Chapter 13: Transportation

A. INTRODUCTION

This chapter examines the potential effects of the Proposed Action on the study area transportation systems, and compares the future with the Proposed Action (the With-Action condition) with the future without the Proposed Action (the No-Action condition).

Through the Proposed Action, the Applicant seeks to activate and enhance the area known as Hudson Square by permitting mixed-use development while preserving the area's commercial base and existing built character. The sites owned by the Applicant are currently occupied by office buildings, ground-floor retail, vacant land, and parking facilities. In the With-Action condition, the projected development sites would be redeveloped with residential, office, school, and ground-floor retail uses. Dormitory uses—although not currently envisioned by the Applicant—have also been studied for the purposes of conservative environmental review because they could be developed on sites not under the Applicant's control.

~~As described in Chapter 1, "Project Description," t~~The transportation analyses presented in the Draft Environmental Impact Statement (DEIS)~~this chapter~~ were prepared based on a slight variation of the No-Action and With-Action reasonable worst case development scenario (RWCDS) assumptions. As a result of recent building permits issued for new developments in the Rezoning Area that were not accounted in the Draft Scope of Work for the ~~Environmental Impact Statement (~~EIS~~)~~, several changes were made to the No-Action and With-Action RWCDS assumptions. The changes to the RWCDS occurred shortly prior to certification of the DEIS, after substantial work had been completed on the transportation analyses. ~~Because the RWCDS analyzed in this chapter analyzes a larger incremental development between the No-Action and With-Action conditions, the analyses are conservative in that they present a larger potential for project-generated impacts. Between the Draft and Final EIS, the transportation and transportation-related analyses will be updated to reflect the final RWCDS.~~

The transportation analyses presented in the Final EIS (FEIS) have been updated based on the No-Action and With-Action RWCDS assumptions analyzed for other technical areas in the DEIS. In addition, as discussed in detail in the "Foreword" of the FEIS, conditions on two development sites within the Rezoning Area—Projected Development Sites 11 and 18—have changed since the issuance of the DEIS; these changes have been incorporated in the transportation analyses presented in this chapter. Furthermore, as a result of discussions with the New York City Department of City Planning (NYCDCP) and the New York City Department of Transportation (NYCDOT), six additional traffic analysis intersections have been added to the FEIS transportation analysis.

PRINCIPAL CONCLUSIONS

TRAFFIC

Traffic conditions were evaluated at ~~22~~ 28 intersections for the weekday AM, midday, and PM peak hours and at ~~18~~ 23 intersections for the Saturday midday peak hour. Under the With-Action

condition, there would be the potential for significant adverse impacts at ~~13~~ 14 intersections during the weekday AM peak hour, 3 intersections during the weekday midday peak hour, ~~13~~ 14 intersections during the PM peak hour, and 5 intersections during the Saturday midday peak hour, as follows:

Weekday AM Peak Hour

- West Street and Clarkson Street – southbound left-turn;
- West Street and West Houston Street – westbound right-turn;
- West Street and Canal Street North – westbound left-turn/right-turn and westbound right-turn;
- Hudson Street and King Street – northbound approach;
- Hudson Street (east and west lanes) and Canal Street – westbound through and northbound left-turn/through (west lanes);
- Varick Street (east and west lanes) and West Houston Street – southbound through/right-turn (west lanes);
- Varick Street (east and west lanes) and King Street – southbound through (west lanes);
- Varick Street (east and west lanes) and Charlton Street – southbound through/right-turn (west lanes);
- Varick Street (east and west lanes) and Spring Street – southbound left-turn/through (east lanes);
- Varick Street and Canal Street – westbound approach;
- Avenue of the Americas and West Houston Street – northbound approach;
- Avenue of the Americas and Spring Street – eastbound left-turn; ~~and~~
- Avenue of the Americas and Canal Street/Laight Street – westbound and northbound approaches; and
- Hudson Street and Spring Street – eastbound approach.

Weekday Midday Peak Hour

- ~~West Street and West Houston Street – westbound right-turn;~~
- Hudson Street (east and west lanes) and Canal Street – westbound through;
- Varick Street (east and west lanes) and Spring Street – eastbound right-turn; and
- Varick Street (east and west lanes) and Broome Street – southbound through/right-turn (west lanes) and southbound right-turn (west lanes).

Weekday PM Peak Hour

- West Street and Clarkson Street – southbound left-turn;
- West Street and West Houston Street – westbound right-turn;
- Hudson Street and Charlton Street – westbound approach;
- Hudson Street (east and west lanes) and Canal Street – northbound left-turn/through (west lanes);
- Varick Street (east and west lanes) and West Houston Street – southbound through/right-turn (west lanes);
- Varick Street (east and west lanes) and King Street – southbound through (west lanes);
- Varick Street (east and west lanes) and Charlton Street – westbound approach and southbound through/right-turn (west lanes);

- Varick Street (east and west lanes) and Vandam Street – southbound through/right-turn (west lanes);
- Varick Street (east and west lanes) and Spring Street – eastbound through, eastbound right-turn, and southbound through (west lanes);
- Varick Street (east and west lanes) and Dominick Street – southbound through/right-turn (west lanes);
- Varick Street (east and west lanes) and Broome Street – southbound through/right-turn and southbound right-turn (west lanes);
- Varick Street and Canal Street – southbound left-turn;
- Avenue of the Americas and Canal Street/Laight Street – westbound approach; and
- Washington Street and West Houston Street – southbound approach.

Saturday Midday Peak Hour

- Varick Street (east and west lanes) and King Street – southbound through (west lanes);
- Varick Street (east and west lanes) and Charlton Street – southbound through/right-turn (west lanes);
- Varick Street (east and west lanes) and Spring Street – eastbound through/right-turn, eastbound right-turn, and southbound left-turn/through (east lanes);
- Varick Street (east and west lanes) and Dominick Street – southbound through/right-turn (west lanes); and
- Varick Street (east and west lanes) and Broome Street – southbound through/right-turn (west lanes) and southbound right-turn (west lanes).

Table 13-1 provides a summary of the above impacted locations by analysis time periods. As detailed in Chapter 20, "Mitigation," some of these significant adverse impacts could be mitigated with standard traffic engineering measures while others could not be mitigated during one or more analysis time periods. ~~Additional intersections may be analyzed between the Draft and Final EIS. These intersections will be selected in consultation with DCP and NYCDOT. The analysis of these additional intersections may identify additional significant adverse traffic impacts, for which mitigation measures would be identified. If feasible measures are not available to fully mitigate these impacts, they would be identified as unmitigated in the Final EIS.~~

TRANSIT

The screening assessment summarized below in Section D, "Level 2 Screening assessment," concluded that a detailed examination of subway and busline-haul conditions is not warranted. However, detailed analyses of station elements at two area subway stations—the Spring Street station (C/E lines) and the Houston Street station (No.1 line)—were prepared. The analysis results show that the Proposed Action would not result in any significant adverse transit impacts during any analysis peak periods.

PEDESTRIANS

Weekday and Saturday peak period pedestrian conditions were evaluated at key sidewalk, corner reservoir, and crosswalk elements at 11 area intersections. Under the RWCDS, significant adverse impacts were identified for the north crosswalk of Avenue of the Americas and Spring Street and the north crosswalk of Varick Street and Spring Street.

Table 13-1
Summary of Significant Adverse Traffic Impacts

Intersection		AM	Midday	PM	Saturday
EB/WB Street	**NB/SB Street**	**Peak Hour**	**Peak Hour**	**Peak Hour**	**Peak Hour**
Clarkson Street	West Street	SB-L		SB-L	
West Houston Street	West Street	WB-R	~~WB-R~~	WB-R	
Canal Street North	West Street	WB-LR WB-R			
King Street	Hudson Street	NB-TR			
Charlton Street	Hudson Street			WB-TR	
Canal Street	Hudson Street	WB-TR NB-LT (west lanes)	WB-T	NB-LT (west lanes)	
West Houston Street	Varick Street	SB-TR (west lanes)		SB-TR (west lanes)	
King Street	Varick Street	SB-T (west lanes)		SB-T (west lanes)	SB-T (west lanes)
Charlton Street	Varick Street	SB-TR (west lanes)		WB-LT SB-TR (west lanes)	SB-TR (west lanes)
Vandam Street	Varick Street			SB-TR (west lanes)	
Spring Street	Varick Street	SB-LT (east lanes)	EB-R	EB-T EB-R SB-T (west lanes)	EB-TR EB-R SB-LT (east lanes)
Dominick Street	Varick Street			SB-TR (west lanes)	SB-TR (west lanes)
Broome Street	Varick Street		SB-TR (west lanes) SB-R (west lanes)	SB-TR (west lanes) SB-R (west lanes)	SB-TR (west lanes) SB-R (west lanes)
Canal Street	Varick Street	WB-LT		SB-L	
West Houston Street	Avenue of the Americas	NB-LTR			
Spring Street	Avenue of the Americas	EB-L			
Canal Street/Laight Street	Avenue of the Americas	WB-TR NB-LTR		WB-TR	
West Houston Street	Washington Street			SB-TR	
Spring Street	Hudson Street	EB-LT			

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left Turn; T = Through; R = Right Turn

Table 13-2 provides a summary of these impacted locations by analysis time periods. As detailed in Chapter 20, "Mitigation," these significant adverse impacts could be mitigated with crosswalk widenings.

Table 13-2
Summary of Significant Adverse Pedestrian Impacts

		2022 With-Action			
Intersection	**Pedestrian Element**	**AM Peak Hour**	**Midday Peak Hour**	**PM Peak Hour**	**Saturday Peak Hour**
Avenue of the Americas and Spring Street	North Crosswalk			X	
Varick Street and Spring Street	North Crosswalk	X		X	

Notes: X = Impacted

VEHICULAR AND PEDESTRIAN SAFETY

Accident data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between March 31, 2008 and March 31, 2011. During this period, a total of ~~864~~ 831 reportable and non-reportable accidents, zero fatalities, 380 injuries, and 92 pedestrian/bicyclist-related accidents occurred at the study area intersections. A rolling total of accident data identifies two study area intersections as high pedestrian accident locations in the 2008 to 2011 period. These intersections are Varick Street at West Houston Street and Avenue of the Americas at West Houston Street.

With the Proposed Action, the intersection of Varick Street and West Houston Street would experience moderate increases in vehicular and pedestrian traffic. The net incremental vehicular and pedestrian levels at this intersection would be above the *CEQR* analysis threshold of 50 peak hour vehicle trips while the net incremental pedestrian levels would be below the *CEQR* analysis threshold of 200 peak hour pedestrian trips. The intersection of Varick Street and West Houston Street would incur significant adverse impacts during the AM and PM peak hours. As described in Chapter 20, "Mitigation," the predicted impacts at this intersection could be fully mitigated during the weekday AM peak hour with standard traffic engineering measures; however, the impact during the weekday PM peak hour could not be fully migitated. Because the incremental vehicle trips at this intersection during the weekday PM peak hour would mostly be on the Varick Street southbound through movement and the incremental increase in pedestrian trips from the Proposed Action at this intersection's crosswalks would not be substantial, the potential for additional vehicular-pedestrian conflicts, which mostly occur with vehicular turning movements through crosswalks, is expected to be minimal. Therefore, the Proposed Action is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures such as the installation of signs warning turning vehicles to yield to pedestrians in the crosswalk on the southbound and westbound approaches and the installation of countdown timers at all crosswalks, can be implemented to improve pedestrian safety at this intersection.

With the Proposed Action, the intersection of Avenue of the Americas and West Houston Street would experience moderate increases in vehicular and pedestrian traffic. The net incremental vehicular and pedestrian levels at this intersection would be above the *CEQR* analysis threshold of 50 peak hour vehicle trips while the net incremental pedestrian levels would be below the *CEQR* analysis threshold of 200 peak hour pedestrian trips. The intersection of Avenue of the Americas and West Houston Street would incur significant adverse impacts during the AM peak hour. However, as described in Chapter 20, "Mitigation," the predicted impact at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., School Advance Warning assemblies on the northbound approach) and restriping the west crosswalk into a high-visibility crosswalk, can be implemented to improve pedestrian safety at this intersection.

PARKING

The Proposed Action would displace existing public parking spaces and include new off-street accessory parking spaces. In the With-Action condition, expected future development projects (No-Action and With-Action condition) are expected to displace 10 public parking facilities, for a total displacement of approximately 809 parking spaces. The Proposed Action is expected to include a total of up to ~~640~~ 630 off-street accessory parking spaces. Accounting for the displacement of the public parking spaces, the addition of the accessory parking spaces, and the parking demand generated from background growth, No-Action condition, and the Proposed Action, the With-Action public parking supply and utilization analysis shows that there would be a parking shortfall during the weekday midday period within the ¼-mile off-street parking study area. However, based on the magnitude of available and total parking spaces within ½-mile of the rezoning boundaries (minimum of 2,000 out of approximately 9,000 spaces), it is anticipated that the excess demand could be accommodated with a slightly longer walking distance beyond the ¼-mile radius. Furthermore, as stated in the *CEQR Technical Manual*, a parking shortfall

resulting from a project located in Manhattan does not constitute a significant adverse parking impact, due to the magnitude of available alternative modes of transportation.

SUMMARY OF MITIGATION ANALYSIS

~~Most~~ Many of the significant adverse impacts summarized above could be mitigated with readily implementable measures, such as signal retiming, changes to parking regulations, and crosswalk widening. Out of the ~~17~~ 19 impacted traffic intersections, impacts at 11 intersections could not be fully mitigated during one or more analysis peak hours. The two crosswalk impacts could be fully mitigated. The specific measures that would be feasible to mitigate the significant adverse impacts summarized above are further discussed in Chapter 20, "Mitigation." These measures would be subject to review and approval by ~~the New York City Department of Transportation (~~NYCDOT~~)~~.

B. PRELIMINARY ANALYSIS METHODOLOGY

The 2012 *CEQR Technical Manual* describes a two-tier screening procedure for the preparation of a "preliminary analysis" to determine if quantified analyses of transportation conditions are warranted. As discussed below, the preliminary analysis begins with a trip generation analysis (Level 1) to estimate the volume of person and vehicle trips attributable to the Proposed Action. According to the *CEQR Technical Manual*, if the Proposed Action is expected to result in fewer than 50 peak hour vehicle trips and fewer than 200 peak hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are performed to estimate the incremental trips that could be incurred at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the Proposed Action would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a pedestrian element, then further quantified analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

C. LEVEL 1 SCREENING ASSESSMENT

A Level 1 trip generation screening assessment was conducted to estimate the volume of person and vehicle trips by mode expected to be generated by the Proposed Action during the weekday AM, midday, PM, and Saturday midday peak hours for the RWCDS. These estimates were then compared to the *CEQR Technical Manual* thresholds to determine if a Level 2 screening and/or quantified analyses would be warranted.

BACKGROUND

The proposed development would include residential, office, school, ground-floor retail, and dormitory uses, as well as provisions for parking. It consists of 22 projected development sites (16 are projected new construction sites, 3 are projected enlargement sites on which additional floors could be constructed above the existing structures, and 3 are projected conversion sites) spread across an approximately 18-block Rezoning Area located within Community Board 2. The Rezoning Area's projected enlargement sites are expected to retain their uses in the No-Action condition, but would be enlarged (in some cases with different uses) in the With-Action condition. As described above, the analyses presented in the DEIS for this chapter addressed a larger development increment between the No-Action and With-Action conditions than currently

contemplated. For the FEIS, the analyses have been updated based on the No-Action and With-Action RWCDS assumptions analyzed for other technical areas in the DEIS. The FEIS No-Action RWCDS assumptions would result in an increase of 326 hotel rooms, an increase of 2,750 gross square feet (gsf) of retail, and a reduction of 61 residential dwelling units. The FEIS With-Action RWCDS assumptions would result in a reduction of 24 residential dwelling units. In addition, the updated No-Action and With-Action RWCDS assumptions and the changes on Projected Development Sites 11 and 18 as described in the "Foreword" of the FEIS are incorporated in the analyses presented below. ~~Accordingly, the current development assumptions are expected to yield increments that would be up to approximately 470 fewer person trips and up to approximately 80 fewer vehicle trips during peak hours. With these trips distributed across various analysis locations within the transportation network, the differences at individual intersections, subway stairs, and pedestrian elements would be more modest. However, because these increments are smaller than what have been assumed for the current transportation analysis, the resulting impacts would also be of lesser magnitudes. The current transportation analysis is conservative in that it shows larger potential for project-generated impacts on traffic, transit, pedestrians, and parking.~~

The transportation analysis is a density-based technical analysis, so only the anticipated development on the projected development sites (including projected new construction, enlargements, and changes of use) form the basis for this impact assessment. The potential development sites that are considered less likely to be developed within the 10-year analysis period are not included in this assessment.

The two RWCDS include various development components that represent "worst-case" conditions for the EIS technical analyses. The two RWCDS both have approximately the same amount of developable square footage. The only difference between the two scenarios is that Scenario 1 would contain all residential dwelling units (approximately 2,867,000 square feet) and Scenario 2 would contain a mix of residential dwelling units and dormitory space (approximately 2,576,000 and 254,900 square feet, respectively). For a conservative analysis, the scenario with the dormitory space, which would yield a larger number of occupants, was selected for this travel demand analysis.

Overall, in the With-Action condition under RWCDS 2, the projected development sites would contain approximately ~~3,030~~ 2,992 dwelling units, 1,006,800 gross square feet (gsf) of commercial office space, 244,700 gsf of retail use, a public school (pre-kindergarten through fifth grade) of up to 75,000 gsf with approximately 444 seats, 254,900 gsf of dormitory space (773 beds[1]), and ~~640~~ 630 new accessory parking spaces. The two With-Action RWCDS are summarized in **Table 13-3**.

The No-Action condition provides a baseline condition that is evaluated and compared with the incremental changes in the With-Action condition for the same analysis year (2022). The No-Action condition uses existing conditions as a baseline and adds to it changes that are known or expected to be in place at various times in the future. It is anticipated that absent the Proposed Action, given the existing M1-6 zoning, the current trend of hotel development would continue in this area. The No-Action condition for this EIS consists of currently planned or ongoing development projects within the Rezoning Area, as well as the development that is expected to occur on certain sites controlled by the Applicant by 2022.

[1] Assumes one dormitory bed per 300 zoning square feet (or one bed per 330 gsf) of dormitory space.

Table 13-3
Proposed Rezoning Area—RWCDS

Uses	Scenario 1	Scenario 2
Residential (DUs)	3,338	2,992
Office (gsf)	1,006,748	1,006,748
Retail (gsf) [1]		
Destination Retail	128,096	128,096
Local Retail	116,572	116,572
Total	244,668	244,668
School		
Students	444	444
Staff/Faculty	40	40
gsf	75,000	75,000
Dormitory (beds)	0	773
Accessory Parking Spaces	700	630

Notes: (1) For trip generation purposes, retail space was divided into destination and local retail based primarily on the size of the retail space available at each site.
Sources: NYC DCP MapPLUTO 10v1 (2010) data. AKRF, Inc; SHoP Architects; HR&A Advisors.

Based on the details presented in Chapter 1, "Project Descriptions," the predicted change in No-Action condition within the Rezoning Area was summarized, as presented in **Table 13-4**. This table summarizes the existing uses and shows that development in the No-Action condition is predicted to have a total of approximately ~~90~~ 34 dwelling units, ~~867,200~~ 846,900 gsf of commercial office space, 172,100 gsf of other commercial uses (assumed to include conference center, community theater, catering hall, professional school, and health club), ~~142,800~~ 145,600 gsf of retail use, ~~800~~ 1,126 hotel rooms, and ~~192~~ 180 new accessory parking spaces. It also summarizes the development components presented in **Table 13-3** for With-Action (RWCDS 2) and shows the incremental differences of the No-Action and With-Action development totals over existing conditions.

Table 13-4
Existing, No-Action, and With-Action (RWCDS 2) Development Scenarios

Uses	Existing	No-Action	No-Action net Existing	With-Action	With-Action net Existing
Residential (DUs)	29	34	5	2,992	2,963
Office (gsf)	683,085	846,908	163,823	1,006,748	323,663
Other Commercial (gsf)					
Conference Center		50,666	50,666		
Community Theater		13,328	13,328		
Catering Hall		40,000	40,000		
Professional School		46,216	46,216		
Health Club		21,934	21,934		
Total		172,144	172,144		
Retail (gsf) [1]					
Destination Retail	31,411	73,345	41,934	128,096	96,685
Local Retail	30,652	72,239	41,587	116,572	85,920
Total	62,063	145,584	83,521	244,668	182,605
School					
Students				444	444
Staff/Faculty				40	40
gsf				75,000	75,000
Dormitory (beds)				773	773
Hotel (rooms)		1,126	1,126	0	0
Storage (gsf) [2]	95,815	165,815	70,000	0	-95,815
Accessory Parking Spaces	N/A	180	180	630	630

Notes: N/A = Not Available.
(1) For trip generation purposes, retail space was divided into destination and local retail based primarily on the size of the retail space available at each site.
(2) Storage and public parking facilities were conservatively not included in the trip credit calculations.
Sources: NYC Department of Buildings; Trinity Real Estate; NYC DCP MapPLUTO 10v1 (2010) data; AKRF, Inc; SHoP Architects; HR&A Advisors.

As discussed above, there are 22 projected development sites within the Rezoning Area and some of the development sites have existing uses that would be replaced by future developments, albeit differently under the No-Action and With-Action conditions. Hence, the "net Existing" columns presented in **Table 13-4** represents the layer of trips that future No-Action and With-Action conditions would add onto existing levels. The "No-Action net Existing" column represents the net incremental difference between the No-Action and existing uses on the development sites. Likewise, the "With-Action net Existing" column represents the net incremental difference between the With-Action and existing uses on the development sites. These increments were analyzed for their potential trip generation and distribution onto the transportation network as detailed below.

TRANSPORTATION PLANNING ASSUMPTIONS

Travel demand projections were prepared for each of the No-Action and With-Action conditions for the weekday AM, midday, PM, and Saturday midday peak hours. The resulting trip increments (Proposed Action trips minus No-Action trips) were compared with the applicable *CEQR Technical Manual* screening thresholds to determine if additional quantified analyses were warranted. The transportation planning assumptions used in calculating the trip estimates are described below and detailed in **Table 13-5**. These assumptions are based on travel demand factors from established and published sources, including the *CEQR Technical Manual*, U.S. Census data, and other approved studies, including the *NYU Core DEIS*, *Western Rail Yard FEIS*, and *Battery Maritime Building Redevelopment EAS*.

RESIDENTIAL

For the residential component, trip generation rates of 8.075 daily person trips per dwelling unit per weekday and 9.6 daily person trips per dwelling unit per Saturday, and a temporal distribution of 10 percent for the weekday AM peak hour, 5 percent for the midday peak hour, 11 percent for the PM peak hour, and 8 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. A directional distribution of 15 percent "in" during the weekday AM peak hour, 50 percent "in" during the midday peak hour, 70 percent "in" during the PM peak hour, and 50 percent "in" during the Saturday peak hour were also obtained from the *Western Rail Yard Final EIS (FEIS).* Modal split information (9 percent by auto, 7 percent by taxi, 55 percent by subway, 2 percent by bus, 27 percent by walk) and auto occupancy (1.11 persons per auto) for the weekday and Saturday peak hours were obtained from journey–to-work data from the U.S. Census American Community Survey (ACS) 2005-2009. A taxi occupancy rate of 1.40 passengers per taxi was obtained from the *Western Rail Yard FEIS.*

Daily truck trip generation rates of 0.06 trips per dwelling unit for weekday and 0.02 trips per dwelling unit for Saturday were obtained from the *CEQR Technical Manual*. Temporal distribution (12 percent during the weekday AM peak hour, 9 percent during the midday peak hour, 2 percent during the PM peak hour, and 9 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *CEQR Technical Manual.*

Table 13-5
Transportation Planning Assumptions

Use	Day of the Week	Daily Trip Rate [1] (per Dwelling Unit) Person	Delivery	Peak Hour	Person Trips [1,2] Temporal	In	Out	Total	Delivery Trips [1] Temporal	In	Out	Total
Residential	Weekday											
	Initial	8.075	-	AM	10.0%	15.0%	85.0%	100.0%	12.0%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	5.0%	50.0%	50.0%	100.0%	9.0%	50.0%	50.0%	100.0%
	Final	8.075	0.06	PM	11.0%	70.0%	30.0%	100.0%	2.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	9.6	-									
	Link Credit	0%	-	MD	8.0%	50.0%	50.0%	100.0%	9.0%	50.0%	50.0%	100.0%
	Final	9.6	0.02									

	Peak Hour	Mode of Transportation [3] Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Vehicle Occupancy [2,3] Auto	Taxi	School Bus
	AM	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.40	-
Weekday	MD	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.40	-
	PM	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.40	-
Saturday	MD	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.40	-

Use	Day of the Week	Daily Trip Rate [1] (per 1,000 SF) Person	Delivery	Peak Hour	Person Trips [1,4] Temporal	In	Out	Total	Delivery Trips [1] Temporal	In	Out	Total
Office	Weekday											
	Initial	18	-	AM	12.0%	96.0%	4.0%	100.0%	10.0%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	15.0%	48.0%	52.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	18	0.32	PM	14.0%	5.0%	95.0%	100.0%	2.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	3.9	-									
	Link Credit	0%	-	MD	17.0%	57.0%	43.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	3.9	0.01									

	Peak Hour	Mode of Transportation [4,5] Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Vehicle Occupancy [2] Auto	Taxi	School Bus
	AM	18.0%	3.0%	60.0%	8.0%	0.0%	9.0%	98.0%	1.19	1.4	-
Weekday	MD	2.0%	3.0%	6.0%	6.0%	0.0%	81.0%	98.0%	1.19	1.4	-
	PM	18.0%	3.0%	60.0%	8.0%	0.0%	9.0%	98.0%	1.19	1.4	-
Saturday	MD	2.0%	3.0%	6.0%	6.0%	0.0%	81.0%	98.0%	1.19	1.4	-

Use	Day of the Week	Daily Trip Rate [1] (per 1,000 SF) Person	Delivery	Peak Hour	Person Trips [1,2] Temporal	In	Out	Total	Delivery Trips [1,6] Temporal	In	Out	Total
Destination Retail	Weekday											
	Initial	78.2	-	AM	3.0%	50.0%	50.0%	100.0%	8.0%	50.0%	50.0%	100.0%
	Link Credit	25%	-	MD	9.0%	55.0%	45.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	58.65	0.35	PM	9.0%	47.0%	53.0%	100.0%	2.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	92.5	-									
	Link Credit	25%	-	MD	11.0%	52.0%	48.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	69.375	0.04									

	Peak Hour	Mode of Transportation [2] Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Vehicle Occupancy [2] Auto	Taxi	School Bus
	AM	9.0%	4.0%	28.5%	8.0%	0.0%	50.5%	100.0%	2.00	2.00	-
Weekday	MD	9.0%	4.0%	20.0%	8.0%	0.0%	59.0%	100.0%	2.00	2.00	-
	PM	9.0%	4.0%	28.5%	8.0%	0.0%	50.5%	100.0%	2.00	2.00	-
Saturday	MD	9.0%	4.0%	20.0%	8.0%	0.0%	59.0%	100.0%	2.00	2.00	-

Use	Day of the Week	Daily Trip Rate [1] (per 1,000 SF) Person	Delivery	Peak Hour	Person Trips [1,7] Temporal	In	Out	Total	Delivery Trips [1] Temporal	In	Out	Total
Local Retail	Weekday											
	Initial	205.0	-	AM	3.0%	50.0%	50.0%	100.0%	8.0%	50.0%	50.0%	100.0%
	Link Credit	25%	-	MD	19.0%	50.0%	50.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	153.75	0.35	PM	10.0%	50.0%	50.0%	100.0%	2.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	240.0	-									
	Link Credit	25%	-	MD	10.0%	50.0%	50.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	180.0	0.04									

	Peak Hour	Mode of Transportation [7] Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Vehicle Occupancy [7] Auto	Taxi	School Bus
	AM	2.0%	3.0%	6.0%	6.0%	0.0%	83.0%	100.0%	1.65	1.4	-
Weekday	MD	2.0%	3.0%	6.0%	6.0%	0.0%	83.0%	100.0%	1.65	1.4	-
	PM	2.0%	3.0%	6.0%	6.0%	0.0%	83.0%	100.0%	1.65	1.4	-
Saturday	MD	2.0%	3.0%	6.0%	6.0%	0.0%	83.0%	100.0%	1.65	1.4	-

Table 13-5 (cont'd)
Transportation Planning Assumptions

Use		Daily Trip Rate [1,2] (per room)			Person Trips [1,2]				Delivery Trips [2]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
Hotel	Weekday											
	Initial	9.4	-	AM	8.0%	39.0%	61.0%	100.0%	12.2%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	14.0%	54.0%	46.0%	100.0%	8.7%	50.0%	50.0%	100.0%
	Final	9.4	0.06	PM	13.0%	65.0%	35.0%	100.0%	1.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	9.4	-									
	Link Credit	0%	-	MD	9.0%	56.0%	44.0%	100.0%	9.0%	50.0%	50.0%	100.0%
	Final	9.4	0.01									

		Mode of Transportation [2]							Vehicle Occupancy [2]		
	Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
Weekday	AM	9.0%	18.0%	24.0%	3.0%	0.0%	46.0%	100.0%	1.40	1.8	-
	MD	8.0%	15.0%	13.0%	3.0%	0.0%	61.0%	100.0%	1.4	1.8	-
	PM	9.0%	18.0%	24.0%	3.0%	0.0%	46.0%	100.0%	1.4	1.8	-
Saturday	MD	9.0%	18.0%	24.0%	3.0%	0.0%	46.0%	100.0%	1.4	1.8	-

School Student		Daily Trip Rate [7] Person (per Student)			Person Trips [7]				Delivery Trips [7]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
	Weekday											
	Initial	2	-	AM	50.0%	100.0%	0.0%	100.0%	-	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	0.0%	0.0%	0.0%	0.0%	-	50.0%	50.0%	100.0%
	Final	2	-	PM	2.5%	0.0%	100.0%	100.0%	-	50.0%	50.0%	100.0%
	Saturday											
	Initial	0	-									
	Link Credit	0%	-	MD	0.0%	50.0%	50.0%	100.0%	-	50.0%	50.0%	100.0%
	Final	0	-									

		Mode of Transportation [7]							Vehicle Occupancy [7]		
	Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
Weekday	AM	6.2%	1.7%	0.0%	0.0%	3.9%	88.2%	100.0%	1.70	1.22	19
	MD	6.2%	1.7%	0.0%	0.0%	3.9%	88.2%	100.0%	1.7	1.22	19
	PM	6.2%	1.7%	0.0%	0.0%	3.9%	88.2%	100.0%	1.7	1.22	19
Saturday	MD	6.2%	1.7%	0.0%	0.0%	3.9%	88.2%	100.0%	1.7	1.22	19

School Staff		Daily Trip Rate [7] Person (per Staff) Delivery (per 1,000 SF)			Person Trips [7]				Delivery Trips [7]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
	Weekday											
	Initial	2	-	AM	5.0%	100.0%	0.0%	100.0%	9.6%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	0.0%	0.0%	0.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	2	0.07	PM	2.5%	0.0%	100.0%	100.0%	1.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	0	-									
	Link Credit	0%	-	MD	0.0%	50.0%	50.0%	100.0%	0.0%	50.0%	50.0%	100.0%
	Final	0	0.00									

		Mode of Transportation [8]							Vehicle Occupancy [7,8]		
	Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
Weekday	AM	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
	MD	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
	PM	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
Saturday	MD	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-

Dormitory		Daily Trip Rate [7] (per Bed)			Person Trips [7]				Delivery Trips [7]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
	Weekday											
	Initial	4.75	-	AM	4.0%	35.5%	64.5%	100.0%	10.0%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	6.0%	50.5%	49.5%	100.0%	8.0%	50.0%	50.0%	100.0%
	Final	4.75	0.03	PM	11.0%	52.5%	47.5%	100.0%	5.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	5.65	-									
	Link Credit	0%	-	MD	8.0%	52.5%	47.5%	100.0%	9.0%	50.0%	50.0%	100.0%
	Final	5.65	0.01									

		Mode of Transportation [3]							Vehicle Occupancy [3,7]		
	Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
Weekday	AM	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.30	-
	MD	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.30	-
	PM	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.30	-
Saturday	MD	9.0%	7.0%	55.0%	2.0%	0.0%	27.0%	100.0%	1.11	1.30	-

Table 13-5 (cont'd)
Transportation Planning Assumptions

Use		Daily Trip Rate [7] (per 1,000 SF)		Peak Hour	Person Trips [7]				Delivery Trips [7]			
		Person	Delivery		Temporal	In	Out	Total	Temporal	In	Out	Total
Conference Center Patrons	Weekday											
	Initial	27.2	-	AM	10.5%	91.0%	9.0%	100.0%	7.9%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	9.5%	53.0%	47.0%	100.0%	14.7%	50.0%	50.0%	100.0%
	Final	27.2	0.35	PM	10.5%	15.0%	85.0%	100.0%	1.1%	50.0%	50.0%	100.0%
	Saturday											
	Initial	27.2	-									
	Link Credit	0%	-	MD	10.5%	53.0%	47.0%	100.0%	14.7%	50.0%	50.0%	100.0%
	Final	27.2	0.06									
			Mode of Transportation [7]							Vehicle Occupancy [7]		
		Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
		AM	7.0%	6.0%	25.0%	10.0%	0.0%	52.0%	100.0%	2.30	1.80	-
	Weekday	MD	7.0%	6.0%	25.0%	10.0%	0.0%	52.0%	100.0%	2.30	1.80	-
		PM	7.0%	6.0%	25.0%	10.0%	0.0%	52.0%	100.0%	2.30	1.80	-
	Saturday	MD	7.0%	6.0%	25.0%	10.0%	0.0%	52.0%	100.0%	2.30	1.80	-
Conference Center Employees		Daily Trip Rate [7] (per 1,000 SF)			Person Trips [7]				Delivery Trips [7]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
	Weekday											
	Initial	10.0	-	AM	14.7%	96.0%	4.0%	100.0%	7.9%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	20.0%	55.0%	45.0%	100.0%	14.7%	50.0%	50.0%	100.0%
	Final	10.0	0.00	PM	12.9%	5.0%	95.0%	100.0%	1.1%	50.0%	50.0%	100.0%
	Saturday											
	Initial	10.0	-									
	Link Credit	0%	-	MD	14.7%	55.0%	45.0%	100.0%	14.7%	50.0%	50.0%	100.0%
	Final	10.0	0.00									
			Mode of Transportation [8]							Vehicle Occupancy [7,8]		
		Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
		AM	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
	Weekday	MD	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
		PM	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
	Saturday	MD	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
Community Theater		Daily Trip Rate [11] (per Seat)			Person Trips [11]				Delivery Trips [11]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
	Weekday											
	Initial	2.68	-	AM	0.0%	50.0%	50.0%	100.0%	6.0%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	0.0%	50.0%	50.0%	100.0%	6.0%	50.0%	50.0%	100.0%
	Final	2.68	0.01	PM	10.0%	100.0%	0.0%	100.0%	1.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	2.68	-									
	Link Credit	0%	-	MD	10.0%	50.0%	50.0%	100.0%	0.0%	50.0%	50.0%	100.0%
	Final	2.68	0.01									
			Mode of Transportation [12]							Vehicle Occupancy [11]		
		Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
		AM	9.0%	4.0%	28.5%	8.0%	0.0%	50.5%	100.0%	2.90	3.00	-
	Weekday	MD	9.0%	4.0%	28.5%	8.0%	0.0%	50.5%	100.0%	2.90	3.00	-
		PM	9.0%	4.0%	28.5%	8.0%	0.0%	50.5%	100.0%	2.90	3.00	-
	Saturday	MD	9.0%	4.0%	28.5%	8.0%	0.0%	50.5%	100.0%	2.90	3.00	-
Catering Hall		Average Occupancy [13]			Person Trips [13]				Delivery Trips [13,17]			
				Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
	Weekday											
	AM	0	-	AM	0.0%	90.0%	10.0%	100.0%	-	50.0%	50.0%	100.0%
	Midday	233	-	MD	80.0%	90.0%	10.0%	100.0%	-	50.0%	50.0%	100.0%
	PM	446	-	PM	80.0%	90.0%	10.0%	100.0%	-	50.0%	50.0%	100.0%
	Saturday											
	Midday	668	-	MD	80.0%	90.0%	10.0%	100.0%	-	50.0%	50.0%	100.0%
			Mode of Transportation [9,10]							Vehicle Occupancy [9]		
		Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
		AM	17.4%	6.4%	20.0%	8.4%	0.0%	47.8%	100.0%	2.20	2.30	-
	Weekday	MD	17.4%	6.4%	20.0%	8.4%	0.0%	47.8%	100.0%	2.20	2.30	-
		PM	17.4%	6.4%	20.0%	8.4%	0.0%	47.8%	100.0%	2.20	2.30	-
	Saturday	MD	17.4%	6.4%	20.0%	8.4%	0.0%	47.8%	100.0%	2.20	2.30	-

Table 13-5 (cont'd)
Transportation Planning Assumptions

Use		Daily Trip Rate [14] (per 1,000 SF)			Person Trips [14]				Delivery Trips [14]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
Professional School	Weekday											
	Initial	26.6	-	AM	7.2%	94.0%	6.0%	100.0%	9.6%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	10.7%	46.0%	54.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	26.6	0.29	PM	12.6%	44.0%	56.0%	100.0%	1.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	10.87	-									
	Link Credit	0%	-	MD	12.6%	57.0%	43.0%	100.0%	0.0%	50.0%	50.0%	100.0%
	Final	10.87	0.29									
			Mode of Transportation [8]							Vehicle Occupancy [8, 14]		
		Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
	Weekday	AM	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
		MD	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
		PM	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
	Saturday	MD	19.0%	3.0%	61.0%	8.0%	0.0%	9.0%	100.0%	1.19	1.40	-
Health Club		Daily Trip Rate [1] (per 1,000 SF)			Person Trips [1,15]				Delivery Trips [15]			
		Person	Delivery	Peak Hour	Temporal	In	Out	Total	Temporal	In	Out	Total
	Weekday											
	Initial	44.7	-	AM	4.0%	41.0%	59.0%	100.0%	6.0%	50.0%	50.0%	100.0%
	Link Credit	0%	-	MD	9.0%	54.0%	46.0%	100.0%	11.0%	50.0%	50.0%	100.0%
	Final	44.7	0.19	PM	5.0%	75.0%	25.0%	100.0%	1.0%	50.0%	50.0%	100.0%
	Saturday											
	Initial	26.1	-									
	Link Credit	0%	-	MD	9.0%	54.0%	46.0%	100.0%	7.6%	50.0%	50.0%	100.0%
	Final	26.1	0.01									
			Mode of Transportation [16]							Vehicle Occupancy [16]		
		Peak Hour	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus
	Weekday	AM	2.0%	2.0%	12.0%	4.0%	0.0%	80.0%	100.0%	1.00	1.00	-
		MD	2.0%	2.0%	12.0%	4.0%	0.0%	80.0%	100.0%	1.00	1.00	-
		PM	2.0%	2.0%	12.0%	4.0%	0.0%	80.0%	100.0%	1.00	1.00	-
	Saturday	MD	2.0%	2.0%	12.0%	4.0%	0.0%	80.0%	100.0%	1.00	1.00	-

Sources and Notes:
1. *CEQR Technical Manual*.
2. *Western Rail Yard FEIS*, 2009.
3. U.S. Census Bureau 2005-2009 American Community Survey 5-Year Estimates.
4. *Western Rail Yard FEIS*, 2009. Walk-only mode adjusted by 2% to account for work at home percentage.
5. 2000 U.S. Census Transportation Planning Package Reverse Journey-to-Work Data. 2% of work at home.
6. Assume the same delivery trip factors as local retail.
7. *NYU Core Draft EIS (DEIS)*, 2011.
8. 2000 U.S. Census Transportation Planning Package Reverse Journey-to-Work Data. Excludes work at home mode.
9. *Battery Maritime Building Redevelopment EAS*, 2008.
10. Modal split factors were adjusted to account for local travel patterns (ferry trips [5%] were added to the bus mode and all the PATH trips [5%] were added to the subway mode).
11. *Brooklyn Bridge Park FEIS*, 2005.
12. *Western Rail Yard FEIS*, 2009. Modal splits assumed the same as the Destination Retail land use.
13. *Domino Sugar Rezoning FEIS*, 2010.
14. *Jamaica Plan Rezoning FEIS*, 2007.
15. *770 Eleventh Avenue Mixed-Use Development Rezoning EIS*, 2009.
16. *Equinox - 344 Amsterdam Avenue EAS*, 2008.
17. Delivery trips not expected to occur during event peak hours.

OFFICE

For office space, daily trip generation rates of 18 person trips per 1,000 square feet per weekday and 3.9 daily person trips per 1,000 square feet per Saturday, and a temporal distribution of 12 percent for the weekday AM peak hour, 15 percent for the midday peak hour, 14 percent for the PM peak hour, and 17 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. Directional distributions of 96 percent "in" during the weekday AM peak hour, 48 percent "in" during the midday peak hours, 5 percent "in during the PM peak hour, and 57 percent "in" during the Saturday peak hour were obtained from the *Western Rail Yard FEIS*. Weekday AM and PM peak hour modal splits of 18 percent by auto, 3 percent by taxi, 60 percent by subway, 8 percent by bus, 9 percent by walk, and 2 percent working at home (not an external trip) were obtained from 2000 U.S. Census reverse journey-to-work data. Weekday midday and Saturday peak hour modal splits of 2 percent by auto, 3 percent by taxi, 6 percent by subway, 6 percent by bus, and 81 percent by walk were obtained from the *Western Rail Yard FEIS*, and reflect a substantially higher walk share and

slightly higher taxi share typical for the middle of the work day and Saturdays. Auto occupancies (1.19 persons per auto) were obtained from the 2000 U.S. Census' reverse-journey-to work data, and taxi occupancies (1.40 passengers per taxi) were obtained from the *Western Rail Yard FEIS.*

Daily truck trip generation rates of 0.32 trips per 1,000 square feet for weekday and 0.01 trips per 1,000 square feet for Saturday were obtained from the *CEQR Technical Manual*. Temporal distribution (10 percent during the weekday AM peak hour, 11 percent during the midday peak hour, 2 percent during the PM peak hour, and 11 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *CEQR Technical Manual*.

DESTINATION RETAIL

For the destination retail component, trip generation rates of 78.2 person trips per 1,000 square feet for weekday and 92.5 trips per 1,000 square feet for Saturday, and a temporal distribution of 3 percent for the weekday AM peak hour, 9 percent for the midday peak hour, 9 percent for the PM peak hour, and 11 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. Directional distributions for the weekday AM, midday, and PM, and Saturday peak hours (50, 55, 47, and 52 percent "in", respectively) were obtained from the *Western Rail Yard FEIS*. A modal split of 9 percent by auto, 4 percent by taxi, 28.5 percent by subway, 8 percent by bus, and 50.5 percent by walk during the weekday AM and PM peak hours was also obtained from the *Western Rail Yard FEIS*. The weekday midday and Saturday peak hours would have a similar modal split but with a slightly higher walk share (59 percent) and a slightly lower subway share (20 percent). Vehicle occupancy rates (2.0 persons per auto and taxi) were obtained from the *Western Rail Yard FEIS* as well. A 25 percent linked trip credit was assumed for all destination retail trips. Daily truck trip generation factors for destination retail were assumed to be similar to the local retail trip factors described below.

LOCAL RETAIL

For local retail use, daily person trip generation rates of 205 person trips per 1,000 square feet for weekday and 240 trips per 1,000 square feet for Saturday, and a temporal distribution of 3 percent for the weekday AM peak hour, 19 percent for the midday peak hour, 10 percent for the PM peak hour, and 10 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. A directional distribution of 50 percent "in" during all peak hours, a modal split of 2 percent by auto, 3 percent by taxi, 6 percent by subway, 6 percent by bus, and 83 percent by walk, and vehicle occupancy rates of 1.65 persons per auto and 1.4 passengers by taxi during all peak hours were all obtained from the *NYU Core DEIS*. A 25 percent linked trip credit was assumed for all local retail trips.

For truck deliveries, a daily trip generation rate of 0.35 trips per 1,000 square feet for weekday and 0.04 trips per 1,000 square feet for Saturday were obtained from the *CEQR Technical Manual*. Temporal distribution (8 percent during the weekday AM peak hour, 11 percent during the midday peak hour, 2 percent during the PM peak hour, and 11 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *CEQR Technical Manual.*

HOTEL

For the hotel component, daily person trip generation rates of 9.4 person trips per room for weekday and Saturday, and a temporal distribution of 8 percent for the weekday AM peak hour, 14 percent for the midday peak hour, 13 percent for the PM peak hour, and 9 percent for the

Saturday peak hour were obtained from the *CEQR Technical Manual*. Directional distributions for the weekday AM, midday, and PM, and Saturday peak hours (39, 54, 65, and 56 percent "in", respectively) were obtained from the *Western Rail Yard FEIS.* A modal split of 9 percent by auto, 18 percent by taxi, 24 percent by subway, 3 percent by bus, and 46 percent by walk during the weekday AM, PM, and Saturday midday peak hours and a modal split of 8 percent by auto, 15 percent by taxi, 13 percent by subway, 3 percent by bus, and 61 percent by walk during the weekday midday peak hour, and vehicle occupancy rates of 1.4 persons per auto and 1.8 passengers by taxi during all peak hours were all obtained from the *Western Rail Yard FEIS*.

For truck deliveries, a daily trip generation rate of 0.06 trips per room for weekday and 0.01 trips per room for Saturday were obtained from the *Western Rail Yard FEIS.* Temporal distribution (12.2 percent during the weekday AM peak hour, 8.7 percent during the midday peak hour, 1 percent during the PM peak hour, and 9 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *Western Rail Yard FEIS.*

SCHOOL

For the PS/IS school component, daily person trip generation rates of 2 person trips per student and per staff for weekday and 0 person trips per student and per staff for Saturday were obtained from the *NYU Core DEIS*. A temporal distribution of 50 percent for the weekday AM peak hour, 0 percent for the midday peak hour, 2.5 percent for the PM peak hour, and 0 percent for the Saturday peak hour for students and a temporal distribution of 5 percent for the weekday AM peak hour, 0 percent for the midday peak hour, 2.5 percent for the PM peak hour, and 0 percent for the Saturday peak hour for staff were obtained from the *NYU Core DEIS*. Directional distributions for the weekday AM, midday, and PM, and Saturday peak hours (100, 0, 0, and 50 percent "in", respectively) were obtained from the *NYU Core DEIS*. A modal split of 6.2 percent by auto, 1.7 percent by taxi, 0 percent by subway, 0 percent by bus, 3.9 percent by school bus, and 88.2 percent by walk for students and a modal split of 19 percent by auto, 3 percent by taxi, 61 percent by subway, 8 percent by bus, and 9 percent by walk for the staff were obtained from the *NYU Core DEIS* and 2000 U.S. Census reverse journey-to-work data, respectively. Vehicle occupancy rates of 1.7 persons per auto, 1.22 passengers by taxi, and 19 passengers by school bus for the students were all obtained from the *NYU Core DEIS.* Vehicle occupancy rates of 1.19 persons per auto and 1.4 passengers by taxi for the staff were obtained from the *NYU Core DEIS* and 2000 U.S. Census reverse journey-to-work data.

For truck deliveries, a daily trip generation rate of 0.07 trips per 1,000 square feet for weekday and 0.00 trips per 1,000 square feet for Saturday were obtained from the *NYU Core DEIS*. Temporal distribution (9.6 percent during the weekday AM peak hour, 11 percent during the midday peak hour, 1 percent during the PM peak hour, and 0 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *NYU Core DEIS.*

DORMITORY

For the dormitory component, trip generation rates of 4.75 person trips per bed for weekday and 5.65 trips per bed for Saturday, and a temporal distribution of 4 percent for the weekday AM peak hour, 6 percent for the midday peak hour, 11 percent for the PM peak hour, and 8 percent for the Saturday peak hour were obtained from the *NYU Core DEIS*. Directional distributions for the weekday AM, midday, and PM, and Saturday peak hours (35.5, 50.5, 52.5, and 52.5 percent "in", respectively) were also obtained from the *NYU Core DEIS*. A modal split of 9 percent by auto, 7

percent by taxi, 55 percent by subway, 2 percent by bus, and 27 percent by walk during the weekday AM, midday and PM peak hours was obtained from journey-to-work data from the U.S. Census ACS 2005-2009. Vehicle occupancy rates (1.11 persons per auto and 1.30 persons per taxi) were obtained from the American Community Survey and the *NYU Core DEIS,* respectively.

Daily truck trip generation rates of 0.03 trips per bed for weekday and 0.01 trips per bed for Saturday were obtained from the *NYU Core DEIS*. Temporal distribution (10 percent during the weekday AM peak hour, 8 percent during the midday peak hour, 5 percent during the PM peak hour, and 9 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were also obtained from the *NYU Core DEIS.*

CONFERENCE CENTER

To calculate trips generated by the conference center space, rates from the *NYU Core DEIS* were used. This included a weekday trip generation rate of 27.2 daily person trips per 1,000 square feet for patrons and 10.0 daily person trips per 1,000 square feet for employees on weekdays and Saturdays. A temporal distribution of 10.5 percent for patrons and 14.7 percent for employees was used during the weekday AM and Saturday peak hours, 9.5 percent for patrons and 20.0 percent for employees during the weekday midday peak hour, and 10.5 percent for patrons and 12.9 percent for employees during the PM peak hour. Directional splits of 91 percent "in" for patrons and 96 percent for employees during the weekday AM peak hour, 53 percent "in" for patrons and 55 percent for employees during the weekday midday peak hour, 15 percent "in" for patrons and 5 percent for employees during the weekday PM peak hour, and 53 percent "in" for patrons and 55 percent for employees during the Saturday peak hour were used. A modal split of 7 percent by auto, 6 percent by taxi, 25 percent by subway, 10 percent by bus, and 52 percent by walk was applied for patrons, with a vehicle-occupancy of 2.3 persons per auto and 1.8 passengers per taxi. For employees, the modal split was applied from 2000 U.S. Census reverse journey-to-work data, and was 19 percent by auto, 3 percent by taxi, 61 percent by subway, 8 percent by bus, and 9 percent by walk, with vehicle occupancies of 1.19 persons per auto and 1.40 passengers per taxi.

For delivery trips, a weekday trip generation rate of 0.35 daily trips per 1,000 square feet was applied, with a Saturday trip generation rate of 0.06 daily trips per 1,000 square feet. A temporal distribution of 7.9 percent, 14.7 percent, 1.1 percent, and 14.7 percent was applied during the weekday AM, midday and PM, and Saturday peak hours, respectively.

COMMUNITY THEATER

For the community theater use, daily person trip generation rates of 2.68 person trips per seat for weekday and Saturday, and a temporal distribution of 0 percent for the weekday AM peak hour, 0 percent for the weekday midday peak hour, 10 percent for the weekday PM peak hour, and 10 percent for the Saturday peak hour were obtained from the *Brooklyn Bridge Park FEIS*. A directional distribution of 50 percent "in" during all peak hours except weekday PM (which is 100 percent "in") were also obtained from the *Brooklyn Bridge Park FEIS*. A modal split of 9 percent by auto, 4 percent by taxi, 28.5 percent by subway, 8 percent by bus, and 50.5 percent by walk were obtained from the *Western Rail Yard FEIS*, and vehicle occupancy rates of 2.9 persons per auto and 3 passengers by taxi during all peak hours were obtained from the *Brooklyn Bridge Park FEIS*.

For truck deliveries, a daily trip generation rate of 0.01 trips per seat for weekday and Saturday were obtained from the *Brooklyn Bridge Park FEIS*, as was the temporal distribution (6 percent during the weekday AM peak hour, 6 percent during the midday peak hour, 1 percent during the PM peak hour, and 0 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours).

CATERING HALL

For the catering hall use, average occupancies of 0, 233, 446, and 668 people were used for the weekday AM, midday, and PM, and Saturday peak hours, respectively, which were taken from the *Domino Sugar Rezoning FEIS*. A temporal distribution of 0 percent for the weekday AM peak hour, and 80 percent for the weekday midday and PM, and Saturday peak hours, and a directional distribution of 90 percent "in" during all peak hours were also obtained from the *Domino Sugar Rezoning FEIS*. A modal split of 17.4 percent by auto, 6.4 percent by taxi, 20 percent by subway, 8.4 percent by bus, and 47.8 percent by walk for all peak periods were obtained from the *Battery Maritime Building Redevelopment EAS*, as were vehicle occupancy rates of 2.2 persons per auto and 2.3 passengers by taxi during all peak hours. Truck deliveries associated with the catering hall use are expected to occur outside of the peak trip generation hours.

PROFESSIONAL SCHOOL

For the professional school use, daily person trip generation rates of 26.6 person trips per 1,000 square feet for weekdays and 10.87 percent for Saturday, and a temporal distribution of 7.2 percent for the weekday AM peak hour, 10.7 percent for the weekday midday peak hour, and 12.6 percent for the weekday PM and Saturday peak hours were obtained from the *Jamaica Plan Rezoning FEIS*. A directional distribution of 94 percent "in" during the weekday AM, 46 percent during the weekday midday, 44 percent during the weekday PM, and 57 percent during the Saturday peak hours were also obtained from the *Jamaica Plan Rezoning FEIS*. A modal split of 19 percent by auto, 3 percent by taxi, 61 percent by subway, 8 percent by bus, and 9 percent by walk were obtained from the U.S. Census 2000 reverse journey-to-work data, and vehicle occupancy rates of 1.19 persons per auto and 1.4 passengers by taxi during all peak hours were obtained from the census reverse journey-to-work data and the *Jamaica Plan Rezoning FEIS*.

For truck deliveries, a daily trip generation rate of 0.29 trips per 1,000 square feet for weekday and Saturday were obtained from the *Jamaica Plan Rezoning FEIS*, as was the temporal distribution (9.6 percent during the weekday AM peak hour, 11 percent during the midday peak hour, 1 percent during the PM peak hour, and 0 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours).

HEALTH CLUB

For the health club component, daily person trip generation rates of 44.7 person trips per 1,000 square feet for weekday and 26.1 trips per 1,000 square feet for Saturday, and a temporal distribution of 4 percent for the weekday AM peak hour, 9 percent for the midday peak hour, 5 percent for the PM peak hour, and 9 percent for the Saturday peak hour were obtained from the *CEQR Technical Manual*. A directional distribution of 41 percent "in" during the weekday AM, 54 percent during the weekday midday, 75 percent during the weekday PM, and 54 percent during the Saturday peak hours were obtained from the *770 Eleventh Avenue Mixed-Use Development Rezoning EIS*. For all peak hours, a modal split of 2 percent by auto, 2 percent by taxi, 12 percent by subway, 4 percent by bus, and 80 percent by walk, and vehicle occupancy rates of 1.00 person per auto and 1.00 passenger by taxi during all peak hours were obtained from the *Equinox - 344 Amsterdam Avenue EAS*.

For truck deliveries, a daily trip generation rate of 0.19 trips per 1,000 square feet for weekday and 0.01 trips per 1,000 square feet for Saturday were obtained from the *CEQR Technical Manual*. Temporal distribution (6 percent during the weekday AM peak hour, 11 percent during

the midday peak hour, 1 percent during the PM peak hour, and 7.6 percent during the Saturday peak hour) and directional distribution assumptions (50 percent "in" during all peak hours) were obtained from the *770 Eleventh Avenue Mixed-Use Development Rezoning EIS.*

TRAVEL DEMAND PROJECTION SUMMARY

As discussed above and presented in **Table 13-6**, the scenario with the dormitory space (RWCDS 2) would yield a larger number of occupants and would generate a greater number of trips overall. Therefore, it was conservatively selected for this travel demand analysis. **Tables 13-7** to **13-9** summarize the travel demand in the No-Action net existing and With-Action net existing conditions, and the incremental trips between the No-Action and the With-Action conditions. Specifically, the trip estimates summarized in **Table 13-7** corresponds to the incremental uses in the "No-Action net Existing" column presented in **Table 13-4** and is the layer of trips that the future No-Action would add onto existing Levels. Likewise, the trip estimates summarized in **Table 13-8** corresponds to the incremental uses in the "With-Action net Existing" column presented in **Table 13-4** and is the layer of trips that the future With-Action would add onto existing Levels.

Table 13-6
RWCDS Trip Estimates Comparison Summary

RWCDS 1													
		Person Trip							Vehicle Trip				
Peak Hour	In / Out	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus	Delivery	Total
Weekday AM	In	456	112	1,525	200	17	969	3,279	374	165	1	32	572
	Out	237	176	1,360	78	0	907	2,758	223	165	1	32	421
	Total	693	288	2,885	278	17	1,876	6,037	597	330	2	64	993
Weekday Midday	In	154	152	625	223	0	2,871	4,025	115	158	0	31	304
	Out	150	152	619	224	0	2,920	4,065	114	158	0	31	303
	Total	304	304	1,244	447	0	5,791	8,090	229	316	0	62	607
Weekday PM	In	257	189	1,363	131	0	1,475	3,415	213	189	0	5	407
	Out	565	175	2,092	294	0	1,402	4,528	465	189	0	5	659
	Total	822	364	3,455	425	0	2,877	7,943	678	378	0	10	1,066
Saturday Midday	In	190	152	893	153	0	1,825	3,213	146	153	0	4	303
	Out	184	149	879	144	0	1,726	3,082	143	153	0	4	300
	Total	374	301	1,772	297	0	3,551	6,295	289	306	0	8	603
Peak Hour Totals								28,365					3,269
RWCDS 2													
		Person Trip							Vehicle Trip				
Peak Hour	In / Out	Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus	Delivery	Total
Weekday AM	In	458	113	1,531	200	17	972	3,291	374	159	1	32	566
	Out	225	167	1,281	75	0	868	2,616	212	159	1	32	404
	Total	683	280	2,812	275	17	1,840	5,907	586	318	2	64	970
Weekday Midday	In	157	155	647	224	0	2,882	4,065	118	161	0	31	310
	Out	153	155	640	225	0	2,930	4,103	117	161	0	31	309
	Total	310	310	1,287	449	0	5,812	8,168	235	322	0	62	619
Weekday PM	In	256	189	1,361	130	0	1,474	3,410	213	194	0	6	413
	Out	574	182	2,148	296	0	1,429	4,629	474	194	0	6	674
	Total	830	371	3,509	426	0	2,903	8,039	687	388	0	12	1,087
Saturday Midday	In	195	155	921	154	0	1,839	3,264	150	156	0	4	310
	Out	187	151	897	144	0	1,735	3,114	145	156	0	4	305
	Total	382	306	1,818	298	0	3,574	6,378	295	312	0	8	615
Peak Hour Totals								28,492					3,291

Table 13-7
Travel Demand Summary: No-Action Net Existing Condition

Use	Peak Hour	In / Out	Person Trip							Vehicle Trip				
			Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus	Delivery	Total
Residential	Weekday AM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	1	2	0	0	1	4	0	0	0	0	0
		Total	0	1	2	0	0	1	4	0	0	0	0	0
	Weekday Midday	In	0	0	1	0	0	0	1	1	0	0	0	1
		Out	0	0	1	0	0	0	1	1	0	0	0	1
		Total	0	0	2	0	0	0	2	2	0	0	0	2
	Weekday PM	In	0	0	2	0	0	1	3	1	0	0	0	1
		Out	0	0	1	0	0	0	1	0	0	0	0	0
		Total	0	0	3	0	0	1	4	1	0	0	0	1
	Saturday Midday	In	0	0	1	0	0	1	2	0	0	0	0	0
		Out	0	0	1	0	0	1	2	0	0	0	0	0
		Total	0	0	2	0	0	2	4	0	0	0	0	0
Office	Weekday AM	In	61	11	204	27	0	31	334	52	1	0	3	56
		Out	2	0	9	1	0	2	14	2	1	0	3	6
		Total	63	11	213	28	0	33	348	54	2	0	6	62
	Weekday Midday	In	4	6	13	13	0	172	208	3	6	0	3	12
		Out	5	7	13	13	0	186	224	4	6	0	3	13
		Total	9	13	26	26	0	358	432	7	12	0	6	25
	Weekday PM	In	4	0	12	2	0	2	20	3	0	0	1	4
		Out	71	12	235	31	0	35	384	60	0	0	1	61
		Total	75	12	247	33	0	37	404	63	0	0	2	65
	Saturday Midday	In	1	2	4	4	0	50	61	1	1	0	0	2
		Out	1	1	2	2	0	38	44	1	1	0	0	2
		Total	2	3	6	6	0	88	105	2	2	0	0	4
Destination Retail	Weekday AM	In	4	2	10	3	0	19	38	2	-1	0	1	2
		Out	4	2	10	3	0	19	38	2	-1	0	1	2
		Total	8	4	20	6	0	38	76	4	-2	0	2	4
	Weekday Midday	In	11	5	25	10	0	72	123	6	3	0	0	9
		Out	9	4	20	8	0	59	100	5	3	0	0	8
		Total	20	9	45	18	0	131	223	11	6	0	0	17
	Weekday PM	In	9	4	30	9	0	53	105	4	2	0	0	6
		Out	10	4	33	9	0	60	116	5	2	0	0	7
		Total	19	8	63	18	0	113	221	9	4	0	0	13
	Saturday Midday	In	15	7	33	13	0	98	166	7	5	0	0	12
		Out	14	6	31	12	0	91	154	7	5	0	0	12
		Total	29	13	64	25	0	189	320	14	10	0	0	24
Local Retail	Weekday AM	In	2	3	6	6	0	79	96	1	3	0	1	5
		Out	2	3	6	6	0	79	96	1	3	0	1	5
		Total	4	6	12	12	0	158	192	2	6	0	2	10
	Weekday Midday	In	12	19	36	36	0	504	607	8	19	0	0	27
		Out	12	19	36	36	0	504	607	8	19	0	0	27
		Total	24	38	72	72	0	1,008	1,214	16	38	0	0	54
	Weekday PM	In	6	10	19	19	0	265	319	4	9	0	0	13
		Out	6	10	19	19	0	265	319	4	9	0	0	13
		Total	12	20	38	38	0	530	638	8	18	0	0	26
	Saturday Midday	In	7	12	22	22	0	311	374	5	11	0	0	16
		Out	7	12	22	22	0	311	374	5	11	0	0	16
		Total	14	24	44	44	0	622	748	10	22	0	0	32
Hotel	Weekday AM	In	30	59	79	10	0	152	330	21	60	0	4	85
		Out	46	93	124	15	0	238	516	33	60	0	4	97
		Total	76	152	203	25	0	390	846	54	120	0	8	182
	Weekday Midday	In	64	120	104	24	0	488	800	46	91	0	3	140
		Out	55	102	89	20	0	416	682	39	91	0	3	133
		Total	119	222	193	44	0	904	1,482	85	182	0	6	273
	Weekday PM	In	80	161	215	27	0	411	894	57	102	0	0	159
		Out	43	87	116	14	0	222	482	31	102	0	0	133
		Total	123	248	331	41	0	633	1,376	88	204	0	0	292
	Saturday Midday	In	48	96	128	16	0	245	533	34	67	0	1	102
		Out	38	75	101	13	0	193	420	27	67	0	1	95
		Total	86	171	229	29	0	438	953	61	134	0	2	197

Table 13-7 (cont)
Travel Demand Summary: No-Action Net Existing Condition

			Person Trip							Vehicle Trip				
Use	**Peak Hour**	**In / Out**	**Auto**	**Taxi**	**Subway**	**Bus**	**School Bus**	**Walk**	**Total**	**Auto**	**Taxi**	**School Bus**	**Delivery**	**Total**
School	Weekday AM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday PM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Saturday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
Dormitory	Weekday AM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday PM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Saturday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
Conference Center	Weekday AM	In	23	10	77	19	0	74	203	15	4	0	1	20
		Out	2	1	5	1	0	7	16	0	4	0	1	5
		Total	25	11	82	20	0	81	219	15	8	0	2	25
	Weekday Midday	In	16	6	51	11	0	41	125	11	4	0	1	16
		Out	13	5	43	10	0	36	107	9	4	0	1	14
		Total	29	11	94	21	0	77	232	20	8	0	2	30
	Weekday PM	In	3	1	7	2	0	11	24	2	5	0	0	7
		Out	21	9	69	17	0	70	186	14	5	0	0	19
		Total	24	10	76	19	0	81	210	16	10	0	0	26
	Saturday Midday	In	13	6	44	11	0	44	118	9	5	0	0	14
		Out	11	5	37	10	0	38	101	7	5	0	0	12
		Total	24	11	81	21	0	82	219	16	10	0	0	26
Community Theater	Weekday AM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday PM	In	10	5	33	9	0	59	116	4	2	0	0	6
		Out	0	0	0	0	0	0	0	0	2	0	0	2
		Total	10	5	33	9	0	59	116	4	4	0	0	8
	Saturday Midday	In	5	2	17	5	0	29	58	2	1	0	0	3
		Out	5	2	17	5	0	29	58	2	1	0	0	3
		Total	10	4	34	10	0	58	116	4	2	0	0	6
Catering Hall	Weekday AM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday Midday	In	29	11	34	14	0	80	168	13	4	0	0	17
		Out	3	1	4	2	0	9	19	1	4	0	0	5
		Total	32	12	38	16	0	89	187	14	8	0	0	22
	Weekday PM	In	56	21	64	27	0	153	321	25	8	0	0	33
		Out	6	2	7	3	0	17	35	3	8	0	0	11
		Total	62	23	71	30	0	170	356	28	16	0	0	44
	Saturday Midday	In	84	31	96	40	0	230	481	38	10	0	0	48
		Out	9	3	11	4	0	26	53	4	10	0	0	14
		Total	93	34	107	44	0	256	534	42	20	0	0	62

Table 13-7 (cont)
Travel Demand Summary: No-Action Net Existing Condition

Use	Peak Hour	In / Out	Person Trip							Vehicle Trip				
			Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus	Delivery	Total
Professional School	Weekday AM	In	16	2	51	7	0	7	83	13	1	0	1	15
		Out	1	0	3	0	0	0	4	1	1	0	1	3
		Total	17	2	54	7	0	7	87	14	2	0	2	18
	Weekday Midday	In	11	2	37	5	0	5	60	10	2	0	1	13
		Out	13	2	43	6	0	6	70	11	2	0	1	14
		Total	24	4	80	11	0	11	130	21	4	0	2	27
	Weekday PM	In	13	2	42	5	0	6	68	11	2	0	0	13
		Out	16	3	53	7	0	8	87	14	2	0	0	16
		Total	29	5	95	12	0	14	155	25	4	0	0	29
	Saturday Midday	In	7	1	22	3	0	3	36	6	1	0	0	7
		Out	5	1	17	2	0	2	27	4	1	0	0	5
		Total	12	2	39	5	0	5	63	10	2	0	0	12
Health Club	Weekday AM	In	0	0	2	1	0	13	16	0	0	0	0	0
		Out	0	0	3	1	0	19	23	0	0	0	0	0
		Total	0	0	5	2	0	32	39	0	0	0	0	0
	Weekday Midday	In	1	1	6	2	0	38	48	1	1	0	0	2
		Out	1	1	5	2	0	32	41	1	1	0	0	2
		Total	2	2	11	4	0	70	89	2	2	0	0	4
	Weekday PM	In	1	1	4	1	0	29	36	1	1	0	0	2
		Out	0	0	1	0	0	10	11	0	1	0	0	1
		Total	1	1	5	1	0	39	47	1	2	0	0	3
	Saturday Midday	In	1	1	3	1	0	22	28	1	1	0	0	2
		Out	0	0	3	1	0	19	23	0	1	0	0	1
		Total	1	1	6	2	0	41	51	1	2	0	0	3
Total	Weekday AM	In	136	87	429	73	0	375	1,100	104	68	0	11	183
		Out	57	100	162	27	0	365	711	39	68	0	11	118
		Total	193	187	591	100	0	740	1,811	143	136	0	22	301
	Weekday Midday	In	148	170	307	115	0	1,400	2,140	99	130	0	8	237
		Out	111	141	254	97	0	1,248	1,851	79	130	0	8	217
		Total	259	311	561	212	0	2,648	3,991	178	260	0	16	454
	Weekday PM	In	182	205	428	101	0	990	1,906	112	129	0	1	242
		Out	173	127	534	100	0	687	1,621	131	129	0	1	261
		Total	355	332	962	201	0	1,677	3,527	243	258	0	2	503
	Saturday Midday	In	181	158	370	115	0	1,033	1,857	103	102	0	1	206
		Out	90	105	242	71	0	748	1,256	57	102	0	1	160
		Total	271	263	612	186	0	1,781	3,113	160	204	0	2	366

Table 13-8
Travel Demand Summary: With-Action Net Existing Condition

			Person Trip							Vehicle Trip				
Use	**Peak Hour**	**In / Out**	**Auto**	**Taxi**	**Subway**	**Bus**	**School Bus**	**Walk**	**Total**	**Auto**	**Taxi**	**School Bus**	**Delivery**	**Total**
Residential	Weekday AM	In	33	25	197	7	0	97	359	29	96	0	11	136
		Out	183	143	1,118	41	0	549	2,034	165	96	0	11	272
		Total	216	168	1,315	48	0	646	2,393	194	192	0	22	408
	Weekday Midday	In	53	42	329	12	0	161	597	49	45	0	8	102
		Out	53	42	329	12	0	161	597	49	45	0	8	102
		Total	106	84	658	24	0	322	1,194	98	90	0	16	204
	Weekday PM	In	165	129	1,013	37	0	497	1,841	150	98	0	2	250
		Out	71	55	435	16	0	213	790	64	98	0	2	164
		Total	236	184	1,448	53	0	710	2,631	214	196	0	4	414
	Saturday Midday	In	102	79	626	23	0	307	1,137	92	84	0	3	179
		Out	102	79	626	23	0	307	1,137	92	84	0	3	179
		Total	204	158	1,252	46	0	614	2,274	184	168	0	6	358
Office	Weekday AM	In	121	21	403	54	0	61	660	102	11	0	5	118
		Out	5	1	17	2	0	3	28	4	11	0	5	20
		Total	126	22	420	56	0	64	688	106	22	0	10	138
	Weekday Midday	In	8	12	25	25	0	340	410	7	13	0	6	26
		Out	9	13	27	27	0	368	444	8	13	0	6	27
		Total	17	25	52	52	0	708	854	15	26	0	12	53
	Weekday PM	In	8	1	24	3	0	3	39	6	8	0	1	15
		Out	140	23	465	62	0	70	760	118	8	0	1	127
		Total	148	24	489	65	0	73	799	124	16	0	2	142
	Saturday Midday	In	3	3	8	8	0	99	121	2	3	0	1	6
		Out	2	3	5	5	0	74	89	2	3	0	1	6
		Total	5	6	13	13	0	173	210	4	6	0	2	12
Destination Retail	Weekday AM	In	8	4	24	7	0	43	86	4	1	0	2	7
		Out	8	4	24	7	0	43	86	4	1	0	2	7
		Total	16	8	48	14	0	86	172	8	2	0	4	14
	Weekday Midday	In	25	11	56	23	0	165	280	13	8	0	1	22
		Out	20	9	46	18	0	136	229	11	8	0	1	20
		Total	45	20	102	41	0	301	509	24	16	0	2	42
	Weekday PM	In	22	10	69	19	0	121	241	10	6	0	0	16
		Out	24	10	77	22	0	137	270	12	6	0	0	18
		Total	46	20	146	41	0	258	511	22	12	0	0	34
	Saturday Midday	In	35	15	77	31	0	226	384	17	11	0	0	28
		Out	32	14	71	29	0	209	355	16	11	0	0	27
		Total	67	29	148	60	0	435	739	33	22	0	0	55
Local Retail	Weekday AM	In	4	6	12	12	0	164	198	2	7	0	2	11
		Out	4	6	12	12	0	164	198	2	7	0	2	11
		Total	8	12	24	24	0	328	396	4	14	0	4	22
	Weekday Midday	In	25	38	75	75	0	1,041	1,254	16	39	0	1	56
		Out	25	38	75	75	0	1,041	1,254	16	39	0	1	56
		Total	50	76	150	150	0	2,082	2,508	32	78	0	2	112
	Weekday PM	In	13	20	40	40	0	548	661	8	19	0	0	27
		Out	13	20	40	40	0	548	661	8	19	0	0	27
		Total	26	40	80	80	0	1,096	1,322	16	38	0	0	54
	Saturday Midday	In	15	23	46	46	0	642	772	10	24	0	0	34
		Out	15	23	46	46	0	642	772	10	24	0	0	34
		Total	30	46	92	92	0	1,284	1,544	20	48	0	0	68
School	Weekday AM	In	29	8	2	0	17	392	448	17	5	1	0	23
		Out	0	0	0	0	0	0	0	16	5	1	0	22
		Total	29	8	2	0	17	392	448	33	10	2	0	45
	Weekday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday PM	In	0	0	0	0	0	0	0	1	0	0	0	1
		Out	1	0	1	0	0	20	22	1	0	0	0	1
		Total	1	0	1	0	0	20	22	2	0	0	0	2
	Saturday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0

Table 13-8 (cont'd)
Travel Demand Summary: With-Action Net Existing Condition

Use	Peak Hour	In / Out	Person Trip							Vehicle Trip				
			Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus	Delivery	Total
Dormitory	Weekday AM	In	5	4	29	1	0	14	53	4	6	0	1	11
		Out	9	7	52	2	0	26	96	8	6	0	1	15
		Total	14	11	81	3	0	40	149	12	12	0	2	26
	Weekday Midday	In	10	8	61	2	0	30	111	9	9	0	1	19
		Out	10	8	60	2	0	29	109	9	9	0	1	19
		Total	20	16	121	4	0	59	220	18	18	0	2	38
	Weekday PM	In	19	15	117	4	0	57	212	17	16	0	1	34
		Out	17	13	106	4	0	52	192	16	16	0	1	33
		Total	36	28	223	8	0	109	404	33	32	0	2	67
	Saturday Midday	In	17	13	101	4	0	50	185	15	14	0	0	29
		Out	15	12	91	3	0	45	166	13	14	0	0	27
		Total	32	25	192	7	0	95	351	28	28	0	0	56
Total	Weekday AM	In	200	68	667	81	17	771	1,804	158	126	1	21	306
		Out	209	161	1,223	64	0	785	2,442	199	126	1	21	347
		Total	409	229	1,890	145	17	1,556	4,246	357	252	2	42	653
	Weekday Midday	In	121	111	546	137	0	1,737	2,652	94	114	0	17	225
		Out	117	110	537	134	0	1,735	2,633	93	114	0	17	224
		Total	238	221	1,083	271	0	3,472	5,285	187	228	0	34	449
	Weekday PM	In	227	175	1,263	103	0	1,226	2,994	192	147	0	4	343
		Out	266	121	1,124	144	0	1,040	2,695	219	147	0	4	370
		Total	493	296	2,387	247	0	2,266	5,689	411	294	0	8	713
	Saturday Midday	In	172	133	858	112	0	1,324	2,599	136	136	0	4	276
		Out	166	131	839	106	0	1,277	2,519	133	136	0	4	273
		Total	338	264	1,697	218	0	2,601	5,118	269	272	0	8	549

Table 13-9
Travel Demand Summary: Net Trip Generation Increments

			Person Trip							Vehicle Trip				
Use	**Peak Hour**	**In / Out**	**Auto**	**Taxi**	**Subway**	**Bus**	**School Bus**	**Walk**	**Total**	**Auto**	**Taxi**	**School Bus**	**Delivery**	**Total**
Residential	Weekday AM	In	33	25	197	7	0	97	359	29	96	0	11	136
		Out	183	142	1,116	41	0	548	2,030	165	96	0	11	272
		Total	216	167	1,313	48	0	645	2,389	194	192	0	22	408
	Weekday Midday	In	53	42	328	12	0	161	596	48	45	0	8	101
		Out	53	42	328	12	0	161	596	48	45	0	8	101
		Total	106	84	656	24	0	322	1,192	96	90	0	16	202
	Weekday PM	In	165	129	1,011	37	0	496	1,838	149	98	0	2	249
		Out	71	55	434	16	0	213	789	64	98	0	2	164
		Total	236	184	1,445	53	0	709	2,627	213	196	0	4	413
	Saturday Midday	In	102	79	625	23	0	306	1,135	92	84	0	3	179
		Out	102	79	625	23	0	306	1,135	92	84	0	3	179
		Total	204	158	1,250	46	0	612	2,270	184	168	0	6	358
Office	Weekday AM	In	60	10	199	27	0	30	326	50	10	0	2	62
		Out	3	1	8	1	0	1	14	2	10	0	2	14
		Total	63	11	207	28	0	31	340	52	20	0	4	76
	Weekday Midday	In	4	6	12	12	0	168	202	4	7	0	3	14
		Out	4	6	14	14	0	182	220	4	7	0	3	14
		Total	8	12	26	26	0	350	422	8	14	0	6	28
	Weekday PM	In	4	1	12	1	0	1	19	3	8	0	0	11
		Out	69	11	230	31	0	35	376	58	8	0	0	66
		Total	73	12	242	32	0	36	395	61	16	0	0	77
	Saturday Midday	In	2	1	4	4	0	49	60	1	2	0	1	4
		Out	1	2	3	3	0	36	45	1	2	0	1	4
		Total	3	3	7	7	0	85	105	2	4	0	2	8
Destination Retail	Weekday AM	In	4	2	14	4	0	24	48	2	2	0	1	5
		Out	4	2	14	4	0	24	48	2	2	0	1	5
		Total	8	4	28	8	0	48	96	4	4	0	2	10
	Weekday Midday	In	14	6	31	13	0	93	157	7	5	0	1	13
		Out	11	5	26	10	0	77	129	6	5	0	1	12
		Total	25	11	57	23	0	170	286	13	10	0	2	25
	Weekday PM	In	13	6	39	10	0	68	136	6	4	0	0	10
		Out	14	6	44	13	0	77	154	7	4	0	0	11
		Total	27	12	83	23	0	145	290	13	8	0	0	21
	Saturday Midday	In	20	8	44	18	0	128	218	10	6	0	0	16
		Out	18	8	40	17	0	118	201	9	6	0	0	15
		Total	38	16	84	35	0	246	419	19	12	0	0	31
Local Retail	Weekday AM	In	2	3	6	6	0	85	102	1	4	0	1	6
		Out	2	3	6	6	0	85	102	1	4	0	1	6
		Total	4	6	12	12	0	170	204	2	8	0	2	12
	Weekday Midday	In	13	19	39	39	0	537	647	8	20	0	1	29
		Out	13	19	39	39	0	537	647	8	20	0	1	29
		Total	26	38	78	78	0	1,074	1,294	16	40	0	2	58
	Weekday PM	In	7	10	21	21	0	283	342	4	10	0	0	14
		Out	7	10	21	21	0	283	342	4	10	0	0	14
		Total	14	20	42	42	0	566	684	8	20	0	0	28
	Saturday Midday	In	8	11	24	24	0	331	398	5	13	0	0	18
		Out	8	11	24	24	0	331	398	5	13	0	0	18
		Total	16	22	48	48	0	662	796	10	26	0	0	36
Hotel	Weekday AM	In	-30	-59	-79	-10	0	-152	-330	-21	-60	0	-4	-85
		Out	-46	-93	-124	-15	0	-238	-516	-33	-60	0	-4	-97
		Total	-76	-152	-203	-25	0	-390	-846	-54	-120	0	-8	-182
	Weekday Midday	In	-64	-120	-104	-24	0	-488	-800	-46	-91	0	-3	-140
		Out	-55	-102	-89	-20	0	-416	-682	-39	-91	0	-3	-133
		Total	-119	-222	-193	-44	0	-904	-1,482	-85	-182	0	-6	-273
	Weekday PM	In	-80	-161	-215	-27	0	-411	-894	-57	-102	0	0	-159
		Out	-43	-87	-116	-14	0	-222	-482	-31	-102	0	0	-133
		Total	-123	-248	-331	-41	0	-633	-1,376	-88	-204	0	0	-292
	Saturday Midday	In	-48	-96	-128	-16	0	-245	-533	-34	-67	0	-1	-102
		Out	-38	-75	-101	-13	0	-193	-420	-27	-67	0	-1	-95
		Total	-86	-171	-229	-29	0	-438	-953	-61	-134	0	-2	-197

Table 13-9 (cont'd)
Travel Demand Summary: Net Trip Generation Increments

			Person Trip							Vehicle Trip				
Use	**Peak Hour**	**In / Out**	**Auto**	**Taxi**	**Subway**	**Bus**	**School Bus**	**Walk**	**Total**	**Auto**	**Taxi**	**School Bus**	**Delivery**	**Total**
School	Weekday AM	In	29	8	2	0	17	392	448	17	5	1	0	23
		Out	0	0	0	0	0	0	0	16	5	1	0	22
		Total	29	8	2	0	17	392	448	33	10	2	0	45
	Weekday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday PM	In	0	0	0	0	0	0	0	1	0	0	0	1
		Out	1	0	1	0	0	20	22	1	0	0	0	1
		Total	1	0	1	0	0	20	22	2	0	0	0	2
	Saturday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
Dormitory	Weekday AM	In	5	4	29	1	0	14	53	4	6	0	1	11
		Out	9	7	52	2	0	26	96	8	6	0	1	15
		Total	14	11	81	3	0	40	149	12	12	0	2	26
	Weekday Midday	In	10	8	61	2	0	30	111	9	9	0	1	19
		Out	10	8	60	2	0	29	109	9	9	0	1	19
		Total	20	16	121	4	0	59	220	18	18	0	2	38
	Weekday PM	In	19	15	117	4	0	57	212	17	16	0	1	34
		Out	17	13	106	4	0	52	192	16	16	0	1	33
		Total	36	28	223	8	0	109	404	33	32	0	2	67
	Saturday Midday	In	17	13	101	4	0	50	185	15	14	0	0	29
		Out	15	12	91	3	0	45	166	13	14	0	0	27
		Total	32	25	192	7	0	95	351	28	28	0	0	56
Conference Center	Weekday AM	In	-23	-10	-77	-19	0	-74	-203	-15	-4	0	-1	-20
		Out	-2	-1	-5	-1	0	-7	-16	0	-4	0	-1	-5
		Total	-25	-11	-82	-20	0	-81	-219	-15	-8	0	-2	-25
	Weekday Midday	In	-16	-6	-51	-11	0	-41	-125	-11	-4	0	-1	-16
		Out	-13	-5	-43	-10	0	-36	-107	-9	-4	0	-1	-14
		Total	-29	-11	-94	-21	0	-77	-232	-20	-8	0	-2	-30
	Weekday PM	In	-3	-1	-7	-2	0	-11	-24	-2	-5	0	0	-7
		Out	-21	-9	-69	-17	0	-70	-186	-14	-5	0	0	-19
		Total	-24	-10	-76	-19	0	-81	-210	-16	-10	0	0	-26
	Saturday Midday	In	-13	-6	-44	-11	0	-44	-118	-9	-5	0	0	-14
		Out	-11	-5	-37	-10	0	-38	-101	-7	-5	0	0	-12
		Total	-24	-11	-81	-21	0	-82	-219	-16	-10	0	0	-26
Community Theater	Weekday AM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday PM	In	-10	-5	-33	-9	0	-59	-116	-4	-1	0	0	-5
		Out	0	0	0	0	0	0	0	0	-1	0	0	-1
		Total	-10	-5	-33	-9	0	-59	-116	-4	-2	0	0	-6
	Saturday Midday	In	-5	-2	-17	-5	0	-29	-58	-2	-1	0	0	-3
		Out	-5	-2	-17	-5	0	-29	-58	-2	-1	0	0	-3
		Total	-10	-4	-34	-10	0	-58	-116	-4	-2	0	0	-6
Catering Hall	Weekday AM	In	0	0	0	0	0	0	0	0	0	0	0	0
		Out	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0
	Weekday Midday	In	-29	-11	-34	-14	0	-80	-168	-13	-4	0	0	-17
		Out	-3	-1	-4	-2	0	-9	-19	-1	-4	0	0	-5
		Total	-32	-12	-38	-16	0	-89	-187	-14	-8	0	0	-22
	Weekday PM	In	-56	-21	-64	-27	0	-153	-321	-25	-7	0	0	-32
		Out	-6	-2	-7	-3	0	-17	-35	-3	-7	0	0	-10
		Total	-62	-23	-71	-30	0	-170	-356	-28	-14	0	0	-42
	Saturday Midday	In	-84	-31	-96	-40	0	-230	-481	-38	-10	0	0	-48
		Out	-9	-3	-11	-4	0	-26	-53	-4	-10	0	0	-14
		Total	-93	-34	-107	-44	0	-256	-534	-42	-20	0	0	-62

Table 13-9 (cont'd)
Travel Demand Summary: Net Trip Generation Increments

Use	Peak Hour	In / Out	Person Trip							Vehicle Trip				
			Auto	Taxi	Subway	Bus	School Bus	Walk	Total	Auto	Taxi	School Bus	Delivery	Total
Professional School	Weekday AM	In	-16	-2	-51	-7	0	-7	-83	-13	-1	0	-1	-15
		Out	-1	0	-3	0	0	0	-4	-1	-1	0	-1	-3
		Total	-17	-2	-54	-7	0	-7	-87	-14	-2	0	-2	-18
	Weekday Midday	In	-11	-2	-37	-5	0	-5	-60	-10	-2	0	-1	-13
		Out	-13	-2	-43	-6	0	-6	-70	-11	-2	0	-1	-14
		Total	-24	-4	-80	-11	0	-11	-130	-21	-4	0	-2	-27
	Weekday PM	In	-13	-2	-42	-5	0	-6	-68	-11	-2	0	0	-13
		Out	-16	-3	-53	-7	0	-8	-87	-14	-2	0	0	-16
		Total	-29	-5	-95	-12	0	-14	-155	-25	-4	0	0	-29
	Saturday Midday	In	-7	-1	-22	-3	0	-3	-36	-6	-1	0	0	-7
		Out	-5	-1	-17	-2	0	-2	-27	-4	-1	0	0	-5
		Total	-12	-2	-39	-5	0	-5	-63	-10	-2	0	0	-12
Health Club	Weekday AM	In	0	0	-2	-1	0	-13	-16	0	0	0	0	0
		Out	0	0	-3	-1	0	-19	-23	0	0	0	0	0
		Total	0	0	-5	-2	0	-32	-39	0	0	0	0	0
	Weekday Midday	In	-1	-1	-6	-2	0	-38	-48	-1	-1	0	0	-2
		Out	-1	-1	-5	-2	0	-32	-41	-1	-1	0	0	-2
		Total	-2	-2	-11	-4	0	-70	-89	-2	-2	0	0	-4
	Weekday PM	In	-1	-1	-4	-1	0	-29	-36	-1	-1	0	0	-2
		Out	0	0	-1	0	0	-10	-11	0	-1	0	0	-1
		Total	-1	-1	-5	-1	0	-39	-47	-1	-2	0	0	-3
	Saturday Midday	In	-1	-1	-3	-1	0	-22	-28	-1	-1	0	0	-2
		Out	0	0	-3	-1	0	-19	-23	0	-1	0	0	-1
		Total	-1	-1	-6	-2	0	-41	-51	-1	-2	0	0	-3
Total	Weekday AM	In	64	-19	238	8	17	396	704	54	58	1	10	123
		Out	152	61	1,061	37	0	420	1,731	160	58	1	10	229
		Total	216	42	1,299	45	17	816	2,435	214	116	2	20	352
	Weekday Midday	In	-27	-59	239	22	0	337	512	-5	-16	0	9	-12
		Out	6	-31	283	37	0	487	782	14	-16	0	9	7
		Total	-21	-90	522	59	0	824	1,294	9	-32	0	18	-5
	Weekday PM	In	45	-30	835	2	0	236	1,088	80	18	0	3	101
		Out	93	-6	590	44	0	353	1,074	88	18	0	3	109
		Total	138	-36	1,425	46	0	589	2,162	168	36	0	6	210
	Saturday Midday	In	-9	-25	488	-3	0	291	742	33	34	0	3	70
		Out	76	26	597	35	0	529	1,263	76	34	0	3	113
		Total	67	1	1,085	32	0	820	2,005	109	68	0	6	183

As presented in **Table 13-9**, the net incremental trip generation from the Proposed Action would result in 2,435, 1,294, 2,162, and 2,005 person trips and 352, -5, 210, and 183 vehicle trips during the weekday AM, midday, and PM, and Saturday midday peak hours, respectively. These trips would be distributed among the project sites comprising the proposed overall development. Since the projected trips would exceed the CEQR analysis thresholds for vehicular traffic, transit, and pedestrians, a Level 2 screening assessment, as detailed below, was undertaken to identify specific locations where additional detailed analyses would be warranted.

D. LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the distribution and assignment of projected trips to the transportation network and the determination of whether specific locations are expected to incur incremental trips exceeding CEQR thresholds. If the results of this analysis show that the Proposed Action would generate 50 or more peak hour vehicle trips through an intersection, 50 or more peak hour bus riders on a bus route in a single direction, 200 or more peak hour subway passengers per station, or 200 or more peak hour pedestrian trips per pedestrian element, further quantified analyses may be warranted to evaluate the potential for significant adverse traffic, transit, pedestrian, and parking impacts. For the Proposed Action, trips projected for the 2022 build year, representing the maximum number of project-generated trips under the RWCDS,

were allocated to the area's roadways, transit facilities, and pedestrian elements. The comparison of these trips to those of the No-Action condition formed the basis for identifying the various study areas for which detailed analyses of potential impacts would be prepared.

TRAFFIC

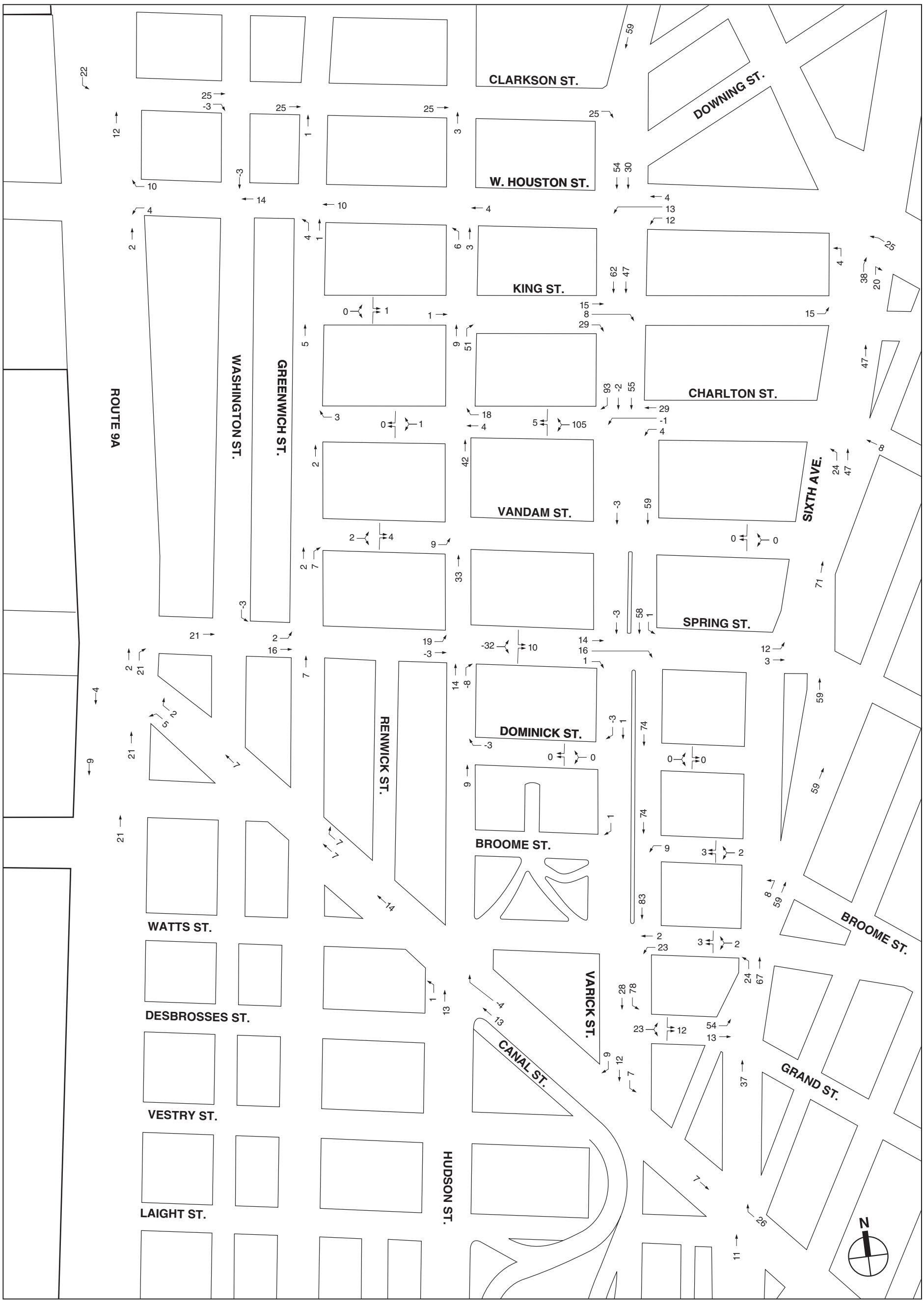
Trip assignments for both the No-Action and With Action conditions were prepared for the weekday AM, midday, and PM peak hours, as well as the Saturday midday peak hour, as presented in **Figures 13-1 to 13-4** (based on the No-Action net Existing incremental trips summarized in **Table 13-7**) and **13-5 to 13-8** (based on the With-Action net Existing incremental trips summarized in **Table 13-8**), respectively. Vehicle trips were assigned to the area intersections based on the most likely routes to and from the project sites, the configuration and direction of the roadway network, prevailing travel patterns, commuter origin-destination summary from the census data, and the expected locations of site access and egress points. All delivery vehicles were assigned onto the traffic network via NYCDOT's designated truck routes.

- Auto Trips – Auto trip travel patterns were assumed to follow the most likely access and egress routes serving the Rezoning Area. The U.S. Census journey-to-work and reverse journey-to work origin-destination data were reviewed to identify directional patterns and trip distribution. Based on the above, approximately 20 to 25 percent of the auto trips were assume to travel to/from the Rezoning Area via West Street (Route 9A), 30 to 35 percent via Varick Street, Avenue of the Americas, and Hudson Street, 10 to 15 percent via Canal Street, 10 percent via West Houston Street, 5 to 10 percent via Holland Tunnel, and the remaining via other roadways in the area.
- Taxi Trips – Taxi trips are expected to be primarily local, with the majority of the trips using Varick Street (approximately 40 percent), Avenue of the Americas (approximately 30 percent), and West Houston Street (approximately 20 percent). The remaining trips would use other roadways in the area.
- Delivery – Delivery trips are expected to use NYCDOT designated truck routes, such as West Street (approximately 30 percent), Varick Street (approximately 20 percent), Avenue of the Americas (approximately 15 percent), West Houston Street (approximately 15 percent), Canal Street (approximately 15 percent), and Hudson Street (approximately 5 percent).

Figures 13-9 to **13-12** present the incremental peak hour trips resulting from the Proposed Action. In total, 22 area intersections were identified for study (22 signalized and 1 unsignalized)[1] for the DEIS. Hudson Street and Varick Street are separated into through lanes and Holland Tunnel access lanes at intersections near entrances to the Holland Tunnel. The separated lanes exhibit different traffic patterns and vary widely in volume during the peak analysis hours. Therefore, these intersections have been separated into "east lane" and "west lane" sub-intersections for the purposes of this analysis. ~~All s~~Study intersections are situated in the immediate area near the project sites, generally bounded by West Houston Street to the north, Canal Street to the south, Greenwich Street to the west, and Avenue of the Americas to the east. ~~As depicted in **Figure 13-13**, t~~These study area intersections include:

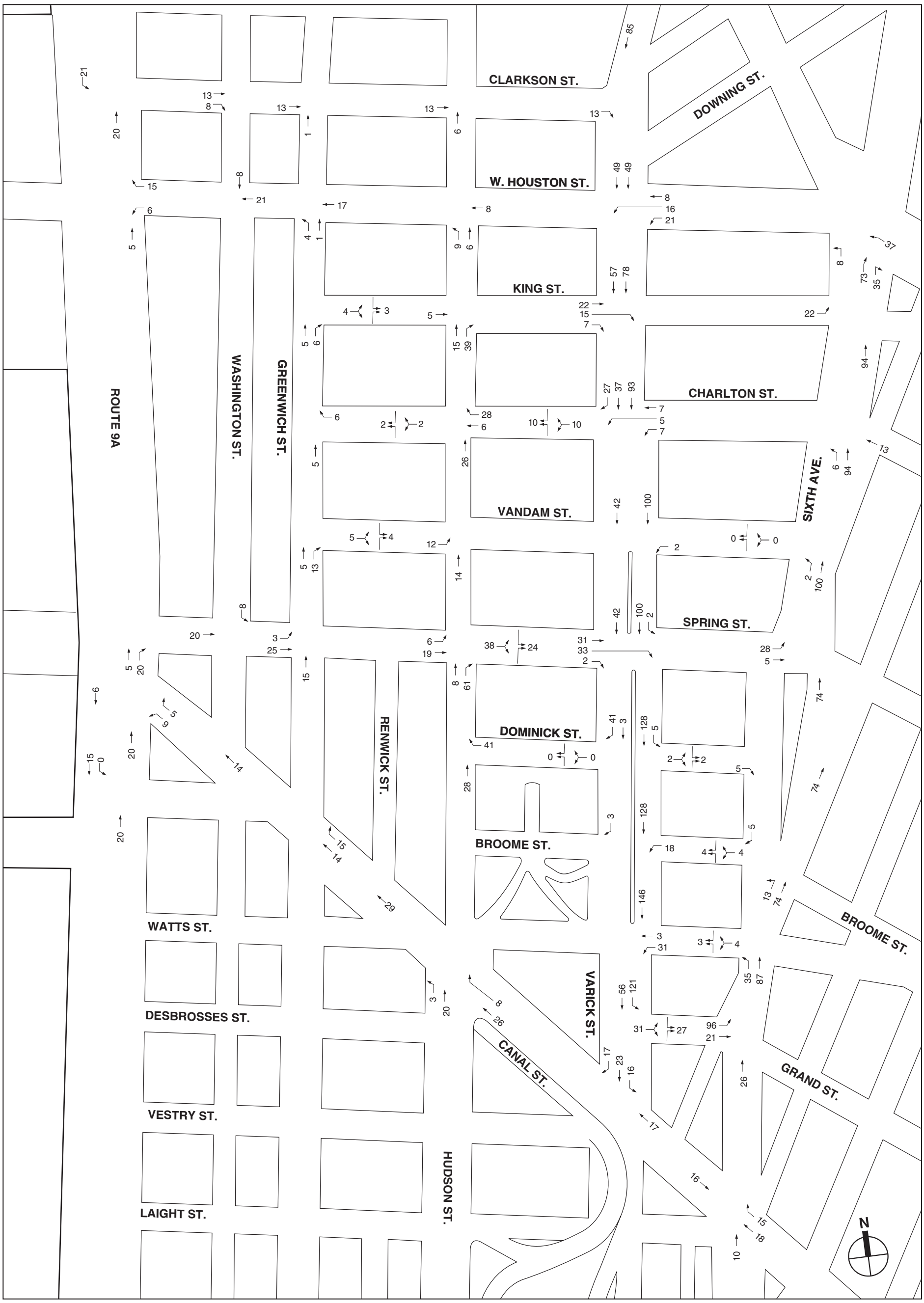
[1] The signalized and unsignalized portions of the intersection of Avenue of the Americas and West Houston Street are listed as "a" and "b" instead of separate numbers.

11.13.12



2022 No-Action Net Existing Generated Traffic
Weekday AM Peak Hour
Figure 13-1

11.13.12



NOT TO SCALE

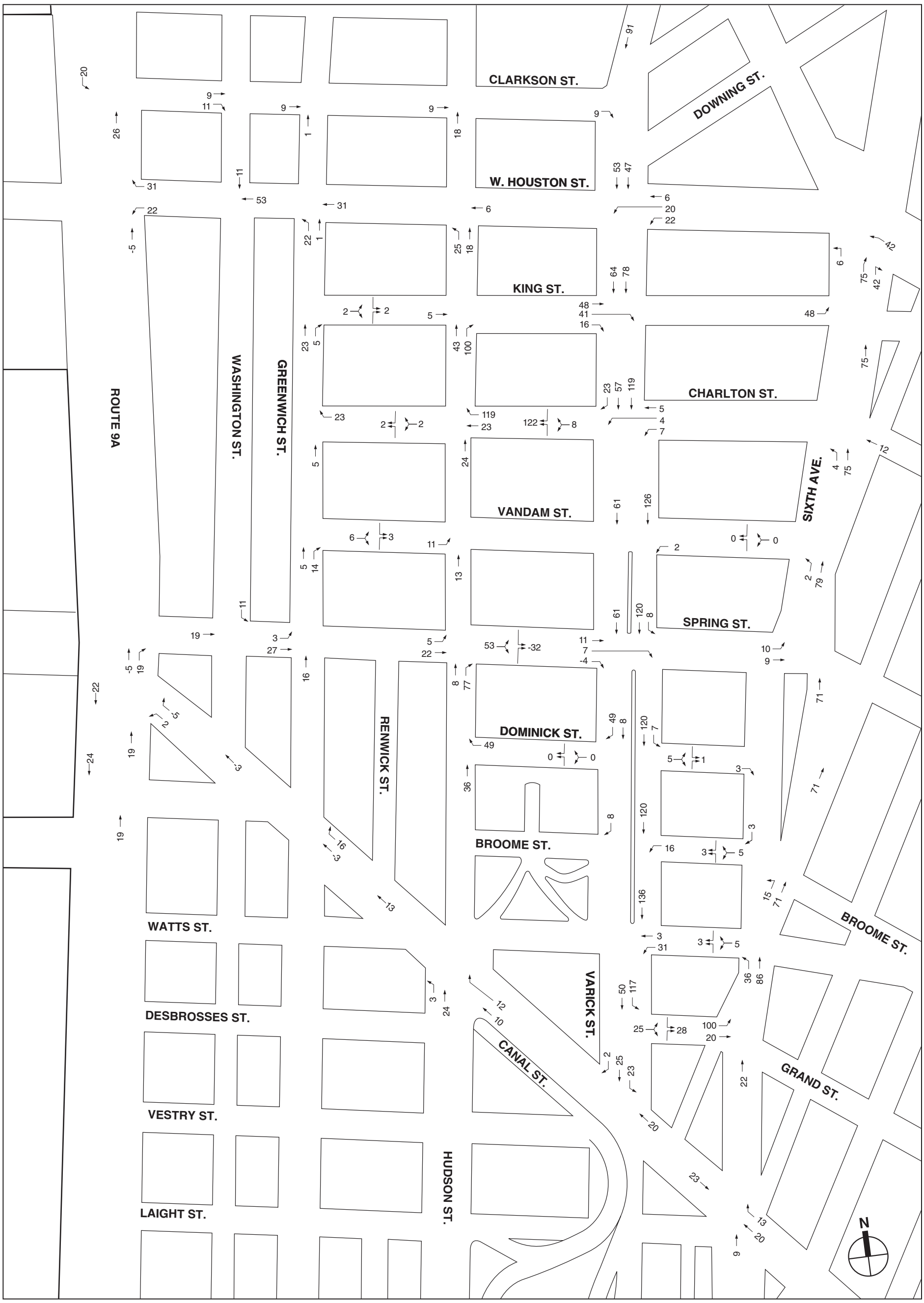
Midblock Source

Midblock Sink

HUDSON SQUARE REZONING

2022 No-Action Net Existing Generated Traffic
Weekday Midday Peak Hour
Figure 13-2

11.13.12



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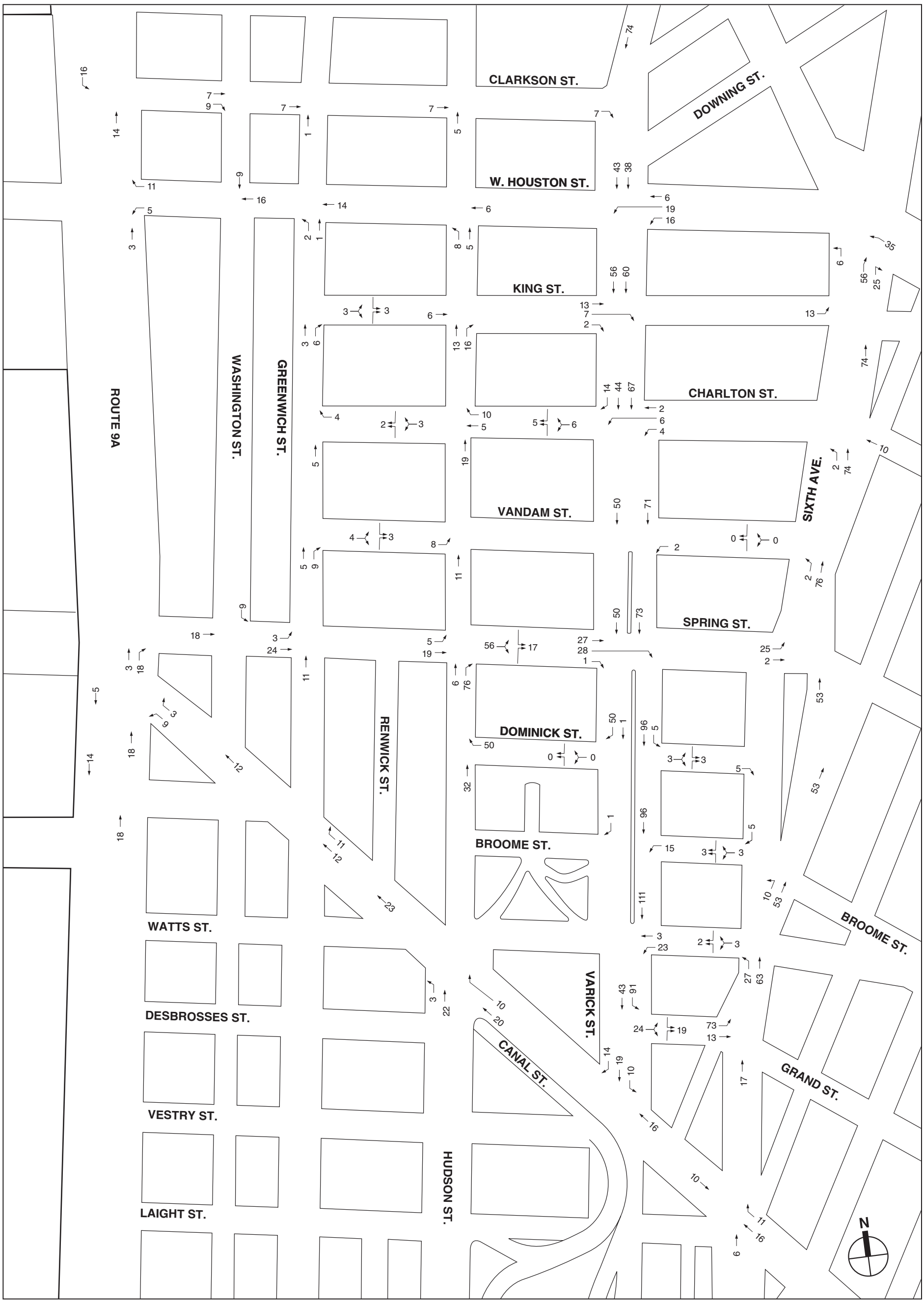
Midblock Source

Midblock Sink

2022 No-Action Net Existing Generated Traffic
Weekday PM Peak Hour
Figure 13-3

11.13.12



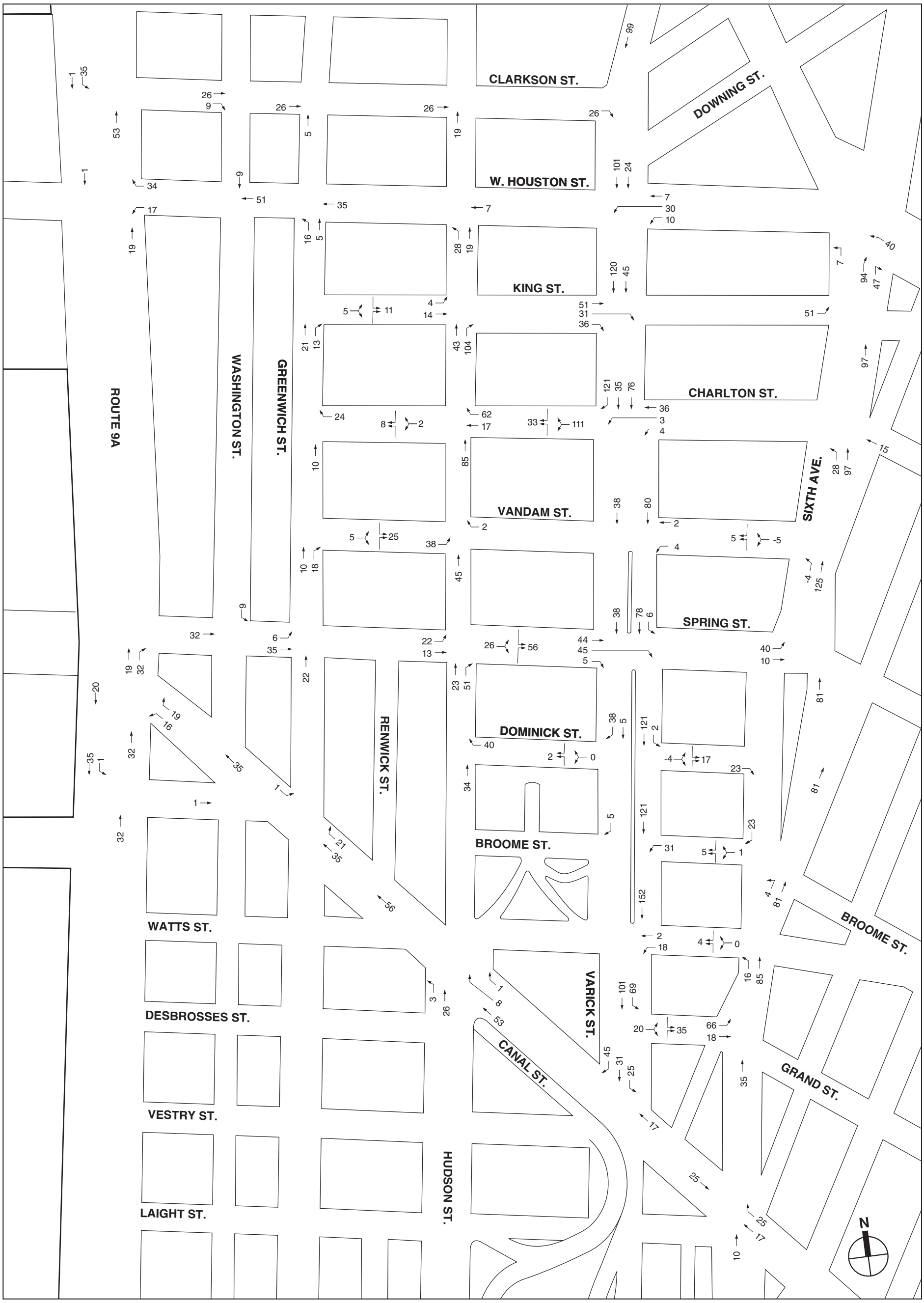
NOT TO SCALE

Midblock Source

Midblock Sink

2022 No-Action Net Existing Generated Traffic
Saturday Midday Peak Hour
Figure 13-4

11.13.12



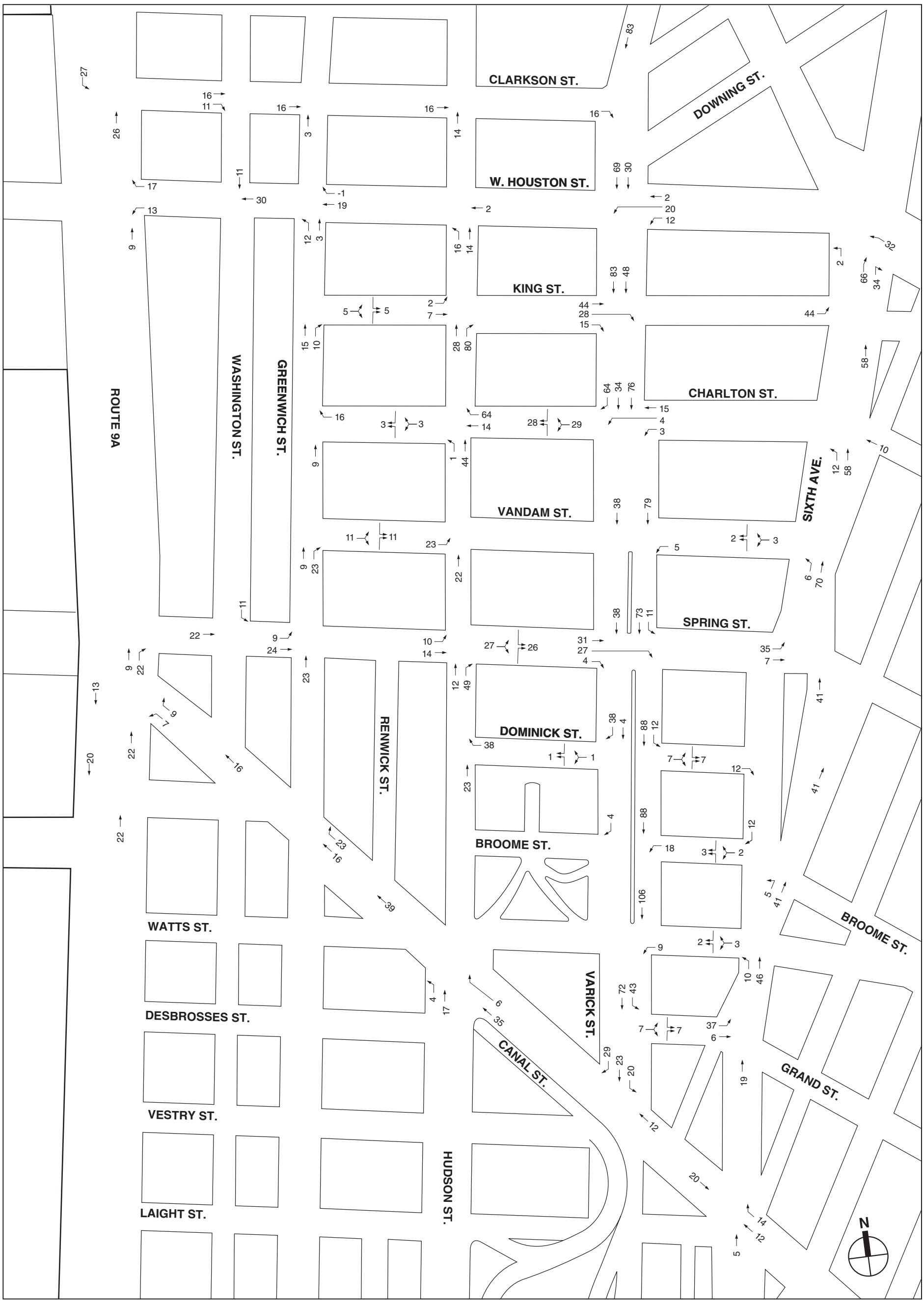
NOT TO SCALE

Midblock Source

Midblock Sink

2022 With-Action Net Existing Generated Traffic
Weekday AM Peak Hour
Figure 13-5

11.13.12



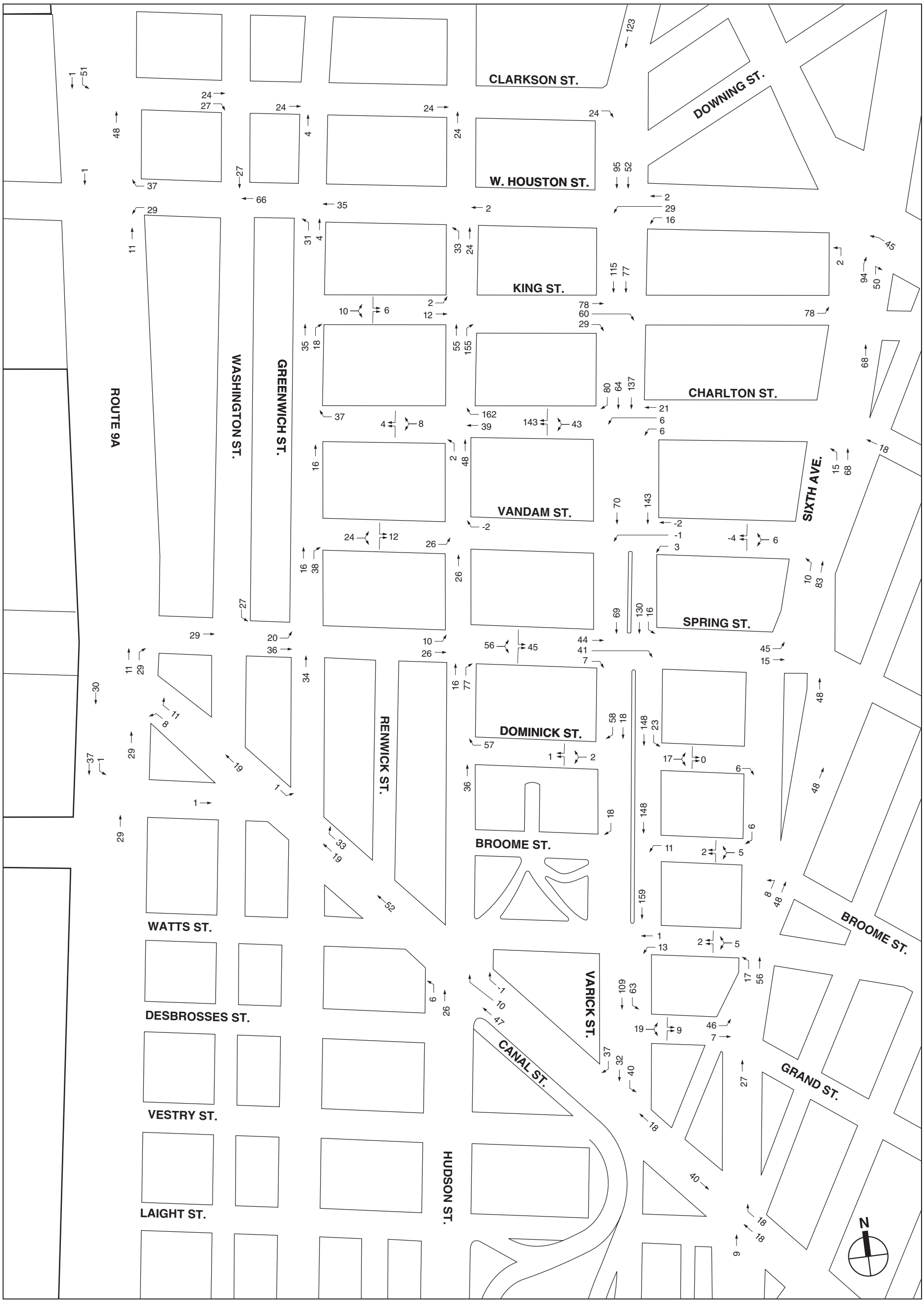
NOT TO SCALE

Midblock Source

Midblock Sink

2022 With-Action Net Existing Generated Traffic
Weekday Midday Peak Hour
Figure 13-6

11.13.12



NOT TO SCALE

Midblock Source

Midblock Sink

2022 With-Action Net Existing Generated Traffic
Weekday PM Peak Hour
Figure 13-7

11.13.12

CLARKSON ST.
DOWNING ST.
W. HOUSTON ST.
KING ST.
CHARLTON ST.
VANDAM ST.
SIXTH AVE.
SPRING ST.
DOMINICK ST.
BROOME ST.
WATTS ST.
DESBROSSES ST.
VESTRY ST.
LAIGHT ST.
ROUTE 9A
WASHINGTON ST.
GREENWICH ST.
RENWICK ST.
HUDSON ST.
VARICK ST.
CANAL ST.
GRAND ST.
N

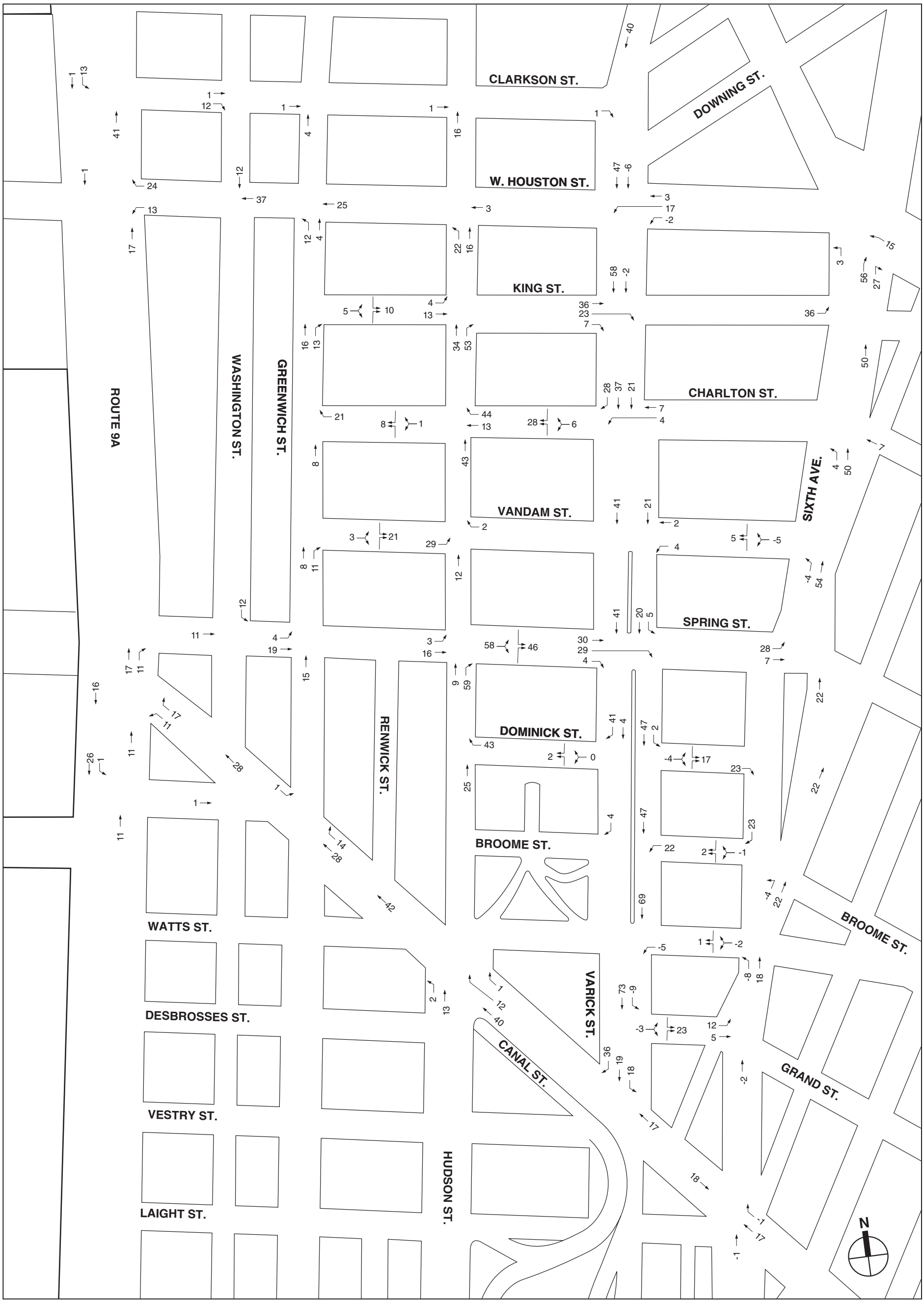
NOT TO SCALE

Midblock Source

Midblock Sink

2022 With-Action Net Existing Generated Traffic
Saturday Midday Peak Hour
Figure 13-8

11.13.12



NOT TO SCALE

Midblock Source

Midblock Sink

HUDSON SQUARE REZONING

Net Incremental Traffic
Weekday AM Peak Hour
Figure 13-9

11.13.12

CLARKSON ST.
DOWNING ST.
W. HOUSTON ST.
KING ST.
CHARLTON ST.
VANDAM ST.
SIXTH AVE.
SPRING ST.
DOMINICK ST.
BROOME ST.
GRAND ST.
CANAL ST.
ROUTE 9A
WASHINGTON ST.
GREENWICH ST.
RENWICK ST.
WATTS ST.
DESBROSSES ST.
VESTRY ST.
LAIGHT ST.
HUDSON ST.
VARICK ST.

N

NOT TO SCALE

Midblock Source

Midblock Sink

HUDSON SQUARE REZONING

Net Incremental Traffic
Weekday Midday Peak Hour
Figure 13-10

11.13.12

CLARKSON ST.
DOWNING ST.
W. HOUSTON ST.
KING ST.
CHARLTON ST.
VANDAM ST.
SIXTH AVE.
SPRING ST.
DOMINICK ST.
BROOME ST.
WATTS ST.
DESBROSSES ST.
VESTRY ST.
LAIGHT ST.
ROUTE 9A
WASHINGTON ST.
GREENWICH ST.
RENWICK ST.
HUDSON ST.
VARICK ST.
CANAL ST.
GRAND ST.

N

NOT TO SCALE

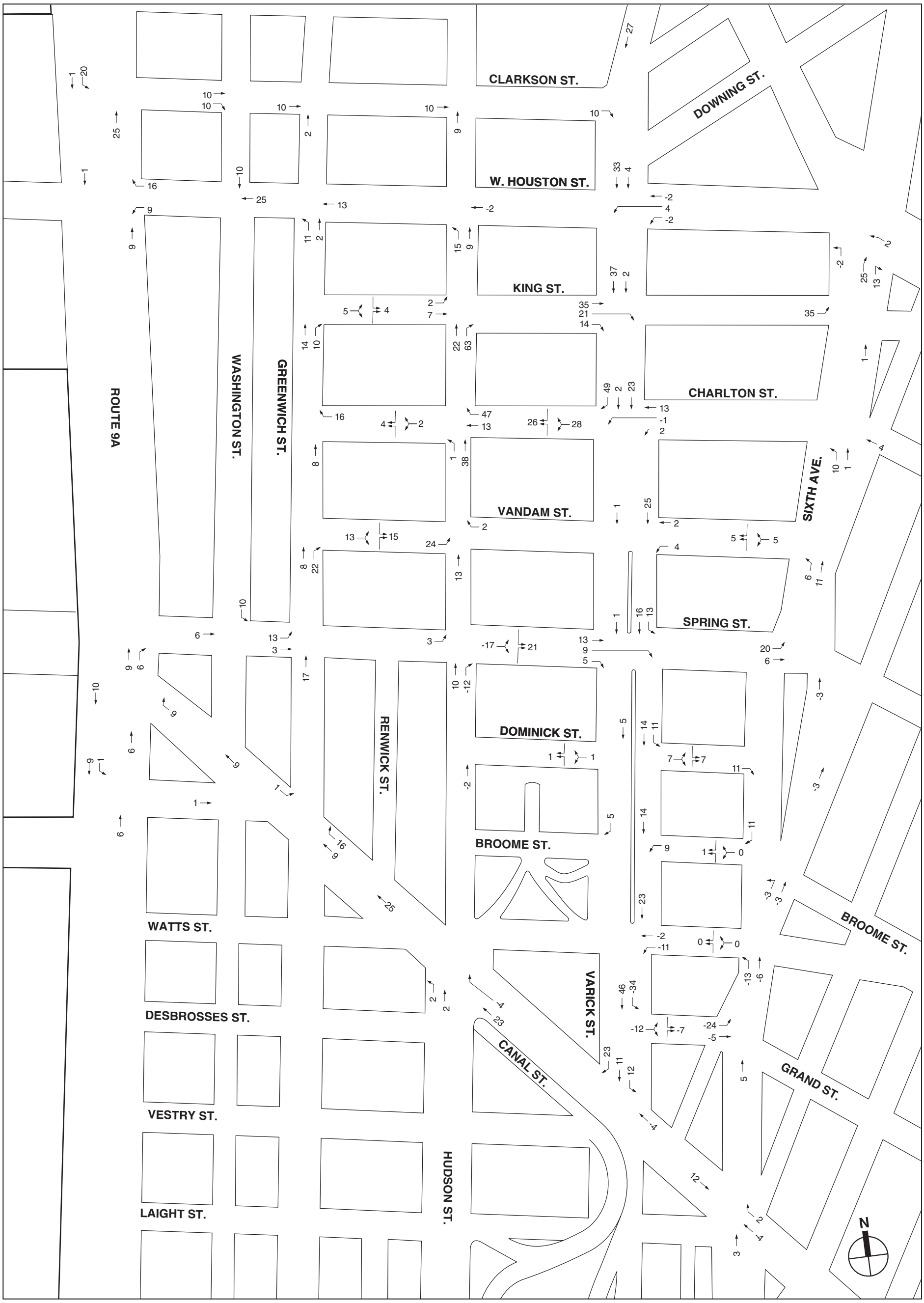
Midblock Source

Midblock Sink

HUDSON SQUARE REZONING

Net Incremental Traffic
Weekday PM Peak Hour
Figure 13-11

11.13.12



NOT TO SCALE

Midblock Source

Midblock Sink

HUDSON SQUARE REZONING

Net Incremental Traffic
Saturday Midday Peak Hour
Figure 13-12

1. West Street and Clarkson Street
2. West Street and West Houston Street
3. Hudson Street and King Street
4. Hudson Street and Charlton Street
5. Hudson Street and Vandam Street
6. Hudson Street (east and west lanes) and Canal Street
7. Varick Street (east and west lanes) and West Houston Street
8. Varick Street (east and west lanes) and King Street
9. Varick Street (east and west lanes) and Charlton Street
10. Varick Street (east and west lanes) and Vandam Street
11. Varick Street (east and west lanes) and Spring Street
12. Varick Street (east and west lanes) and Dominick Street
13. Varick Street (east and west lanes) and Broome Street
14. Varick Street (east and west lanes) and Watts Street
15. Varick Street and Grand Street
16. Varick Street and Canal Street

17a. Avenue of the Americas and West Houston Street (signalized)
17b. Avenue of the Americas and West Houston Street (unsignalized)

18. Avenue of the Americas and King Street
19. Avenue of the Americas and Spring Street
20. Avenue of the Americas and Canal Street/Laight Street
21. West Street and Canal Street North
22. West Street and Canal Street South

~~Additional intersections may be analyzed between the Draft and Final EIS. These intersections will be selected in consultation with DCP and NYCDOT.~~ As described above, since the issuance of the DEIS, six additional intersections have been added to the FEIS transportation analysis based on discussions with NYCDCP and NYCDOT. The six additional intersections include:

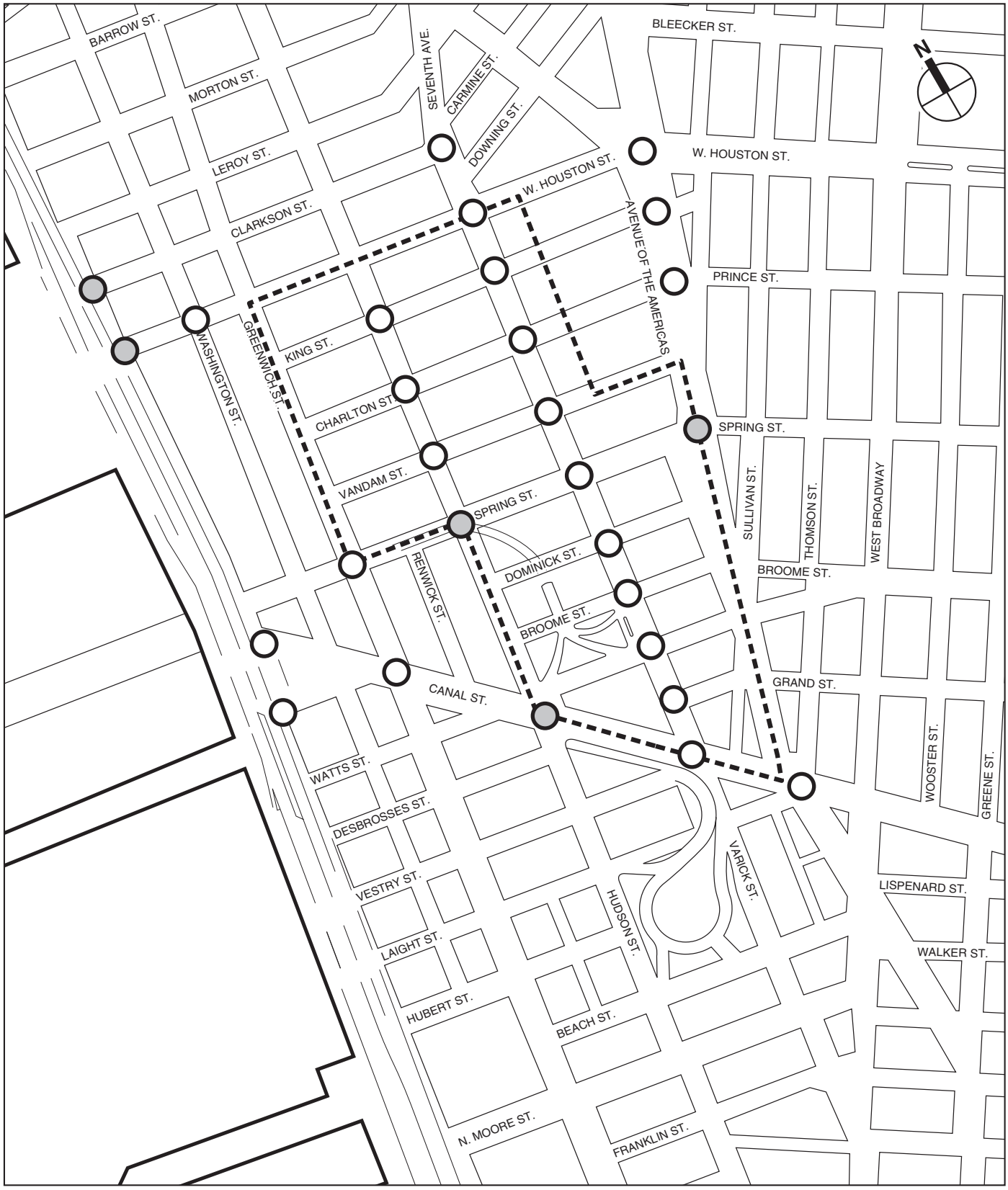
23. Washington Street and West Houston Street
24. Greenwich Street and Spring Street
25. Greenwich Street and Canal Street
26. Hudson Street and Spring Street
27. Varick Street and Clarkson Street/Carmine Street
28. Avenue of the Americas and Charlton Street/Prince Street

The 28 area intersections are depicted in **Figure 13-13**.

TRANSIT

SUBWAY

As presented in **Table 13-9**, the net subway trip increments were projected to be 1,299, 522, 1,425, and 1,085 during the weekday AM, midday, and PM, and Saturday midday peak hours, respectively. Trip assignments for both the No-Action and With-Action conditions were prepared for the weekday AM, midday, and PM peak hours, as well as the Saturday midday peak



HUDSON SQUARE REZONING

Traffic Analysis Locations

Figure 13-13

hour. These trips were distributed to the nearby subway stations serving the area (see **Figure 13-14**). The allocation of project-generated subway trips also considered different train origins, transfer opportunities, and varying train loads at different points along their routes. Based on this assessment, nearly 90 percent of the total project-generated subway trips are expected to be served by the four nearest subway stations—the Canal Street (A/C/E) station, the Canal Street (No.1) station, the Spring Street (C/E) station, and the West Houston Street (No.1) station. The remaining 10 percent were distributed to other stations in the area, including the Prince Street (N/R) station, the Spring Street (No.6) station, and the Canal Street (No.6/J/N/Q/R/W) station.

The following stations and associated station elements are expected to incur 200 or more peak hour incremental subway trips, and the following control areas and station elements were therefore identified for analysis for the weekday AM and PM peak periods.

- Spring Street station (C/E lines) stairways and control areas, including the uptown N86 control area connecting to a street-level stairway (S3 stairway at the northeast corner of Avenue of the Americas and Spring Street) and two downtown control areas each connecting to a street-level stairway (S4 stairway at the southwest corner of Avenue of the Americas and Vandam Street and an unmarked stairway at the northeast corner of Avenue of the Americas and Spring Street); and
- Houston Street station (No.1 line) stairways and control areas, including the uptown control area connecting to a street-level stairway (S2 stairway at the southeast corner of Varick Street and King Street) and the downtown control area connecting to a street-level stairway (S1 stairway at the southwest corner of Varick Street and King Street).

To determine whether a subway line-haul analysis is warranted, the estimated incremental ridership for each subway line by direction was compared with each line's peak period service frequency to determine the incremental increase in subway riders per subway car as shown in **Table 13-10** below. According to the *CEQR Technical Manual*, an incremental ridership of fewer than five riders per subway car is unlikely to result in the potential for a significant subway line-haul impact. The detailed subway trip assignments showed that all subway lines would incur fewer than five additional riders per car along all subway lines. Since the projected peak ridership increment would be below this threshold, a detailed subway line-haul analysis is not warranted.

Table 13-10
Subway Line Haul Screening Analysis

Subway Line	Projected Riders	No. of Cars *	No. Riders/Car	Screening Result
AM Peak Hour				
No. 1 Downtown	139	180	0.8	Screened out
No. 1 Uptown	212	150	1.4	Screened out
C/E Downtown	334	188	1.8	Screened out
C/E Uptown	479	196	2.4	Screened out
N/Q/R/6 Both Directions	152	816	0.2	Screened out
PM Peak Hour				
No. 1 Downtown	203	110	1.8	Screened out
No. 1 Uptown	181	70	2.6	Screened out
C/E Downtown	472	158	3.0	Screened out
C/E Uptown	437	158	2.8	Screened out
N/Q/R/6 Both Directions	204	814	0.3	Screened out

Note: * Number of cars available for each line during the peak hour is obtained from 2010 cordon counts

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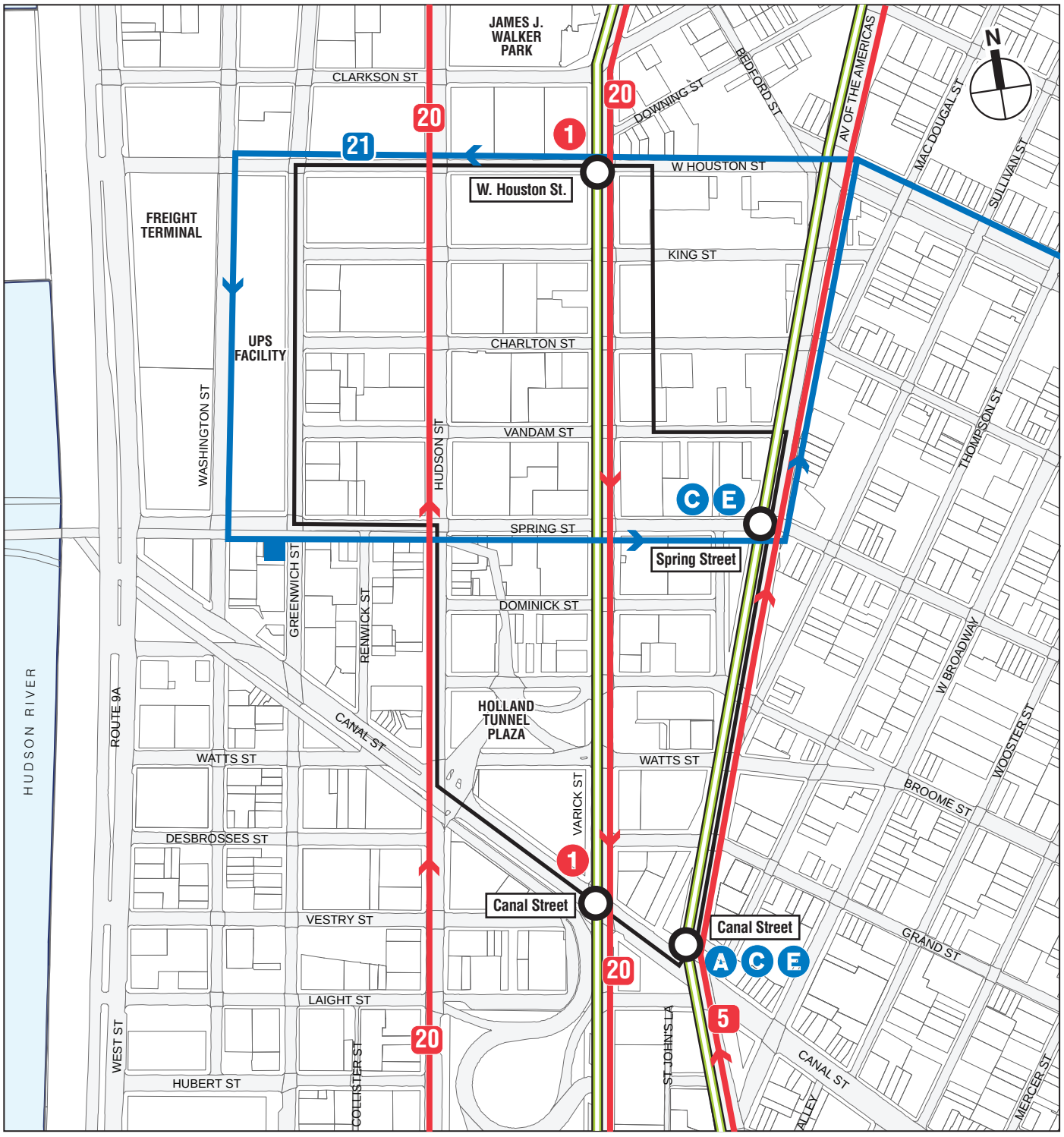


Proposed Rezoning Area

21 Bus Name

Bus Route

Bus Terminal

N Subway Name

Subway Line

Subway Stop

Spring Street Subway Statiom

HUDSON SQUARE REZONING

Transit Map
Figure 13-14

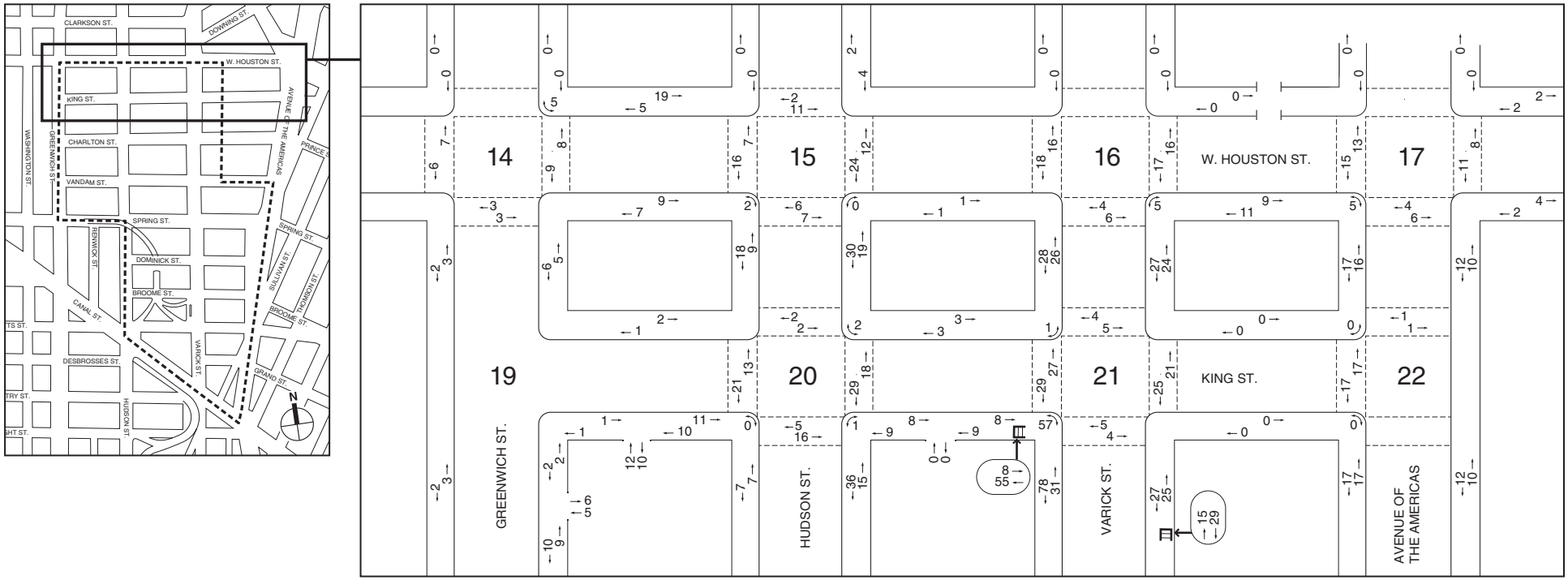
NYCT BUS

Bus trips were distributed to the Metropolitan Transportation Authority (MTA) New York City Transit (NYCT) local bus routes serving the study area (see **Figure 13-14**). There are three local bus routes (M5, M20, and M21) with stops adjacent to or near the project sites. According to the projected incremental bus trips presented in **Table 13-9,** increments of up to 59 total peak hour bus passengers (22 in and 37 out) and no more than 50 peak hour bus passengers in one direction were projected for the Proposed Action. This demonstrates that no individual bus route would experience 50 or more peak hour bus trips in one direction—the CEQR recommended threshold for undertaking a quantified bus analysis. Therefore, a detailed bus line-haul analysis would not be required to address potential transit impacts on the bus system associated with the Proposed Action.

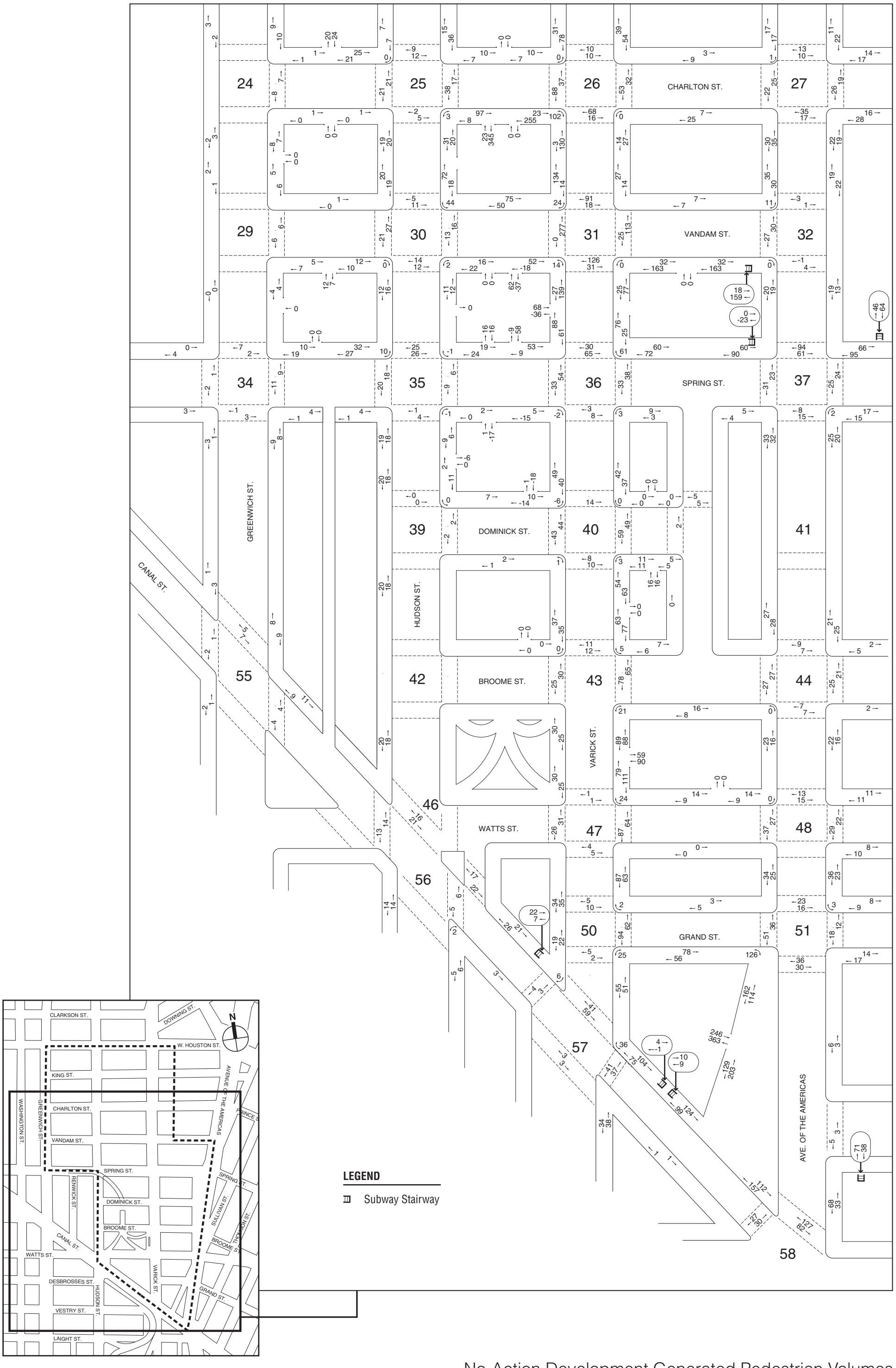
PEDESTRIANS

Trip assignments for both the No-Action and With-Action conditions were prepared for the weekday AM, midday, and PM peak hours, as well as the Saturday midday peak hour as presented in **Figures 13-15A** to **13-18B** and **13-19A** to **13-22B**, respectively. As shown in **Table 13-9**, the projected peak hour pedestrian increments would exceed the CEQR analysis threshold of 200 pedestrians during the weekday AM, midday, and PM, and Saturday midday peak hours. Pedestrian trip assignments were developed for all the uses to conduct a Level 2 screening assessment. For each use, pedestrian trips would follow similar assignment procedures, as described below:

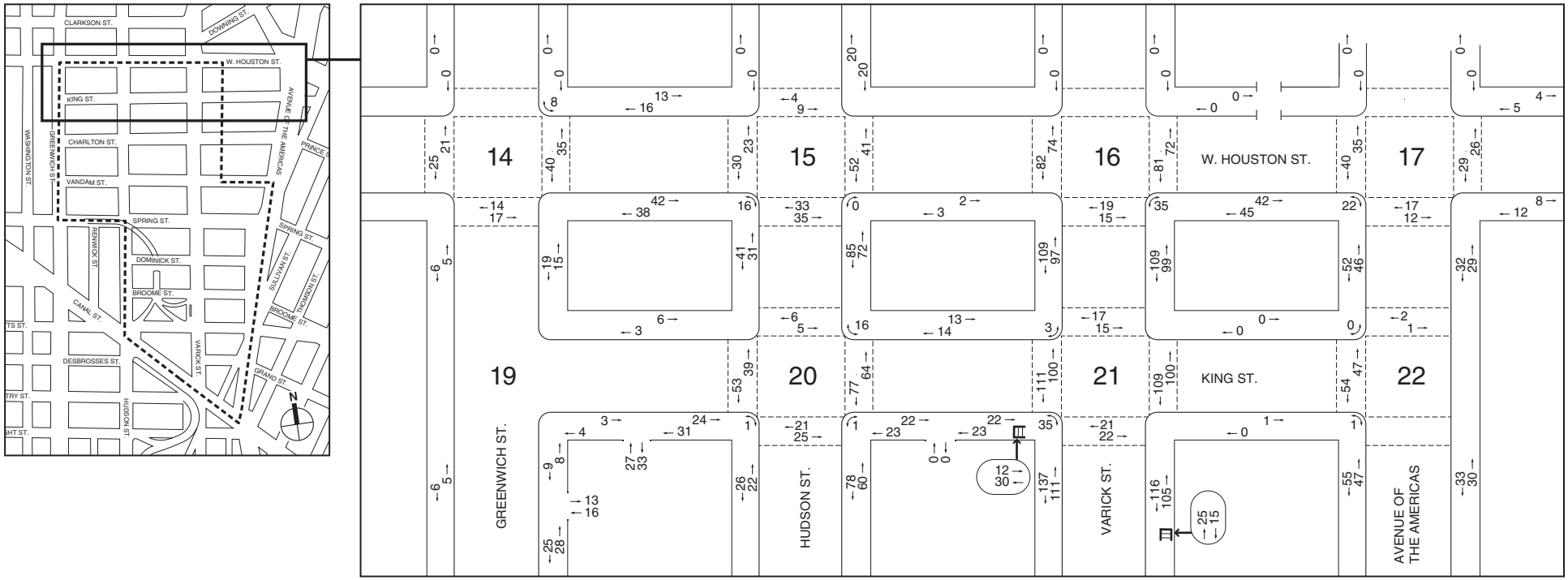
- Auto Trips – For the residential and hotel uses, motorists would park on site and would have direct access to the site without traversing any pedestrian elements. For all other uses, it was assumed that the motorists would drive to the site and park near the site entrance and walk to and from the site.
- Taxi Trips – Taxi riders would get dropped off and picked up near their destination for each use.
- Bus Trips – Bus riders would use one of the three bus routes serving the area (M5, M20, and M21) and would get on and off at the bus stops nearest to the destinations and walk to and from the project sites. It was assumed that 60 percent of bus riders would travel to/from uptown/crosstown and the remaining 40 percent would travel to/from downtown to get to/from their final destinations.
- Subway Trips – Subway riders were assigned to the nearest stations and would walk to and from the proposed sites. The distribution of the subway riders to nearby subway stations is based on the proximity of the stations, the number of subway lines available at each station, and the transfer opportunities that each line provides at other stations. Nearly 90 percent of the total project-generated subway trips are expected to be served by the four nearest subway stations—the Canal Street (A/C/E) station, the Canal Street (No.1) station, the Spring Street (C/E) station, and the West Houston Street (No.1) station. Based on the subway lines available, 30 percent of the subway trips were assigned to the Canal Street and Houston Street Stations (No. 1 line), 60 percent were assigned to the Canal Street (A/C/E lines) and Spring Street(C/E lines) Stations. The remaining 10 percent were distributed to other stations located east of the rezoning area, including the Prince Street (N/R) Station, the Spring Street (No.6) Station, and the Canal Street (No.6/J/N/Q/R/W/Z) Station. It was assumed that approximately 2/3 of subway riders would travel to/from uptown and the remaining 1/3 would travel to/from downtown and Brooklyn to get to/from their final destinations. These



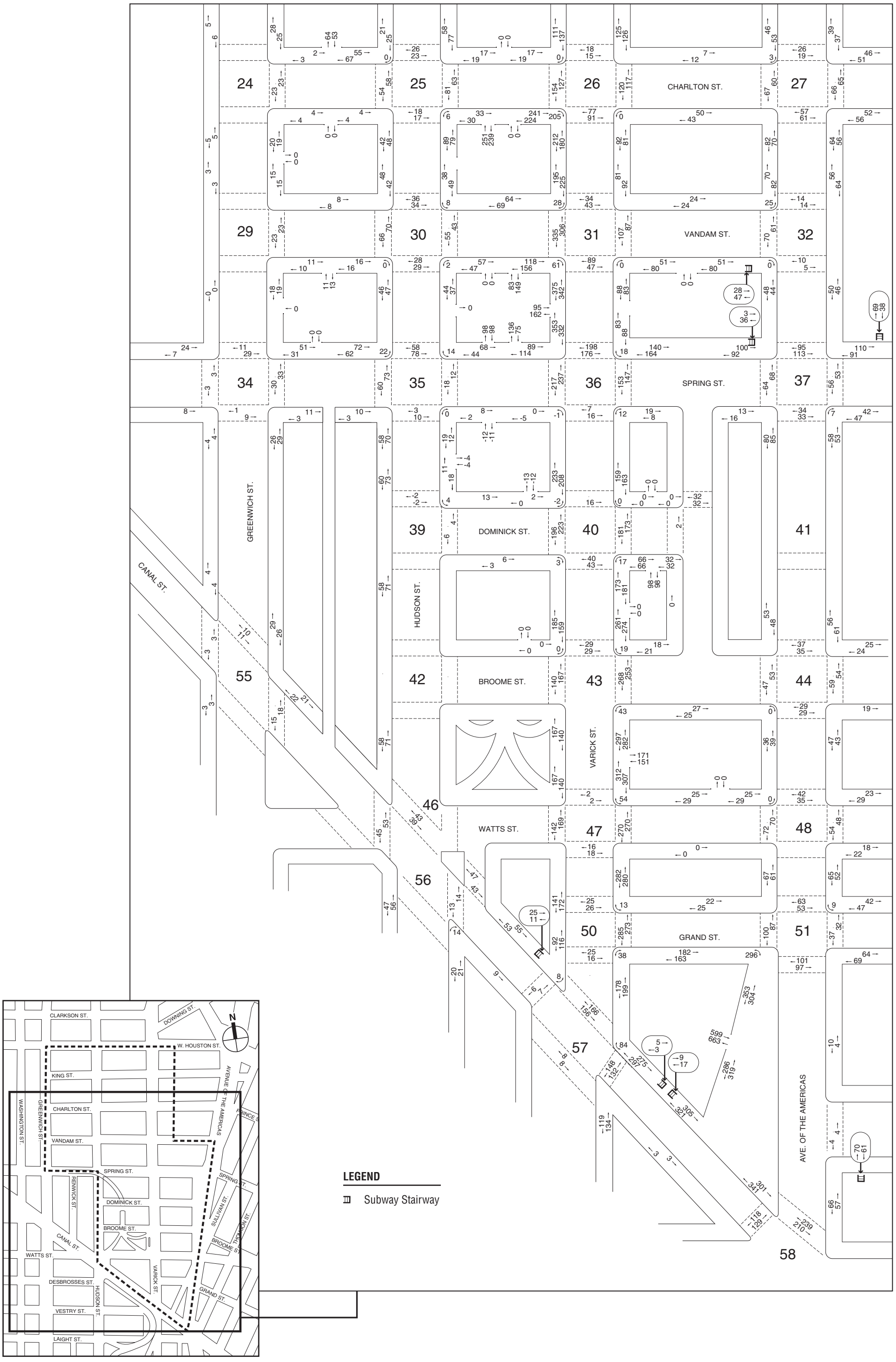
No-Action Development Generated Pedestrian Volumes
Weekday AM Peak Hour
Figure 13-15A



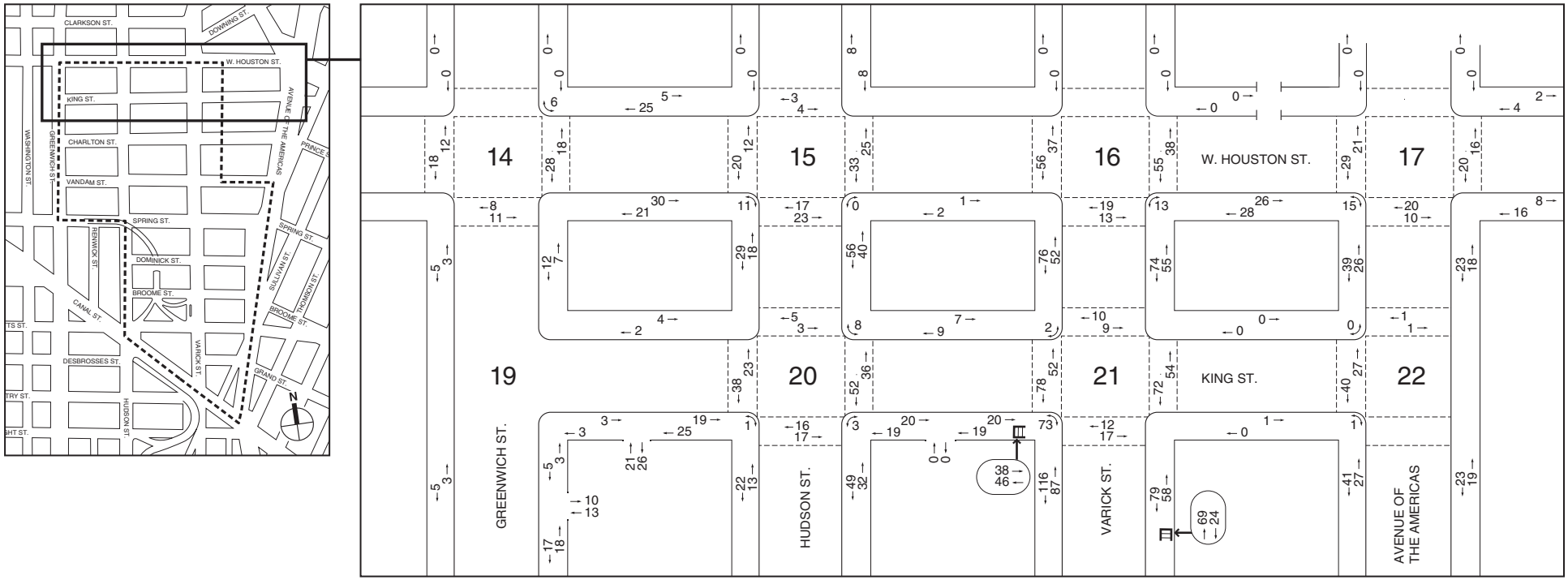
No-Action Development Generated Pedestrian Volumes
Weekday AM Peak Hour
Figure 13-15B



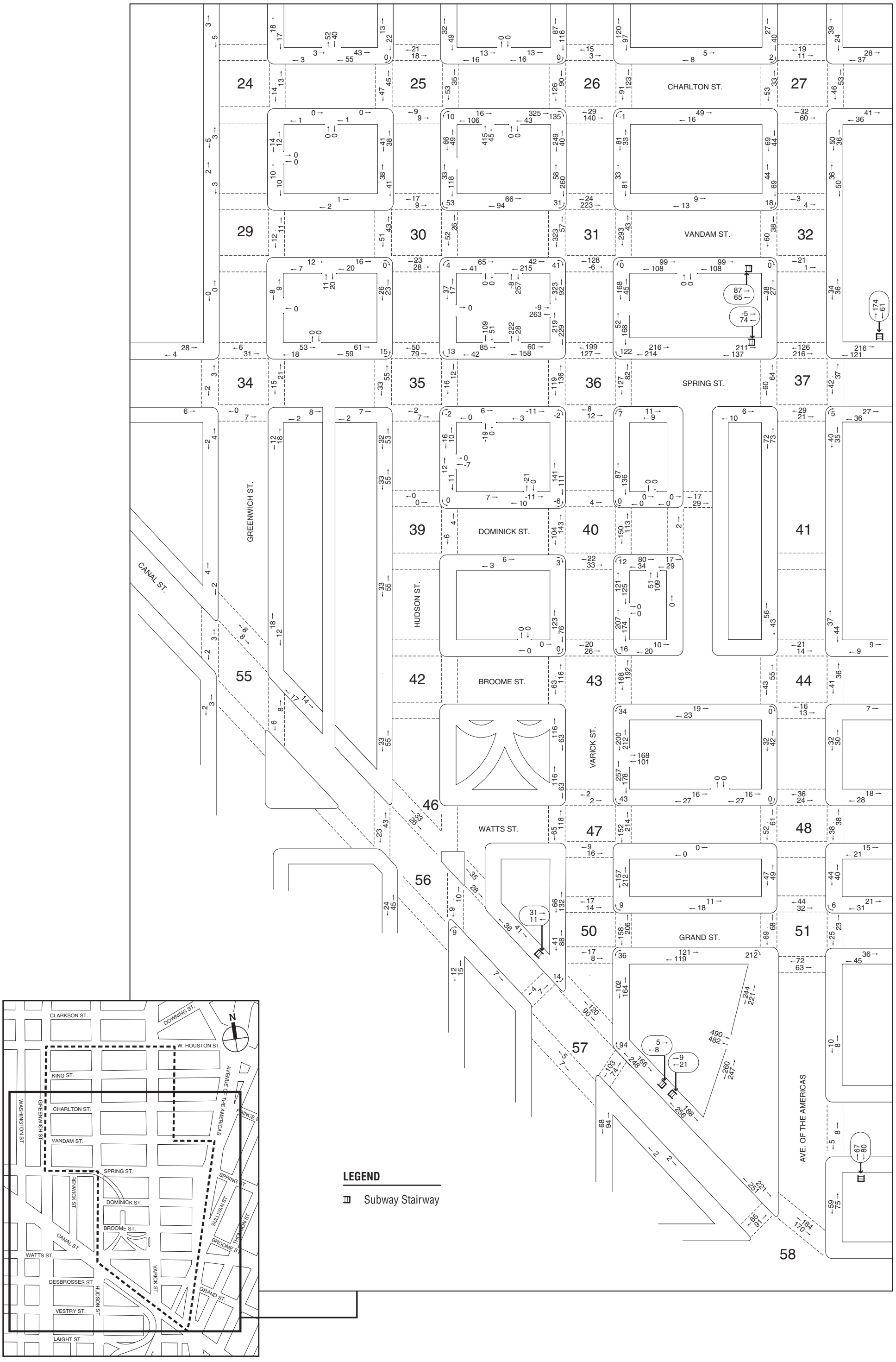
No-Action Development Generated Pedestrian Volumes
Weekday Midday Peak Hour
Figure 13-16A



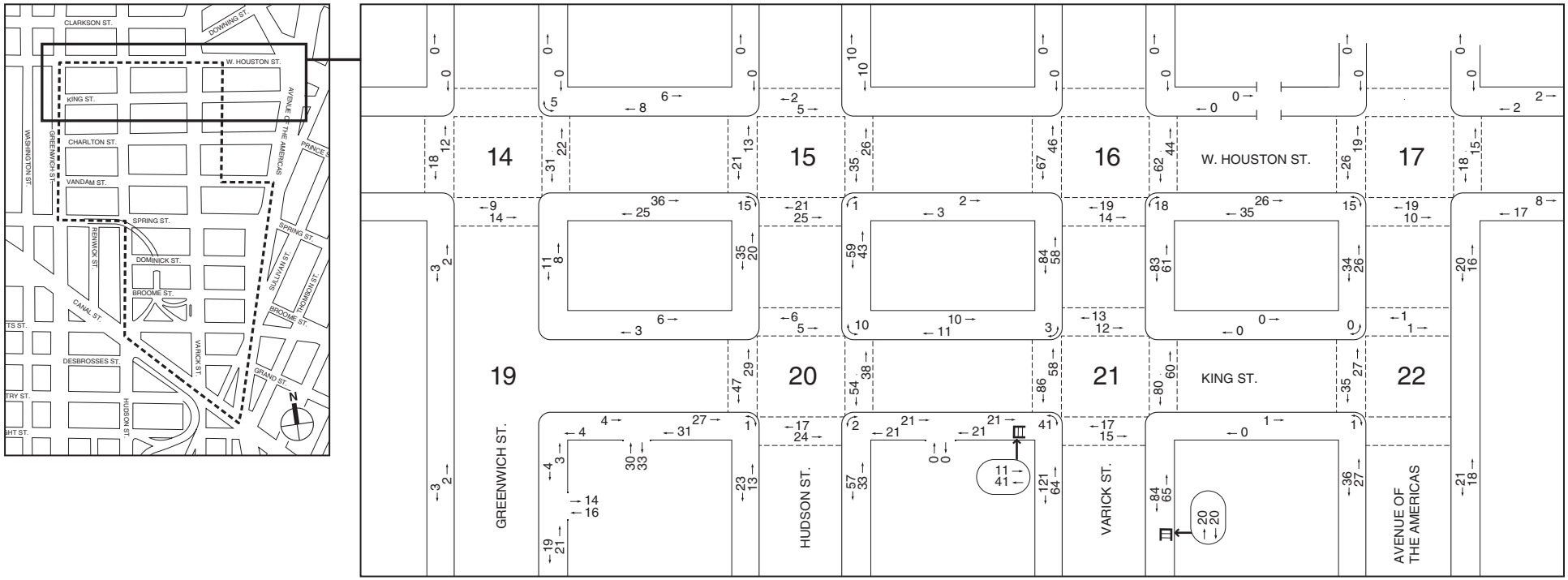
No-Action Development Generated Pedestrian Volumes
Weekday Midday Peak Hour
Figure 13-16B



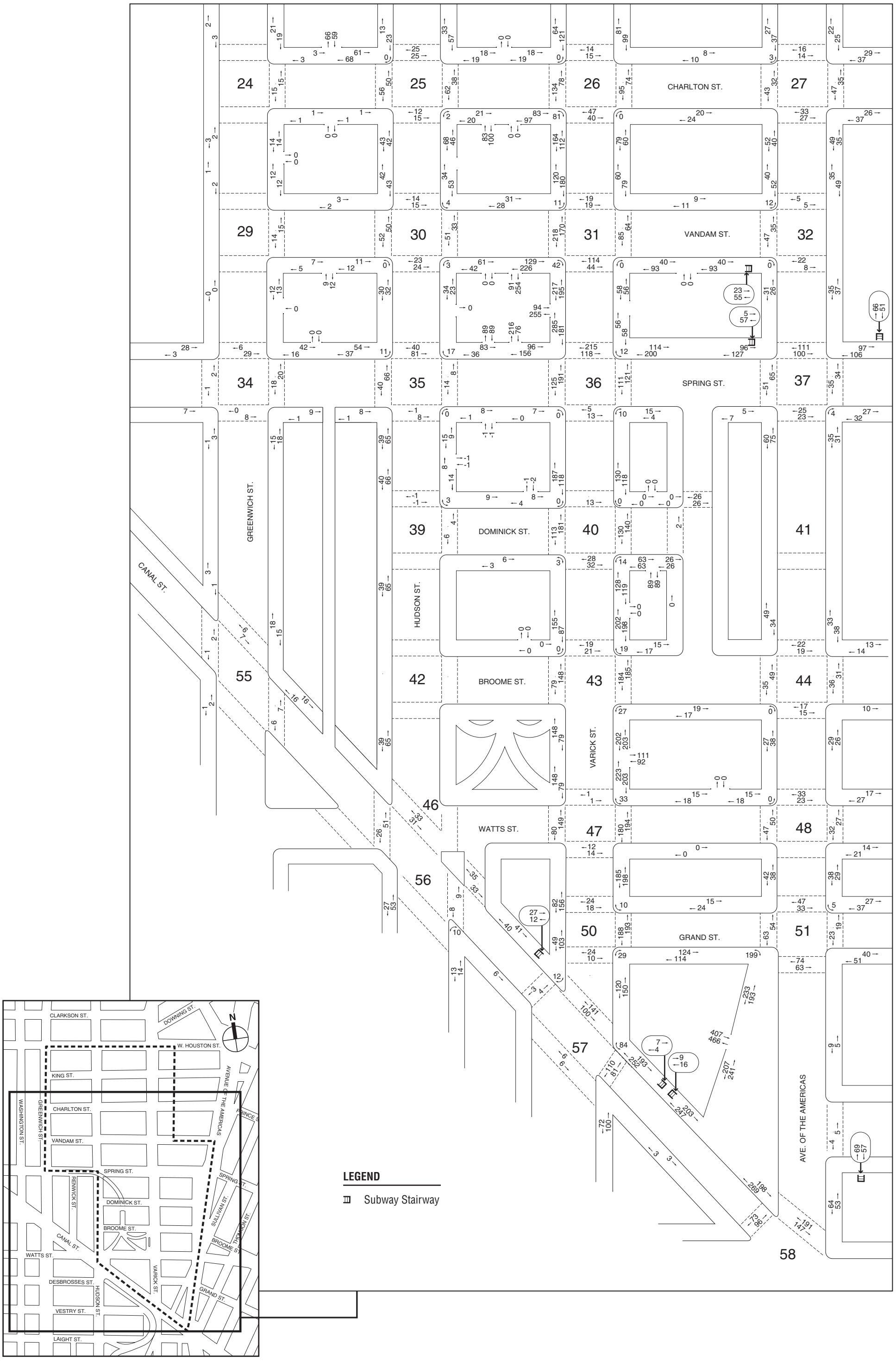
No-Action Development Generated Pedestrian Volumes
Weekday PM Peak Hour
Figure 13-17A



No-Action Development Generated Pedestrian Volumes
Weekday PM Peak Hour
Figure 13-17B

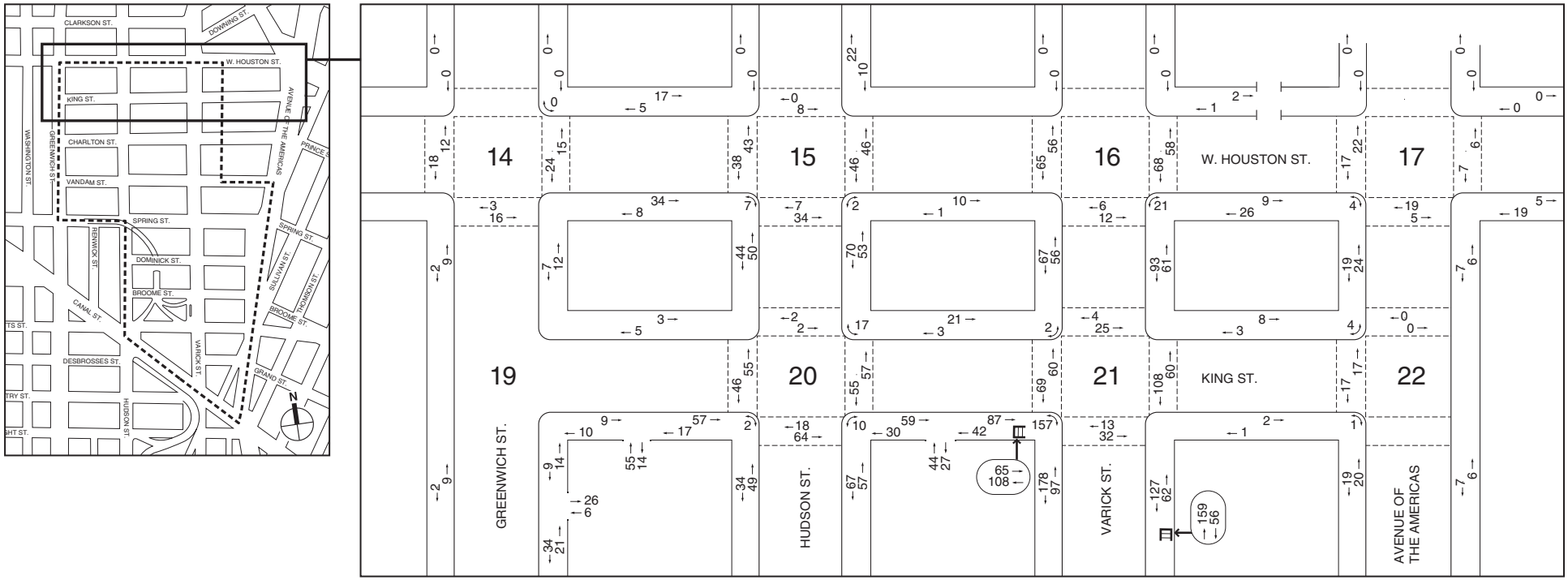


No-Action Development Generated Pedestrian Volumes
Saturday Peak Hour
Figure 13-18A

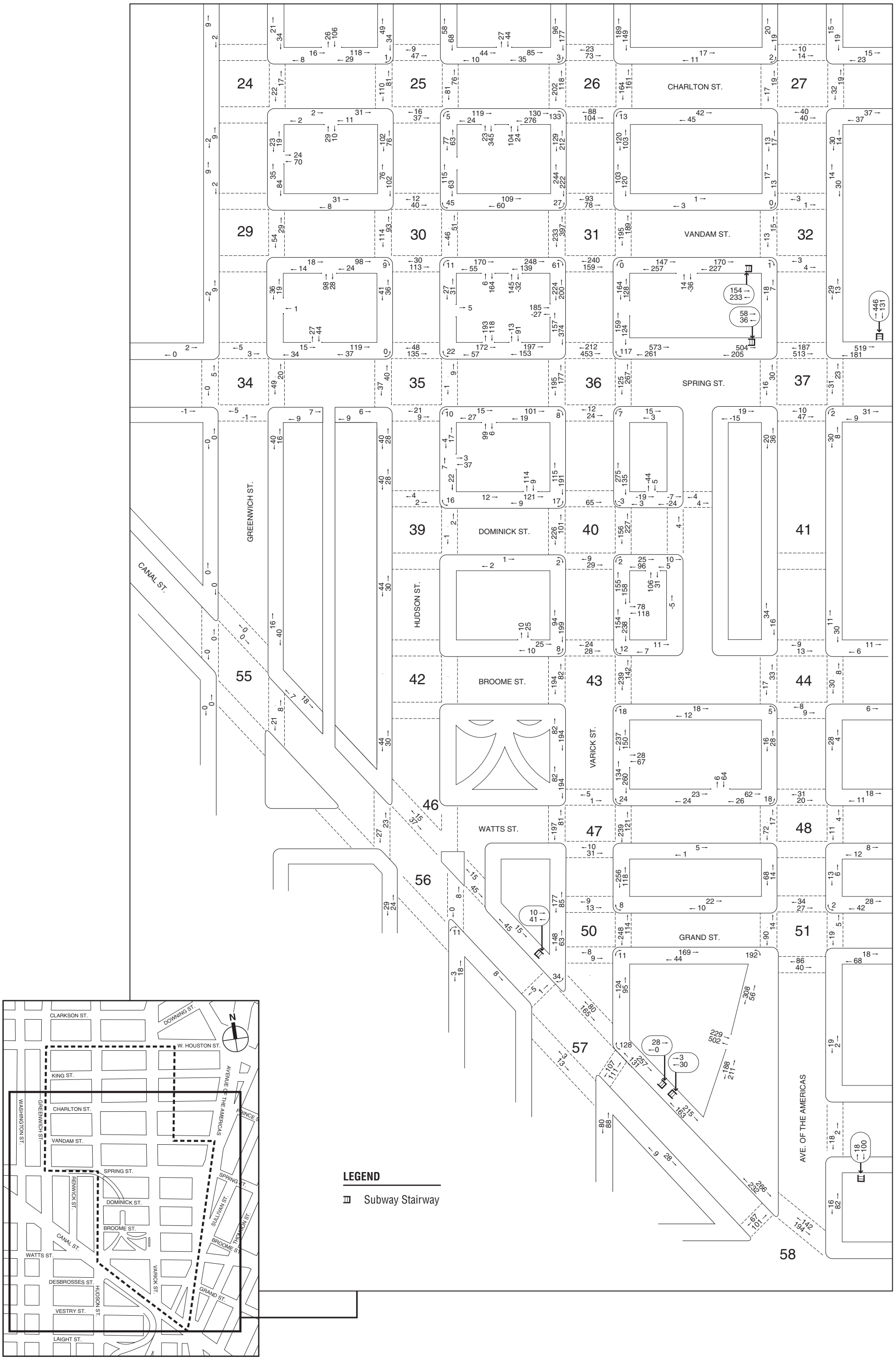


HUDSON SQUARE REZONING

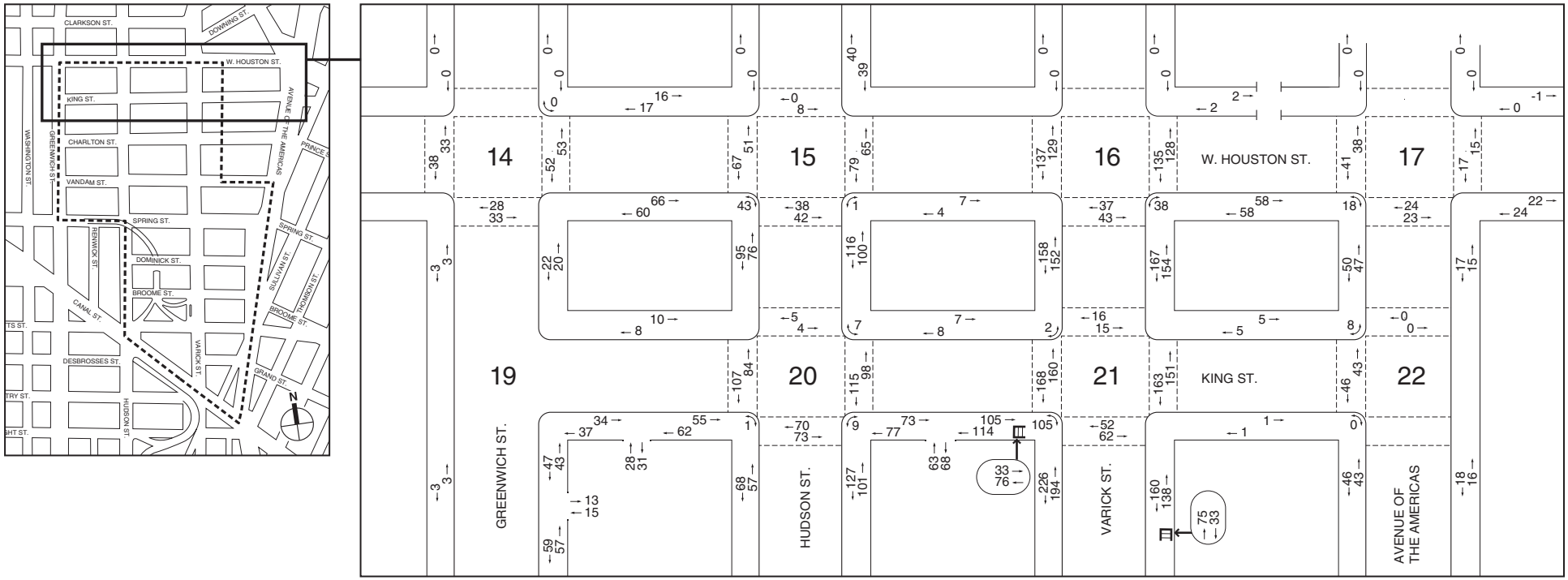
No-Action Development Generated Pedestrian Volumes
Saturday Peak Hour
Figure 13-18B



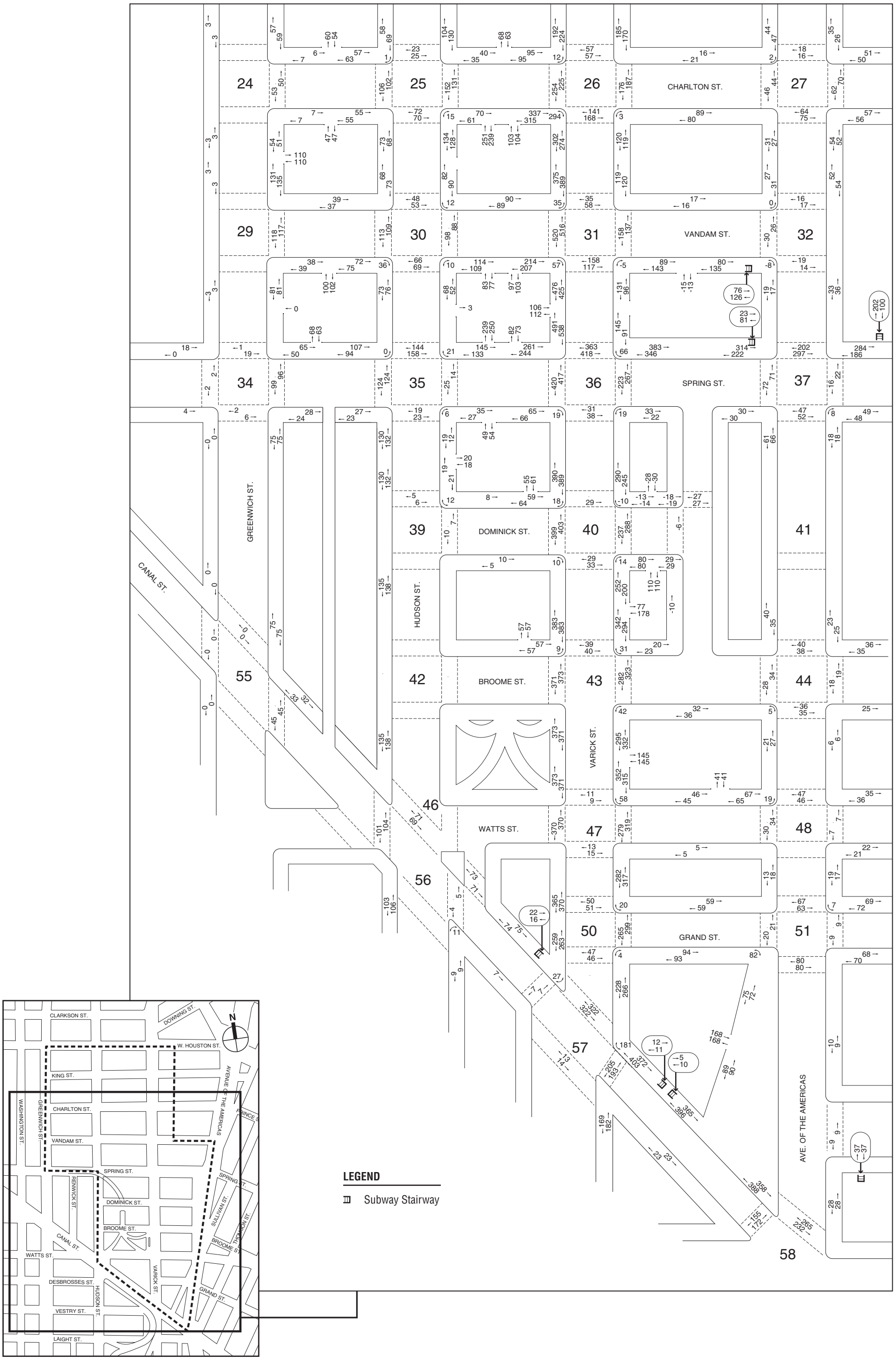
With-Action Development Generated Pedestrian Volumes
Weekday AM Peak Hour
Figure 13-19A



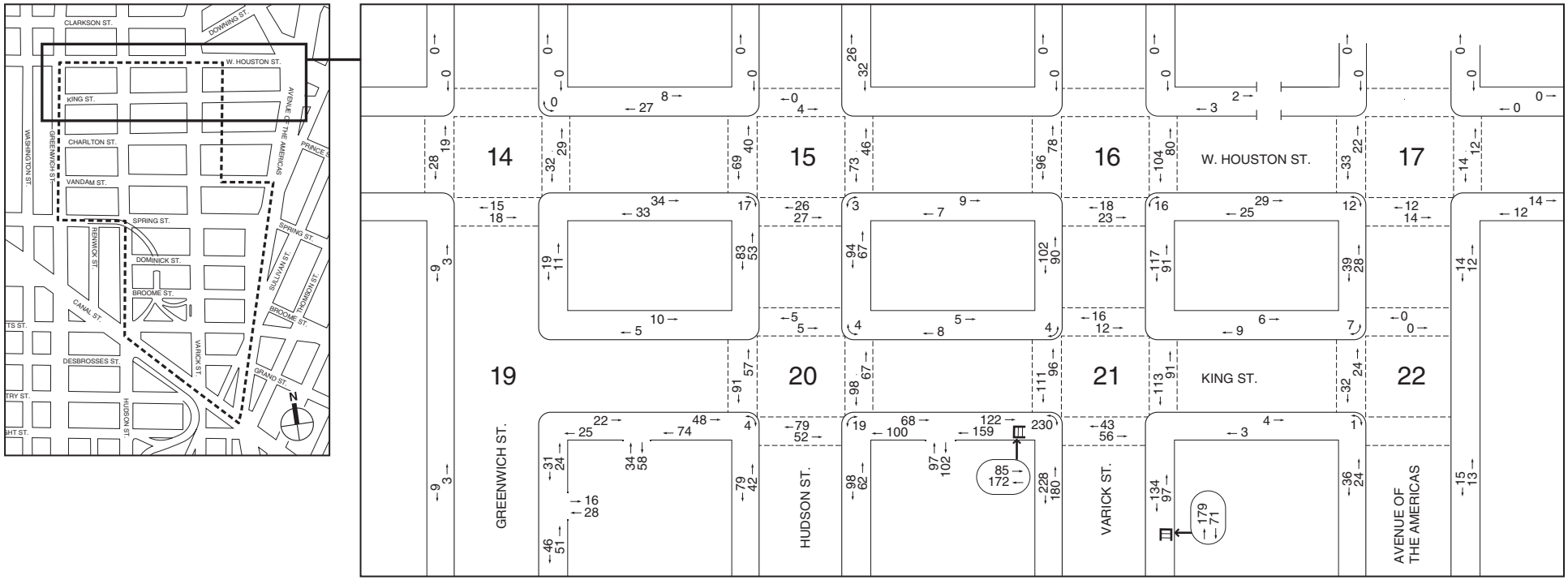
With-Action Development Generated Pedestrian Volumes
Weekday AM Peak Hour
Figure 13-19B



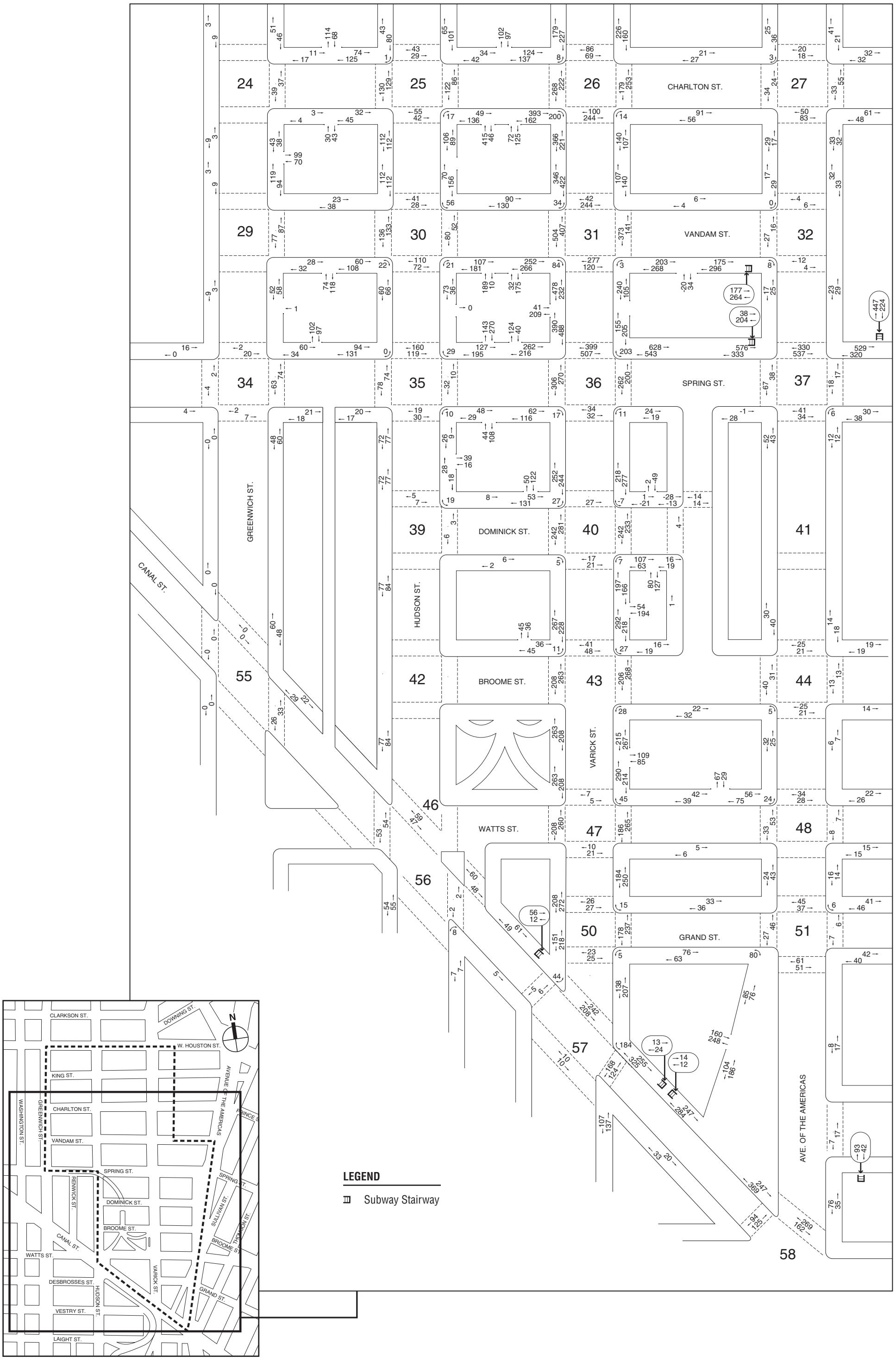
With-Action Development Generated Pedestrian Volumes
Weekday Midday Peak Hour
Figure 13-20A



With-Action Development Generated Pedestrian Volumes
Weekday Midday Peak Hour
Figure 13-20B



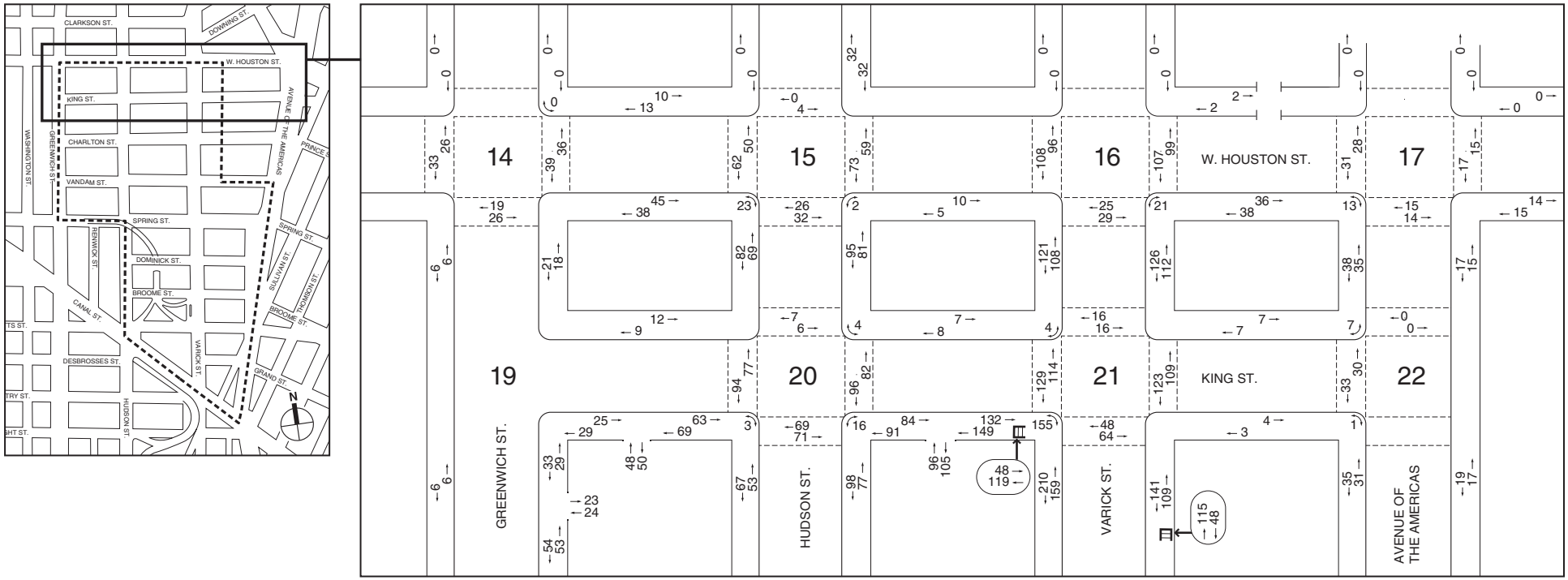
With-Action Development Generated Pedestrian Volumes
Weekday PM Peak Hour
Figure 13-21A



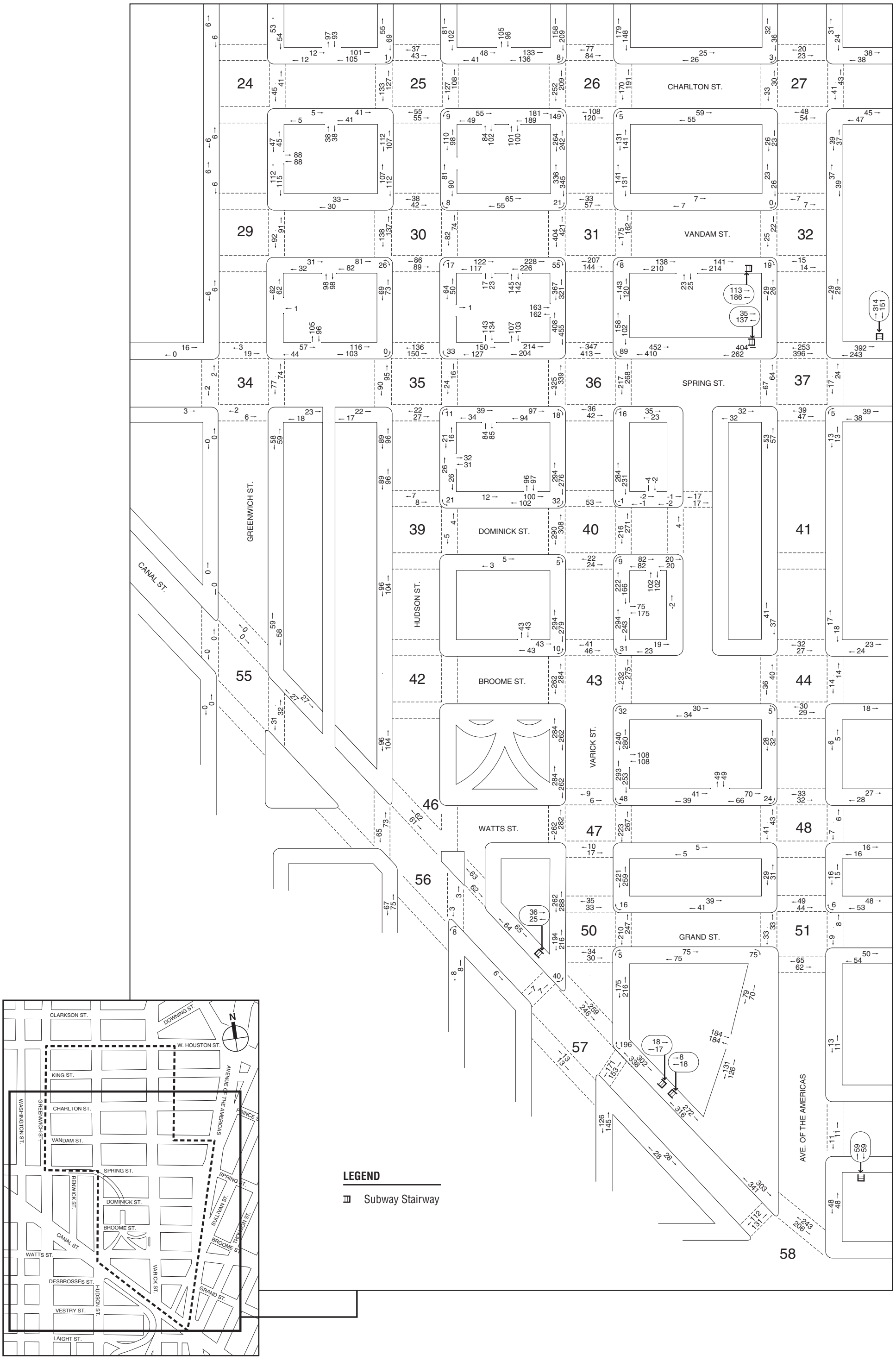
LEGEND

Subway Stairway

With-Action Development Generated Pedestrian Volumes
Weekday PM Peak Hour
Figure 13-21B



With-Action Development Generated Pedestrian Volumes
Saturday Peak Hour
Figure 13-22A



With-Action Development Generated Pedestrian Volumes
Saturday Peak Hour
Figure 13-22B

estimates would result in the net incremental subway trip distribution to the four stations within the rezoning area as shown below for the AM peak hour. The PM peak hour distribution is slightly different within 1 to 2 percent range.

- Spring Street Station (C/E) – approximately 63 percent;
- Houston Street Station (No. 1) – approximately 22 percent;
- Canal Street Station at Varick Street (No. 1) – approximately 5 percent; and
- Canal Street Station at Avenue of the Americas (A/C/E) – approximately 1 percent.

- School Bus Trips– All school bus riders would be picked up and dropped off in front of the school entrance.
- Walk-Only Trips – Pedestrians who walk to and from the development sites within the Rezoning Area were distributed to the area's pedestrian facilities (i.e. crosswalks, sidewalks, and corners) based on the neighborhood land-use characteristics and 2010 Census population data, which was used to identify concentrations of population and to assign residential trips and related use trips accordingly.

Figures 13-23A to **13-26B** present the incremental peak hour trips resulting from the Proposed Action. According to the *CEQR Technical Manual*, quantified pedestrian analyses could be required for pedestrian elements incurring 200 or more incremental peak hour trips. Based on this Level 2 pedestrian assignment, various sidewalks, crosswalks, and corner reservoirs within and in the vicinity of the Rezoning Area would incur 200 or more project-generated peak hour trips. Pedestrian analysis locations were assigned for the weekday AM, midday, PM, and Saturday midday peak hours, taking into account the projected trip increments and background pedestrian characteristics (see **Table 13-11** and **Figure 13-27)**.

E. TRANSPORTATION ANALYSIS METHODOLOGIES

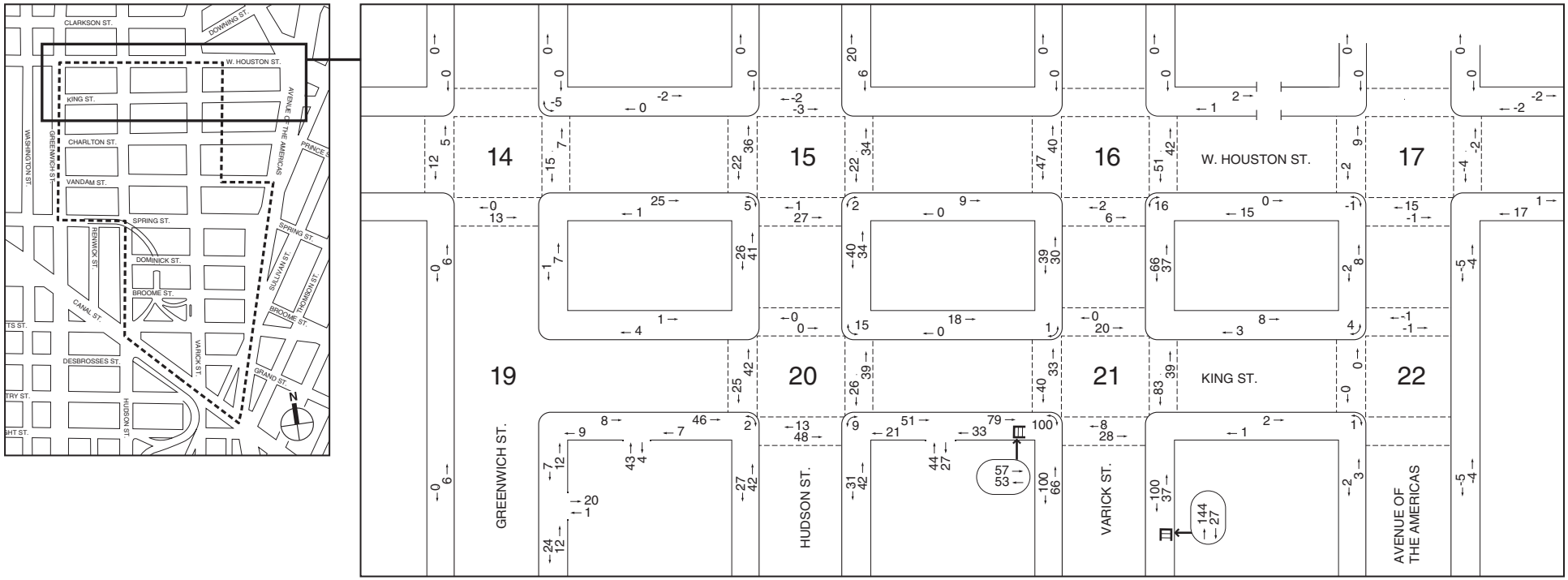
TRAFFIC OPERATIONS

The operation of all of the signalized intersections and unsignalized intersection in the study area were assessed using methodologies presented in the *2000 Highway Capacity Manual (HCM)* using the *Highway Capacity Software (HCS+ 5.5)*. The *HCM* procedure evaluates the levels of service (LOS) for signalized and unsignalized intersections using average stop control delay, in seconds per vehicle, as described below.

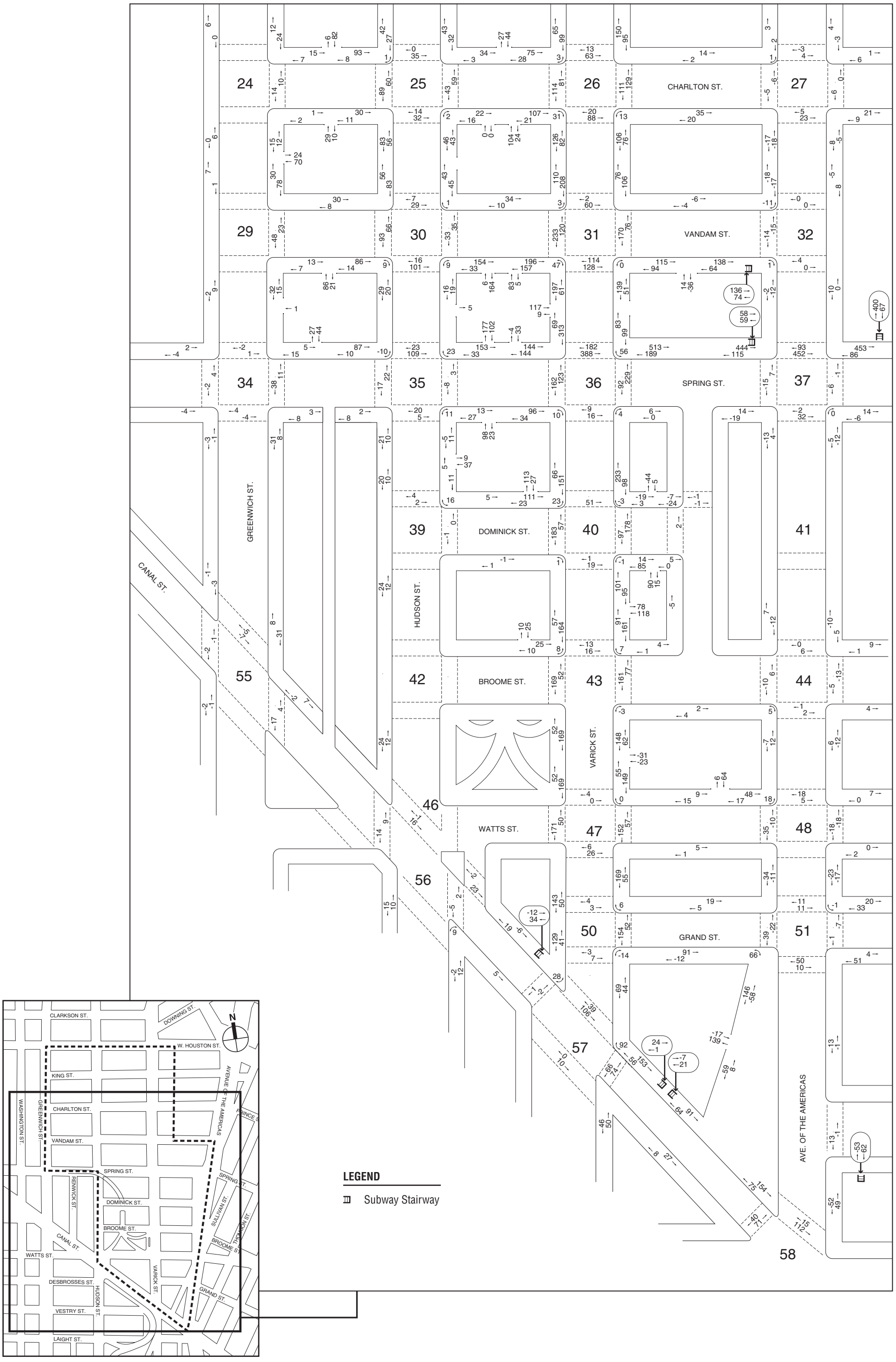
SIGNALIZED INTERSECTIONS

The average control delay per vehicle is the basis for LOS determination for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. The levels of service are defined in **Table 13-12**.

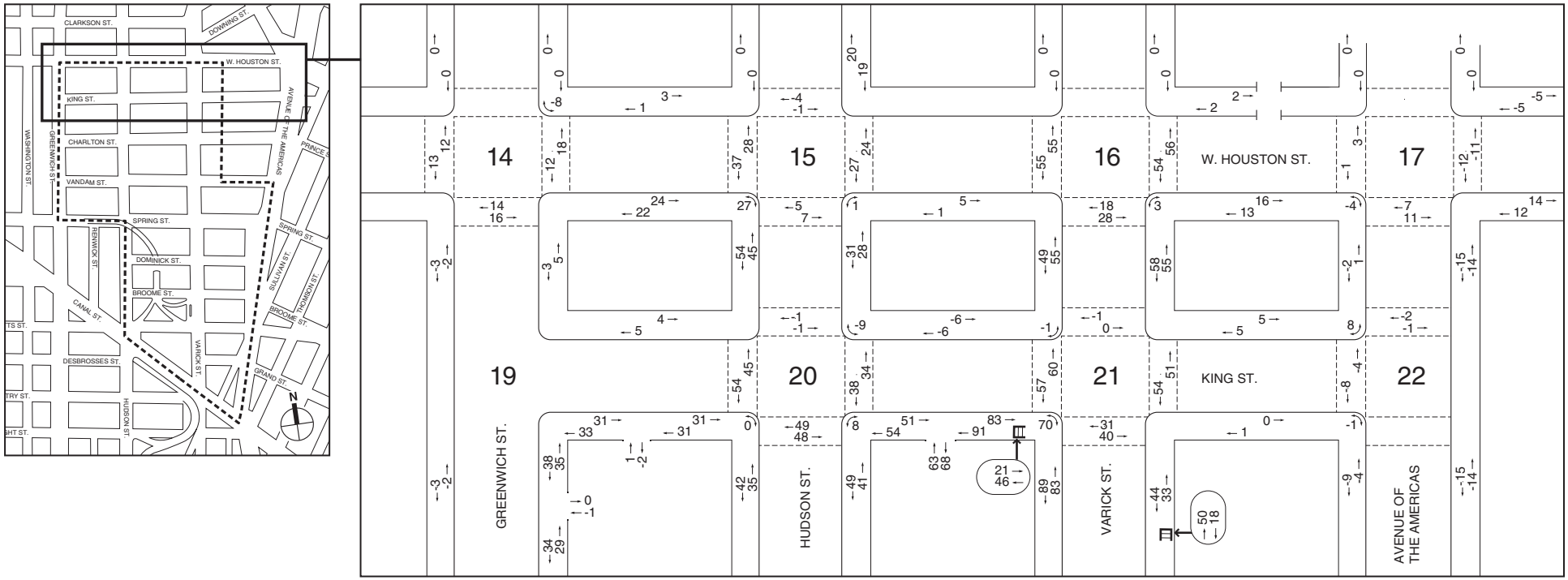
Although the HCM methodology calculates a volume-to-capacity (v/c) ratio, there is no strict relationship between v/c ratios and LOS as defined in the *HCM*. A high v/c ratio indicates substantial traffic passing through an intersection, but a high v/c ratio combined with low average delay actually represents the most efficient condition in terms of traffic engineering standards, where an approach or the whole intersection processes traffic close to its theoretical maximum capacity with minimal delay. However, very high v/c ratios—especially those approaching or greater than 1.0—are often correlated with a deteriorated LOS. Other important variables affecting delay include cycle length, progression, and green time. LOS A and B indicate good operating conditions with minimal delay. At LOS C, the number of vehicles stopping is higher, but congestion is still fairly light. LOS D describes a condition where



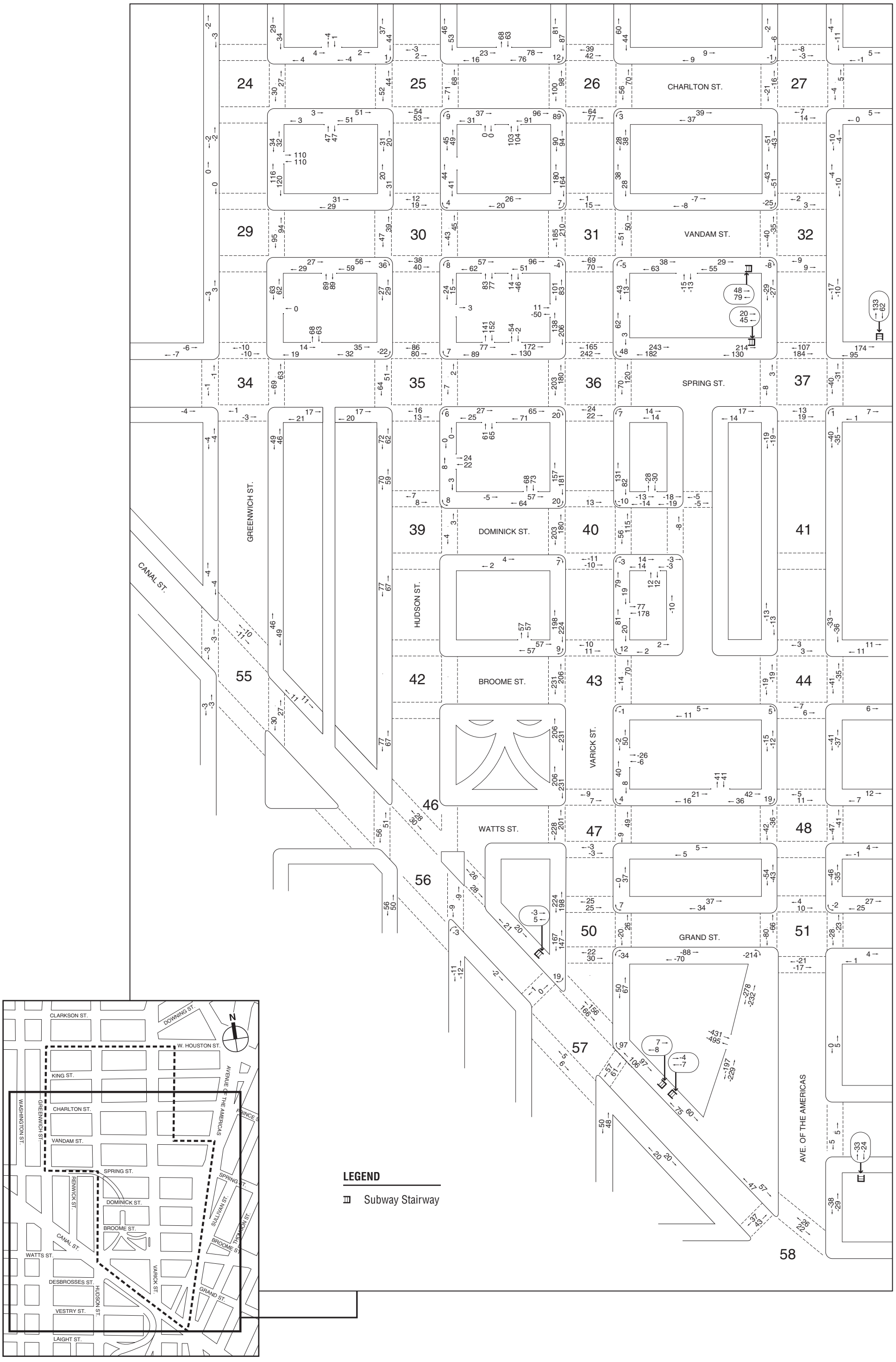
Net Incremental Pedestrian Volumes
Weekday AM Peak Hour
Figure 13-23A



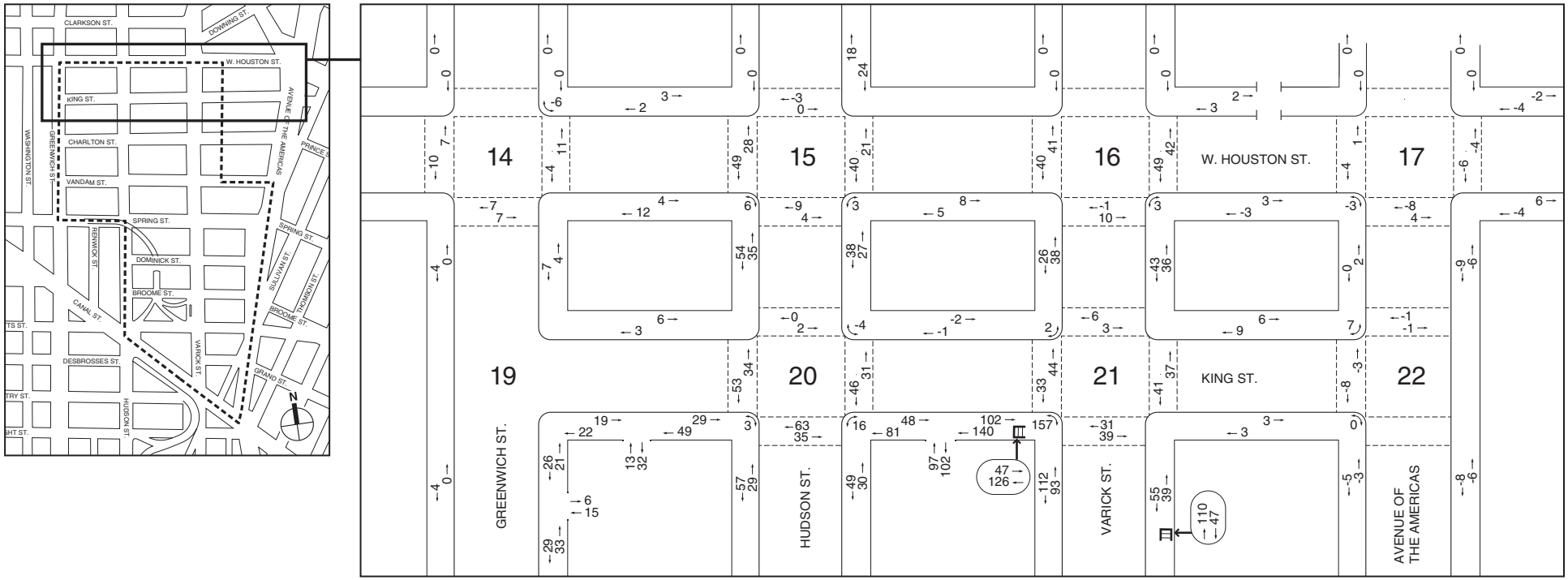
Net Incremental Pedestrian Volumes
Weekday AM Peak Hour
Figure 13-23B



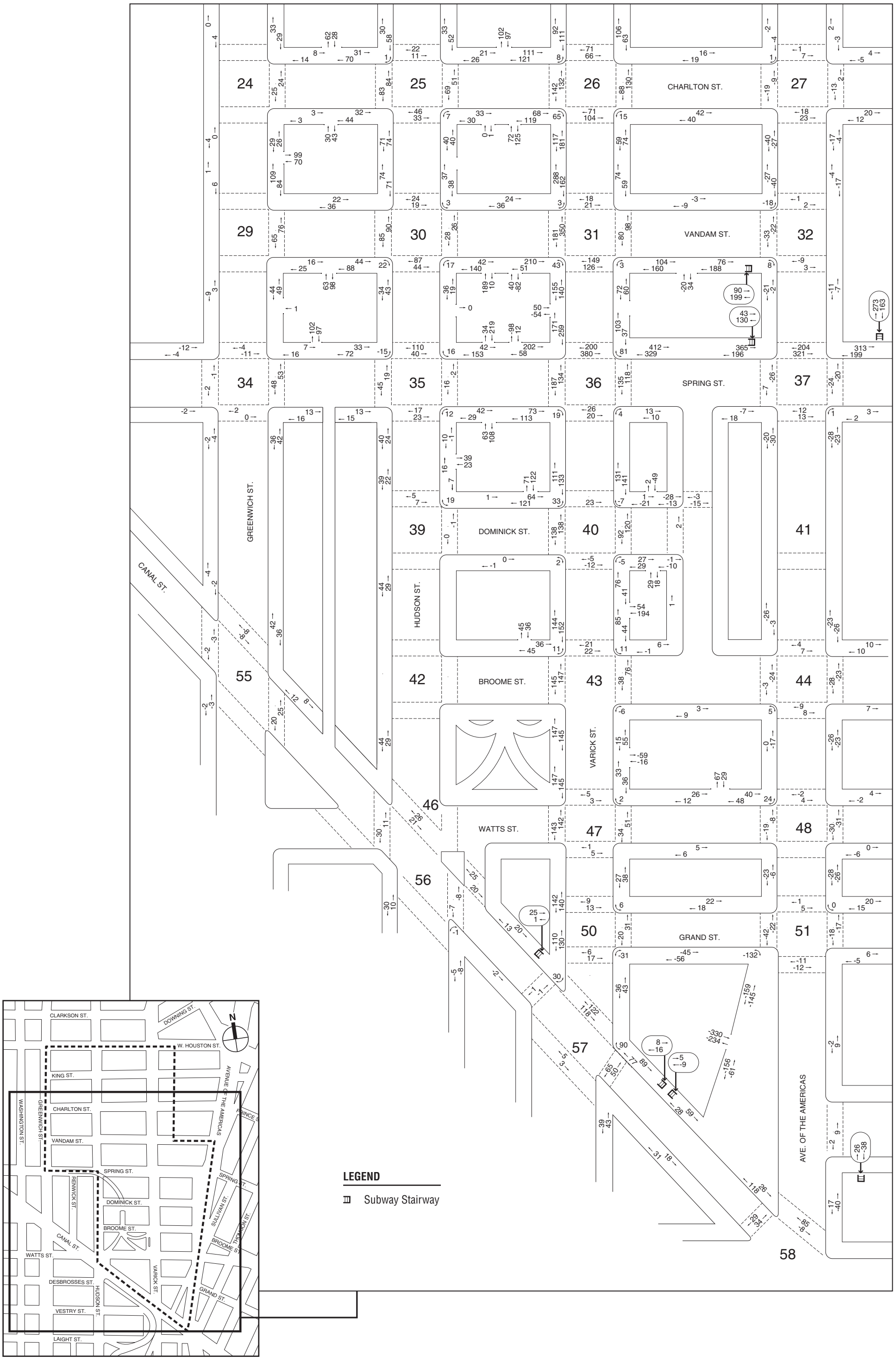
Net Incremental Pedestrian Volumes
Weekday Midday Peak Hour
Figure 13-24A



Net Incremental Pedestrian Volumes
Weekday Midday Peak Hour
Figure 13-24B

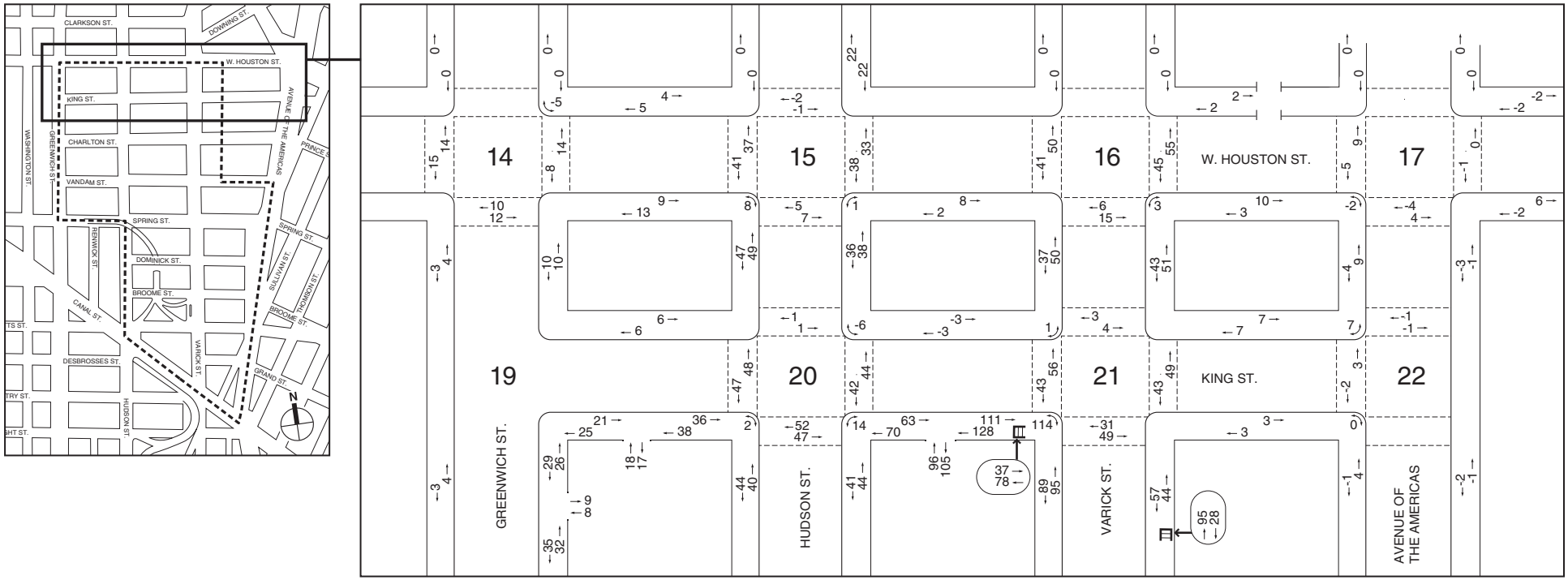


Net Incremental Pedestrian Volumes
Weekday PM Peak Hour
Figure 13-25A

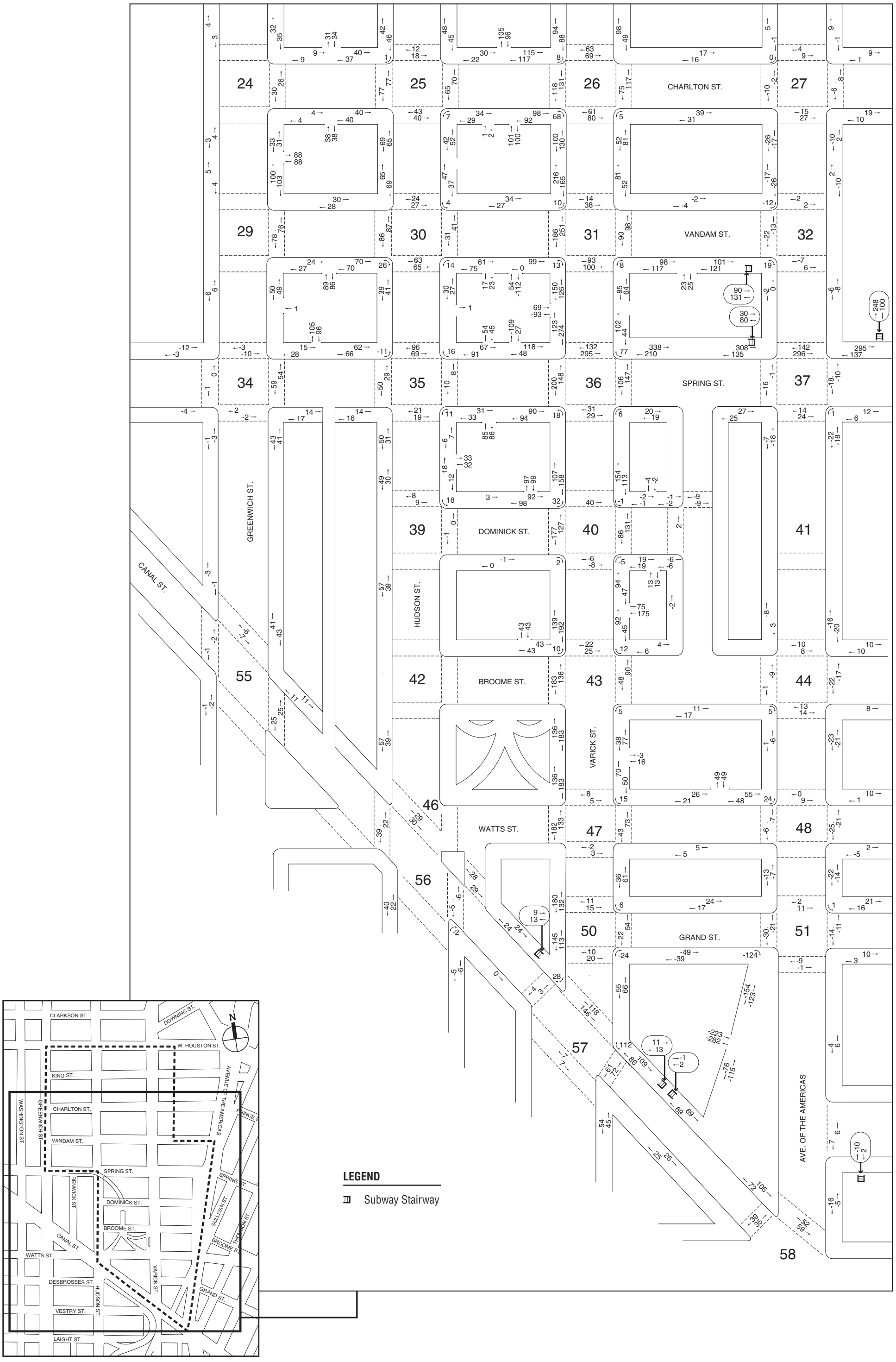


HUDSON SQUARE REZONING

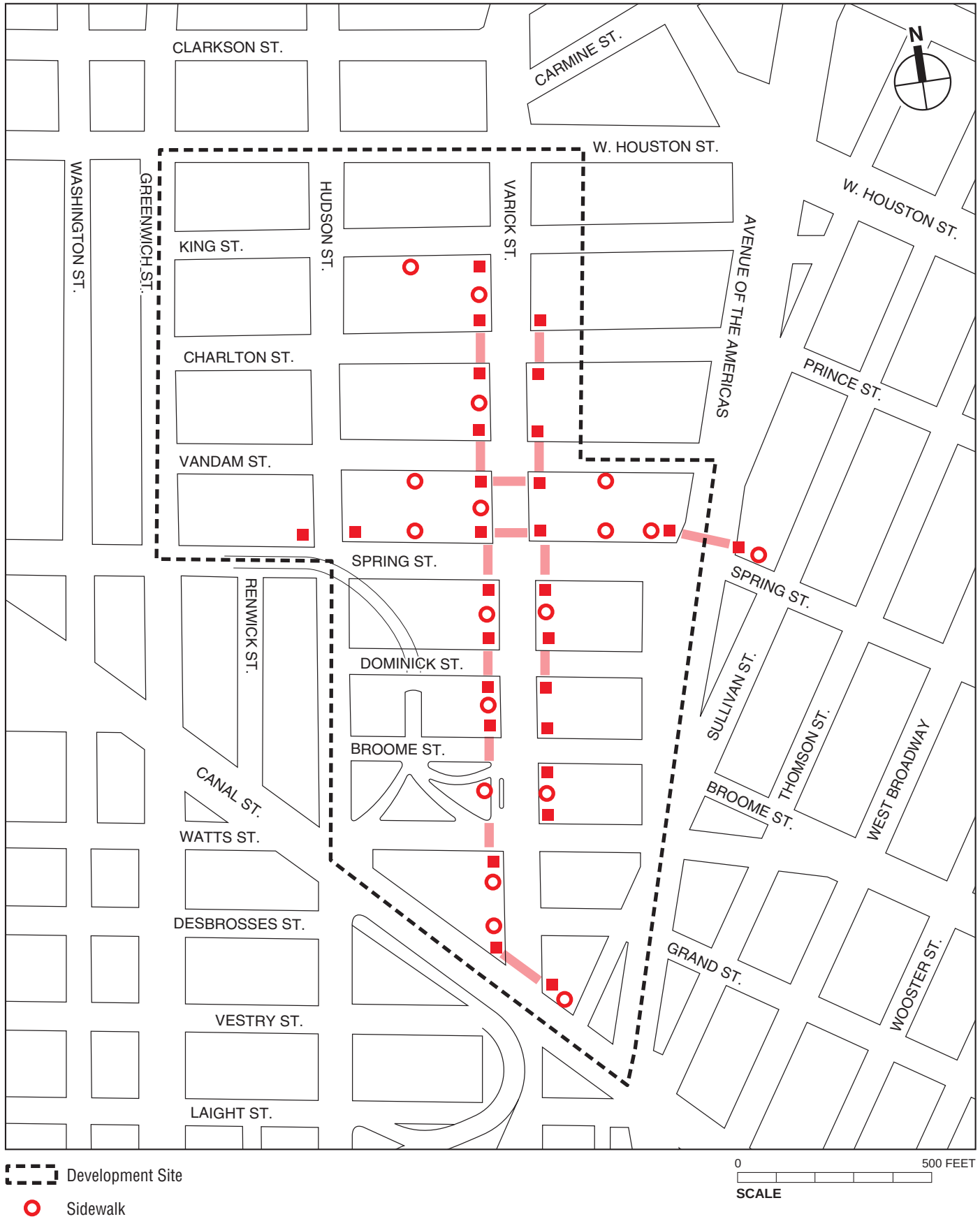
Net Incremental Pedestrian Volumes
Weekday PM Peak Hour
Figure 13-25B



Net Incremental Pedestrian Volumes
Saturday Peak Hour
Figure 13-26A



Net Incremental Pedestrian Volumes
Saturday Peak Hour
Figure 13-26B



HUDSON SQUARE REZONING

Pedestrian Analysis Locations
Figure 13-27

congestion levels are more noticeable and individual cycle failures (a condition where motorists may have to wait for more than one green phase to clear the intersection) can occur. Conditions at LOS E and F reflect poor service levels, and cycle breakdowns are frequent. The *HCM* methodology also provides for a summary of the total intersection operating conditions. The analysis chooses the two critical movements (the worst case from each roadway) and calculates a summary critical v/c ratio. The overall intersection delay, which determines the intersection's LOS, is based on a weighted average of control delays of the individual lane groups. Within New York City, the midpoint of LOS D (45 seconds of delay) is generally considered as the threshold between acceptable and unacceptable operations.

Table 13-11
Pedestrian Analysis Locations

Intersection No.	Location	Elements
1	Avenue of the Americas and Spring Street	North Crosswalk
		Northeast Corner/ Northwest Corner
		North sidewalk between Avenue of the Americas and Sullivan Street (on Spring Street)
		North sidewalk between Avenue of the Americas and Varick Street (on Spring Street)
2	Varick Street and King Street	Southwest Corner
		South sidewalk between Varick Street and Hudson Street (on King Street)
		West sidewalk between King Street and Charlton Street (on Varick Street, north end of sidewalk)
3	Varick Street and Charlton Street	North Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		West sidewalk between King Street and Charlton Street (on Varick Street, south end of sidewalk)
		West sidewalk between Charlton Street and Vandam Street (on Varick Street, north end of sidewalk)
4	Varick Street and Vandam Street	South Crosswalk/ East Crosswalk/ West Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		South sidewalk between Varick Street and Hudson Street (on Vandam Street, east end of sidewalk)
		West sidewalk between Charlton Street and Vandam Street (on Varick Street, south end of sidewalk)
		West sidewalk between Vandam Street and Spring Street (on Varick Street, north end of sidewalk)
5	Varick Street and Spring Street	North Crosswalk/ East Crosswalk/ West Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		North sidewalk between Avenue of the Americas and Varick Street (on Spring Street, west end of sidewalk)
		North sidewalk between Varick Street and Hudson Street (on Spring Street, east end of sidewalk)
		West sidewalk between Vandam Street and Spring Street (on Varick Street, south end of sidewalk)
6	Varick Street and Dominick Street	East Crosswalk/ West Crosswalk
		Northeast Corner/ Southeast Corner/ Southwest Corner / Northwest Corner
		East sidewalk between Spring Street and Dominick Street (on Varick Street)
		West sidewalk between Spring Street and Dominick Street (on Varick Street)
		West sidewalk between Dominick Street and Broome Street (on Varick Street)
7	Varick Street and Broome Street	West Crosswalk
		Northeast Corner/ Southeast Corner/ Northwest Corner
		East sidewalk between Broome Street and Watts Street (on Varick Street, north end of sidewalk)
		West sidewalk between Broome Street and Watts Street (on Varick Street, north end of sidewalk)
8	Varick Street and Watts Street	West Crosswalk
		Northeast Corner/ Southwest Corner
		East sidewalk between Broome Street and Watts Street (on Varick Street, south end of sidewalk)
		West sidewalk between Broome Street and Watts Street (on Varick Street, south end of sidewalk)
9	Varick Street and Grand Street	West sidewalk between Watts Street and Grand Street (on Varick Street)
10	Varick Street and Canal Street	North Crosswalk
		Northeast Corner/ Northwest Corner
		West sidewalk between Grand Street and Canal Street (on Varick Street)
		North sidewalk between Varick Street and Avenue of the Americas (on Canal Street)
11	Hudson Street and Spring Street	Northeast Corner/ Northwest Corner
		North sidewalk between Hudson Street and Varick Street (on Spring Street, west end of sidewalk)

Table 13-12
LOS Criteria for Signalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	>10.0 and ≤ 20.0 seconds
C	>20.0 and ≤ 35.0 seconds
D	>35.0 and ≤ 55.0 seconds
E	>55.0 and ≤ 80.0 seconds
F	>80.0 seconds
Source:	Transportation Research Board. *Highway Capacity Manual*, 2000.

Significant Impact Criteria

According to the criteria presented in the *CEQR Technical Manual*, impacts are considered significant and require examination of mitigation if they result in an increase in the With-Action condition of 5 or more seconds of delay in a lane group over No-Action levels beyond mid-LOS D. For No-Action LOS E, a 4-second increase in delay is considered significant. For No-Action LOS F, a 3-second increase in delay is considered significant. In addition, impacts are considered significant if levels of service deteriorate from acceptable A, B, or C in the No-Action condition to marginally unacceptable LOS D (a delay in excess of 45 seconds, the midpoint of LOS D), or unacceptable LOS E or F in the With-Action condition.

UNSIGNALIZED INTERSECTIONS

For unsignalized intersections, the average control delay is defined as the total elapsed time from which a vehicle stops at the end of the queue until the vehicle departs from the stop line. This includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average control delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The LOS criteria for unsignalized intersections are summarized in **Table 13-13**.

Table 13-13
LOS Criteria for Unsignalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	> 10.0 and ≤ 15.0 seconds
C	> 15.0 and ≤ 25.0 seconds
D	> 25.0 and ≤ 35.0 seconds
E	> 35.0 and ≤ 50.0 seconds
F	> 50.0 seconds
Source:	Transportation Research Board. *Highway Capacity Manual*, 2000.

The LOS thresholds for unsignalized intersections are different from those for signalized intersections. The primary reason is that drivers expect different levels of performance from different types of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection; hence, the corresponding control delays are higher at a signalized intersection than at an unsignalized intersection for the same LOS. In addition, certain driver behavioral considerations combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, whereas

drivers on minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections. For these reasons, the corresponding delay thresholds for unsignalized intersections are lower than those of signalized intersections. As with signalized intersections, within New York City, the midpoint of LOS D (30 seconds of delay) is generally perceived as the threshold between acceptable and unacceptable operations.

Significant Impact Criteria

The same sliding scale of significant delays described for signalized intersections applies for unsignalized intersections. For the minor street to trigger significant impacts, at least 90 passenger car equivalents (PCE) must be identified in the With-Action condition in any peak hour.

TRANSIT OPERATIONS

SUBWAY STATION ELEMENTS

The methodology for assessing station circulation (stairs, escalators, and passageways) and fare control (regular turnstiles, high entry/exit turnstiles, and high exit turnstiles) elements compares the user volume with the analyzed element's design capacity, resulting in a volume-to-capacity (v/c) ratio.

For stairs, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction or counter-flow between upward and downward pedestrians (up to 10 percent capacity reduction is applied to account for counter-flow friction), surging of exiting pedestrians (up to 25 percent capacity reduction is applied to account for detraining surges near platforms), and the average area required for circulation. For passageways, similar considerations are made. For escalators and turnstiles, capacities are measured by the number and width of an element and the NYCT optimum capacity per element, also account for the potential for surging of exiting pedestrians. In the analysis for each of these elements, volumes and capacities are presented for 15-minute intervals.

The estimated v/c ratio is compared with NYCT criteria to determine a LOS for the operation of an element, as summarized in **Table 13-14**.

Table 13-14
LOS Criteria for Subway Station Elements

LOS	V/C Ratio
A	0.00 to 0.45
B	0.45 to 0.70
C	0.70 to 1.00
D	1.00 to 1.33
E	1.33 to 1.67
F	Above 1.67

Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (February 2012).

At LOS A ("free flow") and B ("fluid flow"), there is sufficient area to allow pedestrians to freely select their walking speed and bypass slower pedestrians. When cross and reverse flow movement exists, only minor conflicts may occur. At LOS C ("fluid, somewhat restricted"), movement is fluid although somewhat restricted. While there is sufficient room for standing without personal contact, circulation through queuing areas may require adjustments to walking

speed. At LOS D ("crowded, walking speed restricted"), walking speed is restricted and reduced. Reverse and cross flow movement is severely restricted because of congestion and the difficult passage of slower moving pedestrians. At LOS E ("congested, some shuffling and queuing") and F ("severely congested, queued"), walking speed is restricted. There is also insufficient area to bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

Significant Impact Criteria

The determination of significant impacts for station elements varies based on their type and use. For stairs and passageways, significant impacts are defined in term of width increment threshold (WIT) based on the minimum amount of additional capacity that would be required either to mitigate the location to its service conditions (LOS) under the No-Action levels, or to bring it to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Significant impacts are typically considered to occur once the WITs in **Table 13-15** are reached or exceeded.

Table 13-15
Significant Impact Guidance for Stairs and Passageways

No-Action V/C Ratio	WIT for Significant Impact (inches)	
	Stairway	Passageway
1.00 to 1.09	8.0	13.0
1.10 to 1.19	7.0	11.5
1.20 to 1.29	6.0	10.0
1.30 to 1.39	5.0	8.5
1.40 to 1.49	4.0	6.0
1.50 to 1.59	3.0	4.5
1.60 and up	2.0	3.0

Notes: WIT = Width Increment Threshold
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

For escalators and control area elements, impacts are significant if the Proposed Action causes a v/c ratio to increase from below 1.00 to 1.00 or greater. Where a facility is already at or above its capacity (a v/c of 1.00 or greater) in the No-Action condition, a 0.01 increase in v/c ratio is also significant.

SUBWAY AND BUS LINE-HAUL CAPACITIES

As per the *CEQR Technical Manual*, line-haul capacities are evaluated when a Proposed Action is anticipated to generate a perceptible number of passengers on particular subway and bus routes. For subways, if, on average, a subway car for a particular route is expected to incur five or more riders from a Proposed Action, a review of ridership level at its maximum load point and/or other project-specific load points would be required to determine if the route's guideline (or practical) capacity would be exceeded. NYCT operates six different types of subway cars with different seating and guideline capacities. The peak period guideline capacity of a subway car, which ranges from 110 to 175 passengers, is compared with ridership levels to determine the acceptability of conditions. Bus line-haul capacities are evaluated when a Proposed Action is anticipated to generate 50 or more bus passengers to a single bus line in one direction. The assessment of bus line-haul conditions involves analyzing bus routes at their peak load points and, if necessary, also their bus stops closest to the project site to identify the potential for the analyzed routes to exceed their guideline (or practical) capacities. NYCT and the MTA Bus Company operate three types of buses: standard and articulated buses, and over-the-road coaches.

During peak hours, standard buses operate with up to 54 passengers per bus, articulated buses operate with up to 85 passengers per bus, and over-the-road coaches operate with up to 55 passengers per bus.

Significant Impact Criteria

For subways, projected increases from the No-Action condition within guideline capacity to a With-Action condition that exceeds guideline capacity may be a significant impact. Since there are constraints on what service improvements are available to NYCT, significant line-haul capacity impacts on subway routes are generally disclosed but would usually remain unmitigated. For buses, an increase in bus load levels greater than the maximum capacity at any load point is defined as a significant adverse impact. While subject to operational and fiscal constraints, bus impacts can typically be mitigated by increasing service frequency. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, crosswalks, and corner reservoir capacities in relation to the demand imposed on them is evaluated based on the methodologies presented in the 2000 *HCM*, pursuant to procedures detailed in the *CEQR Technical Manual*.

Sidewalks are analyzed in terms of pedestrian flow. The calculation of the average pedestrians per minute per foot (PMF) of effective walkway width is the basis for a sidewalk LOS analysis. The determination of walkway LOS is also dependent on whether the pedestrian flow being analyzed is best described as "non-platoon" or "platoon." Non-platoon flow occurs when pedestrian volume within the peak 15-minute period is relatively uniform, whereas, platoon flow occurs when pedestrian volumes vary significantly with the peak 15-minute period. Such variation typically occurs near bus stops, subway stations, and/or where adjacent crosswalks account for much of the walkway's pedestrian volume.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of traffic signals. Street corners must be able to provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the street or moving around the corner). The *HCM* methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians.

The total "time-space" available for these activities, expressed in square feet-second, is calculated by multiplying the net area of the corner (in square feet) by the signal's cycle length. The analysis then determines the total circulation time for all pedestrian movements at the corner per signal cycle (expressed as pedestrians per second). The ratio of net time-space divided by the total pedestrian circulation volume per signal cycle provides the LOS measurement of square feet per pedestrian (SFP).

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the width of the street) and the permitted crossing time. This measure is expressed in square feet-second. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the total crosswalk pedestrian occupancy time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for

vehicular turning movements that traverse the crosswalk. The LOS standards for sidewalks, corner reservoirs, and crosswalks are summarized in **Table 13-16**. The *CEQR Technical Manual* specifies acceptable LOS in Central Business District (CBD) areas is mid-LOS D or better.

Table 13-16
Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks		Corner Reservoirs and Crosswalks
	Non-Platoon Flow	Platoon Flow	
A	≤ 5 PMF	≤ 0.5 PMF	> 60 SFP
B	> 5 and ≤ 7 PMF	> 0.5 and ≤ 3 PMF	> 40 and ≤ 60 SFP
C	> 7 and ≤ 10 PMF	> 3 and ≤ 6 PMF	> 24 and ≤ 40 SFP
D	> 10 and ≤ 15 PMF	> 6 and ≤ 11 PMF	> 15 and ≤ 24 SFP
E	> 15 and ≤ 23 PMF	> 11 and ≤ 18 PMF	> 8 and ≤ 15 SFP
F	> 23 PMF	> 18 PMF	≤ 8 SFP

Notes: PMF = pedestrians per minute per foot; SFP = square feet per pedestrian.
Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

SIGNIFICANT IMPACT CRITERIA

The determination of significant pedestrian impacts considers the level of predicted deterioration in pedestrian flow or decrease in pedestrian space between the No-Action and With-Action conditions. For different pedestrian elements, flow conditions, and area types, the CEQR procedure for impact determination corresponds with various sliding-scale formulas, as further detailed below.

Sidewalks

There are two sliding-scale formulas for determining significant sidewalk impacts. For non-platoon flow, the increase in average pedestrian flow rate (Y) in PMF needs to be greater or equal to 3.5 minus X divided by 8.0 (where X is the No-Action pedestrian flow rate in PMF [$Y \geq 3.5 - X/8.0$]) for it to be a significant impact. For platoon flow, the sliding-scale formula is $Y \geq 3.0 - X/8.0$. Since deterioration in pedestrian flow within acceptable levels would not constitute a significant impact, these formulas would apply only if the With-Action pedestrian flow exceeds LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 13-17** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Corner Reservoirs and Crosswalks

The determination of significant corner and crosswalk impacts is also based on a sliding scale using the following formula: $Y \geq X/9.0 - 0.3$, where Y is the decrease in pedestrian space in SFP and X is the No-Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, this formula would apply only if the With-Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 13-18** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir and crosswalk impacts.

Table 13-17
Significant Impact Guidance for Sidewalks

Non-Platoon Flow				Platoon Flow			
Sliding Scale Formula: ***Y ≥ 3.5 – X/8.0***				**Sliding Scale Formula:** ***Y ≥ 3.0 – X/8.0***			
Non-CBD Areas		**CBD Areas**		**Non-CBD Areas**		**CBD Areas**	
No-Action Ped. Flow (X, PMF)	**With-Action Ped. Flow Incr. (Y, PMF)**	**No-Action Ped. Flow (X, PMF)**	**With-Action Ped. Flow Incr. (Y, PMF)**	**No-Action Ped. Flow (X, PMF)**	**With-Action Ped. Flow Incr. (Y, PMF)**	**No-Action Ped. Flow (X, PMF)**	**With-Action Ped. Flow Incr. (Y, PMF)**
7.4 to 7.8	≥ 2.6	–	–	3.4 to 3.8	≥ 2.6	–	–
7.9 to 8.6	≥ 2.5	–	–	3.9 to 4.6	≥ 2.5	–	–
8.7 to 9.4	≥ 2.4	–	–	4.7 to 5.4	≥ 2.4	–	–
9.5 to 10.2	≥ 2.3	–	–	5.5 to 6.2	≥ 2.3	–	–
10.3 to 11.0	≥ 2.2	10.3 to 11.0	≥ 2.2	6.3 to 7.0	≥ 2.2	6.3 to 7.0	≥ 2.2
11.1 to 11.8	≥ 2.1	11.1 to 11.8	≥ 2.1	7.1 to 7.8	≥ 2.1	7.1 to 7.8	≥ 2.1
11.9 to 12.6	≥ 2.0	11.9 to 12.6	≥ 2.0	7.9 to 8.6	≥ 2.0	7.9 to 8.6	≥ 2.0
12.7 to 13.4	≥ 1.9	12.7 to 13.4	≥ 1.9	8.7 to 9.4	≥ 1.9	8.7 to 9.4	≥ 1.9
13.5 to 14.2	≥ 1.8	13.5 to 14.2	≥ 1.8	9.5 to 10.2	≥ 1.8	9.5 to 10.2	≥ 1.8
14.3 to 15.0	≥ 1.7	14.3 to 15.0	≥ 1.7	10.3 to 11.0	≥ 1.7	10.3 to 11.0	≥ 1.7
15.1 to 15.8	≥ 1.6	15.1 to 15.8	≥ 1.6	11.1 to 11.8	≥ 1.6	11.1 to 11.8	≥ 1.6
15.9 to 16.6	≥ 1.5	15.9 to 16.6	≥ 1.5	11.9 to 12.6	≥ 1.5	11.9 to 12.6	≥ 1.5
16.7 to 17.4	≥ 1.4	16.7 to 17.4	≥ 1.4	12.7 to 13.4	≥ 1.4	12.7 to 13.4	≥ 1.4
17.5 to 18.2	≥ 1.3	17.5 to 18.2	≥ 1.3	13.5 to 14.2	≥ 1.3	13.5 to 14.2	≥ 1.3
18.3 to 19.0	≥ 1.2	18.3 to 19.0	≥ 1.2	14.3 to 15.0	≥ 1.2	14.3 to 15.0	≥ 1.2
19.1 to 19.8	≥ 1.1	19.1 to 19.8	≥ 1.1	15.1 to 15.8	≥ 1.1	15.1 to 15.8	≥ 1.1
19.9 to 20.6	≥ 1.0	19.9 to 20.6	≥ 1.0	15.9 to 16.6	≥ 1.0	15.9 to 16.6	≥ 1.0
20.7 to 21.4	≥ 0.9	20.7 to 21.4	≥ 0.9	16.7 to 17.4	≥ 0.9	16.7 to 17.4	≥ 0.9
21.5 to 22.2	≥ 0.8	21.5 to 22.2	≥ 0.8	17.5 to 18.2	≥ 0.8	17.5 to 18.2	≥ 0.8
22.3 to 23.0	≥ 0.7	22.3 to 23.0	≥ 0.7	18.3 to 19.0	≥ 0.7	18.3 to 19.0	≥ 0.7
> 23.0	≥ 0.6	> 23.0	≥ 0.6	> 19.0	≥ 0.6	> 19.0	≥ 0.6

Notes: PMF = pedestrians per minute per foot; Y = increase in average pedestrian flow rate in PMF; X = No-Action pedestrian flow rate in PMF.
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

Table 13-18
Significant Impact Guidance for Corners and Crosswalks

Sliding Scale Formula: ***Y ≥ X/9.0 – 0.3***			
Non-CBD Areas		**CBD Areas**	
No-Action Pedestrian Space (X, SFP)	**With-Action Pedestrian Space Reduction (Y, SFP)**	**No-Action Pedestrian Space (X, SFP)**	**With-Action Pedestrian Space Reduction (Y, SFP)**
25.8 to 26.6	≥ 2.6	–	–
24.9 to 25.7	≥ 2.5	–	–
24.0 to 24.8	≥ 2.4	–	–
23.1 to 23.9	≥ 2.3	–	–
22.2 to 23.0	≥ 2.2	–	–
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2	< 5.1	≥ 0.2

Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No-Action pedestrian space in SFP.
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

An evaluation of vehicular and pedestrian safety is necessary for locations within the traffic and pedestrian study areas that have been identified as high accident locations, where 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes occurred in any consecutive 12 months of the most recent 3-year period for which data are available. For these locations, accident trends are identified to determine whether projected vehicular and pedestrian traffic would further impact safety at these locations. The determination of potential significant safety impacts depends on the type of area where the project site is located, traffic volumes, accident types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety are identified and coordinated with NYCDOT.

PARKING CONDITIONS ASSESSMENT

The parking analysis identifies the extent to which off-street parking is available and utilized under existing and future conditions. It takes into consideration anticipated changes in area parking supply and provides a comparison of parking needs versus availability to determine if a parking shortfall is likely to result from parking displacement attributable to or additional demand generated by a Proposed Action. Typically, this analysis encompasses a study area within a ¼mile of the project site. If the analysis concludes a shortfall in parking within the ¼ mile study area, the study area could sometimes be extended to a ½ mile to identify additional parking supply.

For proposed projects located in Manhattan or other CBD areas, the inability of the proposed project or the surrounding area to accommodate the project's future parking demand is considered a parking shortfall, but is generally not considered significant due to the magnitude of available alternative modes of transportation. For other areas in New York City, a parking shortfall that exceeds more than half the available on-street and off-street parking spaces within a ¼ mile of the project site may be considered significant. Additional factors, such as the availability and extent of transit in the area, proximity of the project to such transit, and patterns of automobile usage by area residents, could be considered to determine the significance of the identified parking shortfall. In some cases, if there is adequate parking supply within a ½ mile of the project site, the projected parking shortfall may also not necessarily be considered significant.

F. TRAFFIC

2011 EXISTING CONDITIONS

ROADWAY NETWORK

The traffic study area characterizes the Lower Manhattan grid pattern with major north-south avenues and east-west minor cross streets. Many of these roadways provide access to and egress from the Holland Tunnel.

West Street, located on the western edge of the study area, is a major north/south arterial on the west side of Manhattan. It operates with four to five moving lanes (including turning lanes) in each direction. Restrictive parking regulations prevail along certain segments of the arterial. West Street is a through truck route between the Brooklyn-Battery Tunnel and West 34th Street. It operates with a center median and exclusive turn lanes at major intersections. Traffic flow on the arterial is controlled by signals that are often spaced by several blocks and operating at long 120- to 150-second cycles.

Canal Street extends in the east-west direction and is an important commuter route for traffic entering and exiting Manhattan via the Manhattan Bridge. It provides access to both the Manhattan Bridge on the east and the Holland Tunnel and West Street on the west. Canal Street generally consists of three travel lanes in each direction with "No Standing Anytime" curbside parking regulations on either side along most of the study area. Canal Street is a through truck route along its entire length. Left turn prohibitions from Canal Street are in effect at several intersections in the study area due to heavy through volumes. Canal Street is generally characterized by mixed-use developments.

Varick Street is a southerly extension of the Seventh Avenue South corridor and runs one way southbound; the roadway consists of a 60-foot wide roadway with four travel lanes. Varick Street's eastern and western travel lanes are separated by bollards between Vandam Street and the entrance to the Holland Tunnel at Watts street, which channelizes southbound through traffic, and relieves congestion caused by tunnel-bound traffic. Curbside parking is generally prohibited along both sides of the street. Varick Street is generally characterized by commercial and retail uses. It is a local and through truck route within the study area.

Hudson Street is a one-way northbound roadway that is approximately 50 feet wide. North of Canal Street, Hudson Street consists of two travel lanes and curbside parking interspersed with loading/unloading regulations. North of Dominick Street, a Class II northbound bike lane is also provided. Hudson Street is a local truck route within the study area. South of Canal Street, Hudson Street consists of four travel lanes and intermittent curbside parking. Hudson Street provides access to the Holland Tunnel via an entrance just north of Canal Street. In addition, a channelized right-turn lane also allows for turns from Hudson Street onto eastbound Canal Street.

Houston Street is a primarily two-way east-west arterial spanning the width of Manhattan, with East Houston Street extending from the East River to Broadway, and West Houston Street extending from Broadway to the Hudson River. East of Avenue of the Americas, the roadway is separated by a pedestrian refuge island and generally contains three eastbound travel lanes and four westbound travel lanes. West of Sixth Avenue, Houston Street runs one-way westbound, with two travel lanes. There is curbside parking or bus staging along certain segments of the street.

Avenue of the Americas is a one-way northbound roadway extending from Franklin Street to West 59th Street. It generally contains four travel lanes. There is curbside parking or bus staging along certain segments of the street. Avenue of the Americas is a through truck route within the study area.

Broome Street is oriented in the east-west direction and is one-way westbound within the study area. Within the study area, it is generally characterized by two travel lanes with parking on both sides.

Spring Street is a one-way eastbound local roadway that ranges in width from 32 to 45 feet within the study area. Curbside parking along both sides of Spring Street is generally restricted on weekdays.

Within the study area, Grand Street runs in the eastbound direction, and generally consists of one travel lane with parking allowed on both sides of the street. Grand Street also has a Class II eastbound bike lane that provides a travel lane designated for the exclusive use of bicycles protected from traffic by an offset parking lane. Within the study area, Grand Street is mostly characterized by residential and retail uses.

Other principal streets within the study area include Greenwich Street and Washington Street, which form a one-way pair of streets, running northbound and southbound, respectively, within the study area. Watts Street branches off from Broome Street at West Broadway and runs one-way westbound, providing direct access to the Holland Tunnel via an entrance just west of Varick Street. Near the northern border of the study area, the principal one-way crosstown streets are King Street, Charlton Street, Vandam Street and Dominick Street. These streets run eastbound and westbound, providing local access to the study area.

TRAFFIC CONDITIONS

Existing traffic volumes for the study area intersections were established based on field counts (including manual turning movement counts and Automatic Traffic Recorder [ATR] counts) conducted from June 4 to June 15, 2010 and from November 10 to November 21, 2011. Overall, based on a comparison of the 2010 and 2011 ATR data, weekday traffic volumes collected in 2010 were approximately 1 percent higher than those collected in 2011, while Saturday traffic volumes collected in 2011 were approximately 3 percent higher than those collected in 2010. Therefore, where available, weekday volumes gathered in 2010 were incorporated into the study area traffic network with the 2011 collected traffic volumes to develop the existing baseline weekday traffic volume networks. Saturday 2010 volumes were increased by approximately 3 percent and incorporated into the study area traffic network with the 2011 collected traffic volumes to develop the existing baseline Saturday traffic volume network.

As per the *CEQR Technical Manual*, the typical weekday analysis peak hours for Manhattan are 8:00 AM to 9:00 AM, 12:00 PM to 1:00 PM, and 5:00 PM to 6:00 PM. For analysis, the highest peak hour traffic volumes (from 8:15 AM to 9:15 AM, 1:00 PM to 2:00 PM, and 4:45 PM to 5:45 PM) during the respective peak periods based on the collected data were used. The hour with the highest traffic volumes during the Saturday midday peak hour was 2:30 PM to 3:30 PM.

Existing traffic volumes for the six additional intersections were also collected in 2010 and 2011 with the exception of the intersection of Varick Street and Clarkson Street/Carmine Street. Existing traffic volumes for the intersection of Varick Street and Clarkson Street/Carmine Street were collected in late September/early October 2012. The existing traffic volumes for the six additional intersections were balanced into the DEIS weekday and Saturday baseline peak hour traffic networks for analysis.

During the 2011 data collection, the New York City Department of Design and Construction (DDC) was at work on a project to install trunk water mains along Hudson Street between Worth Street and Laight Street. Over the duration of this project (September 2010 through winter 2015), traffic pattern changes will be implemented in the study area to facilitate DDC's construction. Specifically:

- Holland Tunnel access from Hudson Street is restricted (no right-turn from Hudson Street to the Holland Tunnel entrance north of Canal Street);
- Variable message sign (VMS) boards have been installed along Hudson Street to advise motorists to use either West Street or Church Street to access the Holland Tunnel; and
- Right-turns from West Street to Canal Street for access to the Holland Tunnel are permitted during peak hours.

It was determined from field observations undertaken in January 2012 that, during the weekday AM, midday, and Saturday afternoon periods, despite DDC construction-related regulations, New York Police Department (NYPD) Traffic Enforcement Agents (TEAs) permit Hudson

Street northbound traffic into the Holland Tunnel at their discretion when they see that the tunnel can process traffic demand. During the weekday PM period, the regulation is strictly enforced, with only a few government or official vehicles permitted to enter the tunnel from Hudson Street northbound.

At the West Street and Canal Street intersection, northbound right-turns are generally not permitted during the weekday PM period. TEAs allow a few vehicles to make the northbound right-turn at their discretion. During the weekday AM, midday, and Saturday afternoon period, there are no restrictions on the northbound right-turn. In addition, during traffic peak hours, TEAs are also positioned at other critical intersections near the Holland Tunnel (including the intersections of Varick Street at Watts and Canal Streets and Avenue of the Americas at Canal Street/Laight Street) overriding traffic signals to facilitate traffic flow.

Data for the intersection of Hudson Street and Canal Street were collected in June 2010, before the above traffic pattern changes took effect. However, a comparison of volume data between 2010 and 2011 showed differences in volumes at nearby intersections. Therefore, these traffic pattern changes were incorporated into the existing conditions analysis. In addition, the DDC project is expected to be completed in 2015. This is before the Proposed Action's 2022 build year. Because it will be completed before the Proposed Action and because the traffic pattern under the existing conditions is generally reflective of conditions before the DDC project construction, there would not be a need to adjust the traffic patterns for the analysis of future conditions.

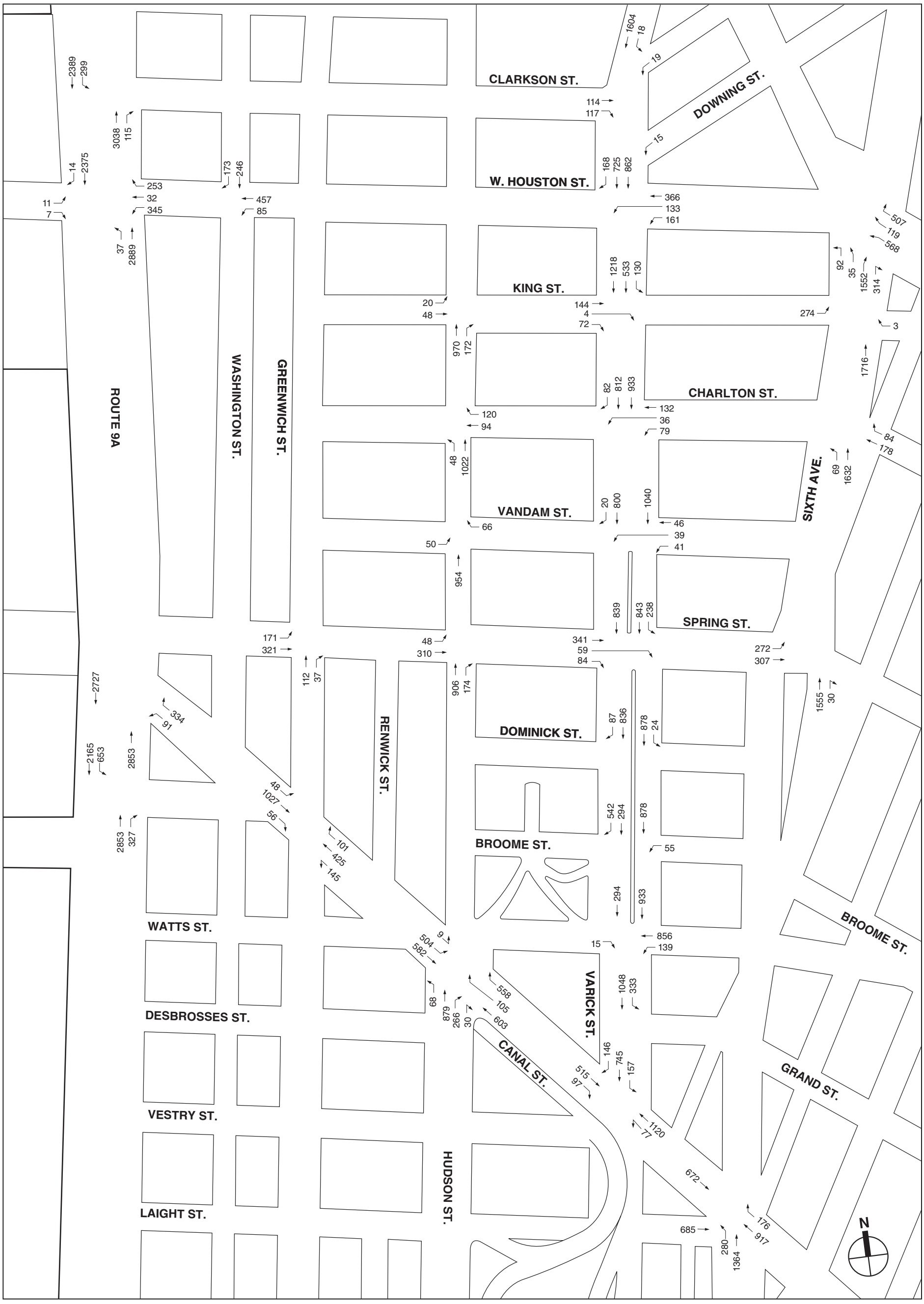
Also as part of the data collection effort, traffic congestion as a result of unmet demand at entrances to the Holland Tunnel caused several intersections along Varick Street and Hudson Street to experience significant start-up lost time, primarily during the weekday PM and Saturday peak hours. Extensive observations were conducted to estimate the additional delays resulted from the extended Holland Tunnel queues. In addition, inventories of roadway geometry, traffic controls, bus stops, and parking regulations/activities were recorded to provide appropriate inputs for the operational analyses. Official signal timings were also obtained from NYCDOT for use in the analysis of the study area signalized intersections. **Figures 13-28** to **13-31** show the 2011 existing traffic volumes for the weekday AM, midday, PM and Saturday peak hours, respectively.

LEVELS OF SERVICE

As discussed above in Section D, "Level 2 Screening Assessment," Hudson Street and Varick Street are separated into through lanes and Holland Tunnel access lanes at intersections near entrances to the Holland Tunnel. The separated lanes exhibit different traffic patterns and vary widely in volume during the peak analysis hours. Therefore, these intersections have been separated into "east lane" and "west lane" sub-intersections for the purposes of this analysis. In addition, the HCS analysis accounted for NYCDOT and field observed start-up lost time in excess of the default 2.0 seconds and/or adjustments to the initial unmet demand during one or more peak analysis hours at the following approaches:

- Eastbound left-turn (to Holland Tunnel) at the Hudson Street and Canal Street intersection;
- Westbound right-turn (to Holland Tunnel) at the Hudson Street and Canal Street intersection;
- Northbound through movement (to Holland Tunnel) at the Hudson Street and Canal Street intersection;

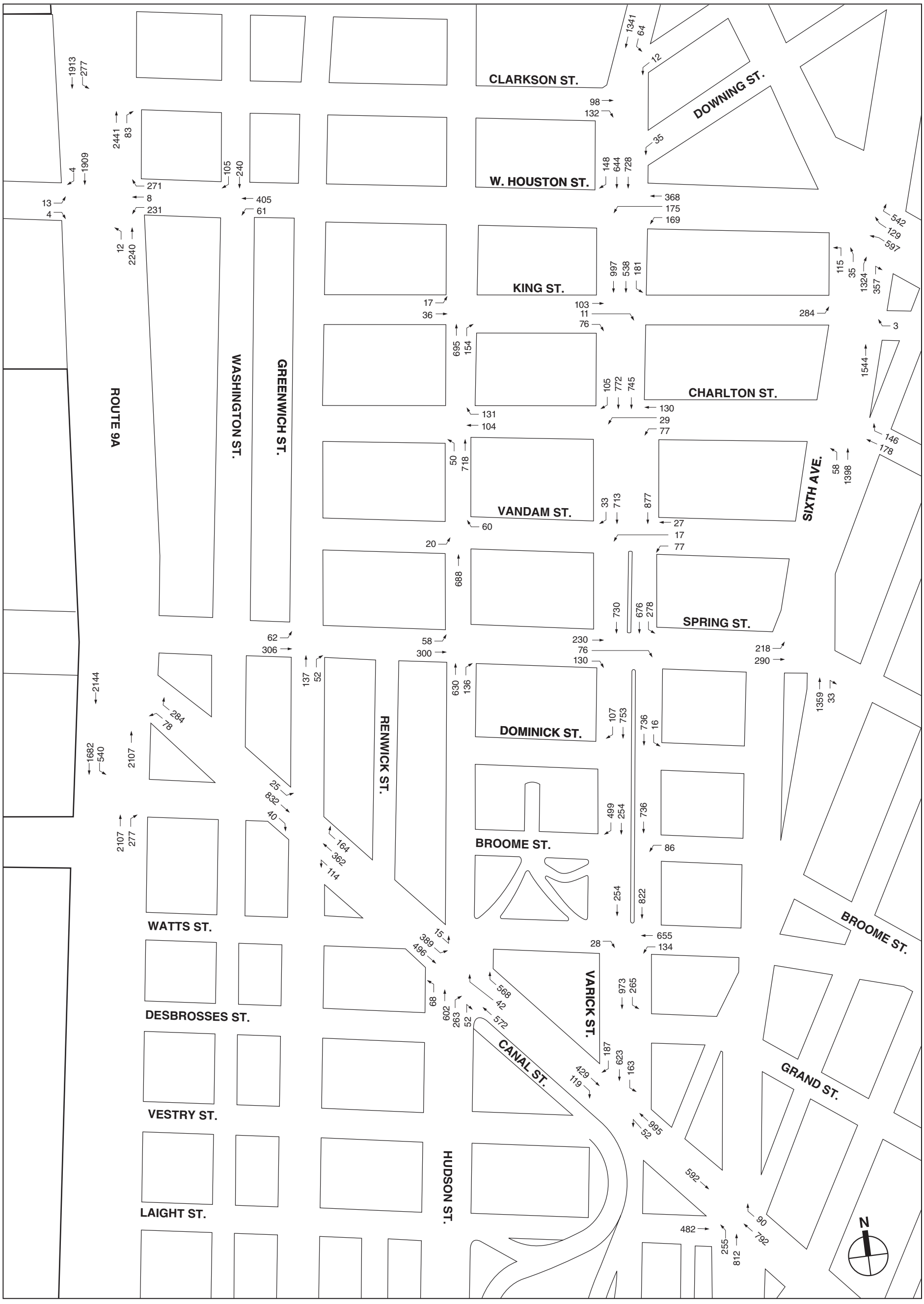
11.13.12



NOT TO SCALE

2011 Existing Traffic Volumes
Weekday AM Peak Hour
Figure 13-28

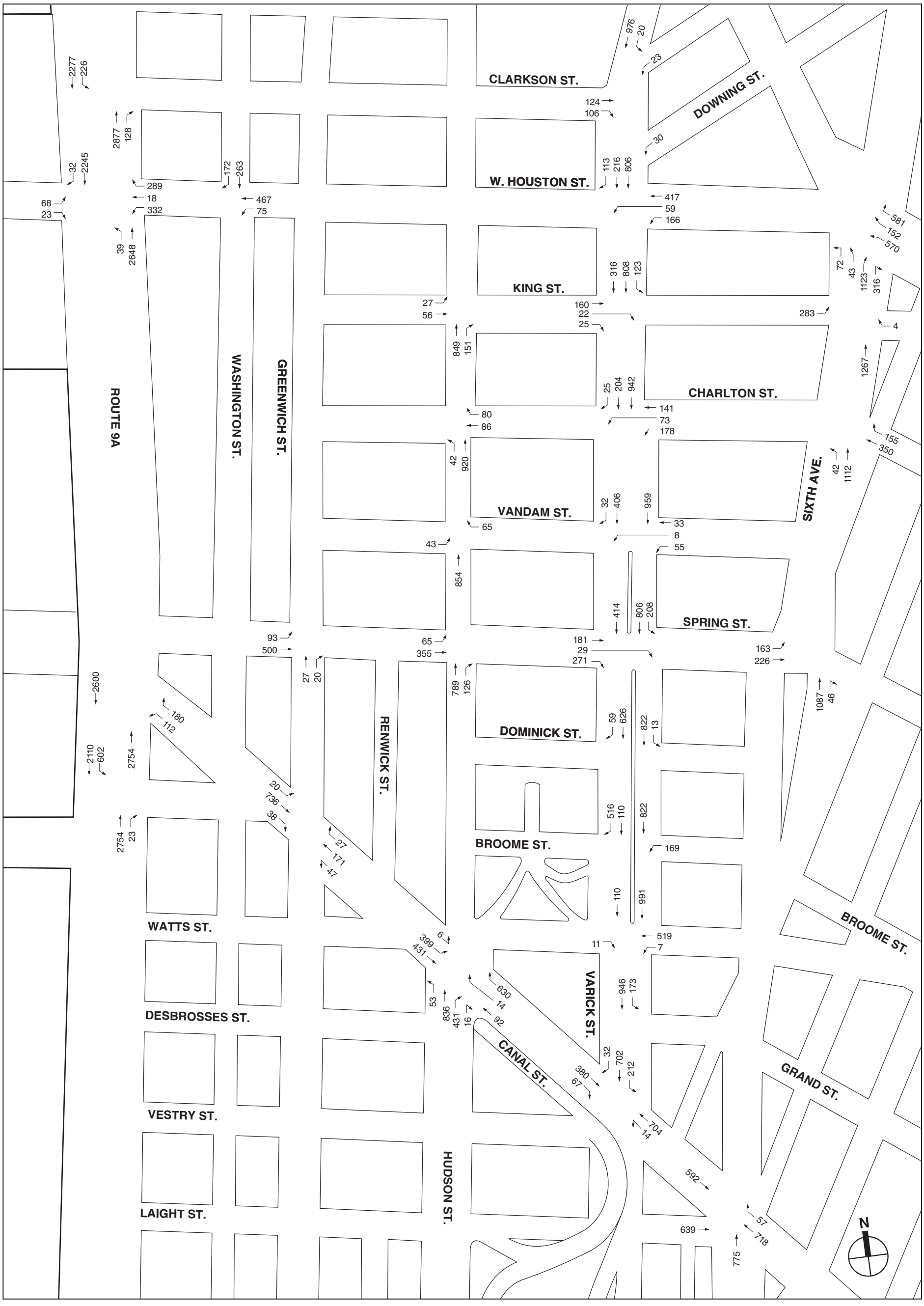
11.13.12



NOT TO SCALE

2011 Existing Traffic Volumes
Weekday Midday Peak Hour
Figure 13-29

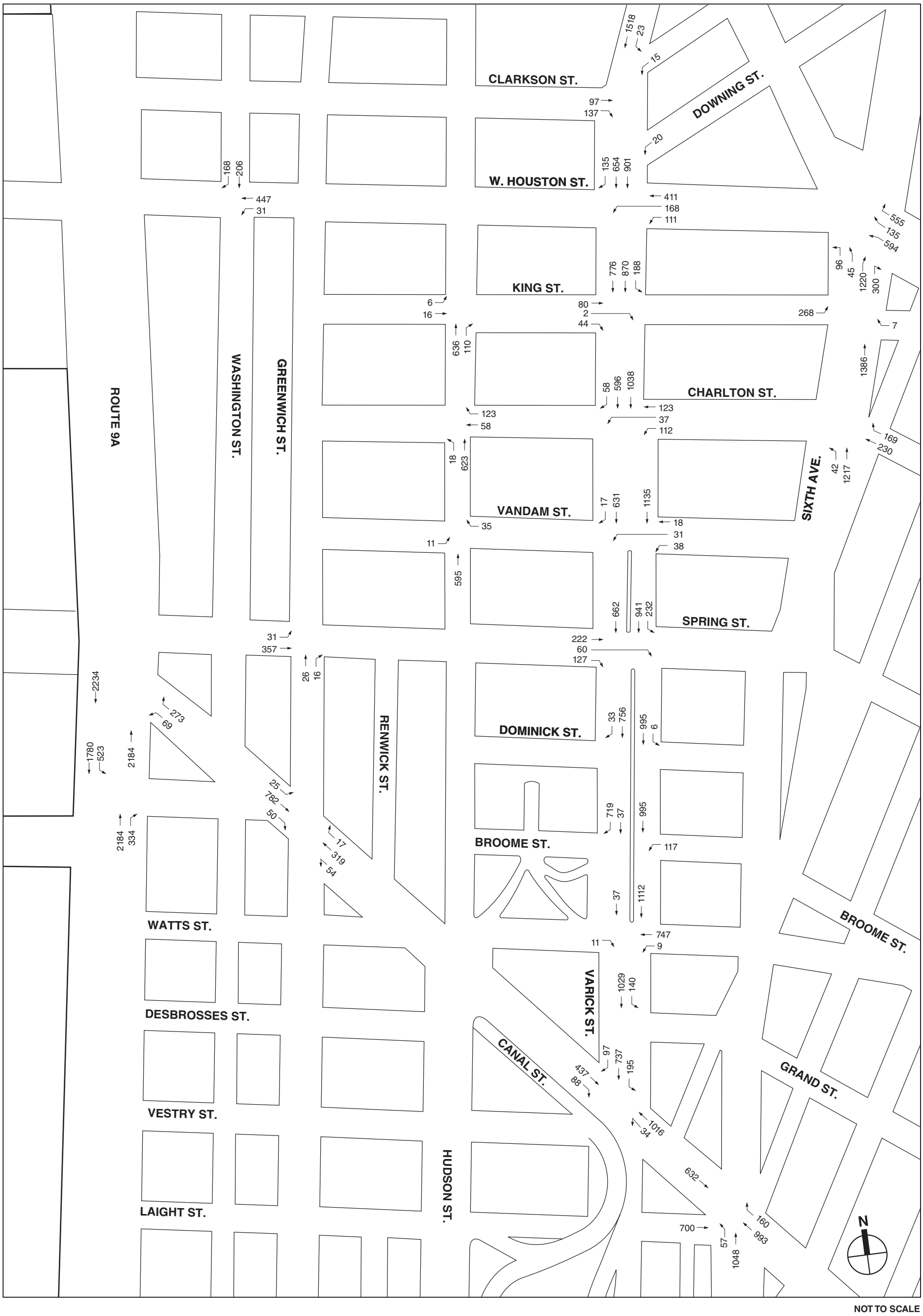
11.13.12



NOT TO SCALE

2011 Existing Traffic Volumes
Weekday PM Peak Hour
Figure 13-30

11.13.12



NOT TO SCALE

HUDSON SQUARE REZONING

2011 Existing Traffic Volumes
Saturday Midday Peak Hour
Figure 13-31

- Southbound through movement (west lanes) at the Varick Street and West Houston Street intersection;
- Southbound through movement (west lanes) at the Varick Street and King Street intersection;
- Southbound through movement (west lanes) at the Varick Street and Charlton Street intersection;
- Southbound through movement (west lanes) at the Varick Street and Vandam Street intersection;
- Eastbound through movement at the Varick Street and Spring Street intersection;
- Eastbound right-turn at the Varick Street and Spring Street intersection;
- Southbound through movement (west lanes) at the Varick Street and Spring Street intersection;
- Southbound through movement (west lanes) at the Varick Street and Dominick Street intersection;
- Southbound through movement (west lanes) at the Varick Street and Broome Street intersection;
- Southbound right-turn (to Holland Tunnel) at the Varick Street and Broome Street intersection;
- Westbound through movement (to Holland Tunnel) at the Varick Street and Watts Street intersection;
- Westbound through movement at the Varick Street and Canal Street intersection;
- Eastbound through movement (Laight Street) at the Avenue of the Americas and Canal Street/Laight Street intersection;
- Westbound through movement (Canal Street) at the Avenue of the Americas and Canal Street/Laight Street intersection;
- Northbound approach at the Avenue of the Americas and Canal Street/Laight Street intersection;
- Eastbound approach at the Greenwich Street and Canal Street intersection; and
- Southbound approach at the Varick Street and Clarkson Street/Carmine Street intersection.

Table 13-19 provides an overview of the levels of service that characterize existing overall intersection conditions during the weekday AM, midday and PM, and Saturday peak hours.

The detailed traffic levels of service tables are provided in Section K, "Detailed Analysis Results Tables" at the end of this chapter. The analysis results shown on **Tables 13-47** to **13-48** indicate that most of the study area's intersection approaches/lane groups operate acceptably—at mid-LOS D (delays of 45 seconds per vehicle [spv] or less for signalized intersections and 30 spv or less for unsignalized intersections) or better for the analysis peak hours. Approaches/lane groups operating at worse than mid-LOS D and those with v/c ratios of 0.90 or greater are listed below.

Table 13-19
Existing Traffic Level of Service Summary

	Weekday			
	AM Peak Hour	**Midday Peak Hour**	**PM Peak Hour**	**Saturday Midday**
Intersections at Overall LOS A/B/C	25	29	17	17
Intersections at Overall LOS D	4	0	11	6
Intersections at Overall LOS E	0	0	1	1
Intersections Overall LOS F	0	0	0	0
Number of individual traffic lane groups at LOS E or F (of 96 movements analyzed during weekday AM, 94 weekday midday, 95 weekday PM, and 69 Saturday)	11	2	23	11
Note: Includes the 28 analyzed intersections (28 signalized and 1 unsignalized).				

West Street

- Southbound left-turn at the West Street and Clarkson Street intersection (LOS F with a v/c ratio of 0.92 during the weekday AM peak hour; LOS D with a delay of 47.4 spv during the weekday midday peak hour; and LOS E during the weekday PM peak hour);
- Eastbound left-turn at the West Street and West Houston Street intersection (LOS D with a delay of 48.2 spv during the weekday AM peak hour; and LOS E during the weekday PM peak hour);
- Eastbound right-turn at the West Street and West Houston Street intersection (LOS D with a delay of 46.1 spv during the weekday AM peak hour; and LOS D with a delay of 47.2 spv during the weekday PM peak hour);
- Westbound left-turn at the West Street and West Houston Street intersection (LOS E during the weekday AM and PM peak hours);
- Westbound left-turn/through at the West Street and West Houston Street intersection (LOS E during the weekday AM and PM peak hours);
- Westbound right-turn at the West Street and West Houston Street intersection (LOS F with a v/c ratio of 1.05 during the weekday AM and PM peak hours; and LOS E during the weekday midday peak hour);
- Northbound left-turn at the West Street and West Houston Street intersection (LOS E during the weekday AM peak hour; LOS D with a delay of 52.5 spv during the weekday midday peak hour; and LOS F during the weekday PM peak hour);
- Southbound through at the West Street and West Houston Street intersection (LOS D with a v/c ratio of 0.95 and 0.92 during the weekday AM and midday peak hours, respectively);
- Westbound left-turn at the West Street and Canal Street North intersection (LOS E during the weekday AM peak hour);
- Westbound left-turn/right-turn at the West Street and Canal Street North intersection (LOS F with a v/c ratio of 0.92 during the weekday AM peak hour; and LOS D with a delay of 52.2 spv and 50.2 spv during the weekday and Saturday midday peak hours, respectively);
- Westbound right-turn at the West Street and Canal Street North intersection (LOS F with a v/c ratio of 0.93 during the weekday AM peak hour; LOS E during the weekday midday; and LOS D with a delay of 54.3 spv during the Saturday midday peak hours);

- Northbound through at the West Street and Canal Street South intersection (LOS C with a v/c ratio of 0.94 and 0.93 during the weekday AM and PM peak hours, respectively); and
- Southbound through at the West Street and Canal Street South intersection (LOS D with a v/c ratio of 0.96 during the weekday PM peak hours).

Hudson Street

- Eastbound left-turn at the Hudson Street (east and west lanes) and Canal Street intersection (LOS F with a v/c ratio of 1.03 during the weekday PM peak hour);
- Westbound through/right-turn at the Hudson Street (east and west lanes) and Canal Street intersection (LOS D with a delay of 50.3 seconds and a v/c ratio of 0.93 during the weekday AM peak hour);
- Westbound right-turn at the Hudson Street (east and west lanes) and Canal Street intersection (LOS F with a v/c ratio of 1.05 during the weekday PM peak hour);
- Northbound through (east lanes) at the Hudson Street (east and west lanes) and Canal Street intersection (LOS F with a v/c ratio of 1.01 during the weekday PM peak hour);
- Northbound left-turn/through (west lanes) at the Hudson Street (east and west lanes) and Canal Street intersection (LOS E with a v/c ratio of 1.05 and 1.05 during the weekday AM and PM peak hours, respectively).

Varick Street

- Southbound through/right-turn (west lanes) at Varick Street (east and west lanes) and West Houston Street (LOS D with a v/c ratio of 0.90 during the weekday AM peak hour; LOS F with a v/c ratio of 1.05 during the weekday PM peak hour);
- Southbound through (west lanes) at Varick Street (east and west lanes) and King Street (LOS D with a v/c ratio of 0.96 during the weekday AM peak hour; LOS F during the weekday PM peak hour; and LOS E with a v/c ratio of 0.96 during the Saturday midday peak hour);
- Westbound left-turn/through at Varick Street (east and west lanes) and Charlton Street (LOS D with a delay of 50.2 spv and a v/c ratio of 0.91 during the weekday PM peak hour);
- Southbound through/right-turn (west lanes) at Varick Street (east and west lanes) and Charlton Street (LOS F during the weekday PM peak hour; and LOS E with a v/c ratio of 0.96 during the Saturday midday peak hour);
- Southbound through/right-turn (west lanes) at Varick Street (east and west lanes) and Vandam Street (LOS F with a v/c ratio of 1.01 during the weekday PM peak hour; and LOS F with a v/c ratio of 1.05 during the Saturday midday peak hour);
- Eastbound through at Varick Street (east and west lanes) and Spring Street (LOS D with a delay of 52.4 during the weekday PM peak hour);
- Eastbound through/right-turn at Varick Street (east and west lanes) and Spring Street (LOS F with a v/c ratio of 1.05 during the Saturday midday peak hour);
- Eastbound right-turn at Varick Street (east and west lanes) and Spring Street (LOS F with a v/c ratio of 1.05 and 1.05 during the weekday PM and Saturday midday peak hours, respectively);
- Southbound left-turn/through at Varick Street (east and west lanes) and Spring Street (LOS C with a v/c ratio of 0.91 during the weekday AM peak hour);

- Southbound through (west lanes) at Varick Street (east and west lanes) and Spring Street (LOS F with 81.2 seconds of delay during the weekday PM peak hour; and LOS E with a v/c ratio of 1.03 during the Saturday midday peak hour);
- Southbound through/right-turn (west lanes) at Varick Street (east and west lanes) and Dominick Street (LOS F with a v/c ratio of 1.05 and 1.05 during the weekday PM and Saturday midday peak hours, respectively);
- Southbound through/right-turn (west lanes) at Varick Street (east and west lanes) and Broome Street (LOS F with a v/c ratio of 0.93 and 1.05 during the weekday PM and Saturday midday peak hours, respectively);
- Southbound right-turn (west lanes) at Varick Street (east and west lanes) and Broome Street (LOS F with a v/c ratio of 0.99 and 1.05 during the weekday PM peak hour and Saturday midday peak hours, respectively);
- Westbound left-turn/through at Varick Street (east and west lanes) and Watts Street (LOS E with a v/c ratio of 0.96 during the Saturday midday peak hour);
- Westbound through at Varick Street (east and west lanes) and Watts Street (LOS F with a v/c ratio of 1.04 during the weekday PM peak hour); and
- Westbound left-turn/through at Varick Street and Canal Street (LOS D with 49.5 seconds of delay and a v/c ratio of 1.02 during the weekday AM peak hour; LOS F with a v/c ratio of 1.04 during the weekday PM peak hour; and LOS E with a v/c ratio of 1.01 during the Saturday midday peak hour).

Avenue of the Americas

- Westbound right-turn at Avenue of the Americas and West Houston Street (LOS D with a v/c ratio of 0.90 during the weekday midday peak hour; LOS D with 48.4 seconds of delay and a v/c ratio of 0.94 during the weekday PM peak hour; LOS D with a v/c ratio of 0.91 during the Saturday midday peak hour);
- Northbound approach at Avenue of the Americas and West Houston Street (LOS D with a v/c ratio of 1.00 during the weekday AM peak hour); and
- Eastbound approach (Laight Street) at Avenue of the Americas and Canal Street/Laight Street (LOS E during the weekday AM peak hour; and LOS F with a v/c ratio of 1.05 during the weekday PM peak hour);
- Westbound approach at Avenue of the Americas and Canal Street/Laight Street (LOS D with a v/c ratio of 0.96 and 0.90 during the weekday AM and midday peak hours, respectively; and LOS F with a v/c ratio of 1.04 during the weekday PM peak hour);
- Northbound approach at Avenue of the Americas and Canal Street/Laight Street (LOS E with a v/c ratio of 1.05 during the weekday AM peak hour)<u>;</u>
- <u>Westbound approach at Avenue of the Americas and Charlton Street/Prince Street (LOS E with a v/c ratio of 0.97 during the weekday PM peak hour).</u>

THE FUTURE WITHOUT THE PROPOSED ACTION

The No-Action condition was developed by increasing existing (2011) traffic levels by the expected growth in overall travel through and within the study area. As per *CEQR* guidelines, an annual background growth rate of 0.25 percent was assumed for the first five years (year 2011 to year 2016) and then 0.125 percent for the remaining years (year 2016 to year 2022). In addition, a total of 4<u>8</u> development projects expected to occur in the No-Action condition (No Action

projects) were identified in coordination with the New York City Department of City Planning (DCP) as being planned for the study area (see **Figure 13-32**). However, many of these planned projects are modest in size and would be very modest traffic generators. After reviewing the development programs for each of the 48 planned projects, it was determined that background growth will address the increase in traffic and pedestrian levels for 25 of the small- to moderate-sized projects in the study area. Person and vehicle trips generated by the remaining projects, which include trips associated with No-Action projects within the Rezoning Area, were then determined and incorporated into the No-Action traffic analysis. **Table 13-20** and **Figure 13-32** summarize the projects that were accounted for in this future 2022 baseline, including those that were considered as part of the study area background growth. Projected Development Sites 1 through 8 and No-Action site 9 were included in the net project screening, presented above in Section C, "Level 1 Screening Assessment."

As discussed, during the 2011 data collection, DDC was underway with a project to install trunk water mains along Hudson Street between Worth Street and Laight Street. During the duration of this project (September 2010 through winter 2015), traffic pattern changes were implemented in the study area to facilitate DDC's construction. However, since the baseline 2011 traffic networks reflect 2010 traffic patterns prior to DDC construction, no network traffic pattern adjustments were made to arrive at the No-Action condition traffic volumes.

TRAFFIC OPERATIONS

The No-Action condition traffic volumes are shown in **Figures 13-33** to **13-36** for the weekday AM, midday, PM, and Saturday peak hours. The No-Action condition traffic volumes were constructed by layering on top of the existing traffic volumes with background growth, the trips generated by the discrete No Action projects in the area and the No-Action Net Existing Generated Traffic show in **Figures 13-1** to **13-4**. **Table 13-21** shows an overall comparison of traffic levels of service for existing and No-Action conditions.

Under existing conditions, the circulation of traffic in the study area was affected by traffic pattern changes associated with the DDC trunk water main project along Hudson Street (see discussion above). This construction project will be completed by 2015; therefore, in the No-Action condition, traffic circulation patterns at these locations will have reverted back to normal. In addition, a traffic management plan for the Hudson Square neighborhood was prepared in July 2010 by Hudson Square Connection, the Hudson Square business improvement district (BID). ~~The BID plan recommendations include measures that would affect traffic patterns, such as travel lane narrowing, sidewalk widening, bicycle lane striping, curb extensions, and installation of center median pedestrian refuges along several of the study area streets, including Varick Street, Canal Street, Hudson Street, and Houston Street.~~ Recent implementation of the Hudson Square Connection's recommendations focused on short-term, relatively easy to implement measures to improve pedestrian safety in the BID. The recommendations include the installation of a new north crosswalk at Watts and Varick Street, lane striping at Spring Street near Varick Street, high visibility crosswalks at intersections at Varick Street between West Houston and Dominick Streets, and countdown timers at the intersection of Spring and Varick Streets. By July 2012, most of the short-term and relatively easy to implement recommendations have been implemented. Where appropriate, the effects of these changes on traffic flow and pedestrian circulation are reflected in the FEIS. However, the implementation timing of the remaining recommendations in the July 2010 traffic management plan is not clear, and therefore they were not included in the No-Action or With-Action condition traffic analyses.

12.28.12

Proposed Rezoning Area (Primary Study Area)

Study Area Boundary (1/2-Mile Perimeter)

❶ No Action Project (see Table 13-20 for reference)

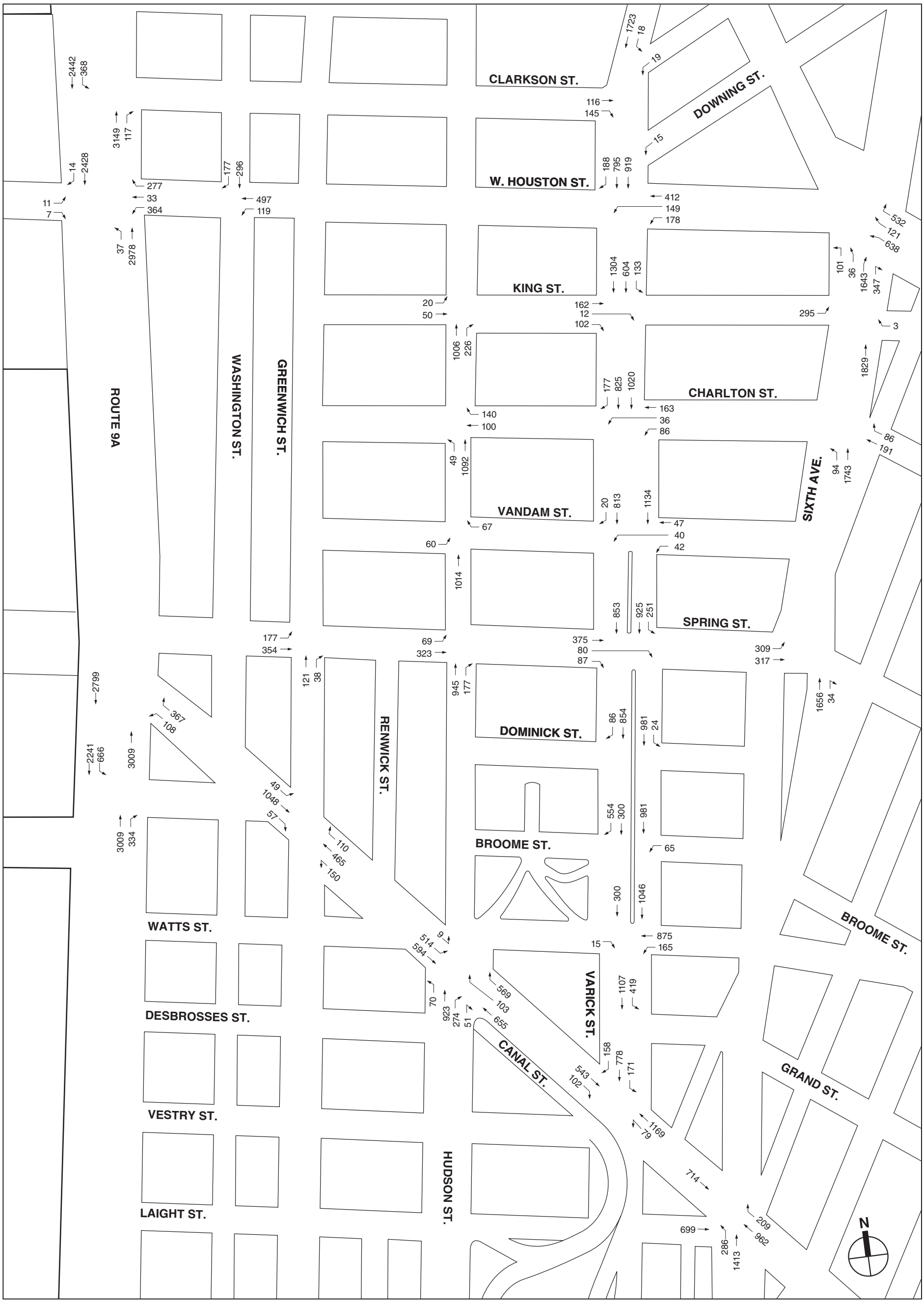
North Tribeca Rezoning Area

HUDSON SQUARE REZONING

Future Development Projects in the No-Action Condition

Figure 13-32

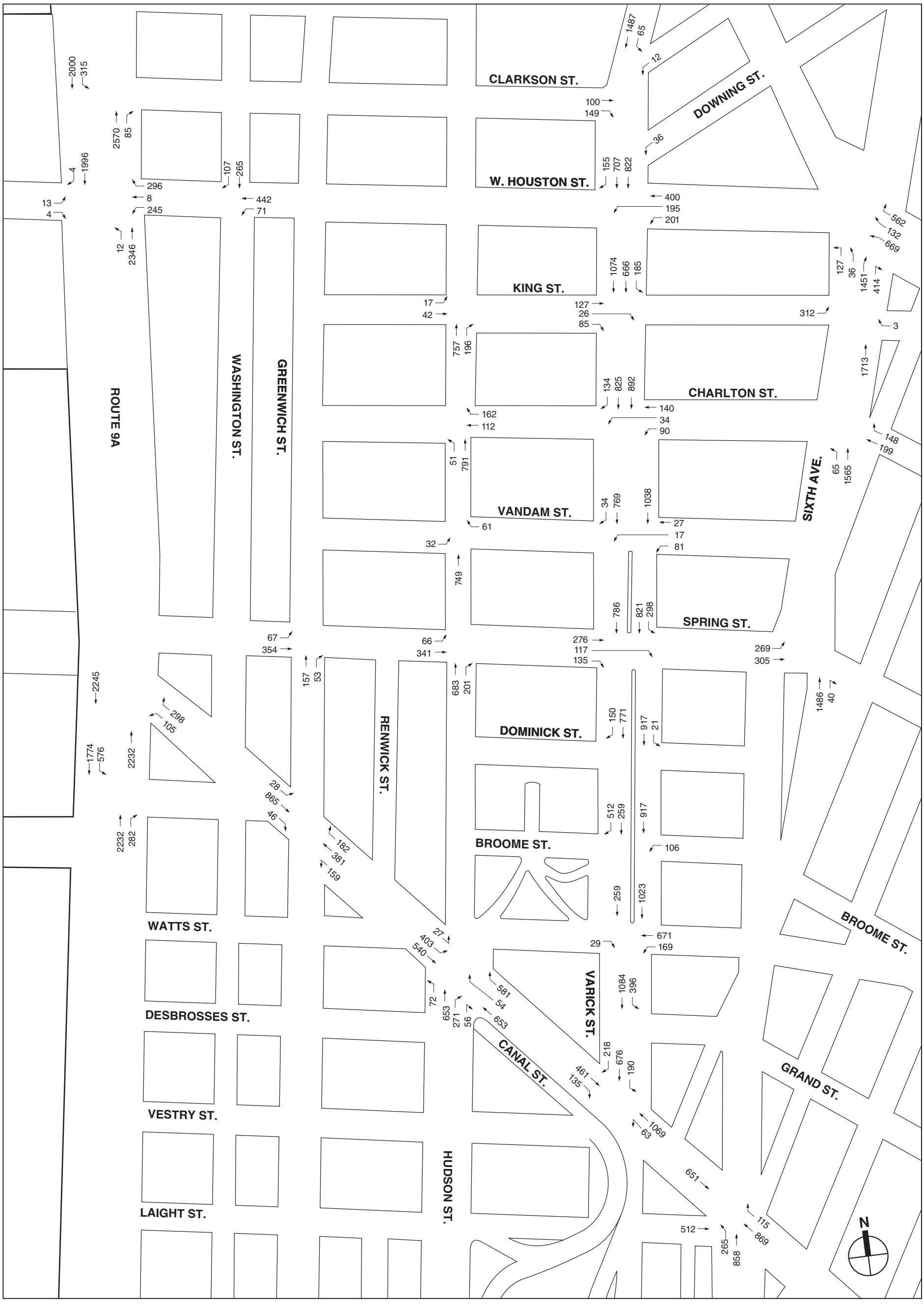
11.13.12



NOT TO SCALE

2022 No-Action Traffic Volumes
Weekday AM Peak Hour
Figure 13-33

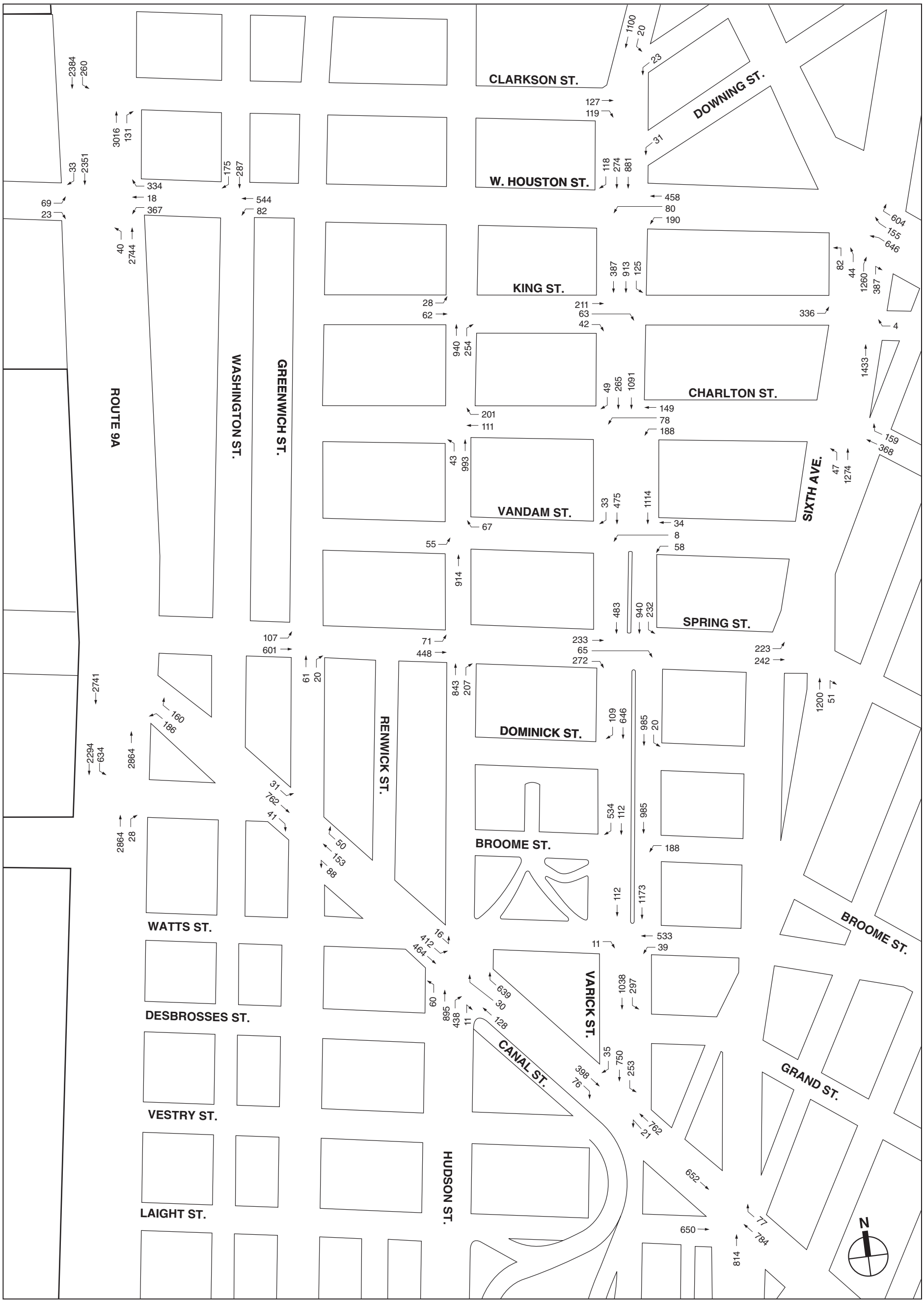
11.13.12



NOT TO SCALE

2022 No-Action Traffic Volumes
Weekday Midday Peak Hour
Figure 13-34

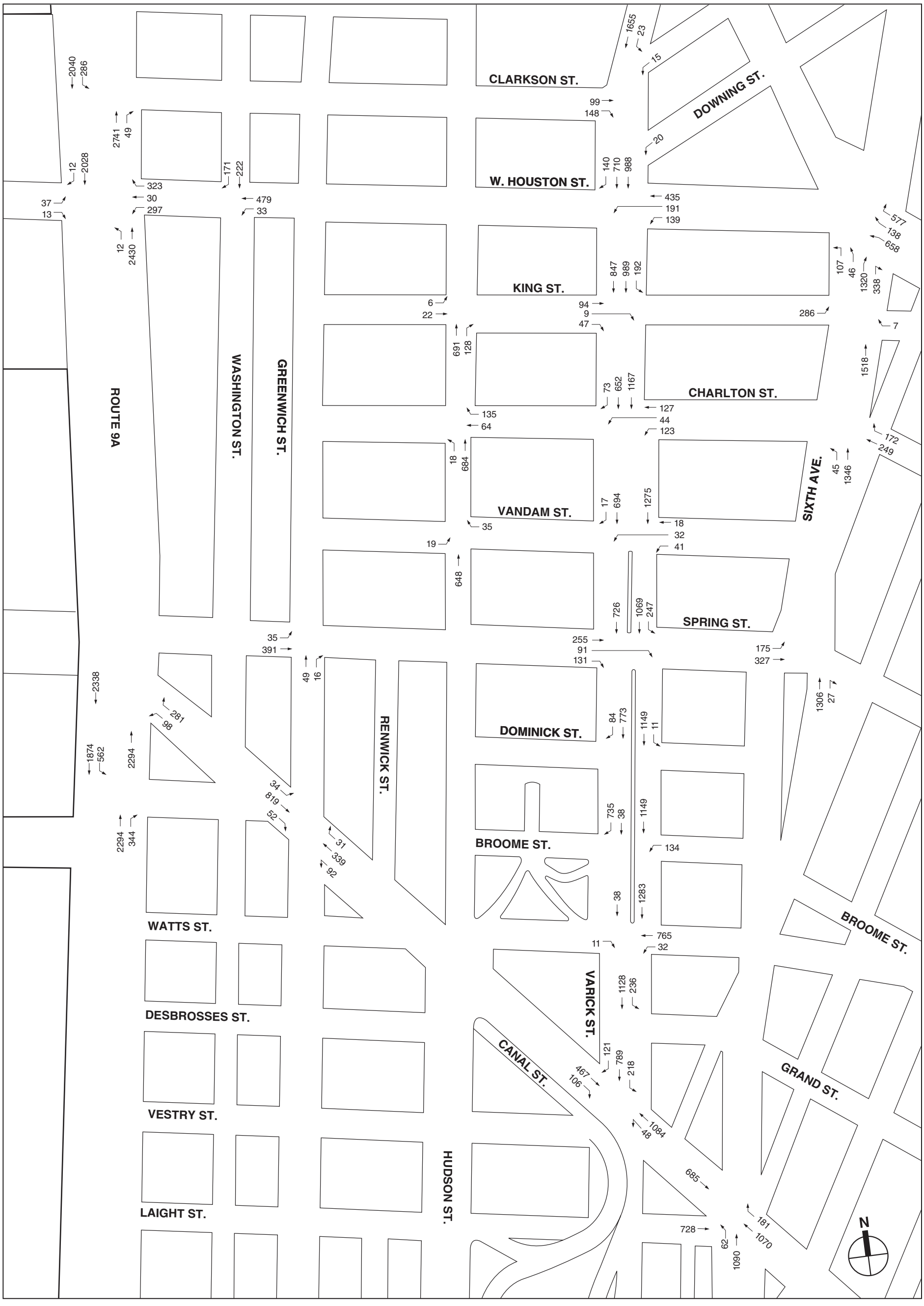
11.13.12



NOT TO SCALE

2022 No-Action Traffic Volumes
Weekday PM Peak Hour
Figure 13-35

11.13.12



NOT TO SCALE

2022 No-Action Traffic Volumes
Saturday Midday Peak Hour
Figure 13-36

Table 13-20
Planned Projects Within or Near the Study Area by 2022

Map No.	Location	Description	Transportation Assumptions	Build Year
1	Projected Development Site 1 (Canal/Varick/Grand/Avenue of the Americas)	Mixed use development with hotel (419 rooms) above a commercial base containing 16,409 gsf ground floor retail and 50,666 gsf other commercial use, with 80 parking spaces	Hotel and Local Retail trip rates from the *CEQR Technical Manual*; Hotel temporal distribution, modal split, vehicle occupancy, and delivery trip rates based on *Western Rail Yard FEIS* (2009); Local Retail temporal distribution, modal split, vehicle occupancy and delivery trip rates from the *New School DASNY FEAF* (2010) and from the *CEQR Technical Manual*; Conference Center trip rates, temporal distribution, and delivery trip rates from *Battery Maritime Building Redevelopment EAS* (2008); Conference Center modal split and vehicle occupancy from 2000 U.S. Census Transportation Planning Package Reverse Journey- to-Work Data and *Battery Maritime Building Redevelopment EAS* (2008)	2022
2	Projected Development Site 2 (114 Varick St)	Two-story commercial development containing 13,328 gsf retail and 13,328 gsf other commercial use and 7 parking spaces	Local Retail: see Projected Site 1, above; Community Theater trip rates, temporal distribution, vehicle occupancy and delivery trip rates from *Brooklyn Bridge Park FEIS* (2005); Community Theater modal split from *Western Rail Yard FEIS* (2009)	2022
3	Projected Development Site 3 (Varick/Vandam/Spring)	Mixed use development with hotel (381 rooms) above a commercial base containing 12,100 gsf ground floor retail and 86,216 gsf other commercial use, with 82 parking spaces	Hotel and Local Retail: see Projected Site 1, above; Catering Hall average occupancy, trip rates, temporal distribution, and delivery trip rates from *Domino Sugar Rezoning FEIS* (2010); Catering Hall modal split and vehicle occupancy from *Battery Maritime Building Redevelopment EAS* (2008); Professional School trip rates, temporal distribution and delivery trip rates from *Jamaica Plan Rezoning FEIS, (*2007); Professional School modal split and vehicle occupancy from 2000 U.S. Census Transportation Planning Package Reverse Journey-to-Work Data and *Jamaica Plan Rezoning FEIS, (*2007)	2022

Table 13-20 (cont'd)
Planned Projects Within or Near the Study Area by 2022

Map No.	Location	Description	Transportation Assumptions	Build Year
4	Projected Development Site 4 (551-61 Greenwich St)	Two-story commercial development containing 21,934 gsf retail and 21,934 gsf other commercial use and 11 parking spaces	Destination Retail trip rates and delivery trip rates, and Health Club trip rates from the *CEQR Technical Manual*; Destination Retail temporal distribution, modal split, and vehicle occupancy based on *Western Rail Yard FEIS* (2009); Health Club temporal distribution and delivery trip rates from the *770 Eleventh Avenue Mixed-Use Development Rezoning EIS* (2009); Health Club modal split and vehicle occupancy from *Equinox - 344 Amsterdam Avenue EAS* (2008)	2022
5	Projected Development Site 5 (94-104 Varick St)	Hotel development containing 202 rooms and 2,750-gsf of retail uses	see Projected Site 1, above	2013
~~6~~	~~Projected Development Site 18 (145 Avenue of the Americas)~~	~~Completion of a 5,032-gsf commercial enlargement~~	~~Trip rates and delivery trip rates from the *CEQR Technical Manual*; temporal distribution and vehicle occupancy from the *Western Rail Yard FEIS* (2009); modal split from the 2000 U.S. Census Transportation Planning Package Reverse Journey-to-Work Data and the *Western Rail Yard FEIS* (2009)~~	~~2012~~
6	Projected Development Site 11 (290 Hudson Street)	Conversion to five residential units	Residential trip rates, temporal distribution, and delivery trip rates from the *CEQR Technical Manual*; modal split and vehicle occupancy from the *Western Rail Yard FEIS* (2009) and the U.S. Census Bureau 2005-2009 American Community Survey 5-Year Estimates	2015
7	Projected Development Site 17 (523 Greenwich Street)	Hotel development containing 124 rooms	see Projected Site 1, above	2013
8	Projected Development Site 19 (537 Greenwich St)	Re-tenanting an existing (vacant) 70,000-sf building with commercial or storage uses	~~see Projected Site 18, above~~ Trip rates and delivery trip rates from the *CEQR Technical Manual*; temporal distribution and vehicle occupancy from the *Western Rail Yard FEIS* (2009); modal split from the 2000 U.S. Census Transportation Planning Package Reverse Journey-to-Work Data and the *Western Rail Yard FEIS* (2009)	2022
9	330 Hudson Street	Commercial office conversion and expansion containing 330,000 gsf office space and 20,000 gsf retail	see Projected Sites 1 and 19, above	2022
10	23 Downing Street	Residential development containing one unit	Included in background growth	2022
11	396 West Broadway	Enlargement of existing building to add two residential units	Included in background growth	2021
12	419 West Broadway	Residential development with eight units	Included in background growth	2011

Table 13-20 (cont'd)
Planned Projects Within or Near the Study Area by 2022

Map No.	Location	Description	Transportation Assumptions	Build Year
13	325 West Broadway	Residential development with 20 units	Included in background growth	2022
14	83 Thompson Street	Mixed use development with four residential units, 3,700 sf retail, and 750 sf community facility	Included in background growth	2022
15	403 Greenwich Street	Residential development with five units	Included in background growth	2022
16	137 Franklin Street	Residential development with three units	Included in background growth	2012
17	309 Avenue of the Americas	Mixed use development with 17 residential units, 3,700-sf retail; 8,121-sf community facility	Included in background growth	2021
18	353 Spring Street	398,000-sf DSNY sanitation garage	Trip rates and temporal distribution from the *CEQR Technical Manual* and *First Avenue Properties Rezoning Final SEIS* (2008); Modal split and vehicle occupancy from U.S. Bureau of the Census, 2000 Reverse Journey-To-Work Data	2014
19	482 Greenwich Street	Mixed use development with 19 residential units; 975-sf retail; 294-sf community facility	Included in background growth	2012
20	43 Grand Street	Development of 17,515-sf hotel with 3,300-sf retail	Transportation assumptions from *Western Rail Yard FEIS* (2009)	2022
21	27 Wooster Street	Mixed use development with 16 residential units, 2,000-sf retail, and 10 parking spaces	Included in background growth	2021
22	138 Wooster Street	Mixed use development with nine residential units and 2,000-sf retail	Included in background growth	2021
23	150 Wooster Street	Mixed use development with 15 residential units and 5,000-sf retail	Included in background growth	2014
24	35-39 Greene St	Conversion and enlargement of existing building to add five residential units	Included in background growth	2021
25	603 Greenwich St	Enlargement and addition of one residential unit	Included in background growth	2021
26	70 Greene Street	Conversion to three residential units and 2,400-sf retail	Included in background growth	2021
27	357 Canal Street	Conversion to four residential units	Included in background growth	2021
28	359 Canal Street	Conversion to four residential units	Included in background growth	2021
29	361 Canal Street	Conversion to four residential units	Included in background growth	2021
30	55 Mercer Street	Conversion to four Joint Living Work Quarters for Artists units	Included in background growth	2021
31	435 Broadway	46,217-sf commercial development	Included in background growth	2012
32	22 Renwick Street	Residential development with 19 units	Included in background growth	2012

Table 13-20 (cont'd)
Planned Projects Within or Near the Study Area by 2022

Map No.	Location	Description	Transportation Assumptions	Build Year
33	52 Laight Street	Residential development with six units	Included in background growth	2012
34	22-28 Downing Street	Residential development with three units	Included in background growth	2012
35	NYU – University Village [(1)]	Mixed use NYU development containing: 1,566 dormitory beds; 31,000-sf retail; 277,000-sf academic; 146,000-sf athletic center; and a 100,000-sf (800 seat) public school	Transportation assumptions from NYU Core FEIS, Chapter 26 - 2021 RWCDS 2	2021
36	Hudson River Park – Pier 26	1.49-acre open space development	Included in background growth	2013
37	32 development sites within the area roughly bounded by: Canal Street to the north, West Street to the west, Broadway to the east, and Walker, N. Moore, Beach, and Hubert Streets to the south.	Projected development from the Tribeca North Rezoning Environmental Assessment Statement (2010) that would collectively result in: 880 residential units (including 16 affordable units); 168,186-sf of retail uses; and 72 parking spaces.	Transportation assumptions from *Tribeca North Rezoning EAS* (2010)	2019
38	15 Washington Place	NYU: New 129,000 sf academic building	Transportation assumptions from *NYU Core FEIS* (2012)	2021
39	25 West 4th Street	NYU: Addition of 20,000 sf to existing building. New total: 94,000 sf.	Transportation assumptions from *NYU Core FEIS* (2012)	2021
40	36 East 8th Street	NYU: new building, 105,000 sf academic	Transportation assumptions from *NYU Core FEIS* (2012)	2021
41	383 Lafayette Street	NYU: 77,000 sf academic through addition and new building.	Transportation assumptions from *NYU Core FEIS* (2012)	2021
42	7, 8, 14A Washington Mews	NYU: conversion from residential to academic. 7: 12,000 sf; 8: 12,000 sf; 14A: 12,000 sf	Transportation assumptions from *NYU Core FEIS* (2012)	2021
43	58 Washington Square South	NYU: new 91,000-sf Center for Academic and Spiritual Life	Transportation assumptions from *NYU Core FEIS* (2012)	2021
44	51 Astor Place	215,000 sf commercial/office; 15,000 sf retail; 40,000 sf academic	Transportation assumptions from *First Avenue Properties Rezoning Final SEIS* (2008)	2015
45	302 Lafayette Street	36,000 sf office; 36,000 sf retail	Trip rates and temporal distribution from the *CEQR Technical Manual* and *First Avenue Properties Rezoning Final SEIS* (2008); Modal split and vehicle occupancy from U.S. Bureau of the Census, 2000 Reverse Journey-To-Work Data	2021
46	197 Mott Street	56-room hotel	see Projected Site 1, above	2022

Table 13-20 (cont'd)
Planned Projects Within or Near the Study Area by 2022

Map No.	Location	Description	Transportation Assumptions	Build Year
47	180 Avenue of the Americas	Mixed use development with 79 residential units, 14,470-sf retail; 33,564-gsf expansion of God's Love We Deliver, an existing community facility use	Residential trip rates, temporal distribution, and delivery trip rates from the *CEQR Technical Manual*; modal split and vehicle occupancy from the *Western Rail Yard FEIS* (2009) and the U.S. Census Bureau 2005-2009 American Community Survey 5-Year Estimates; Local retail – see Projected Site 1; Community facility use transportation assumptions from *West Harlem Rezoning FEIS* (2012)	2014
48	One SoHo Square (161 Avenue of the Americas)	45,000-sf commercial office enlargement	Included in background growth	2013/2014

Notes: (1) ~~The NYU-University Village project is currently undergoing public review. Between the Draft and Final EIS, the analyses in this document will be updated to reflect the final NYU-University Village program.~~ Subsequent to the issuance of the NYU Core FEIS in May 2012 (CEQR No. 11DCP121M), two technical memoranda were prepared to address potential impacts of the further modifications to the program. The June 4, 2012 and July 20, 2012 technical memoranda presented trip estimates that were minimally different from what was analyzed for the Potential CPC Modifications presented in Chapter 26, "Potential Modifications under Consideration by the CPC" in the NYU Core FEIS. Hence, the Potential CPC Modifications trip projections presented in Chapter 26 of the NYU Core FEIS were incorporated for the Hudson Square Rezoning FEIS No-Action conditions.

Sources: AKRF, Inc., Trinity Real Estate, New York City Department of City Planning, New York City Department of Buildings, New York City Economic Development Corporation, New York University.

Table 13-21
Traffic Level of Service Summary Comparison:
2011 Existing vs. 2022 No-Action Conditions

	Existing				2022 No-Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Midday	AM	Midday	PM	Midday
Intersections at Overall LOS A/B/C	25	29	17	17	21	24	15	16
Intersections at Overall LOS D	4	0	11	6	6	4	5	3
Intersections at Overall LOS E	0	0	1	1	1	0	7	3
Intersections at Overall LOS F	0	0	0	0	1	1	2	2
Number of individual traffic lane groups at LOS E or F (of 96 movements analyzed during weekday AM, 94 weekday midday, 95 weekday PM, and 69 Saturday for Existing; of 96 movements analyzed during the weekday AM, 95 weekday midday, 96 weekday PM, and 71 Saturday for No-Action)	11	2	23	11	15	7	27	12

Note: Includes 28 analyzed intersections (28 signalized and 1 unsignalized).

In June 2012, NYCDOT presented a set of potential pedestrian improvement measures at Varick and Canal Streets near the Holland Tunnel to Manhattan's Community Board 2's Transportation Committee. The potential improvements would include the addition of new crosswalks (south crosswalk at the intersection of Varick Street and Broome Street), conversion of underutilized traffic lanes (Varick Street between Broome and Watts Streets) into sidewalk extensions to shorten crosswalk distances (at the intersection of Varick Street and Watts Street), installation of center median pedestrian refuge islands along Canal Street (at Hudson Street and at Avenue of the Americas), and general improvements in lane markings along Canal Street and Avenue of the Americas. Currently, Hudson Square BID "pedestrian traffic managers" are positioned along Varick Street at Spring, Vandam, Charlton, and West Houston Streets to help manage pedestrian flow during the PM commuter peak period. The NYCDOT pedestrian improvements are expected to be implemented as part of a pilot program. ~~in the near future. Based on the conceptual schematics outlined in NYCDOT's presentation, the potential pedestrian improvement measures are expected to benefit pedestrian circulation while not impeding traffic flow.~~ Most of these improvements ~~would be~~ have been recently implemented and are continuing to be implemented ~~subject to further review and changes~~ by NYCDOT. Therefore, where appropriate, the effects of these changes are reflected in the FEIS.~~they were not incorporated into the impact analysis presented below.~~

In addition, the Hudson Square Connection released a Streetscape Improvement Plan in October 2012 with distinct initiatives to manage traffic, create open space, green the streets and improve the pedestrian environment. This plan will be implemented over the course of the next five years as funds become available. As Hudson Square Connection develops the designs, they will undertake further surveys and traffic studies. Final designs will require public review and approval of City agencies. Therefore, the potential effects on the transportation systems have yet to be determined and were not included in the No-Action or With-Action condition traffic analyses.

Based on the analysis results presented in **Tables 13-49** to **13-50** in Section K, "Detailed Analysis Results Tables," the majority of the approaches/lane-groups will operate at the same LOS as in existing conditions with the following notable exceptions:

West Street

- Eastbound left-turn at the West Street and West Houston Street intersection will deteriorate to LOS F with a v/c ratio of 0.74 and a delay of 88.9 spv during the weekday PM peak hour;
- Westbound right-turn at the West Street and West Houston Street intersection will deteriorate to LOS F with a v/c ratio of 0.97 and a delay of 84.6 spv during the weekday midday peak hour;
- Westbound left-turn at the West Street and Canal Street North intersection will deteriorate within LOS D with a v/c ratio of 0.39 and a delay of 46.4 spv during the weekday midday peak hour, within LOS D with a v/c ratio of 0.64 and a delay of 53.2 spv during the weekday PM peak hour, and within LOS D with a v/c ratio of 0.35 and a delay of 45.3 spv during the Saturday midday peak hour;
- Westbound right-turn at the West Street and Canal Street North intersection will deteriorate to LOS E with a delay of 55.0 spv during the Saturday midday peak hour; and
- Southbound through at the West Street and Canal Street South intersection will deteriorate to LOS E with a v/c ratio of 1.05 and a delay of 59.8 spv during the weekday PM peak hour.

Washington Street

- Southbound approach at the Washington Street and West Houston Street intersection will deteriorate within LOS D with a v/c ratio of 0.92 and a delay of 45.9 spv during the weekday PM peak hour.

Hudson Street

- Westbound approach at the Hudson Street and Charlton Street intersection will deteriorate to LOS D with a v/c ratio of 0.85 and a delay of 45.4 spv during the weekday PM peak hour;
- Eastbound left-turn at the Hudson Street (east and west lanes) and Canal Street intersection will deteriorate within LOS D with a v/c ratio of 0.84 and a delay of 45.3 during the weekday AM peak hour;
- ~~Westbound through/right-turn at the Hudson Street (east and west lanes) and Canal Street intersection will deteriorate to LOS E with a v/c ratio of 0.99 and a delay of 61.9 spv during the weekday AM peak hour and within LOS D with a v/c ratio of 0.92 and a delay of 49.5 spv during the weekday midday peak hour;~~
- The westbound approach at the Hudson Street (east and west lanes) and Canal Street intersection was recently reconfigured based on NYCDOT's pedestrian improvement measures presented in June 2012, as described above. With the reconfigurations, the westbound through at this intersection is projected to experience significantly higher levels of delay during the weekday AM and midday peak hours under the No-Action conditions. Specifically, the westbound through will deteriorate to LOS F with a v/c ratio of 1.90 and a delay of 446.1 spv during the weekday AM peak hour and to LOS F with a v/c ratio of 1.78 and a delay of 393.0 spv during the weekday midday peak hour; and
- Northbound left-turn/through (west lanes) at the Hudson Street (east and west lanes) and Canal Street intersection will deteriorate to LOS F with a v/c ratio of 1.12 and a delay of 101.0 spv during the weekday AM peak hour, within LOS D with a v/c ratio of 0.95 and a delay of 51.9 spv during the weekday midday peak hour, and to LOS F with a v/c ratio of 1.14 and a delay of 109.4 spv during the weekday PM peak hour.

Varick Street

- Westbound left-turn at the Varick Street (east and west lanes) and West Houston Street intersection will deteriorate to LOS D with a v/c ratio of 0.96 and a delay of 57.9 spv during the weekday midday peak hour;
- Southbound through/right-turn (west lanes) at the Varick Street (east and west lanes) and West Houston Street will deteriorate to LOS D with a v/c ratio of 1.01 and a delay of 53.7 spv during the weekday AM peak hour;
- Southbound through (west lanes) at the Varick Street (east and west lanes) and King Street intersection will deteriorate within LOS D with a v/c ratio of 1.02 and a delay of 52.6 spv during the weekday AM peak hour and to LOS F with a v/c ratio of 1.04 and a delay of 88.2 spv during the Saturday midday peak hour;
- Westbound approach at the Varick Street (east and west lanes) and Charlton Street intersection will deteriorate to LOS F with a v/c ratio of 1.07 and a delay of 93.1 spv during the weekday PM peak hour;
- Southbound through/right-turn (west lanes) at the Varick Street (east and west lanes) and Charlton Street intersection will deteriorate to LOS F with a v/c ratio of 1.09 and a delay of 95.3 spv during the Saturday midday peak hour;

- Eastbound through at the Varick Street (east and west lanes) and Spring Street intersection will deteriorate to LOS F with a v/c ratio of 0.97 and a delay of 83.6 spv during the weekday PM peak hour;
- Southbound left-turn/through (east lanes) at the Varick Street (east and west lanes) and Spring Street intersection will deteriorate to LOS D with a v/c ratio of 1.00 and a delay of 46.1 spv during the weekday AM peak hour and to LOS D with a v/c ratio of 1.03 and a delay of 54.9 spv during the Saturday midday peak hour;
- Southbound through/right-turn (west lanes) at the Varick Street (east and west lanes) and Broome Street intersection will deteriorate to LOS E with a v/c ratio of 1.05 and a delay of 75.7 spv during the weekday midday peak hour;
- Southbound right-turn (west lanes) at the Varick Street (east and west lanes) and Broome Street intersection will deteriorate to LOS E with a v/c ratio of 1.01 and 79.9 spv during the weekday midday peak hour;
- Westbound approach at the Varick Street (east and west lanes) and Watts Street intersection will deteriorate to LOS F with a v/c ratio of 1.01 and a delay of 80.1 spv during the Saturday midday peak hour;
- Westbound approach at the Varick Street and Canal Street intersection will deteriorate to LOS E with a v/c ratio of 1.07 and a delay of 66.1 spv during the weekday AM peak hour and to LOS F with a v/c ratio of 1.12 and a delay of 99.2 spv during the Saturday midday peak hour; and
- Southbound left-turn at the Varick Street and Canal Street intersection will deteriorate to LOS D with a v/c ratio of 0.76 and a delay of 52.3 spv during the weekday PM peak hour.

Avenue of the Americas

- Westbound right-turn at the Avenue of the Americas and West Houston Street intersection will deteriorate within LOS D with a v/c ratio of 0.93 and a delay of 47.7 spv and a v/c ratio of 0.95 and a delay of 50.7 spv during the weekday and Saturday midday peak hours, respectively;
- Northbound approach at the Avenue of the Americas and West Houston Street intersection will deteriorate to LOS E with a v/c ratio of 1.04 and a delay of 55.1 spv during the weekday AM peak hour;
- Westbound approach at the Avenue of the Americas and Canal Street/Laight Street intersection will deteriorate to LOS E with a v/c ratio of 1.04 and a delay of 56.6 spv during the weekday AM peak hour and to LOS E with a v/c ratio of 1.02 and a delay of 58.8 spv during the weekday midday peak hour; and
- Northbound approach at the Avenue of the Americas and Canal Street/Laight Street intersection will deteriorate to LOS F with a v/c ratio of 1.10 and a delay of 84.0 spv during the weekday AM peak hour; and
- Westbound approach at the Avenue of the Americas and Charlton Street/Carmine Street intersection will deteriorate within LOS D with a v/c ratio of 0.92 and a delay of 46.8 spv during the Saturday midday peak hour.

FUTURE WITH THE PROPOSED ACTION

As discussed above in Section D, "Level 2 Screening Assessment," the project-generated vehicle trips were assigned to the study area off-street parking garages and the various block fronts

surrounding the project sites. Overall, the 2022 completion of the Proposed Action would result in approximately 352, -5, 210, and 183 incremental vehicle trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively. The related peak hour traffic assignments are discussed above in Section D, "Level 2 Screening Assessment," and the incremental peak hour trips resulting from the Proposed Action are shown in **Figures 13-9** to **13-12**.

TRAFFIC OPERATIONS

The With-Action condition traffic volumes are shown in **Figures 13-37** to **13-40** for the weekday AM, midday, PM, and Saturday midday peak hours. The With-Action condition traffic volumes were constructed by layering on top of the existing traffic volumes with background growth, the trips generated by the discrete No Action projects in the area and the With-Action Net Existing Generated Traffic show in **Figures 13-5** to **13-8**. **Table 13-22** shows an overall comparison of traffic levels of service for the No-Action and With-Action conditions.

Table 13-22
Traffic Level of Service Summary Comparison:
2022 No-Action vs. 2022 With-Action Conditions

	2022 No-Action				2022 With-Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Midday	AM	Midday	PM	Midday
Intersections at Overall LOS A/B/C	21	24	15	16	17	24	13	16
Intersections at Overall LOS D	6	4	5	3	9	3	6	2
Intersections at Overall LOS E	1	0	7	3	2	1	5	4
Intersections at Overall LOS F	1	1	2	2	1	1	5	2
Number of intersections with significant impacts	-	-	-	-	14	3	14	5
Number of individual traffic lane groups at LOS E or F (of 96 movements analyzed during weekday AM, 95 weekday midday, 96 weekday PM, and 71 Saturday)	15	7	27	12	19	7	29	13
Note: Includes 28 analyzed intersections (28 signalized and 1 unsignalized).								

Based on the criteria presented in the *CEQR Technical Manual* and discussed previously in Section E, "Transportation Analysis Methodology," significant adverse traffic impacts were identified and are denoted by the "+" symbol in the analysis summary tables—**Table 13-51** to **13-52** in Section K, "Detailed Analysis Results Tables."

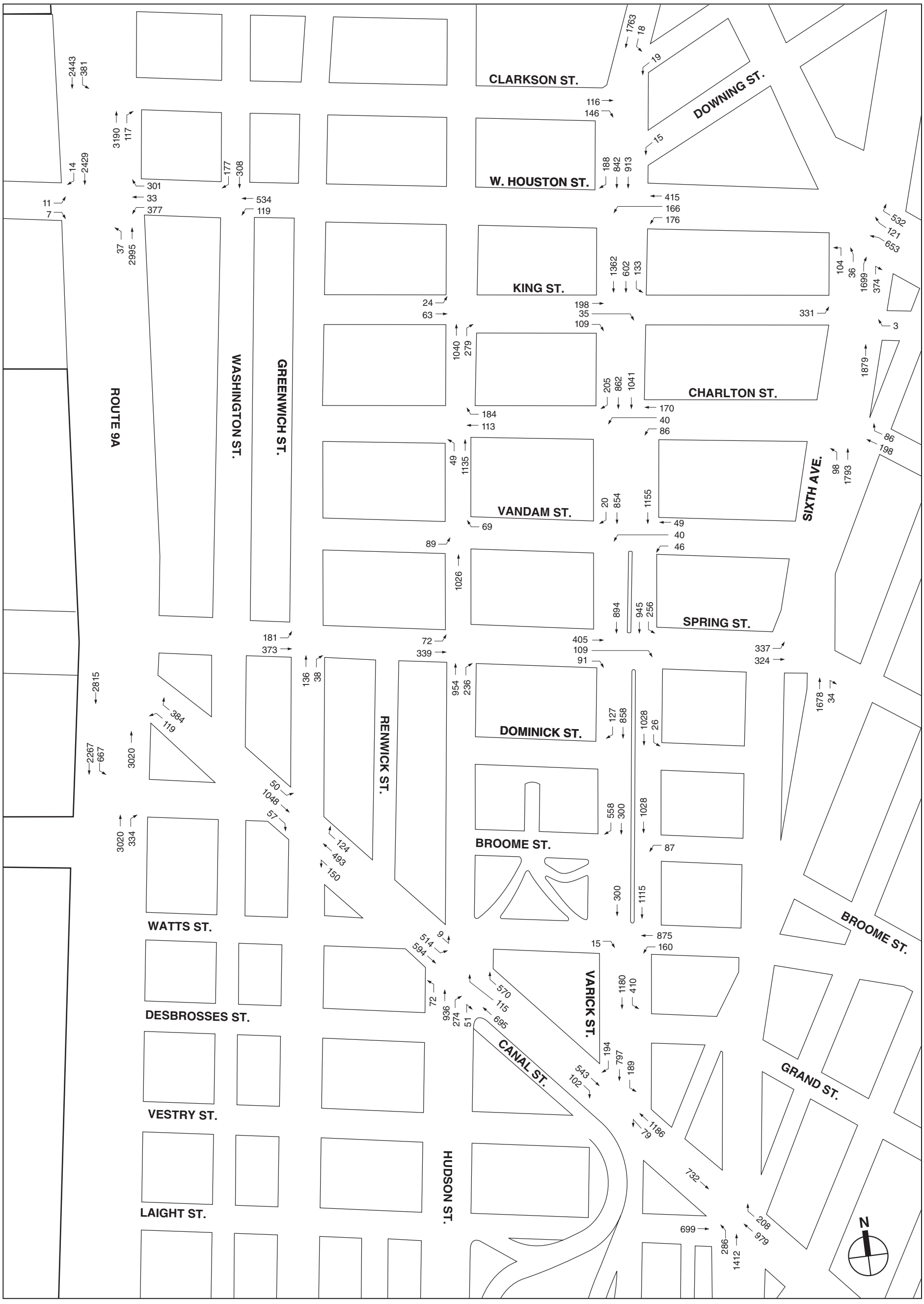
SIGNIFICANT IMPACTS

Significant adverse traffic impacts were identified at 29 approaches/lane groups (of 19 intersections). Potential measures that can be implemented to mitigate these significant adverse traffic impacts are discussed in Chapter 20, "Mitigation."

West Street

- The southbound left-turn at the signalized intersection of West Street and Clarkson Street would deteriorate within LOS F (from a v/c ratio of 1.14 and 149.3 spv of delay to a v/c ratio of 1.18 and 164.7 spv of delay) and from LOS E (v/c ratio of 0.80 and 72.2 spv of delay) to

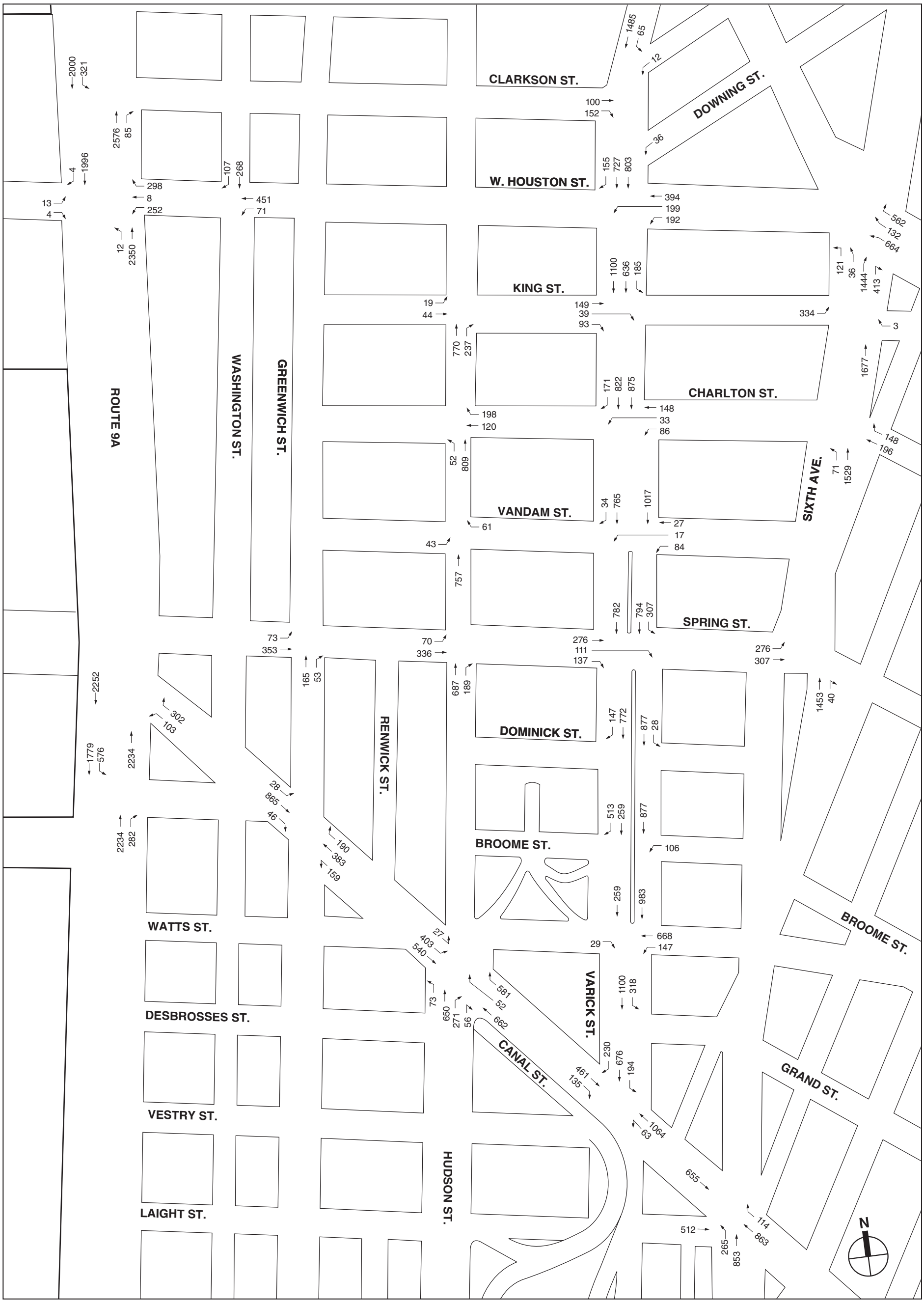
11.13.12



NOT TO SCALE

2022 With-Action Traffic Volumes
Weekday AM Peak Hour
Figure 13-37

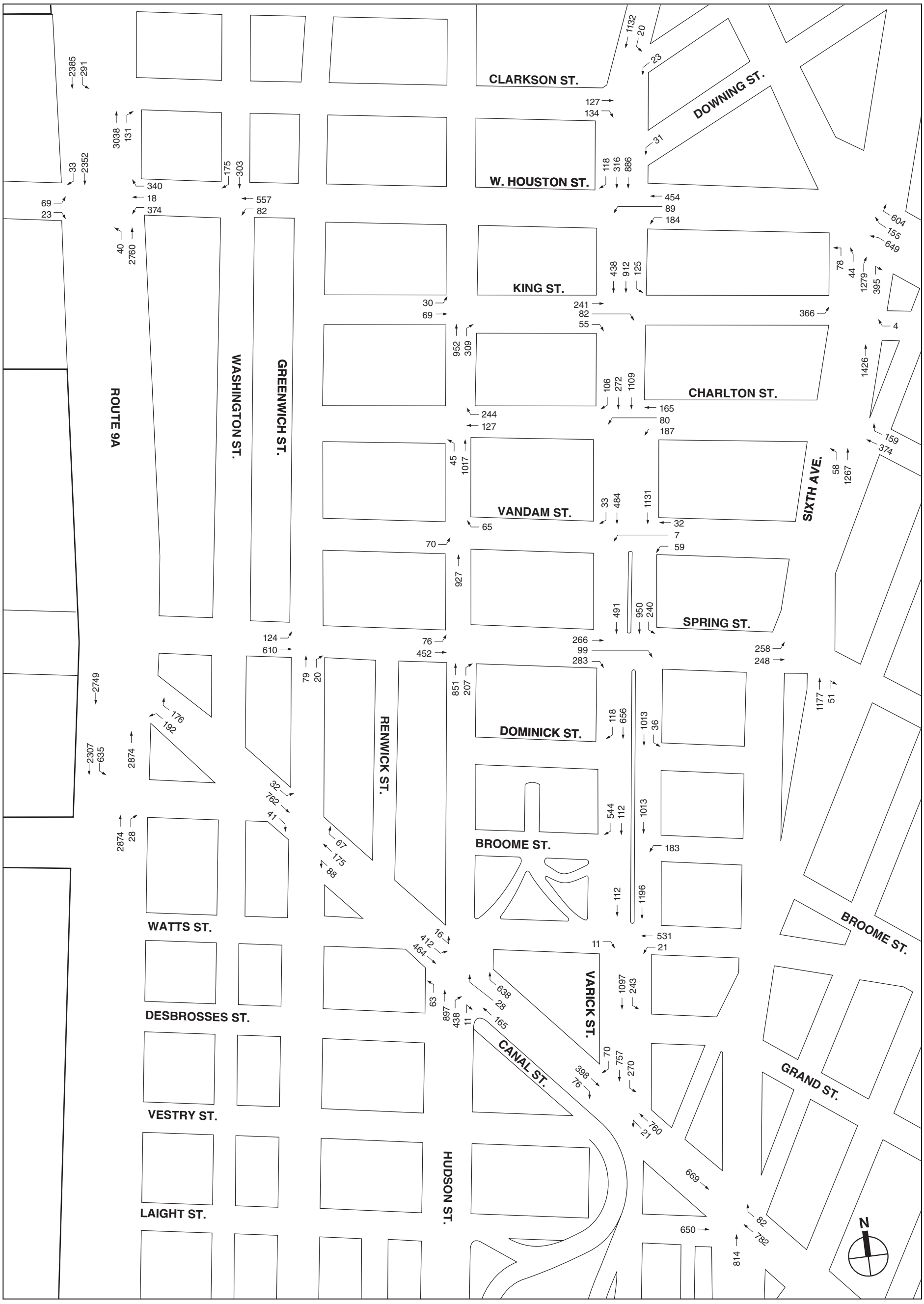
11.13.12



NOT TO SCALE

2022 With-Action Traffic Volumes
Weekday Midday Peak Hour
Figure 13-38

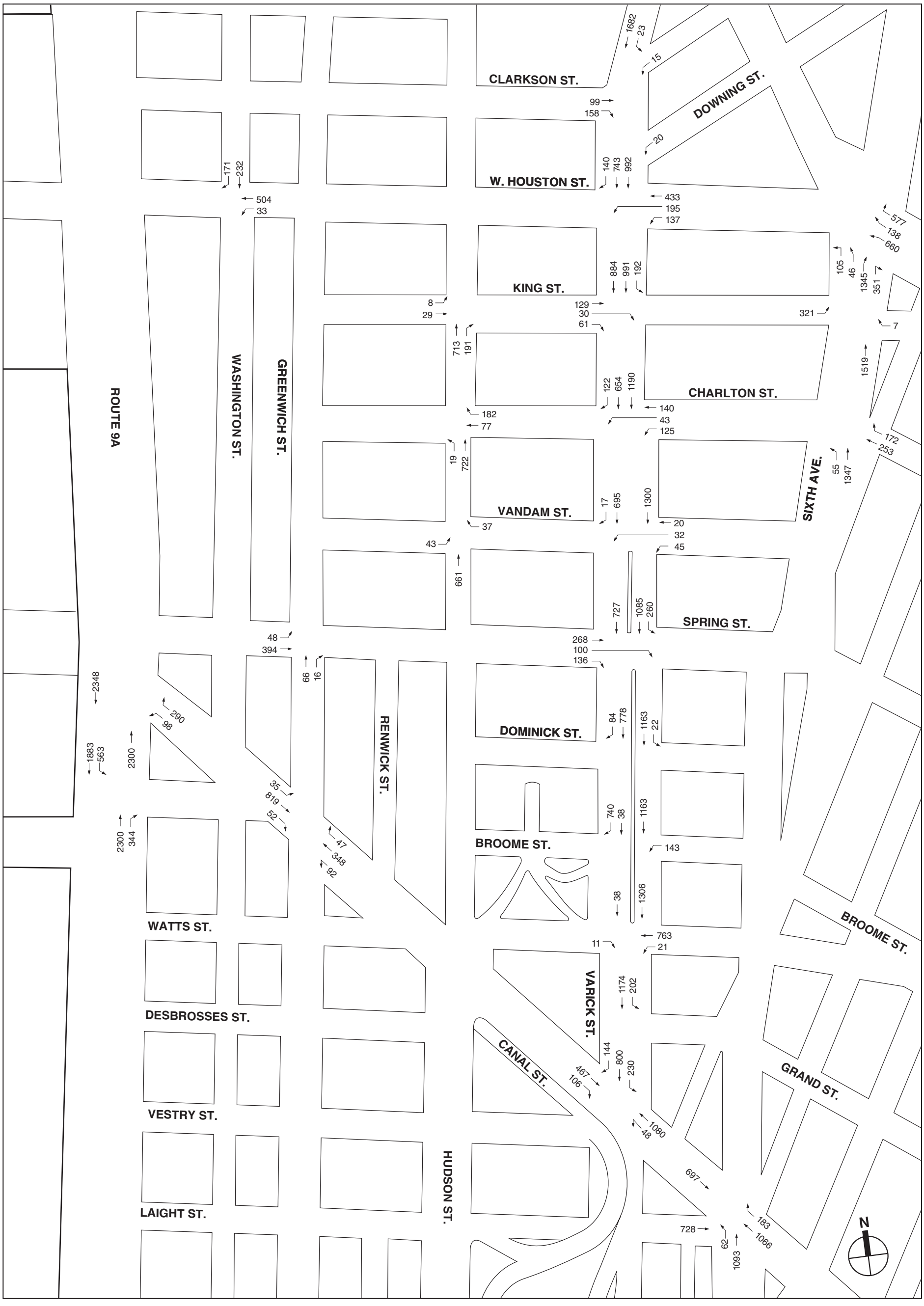
11.13.12



NOT TO SCALE

2022 With-Action Traffic Volumes
Weekday PM Peak Hour
Figure 13-39

11.13.12



NOT TO SCALE

2022 With-Action Traffic Volumes
Saturday Midday Peak Hour
Figure 13-40

LOS F (v/c ratio of 0.89 and 83.9 spv of delay), increases in delay of more than three and four seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

- The westbound right-turn at the signalized intersection of West Street and West Houston Street would deteriorate within LOS F (from a v/c ratio of 1.16 and 164.5 spv of delay to a v/c ratio of 1.26 and 203.9 spv of delay~~, from a v/c ratio of 0.98 and 86.0 spv of delay to a v/c ratio of 1.00 with 92.6 spv of delay,~~ and from a v/c ratio of 1.21 and 177.9 spv of delay to a v/c ratio of 1.24 and 187.1 spv of delay), increases in delay of more than three seconds, during the weekday AM~~, midday,~~ and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound left-turn/right-turn at the signalized intersection of West Street and Canal Street North would deteriorate within LOS F (from a v/c ratio of 1.01 and 124.6 spv of delay to a v/c ratio of 1.06 and 137.6 spv of delay), an increase in delay of more than three seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The westbound right-turn at the signalized intersection of West Street and Canal Street North would deteriorate within LOS F (from a v/c ratio of 1.02 and 127.4 spv of delay to a v/c ratio of 1.07 and 142.3 spv of delay), an increase in delay of more than three seconds during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.

Washington Street

- The southbound approach at the signalized intersection of Washington Street and West Houston Street would deteriorate within LOS D (from a v/c ratio of 0.92 and 45.9 spv of delay to a v/c ratio of 0.95 and 51.4 spv of delay), an increase in delay of more than five seconds during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.

Hudson Street

- The northbound approach at the signalized intersection of Hudson Street and King Street would deteriorate from LOS C (v/c ratio of 0.93 and 31.8 spv of delay) to LOS D (v/c ratio of 1.03 and 53.1 spv of delay), an increase in delay more than five seconds, during the AM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The westbound approach at the signalized intersection of Hudson Street and Charlton Street would deteriorate from LOS D (v/c ratio of 0.85 and 45.4 spv of delay) to LOS F (v/c ratio of 1.04 and 83.7 spv of delay), an increase in delay of more than five seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.
- ~~The westbound through/right-turn at the signalized intersection of Hudson Street (east and west lanes) and Canal Street would deteriorate from LOS E (v/c ratio of 0.99 and 61.9 spv of delay) to LOS F (v/c ratio of 1.06 and 81.9 spv of delay), an increase in delay of more than four seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.~~
- The westbound through at the signalized intersection of Hudson Street (east and west lanes) and Canal Street would deteriorate within LOS F (from a v/c ratio of 1.90 and 446.1 spv of delay to a v/c ratio of 2.03 and 504.3 spv of delay and from a v/c ratio of 1.78 and 393.0 spv

of delay to a v/c ratio of 1.80 and 401.5 spv of delay), increases in delay of more than three seconds, during the weekday AM and midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

- The northbound left-turn/through (west lanes) at the signalized intersection of Hudson Street (east and west lanes) and Canal Street would deteriorate within LOS F (from a v/c ratio of 1.12 and 101.0 spv of delay to a v/c ratio of 1.14 and 108.5 spv of delay and from a v/c ratio of 1.14 and 109.4 spv of delay to a v/c ratio of 1.16 and 115.0 spv of delay), increases in delay of more than three seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The eastbound approach at the signalized intersection of Hudson Street and Spring Street would deteriorate within LOS D (from a v/c ratio of 0.86 and 44.4 spv of delay to a v/c ratio of 0.90 and 49.6 spv of delay), an increase in delay of more than five seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.

Varick Street

- The southbound through/right-turn (west lanes) at the signalized intersection of Varick Street (east and west lanes) and West Houston Street would deteriorate from LOS D (v/c ratio of 1.01 and 53.7 spv of delay) to LOS E (v/c ratio of 1.07 and 73.3 spv of delay) and within LOS F (from a v/c ratio of 1.28 and 183.0 spv of delay to a v/c ratio of 1.41 and 237.8 spv of delay), increases in delays of more than five and three seconds, during the weekday AM and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The southbound through (west lanes) at the signalized intersection of Varick Street (east and west lanes) and King Street would deteriorate from LOS D (v/c ratio of 1.02 and 52.6 spv of delay) to LOS E (v/c ratio of 1.07 and 67.3 spv of delay), within LOS F (from a v/c ratio of 1.09 and 174.3 spv of delay to a v/c ratio of 1.24 and 228.0 spv of delay) and within LOS F (from a v/c ratio of 1.04 and 88.2 spv of delay to a v/c ratio of 1.09 and 103.5 spv of delay), increases in delays of more than five, three, and three seconds, during the weekday AM and PM and Saturday midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound approach at the signalized intersection of Varick Street (east and west lanes) and Charlton Street would deteriorate within LOS F (from a v/c ratio of 1.07 and 93.1 spv of delay to a v/c ratio of 1.13 and 113.7 spv of delay), an increase in delay of more than three seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound through/right-turn (west lanes) at the signalized intersection of Varick Street (east and west lanes) and Charlton Street would deteriorate from LOS C (v/c ratio of 0.92 and 33.6 spv of delay) to LOS D (v/c ratio of 1.00 and 48.7 spv of delay), within LOS F (from a v/c ratio of 1.20 and 250.5 spv of delay to a v/c ratio of 1.62 and 440.8 spv of delay) and within LOS F (from a v/c ratio of 1.09 and 95.3 spv of delay to a v/c ratio of 1.23 and 149.4 spv of delay), increases in delays of more than five, three, and three seconds, during the weekday AM and PM and Saturday midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

- The southbound through/right-turn (west lanes) at the signalized intersection of Varick Street (east and west lanes) and Vandam Street would deteriorate within LOS F (from a v/c ratio of 1.19 and 145.4 spv of delay to a v/c ratio of 1.22 and 157.4 spv of delay), an increase in delay of more than three seconds, during the weekday PM peak hour. These projected increases in delay constitute significant adverse impacts.
- The eastbound through at the signalized intersection of Varick Street (east and west lanes) and Spring Street would deteriorate within LOS F (from a v/c ratio of 0.97 and 83.6 spv of delay to a v/c ratio of 1.11 and 122.3 spv of delay), an increase in delay of more than three seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The eastbound through/right-turn at the signalized intersection of Varick Street (east and west lanes) and Spring Street would deteriorate within LOS F (from a v/c ratio of 1.22 and 167.5 spv of delay to a v/c ratio of 1.31 and 201.5 spv of delay), an increase of more than three seconds, during the Saturday midday peak hour. This projected increase in delay constitutes a significant adverse impact.
- The eastbound right-turn at the signalized intersection of Varick Street (east and west lanes) and Spring Street would deteriorate from LOS D (v/c ratio of 0.73 and 43.4 spv of delay) to LOS E (v/c ratio of 0.82 and 54.5 spv of delay) and within LOS F (from a v/c ratio of 1.21 and 157.3 spv of delay to a v/c ratio of 1.45 and 255.4 spv of delay and from a v/c ratio of 1.36 and 240.3 spv of delay to a v/c ratio of 1.69 and 381.9 spv of delay), increases in delays of more than five, three, and three seconds, during the weekday midday and PM, and Saturday midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The southbound left-turn/through (east lanes) at the signalized intersection of Varick Street (east and west lanes) and Spring Street would deteriorate from LOS D (v/c ratio of 1.00 and 46.1 spv of delay and a v/c ratio of 1.03 and 54.9 spv of delay) to LOS E (v/c ratio of 1.06 and 62.3 spv of delay and a v/c ratio of 1.08 and 71.4 spv of delay), increases in delays of more than five seconds, during the weekday AM and Saturday midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The southbound through (west lanes) at the signalized intersection of Varick Street (east and west lanes) and Spring Street would deteriorate within LOS F (from a v/c ratio of 0.96 and 148.7 spv of delay to a v/c ratio of 0.98 and 159.3 spv of delay), an increase in delay of more than three seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound through/right-turn (west lanes) at the signalized intersection of Varick Street (east and west lanes) and Dominick Street would deteriorate within LOS F (from a v/c ratio of 1.23 and 152.5 spv of delay to a v/c ratio of 1.29 and 178.0 spv of delay and from a v/c ratio of 1.21 and 143.7 spv of delay to a v/c ratio of 1.22 and 149.3 spv of delay), increases in delays of more than three seconds, during the weekday PM and Saturday midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The southbound through/right-turn (west lanes) at the signalized intersection of Varick Street (east and west lanes) and Broome Street would deteriorate from LOS E (v/c ratio of 1.05 and 75.7 spv of delay) to LOS F (v/c ratio of 1.13 and 105.7 spv of delay) and within LOS F (from a v/c ratio of 1.20 and 190.7 spv of delay to a v/c ratio of 1.62 and 372.3 spv of delay and from a v/c ratio of 1.85 and 429.0 spv of delay to a v/c ratio of 2.09 and 538.0 spv

of delay), an increase in delay of more than four, three, and three seconds, during the weekday midday and PM and Saturday midday peak hour. This projected increase in delay constitutes a significant adverse impact.

- The southbound right-turn (west lanes) at the signalized intersection of Varick Street (east and west lanes) and Broome Street would deteriorate from LOS E (v/c ratio of 1.01 and 79.9 spv of delay) to LOS F (v/c ratio of 1.23 and 158.1 spv of delay) and within LOS F (from a v/c ratio of 1.26 and 188.8 spv of delay to a v/c ratio of 1.68 and 381.3 spv of delay, and from a v/c ratio of 2.01 and 501.4 spv of delay to a v/c ratio of 2.33 and 649.4 spv of delay), increases in delays of more than four, three, and three seconds, during the weekday midday, PM, and Saturday midday peak hours, respectively. These projected increases in delays constitute significant adverse impacts.
- The westbound approach at the signalized intersection of Varick Street and Canal Street would deteriorate within LOS E (from a v/c ratio of 1.07 and 66.1 spv of delay to a v/c ratio of 1.09 and 70.8 spv of delay), an increase in delay of more than four seconds, during the AM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound left-turn at the signalized intersection of Varick Street and Canal Street would deteriorate from LOS D (v/c ratio of 0.76 and 52.3 spv of delay) to LOS E (v/c ratio of 0.88 and 72.2 spv of delay) an increase in delay of more than five seconds, during the weekday PM peak hours. This projected increase in delay constitutes a significant adverse impact.

Avenue of the Americas

- The northbound approach at the signalized intersection of Avenue of the Americas and West Houston Street would deteriorate from LOS D (v/c ratio of 1.04 and 55.1 spv of delay) to LOS E (v/c ratio of 1.09 and 72.4 spv of delay), an increase in delay of more than five seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The eastbound left-turn at the signalized intersection of Avenue of the Americas and Spring Street would deteriorate from LOS D (v/c ratio of 0.82 and 38.0 spv of delay) to LOS E (v/c ratio of 0.96 and 62.1 spv of delay), an increase in delay of more than five seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The westbound approach at the signalized intersection of Avenue of the Americas and Canal Street/Laight Street would deteriorate within LOS E (from a v/c ratio of 1.04 and 56.6 spv of delay to a v/c ratio of 1.05 and 61.3 spv of delay) and within LOS F (from a v/c ratio of 1.17 and 129.7 spv of delay to a v/c ratio of 1.18 and 132.5 spv of delay), increases in delays of more than four and three seconds, during the weekday AM and PM peak hours. These projected increases in delays constitute significant adverse impacts.
- The northbound approach at the signalized intersection of Avenue of the Americas and Canal Street/Laight Street would deteriorate within LOS F (from a v/c ratio of 1.10 and 84.0 spv of delay to a v/c ratio of 1.12 and 91.1 spv of delay), an increase in delay of more than three seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact.

G. TRANSIT

Mass transit options serving the study area are provided by the NYCT and include the No.1 subway line at the Houston Street station and the Canal Street station; the C/E subway lines at the Spring Street station; the No.6 line at the Spring Street station; the A.C/E subway lines at the Canal Street station; the N/R lines at the Prince Street station; the No.6/J/N/Q/R/W/Z lines at the Canal Street station; and the M5, M20, and M21 bus routes. A detailed analysis of transit operations during the critical weekday AM and PM peak periods is presented below. During other time periods, background transit ridership and station utilization, as well as project trip generation, are comparatively lower. Hence, potential transit impacts were evaluated only for the weekday AM and PM peak periods.

TRANSIT STUDY AREAS

SUBWAY SERVICE

Below is the summary of subway lines that would most likely serve the project site. Subway lines serving stations further away are shown in the transit map (see **Figure 13-14**) but are not included in the description below.

- The A subway line (Eighth Avenue Express) operates between Far Rockaway-Mott Avenue, Queens and Inwood-207th Street, Manhattan, at all times.
- The C subway line (Eighth Avenue Local) operates between Euclid Avenue, Brooklyn and 168th Street, Manhattan.
- The E subway line (Eighth Avenue Local) operates between the World Trade Center-Church Street, Manhattan and Jamaica Center, Queens, at all times.
- The N subway line (Broadway Local) operates between Coney Island-Stillwell Avenue, Brooklyn and Astoria-Ditmars Boulevard, Queens, at all times.
- The Q subway line (Broadway Express) operates between Coney Island-Stillwell Avenue, Brooklyn and Astoria-Ditmars Boulevard, Queens.
- The R subway line (Broadway Local) operates between 95th Street-4th Avenue, Brooklyn and Forest Hills-71st Avenue, Queens.
- The No.1 subway line (Broadway-Seventh Avenue Local) operates between South Ferry, Manhattan and Van Cortlandt Park-242nd Street, Bronx, at all times.

BUS SERVICE

Based on the travel demand estimates and the availability and service frequencies of the bus routes in the study area, it was determined that no individual bus route would experience 50 or more peak hour bus trips in one direction—the CEQR recommended threshold for undertaking a quantified bus analysis. As shown in **Table 13-9**, increments of up to 59 total peak hour riders and no more than 50 peak hour riders in one direction were projected for the Proposed Action. Consequently, a quantitative bus line-haul analysis is not warranted and the Proposed Action would not result in any significant adverse bus impacts. **Table 13-23** provides a summary of the NYCT local bus routes that provide regular service to the study area and their weekday frequencies of operation. All of these routes use standard buses with a guideline capacity of 54 to 55 passengers per bus.

Table 13-23
NYCT Local Bus Routes Serving The Study Area

Bus Route	Start Point	End Point	Routing in Study Area	Freq. of Bus Service (Headway in Minutes)		
				AM	Afternoon	PM
M5 (SB/NB)	Washington Heights	Staten Island Ferry	Broadway/ Avenue of the Americas	(6/9)	(12/10)	(10/10)
M20 (SB/NB)	Lincoln Center	South Ferry	Varick Street/Hudson Street	(20/30)	(15/15)	(12/15)
M21 (WB/EB)	Lower East Side	West Village	Spring St/W. Houston St	(15/20)	(15/30)	(20/20)

Source: MTA NYCT Bus Timetables (2011).

2011 EXISTING CONDITIONS—SUBWAY STATION OPERATIONS

As presented in **Table 13-9** in Section C, "Level 1 Screening Assessment," the full build-out of the Proposed Action in 2022 is expected to result in approximately 1,299 and 1,425 net project-generated subway trips during the weekday AM and PM peak hours, respectively. These trips were distributed to the several nearby stations discussed above and the corresponding station elements. As detailed in Section D, "Level 2 Screening Assessment," station elements at two area subway stations were identified for analysis, as follows.

SPRING STREET STATION (C/E LINES)

The Spring Street Station is located beneath Avenue of the Americas between Spring Street and Vandam Street. The stairways located on the northeast (S-3) and northwest (unmarked) corners of the Avenue of the Americas and Spring Street intersection, southwest (S-4) corner of the Avenue of Americas and Vandam Street, and the control areas located on the northeast (N86) and northwest (unmarked) corners of the Avenue of the Americas and Spring Street intersection and the southwest (unmarked) corner of the Avenue of the Americas and Vandam Street intersection were included for analysis. The control area on the uptown side at Avenue of the Americas and Spring Street (Location 1-N86) includes three two-way turnstiles and two emergency gates, while that on the downtown side at Avenue of the Americas and Spring Street (Location 2) contains two High Entry/Exit Turnstiles (HEETs), one High Exit Turnstile (HXT), and two emergency gates, and the control area on the downtown side at Avenue of the Americas and Vandam Street (also Location 2) contains one HEET, two HXTs, and one emergency gate. Subway passengers for the downtown entrance at the northwest corner of the Avenue of the Americas and Spring Street intersection exit the station through the control area followed by a single stairway leading to the sidewalk. During the AM peak hour, the field data show that approximately 50 percent of the subway passengers exiting through this downtown entrance use the emergency gate. In accordance with CEQR guidance, the control area analysis was performed for the HEETs and HXTs, but not for the emergency gates. However, according to NYCT, the number and type of control area elements for each station are planned under the assumption that emergency gates are not used by exiting passengers under normal conditions. Therefore, for the purpose of a conservative analysis, all passenger volumes exiting through the emergency gates were redistributed to the HEETs and HXTs.

HOUSTON STREET STATION (NO.1 LINE)

The Houston Street Station is located beneath Varick Street between King Street and West Houston Street. The stairways and control areas located on the southwest (S-1) and southeast (S-2) corners of the Varick Street and King Street intersection were included for analysis. The downtown control area (Location 3) contains two HEETs, one HXT, and two emergency gates, and the control area on the uptown side (Location 4) contains two HEETs and two HXTs, and two emergency gates. Similar to the Spring Street Station, passenger volumes recorded for the emergency gates were redistributed to the HEETs and HXTs and the control area analysis was performed only for the HEETs and HXTs.

Field surveys conducted on May 19, 2010 during the hours of 7:00 to 9:30 AM and 4:00 to 6:30 PM provided the baseline volumes for the analysis of the above subway station elements. The CEQR recommended growth rate of 0.25 percent was applied to the 2010 volumes to establish the 2011 existing volumes. It should be noted that although common peak hours were selected for the subway station analysis, each analysis element may have different peak 15 minutes within the selected peak hour. As shown in **Tables 13-24** and **13-25**, all analyzed stairways and control areas currently operate at acceptable levels during the weekday AM and PM peak periods, with the exception of the northwest stairway at the Spring Street and Avenue of the Americas entrance during the AM peak period (LOS ~~E~~ F, v/c= 1.~~5~~68).

Table 13-24
Existing Conditions: Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Down	Up				
Weekday AM Peak 15 Minutes								
Spring Street Station (C/E Lines) Spring Street and Avenue of the Americas Entrance								
NE (S-3)	8.0	7.0	100	206	0.75	0.90	0.40	A
NW (unmarked)	5.0	4.0	15	744	0.75	1.00	1.68	F
SW (S-4)	5.0	4.0	8	275	0.75	1.00	0.62	B
Houston Street Station (No.1 Line) King Street and Varick Street Entrance								
SW (S1)	5.2	4.2	2	247	0.75	1.00	0.53	B
SE (S2)	6.0	5.0	20	81	0.75	0.90	0.19	A
Weekday PM Peak 15 Minutes								
Spring Street Station (C/E Lines) Spring Street and Avenue of the Americas Entrance								
NE (S-3)	8.0	7.0	415	40	0.75	0.90	0.50	B
NW (unmarked)	5.0	4.0	63	156	0.75	0.90	0.50	B
SW (S-4)	5.0	4.0	81	32	0.75	0.90	0.23	A
Houston Street Station (No.1 Line) King Street and Varick Street Entrance								
SW (S1)	5.2	4.2	32	28	0.75	0.90	0.12	A
SE (S2)	6.0	5.0	263	6	0.75	1.00	0.36	A

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (*CEQR Technical Manual*).
V/C = [Vin / (150 * We * Sf * Ff)]+ [Vx/ (150 * We * Sf * Ff)], where
Vin = Peak 15-minute entering passenger volume;
Vx = Peak 15-minute exiting passenger volume
We = Effective width of stairs
Sf = Surging factor (if applicable); Ff = Friction factor (if applicable)

Table 13-25
Existing Conditions: Subway Control Area Analysis

Station Elements	Qty.	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
AM Peak 15- Minutes							
Location 1. Spring Street Station (N86) – C/E Lines (Uptown)							
NE Corner of Spring Street and Avenue of the Americas							
Two-Way Turnstiles	3	100	206	0.75	0.90	0.25	A
Location 2. Spring Street Station – C/E Lines (Downtown)*							
NW Corner of Spring Street and Avenue of the Americas							
HEET	2	15	366	0.75	1.00	0.48	B
Exit Only HXT	1	N/A	379	0.75	1.00	0.91	C
SW Corner of Vandam Street and Avenue of the Americas							
HEET	1	8	23	0.75	0.90	0.10	A
Exit Only HXT	2	N/A	251	0.75	1.00	0.30	A
Location 3. Houston Street Station – No.1 Line (Downtown)*							
West Side of Varick Street at King Street							
HEET	2	12	221	0.75	0.90	0.33	A
Exit Only HXT	1	N/A	118	0.75	1.00	0.28	A
Location 4. Houston Street Station – No.1 Line (Uptown)*							
East Side of Varick Street at King Street							
HEET	2	42	56	0.75	0.90	0.17	A
Exit Only HXT	2	N/A	60	0.75	1.00	0.07	A
PM Peak 15- Minutes							
Location 1. Spring Street Station (N86) – C/E Lines (Uptown)							
NE Corner of Spring Street and Avenue of the Americas							
Two-Way Turnstiles	3	415	40	0.75	0.90	0.40	A
Location 2. Spring Street Station – C/E Lines (Downtown)*							
NW Corner of Spring Street and Avenue of the Americas							
HEET	2	92	24	0.75	0.90	0.23	A
Exit Only HXT	1	N/A	135	0.75	1.00	0.32	A
SW Corner of Vandam Street and Avenue of the Americas							
HEET	1	81	2	0.75	1.00	0.32	A
Exit Only HXT	2	N/A	61	0.75	1.00	0.07	A
Location 3. Houston Street Station – No.1 Line (Downtown)*							
West Side of Varick Street at King Street							
HEET	2	70	39	0.75	0.90	0.21	A
Exit Only HXT	1	N/A	25	0.75	1.00	0.06	A
Location 4. Houston Street Station – No.1 Line (Uptown)*							
East Side of Varick Street at King Street							
HEET	2	240	0	0.75	1.00	0.47	B
Exit Only HXT	2	N/A	12	0.75	1.00	0.01	A

Notes:
* Passengers exiting through the emergency gates were redistributed to the HEETs and HXTs.
Capacities were calculated based on rates presented in the *CEQR Technical Manual.*
V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff), where
Vin = Peak 15 Min Entering Passenger Volume
Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers
Vx = Peak 15- Minute Exiting Passenger
Cx = Total 15-minute Capacity of all turnstile for exiting Passengers
Sf = Surging Factor
Ff = Friction Factor

THE FUTURE WITHOUT THE PROPOSED ACTION—SUBWAY STATION OPERATIONS

Estimates of peak hour transit volumes in the No-Action condition were developed by applying the *CEQR Technical Manual* recommended annual background growth rates. An annual compounded background growth rate of 0.25 percent was applied to the transit volumes from 2011 to 2016, and an annual compounded background growth rate of 0.125 percent was applied to the transit volumes from 2016 to 2022. In addition, trips associated with No-Action projects were incorporated into the No-Action transit volumes.

The No-Action peak period volume projections were allocated to the transit analysis elements described above. For the analyzed control areas, the projected volumes were assigned only to the turnstiles, HEETs, and HXTs. As shown in **Tables 13-26** and **13-27**, all station stairways and control area elements would continue to operate at acceptable levels, except for the northwest stairway at the Spring Street and Avenue of the Americas entrance during the AM peak period (Spring Street station), which will operate at LOS F with a v/c ratio of 1.~~73~~84 during the AM peak period.

Table 13-26
No-Action Condition: Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Down	Up				
Weekday AM Peak 15 Minutes								
Spring Street Station (C/E Lines) Spring Street and Avenue of the Americas Entrance								
NE (S-3)	8.0	7.0	121	267	0.75	0.90	0.50	B
NW (unmarked)	5.0	4.0	18	814	0.75	1.00	1.84	F
SW (S-4)	5.0	4.0	14	334	0.75	1.00	0.77	C
Houston Street Station (No.1 Line) King Street and Varick Street Entrance								
SW (S1)	5.2	4.2	5	294	0.75	1.00	0.63	B
SE (S2)	6.0	5.0	27	105	0.75	0.90	0.25	A
Weekday PM Peak 15 Minutes								
Spring Street Station (C/E Lines) Spring Street and Avenue of the Americas Entrance								
NE (S-3)	8.0	7.0	551	65	0.75	0.90	0.67	B
NW (unmarked)	5.0	4.0	98	185	0.75	0.90	0.64	B
SW (S-4)	5.0	4.0	114	56	0.75	0.90	0.35	A
Houston Street Station (No.1 Line) King Street and Varick Street Entrance								
SW (S1)	5.2	4.2	59	45	0.75	0.90	0.21	A
SE (S2)	6.0	5.0	319	14	0.75	1.00	0.45	A

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (*CEQR Technical Manual*).
V/C = [Vin / (150 * We * Sf * Ff)]+ [Vx/ (150 * We * Sf * Ff)], where
Vin = Peak 15-minute entering passenger volume
Vx = Peak 15-minute exiting passenger volume
We = Effective width of stairs
Sf = Surging factor (if applicable)
Ff = Friction factor (if applicable)

Table 13-27
No-Action Condition: Subway Control Area Analysis

Station Elements	Qty.	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
AM Peak 15 Minutes							
Location 1. Spring Street Station (N86) – C/E Lines (Uptown)							
NE Corner of Spring Street and Avenue of the Americas							
Two-Way Turnstiles	3	121	267	0.75	0.90	0.31	A
Location 2. Spring Street Station – C/E Lines (Downtown)							
NW Corner of Spring Street and Avenue of the Americas							
HEET	2	18	420	0.75	1.00	0.55	B
Exit Only HXT	1	N/A	395	0.75	1.00	0.95	C
SW Corner of Vandam Street and Avenue of the Americas							
HEET	1	14	40	0.75	0.90	0.17	A
Exit Only HXT	2	N/A	292	0.75	1.00	0.35	A
Location 3. Houston Street Station – No.1 Line (Downtown)							
West Side of Varick Street at King Street							
HEET	2	15	254	0.75	0.90	0.38	A
Exit Only HXT	1	N/A	134	0.75	1.00	0.32	A
Location 4. Houston Street Station – No.1 Line (Uptown)							
East Side of Varick Street at King Street							
HEET	2	50	68	0.75	0.90	0.20	A
Exit Only HXT	2	N/A	72	0.75	1.00	0.09	A
PM Peak 15 Minutes							
Location 1. Spring Street Station (N86) – C/E Lines (Uptown)							
NE Corner of Spring Street and Avenue of the Americas							
Two-Way Turnstiles	3	551	65	0.75	0.90	0.54	B
Location 2. Spring Street Station – C/E Lines (Downtown)							
NW Corner of Spring Street and Avenue of the Americas							
HEET	2	128	42	0.75	0.90	0.34	A
Exit Only HXT	1	N/A	147	0.75	1.00	0.35	A
SW Corner of Vandam Street and Avenue of the Americas							
HEET	1	114	10	0.75	0.90	0.52	B
Exit Only HXT	2	N/A	77	0.75	1.00	0.09	A
Location 3. Houston Street Station – No.1 Line (Downtown)							
West Side of Varick Street at King Street							
HEET	2	97	51	0.75	0.90	0.28	A
Exit Only HXT	1	N/A	31	0.75	1.00	0.07	A
Location 4. Houston Street Station – No.1 Line (Uptown)							
East Side of Varick Street at King Street							
HEET	2	295	4	0.75	1.00	0.58	B
Exit Only HXT	2	N/A	16	0.75	1.00	0.02	A

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual.*
V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff), where
Vin = Peak 15 Min Entering Passenger Volume
Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers
Vx = Peak 15- Minute Exiting Passenger
Cx = Total 15-minute Capacity of all turnstile for exiting Passengers
Sf = Surging Factor
Ff = Friction Factor

FUTURE WITH THE PROPOSED ACTION—SUBWAY STATION OPERATIONS

As shown in **Table 13-9**, the net incremental subway trips under the RWCDS were projected to be 1,299 (238 in and 1,061 out) during the weekday AM peak hour and 1,425 (835 in and 590 out) during the weekday PM peak hour. As discussed above in Section D, "Level 2 Screening Assessment," nearly 90 percent of the total project-generated subway trips are expected to be served by the four nearest subway stations—the Canal Street (A/C/E) station, the Canal Street (No.1) station, the Spring Street (C/E) station, and the West Houston Street (No.1) station. The remaining 10 percent were distributed to other stations in the area, including the Prince Street (N/R) station, the Spring Street (No.6) station, and the Canal Street (No.6/J/N/Q/R/W/Z) station.

As with the No-Action analysis, for the analyzed control areas, the projected volumes were assigned only to the turnstiles, HEETs, and HXTs. As shown in **Tables 13-28** and **13-29**, all station stairways and control elements would continue to operate at acceptable levels, except for the northwest stairway at the Spring Street and Avenue of the Americas entrance during the AM peak period (Spring Street station), which would operate at LOS F with a v/c ratio of 1.~~79~~90 during the AM peak period. Compared with the No-Action service levels (LOS F, v/c ratio of 1.~~73~~84), the WIT for this stairway was calculated to be 1.90 inches, which is less than the *CEQR Technical Manual* WIT impact threshold of 2.0 inches (for stairway v/c ratios of 1.60 and up in the With-Action condition; see **Table 13-15**), hence not constituting a significant adverse impact under CEQR.

Table 13-28
With-Action Condition: Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Down	Up				
Weekday AM Peak 15 Minutes								
Spring Street Station (C/E Lines) Spring Street and Avenue of the Americas Entrance								
NE (S-3)	8.0	7.0	235	286	0.75	0.90	0.65	B
NW (unmarked)	5.0	4.0	34	831	0.75	1.00	1.90	F
SW (S-4)	5.0	4.0	53	355	0.75	0.90	0.97	C
Houston Street Station (No.1 Line) King Street and Varick Street Entrance								
SW (S1)	5.2	4.2	22	309	0.75	0.90	0.77	C
SE (S2)	6.0	5.0	68	113	0.75	0.90	0.32	A
Weekday PM Peak 15 Minutes								
Spring Street Station (C/E Lines) Spring Street and Avenue of the Americas Entrance								
NE (S-3)	8.0	7.0	627	111	0.75	0.90	0.82	C
NW (unmarked)	5.0	4.0	111	222	0.75	0.90	0.75	C
SW (S-4)	5.0	4.0	140	112	0.75	0.90	0.54	B
Houston Street Station (No.1 Line) King Street and Varick Street Entrance								
SW (S1)	5.2	4.2	73	80	0.75	0.90	0.32	A
SE (S2)	6.0	5.0	349	28	0.75	0.90	0.57	B

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (*CEQR Technical Manual*).
V/C = [Vin / (150 * We * Sf * Ff)]+ [Vx/ (150 * We * Sf * Ff)], where
Vin = Peak 15-minute entering passenger volume
Vx = Peak 15-minute exiting passenger volume
We = Effective width of stairs
Sf = Surging factor (if applicable)
Ff = Friction factor (if applicable)

Table 13-29
With-Action Condition: Subway Control Area Analysis

Station Elements	Qty.	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
AM Peak 15 Minutes							
Location 1. Spring Street Station (N86) – C/E Lines (Uptown)							
NE Corner of Spring Street and Avenue of the Americas							
Two-Way Turnstiles	3	235	286	0.75	0.90	0.43	A
Location 2. Spring Street Station – C/E Lines (Downtown)							
NW Corner of Spring Street and Avenue of the Americas							
HEET	2	34	434	0.75	0.90	0.67	B
Exit Only HXT	1	N/A	398	0.75	1.00	0.96	C
SW Corner of Vandam Street and Avenue of the Americas							
HEET	1	53	47	0.75	0.90	0.36	A
Exit Only HXT	2	N/A	306	0.75	1.00	0.37	A
Location 3. Houston Street Station – No.1 Line (Downtown)							
West Side of Varick Street at King Street							
HEET	2	32	264	0.75	0.90	0.43	A
Exit Only HXT	1	N/A	139	0.75	1.00	0.33	A
Location 4. Houston Street Station – No.1 Line (Uptown)							
East Side of Varick Street at King Street							
HEET	2	91	72	0.75	0.90	0.30	A
Exit Only HXT	2	N/A	76	0.75	1.00	0.09	A
PM Peak 15 Minutes							
Location 1. Spring Street Station (N86) – C/E Lines (Uptown)							
NE Corner of Spring Street and Avenue of the Americas							
Two-Way Turnstiles	3	627	111	0.75	0.90	0.64	B
Location 2. Spring Street Station – C/E Lines (Downtown)							
NW Corner of Spring Street and Avenue of the Americas							
HEET	2	141	66	0.75	0.90	0.40	A
Exit Only HXT	1	N/A	160	0.75	1.00	0.38	A
SW Corner of Vandam Street and Avenue of the Americas							
HEET	1	140	28	0.75	0.90	0.69	B
Exit Only HXT	2	N/A	115	0.75	1.00	0.14	A
Location 3. Houston Street Station – No.1 Line (Downtown)							
West Side of Varick Street at King Street							
HEET	2	111	74	0.75	0.90	0.34	A
Exit Only HXT	1	N/A	43	0.75	1.00	0.10	A
Location 4. Houston Street Station – No.1 Line (Uptown)							
East Side of Varick Street at King Street							
HEET	2	325	11	0.75	1.00	0.65	B
Exit Only HXT	2	N/A	23	0.75	1.00	0.03	A

Notes:
Capacities were calculated based on rates presented in the *CEQR Technical Manual.*
V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff), where
Vin = Peak 15 Min Entering Passenger Volume
Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers
Vx = Peak 15- Minute Exiting Passenger
Cx = Total 15-minute Capacity of all turnstile for exiting Passengers
Sf = Surging Factor
Ff = Friction Factor

H. PEDESTRIANS

EXISTING CONDITIONS

Pedestrian data were collected in May and June 2010 at key locations near the project site during the weekday hours of 7:00 AM to 9:30 AM, 12:00 PM to 2:00 PM, and 4:00 PM to 6:30 PM, and during the Saturday hours of 12:00 PM to 2:30 PM and 3:00 PM to 5:00 PM. Additional data were collected in November 2011 during the same time periods to supplement the 2010 data for locations subsequently added for analysis and to establish a data set sufficient for analysis in accordance with procedures outlined in the *CEQR Technical Manual*. The 2010 pedestrian volume data were adjusted to 2011 levels, accounting for growth and changes in the area's pedestrian travel patterns in the following manner:

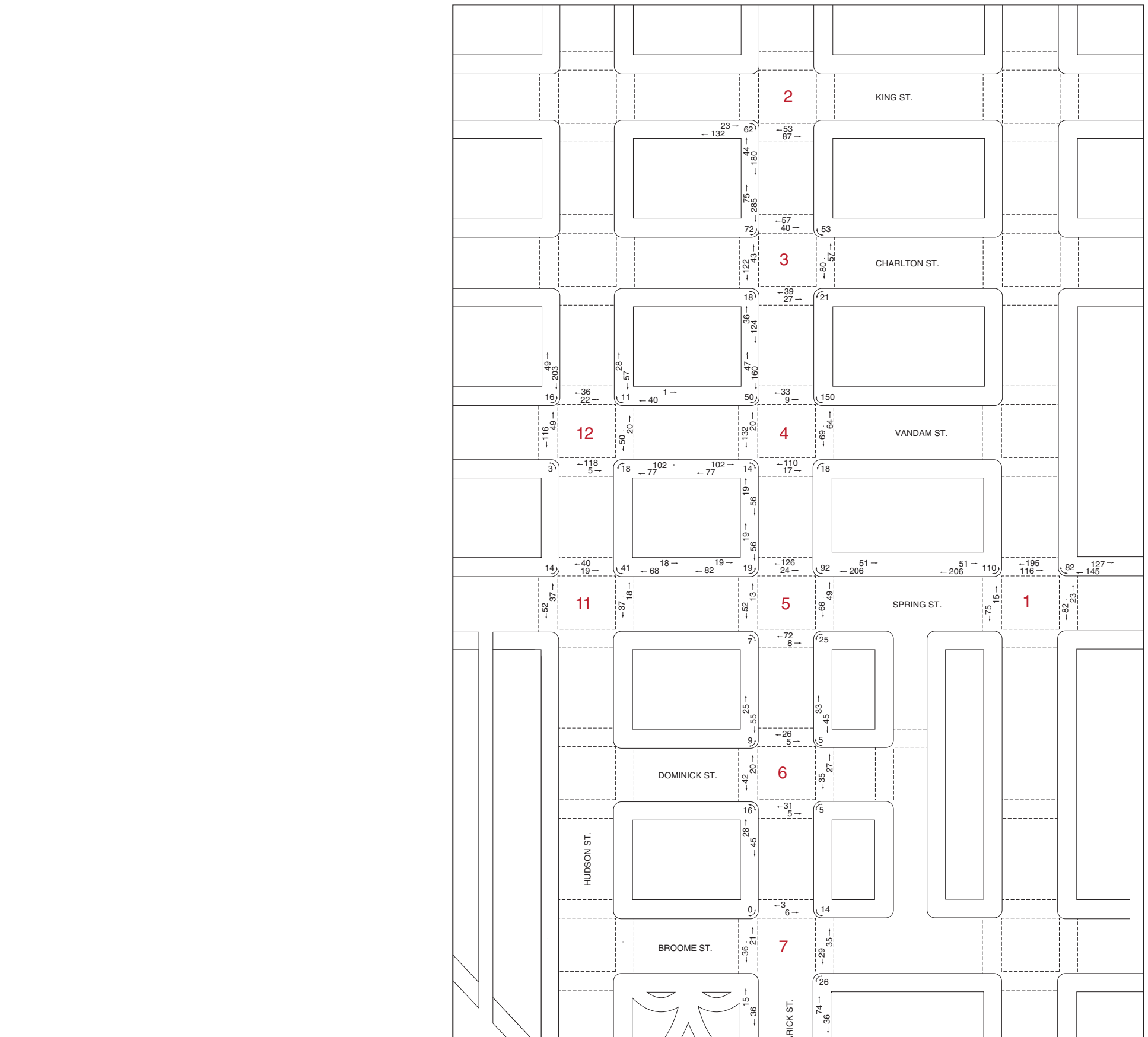
- For weekday counts, at key locations where crosswalk volumes were collected in 2010 and 2011, an overall volume difference of 1.3 percent was determined by comparing the total 2011 crosswalk volumes with the 2010 total crosswalk volumes at locations where data were gathered in both years.
- For locations where 2010 weekday data were gathered but not 2011 data, the 2010 baseline pedestrian volumes were increased by 1.3 percent for use in the pedestrian analysis. If 2011 data were gathered, then 2011 data were used for the pedestrian analysis.
- For Saturday counts, at key locations where crosswalk volumes were collected in 2010 and 2011, an overall volume difference of -1.4 percent was determined by comparing the total 2011 crosswalk volumes with the 2010 total crosswalk volumes at locations where data were gathered in both years.
- For locations where 2010 weekday data were gathered but not 2011 data, the 2010 baseline pedestrian volumes were used for the pedestrian analysis. If 2011 data were gathered, then 2011 data were used for the pedestrian analysis.
- For the crosswalk analysis locations where two days of data were gathered in 2011, the average of the two days of data collection were selected for the analysis.

Peak hours were determined by comparing rolling hourly averages; the highest 15-minute volumes within the peak hours were selected for analysis. The existing peak 15-minute weekday AM, midday, PM, and Saturday pedestrian analysis networks are presented in **Figures 13-41** to **13-44**. **Tables 13-30** to **13-32** provide overall summaries of pedestrian levels of service under 2011 existing conditions. As shown in **Tables 13-50** to **13-52** in Section K, "Detailed Analysis Results Tables," all sidewalks, corner reservoirs, and crosswalk analysis locations operate at acceptable mid-LOS D or better (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks).

Table 13-30
Existing Pedestrian Sidewalk Level of Service Summary

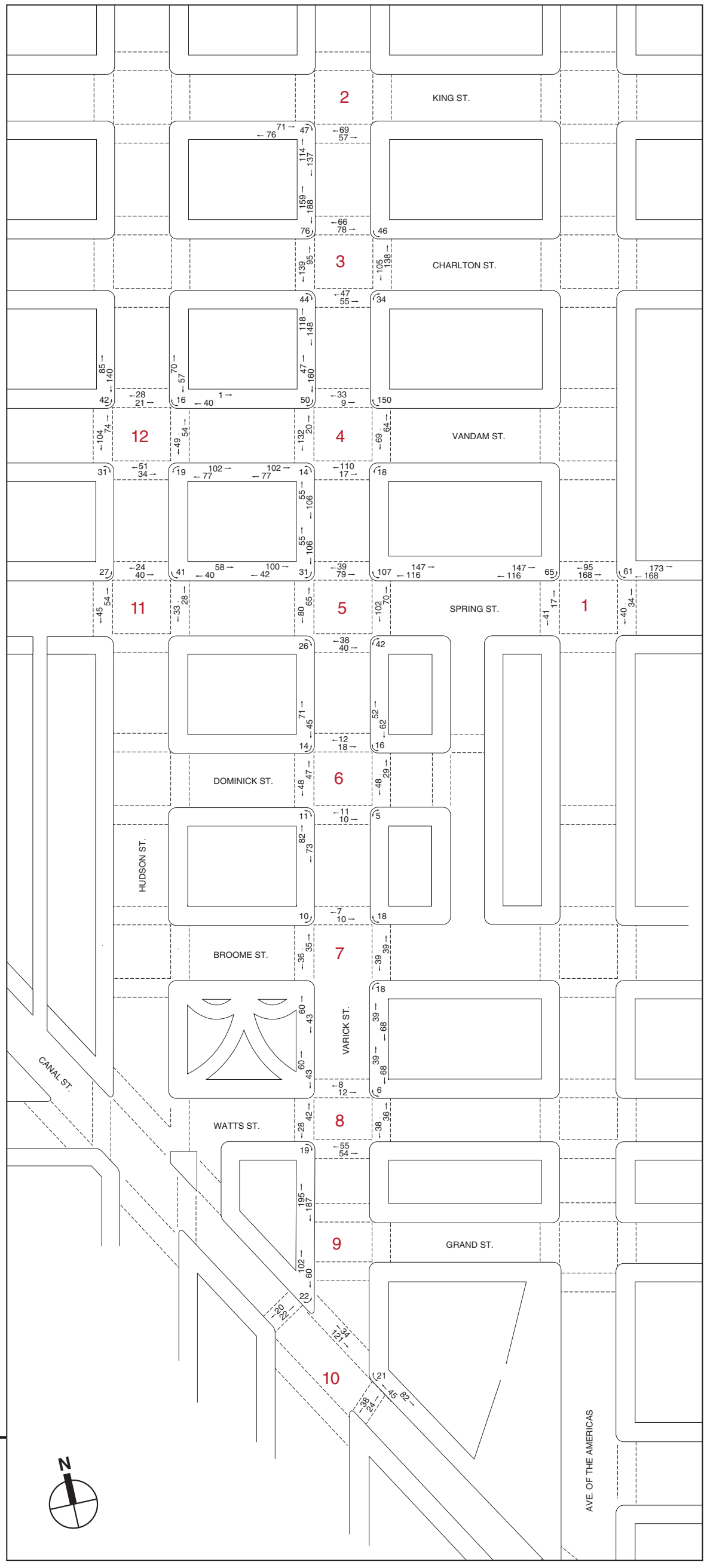
	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Overall LOS A/B/C	23	23	23	23
Overall LOS D	0	0	0	0
Overall LOS E	0	0	0	0
Overall LOS F	0	0	0	0
Note: Includes 23 sidewalk analysis locations.				

5.31.12



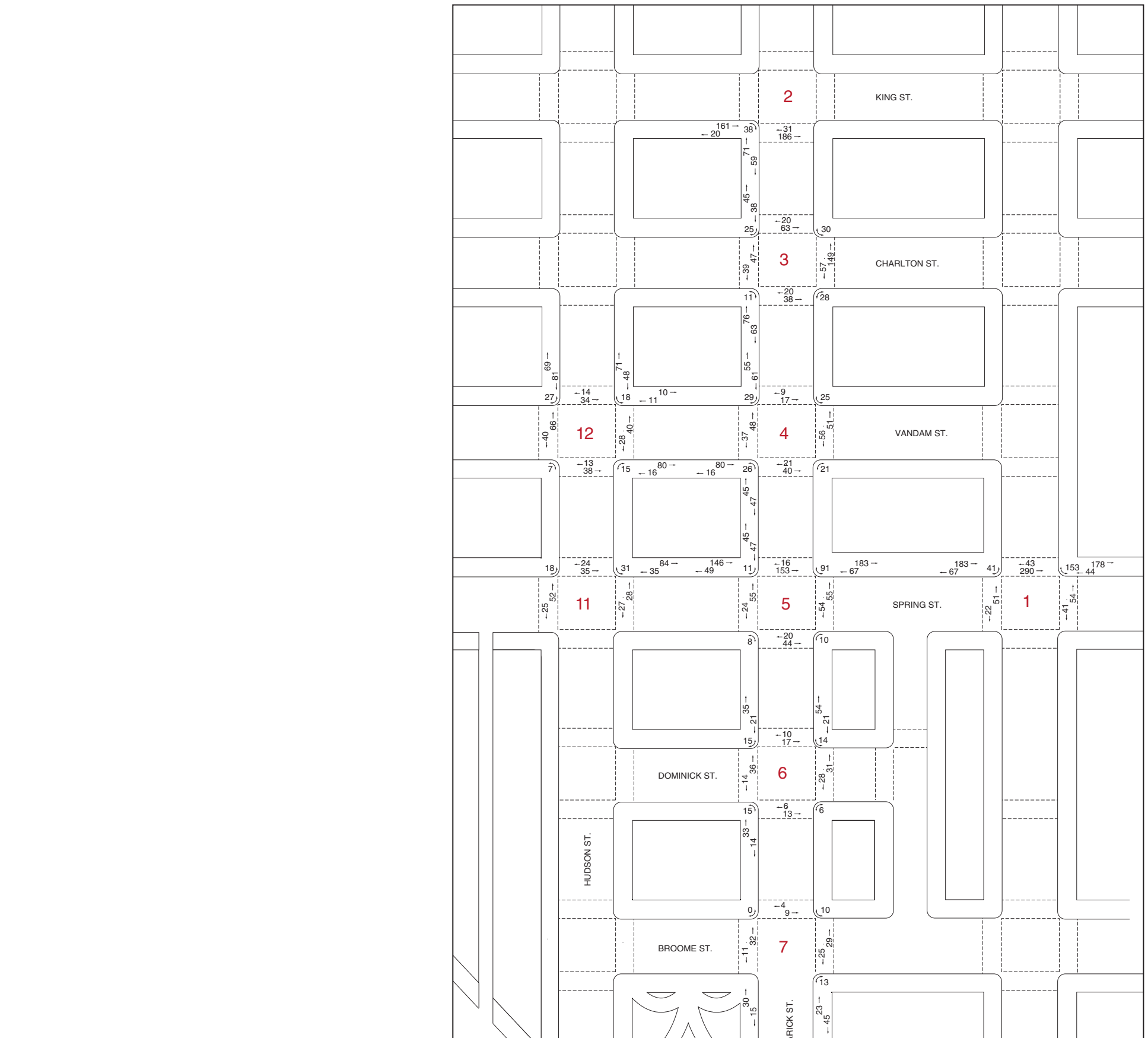
2011 Existing Pedestrian Volumes
Weekday AM Peak 15 Minutes
Figure 13-41

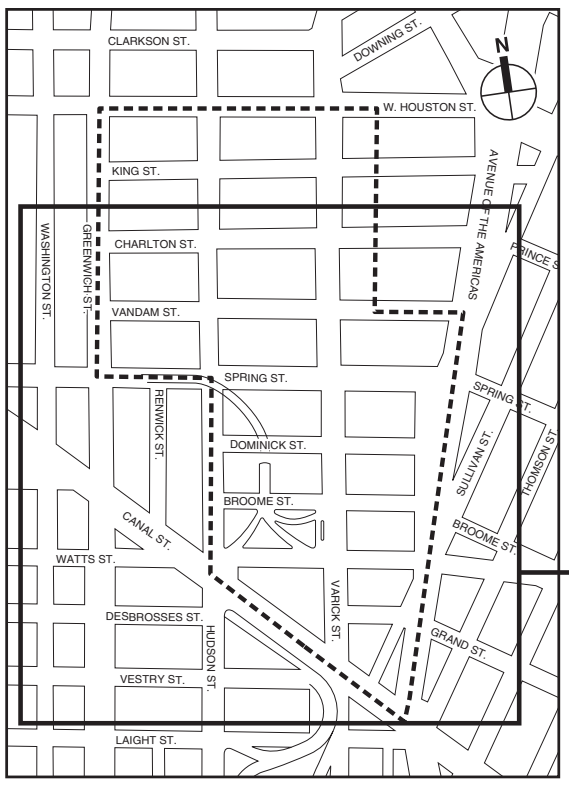
5.31.12



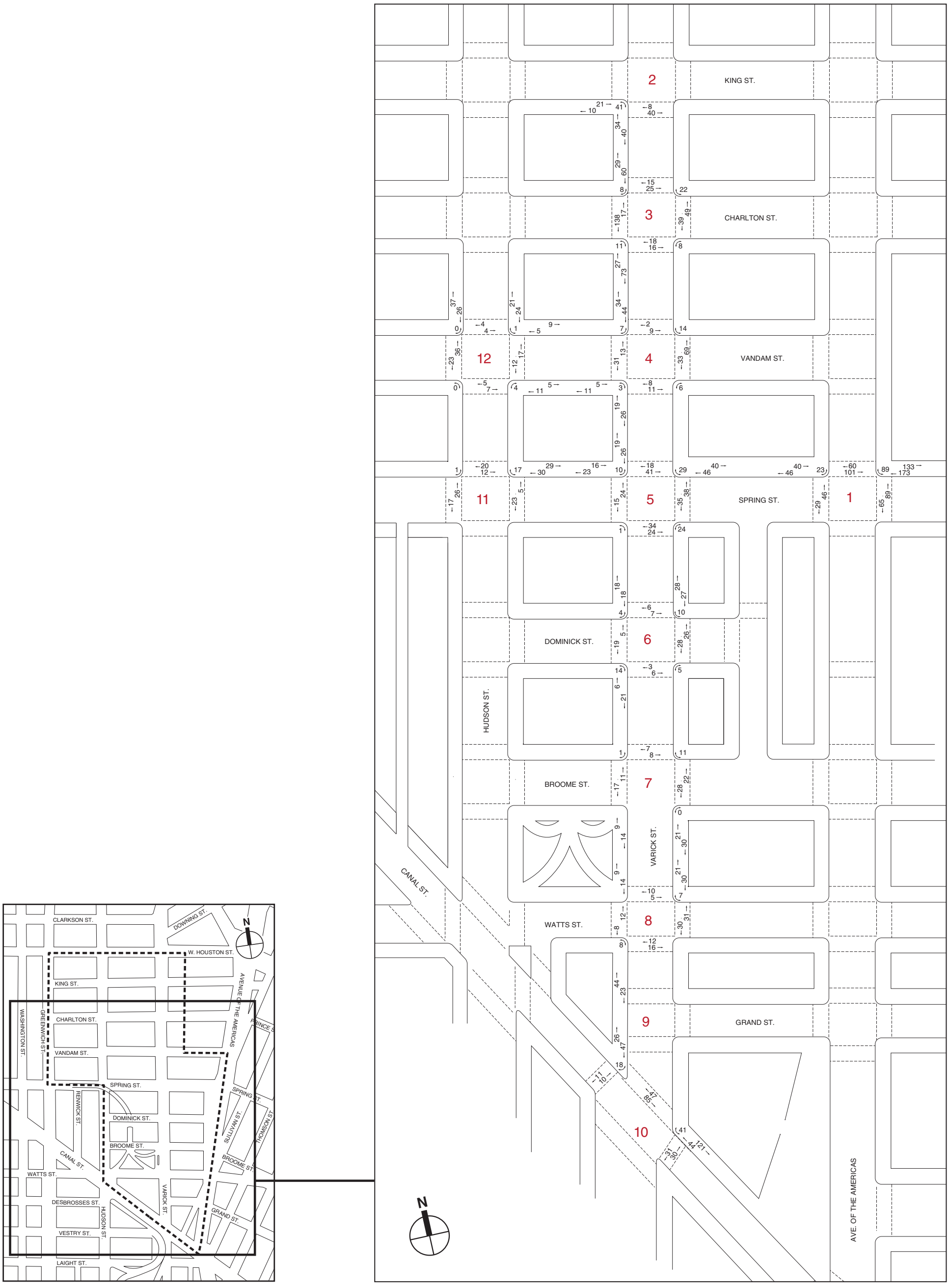
2011 Existing Pedestrian Volumes
Weekday Midday Peak 15 Minutes
Figure 13-42

5.31.12





2011 Existing Pedestrian Volumes
Weekday PM Peak 15 Minutes
Figure 13-43



2011 Existing Pedestrian Volumes
Saturday Peak 15 Minutes
Figure 13-44

Table 13-31
Existing Pedestrian Corner Level of Service Summary

	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Overall LOS A/B/C	28	28	28	28
Overall LOS D	0	0	0	0
Overall LOS E	0	0	0	0
Overall LOS F	0	0	0	0
Note: Includes 28 corner analysis locations.				

Table 13-32
Existing Pedestrian Crosswalk Level of Service Summary

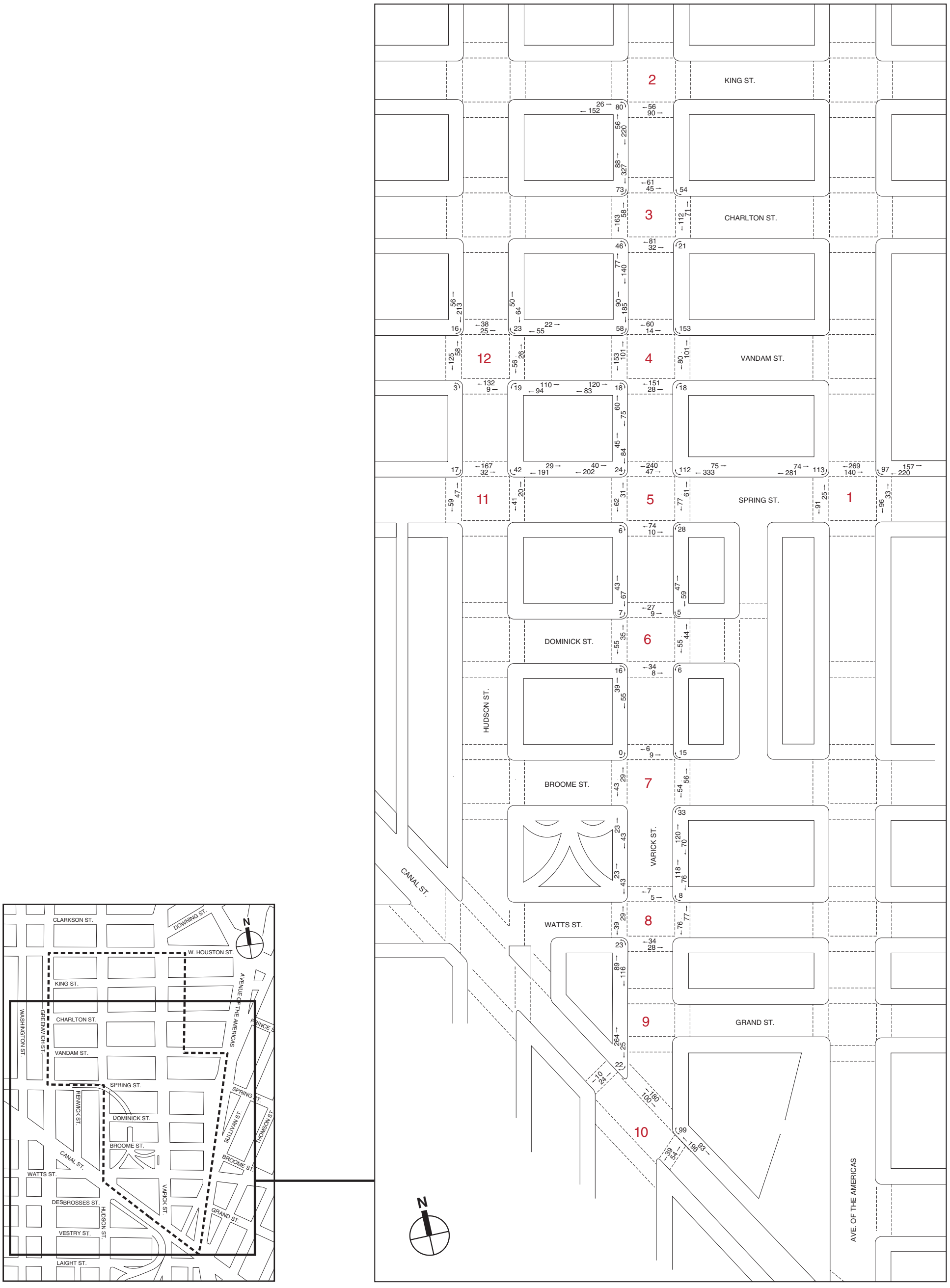
	Weekday			
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
Overall LOS A/B/C	14	14	14	14
Overall LOS D	0	0	0	0
Overall LOS E	0	0	0	0
Overall LOS F	0	0	0	0
Note: Includes 14 crosswalk analysis locations.				

THE FUTURE WITHOUT THE PROPOSED ACTION

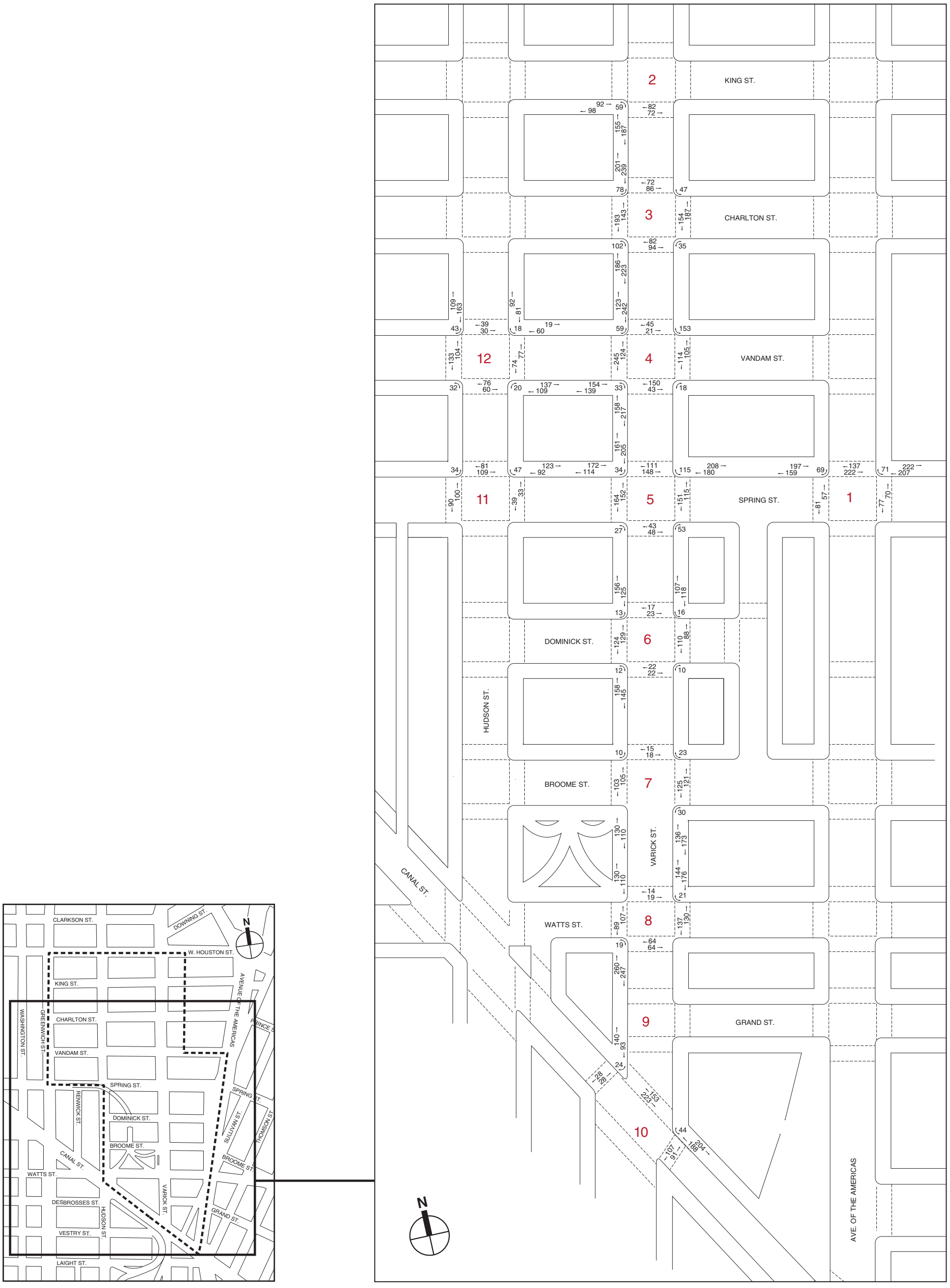
No-Action condition pedestrian volumes were estimated by increasing existing pedestrian levels to reflect expected growth in overall travel through and within the study area. As per CEQR guidelines, an annual background growth rate of 0.25 percent was assumed for the first five years (year 2011 to year 2016) and then 0.125 percent for the remaining years (year 2016 to year 2022). Pedestrian volumes from projects that are anticipated to be completed in the study area, absent the Proposed Action, were also added to arrive at the No-Action condition pedestrian volumes. The total No-Action peak 15-minute pedestrian volumes for the weekday AM, midday, PM, and Saturday peak periods are presented in **Figures 13-45** to **13-48**.

As mentioned above in Section F, "Traffic," a traffic management plan for the Hudson Square neighborhood was prepared in July 2010 by Hudson Square Connection, the Hudson Square BID. ~~The BID plan recommendations include measures that would enhance the area's available pedestrian space. These measures include sidewalk widening, curb extensions, and installation of center median pedestrian refuges along several of the study area streets, including Varick Street, Canal Street, Hudson Street, and Houston Street.~~ Recent implementation of the Hudson Square Connection's recommendations focused on short-term, relatively easy to implement measures to improve pedestrian safety in the BID. By July 2012, most of the short-term and relatively easy to implement recommendations have been implemented. Where appropriate, the effects of these changes on traffic flow and pedestrian circulation are reflected in the FEIS. However, the implementation timing of the remaining recommendations in the July 2010 traffic management plan is not certain; therefore, they were not included in the No-Action or With-Action pedestrian analyses.

Also mentioned above in Section F, "Traffic," NYCDOT presented in June 2012 a set of potential pedestrian improvement measures at locations near the Holland Tunnel. The potential improvements would include the addition of new crosswalks, sidewalk extensions, installation of

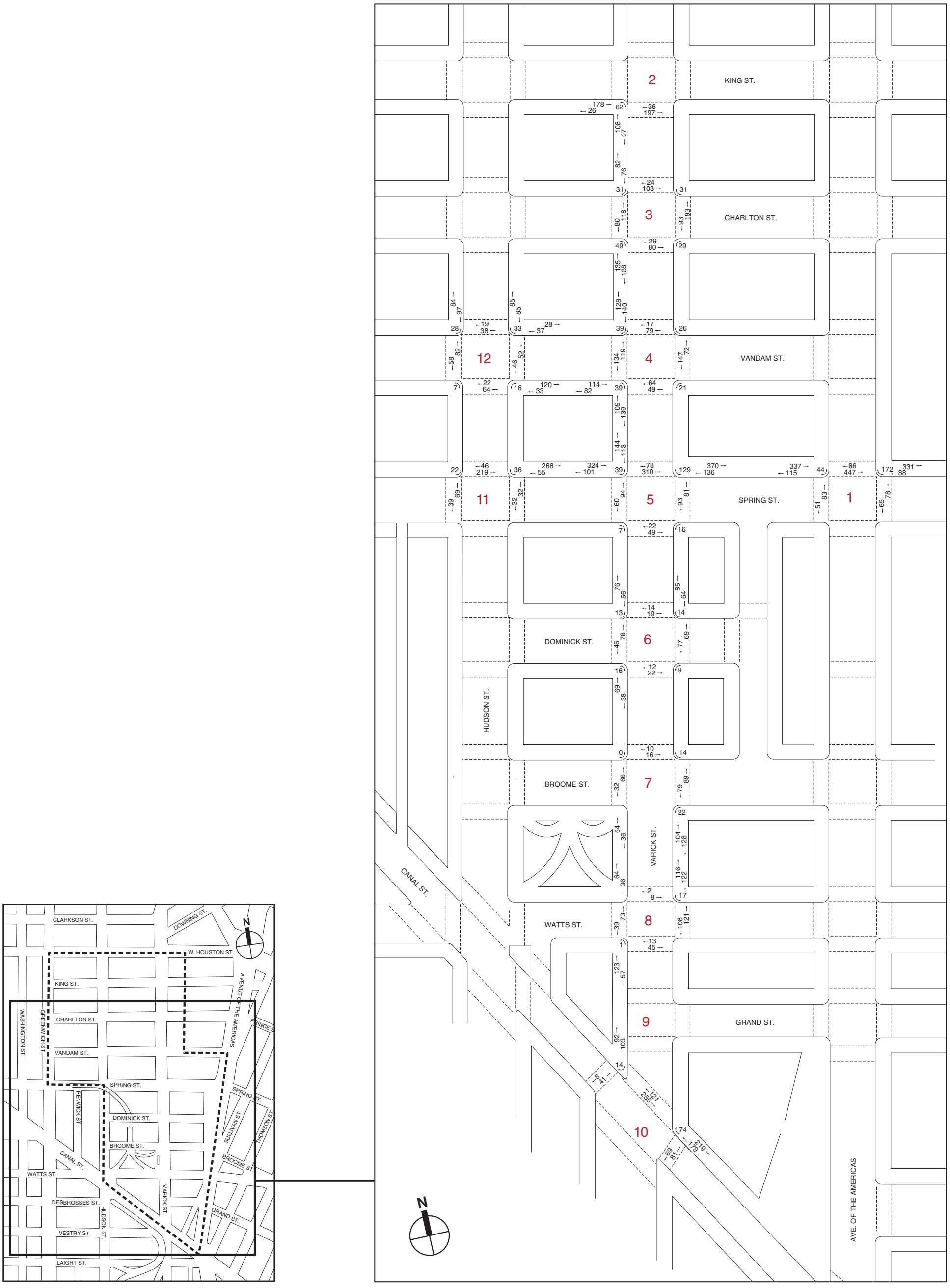


2022 No-Action Pedestrian Volumes
Weekday AM Peak 15 Minutes
Figure 13-45

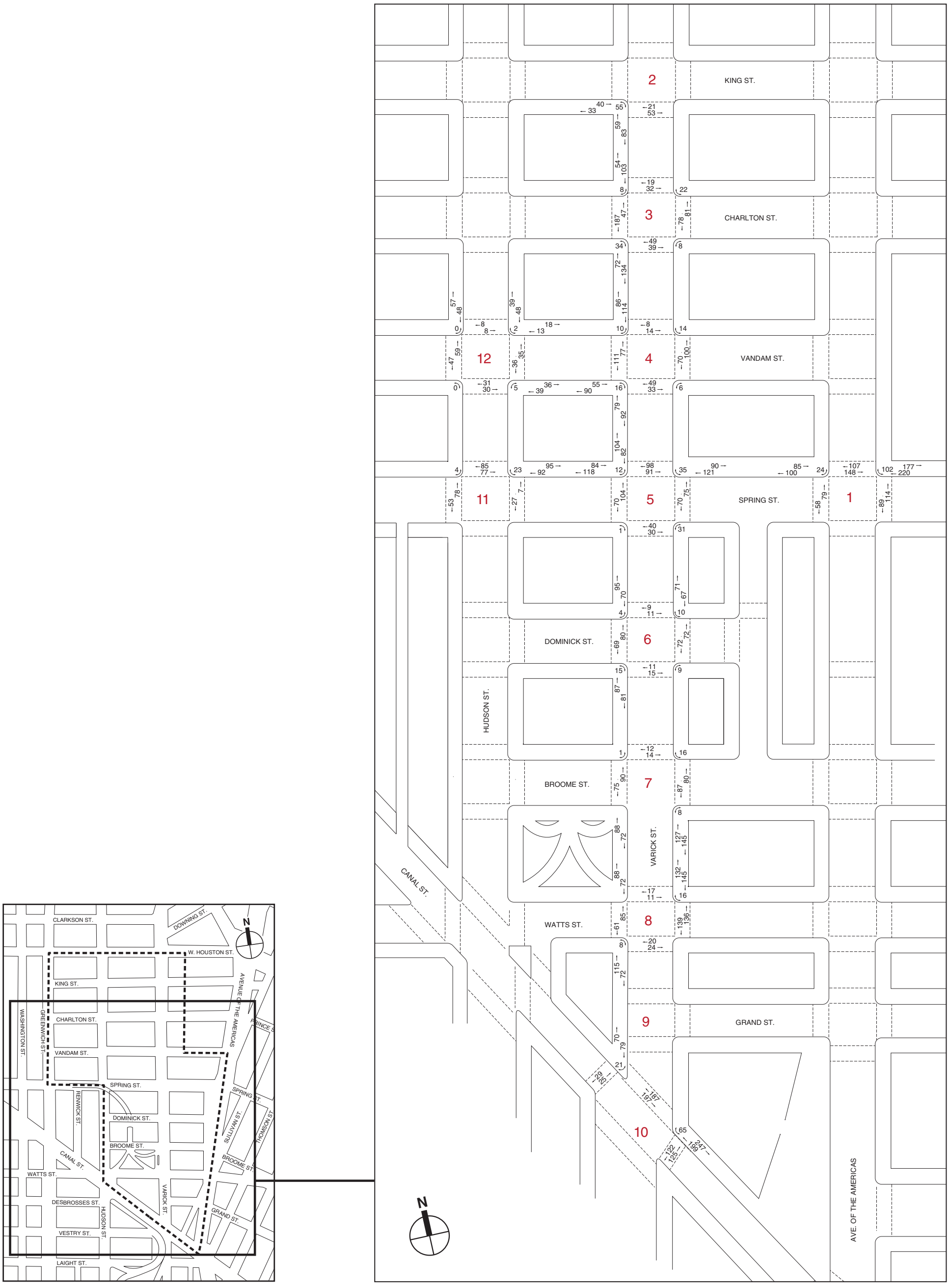


HUDSON SQUARE REZONING

2022 No-Action Pedestrian Volumes
Weekday Midday Peak 15 Minutes
Figure 13-46



2022 No-Action Pedestrian Volumes
Weekday PM Peak 15 Minutes
Figure 13-47



2022 No-Action Pedestrian Volumes
Saturday Peak 15 Minutes
Figure 13-48

center median pedestrian refuge islands, and general improvements in lane markings. Currently, Hudson Square BID "pedestrian traffic managers" are positioned along Varick Street at Spring, Vandam, Charlton, and West Houston Streets to help manage pedestrian flow during the PM commuter peak period. ~~Based on the conceptual schematics outlined in NYCDOT's presentation, the potential pedestrian improvement measures are expected to benefit pedestrian circulation while not impeding traffic flow.~~ Most of these improvements ~~would be~~ have been recently implemented and are continuing to be implemented ~~subject to further review and changes~~ by NYCDOT. Therefore, where appropriate, the effects of these changes are reflected in the FEIS.~~they were not incorporated into the impact analysis presented below.~~

In addition, the Hudson Square Connection released a Streetscape Improvement Plan in October 2012 with distinct initiatives to manage traffic, create open space, green the streets and improve the pedestrian environment. This plan will be implemented over the course of the next five years as funds become available. As Hudson Square Connection develops the designs, they will undertake further surveys and traffic studies. Final designs will require public review and approval of City agencies. Therefore, the potential effects on the transportation systems have yet to be determined and were not included in the No-Action or With-Action condition pedestrian analyses.

Tables 13-33 to **13-35** show an overall comparison of pedestrian levels of service for the existing and No-Action conditions. As summarized in **Tables 13-56** to **13-58** in Section K, "Detailed Analysis Results Tables," all sidewalk, corner reservoir, and crosswalk analysis locations will continue to operate at acceptable mid-LOS D or better (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except at the north crosswalk of Varick Street and Spring Street, which will operate at LOS D with 19.1 SFP during the PM peak period.

Table 13-33
Pedestrian Sidewalk Level of Service Summary Comparison
Existing vs. No-Action Conditions

	Existing				No-Action			
	Weekday Peak Hours			Saturday Peak Hour	Weekday Peak Hours			Saturday Peak Hour
	AM	Midday	PM		AM	Midday	PM	
Overall LOS A/B/C	23	23	23	23	23	23	23	23
Overall LOS D	0	0	0	0	0	0	0	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Note: Includes 23 sidewalk analysis locations.								

Table 13-34
Pedestrian Corner Level of Service Summary Comparison
Existing vs. No-Action Conditions

	Existing				No-Action			
	Weekday Peak Hours			Saturday Peak Hour	Weekday Peak Hours			Saturday Peak Hour
	AM	Midday	PM		AM	Midday	PM	
Overall LOS A/B/C	28	28	28	28	28	28	28	28
Overall LOS D	0	0	0	0	0	0	0	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Note: Includes 28 corner analysis locations.								

Table 13-35
Pedestrian Crosswalk Level of Service Summary Comparison
Existing vs. No-Action Conditions

	Existing				2022 No-Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	14	14	14	14	14	14	12	14
Overall LOS D	0	0	0	0	0	0	2	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0

Note: Includes 14 crosswalk analysis locations.

FUTURE WITH THE PROPOSED ACTION

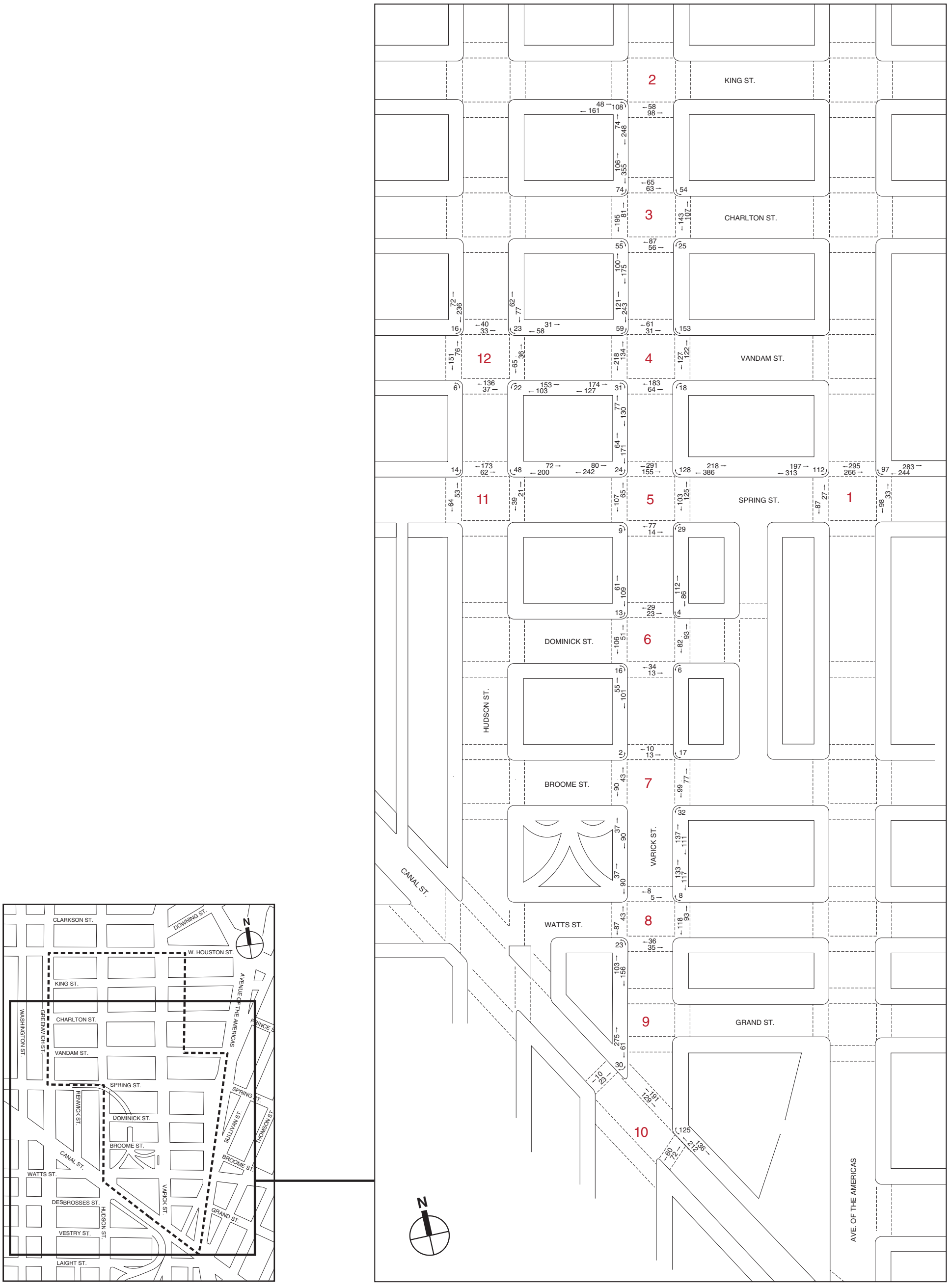
The project-generated pedestrian volumes were assigned to the pedestrian network considering current land uses in the area, nearby parking locations, available transit services, and pedestrian pathways connecting to/from the Proposed Action. Based on the incremental peak hour pedestrian trips presented on **Figures 13-23A** to **13-26B** in Section D, "Level 2 Screening Assessment," peak 15-minute incremental pedestrian volumes were developed by dividing the hourly incremental volumes by four and accounting for peaking characteristics within the peak hours. These pedestrian volumes were added to the No-Action volumes to arrive at the With-Action pedestrian volumes for analysis. The total With-Action peak 15-minute pedestrian volumes are presented in **Figures 13-49** to **13-52**.

The pedestrian analyses conducted for the With-Action condition accounted for the project-generated pedestrian volumes and anticipated physical changes, if any, to the pedestrian environment resulting from the Proposed Action. **Tables 13-36** to **13-38** show an overall comparison of pedestrian levels of service for the No-Action and With-Action conditions.

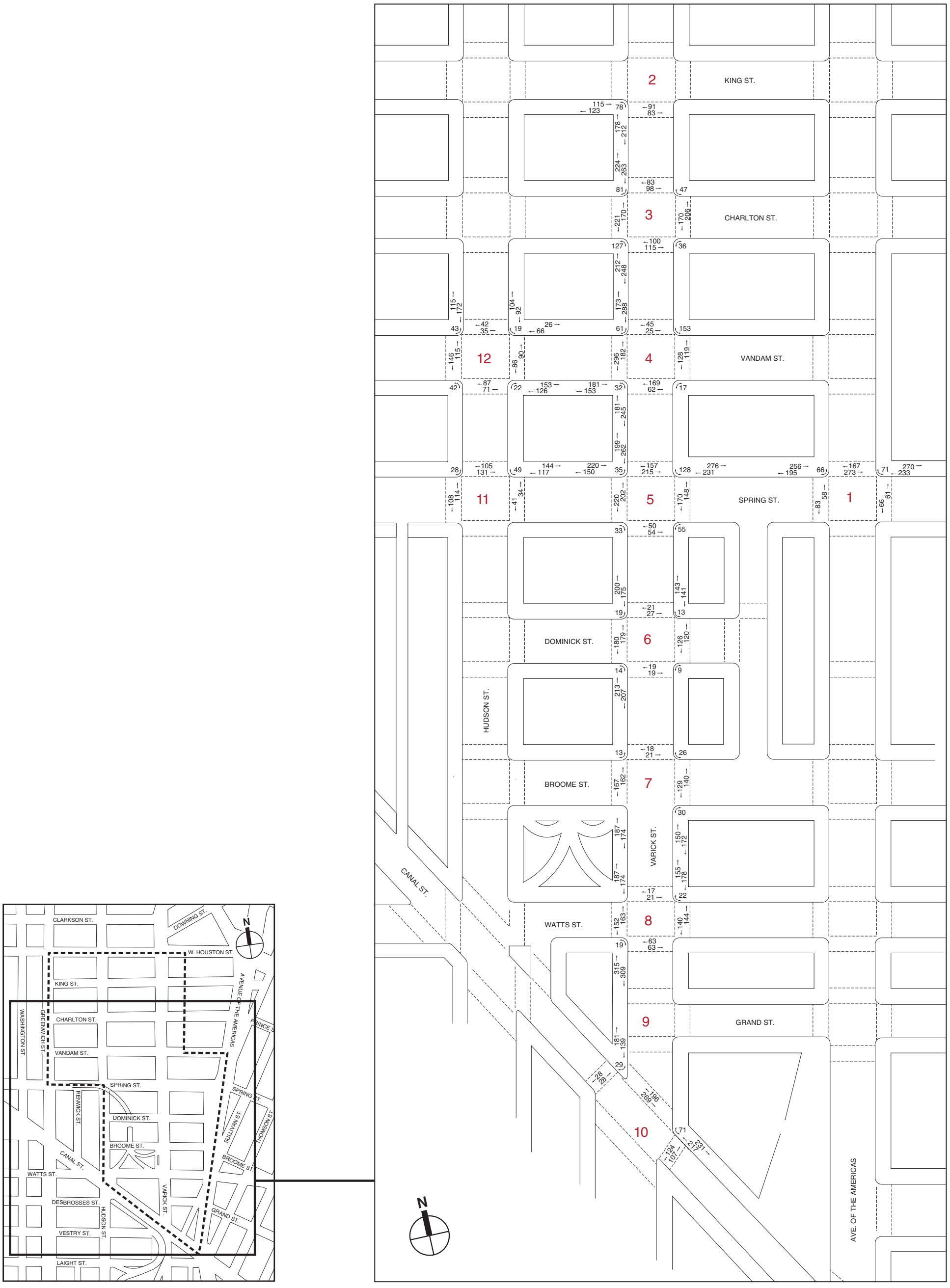
Table 13-36
Pedestrian Sidewalk Level of Service Summary Comparison
No-Action vs. With-Action Conditions

	No-Action				With-Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	23	23	23	23	23	23	22	23
Overall LOS D	0	0	0	0	0	0	1	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Number of analysis locations with significant impacts	-	-	-	-	0	0	0	0

Note: Includes 23 sidewalk analysis locations.

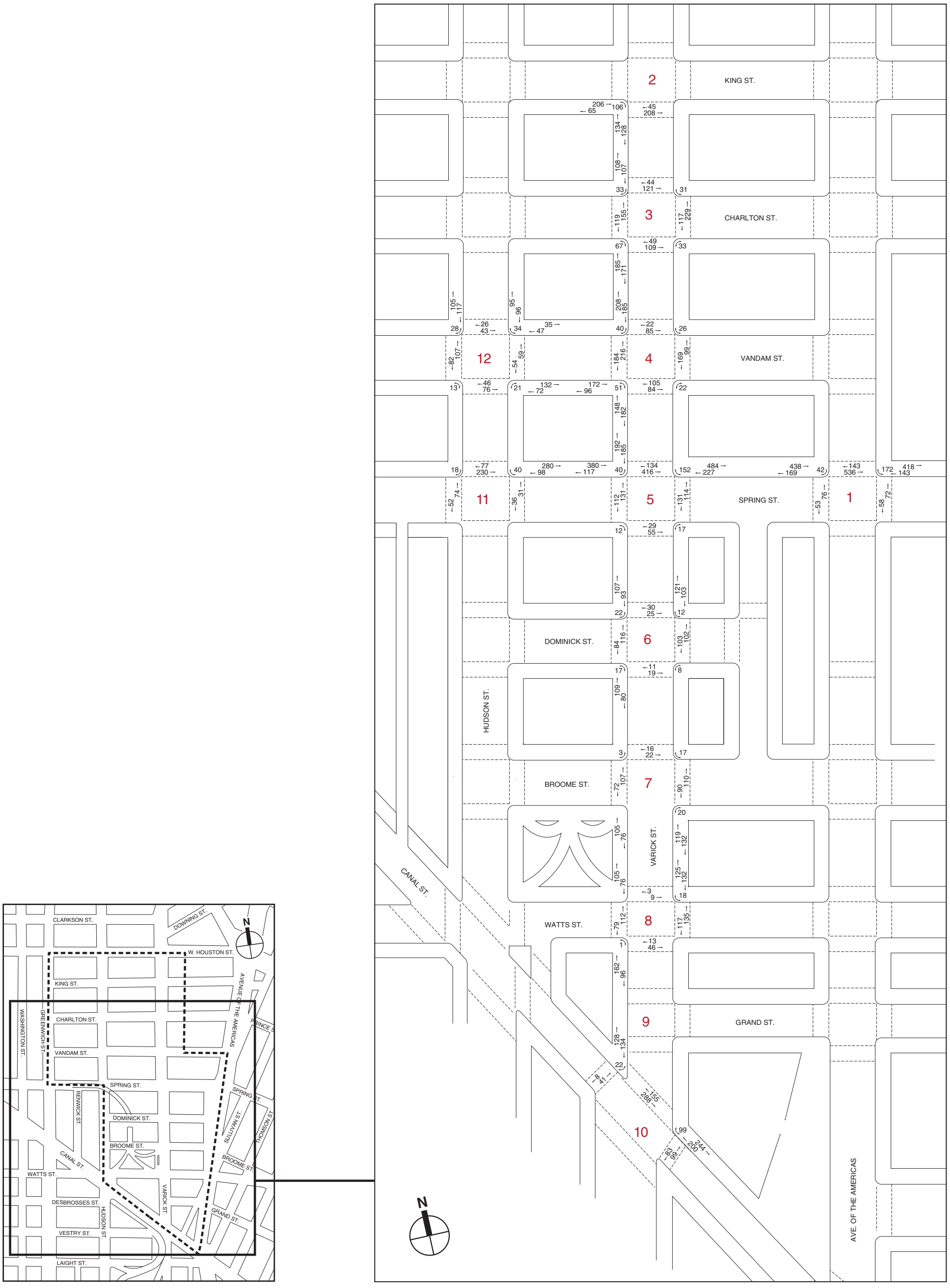


2022 With-Action Pedestrian Volumes
Weekday AM Peak 15 Minutes
Figure 13-49

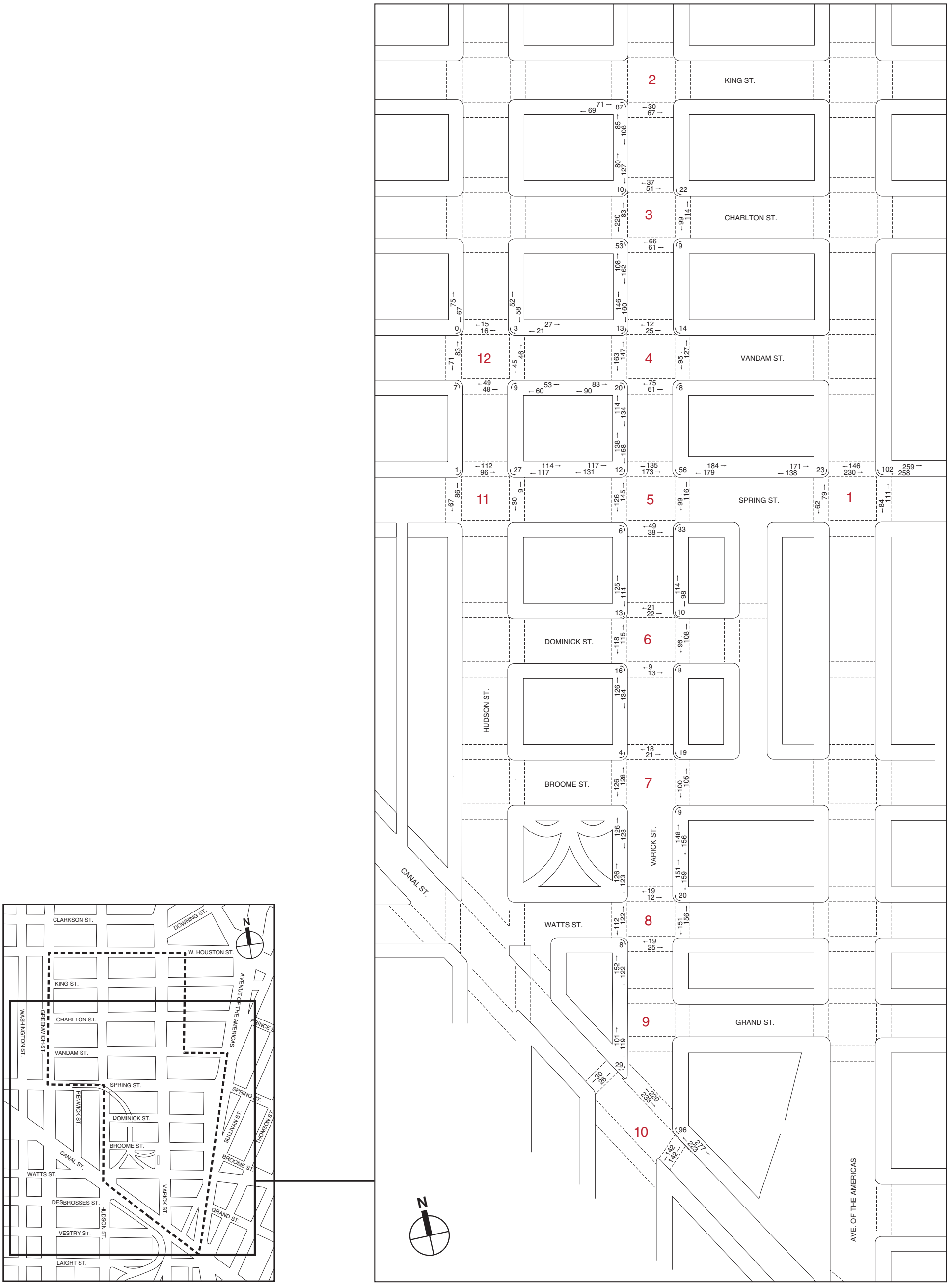


HUDSON SQUARE REZONING

2022 With-Action Pedestrian Volumes
Weekday Midday Peak 15 Minutes
Figure 13-50



2022 With-Action Pedestrian Volumes
Weekday PM Peak 15 Minutes
Figure 13-51



2022 With-Action Pedestrian Volumes
Saturday Peak 15 Minutes
Figure 13-52

Table 13-37
Pedestrian Corner Level of Service Summary Comparison
No-Action vs. With-Action Conditions

	No-Action				With-Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	28	28	28	28	28	28	28	28
Overall LOS D	0	0	0	0	0	0	0	0
Overall LOS E	0	0	0	0	0	0	0	0
Overall LOS F	0	0	0	0	0	0	0	0
Number of analysis locations with significant impacts	-	-	-	-	0	0	0	0

Note: Includes 28 corner analysis locations.

Table 13-38
Pedestrian Crosswalk Level of Service Summary Comparison
No-Action vs. With-Action Conditions

	No-Action				With-Action			
	Weekday Peak Hours			Saturday	Weekday Peak Hours			Saturday
	AM	Midday	PM	Peak Hour	AM	Midday	PM	Peak Hour
Overall LOS A/B/C	14	14	12	14	12	12	12	14
Overall LOS D	0	0	2	0	2	2	1	0
Overall LOS E	0	0	0	0	0	0	1	0
Overall LOS F	0	0	0	0	0	0	0	0
Number of analysis locations with significant impacts	-	-	-	-	1	0	2	0

Note: Includes 14 crosswalk analysis locations.

As summarized in **Tables 13-59** to **13-61** in Section K, "Detailed Analysis Results Tables," all sidewalk, corner reservoir, and crosswalk locations would continue to operate at acceptable levels (within mid-LOS D, with a maximum of 8.5 PMF in sidewalk platoon flows or a minimum of 19.5 SFP for corners and crosswalks) or incur degradations that, when compared with the No-Action condition, do not exceed the *CEQR Technical Manual* sliding scale impact thresholds (see **Tables 13-17** and **13-18**), except at the following locations:

- The north crosswalk of Avenue of the Americas and Spring Street, which would operate at LOS D with 16.2 SFP during the PM peak 15-minute period; and
- The north crosswalk of Varick Street and Spring Street, which would operate at LOS D with 18.1 SFP during the AM peak 15-minute period, and at LOS E with 12.8 SFP during the PM peak 15-minute period.

Measures that can be implemented to mitigate these significant adverse pedestrian impacts are discussed in Chapter 20, "Mitigation."

I. VEHICULAR AND PEDESTRIAN SAFETY

Accident data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between March 31, 2008 and

March 31, 2011. The data obtained quantify the total number of reportable accidents (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related accidents at each location. According to the *CEQR Technical Manual*, a high accident location is one where there were five or more pedestrian/bicyclist-related accidents or 48 or more reportable and non-reportable accidents in any consecutive 12 months within the most recent 3-year period for which data are available.

During the March 2008 to March 2011 3-year period, a total of 831 reportable and non-reportable accidents, zero fatalities, 380 injuries, and 92 pedestrian/bicyclist-related accidents occurred at the study area and surrounding intersections. A rolling total of accident data identifies two study area intersections as high pedestrian accident locations in the 2008 to 2011 period. These intersections are Varick Street at West Houston Street and Avenue of the Americas at West Houston Street. **Table 13-39** depicts total accident characteristics by intersection during the study period, as well as a breakdown of pedestrian and bicycle accidents by year and location. **Table 13-40** provides a detailed description of each pedestrian/bicyclist-related accident at the two intersections listed above during the three year period.

VARICK STREET AND WEST HOUSTON STREET

Based on the review of the accident history at the intersection of Varick Street and West Houston Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Varick Street and West Houston Street is signalized and provides four high visibility crosswalks, though faded striping suggests they may have been school crosswalks. With the Proposed Action, the intersection of Varick Street and West Houston Street would experience noticeable increases in vehicular and pedestrian traffic. In terms of project-generated activity, the intersection would experience net incremental peak-hour volume increases of approximately 60 or fewer vehicle trips and 110 or fewer pedestrian trips at any crosswalks at this intersection during each of the four analysis peak hours.

As discussed above in Section F, "Traffic," this intersection would be impacted during the weekday AM and PM peak hours under the 2022 With-Action conditions. As described in Chapter 20, "Mitigation," the predicted impacts at this intersection could be fully mitigated during the weekday AM peak hour with standard traffic engineering measures; however, the impact during the weekday PM peak hour could not be fully migitated. Because the incremental vehicle trips at this intersection during the weekday PM peak hour would mostly be on the Varick Street southbound through movement and the incremental increase in pedestrian trips from the Proposed Action at this intersection's crosswalks would not be substantial, the potential for additional vehicular-pedestrian conflicts, which mostly occur with vehicular turning movements through crosswalks, is expected to be minimal. In addition, due to the persistent traffic queues from the Holland Tunnel along the Varick Street corridor, vehicles and pedestrians are generally acclimated to the prevailing condition during peak periods of heavy traffic. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures such as the installation of signs warning turning vehicles to yield to pedestrians in the crosswalk on the southbound and westbound approaches and the installation of countdown timers at all crosswalks, can be implemented to improve pedestrian safety at this intersection.

Table 13-39
Accident Summary

Intersection		Study Period						Accidents by Year							
North-South Roadway	East-West Roadway	All Accidents by Year				Total Fatalities	Total Injuries	Pedestrian				Bicycle			
		2008	2009	2010	2011			2008	2009	2010	2011	2008	2009	2010	2011
West Street	Clarkson Street	0	1	0	0		1								
West Street	W. Houston Street	2	2	0	0		4								
West Street	Spring Street	5	9	4	0		4								
West Street	Canal Street (N&S)	2	0	2	0		2								
Washington Street	W. Houston Street	1	5	2	0		6						1		
Washington Street	Spring Street	2	6	0	0		8						2		
Washington Street	Canal Street	1	2	2	1		1			1					
Greenwich Street	W. Houston Street	1	4	0	0		3		3				1		
Greenwich Street	King Street	2	0	0	0		0								
Greenwich Street	Charlton Street	0	0	0	0		0								
Greenwich Street	Vandam Street	0	0	0	0		0								
Greenwich Street	Spring Street	2	2	3	0		0								
Greenwich Street	Canal Street	0	0	0	0		0								
Renwick Street	Spring Street	2	4	1	1		1	1							
Renwick Street	Canal Street	0	0	0	0		0								
Hudson Street	W. Houston Street	2	6	2	1		6								
Hudson Street	King Street	4	3	1	1		3								
Hudson Street	Charlton Street	0	2	2	1		4		1					1	
Hudson Street	Vandam Street	3	0	1	0		2	1							
Hudson Street	Spring Street	4	5	4	0		4		2	1					
Hudson Street	Dominick Street	2	0	1	1		4								
Hudson Street	Broome Street	0	2	0	0		2								
Hudson Street	Canal Street	33	30	15	3		36		1			1		1	
Hudson Street	Debrosses Street	4	2	1	0		4								
Hudson Street	Vestry Street	3	5	1	0		3	1		1			1		
Hudson Street	Laight Street	10	10	3	0		8	1							
Hudson Street	Hubert Street	0	3	0	0		0								
Hudson Street	Ericsson Pl/Beach St	4	7	0	0		3	1				1			
Varick Street	**W. Houston Street**	9	26	15	1		21	1	5	4	1			1	
Varick Street	King Street	3	2	2	0		4		1						
Varick Street	Charlton Street	10	8	0	1		4		1						
Varick Street	Vandam Street	6	1	6	4		10	1		1	1				
Varick Street	Spring Street	20	25	10	1		23		1				2	1	
Varick Street	Dominick Street	5	10	5	1		7			1					1
Varick Street	Broome Street	12	14	6	0		4								
Varick Street	Watts Street	21	15	17	1		73			2			2	1	
Varick Street	Grand Street	5	8	1	1		3							1	
Varick Street	Canal Street	18	30	3	0		14	1		1					
Varick Street	Laight Street	0	0	0	0		0								
Varick Street	Ericsson Place	11	8	4	0		9		2	1					
Varick Street	Clarkson/Carmine St	2	9	13	0		0								
St Johns Lane	Laight Street	0	0	0	0		0								
St Johns Lane	York Street	0	0	0	0		0								
St Johns Lane	Beach Street	1	0	0	0		0								
Avenue of the Americas	**W. Houston Street**	7	5	10	0		16	2	1	3				1	
Avenue of the Americas	King Street	2	1	0	1		1					1			
Avenue of the Americas	Prince/Charlton St	2	1	0	0		0								
Avenue of the Americas	Vandam Street	1	0	0	1		0								

Table 13-39 (cont'd)
Accident Summary

Intersection		Study Period						Accidents by Year							
North-South Roadway	East-West Roadway	All Accidents by Year				Total Fatalities	Total Injuries	Pedestrian				Bicycle			
		2008	2009	2010	2011			2008	2009	2010	2011	2008	2009	2010	2011
Avenue of the Americas	Spring Street	3	5	3	2		21	2	1	1	2				
Avenue of the Americas	Dominick Street	0	0	1	0		1								
Avenue of the Americas	Broome Street	4	1	0	0		3	1							
Avenue of the Americas	Watts Street	3	19	6	4		23	1	1						
Avenue of the Americas	Grand Street	5	0	2	1		8				1				
Avenue of the Americas	Canal Street	12	17	4	1		8	1	2	1			2		
Avenue of the Americas	York Street	0	3	0	0		2						1		
Avenue of the Americas	Lispenard Street/W. Broadway	0	0	1	0		0								
Avenue of the Americas	Beach/Walker St	2	3	2	1		2			1					
W. Broadway	Canal Street	0	0	0	0		0								
W. Broadway	Beach Street	0	0	0	0		0								
Wooster Street	Canal Street	10	13	3	0		3								
Church Street	Canal Street	17	18	9	1		11	2	1	1			2	2	
Church Street	Lispenard Street	0	0	0	0		0								
Church Street	Walker Street	0	0	0	0		0								

Note: **Bold** intersections are high pedestrian accident locations.
Source: NYSDOT March 31, 2008 and March 31, 2011 accident data.

AVENUE OF THE AMERICAS AND WEST HOUSTON STREET

Based on a review of the accident history at the intersection of Avenue of the Americas and West Houston Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With regard to geometric deficiencies that could potentially cause safety hazards, the intersection of Avenue of the Americas and West Houston Street is signalized and provides two school crosswalks, one high-visibility crosswalk, and one standard crosswalk. In addition, countdown timers are installed for all crosswalks at this intersection and School Advance Warning assembly signs are posted on the eastern leg of West Houston Street. With the Proposed Action, the intersection of Avenue of the Americas and West Houston Street would experience moderate increases in vehicular and pedestrian traffic. In terms of project-generated activity, the intersection would experience net incremental peak-hour volume increases of approximately 100 or fewer vehicle trips and 20 or fewer pedestrian trips at any crosswalks at this intersection during each of the four analysis peak hours. As discussed above in Section F, "Traffic," this intersection would be impacted during the weekday AM peak hour under the 2022 With-Action conditions.

Table 13-40
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Varick Street @ W. Houston Street	2008	12/1	6:15 AM	X		Making right turn – South	Crossing with signal	X		X	
	2009	3/31	8:34 PM	X		Making left turn – Southwest	Crossing with signal	X			Failure to yield R.O.W.
		4/28	9:30 PM	X		Making left turn – South	Crossing against signal	X	X		
		6/5	4:00 PM	X		Going straight	Crossing with signal			X	
		8/19	9:00 PM	X		Going straight – South	Making left turn on red		X		
		9/8									
	2010	5/6	10:30 AM	X		Starting from parking – South	Other actions in roadway				Unknown
		6/14	4:00 PM	X		Going straight – South	Crossing with signal				Following too closely
		9/29	1:23 PM	X		Going straight – West	Working in roadway				Aggressive Driving/Road Rage
		10/5	4:25 PM	X		Backing – North	Crossing with signal				Backing unsafely
		12/6	6:22 AM	X		Making left turn – South	Crossing with signal	X		X	
	2011	3/6	8:21 PM	X		Making left turn – South	Crossing	X	X		
Avenue of the Americas @ W. Houston Street	2008	8/2	4:45 PM	X		Going straight – West	Crossing against signal		X	X	Unsafe speed
		12/20	3:00 AM	X		Going straight – North	Crossing against signal		X		
	2009	12/21	4:45 AM	X		Unknown	Unknown				Unknown
	2010	1/28	4:55 PM	X		Unknown	Crossing against signal		X		
		2/23	12:45 PM	X		Unknown	Unknown				Unknown
		10/2	7:45 PM	X		Unknown	Crossing with signal				Unknown
		12/13	7:30 PM	X		Unknown	Crossing with signal				Unknown

Source: NYSDOT March 31, 2008 and March 31, 2011 accident data.

However, as described in Chapter 20, "Mitigation," the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., School Advance Warning assemblies on the northbound approach) and restriping the west crosswalk into a high-visibility crosswalk, can be implemented to improve pedestrian safety at this intersection.

J. PARKING

2011 EXISTING CONDITIONS

An inventory of on- and off-street parking within a ¼ mile of the Rezoning Area was conducted in October 2011 and March 2012. The on-street survey involved recording curbside regulations and performing general observations of daytime utilization. The off-street survey provided an inventory of the area's public parking facilities and their legal capacities and daytime utilization.

ON-STREET PARKING

Curbside parking regulations within a ¼ mile of the Rezoning Area are illustrated in **Figure 13-53** and summarized in **Table 13-41**. The curbside regulations in the area generally include limited one-hour metered parking, no standing or no parking anytime except authorized vehicles, and alternate-side parking to accommodate street-cleaning.

Table 13-41
Summary of On-Street Parking Regulations

No.	Regulation	No.	Regulation
1	NP anytime	**74**	NS 7-10AM 4-7PM except Sun
2	NP 9-10:30AM Mon & Thurs	**75**	1 hr parking 10AM-4PM except Sun
3	NP 9-10:30AM Tues & Fri	**76**	NS 4-7PM except Sun
4	NS anytime	**77**	NS except trucks loading/unloading 10AM-4PM except Sun
5	NP 11-12:30PM Mon & Thurs	**78**	2 hr parking 9AM-4PM except Sun
6	NP 8AM-6PM Mon-Fri	**79**	NS 8-9AM 4-7PM except Sun
8	NP 11-12:30PM Tues & Fri	**80**	1 hr parking 10AM-4PM Mon-Fri 9AM-7PM Sat
9	NP 7:30-8AM except Sun	**84**	Board of Education
10	1 hr parking 8AM-7PM except Sun	**85**	NS 4-7PM Mon-Fri
11	Pay at Muni-meter	**86**	NP 8AM-7PM except Sun
12	NS 6AM-6PM Mon-Fri	**87**	NS except taxis 7AM-4PM except Sun
13	NS except trucks loading/unloading 8AM-6PM except Sun	**88**	NS except trucks loading/unloading 7AM-4PM except Sun
14	NP 12:30-2PM Mon & Thurs	**89**	NP 8AM-4PM Mon-Fri
15	NP 7AM-4PM Mon-Fri	**90**	No bus layovers
17	NS except trucks loading/unloading 8AM-10PM Mon-Fri	**91**	Special night regulations/ NS 11PM-7AM including Sun
18	NS except trucks loading/unloading 8AM-4PM Mon-Fri	**92**	NS 7AM-4PM Mon-Fri
19	NP 7AM-4PM school days	**93**	6AM-7PM Mon-Fri
20	Department of Education (DOE)	**94**	NYS Dept of Labor
21	NS anytime temporary construction regulation	**95**	UIAB (Unemployment Insurance Appeal Board)
22	NS 7AM-4PM school days except school buses	**96**	NS access-a-ride bus stop
23	No stopping anytime	**97**	NYSL (New York State Lottery)
24	Bus stop, NS	**98**	NP passenger loading zone
25	NS except trucks loading/unloading 7AM-7PM except Sun	**99**	7AM-6PM Mon-Fri
26	NP 7AM-7PM Mon-Fri	**100**	3 minute idling law you idle you pay $2000
29	Department of Mental Health	**101**	Department of Sanitation
30	Ambulette	**102**	NP 10AM-6PM Mon-Fri
31	NYP license plates only	**103**	NS 4-8PM Mon-Fri
32	2 hr parking 8AM-7PM except Sun	**104**	NS fire zone
33	NP 8-8:30AM except Sun	**105**	NS 7AM-8PM Mon-Fri
34	2 hr parking 8:30AM-7PM except Sun	**106**	NS except trucks loading/unloading 7AM-7PM including Sun
35	Pay at Muni-meter NYC Parking card available for info visit www.nyc.gov/dot or call 311	**107**	NP 8AM-7PM Mon-Fri
36	Night regulations 4-6AM Tues, Thurs, Sat	**108**	NS 7AM-7PM Mon-Fri
37	1 hr parking 9AM-7PM except Sun	**109**	Buses only 4-7PM Mon-Fri
39	USDSS	**110**	NS except commercial vehicles metered parking 3 hr limit 9AM-7PM except Sun
40	NS 7AM-7PM Mon-Fri except authorized vehicles	**111**	Special night regulations/ NS 12-7AM including Sun
41	NS anytime except vehicles with NYP License Plates	**112**	Night regulations 3-6AM except Suns
44	DCASR	**113**	NS except trucks loading/unloading 7AM-1PM except Sun
45	US Government vehicles only	**114**	NS 1-7PM except Sun
47	NS 8AM-6PM Mon-Fri	**115**	NS 3-7PM except Sun
48	No permit zone	**116**	NS except commercial vehicles metered parking 3 hr limit 7AM-1PM except Sun 7PM-12AM except Sun metered parking 5 hr limit
49	NS 8AM-6PM except Sun	**117**	NS 1-7PM including Sun
50	NP 8AM-6PM except Sun	**118**	NS 7-10AM 3-7PM including Sun
51	US Immigration & Naturalization	**119**	NS except trucks loading/unloading 10AM-3PM except Sun
52	NS anytime except authorized vehicles	**120**	NS except trucks loading/unloading 8AM-7PM Mon-Fri
54	1 hr parking 7:30AM-10PM except Sun	**121**	Fire Department
55	NP 8AM-5PM Mon-Fri	**122**	NP 8-9:30AM Mon & Thurs

2.28.12

Rezoning Area Boundary

1/4-Mile Study Area

1. North/South Roadways Parking Regulations

1. East/West Roadways Parking Regulations

Blocked off for Construction/ Construction Equipment

On-Street Parking Regulations
Figure 13-53

Table 13-41 (cont'd)
Summary of On-Street Parking Regulations

No.	Regulation	No.	Regulation
56	NP 6AM-6PM Mon-Fri	**123**	US Mail
57	NS 6PM-6AM including Sun	**124**	NS except trucks loading/unloading 7AM-4PM Mon-Fri
58	NP 6AM-6PM including Sun	**126**	Night regulations 2-6AM Tues & Fri
59	NP 7AM-6PM Mon-Fri	**127**	Taxi/FHV
60	NS hotel loading zone	**128**	Night regulations 4-6AM Mon, Wed, Fri
61	Department of Corrections vehicles	**129**	1 hr parking 8:30AM-7PM except Sun
62	DOL - OSHA	**130**	2 hr parking 9AM-7PM except Sun
63	1 hr parking 8AM-7PM except Sun	**131**	Night regulations 2-6AM Mon & Thurs
64	1 hr parking 7:30AM-7PM except Sun	**132**	NS anytime Taxi Stand
65	Meters are not in effect above times	**133**	NP Wed (paper sign posted by NYPD)
66	Board of Elections	**134**	1 Hr parking 9AM-4PM Mon-Fri 9AM-7PM Sat
67	NS 6AM-6PM Mon-Fri except Authorized vehicles	**135**	NS 8-12AM Mon-Fri except TLC licensed vehicles prearranged service only
68	U.S. Dept of Agriculture	**136**	NS 4-7PM including Sun
69	Police vehicles only	**16+46**	Faculty Parking
70	NS except trucks loading/unloading 7AM-6PM Mon-Fri	**28+43**	NS 8AM-6PM Mon-Fri except authorized vehicles
71	NS except trucks loading/unloading	**38+125**	NS except trucks loading/unloading 7AM-7PM Mon-Fri
72	NS 3-7PM Mon-Fri	**53+83**	NP 7-7:30AM except Sun
73	NS except trucks loading/unloading 7AM-3PM Mon-Fri	**7+27**	NS except trucks loading/unloading 8AM-6PM Mon-Fri

Notes: NP = No Parking; NS = No Standing; Sun = Sunday; Mon = Monday; Tue = Tuesday; Wed = Wednesday; Thu = Thursday; Fri = Friday; Sat = Saturday.
Sources: Surveys conducted by AKRF, Inc.; October 2011.

Based on field observations, on-street parking in the area is generally at or near full utilization during weekday daytime hours. In response to the comment made to the Draft Scope of Work regarding illegal parking activities (such as placard parking) in the Rezoning Area, a field survey was undertaken during February 2012 to document such activities. Key observations of illegal parking activities include:

- Vehicles with NYPD placards were observed within the Rezoning Area parking on streets with "No Parking 8 AM to 6 PM Monday to Friday" parking regulations (along Vandam Street between Greenwich Street and Varick Street; along Spring Street between Greenwich Street and Hudson Street);
- Vehicles with NYPD placards were observed parked in on-street metered parking spaces (along Hudson Street between Charlton Street and Spring Street);
- Vehicles standing and/or double parked along Spring Street between Varick Street and Avenue of the Americas, presumably waiting for passengers at the nearby hotel;
- U.S. Government vehicles were observed parked along sections of West Houston Street between Greenwich Street and Varick Street with "No Parking 8 AM to 6 PM Monday to Friday" parking regulations.

The presence of the NYPD vehicles could be attributed to the need for NYPD staff to facilitate traffic operations near the Holland Tunnel. And the presence of U.S. Government vehicles could be attributed to the various government buildings located within and near the Rezoning Area. However, this is an issue of enforcement that is typically addressed by the NYPD and not typically examined under CEQR parking analysis.

OFF-STREET PARKING

Off-street publicly accessible parking lots and garages (see **Figure 13-54**) within ¼ mile of the Rezoning Area were surveyed in October 2011 and March 2012. Each facility's operating license and legal capacity were noted. Based on responses given by parking attendants and visual inspections, where possible, estimates were made on the parking occupancy or utilization

3.14.12

Rezoning Area Boundary

Study Area Boundary (1/4-Mile Perimeter)

1 Off-Street Parking Facility

= Entry/Exit

1/4-Mile Off-Street Parking Facilities

Figure 13-54

at each facility for the morning, midday, evening, overnight, and Saturday time periods. A summary of the recorded information and the area's overall off-street public parking supply and utilization is presented in **Table 13-42**.

Table 13-42
Existing Off-Street Parking Supply and Utilization—1/4 Mile

Map #	Name/Operator and Address/Location	License Number	Licensed Capacity	Utilization Rate					Utilized Spaces					Available Spaces				
				AM	MD	PM	ON	SAT	AM	MD	PM	ON	SAT	AM	MD	PM	ON	SAT
1	Stop Park Garage Corp. - 18-20 Morton Street	427429	180	50%	75%	50%	50%	75%	90	135	90	90	135	90	45	90	90	45
2	Central Parking System - 100 Morton Street	1185987	140	70%	80%	60%	25%	30%	98	112	84	35	42	42	28	56	105	98
3	Caliente Car Park, LLC - 115 Leroy Street	1096607	98	50%	90%	55%	50%	33%	49	88	54	49	32	49	10	44	49	66
4	Elba Operating Corp. - 575 Washington Street	1148944	400	75%	70%	70%	N/A	40%	300	280	280	N/A	160	100	120	120	N/A	240
5	375 HUD Parking Corp. - 375 Hudson Street	1010916	100	50%	60%	50%	30%	40%	50	60	50	30	40	50	40	50	70	60
6	Greenwich Street Parking, LLC - 551-561 Greenwich Street	1076703	51	20%	90%	50%	45%	CLD	10	46	26	23	CLD	41	5	25	28	CLD
7	Greenwich Street Parking, LLC - 565 Greenwich Street	1076708	91	20%	90%	50%	45%	CLD	18	82	46	41	CLD	73	9	45	50	CLD
8	Central Parking System of NY, Inc - 272-296 Hudson Street	1243909	43	80%	85%	50%	20%	33%	34	37	22	9	14	9	6	21	34	29
9	Edison Parking, LLC - 272-276 Spring Street	925848	63	75%	80%	80%	30%	30%	47	50	50	19	19	16	13	13	44	44
10	Varick Street Parking, LLC - 114-122 Varick Street	1076689	86	70%	100%	50%	40%	50%	60	86	43	34	43	26	0	43	52	43
11	Central Parking System of NY, Inc - 43 Dominick Street	1243911	49	60%	90%	90%	50%	CLD	29	44	44	25	CLD	20	5	5	24	CLD
12	ERIK Parking Corp - 281-287 West Street	915103	75	85%	95%	CLD	CLD	80%	64	71	CLD	CLD	60	11	4	CLD	CLD	15
13	684 Warehouse Corp - 489 Canal Street	1231226	25	85%	50%	CLD	CLD	CLD	21	13	CLD	CLD	CLD	4	12	CLD	CLD	CLD
14	Sam Parking LLC - 360 West Broadway	926039	180	0%	65%	5%	0%	50%	0	117	9	0	90	180	63	171	180	90
15	Tribeca Parking Corp - 456 Greenwich Street, 445 Washington Street	981738	55	95%	95%	80%	CLD	CLD	52	52	44	CLD	CLD	3	3	11	CLD	CLD
16	West Side Parking Corporation - 432 Washington Street	1135161	25	10%	50%	CLD	CLD	CLD	3	13	CLD	CLD	CLD	22	12	CLD	CLD	CLD
17	Pine Parking Corp - 61-69 Grand Street	1141705	45	50%	100%	50%	50%	66%	23	45	23	23	30	22	0	22	22	15
18	First Mercer Parking LLC - 40 Mercer Street	1270544	100	45%	75%	45%	50%	25%	45	75	45	50	25	55	25	55	50	75
19	Empire Parking Corp - 90 Laight Street	1200653	90	50%	50%	45%	15%	20%	45	45	41	14	18	45	45	49	76	72
20	Diamond Parking Corp - 412-422 Greenwich Street	1157668	23	95%	95%	80%	CLD	75%	22	22	18	CLD	17	1	1	5	CLD	6
21	Wooster Parking Corp - 349 Canal Street (6-10 Wooster Street)	901637	225	75%	90%	85%	55%	30%	169	203	191	124	68	56	22	34	101	157
22	Canal Development Corp - 335-341 Canal Street	369905	89	CLD	100%	60%	CLD	75%	CLD	89	53	CLD	67	CLD	0	36	CLD	22
23	Kinney Parking Inc. D/B/A Central Parking Systems - 56 North Moore Street	1137052	220	80%	90%	65%	50%	66%	176	198	143	110	145	44	22	77	110	75
24	Kinney Parking Inc. D/B/A Central Parking Systems - 20-24 Varick Street	1196587	92	80%	90%	60%	CLD	CLD	74	83	55	CLD	CLD	18	9	37	CLD	CLD
25	Patriot Parking LLC - 350-1/2-376 Greenwich Street	1159595	318	90%	90%	75%	60%	25%	286	286	239	191	80	32	32	79	127	238
26	512 Parking Corp - 14 White Street	922578	42	90%	90%	70%	CLD	60%	38	38	29	CLD	25	4	4	13	CLD	17
27	Quik Park 311 WB LLC - 311 West Broadway	1310048	93	40%	80%	60%	10%	60%	37	74	56	9	56	56	19	37	84	37
28	Kinney-Charlton Corp. - 14-18 Charlton Street	1204606	63	50%	25%	45%	45%	CLD	32	16	28	28	CLD	31	47	35	35	CLD
29	Pine Parking Corp - 111-115 Varick Street	1141698	183	20%	90%	50%	45%	CLD	37	165	92	82	CLD	146	18	91	101	CLD
30	Quik Park Tribeca LLC - 450 Washington Street	1321864	166	70%	65%	60%	25%	30%	116	108	100	42	50	50	58	66	124	116
31	Central Parking Systems – Pier 40 West Street	1341459	700*	1%	45%	20%	3%	90%	7	315	140	21	630	693	385	560	679	70
1/4-Mile Area Totals			4,110	51%	74%	53%	32%	53%	2,032	3,048	2,095	1,049	1,846	1,989	1,062	1,890	2,235	1,630

Notes: MD = Midday; ON = Overnight; SAT = Saturday; CLD = CLD.
* The reported capacity reflects only the daily portion of the Pier 40 garage (#31). Information pertained to the long-term monthly portion of the garage was not surveyed.
Sources: AKRF, Inc. (October 2011 and March 2012).

Within the ¼-mile parking study area, 31 public parking facilities were inventoried. The combined capacity of these facilities totals 4,110 parking spaces. Overall, they were 51, 74, 53, 32 and 53-percent utilized, with 1,989, 1,062, 1,890, 2,235 and 1,630 parking spaces available during the weekday morning, midday, evening, overnight, and Saturday time periods, respectively.

THE FUTURE WITHOUT THE PROPOSED ACTION

Overall off-street public parking utilization is expected to experience the same growth as projected for traffic. In the No-Action condition, No-Action projects are expected to displace 9 public parking facilities, for a total displacement of approximately 746 parking spaces. However, the No-Action projects are expected to include a total of up to 180 off-street accessory parking spaces. As presented in **Table 13-43**, accounting for the displacement of the public parking spaces, the addition of the accessory parking spaces, and the parking demand generated from background growth, discrete projects that would advance absent the Proposed Action, the No-Action condition public parking utilization is expected to increase to 43 percent overnight and 102 percent during the weekday midday peak in the ¼-mile off-street parking study area; this represents a parking shortfall of 66 spaces.

Table 13-43
Existing and No-Action Condition Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight	Saturday Midday
Existing Public Parking Supply	4,021	4,110	3,985	3,284	3,476
Existing Public Parking Demand	2,032	3,048	2,095	1,049	1,846
Existing Public Parking Utilization	51%	74%	53%	32%	53%
Existing Public Parking Supply	4,021	4,110	3,985	3,284	3,476
Displaced Public Parking Supply Total [(1)]	-746	-746	-671	-501	-457
No-Action Public Parking Supply Total	3,275	3,364	3,314	2,783	3,019
No-Action Background Incremental Demand	41	62	43	21	37
No-Action Projects Total Parking Demand	200	279	128	132	135
No-Action As-of-Right Incremental Parking Demand	151	221	123	77	178
No-Action As-of-Right Accessory Parking Spaces	180	180	180	180	180
No-Action As-of-Right Incremental Parking Demand Accommodated by Accessory Parking	151	180	123	77	178
No-Action As-of-Right Incremental Parking Demand Accommodated by Public Parking	0	41	0	0	0
No-Action Incremental Public Parking Demand	241	382	171	153	172
No-Action Public Parking Demand Total	2,273	3,430	2,266	1,202	2,018
No-Action Public Parking Utilization	69%	102%	68%	43%	67%
No-Action Available Spaces (Shortfall)	1,002	(66)	1,048	1,581	1,001

Note: (1) Total parking displacement is not the same for all peak periods since not all surveyed parking facilities are available during all time periods, see **Table 13-42**.
Sample Calculation:
No-Action Incremental Public Parking Demand = No-Action Background Incremental Demand + No-Action Projects Total Parking Demand + No-Action As-of-Right Incremental Parking Demand Accommodated by Public Parking
Weekday AM No-Action Incremental Public Parking Demand = 41 + 200 + 0 = 241

FUTURE WITH THE PROPOSED ACTION

Similar to the No-Action condition, the Proposed Action would also displace public parking spaces and include new off-street accessory parking spaces. In the With-Action condition, expected future development projects (including No-Action projects and the Proposed Action) are expected to displace 10 public parking facilities, for a total displacement of approximately 809 parking spaces. The Proposed Action would include a total of up to 630 off-street accessory parking spaces. The weekday and Saturday incremental parking demand generated by the Proposed Action are presented in **Tables 13-44** and **13-45**, respectively.

Table 13-44

2022 Proposed Project Incremental Parking Demand - Weekday

Hour	Residential			Commercial Office			Destination Retail			Local Retail		
	In	Out	Demand	In	Out	Demand	In	Out	Demand	In	Out	Demand
12 AM - 01 AM	15	15	889	0	0	0	0	0	0	0	0	0
01 AM - 02 AM	7	7	889	0	0	0	0	0	0	0	0	0
02 AM - 03 AM	4	4	889	0	0	0	0	0	0	0	0	0
03 AM - 04 AM	3	3	889	0	0	0	0	0	0	0	0	0
04 AM - 05 AM	3	3	889	0	0	0	0	0	0	0	0	0
05 AM - 06 AM	3	3	889	0	0	0	0	0	0	0	0	0
06 AM - 07 AM	6	6	889	0	0	0	0	0	0	0	0	0
07 AM - 08 AM	8	68	829	9	1	8	1	1	0	0	0	0
08 AM - 09 AM	29	165	693	102	4	106	4	4	0	2	2	0
09 AM - 10 AM	26	102	617	82	8	180	4	1	3	1	1	0
10 AM - 11 AM	24	73	568	13	19	174	5	2	6	3	2	1
11 AM - 12 PM	34	51	551	3	3	174	7	5	8	4	4	1
12 PM - 01 PM	49	49	551	7	8	173	13	11	10	16	16	1
01 PM - 02 PM	45	45	551	8	5	176	20	19	11	12	12	1
02 PM - 03 PM	41	41	551	4	2	178	13	14	10	8	8	1
03 PM - 04 PM	53	51	553	15	15	178	12	10	12	7	6	2
04 PM - 05 PM	84	56	581	11	62	127	11	12	11	7	7	2
05 PM - 06 PM	150	64	667	6	118	15	10	12	9	8	8	2
06 PM - 07 PM	128	55	740	5	18	2	11	13	7	7	7	2
07 PM - 08 PM	113	48	805	3	5	0	10	10	7	4	6	0
08 PM - 09 PM	49	21	833	2	2	0	6	7	6	0	0	0
09 PM - 10 PM	39	18	854	0	0	0	2	8	0	0	0	0
10 PM - 11 PM	33	14	873	0	0	0	0	0	0	0	0	0
11 PM - 12 AM	27	11	889	0	0	0	0	0	0	0	0	0

Hour	Dormitory			PS/IS School [1]			Total		
	In	Out	Demand	In	Out	Demand	In	Out	Demand
12 AM - 01 AM	3	3	232	0	0	0	18	18	1121
01 AM - 02 AM	1	1	232	0	0	0	8	8	1121
02 AM - 03 AM	1	1	232	0	0	0	5	5	1121
03 AM - 04 AM	0	0	232	0	0	0	3	3	1121
04 AM - 05 AM	0	0	232	0	0	0	3	3	1121
05 AM - 06 AM	0	0	232	0	0	0	3	3	1121
06 AM - 07 AM	0	1	231	1	0	1	7	7	1121
07 AM - 08 AM	1	6	226	5	0	6	24	76	1069
08 AM - 09 AM	4	8	222	1	0	7	142	183	1028
09 AM - 10 AM	4	12	214	0	0	7	117	124	1021
10 AM - 11 AM	5	9	210	0	0	7	50	105	966
11 AM - 12 PM	7	8	209	0	0	7	55	71	950
12 PM - 01 PM	9	9	209	0	0	7	94	93	951
01 PM - 02 PM	7	7	209	0	0	7	92	88	955
02 PM - 03 PM	7	7	209	0	0	7	73	72	956
03 PM - 04 PM	10	8	211	0	5	2	97	95	958
04 PM - 05 PM	12	8	215	0	2	0	125	147	936
05 PM - 06 PM	17	16	216	0	0	0	191	218	909
06 PM - 07 PM	17	9	224	0	0	0	168	102	975
07 PM - 08 PM	17	9	232	0	0	0	147	78	1044
08 PM - 09 PM	12	12	232	0	0	0	69	42	1071
09 PM - 10 PM	4	4	232	0	0	0	45	30	1086
10 PM - 11 PM	5	5	232	0	0	0	38	19	1105
11 PM - 12 AM	4	4	232	0	0	0	31	15	1121

Notes: (1) PS/IS School auto drop-off/pick-up vehicle trips not included.

Table 13-45
2022 Proposed Project Incremental Parking Demand - Saturday

Hour	Residential			Commercial Office			Destination Retail			Local Retail		
	In	Out	Demand	In	Out	Demand	In	Out	Demand	In	Out	Demand
12 AM - 01 AM	6	6	889	0	0	0	0	0	0	0	0	0
01 AM - 02 AM	6	6	889	0	0	0	0	0	0	0	0	0
02 AM - 03 AM	0	0	889	0	0	0	0	0	0	0	0	0
03 AM - 04 AM	0	0	889	0	0	0	0	0	0	0	0	0
04 AM - 05 AM	0	0	889	0	0	0	0	0	0	0	0	0
05 AM - 06 AM	12	12	889	0	0	0	0	0	0	0	0	0
06 AM - 07 AM	6	17	878	0	0	0	0	0	0	0	0	0
07 AM - 08 AM	18	55	841	1	0	1	2	0	2	0	0	0
08 AM - 09 AM	23	69	795	4	1	4	3	0	5	1	0	1
09 AM - 10 AM	29	86	738	6	3	7	3	0	8	2	0	3
10 AM - 11 AM	35	104	669	9	5	11	5	1	12	7	2	8
11 AM - 12 PM	37	112	594	2	1	12	19	8	23	9	9	8
12 PM - 01 PM	40	121	513	2	1	13	13	11	25	10	8	10
01 PM - 02 PM	92	92	513	2	2	13	17	16	26	10	10	10
02 PM - 03 PM	96	70	539	1	1	13	16	15	27	10	8	12
03 PM - 04 PM	97	67	569	9	14	8	15	15	27	10	8	14
04 PM - 05 PM	95	66	598	6	10	4	9	10	26	8	9	13
05 PM - 06 PM	97	65	630	3	5	2	14	14	26	7	7	13
06 PM - 07 PM	105	57	678	2	3	1	12	15	23	7	8	12
07 PM - 08 PM	121	40	759	0	1	0	10	18	15	6	8	10
08 PM - 09 PM	104	35	828	0	0	0	8	16	7	5	8	7
09 PM - 10 PM	86	29	885	0	0	0	6	13	0	2	9	0
10 PM - 11 PM	37	33	889	0	0	0	0	0	0	0	0	0
11 PM - 12 AM	12	12	889	0	0	0	0	0	0	0	0	0

Hour	Dormitory			PS/IS School [1]			Total		
	In	Out	Demand	In	Out	Demand	In	Out	Demand
12 AM - 01 AM	1	1	232	0	0	0	7	7	1121
01 AM - 02 AM	1	1	232	0	0	0	7	7	1121
02 AM - 03 AM	0	0	232	0	0	0	0	0	1121
03 AM - 04 AM	0	0	232	0	0	0	0	0	1121
04 AM - 05 AM	0	0	232	0	0	0	0	0	1121
05 AM - 06 AM	2	2	232	0	0	0	14	14	1121
06 AM - 07 AM	1	3	230	0	0	0	7	20	1108
07 AM - 08 AM	3	8	225	0	0	0	24	63	1069
08 AM - 09 AM	4	11	218	0	0	0	35	81	1023
09 AM - 10 AM	4	13	209	0	0	0	44	102	965
10 AM - 11 AM	5	16	198	0	0	0	61	128	898
11 AM - 12 PM	6	17	187	0	0	0	73	147	824
12 PM - 01 PM	6	19	174	0	0	0	71	160	735
01 PM - 02 PM	15	13	176	0	0	0	136	133	738
02 PM - 03 PM	15	10	181	0	0	0	138	104	772
03 PM - 04 PM	15	10	186	0	0	0	146	114	804
04 PM - 05 PM	15	10	191	0	0	0	133	105	832
05 PM - 06 PM	15	10	196	0	0	0	136	101	867
06 PM - 07 PM	15	10	201	0	0	0	141	93	915
07 PM - 08 PM	18	7	212	0	0	0	155	74	996
08 PM - 09 PM	15	5	222	0	0	0	132	64	1064
09 PM - 10 PM	13	4	231	0	0	0	107	55	1116
10 PM - 11 PM	6	5	232	0	0	0	43	38	1121
11 PM - 12 AM	2	2	232	0	0	0	14	14	1121

Notes: (1) PS/IS School auto drop-off/pick-up vehicle trips not included.

As presented in **Table 13-46**, accounting for the displacement of the public parking spaces, the addition of the accessory parking spaces, and the parking demand generated from background growth, No-Action projects and the Proposed Action, the With-Action public parking utilization is expected to increase to 62 percent overnight and to a weekday midday peak of 112 percent in the ¼-mile off-street parking study area; this represents a parking shortfall of 409 spaces.

Table 13-46
Existing and With-Action Condition Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight	Saturday Midday
Existing Public Parking Supply	4,021	4,110	3,985	3,284	3,476
Existing Public Parking Demand	2,032	3,048	2,095	1,049	1,846
Existing Public Parking Utilization	51%	74%	53%	32%	53%
Existing Public Parking Supply	4,021	4,110	3,985	3,284	3,476
Displaced Public Parking Supply Total [(1)]	-809	-809	-734	-564	-520
With-Action Public Parking Supply Total	3,212	3,301	3,251	2,720	2,956
No-Action Background Incremental Demand	41	62	43	21	37
No-Action Projects Total Parking Demand	200	279	128	132	135
RWCDS 2 Incremental Parking Demand	1,028	951	909	1,121	738
RWCDS 2 Accessory Parking Spaces	630	630	630	630	630
RWCDS 2 Incremental Parking Demand Accommodated by Accessory Parking	630	630	630	630	630
RWCDS 2 Incremental Parking Demand Accommodated by Public Parking	398	321	279	491	108
RWCDS 2 Incremental Public Parking Demand	639	662	450	644	280
With-Action Public Parking Demand Total	2,671	3,710	2,545	1,693	2,126
With-Action Public Parking Utilization	83%	112%	78%	62%	72%
With-Action Available Spaces (Shortfall)	541	(409)	706	1,027	830

Note: (1) Total parking displacement is not the same for all peak periods since not all surveyed parking facilities are available during all time periods, see **Table 13-42**.
Sample Calculation:
RWCDS 2 Incremental Public Parking Demand = No-Action Background Incremental Demand + No-Action Projects Total Parking Demand + RWCDS 2 Incremental Parking Demand Accommodated by Public Parking
Weekday AM RWCDS 2 Incremental Public Parking Demand = 41 + 200 + 398 = 639

It should be noted that the vehicle ownership rate used to calculate the dormitory overnight parking demand was conservatively assumed to be the same as typical residential dwelling units, while in reality, the vehicle ownership rate for dormitories would be lower than what is conservatively assumed. A review of the existing off-street parking supply and utilization within ½-mile of the rezoning boundaries showed that there would a total of approximately 9,000 off-street parking spaces. Out of these spaces, they were approximately 56, 77, 60, 40, and 44-percent utilized, with approximately 4,000, 2,100, 3,600, 4,700, and 4,500 parking spaces available during the weekday morning, midday, evening, overnight, and Saturday time periods, respectively. It is expected that the excess demand of 409 spaces resulting from the Proposed Action during the weekday midday period could be accommodated with a slightly longer walking distance beyond the ¼-mile radius. Furthermore, as stated in the *CEQR Technical Manual*, a parking shortfall resulting from a project located in Manhattan does not constitute a significant adverse parking impact, due to the magnitude of available alternative modes of transportation.

K. DETAILED ANALYSIS RESULTS TABLES

Table 13-47
2011 Existing Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM				Weekday Midday				Weekday PM				Saturday Midday			
Intersection	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS
West Street (Route 9A) & Clarkson Street																
NB	TR	0.81	17.4	B	TR	0.76	17.8	B	TR	0.84	18.8	B				
SB	L	0.92	89.6	F	L	0.69	47.4	D	L	0.69	64.3	E				
	T	0.81	17.8	B	T	0.73	17.3	B	T	0.76	16.2	B				
	Int.		21.3	C	Int.		19.3	B	Int.		19.5	B				
West Street (Route 9A) & West Houston Street																
EB	L	0.10	48.2	D	L	0.06	32.4	C	L	0.66	76.8	E				
	R	0.03	46.1	D	R	0.01	31.7	C	R	0.09	47.2	D				
WB	L	0.57	58.9	E	L	0.32	36.7	D	L	0.63	61.9	E				
	LT	0.66	63.1	E	LT	0.34	37.1	D	LT	0.69	65.1	E				
	R	1.05	128.5	F	R	0.89	69.0	E	R	1.05	120.6	F				
NB	L	0.38	77.6	E	L	0.10	52.5	D	L	0.44	80.4	F				
	T	0.85	26.8	C	T	0.83	28.0	C	T	0.85	26.7	C				
SB	T	0.95	36.6	D	T	0.92	35.1	D	T	0.88	29.5	C				
	R	0.02	11.8	B	R	0.01	14.6	B	R	0.05	12.1	B				
	Int.		37.8	D	Int.		33.8	C	Int.		36.8	D				
West Street (Route 9A) & Canal Street North																
WB	L	0.44	58.9	E	L	0.29	44.2	D	L	0.39	44.5	D	L	0.24	43.1	D
	LR	0.92	102.7	F	LR	0.56	52.2	D	LR	0.34	43.5	D	LR	0.51	50.2	D
	R	0.93	104.8	F	R	0.66	57.3	E	R	0.39	44.8	D	R	0.61	54.3	D
NB	T	0.73	8.8	A	T	0.51	7.7	A	T	0.72	11.5	B	T	0.57	8.3	A
SB	T	0.51	5.8	A	T	0.47	7.2	A	T	0.55	8.8	A	T	0.47	7.1	A
	Int.		13.3	B	Int.		11.0	B	Int.		12.0	B	Int.		10.7	B
West Street (Route 9A) & Canal Street South																
NB	T	0.94	31.8	C	T	0.69	21.3	C	T	0.93	31.5	C	T	0.76	23.2	C
	R	0.50	18.3	B	R	0.42	18.1	B	R	0.04	13.0	B	R	0.56	21.3	C
SB	L	0.71	44.4	D	L	0.57	32.6	C	L	0.61	33.5	C	L	0.53	31.7	C
	T	0.87	27.1	C	T	0.80	25.3	C	T	0.96	37.8	D	T	0.81	25.6	C
	Int.		30.7	C	Int.		24.1	C	Int.		34.1	C	Int.		24.9	C
Hudson Street & King Street																
EB	LT	0.17	21.3	C	LT	0.13	20.9	C	LT	0.20	21.7	C	LT	0.05	19.9	B
NB	TR	0.84	23.4	C	TR	0.69	17.7	B	TR	0.72	18.5	B	TR	0.53	14.6	B
	Int.		23.2	C	Int.		17.9	B	Int.		18.7	B	Int.		14.8	B
Hudson Street & Charlton Street																
WB	TR	0.49	26.7	C	TR	0.57	28.9	C	TR	0.41	25.1	C	TR	0.45	25.8	C
NB	LT	0.77	20.0-	B	LT	0.57	15.1	B	LT	0.72	18.4	B	LT	0.47	13.6	B
	Int.		21.1	C	Int.		18.6	B	Int.		19.5	B	Int.		16.6	B
Hudson Street & Vandam Street																
EB	L	0.13	20.9	C	L	0.05	19.9	B	L	0.12	20.7	C	L	0.03	19.6	B
WB	R	0.17	21.5	C	R	0.18	21.6	C	R	0.19	21.7	C	R	0.09	20.4	C
NB	T	0.68	17.3	B	T	0.48	13.7	B	T	0.62	16.1	B	T	0.43	13.1	B
	Int.		17.8	B	Int.		14.6	B	Int.		16.7	B	Int.		13.7	B
Hudson Street & Canal Street																
EB	L	0.83	44.2	D	L	0.68	36.7	D	L	1.03	50.2	D				
	T	0.70	18.6	B	T	0.62	16.2	B	T	0.50	13.8	B				
WB	-	-	-	-	-	-	-	-	T	0.26	26.8	C				
	TR	0.93	50.3	D	TR	0.81	39.2	D	-	-	-	-				
	R	0.87	31.8	C	R	0.86	40.6	D	R	1.05	81.7	F				
NB (East Lanes)	T	0.32	26.1	C	T	0.32	26.1	C	T	1.01	83.2	F				
	R	0.18	26.2	C	R	0.30	29.1	C	R	0.09	24.3	C				
NB (West Lanes)	LT	1.05	76.6	E	LT	0.85	40.6	D	LT	1.05	76.8	E				
	Int.		48.9	D	Int.		34.4	C	Int.		69.1	E				
Varick Street & West Houston Street																
WB	L	0.65	26.1	C	L	0.80	34.5	C	L	0.46	20.2	C	L	0.49	20.6	C
	T	0.49	19.8	B	T	0.50	20.1	C	T	0.58	21.7	C	T	0.59	22.2	C
SB (East Lanes)	T	0.78	26.3	C	T	0.61	21.4	C	T	0.79	26.8	C	T	0.77	25.7	C
SB (West Lanes)	TR	0.90	35.1	D	TR	0.74	25.1	C	TR	1.05	97.3	F	TR	0.71	24.1	C
	Int.		28.5	C	Int.		24.5	C	Int.		37.8	D	Int.		24.0	C
Varick Street & King Street																
EB	TR	0.49	24.7	C	TR	0.44	23.7	C	TR	0.40	22.7	C	TR	0.29	21.0	C
SB (East Lanes)	LT	0.54	16.5	B	LT	0.63	18.4	B	LT	0.79	22.8	C	LT	0.83	25.0	C
SB (West Lanes)	T	0.96	37.1	D	T	0.74	20.7	C	T	0.89	83.6	F	T	0.96	55.9	E
	Int.		29.3	C	Int.		20.1	C	Int.		36.0	D	Int.		37.0	D
Varick Street & Charlton Street																
WB	LT	0.60	28.0	C	LT	0.57	27.1	C	LT	0.91	50.2	D	LT	0.62	28.7	C
SB (East Lanes)	T	0.73	20.4	C	T	0.57	16.8	B	T	0.77	21.8	C	T	0.77	21.7	C
SB (West Lanes)	TR	0.77	22.3	C	TR	0.73	20.7	C	TR	0.82	84.2	F	TR	0.96	58.5	E
	Int.		22.1	C	Int.		19.9	B	Int.		38.1	D	Int.		34.9	C
Varick Street & Vandam Street																
WB	LT	0.31	21.3	C	LT	0.30	21.3	C	LT	0.21	19.8	B	LT	0.18	19.4	B
SB (East Lanes)	T	0.54	15.8	B	T	0.66	18.7	B	T	0.51	15.4	B	T	0.82	24.1	C
SB (West Lanes)	TR	0.45	14.6	B	TR	0.58	20.1	B	TR	1.01	82.6	F	TR	1.05	83.4	F
	Int.		15.7	B	Int.		19.5	B	Int.		35.4	D	Int.		44.4	D

Table 13-47 (cont'd)
2011 Existing Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday Midday			
	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS
Varick Street & Spring Street																
EB	-	-	-	-	-	-	-	-	T	0.75	52.4	D	-	-	-	-
	TR	0.67	31.4	C	TR	0.61	29.9	C	-	-	-	-	TR	1.05	106.1	F
	R	0.51	29.5	C	R	0.53	31.1	C	R	1.05	98.6	F	R	1.05	122.6	F
SB (East Lanes)	LT	0.91	29.4	C	LT	0.79	22.2	C	LT	0.52	14.5	B	LT	0.88	26.7	C
SB (West Lanes)	T	0.43	13.4	B	T	0.52	20.1	C	T	0.82	81.2	F	T	1.05	82.9	F
	Int.		24.1	C	Int.		23.2	C	Int.		45.8	D	Int.		59.1	E
Varick Street & Dominick Street																
SB (East Lanes)	LT	0.47	15.4	B	LT	0.37	14.3	B	LT	0.44	15.1	B	LT	0.48	15.6	B
SB (West Lanes)	TR	0.52	16.2	B	TR	0.71	20.8	C	TR	1.05	83.8	F	TR	1.05	83.5	F
	Int.		15.8	B	Int.		17.8	B	Int.		46.1	D	Int.		45.5	D
Varick Street & Broome Street																
WB	L	0.12	18.0	B	L	0.17	18.7	B	L	0.36	21.2	C	L	0.24	19.5	B
SB (East Lanes)	T	0.46	15.3	B	T	0.36	14.2	B	T	0.42	14.8	B	T	0.48	15.5	B
SB (West Lanes)	TR	0.53	18.1	B	TR	0.75	25.7	C	TR	0.93	80.9	F	TR	1.05	91.6	F
	R	0.58	18.3	B	R	0.70	25.9	C	R	0.99	83.4	F	R	1.05	92.9	F
	Int.		16.8	B	Int.		21.9	C	Int.		41.9	D	Int.		47.0	D
Varick Street & Watts Street																
EB	R	0.03	14.2	B	R	0.06	14.5	B	R	0.02	14.1	B	R	0.02	14.1	B
WB	L	0.30	17.3	B	L	0.30	17.6	B	L	0.01	14.0	B	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	LT	0.96	56.0	E
	T	0.65	24.5	C	T	0.38	17.3	B	T	1.04	84.2	F	-	-	-	-
SB (East Lanes)	T	0.67	21.8	C	T	0.49	18.8	B	T	0.43	17.7	B	T	0.79	25.0	C
SB (West Lanes)	T	0.28	16.4	B	T	0.20	15.6	B	T	0.09	14.6	B	T	0.03	14.2	B
	Int.		21.8	C	Int.		17.7	B	Int.		38.5	D	Int.		37.0	D
Varick Street & Grand Street																
SB	LT	0.45	10.2	B	LT	0.43	10.1	B	LT	0.31	9.1	A	LT	0.46	10.5	B
	Int.		10.2	B	Int.		10.1	B	Int.		9.1	A	Int.		10.5	B
Varick Street & Canal Street																
EB	TR	0.37	10.3	B	TR	0.38	10.4	B	TR	0.31	9.8	A	TR	0.35	10.1	B
WB	LT	1.02	49.5	D	LT	0.71	20.8	C	LT	1.04	80.7	F	LT	1.01	61.5	E
SB	L	0.24	25.4	C	-	-	-	-	L	0.37	28.0	C	-	-	-	-
	LTR	0.65	29.5	C	LTR	0.70	30.5	C	LTR	0.62	28.9	C	LTR	0.71	30.8	C
	Int.		34.0	C	Int.		22.0	C	Int.		41.2	D	int.		38.2	D
Avenue of the Americas & West Houston Street																
WB	T	0.63	24.1	C	T	0.64	24.4	C	T	0.61	23.6	C	T	0.59	23.2	C
	R	0.70	27.3	C	R	0.90	42.8	D	R	0.94	48.4	D	R	0.91	44.6	D
NB	LTR	1.00	43.3	D	LTR	0.89	27.8	C	LTR	0.80	23.8	C	LTR	0.76	22.7	C
	Int.		36.2	D	Int.		29.7	C	Int.		28.8	C	Int.		27.1	C
Avenue of the Americas & King Street																
EB	L	0.48	20.2	C	L	0.58	22.8	C	L	0.50	20.8	C	L	0.49	20.6	C
WB	R	0.01	13.9	B	R	0.01	14.0	B	R	0.01	14.0	B	R	0.02	14.0	B
NB	T	0.82	21.9	C	T	0.70	18.9	B	T	0.56	16.5	B	T	0.61	17.2	B
	Int.		21.6	C	Int.		19.6	B	Int.		17.3	B	Int.		17.7	B
Avenue of the Americas & Spring Street																
EB	L	0.66	27.3	C	L	0.54	22.7	C	L	0.38	19.0	B				
	T	0.44	19.2	B	T	0.44	19.0	B	T	0.31	17.2	B				
NB	TR	0.76	20.0+	C	TR	0.63	17.6	B	TR	0.53	16.2	B				
	Int.		20.8	C	Int.		18.4	B	Int.		16.6	B				
Avenue of the Americas & Canal Street/Laight Street																
EB (Canal Street)	T	0.62	30.6	C	T	0.52	28.9	C	T	0.40	23.2	C	T	0.52	29.0	C
EB (Laight Street)	T	0.80	56.4	E	T	0.53	34.4	C	T	1.05	87.1	F	T	0.81	42.1	D
WB	TR	0.96	36.3	D	TR	0.90	36.6	D	TR	1.04	82.4	F	TR	0.64	16.3	B
NB	LTR	1.05	67.1	E	LTR	0.78	29.9	C	-	-	-	-	LTR	0.82	31.4	C
	-	-	-	-	-	-	-	-	TR	0.55	24.6	C	-	-	-	-
	Int.		51.1	D	Int.		32.4	C	Int.		54.8	D	Int.		28.2	C
Washington Street & West Houston Street																
WB	LT	0.40	17.7	B	LT	0.35	17.1	B	LT	0.44	18.4	B	LT	0.41	18.0	B
SB	TR	0.80	32.4	C	TR	0.70	26.9	C	TR	0.87	38.8	D	TR	0.72	27.6	C
	Int.		24.1	C	Int.		21.5	C	Int.		27.3	C	Int.		22.3	C
Greenwich Street & Spring Street																
EB	LT	0.49	24.8	C	LT	0.35	22.8	C	LT	0.54	25.5	C	LT	0.39	23.4	C
NB	TR	0.27	11.9	B	TR	0.34	12.8	B	TR	0.09	10.1	B	TR	0.07	9.9	A
	Int.		21.6	C	Int.		19.2	B	Int.		24.2	C	Int.		21.9	C
Greenwich Street & Canal Street																
EB	LTR	0.59	19.6	B	LTR	0.53	19.8	B	LTR	0.48	23.6	C	LTR	0.61	27.9	C
WB	Defl	0.47	24.3	C	=	=	=	=	=	=	=	=	=	=	=	=
	=	=	=	=	LTR	0.64	14.0	B	LTR	0.22	7.8	A	LTR	0.35	9.0	A
	TR	0.64	13.8	B	=	=	=	=	=	=	=	=	=	=	=	=
	Int.		18.2	B	Int.		17.4	B	Int.		19.4	B	Int.		21.7	C
Hudson Street & Spring Street																
EB	LT	0.74	35.0-	C	LT	0.76	35.8	D	LT	0.54	26.3	C				
NB	TR	0.81	21.5	C	TR	0.56	15.0	B	TR	0.67	17.1	B				
	Int.		24.8	C	Int.		21.9	C	Int.		20.0-	B				

Table 13-47 (cont'd)
2011 Existing Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM				Weekday Midday				Weekday PM				Saturday Midday			
Intersection	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS
Varick Street & Clarkson Street/Carmine Street																
EB	TR	0.59	27.8	C	TR	0.56	26.7	C	TR	0.59	28.1	C	TR	0.64	29.6	C
WB	L	0.11	19.2	B	L	0.07	18.4	B	L	0.14	19.9	B	L	0.09	18.9	B
SB	LT	0.67	17.7	B	LT	0.62	16.8	B	LT	0.66	27.6	C	LT	0.61	16.7	B
	Int.		19.0	B	Int.		18.2	B	Int.		27.6	C	Int.		18.6	B
Avenue of the Americas & Charlton Street/Prince Street																
WB	TR	0.60	23.9	C	TR	0.71	28.4	C	TR	0.97	56.1	E	TR	0.87	39.5	D
NB	LT	0.81	21.6	C	LT	0.70	18.7	B	LT	0.51	15.9	B	LT	0.58	16.8	B
	Int.		21.9	C	Int.		20.5	C	Int.		28.4	C	Int.		22.6	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection

Table 13-48
2011 Existing Conditions Level of Service Analysis
Unsignalized Intersections

	Weekday AM				Weekday Midday				Weekday PM				Saturday Midday			
Intersection	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS
Avenue of the Americas & West Houston Street																
NB	L	0.30	20.7	C	L	0.25	15.2	C	L	0.13	11.7	B	L	0.25	17.0	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

Table 13-49
2011 Existing and 2022 No-Action Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM								Weekday Midday								Weekday PM								Saturday Midday							
	2011 Existing				2022 No-Action				2011 Existing				2022 No-Action				2011 Existing				2022 No-Action				2011 Existing				2022 No-Action			
Intersection	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS
West Street (Route 9A) & Clarkson Street																																
NB	TR	0.81	17.4	B	TR	0.84	18.6	B	TR	0.76	17.8	B	TR	0.80	19.0	B	TR	0.84	18.8	B	TR	0.88	20.8	C								
SB	L	0.92	89.6	F	L	1.14	149.3	F	L	0.69	47.4	D	L	0.79	53.6	D	L	0.69	64.3	E	L	0.80	72.2	E								
	T	0.81	17.8	B	T	0.82	18.6	B	T	0.73	17.3	B	T	0.76	18.2	B	T	0.76	16.2	B	T	0.80	17.4	B								
	Int.		21.3	C	Int.		26.5	C	Int.		19.3	B	Int.		20.8	C	Int.		19.5	B	Int.		21.7	C								
West Street (Route 9A) & West Houston Street																																
EB	L	0.10	48.2	D	L	0.11	48.5	D	L	0.06	32.4	C	L	0.06	32.4	C	L	0.66	76.8	E	L	0.74	88.9	F								
	R	0.03	46.1	D	R	0.03	46.1	D	R	0.01	31.7	C	R	0.01	31.7	C	R	0.09	47.2	D	R	0.09	47.2	D								
WB	L	0.57	58.9	E	L	0.60	60.2	E	L	0.32	36.7	D	L	0.34	37.1	D	L	0.63	61.9	E	L	0.70	65.6	E								
	LT	0.66	63.1	E	LT	0.70	65.1	E	LT	0.34	37.1	D	LT	0.36	37.5	D	LT	0.69	65.1	E	LT	0.76	69.8	E								
	R	1.05	128.5	F	R	1.16	164.5	F	R	0.89	69.0	E	R	0.97	84.6	F	R	1.05	120.6	F	R	1.21	177.9	F								
NB	L	0.38	77.6	E	L	0.38	77.6	E	L	0.10	52.5	D	L	0.10	52.5	D	L	0.44	80.4	F	L	0.45	80.9	F								
	T	0.85	26.8	C	T	0.88	28.2	C	T	0.83	28.0	C	T	0.87	29.8	C	T	0.85	26.7	C	T	0.88	28.5	C								
SB	T	0.95	36.6	D	T	0.97	40.2	D	T	0.92	35.1	D	T	0.96	40.6	D	T	0.88	29.5	C	T	0.92	33.0	C								
	R	0.02	11.8	B	R	0.02	11.8	B	R	0.01	14.6	B	R	0.01	14.6	B	R	0.05	12.1	B	R	0.05	12.1	B								
	Int.		37.8	D	Int.		42.0	D	Int.		33.8	C	Int.		38.0	D	Int.		36.8	D	Int.		43.6	D								
West Street (Route 9A) & Canal Street North																																
WB	L	0.44	58.9	E	L	0.52	61.9	E	L	0.29	44.2	D	L	0.39	46.4	D	L	0.39	44.5	D	L	0.64	53.2	D	L	0.24	43.1	D	L	0.35	45.3	D
	LR	0.92	102.7	F	LR	1.01	124.6	F	LR	0.56	52.2	D	LR	0.59	53.6	D	LR	0.34	43.5	D	LR	0.31	43.0	D	LR	0.51	50.2	D	LR	0.53	51.0	D
	R	0.93	104.8	F	R	1.02	127.4	F	R	0.66	57.3	E	R	0.70	59.5	E	R	0.39	44.8	D	R	0.34	43.8	D	R	0.61	54.3	D	R	0.62	55.0+	E
NB	T	0.73	8.8	A	T	0.77	9.7	A	T	0.51	7.7	A	T	0.54	8.0	A	T	0.72	11.5	B	T	0.75	12.1	B	T	0.57	8.3	A	T	0.60	8.6	A
SB	T	0.51	5.8	A	T	0.52	5.9	A	T	0.47	7.2	A	T	0.49	7.4	A	T	0.55	8.8	A	T	0.58	9.1	A	T	0.47	7.1	A	T	0.49	7.3	A
	Int.		13.3	B	Int.		15.5	B	Int.		11.0	B	Int.		11.6	B	Int.		12.0	B	Int.		12.9	B	Int.		10.7	B	Int.		11.1	B
West Street (Route 9A) & Canal Street South																																
NB	T	0.94	31.8	C	T	0.99	40.5	D	T	0.69	21.3	C	T	0.73	22.3	C	T	0.93	31.5	C	T	0.97	36.2	D	T	0.76	23.2	C	T	0.80	24.4	C
	R	0.50	18.3	B	R	0.51	18.5	B	R	0.42	18.1	B	R	0.42	18.3	B	R	0.04	13.0	B	R	0.04	13.0	B	R	0.56	21.3	C	R	0.57	21.8	C
SB	L	0.71	44.4	D	L	0.73	44.9	D	L	0.57	32.6	C	L	0.61	33.6	C	L	0.61	33.5	C	L	0.64	34.4	C	L	0.53	31.7	C	L	0.57	32.6	C
	T	0.87	27.1	C	T	0.90	29.1	C	T	0.80	25.3	C	T	0.85	27.2	C	T	0.96	37.8	D	T	1.05	59.8	E	T	0.81	25.6	C	T	0.86	27.6	C
	Int.		30.7	C	Int.		35.9	D	Int.		24.1	C	Int.		25.4	C	Int.		34.1	C	Int.		45.3	D	Int.		24.9	C	Int.		26.3	C
Hudson Street & King Street																																
EB	LT	0.17	21.3	C	LT	0.17	21.3	C	LT	0.13	20.9	C	LT	0.15	21.1	C	LT	0.20	21.7	C	LT	0.22	21.9	C	LT	0.05	19.9	B	LT	0.07	20.0+	C
NB	TR	0.84	23.4	C	TR	0.93	31.8	C	TR	0.69	17.7	B	TR	0.82	22.5	C	TR	0.72	18.5	B	TR	0.89	27.1	C	TR	0.53	14.6	B	TR	0.60	15.9	B
	Int.		23.2	C	Int.		31.1	C	Int.		17.9	B	Int.		22.4	C	Int.		18.7	B	Int.		26.7	C	Int.		14.8	B	Int.		16.0	B
Hudson Street & Charlton Street																																
WB	TR	0.49	26.7	C	TR	0.56	28.6	C	TR	0.57	28.9	C	TR	0.69	33.1	C	TR	0.41	25.1	C	TR	0.85	45.4	D	TR	0.45	25.8	C	TR	0.51	27.3	C
NB	LT	0.77	20.0-	B	LT	0.82	22.2	C	LT	0.57	15.1	B	LT	0.63	16.2	B	LT	0.72	18.4	B	LT	0.78	20.3	C	LT	0.47	13.6	B	LT	0.52	14.3	B
	Int.		21.1	C	Int.		23.3	C	Int.		18.6	B	Int.		20.7	C	Int.		19.5	B	Int.		26.6	C	Int.		16.6	B	Int.		17.5	B
Hudson Street & Vandam Street																																
EB	L	0.13	20.9	C	L	0.17	21.3	C	L	0.05	19.9	B	L	0.09	20.4	C	L	0.12	20.7	C	L	0.15	21.1	C	L	0.03	19.6	B	L	0.05	19.8	B
WB	R	0.17	21.5	C	R	0.18	21.6	C	R	0.18	21.6	C	R	0.20	21.9	C	R	0.19	21.7	C	R	0.20	21.9	C	R	0.09	20.4	C	R	0.10	20.4	C
NB	T	0.68	17.3	B	T	0.72	18.4	B	T	0.48	13.7	B	T	0.52	14.3	B	T	0.62	16.1	B	T	0.67	17.0	B	T	0.43	13.1	B	T	0.47	13.6	B
	Int.		17.8	B	Int.		18.8	B	Int.		14.6	B	Int.		15.2	B	Int.		16.7	B	Int.		17.6	B	Int.		13.7	B	Int.		14.1	B
Hudson Street & Canal Street																																
EB	L	0.83	44.2	D	L	0.84	45.3	D	L	0.68	36.7	D	L	0.72	38.3	D	L	1.03	89.0	F	L	1.08	107.0	F								
	T	0.70	18.6	B	T	0.72	19.1	B	T	0.62	16.2	B	T	0.68	17.7	B	T	0.50	13.8	B	T	0.54	14.5	B								
WB	-	-	-	-	T	1.90	446.1	F	-	-	-	-	T	1.78	393.0	F	T	0.26	26.8	C	T	0.40	29.0	C								
	TR	0.93	50.3	D	...	...	...	...	TR	0.81	39.2	D	...	...	...	...	-	-	-	-	-	-	-	-								
	R	0.87	31.8	C	R	0.50	14.3	B	R	0.86	40.6	D	R	0.49	14.6	B	R	1.05	81.7	F	R	1.07	86.4	F								
NB (East Lanes)	T	0.32	26.1	C	T	0.33	26.2	C	T	0.32	26.1	C	T	0.33	26.2	C	T	1.01	83.2	F	T	1.03	87.8	F								
	R	0.18	26.2	C	R	0.31	29.6	C	R	0.30	29.1	C	R	0.33	30.1	C	R	0.09	24.3	C	R	0.07	23.9	C								
NB (West Lanes)	LT	1.05	76.6	E	LT	1.12	101.0	F	LT	0.85	40.6	D	LT	0.95	51.9	D	LT	1.05	76.8	E	LT	1.14	109.4	F								
	Int.		46.4	D	Int.		130.3	F	Int.		34.4	C	Int.		108.4	F	Int.		69.1	E	Int.		82.6	F								
Varick Street & West Houston Street																																
WB	L	0.65	26.1	C	L	0.74	30.5	C	L	0.80	34.5	C	L	0.96	57.9	E	L	0.46	20.2	C	L	0.58	23.2	C	L	0.49	20.6	C	L	0.61	23.9	C
	T	0.49	19.8	B	T	0.55	21.0	C	T	0.50	20.1	C	T	0.55	21.0	C	T	0.58	21.7	C	T	0.63	23.1	C	T	0.59	22.2	C	T	0.62	23.1	C
SB (East Lanes)	T	0.78	26.3	C	T	0.83	28.8	C	T	0.61	21.4	C	T	0.69	23.3	C	T	0.79	26.8	C	T	0.87	30.9	C	T	0.77	25.7	C	T	0.84	29.2	C
SB (West Lanes)	TR	0.90	35.1	D	TR	1.01	53.7	D	TR	0.74	25.1	C	TR	0.82	28.9	C	TR	1.05	97.3	F	TR	1.28	183.0	F	TR	0.71	24.1	C	TR	0.79	27.3	C
	Int.		28.5	C	Int.		37.1	D	Int.		24.5	C	Int.		30.4	C	Int.		37.8	D	Int.		57.9	E	Int.		24.0	C	Int.		26.9	C
Varick Street & King Street																																
EB	TR	0.49	24.7	C	TR	0.65	29.2	C	TR	0.44	23.7	C	TR	0.55	26.5	C	TR	0.40	22.7	C	TR	0.65	29.4	C	TR	0.29	21.0	C	TR	0.33	21.6	C
SB (East Lanes)	LT	0.54	16.5	B	LT	0.61	17.7	B	LT	0.63	18.4	B	LT	0.74	21.4	C	LT	0.79	22.8	C	LT	0.89	28.8	C	LT	0.83	25.0	C	LT	0.94	35.5	D
SB (West Lanes)	T	0.96	37.1	D	T	1.02	52.6	D	T	0.74	20.7	C	T	0.79	22.8	C	T	0.89	83.6	F	T	1.09	174.3	F	T	0.96	55.9	E	T	1.04	88.2	F
	Int.		29.3	C	Int.		38.7	D	Int.		20.1	C	Int.		22.7	C	Int.		36.0	D	Int.		61.3	E	Int.		37.0	D	Int.		55.0+	F
Varick Street & Charlton Street																																
WB	LT	0.60	28.0	C	LT	0.73	34.1	C	LT	0.57	27.1	C	LT	0.68	31.5	C	LT	0.91	50.2	D	LT	1.07	93.1	F	LT	0.62	28.7	C	LT	0.74	35.3	D
SB (East Lanes)	T	0.73	20.4	C	T	0.80	22.9	C	T	0.57	16.8	B	T	0.68	19.2	B	T	0.77	21.8	C	T	0.89	28.5	C	T	0.77	21.7	C	T	0.86	26.5	C
SB (West Lanes)	TR	0.77	22.3	C	TR	0.92	33.6	C	TR	0.73	20.7	C	TR	0.82	24.3	C	TR	0.82	84.2	F	TR	1.20	250.5	F	TR	0.96	58.5	E	TR	1.09	95.3	F
	Int.		22.1	C	Int.		28.9	C	Int.		19.9	B	Int.		23.0	C	Int.		38.1	D	Int.		81.5	F	Int.		34.9	C	Int.		50.5	D
Varick Street & Vandam Street																																
WB	LT	0.31	21.3	C	LT	0.32	21.6	C	LT	0.30	21.3	C	LT	0.35	22.1	C	LT	0.21	19.8	B	LT	0.24	20.4	C	LT	0.18	19.4	B	LT	0.22	20.1	C
SB (East Lanes)	T	0.54	15.8	B	T	0.58	16.5	B	T	0.66	18.7	B	T	0.78	22.4	C	T	0.51	15.4	B	T	0.59	16.7	B	T	0.82	24.1	C	T	0.92	31.9	C
SB (West Lanes)	TR	0.45	14.6	B	TR	0.45	14.7	B	TR	0.58	20.1	C	TR	0.62	21.3	C	TR	1.01	82.6	F	TR	1.19	145.4	F	TR	1.05	83.4	F	TR	1.16	122.4	F
	Int.		15.7	B	Int.		16.1	B	Int.		19.5	B	Int.		21.9	C	Int.		35.4	D	Int.		54.9	D	Int.		44.4	D	Int.		62.4	E
Varick Street & Spring Street																																
EB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	0.75	52.4	D	T	0.97	83.6	F	-	-	-	-	-	-	-	-
	TR	0.67	31.4	C	TR	0.73	34.1	C	TR	0.61	29.9	C	TR	0.75	35.7	D	-	-	-	-	-	-	-	-	TR	1.05	106.1	F	TR	1.22	167.5	F
	R	0.51	29.5	C	R	0.61	33.2	C	R	0.53	31.1	C	R	0.73	43.4	D	R	1.05	98.6	F	R	1.21	157.3	F	R	1.05	122.6	F	R	1.36	240.3	F
SB (East Lanes)	LT	0.91	29.4	C	LT	1.00	46.1	D	LT	0.79	22.2	C	LT	0.95	35.9	D	LT	0.52	14.5	B	LT	0.65	16.7	B	LT	0.88	26.7	C	LT	1.03	54.9	D
SB (West Lanes)	T	0.43	13.4	B	T	0.44	13.5	B	T	0.52	20.1	C	T	0.56	21.2	C	T	0.82	81.2	F	T	0.96	148.7	F	T	1.05	82.9	F	T	1.15	118.6	F
	Int.		24.1	C	Int.		32.7	C	Int.		23.2	C	Int.		31.9	C	Int.		45.8	D	Int.		73.7	E	Int.		59.1	E	Int.		101.0	F
Varick Street & Dominick Street																																
SB (East Lanes)	LT	0.47	15.4	B	LT	0.52	16.2	B	LT	0.37	14.3	B	LT	0.47	15.5	B	LT	0.44	15.1	B	LT	0.54	16.3	B	LT	0.48	15.6	B	LT	0.56	16.8	B
SB (West Lanes)	TR	0.52	16.2	B	TR	0.53	16.4	B	TR	0.71	20.8	C	TR	0.81	24.9	C	TR	1.05	83.8	F	TR	1.23	152.5	F	TR	1.05	83.5	F	TR	1.21	143.7	F
	Int.		15.8	B	Int.		16.3	B	Int.		17.8	B	Int.		20.2	C	Int.		46.1	D	Int.		74.7	E	Int.		45.5	D	Int.		70.7	E
Varick Street & Broome Street																																
WB	L	0.12	18.0	B	L	0.15	18.5	B	L	0.17	18.7	B	L	0.23	19.5	B	L	0.36	21.2	C	L	0.43	22.7	C	L	0.24	19.5	B	L	0.30	20.5	C
SB (East Lanes)	T	0.46	15.3	B	T	0.51	16.0	B	T	0.36	14.2	B	T	0.45	15.2	B	T	0.42	14.8	B	T	0.50	15.9	B	T	0.48	15.5	B	T	0.55	16.5	B
SB (West Lanes)	TR	0.53	18.1	B	TR	0.56	18.9	B	TR	0.75	25.7	C	TR	1.05	75.7	E	TR	0.93	80.9	F	TR	1.20	190.7	F	TR	1.05	91.6	F	TR	1.85	429.0	F
	R	0.58	18.3	B	R	0.62	19.4	B	R	0.70	25.9	C	R	1.01	79.9	E	R	0.99	83.4	F	R	1.26	188.8	F	R	1.05	92.9	F	R	2.01	501.4	F
	Int.		16.8	B	Int.		17.5	B	Int.		21.9	C	Int.		42.7	D	Int.		41.9	D	Int.		78.1	E	Int.		47.0	D	Int.		197.7	F

Table 13-49 (cont'd)
2011 Existing and 2022 No-Action Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM								Weekday Midday								Weekday PM								Saturday Midday							
	2011 Existing				2022 No-Action				2011 Existing				2022 No-Action				2011 Existing				2022 No-Action				2011 Existing				2022 No-Action			
	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS
Varick Street & Watts Street																																
EB	R	0.03	14.2	B	R	0.03	14.2	B	R	0.06	14.5	B	R	0.07	14.6	B	R	0.02	14.1	B	R	0.02	14.1	B	R	0.02	14.1	B	R	0.02	14.1	B
WB	L	0.30	17.3	B	L	0.35	18.2	B	L	0.30	17.6	B	L	0.40	19.5	B	L	0.01	14.0	B	L	0.08	14.7	B	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LT	0.96	56.0	E	LT	1.01	80.1	E
	T	0.65	24.5	C	T	0.67	24.8	C	T	0.38	17.3	B	T	0.39	17.4	B	T	1.04	84.2	F	T	1.07	92.9	F	-	-	-	-	-	-	-	-
SB (East Lanes)	T	0.67	21.8	C	T	0.75	23.7	C	T	0.49	18.8	B	T	0.62	20.7	C	T	0.43	17.7	B	T	0.51	18.7	B	T	0.79	25.0	C	T	0.91	31.6	C
SB (West Lanes)	T	0.28	16.4	B	T	0.54	21.4	C	T	0.20	15.6	B	T	0.40	18.5	B	T	0.09	14.6	B	T	0.17	15.6	B	T	0.03	14.2	B	T	0.07	14.5	B
	Int.		21.8	C	Int.		23.4	C	Int.		17.7	B	Int.		19.2	B	Int.		38.5	D	Int.		39.6	D	Int.		37.0	D	Int.		49.4	D
Varick Street & Grand Street																																
SB	LT	0.45	10.2	B	LT	0.52	11.1	B	LT	0.43	10.1	B	LT	0.57	11.9	B	LT	0.31	9.1	A	LT	0.40	9.8	A	LT	0.46	10.5	B	LT	0.58	11.9	B
	Int.		10.2	B	Int.		11.1	B	Int.		10.1	B	Int.		11.9	B	Int.		9.1	A	Int.		9.8	A	Int.		10.5	B	Int.		11.9	B
Varick Street & Canal Street																																
EB	TR	0.37	10.3	B	TR	0.39	10.5	B	TR	0.38	10.4	B	TR	0.41	10.8	B	TR	0.31	9.8	A	TR	0.33	9.9	A	TR	0.35	10.1	B	TR	0.38	10.4	B
WB	LT	1.02	49.5	D	LT	1.07	66.1	E	LT	0.71	20.8	C	LT	0.80	23.5	C	LT	1.04	80.7	F	LT	1.16	121.6	F	LT	1.01	61.5	E	LT	1.12	99.2	F
SB	L	0.24	25.4	C	L	0.40	30.6	C	-	-	-	-	-	-	-	-	L	0.37	28.0	C	L	0.76	52.3	D	-	-	-	-	-	-	-	-
	LTR	0.65	29.5	C	R	0.70	30.7	C	LTR	0.70	30.5	C	LTR	0.81	34.4	C	LTR	0.62	28.9	C	LTR	0.70	30.7	C	LTR	0.71	30.8	C	LTR	0.84	35.4	D
	Int.		34.0	C	Int.		41.7	D	Int.		22.0	C	Int.		24.6	C	Int.		41.2	D	Int.		56.8	E	Int.		38.2	D	Int.		54.5	D
Avenue of the Americas & West Houston Street																																
WB	T	0.63	24.1	C	T	0.71	27.0	C	T	0.64	24.4	C	T	0.71	26.1	C	T	0.61	23.6	C	T	0.66	24.0	D	T	0.59	23.2	C	T	0.65	24.3	C
	R	0.70	27.3	C	R	0.76	30.5	C	R	0.90	42.8	D	R	0.93	47.7	D	R	0.94	48.4	D	R	0.95	49.1	D	R	0.91	44.6	D	R	0.95	50.7	D
NB	LTR	1.00	43.3	D	LTR	1.04	55.1	E	LTR	0.89	27.8	C	LTR	1.00	42.6	D	LTR	0.80	23.8	C	LTR	0.96	36.0	D	LTR	0.76	22.7	C	LTR	0.84	25.1	C
	Int.		36.2	D	Int.		44.4	D	Int.		29.7	C	Int.		39.4	D	Int.		28.8	C	Int.		35.5	D	Int.		27.1	C	Int.		29.7	C
Avenue of the Americas & King Street																																
EB	L	0.48	20.2	C	L	0.52	21.0	C	L	0.58	22.8	C	L	0.64	24.6	C	L	0.50	20.8	C	L	0.59	23.1	C	L	0.49	20.6	C	L	0.52	21.4	C
WB	R	0.01	13.9	B	R	0.01	13.9	B	R	0.01	14.0	B	R	0.01	14.0	B	R	0.01	14.0	B	R	0.01	14.0	B	R	0.02	14.0	B	R	0.02	14.0	B
NB	T	0.82	21.9	C	T	0.87	24.2	C	T	0.70	18.9	B	T	0.78	20.7	C	T	0.56	16.5	B	T	0.63	17.6	B	T	0.61	17.2	B	T	0.67	18.1	B
	Int.		21.6	C	Int.		23.7	C	Int.		19.6	B	Int.		21.3	C	Int.		17.3	B	Int.		18.6	B	Int.		17.7	B	Int.		18.6	B
Avenue of the Americas & Spring Street																																
EB	L	0.66	27.3	C	L	0.82	38.0	D	L	0.54	22.7	C	L	0.72	30.4	C	L	0.38	19.0	B	L	0.61	25.9	C								
	T	0.44	19.2	B	T	0.46	19.4	B	T	0.44	19.0	B	T	0.46	19.4	B	T	0.31	17.2	B	T	0.34	17.5	B								
NB	TR	0.76	20.0+	C	TR	0.81	21.5	C	TR	0.63	17.6	B	TR	0.70	18.7	B	TR	0.53	16.2	B	TR	0.59	17.0	B								
	Int.		20.8	C	Int.		23.4	C	Int.		18.4	B	Int.		20.4	C	Int.		16.6	B	Int.		18.2	B								
Avenue of the Americas & Canal Street/Laight Street																																
EB (Canal Street)	T	0.62	30.6	C	T	0.66	31.4	C	T	0.52	28.9	C	T	0.57	29.7	C	T	0.40	23.2	C	T	0.44	23.7	C	T	0.52	29.0	C	T	0.57	29.6	C
EB (Laight Street)	T	0.80	56.4	E	T	0.81	58.4	E	T	0.53	34.4	C	T	0.56	34.9	C	T	1.05	87.1	F	T	1.06	92.5	F	T	0.81	42.1	D	T	0.85	44.0	D
WB	TR	0.96	36.3	D	TR	1.04	56.6	E	TR	0.90	36.6	D	TR	1.02	58.8	E	TR	1.04	82.4	F	TR	1.17	129.7	F	TR	0.64	16.3	B	TR	0.70	17.6	B
NB	LTR	1.05	67.1	E	LTR	1.10	84.0	F	LTR	0.78	29.9	C	LTR	0.87	34.1	C	-	-	-	-	-	-	-	-	LTR	0.82	31.4	C	LTR	0.86	33.4	C
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TR	0.55	24.6	C	TR	0.58	25.1	C	-	-	-	-	-	-	-	-
	Int.		51.1	D	Int.		63.5	E	Int.		32.4	C	Int.		40.8	D	Int.		54.8	D	Int.		69.8	E	Int.		28.2	C	Int.		29.6	C
Washington Street & West Houston Street																																
WB	LT	0.40	17.7	B	LT	0.46	18.5	B	LT	0.35	17.1	B	LT	0.39	17.6	B	LT	0.46	18.4	B	LT	0.52	19.4	B	LT	0.41	18.0	B	LT	0.44	18.4	B
SB	TR	0.80	32.4	C	TR	0.90	41.7	D	TR	0.70	26.9	C	TR	0.76	29.6	C	TR	0.87	38.8	D	TR	0.92	45.9	D	TR	0.72	27.6	C	TR	0.76	29.7	C
	Int.		24.1	C	Int.		28.6	C	Int.		21.5	C	Int.		22.9	C	Int.		27.3	C	Int.		30.4	C	Int.		22.3	C	Int.		23.4	C
Greenwich Street & Spring Street																																
EB	LT	0.49	24.8	C	LT	0.64	28.3	C	LT	0.35	22.8	C	LT	0.44	24.2	C	LT	0.54	25.5	C	LT	0.71	29.4	C	LT	0.39	23.4	C	LT	0.45	24.3	C
NB	TR	0.27	11.9	B	TR	0.27	11.9	B	TR	0.34	12.8	B	TR	0.38	13.4	B	TR	0.09	10.1	B	TR	0.15	10.6	B	TR	0.07	9.9	A	TR	0.11	10.3	B
	Int.		21.6	C	Int.		24.4	C	Int.		19.2	B	Int.		20.3	C	Int.		24.2	C	Int.		27.2	C	Int.		21.9	C	Int.		22.3	C
Greenwich Street & Canal Street																																
EB	LTR	0.59	19.6	B	LTR	0.61	20.0+	C	LTR	0.53	19.8	B	LTR	0.55	20.2	C	LTR	0.48	23.6	C	LTR	0.51	24.2	C	LTR	0.61	27.9	C	LTR	0.65	29.0	C
WB	DefL	0.47	24.3	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	L	0.49	26.4	C	-	-	-	-	L	0.49	24.6	C	-	-	-	-	L	0.26	14.2	B	-	-	-	-	L	0.29	17.4	B
	-	-	-	-	-	-	-	-	LTR	0.64	14.0	B	-	-	-	-	LTR	0.22	7.8	A	-	-	-	-	LTR	0.35	9.0	A	-	-	-	-
	TR	0.64	13.8	B	TR	0.70	15.7	B	-	-	-	-	TR	0.81	22.8	C	-	-	-	-	TR	0.29	8.7	A	-	-	-	-	TR	0.52	12.0	B
	Int.		18.2	B	Int.		19.2	B	Int.		17.4	B	Int.		21.5	C	Int.		19.4	B	Int.		20.1	C	Int.		21.7	C	Int.		23.4	C
Hudson Street & Spring Street																																
EB	LT	0.74	35.0-	C	LT	0.86	44.4	D	LT	0.76	35.8	D	LT	0.90	48.9	D	LT	0.54	26.3	C	LT	0.70	30.4	C								
NB	TR	0.81	21.5	C	TR	0.84	23.2	C	TR	0.56	15.0	B	TR	0.66	17.0	B	TR	0.67	17.1	B	TR	0.78	20.4	C								
	Int.		24.8	C	Int.		28.6	C	Int.		21.9	C	Int.		27.6	C	Int.		20.0-	B	Int.		23.8	C								
Varick Street & Clarkson Street/Carmine Street																																
EB	TR	0.59	27.8	C	TR	0.68	31.3	C	TR	0.56	26.7	C	TR	0.61	28.3	C	TR	0.59	28.1	C	TR	0.64	30.0	C	TR	0.64	29.6	C	TR	0.68	31.3	C
WB	L	0.11	19.2	B	L	0.12	19.5	B	L	0.07	18.4	B	L	0.07	18.5	B	L	0.14	19.9	B	L	0.15	20.1	C	L	0.09	18.9	B	L	0.09	19.0	B
SB	LT	0.67	17.7	B	LT	0.72	18.7	B	LT	0.62	16.8	B	LT	0.69	18.1	B	LT	0.66	27.6	C	LT	0.74	29.5	C	LT	0.61	16.7	B	LT	0.67	17.6	B
	Int.		19.0	B	Int.		20.4	C	Int.		18.2	B	Int.		19.5	B	Int.		27.6	C	Int.		29.4	C	Int.		18.6	B	Int.		19.6	B
Avenue of the Americas & Charlton Street/Prince Street																																
WB	TR	0.60	23.9	C	TR	0.64	25.2	C	TR	0.71	28.4	C	TR	0.76	31.5	C	TR	0.97	56.1	E	TR	1.03	70.4	E	TR	0.87	39.5	D	TR	0.92	46.8	D
NB	LT	0.81	21.6	C	LT	0.88	24.7	C	LT	0.70	18.7	B	LT	0.79	20.8	C	LT	0.51	15.9	B	LT	0.58	16.8	B	LT	0.58	16.8	B	LT	0.64	17.7	B
	Int.		21.9	C	Int.		24.7	C	Int.		20.5	C	Int.		22.7	C	Int.		28.4	C	Int.		32.5	C	Int.		22.6	C	Int.		24.9	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection

Table 13-50
2011 Existing and 2022 No-Action Conditions Level of Service Analysis
Unsignalized Intersection

Intersection	Weekday AM								Weekday Midday								Weekday PM										Saturday Midday							
	2011 Existing				2022 No-Action				2011 Existing				2022 No-Action				2011 Existing				2022 No-Action						2011 Existing				2022 No-Action			
	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Ln Grp	v/c Ratio	spv	LOS	Ln Grp	v/c Ratio	spv	LOS
Avenue of the Americas & West Houston Street																																
NB	L	0.30	20.7	C	L	0.36	24.0	C	L	0.25	15.2	C	L	0.31	17.2	C	L	0.13	11.7	B	L	0.16	12.9	B	L	0.25	17.0	C	L	0.32	19.9	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

Table 13-51
2022 No-Action and With-Action Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM									Weekday Midday									Weekday PM									Saturday Midday								
	2022 No-Action					2022 With-Action				2022 No-Action					2022 With-Action					2022 No-Action					2022 With-Action					2022 No-Action					2022 With-Action				
	Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS	
West Street (Route 9A) & Clarkson Street																																				
NB	TR	0.84	18.6	B		TR	0.85	19.1	B		TR	0.80	19.0	B		TR	0.81	19.0	B		TR	0.88	20.8	C		TR	0.89	21.1	C									
SB	L	1.14	149.3	F		L	1.18	164.7	F	+	L	0.79	53.6	D		L	0.80	54.8	D		L	0.80	72.2	E		L	0.89	83.9	F	+								
	T	0.82	18.6	B		T	0.82	18.6	B		T	0.76	18.2	B		T	0.76	18.2	B		T	0.80	17.4	B		T	0.80	17.5	B									
	Int.		26.5	C				27.9	C		Int.		20.8	C		Int.		21.0	C		Int.		21.7	C		Int.		22.7	C									
West Street (Route 9A) & West Houston Street																																				
EB	L	0.11	48.5	D		L	0.11	48.6	D		L	0.06	32.4	C		L	0.06	32.5	C		L	0.74	88.9	F		L	0.75	91.2	F									
	R	0.03	46.1	D		R	0.03	46.1	D		R	0.01	31.7	C		R	0.01	31.7	C		R	0.09	47.2	D		R	0.09	47.2	D									
WB	L	0.60	60.2	E		L	0.62	61.1	E		L	0.34	37.1	D		L	0.35	37.3	D		L	0.70	65.6	E		L	0.71	66.4	E									
	LT	0.70	65.1	E		LT	0.72	66.4	E		LT	0.36	37.5	D		LT	0.37	37.7	D		LT	0.76	69.8	E		LT	0.77	70.8	E									
	R	1.16	164.5	F		R	1.26	203.9	F	+	R	0.97	84.6	F		R	0.98	86.7	F		R	1.21	177.9	F		R	1.24	187.1	F	+								
NB	L	0.38	77.6	E		L	0.38	77.6	E		L	0.10	52.5	D		L	0.10	52.5	D		L	0.45	80.9	F		L	0.45	80.9	F									
	T	0.88	28.2	C		T	0.88	28.5	C		T	0.87	29.8	C		T	0.87	29.9	C		T	0.88	28.5	C		T	0.89	28.8	C									
SB	T	0.97	40.2	D		T	0.97	40.3	D		T	0.96	40.6	D		T	0.96	40.6	D		T	0.92	33.0	C		T	0.92	33.0	C									
	R	0.02	11.8	B		R	0.02	11.8	B		R	0.01	14.6	B		R	0.01	14.6	B		R	0.05	12.1	B		R	0.05	12.1	B									
	Int.		42.0	D				44.8	D		Int.		38.0	D		Int.		38.2	D		Int.		43.6	D		Int.		44.6	D									
West Street (Route 9A) & Canal Street North																																				
WB	L	0.52	61.9	E		L	0.58	64.6	E		L	0.39	46.4	D		L	0.39	46.3	D		L	0.64	53.2	D		L	0.66	54.2	D		L	0.35	45.3	D		L	0.35	45.3	D
	LR	1.01	124.6	F		LR	1.06	137.6	F	+	LR	0.59	53.6	D		LR	0.60	54.0	D		LR	0.31	43.0	D		LR	0.34	43.7	D		LR	0.53	51.0	D		LR	0.54	51.6	D
	R	1.02	127.4	F		R	1.07	142.3	F	+	R	0.70	59.5	E		R	0.70	60.0	E		R	0.34	43.8	D		R	0.38	44.6	D		R	0.62	55.0+	E		R	0.64	56.2	E
NB	T	0.77	9.7	A		T	0.78	9.8	A		T	0.54	8.0	A		T	0.55	8.0	A		T	0.75	12.1	B		T	0.75	12.2	B		T	0.60	8.6	A		T	0.60	8.6	A
SB	T	0.52	5.9	A		T	0.52	6.0	A		T	0.49	7.4	A		T	0.49	7.4	A		T	0.58	9.1	A		T	0.58	9.1	A		T	0.49	7.3	A		T	0.49	7.4	A
	Int.		15.5	B		Int.		16.7	B		Int.		11.6	B		Int.		11.6	B		Int.		12.9	B		Int.		13.1	B		Int.		11.1	B		Int.		11.3	B
West Street (Route 9A) & Canal Street South																																				
NB	T	0.99	40.5	D		T	1.00	41.5	D		T	0.73	22.3	C		T	0.73	22.4	C		T	0.97	36.2	D		T	0.97	36.8	D		T	0.80	24.4	C		T	0.80	24.5	C
	R	0.51	18.5	B		R	0.51	18.5	B		R	0.42	18.3	B		R	0.42	18.3	B		R	0.04	13.0	B		R	0.04	13.0	B		R	0.57	21.8	C		R	0.57	21.8	C
SB	L	0.73	44.9	D		L	0.73	45.0	D		L	0.61	33.6	C		L	0.61	33.6	C		L	0.64	34.4	C		L	0.64	34.4	C		L	0.57	32.6	C		L	0.57	32.6	C
	T	0.90	29.1	C		T	0.91	30.0	C		T	0.85	27.2	C		T	0.85	27.3	C		T	1.05	59.8	E		T	1.05	61.8	E		T	0.86	27.6	C		T	0.86	27.8	C
	Int.		35.9	D		Int.		36.6	D		Int.		25.4	C		Int.		25.5	C		Int.		45.3	D		Int.		46.4	D		Int.		26.3	C		Int.		26.5	C
Hudson Street & King Street																																				
EB	LT	0.17	21.3	C		LT	0.22	21.9	C		LT	0.15	21.1	C		LT	0.16	21.2	C		LT	0.22	21.9	C		LT	0.24	22.2	C		LT	0.07	20.0+	C		LT	0.09	20.3	C
NB	TR	0.93	31.8	C		TR	1.03	53.1	D	+	TR	0.82	22.5	C		TR	0.88	27.0	C		TR	0.89	27.1	C		TR	0.97	38.1	D		TR	0.60	15.9	B		TR	0.70	18.2	B
	Int.		31.1	C		Int.		50.8	D		Int.		22.4	C		Int.		26.6	C		Int.		26.7	C		Int.		36.8	D		Int.		16.0	B		Int.		18.3	B
Hudson Street & Charlton Street																																				
WB	TR	0.56	28.6	C		TR	0.71	34.6	C		TR	0.69	33.1	C		TR	0.81	40.9	D		TR	0.85	45.4	D		TR	1.04	83.7	F	+	TR	0.51	27.3	C		TR	0.68	32.9	C
NB	LT	0.82	22.2	C		LT	0.86	24.1	C		LT	0.63	16.2	B		LT	0.64	16.5	B		LT	0.78	20.3	C		LT	0.81	21.4	C		LT	0.52	14.3	B		LT	0.55	14.8	B
	Int.		23.3	C		Int.		26.3	C		Int.		20.7	C		Int.		23.7	C		Int.		26.6	C		Int.		38.8	D		Int.		17.5	B		Int.		19.9	B
Hudson Street & Vandam Street																																				
EB	L	0.17	21.3	C		L	0.26	22.6	C		L	0.09	20.4	C		L	0.13	20.9	C		L	0.15	21.1	C		L	0.20	21.8	C		L	0.05	19.8	B		L	0.11	20.6	C
WB	R	0.18	21.6	C		R	0.19	21.8	C		R	0.20	21.9	C		R	0.20	22.0	C		R	0.20	21.9	C		R	0.21	22.0	C		R	0.10	20.4	C		R	0.11	20.6	C
NB	T	0.72	18.4	B		T	0.73	18.7	B		T	0.52	14.3	B		T	0.52	14.4	B		T	0.67	17.0	B		T	0.68	17.2	B		T	0.47	13.6	B		T	0.48	13.7	B
	Int.		18.8	B		Int.		19.2	B		Int.		15.2	B		Int.		15.4	B		Int.		17.6	B		Int.		17.9	B		Int.		14.1	B		Int.		14.5	B
Hudson Street & Canal Street																																				
EB	L	0.84	45.3	D		L	0.84	45.3	D		L	0.72	38.3	D		L	0.72	38.3	D		L	1.08	107.0	F		L	1.08	107.0	F									
	T	0.72	19.1	B		T	0.72	19.1	B		T	0.68	17.7	B		T	0.68	17.7	B		T	0.54	14.5	B		T	0.54	14.5	B									
WB	T	1.90	446.1	F		T	2.03	504.3	F	+	T	1.78	393.0	F		T	1.80	401.5	F	+	T	0.40	29.0	C		T	0.48	30.8	C									
	R	0.50	14.3	B		R	0.50	14.3	B		R	0.49	14.6	B		R	0.49	14.6	B		R	1.07	86.4	F		R	1.07	85.9	F									
NB (East Lanes)	T	0.33	26.2	C		T	0.33	26.2	C		T	0.33	26.2	C		T	0.33	26.2	C		T	1.03	87.8	F		T	1.03	87.8	F									
	R	0.31	29.6	C		R	0.31	29.6	C		R	0.33	30.1	C		R	0.33	29.9	C		R	0.07	23.9	C		R	0.06	23.9	C									
NB (West Lanes)	LT	1.12	101.0	F		LT	1.14	108.5	F	+	LT	0.95	51.9	D		LT	0.95	52.5	D		LT	1.14	109.4	F		LT	1.16	115.0	F	+								
	Int.		130.3	F		Int.		148.8	F		Int.		108.4	F		Int.		111.0	F		Int.		82.6	F		Int.		83.8	F									
Varick Street & West Houston Street																																				
WB	L	0.74	30.5	C		L	0.78	33.1	C		L	0.96	57.9	E		L	0.96	57.1	E		L	0.58	23.2	C		L	0.59	23.5	C		L	0.61	23.9	C		L	0.62	24.4	C
	T	0.55	21.0	C		T	0.55	21.0	C		T	0.55	21.0	C		T	0.54	20.8	C		T	0.63	23.1	C		T	0.63	22.9	C		T	0.62	23.1	C		T	0.63	23.4	C
SB (East Lanes)	T	0.83	28.8	C		T	0.83	28.5	C		T	0.69	23.3	C		T	0.68	22.9	C		T	0.87	30.9	C		T	0.87	31.3	C		T	0.84	29.2	C		T	0.84	29.4	C
SB (West Lanes)	TR	1.01	53.7	D		TR	1.07	73.3	E	+	TR	0.82	28.9	C		TR	0.84	30.2	C		TR	1.28	183.0	F		TR	1.41	237.8	F	+	TR	0.79	27.3	C		TR	0.83	29.4	C
	Int.		37.1	D		Int.		45.0+	D		Int.		30.4	C		Int.		30.4	C		Int.		57.9	E		Int.		72.2	E		Int.		26.9	C		Int.		27.8	C
Varick Street & King Street																																				
EB	TR	0.65	29.2	C		TR	0.81	38.2	D		TR	0.55	26.5	C		TR	0.68	31.2	C		TR	0.65	29.4	C		TR	0.79	37.0	D		TR	0.33	21.6	C		TR	0.51	25.3	C
SB (East Lanes)	LT	0.61	17.7	B		LT	0.62	17.9	B		LT	0.74	21.4	C		LT	0.72	20.9	C		LT	0.89	28.8	C		LT	0.89	28.9	C		LT	0.94	35.5	D		LT	0.95	36.3	C
SB (West Lanes)	T	1.02	52.6	D		T	1.07	67.3	E	+	T	0.79	22.8	C		T	0.81	23.6	C		T	1.09	174.3	F		T	1.24	228.0	F	+	T	1.04	88.2	F		T	1.09	103.5	F	+
	Int.		38.7	D		Int.		48.3	D		Int.		22.7	C		Int.		23.6	C		Int.		61.3	E		Int.		77.6	E		Int.		55.0+	E		Int.		61.2	E
Varick Street & Charlton Street																																				
WB	LT	0.73	34.1	C		LT	0.76	36.3	D		LT	0.68	31.5	C		LT	0.69	31.9	C		LT	1.07	93.1	F		LT	1.13	113.7	F	+	LT	0.74	35.3	D		LT	0.81	40.3	D
SB (East Lanes)	T	0.80	22.9	C		T	0.81	23.6	C		T	0.68	19.2	B		T	0.67	18.9	B		T	0.89	28.5	C		T	0.90	29.9	C		T	0.86	26.5	C		T	0.88	27.7	C
SB (West Lanes)	TR	0.92	33.6	C		TR	1.00	48.7	D	+	TR	0.82	24.3	C		TR	0.87	28.3	C		TR	1.20	250.5	F		TR	1.62	440.8	F	+	TR	1.09	95.3	F		TR	1.23	149.4	F	+
	Int.		28.9	C		Int.		36.3	D		Int.		23.0	C		Int.		24.9	C		Int.		81.5	E		Int.		129.7	F		Int.		50.5	D		Int.		70.9	E
Varick Street & Vandam Street																																				
WB	LT	0.32	21.6	C		LT	0.35	22.2	C		LT	0.35	22.1	C		LT	0.36	22.5	C		LT	0.24	20.4	C		LT	0.25	20.5	C		LT	0.22	20.1	C		LT	0.26	20.7	C
SB (East Lanes)	T	0.58	16.5	B		T	0.60	16.7	B		T	0.78	22.4	C		T	0.77	21.8	C		T	0.59	16.7	B		T	0.60	16.8	B		T	0.92	31.9	C		T	0.94	34.3	C
SB (West Lanes)	TR	0.45	14.7	B		TR	0.48	15.0	B		TR	0.62	21.3	C		TR	0.62	21.3	C		TR	1.19	145.4	F		TR	1.22	157.4	F	+	TR	1.16	122.4	F		TR	1.16	124.5	F
	Int.		16.1	B		Int.		16.4	B		Int.		21.9	C		Int.		21.6	C		Int.		54.9	D		Int.		58.6	E		Int.		62.4	E		Int.		64.1	E
Varick Street & Spring Street																																				
EB	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-		T	0.97	83.6	F		T	1.11	122.3	F	+	-	-	-	-		-	-	-	-	
	TR	0.73	34.1	C		TR	0.79	37.3	D		TR	0.75	35.7	D		TR	0.76	36.4	D		-	-	-	-		-	-	-	-		TR	1.22	167.5	F		TR	1.31	201.5	F	+
	R	0.61	33.2	C		R	0.75	41.3	D		R	0.73	43.4	D		R	0.82	54.5	D	+	R	1.21	157.3	F		R	1.45	255.4	F	+	R	1.36	240.3	F		R	1.69	381.9	F	+
SB (East Lanes)	LT	1.00	46.1	D		LT	1.06	62.3	E	+	LT	0.95	35.9	D		LT	0.95	36.9	D		LT	0.65	16.7	B		LT	0.66	16.9	B		LT	1.03	54.9	D		LT	1.08	71.4	E	+
SB (West Lanes)	T	0.44	13.5	B		T	0.46	13.7	B		T	0.56	21.2	C		T	0.56	21.1	C		T	0.96	148.7	F		T	0.98	159.3	F	+	T	1.15	118.6	F		T	1.15	119.2	F
	Int.		32.7	C		Int.		40.9	D		Int.		31.9	C		Int.		33.5	C		Int.		73.7	E		Int.		98.2	F		Int.		101.0	F		Int.		126.9	F
Varick Street & Dominick Street																																				
SB (East Lanes)	LT	0.52	16.2	B		LT	0.55	16.6	B		LT	0.47	15.5	B		LT	0.46	15.3	B		LT	0.54	16.3	B		LT	0.56	16.8	B		LT	0.56	16.8	B		LT	0.58	17.0	B
SB (West Lanes)	TR	0.53	16.4	B		TR	0.59	17.3	B		TR	0.81	24.9	C		TR	0.82	25.4	C		TR	1.23	152.5	F		TR	1.29	178.0	F	+	TR	1.21	143.7	F		TR	1.22	149.3	F	+
	Int.		16.3	B		Int.		16.9	B		Int.		20.2	C		Int.		20.4	C		Int.		74.7	E		Int.		85.2	F		Int.		70.7	E		Int.		72.7	E
Varick Street & Broome Street																																				
WB	L	0.15	18.5	B		L	0.20	19.1	B		L	0.23	19.5	B		L	0.23	19.5	B		L	0.43	22.7	C		L	0.42	22.5	C		L	0.30	20.5	C		L	0.32	20.7	C
SB (East Lanes)	T	0.51	16.0	B		T	0.54	16.3	B		T	0.45	15.2	B		T	0.43	15.0	B		T	0.50	15.9	B		T	0.52	16.1	B		T	0.55	16.5	B		T	0.56	16.6	B
SB (West Lanes)	TR	0.56	18.9	B		TR	0.58	19.6	B		TR	1.05	75.7	E		TR	1.13	105.7	F	+	TR	1.20	190.7	F		TR	1.62	372.3	F	+	TR	1.85	429.0	F		TR	2.09	538.0	F	+
	R	0.62	19.4	B		R	0.86	33.2	C		R	1.01	79.9	E		R	1.23	158.1	F	+	R	1.26	188.8	F		R	1.68	381.3	F	+	R	2.01	501.4	F		R	2.33	649.4	F	+
	Int.		17.5	B		Int.		21.7	C		Int.		42.7	D		Int.		70.5	E		Int.		78.1	E		Int.		145.6	F		Int.		197.7	F		Int.		251.1	F

Table 13-51 (cont'd)
2022 No-Action and With-Action Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM									Weekday Midday									Weekday PM									Saturday Midday								
	2022 No-Action					2022 With-Action				2022 No-Action					2022 With-Action					2022 No-Action					2022 With-Action					2022 No-Action					2022 With-Action				
	Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS	
Varick Street & Watts Street																																				
EB	R	0.03	14.2	B		R	0.03	14.2	B		R	0.07	14.6	B		R	0.07	14.6	B		R	0.02	14.1	B		R	0.02	14.1	B		R	0.02	14.1	B		R	0.02	14.1	B	
WB	L	0.35	18.2	B		L	0.35	18.2	B		L	0.40	19.5	B		L	0.35	18.5	B		L	0.08	14.7	B		L	0.04	14.3	B		-	-	-	-		-	-	-	-	
	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-		LT	1.01	80.1	E		LT	0.99	73.1	E	
	T	0.67	24.8	C		T	0.67	24.8	C		T	0.39	17.4	B		T	0.39	17.4	B		T	1.07	92.9	F		T	1.06	91.2	F		-	-	-	-		-	-	-	-	
SB (East Lanes)	T	0.75	23.7	C		T	0.80	25.4	C		T	0.62	20.7	C		T	0.59	20.3	C		T	0.51	18.7	B		T	0.52	18.8	B		T	0.91	31.6	C		T	0.92	33.1	C	
SB (West Lanes)	T	0.54	21.4	C		T	0.54	21.4	C		T	0.40	18.5	B		T	0.40	18.5	B		T	0.17	15.6	B		T	0.17	15.6	B		T	0.07	14.5	B		T	0.07	14.5	B	
	Int.		23.4	C		Int.		24.2	C		Int.		19.2	B		Int.		18.6	B		Int.		39.6	D		Int.		39.1	D		Int.		49.4	D		Int.		47.3	D	
Varick Street & Grand Street																																				
SB	LT	0.52	11.1	B		LT	0.56	11.5	B		LT	0.57	11.9	B		LT	0.53	11.3	B		LT	0.40	9.8	A		LT	0.39	9.7	A		LT	0.58	11.9	B		LT	0.58	11.8	B	
	Int.		11.1	B		Int.		11.5	B		Int.		11.9	B		Int.		11.3	B		Int.		9.8	A		Int.		9.7	A		Int.		11.9	B		Int.		11.8	B	
Varick Street & Canal Street																																				
EB	TR	0.39	10.5	B		TR	0.39	10.6	B		TR	0.41	10.8	B		TR	0.41	10.8	B		TR	0.33	9.9	A		TR	0.33	9.9	A		TR	0.38	10.4	B		TR	0.38	10.4	B	
WB	LT	1.07	66.1	E		LT	1.09	70.8	E	+	LT	0.80	23.5	C		LT	0.79	23.4	C		LT	1.16	121.6	F		LT	1.15	120.5	F		LT	1.12	99.2	F		LT	1.12	98.2	F	
SB	L	0.40	30.6	C		L	0.49	34.5	C		-	-	-	-		-	-	-	-		L	0.76	52.3	D		L	0.88	72.2	E	+	-	-	-	-		-	-	-	-	
	R	0.70	30.7	C		LTR	0.75	32.1	C		LTR	0.81	34.4	C		LTR	0.83	35.3	D		LTR	0.70	30.7	C		LTR	0.75	32.1	C		LTR	0.84	35.4	D		LTR	0.88	38.2	D	
	Int.		41.7	D		Int.		44.2	D		Int.		24.6	C		Int.		25.0	C		Int.		56.8	E		Int.		57.6	E		Int.		54.5	D		Int.		54.9	D	
Avenue of the Americas & West Houston Street																																				
WB	T	0.71	27.0	C		T	0.73	27.4	C		T	0.71	26.1	C		T	0.70	26.0	C		T	0.66	24.0	C		T	0.66	24.1	C		T	0.65	24.3	C		T	0.65	24.4	C	
	R	0.76	30.5	C		R	0.76	30.5	C		R	0.93	47.7	D		R	0.93	47.7	D		R	0.95	49.1	D		R	0.95	49.1	D		R	0.95	50.7	D		R	0.95	50.7	D	
NB	LTR	1.04	55.1	E		LTR	1.09	72.4	E	+	LTR	1.00	42.6	D		LTR	0.99	41.4	D		LTR	0.96	36.0	D		LTR	0.97	38.6	D		LTR	0.84	25.1	C		LTR	0.86	26.0	C	
	Int.		44.4	D		Int.		55.2	E		Int.		39.4	D		Int.		38.7	D		Int.		35.5	D		Int.		36.9	D		Int.		29.7	C		Int.		30.1	C	
Avenue of the Americas & King Street																																				
EB	L	0.52	21.0	C		L	0.58	22.6	C		L	0.64	24.6	C		L	0.68	26.1	C		L	0.59	23.1	C		L	0.65	24.7	C		L	0.52	21.4	C		L	0.59	23.0	C	
WB	R	0.01	13.9	B		R	0.01	13.9	B		R	0.01	14.0	B		R	0.01	14.0	B		R	0.01	14.0	B		R	0.01	14.0	B		R	0.02	14.0	B		R	0.02	14.0	B	
NB	T	0.87	24.2	C		T	0.90	25.6	C		T	0.78	20.7	C		T	0.77	20.2	C		T	0.63	17.6	B		T	0.63	17.5	B		T	0.67	18.1	B		T	0.67	18.1	B	
	Int.		23.7	C		Int.		25.1	C		Int.		21.3	C		Int.		21.3	C		Int.		18.6	B		Int.		19.0	B		Int.		18.6	B		Int.		19.0	B	
Avenue of the Americas & Spring Street																																				
EB	L	0.82	38.0	D		L	0.96	62.1	E	+	L	0.72	30.4	C		L	0.80	36.4	D		L	0.61	25.9	C		L	0.71	30.7	C											
	T	0.46	19.4	B		T	0.47	19.6	B		T	0.46	19.4	B		T	0.46	19.4	B		T	0.34	17.5	B		T	0.35	17.6	B											
NB	TR	0.81	21.5	C		TR	0.82	21.8	C		TR	0.70	18.7	B		TR	0.68	18.4	B		TR	0.59	17.0	B		TR	0.58	16.8	B											
	Int.		23.4	C		Int.		27.2	C		Int.		20.4	C		Int.		21.2	C		Int.		18.2	B		Int.		19.0	B											
Avenue of the Americas & Canal Street/Laight Street																																				
EB (Canal Street)	T	0.66	31.4	C		T	0.67	31.7	C		T	0.57	29.7	C		T	0.57	29.7	C		T	0.44	23.7	C		T	0.45	23.8	C		T	0.57	29.6	C		T	0.57	29.8	C	
EB (Laight Street)	T	0.81	58.4	E		T	0.81	58.4	E		T	0.56	34.9	C		T	0.56	34.9	C		T	1.06	92.5	F		T	1.06	92.5	F		T	0.85	44.0	D		T	0.85	44.0	D	
WB	TR	1.04	56.6	E		TR	1.05	61.3	E	+	TR	1.02	58.8	E		TR	1.01	57.3	E		TR	1.17	129.7	F		TR	1.18	132.5	F	+	TR	0.70	17.6	B		TR	0.70	17.6	B	
NB	LTR	1.10	84.0	F		LTR	1.12	91.1	F	+	LTR	0.87	34.1	C		LTR	0.87	34.1	C		-	-	-	-		-	-	-	-		LTR	0.86	33.4	C		LTR	0.86	33.5	C	
	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-		TR	0.58	25.1	C		TR	0.58	25.1	C		-	-	-	-		-	-	-	-	
	Int.		63.5	E		Int.		67.5	E		Int.		40.8	D		Int.		40.3	D		Int.		69.8	E		Int.		70.4	E		Int.		29.6	C		Int.		29.6	C	
Washington Street & West Houston Street																																				
WB	LT	0.46	18.5	B		LT	0.49	18.8	B		LT	0.39	17.6	B		LT	0.40	17.6	B		LT	0.52	19.4	B		LT	0.53	19.6	B		LT	0.44	18.4	B		LT	0.46	18.7	B	
SB	TR	0.90	41.7	D		TR	0.92	44.8	D		TR	0.76	29.6	C		TR	0.77	30.0	C		TR	0.92	45.9	D		TR	0.95	51.4	D	+	TR	0.76	29.7	C		TR	0.77	30.7	C	
	Int.		28.6	C		Int.		30.0	C		Int.		22.9	C		Int.		23.1	C		Int.		30.4	C		Int.		32.8	C		Int.		23.4	C		Int.		23.9	C	
Greenwich Street & Spring Street																																				
EB	LT	0.64	28.3	C		LT	0.67	28.9	C		LT	0.44	24.2	C		LT	0.45	24.3	C		LT	0.71	29.4	C		LT	0.74	30.6	C		LT	0.45	24.3	C		LT	0.48	24.8	C	
NB	TR	0.27	11.9	B		TR	0.31	12.5	B		TR	0.38	13.4	B		TR	0.41	13.8	B		TR	0.15	10.6	B		TR	0.18	10.9	B		TR	0.11	10.3	B		TR	0.14	10.5	B	
	Int.		24.4	C		Int.		24.7	C		Int.		20.3	C		Int.		20.6	C		Int.		27.2	C		Int.		27.9	C		Int.		22.3	C		Int.		22.4	C	
Greenwich Street & Canal Street																																				
EB	LTR	0.61	20.0+	C		LTR	0.62	20.3	C		LTR	0.55	20.2	C		LTR	0.55	20.2	C		LTR	0.51	24.2	C		LTR	0.52	24.2	C		LTR	0.65	29.0	C		LTR	0.66	29.1	C	
WB	L	0.49	26.4	C		L	0.49	26.4	C		L	0.49	24.6	C		L	0.49	24.6	C		L	0.26	14.2	B		L	0.26	14.2	B		L	0.29	17.4	B		L	0.29	17.4	B	
	TR	0.70	15.7	B		TR	0.75	17.8	B		TR	0.81	22.8	C		TR	0.82	23.6	C		TR	0.29	8.7	A		TR	0.35	9.4	A		TR	0.52	12.0	B		TR	0.56	12.9	B	
	Int.		19.2	B		Int.		20.0-	B		Int.		21.5	C		Int.		21.8	C		Int.		20.1	C		Int.		19.9	B		Int.		23.4	C		Int.		23.5	C	
Hudson Street & Spring Street																																				
EB	LT	0.86	44.4	D		LT	0.90	49.6	D	±	LT	0.90	48.9	D		LT	0.90	49.5	D		LT	0.70	30.4	C		LT	0.72	31.1	C											
NB	TR	0.84	23.2	C		TR	0.90	27.9	C		TR	0.66	17.0	B		TR	0.66	16.9	B		TR	0.78	20.4	C		TR	0.79	20.7	C											
	Int.		28.6	C		Int.		33.3	C		Int.		27.6	C		Int.		27.7	C		Int.		23.8	C		Int.		24.2	C											
Varick Street & Clarkson Street/Carmine Street																																				
EB	TR	0.68	31.3	C		TR	0.68	31.4	C		TR	0.61	28.3	C		TR	0.62	28.6	C		TR	0.64	30.0	C		TR	0.69	32.3	C		TR	0.68	31.3	C		TR	0.71	32.7	C	
WB	L	0.12	19.5	B		L	0.12	19.5	B		L	0.07	18.5	B		L	0.07	18.5	B		L	0.15	20.1	C		L	0.15	20.2	C		L	0.09	19.0	B		L	0.10	19.1	B	
SB	LT	0.72	18.7	B		LT	0.73	19.0	B		LT	0.69	18.1	B		LT	0.69	18.1	B		LT	0.74	29.5	C		LT	0.76	30.1	C		LT	0.67	17.6	B		LT	0.68	17.8	B	
	Int.		20.4	C		Int.		20.7	C		Int.		19.5	B		Int.		19.6	B		Int.		29.4	C		Int.		30.3	C		Int.		19.6	B		Int.		20.0+	C	
Avenue of the Americas & Charlton Street/Prince Street																																				
WB	TR	0.64	25.2	C		TR	0.65	25.6	C		TR	0.76	31.5	C		TR	0.75	30.9	C		TR	1.03	70.4	E		TR	1.04	73.5	E		TR	0.92	46.8	D		TR	0.93	48.7	D	
NB	LT	0.88	24.7	C		LT	0.91	26.4	C		LT	0.79	20.8	C		LT	0.77	20.4	C		LT	0.58	16.8	B		LT	0.59	16.9	B		LT	0.64	17.7	B		LT	0.65	17.8	B	
	Int.		24.7	C		Int.		26.3	C		Int.		22.7	C		Int.		22.3	C		Int.		32.5	C		Int.		33.5	C		Int.		24.9	C		Int.		25.4	C	

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection
+ Denotes a significant adverse traffic impact

Table 13-52
2022 No-Action and With-Action Conditions Level of Service Analysis
Unsignalized Intersection

Intersection	Weekday AM									Weekday Midday									Weekday PM									Saturday Midday								
	2022 No-Action					2022 With-Action				2022 No-Action					2022 With-Action					2022 No-Action					2022 With-Action					2022 No-Action					2022 With-Action				
	Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS		Ln Grp	v/c Ratio	spv	LOS	
Sixth Avenue & West Houston Street																																				
NB	L	0.36	24.0	C		L	0.39	25.5	D		L	0.31	17.2	C		L	0.31	17.5	C		L	0.16	12.9	B		L	0.15	12.7	B		L	0.32	19.9	C		L	0.31	19.7	C	

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

Table 13-53
2011 Existing Conditions Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	272	2.59	B
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	257	2.86	B
2	King Street between Varick Street and Hudson Street	South	4.0	155	2.58	B
	Varick Street between King Street and Charlton Street (north)	West	13.0	224	1.15	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	360	2.18	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	160	1.19	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	179	0.92	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	207	0.92	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	75	0.45	A
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	257	1.32	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	101	0.52	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	75	0.36	A
6	Varick Street between Spring Street and Dominick Street	East	26.0	78	0.20	A
		West	15.0	80	0.36	A
	Varick Street between Dominick Street and Broome Street	West	14.0	73	0.35	A
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	110	0.61	B
		West	5.0	51	0.68	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	110	0.67	B
		West	5.0	51	0.68	B
9	Varick Street between Watts Street and Grand Street	West	15.0	185	0.82	B
10	Varick Street between Grand Street and Canal Street	West	15.0	277	1.23	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	193	2.14	B
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	86	0.72	B

Table 13-53 (cont'd)
2011 Existing Conditions Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	341	3.25	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	263	2.92	B
2	King Street between Varick Street and Hudson Street	South	4.0	147	2.45	B
	Varick Street between King Street and Charlton Street (north)	West	13.0	251	1.29	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	347	2.10	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	266	1.97	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	179	0.92	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	207	0.92	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	161	0.98	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	263	1.35	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	142	0.73	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	161	0.77	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	114	0.29	A
		West	15.0	116	0.52	B
	Varick Street between Dominick Street and Broome Street	West	14.0	155	0.74	B
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	107	0.59	B
		West	5.0	103	1.37	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	107	0.65	B
		West	5.0	103	1.37	B
9	Varick Street between Watts Street and Grand Street	West	15.0	382	1.70	B
10	Varick Street between Grand Street and Canal Street	West	15.0	162	0.72	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	127	1.41	B
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	98	0.82	B

Table 13-53 (cont'd)
2011 Existing Conditions Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
PM Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	222	2.11	B
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	250	2.78	B
2	King Street between Varick Street and Hudson Street	South	4.0	181	3.02	C
	Varick Street between King Street and Charlton Street (north)	West	13.0	130	0.67	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	83	0.50	A
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	139	1.03	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	96	0.49	A
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	116	0.52	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	92	0.56	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	250	1.28	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	195	1.00	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	92	0.44	A
6	Varick Street between Spring Street and Dominick Street	East	26.0	75	0.19	A
		West	15.0	56	0.25	A
	Varick Street between Dominick Street and Broome Street	West	14.0	47	0.22	A
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	68	0.38	A
		West	5.0	45	0.60	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	68	0.41	A
		West	5.0	45	0.60	B
9	Varick Street between Watts Street and Grand Street	West	15.0	120	0.53	B
10	Varick Street between Grand Street and Canal Street	West	15.0	157	0.70	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	205	2.28	B
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	119	0.99	B

Table 13-53 (cont'd)
2011 Existing Conditions Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Saturday Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	306	2.91	B
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	86	0.96	B
2	King Street between Varick Street and Hudson Street	South	4.0	31	0.52	B
	Varick Street between King Street and Charlton Street (north)	West	13.0	74	0.38	A
3	Varick Street between King Street and Charlton Street (south)	West	11.0	89	0.54	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	100	0.74	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	16	0.08	A
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	78	0.35	A
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	45	0.27	A
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	86	0.44	A
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	39	0.20	A
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	45	0.21	A
6	Varick Street between Spring Street and Dominick Street	East	26.0	55	0.14	A
		West	15.0	36	0.16	A
	Varick Street between Dominick Street and Broome Street	West	14.0	27	0.13	A
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	51	0.28	A
		West	5.0	23	0.31	A
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	51	0.31	A
		West	5.0	23	0.31	A
9	Varick Street between Watts Street and Grand Street	West	15.0	67	0.30	A
10	Varick Street between Grand Street and Canal Street	West	15.0	73	0.32	A
	Canal Street between Varick Street and Sixth Avenue	North	6.0	165	1.83	B
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	59	0.49	A

Note: PMF = pedestrians per minute per foot

Table 13-54
2011 Existing Conditions Corner Analysis

Intersection No.	Location	Corner	AM Peak Period		Midday Peak Period		PM Peak Period		Saturday Peak Period	
			SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
1	Sixth Avenue and Spring Street	Northeast	221.9	A	283.8	A	195.9	A	280.0	A
		Northwest	155.6	A	205.1	A	173.1	A	311.0	A
2	Varick Street and King Street	Southwest	131.8	A	119.6	A	153.8	A	364.4	A
3	Varick Street and Charlton Street	Northeast	209.9	A	137.9	A	192.3	A	411.4	A
		Southeast	272.1	A	157.5	A	205.9	A	473.1	A
		Southwest	246.6	A	158.1	A	394.2	A	309.9	A
		Northwest	179.8	A	129.9	A	312.7	A	296.4	A
4	Varick Street and Vandam Street	Northeast	187.4	A	187.4	A	389.9	A	488.8	A
		Southeast	206.0	A	206.0	A	314.2	A	468.0	A
		Southwest	226.7	A	226.7	A	381.1	A	1009.8	A
		Northwest	248.3	A	248.3	A	440.7	A	999.1	A
5	Varick Street and Spring Street	Northeast	164.1	A	152.0	A	166.7	A	383.1	A
		Southeast	273.4	A	208.1	A	335.4	A	395.1	A
		Southwest	409.2	A	244.0	A	402.6	A	629.2	A
		Northwest	270.7	A	209.6	A	233.5	A	586.8	A
6	Varick Street and Dominick Street	Northeast	627.8	A	501.1	A	619.6	A	805.7	A
		Southeast	597.4	A	601.2	A	738.1	A	913.7	A
		Southwest	545.4	A	485.7	A	735.5	A	1326.9	A
		Northwest	606.5	A	442.5	A	674.0	A	1515.7	A
7	Varick Street and Broome Street	Northeast	517.1	A	396.1	A	584.7	A	591.0	A
		Southeast	499.6	A	467.8	A	672.4	A	903.0	A
		Northwest	600.8	A	403.8	A	713.2	A	906.3	A
8	Varick Street and Watts Street	Northeast	448.2	A	412.9	A	470.5	A	498.7	A
		Southwest	371.6	A	247.3	A	456.3	A	895.5	A
10	Varick Street and Canal Street	Northeast	348.5	A	493.4	A	348.3	A	502.2	A
		Northwest	256.0	A	298.4	A	222.8	A	385.7	A
11	Hudson Street and Spring Street	Northeast	369.5	A	347.7	A	398.5	A	752.3	A
		Northwest	407.4	A	345.1	A	428.1	A	875.9	A

Note: SFP = square feet per pedestrian

Table 13-55
2011 Existing Conditions Crosswalk Analysis

Intersection No.	Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles											
					AM			Midday			PM			Saturday		
					2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
1	Sixth Avenue and Spring Street	North	60.0	15.0	311	42.3	B	263	48.8	B	333	36.5	C	161	82.3	A
3	Varick Street and Charlton Street	East	34.0	18.0	137	137.9	A	243	74.4	A	206	87.3	A	88	215.6	A
		West	34.0	18.0	165	104.0	A	234	71.4	A	86	217.8	A	155	111.8	A
4	Varick Street and Vandam Street	South	60.0	16.0	127	89.4	A	127	89.4	A	61	194.6	A	19	629.0	A
		East	34.0	19.0	133	149.6	A	133	149.6	A	107	187.2	A	102	194.5	A
		West	33.0	19.0	152	123.9	A	152	122.7	A	85	230.8	A	44	452.3	A
5	Varick Street and Spring Street	North	59.0	14.0	150	58.3	B	118	71.7	A	169	47.9	B	59	146.7	A
		East	36.0	19.0	115	184.6	A	172	122.2	A	109	194.2	A	73	292.3	A
		West	36.0	19.0	65	326.1	A	145	144.2	A	79	271.9	A	39	553.3	A
6	Varick Street and Dominick Street	East	31.0	17.0	62	281.0	A	77	226.0	A	59	294.5	A	54	322.9	A
		West	31.0	18.0	62	274.7	A	95	175.6	A	50	354.8	A	24	752.9	A
7	Varick Street and Broome Street	West	67.0	12.0	57	140.0	A	71	115.2	A	43	190.4	A	28	257.9	A
8	Varick Street and Watts Street	West	57.0	19.0	54	323.7	A	70	250.1	A	58	302.9	A	20	882.4	A
10	Varick Street and Canal Street	North	60.0	16.0	204	101.1	A	155	129.9	A	237	83.1	A	132	154.4	A

Note: SFP = square feet per pedestrian

Table 13-56
2022 No-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	377	3.59	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	355	3.94	C
2	King Street between Varick Street and Hudson Street	South	4.0	178	2.97	B
	Varick Street between King Street and Charlton Street (north)	West	13.0	276	1.42	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	415	2.52	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	217	1.61	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	203	1.04	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	275	1.22	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	135	0.82	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	408	2.09	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	242	1.24	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	129	0.61	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	106	0.27	A
		West	15.0	110	0.49	A
	Varick Street between Dominick Street and Broome Street	West	14.0	94	0.45	A
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	190	1.06	B
		West	5.0	66	0.88	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	194	1.18	B
		West	5.0	66	0.88	B
9	Varick Street between Watts Street and Grand Street	West	15.0	205	0.91	B
10	Varick Street between Grand Street and Canal Street	West	15.0	289	1.28	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	289	3.21	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	220	1.83	B

Table 13-56 (cont'd)
2022 No-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	429	4.09	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	356	3.96	C
2	King Street between Varick Street and Hudson Street	South	4.0	190	3.17	C
	Varick Street between King Street and Charlton Street (north)	West	13.0	342	1.75	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	440	2.67	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	409	3.03	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	293	1.50	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	365	1.62	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	375	2.27	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	388	1.99	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	286	1.47	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	366	1.74	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	225	0.58	A
		West	15.0	281	1.25	B
	Varick Street between Dominick Street and Broome Street	West	14.0	303	1.44	B
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	309	1.72	B
		West	5.0	240	3.20	C
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	320	1.94	B
		West	5.0	240	3.20	C
9	Varick Street between Watts Street and Grand Street	West	15.0	507	2.25	B
10	Varick Street between Grand Street and Canal Street	West	15.0	233	1.04	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	392	4.36	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	215	1.79	B

Table 13-56 (cont'd)
2022 No-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
PM Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	419	3.99	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	452	5.02	C
2	King Street between Varick Street and Hudson Street	South	4.0	204	3.40	C
	Varick Street between King Street and Charlton Street (north)	West	13.0	205	1.05	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	158	0.96	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	273	2.02	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	196	1.01	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	268	1.19	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	248	1.50	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	506	2.59	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	425	2.18	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	257	1.22	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	149	0.38	A
		West	15.0	132	0.59	B
	Varick Street between Dominick Street and Broome Street	West	14.0	107	0.51	A
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	232	1.29	B
		West	5.0	100	1.33	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	238	1.44	B
		West	5.0	100	1.33	B
9	Varick Street between Watts Street and Grand Street	West	15.0	180	0.80	B
10	Varick Street between Grand Street and Canal Street	West	15.0	195	0.87	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	398	4.42	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	323	2.69	B

Table 13-56 (cont'd)
2022 No-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Saturday Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	397	3.78	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	185	2.06	B
2	King Street between Varick Street and Hudson Street	South	4.0	73	1.22	B
	Varick Street between King Street and Charlton Street (north)	West	13.0	142	0.73	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	157	0.95	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	206	1.53	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	145	0.74	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	200	0.89	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	171	1.04	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	211	1.08	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	202	1.04	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	186	0.89	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	138	0.35	A
		West	15.0	165	0.73	B
	Varick Street between Dominick Street and Broome Street	West	14.0	168	0.80	B
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	272	1.51	B
		West	5.0	160	2.13	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	277	1.68	B
		West	5.0	160	2.13	B
9	Varick Street between Watts Street and Grand Street	West	15.0	187	0.83	B
10	Varick Street between Grand Street and Canal Street	West	15.0	149	0.66	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	446	4.96	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	187	1.56	B

Note: PMF = pedestrians per minute per foot

Table 13-57
2022 No-Action Condition Corner Analysis

Intersection No.	Location	Corner	AM Peak Period		Midday Peak Period		PM Peak Period		Saturday Peak Period	
			SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
1	Sixth Avenue and Spring Street	Northeast	171.6	A	193.4	A	132.9	A	199.8	A
		Northwest	123.5	A	137.0	A	104.3	A	190.5	A
2	Varick Street and King Street	Southwest	118.7	A	92.4	A	123.4	A	217.3	A
3	Varick Street and Charlton Street	Northeast	174.1	A	107.9	A	136.9	A	263.3	A
		Southeast	188.8	A	105.5	A	139.9	A	236.9	A
		Southwest	160.7	A	95.4	A	166.4	A	171.6	A
		Northwest	148.5	A	101.6	A	166.4	A	202.6	A
4	Varick Street and Vandam Street	Northeast	147.5	A	137.1	A	176.6	A	298.3	A
		Southeast	147.9	A	129.9	A	164.8	A	225.3	A
		Southwest	144.3	A	108.3	A	159.0	A	228.3	A
		Northwest	156.0	A	119.0	A	152.2	A	276.2	A
5	Varick Street and Spring Street	Northeast	103.6	A	90.5	A	86.1	A	160.6	A
		Southeast	239.8	A	146.5	A	233.8	A	246.5	A
		Southwest	338.4	A	137.1	A	259.4	A	247.1	A
		Northwest	155.1	A	96.7	A	96.6	A	163.9	A
6	Varick Street and Dominick Street	Northeast	437.3	A	238.8	A	317.0	A	352.6	A
		Southeast	416.5	A	241.5	A	324.5	A	342.5	A
		Southwest	418.2	A	195.1	A	350.6	A	321.7	A
		Northwest	463.1	A	197.2	A	361.8	A	354.7	A
7	Varick Street and Broome Street	Northeast	318.4	A	143.7	A	212.2	A	210.4	A
		Southeast	312.4	A	158.5	A	232.7	A	253.3	A
		Northwest	453.9	A	153.2	A	318.5	A	202.8	A
8	Varick Street and Watts Street	Northeast	234.9	A	122.9	A	156.9	A	123.4	A
		Southwest	324.5	A	139.0	A	284.1	A	246.2	A
10	Varick Street and Canal Street	Northeast	245.8	A	185.1	A	192.9	A	163.3	A
		Northwest	195.9	A	140.7	A	146.7	A	140.3	A
11	Hudson Street and Spring Street	Northeast	179.3	A	182.1	A	156.7	A	257.1	A
		Northwest	203.7	A	153.1	A	155.2	A	217.4	A

Note: SFP = square feet per pedestrian

Table 13-58
2022 No-Action Condition Crosswalk Analysis

Intersection No.	Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles											
					AM			Midday			PM			Saturday		
					2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
1	Sixth Avenue and Spring Street	North	60.0	15.0	409	31.8	C	359	34.9	C	533	21.4	D	255	50.8	B
3	Varick Street and Charlton Street	East	34.0	18.0	183	102.4	A	341	51.7	B	286	61.4	A	159	117.2	A
		West	34.0	18.0	221	70.5	A	336	47.3	B	198	90.9	A	234	71.4	A
4	Varick Street and Vandam Street	South	60.0	16.0	179	62.2	A	193	57.7	A	113	102.8	A	82	142.7	A
		East	34.0	19.0	181	107.8	A	219	89.0	A	219	90.5	A	170	114.9	A
		West	33.0	19.0	254	73.3	A	369	47.7	B	253	73.6	A	188	101.5	A
5	Varick Street and Spring Street	North	59.0	14.0	287	30.0	C	259	31.3	C	388	19.1	D	189	44.4	B
		East	36.0	19.0	138	152.9	A	266	77.3	A	174	120.1	A	145	144.6	A
		West	36.0	19.0	93	226.8	A	316	63.7	A	154	137.1	A	174	120.8	A
6	Varick Street and Dominick Street	East	31.0	17.0	99	174.1	A	198	84.7	A	146	116.2	A	144	117.6	A
		West	31.0	18.0	90	187.9	A	253	60.7	A	124	134.5	A	149	112.8	A
7	Varick Street and Broome Street	West	67.0	12.0	72	109.7	A	208	37.9	C	98	81.9	A	165	42.2	B
8	Varick Street and Watts Street	West	57.0	19.0	68	178.1	A	196	87.2	A	112	155.6	A	146	118.3	A
10	Varick Street and Canal Street	North	60.0	16.0	280	72.4	A	376	51.8	B	376	51.3	B	384	51.2	B

Note: SFP = square feet per pedestrian

Table 13-59
2022 With-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
AM Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	527	5.02	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	510	5.67	C
2	King Street between Varick Street and Hudson Street	South	4.0	209	3.48	C
	Varick Street between King Street and Charlton Street (north)	West	13.0	322	1.65	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	461	2.79	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	275	2.04	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	301	1.54	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	364	1.62	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	207	1.25	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	604	3.10	C
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	322	1.65	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	235	1.12	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	198	0.51	B
		West	15.0	170	0.76	B
	Varick Street between Dominick Street and Broome Street	West	14.0	156	0.74	B
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	248	1.38	B
		West	5.0	127	1.69	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	250	1.52	B
		West	5.0	127	1.69	B
9	Varick Street between Watts Street and Grand Street	West	15.0	259	1.15	B
10	Varick Street between Grand Street and Canal Street	West	15.0	336	1.49	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	348	3.87	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	272	2.27	B

Table 13-59 (cont'd)
2022 With-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Midday Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	503	4.79	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	451	5.01	C
2	King Street between Varick Street and Hudson Street	South	4.0	238	3.97	C
	Varick Street between King Street and Charlton Street (north)	West	13.0	390	2.00	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	487	2.95	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	460	3.41	C
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	334	1.71	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	461	2.05	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	426	2.58	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	507	2.60	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	370	1.90	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	461	2.20	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	284	0.73	B
		West	15.0	375	1.67	B
	Varick Street between Dominick Street and Broome Street	West	14.0	420	2.00	B
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	322	1.79	B
		West	5.0	361	4.81	C
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	333	2.02	B
		West	5.0	361	4.81	C
9	Varick Street between Watts Street and Grand Street	West	15.0	624	2.77	B
10	Varick Street between Grand Street and Canal Street	West	15.0	320	1.42	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	448	4.98	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	261	2.18	B

Table 13-59 (cont'd)
2022 With-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
PM Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	561	5.34	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	607	6.74	D
2	King Street between Varick Street and Hudson Street	South	4.0	271	4.52	C
	Varick Street between King Street and Charlton Street (north)	West	13.0	262	1.34	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	215	1.30	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	356	2.64	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	268	1.37	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	393	1.75	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	330	2.00	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	711	3.65	C
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	497	2.55	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	377	1.80	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	224	0.57	B
		West	15.0	200	0.89	B
	Varick Street between Dominick Street and Broome Street	West	14.0	189	0.90	B
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	251	1.39	B
		West	5.0	181	2.41	B
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	257	1.56	B
		West	5.0	181	2.41	B
9	Varick Street between Watts Street and Grand Street	West	15.0	258	1.15	B
10	Varick Street between Grand Street and Canal Street	West	15.0	262	1.16	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	444	4.93	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	378	3.15	C

Table 13-59 (cont'd)
2022 With-Action Condition Sidewalk Analysis

Intersection No.	Location	Sidewalk	Effective Width (ft)	15 Minute Two-Way Volume	Platoon Flow	
					PMF	LOS
Saturday Peak Period						
1	Spring Street between Sixth Avenue and Sullivan Street	North	7.0	517	4.92	C
	Spring Street between Sixth Avenue and Varick Street (east)	North	6.0	309	3.43	C
2	King Street between Varick Street and Hudson Street	South	4.0	140	2.33	B
	Varick Street between King Street and Charlton Street (north)	West	13.0	193	0.99	B
3	Varick Street between King Street and Charlton Street (south)	West	11.0	207	1.25	B
	Varick Street between Charlton Street and Vandam Street (north)	West	9.0	270	2.00	B
4	Vandam Street between Varick Street and Hudson Street (east)	South	13.0	173	0.89	B
	Varick Street between Charlton Street and Vandam Street (south)	West	15.0	306	1.36	B
	Varick Street between Vandam Street and Spring Street (north)	West	11.0	248	1.50	B
5	Spring Street between Sixth Avenue and Varick Street (west)	North	13.0	363	1.86	B
	Spring Street between Varick Street and Hudson Street (east)	North	13.0	248	1.27	B
	Varick Street between Vandam Street and Spring Street (south)	West	14.0	296	1.41	B
6	Varick Street between Spring Street and Dominick Street	East	26.0	212	0.54	B
		West	15.0	239	1.06	B
	Varick Street between Dominick Street and Broome Street	West	14.0	260	1.24	B
7	Varick Street between Broome Street and Watts Street (north)	East	12.0	304	1.69	B
		West	5.0	249	3.32	C
8	Varick Street between Broome Street and Watts Street (south)	East	11.0	310	1.88	B
		West	5.0	249	3.32	C
9	Varick Street between Watts Street and Grand Street	West	15.0	274	1.22	B
10	Varick Street between Grand Street and Canal Street	West	15.0	220	0.98	B
	Canal Street between Varick Street and Sixth Avenue	North	6.0	500	5.56	C
11	Spring Street between Hudson Street and Varick Street (west)	North	8.0	231	1.93	B

Note: PMF = pedestrians per minute per foot

Table 13-60
2022 With-Action Condition Corner Analysis

Intersection No.	Location	Corner	AM Peak Period		Midday Peak Period		PM Peak Period		Saturday Peak Period	
			SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
1	Sixth Avenue and Spring Street	Northeast	137.5	A	192.9	A	114.0	A	165.4	A
		Northwest	97.4	A	130.5	A	85.4	A	144.0	A
2	Varick Street and King Street	Southwest	105.4	A	83.0	A	102.7	A	164.3	A
3	Varick Street and Charlton Street	Northeast	137.1	A	174.4	A	110.8	A	187.1	A
		Southeast	141.7	A	118.4	A	108.8	A	170.7	A
		Southwest	127.1	A	81.9	A	116.4	A	124.5	A
		Northwest	122.5	A	96.8	A	123.6	A	145.9	A
4	Varick Street and Vandam Street	Northeast	120.5	A	91.9	A	149.1	A	223.5	A
		Southeast	106.8	A	78.8	A	118.8	A	156.3	A
		Southwest	101.4	A	88.0	A	97.4	A	136.8	A
		Northwest	117.2	A	127.4	A	106.5	A	166.2	A
5	Varick Street and Spring Street	Northeast	67.4	A	111.6	A	60.8	A	100.1	A
		Southeast	169.8	A	85.4	A	174.7	A	178.8	A
		Southwest	225.8	A	95.3	A	175.8	A	164.4	A
		Northwest	92.5	A	68.2	A	63.4	A	99.3	A
6	Varick Street and Dominick Street	Northeast	263.2	A	196.6	A	222.4	A	236.5	A
		Southeast	265.5	A	206.4	A	250.6	A	260.0	A
		Southwest	279.9	A	145.1	A	245.1	A	223.9	A
		Northwest	272.9	A	139.6	A	219.7	A	209.1	A
7	Varick Street and Broome Street	Northeast	203.0	A	129.5	A	172.0	A	166.1	A
		Southeast	213.3	A	145.5	A	199.6	A	205.5	A
		Northwest	245.2	A	98.4	A	176.4	A	128.2	A
8	Varick Street and Watts Street	Northeast	172.0	A	114.4	A	141.8	A	109.3	A
		Southwest	220.0	A	101.5	A	190.8	A	168.1	A
10	Varick Street and Canal Street	Northeast	199.9	A	148.0	A	158.9	A	134.6	A
		Northwest	171.2	A	115.9	A	124.7	A	117.8	A
11	Hudson Street and Spring Street	Northeast	157.6	A	154.6	A	136.2	A	203.0	A
		Northwest	177.1	A	128.9	A	135.0	A	176.7	A

Note: SFP = square feet per pedestrian

Table 13-61
2022 With-Action Condition Crosswalk Analysis

Intersection No.	Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles											
					AM			Midday			PM			Saturday		
					2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
1	Sixth Avenue and Spring Street	North	60.0	15.0	561	21.9	D	440	27.9	C	679	16.2	D	376	33.2	C
3	Varick Street and Charlton Street	East	34.0	18.0	250	73.5	A	376	46.4	B	346	49.9	B	213	86.0	A
		West	34.0	18.0	276	54.3	B	391	38.9	C	274	61.6	A	303	52.2	B
4	Varick Street and Vandam Street	South	60.0	16.0	247	44.4	B	231	47.8	B	189	60.2	A	136	84.9	A
		East	34.0	19.0	249	77.6	A	247	78.3	A	268	72.9	A	222	86.8	A
		West	33.0	19.0	352	51.2	B	478	36.0	C	400	45.4	B	310	59.9	B
5	Varick Street and Spring Street	North	59.0	14.0	446	18.1	D	372	21.0	D	550	12.8	E	308	26.0	C
		East	36.0	19.0	228	89.8	A	318	63.7	A	245	84.0	A	215	95.6	A
		West	36.0	19.0	172	120.1	A	422	46.5	B	243	84.8	A	271	75.5	A
6	Varick Street and Dominick Street	East	31.0	17.0	175	95.5	A	246	66.8	A	205	81.1	A	204	81.2	A
		West	31.0	18.0	157	100.9	A	359	41.5	B	200	80.8	A	233	70.1	A
7	Varick Street and Broome Street	West	67.0	12.0	133	58.1	B	329	23.3	D	179	43.8	B	254	26.8	C
8	Varick Street and Watts Street	West	57.0	19.0	130	131.6	A	315	52.9	B	191	89.8	A	234	72.4	A
10	Varick Street and Canal Street	North	60.0	16.0	320	62.8	A	465	41.3	B	443	43.1	B	458	42.3	B

Note: SFP = square feet per pedestrian

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