Chapter 11: Transportation

A. INTRODUCTION

This chapter examines the potential for the proposed actions to result in significant adverse impacts on study area transportation systems, through a comparison of conditions with the proposed actions (the With Action condition) to conditions in the future without the proposed actions (the No Action condition).

As described in Chapter 1, "Project Description," the applicant proposes a rezoning of a portion of the block bounded by West 56th and West 57th Streets and Eleventh and Twelfth Avenues from M1-5 and M2-3 to C4-7, along with other related land use actions. The proposed actions would facilitate the development on the proposed project site (projected development site 1) of a mixed-use building of approximately 1.2 million gross square feet (gsf). In addition, the proposed actions are assumed to result in the redevelopment of one additional site (projected development site 2) with a new, approximately 117,612 gsf hotel with 181 hotel rooms. In terms of parking, the proposed actions would provide a below-grade public parking garage that could include either 395 spaces or up to 500 spaces.

This analysis assesses the potential impacts resulting from redevelopment of both sites. It assumes as a conservative measure that the proposed project site is redeveloped with ~~the Mixed Use~~ Reasonable Worse Case Development Scenario 2 (RWCDS 2), which (as described in greater detail below) has a greater potential to result in transportation-related impacts than would the proposed project (RWCDS 1).

~~It is possible that new impacts, new unmitigated impacts and new mitigation may be identified between Draft and Final EIS. If conditions change or it is determined that proposed mitigation measures are not feasible, additional mitigation measures may be explored. If it is determined that other measures are not available to mitigate identified significant adverse transportation impacts, either in part or in whole, those impacts would be identified in the FEIS as unmitigated and a discussion will be included in the "Unavoidable Adverse Impacts" chapter of the FEIS.~~

Subsequent to the issuance of the DEIS, the New York City Department of Transportation (NYCDOT) reviewed the specific mitigation measures proposed for each intersection (discussed in detail in Chapter 19, "Mitigation") to assess feasibility of their implementation. Based on NYCDOT's review and recommendation, the measures recommended to mitigate the significant adverse traffic and pedestrian impacts at the intersection of Eleventh Avenue and West 57th Street were revised. Based on these revisions, it was determined that the significant adverse traffic impacts at the intersection of Eleventh Avenue and West 57th Street would remain unmitigated during the weekday PM and Saturday peak hours. Furthermore, the significant adverse pedestrian impact at the south crosswalk of Eleventh Avenue at West 57th Street would also remain unmitigated during the weekday AM, midday and PM, and Saturday peak hours. A discussion of these impacts is included in Chapter 20, "Unavoidable Adverse Impacts."

As discussed in detail in Chapter 19, "Mitigation," in order to verify the need and effectiveness of the proposed mitigation measures, the applicant would develop and conduct a Traffic Monitoring Plan (TMP) once the proposed project is operational. In consultation with NYCDOT, the TMP would be used to determine whether actual future Build conditions have, in fact, resulted in significant adverse traffic and pedestrian impacts and verify the need for mitigation measures identified in the FEIS or similar measures identified through the TMP.

PRINCIPAL CONCLUSIONS

TRAFFIC

Traffic conditions were evaluated at 15 intersections for the weekday AM, midday, PM, and the Saturday peak hours. In the With Action condition, there would be the potential for significant adverse impacts at 7 intersections during the weekday AM peak hour, 10 intersections during the weekday midday peak hour, 13 intersections during the PM peak hour, and 8 intersections during the Saturday peak hour.

Table 11-1(a) provides a summary of the impacted locations by analysis time period and lane-groups. Potential measures to mitigate the projected traffic impacts are described in Chapter 19, "Mitigation." As shown in that chapter, ~~all of~~ the significant adverse impacts at 12 out of the 13 intersections could be fully mitigated with standard mitigation measures, including signal timing changes and approach daylighting. However, the intersection of Eleventh Avenue and West 57th Street would remain unmitigated during the weekday PM and Saturday peak hours.

Table 11-1(a)
Summary of Significant Adverse Traffic Impacts

Intersection		Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
EB/WB Street	NB/SB Street				
West 57th Street	12th Avenue			WB-R	
West 56th Street	12th Avenue			SB-L (Mainline)	SB-L (Mainline)
West 55th Street	12th Avenue	WB-L	WB-L	WB-L	
West 58th Street	11th Avenue			SB-L	
West 57th Street	11th Avenue	EB-L WB-L WB-TR	WB-L	WB-L WB-TR SB-L	WB-L WB-TR NB-L
West 55th Street	11th Avenue		WB-LTR	WB-LTR	
West 58th Street	10th Avenue		EB-LT	EB-LT	
West 57th Street	10th Avenue	EB-LT WB-TR	EB-LT WB-TR	EB-LT WB-TR	EB-DefL WB-TR
West 56th Street	10th Avenue	EB-LT	EB-LT	EB-LT	EB-LT
West 55th Street	10th Avenue		WB-TR	WB-T	WB-TR
West 57th Street	9th Avenue	EB-T EB-R WB-T	EB-T EB-R WB-T	EB-R WB-LT	EB-R WB-T
West 56th Street	9th Avenue	EB-TR	EB-TR	EB-TR	EB-TR
West 57th Street	8th Avenue	EB-LT WB-TR	WB-TR	WB-TR	WB-TR

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

TRANSIT

The screening assessment concluded that a detailed examination of subway line-haul analysis was not warranted. However, bus line-haul analyses and a detailed analysis of station elements at the 59th Street/Columbus Circle subway station (A, B, C, D and No.1 lines) and the 57th Street/7th Avenue station (N, Q, R lines) were prepared. Based on the result of the transit analysis, the proposed actions would not result in potential significant adverse impacts at the two stations analyzed during any of the peak periods. However, as summarized in **Table 11-1(b),** the proposed actions would result in potential significant adverse impacts on bus line-haul levels on the eastbound M57 during the weekday AM peak period and the westbound M31 and westbound M57 during the weekday PM peak period. Potential measures to mitigate the projected potential significant adverse bus line-haul impacts are described in Chapter 19, "Mitigation." As discussed in that chapter, these impacts could be mitigated by increasing bus service along affected routes.

Table 11-1(b)
Summary of Significant Adverse Transit Impacts

Bus Route	Direction	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
M11	Northbound				
	Southbound				
M31	Eastbound				
	Westbound			X	
M57	Eastbound	X			
	Westbound			X	

Notes: X = Impacted
This table is new to the FEIS.

PEDESTRIANS

Weekday and Saturday peak period pedestrian conditions were evaluated at key sidewalk, corner reservoir, and crosswalk elements at 8 intersections. Significant adverse impacts were identified only for the south crosswalk of West 57th Street and Eleventh Avenue. These impacts would occur during all of the four analysis time periods. **Table 11-2** provides a summary of the impacted location by analysis time periods. As detailed in Chapter 19, "Mitigation," these significant adverse impacts ~~could be mitigated by widening the crosswalk~~ would remain unmitigated during all of the four analysis time periods.

Table 11-2
Summary of Significant Adverse Pedestrian Impacts

Intersection	Pedestrian Element	2017 With Action			
		AM Peak Hour	Midday Peak Hour	PM Peak Hour	Saturday Peak Hour
57th Street and 11th Avenue	South Crosswalk	X	X	X	X

Notes: X = Impacted

VEHICULAR AND PEDESTRIAN SAFETY

Crash data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between May 31, 2009 and May 31, 2012. During this time period, a total of 250 reportable and non-reportable accidents, 2 fatalities, 378 injuries, and ~~77~~ 79 pedestrian/bicyclist-related accidents occurred at the study area intersections. A rolling total of accident data identifies ~~three~~ four study area intersections as high pedestrian

accident locations in the 2009 to 2012 period. These intersections are Eleventh Avenue at West 57th Street, Tenth Avenue at West 57th Street, Ninth Avenue at West 57th Street and Eighth Avenue at West 57th Street.

The ~~three~~ four intersections identified above would experience significant adverse traffic impacts during all analysis peak hours. To increase pedestrian safety at these intersections, measures such as such as the restriping of faded crosswalks, installation of pedestrian warning signs and the installation of countdown timers can be implemented. As described in Chapter 19, "Mitigation," the predicted impacts at these intersections, with the exception of Eleventh Avenue at West 57th Street, could be fully mitigated with standard traffic engineering measures. The intersection of Eleventh Avenue at West 57th Street could be fully mitigated during the weekday AM and midday peak hours; however, it would remain unmitigated during the weekday PM and Saturday peak hours. Pedestrian safety measures at this intersection may be evaluated in the future as part of the TMP that is described in Chapter 19, "Mitigation," at which time additional pedestrian safety remedies could be implemented subject to NYCDOT consultation and approval.

PARKING

The proposed actions would include a below-grade public parking garage with up to 500 parking spaces. The proposed actions are expected to eliminate the 1,000-space public parking garage that currently exists on development site 1. Accounting for the change in on-site parking spaces, and the parking demand generated from background growth, No Action projects and the proposed actions, the With Action public parking supply and utilization analysis shows that there could be a parking shortfall during the weekday midday period within the ¼-mile off-street parking study area. The proposed actions could provide a smaller garage with 395 spaces. With a smaller garage, the parking shortfall during the weekday midday peak period would be greater than with a 500 space garage, and there is a potential that additional parking shortfall could occur during other analyzed peak periods. 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 multitude of available modes of transportation.

B. PRELIMINARY ANALYSIS METHODOLOGY

The 2012 *City Environmental Quality Review* (*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 actions. According to the *CEQR Technical Manual*, if the proposed project 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 project 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 project during the weekday AM, midday, PM, and Saturday 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.

OVERVIEW

~~*THE PROPOSED PROJECT SITE*~~

PROJECTED DEVELOPMENT SITE 1

The proposed project site totals approximately 83,303 square feet of lot area and consists of Block 1104, Lots 31, 40, 44 and 55. Lots 31 and 40 are currently developed with low-rise structures and open service areas that are used by Lexus and Acura for auto sales and service. Lot 44 is a four-story parking garage with a licensed capacity of 1,000 spaces. Lot 55 includes a one-story auto repair shop.

As shown in **Table 11-3**, ~~the~~ for the proposed project site RWCDS 2 assumes that development under the proposed rezoning could include approximately 848 residential apartments, approximately 35,000 gsf of ground-floor local retail uses, approximately 75,000 gsf of destination retail space, approximately 30,000 gsf of medical office space, a 285-room hotel and ~~approximately~~ up to 500 below-grade public parking spaces. As discussed above, for transportation analysis purposes, ~~the Mixed-Use~~ RWCDS 2 was analyzed.

Table 11-3
RWCDS 2

Use	Description	GSF
Residential	848 Units	704,250
Parking	395 or 500 Spaces	~~170,750~~ 109,400
Mechanical/Other		61,350
Hotel	285 rooms	185,000
Local Retail	—	35,000
Destination Retail	—	75,000
Medical Office	—	30,000
	Total GSF	**1,200,000**

LOTS 25 AND 29—PROJECTED DEVELOPMENT SITE 2

As discussed in Chapter 1, "Project Description," under RWCDS 2, lots 25 and 29 are assumed to be redeveloped with a new hotel use. Accordingly, it is considered in this analysis as an approximately 117,612 gsf hotel with approximately 181 hotel rooms (**Appendix F** includes a conceptual analysis that considers redevelopment of this site with a mixed-use building with retail, residential and commercial office use).

~~Lots 25 and 29 were evaluated for both residential and hotel developments. For these lots, residential development is not considered to be feasible. However, a hotel development would be possible and will therefore be considered as part of the Mixed-Use RWCDS for travel demand analysis purposes. In terms of the development program, a new hotel building would~~

~~have approximately 117,612 gsf consisting of approximately 181 hotel rooms at about 650 gsf per room.~~

TRANSPORTATION PLANNING ASSUMPTIONS

The trip-making characteristics will be the subject of evaluating potential transportation-related impacts. Travel demand projections and assignments of vehicular, transit, and pedestrian trips were conducted, pursuant to the methodologies outlined in the 2012 *CEQR Technical Manual*, to determine the various transportation facilities that warrant detailed impact analyses.

The travel demand assumptions identified for the various development components of the ~~Mixed-Use~~ RWCDS 2 and the Proposed Project are summarized in **Table 11-4** and are discussed in detail as follows:

RESIDENTIAL

Trip estimates for the residential component were developed using person and delivery trip generation and temporal distributions, and delivery directional distribution factors from the 2012 *CEQR Technical Manual*. Person trip directional distributions and taxi vehicle occupancy were derived from factors in the *625 West 57th Street FSEIS* (2012). The modal split and auto occupancy factors were based on the 2007- 2011 ACS (American Community Survey, U.S Department of Commerce: Bureau of the Census) Journey-to-Work (JTW) data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147, and 151.

LOCAL RETAIL

Trip estimates for the local retail component were developed using person and delivery trip generation and temporal distributions, and delivery directional distribution factors from the 2012 *CEQR Technical Manual*. Person trip directional distributions were derived from factors in the *625 West 57th Street FSEIS* (2012). The modal split and vehicle occupancy factors were taken from the *West 44th Street and Eleventh Avenue Rezoning FEIS* (2010). A 25-percent linked trip credit was applied to the standard rate of 205 weekday trips and 240 Saturday trips per 1,000 gsf, resulting in 153.75 trips and 180 trips per 1,000 gsf, respectively.

DESTINATION RETAIL

Trip estimates for the destination retail component were developed using person and delivery trip generation and temporal distributions, and delivery directional distribution factors from the 2012 *CEQR Technical Manual*. Person trip directional distributions, modal splits, and vehicle occupancies were derived from factors in the *625 West 57th Street FSEIS* (2012).

COMMUNITY FACILITY (MEDICAL OFFICE) STAFF

Trip estimates for the medical office staff were developed using person and delivery trip generation factors, temporal distributions, directional distributions, and taxi occupancy from the *625 West 57th Street FSEIS* (2012). Modal splits and auto occupancies were derived from 2000 U.S. Census reverse-journey-to-work data for Manhattan census tracts 127, 129, 133, 135, 139, 145, 147, and 151.

COMMUNITY FACILITY (MEDICAL OFFICE) VISITORS

Trip estimates for the medical office visitors were developed using person and delivery trip generation factors, temporal distributions, directional distributions, vehicle occupancies, and modal splits from the *625 West 57th Street FSEIS* (2012).

Table 11-4
Transportation Planning Assumptions

Use	Residential				Destination Retail				Local Retail				Community Facility(Medical Office) Staff				Community Facility(Medical Office) Visitors				Hotel			
Total Daily Person Trip	(1) Weekday 8.075 Trips / DU			SAT 9.6	(1) Weekday 78.2 Trips / KSF			SAT 92.5	(1) Weekday 205.0 Trips / KSF			SAT 240.0	(2) Weekday 10.0 Trips / KSF			SAT 4.3	(2) Weekday 33.6 Trips / KSF			SAT 14.5	(1) Weekday 9.40 Trips / Room			SAT 9.4
Trip Linkage	0%				0%				25%				0%				0%				0%			
Net Daily Person trip	Weekday 8.075 Trips / DU			SAT 9.6	Weekday 78.2 Trips / KSF			SAT 92.5	Weekday 153.8 Trips / KSF			SAT 180.0	Weekday 10.0 Trips / KSF			SAT 4.3	Weekday 33.6 Trips / KSF			SAT 14.5	Weekday 9.40 Trips / Unit			SAT 9.40
	AM	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**
Temporal	(1)				(1)				(1)				(2)				(2)				(1)			
	10%	5%	11%	8%	3%	9%	9%	11%	3%	19%	10%	10%	24.0%	17.0%	24.0%	17.0%	6.0%	9.0%	5.0%	9.0%	8.0%	14.0%	13.0%	9.0%
Direction	(2)				(2)				(4)				(2)				(2)				(6)			
In	16%	50%	67%	53%	61%	55%	47%	55%	50%	50%	50%	50%	94%	50%	12%	50%	94%	50%	12%	50%	39%	54%	65%	56%
Out	84%	50%	33%	47%	39%	45%	53%	45%	50%	50%	50%	50%	6%	50%	88%	50%	6%	50%	88%	50%	61%	46%	35%	44%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Modal Split	(3)				(2)				(4)				(5)				(2)				(6)			
	All				**AM/MD/PM**			**SAT**	**All**				**All**				**All**				**AM/PM/SAT**			**Midday**
Auto	7.0%				10.0%			12.0%	2.0%				25.7%				25.0%				9.0%			8.0%
Taxi	5.0%				15.0%			15.0%	3.0%				2.3%				25.0%				18.0%			15.0%
Subway	43.0%				20.0%			18.0%	6.0%				50.1%				29.0%				24.0%			13.0%
Bus/School Bus	8.0%				20.0%			20.0%	6.0%				11.2%				11.0%				3.0%			3.0%
Walk	37.0%				35.0%			35.0%	83.0%				10.7%				10.0%				46.0%			61.0%
Total	100%				100%			100%	100%				100.0%				100.0%				100%			100%
Vehicle Occupancy	(2)(3)				(2)				(4)				(5)(2)				(2)				(6)			
Auto	1.13				2.00				1.65				1.15				1.65				1.40			
Taxi	1.40				2.00				1.40				1.40				1.20				1.80			
School Bus	-				-				-				-				-				-			
Daily Delivery Trip Generation Rate	(1) Weekday 0.06 Delivery Trips / DU			SAT 0.02	(1) Weekday 0.35 Delivery Trips / KSF			SAT 0.04	(1) Weekday 0.35 Delivery Trips / KSF			SAT 0.04	(2) Weekday 0.32 Delivery Trips / KSF			SAT 0.01					(6) Weekday 0.06 Delivery Trips / KSF			SAT 0.01
	AM	**MD**	**PM**	**SAT MD**	**AM**	**MD**	**PM**	**SAT MD**	**AM**	**MD**	**PM**	**SAT MD**	**AM**	**MD**	**PM**	**SAT MD**					**AM**	**MD**	**PM**	**SAT MD**
Delivery Temporal	(1)				(1)				(1)				(2)								(6)			
	12%	9%	2%	9%	8%	11%	2%	11%	8%	11%	2%	11%	10.0%	11.0%	2.0%	11.0%					12.0%	9.0%	1.0%	9.0%
Delivery Direction	(1)				(1)				(1)				(2)								(1)			
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%					50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%					50%	50%	50%	50%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%					100%	100%	100%	100%

Source
(1) *2012 CEQR Technical Manual*
(2) *625 W.57th Street FSEIS*, December 2012
(3) U.S. Census American Community Survey 2007-2011 Journey to Work Data for Manhattan Tracts 127, 129, 133, 135, 139, 145, 147, and 151
(4) *West 44th Street and Eleventh Avenue Rezoning FEIS*, Jan 2010
(5) 2000 U.S. Census Reverse Journey To Work Data for Manhattan Tracts 127, 129, 133, 135, 139, 145, 147, and 151
(6) *Western Rail Yard FEIS*, 2009

HOTEL

Travel demand factors from the 2012 *CEQR Technical Manual* and *Western Rail Yard FEIS* (2009) for a typical New York City hotel were used to estimate trips generated by the hotel. These factors include daily person and delivery trip generation rates, modal split, vehicle occupancies, and temporal and directional distributions.

TRAVEL DEMAND PROJECTION SUMMARY

As shown in **Table 11-5**, the ~~Mixed-Use RWCDS (~~RWCDS 2~~)~~ would generate approximately 1,502, 2,653, 2,510, and 2,498 person trips, including 476, 448, 650, and 573 subway trips, and 124, 230, 229, and 261 bus trips, during the weekday AM, midday, and PM, and the Saturday peak hours, respectively. ~~The Mixed-Use~~ RWCDS 2 would also generate approximately 254, 346, 353, and 337 vehicle trips, including 102, 122, 139, and 129 auto trips and 140, 212, 212, and 206 taxi trips, during the weekday AM, midday, and PM, and the Saturday peak hours, respectively.

As shown in **Table 11-6**, the Proposed Project (RWCDS 1) would generate approximately 1,154, 1,706, 1,700, and 1,671 person trips, including 425, 280, 492, and 439 subway trips, and 89, 112, 123, and 119 bus trips, during the weekday AM, midday, and PM, and the Saturday peak hours, respectively. The Proposed Project would also generate approximately 140, 118, 146, and 139 vehicle trips, including 62, 44, 74, and 67 auto trips and 68, 66, 70, and 70 taxi trips, during the weekday AM, midday, and PM, and the Saturday peak hours, respectively.

Although the Proposed Project contains 341 more dwelling units than ~~the Mixed-Use~~ RWCDS 2, the destination retail and hotel components generate a substantial level of pedestrian trips which are enough to surpass the trips generated by the Proposed Project. Similarly, the total number of vehicles generated by ~~the Mixed-Use~~ RWCDS 2 is much higher than those generated by the Proposed Project—by approximately a factor of 2-to-1—again contributed by the destination retail and hotel components. Therefore, the vehicle, pedestrian and transit trips generated under ~~the Mixed-Use~~ RWCDS 2 were used in analyzing the potential for significant adverse transportation impacts as discussed in detail in the following sections.

TRAFFIC

Since the projected vehicle trips would be greater than the *CEQR* analysis threshold of 50 peak hour vehicle trips, a Level 2 screening assessment was conducted to determine if there is a need for additional quantified traffic analyses.

TRANSIT

Since the projected bus trips would be at or greater than 200 during all peak hours except weekday AM, and the subway trips would be greater than 200 during all four peak hours, a Level 2 screening assessment was conducted to determine if there is a need for additional quantified transit analyses.

PEDESTRIAN

Other than the person trips by autos that are made directly to/from the on-site parking garage, all person trips would traverse the pedestrian elements surrounding the project site. A Level 2 screening assessment was conducted to determine if there is a need for additional quantified pedestrian analyses.

Table 11-5
Trip Generation Summary: RWCDS 2

Use	Peak Hour	In/Out	Person Trip						Vehicle Trip			
			Auto	Taxi	Subway	Bus	Walk	Total	Auto	Taxi	Delivery	Total
Residential	Weekday AM	In	8	5	47	9	41	110	7	19	3	29
		Out	40	29	247	46	213	575	36	19	3	58
		Total	48	34	294	55	254	685	43	38	6	87
	Weekday Midday	In	12	9	74	14	63	172	11	9	2	22
		Out	12	9	74	14	63	172	11	9	2	22
		Total	24	18	148	28	126	344	22	18	4	44
	Weekday PM	In	35	25	217	40	187	504	31	19	1	51
		Out	17	12	107	20	92	248	15	19	1	35
		Total	52	37	324	60	279	752	46	38	2	86
	Saturday	In	24	17	148	28	128	345	21	17	1	39
		Out	21	15	132	24	113	305	19	17	1	37
		Total	45	32	280	52	241	650	40	34	2	76
Local Retail	Weekday AM	In	2	2	5	5	67	81	1	3	0	4
		Out	2	2	5	5	67	81	1	3	0	4
		Total	4	4	10	10	134	162	2	6	0	8
	Weekday Midday	In	10	15	31	31	424	511	6	16	1	23
		Out	10	15	31	31	424	511	6	16	1	23
		Total	20	30	62	62	848	1022	12	32	2	46
	Weekday PM	In	5	8	16	16	223	268	3	9	0	12
		Out	5	8	16	16	223	268	3	9	0	12
		Total	10	16	32	32	446	536	6	18	0	24
	Saturday	In	6	9	19	19	261	314	4	10	0	14
		Out	6	9	19	19	261	314	4	10	0	14
		Total	12	18	38	38	522	628	8	20	0	28
Destination Retail	Weekday AM	In	11	16	21	21	38	107	5	10	1	16
		Out	7	10	14	14	24	69	3	10	1	14
		Total	18	26	35	35	62	176	8	20	2	30
	Weekday Midday	In	29	44	58	58	102	291	15	29	1	45
		Out	24	36	48	48	83	239	12	29	1	42
		Total	53	80	106	106	185	530	27	58	2	87
	Weekday PM	In	25	37	50	50	87	249	12	29	0	41
		Out	28	42	56	56	98	280	14	29	0	43
		Total	53	79	106	106	185	529	26	58	0	84
	Saturday	In	50	63	76	84	147	420	25	42	0	67
		Out	41	52	62	69	120	344	21	42	0	63
		Total	91	115	138	153	267	764	46	84	0	130
Hotel	Weekday AM	In	12	25	33	4	63	137	9	27	2	38
		Out	19	38	51	6	98	212	14	27	2	43
		Total	31	63	84	10	161	349	23	54	4	81
	Weekday Midday	In	26	50	43	10	202	331	19	38	1	58
		Out	23	42	37	8	172	282	16	38	1	55
		Total	49	92	80	18	374	613	35	76	2	113
	Weekday PM	In	33	67	89	11	170	370	24	41	0	65
		Out	18	36	48	6	92	200	13	41	0	54
		Total	51	103	137	17	262	570	37	82	0	119
	Saturday	In	20	40	53	7	102	222	14	28	0	42
		Out	16	31	42	5	80	174	11	28	0	39
		Total	36	71	95	12	182	396	25	56	0	81
Medical Office – Staff	Weekday AM	In	17	2	34	8	7	68	15	1	0	16
		Out	1	0	2	0	0	3	1	1	0	2
		Total	18	2	36	8	7	71	16	2	0	18
	Weekday Midday	In	7	1	13	3	3	27	6	0	1	7
		Out	7	1	13	3	3	27	6	0	1	7
		Total	14	2	26	6	6	54	12	0	2	14
	Weekday PM	In	2	0	4	1	1	8	2	1	0	3
		Out	16	1	32	7	7	63	14	1	0	15
		Total	18	1	36	8	8	71	16	2	0	18
	Saturday	In	3	0	5	1	1	10	2	0	0	2
		Out	3	0	5	1	1	10	2	0	0	2
		Total	6	0	10	2	2	20	4	0	0	4

Table 11-5 (cont'd)
Trip Generation Summary: ~~Mixed-Use RWCDS (~~RWCDS 2~~)~~

Use	Peak Hour	In/Out	Person Trip						Vehicle Trip			
			Auto	Taxi	Subway	Bus	Walk	Total	Auto	Taxi	Delivery	Total
Medical Office - Visitors	Weekday AM	In	14	14	16	6	6	56	9	10	0	19
		Out	1	1	1	0	0	3	1	10	0	11
		Total	15	15	17	6	6	59	10	20	0	30
	Weekday Midday	In	11	11	13	5	5	45	7	13	0	20
		Out	11	11	13	5	5	45	7	13	0	20
		Total	22	22	26	10	10	90	14	26	0	40
	Weekday PM	In	2	2	2	1	1	8	1	7	0	8
		Out	11	11	13	5	4	44	7	7	0	14
		Total	13	13	15	6	5	52	8	14	0	22
	Saturday	In	5	5	6	2	2	20	3	6	0	9
		Out	5	5	6	2	2	20	3	6	0	9
		Total	10	10	12	4	4	40	6	12	0	18
Total	Weekday AM	In	64	64	156	53	222	559	46	70	6	122
		Out	70	80	320	71	402	943	56	70	6	132
		Total	134	144	476	124	624	1502	102	140	12	254
	Weekday Midday	In	95	130	232	121	799	1377	64	106	6	176
		Out	87	114	216	109	750	1276	58	106	6	170
		Total	182	244	448	230	1549	2653	122	212	12	346
	Weekday PM	In	102	139	378	119	669	1407	73	106	1	180
		Out	95	110	272	110	516	1103	66	106	1	173
		Total	197	249	650	229	1185	2510	139	212	2	353
	Saturday	In	108	134	307	141	641	1331	69	103	1	173
		Out	92	112	266	120	577	1167	60	103	1	164
		Total	200	246	573	261	1218	2498	129	206	2	337

Table 11-6
Trip Generation Summary: Proposed Project (RWCDS 1)

Use	Peak Hour	In/Out	Person Trip						Vehicle Trip			
			Auto	Taxi	Subway	Bus	Walk	Total	Auto	Taxi	Delivery	Total
Residential	Weekday AM	In	11	8	66	12	57	154	10	30	4	44
		Out	56	40	347	65	298	806	50	30	4	84
		Total	67	48	413	77	355	960	60	60	8	128
	Weekday Midday	In	17	12	103	19	89	240	15	14	3	32
		Out	17	12	103	19	89	240	15	14	3	32
		Total	34	24	206	38	178	480	30	28	6	64
	Weekday PM	In	50	35	304	57	262	708	44	25	1	70
		Out	24	17	150	28	129	348	22	25	1	48
		Total	74	52	454	85	391	1056	66	50	2	118
	Saturday	In	34	24	208	39	179	484	30	23	1	54
		Out	30	21	185	34	159	429	27	23	1	51
		Total	64	45	393	73	338	913	57	46	2	105
Local Retail	Weekday AM	In	2	3	6	6	80	97	1	4	1	6
		Out	2	3	6	6	80	97	1	4	1	6
		Total	4	6	12	12	160	194	2	8	2	12
	Weekday Midday	In	12	18	37	37	509	613	7	20	1	28
		Out	12	18	37	37	509	613	7	20	1	28
		Total	24	36	74	74	1018	1226	14	40	2	56
	Weekday PM	In	6	10	19	19	268	322	4	10	0	14
		Out	6	10	19	19	268	322	4	10	0	14
		Total	12	20	38	38	536	644	8	20	0	28
	Saturday	In	8	11	23	23	314	379	5	12	0	17
		Out	8	11	23	23	314	379	5	12	0	17
		Total	16	22	46	46	628	758	10	24	0	34
Total	Weekday AM	In	13	11	72	18	137	251	11	34	5	50
		Out	58	43	353	71	378	903	51	34	5	90
		Total	71	54	425	89	515	1154	62	68	10	140
	Weekday Midday	In	29	30	140	56	598	853	22	33	4	59
		Out	29	30	140	56	598	853	22	33	4	59
		Total	58	60	280	112	1196	1706	44	66	8	118
	Weekday PM	In	56	45	323	76	530	1030	48	35	1	84
		Out	30	27	169	47	397	670	26	35	1	62
		Total	86	72	492	123	927	1700	74	70	2	146
	Saturday	In	42	35	231	62	493	863	35	35	1	71
		Out	38	32	208	57	473	808	32	35	1	68
		Total	80	67	439	119	966	1671	67	70	2	139

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 project 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 project, trips projected for the 2017 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

As shown above, incremental vehicle trips resulting from ~~the Mixed-Use~~ RWCDS 2 would exceed the *CEQR* Level 1 screening threshold during all peak hours. These vehicle trips were assigned to area intersections based on the most likely travel routes to and from the project site, prevailing travel patterns, commuter origin-destination summaries from the census data, the configuration of the roadway network, and the anticipated locations of site access and egress. For a conservative analysis, all auto trips were assigned to the on-site 500 space public parking garage with entrances on West 56th Street and West 57th Street between Eleventh Avenue and Route 9A. Taxi trips were assigned to the block faces bordering the project site. All delivery trips were assigned to dedicated loading area on West 56th Street via ~~the New York City Department of Transportation (~~NYCDOT~~)~~ designated truck routes.

Traffic assignments for autos, taxis, and deliveries for individual components are discussed as follows:

AUTOS

Residential

Residential auto assignments were based on the journey-to-work origin-destination information from the 2000 U.S. Census database. Based on this information, majority of residential trips would occur within Manhattan (approximately 99 percent) with the remaining trips being made to Brooklyn and New Jersey.

Overall, the vehicle trips generated by the residential component were distributed to the study area streets/roadways in the following manner: approximately 20 percent of project-generated vehicle trips were assumed to approach the project site from the north, 50 percent from the south, and the remaining 30 percent from the east. Reverse auto trips are expected to return along the same general routes on which they departed. As discussed above, all residential auto trips were assigned to the public parking garage proposed for the project site.

Hotel

Hotel auto trip assignments were split between the area's major transit hubs, and tourist, business, and shopping destinations. Specifically, approximately 60 percent of the hotel generated trips were assigned to the three major airports (JFK, LaGuardia and Newark Liberty International) and two railroad stations (Grand Central Terminal and Pennsylvania Station);

whereas, the remaining 40 percent of the trips were assigned to the tourist, business, and shopping destinations primarily in Manhattan.

Trips assigned to JFK and LaGuardia Airports were split between the Ed Koch Queensboro Bridge, the RFK Triboro Bridge and Queens-Midtown Tunnel via the FDR Drive, whereas the trips to Newark Liberty International Airport were assigned via the Lincoln Tunnel. Trips to Grand Central Terminal and Pennsylvania Station were assigned via major cross street and direct routes within the study area.

Overall, the vehicle trips generated by the hotel component were distributed to the study area streets/roadways in the following manner: approximately 15 percent of project generated trips were assumed to approach the project site from the north, 45 percent from the south, and the remaining 40 percent from the east.

Destination Retail

The destination retail component is expected to draw customers from within a three-mile radius of the project site; therefore, a majority of the auto trips are expected to come from within Manhattan (65 percent) with some trips expected to come from Brooklyn (30 percent) and Queens (five percent).

Overall, the vehicle trips generated by the destination retail component were distributed to the study area streets/roadways in the following manner: approximately 35 percent of project generated trips were assumed to approach the project site from the north, 35 percent from the south, and the remaining 30 percent from the east. Departing trips were assigned along the same routes as arrivals.

Local Retail

The local retail uses are expected to serve the immediate surrounding area. Therefore, auto trips were generally assigned from local origins within the neighborhood and adjacent residential areas.

Overall, the vehicle trips generated by the local retail component were distributed to the study area streets/roadways in the following manner: approximately 35 percent of project generated trips were assumed to approach the project site from the north, 35 percent from the south, and the remaining 30 percent from the east. Departing trips were assigned along the same routes as arrivals.

Medical Office - Staff

Auto trips generated by the medical office use for staff were based on U.S. Census 2000 reverse journey-to-work data. Most of the staff trips would originate from Queens (29 percent) and within Manhattan (23 percent). The remaining trips would originate from New Jersey (17 percent), Brooklyn (10 percent), New York counties outside of the five boroughs (10 percent), the Bronx (6 percent), Long Island (3 percent), and Staten Island (2 percent).

Of the trips within Manhattan, approximately 70 percent were assigned from points east and south of the site, and the remaining 30 percent were assigned from points east and north. The majority of trips (80 percent) traveling from Queens and Long Island were assigned to the site via the Ed Koch Queensboro Bridge while the remaining trips were assigned from the Queens Midtown Tunnel. Trips from Brooklyn are expected to use East River crossings to enter Manhattan and will than approach the project site via the most direct routes available.

Overall, the vehicle trips generated by the medical office staff were distributed to the study area streets/roadway in the following manner: approximately 45 percent of project generated trips were assumed to approach the project site from the north, 35 percent from the south, and 20 percent from the east. Reverse trips are expected to depart along the same general routes on which they arrived. Medical office auto trips were assigned to the proposed on-site public parking garage.

Medical Office - Visitors

For medical office visitor trips, half of the trips were assigned locally to reflect neighborhood medical facilities (i.e. neighborhood physician's office, local medical clinic), and the remaining half were assigned more regionally—similar to destination retail—to account for specialist offices or other facilities that would draw trips from beyond the local area.

Overall, the vehicle trips generated by the medical office visitors were distributed to the study area streets/roadways in the following manner: approximately 35 percent of project generated trips were assumed to approach the project site from the north, 35 percent from the south, and the remaining 30 percent from the east.

Taxis

The majority of taxi pick-ups and drop-offs for all development components were assigned to pick up and drop off along the building frontages on West 56th Street, West 57th Street, and Eleventh Avenue.

Deliveries

Truck delivery trips for all land uses were assigned to NYCDOT-designated truck routes. Trucks were assigned to the study area from regional origins via the Lincoln Tunnel, Ed Koch Queensboro Bridge, West 57th Street, Eleventh Avenue, and Route 9A. Trucks were assigned along regional and local truck routes as long as possible until reaching the project site.

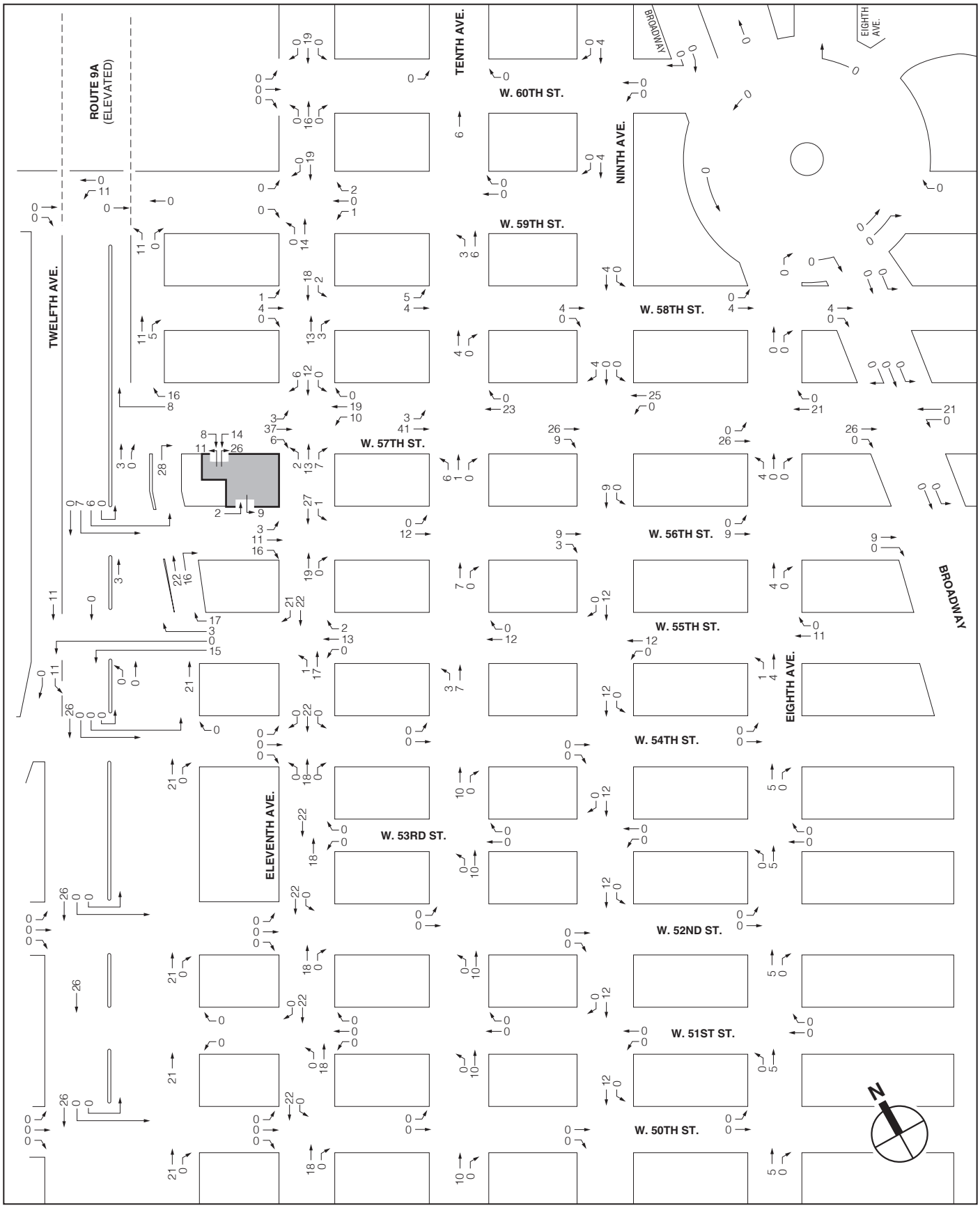
On-Site Parking Displacement

In the future with the proposed project, the existing 1,000 space parking garage would be replaced with either a 395 space or a 500 space below-grade public parking space garage. Vehicle trips associated with the parking demand that could no longer be accommodated within the on-site public parking garage were reassigned to other area public parking garages with available capacities. These reassignments are reflected in the overall vehicle trip increments developed for ~~the Mixed Use~~ RWCDS 2. For the purposes of a conservative traffic analysis, a 500 space parking garage would allow a greater number of existing parking patrons (and associated trips) to be retained in the study area. In comparison, a 395 space garage would result in a larger displacement of existing parking patrons which would potentially decrease the traffic levels at the study area intersections as the patrons seek parking in the broader area.

The total weekday AM, midday, PM, and Saturday peak hour vehicle trip increments are presented in **Figures 11-1, 11-2, 11-3 and 11-4**, respectively.

According to the *CEQR Technical Manual*, intersections expected to incur 50 or more incremental peak hour vehicle trips as a result of a proposed project would have the potential for significant adverse traffic impacts and should be assessed in a quantified traffic impact analysis. As depicted in **Figure 11-5**, the following 15 intersections, together comprising the traffic study area, are included for the weekday AM, midday, PM, and Saturday peak hour traffic impact analysis.

7.1.13



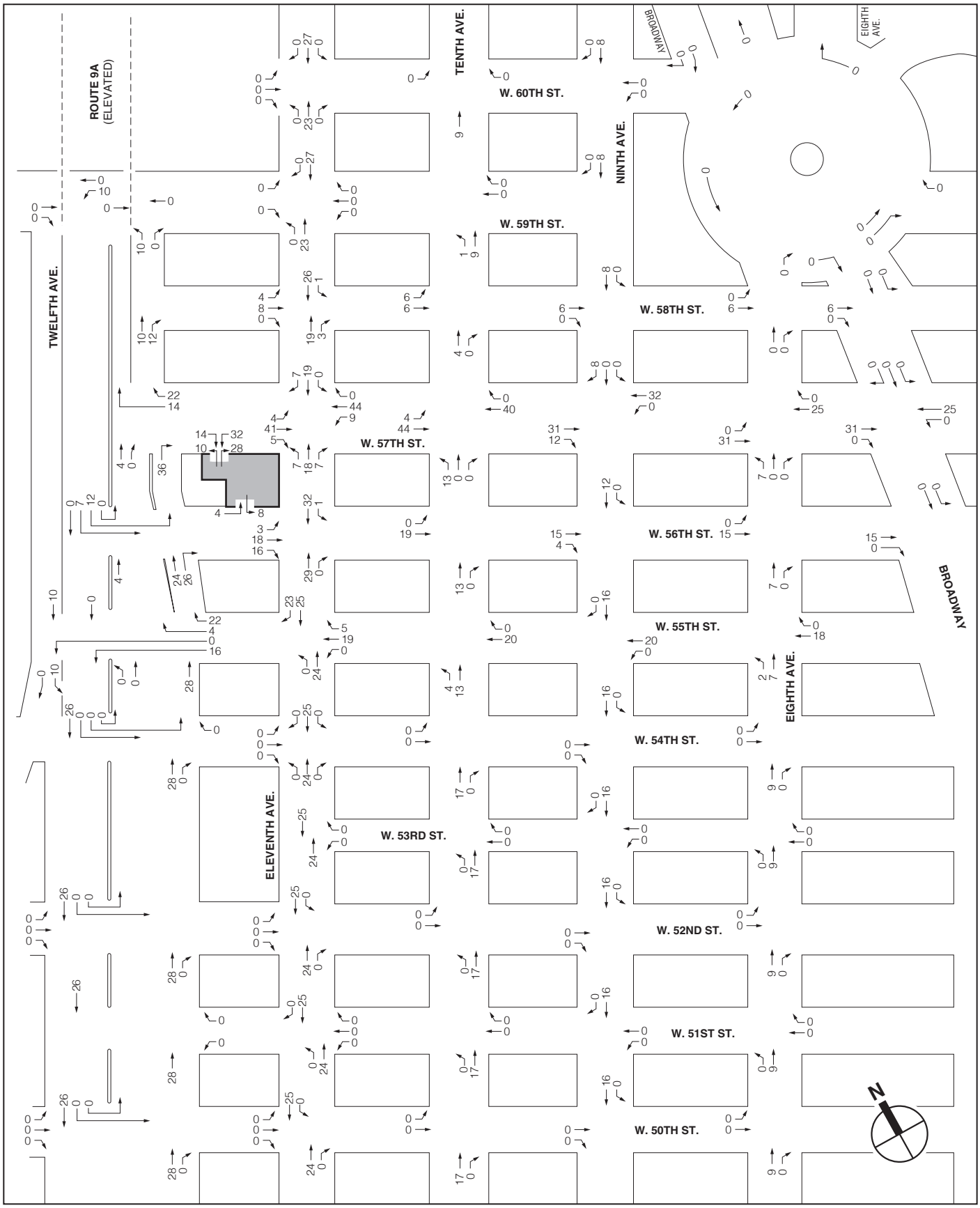
Project Site

Incremental Vehicle Trips
Weekday AM Peak Hour

606 WEST 57TH STREET

Figure 11-1

7.1.13



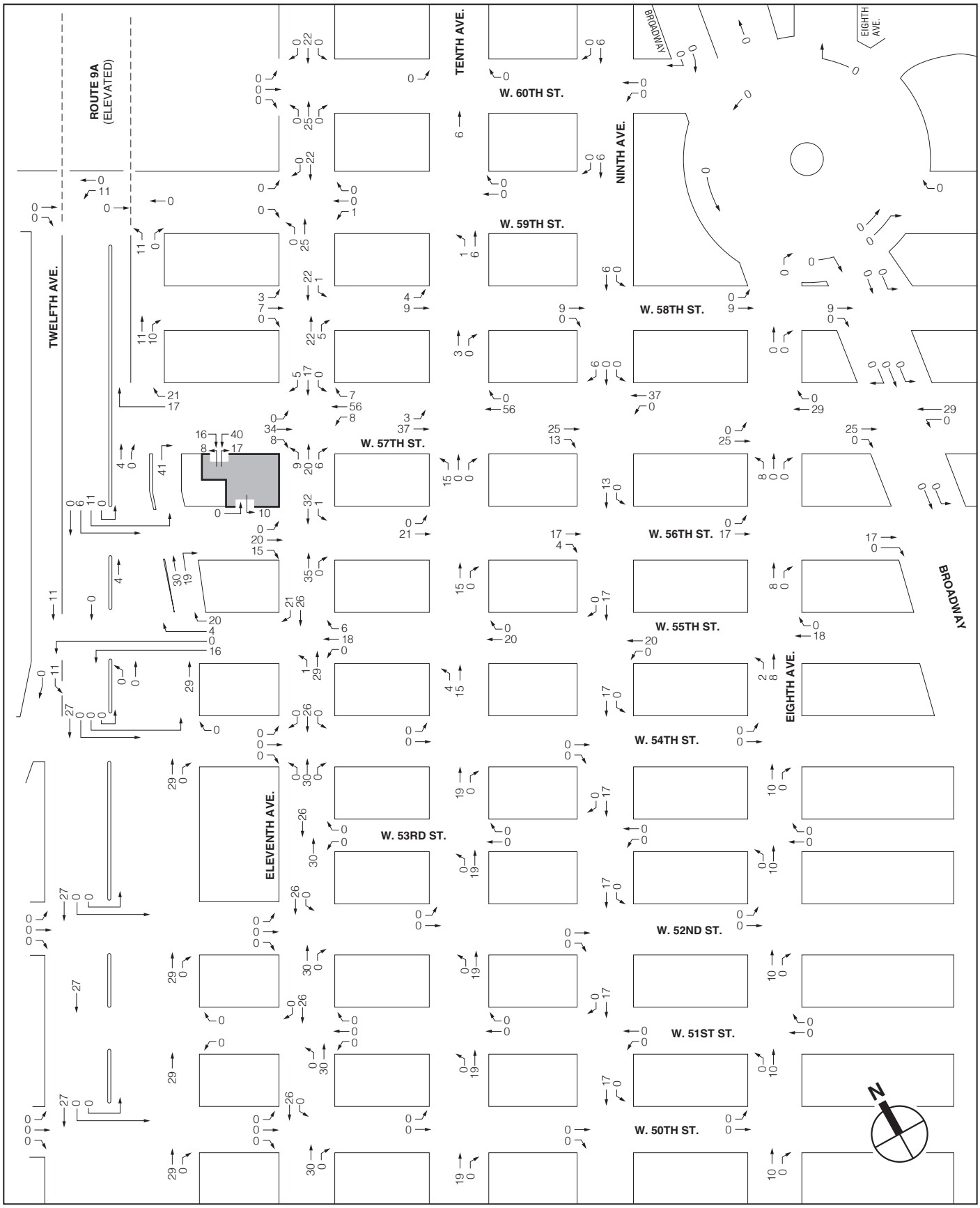
Project Site

Incremental Vehicle Trips
Weekday Midday Peak Hour

606 WEST 57TH STREET

Figure 11-2

7.1.13

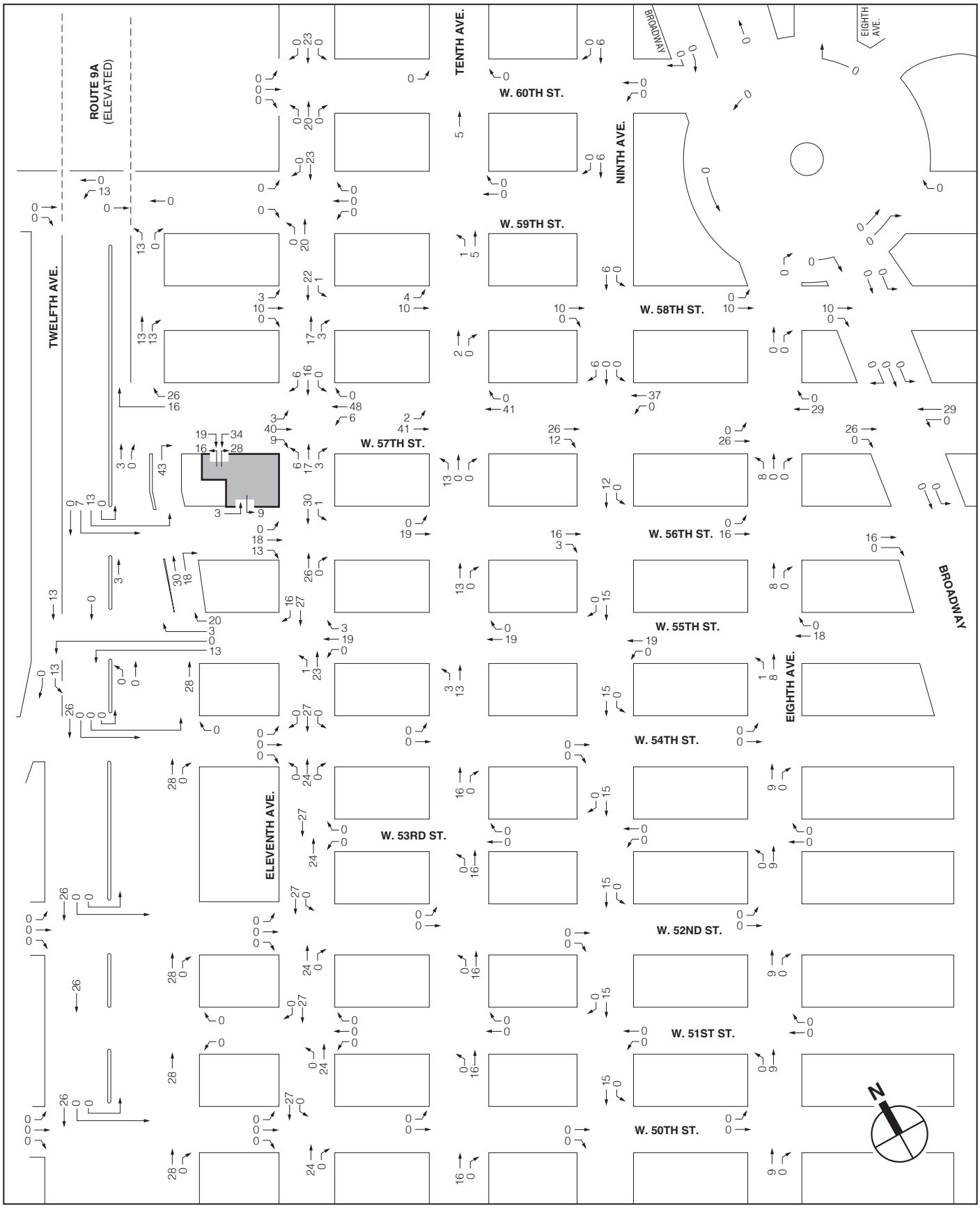


Project Site

Incremental Vehicle Trips
Weekday PM Peak Hour

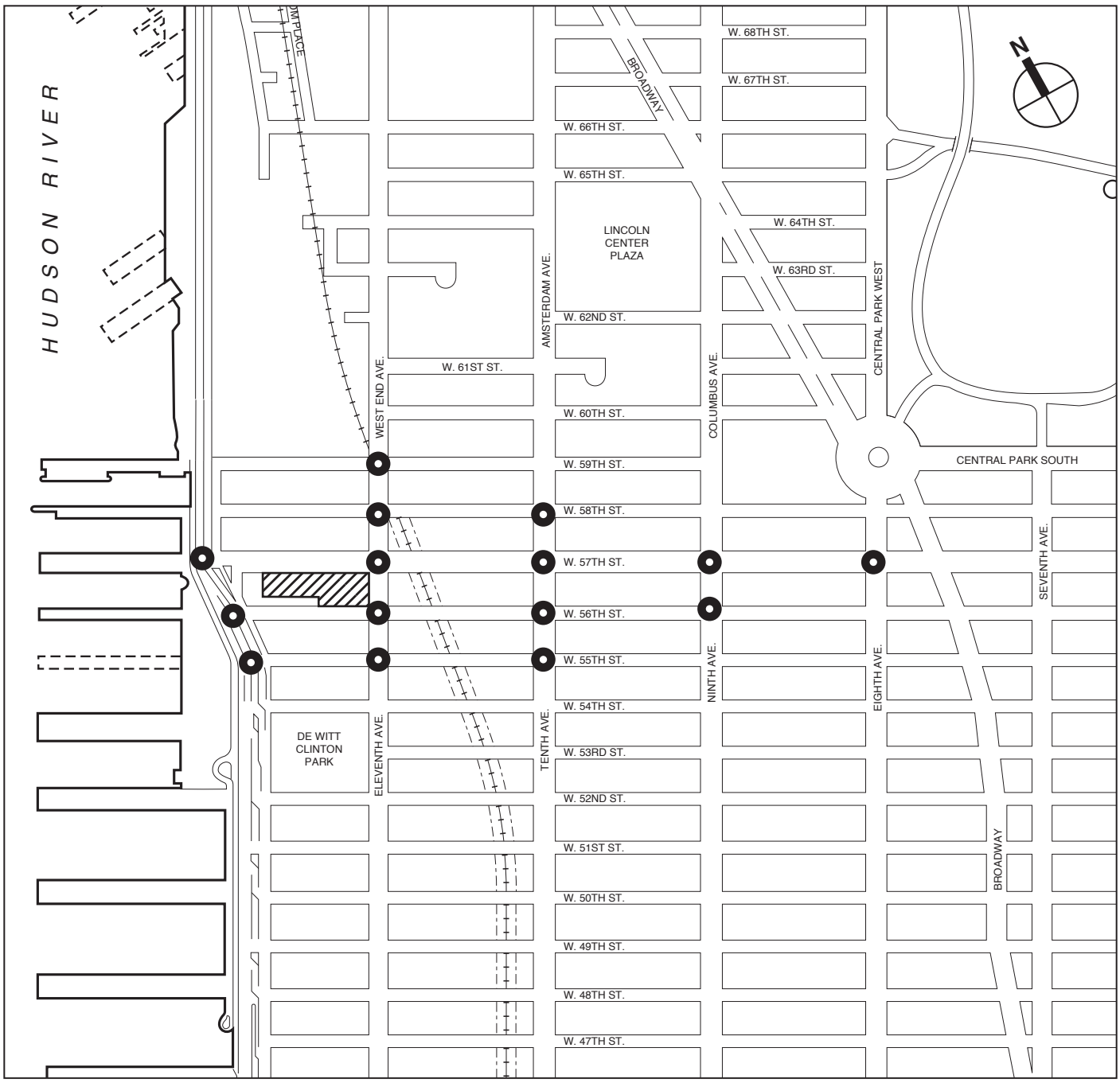
606 WEST 57TH STREET

Figure 11-3



Project Site

Incremental Vehicle Trips
Saturday Peak Hour
Figure 11-4



Traffic Analysis Locations

Figure 11-5

- Twelfth Avenue & West 57th Street;
- Twelfth Avenue & West 56th Street;
- Twelfth Avenue & West 55th Street;
- Eleventh Avenue & West 59th Street;
- Eleventh Avenue & West 58th Street;
- Eleventh Avenue & West 57th Street;
- Eleventh Avenue & West 56th Street;
- Eleventh Avenue & West 55th Street;
- Tenth Avenue & West 58th Street;
- Tenth Avenue & West 57th Street;
- Tenth Avenue & West 56th Street;
- Tenth Avenue & West 55th Street;
- Ninth Avenue & West 57th Street;
- Ninth Avenue & West 56th Street; and
- Eighth Avenue & West 57th Street.

TRANSIT

The proposed project site is located near two New York City Transit (NYCT) subway stations: the 57th Street at Seventh Avenue Station (N, Q, and R trains), and the 59th Street Columbus Circle Station (No. 1, A, B, C, and D trains). Subway lines at these stations provide convenient connections to other subway lines and the various railroad services at Penn Station. Therefore, most projected subway and rail trips are expected to be served by these stations. As summarized in **Table 11-5**, ~~the Mixed Use~~ RWCDS 2 is expected to generate 476, 448, 650, and 573 peak hour subway trips during the weekday AM, midday, and PM, and the Saturday peak hours, respectively. Although these trips would be distributed to the two nearby stations, given the level of transit trips, quantified analyses of affected subway elements at both stations for the weekday AM and PM peak hours would be necessary.

Additionally, the project generated subway trips were distributed to eight different subway lines (No. 1, A, B, C, D, N, Q, and R) serving the study area. The detailed subway trip assignments showed that all eight subway lines would incur fewer than 200 additional riders per line per direction during any analysis peak hours which is the *CEQR* analysis threshold to perform a quantified subway line-haul analysis. Therefore, it was determined that a detailed subway line-haul analysis is not warranted.

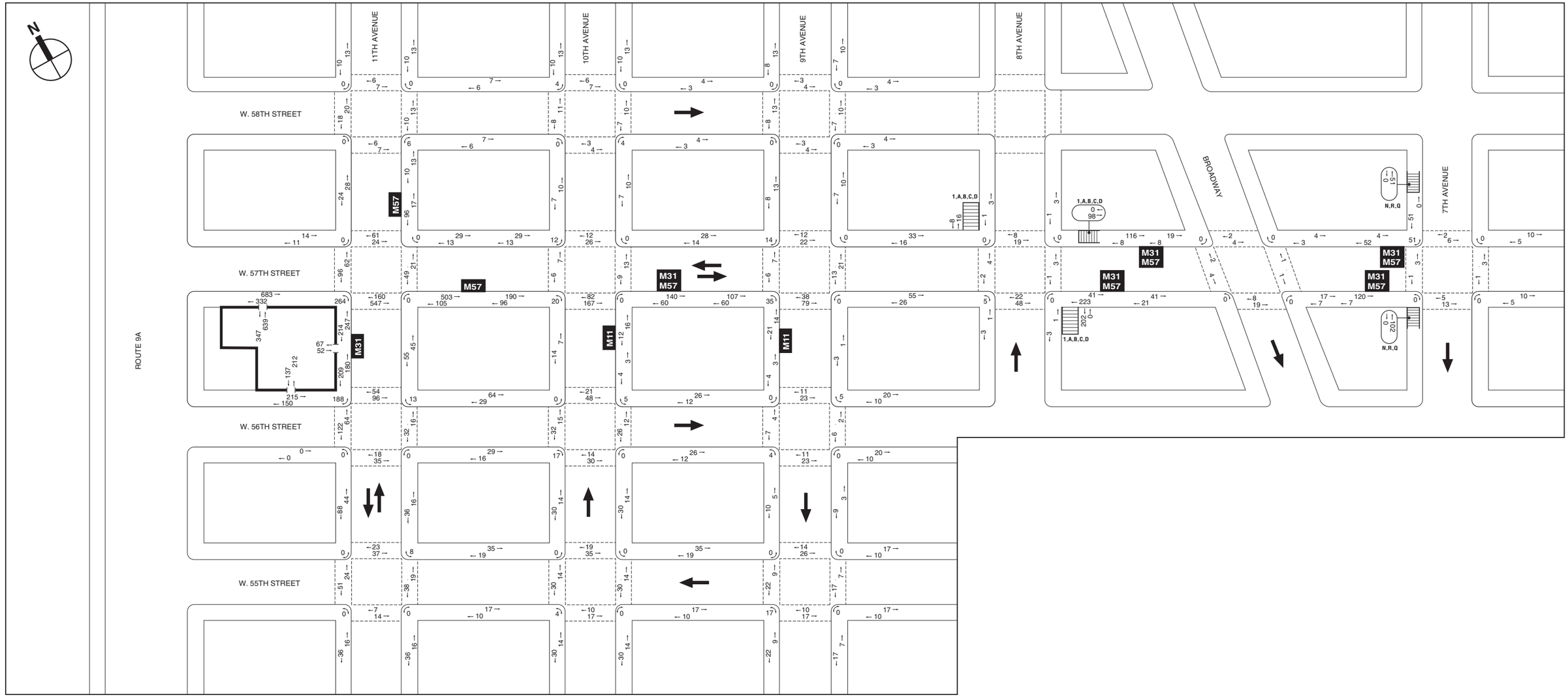
With regard to bus service, there are three local bus routes (M11, M31, and M57) with stops adjacent to or near the project site. As summarized in **Table 11-5**, ~~the Mixed Use~~ RWCDS 2 is expected to generate 124, 230, 229, and 261 bus trips during the weekday AM, midday, and PM, and the Saturday peak hours, respectively. In addition, there could be some cross-town subway-to-bus transfer trips from the two subway stations. Allocation of these trips to the bus routes serving the stops near the subway stations (i.e., M31 and M57) shows that these routes could incur 50 or more peak hour riders in a single direction. Therefore, quantified bus line-haul analysis of these routes was performed for potential bus impacts during the weekday AM and PM peak hours.

PEDESTRIANS

As shown in **Table 11-5**, the projected peak hour pedestrian trips would exceed the CEQR analysis threshold of 200 pedestrians during all peak hours. Level 2 pedestrian trip assignments were individually developed for all the proposed development components and are discussed as follows:

- Auto Trips – For the residential use, the motorists would have a direct access from the on-site parking to the building and would not occupy any sidewalks, crosswalks, or corners. For all other uses, motorists would park at the on-site parking facility and would than walk to-and-from the hotel lobby, local and destination retail establishments and medical office facilities.
- Taxi Trips – Taxi patrons would get dropped off and picked up along West 57th Street, West 56th Street, and Eleventh Avenue.
- Bus Trips – Bus riders would use the M11, M31, and M57 buses and would get on and off at the bus stops nearest to the project site.
- Subway Trips – Subway riders were assigned to the 57th Street at Seventh Avenue Station (N, Q, and R trains), and the 59th Street Columbus Circle Station (No. 1, A, B, C, and D trains). It is anticipated majority of the subway riders would transfer to the nearby buses to reach the project site.
- Walk-Only Trips – Pedestrian walk-only trip assignments were developed by distributing project-generated person trips to surrounding pedestrian facilities (i.e., sidewalks, corner reservoirs, and crosswalks) based on the origin and destination (OD) data as well as the land use characteristics and the population distribution of the surrounding neighborhood.

The pedestrian trip assignments are shown in **Figures 11-6 through 11-9**. Based on the above assignment of pedestrian trips and the Level 2 assessment criteria, 12 sidewalks, 6 crosswalks, and 19 corners were analyzed, as shown in **Figure 11-10** and summarized in **Table 11-7.**



NOT TO SCALE

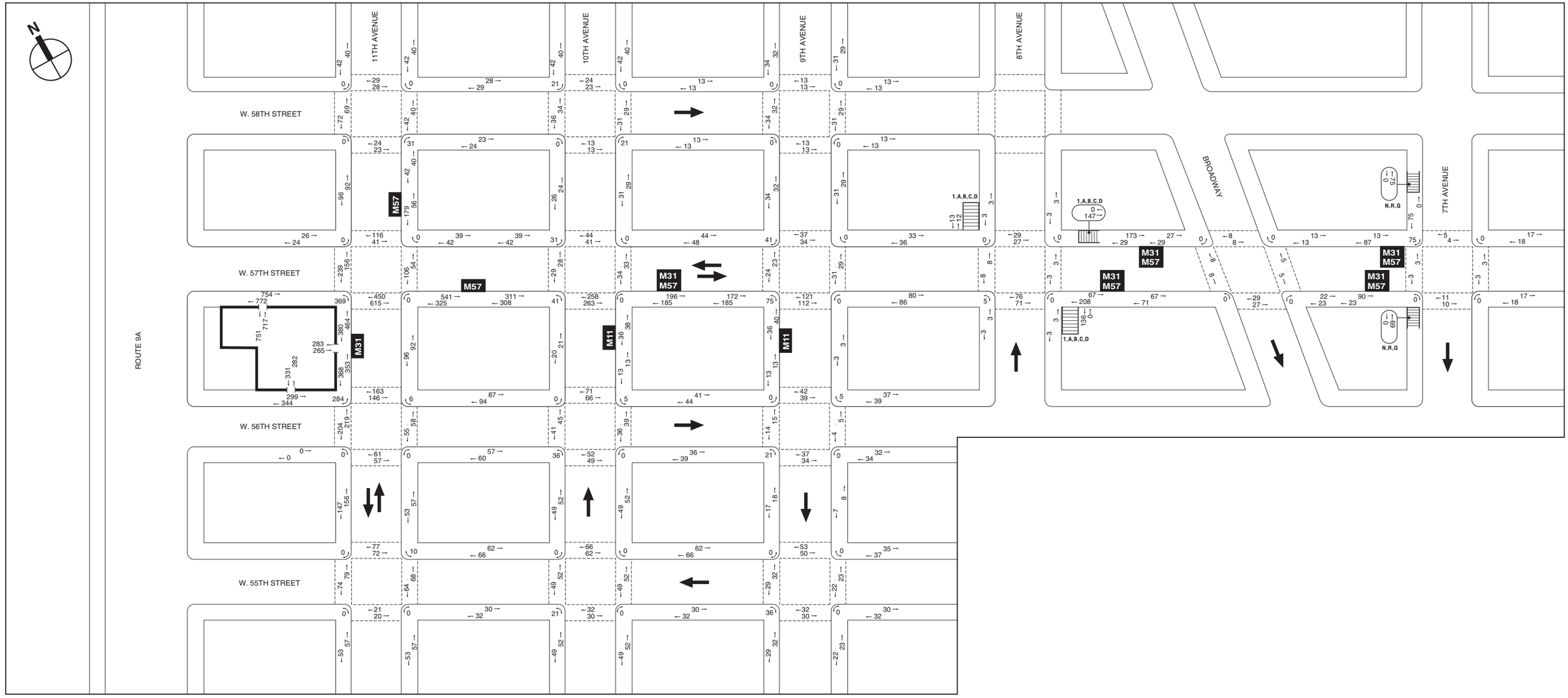
Project Site

Subway Station Entrance

M57 *Bus Stop*

606 WEST 57TH STREET

Project Generated Pedestrian Volumes
Weekday AM Peak Hour
Figure 11-6



NOT TO SCALE

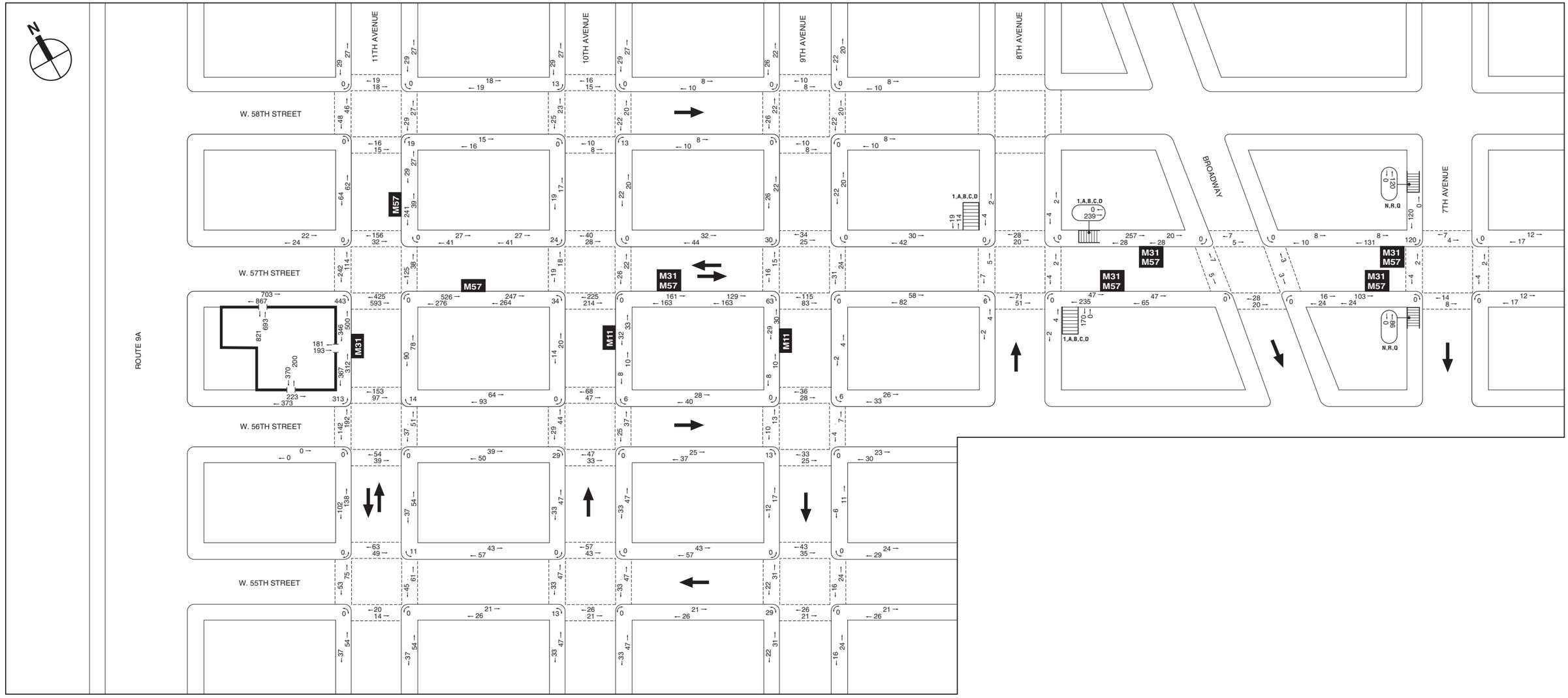
Project Site

Subway Station Entrance

M57 *Bus Stop*

606 WEST 57TH STREET

Project Generated Pedestrian Volumes
Weekday MD Peak Hour
Figure 11-7



NOT TO SCALE

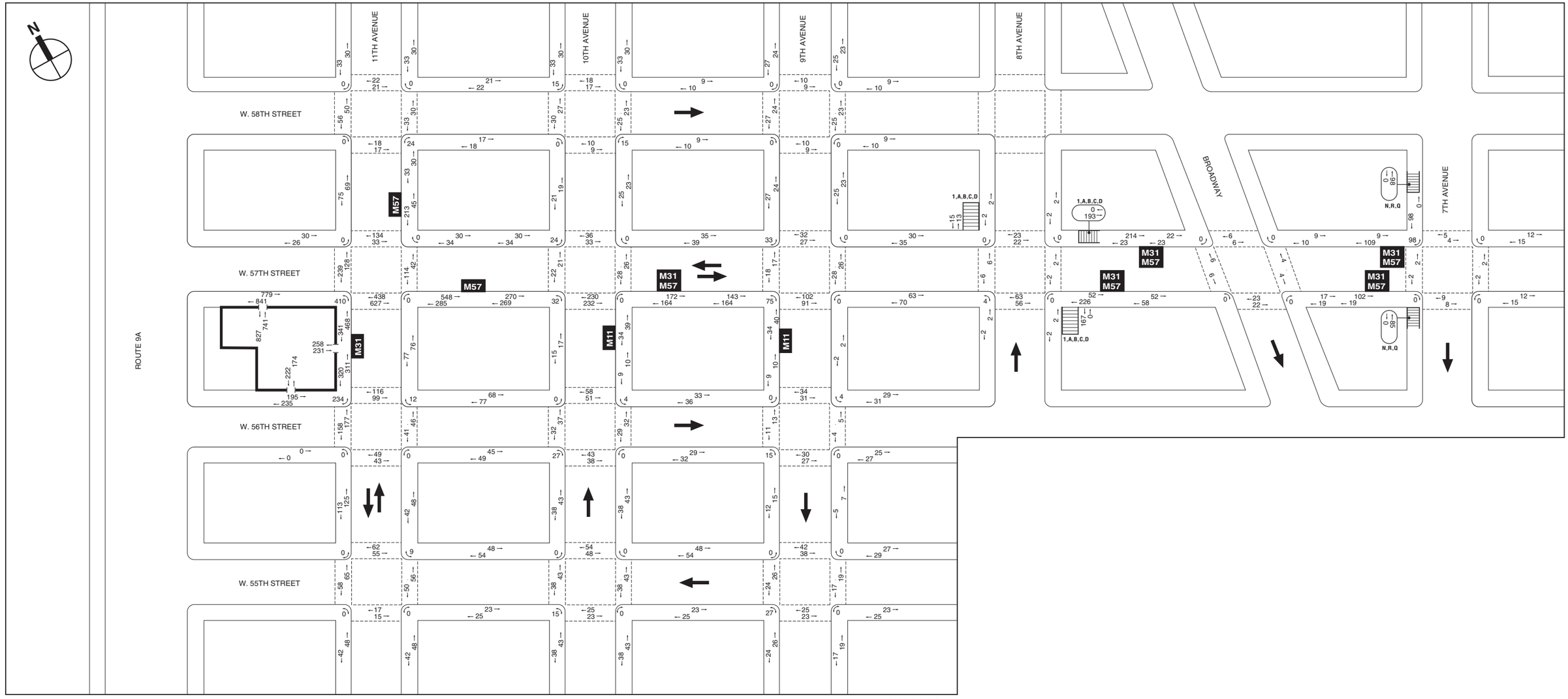
Project Site

Subway Station Entrance

M57 *Bus Stop*

606 WEST 57TH STREET

Project Generated Pedestrian Volumes
Weekday PM Peak Hour
Figure 11-8



NOT TO SCALE

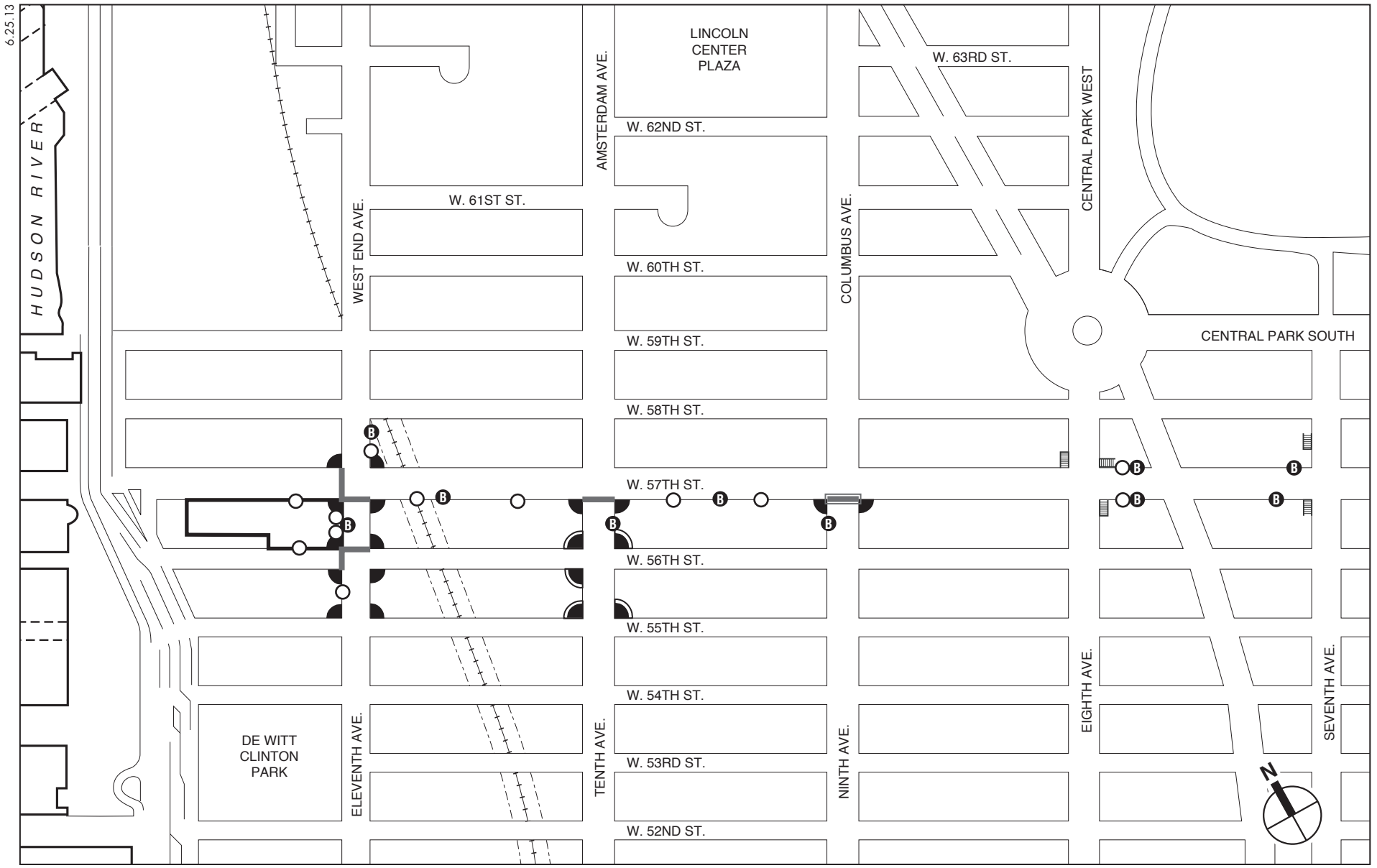
Project Site

Subway Station Entrance

M57 *Bus Stop*

606 WEST 57TH STREET

Project Generated Pedestrian Volumes
Saturday Peak Hour
Figure 11-9



Pedestrian Analysis Locations

Figure 11-10

Table 11-7
Pedestrian Analysis Locations

Pedestrian Elements	Weekday				Saturday	
	AM	MD	PM	Analysis Location	Midday	Analysis Location
8th Avenue and 57th Street						
North sidewalk between 8th Ave and Broadway (on 57th St)	124	**202**	**285**	✓	**237**	✓
South Sidewalk between 8th Ave and Broadway (on 57th St)	**264**	**275**	**282**	✓	**278**	✓
9th Avenue and 57th Street						
South Crosswalk	117	**233**	198	✓	193	
Southeast Corner	151	**293**	**253**	✓	**247**	✓
Southwest Corner	165	**355**	**292**	✓	**303**	✓
South Sidewalk between 10th Ave and 9th Ave(on 57th St)	167	**357**	**292**	✓	**307**	✓
10th Avenue and 57th Street						
South Crosswalk	**249**	**521**	**439**	✓	**462**	✓
Southeast Corner	**271**	**588**	**487**	✓	**516**	✓
Southwest Corner	**282**	**619**	**510**	✓	**537**	✓
South sidewalk between 10th Ave and 9th Ave (on 57th St)	**200**	**381**	**324**	✓	**336**	✓
South sidewalk between 11th Ave and 10th Ave(on 57th St)	**286**	**619**	**511**	✓	**539**	✓
11th Avenue and 57th Street						
South Crosswalk	**707**	**1065**	**1018**	✓	**1065**	✓
West Crosswalk	158	**395**	**356**	✓	**367**	✓
Northeast Corner	155	**317**	**351**	✓	**323**	✓
Southeast Corner	**777**	**1225**	**1181**	✓	**1221**	✓
Southwest Corner	**1129**	**1829**	**1817**		**1842**	✓
Northwest Corner	**243**	**552**	**544**	✓	**534**	✓
East sidewalk between 57th St and 58th St (on 11th Ave)	113	**235**	**280**	✓	**258**	✓
South sidewalk between 11th Ave and 10th Ave (on 57th St)	**608**	**866**	**802**	✓	**833**	✓
West sidewalk between 56th St and 57th St (on 11th Ave)	**461**	**844**	**846**	✓	**809**	✓
South sidewalk between R9A and 11th Ave (on 57th St)	**1015**	**1526**	**1570**	✓	**1620**	✓
56th Street and 11th Avenue						
North Crosswalk	150	**309**	**250**	✓	**215**	✓
West Crosswalk	186	**423**	**334**	✓	**335**	✓
Northeast Corner	**211**	**428**	**352**	✓	**314**	✓
Southeast Corner	101	**231**	181	✓	179	
Southwest Corner	**239**	**541**	**427**	✓	**427**	✓
Northwest Corner	**524**	**1016**	**897**	✓	**784**	✓
West Sidewalk between 55th St and 56th St (on 11th Ave)	132	**303**	**240**	✓	**238**	✓
West Sidewalk between 56th St and 57th St (on 11th Ave)	**389**	**721**	**679**	✓	**631**	✓
North Sidewalk between R9A and 11th Ave (on 56th St)	**365**	**643**	**596**	✓	**430**	✓
56th Street and 10th Avenue						
Northeast Corner	112	**217**	183	✓	174	
Southwest Corner	108	**223**	182	✓	177	
Northwest Corner	116	**223**	188	✓	178	
55th Street and 11th Avenue						
Northeast Corner	125	**291**	**229**	✓	**232**	✓
Northwest Corner	135	**302**	**240**	✓	**240**	✓
55th Street and 10th Avenue						
Northeast Corner	98	**229**	180	✓	183	
Northwest Corner	98	**229**	180	✓	183	

Notes: ✓ denotes pedestrian elements selected for the detailed analysis.

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 11-8**.

Table 11-8
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.

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 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.

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 11-9**.

Table 11-9
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 11-10**.

Table 11-10
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 11-11** are reached or exceeded.

Table 11-11
Significant Impact Guidance for Stairs and Passageways

With 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 project 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 project 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 project, 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 project 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 2010 *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 11-12**. The *CEQR Technical Manual* specifies acceptable LOS in Central Business District (CBD) areas is mid-LOS D or better.

Table 11-12
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 11-13** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Table 11-13
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)**
7.5 to 7.8	≥ 2.6	–	–	3.5 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	10.4 to 11.0	≥ 2.2	6.3 to 7.0	≥ 2.2	6.4 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*.

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 11-14** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir and crosswalk impacts.

Table 11-14
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 project. 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. DETAILED TRAFFIC ANALYSIS

2013 EXISTING CONDITIONS

ROADWAY NETWORK AND TRAFFIC STUDY AREA

As detailed above in Section D, "Level 2 Screening Assessment," 15 key intersections in the study area were identified that would most likely be affected by project-generated traffic. The study area is typical of the Manhattan grid, composed of major north-south avenues and principal as well as minor east-west cross-streets. It is generally bounded by West 59th Street to the north, Eighth Avenue to the east, West 55th Street to the south, and Twelfth Avenue to the west. All of the study intersections are signalized except the intersection of the Twelfth Avenue service road and West 57th Street.

Twelfth Avenue acts as a service road for Route 9A. It mostly serves vehicles making a U-turn at West 59th Street to access facilities on southbound Route 9A such as the ship terminals, although it does serve some local traffic, including buses that lay over on West 59th Street between Eleventh and Twelfth Avenues.

Eleventh Avenue, which runs from 14th Street (where it continues south as West Street) to West 59th Street (where it continues north as West End Avenue), is a 70 foot wide, two-way arterial with two lanes in each direction, plus parking. Parking is typically restricted, especially southbound in the AM peak hour and northbound in the PM peak. The avenue provides left-turn lanes at most intersections south of West 66th Street.

Tenth and Ninth Avenues are one-way arterials with five to six lanes (including parking lanes). Tenth Avenue serves northbound traffic and continues as Amsterdam Avenue north of West 60th Street. Ninth Avenue serves southbound traffic and continues as Columbus Avenue north of West 60th Street.

Eighth Avenue is a northbound arterial roadway with four to six lanes of moving traffic, depending on parking regulations.

West 57th Street is a principal east-west cross street within the study area. It is approximately 60 feet wide with two travel lanes in each direction and parking on both sides of the street except at intersection approaches where there is a left turn bay. West 57th Street runs from Twelfth Avenue in the west to Sutton Place in the east.

West 58th Street is a local one-way eastbound cross street within the study area. It is approximately 34 feet wide with one travel lane and parking along both sides of the street, but parking is typically restricted to vehicles with special plates due to facilities such as the John Jay College of Criminal Justice and St. Luke's Hospital. Other study area local cross-town streets include West 59th Street, West 56th Street, and West 55th Street.

TRAFFIC CONDITIONS

Traffic data were collected in March 2013 for the weekday AM, midday, and PM, and Saturday peak periods using manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. Peak period traffic volumes were developed based on a combination of manual intersection counts and ATR counts. The standard peak hours in Manhattan south of 110th Street generally occur from 8:00 to 9:00 AM, 12:00 PM to 1:00 PM, and 5:00 PM to 6:00 PM on for weekday conditions and from 3:00 PM to 4:00 PM for Saturday conditions. These peak hours were assumed for the traffic analysis purposes. The Proposed Project is also adjacent to an existing garage operated by the Department of Sanitation (DSNY). Traffic activities generated by the DSNY garage were accounted for in the baseline traffic networks.

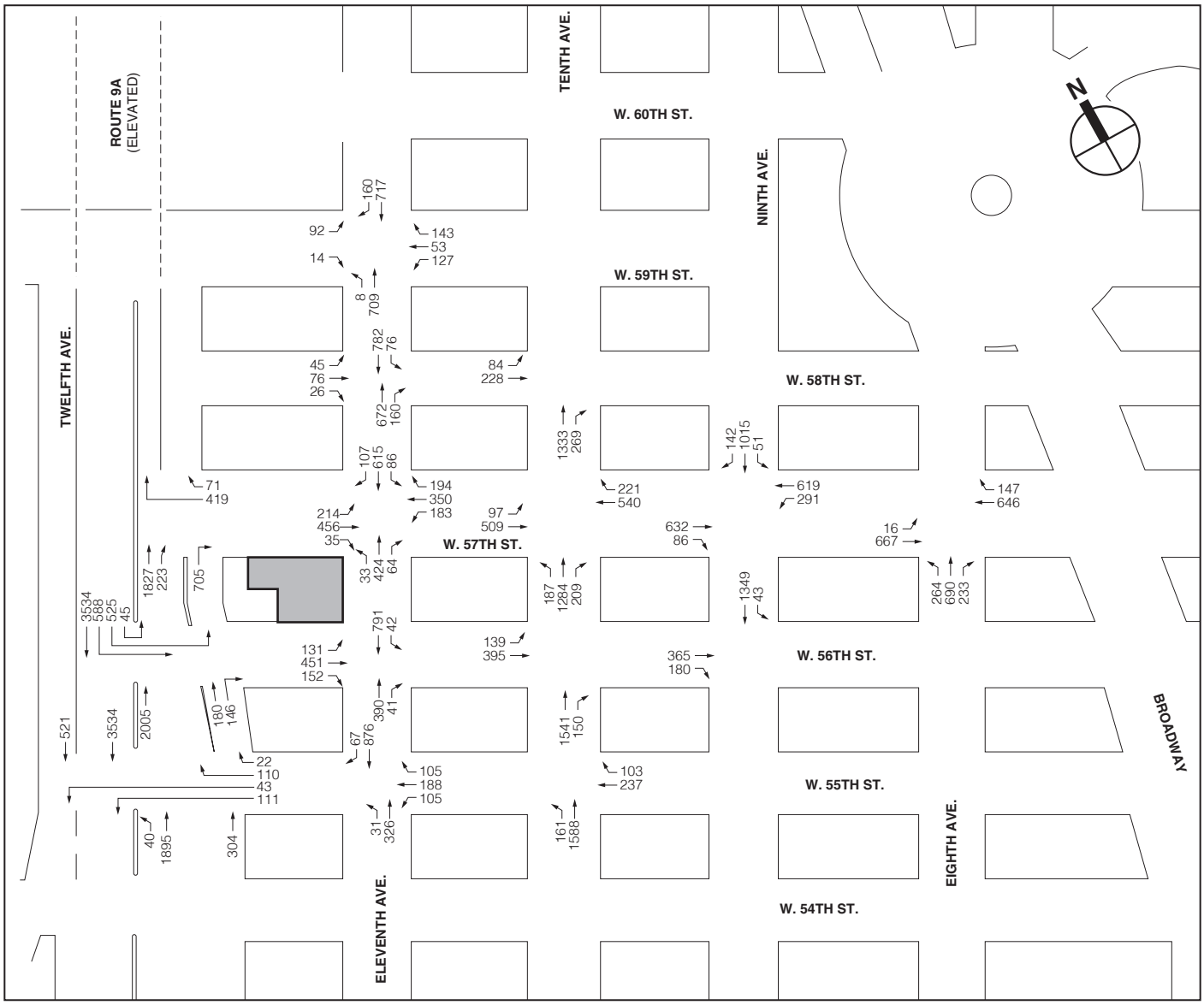
In addition, inventories of roadway geometry, traffic controls, bus stops, and parking regulations/activities were recorded to provide appropriate inputs for the operational analyses. Official signal timings were also obtained from NYCDOT for use in the analysis of the study area signalized intersections. **Figures 11-11 to 11-14** show the 2013 existing traffic volumes for the weekday AM, midday, PM and Saturday peak hours, respectively.

During the traffic data collection, the curbside lane of the westbound approach at Twelfth Avenue and West 57th Street was blocked by construction. Therefore, this approach was analyzed with two right-turn lanes in the existing conditions, but was restored to three right-turn lanes in the No Action and With Action conditions analyses, as discussed below.

LEVELS OF SERVICE

Tables 11-15 and **11-16** provide the existing levels of service for the study area intersections. Overall, the capacity analysis indicates that most of the study area's intersection approaches/lane groups operate acceptably—at mid-LOS D (delays of 45 seconds or fewer per vehicle for signalized intersections and 30 seconds or fewer per vehicle for unsignalized intersections) or better for the peak hours. Approaches/lane groups operating beyond mid-LOS D and those with v/c ratios of 0.90 or greater are listed below.

6.19.13

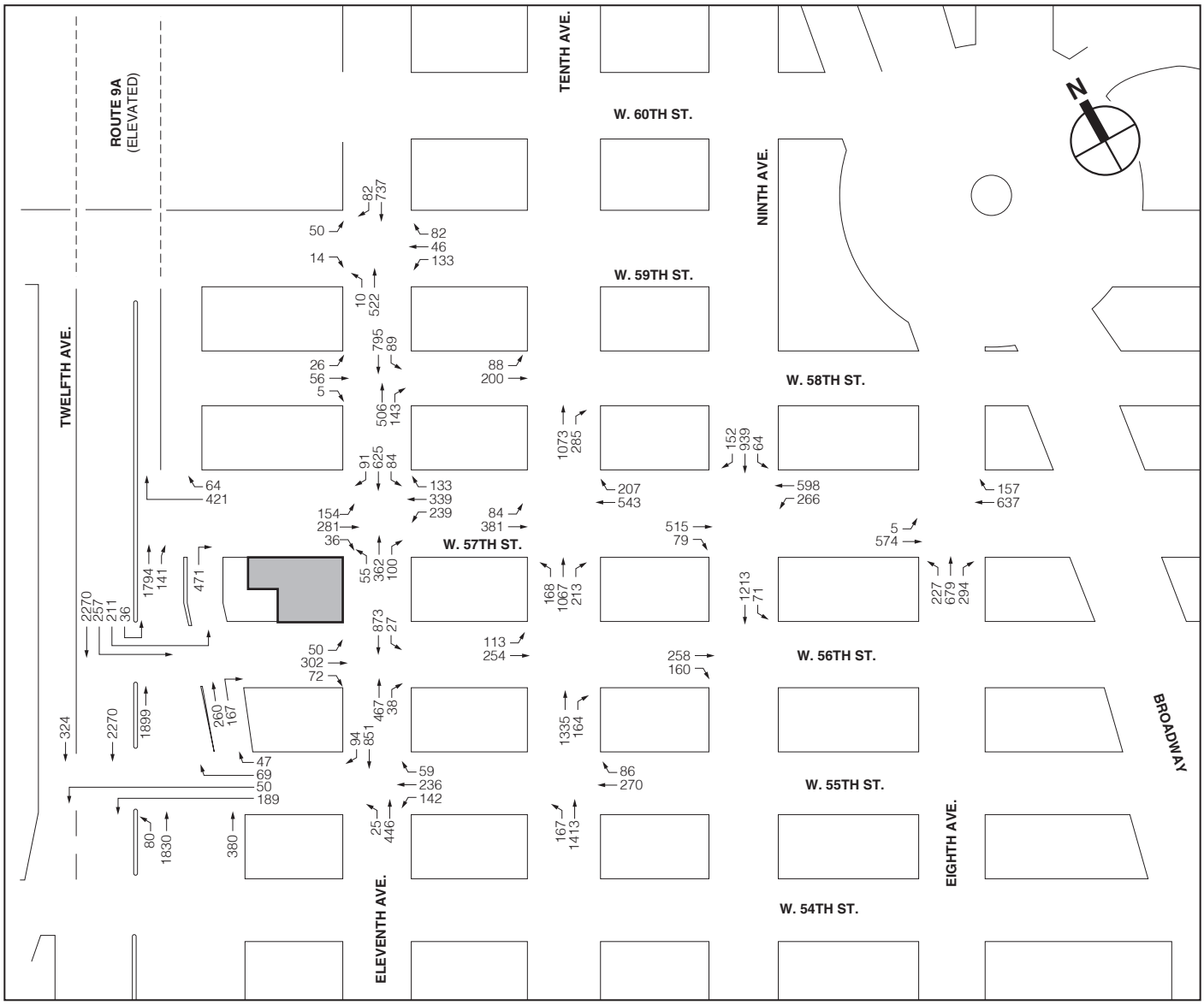


Project Site

2013 Existing Traffic Volumes
Weekday AM Peak Hour

606 WEST 57TH STREET

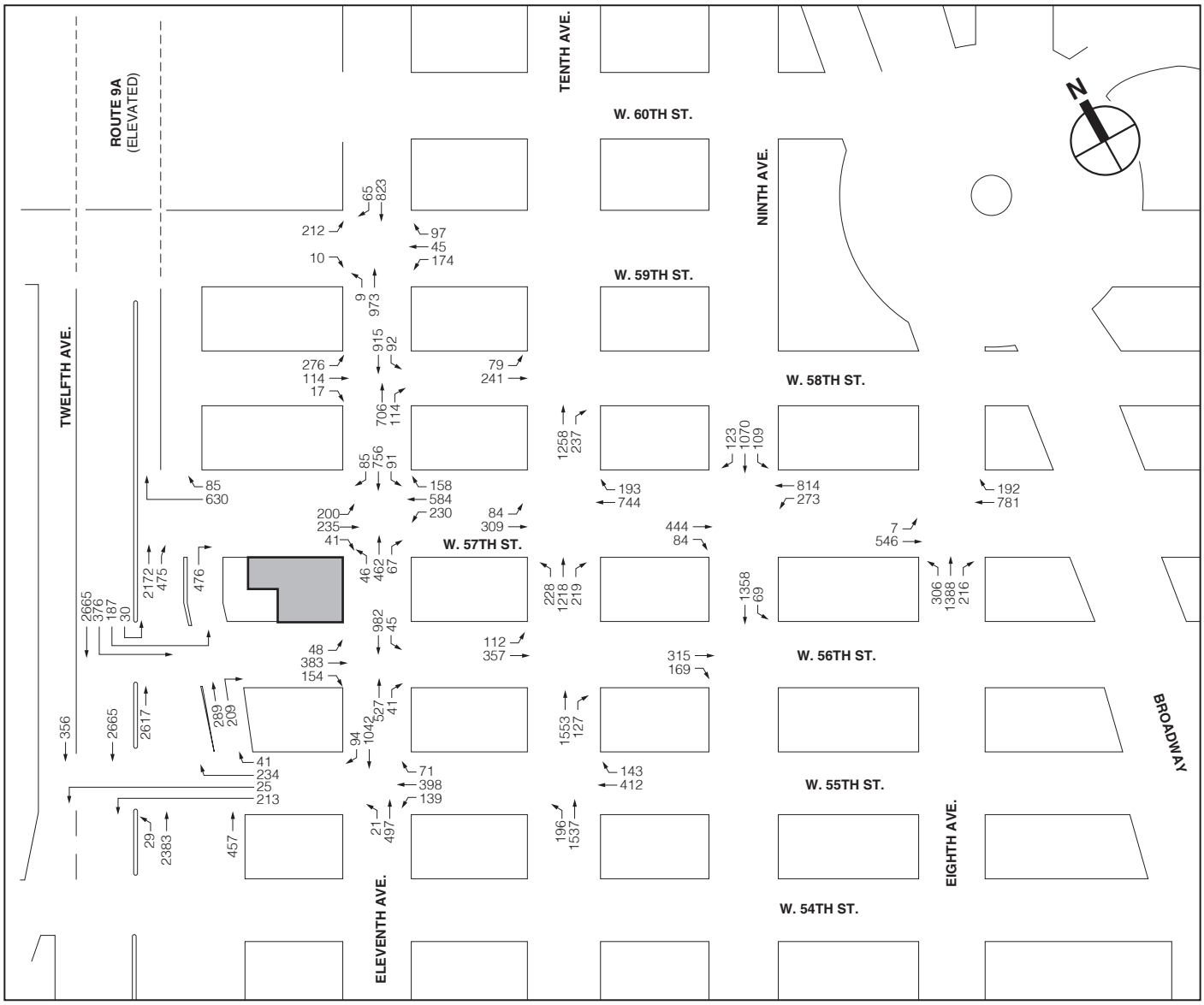
Figure 11-11



2013 Existing Traffic Volumes
Weekday Midday Peak Hour

606 WEST 57TH STREET

Figure 11-12

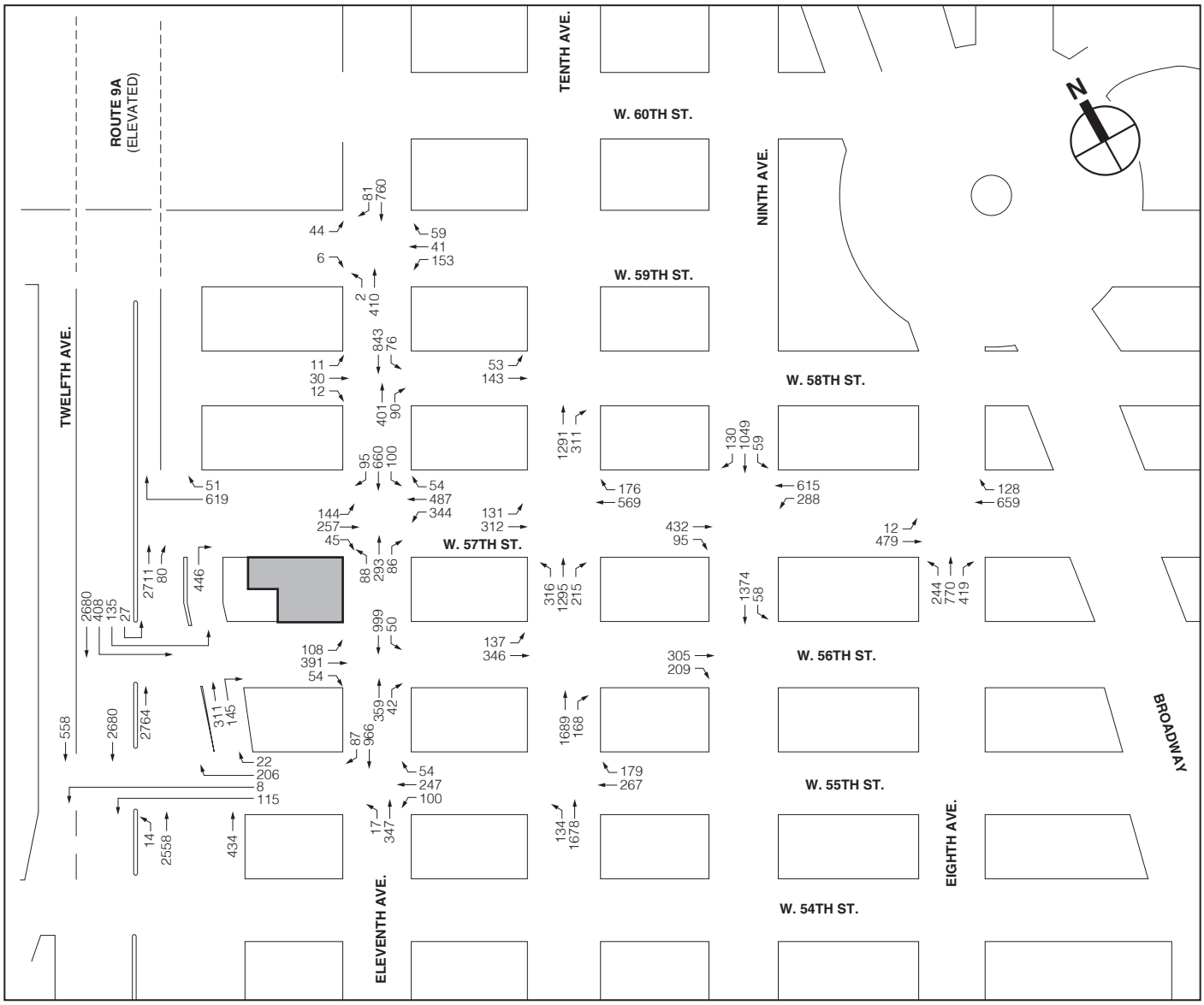


Project Site

2013 Existing Traffic Volumes
Weekday PM Peak Hour

606 WEST 57TH STREET

Figure 11-13



Project Site

2013 Existing Traffic Volumes
Saturday Peak Hour
Figure 11-14

Table 11-15
2013 Existing Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
12th Avenue (Route 9A) & West 57th Street																
WB	R	0.67	41.1	D	R	0.87	57.3	E	R	1.05	104.0	F	R	1.05	92.4	F
NB (Mainline)	T	0.55	24.1	C	T	0.47	11.8	B	T	0.56	5.1	A	T	0.61	13.7	B
	Int.		27.8	C	Int.		20.7	C	Int.		26.1	C	Int.		29.6	C
12th Avenue (Route 9A) & West 56th Street																
NB (Mainline)	T	0.78	37.1	D	T	0.52	9.0	A	T	0.69	5.8	A	T	0.68	11.2	B
SB (Mainline)	L	0.88	38.3	D	L	0.91	68.1	E	L	0.89	71.9	E	L	1.04	95.9	F
NB (Service Road)	TR	0.32	26.8	C	TR	0.27	7.0	A	TR	0.34	3.8	A	TR	0.26	6.9	A
	Int.		36.5	D	Int.		22.6	C	Int.		16.3	B	Int.		23.4	C
12th Avenue (Route 9A) & West 55th Street																
WB	L	0.60	64.1	E	L	0.82	61.9	E	L	0.89	88.6	F	L	0.35	40.1	D
	R	0.32	53.8	D	R	0.25	37.8	D	R	0.64	62.3	E	R	0.40	40.2	D
NB (Mainline)	L	0.51	89.9	F	L	0.69	80.3	F	L	0.30	74.0	E	L	0.11	52.6	D
	T	0.46	8.8	A	T	0.52	11.2	B	T	0.59	2.6	A	T	0.67	13.4	B
SB (Mainline)	T	0.99	24.4	C	T	0.75	23.6	C	T	0.77	21.8	C	T	0.90	29.7	C
NB (Service Road)	T	0.26	7.4	A	T	0.40	10.6	B	T	0.46	3.0	A	T	0.43	11.0	B
SB (Service Road)	T	0.26	5.8	A	T	0.20	14.9	B	T	0.18	12.0	B	T	0.38	17.0	B
	Int.		19.6	B	Int.		20.7	C	Int.		16.8	B	Int.		21.7	C
11th Avenue & West 59th Street																
EB	LR	0.54	32.3	C	LR	0.22	22.3	C	LR	0.99	81.5	F	LR	0.17	21.6	C
WB	L	0.30	23.2	C	L	0.30	23.3	C	L	0.41	25.2	C	L	0.38	24.6	C
	TR	0.45	25.8	C	TR	0.28	22.8	C	TR	0.32	23.4	C	TR	0.24	22.2	C
NB	L	0.03	9.8	A	L	0.05	9.9	A	L	0.06	10.2	B	L	0.01	9.5	A
	T	0.53	14.7	B	T	0.39	12.6	B	T	0.75	19.1	B	T	0.30	11.7	B
SB	T	0.49	13.8	B	T	0.50	13.9	B	T	0.63	16.3	B	T	0.57	15.0	B
	R	0.26	11.9	B	R	0.13	10.5	B	R	0.13	10.5	B	R	0.15	10.6	B
	Int.		16.9	B	Int.		15.1	B	Int.		24.7	C	Int.		15.6	B
11th Avenue & West 58th Street																
EB	LTR	0.17	20.9	C	LTR	0.11	20.3	C	LTR	0.48	24.9	C	LTR	0.07	20.0-	B
NB	TR	0.67	17.4	B	TR	0.50	14.1	B	TR	0.66	17.0	B	TR	0.36	12.3	B
SB	L	0.42	18.5	B	L	0.35	15.1	B	L	0.59	27.3	C	L	0.24	12.4	B
	T	0.61	15.9	B	T	0.58	15.3	B	T	0.74	19.0	B	T	0.64	16.4	B
	Int.		17.1	B	Int.		15.1	B	Int.		19.6	B	Int.		15.0	B
11th Avenue & West 57th Street																
EB	L	0.90	65.4	E	L	0.61	26.8	C	L	1.05	98.6	F	L	0.64	28.5	C
	TR	0.62	30.4	C	TR	0.41	26.6	C	TR	0.41	26.6	C	TR	0.40	26.5	C
WB	L	0.77	44.8	D	L	0.80	42.2	D	L	0.75	37.1	D	L	1.05	91.2	F
	TR	0.80	37.9	D	TR	0.68	32.6	C	TR	1.03	70.9	E	TR	0.71	33.1	C
NB	L	0.25	19.5	B	L	0.35	21.6	C	L	0.39	24.6	C	L	0.66	38.2	D
	TR	0.51	19.5	B	TR	0.46	18.8	B	TR	0.50	19.2	B	TR	0.39	17.7	B
SB	L	0.40	21.7	C	L	0.35	20.3	C	L	0.45	24.0	C	L	0.39	20.8	C
	TR	0.72	24.5	C	TR	0.66	22.7	C	TR	0.81	28.0	C	TR	0.71	24.1	C
	Int.		31.3	C	Int.		26.3	C	Int.		42.2	D	Int.		34.2	C
11th Avenue & West 56th Street																
EB	LTR	0.76	31.4	C	LTR	0.51	25.5	C	LTR	0.69	29.8	C	LTR	0.64	28.3	C
NB	TR	0.35	12.3	B	TR	0.39	12.7	B	TR	0.46	13.5	B	TR	0.34	12.1	B
SB	L	0.13	10.8	B	L	0.10	10.5	B	L	0.17	11.7	B	L	0.16	11.2	B
	T	0.56	14.8	B	T	0.64	16.2	B	T	0.65	16.5	B	T	0.68	17.2	B
	Int.		20.3	C	Int.		17.3	B	Int.		19.0	B	Int.		18.8	B
11th Avenue & West 55th Street																
WB	LTR	0.61	31.5	C	LTR	0.80	38.8	D	LTR	0.83	40.4	D	LTR	0.58	30.4	C
NB	L	0.19	10.2	B	L	0.15	9.5	A	L	0.14	9.6	A	L	0.15	10.2	B
	T	0.26	8.9	A	T	0.34	9.6	A	T	0.31	9.3	A	T	0.24	8.7	A
SB	TR	0.56	12.1	B	TR	0.59	12.6	B	TR	0.68	14.4	B	TR	0.73	15.6	B
	Int.		16.0	B	Int.		18.5	B	Int.		20.0	C	Int.		17.3	B

Table 11-15 (cont'd)
2013 Existing Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
10th Avenue & West 58th Street																
EB	LT	0.82	43.6	D	LT	0.84	44.9	D	LT	0.89	51.7	D	LT	0.53	29.0	C
NB	TR	0.53	13.3	B	TR	0.61	14.6	B	TR	0.46	12.3	B	TR	0.63	14.7	B
	Int.		18.7	B	Int.		20.5	C	Int.		19.7	B	Int.		16.4	B
10th Avenue & West 57th Street																
EB	-	-	-	-	-	-	-	-	-	-	-	-	DefL	0.97	96.0	F
	LT	1.05	76.9	E	LT	1.00	64.8	E	LT	0.89	45.7	D	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	T	0.59	26.6	C
WB	TR	1.05	72.8	E	TR	0.97	51.2	D	TR	1.05	69.8	E	TR	0.81	32.0	C
NB	LTR	0.66	18.0	B	LTR	0.64	18.0	B	LTR	0.59	16.9	B	LTR	0.80	21.4	C
	Int.		43.9	D	Int.		37.2	D	Int.		37.0	D	Int.		27.6	C
10th Avenue & West 56th Street																
EB	LT	1.05	81.9	F	LT	0.81	39.6	D	LT	0.91	49.6	D	LT	1.05	82.6	F
NB	TR	0.56	13.6	B	TR	0.68	15.7	B	TR	0.40	11.7	B	TR	0.69	15.9	B
	Int.		35.6	D	Int.		20.4	C	Int.		20.0	B	Int.		31.1	C
10th Avenue & West 55th Street																
WB	-	-	-	-	-	-	-	-	T	1.01	74.0	E	-	-	-	-
	TR	0.71	34.3	C	TR	0.85	44.5	D	-	-	-	-	TR	1.00	72.2	E
	-	-	-	-	-	-	-	-	R	0.48	28.3	C	-	-	-	-
NB	LT	0.56	13.7	B	LT	0.60	14.3	B	LT	0.49	12.7	B	LT	0.65	15.1	B
	Int.		17.1	B	Int.		20.4	C	Int.		26.0	C	Int.		26.7	C
9th Avenue & West 57th Street																
EB	T	1.05	83.8	F	T	0.87	47.9	D	T	0.79	42.4	D	T	0.67	36.4	D
	R	0.59	45.1	D	R	0.54	43.0	D	R	0.65	51.9	D	R	0.58	44.4	D
WB	DefL	1.05	90.4	F	DefL	0.95	59.0	E	-	-	-	-	DefL	0.86	41.2	D
	-	-	-	-	-	-	-	-	LT	1.05	65.9	E	-	-	-	-
	T	1.05	73.2	E	T	1.03	66.2	E	-	-	-	-	T	0.96	50.2	D
SB	L	0.18	22.0	C	L	0.25	23.3	C	L	0.40	26.7	C	L	0.27	24.0	C
	TR	0.65	26.6	C	TR	0.77	29.9	C	TR	0.57	25.1	C	TR	0.74	28.8	C
	Int.		56.9	E	Int.		44.9	D	Int.		43.6	D	Int.		36.7	D
9th Avenue & West 56th Street																
EB	TR	1.05	80.0-	E	TR	0.77	33.3	C	TR	0.93	50.7	D	TR	1.05	83.1	F
SB	L	0.08	9.6	A	L	0.15	12.7	B	L	0.20	13.7	B	L	0.07	9.4	A
	T	0.41	11.9	B	T	0.51	15.9	B	T	0.43	14.8	B	T	0.50	12.9	B
	Int.		32.5	C	Int.		20.2	C	Int.		24.1	C	Int.		31.1	C
8th Avenue & West 57th Street																
EB	LT	0.80	31.7	C	LT	0.75	29.2	C	LT	0.67	26.6	C	LT	0.53	23.3	C
WB	TR	0.95	47.3	D	TR	0.95	46.2	D	TR	1.05	68.7	E	TR	0.90	38.2	D
NB	LTR	0.53	16.1	B	LTR	0.53	16.2	B	LTR	0.70	18.8	B	LTR	0.71	19.6	B
	Int.		29.3	C	Int.		28.8	C	Int.		33.7	C	Int.		25.8	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 11-16
2013 Existing Conditions Level of Service Analysis
Unsignalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
12th Avenue (Route 9A) & West 57th Street																
NB (Service Road)	R	0.72	16.6	C	R	0.54	12.5	B	R	0.57	12.7	B	R	0.50	11.8	B

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

Twelfth Avenue

- Westbound right-turn at the Twelfth Avenue and West 57th Street intersection (LOS E with a delay of 57.3 spv during the weekday midday peak hour; LOS F with a delay of 104.0 spv and a v/c ratio of 1.05 during the weekday PM peak hour; and LOS F with a delay of 92.4 spv and a v/c ratio of 1.05 during the Saturday peak hour);
- Southbound (mainline) left-turn at the Twelfth Avenue and West 56th Street intersection (LOS E with a delay of 68.1 spv and a v/c ratio of 0.91 during the weekday midday peak hour; LOS E with a delay of 71.9 spv during the weekday PM peak hour; and LOS F with a delay of 95.9 spv and a v/c ratio of 1.04 during the Saturday peak hour);
- Westbound left-turn at the Twelfth Avenue and West 55th Street intersection (LOS E with a delay of 64.1 spv during the weekday AM peak hour; LOS E with a delay of 61.9 spv during the weekday midday peak hour; and LOS F with a delay of 88.6 spv during the weekday PM peak hour);
- Westbound right-turn at the Twelfth Avenue and West 55th Street intersection (LOS D with a delay of 53.8 spv during the weekday AM peak hour; and LOS E with a delay of 62.3 spv during the weekday PM peak hour);
- Northbound (mainline) left-turn at the Twelfth Avenue and West 55th Street intersection (LOS F with a delay of 89.9 spv during the weekday AM peak hour; LOS F with a delay of 80.3 spv during the weekday midday peak hour; LOS E with a delay of 74.0 spv during the weekday PM peak hour; and LOS D with a delay of 52.6 spv during the Saturday peak hour);
- Southbound (mainline) through at the Twelfth Avenue and West 55th Street intersection (LOS C with a delay of 24.4 spv and a v/c ratio of 0.99 during the weekday AM peak hour; and LOS C with a delay of 29.7 spv and a v/c ratio of 0.90 during the Saturday peak hour);

Eleventh Avenue

- Eastbound approach at the Eleventh Avenue and West 59th Street intersection (LOS F with a delay of 81.5 spv and a v/c ratio of 0.99 during the weekday PM peak hour);
- Eastbound left-turn at the Eleventh Avenue and West 57th Street intersection (LOS E with a delay of 65.4 spv and a v/c ratio of 0.90 during the weekday AM peak hour; and LOS F with a delay of 98.6 spv and a v/c ratio of 1.05 during the weekday PM peak hour);
- Westbound left-turn at the Eleventh Avenue and West 57th Street intersection (LOS F with a delay of 91.2 spv and a v/c ratio of 1.05 during the Saturday peak hour);
- Westbound through/right-turn at the Eleventh Avenue and West 57th Street intersection (LOS E with a delay of 70.9 spv and a v/c ratio of 1.03 during the weekday PM peak hour);

Tenth Avenue

- Eastbound approach at the Tenth Avenue and West 58th Street intersection (LOS D with a delay of 51.7 spv weekday PM peak hour);
- Eastbound defacto left-turn at the Tenth Avenue and West 57th Street intersection (LOS F with a delay of 96.0 spv and a v/c ratio of 0.97 during the Saturday peak hour);
- Eastbound approach at the Tenth Avenue and West 57th Street intersection (LOS E with a delay of 76.9 spv and a v/c ratio of 1.05 during the weekday AM peak hour; LOS E with a delay of 64.8 spv and a v/c ratio of 1.00 during the weekday midday peak hour; and LOS D with a delay of 45.7 spv during the weekday PM peak hour);

- Westbound approach at the Tenth Avenue and West 57th Street intersection (LOS E with a delay of 72.8 spv and a v/c ratio of 1.05 during the weekday AM peak hour; LOS D with a delay of 51.2 spv and a v/c ratio of 0.97 during the weekday midday peak hour; and LOS E with a delay of 69.8 spv and a v/c ratio of 1.05 during the weekday PM peak hour);
- Eastbound approach at the Tenth Avenue and West 56th Street intersection (LOS F with a delay of 81.9 spv and a v/c ratio of 1.05 during the weekday AM peak hour; LOS D with a delay of 49.6 spv and a v/c ratio of 0.91 during the weekday PM peak hour; and LOS F with a delay of 82.6 spv and a v/c ratio of 1.05 during the Saturday peak hour);
- Westbound through at the Tenth Avenue and West 55th Street intersection (LOS E with a delay of 74.0 spv and a v/c ratio of 1.01 during the weekday PM peak hour);
- Westbound approach at the Tenth Avenue and West 55th Street intersection (LOS E with a delay of 72.2 spv and a v/c ratio of 1.00 during the Saturday peak hour);

Ninth Avenue

- Eastbound through at the Ninth Avenue and West 57th Street intersection (LOS F with a delay of 83.8 spv and a v/c ratio of 1.05 during the weekday AM peak hour; and LOS D with a delay of 47.9 spv during the weekday midday peak hour);
- Eastbound right-turn at the Ninth Avenue and West 57th Street intersection (LOS D with a delay of 45.1 spv during the weekday AM peak hour; and LOS D with a delay of 51.9 spv during the weekday PM peak hour);
- Westbound defacto left-turn at the Ninth Avenue and West 57th Street intersection (LOS F with a delay of 90.4 spv and a v/c ratio of 1.05 during the weekday AM peak hour; and LOS E with a delay of 59.0 spv and a v/c ratio of 0.95 during the weekday midday peak hour);
- Westbound approach at the intersection of Ninth Avenue and West 57th Street (LOS E with a delay of 65.9 spv and a v/c ratio of 1.05 during the weekday PM peak hour);
- Westbound through at the Ninth Avenue and West 57th Street intersection (LOS E with a delay of 73.2 spv and a v/c ratio of 1.05 during the weekday AM peak hour; LOS E with a delay of 66.2 spv and a v/c ratio of 1.03 during the weekday midday peak hour; and LOS D with a delay of 50.2 spv and a v/c ratio of 0.96 during the Saturday peak hour);
- Eastbound approach at the Ninth Avenue and West 56th Street intersection (LOS E with a delay of 80.0 spv and a v/c ratio of 1.05 during the weekday AM peak hour; LOS D with a delay of 50.7 spv and a v/c ratio of 0.93 during the weekday PM peak hour; and LOS F with a delay of 83.1 and a v/c ratio of 1.05 during the Saturday peak hour);

Eighth Avenue

- Westbound approach at the Eighth Avenue and West 57th Street intersection (LOS D with a delay of 47.3 spv and a v/c ratio of 0.95 during the weekday AM peak hour; LOS D with a delay of 46.2 spv and a v/c ratio of 0.95 during the weekday midday peak hour; LOS E with a delay of 68.7 spv and a v/c ratio of 1.05 during the weekday PM peak hour; and LOS D with a delay of 38.2 spv and a v/c ratio of 0.90 during the Saturday peak hour).

THE FUTURE WITHOUT THE PROPOSED ACTIONS

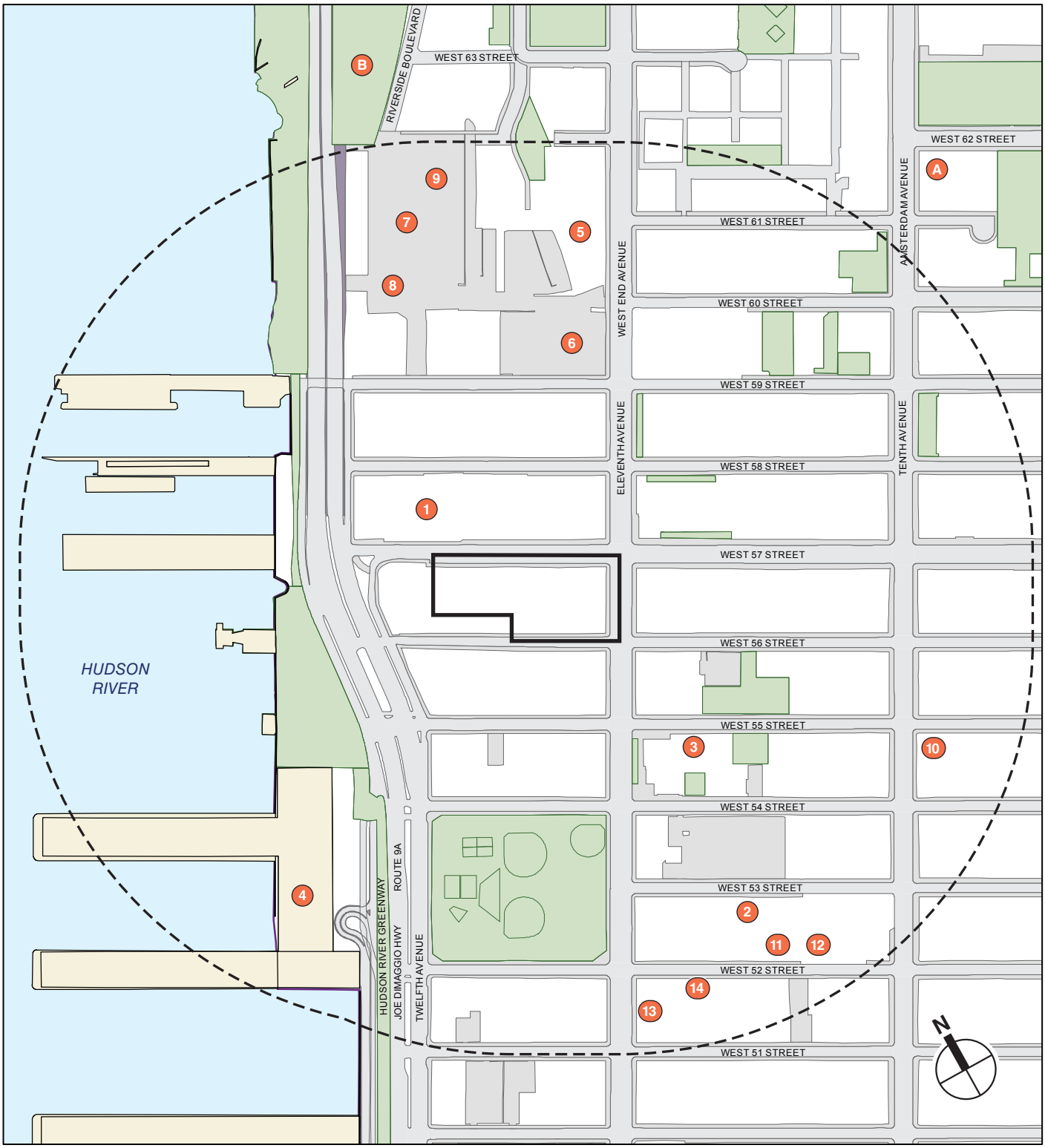
The No Action condition was developed by increasing existing (2013) traffic levels by the expected growth in overall travel through and within the study area. As per *CEQR* guidelines, an annual background growth rate of 0.25 percent was assumed for the years between 2013 and 2017. In addition, a total of 14~~5~~ development sites ~~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 11-15**). However, many of these planned projects are modest in size and would be modest traffic generators based on the "Minimum Development Densities" thresholds presented in Table 16-1 of the *CEQR Technical Manual*. After reviewing the development programs for each of the 14~~5~~ planned sites, ~~projects,~~ it was determined that background growth will address the increase in traffic and pedestrian levels for 7 of the small- to moderate-sized projects in the study area.

Person and vehicle trips generated by the remaining projects were then determined and incorporated into the No Action traffic analysis. **Table 11-17** summarize the projects that were accounted for in this future 2017 baseline, including those that were considered as part of the study area background growth.

Table 11-17
Planned Projects Within or Near the Study Area by 2017

Map Ref. No.	Project Name	Location/ Address	Development Program	Transportation Assumptions	Status/ Build Year
1	625 West 57th Street	Twelfth Avenue between West 58th Street and West 57th Street	New mixed-use building and conversion of existing buildings to residential and retail uses, totally 863 dwelling units (151 affordable units), 62,000 gsf of retail, 28,000 gsf community facility, and 285 accessory parking spaces	Transportation Assumptions from *625 West 57th Street FSEIS* (2012)	2015
2*	530-548 West 53rd Street (Clinton URA Site 7)	West 53rd Street between Tenth Avenue and Eleventh Avenue	New residential building with ~~106~~ 103 dwelling units (low-, moderate- and middle-income units)	Included in background growth	2016
3	Harborview Terrace Expansion	525 West 55th Street	Residential development with 320 dwelling units (mixed-income) and 37 accessory parking spaces	See project site 1, above	2017
~~4~~	~~Pier 99~~	~~Hudson River at West 59th Street~~	~~Conversion of existing facility to accept commercial waste~~	~~Included in background growth~~	~~2017~~
~~5~~	~~Pier 97~~	~~Hudson River at West 57th Street~~	~~1-acre addition to Hudson River Park open space with recreational lawn and playground~~	~~Included in background growth~~	~~2017~~
4	Piers 92 & 94	Hudson River between West 52nd Street and West 54th Street	Potential expansion of trade show facility with up to 40,000 gsf of new space; conversion of portions of Pier 92 from passenger ship terminal to trade show space; new waterfront esplanade	Transportation assumptions from *Piers 92-94 Redevelopment EAS*	2017
5	Riverside Center Building 2	West 61st Street between West End Avenue and Freedom Place South	Mixed-use building with 446 dwelling units, 15,635 gsf retail, and 151,598 gsf public school	Transportation assumptions from *Riverside Center FSEIS* (2010)	2015
6	Riverside Center Building 5	West 60th Street between West End Avenue and Freedom Place South	Mixed-use building with 455 dwelling units, 61,580 gsf retail, and 250-room hotel	See project site 5, above	2015
7	Riverside Center Building 1	West 61st Street between Freedom Place South and Riverside Boulevard	Mixed-use building with 809 dwelling units, 104,432 gsf office space, and 42,233 gsf retail	See project site 5, above	2016
8	Riverside Center Open Space	Riverside Boulevard between West 59th Street and West 61st Street	2.75 acres of active and passive open space, including water feature, seating, landscaping, play area, and central plaza	Included in background growth	2017
9	40 Riverside Boulevard	Riverside Boulevard and West 61st Street	Mixed-use development with 520 dwelling units (188 affordable units), 4,581 gsf office space, 7,168 gsf retail, and 535 parking spaces	Trip rates and temporal distribution from the *CEQR Technical Manual*; Modal split and vehicle occupancy from U.S. Bureau of the Census, 2007-2011 American Community Survey (ACS) estimates; directional distribution from *625 West 57th Street FSEIS* (2012)	2014
10	824 Tenth Avenue	Tenth Avenue and West 55th Street	Expansion of existing store for 1,000 gsf to 2,800 gsf	Included in background growth	2017
11	533-541 West 52nd Street	West 52nd Street between Tenth Avenue and Eleventh Avenue	New residential building with 100 dwelling units	Included in background growth	2013



606 WEST 57TH STREET

2017 No Build Projects

Figure 11-15

Table 11-17 (cont'd)
Planned Projects Within or Near the Study Area by 2017

Map Ref. No.	Project Name	Location/ Address	Development Program	Transportation Assumptions	Status/ Build Year
12*	525 West 52nd Street (Clinton URA Site 7)	West 52nd Street between Tenth Avenue and Eleventh Avenue	New residential building with 405 dwelling units (81 affordable units) and ~~21,000~~ 57,100 gsf commercial in an integrated retail base with 530-548 West 53rd Street	Included in background growth	2016
13	Irish Arts Center, 726 Eleventh Avenue	Eleventh Avenue between West 51st Street and West 52nd Street	Expansion of cultural arts center with 42,000 gsf of space	Included in background growth	2016
14*	556-560 West 52nd Street (Clinton URA Site 7)	West 52nd Street between Tenth Avenue and Eleventh Avenue	Rehabilitation of and addition to existing building to include 22 dwelling units (low- and moderate-income housing) and 4,162 gsf of community facility space	Included in background growth	2016
Adjacent to ¼-Mile Study Area					
A	Fordham Center Master Plan—Phase I	Amsterdam Avenue and West 62nd Street	Mixed-use development with 876 dwelling units, 382,667 gsf academic space, 695-bed student dormitory, and 205 parking spaces	Transportation assumptions from *Fordham University Lincoln Center Master Plan FEIS* (2009)	2014
B	Riverside Park South	Riverside Boulevard between West 61st Street and West 68th Street	Expansion of park with 9.6 acres of passive and active open space	Included in background growth	2017
Notes:	* Clinton Urban Renewal Area (URA) Site 7 projects are currently undergoing public review.				

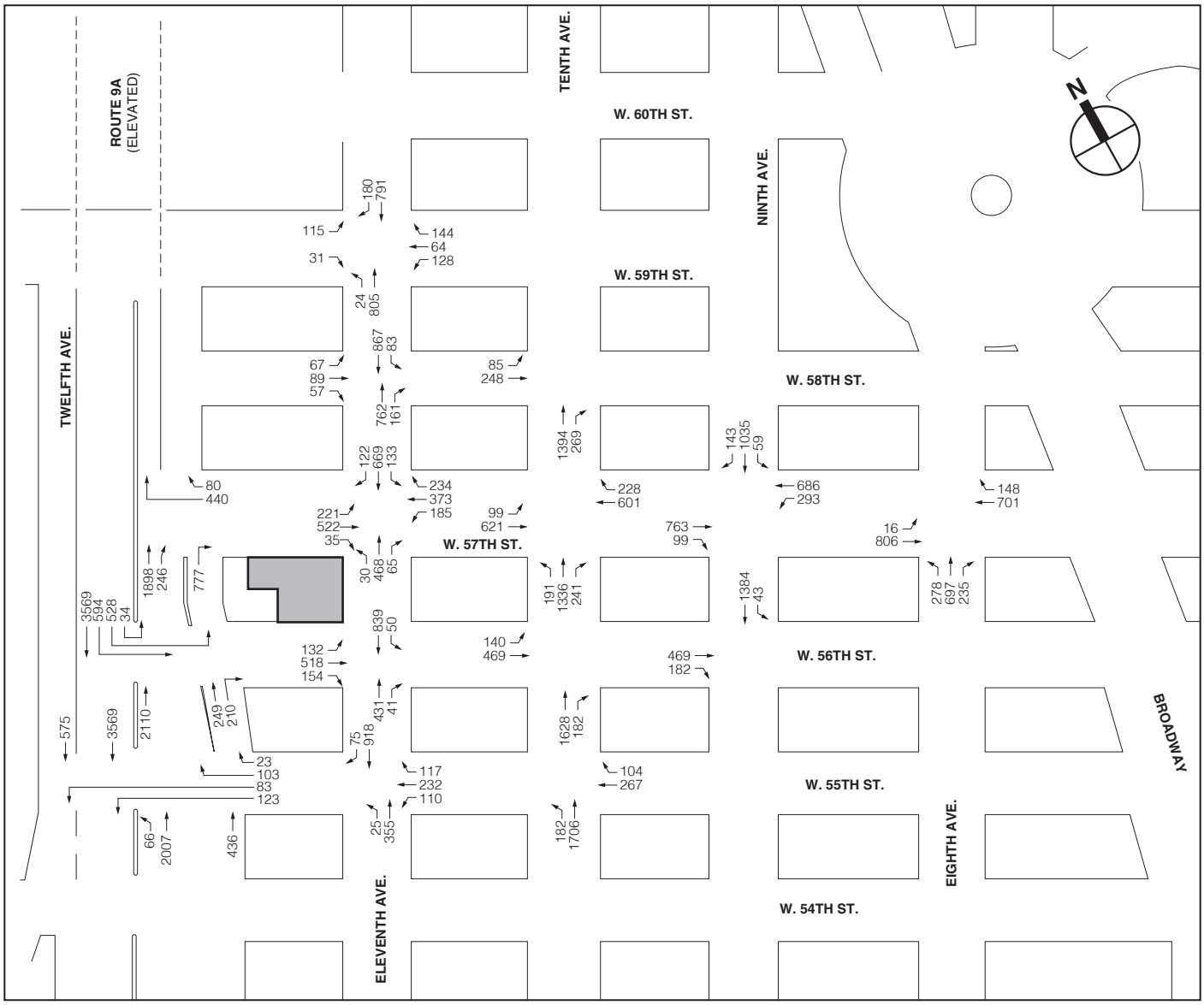
Additional residential growth within the study area is expected to occur as a result of a planned redevelopment known as the Clinton Urban Renewal Area (URA) Site 7 projects being undertaken by the New York City Department of Housing Preservation and Development (HPD) on the two blocks bounded by West 53rd Street, Tenth Avenue, West 51st Street, and Eleventh Avenue (identified as Sites 2, 12 and 14 in **Table 11-17**). Based on the travel demand characteristics and the availability of more direct routes to access/egress these sites, the URA development would generate low level of vehicular trips that could potentially travel through the study area intersections in the future conditions. Therefore, the traffic activity generated by these sites was considered as part of the overall background growth identified for the study area.

~~In addition, the New York City Department of Housing Preservation and Development (HPD) has proposed rezoning portions of two blocks bounded by West 53rd Street, Tenth Avenue, West 51st Street and Eleventh Avenue. Combined, these two blocks could be developed with residential, commercial and community facility uses. The development program for the proposed rezoning has not been finalized. Once the development program is finalized, if warranted, the trips expected to be generated by the proposed rezoning would be incorporated in the No Action traffic analysis for the FEIS.~~

TRAFFIC OPERATIONS

The No Action condition traffic volumes are shown in **Figures 11-16** to **11-19** 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. **Tables 11-18 and 11-19** show an overall comparison of traffic levels of service for existing and No Action conditions.

Mitigation measures described in the *Riverside Center FSEIS* for the intersections of Twelfth Avenue at West 57th Street, Twelfth Avenue at West 56th Street, Eleventh Avenue at West 59th Street, and Ninth Avenue at West 57th Street were also incorporated into the No Action and With Action traffic analyses. ~~Between DEIS and FEIS the expected dates of completion for the Riverside Center project components will be confirmed, and the timing for the implementation~~

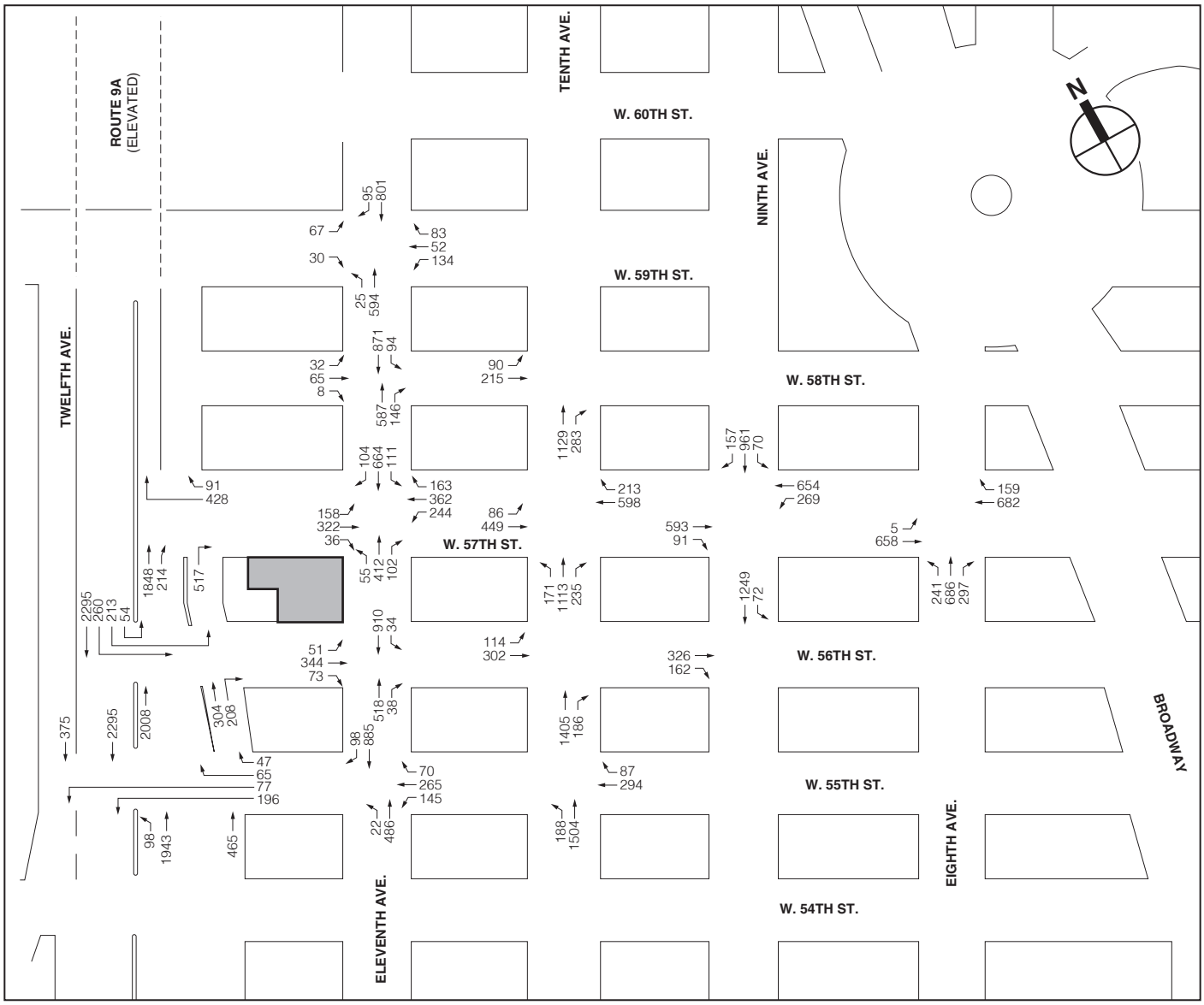


Project Site

2017 No Action Traffic Volumes
Weekday AM Peak Hour

606 WEST 57TH STREET

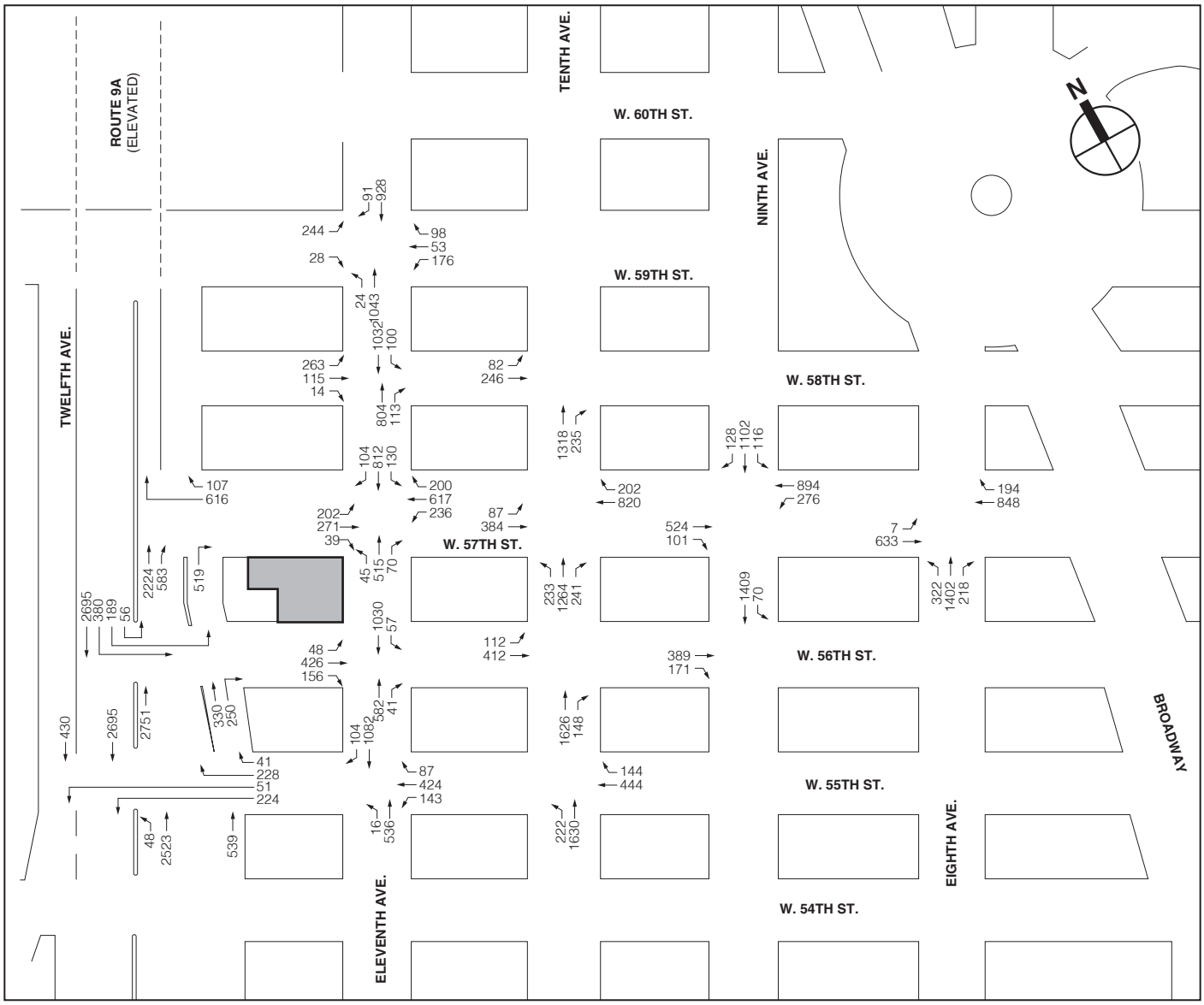
Figure 11-16



2017 No Action Traffic Volumes
Weekday Midday Peak Hour

606 WEST 57TH STREET

Figure 11-17

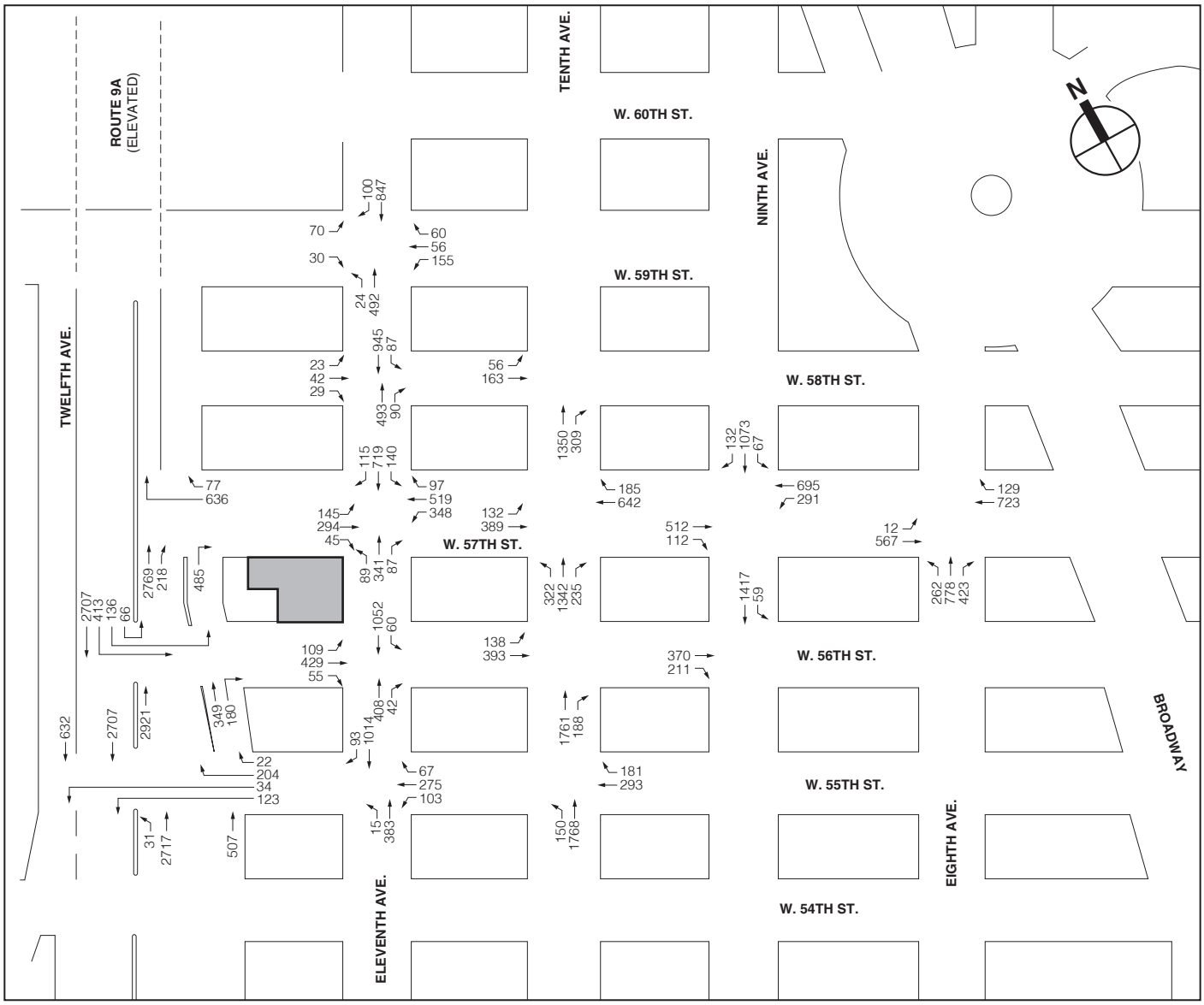


Project Site

2017 No-Action Traffic Volumes
Weekday PM Peak Hour

606 WEST 57TH STREET

Figure 11-18



2017 No-Action Traffic Volumes
Saturday Peak Hour

606 WEST 57TH STREET

Figure 11-19

~~of traffic mitigation measures will be considered. Based on the construction schedule and traffic mitigation implementation plan, if any changes to traffic analysis are required, those would be addressed in the FEIS.~~

In addition, as mentioned above in the "2013 Existing Conditions" section, during the traffic data collection, the curbside lane of the westbound approach at Twelfth Avenue and West 57th Street was blocked by construction. Therefore, this approach was analyzed as consisting of 2 right-turn lanes in the existing conditions, but was restored to 3 right-turn lanes in the No Action and With Action conditions analyses.

Table 11-18
2013 Existing and 2017 No Action Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
12th Avenue (Route 9A) & West 57th Street																																
WB	R	0.67	41.1	D	R	0.47	35.1	D	R	0.87	57.3	E	R	0.60	40.7	D	R	1.05	104.0	F	R	0.96	76.2	E	R	1.05	92.4	F	R	0.73	43.9	D
NB (Mainline)	T	0.55	24.1	C	T	0.56	23.9	C	T	0.47	11.8	B	T	0.50	12.2	B	T	0.56	5.1	A	T	0.60	5.3	A	T	0.61	13.7	B	T	0.65	14.4	B
	Int.		27.8	C	Int.		26.4	C	Int.		20.7	C	Int.		17.8	B	Int.		26.1	C	Int.		21.2	C	Int.		29.6	C	Int.		20.3	C
12th Avenue (Route 9A) & West 56th Street																																
NB (Mainline)	T	0.78	37.1	D	T	0.82	38.8	D	T	0.52	9.0	A	T	0.57	10.9	B	T	0.69	5.8	A	T	0.72	6.2	A	T	0.68	11.2	B	T	0.74	14.0	B
SB (Mainline)	L	0.88	38.3	D	L	0.88	38.2	D	L	0.91	68.1	E	L	0.84	57.3	E	L	0.89	71.9	E	L	0.94	79.1	E	L	1.04	95.9	F	L	0.99	79.7	E
NB (Service Road)	TR	0.32	26.8	C	TR	0.45	29.3	C	TR	0.27	7.0	A	TR	0.34	8.8	A	TR	0.34	3.8	A	TR	0.40	4.2	A	TR	0.26	6.9	A	TR	0.32	8.5	A
	Int.		36.5	D	Int.		37.4	D	Int.		22.6	C	Int.		18.6	B	Int.		16.3	B	Int.		17.6	B	Int.		23.4	C	Int.		23.2	C
12th Avenue (Route 9A) & West 55th Street																																
WB	L	0.60	64.1	E	L	0.81	78.8	E	L	0.82	61.9	E	L	0.93	78.3	E	L	0.89	88.6	F	L	1.02	118.1	F	L	0.35	40.1	D	L	0.44	42.3	D
	R	0.32	53.8	D	R	0.31	53.5	D	R	0.25	37.8	D	R	0.24	37.7	D	R	0.64	62.3	E	R	0.63	61.8	E	R	0.40	40.2	D	R	0.40	40.1	D
NB (Mainline)	L	0.51	89.9	F	L	0.84	132.7	F	L	0.69	80.3	F	L	0.85	101.6	F	L	0.30	74.0	E	L	0.50	83.6	F	L	0.11	52.6	D	L	0.24	55.9	E
	T	0.46	8.8	A	T	0.49	9.1	A	T	0.52	11.2	B	T	0.56	11.6	B	T	0.59	2.6	A	T	0.62	2.8	A	T	0.67	13.4	B	T	0.71	14.2	B
SB (Mainline)	T	0.99	24.4	C	T	1.00	26.6	C	T	0.75	23.6	C	T	0.76	23.8	C	T	0.77	21.8	C	T	0.78	22.1	C	T	0.90	29.7	C	T	0.91	30.4	C
NB (Service Road)	T	0.26	7.4	A	T	0.37	8.5	A	T	0.40	10.6	B	T	0.48	11.8	B	T	0.46	3.0	A	T	0.54	3.6	A	T	0.43	11.0	B	T	0.51	12.1	B
SB (Service Road)	T	0.26	5.8	A	T	0.29	5.9	A	T	0.20	14.9	B	T	0.23	15.2	B	T	0.18	12.0	B	T	0.22	12.4	B	T	0.38	17.0	B	T	0.44	17.8	B
	Int.		19.6	B	Int.		22.2	C	Int.		20.7	C	Int.		22.3	C	Int.		16.8	B	Int.		18.2	B	Int.		21.7	C	Int.		22.3	C
11th Avenue & West 59th Street																																
EB	LR	0.54	32.3	C	LR	0.76	46.1	D	LR	0.22	22.3	C	LR	0.36	25.1	C	LR	0.99	81.5	F	LR	1.24	163.1	F	LR	0.17	21.6	C	LR	0.37	25.3	C
WB	L	0.30	23.2	C	L	0.29	23.0	C	L	0.30	23.3	C	L	0.29	23.0	C	L	0.41	25.2	C	L	0.38	24.3	C	L	0.38	24.6	C	L	0.37	24.3	C
	TR	0.45	25.8	C	TR	0.44	25.5	C	TR	0.28	22.8	C	TR	0.28	22.7	C	TR	0.32	23.4	C	TR	0.31	23.3	C	TR	0.24	22.2	C	TR	0.26	22.3	C
NB	L	0.03	9.8	A	L	0.12	11.2	B	L	0.05	9.9	A	L	0.12	11.1	B	L	0.06	10.2	B	L	0.19	13.3	B	L	0.01	9.5	A	L	0.16	12.1	B
	T	0.53	14.7	B	T	0.56	15.0	B	T	0.39	12.6	B	T	0.41	12.8	B	T	0.75	19.1	B	T	0.74	18.7	B	T	0.30	11.7	B	T	0.36	12.3	B
SB	T	0.49	13.8	B	T	0.54	14.6	B	T	0.50	13.9	B	T	0.54	14.6	B	T	0.63	16.3	B	T	0.71	18.1	B	T	0.57	15.0	B	T	0.63	16.2	B
	R	0.26	11.9	B	R	0.30	12.3	B	R	0.13	10.5	B	R	0.16	10.7	B	R	0.13	10.5	B	R	0.18	11.0	B	R	0.15	10.6	B	R	0.18	11.0	B
	Int.		16.9	B	Int.		18.4	B	Int.		15.1	B	Int.		15.6	B	Int.		24.7	C	Int.		34.4	C	Int.		15.6	B	Int.		16.5	B
11th Avenue & West 58th Street																																
EB	LTR	0.17	20.9	C	LTR	0.25	21.8	C	LTR	0.11	20.3	C	LTR	0.13	20.5	C	LTR	0.48	24.9	C	LTR	0.46	24.6	C	LTR	0.07	20.0-	B	LTR	0.13	20.5	C
NB	TR	0.67	17.4	B	TR	0.75	19.7	B	TR	0.50	14.1	B	TR	0.57	15.2	B	TR	0.66	17.0	B	TR	0.74	19.2	B	TR	0.36	12.3	B	TR	0.43	13.1	B
SB	L	0.42	18.5	B	L	0.54	25.3	C	L	0.35	15.1	B	L	0.43	17.9	B	L	0.59	27.3	C	L	0.78	49.2	D	L	0.24	12.4	B	L	0.33	14.3	B
	T	0.61	15.9	B	T	0.67	17.3	B	T	0.58	15.3	B	T	0.63	16.4	B	T	0.74	19.0	B	T	0.83	22.8	C	T	0.64	16.4	B	T	0.71	18.2	B
	Int.		17.1	B	Int.		19.2	B	Int.		15.1	B	Int.		16.2	B	Int.		19.6	B	Int.		22.8	C	Int.		15.0	B	Int.		16.5	B

Table 11-18 (cont'd)
2013 Existing and 2017 No Action Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
11th Avenue & West 57th Street																																
EB	L	0.90	65.4	E	L	1.02	97.2	F	L	0.61	26.8	C	L	0.66	30.3	C	L	1.05	98.6	F	L	1.06	102.0	F	L	0.64	28.5	C	L	0.71	34.7	C
	TR	0.62	30.4	C	TR	0.71	33.0	C	TR	0.41	26.6	C	TR	0.46	27.4	C	TR	0.41	26.6	C	TR	0.45	27.3	C	TR	0.40	26.5	C	TR	0.45	27.3	C
WB	L	0.77	44.8	D	L	0.87	60.9	E	L	0.80	42.2	D	L	0.86	50.6	D	L	0.75	37.1	D	L	0.80	43.0	D	L	1.05	91.2	F	L	1.13	119.8	F
	TR	0.80	37.9	D	TR	0.92	49.5	D	TR	0.68	32.6	C	TR	0.75	35.1	D	TR	1.03	70.9	E	TR	1.16	119.4	F	TR	0.71	33.1	C	TR	0.84	39.8	D
NB	L	0.25	19.5	B	L	0.28	21.2	C	L	0.35	21.6	C	L	0.38	23.0	C	L	0.39	24.6	C	L	0.46	30.5	C	L	0.66	38.2	D	L	0.82	62.7	E
	TR	0.51	19.5	B	TR	0.56	20.5	C	TR	0.46	18.8	B	TR	0.52	19.7	B	TR	0.50	19.2	B	TR	0.55	20.2	C	TR	0.39	17.7	B	TR	0.45	18.6	B
SB	L	0.40	21.7	C	L	0.71	38.7	D	L	0.35	20.3	C	L	0.52	26.4	C	L	0.45	24.0	C	L	0.74	43.1	D	L	0.39	20.8	C	L	0.64	31.9	C
	TR	0.72	24.5	C	TR	0.81	28.3	C	TR	0.66	22.7	C	TR	0.70	23.9	C	TR	0.81	28.0	C	TR	0.90	35.0	D	TR	0.71	24.1	C	TR	0.81	28.2	C
	Int.		31.3	C	Int.		38.8	D	Int.		26.3	C	Int.		28.5	C	Int.		42.2	D	Int.		57.5	E	Int.		34.2	C	Int.		41.1	D
11th Avenue & West 56th Street																																
EB	LTR	0.76	31.4	C	LTR	0.84	35.1	D	LTR	0.51	25.5	C	LTR	0.56	26.4	C	LTR	0.69	29.8	C	LTR	0.75	31.9	C	LTR	0.64	28.3	C	LTR	0.69	29.7	C
NB	TR	0.35	12.3	B	TR	0.38	12.6	B	TR	0.39	12.7	B	TR	0.43	13.2	B	TR	0.46	13.5	B	TR	0.51	14.1	B	TR	0.34	12.1	B	TR	0.38	12.6	B
SB	L	0.13	10.8	B	L	0.17	11.4	B	L	0.10	10.5	B	L	0.13	11.0	B	L	0.17	11.7	B	L	0.25	13.3	B	L	0.16	11.2	B	L	0.22	12.3	B
	T	0.56	14.8	B	T	0.59	15.4	B	T	0.64	16.2	B	T	0.66	16.8	B	T	0.65	16.5	B	T	0.68	17.2	B	T	0.68	17.2	B	T	0.72	18.0	B
	Int.		20.3	C	Int.		22.1	C	Int.		17.3	B	Int.		17.9	B	Int.		19.0	B	Int.		20.1	C	Int.		18.8	B	Int.		19.7	B
11th Avenue & West 55th Street																																
WB	LTR	0.61	31.5	C	LTR	0.71	34.4	C	LTR	0.80	38.8	D	LTR	0.86	43.9	D	LTR	0.83	40.4	D	LTR	0.90	47.0	D	LTR	0.58	30.4	C	LTR	0.64	32.1	C
NB	L	0.19	10.2	B	L	0.17	9.9	A	L	0.15	9.5	A	L	0.14	9.4	A	L	0.14	9.6	A	L	0.11	9.2	A	L	0.15	10.2	B	L	0.15	10.6	B
	T	0.26	8.9	A	T	0.28	9.1	A	T	0.34	9.6	A	T	0.37	9.9	A	T	0.31	9.3	A	T	0.34	9.6	A	T	0.24	8.7	A	T	0.26	8.9	A
SB	TR	0.56	12.1	B	TR	0.59	12.6	B	TR	0.59	12.6	B	TR	0.61	13.0	B	TR	0.68	14.4	B	TR	0.72	15.2	B	TR	0.73	15.6	B	TR	0.77	16.8	B
	Int.		16.0	B	Int.		17.4	B	Int.		18.5	B	Int.		20.3	C	Int.		20.0	C	Int.		22.4	C	Int.		17.3	B	Int.		18.5	B
10th Avenue & West 58th Street																																
EB	LT	0.82	43.6	D	LT	0.87	49.1	D	LT	0.84	44.9	D	LT	0.88	50.0	D	LT	0.89	51.7	D	LT	0.91	55.4	E	LT	0.53	29.0	C	LT	0.59	30.7	C
NB	TR	0.53	13.3	B	TR	0.55	13.5	B	TR	0.61	14.6	B	TR	0.63	14.8	B	TR	0.46	12.3	B	TR	0.47	12.5	B	TR	0.63	14.7	B	TR	0.65	15.1	B
	Int.		18.7	B	Int.		20.0+	C	Int.		20.5	C	Int.		21.7	C	Int.		19.7	B	Int.		20.4	C	Int.		16.4	B	Int.		17.1	B
10th Avenue & West 57th Street																																
EB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DefL	0.97	96.0	F	DefL	1.16	160.9	F
	LT	1.05	76.9	E	LT	1.29	170.7	F	LT	1.00	64.8	E	LT	1.18	126.6	F	LT	0.89	45.7	D	LT	1.10	98.5	F	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	0.59	26.6	C	T	0.74	32.3	C
WB	TR	1.05	72.8	E	TR	1.14	104.5	F	TR	0.97	51.2	D	TR	1.05	70.7	E	TR	1.05	69.8	E	TR	1.14	102.8	F	TR	0.81	32.0	C	TR	0.89	38.4	D
NB	LTR	0.66	18.0	B	LTR	0.70	18.8	B	LTR	0.64	18.0	B	LTR	0.67	18.5	B	LTR	0.59	16.9	B	LTR	0.62	17.3	B	LTR	0.80	21.4	C	LTR	0.83	22.8	C
	Int.		43.9	D	Int.		73.3	E	Int.		37.2	D	Int.		57.0	E	Int.		37.0	D	Int.		56.6	E	Int.		27.6	C	Int.		33.2	C
10th Avenue & West 56th Street																																
EB	LT	1.05	81.9	F	LT	1.20	135.6	F	LT	0.81	39.6	D	LT	0.91	50.2	D	LT	0.91	49.6	D	LT	1.01	71.6	E	LT	1.05	82.6	F	LT	1.15	118.3	F
NB	TR	0.56	13.6	B	TR	0.60	14.2	B	TR	0.68	15.7	B	TR	0.72	16.5	B	TR	0.40	11.7	B	TR	0.43	11.9	B	TR	0.69	15.9	B	TR	0.73	16.7	B
	Int.		35.6	D	Int.		46.1	D	Int.		20.4	C	Int.		23.6	C	Int.		20.0	B	Int.		25.5	C	Int.		31.1	C	Int.		40.6	D
10th Avenue & West 55th Street																																
WB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	1.01	74.0	E	T	1.09	98.5	F	-	-	-	-	-	-	-	-
	TR	0.71	34.3	C	TR	0.79	38.8	D	TR	0.85	44.5	D	TR	0.90	50.8	D	-	-	-	-	-	-	-	-	TR	1.00	72.2	E	TR	1.08	94.8	F
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	0.48	28.3	C	R	0.51	29.4	C	-	-	-	-	-	-	-	-
NB	LT	0.56	13.7	B	LT	0.61	14.4	B	LT	0.60	14.3	B	LT	0.65	15.1	B	LT	0.49	12.7	B	LT	0.53	13.2	B	LT	0.65	15.1	B	LT	0.69	15.8	B
	Int.		17.1	B	Int.		18.4	B	Int.		20.4	C	Int.		22.2	C	Int.		26.0	C	Int.		31.4	C	Int.		26.7	C	Int.		32.0	C

Table 11-18 (cont'd)
2013 Existing and 2017 No Action Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
9th Avenue & West 57th Street																																
EB	T	1.05	83.8	F	T	1.21	143.1	F	T	0.87	47.9	D	T	0.91	50.7	D	T	0.79	42.4	D	T	0.85	44.9	D	T	0.67	36.4	D	T	0.72	36.5	D
	R	0.59	45.1	D	R	0.65	47.3	D	R	0.54	43.0	D	R	0.56	41.4	D	R	0.65	51.9	D	R	0.70	52.9	D	R	0.58	44.4	D	R	0.62	44.0	D
WB	DefL	1.05	90.4	F	DefL	1.05	89.5	F	DefL	0.95	59.0	E	DefL	0.97	65.4	E	-	-	-	-	-	-	-	-	DefL	0.86	41.2	D	DefL	0.89	44.2	D
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LT	1.05	65.9	E	LT	1.11	86.1	F	-	-	-	-	-	-	-	-
	T	1.05	73.2	E	T	1.14	102.4	F	T	1.03	66.2	E	T	1.07	78.6	E	-	-	-	-	-	-	-	-	T	0.96	50.2	D	T	1.04	67.9	E
SB	L	0.18	22.0	C	L	0.23	23.5	C	L	0.25	23.3	C	L	0.29	25.6	C	L	0.40	26.7	C	L	0.47	30.3	C	L	0.27	24.0	C	L	0.34	27.3	C
	TR	0.65	26.6	C	TR	0.68	27.9	C	TR	0.77	29.9	C	TR	0.84	34.2	C	TR	0.57	25.1	C	TR	0.63	27.4	C	TR	0.74	28.8	C	TR	0.81	32.4	C
	Int.		56.9	E	Int.		80.0	F	Int.		44.9	D	Int.		51.1	D	Int.		43.6	D	Int.		52.8	D	Int.		36.7	D	Int.		43.1	D
9th Avenue & West 56th Street																																
EB	TR	1.05	80.0-	E	TR	1.23	146.4	F	TR	0.77	33.3	C	TR	0.88	42.9	D	TR	0.93	50.7	D	TR	1.06	82.7	F	TR	1.05	83.1	F	TR	1.17	125.2	F
SB	L	0.08	9.6	A	L	0.09	9.7	A	L	0.15	12.7	B	L	0.14	12.7	B	L	0.20	13.7	B	L	0.20	13.8	B	L	0.07	9.4	A	L	0.07	9.4	A
	T	0.41	11.9	B	T	0.42	12.0	B	T	0.51	15.9	B	T	0.53	16.1	B	T	0.43	14.8	B	T	0.45	14.9	B	T	0.50	12.9	B	T	0.52	13.1	B
	Int.		32.5	C	Int.		57.2	E	Int.		20.2	C	Int.		23.5	C	Int.		24.1	C	Int.		33.9	C	Int.		31.1	C	Int.		44.2	D
8th Avenue & West 57th Street																																
EB	LT	0.80	31.7	C	LT	0.96	48.1	D	LT	0.75	29.2	C	LT	0.86	35.2	D	LT	0.67	26.6	C	LT	0.77	30.4	C	LT	0.53	23.3	C	LT	0.63	25.2	C
WB	TR	0.95	47.3	D	TR	1.02	61.6	E	TR	0.95	46.2	D	TR	1.00	57.3	E	TR	1.05	68.7	E	TR	1.11	92.1	F	TR	0.90	38.2	D	TR	0.96	47.9	D
NB	LTR	0.53	16.1	B	LTR	0.54	16.3	B	LTR	0.53	16.2	B	LTR	0.54	16.3	B	LTR	0.70	18.8	B	LTR	0.72	19.0	B	LTR	0.71	19.6	B	LTR	0.73	20.0-	B
	Int.		29.3	C	Int.		38.5	D	Int.		28.8	C	Int.		34.2	C	Int.		33.7	C	Int.		41.3	D	Int.		25.8	C	Int.		29.5	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 11-19
2013 Existing and 2017 No Action Conditions Level of Service Analysis
Unsignalized Intersections

Intersection	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action				2013 Existing				2017 No Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
12th Avenue (Route 9A) & West 57th Street																																
NB (Service Road)	R	0.72	16.6	C	R	0.79	20.0	C	R	0.54	12.5	B	R	0.59	13.4	B	R	0.57	12.7	B	R	0.60	13.6	B	R	0.50	11.8	B	R	0.55	12.5	B

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

Based on the analysis results presented in **Tables 11-18** to **11-19**, the majority of the approaches/lane-groups will operate at the same LOS as in existing conditions. It should also be noted that the approved trip generations used in the analyses for the 625 West 57th Street project, the Piers 92 and 94 project, and the Fordham Center Master Plan project included negative trip increments for the proposed developments when compared to existing conditions. Therefore, some analysis locations experienced improvements in levels of service when compared to existing conditions. The following approaches/lane-groups are expected to operate at deteriorated LOS when compared to existing conditions:

Twelfth Avenue

- Northbound (mainline) left-turn at the Twelfth Avenue and West 55th Street intersection will deteriorate to LOS F with a v/c ratio of 0.50 and a delay of 83.6 spv during the weekday PM peak hour and to LOS E with a v/c ratio of 0.24 and a delay of 55.9 spv during the Saturday peak hour;

Eleventh Avenue

- Eastbound approach at the Eleventh Avenue and West 59th Street intersection will deteriorate to LOS D with a v/c ratio of 0.76 and a delay of 46.1 spv during the weekday AM peak hour;
- Southbound left-turn at the Eleventh Avenue and West 58th Street intersection will deteriorate to LOS D with a v/c ratio of 0.78 and a delay of 49.2 spv during the weekday PM peak hour;
- Eastbound left-turn at the Eleventh Avenue and West 57th Street intersection will deteriorate to LOS F with a v/c ratio of 1.02 and a delay of 97.2 spv during the weekday AM peak hour;
- Westbound left-turn at the Eleventh Avenue and West 57th Street intersection will deteriorate to LOS E with a v/c ratio of 0.87 and a delay of 60.9 spv during the weekday AM peak hour and within LOS D with a v/c ratio of 0.86 and a delay of 50.6 spv during the weekday midday peak hour;
- Westbound through/right-turn at the Eleventh Avenue and West 57th Street intersection will deteriorate within LOS D with a v/c ratio of 0.92 and a delay of 49.5 spv during the weekday AM peak hour, to LOS F with a v/c ratio of 1.16 and a delay of 119.4 spv during the weekday PM peak hour;
- Northbound left-turn at the Eleventh Avenue and West 57th Street intersection will deteriorate to LOS E with a v/c ratio of 0.82 and a delay of 62.7 spv during the Saturday peak hour;
- Westbound approach at the Eleventh Avenue and West 55th Street intersection will deteriorate within to LOS D with a v/c ratio of 0.90 and a delay of 47.0 spv during the weekday PM peak hour;

Tenth Avenue

- Eastbound approach at the Tenth Avenue and West 58th Street intersection will deteriorate within LOS D with a v/c ratio of 0.87 and a delay of 49.1 spv during the weekday AM peak hour, within LOS D with a v/c ratio of 0.88 and a delay of 50.0 spv during the weekday midday peak hour, and to LOS E with a v/c ratio of 0.91 and a delay of 55.4 spv during the weekday PM peak hour;

- Eastbound approach at the Tenth Avenue and West 57th Street intersection will deteriorate to LOS F with a v/c ratio of 1.29 and a delay of 170.7 spv during the weekday AM peak hour, to LOS F with a v/c ratio of 1.18 and a delay of 126.6 spv during the weekday midday peak hour, and to LOS F with a v/c ratio of 1.10 and a delay of 98.5 spv during the weekday PM peak hour;
- Westbound approach at the Tenth Avenue and West 57th Street intersection will deteriorate to LOS F with a v/c ratio of 1.14 and a delay of 104.5 spv during the weekday AM peak hour, to LOS E with a v/c ratio of 1.05 and a delay of 70.7 spv during the weekday midday peak hour, and to LOS F with a v/c ratio of 1.14 and a delay of 102.8 spv during the weekday PM peak hour;
- Eastbound approach at the Tenth Avenue and West 56th Street intersection will deteriorate within LOS D with a v/c ratio of 0.91 and a delay of 50.2 spv during the weekday midday peak hour, and to LOS E with a v/c ratio of 1.01 and a delay of 71.6 spv during the weekday PM peak hour;
- Westbound approach at the Tenth Avenue and West 55th Street intersection will deteriorate within LOS D with a v/c ratio of 0.90 and a delay of 50.8 spv during the weekday midday peak hour, and to LOS F with a v/c ratio of 1.08 and a delay of 94.8 spv during the Saturday peak hour;
- Westbound through at the Tenth Avenue and West 55th Street intersection will deteriorate to LOS F with a v/c ratio of 1.09 and a delay of 98.5 spv during the weekday PM peak hour;

Ninth Avenue

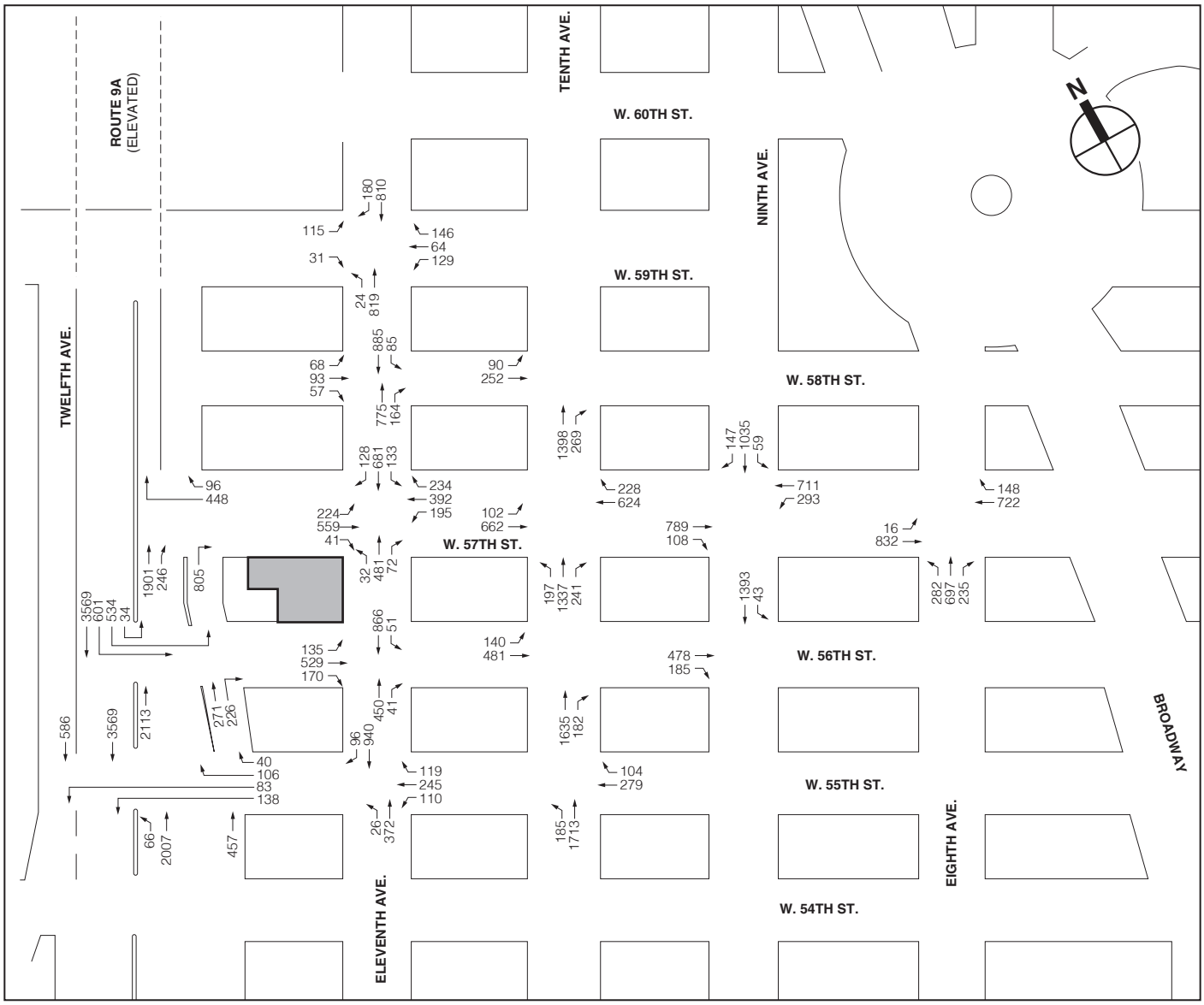
- Westbound through at the Ninth Avenue and West 57th Street intersection will deteriorate to LOS F with a v/c ratio of 1.14 and a delay of 102.4 spv during the weekday AM peak hour, and to LOS E with a v/c ratio of 1.04 and a delay of 67.9 spv during the Saturday peak hour;
- Eastbound approach at the Ninth Avenue and West 56th Street intersection will deteriorate to LOS F with a v/c ratio of 1.23 and a delay of 146.4 spv during weekday AM peak hour and to LOS F with a v/c ratio of 1.06 and a delay of 82.7 spv during the weekday PM peak hour;

Eighth Avenue

- Eastbound approach at the Eighth Avenue and West 57th Street intersection will deteriorate to LOS D with a v/c ratio of 0.96 and a delay of 48.1 spv during the weekday AM peak hour; and
- Westbound approach at the Eighth Avenue and West 57th Street intersection will deteriorate to LOS E with a v/c ratio of 1.02 and a delay of 61.6 spv during the weekday AM peak hour, to LOS E with a v/c ratio of 1.00 and a delay of 57.3 spv during the weekday midday peak hour, to LOS F with a v/c ratio of 1.11 and a delay of 92.1 spv during the weekday PM peak hour, and to LOS D with a v/c ratio of 0.96 and a delay of 47.9 spv during the Saturday peak hour.

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The With Action condition traffic volumes are shown in **Figures 11-20** to **11-23** for the weekday AM, midday, PM, and Saturday peak hours.

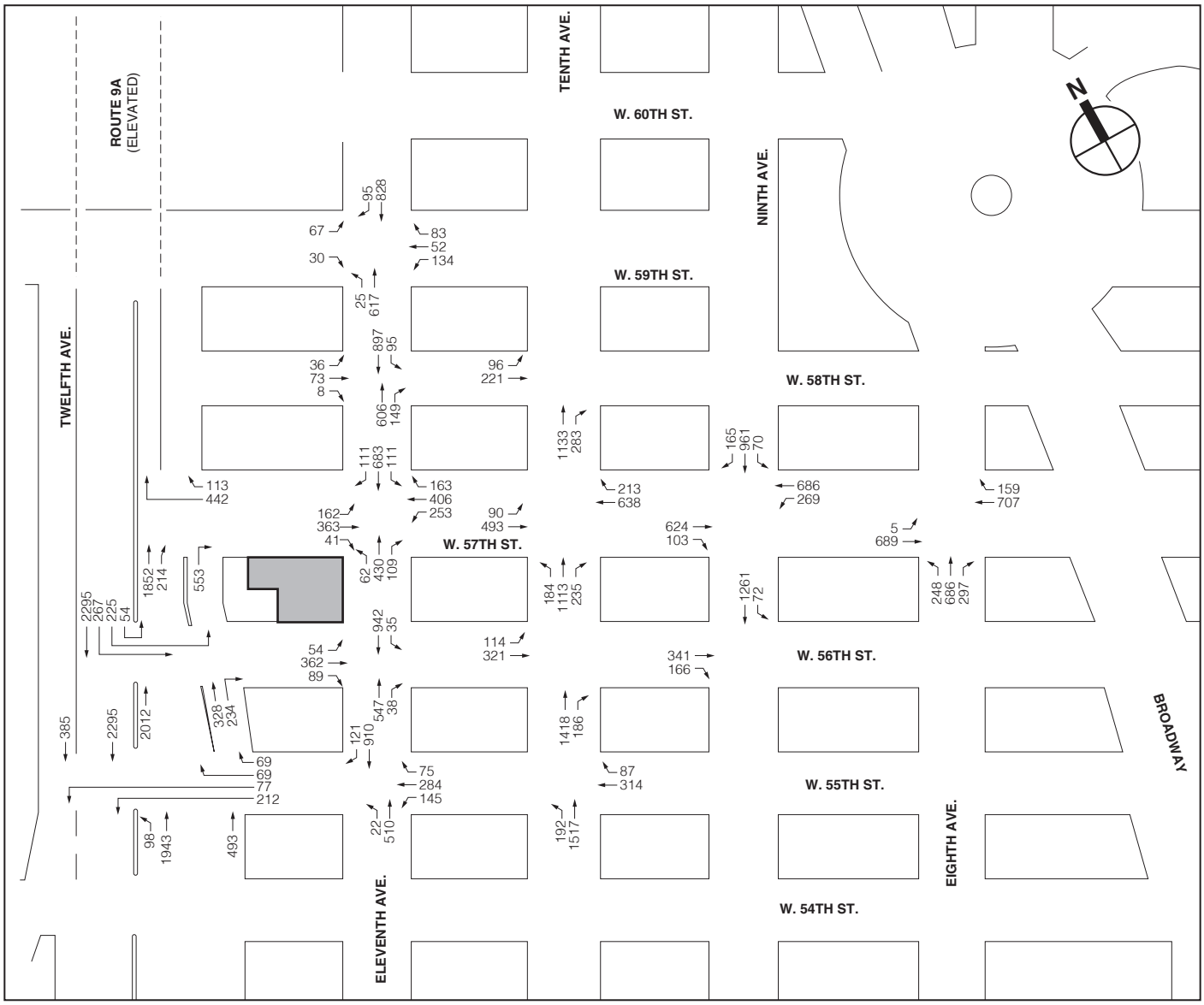


Project Site

2017 With Action Traffic Volumes
Weekday AM Peak Hour

606 WEST 57TH STREET

Figure 11-20

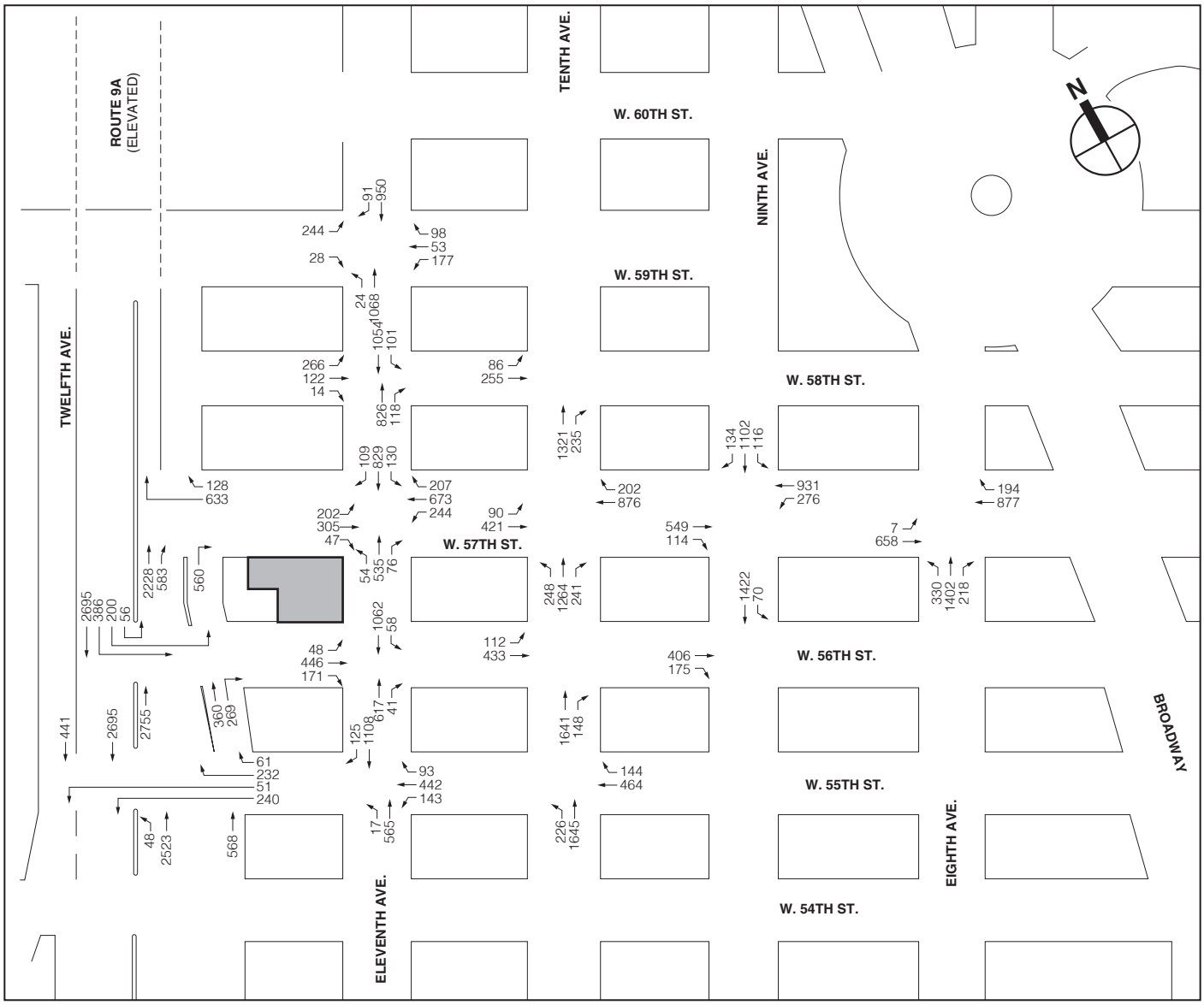


Project Site

2017 With Action Traffic Volumes
Weekday Midday Peak Hour

606 WEST 57TH STREET

Figure 11-21

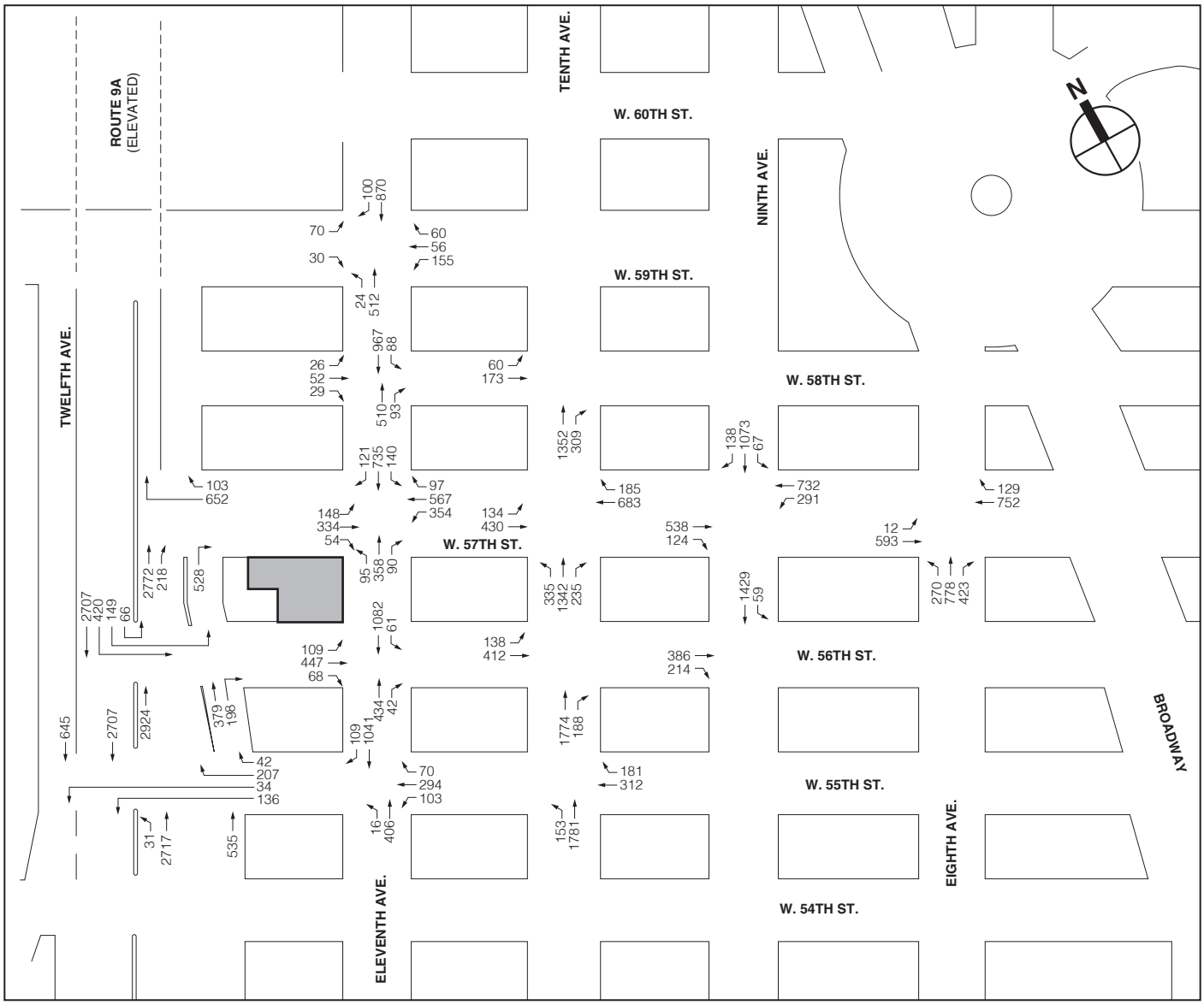


Project Site

2017 With-Action Traffic Volumes
Weekday PM Peak Hour

606 WEST 57TH STREET

Figure 11-22



2017 With-Action Traffic Volumes
Saturday Peak Hour

606 WEST 57TH STREET

Figure 11-23

SIGNIFICANT ADVERSE IMPACTS

As shown in **Tables 11-20 and 11-21** and discussed below, significant adverse traffic impacts were identified at 24 approaches/lane groups (of 13 different intersections). Potential measures that can be implemented to mitigate these significant adverse traffic impacts are discussed in Chapter 19, "Mitigation."

Twelfth Avenue

- The westbound right-turn at the Twelfth Avenue and West 57th Street intersection would deteriorate from LOS E (v/c ratio 0.96 and 76.2 spv of delay) to LOS F (v/c ratio of 1.00 and 87.2 spv of delay), an increase in delay of more than four seconds, during the weekday PM peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound (mainline) left-turn at Twelfth Avenue and West 56th Street intersection would deteriorate from LOS E (v/c ratio of 0.94 and 79.1 spv of delay) to LOS F (v/c ratio of 0.97 and 84.1 spv of delay), and from LOS E (v/c ratio of 0.99 and 79.7 spv of delay) to LOS F (v/c ratio of 1.02 and 87.5 spv of delay), increases in delay of more than four seconds, during the weekday PM and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound left-turn at Twelfth Avenue and West 55th Street intersection would deteriorate from LOS E (v/c ratio of 0.81 and 78.8 spv of delay) to LOS F (v/c ratio of 0.87 and of 86.1 spv of delay), from LOS E (v/c ratio of 0.93 and 78.3 spv of delay) to LOS F (v/c ratio of 0.99 and 90.5 spv of delay), and within LOS F (from a v/c ratio of 1.02 and 118.1 spv of delay to a v/c ratio of 1.08 and 136.1 spv of delay), increases in delay of more than four seconds, four seconds, and three seconds, during the weekday AM, midday, and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Eleventh Avenue

- The southbound left-turn at Eleventh Avenue and West 58th Street intersection would deteriorate from LOS D (v/c ratio of 0.78 and 49.2 spv of delay) to LOS E (v/c ratio of 0.84 and 60.2 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 eastbound left-turn at the Eleventh Avenue and West 57th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.02 and 97.2 spv of delay to a v/c ratio of 1.07 and 111.6 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 left-turn at the Eleventh Avenue and West 57th Street intersection would deteriorate from LOS E (v/c ratio of 0.87 and 60.9 spv of delay) to LOS F (v/c ratio of 0.98 and 88.0 spv of delay), from LOS D (v/c ratio of 0.86 and 50.6 spv of delay) to LOS E (v/c ratio of 0.98 and 78.4 spv of delay), from LOS D (v/c ratio of 0.80 and 43.0 spv of delay) to LOS E (v/c ratio of 0.91 and 61.5 spv of delay), and within LOS F (from a v/c ratio of 1.13 and 119.8 spv of delay to v/c ratio of 1.27 and 173.6 spv of delay), increases in delay of more than four seconds, five seconds, five seconds, and three seconds, during the weekday AM, midday, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Table 11-20
2017 No Action and With Action Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
12th Avenue (Route 9A) & West 57th Street																																
WB	R	0.47	35.1	D	R	0.49	35.6	D	R	0.60	40.7	D	R	0.65	41.8	D	R	0.96	76.2	E	R	1.00	87.2	F+	R	0.73	43.9	D	R	0.77	45.5	D
NB (Mainline)	T	0.56	23.9	C	T	0.56	24.0	C	T	0.50	12.2	B	T	0.50	12.2	B	T	0.60	5.3	A	T	0.60	5.4	A	T	0.65	14.4	B	T	0.65	14.4	B
	Int.		26.4	C	Int.		26.6	C	Int.		17.8	B	Int.		18.3	B	Int.		21.2	C	Int.		24.4	C	Int.		20.3	C	Int.		20.9	C
12th Avenue (Route 9A) & West 56th Street																																
NB (Mainline)	T	0.82	38.8	D	T	0.82	38.9	D	T	0.57	10.9	B	T	0.57	10.9	B	T	0.72	6.2	A	T	0.72	6.3	A	T	0.74	14.0	B	T	0.74	14.0	B
SB (Mainline)	L	0.88	38.2	D	L	0.89	39.1	D	L	0.84	57.3	E	L	0.87	60.1	E	L	0.94	79.1	E	L	0.97	84.1	F+	L	0.99	79.7	E	L	1.02	87.5	F+
NB (Service Road)	TR	0.45	29.3	C	TR	0.48	30.1	C	TR	0.34	8.8	A	TR	0.37	9.1	A	TR	0.40	4.2	A	TR	0.43	4.4	A	TR	0.32	8.5	A	TR	0.35	8.8	A
	Int.		37.4	D	Int.		37.8	D	Int.		18.6	B	Int.		19.2	B	Int.		17.6	B	Int.		18.6	B	Int.		23.2	C	Int.		24.6	C
12th Avenue (Route 9A) & West 55th Street																																
WB	L	0.81	78.8	E	L	0.87	86.1	F+	L	0.93	78.3	E	L	0.99	90.5	F+	L	1.02	118.1	F	L	1.08	136.1	F+	L	0.44	42.3	D	L	0.48	43.3	D
	R	0.31	53.5	D	R	0.35	54.5	D	R	0.24	37.7	D	R	0.30	38.6	D	R	0.63	61.8	E	R	0.68	64.1	E	R	0.40	40.1	D	R	0.44	40.9	D
NB (Mainline)	L	0.84	132.7	F	L	0.84	132.7	F	L	0.85	101.6	F	L	0.85	101.6	F	L	0.50	83.6	F	L	0.50	83.6	F	L	0.24	55.9	E	L	0.24	55.9	E
	T	0.49	9.1	A	T	0.49	9.1	A	T	0.56	11.6	B	T	0.56	11.6	B	T	0.62	2.8	A	T	0.62	2.8	A	T	0.71	14.2	B	T	0.71	14.2	B
SB (Mainline)	T	1.00	26.6	C	T	1.00	26.6	C	T	0.76	23.8	C	T	0.76	23.8	C	T	0.78	22.1	C	T	0.78	22.1	C	T	0.91	30.4	C	T	0.91	30.4	C
NB (Service Road)	T	0.37	8.5	A	T	0.39	8.7	A	T	0.48	11.8	B	T	0.51	12.3	B	T	0.54	3.6	A	T	0.57	3.9	A	T	0.51	12.1	B	T	0.53	12.5	B
SB (Service Road)	T	0.29	5.9	A	T	0.29	5.9	A	T	0.23	15.2	B	T	0.24	15.3	B	T	0.22	12.4	B	T	0.23	12.4	B	T	0.44	17.8	B	T	0.44	17.9	B
	Int.		22.2	C	Int.		22.2	C	Int.		22.3	C	Int.		23.1	C	Int.		18.2	B	Int.		19.3	B	Int.		22.3	C	Int.		22.5	C
11th Avenue & West 59th Street																																
EB	LR	0.76	46.1	D	LR	0.76	46.5	D	LR	0.36	25.1	C	LR	0.36	25.1	C	LR	1.24	163.1	F	LR	1.24	163.1	F	LR	0.37	25.3	C	LR	0.37	25.3	C
WB	L	0.29	23.0	C	L	0.29	23.0	C	L	0.29	23.0	C	L	0.29	23.0	C	L	0.38	24.3	C	L	0.38	24.4	C	L	0.37	24.3	C	L	0.37	24.3	C
	TR	0.44	25.5	C	TR	0.44	25.6	C	TR	0.28	22.7	C	TR	0.28	22.7	C	TR	0.31	23.3	C	TR	0.31	23.3	C	TR	0.26	22.3	C	TR	0.26	22.3	C
NB	L	0.12	11.2	B	L	0.13	11.3	B	L	0.12	11.1	B	L	0.13	11.3	B	L	0.19	13.3	B	L	0.20	13.7	B	L	0.16	12.1	B	L	0.16	12.3	B
	T	0.56	15.0	B	T	0.57	15.2	B	T	0.41	12.8	B	T	0.42	13.0	B	T	0.74	18.7	B	T	0.76	19.2	B	T	0.36	12.3	B	T	0.38	12.5	B
SB	T	0.54	14.6	B	T	0.55	14.8	B	T	0.54	14.6	B	T	0.56	14.9	B	T	0.71	18.1	B	T	0.73	18.6	B	T	0.63	16.2	B	T	0.65	16.6	B
	R	0.30	12.3	B	R	0.30	12.3	B	R	0.16	10.7	B	R	0.16	10.7	B	R	0.18	11.0	B	R	0.18	11.0	B	R	0.18	11.0	B	R	0.18	11.0	B
	Int.		18.4	B	Int.		18.5	B	Int.		15.6	B	Int.		15.7	B	Int.		34.4	C	Int.		34.5	C	Int.		16.5	B	Int.		16.6	B
11th Avenue & West 58th Street																																
EB	LTR	0.25	21.8	C	LTR	0.26	21.9	C	LTR	0.13	20.5	C	LTR	0.14	20.7	C	LTR	0.46	24.6	C	LTR	0.47	24.8	C	LTR	0.13	20.5	C	LTR	0.15	20.7	C
NB	TR	0.75	19.7	B	TR	0.77	20.3	C	TR	0.57	15.2	B	TR	0.59	15.6	B	TR	0.74	19.2	B	TR	0.77	20.1	C	TR	0.43	13.1	B	TR	0.44	13.3	B
SB	L	0.54	25.3	C	L	0.57	27.3	C	L	0.43	17.9	B	L	0.45	19.0	B	L	0.78	49.2	D	L	0.84	60.2	E+	L	0.33	14.3	B	L	0.34	14.8	B
	T	0.67	17.3	B	T	0.69	17.7	B	T	0.63	16.4	B	T	0.65	16.8	B	T	0.83	22.8	C	T	0.85	23.8	C	T	0.71	18.2	B	T	0.73	18.7	B
	Int.		19.2	B	Int.		19.6	B	Int.		16.2	B	Int.		16.7	B	Int.		22.8	C	Int.		24.0	C	Int.		16.5	B	Int.		16.9	B

Table 11-20 (cont'd)
2017 No Action and With Action Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
11th Avenue & West 57th Street																																
EB	L	1.02	97.2	F	L	1.07	111.6	F+	L	0.66	30.3	C	L	0.73	36.2	D	L	1.06	102.0	F	L	1.07	104.0	F	L	0.71	34.7	C	L	0.78	41.7	D
	TR	0.71	33.0	C	TR	0.77	35.7	D	TR	0.46	27.4	C	TR	0.54	28.9	C	TR	0.45	27.3	C	TR	0.53	28.9	C	TR	0.45	27.3	C	TR	0.54	28.9	C
WB	L	0.87	60.9	E	L	0.98	88.0	F+	L	0.86	50.6	D	L	0.98	78.4	E+	L	0.80	43.0	D	L	0.91	61.5	E+	L	1.13	119.8	F	L	1.27	173.6	F+
	TR	0.92	49.5	D	TR	0.98	60.5	E+	TR	0.75	35.1	D	TR	0.85	41.3	D	TR	1.16	119.4	F	TR	1.28	167.1	F+	TR	0.84	39.8	D	TR	0.91	45.9	D+
NB	L	0.28	21.2	C	L	0.31	22.7	C	L	0.38	23.0	C	L	0.49	28.5	C	L	0.46	30.5	C	L	0.60	41.9	D	L	0.82	62.7	E	L	0.94	88.2	F+
	TR	0.56	20.5	C	TR	0.59	21.1	C	TR	0.52	19.7	B	TR	0.56	20.5	C	TR	0.55	20.2	C	TR	0.58	20.8	C	TR	0.45	18.6	B	TR	0.47	19.0	B
SB	L	0.71	38.7	D	L	0.75	43.9	D	L	0.52	26.4	C	L	0.57	29.6	C	L	0.74	43.1	D	L	0.80	51.5	D+	L	0.64	31.9	C	L	0.67	34.5	C
	TR	0.81	28.3	C	TR	0.84	30.0	C	TR	0.70	23.9	C	TR	0.76	25.8	C	TR	0.90	35.0	D	TR	0.94	39.2	D	TR	0.81	28.2	C	TR	0.84	30.0	C
	Int.		38.8	D	Int.		44.7	D	Int.		28.5	C	Int.		33.7	C	Int.		57.5	E	Int.		73.3	E	Int.		41.1	D	Int.		50.2	D
11th Avenue & West 56th Street																																
EB	LTR	0.84	35.1	D	LTR	0.90	40.4	D	LTR	0.56	26.4	C	LTR	0.63	28.2	C	LTR	0.75	31.9	C	LTR	0.82	35.7	D	LTR	0.69	29.7	C	LTR	0.76	32.4	C
NB	TR	0.38	12.6	B	TR	0.40	12.8	B	TR	0.43	13.2	B	TR	0.45	13.5	B	TR	0.51	14.1	B	TR	0.54	14.6	B	TR	0.38	12.6	B	TR	0.41	12.8	B
SB	L	0.17	11.4	B	L	0.18	11.6	B	L	0.13	11.0	B	L	0.15	11.3	B	L	0.25	13.3	B	L	0.27	14.0	B	L	0.22	12.3	B	L	0.24	12.7	B
	T	0.59	15.4	B	T	0.61	15.7	B	T	0.66	16.8	B	T	0.69	17.4	B	T	0.68	17.2	B	T	0.70	17.7	B	T	0.72	18.0	B	T	0.74	18.6	B
	Int.		22.1	C	Int.		24.2	C	Int.		17.9	B	Int.		18.8	B	Int.		20.1	C	Int.		21.5	C	Int.		19.7	B	Int.		20.7	C
11th Avenue & West 55th Street																																
WB	LTR	0.71	34.4	C	LTR	0.75	36.0	D	LTR	0.86	43.9	D	LTR	0.94	54.1	D+	LTR	0.90	47.0	D	LTR	0.96	55.8	E+	LTR	0.64	32.1	C	LTR	0.69	33.6	C
NB	L	0.17	9.9	A	L	0.18	10.4	B	L	0.14	9.4	A	L	0.15	9.8	A	L	0.11	9.2	A	L	0.13	9.8	A	L	0.15	10.6	B	L	0.18	11.7	B
	T	0.28	9.1	A	T	0.30	9.3	A	T	0.37	9.9	A	T	0.39	10.1	B	T	0.34	9.6	A	T	0.36	9.7	A	T	0.26	8.9	A	T	0.28	9.1	A
SB	TR	0.59	12.6	B	TR	0.62	13.2	B	TR	0.61	13.0	B	TR	0.65	13.7	B	TR	0.72	15.2	B	TR	0.75	16.3	B	TR	0.77	16.8	B	TR	0.81	18.3	B
	Int.		17.4	B	Int.		18.1	B	Int.		20.3	C	Int.		23.4	C	Int.		22.4	C	Int.		25.2	C	Int.		18.5	B	Int.		19.7	B
10th Avenue & West 58th Street																																
EB	LT	0.87	49.1	D	LT	0.90	52.6	D	LT	0.88	50.0	D	LT	0.92	56.4	E+	LT	0.91	55.4	E	LT	0.95	63.1	E+	LT	0.59	30.7	C	LT	0.63	32.1	C
NB	TR	0.55	13.5	B	TR	0.55	13.6	B	TR	0.63	14.8	B	TR	0.63	15.0	B	TR	0.47	12.5	B	TR	0.48	12.6	B	TR	0.65	15.1	B	TR	0.65	15.2	B
	Int.		20.0	C	Int.		20.8	C	Int.		21.7	C	Int.		23.3	C	Int.		20.4	C	Int.		22.2	C	Int.		17.1	B	Int.		17.4	B
10th Avenue & West 57th Street																																
EB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DefL	1.16	160.9	F	DefL	1.31	221.3	F+
	LT	1.29	170.7	F	LT	1.39	215.4	F+	LT	1.18	126.6	F	LT	1.33	187.6	F+	LT	1.10	98.5	F	LT	1.22	142.3	F+	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	0.74	32.3	C	T	0.82	37.3	D
WB	TR	1.14	104.5	F	TR	1.18	119.9	F+	TR	1.05	70.7	E	TR	1.11	93.4	F+	TR	1.14	102.8	F	TR	1.20	126.6	F+	TR	0.89	38.4	D	TR	0.94	45.3	D+
NB	LTR	0.70	18.8	B	LTR	0.71	18.9	B	LTR	0.67	18.5	B	LTR	0.69	18.8	B	LTR	0.62	17.3	B	LTR	0.63	17.5	B	LTR	0.83	22.8	C	LTR	0.85	23.4	C
	Int.		73.3	E	Int.		88.5	F	Int.		57.0	E	Int.		79.0	E	Int.		56.6	E	Int.		72.7	E	Int.		33.2	C	Int.		38.4	D
10th Avenue & West 56th Street																																
EB	LT	1.20	135.6	F	LT	1.24	152.7	F+	LT	0.91	50.2	D	LT	0.98	64.0	E+	LT	1.01	71.6	E	LT	1.08	90.8	F+	LT	1.15	118.3	F	LT	1.22	146.0	F+
NB	TR	0.60	14.2	B	TR	0.61	14.3	B	TR	0.72	16.5	B	TR	0.73	16.8	B	TR	0.43	11.9	B	TR	0.43	12.0	B	TR	0.73	16.7	B	TR	0.74	16.9	B
	Int.		46.1	D	Int.		51.0	D	Int.		23.6	C	Int.		27.0	C	Int.		25.5	C	Int.		30.4	C	Int.		40.6	D	Int.		47.9	D
10th Avenue & West 55th Street																																
WB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	1.09	98.5	F	T	1.14	115.5	F+	-	-	-	-	-	-	-	-
	TR	0.79	38.8	D	TR	0.82	41.5	D	TR	0.90	50.8	D	TR	0.97	63.8	E+	-	-	-	-	-	-	-	-	TR	1.08	94.8	F	TR	1.16	123.8	F+
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	0.51	29.4	C	R	0.56	32.0	C	-	-	-	-	-	-	-	-
NB	LT	0.61	14.4	B	LT	0.62	14.4	B	LT	0.65	15.1	B	LT	0.66	15.3	B	LT	0.53	13.2	B	LT	0.54	13.3	B	LT	0.69	15.8	B	LT	0.70	16.0	B
	Int.		18.4	B	Int.		19.0	B	Int.		22.2	C	Int.		25.4	C	Int.		31.4	C	Int.		35.6	D	Int.		32.0	C	Int.		38.6	D

Table 11-20 (cont'd)
2017 No Action and With Action Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
9th Avenue & West 57th Street																																
EB	T	1.21	143.1	F	T	1.26	160.5	F+	T	0.91	50.7	D	T	0.96	58.3	E+	T	0.85	44.9	D	T	0.90	49.1	D	T	0.72	36.5	D	T	0.76	37.9	D
	R	0.65	47.3	D	R	0.72	53.2	D+	R	0.56	41.4	D	R	0.69	52.3	D+	R	0.70	52.9	D	R	0.86	76.9	E+	R	0.62	44.0	D	R	0.74	54.8	D+
WB	DefL	1.05	89.5	F	DefL	1.05	84.5	F	DefL	0.97	65.4	E	DefL	0.97	67.5	E	-	-	-	-	-	-	-	-	DefL	0.89	44.2	D	DefL	0.92	49.1	D
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LT	1.11	86.1	F	LT	1.16	103.4	F+	-	-	-	-	-	-	-	-
	T	1.14	102.4	F	T	1.18	118.6	F+	T	1.07	78.6	E	T	1.12	96.9	F+	-	-	-	-	-	-	-	-	T	1.04	67.9	E	T	1.10	86.5	F+
SB	L	0.23	23.5	C	L	0.24	23.8	C	L	0.29	25.6	C	L	0.30	25.8	C	L	0.47	30.3	C	L	0.48	30.7	C	L	0.34	27.3	C	L	0.34	27.6	C
	TR	0.68	27.9	C	TR	0.69	28.0	C	TR	0.84	34.2	C	TR	0.85	34.8	C	TR	0.63	27.4	C	TR	0.63	27.5	C	TR	0.81	32.4	C	TR	0.81	32.6	C
	Int.		80.0	F	Int.		88.4	F	Int.		51.1	D	Int.		58.1	E	Int.		52.8	D	Int.		61.1	E	Int.		43.1	D	Int.		49.2	D
9th Avenue & West 56th Street																																
EB	TR	1.23	146.4	F	TR	1.26	160.7	F+	TR	0.88	42.9	D	TR	0.94	50.6	D+	TR	1.06	82.7	F	TR	1.12	101.0	F+	TR	1.17	125.2	F	TR	1.23	148.2	F+
SB	L	0.09	9.7	A	L	0.09	9.7	A	L	0.14	12.7	B	L	0.15	12.7	B	L	0.20	13.8	B	L	0.20	13.8	B	L	0.07	9.4	A	L	0.07	9.4	A
	T	0.42	12.0	B	T	0.42	12.0	B	T	0.53	16.1	B	T	0.53	16.2	B	T	0.45	14.9	B	T	0.45	15.0	B	T	0.52	13.1	B	T	0.52	13.2	B
	Int.		57.2	E	Int.		62.4	E	Int.		23.5	C	Int.		25.9	C	Int.		33.9	C	Int.		39.6	D	Int.		44.2	D	Int.		51.3	D
8th Avenue & West 57th Street																																
EB	LT	0.96	48.1	D	LT	0.99	54.6	D+	LT	0.86	35.2	D	LT	0.90	38.8	D	LT	0.77	30.4	C	LT	0.81	32.6	C	LT	0.63	25.2	C	LT	0.65	25.9	C
WB	TR	1.02	61.6	E	TR	1.04	69.6	E+	TR	1.00	57.3	E	TR	1.03	65.3	E+	TR	1.11	92.1	F	TR	1.14	103.3	F+	TR	0.96	47.9	D	TR	1.00	55.0	E+
NB	LTR	0.54	16.3	B	LTR	0.54	16.3	B	LTR	0.54	16.3	B	LTR	0.54	16.4	B	LTR	0.72	19.0	B	LTR	0.72	19.1	B	LTR	0.73	20.0-	B	LTR	0.74	20.1	C
	Int.		38.5	D	Int.		43.0	D	Int.		34.2	C	Int.		37.9	D	Int.		41.3	D	Int.		45.2	D	Int.		29.5	C	Int.		32.0	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, Int. = Intersection
+ Denotes a significant adverse traffic impact

Table 11-21
2017 No Action and With Action Conditions Level of Service Analysis
Unsignalized Intersections

Intersection	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action				2017 No Action				2017 With Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
12th Avenue (Route 9A) & West 57th Street																																
NB (Service Road)	R	0.79	20.0	C	R	0.82	21.9	C	R	0.59	13.4	B	R	0.63	14.2	B	R	0.60	13.6	B	R	0.65	14.7	B	R	0.55	12.5	B	R	0.60	13.3	B

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

- The westbound through/right-turn at the Eleventh Avenue and West 57th Street intersection would deteriorate from LOS D (v/c ratio of 0.92 and 49.5 spv of delay) to LOS E (v/c ratio of 0.98 and 60.5 spv of delay), within LOS F (from a v/c ratio of 1.16 and 119.4 spv of delay to a v/c ratio of 1.28 and 167.1 spv of delay), and within LOS D (from a v/c ratio of 0.84 and 39.8 spv of delay to a v/c ratio of 0.91 and 45.9 spv of delay), increases in delay of more than five seconds, three seconds, and five seconds, during the weekday AM, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The northbound left-turn at the Eleventh Avenue and West 57th Street intersection would deteriorate from LOS E (v/c ratio of 0.82 and 62.7 spv of delay) to LOS F (v/c ratio of 0.94 and 88.2 spv of delay), an increase in delay of more than four seconds, during the Saturday peak hour. This projected increase in delay constitutes a significant adverse impact.
- The southbound left-turn at the Eleventh Avenue and West 57th Street intersection would deteriorate within LOS D (from a v/c ratio of 0.74 and 43.1 spv of delay to a v/c ratio of 0.80 and 51.5 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 approach at the Eleventh Avenue and West 55th Street intersection would deteriorate within LOS D (from v/c ratio of 0.86 and 43.9 spv of delay to a v/c ratio of 0.94 and 54.1 spv of delay), and from LOS D (v/c ratio of 0.90 and 47.0 spv of delay) to LOS E (v/c ratio of 0.96 and 55.8 spv of delay), increases in delay of more than five seconds, and five seconds, during the weekday midday and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Tenth Avenue

- The eastbound approach at the Tenth Avenue and West 58th Street intersection would deteriorate from LOS D (v/c ratio of 0.88 and 50.0 spv of delay) to LOS E (v/c ratio of 0.92 and 56.4 spv of delay), and within LOS E (from a v/c ratio of 0.91 and 55.4 spv of delay to a v/c ratio of 0.95 and 63.1 spv of delay), increases in delay of more than five seconds and four seconds, during the weekday midday and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The eastbound defacto left-turn at the Tenth Avenue and West 57th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.16 and 160.9 spv of delay to a v/c ratio of 1.31 and 221.3 spv of delay), an increase in delay of more than three seconds, during the Saturday peak hour. This projected increase in delay constitutes a significant adverse impact.
- The eastbound approach at the Tenth Avenue and West 57th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.29 and 170.7 spv of delay to a v/c ratio of 1.39 and 215.4 spv of delay), within LOS F (from a v/c ratio of 1.18 and 126.6 spv of delay to a v/c ratio of 1.33 and 187.6 spv of delay), and within LOS F (from a v/c ratio of 1.10 and 98.5 spv of delay to a v/c ratio of 1.22 and 142.3 spv of delay), increases in delay of more than three seconds, three seconds, and three seconds, during the weekday AM, midday, and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound approach at the Tenth Avenue and West 57th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.14 and 104.5 spv of delay to a v/c ratio of 1.18 and 119.9 spv of delay), from LOS E (v/c ratio of 1.05 and 70.7 spv of delay) to LOS F (v/c ratio of 1.11 and 93.4 spv of delay), within LOS F (from a v/c ratio of 1.14 and 102.8

spv of delay to a v/c ratio of 1.20 and 126.6 spv of delay), and within LOS D (from a v/c ratio of 0.89 and 38.4 spv of delay to a v/c ratio of 0.94 and 45.3 spv of delay), increases in delay of more than three seconds, four seconds, three seconds, and five seconds during the weekday AM, midday, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

- The eastbound approach at the Tenth Avenue and West 56th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.20 and 135.6 spv of delay to a v/c ratio of 1.24 and 152.7 spv of delay), from LOS D (v/c ratio of 0.91 and 50.2 spv of delay) to LOS E (v/c ratio of 0.98 and 64.0 spv of delay), from LOS E (v/c ratio of 1.01 and 71.6 spv of delay) to LOS F (v/c ratio of 1.08 and 90.8 spv of delay), and within LOS F (from a v/c ratio of 1.15 and 118.3 spv of delay to a v/c ratio of 1.22 and 146.0 spv of delay), increases in delay of more than three seconds, five seconds, four seconds, and three seconds, during the weekday AM, midday, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound through at the Tenth Avenue and West 55th Street intersection would deteriorate within LOS F (from v/c ratio of 1.09 and 98.5 spv of delay to a v/c ratio of 1.14 and 115.5 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 westbound approach at the Tenth Avenue and West 55th Street intersection would deteriorate from LOS D (v/c ratio of 0.90 and 50.8 spv of delay) to LOS E (v/c ratio of 0.97 and 63.8 spv of delay) and within LOS F (from a v/c ratio of 1.08 and 94.8 spv of delay to a v/c ratio of 1.16 and 123.8 spv of delay), increases in delay of more than five seconds and three seconds, during the weekday midday and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Ninth Avenue

- The eastbound through at the Ninth Avenue and West 57th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.21 and 143.1 spv of delay to a v/c ratio of 1.26 and 160.5 spv of delay), and from LOS D (v/c ratio of 0.91 and 50.7 spv of delay) to LOS E (v/c ratio of 0.96 and 58.3 spv of delay), increases in delay of more than three seconds and five seconds, during the weekday AM and midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The eastbound right-turn at the Ninth Avenue and West 57th Street intersection would deteriorate within LOS D (from a v/c ratio of 0.65 and 47.3 spv of delay to v/c ratio of 0.72 and 53.2 spv of delay), within LOS D (from a v/c ratio of 0.56 and 41.4 spv of delay to a v/c ratio of 0.69 and 52.3 spv of delay), from LOS D (v/c ratio of 0.70 and 52.9 spv of delay) to LOS E (v/c ratio of 0.86 and 76.9 spv of delay), and within LOS D (from a v/c ratio of 0.62 and 44.0 spv of delay to a v/c ratio of 0.74 and 54.8 spv of delay), increases in delay of more than five seconds, during the weekday AM, midday, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.
- The westbound approach at the Ninth Avenue and West 57th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.11 and 86.1 spv of delay to a v/c ratio of 1.16 and 103.4 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 westbound through at the Ninth Avenue and West 57th Street intersection would deteriorate within LOS F (from a v/c ratio of 1.14 and 102.4 spv of delay to a v/c ratio of

1.18 and 118.6 spv of delay), from LOS E (v/c ratio of 1.07 and 78.6 spv of delay) to LOS F (v/c ratio 1.12 and 96.9 spv of delay), from LOS E (v/c ratio of 1.04 and 67.9 spv of delay) to LOS F (v/c ratio 1.10 and 86.5 spv of delay), increases in delay of more than three seconds, four seconds, and four seconds, during the weekday AM, midday, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

- The eastbound approach at the Ninth Avenue and West 56th Street intersection would deteriorate within LOS F (v/c ratio of 1.23 and 146.4 spv of delay to a v/c ratio of 1.26 and 160.7 spv of delay), within LOS D (v/c ratio of 0.88 and 42.9 spv of delay to a v/c ratio of 0.94 and 50.6 spv of delay), within LOS F (from a v/c ratio of 1.06 and 82.7 spv of delay to a v/c ratio of 1.12 and 101.0 spv of delay), and within LOS F (from a v/c ratio of 1.17 and 125.2 spv of delay to a v/c ratio of 1.23 and 148.2 spv of delay), increases in delay of more than three seconds, five seconds, three seconds, and three seconds, during the weekday AM, midday, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

Eighth Avenue

- The eastbound approach at the Eighth Avenue and West 57th Street intersection would deteriorate within LOS D (from a v/c ratio of 0.96 and 48.1 spv of delay to a v/c ratio of 0.99 and 54.6 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.
- The westbound approach at the Eighth Avenue and West 57th Street intersection would deteriorate within LOS E (from a v/c ratio of 1.02 and 61.6 spv of delay to a v/c ratio of 1.04 and 69.6 spv of delay), within LOS E (from a v/c ratio of 1.00 and 57.3 spv of delay to a v/c ratio of 1.03 and 65.3 spv of delay), within LOS F (from a v/c ratio of 1.11 and 92.1 spv of delay to a v/c ratio of 1.14 and 103.3 spv of delay), and from LOS D (v/c ratio of 0.96 and 47.9 spv of delay) to LOS E (v/c ratio of 1.00 and 55.0 spv of delay), increases in delay of more than four seconds, four seconds, three seconds, and five seconds, during the weekday AM, midday, PM, and Saturday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

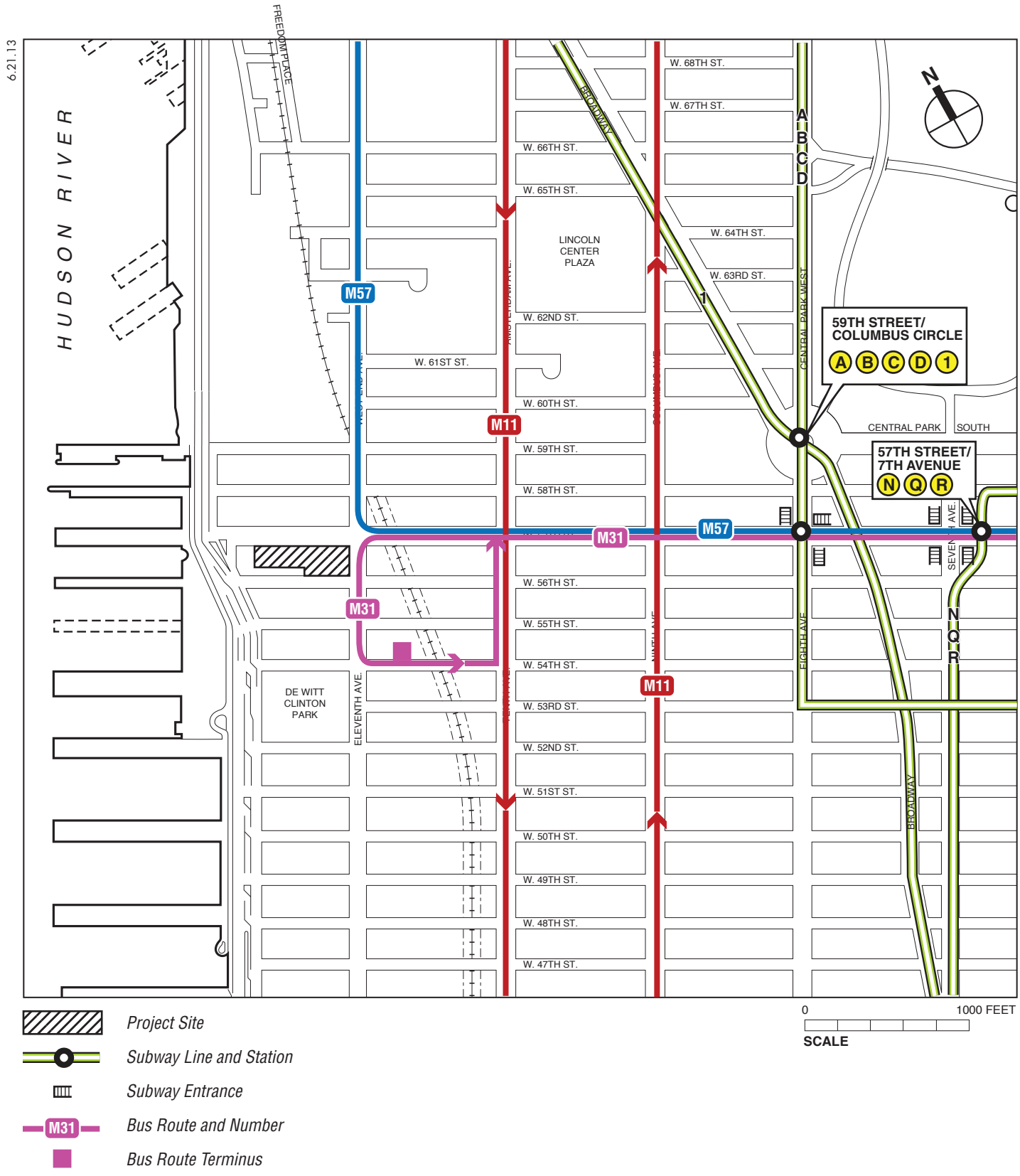
G. TRANSIT

The project site is located near two New York City Transit (NYCT) subway stations: 1) 57th Street at Seventh Avenue Station (N, Q, and R trains), and 2) 59th Street Columbus Circle Station (No. 1, A, B, C, and D trains). Subway lines at these stations provide convenient connections to other subway lines and the various railroad services at Penn Station. Therefore, most projected subway and rail trips are expected to be served by these stations. 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 a summary of the subway lines that would most likely serve the project site. Subway lines serving stations further away are shown in **Figure 11-24** but are not included in the description below.



606 WEST 57TH STREET

Study Area Transit Map
Figure 11-24

- The A subway line (Eighth Avenue Express) operates between Far Rockaway-Mott Avenue, Queens and Inwood-207th Street, Manhattan.
- The B subway line (Central Park West Local/Sixth Avenue Express) operates between Bedford Park Boulevard, Bronx and Brighton Sixth Street, Brooklyn.
- The C subway line (Eighth Avenue Local) operates between Euclid Avenue, Brooklyn and 168th Street, Manhattan.
- The D subway line (Sixth Avenue Express) operates between 205th Street/Bainbridge Avenue, Bronx and Coney Island/Stillwell Avenue, Brooklyn.
- The N subway line (Broadway Local) operates between Coney Island-Stillwell Avenue, Brooklyn and Astoria-Ditmars Boulevard, Queens.
- 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.

BUS SERVICE

The NYCT M11, M31 and M57 routes have stops adjacent to or near the project site (see **Figure 11-24**). These routes operate standard buses with a guideline capacity of 54 passengers per bus. **Table 11-22** provides a summary of these routes and their peak period schedules.

Table 11-22
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	PM
M11 (NB/SB)	Greenwich Village	Harlem	9th Avenue and 10th Avenue	(13/8-9)	(8-10/11-12)
M31 (EB/WB)	Yorkville – York Avenue and East 92nd Street	Clinton – Eleventh Avenue and West 54th Street	West 57th Street	(12/8)	(9/9)
M57 (EB/WB)	Upper West Side – Broadway and West 72nd Street	East Midtown – East 60th Street and York Avenue	West 57th Street	(9/8)	(8/8)

Source: NYCT Timetables (2012/2013).

SUBWAY STATION ANALYSIS

EXISTING CONDITIONS

As presented in Section B under "Level 1 Screening Assessment," the proposed actions are expected to generate approximately 476 and 650 subway trips during the AM and PM peak hours, respectively. These trips were assigned to the eight area subway lines, and critical station elements, including station control areas and stairways were identified for analysis.

Field surveys were conducted at the 57th Street - Seventh Avenue (N, Q, and R) Station, and the 59th Street – Columbus Circle (1, A, B, C, and D) Station in February 2013 during the hours of 7:00 AM to 9:30 AM and 4:00 PM to 6:30 PM. As shown in **Table 11-23** and **Table 11-24**, all critical subway station elements operate at LOS A, B, or C during the weekday AM and PM peak periods.

Table 11-23
2013 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								
Columbus Circle/59th Street (A/B/C/D/1 line) - N051								
Street-Level								
O-22 A, B (NW corner)	8.1	6.9	26	41	0.95	0.90	0.07	A
S-2 (NE corner)	5.8	4.8	11	84	0.95	0.90	0.15	A
O5 A, B (SE corner)	8.0	6.8	33	333	0.95	0.90	0.42	A
Platform-Level								
P-1 A, B (Downtown)	11.0	9.8	248	160	0.75	0.90	0.35	A
P-3 A, B (Uptown)	9.0	7.8	65	540	0.75	0.90	0.75	C
57th Street/7th Avenue Station (N/Q/R line) –A010								
Street-Level								
S-7 (NW corner)	5.7	4.7	58	365	0.95	0.90	0.70	B
S-5 (SW corner)	5.7	4.7	52	183	0.95	0.90	0.39	A
Platform-Level								
P-5 A, B (Downtown)	9.5	8.3	127	573	0.75	0.90	0.80	C
P-6 A, B (Uptown)	11.5	10.3	58	331	0.75	0.90	0.36	A
Weekday PM Peak 15 Minutes								
Columbus Circle/59th Street (A/B/C/D/1 line) - N051								
Street-Level								
O-22 A, B (NW corner)	8.1	6.9	54	14	0.95	0.90	0.07	A
S-2 (NE corner)	5.8	4.8	90	20	0.95	0.90	0.17	A
O5 A, B (SE corner)	8.0	6.8	199	82	0.95	0.90	0.31	A
Platform-Level								
P-1 A, B (Downtown)	11.0	9.8	805	58	0.75	0.90	0.67	B
P-3 A, B (Uptown)	9.0	7.8	298	189	0.75	0.90	0.52	B

Table 11-23 (cont'd)
2013 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 PM Peak 15 Minutes								
57th Street/7th Avenue Station (N/Q/R line) –A010								
Street-Level								
S-7 (NW corner)	5.7	4.7	203	119	0.95	0.90	0.52	B
S-5 (SW corner)	5.7	4.7	228	43	0.95	0.90	0.43	A
Platform-Level								
P-5 A, B (Downtown)	9.5	8.3	324	84	0.75	0.90	0.39	A
P-6 A, B (Uptown)	11.5	10.3	331	163	0.75	0.90	0.39	A

Notes:
Capacities were calculated based on rates presented in the 2012 *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (2012 *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 11-24
2013 Existing Conditions Subway Fare Array Control Area Analysis

Station Fare Array Elements	Quantity	Fare Array Capacity for 15 Minutes		15 minute Ped Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Entry	Exit	Entry	Exit				
Weekday AM Peak 15 Minutes									
Columbus Circle/59th Street (A/B/C/D/1 line) - N051									
High-Exit only – Turnstile (HXT)	4	0	555	0	702	0.90	1.00	0.35	A
Two-way Turnstiles	10	420	645	464	1,219	0.90	0.90	0.36	A
57th Street/7th Avenue Station (N/Q/R line) – A010									
High-Exit only – Turnstile (HXT)	4	0	555	0	706	0.90	1.00	0.35	A
Two-way Turnstiles	8	420	645	162	323	0.90	0.90	0.13	A
Weekday PM Peak 15 Minutes									
Columbus Circle/59th Street (A/B/C/D/1 line) – N051									
High-Exit only – Turnstile (HXT)	4	0	555	0	316	0.90	1.00	0.16	A
Two-way Turnstiles	10	420	645	1,444	198	0.90	0.90	0.42	A
57th Street/7th Avenue Station (N/Q/R line) –A010									
High-Exit only – Turnstile (HXT)	4	0	555	0	114	0.90	1.00	0.06	A
Two-way Turnstiles	8	420	645	617	55	0.90	0.90	0.22	A

Notes:
Capacities were calculated based on rates presented in the 2012 *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (2012 *CEQR Technical Manual*).
V/C = [Vin/ Cin* Ff] + [Vx/ Cx* Sf*Ff]
Where
Vin = Peak 15-minute 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 (if applicable)
Ff = Friction factor (if applicable)

THE FUTURE WITHOUT THE PROPOSED ACTIONS

An annual background growth rate of 0.25 percent was applied to the existing station volumes from 2013 to 2017. In addition, trips associated with the No Action projects that could add to the demand at the analysis subway station elements were incorporated into the No Action station volumes. As shown in **Tables 11-25** and **11-26**, all critical subway station elements will continue to operate at acceptable levels during the weekday AM and PM peak periods.

Table 11-25
2017 No Action 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								
Columbus Circle/59th Street (A/B/C/D/1 line) - N051								
Street-Level								
O-22 A, B (NW corner)	8.1	6.9	29	39	0.95	0.90	0.08	A
S-2 (NE corner)	5.8	4.8	11	50	0.95	0.90	0.10	A
O5 A, B (SE corner)	8.0	6.8	98	336	0.95	0.90	0.49	B
Platform-Level								
P-1 A, B (Downtown)	11.0	9.8	268	160	0.75	0.90	0.36	A
P-3 A, B (Uptown)	9.0	7.8	76	541	0.75	0.90	0.76	C
57th Street/7th Avenue Station (N/Q/R line) –A010								
Street-Level								
S-7 (NW corner)	5.7	4.7	59	352	0.95	0.90	0.68	B
S-5 (SW corner)	5.7	4.7	84	185	0.95	0.90	0.44	A
Platform-Level								
P-5 A, B (Downtown)	9.5	8.3	150	569	0.75	0.90	0.81	C
P-6 A, B (Uptown)	11.5	10.3	68	327	0.75	0.90	0.36	A
Weekday PM Peak 15 Minutes								
Columbus Circle/59th Street (A/B/C/D/1 line) - N051								
Street-Level								
O-22 A, B (NW corner)	8.1	6.9	54	16	0.95	0.90	0.08	A
S-2 (NE corner)	5.8	4.8	91	64	0.95	0.90	0.24	A
O5 A, B (SE corner)	8.0	6.8	180	83	0.95	0.90	0.29	A
Platform-Level								
P-1 A, B (Downtown)	11.0	9.8	807	60	0.75	0.90	0.67	B
P-3 A, B (Uptown)	9.0	7.8	294	196	0.75	0.90	0.53	B

Table 11-25 (cont'd)
2017 No Action Conditions Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
Weekday PM Peak 15 Minutes								
57th Street/7th Avenue Station (N/Q/R line) –A010								
Street-Level								
S-7 (NW corner)	5.7	4.7	205	142	0.95	0.90	0.56	B
S-5 (SW corner)	5.7	4.7	219	43	0.95	0.90	0.42	A
Platform-Level								
P-5 A, B (Downtown)	9.5	8.3	323	92	0.75	0.90	0.40	A
P-6 A, B (Uptown)	11.5	10.3	327	180	0.75	0.90	0.41	A

Notes:
Capacities were calculated based on rates presented in the 2012 *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (2012 *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 11-26
2017 No Action Conditions Subway Fare Array Control Area Analysis

Station Fare Array Elements	Quantity	Fare Array Capacity for 15 Minutes		15 minute Ped Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Entry	Exit	Entry	Exit				
Weekday AM Peak 15 Minutes									
Columbus Circle/59th Street (A/B/C/D/1 line) - N051									
High-Exit only – Turnstile (HXT)	4	0	555	0	695	0.90	1.00	0.35	A
Two-way Turnstiles	10	420	645	537	1,208	0.90	0.90	0.37	A
57th Street/7th Avenue Station (N/Q/R line) – A010									
High-Exit only – Turnstile (HXT)	4	0	555	0	701	0.90	1.00	0.35	A
Two-way Turnstiles	8	420	645	195	321	0.90	0.90	0.14	A
Weekday PM Peak 15 Minutes									
Columbus Circle/59th Street (A/B/C/D/1 line) – N051									
High-Exit only – Turnstile (HXT)	4	0	555	0	347	0.90	1.00	0.17	A
Two-way Turnstiles	10	420	645	1,436	218	0.90	0.90	0.42	A
57th Street/7th Avenue Station (N/Q/R line) –A010									
High-Exit only – Turnstile (HXT)	4	0	555	0	130	0.90	1.00	0.07	A
Two-way Turnstiles	8	420	645	612	63	0.90	0.90	0.22	A

Notes:
Capacities were calculated based on rates presented in the 2012 *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (2012 *CEQR Technical Manual*).
V/C = [Vin/ Cin* Ff] + [Vx/ Cx* Sf*Ff]
Where
Vin = Peak 15-minute 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 (if applicable)
Ff = Friction factor (if applicable)

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The 476 (156 in and 320 out) AM peak hour and 650 (378 in and 272 out) PM peak hour project-generated subway trips were distributed to the 59th Street/Columbus Circle Station and the 57th Street/7th Avenue Station. This distribution was based on the proximity of the subway stations to the proposed project site, the number of lines being served at each station, and the 2011 cordon counts at or near the two subway stations. Based on this assessment, 68 percent of these trips were assigned to the 59th Street/Columbus Circle Station and the remaining 32 percent to the 57th Street/7th Avenue Station. These trips were added to the projected 2017 No Action volumes to generate the 2017 With Action volumes for analysis.

As shown in **Tables 11-27** and **11-28**, all station stairways and control area elements would continue to operate at acceptable levels in the 2017 With Action conditions.

Table 11-27
2017 With Action 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								
Columbus Circle/59th Street (A/B/C/D/1 line) - N051								
Street-Level								
O-22 A, B (NW corner)	8.1	6.9	32	41	0.95	0.90	0.08	A
S-2 (NE corner)	5.8	4.8	11	81	0.95	0.90	0.15	A
O5 A, B (SE corner)	8.0	6.8	162	336	0.95	0.90	0.56	B
Platform-Level								
P-1 A, B (Downtown)	11.0	9.8	286	162	0.75	0.90	0.38	A
P-3 A, B (Uptown)	9.0	7.8	86	544	0.75	0.90	0.77	C
57th Street/7th Avenue Station (N/Q/R line) – A010								
Street-Level								
S-7 (NW corner)	5.7	4.7	59	367	0.95	0.90	0.70	C
S-5 (SW corner)	5.7	4.7	115	185	0.95	0.90	0.49	B
Platform-Level								
P-5 A, B (Downtown)	9.5	8.3	172	578	0.75	0.90	0.84	C
P-6 A, B (Uptown)	11.5	10.3	77	333	0.75	0.90	0.37	A
Weekday PM Peak 15 Minutes								
Columbus Circle/59th Street (A/B/C/D/1 line) - N051								
Street-Level								
O-22 A, B (NW corner)	8.1	6.9	57	20	0.95	0.90	0.08	A
S-2 (NE corner)	5.8	4.8	91	131	0.95	0.90	0.35	A
O5 A, B (SE corner)	8.0	6.8	228	83	0.95	0.90	0.34	A
Platform-Level								
P-1 A, B (Downtown)	11.0	9.8	333	102	0.75	0.90	0.42	A
P-3 A, B (Uptown)	9.0	7.8	341	203	0.75	0.90	0.44	A

Table 11-27 (cont'd)
2017 With Action Conditions Subway Stairway Analysis

Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
Weekday PM Peak 15 Minutes								
57th Street/7th Avenue Station (N/Q/R line) – A010								
Street-Level								
S-7 (NW corner)	5.7	4.7	205	175	0.95	0.90	0.61	B
S-5 (SW corner)	5.7	4.7	243	43	0.95	0.90	0.45	B
Platform-Level								
P-5 A, B (Downtown)	9.5	8.3	820	62	0.75	0.90	0.68	B
P-6 A, B (Uptown)	11.5	10.3	310	203	0.75	0.90	0.55	B

Notes:
Capacities were calculated based on rates presented in the 2012 *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (2012 *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 11-28
2017 With Action Conditions Subway Fare Array Control Area Analysis

Station Fare Array Elements	Quantity	Fare Array Capacity for 15 Minutes		15 minute Ped Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Entry	Exit	Entry	Exit				
Weekday AM Peak 15 Minutes									
Columbus Circle/59th Street (A/B/C/D/1 line) - N051									
High-Exit only – Turnstile (HXT)	4	0	555	0	707	0.90	1.00	0.35	A
Two-way Turnstiles	10	420	645	604	1,229	0.90	0.90	0.40	A
57th Street/7th Avenue Station (N/Q/R line) – A010									
High-Exit only – Turnstile (HXT)	4	0	555	0	711	0.90	1.00	0.36	A
Two-way Turnstiles	8	420	645	226	326	0.90	0.90	0.15	A
Weekday PM Peak 15 Minutes									
Columbus Circle/59th Street (A/B/C/D/1 line) – N051									
High-Exit only – Turnstile (HXT)	4	0	555	0	378	0.90	1.00	0.19	A
Two-way Turnstiles	10	420	645	1,507	238	0.90	0.90	0.44	A
57th Street/7th Avenue Station (N/Q/R line) –A010									
High-Exit only – Turnstile (HXT)	4	0	555	0	146	0.90	1.00	0.07	A
Two-way Turnstiles	8	420	645	645	71	0.90	0.90	0.23	A

Notes:
Capacities were calculated based on rates presented in the 2012 *CEQR Technical Manual*.
Surging factors are only applied to the exiting pedestrian volume (2012 *CEQR Technical Manual*).
V/C = [Vin/ Cin* Ff] + [Vx/ Cx* Sf*Ff]
Where
Vin = Peak 15-minute 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 (if applicable)
Ff = Friction factor (if applicable)

BUS LINE-HAUL ANALYSIS

EXISTING CONDITIONS

To assess the potential impacts on the study area bus routes, maximum load point data for the M31 and M57 bus routes were obtained from NYCT. A field survey was conducted on June 19, 2013 to supplement data for the westbound M31 line during the AM peak hour (8:00- 9:00 AM). As shown in **Table 11-29**, under existing conditions, the M31 and M57 bus routes currently operate within the guideline capacity during the weekday AM and PM peak hours.

Table 11-29
2013 Existing Conditions: Bus Line-Haul Analysis

Route	Direction	Peak Load Point	Hourly Volumes	Buses/ Hour	AP
AM Peak Hour					
M31	West	West 57th Street and Broadway	166	6	28
M57	East	West 57th Street and Broadway	244	7	35
	West	West 57th Street and Broadway	205	5	41
PM Peak Hour					
M31	West	West 57th Street and Broadway	286	9	32
M57	East	East 57th Street and Lexington Avenue	195	7	28
	West	West 57th Street and Broadway	298	7	43

Notes: AP=average passengers per bus;
***** Articulated buses with guideline capacity of 85 passengers/bus
Source: NYCT Bus ridership data (2010/2012), AKRF field survey- June 19, 2013

THE FUTURE WITHOUT THE PROPOSED ACTIONS

Estimates of peak hour bus volumes in the No Action condition were developed by applying the *CEQR Technical Manual* recommended annual background growth rates as previously described. In addition, trips associated with the No Action projects that could add to the bus transit demand were incorporated into the No Action bus line-haul volumes. As shown in **Table 11-30**, under the No Action condition, during the AM peak hour, the eastbound M57 would exceed the guideline capacity (54 passengers per bus) while the westbound M57 would exceed the guideline capacity during the PM peak hour.

Table 11-30
2017 No Action Conditions: Bus Line-Haul Analysis

Route	Direction	Peak Load Point	Hourly Volumes	Buses/ Hour	AP
AM Peak Hour					
M31	West	West 57th Street and Broadway	76[1]	6	13
M57	East	West 57th Street and Broadway	523	7	(75)
	West	West 57th Street and Broadway	115[1]	5	23
PM Peak Hour					
M31	West	West 57th Street and Broadway	432	9	48
M57	East	East 57th Street and Lexington Avenue	64[1]	7	10
	West	West 57th Street and Broadway	446	7	(64)

Notes: AP=average passengers per bus;
***** Articulated buses with guideline capacity of 85 passengers/bus
(#)=exceeds NYCT guideline capacity.
[1] No Action hourly volume incorporated negative No Action project increments.
Source: NYCT Bus ridership data (2010/2012), AKRF field survey- June 19, 2013

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

Peak period bus ridership for the With Action condition was generated by adding the incremental trips associated with the proposed project to the No Action bus line-haul volumes. For the office use, 2000 RJTW data was used to determine the origins of bus trips to the study area. It was estimated that 70 percent of people residing north of the project site would take the M11 route and the remaining 30 percent would take the M57 route. For those residing south of the project site, it was estimated that 70 percent would take the M31 and M57 routes (35 percent each) and the remaining 30 percent would take the M11 route. For the retail use, the population distribution in the neighborhood was used to determine the origins of bus trips. It was estimated that 34 percent of trips would come from east of the project site via the M31 and M57 routes (17

percent each) while 42 percent would come from north of the project site via the M57 and M11 routes (21 percent each). The remaining 24 percent were estimated to come from south of the project site via the M11 route. For the residential use, the ACS 2007-2011 journey-to-work estimates were used to determine the destination of bus trips originating from the study area. It was estimated that approximately 29 percent of the residents would take the M11 route, approximately 7 percent would take the M31 route, and approximately 64 percent would take the M57 route to their destinations of employment.

As described in Section E, "Transportation Analysis Methodologies," impacts on bus line-haul levels are considered significant if a proposed project would result in operating conditions above guideline capacities. As shown in **Table 11-31**, under the With Action condition, during the AM peak period, the eastbound M57 would exceed guideline capacity while westbound M31 and westbound M57 would exceed guideline capacity during the PM peak. These projected increases in bus ridership beyond guideline capacities constitute potential significant adverse bus line-haul impacts based on the *CEQR* criteria.

Proposed measures to mitigate the potential significant adverse bus line-haul impacts include scheduling additional buses to increase the capacity. Typically, NYCT routinely monitors changes in bus ridership and would make the necessary service adjustments where warranted. These service adjustments are subject to fiscal and operational constraints and, if implemented, are expected to occur over time. These measures are discussed in greater detail in Chapter 19, "Mitigation."

Table 11-31
2017 With Action Conditions: Bus Line-Haul Analysis

Route	Direction	Peak Load Point	Hourly Volumes	Buses/ Hour	AP
AM Peak Hour					
M31	West	West 57th Street and Broadway	162	6	27
M57	East	West 57th Street and Broadway	838	7	**(120)**
	West	West 57th Street and Broadway	202	5	41
PM Peak Hour					
M31	West	West 57th Street and Broadway	641	9	(72)
M57	East	East 57th Street and Lexington Avenue	344	7	50
	West	West 57th Street and Broadway	658	7	**(94)**

Notes: AP=average passengers per bus;
***** Articulated buses with guideline capacity of 85 passengers/bus
(#)=exceeds NYCT guideline capacity.
Source: NYCT Bus ridership data (2010/2012), AKRF field survey- June 19, 2013

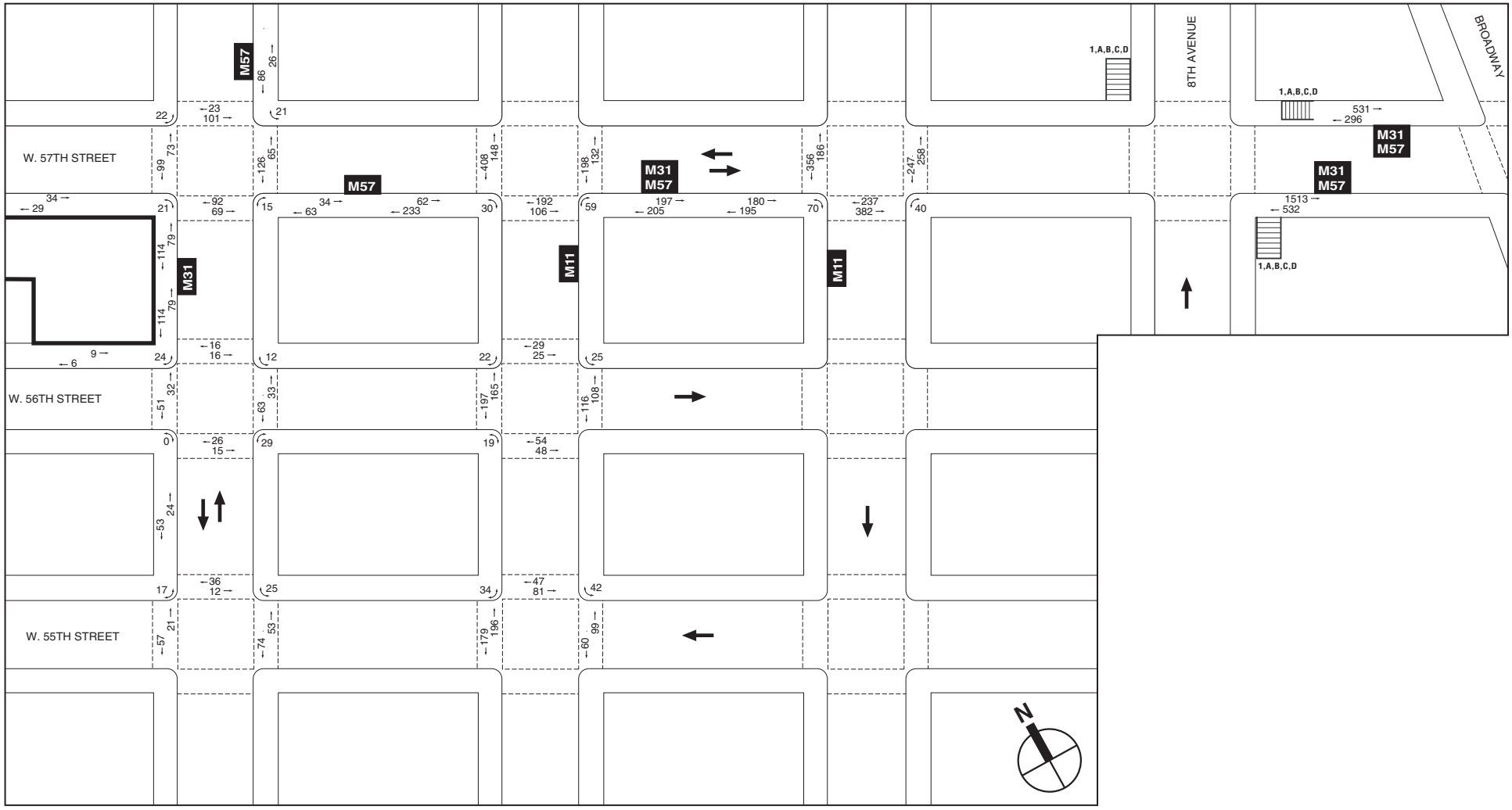
H. PEDESTRIANS

EXISTING CONDITIONS

Pedestrian data were collected in March 2013 at key locations near the project site during the weekday hours of 7:00 AM to 10:00 AM, 11:00 AM to 2:00 PM, and 4:00 PM to 7:00 PM, and during the Saturday hours of 12:00 PM to 4:00 PM.

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 11-25** to **11-28**. As shown in **Tables 11-32** to **11-34**, all sidewalks, corner reservoirs, and crosswalk

6.25.13



Project Site

Subway Station Entrance

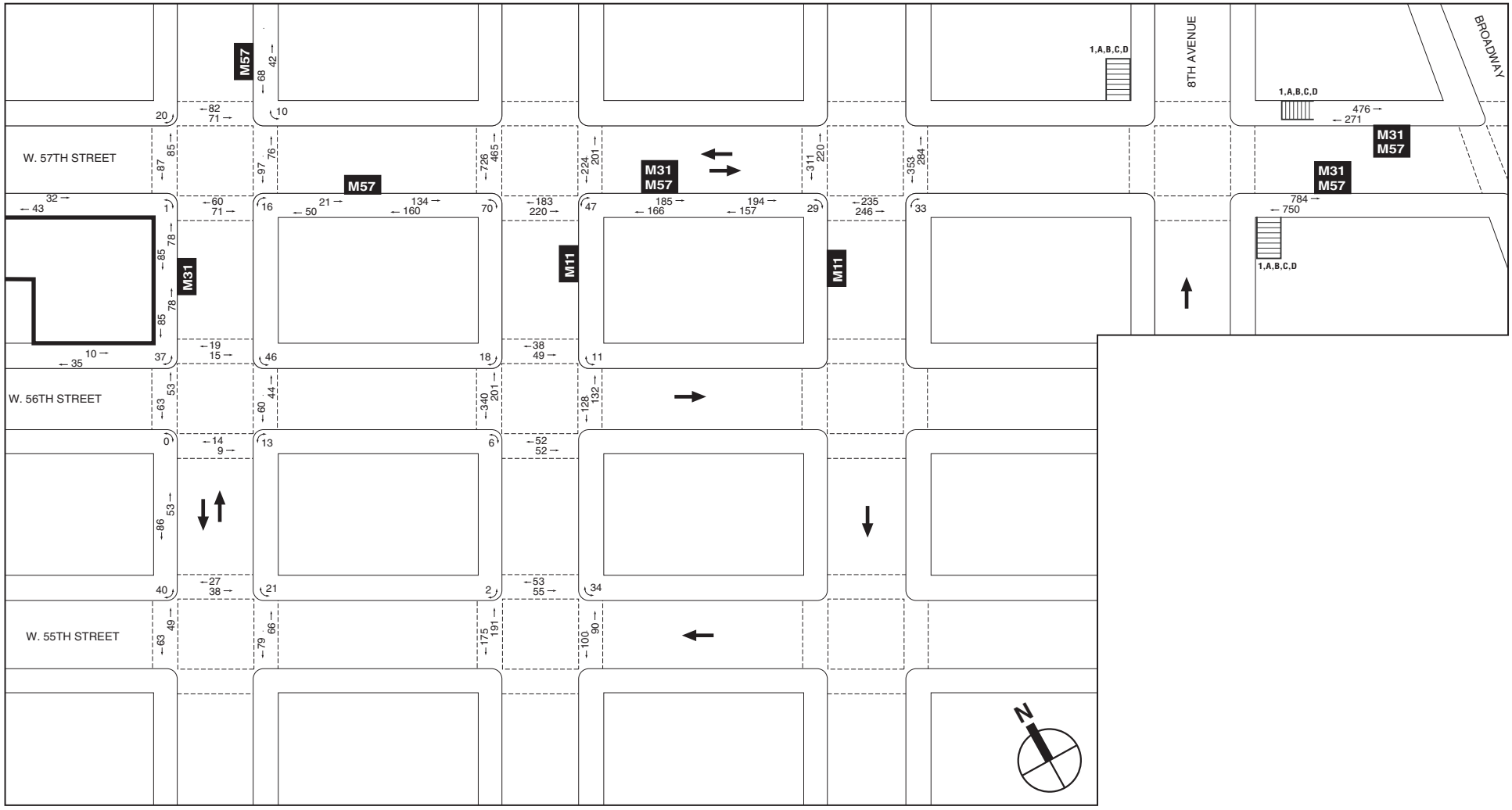
M57 *Bus Stop*

Existing Pedestrian Volumes
Weekday AM Peak Hour

606 WEST 57TH STREET

Figure 11-25

6.25.13



Project Site

Subway Station Entrance

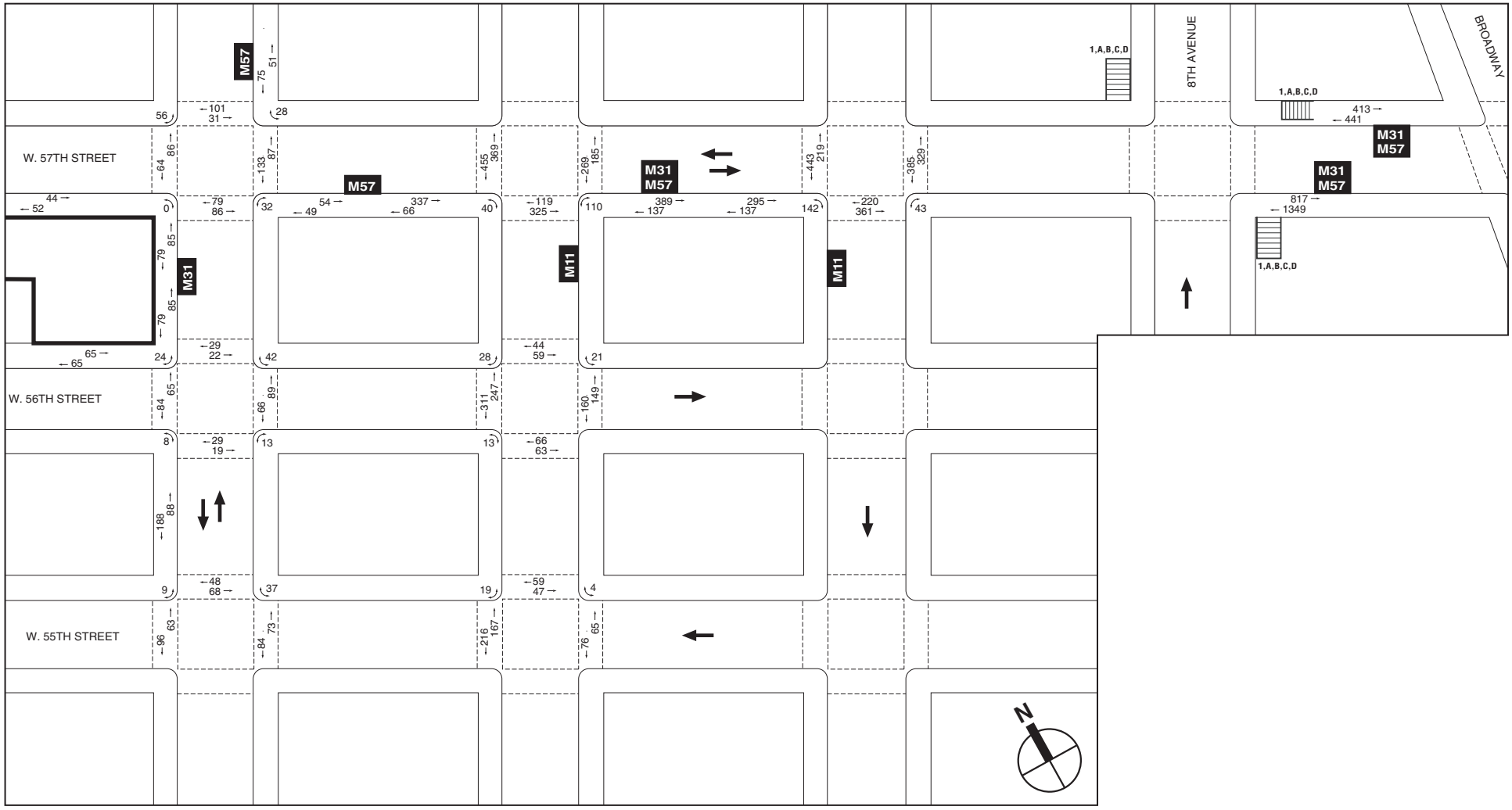
M57 *Bus Stop*

Existing Pedestrian Volumes
Weekday MD Peak Hour

606 WEST 57TH STREET

Figure 11-26

6.25.13



Project Site

Subway Station Entrance

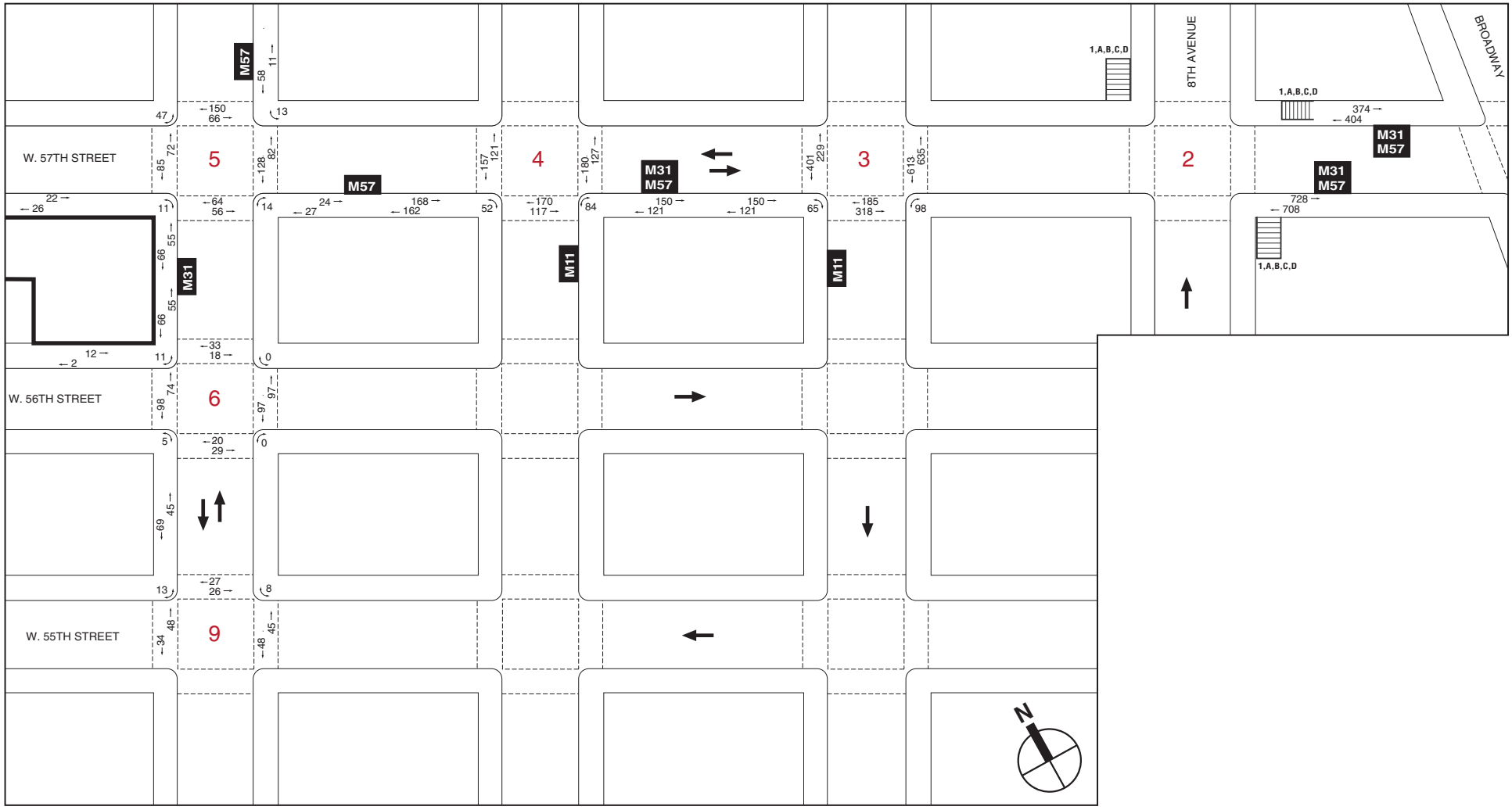
M57 *Bus Stop*

Existing Pedestrian Volumes
Weekday PM Peak Hour

606 WEST 57TH STREET

Figure 11-27

9.6.13



Project Site

Subway Station Entrance

M57 *Bus Stop*

Existing Pedestrian Volumes
Saturday Peak Hour

606 WEST 57TH STREET

Figure 11-28

analysis locations operate at acceptable mid-LOS D or better service levels (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks.)

THE FUTURE WITHOUT THE PROPOSED ACTIONS

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 years 2013 to 2017. Pedestrian volumes from projects that are anticipated to be completed in the study area, absent the proposed project, were also added to determine 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 11-29** to **11-32**. As summarized in **Tables 11-35** to **11-37**, all sidewalk, corner reservoir, and crosswalk analysis locations will continue to operate at acceptable mid-LOS D or better service levels (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks.)

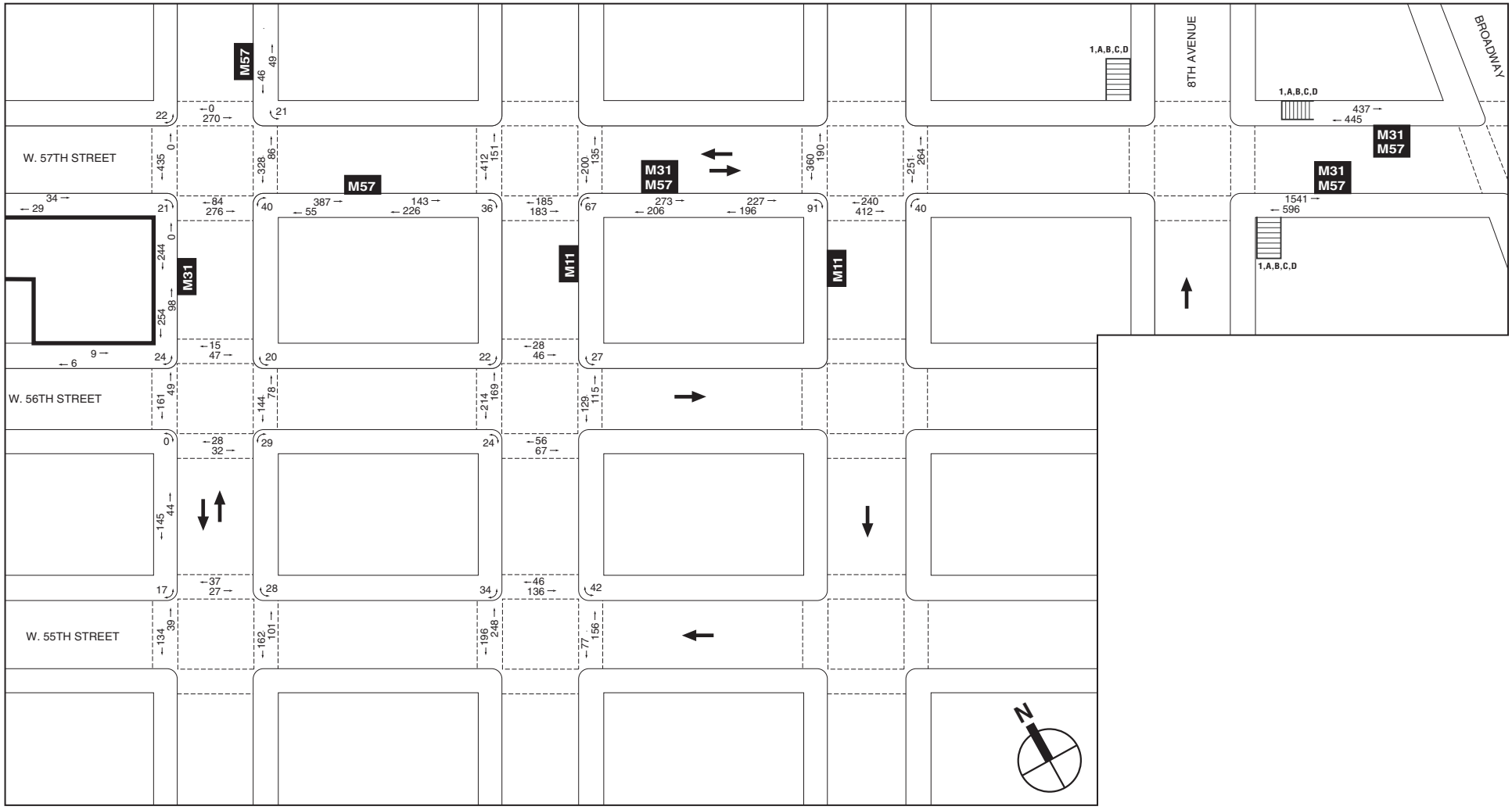
PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The project-generated pedestrian volumes were assigned to the pedestrian network considering current land uses in the area, population distribution, nearby parking locations, available transit services, and surrounding pedestrian facilities. The hourly incremental pedestrian volumes presented above in Section D, "Level 2 Screening Assessment", were added to the projected 2017 No Action volumes to generate the 2017 With Action pedestrian volumes for analysis (see **Figures 11-33** to **11-36**).

As shown in **Tables 11-38** to **11-40**, with the exception of the following location all the sidewalk, corner reservoir, and crosswalk analysis locations would continue to operate acceptably at mid-LOS D or better (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), or incur decreased LOS that, when compared to the No Action condition, do not exceed the 2012 *CEQR Technical Manual* sliding scale impact thresholds in the With Action condition:

- The south crosswalk of 57th Street and 11th Avenue, which would operate at LOS E with 12.3SFP, 10.8 SFP, 11.6 SFP, and 10.1 SFP during the weekday AM, weekday midday, weekday PM ,and Saturday peak 15-minute periods, respectively.

7.2.13



Project Site

Subway Station Entrance

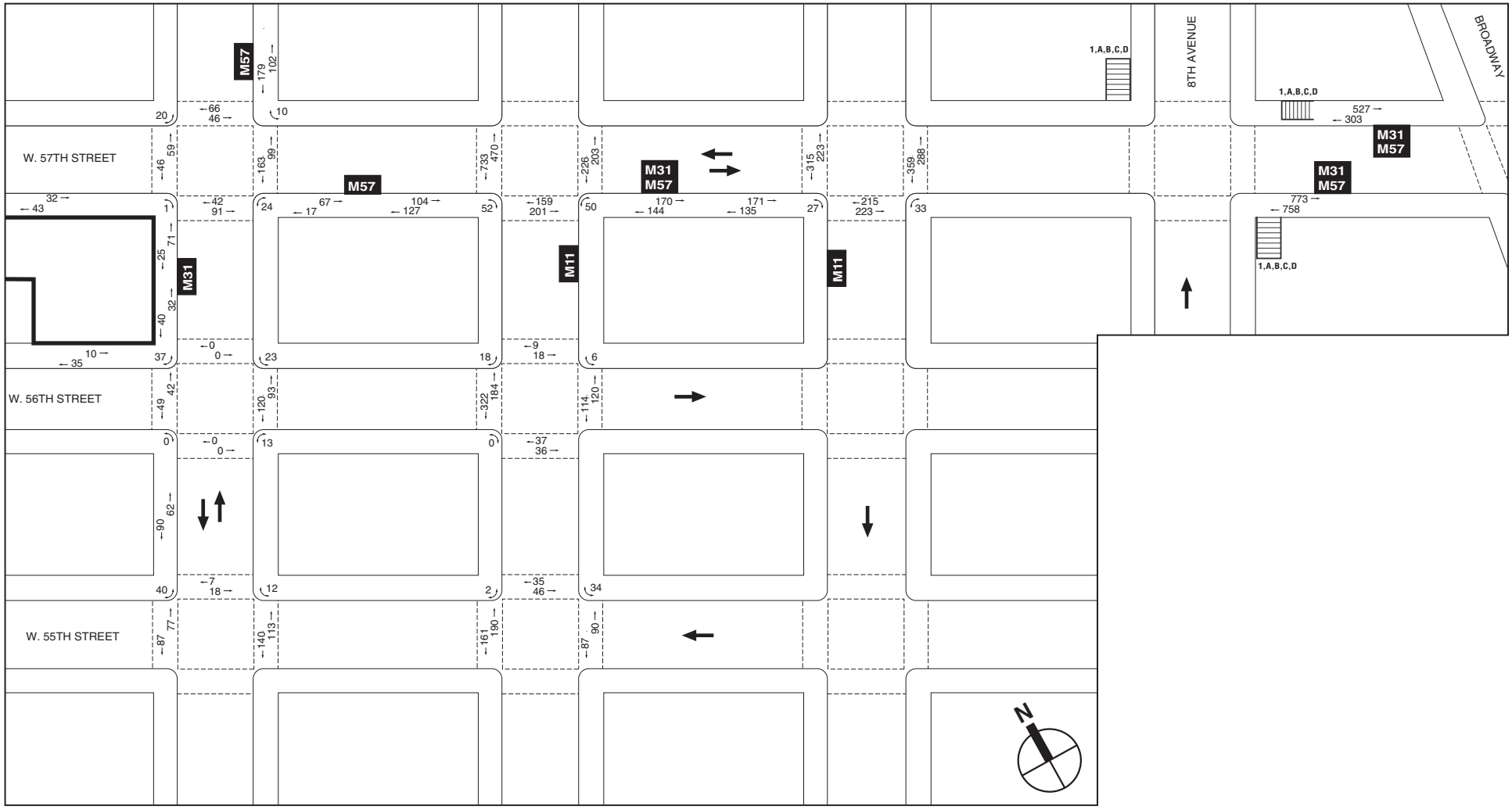
M57 *Bus Stop*

No Action Pedestrian Volumes
Weekday AM Peak Hour

606 WEST 57TH STREET

Figure 11-29

7.2.13



Project Site

Subway Station Entrance

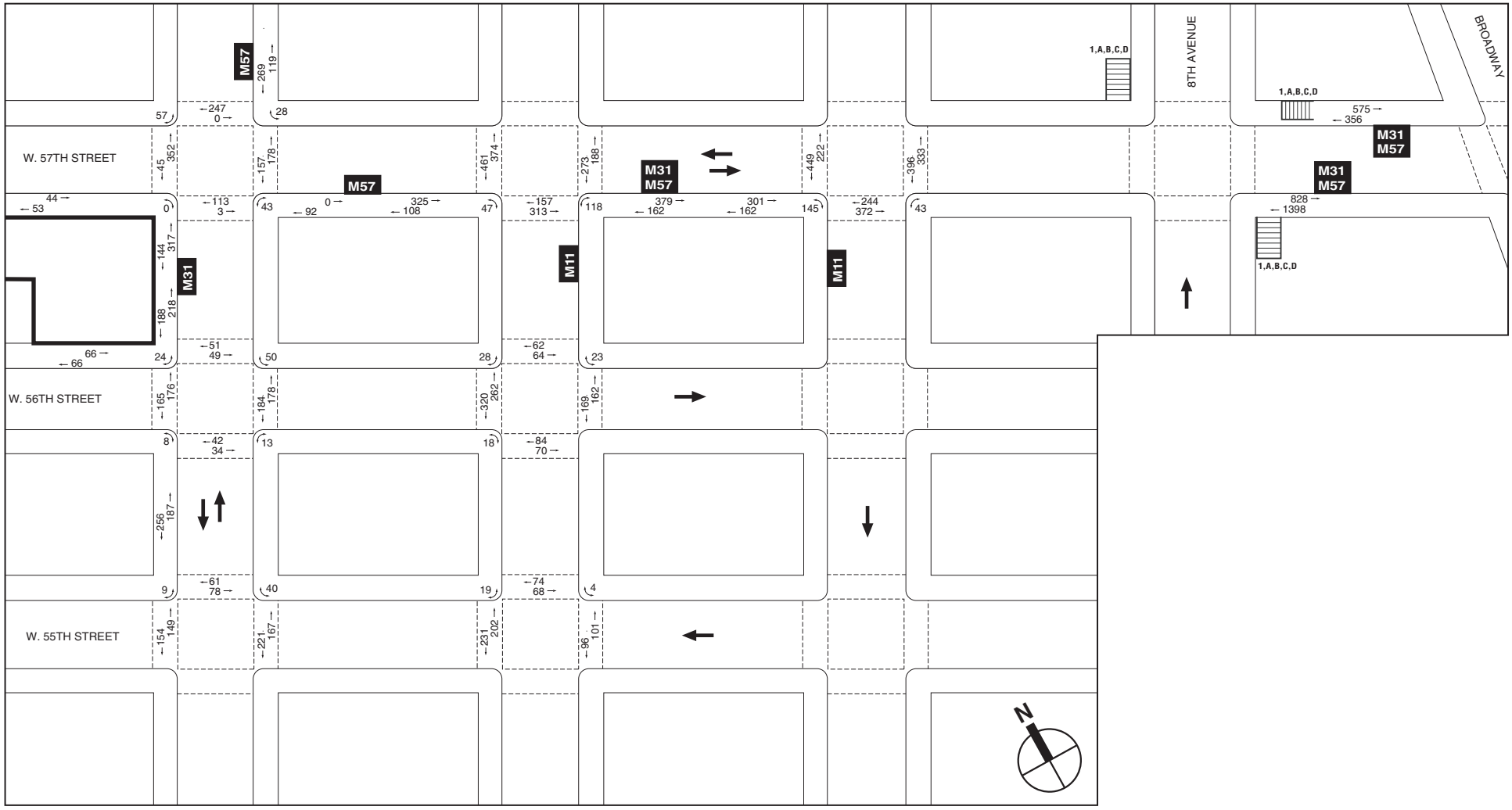
M57 *Bus Stop*

No Action Pedestrian Volumes
Weekday MD Peak Hour

606 WEST 57TH STREET

Figure 11-30

7.2.13



Project Site

Subway Station Entrance

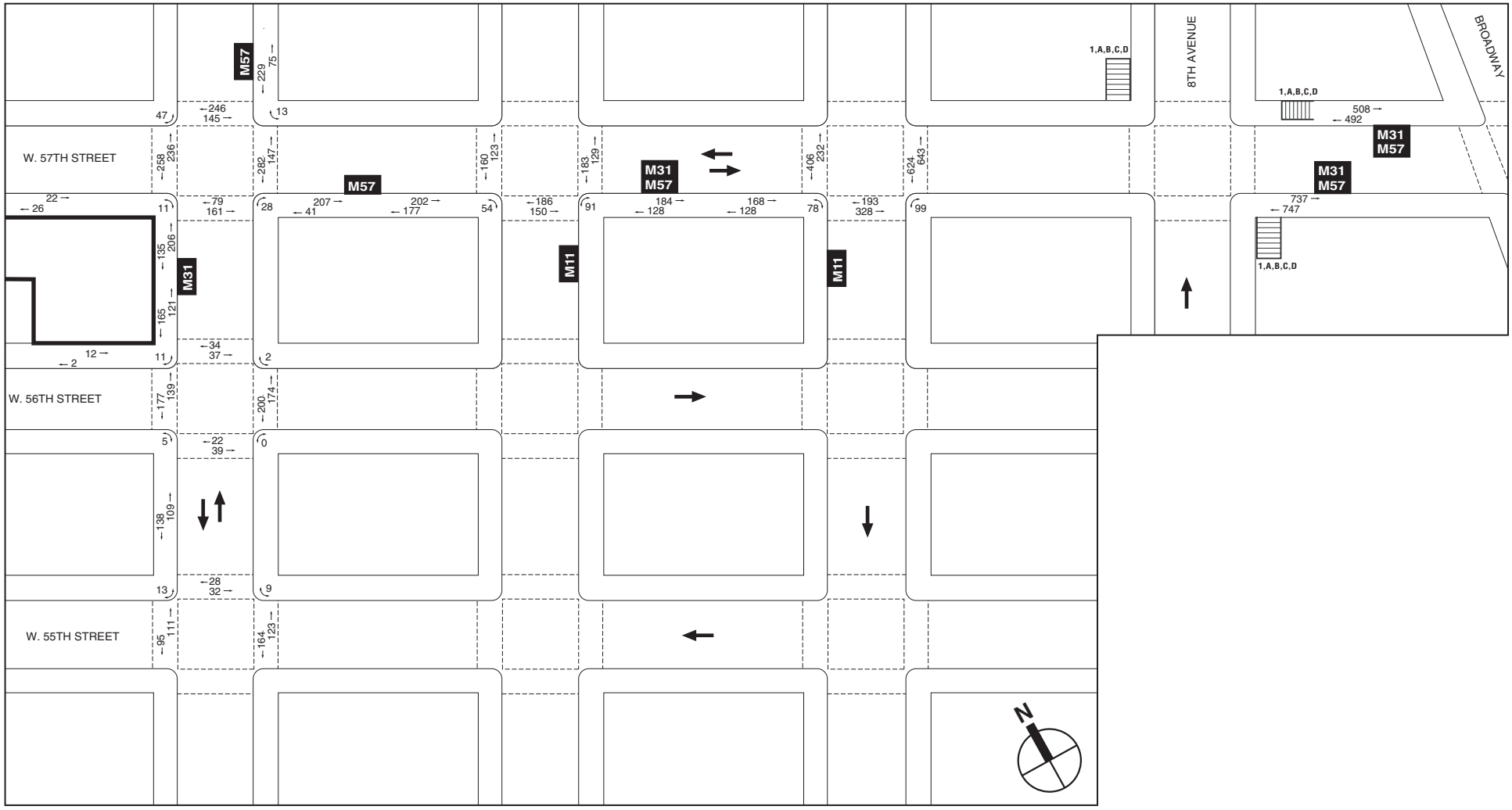
M57 *Bus Stop*

No Action Pedestrian Volumes
Weekday PM Peak Hour

606 WEST 57TH STREET

Figure 11-31

9.6.13



Project Site

Subway Station Entrance

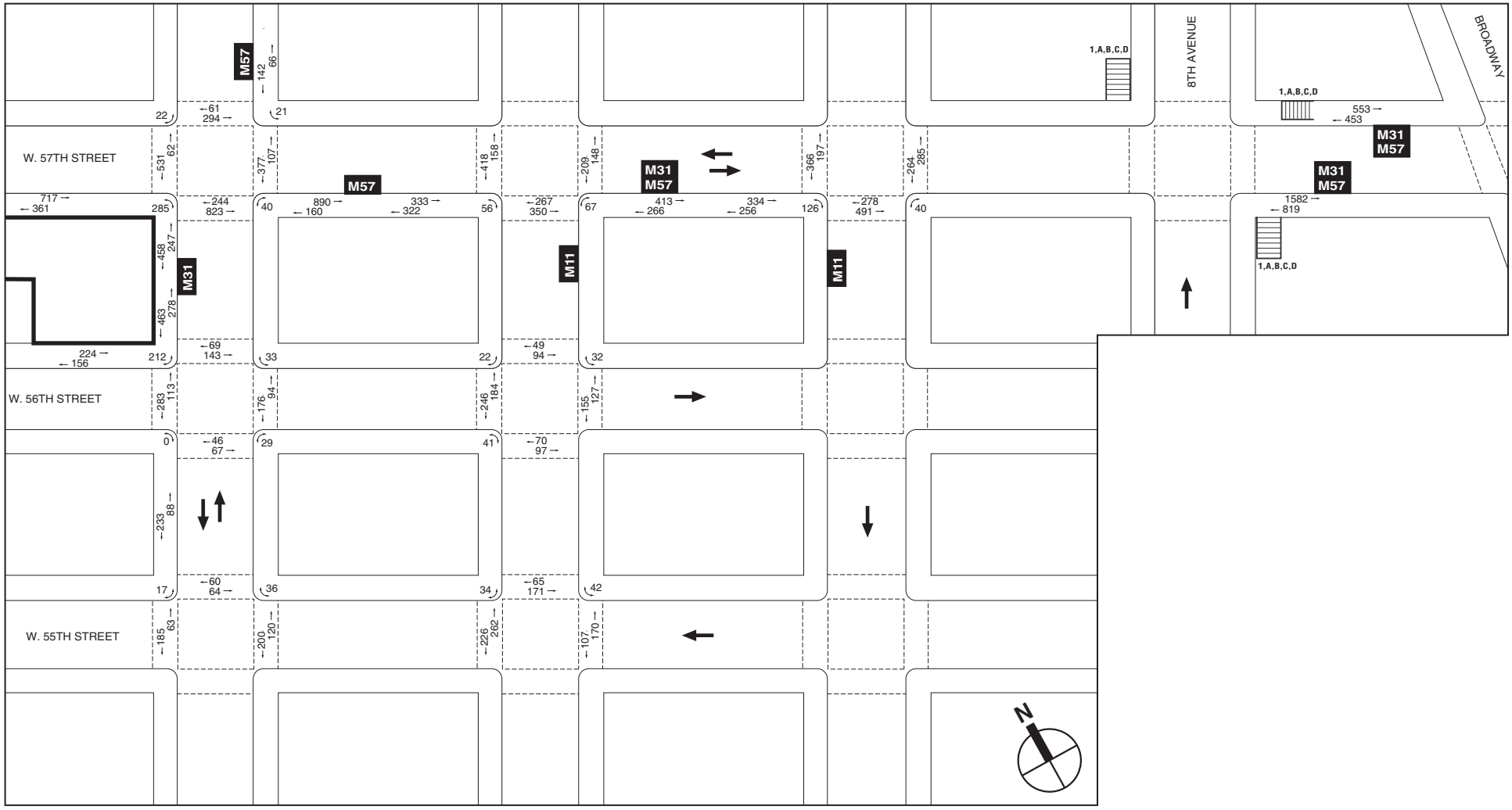
M57 *Bus Stop*

No Action Pedestrian Volumes
Saturday Peak Hour

606 WEST 57TH STREET

Figure 11-32

7.2.13



Project Site

Subway Station Entrance

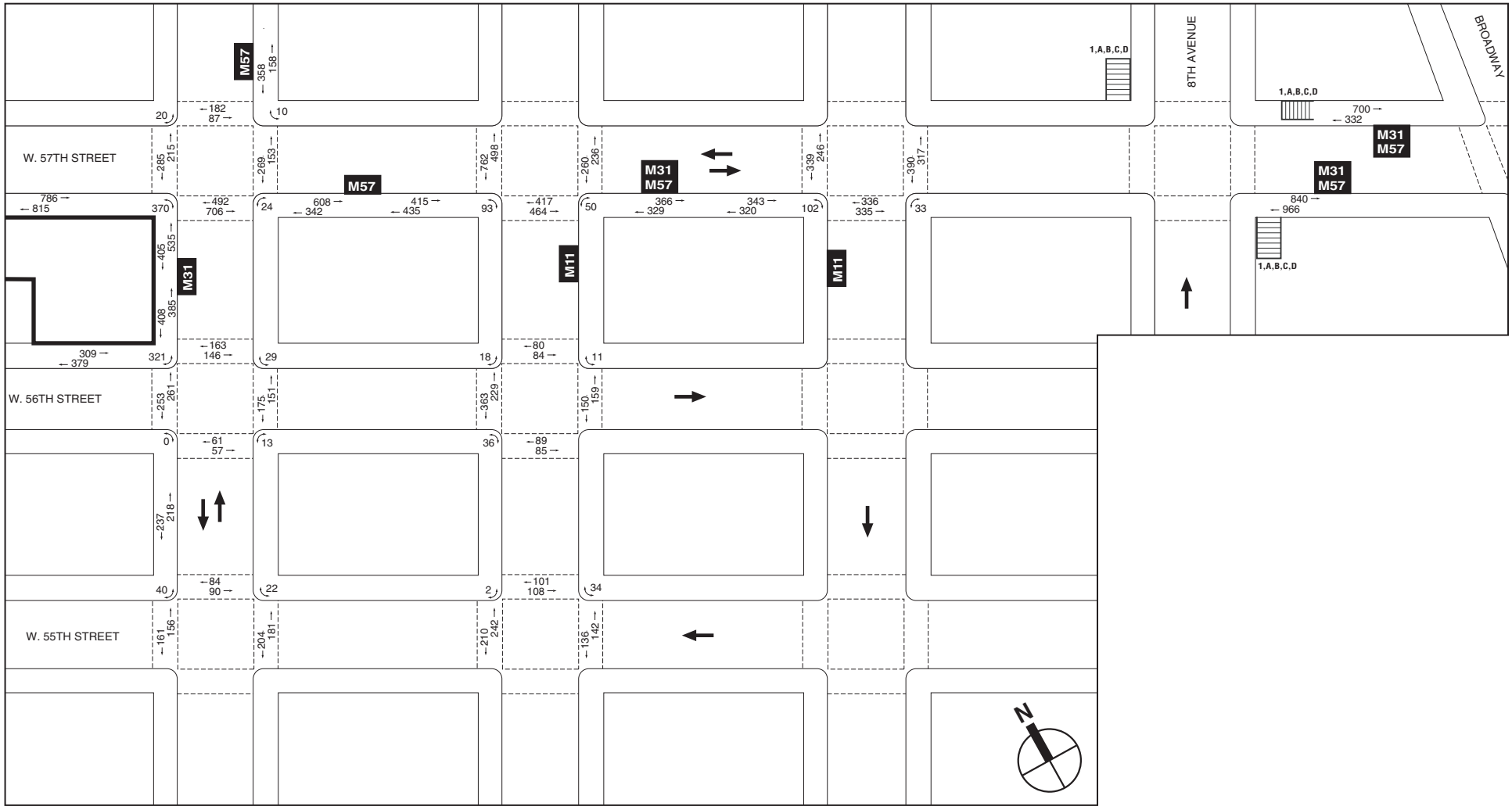
M57 *Bus Stop*

With Action Pedestrian Volumes
Weekday AM Peak Hour

606 WEST 57TH STREET

Figure 11-33

7.2.13



Project Site

Subway Station Entrance

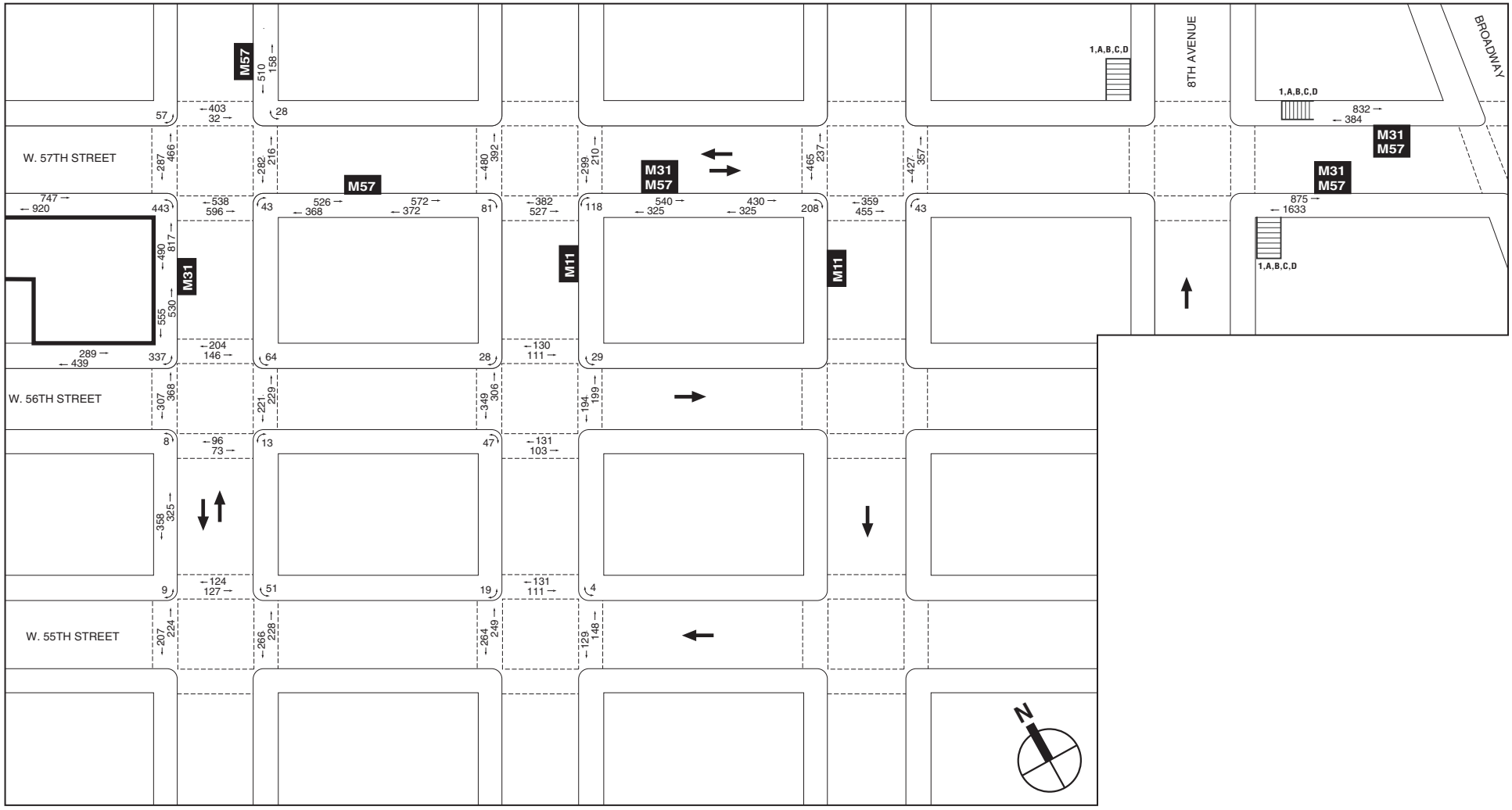
M57 *Bus Stop*

With Action Pedestrian Volumes
Weekday MD Peak Hour

606 WEST 57TH STREET

Figure 11-34

7.2.13



Project Site

Subway Station Entrance

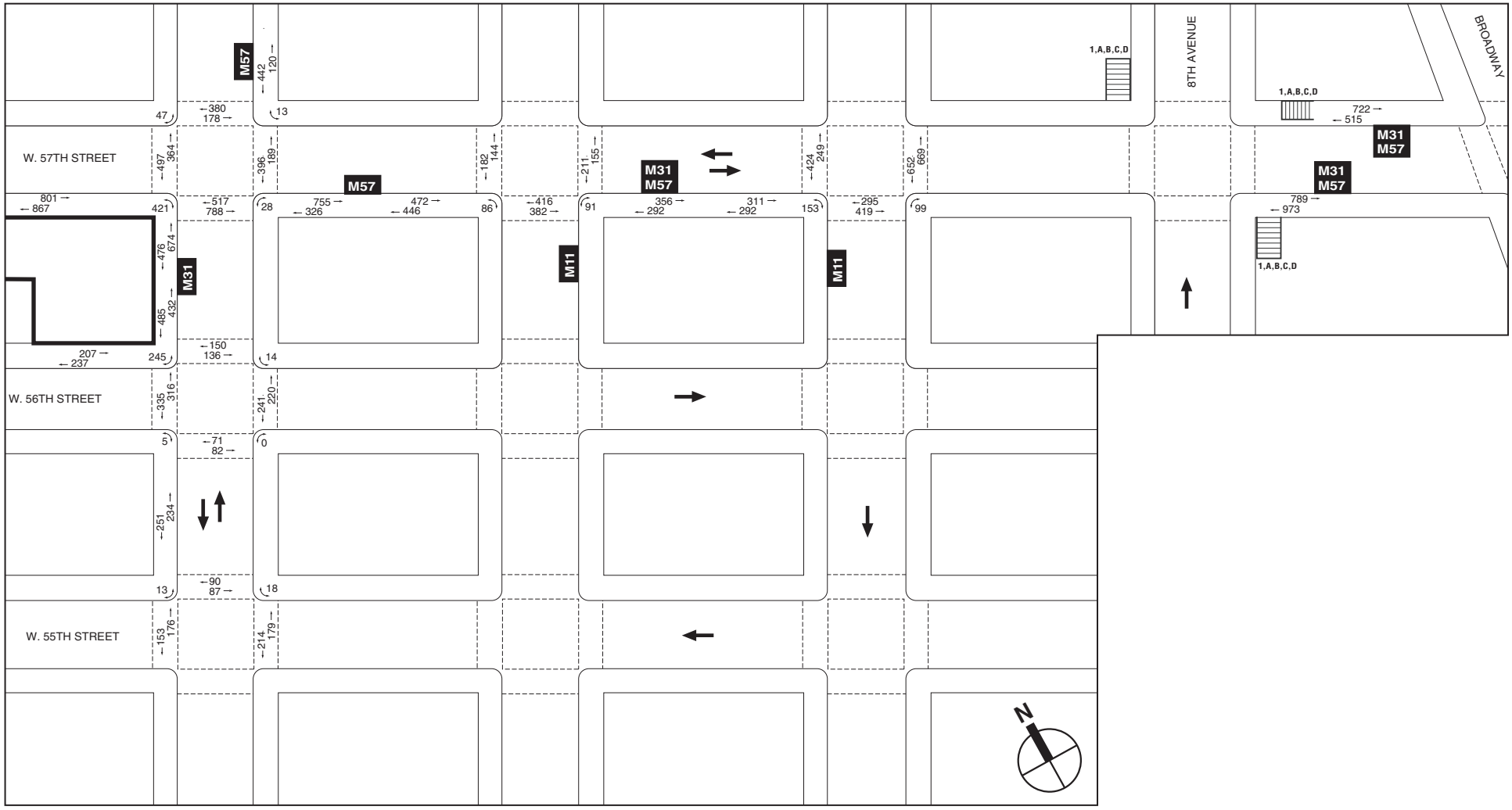
M57 *Bus Stop*

With Action Pedestrian Volumes
Weekday PM Peak Hour

606 WEST 57TH STREET

Figure 11-35

9.6.13



Project Site

Subway Station Entrance

M57 *Bus Stop*

With Action Pedestrian Volumes
Saturday Peak Hour

606 WEST 57TH STREET

Figure 11-36

Table 11-32
2013 Existing Conditions: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	PMF	Platoon LOS
Weekday AM Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	5.0	112	0.80	0.47	A
57th Street between Eleventh Avenue and Bus Stop	South	10.0	97	0.80	0.20	A
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	193	0.80	0.40	A
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	63	0.80	0.19	A
Eleventh Avenue between 56th Street and 55th Street	West	7.5	77	0.80	0.40	A
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	15	0.80	0.04	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	193	0.80	0.50	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	402	0.89	2.51	B
57th Street between Bus Stop and Tenth Avenue	South	6.8	295	0.80	0.91	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	375	0.82	0.58	B
57th Street between Eighth Avenue and Broadway	North	10.0	827	0.83	1.66	B
	South	8.0	2045	0.94	4.54	C
Weekday Midday Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	5.0	110	0.89	0.41	A
57th Street between Eleventh Avenue and Bus Stop	South	10.0	71	0.85	0.14	A
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	163	0.83	0.33	A
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	75	0.82	0.22	A
Eleventh Avenue between 56th Street and 55th Street	West	7.5	139	0.91	0.33	A
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	45	0.80	0.13	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	163	0.83	0.41	A
57th Street between Tenth Avenue and Bus Stop	South	3.0	351	0.80	2.44	B
57th Street between Bus Stop and Tenth Avenue	South	6.8	294	0.86	0.84	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	351	0.87	0.52	B
57th Street between Eighth Avenue and Broadway	North	10.0	747	0.80	1.56	B
	South	8.0	1534	0.89	3.59	C
Weekday PM Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	5.0	126	0.80	0.53	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	103	0.83	0.21	A
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	164	0.87	0.31	A
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	96	0.96	0.24	A
Eleventh Avenue between 56th Street and 55th Street	West	7.5	276	0.80	0.31	A
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	130	0.80	0.39	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	164	0.87	0.39	A
57th Street between Tenth Avenue and Bus Stop	South	3.0	526	0.80	3.65	C
57th Street between Bus Stop and Tenth Avenue	South	6.8	403	0.94	1.06	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	432	0.95	0.58	B
57th Street between Eighth Avenue and Broadway	North	10.0	854	0.89	1.61	B
	South	8.0	2166	0.95	4.73	C
Saturday Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	5.0	69	0.80	0.29	A
57th Street between Eleventh Avenue and Bus Stop	South	10.0	51	0.80	0.11	A
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	121	0.82	0.25	A
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	48	0.80	0.14	A
Eleventh Avenue between 56th Street and 55th Street	West	7.5	114	0.80	0.25	A
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	14	0.88	0.04	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	121	0.80	0.32	A
57th Street between Tenth Avenue and Bus Stop	South	3.0	271	0.81	1.87	B
57th Street between Bus Stop and Tenth Avenue	South	6.8	330	0.83	0.99	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	271	0.81	0.43	A
57th Street between Eighth Avenue and Broadway	North	10.0	778	0.85	1.53	B
	South	8.0	1436	0.85	3.52	C

Note: PMF = pedestrians per minute per foot

Table 11-33
2013 Existing Conditions: Corner Analysis

Location	Corner	Weekday AM Peak Period		Weekday Midday Peak Period		Weekday PM Peak Period		Saturday Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Eleventh Avenue and W 57th Street	Northeast	501.8	A	497.5	A	460.5	A	448.5	A
	Southeast	474.5	A	542.1	A	441.9	A	512.3	A
	Southwest	536.9	A	610.6	A	590.7	A	675.3	A
	Northwest	578.5	A	532.9	A	549.4	A	464.9	A
Eleventh Avenue and W 56th Street	Northeast	797.0	A	620.8	A	469.0	A	494.2	A
	Southeast	529.3	A	630.6	A	417.8	A	401.6	A
	Southwest	781.7	A	696.9	A	469.8	A	464.6	A
	Northwest	534.6	A	407.5	A	328.6	A	336.8	A
Eleventh Avenue and W 55th Street	Northeast	456.2	A	425.6	A	317.8	A	604.2	A
	Northwest	505.0	A	334.5	A	242.0	A	530.8	A
Tenth Avenue and W 57th Street	Southeast	357.1	A	257.1	A	231.5	A	344.7	A
	Southwest	233.3	A	114.3	A	144.5	A	362.6	A
Tenth Avenue and W 56th Street	Northeast	447.2	A	428.5	A	312.1	A	N/A	N/A
	Southwest	294.8	A	202.7	A	187.0	A		
	Northwest	364.8	A	222.4	A	211.0	A		
Tenth Avenue and W 55th Street	Northeast	432.6	A	413.2	A	549.2	A	N/A	N/A
	Northwest	244.3	A	301.0	A	287.4	A		
Ninth Avenue and W 57th Street	Southeast	160.3	A	148.5	A	145.0	A	101.4	A
	Southwest	138.4	A	151.7	A	124.4	A	137.3	A

Note: SFP = square feet per pedestrian

Table 11-34
2013 Existing Conditions: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	Two-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	161	91.2	A
	West	59.0	14.0	172	182.8	A
Eleventh Avenue and W 56th Street	North	70.0	14.0	32	520.3	A
	West	34.0	13.0	83	522.5	A
Tenth Avenue and 57th Street	South	60.0	18.0	298	113.7	A
Ninth Avenue and W 57th Street	South	70.0	19.0	619	30.7	C
Weekday Midday Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	131	109.7	A
	West	59.0	14.0	172	180.2	A
Eleventh Avenue and W 56th Street	North	70.0	14.0	34	529.7	A
	West	34.0	13.0	116	372.7	A
Tenth Avenue and 57th Street	South	60.0	18.0	403	78.9	A
Ninth Avenue and W 57th Street	South	70.0	19.0	481	35.2	C
Weekday PM Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	165	87.3	A
	West	59.0	14.0	150	208.0	A
Eleventh Avenue and W 56th Street	North	70.0	14.0	51	353.2	A
	West	34.0	13.0	149	289.0	A
Tenth Avenue and 57th Street	South	60.0	18.0	444	70.9	A
Ninth Avenue and W 57th Street	South	70.0	19.0	581	31.5	C
Saturday Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	120	123.5	A
	West	59.0	14.0	157	204.9	A
Eleventh Avenue and W 56th Street	North	70.0	14.0	51	333.3	A
	West	34.0	13.0	172	274.4	A
Tenth Avenue and 57th Street	South	60.0	18.0	287	118.0	A

Note: SFP = square feet per pedestrian

Table 11-35
2017 No Action Conditions: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	PMF	Platoon LOS
Weekday AM Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	95	0.80	0.25	A
57th Street between Eleventh Avenue and Bus Stop	South	10.0	442	0.80	0.92	B
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	244	0.80	0.51	B
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	63	0.80	0.19	A
Eleventh Avenue between 56th Street and 55th Street	West	9.0	189	0.80	0.51	B
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	15	0.80	0.04	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	352	0.80	0.92	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	479	0.89	2.99	B
57th Street between Bus Stop and Tenth Avenue	South	6.8	369	0.80	1.14	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	423	0.82	0.66	B
57th Street between Eighth Avenue and Broadway	North	10.0	882	0.83	1.77	B
	South	10.0	2137	0.94	3.80	C
Weekday Midday Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	281	0.89	0.66	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	84	0.85	0.17	A
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	96	0.83	0.19	A
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	75	0.82	0.22	A
Eleventh Avenue between 56th Street and 55th Street	West	9.0	152	0.91	0.19	A
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	45	0.80	0.13	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	72	0.83	0.18	A
57th Street between Tenth Avenue and Bus Stop	South	3.0	314	0.80	2.18	B
57th Street between Bus Stop and Tenth Avenue	South	6.8	231	0.86	0.66	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	306	0.87	0.45	A
57th Street between Eighth Avenue and Broadway	North	10.0	830	0.80	1.73	B
	South	10.0	1531	0.89	2.87	B
Weekday PM Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	388	0.80	1.01	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	92	0.83	0.18	A
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	461	0.87	0.88	B
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	97	0.96	0.24	A
Eleventh Avenue between 56th Street and 55th Street	West	9.0	443	0.80	0.88	B
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	132	0.80	0.39	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	406	0.87	0.97	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	541	0.80	3.76	C
57th Street between Bus Stop and Tenth Avenue	South	6.8	433	0.94	1.14	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	463	0.95	0.63	B
57th Street between Eighth Avenue and Broadway	North	10.0	931	0.89	1.75	B
	South	10.0	2226	0.95	3.89	C
Saturday Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	304	0.80	0.79	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	248	0.80	0.52	B
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	341	0.82	0.70	B
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	48	0.80	0.14	A
Eleventh Avenue between 56th Street and 55th Street	West	9.0	247	0.80	0.70	B
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	14	0.88	0.04	A
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	286	0.80	0.74	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	312	0.81	2.15	B
57th Street between Bus Stop and Tenth Avenue	South	6.8	379	0.83	1.13	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	296	0.81	0.47	A
57th Street between Eighth Avenue and Broadway	North	10.0	1000	0.85	1.96	B
	South	10.0	1484	0.85	2.91	B

Note: PMF = pedestrians per minute per foot

Table 11-36
2017 No Action Conditions: Corner Analysis

Location	Corner	Weekday AM Peak Period		Weekday Midday Peak Period		Weekday PM Peak Period		Saturday Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Eleventh Avenue and W 57th Street	Northeast	330.1	A	611.1	A	391.8	A	280.2	A
	Southeast	213.7	A	414.5	A	370.4	A	249.4	A
	Southwest	224.7	A	776.0	A	354.9	A	249.7	A
	Northwest	231.6	A	785.5	A	267.5	A	200.9	A
Eleventh Avenue and W 56th Street	Northeast	363.4	A	476.4	A	221.7	A	269.1	A
	Southeast	280.2	A	389.7	A	197.0	A	222.1	A
	Southwest	358.4	A	1077.8	A	223.3	A	273.8	A
	Northwest	241.8	A	609.3	A	153.6	A	194.4	A
Eleventh Avenue and W 55th Street	Northeast	254.2	A	347.0	A	174.6	A	256.1	A
	Northwest	279.0	A	323.5	A	150.0	A	284.7	A
Tenth Avenue and W 57th Street	Southeast	317.2	A	269.4	A	220.9	A	315.6	A
	Southwest	211.3	A	118.1	A	140.0	A	329.6	A
Tenth Avenue and W 56th Street	Northeast	392.1	A	598.0	A	280.4	A	N/A	N/A
	Southwest	266.5	A	229.3	A	172.9	A		
	Northwest	330.2	A	263.4	A	197.4	A		
Tenth Avenue and W 55th Street	Northeast	309.7	A	470.8	A	398.9	A	N/A	N/A
	Northwest	195.3	A	331.3	A	243.9	A		
Ninth Avenue and W 57th Street	Southeast	154.7	A	153.7	A	139.1	A	99.0	A
	Southwest	131.0	A	158.6	A	120.3	A	133.0	A

Note: SFP = square feet per pedestrian

Table 11-37
2017 No Action Conditions: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	Two-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	360	39.8	C
	West	59.0	14.0	435	67.6	A
Eleventh Avenue and W 56th Street	North	70.0	14.0	62	267.1	A
	West	34.0	13.0	210	202.5	A
Tenth Avenue and 57th Street	South	60.0	18.0	368	91.7	A
Ninth Avenue and W 57th Street	South	70.0	19.0	652	31.3	C
Weekday Midday Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	133	107.9	A
	West	59.0	14.0	105	294.4	A
Eleventh Avenue and W 56th Street	North[1]	70.0	14.0	0	N/A	A
	West	34.0	13.0	91	476.4	A
Tenth Avenue and 57th Street	South	60.0	18.0	360	88.6	A
Ninth Avenue and W 57th Street	South	70.0	19.0	438	45.3	B
Weekday PM Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	116	123.8	A
	West	59.0	14.0	397	74.5	A
Eleventh Avenue and W 56th Street	North	70.0	14.0	100	179.3	A
	West	34.0	13.0	341	123.7	A
Tenth Avenue and 57th Street	South	60.0	18.0	470	67.1	A
Ninth Avenue and W 57th Street	South	70.0	19.0	616	34.5	C
Saturday Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	240	61.6	A
	West	59.0	14.0	494	62.7	A
Eleventh Avenue and W 56th Street	North	70.0	14.0	71	240.7	A
	West	34.0	13.0	316	147.2	A
Tenth Avenue and 57th Street	South	60.0	18.0	336	100.5	A

Note: SFP = square feet per pedestrian
[1] When the total No Action project generated trips were negative, the total No Action volumes were capped at "0". "N/A" is entered for SFP because the calculation for SFP would return an error when there is "0" pedestrian volume (since "0" is in the denominator). LOS A indicates that this crosswalk has ample pedestrian space to accommodate very low pedestrian volumes.

Table 11-38
2017 With Action Conditions: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	PMF	Platoon LOS
Weekday AM Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	208	0.80	0.54	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	1050	0.80	2.19	B
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	705	0.80	1.47	B
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	1078	0.80	3.21	C
Eleventh Avenue between 56th Street and 55th Street	West	9.0	321	0.80	1.47	B
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	380	0.80	1.13	B
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	741	0.80	1.93	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	679	0.89	4.24	C
57th Street between Bus Stop and Tenth Avenue	South	6.8	655	0.80	2.02	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	590	0.82	0.92	B
57th Street between Eighth Avenue and Broadway	North	10.0	1006	0.83	2.02	B
	South	10.0	2401	0.94	4.27	C
Weekday Midday Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	516	0.89	1.21	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	950	0.85	1.87	B
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	940	0.83	1.88	B
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	1601	0.82	4.68	C
Eleventh Avenue between 56th Street and 55th Street	West	9.0	455	0.91	1.88	B
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	688	0.80	2.04	B
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	793	0.83	1.99	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	695	0.80	4.83	C
57th Street between Bus Stop and Tenth Avenue	South	6.8	850	0.86	2.43	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	663	0.87	0.98	B
57th Street between Eighth Avenue and Broadway	North	10.0	1032	0.80	2.15	B
	South	10.0	1806	0.89	3.38	C
Weekday PM Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	668	0.80	1.74	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	894	0.83	1.79	B
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	1307	0.87	2.50	B
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	1667	0.96	4.13	C
Eleventh Avenue between 56th Street and 55th Street	West	9.0	683	0.80	2.50	B
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	728	0.80	2.17	B
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	1085	0.87	2.59	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	865	0.80	6.01	D
57th Street between Bus Stop and Tenth Avenue	South	6.8	944	0.94	2.48	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	755	0.95	1.02	B
57th Street between Eighth Avenue and Broadway	North	10.0	1216	0.89	2.29	B
	South	10.0	2508	0.95	4.38	C
Saturday Peak Period						
Eleventh Avenue between 58th Street and 57th Street	East	8.0	562	0.80	1.46	B
57th Street between Eleventh Avenue and Bus Stop	South	10.0	1081	0.80	2.25	B
Eleventh Avenue between 57th Street and Bus Stop	West	10.0	1150	0.82	2.34	B
57th Street between Twelfth Avenue and Eleventh Avenue	South	7.0	1668	0.80	4.96	C
Eleventh Avenue between 56th Street and 55th Street	West	9.0	485	0.80	2.34	B
56th Street between Twelfth Avenue and Eleventh Avenue	North	7.0	444	0.88	1.21	B
Eleventh Avenue between Bus Stop and 56th Street	West	7.0	917	0.80	2.39	B
57th Street between Tenth Avenue and Bus Stop	South	3.0	648	0.81	4.46	C
57th Street between Bus Stop and Tenth Avenue	South	6.8	918	0.83	2.75	B
57th Street between Bus Stop and Ninth Avenue	South	13.0	603	0.81	0.96	B
57th Street between Eighth Avenue and Broadway	North	10.0	1237	0.85	2.43	B
	South	10.0	1762	0.85	3.45	C

Note: PMF = pedestrians per minute per foot

Table 11-39
2017 With Action Conditions: Corner Analysis

Location	Corner	Weekday AM Peak Period		Weekday Midday Peak Period		Weekday PM Peak Period		Saturday Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Eleventh Avenue and W 57th Street	Northeast	266.2	A	323.7	A	237.2	A	194.8	A
	Southeast	105.4	A	93.2	A	93.2	A	81.6	A
	Southwest	81.4	A	75.2	A	66.4	A	60.0	B
	Northwest	170.0	A	225.4	A	144.5	A	122.4	A
Eleventh Avenue and W 56th Street	Northeast	209.7	A	157.9	A	122.3	A	146.8	A
	Southeast	209.3	A	185.8	A	135.4	A	152.7	A
	Southwest	185.7	A	146.9	A	106.5	A	124.3	A
	Northwest	80.7	A	60.4	A	48.3	B	58.8	B
Eleventh Avenue and W 55th Street	Northeast	185.0	A	162.1	A	118.7	A	150.3	A
	Northwest	176.4	A	130.9	A	94.0	A	145.1	A
Tenth Avenue and W 57th Street	Southeast	229.7	A	150.6	A	143.8	A	179.4	A
	Southwest	160.5	A	81.3	A	97.8	A	173.5	A
Tenth Avenue and W 56th Street	Northeast	293.1	A	307.2	A	200.3	A	N/A	N/A
	Southwest	218.1	A	162.5	A	137.3	A		
	Northwest	259.6	A	183.5	A	156.0	A		
Tenth Avenue and W 55th Street	Northeast	252.0	A	260.7	A	257.4	A	N/A	N/A
	Northwest	167.8	A	212.6	A	183.9	A		
Ninth Avenue and W 57th Street	Southeast	136.4	A	117.8	A	114.2	A	85.1	A
	Southwest	114.1	A	113.4	A	97.7	A	104.7	A

Note: SFP = square feet per pedestrian

Table 11-40
2017 With Action Conditions: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	Two-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	1067	12.3	E+
	West	59.0	14.0	593	49.0	B
Eleventh Avenue and W 56th Street	North	70.0	14.0	212	76.7	A
	West	34.0	13.0	396	105.1	A
Tenth Avenue and 57th Street	South	60.0	18.0	617	53.7	B
Ninth Avenue and W 57th Street	South	70.0	19.0	769	26.1	C
Weekday Midday Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	1198	10.8	E+
	West	59.0	14.0	500	59.4	B
Eleventh Avenue and W 56th Street	North	70.0	14.0	309	56.7	B
	West	34.0	13.0	514	80.6	A
Tenth Avenue and 57th Street	South	60.0	18.0	881	34.9	C
Ninth Avenue and W 57th Street	South	70.0	19.0	671	28.7	C
Weekday PM Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	1134	11.6	E+
	West	59.0	14.0	753	38.6	C
Eleventh Avenue and W 56th Street	North	70.0	14.0	350	50.0	B
	West	34.0	13.0	675	60.3	A
Tenth Avenue and 57th Street	South	60.0	18.0	909	33.7	C
Ninth Avenue and W 57th Street	South	70.0	19.0	814	25.4	C
Saturday Peak Period						
Eleventh Avenue and W 57th Street	South	70.0	15.0	1305	10.1	E+
	West	59.0	14.0	861	34.6	C
Eleventh Avenue and W 56th Street	North	70.0	14.0	286	58.1	B
	West	34.0	13.0	651	69.2	A
Tenth Avenue and 57th Street	South	60.0	18.0	798	41.0	B

Note: SFP = square feet per pedestrian
"+" denotes a significant adverse pedestrian impact.

I. VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Accident records for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between May 31, 2009 and May 31, 2012. 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 vehicular accidents with pedestrians and bicycles at each location.

During the May 31, 2009 and May 31, 2012 three-year period, a total of 250 reportable and non-reportable accidents, 2 fatalities, 378 injuries, and 77 pedestrian/bicyclist-related accidents occurred at the study area intersections. A rolling total of accident data identifies ~~three~~ four study area intersections as high accident locations in the 2009 to 2012 period. These intersections are Eleventh Avenue at West 57th Street, Tenth Avenue at West 57th Street, Ninth Avenue at West 57th Street, and Eighth Avenue at West 57th Street. **Table 11-41** 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 11-41
Accident Summary

Intersection		Study Period						Accidents by Year							
North-South Roadway	East-West Roadway	All Accidents by Year				Total Fatalities	Total Injuries	Pedestrian				Bicycle			
		2009	2010	2011	2012			2009	2010	2011	2012	2009	2010	2011	2012
Route 9A	West 55th Street	4	4	6	0	0	20	1						1	
Route 9A	West 56th Street	2	3	6	3	0	25								
Route 9A	West 57th Street	12	8	10	3	0	66	1							
Twelfth Avenue	West 55th Street	4	4	6	0	0	20	1						1	
Twelfth Avenue	West 56th Street	2	3	6	3	0	25								
Twelfth Avenue	West 57th Street	12	8	10	3	0	66	1							
Eleventh Avenue	West 55th Street	1	0	4	0	0	6			3					
Eleventh Avenue	West 56th Street	1	3	1	1	0	6						1		
Eleventh Avenue	**West 57th Street**	3	5	8	3	0	23	3	1	1	2		1	1	1
Eleventh Avenue	West 58th Street	0	0	0	0	0	0								
Eleventh Avenue	West 59th Street	0	0	1	1	0	2			1	1				
Tenth Avenue	West 55th Street	1	1	2	1	0	7		1						
Tenth Avenue	West 56th Street	2	0	5	0	0	8	1		3					
Tenth Avenue	**West 57th Street**	8	3	5	4	1	20	4	2	3	3	1			
Tenth Avenue	West 58th Street	0	2	1	0	0	5		1	1					
Ninth Avenue	West 56th Street	2	3	1	4	0	14		1		1			1	
Ninth Avenue	**West 57th Street**	7	7	9	6	0	38	2	4	4	3	1	2	1	2
Eighth Avenue	**West 57th Street**	3	10	9	0	1	27	2	3	8			1	1	

Note: Bold text indicates high accident location.
Source: NYSDOT May 31, 2009 and May 31, 2012 accident data.

Table 11-42 shows a detailed description of each pedestrian/bicyclist-related accident at the ~~three~~ four high accident locations listed above during the three year period.

ELEVENTH AVENUE AND WEST 57TH STREET

Based on the review of the accident history at the intersection of Eleventh Avenue and West 57th Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. Based on the detailed description, half of the pedestrian-related accidents were related to vehicles making turning movements from Eleventh Avenue onto West 57th Street. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Eleventh Avenue and West 57th Street is signalized and provides four regular crosswalks with countdown timers.

With the proposed project, the intersection of Eleventh Avenue and West 57th Street would experience increases in vehicular traffic of approximately 115, 161, 170, and 154 vehicles during the weekday AM, midday, PM, and Saturday peak hours, respectively. However, in terms of turning vehicles which could potentially conflict with the pedestrians in the crosswalks, the intersection of Eleventh Avenue and West 57th could experience up to 43 incremental project-generated vehicles executing a left or a right turn during any of the four peak hours analyzed. This would result in one turning vehicle in approximately every one-and-a-half minute during any given peak hour. In terms of pedestrian trips, the highest incremental pedestrian traffic is expected to traverse the south crosswalk with project generated trips of 707, 1,065, 1,018, and 1,065 pedestrians during the weekday AM, midday, PM, and Saturday peak hours, respectively. As for the conflicting vehicles, a maximum of up to 16 incremental project-generated vehicles executing a left or a right turn could potentially conflict with the pedestrians in the critical south crosswalk during any of the four analysis peak hours. This would result in one project generated turning vehicle in approximately every four minutes during any given peak hour.

As discussed above in Section F, "Detailed Traffic Analysis," this intersection would be impacted during all peak hours in the 2017 With Action condition. However, as described in Chapter 19, "Mitigation," the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures during the weekday AM and midday peak hours, but remain unmitigated during the weekday PM and Saturday peak hours. To increase pedestrian safety at this intersection, measures such as the addition of pedestrian warning signs can be implemented. Pedestrian safety measures at this intersection may be evaluated in the future as part of the TMP that is described in Chapter 19, "Mitigation," at which time additional pedestrian safety remedies could be implemented subject to NYCDOT consultation and approval.

TENTH AVENUE AND WEST 57TH STREET

Based on the review of the accident history at the intersection of Tenth Avenue and West 57th Street, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. Based on the detailed description, half of the pedestrian-related accidents were related to vehicles making left turning movements from Tenth Avenue onto West 57th Street. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Tenth Avenue and West 57th Street is signalized and provides four high visibility crosswalks. In addition, countdown timers are present on all four crosswalks. With the proposed project, the intersection of Tenth Avenue and West 57th Street would experience increases in vehicular traffic of approximately 74, 101, 111, and 97 vehicles during the weekday AM, midday, PM, and Saturday peak hours, respectively. In terms of pedestrian trips, the highest incremental pedestrian traffic is expected to traverse the south crosswalk with project generated trips of 249, 521, 439, and 462 pedestrians during the weekday AM, midday, PM, and Saturday peak hours, respectively. All other crosswalks would experience fewer than 200 incremental pedestrian trips during all four analysis peak hours.

As discussed above in Section F, "Detailed Traffic Analysis," this intersection would be impacted during all peak hours in the 2017 With Action condition. However, as described in Chapter 19, "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 restriping of all four crosswalks, which are faded, and the installation of pedestrian warning signs can be implemented to improve pedestrian safety at this intersection.

Table 11-42
Vehicle and Pedestrian Accident Details

Inter-section	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
Eleventh Avenue & West 57th Street	2009	5/11	14:10 PM	X		Making left turn – South	Unknown	X			Failure to yield R.o.W.
		8/20	17:10 PM	X		Making left turn – Southwest	Crossing with signal	X			
		10/23	23:15 PM	X		Making right turn – Northeast	Crossing with signal	X			
	2010	1/21	15:10 PM	X		Slowed or stopping – South	Crossing with signal				Unknown
		9/8	18:20 PM	X		Going straight – North	Crossing with signal				Failure to yield R.o.W.
	2011	3/11	7:30 AM	X		Making left turn – North	Crossing with signal	X			Failure to yield R.o.W.
		5/5	8:30 AM	X		Going straight – South	Along highway with traffic		X		Passing or lane usage improper
	2012	1/10	18:40 PM	X		Slowed or stopping – West	Crossing		X		View obstructed/limited
		2/16	20:50 PM	X		Going straight – South	Going straight – East				
		2/19	16:30 PM	X		Going straight – South	Crossing against signal		X		
Tenth Avenue & West 57th Street	2009	7/9	14:30 PM	X		Going straight – East	Crossing		X		
		8/14	12:30 PM	X		Stopped in traffic – West	Going straight – West		X		
		9/3	21:10 PM	X		Going straight – East	Unknown				Unsafe speed
		9/14	13:00 PM	X		Making right turn – East	Unknown	X			
		10/8	15:25 PM	X		Making left turn – Northwest	Crossing with signal	X			
	2010	1/10	19:50 PM	X		Making left turn – Northwest	Crossing with signal	X		X	
		2/27	23:40 PM	X		Making left turn – Northwest	Crossing with signal	X			Failure to yield R.o.W.
	2011	1/6	8:00 AM	X		Backing – East	Crossing with signal				Backing unsafely
		3/28	14:10 PM	X		Going straight – West	Crossing against signal		X		Traffic control devices disregarded
		12/2	2:42 AM	X	X	Going straight – East	Unknown				Unknown
	2012	1/7	19:45 PM	X		Making left turn – Northwest	Crossing with signal	X			Failure to yield R.o.W.
		3/29	7:10 AM	X		Making left turn – Northwest	Crossing with signal	X		X	
		4/30	8:30 AM	X		Making left turn – West	Crossing with signal	X			Glare
Ninth Avenue & West 57th Street	2009	8/24	19:30 PM	X		Unknown	Going straight – Southwest				
		10/28	6:42 AM	X		Making left turn – South	Crossing against signal	X	X		
		11/12	15:37 PM	X		Making left turn – South	Crossing with signal	X			
	2010	1/6	13:20 PM	X		Making left turn – South	Crossing with signal	X		X	
		3/20	16:35 PM	X		Unknown	Along highway with traffic				Unknown
		6/23	14:39 PM	X		Going straight – West	Going straight – West			X	
		7/18	21:05 PM	X		Going straight – East	Unknown			X	
		9/10	1:00 AM	X		Making left turn – West	Crossing with signal	X		X	
		11/4	22:15 PM	X		Making left turn – Southeast	Crossing with signal	X			
	2011	8/3	21:30 PM	X		Going straight – West	Crossing with signal		X		
		8/15	16:30 PM	X		Making left turn – Southwest	Going straight – East	X			
		8/26	10:00 AM	X		Starting from parking – West	Other actions in roadway		X		
		9/10	15:25 PM	X		Making left turn – Southwest	Crossing against signal	X	X		
		11/4	18:40 PM	X		Going straight – East	Crossing against signal		X		
	2012	1/26	23:10 PM	X		Making turn – Southwest	Crossing with signal				Turning improper / unsafe speed
		1/27	17:00 PM	X		Making left turn – Southwest	Making left turn – Southwest	X			Aggressive driving, turning improper
		2/3	17:50 PM	X		Going straight – South	Going straight – South			X	Following too closely
		2/18	1:00 AM	x		Making left turn – North	Crossing against signal	X		X	Failure to yield R.o.W.
		3/19	15:40 PM	X		Going straight – East	Not in the roadway				Reaction to other uninvolved vehicle
Eighth Avenue & West 57th Street	2009	9/22	5:42 AM	X		Making left turn – West	Crossing with signal	X			
		12/2	23:00 PM	X		Going straight – East	Crossing			X	
	2010	5/10	15:12 PM	X		Making right turn – Northwest	Crossing with signal	X			
		7/9	8:45 AM	X		Making right turn – Northeast	Crossing with signal	X			
		8/25	22:50 PM	X		Going straight – East	Going straight – East				Unknown
		11/2	10:29 AM	X		Making right turn – North	Unknown	X		X	
	2011	3/5	2:40 AM	X		Going straight – North	Crossing with signal		X	X	
		3/11	18:50 PM	X		Making right turn – East	Crossing with signal	X		X	Driver inexperience
		3/19	4:20 AM	X		Going straight – North	Unknown				Unknown
		3/29	23:00 PM	X		Making right turn – Northeast	Unknown	X			Failure to yield R.o.W.
		6/28	21:46 PM	X		Going straight – West	Crossing with signal				Failure to yield R.o.W. / passing or lane usage improperly
		7/28	21:20 PM	X		Going straight – West	Crossing against signal		X	X	
		10/1	1:40 AM	X		Going straight – North	Crossing				Alcohol involvement
		11/16	23:09 PM	X		Going straight – West	Crossing against signal		X		
		12/26	10:00 AM	X		Going straight – East	Other actions in roadway		X		

NINTH AVENUE AND WEST 57TH STREET

Based on the review of the accident history at the intersection of Ninth Avenue and West 57th 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 Ninth Avenue and West 57th Street is signalized and provides four high visibility crosswalks. In addition, countdown timers are present on all four crosswalks. Based on the detailed description, half of the pedestrian-related accidents were related to vehicles making left turning movements from West 57th Street onto Ninth Avenue. With the proposed actions, the intersection of Ninth Avenue and West 57th Street would experience increases in vehicular traffic of approximately 64, 83, 81, and 81 vehicles during the weekday AM, midday, PM, and Saturday peak hours, respectively. In terms of pedestrian trips, the highest incremental pedestrian traffic is expected to traverse the south crosswalk with project generated trips of 117, 233, 198, and 193 pedestrians during the weekday AM, midday, PM, and Saturday peak hours, respectively. All other crosswalks would experience fewer than 200 incremental pedestrian trips during all four analysis peak hours.

As discussed above in Section F, "Detailed Traffic Analysis," this intersection would be impacted during all peak hours in the 2017 With Action condition. However, as described in Chapter 19, "Mitigation," the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the proposed actions are not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of signage specifically warning pedestrians along the south crosswalk to wait for the walk signal, and restriping the faded east crosswalk can be implemented to improve pedestrian safety at this intersection.

EIGHTH AVENUE AND WEST 57TH STREET

Based on the review of the accident history at the intersection of Eighth Avenue and West 57th 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 Eighth Avenue and West 57th Street is signalized and provides four high visibility crosswalks. In addition, countdown timers are present on the north and south crosswalks. With the proposed actions, the intersection of Eighth Avenue and West 57th Street would experience increases in vehicular traffic of approximately 51, 63, 62, and 63 vehicles during the weekday AM, midday, PM, and Saturday peak hours, respectively. In terms of pedestrian trips, the highest incremental pedestrian traffic is expected to traverse the south crosswalk with project generated trips of 70, 147, 122, and 119 pedestrians during the weekday AM, midday, PM, and Saturday peak hours, respectively. All other crosswalks would experience fewer than 200 incremental pedestrian trips during all four analysis peak hours.

As discussed above in Section F, "Detailed Traffic Analysis," this intersection would be impacted during all peak hours in the 2017 With Action condition. However, as described in Chapter 19, "Mitigation," the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Because the incremental increase in pedestrian trips from the proposed actions 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 actions are not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the restriping of the east and west crosswalks, which are

without striping where repaved, and the installation of countdown timers on the east and west crosswalks can be implemented to improve pedestrian safety at this intersection.

J. PARKING

2013 EXISTING CONDITIONS

An inventory of on- and off-street parking within a ¼-mile of the project site was conducted in February and March 2013. 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 project site are illustrated in **Figure 11-37** and summarized in **Table 11-43**. 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. Based on field observations, on-street parking in the area is generally at or near full utilization during daytime hours.

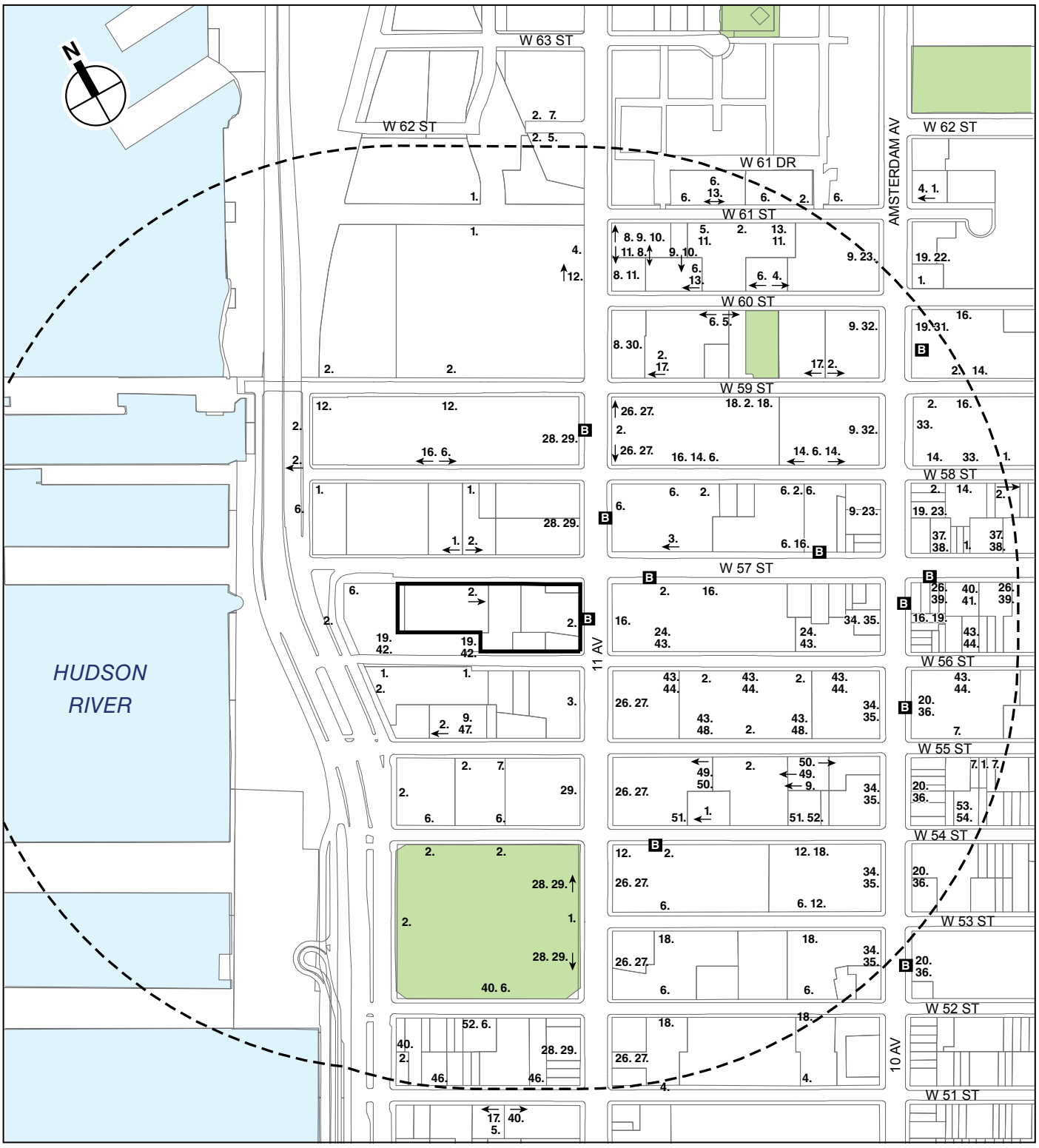
Table 11-43
On-Street Parking Regulations

No.	Regulation	No.	Regulation
1	NP Anytime	29	2-Hr Parking 8AM-7PM Ex. Sun.
2	NS Anytime	30	1-Hr Parking 8AM-7PM Except Sun.
3	No Stopping Anytime	31	1-Hr Parking 10AM-7PM Except Sun.
4	NP 9-10:30AM Mon. & Thur.	32	1-Hr Parking 9AM-4PM Mon-Fri, 9AM-7PM Sat
5	NP 9-10:30AM Tue. & Fri.	33	NS 7AM-7PM Mon-Fri.
6	NP 8AM-6PM Mon-Fri.	34	NS 4PM-7PM Ex. Sun.
7	NS Ex. Trucks Loading & Unloading 7AM-7PM Mon-Fri.	35	1-Hr Parking 9AM-4PM Except Sun.
8	NP 7:30AM-8AM Mon., Tue., Thur., Fri.	36	1-Hr Parking 10AM-4PM Mon-Fri, 9AM-7PM Sat
9	NS 4PM-7PM Mon-Fri.	37	NP 8:30-9AM Ex Sun.
10	1-Hr Parking 8AM-4PM Mon.-Fri., 8AM-7PM Sat.	38	1-Hr Parking 9AM-7PM Except Sun.
11	NS 7AM-7PM School Days	39	1-Hr Parking 8:30AM-7PM Except Sun.
12	Bus Layover Area No Standing Anytime	40	NS Anytime Taxi Stand
13	NS 7AM-4PM School Days	41	NS Hotel Loading Zone
14	NS 7AM-7PM Mon-Fri. Ex Authorized Vehicles (Various)	42	NP 10AM-7PM Mon-Fri.
15	2-Hr Parking 10AM-7PM Mon-Fri, 9AM-7PM Sat	43	NP 8AM-7PM Mon-Fri.
16	NS Ex Authorized Vehicles (Various)	44	NS 8-9:30AM Mon-Fri.
17	NP 8AM-Midnight Including Sun.	45	NS Ex. Trucks Loading & Unloading 9:30AM-5PM Mon-Fri.
18	NP 8AM-6PM Ex Sun.	46	NS Ex. Trucks Loading & Unloading 7AM-7PM Ex Sun.
19	NS 7AM-10AM, Mon-Fri.	47	NS Ex. Trucks Loading & Unloading 7AM-4PM Mon-Fri.
20	NS 7AM-10AM, 4PM-7PM Mon-Fri.	48	NS 5PM-7PMAM Mon-Fri.
21	2-Hr Parking 10AM-4PM Mon-Fri, 9AM-7PM Sat	49	NP 7AM-7PM Mon.-Fri.
22	1-Hr Parking 10AM-7PM Mon-Fri, 9AM-7PM Sat.	50	Taxi Relief Stand 1-Hr Limit NP 7AM-4PM Ex. Taxis
23	2-Hr Parking 9AM-4PM Mon-Fri, 9AM-7PM Sat	51	NP 10-11:30AM Tue. & Fri.
24	NP 8-9:30AM Mon. & Thur.	52	NS Ex Trucks Loading & Unloading 8AM-6PM Ex Sun.
25	NP 8-9:30AM Tue. & Fri.	53	NS 11PM-6AM Incl. Sun.
26	NP 8AM-8:30PM Ex Sun.	54	NP 8AM-Midnight Ex Sun.
27	2-Hr Parking 8:30AM-7PM Ex. Sun.	55	NS 7AM-5PM Mon-Fri. (Dept. of Education)
28	NP 7:30-8AM Ex Sun.		

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.; February, 2013

OFF-STREET PARKING

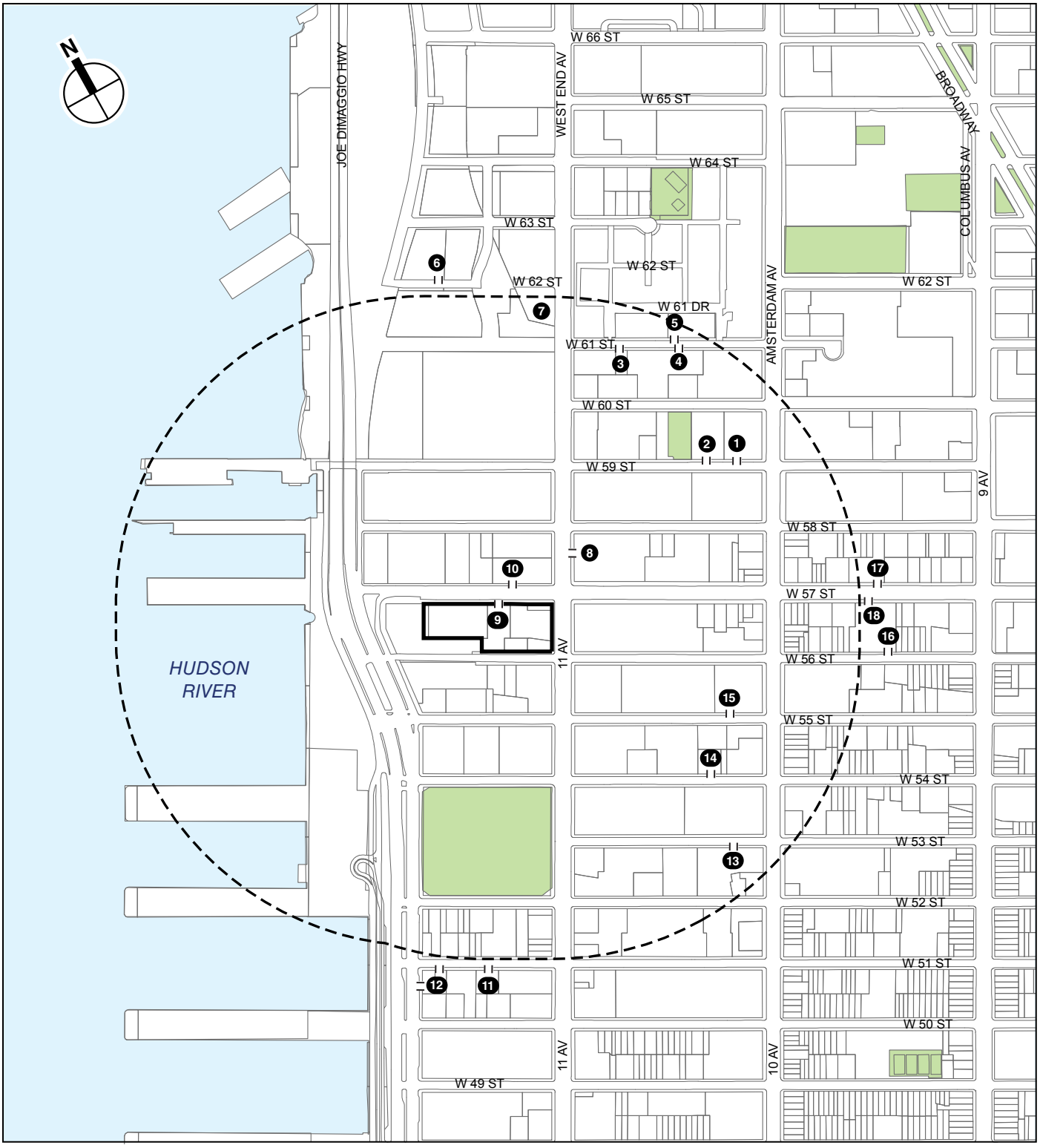
Off-street publicly accessible parking lots and garages (see **Figure 11-38**) within ¼-mile of the project site were surveyed in March 2013. Each facility's operating license and legal capacity were noted. Based on responses given by parking attendants and visual inspections, where possible, estimates were



On-Street Parking Regulations

606 WEST 57TH STREET

Figure 11-37



Off Street Parking Facilities

606 WEST 57TH STREET

Figure 11-38

made on the parking occupancy or utilization at each facility for the weekday 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 11-44**.

Within the ¼-mile parking study area, 18 public parking facilities were inventoried. The combined capacity of these facilities totals 3,651 parking spaces. Overall, they were 55, 80, 73, 55, and 36 percent utilized, with 1,647, 741, 995, 1,621, and 2,340 parking spaces available during the weekday morning, midday, evening, overnight, and Saturday time periods, respectively.

Table 11-44
2013 Existing Off-Street Parking - 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	Concerto Garage Corp. - 200 W. 60th Street	884653	265	40%	90%	70%	40%	40%	106	239	186	106	106	159	26	79	159	159
2	Propark America NY - 515 W. 59th Street	1171649	190	50%	80%	80%	60%	45%	95	152	152	114	86	95	38	38	76	104
3	Enterprise E. 60 West - 10 West End Avenue	1307111	150	70%	70%	60%	50%	20%	105	105	90	75	30	45	45	60	75	120
4	Elemant Parking Management - 270 W. 60th Street	1380145	90	75%	80%	80%	75%	33%	68	72	72	68	30	22	18	18	22	60
5	Sessanta Parking Co. - 229 W. 60th Street	1342356	200	50%	90%	75%	30%	25%	100	180	150	60	50	100	20	50	140	150
6	Aspen 36 LLC - 60 Riverside Drive	1416505	113	60%	80%	80%	40%	50%	68	90	90	45	57	45	23	23	68	56
-	(same as above) - 400 W. 63rd Street	1416502	118	60%	80%	80%	40%	50%	71	94	94	47	59	47	24	24	71	59
7	West End Towers - 55 West End Avenue	948832	375	50%	81%	75%	55%	41%	188	304	281	206	154	187	71	94	169	221
8	Kinney Parking System - 838-852 11th Avenue	1137953	84	75%	100%	90%	50%	70%	63	84	76	42	59	21	0	8	42	25
9	GMC - 622 W. 57th Street	429031	1,000	70%	70%	70%	70%	20%	700	700	700	700	200	300	300	300	300	800
10	MTP 57 LLC - 601 W. 57th Street	1205750	100	50%	80%	65%	50%	50%	50	80	65	50	50	50	20	35	50	50
11	50-51 Operating Corp. - 622-630 W. 51st Street	1189161	121	33%	90%	50%	25%	90%	40	109	61	30	109	81	12	60	91	12
12	K Park Group LLC - 680 12th Avenue	1186413	170	50%	81%	75%	55%	41%	85	138	128	94	70	85	32	42	76	100
13	Clinton 53 Parking LLC - 515 W. 52nd Street	1263170	83	25%	90%	60%	15%	25%	21	75	50	12	21	62	8	33	71	62
14	815 Tenth Parking LLC - 815 Tenth Avenue	1179523	48	70%	90%	90%	60%	60%	34	43	43	29	29	14	5	5	19	19
15	Worthy Parking LLC - 841 Tenth Avenue	1148650	86	40%	100%	80%	80%	50%	34	86	69	69	43	52	0	17	17	43
16	56/57 Operating Corp. - 409 W. 56th Street	1257438	25	60%	100%	60%	Closed	50%	15	25	15	Closed	13	10	0	10	Closed	12
17	Effective Parking LLC - 435 W. 57th Street	368157	55	66%	90%	90%	90%	90%	36	50	50	50	50	19	5	5	5	5
18	Apex Parking LLC - 440 W. 57th Street	368300	378	33%	75%	75%	55%	25%	125	284	284	208	95	253	94	94	170	283
			3,651	**55%**	**80%**	**73%**	**55%**	**36%**	**2,004**	**2,910**	**2,656**	**2,005**	**1,311**	**1,647**	**741**	**995**	**1,621**	**2,340**

Notes: MD = Midday; ON = Overnight; SAT=Saturday; CLD = Closed
Sources: Survey conducted by AKRF Inc.; March 2013.

THE FUTURE WITHOUT THE PROPOSED ACTIONS

Overall off-street public parking utilization is expected to experience the same growth as projected for traffic. No Action projects within the ¼-mile parking study area are expected to include a total of up to 1,163 and 472 ~~322~~ off-street public and accessory parking spaces, respectively. As presented in **Table 11-45**, the addition of the public and accessory parking spaces, and the parking demand generated from background growth and discrete projects that would advance absent the proposed actions, the No Action condition public parking utilization is

expected to increase to 70, 89, 85~~6~~, 73~~4~~, and 51 ~~49~~ percent during the weekday morning, midday, evening, overnight, and Saturday time periods, respectively, in the ¼-mile off-street parking study area.

Table 11-45
2013 Existing and 2017 No Action Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight	Saturday
2013 Existing Public Parking Supply	3,651	3,651	3,651	3,626	3,651
2013 Existing Public Parking Demand	2,004	2,910	2,656	2,005	1,311
2013 Existing Public Parking Utilization	55%	80%	73%	55%	36%
2013 Existing Public Parking Supply	3,651	3,651	3,651	3,626	3,651
New No Action Project Public Parking Supply Total	1,163	1,163	1,163	1,163	1,163
2017 No Action Public Parking Supply Total	4,814	4,814	4,814	4,789	4,814
2017 No Action Background Incremental Demand	20	29	27	20	13
Discrete No Action Projects Total Parking Demand	1,763~~679~~	1,755~~688~~	1,845~~761~~	1,953~~843~~	1,382~~222~~
Discrete No Action Projects Accessory Parking Spaces	472~~322~~	472~~322~~	472~~322~~	472~~322~~	472~~322~~
Discrete No Action Parking Demand Accommodated by Accessory Parking	416~~322~~	407~~322~~	432~~322~~	467~~322~~	255~~205~~
Discrete No Action Parking Demand Accommodated by Public Parking	1,34~~757~~	1,34~~866~~	1,41~~339~~	1,486~~521~~	1,127~~017~~
No Action Incremental Public Parking Demand	1,36~~777~~	1,37~~795~~	1,44~~066~~	1,506~~41~~	1,140~~030~~
2017 No Action Public Parking Demand Total	3,37~~181~~	4,287~~305~~	4,096~~122~~	3,511~~46~~	2,451~~341~~
2017 No Action Public Parking Utilization	70%	89%	85~~6~~%	73~~4~~%	51~~49~~%
2017 No Action Available Spaces (Shortfall)	1,44~~333~~	52~~709~~	718~~692~~	1,278~~43~~	2,363~~473~~

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

In the future With Action condition, ~~future developments (including the No Action projects and~~ the proposed actions are expected to eliminate the existing 1,000 space public parking garage on the project site. The proposed actions would include a below-grade public parking garage with ~~approximately~~ up to 500 spaces.

The weekday and Saturday incremental parking demand generated by the proposed actions are presented in **Tables 11-46** and **11-47**. As presented in **Table 11-48**, accounting for the displacement and the addition of public parking spaces and the parking demand generated from ~~background growth, No Action projects and~~ the proposed actions, the With Action public parking utilization is expected to increase to 81, 102, 97~~8~~, 85~~6~~, and 60 ~~57~~ percent during the weekday morning, midday, evening, overnight, and Saturday time periods, respectively. This represents a parking shortfall of approximately 80 ~~98~~ spaces during the weekday midday peak period. As discussed above, the proposed actions could provide a smaller garage with 395 spaces. With a smaller garage, the parking shortfall during the weekday midday peak period would be greater than with a 500 space garage (a shortfall of 185 ~~203~~ spaces), and there is a potential that additional parking shortfall could occur during other analyzed peak periods.

Most of this excess demand is expected to be accommodated by parking facilities outside of the ¼-mile parking study area radius. However, some may seek parking on-street or choose alternate modes of transportation. As stated in the *CEQR Technical Manual* and discussed in the above parking analysis methodology, a parking shortfall resulting from a project located in Manhattan and other CBD neighborhoods is generally not considered a significant adverse parking impact due to the magnitude of available alternative modes of transportation.

Table 11-46
Proposed Actions—Weekday Parking Demand

Hour	Residential	Destination Retail	Local Retail	Community Facility		Hotel	Total
				Staff	Visitors		
12:00 AM - 1:00 AM	119	0	0	0	0	30	149
1:00 AM - 2:00 AM	119	0	0	0	0	31	150
2:00 AM - 3:00 AM	119	0	0	0	0	31	150
3:00 AM - 4:00 AM	119	0	0	0	0	31	150
4:00 AM - 5:00 AM	119	0	0	0	0	31	150
5:00 AM - 6:00 AM	119	0	0	0	0	31	150
6:00 AM - 7:00 AM	119	0	0	0	0	31	150
7:00 AM - 8:00 AM	106	0	0	0	0	31	137
8:00 AM - 9:00 AM	77	2	0	14	8	26	127
9:00 AM - 10:00 AM	61	4	1	18	8	22	114
10:00 AM - 11:00 AM	51	7	1	18	8	20	105
11:00 AM - 12:00 PM	47	9	2	18	7	18	101
12:00 PM - 1:00 PM	47	12	2	18	7	21	107
1:00 PM - 2:00 PM	47	12	2	18	7	18	104
2:00 PM - 3:00 PM	47	10	1	18	6	15	97
3:00 PM - 4:00 PM	48	12	0	18	6	11	95
4:00 PM - 5:00 PM	55	11	0	14	6	9	95
5:00 PM - 6:00 PM	71	9	0	2	0	20	102
6:00 PM - 7:00 PM	86	8	0	0	0	15	109
7:00 PM - 8:00 PM	100	8	0	0	0	21	129
8:00 PM - 9:00 PM	106	6	0	0	0	24	136
9:00 PM - 10:00 PM	111	0	0	0	0	26	137
10:00 PM - 11:00 PM	115	0	0	0	0	28	143
11:00 PM - 12:00 AM	119	0	0	0	0	29	148

Table 11-47
Proposed Actions—Saturday Parking Demand

Hour	Residential	Destination Retail	Local Retail	Community Facility		Hotel	Total
				Staff	Visitors		
12:00 AM - 1:00 AM	119	0	0	0	0	30	149
1:00 AM - 2:00 AM	119	0	0	0	0	31	150
2:00 AM - 3:00 AM	119	0	0	0	0	31	150
3:00 AM - 4:00 AM	119	0	0	0	0	31	150
4:00 AM - 5:00 AM	119	0	0	0	0	31	150
5:00 AM - 6:00 AM	119	0	0	0	0	31	150
6:00 AM - 7:00 AM	116	0	0	0	0	31	147
7:00 AM - 8:00 AM	108	2	0	0	0	30	140
8:00 AM - 9:00 AM	98	6	0	7	4	27	142
9:00 AM - 10:00 AM	85	10	1	9	4	24	133
10:00 AM - 11:00 AM	70	15	3	9	4	24	125
11:00 AM - 12:00 PM	53	30	3	9	3	24	122
12:00 PM - 1:00 PM	36	32	4	9	3	24	108
1:00 PM - 2:00 PM	38	36	4	9	3	27	117
2:00 PM - 3:00 PM	43	36	5	9	4	22	119
3:00 PM - 4:00 PM	48	36	5	9	4	16	118
4:00 PM - 5:00 PM	54	35	4	7	4	16	120
5:00 PM - 6:00 PM	61	35	4	1	1	16	118
6:00 PM - 7:00 PM	72	31	4	0	0	16	123
7:00 PM - 8:00 PM	88	20	4	0	0	20	132
8:00 PM - 9:00 PM	103	10	3	0	0	22	138
9:00 PM - 10:00 PM	118	0	0	0	0	25	143
10:00 PM - 11:00 PM	119	0	0	0	0	28	147
11:00 PM - 12:00 AM	119	0	0	0	0	29	148

Table 11-48
2017 No Action and With Action Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight	Saturday
2017 No Action Public Parking Supply	4,814	4,814	4,814	4,789	4,814
2017 No Action Public Parking Demand	3,371~~81~~	4,287~~305~~	4,096~~122~~	3,511~~46~~	2,451~~341~~
2017 No Action Public Parking Utilization	70%	89%	85~~6~~%	73~~4~~%	51~~49~~%
2017 No Action Public Parking Supply	4,814	4,814	4,814	4,789	4,814
Displaced Public Parking Supply Total	-1,000	-1,000	-1,000	-1,000	-1,000
New Proposed Actions Public Parking Supply Total	500	500	500	500	500
2017 With Action Public Parking Supply Total	4,314	4,314	4,314	4,289	4,314
Proposed Actions Parking Demand	127	107	102	150	117
Proposed Actions Parking Demand Accommodated by Public Parking	127	107	102	150	117
2017 With Action Public Parking Demand Total	3,498~~508~~	4,394~~412~~	4,198~~224~~	3,661~~96~~	2,568~~458~~
2017 With Action Public Parking Utilization	81%	102%	97~~8~~%	85~~6~~%	60~~57~~%
2017 With Action Available Spaces (Shortfall)	816~~06~~	(809~~8~~)	116~~90~~	628~~593~~	1,746~~856~~

✶