12. Transportation

12.1 INTRODUCTION

This chapter describes the transportation characteristics and potential impacts associated with the Proposed Action, which involves zoning map and text amendments for an approximately 70-block area in the East Midtown neighborhood of Manhattan in Community Districts 5 and 6. The rezoning area is generally bounded by East 57th Street to the north, East 39th Street to the south, Second Avenue to the east, and Fifth Avenue to the west. As described in detail in other sections of this FEIS, the proposed rezoning would allow for the addition of modern and sustainable office space to ensure the area remains a key job center for the city and region, capitalizing on the area's existing and expanding transportation network.

Typically, CEQR assessments of large area-wide zoning proposals not associated with specific development projects assume an approximately 20-year build period. This is the time frame that can be reasonably predicted into the foreseeable future without engaging in highly speculative projections. Thus, the transportation analyses in this EIS address a development program that could reasonably be constructed by 2033.

As discussed in Chapter 1 "Project Description," DCP has developed a Reasonable Worst Case Development Scenario (RWCDS) identifying 19 projected sites that are considered likely to be developed by 2033, the analysis year for the proposed action, and 20 potential development sites that are considered less likely to be developed. This chapter analyzes only projected development sites. Figure 12-1 shows the boundaries of the proposed rezoning area and the locations of projected and potential development sites. Table 12-1 summarizes the incremental net change of gross square feet (gsf) of floor area by land use for the RWCDS.

The proposed rezoning action would result in a change in permitted development floor area for commercial land uses. If approved, the rezoning could result in a net increase of approximately 3.5 million gsf of new development on projected sites. Although there would be a net increase of approximately 3.8 million gsf of office space, there would also be a net decrease of approximately 568 residential dwelling units between the Future With the Proposed Action and the Future Without the Proposed Action scenarios because it is expected that some of this development would change from residential to hotel use to support a premier office district in East Midtown.

FIGURE 12-1: PROJECTED AND POTENTIAL DEVELOPMENT SITES

Source: Parsons Brinckerhoff, Inc., 2012

TABLE 12-1: PROJECTED DEVELOPMENT AND NET CHANGE IN GROSS FLOOR AREA RESULTING FROM THE PROPOSED ACTION – 2033 BUILD YEAR

Land Use	Incremental Net Change in Floor Area (gsf)	Units	Comments
Office	3,821,339		
Residential	-565,675	-568 dwelling units	Reduction in dwelling units is relative to projected increases under the No-Action scenario.
Local Retail	53,739		
Destination Retail	65,924		
Hotel	123,286	+190 hotel rooms	
TOTAL	**3,498,613**		

This chapter describes in detail the existing transportation conditions in proximity to the rezoning area. Future conditions in the year 2033 without the Proposed Action (the No-Action condition) are then determined, including additional transportation-system demand and any changes expected by the year 2033. The increase in travel demand resulting from the Proposed Action is then projected and added to the No-Action condition to develop the 2033 future with the Proposed Action (the With-Action condition). Significant adverse impacts from project-generated trips are then identified and described in detail. Chapter 19, "Mitigation" addresses practicable measures to address these impacts.

12.2 PRINCIPAL CONCLUSIONS

12.2.1 Traffic

Weekday AM, Midday, and PM peak-hour traffic conditions were evaluated at 90 intersections in the traffic study area, where additional traffic resulting with the Proposed Action would be most heavily concentrated. As summarized in Table 12-2, the traffic impact analysis indicates the potential for significant adverse impacts at 57 intersections during one or more analyzed peak hours; specifically, the impact locations comprise 55 approach movements at 42 intersections during the AM peak hour, 41 approach movements at 31 intersections during the Midday peak hour, and 46 approach movements at 33 intersections during the PM peak hour. Chapter 19, "Mitigation," discusses standard traffic engineering measures that could be used to mitigate most of these significant adverse impacts.

TABLE 12-2: SUMMARY OF SIGNIFICANT ADVERSE TRAFFIC IMPACTS

Intersection	Peak Hour		
	AM	Midday	PM
First Ave. @ E. 42nd St.	EB-L (West)		EB-LT (East)
First Ave. @ E. 46th St.		EB-L	EB-L
First Ave. @ E. 47th St.			NB-TR
First Ave. @ E. 48th St.			NB-R
Second Ave. @ E. 42nd St.	EB-R, WB-LT	EB-R, SB-L, SB-TR	EB-R, SB-L
Second Ave. @ E. 44th St.	EB-TR	EB-TR	EB-TR
Second Ave. @ E. 45th St.	WB-LT		
Second Ave. @ E. 46th St.		EB-R	EB-T, EB-R
Second Ave. @ E. 49th St.	WB-L	WB-LT	WB-L
Second Ave. @ E. 57th St.		SB-TR	
Second Ave. @ E. 59th St.	EB-T		
Third Ave. @ E. 42nd St.	WB-T, WB-R, NB-R	WB-R	WB-R, NB-R
Third Ave. @ E. 44th St.		NB-R	
Third Ave. @ E. 57th St.		NB-R	
Lexington Ave. @ E. 39th St.	WB-T		
Lexington Ave. @ E. 51st St.		WB-L	
Park Ave. @ E. 39th St.	WB-LTR	WB-LTR	WB-LTR, SB-TR
Park Ave. @ E. 40th St.		SBT-Viaduct Exit	EB-LT, SBT-Viaduct Exit
Park Ave. @ E. 47th St.			NB-T
Park Ave. @ E. 49th St.	WB-LT	WB-LT	WB-LT, NB-T
Park Ave. @ E. 51st St.			NB-T
Park Ave. @ E. 53rd St.			NB-T
Park Ave. @ E. 57th St.	NB-TR		NB-TR
Madison Ave. @ E. 39th St.	WB-T, WB-R	WB-R	WB-T, WB-R
Madison Ave. @ E. 40th St.	EB-L, EB-T		EB-T
Madison Ave. @ E. 42nd St.	NB-LT	NB-LT	
Madison Ave. @ E. 43rd St.	NB-L, NB-T		
Madison Ave. @ E. 44th St.	EB-LT, NB-T, NB-R	EB-LT, NB-T, NB-R	EB-LT, NB-R
Madison Ave. @ E. 45th St.	NB-T	NB-T	NB-T
Madison Ave. @ E. 46th St.	EB-LT, NB-T	EB-LT, NB-T	EB-LT, NB-R
Madison Ave. @ E. 47th St.	WB-T, NB-T	WB-T, NB-L	WB-T, WB-R
Madison Ave. @ E. 49th St.	NB-T		
Madison Ave. @ E. 51st St.	NB-T	NB-T	NB-T
Madison Ave. @ E. 53rd St.	NB-T	NB-T	
Madison Ave. @ E. 57th St.	NB-T		
Fifth Ave. @ 42nd St.	SB-LT		SB-LT
Fifth Ave. @ 43rd St.	SB-T, SB-R	SB-R	
Fifth Ave. @ 44th St.	SB-LT	EB-R, SB-LT	EB-R, SB-LT
Fifth Ave. @ 45th St.	SB-T		
Fifth Ave. @ 46th St.	EB-TR, SB-LT	EB-TR, SB-LT	EB-TR, SB-LT
Fifth Ave. @ 47th St.	WB-L, SB-T	WB-L, SB-T	WB-L
Fifth Ave. @ 48th St.	SB-LT	EB-R, SB-LT	EB-R, SB-LT
Fifth Ave. @ 49th St.	SB-T		
Fifth Ave. @ 50th St.	SB-LT		
Fifth Ave. @ 51st St.	SB-T		
Fifth Ave. @ 52nd St.	SB-LT	SB-LT	
Fifth Ave. @ 53rd St.	SB-T		
Fifth Ave. @ 54th St.	SB-LT		
Fifth Ave. @ 56th St.	SB-LT		
Fifth Ave. @ 57th St.	SB-LT		
Fifth Ave. @ 59th St.	SB-LT	SB-LT	SB-LT
Sixth Ave. @ W. 40th St.	NB-TR	EB-LT	NB-R
Sixth Ave. @ W. 42nd St.	WB-R	WB-R	WB-R
Sixth Ave. @ W. 44th St.			NB-R
Sixth Ave. @ W. 45th St.		WB-R	
Sixth Ave. @ W. 46th St.			NB-R
Route 9A @ W. 56th St.	NB-T		

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

Source: Parsons Brinckerhoff, Inc., 2013

Note: This table has been revised for the FEIS.

12.2.2 Transit

New demand from the proposed rezoning would exceed the 200-trip *CEQR Technical Manual* analysis threshold in the AM and/or PM peak hour at four subway stations/station complexes:

- Grand Central-42nd Street
- 42nd St-Bryant Park/5th Avenue
- 47-50 Streets-Rockefeller Center
- 51st Street/Lexington Avenue-53rd Street

The future with the Proposed Action condition for the Grand Central subway station complex incorporates the priority improvements that would be implemented under the District Improvement Bonus (DIB) mechanism. In addition, an analysis is provided as part of the EIS that evaluates how and to what extent the priority DIB-funded public improvements in the Grand Central subway station avoid pedestrian and transit impacts that would otherwise result from the development. Therefore, the Grand Central subway station analysis is presented first as the future with the Proposed Action with Station Improvements (Action-With-Improvements) and then as the future with the Proposed Action without Station Improvements (Action-Without-Improvements). This analysis approach provides the decision-makers with important information concerning the benefits of the improvements, and allows for adjustments to improve their use as project components related to the environment.

The Action-With-Improvements condition would result less crowding in the station, improved sightlines and additional Lexington Line express track capacity, with most station elements experiencing improved conditions. All of the significant adverse impacts identified in the Action-Without-Improvements condition would be eliminated. Some stairs would become more congested in the Action-With-Improvements condition and may constitute a significant adverse impact. In most cases however, these stairs would be narrowed relative to the No-Action and the Action-Without-Improvements conditions in order to provide better platform circulation and improved track capacity. In another instant, a planned stair widening in the No-Action and the Action-Without-Improvements conditions would be replaced by another more effective improvement.

The Proposed Action would result in no significant adverse impacts to analyzed stairs, escalators, passageways or fare arrays at the 42nd Street-Bryant Park/5th Avenue, 47-50 Streets-Rockefeller Center and 51st Street/Lexington Avenue-53rd Street subway stations.

12.2.2.1 Subway Line Haul

Line haul is the volume of transit riders passing a defined point on a given transit route. Subway line haul is typically measured at the maximum load point on each route (the point where the trains carry the

greatest number of passengers during the peak hour). All subway routes that are projected to exceed guideline capacity in the future are expected to experience fewer than five incremental trips per car in each direction in each peak hour as a result of the Proposed Action, therefore significant adverse impacts to subway line haul conditions are not anticipated based on *CEQR Technical Manual* criteria.

It is anticipated that the platform circulation improvements on Lexington Avenue line platforms at the Grand Central-42nd Street subway station would reduce dwell time on the No. 4 and No. 5 and would result in additional capacity of one peak-hour train on the northbound PM and southbound AM Lexington Avenue express service. For purposes of the line haul analysis this capacity increase is deemed to be one additional No. 4 train in the Action-With-Improvements condition, but service reliability and capacity improvements would benefit both the No. 4 and 5 riders in Manhattan where the two lines provide the same service.

12.2.2.2 Bus

The proposed rezoning area is served by a total of approximately 16 NYCT local bus routes that operate exclusively within Manhattan, one NYCT local route that connects midtown Manhattan to Queens, and a total of approximately 54 NYCT, MTA Bus, and Bee-Line Bus express routes connecting Manhattan to New York City's outer boroughs and to Westchester County. A preliminary screening assessment concluded that a detailed examination of express bus conditions is not warranted, but that new demand from the proposed rezoning would exceed the 50-trip *CEQR Technical Manual* analysis threshold in the AM and/or PM peak hour at the maximum load points along three NYCT local bus routes – the M1, M4, and M42.

As summarized in Table 12-3, significant adverse impacts are anticipated on the M42 local bus service as follows:

- In the AM peak hour, the Proposed Action would result in a capacity shortfall of 64 spaces on the eastbound M42 service; and
- In the PM peak hour, the Proposed Action would result in a capacity shortfall of 56 spaces on the westbound M42 service.

TABLE 12-3: SUMMARY OF SIGNIFICANT ADVERSE LOCAL BUS IMPACTS

Route	Direction	Impacted Time Period
M42	Eastbound	AM
	Westbound	PM

Source: Philip Habib & Associates, 2013

As discussed in Chapter 19, "Mitigation," measures to mitigate these significant adverse impacts to M42 local bus service could include adding two standard buses in the eastbound direction in the AM and two in the westbound direction in the PM, or converting the M42 route to articulated bus service.

The general policy of NYCT is to provide additional bus service where demand warrants, taking into account financial and operational constraints. Based on NYCT's ongoing passenger monitoring program and as new development occurs throughout the study area, a comprehensive service plan would be generated to respond to specific, known needs with capital and/or operational improvements where fiscally and operationally practicable. NYCT's capital program is developed on a five-year cycle; through this program, expansion of bus services would be provided as needs are determined. It is therefore anticipated that NYCT would increase service frequency on the M42 route to address its capacity shortfalls.

12.2.3 Pedestrians

Weekday peak period pedestrian conditions were evaluated at a total of 27 sidewalks, 76 crosswalks, and 62 corner reservoir areas in proximity to projected development sites and along key corridors connecting these sites to area transit facilities. As summarized in Table 12-4, based on *CEQR Technical Manual* criteria, a total of 35 of the 165 pedestrian elements analyzed would be significantly adversely impacted in one or more peak hours. There would be 20 elements with significant adverse impacts in the AM peak hour, 21 in the Midday, and 24 in the PM peak hour.

Two of the 27 analyzed sidewalks would be significantly impacted, both in the AM and PM peak hours and both located along the north side of East 43rd Street between Fifth and Vanderbilt Avenues. Twenty-five of the 76 crosswalks analyzed would be significantly adversely impacted in one or more peak hours. There would be 13 crosswalks with significant adverse impacts in the AM peak hour, 16 in the Midday, and 16 in the PM peak hour. Four of these crosswalks would be located on Fifth Avenue, four on Madison Avenue and two each on Lexington and Third Avenues. The remaining 13 impacted crosswalks would be located on cross-streets, including three on East 43rd Street, two each on East 44th and East 46th Streets, and one each on East 40th, East 42nd, East 45th, East 47th, East 49th, and East 50th Streets. Lastly, eight of the 62 corner areas analyzed would be significantly adversely impacted in one or more peak hours. There would be five significantly impacted corner areas at a total of four intersections in the AM peak hour, five impacted corner areas at three intersections in the Midday, and six impacted corner areas at three intersections in the PM peak hour. Three of the corner areas with significant impacts would be located along Madison Avenue, four along Lexington Avenue, and one on Third Avenue.

TABLE 12-4: SUMMARY OF SIGNIFICANT ADVERSE PEDESTRIAN IMPACTS

Corridor/Intersection	Impacted Element	Impacted Peak Hour		
		AM	Midday	PM
East 43rd Street, Vanderbilt to Madison Aves	North Sidewalk	X		X
East 43rd Street, Madison to Fifth Aves	North Sidewalk	X		X
Third Ave/East 49th Street	North Crosswalk		X	
Third Ave/East 42nd Street	NW Corner	X		
	North Crosswalk	X	X	X
Lexington Ave/East 50th Street	NE Corner	X	X	X
	NW Corner			X
	SE Corner	X	X	X
	SW Corner		X	X
	South Crosswalk		X	
	East Crosswalk		X	
Lexington Ave/East 49th Street	West Crosswalk	X		X
Lexington Ave/East. 48th Street	South Crosswalk		X	
Madison Ave/East 47th Street	West Crosswalk		X	
Madison Ave/East 46th Street	East Crosswalk	X	X	X
	West Crosswalk		X	
Madison Ave/East 45th Street	NW Corner		X	X
	North Crosswalk	X	X	X
	East Crosswalk	X	X	X
Madison Ave/East 44th Street	East Crosswalk	X		
Madison Ave/East 43rd Street	NE Corner	X	X	
	North Crosswalk	X	X	X
	West Crosswalk	X		X
Madison Ave/East 42nd Street	NW Corner	X		X
	North Crosswalk	X		X
Madison Ave/East 40th Street	North Crosswalk		X	
	West Crosswalk		X	
Fifth Ave/47th Street	South Crosswalk	X	X	X
Fifth Ave/46th Street	South Crosswalk		X	X
Fifth Ave/44th Street	East Crosswalk	X	X	X
Fifth Ave/43rd Street	East Crosswalk			X
	West Crosswalk			X
Fifth Ave/42nd Street	North Crosswalk	X		X
	South Crosswalk	X		X
	East Crosswalk			X

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

As discussed in Chapter 19, "Mitigation," significant adverse impacts to all but six of the 35 pedestrian elements impacted in the With-Action condition could be fully mitigated with corner/sidewalk extensions, removal of street furniture, crosswalk widenings, and/or signal timing adjustments.

12.2.4 Vehicular and Pedestrian Safety

Accident data for the traffic and pedestrian study area intersections were obtained from the New York City Department of Transportation (DOT) for the 3-year reporting period between January 1, 2008, and December 31, 2010. A total of 1,714 reportable and non-reportable accidents, 8 fatalities, and 518 pedestrian/bicyclist-related injury accidents occurred at study area intersections. A review of the accident data identified 21 intersections as high accident locations (defined as those with 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes occurring in any consecutive 12 months of the most recent 3-year period for which data are available); at the following 10 of these intersections, significant increases in pedestrian traffic and/or turning vehicles conflicting with pedestrians are anticipated with the Proposed Action:

- Second Avenue and East 42nd Street
- Third Avenue and East 42nd Street
- Lexington Avenue and East 42nd Street
- Park Avenue and East 57th Street
- Madison Avenue and East 42nd Street
- Fifth Avenue and 42nd Street
- Fifth Avenue and 43rd Street
- Fifth Avenue and 46th Street
- Sixth Avenue and West 45th Street
- Sixth Avenue and West 46th Street

All of these intersections have significant existing pedestrian volumes. While the addition of pedestrian trips and vehicle trips at high accident locations could result in increasingly unsafe conditions, a variety of pedestrian and bicycle safety improvements have been made by DOT at these intersections subsequent to 2010 and additional improvements could be further employed to increase pedestrian/bicyclist safety; such measures may include installation of pedestrian countdown signals, advance stop bars, "LOOK!" pavement markings on crosswalks, and supplemental advance-warning signage (i.e., "Turning Vehicles Yield to Pedestrians")

12.2.5 Parking

The Proposed Action would generate a net incremental parking demand of 591 spaces during the weekday Midday. Also, the Proposed Action includes 701 new public off-street parking spaces and would displace 284 parking spaces at two existing public parking facilities for a net increase of 417 parking spaces. Although the incremental parking demand would exceed the amount of new parking that would be provided, the parking analysis indicates that the surplus demand could be readily accommodated at off-street public parking facilities within a ¼-mile radius of the rezoning area, and there would be no parking shortfall. The Proposed Action would not affect on-street public parking utilization.

12.3 PRELIMINARY ANALYSIS METHODOLOGY

The *CEQR Technical Manual* describes a two-level screening procedure for the preparation of a "preliminary analysis" to determine if quantified operational analyses of transportation conditions are warranted. As discussed in the following sections, the preliminary analysis begins with a trip generation (Level 1) analysis to estimate the amount of person and vehicle trips generated by the proposed project. 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 to be 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 sidewalk, corner area or crosswalk, further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

12.4 LEVEL 1 SCREENING ASSESSMENT

A Level 1 trip generation screening assessment was conducted to estimate the amount of person and vehicle trips expected to be generated by the Proposed Action during the weekday AM, Midday and PM peak hours. These estimates were then compared to the *CEQR Technical Manual* analysis thresholds of 50 peak-hour vehicle trip ends, 200 peak-hour subway/rail or bus riders, and 200 peak-hour pedestrian trips to determine if Level 2 screening and/or quantified operational analyses are warranted. The Level 1 screening assessment is described below.

12.4.1 Background

As discussed in Chapter 1, "Project Description," the RWCDS identifies 19 projected sites that are considered likely to be developed by 2033. Table 12-5 shows the development anticipated on projected development sites in the No-Action condition, the With-Action condition, and the net incremental change. The RWCDS would result in an estimated net increase of approximately 3.8 million gsf of office space, 123,000 gsf (191 rooms) of hotel space, 66,000 gsf of local retail space, and 54,000 gsf of destination retail space. In addition, the Proposed Action would result in a net decrease of 568 residential dwelling units relative to the No-Action (existing zoning) development scenario. It should be noted that residential space is expected to increase under both the No-Action scenario and the RWCDS, but the increase in residential space would be less under the Proposed Action because some of this development would change to hotel use to support a premier office district in East Midtown.

TABLE 12-5: TOTAL NET CHANGE IN LAND USES ON PROJECTED DEVELOPMENT SITES

Land Use	No-Action	With-Action	Net Increment
Office	6,519,633 gsf	10,340,972 gsf	3,821,339 gsf
Local Retail	457,053 gsf	510,791 gsf	53,738 gsf
Destination Retail	72,275 gsf	138,199 gsf	65,924 gsf
Hotel	3,094 rooms	3,285 rooms	191 rooms
Residential	776 dwelling units	208 dwelling units	-568 dwelling units

Sources: DCP and Parsons Brinckerhoff, Inc., 2012

12.4.2 Transportation Planning Factors

Table 12-6 details the transportation planning factors used to forecast travel demand generated by the Proposed Action during the weekday AM, Midday, and PM peak hours. These factors include daily person trip-generation rates, temporal and directional distributions, mode choice, vehicle occupancies and truck trip-generation rates for office, residential, local retail, destination retail, and hotel uses. The factors in Table 12-6 were developed based on established and published sources, including the *CEQR Technical Manual*, U.S. Census data, and the 2009 *Western Rail Yard FEIS*, also taking into account future changes in travel patterns expected due to the Long Island Rail Road's East Side Access project, which is scheduled to be operational in 2019. Further details on the process used to select trip-generation rates are presented in the Transportation Planning Factors technical memorandum provided in Appendix 4.

TABLE 12-6: TRANSPORTATION PLANNING FACTORS

Land Use:	Office		Residential		Local Retail		Destination Retail		Hotel	
Trip Generation:	(1)		(1)		(1)		(1)		(1)	
	Weekday		**Weekday**		**Weekday**		**Weekday**		**Weekday**	
Daily Person Trips	18.0		8.075		205		78.2		9.4	
Net Daily Person Trips*	18.0		8.075		154		78.2		9.4	
	per 1,000 gsf		per dwelling unit		per 1,000 gsf		per 1,000 gsf		per room	
Temporal Distribution:	(1)		(1)		(1)		(1)		(1)	
AM	12%		10%		3%		3%		8%	
MD	15%		5%		19%		9%		14%	
PM	14%		11%		10%		9%		13%	
In/Out Splits:	(2,3)		(2)		(2)		(2)		(2)	
	In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
AM	96%	4%	15%	85%	50%	50%	61%	39%	39%	61%
MD	48%	52%	50%	50%	50%	50%	55%	45%	54%	46%
PM	5%	95%	70%	30%	50%	50%	47%	53%	65%	35%
Modal Splits:	(4)	(2)	(5)		(2)		(2)	(2)	(2)	(2)
	AM/PM	**MD**	**All**		**All**		**AM/PM**	**MD**	**AM/PM**	**MD**
Auto	6.0%	2.0%	7.0%		2%		9.0%	9%	9%	8%
Taxi (Yellow Cab)	1.5%	1.5%	5.4%		3%		4.0%	4%	18%	15%
Taxi (Black Car)	1.5%	1.5%	-		-		-	-	-	-
Bus	14.6%	6.0%	6.3%		6%		8.0%	8%	3%	3%
Subway	47.9%	6.0%	26.3%		6%		26.5%	20%	24%	13%
Railroad	19.0%	0.0%	3.3%		0%		2.0%	0%	0%	0%
Walk	8.4%	83.0%	50.6%		83%		50.5%	59%	46%	61%
Other	1.1%	0.0%	1.1%		0%		0.0%	0%	0%	0%
	100.0%	100%	100.0%		100%		100.0%	100%	100%	100%
Vehicle Occupancy:	(1,2,4)		(1,2,5)		(1,2)		(2)		(2)	
Auto	1.20		1.23		1.65		2.00		1.40	
Taxi (Yellow Cab)	1.40		1.40		1.40		2.00		1.80	
Taxi (Black Car)	1.40		-		-		-		-	
Truck Trip Generation:	(1)		(1)		(1)		(1,2)		(2,6)	
	Weekday		**Weekday**		**Weekday**		**Weekday**		**Weekday**	
	0.32		0.06		0.35		0.35		0.06	
	per 1,000 gsf		per dwelling unit		per 1,000 gsf		per 1,000 gsf		per room	
	(1)		(1)		(1)		(1,2)		(2,6)	
AM	10%		12%		8%		8%		12.0%	
MD	11%		9%		11%		11%		9.0%	
PM	2%		2%		2%		2%		1.0%	
	In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
AM/MD/PM	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

Sources:
(1) CEQR Technical Manual (2012)
(2) Western Rail Yard FEIS (2009)
(3) Pushkarev & Zupan, Urban Space for Pedestrians (1975)
(4) Adapted by MTA-NYCT, NYCDCP and NYCDOT from 2000 US Census Reverse Journey-to-Work Data for Tracts 80, 82, 88, 90, 92, 94, 100, 102, 112.02 and 112.03 for workers arriving between 7:30-9:30 am
(5) 2006-2010 American Community Survey Journey-to-Work Data for Tracts 80, 82, 88, 90, 92, 94, 100, 102, 112.02 and 112.03
(6) Curbside Pickup and Delivery Operations and Arterial Traffic Impacts, FHWA (1981)

Note:
* Includes 25% credit for linked trips to local retail

Source: Parsons Brinckerhoff, Inc., 2012

12.4.3 Travel Demand Forecast

Table 12-7 summarizes the results of the travel demand forecasting for the Proposed Action based on the net change in land uses in Table 12-5 and the transportation planning factors presented in Table 12-6. The data in Table 12-7 provide the net incremental increases with the Proposed Action in the numbers of peak-hour person and vehicle trips that would be generated in 2033.

As shown in Table 12-7, the Proposed Action would result in an increase of 8,345, 12,377, and 10,647 person trips in the weekday AM, Midday, and PM peak hours, respectively. A high percentage of the peak-hour person trips is expected to be made using transit modes, primarily subway, bus, and commuter rail. Most trips during the Midday peak hour are expected to be "walk-only" trips related to lunchtime and shopping activities.

Nearly one-half of the increase in person trips is expected to be accommodated by subway—3,922 trips in the AM peak hour and 4,708 trips in the PM peak hour. Local and express buses are expected to handle 1,208 trips in the AM peak hour and 1,468 trips in the PM peak hour. Commuter rail, primarily at Grand Central Terminal, is expected to handle 1,557 and 1,821 person trips during the AM and PM peak hours, respectively. These transit trips also have a pedestrian component associated with walking between the development sites and subway stations, commuter rail stations, and bus stops.

Table 12-7 also provides an estimate of the incremental net change in peak-hour vehicle trips (auto, taxi and truck) that would occur in 2033 with implementation of the Proposed Action. Inbound and outbound taxi (yellow cab and black car) trips were balanced to reflect that they consist of two trip ends (one in, one out) and that some taxis arrive or depart without passengers. As the rezoning area encompasses Grand Central Terminal, 75 percent of inbound occupied yellow cabs were assumed to be available for outbound demand (e.g., taxis dropping off passengers at adjacent office buildings in the AM peak hour could pick up passengers arriving at the train terminal). This assumption is based on guidance in the *CEQR Technical Manual*. For livery cabs, 90 percent of inbound occupied black cars were assumed to be available for outbound demand since these vehicles are dispatched and do not pick up passengers via street hails. As shown in Table 12-7, total vehicle trips generated by the Proposed Action would be 938 in the AM peak hour, 705 in the Midday peak hour, and 972 in the PM peak hour.

Table 12-8 summarizes the estimated number of additional trips that would be generated by the Proposed Action during the AM, Midday, and PM peak hours by various modes of travel.

Since these numbers of peak-hour trips exceed the *CEQR Technical Manual* thresholds of 50 peak-hour vehicle trip ends, 200 peak-hour subway/rail or bus riders, and 200 peak-hour pedestrian trips, a Level 2 screening assessment was completed to identify specific locations where additional detailed analyses may be warranted.

TABLE 12-7: TRAVEL DEMAND FORECAST WITH THE PROPOSED ACTION (2033)

Project Components:		Office		Residential		Local Retail		Destination Retail		Hotel				
Peak Hour Trips:														
	AM	8,260		-459		246		154		144				
	MD	10,318		-228		1,574		464		249				
	PM	9,633		-507		826		464		231				
Person Trips By Mode:		**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Total Out**	**Total**
AM	Auto	475	20	-5	-27	2	2	8	5	5	8	485	8	493
	Taxi	238	10	-4	-21	4	4	4	2	10	16	252	11	263
	Bus	1,157	48	-4	-25	7	7	8	5	2	3	1,170	38	1,208
	Subway	3,796	158	-18	-103	7	7	25	16	13	21	3,823	99	3,922
	Railroad	1,506	63	-2	-13	0	0	2	1	0	0	1,506	51	1,557
	Walk	666	28	-35	-197	103	103	48	30	26	40	808	4	812
	Other	91	4	-1	-4	0	0	0	0	0	0	90	0	90
	Total	7,929	331	-69	-390	123	123	95	59	56	88	8,134	211	8,345
MD	Auto	99	107	-8	-8	16	16	23	19	11	9	141	143	284
	Taxi	149	161	-6	-6	24	24	10	8	20	17	197	204	401
	Bus	297	322	-7	-7	47	47	20	17	4	3	361	382	743
	Subway	297	322	-30	-30	47	47	51	42	18	15	383	396	779
	Railroad	0	0	-4	-4	0	0	0	0	0	0	-4	-4	-8
	Walk	4,111	4,453	-58	-58	653	653	151	123	82	70	4,939	5,241	10,180
	Other	0	0	-1	-1	0	0	0	0	0	0	-1	-1	-2
	Total	4,953	5,365	-114	-114	787	787	255	209	135	114	6,016	6,361	12,377
PM	Auto	29	549	-25	-11	8	8	20	22	14	7	46	575	621
	Taxi	14	274	-19	-8	12	12	9	10	27	15	43	303	346
	Bus	70	1,336	-22	-10	25	25	17	20	5	2	95	1,373	1,468
	Subway	231	4,382	-93	-40	25	25	58	65	36	19	257	4,451	4,708
	Railroad	91	1,738	-12	-5	0	0	4	5	0	0	83	1,738	1,821
	Walk	40	768	-179	-77	343	343	110	124	69	37	383	1,195	1,578
	Other	6	105	-4	-2	0	0	0	0	0	0	2	103	105
	Total	481	9,152	-354	-153	413	413	218	246	151	80	909	9,738	10,647
Vehicle Trips:		**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**Total Balanced In**	**Out**	**Total**
AM	Auto	396	17	-4	-22	2	2	4	3	4	6	402	6	408
	Taxi	170	8	-3	-15	3	3	2	1	6	9	203	203	406
	Truck	61	61	-2	-2	1	1	1	1	1	1	62	62	124
	Total	627	86	-9	-39	6	6	7	5	11	16	667	271	938
MD	Auto	83	89	-7	-7	10	10	11	9	8	7	105	108	213
	Taxi	106	114	-4	-4	17	17	5	4	11	10	178	178	356
	Truck	67	67	-2	-2	1	1	1	1	1	1	68	68	136
	Total	256	270	-13	-13	28	28	17	14	20	18	351	354	705
PM	Auto	24	457	-20	-9	5	5	10	11	10	5	29	469	498
	Taxi	10	196	-14	-6	9	9	4	5	15	8	225	225	450
	Truck	12	12	0	0	0	0	0	0	0	0	12	12	24
	Total	46	665	-34	-15	14	14	14	16	25	13	266	706	972

Source: Parsons Brinckerhoff, Inc., 2012

TABLE 12-8: SUMMARY OF INCREMENTAL TRIPS GENERATED BY THE PROPOSED ACTION

Mode/Description	Trip Type	AM	Midday	PM
Auto/Taxi/Truck	vehicle trips	938	705	972
Railroad	person trips	1,557	-*	1,821
Subway	person trips	3,922	779	4,708
Local and Express Bus	person trips	1,208	743	1,468
Walk-only	person trips	812	10,180	1,578
Other	person trips	90	-*	105

Source: Parsons Brinckerhoff, Inc., 2012

Note: *No additional trips would be generated

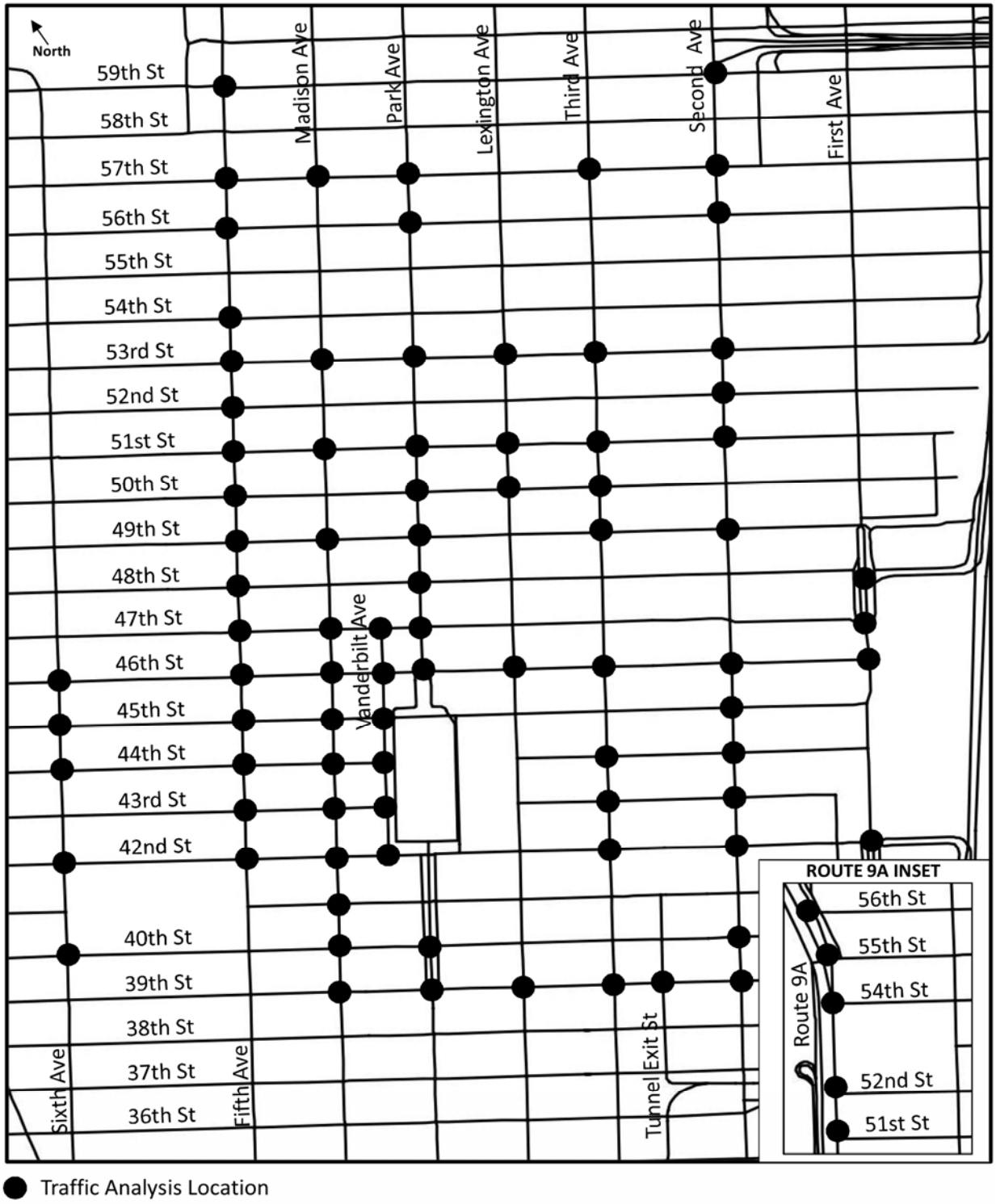
12.5 LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the assignment of project-generated trips to the study area street network, pedestrian elements and transit facilities, and the identification of specific locations where the incremental project-related increase in demand exceeds the *CEQR Technical Manual* analysis thresholds above which a quantitative analysis is required. Based on the estimates of additional peak-hour vehicular, transit and pedestrian trips generated by the Proposed Action, Level 2 screening assessments were performed to determine which intersections and transportation elements require a detailed analysis.

12.5.1 Vehicular Traffic

The CEQR Level 2 screening criterion of 50 peak-hour vehicle trips applies to individual intersections rather than total trips generated, as is the case for the Level 1 screening. A preliminary assignment of traffic volumes was performed for the AM, Midday, and PM peak hours to identify the intersections that would exceed the 50 vehicle-trips threshold. The intersection analysis locations were finalized in consultation with the New York City Department of City Planning (DCP) and DOT, taking into consideration existing bottleneck locations and prevailing travel patterns in the study area. Figure 12-2 shows the locations of the 90 intersections that were determined, on the basis of the Level 2 screening, to require a detailed analysis. The area within which these intersections are located is generally bound by 59th Street on the north, 39th Street on the south, First Avenue on the east, and Sixth Avenue on the west, and also includes a portion of Route 9A between West 51st and West 56th Streets.

FIGURE 12-2: TRAFFIC ANALYSIS LOCATIONS WITHIN THE TRAFFIC STUDY AREA



Source: Parsons Brinckerhoff, Inc., 2012

12.5.2 Transit

12.5.2.1 Subway Stations

There are a total of eight NYCT subway stations or station complexes located in proximity to projected development sites. These stations and station complexes are listed in Table 12-9 along with the subway routes serving each facility. The locations of these stations are shown in Figure 12-3. Notable among these is the Grand Central-42nd Street subway station complex served by Nos. 4, 5, and 6 trains on the Lexington Avenue Line, No. 7 trains on the Flushing Line, and the 42nd Street Shuttle (S).

TABLE 12-9: NET INCREMENTAL PEAK HOUR SUBWAY TRIPS BY STATION OR STATION COMPLEX

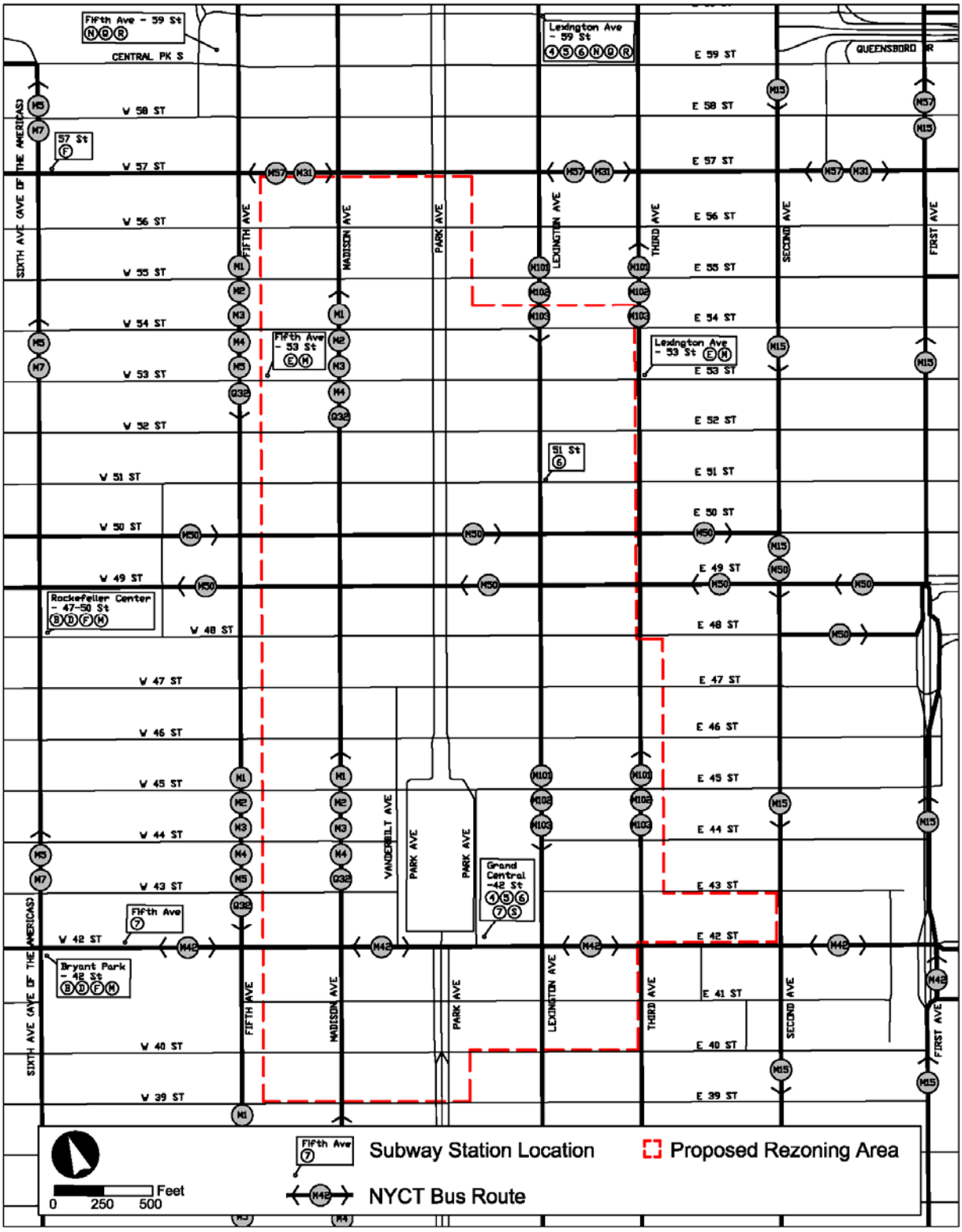
Subway Station or Station Complex	Route(s) Served	Weekday Peak Hour	
		AM	PM
42nd St-Bryant Park/5th Ave	B D F M 7	1,403	1,624
47-50th Sts-Rockefeller Center	B D F M	392	463
57th St	F	1	3
5th Ave-53rd St	E M	61	53
5th Ave-59th St	N Q R	-2	0
Grand Central-42nd Street	S 4 5 6 7	1,822	2,158
51st Street/Lexington Ave-53rd St	E M 6	200	354
Lexington Ave-59th St	N Q R 4 5 6	45	53
Totals		3,922	4,708

Source: *MTA-NYCT*

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) and specified in the *2012 CEQR Technical Manual*, detailed transit analyses are generally not required if a proposed action is projected to result in fewer than 200 peak-hour rail or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus line (in one direction), or if it would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a detailed bus or subway analysis would be warranted.

Table 12-8 shows the forecast of weekday AM, Midday, and PM peak-hour transit trips for the projected development sites. As shown in Table 12-8, it is estimated that under the Proposed Action, projected development sites would generate a total of 3,922 and 4,708 new subway trips in the weekday AM and PM peak hours, respectively. (Transit analyses typically focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway and bus systems is usually highest.) Data provided by NYCT were used to assign these trips to individual subway stations and station elements (i.e., stairs, escalators, passageways, and fare arrays).

FIGURE 12-3: REZONING AREA SUBWAY AND LOCAL BUS SERVICES



Source: Philip Habib & Associates, 2013

Table 12-9 shows the total net incremental subway trips generated by the Proposed Action during the AM and PM peak hours at each of the subway station and station complexes serving the rezoning area. As shown in Table 12-9, the highest number of new peak-hour subway trips would occur at the Grand Central-42nd Street station complex, which would experience approximately 1,822 new trips in the AM peak hour and 2,158 in the PM. The 42nd Street-Bryant Park/Fifth Avenue station complex would experience the second highest number of new peak-hour subway trips with 1,403 in the AM and 1,624 in the PM. By contrast, the Fifth Avenue-59th Street (N, Q, R) subway station would experience a net decrease of two trips in the AM peak hour due in part to the displacement of residential demand under the Proposed Action.

The analysis of subway station conditions focuses on the four subway stations/station complexes at which new peak-hour subway demand from the Proposed Action would exceed the 200-trip *CEQR Technical Manual* analysis threshold. As shown in Table 12-9, these are:

- Grand Central-42nd Street
- 42nd St-Bryant Park/Fifth Avenue
- 47th-50th Streets-Rockefeller Center
- 51st Street/Lexington Avenue-53rd Street

12.5.2.2 Subway Line Haul

Line haul is the volume of transit riders passing a defined point on a given transit route. Subway line haul is typically measured at the maximum load point on each route (the point where the trains carry the greatest number of passengers during the peak hour). Maximum load point subway ridership data for 2011 were provided by NYCT.

The proposed rezoning area is currently served by a total of 13 NYCT subway routes, including Nos. 4 and 5 express and No. 6 local services on the Lexington Avenue Line, No. 7 local and express services on the Flushing Line, the B and D express and M and F local services on the Sixth Avenue Line, the E local service on the Eighth Avenue Line, the Q express and N and R local services on the Broadway line, and the 42nd Street Shuttle. (As discussed later in this chapter, with completion of the first phase of the Second Avenue Subway Line project, one additional route—tentatively called the W—is expected to provide service along the Broadway Line in the No-Action condition.)

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, a detailed analysis of subway line haul conditions is generally not required if a proposed action is projected to result in fewer than 200 peak-hour trips being assigned to a single route (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts.

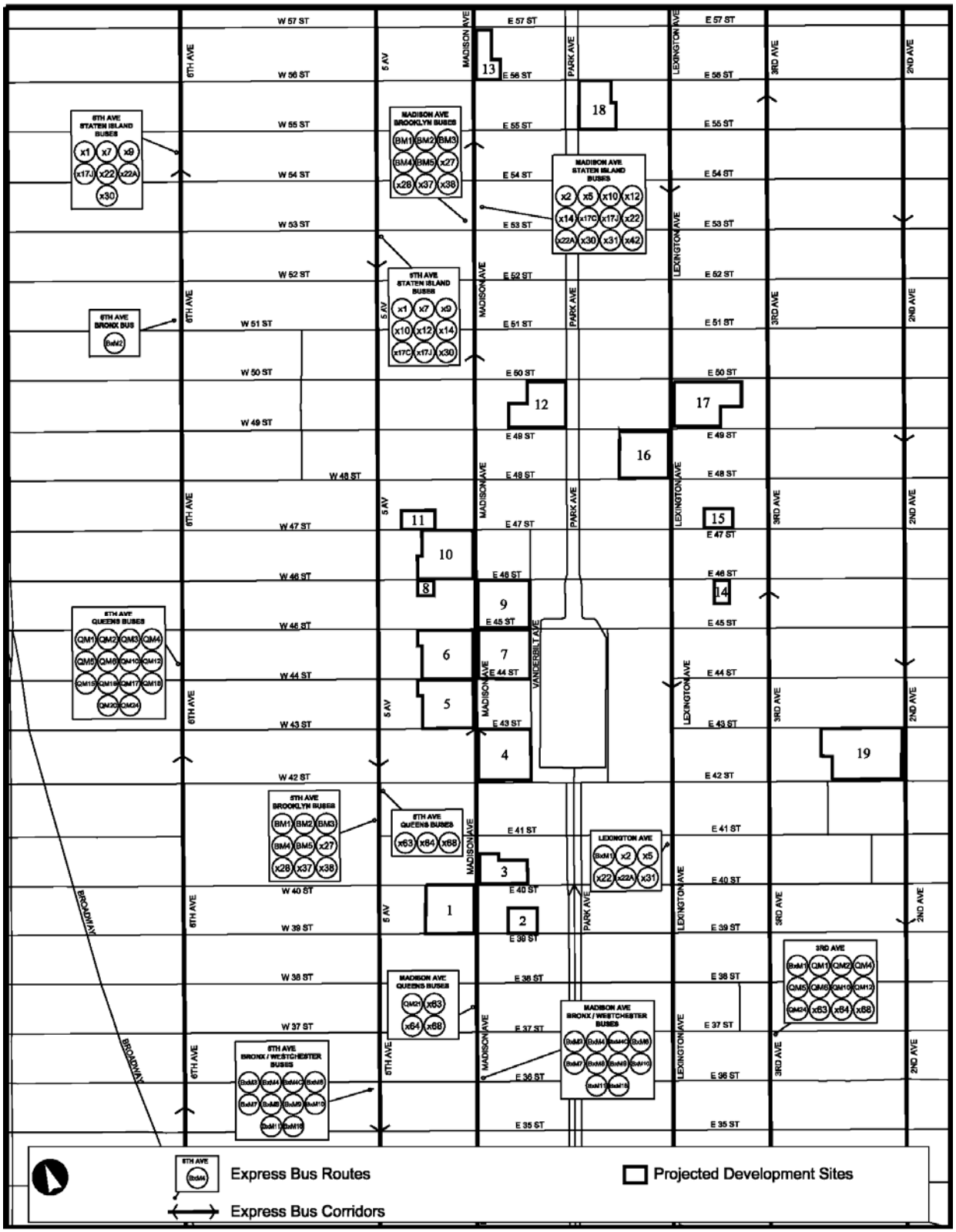
As shown in Table 12-8, it is estimated that under the RWCDS, all of the projected development sites would generate a combined total of 3,922 and 4,708 new subway trips in the weekday AM and PM peak hours, respectively. Given the number of new subway trips generated by the Proposed Action in each peak hour, one or more of the 14 subway routes that will be serving the proposed rezoning area by 2033 would potentially experience 200 or more incremental trips in one direction in either period. Therefore, a further screening analysis was conducted to determine the potential for the incremental increases in demand on each subway route to meet or exceed *CEQR Technical Manual* impact thresholds in either peak hour.

12.5.2.3 Bus

As shown in Figure 12-3, the proposed rezoning area is served by a total of approximately 16 NYCT local bus routes that operate exclusively within Manhattan, and one local route—the Q32—that connects midtown Manhattan to Jackson Heights, Queens via the Ed Koch Queensboro Bridge. In addition, as shown in Figure 12-4, a total of 54 NYCT, MTA Bus, and Bee-Line Bus express routes connecting Manhattan to New York City's outer boroughs and to Westchester County also operate through the rezoning area, many along Madison and Fifth Avenues which are major north-south bus corridors. As shown in Table 12-8, projected development sites are expected to generate a net total of approximately 1,208 and 1,468 new bus trips during the weekday AM and PM peak hours, respectively. Based on 2000 US Census journey-to-work origin/destination data for commuters, it is estimated that approximately 58 percent of these bus trips would be intra-Manhattan and would therefore occur on local bus routes, and approximately 42 percent would be en route to or from the outer boroughs or Westchester County and are therefore expected to primarily utilize express bus routes and the NYCT Q32 local route connecting Manhattan and Queens. Overall, the numbers of new bus trips using the 16 NYCT local bus routes operating within Manhattan are expected to total approximately 701 in the AM peak hour and 851 during the PM. An additional 29 and 35 trips during these periods, respectively, are also expected to utilize the NYCT Q32 service to/from Queens.

Local bus trips generated by the Proposed Action were assigned to each route based on proximity to individual projected development sites and current ridership patterns. Table 12-10 shows the anticipated numbers of new riders expected to pass through the maximum load point on each local bus route in the AM and PM peak hours. (It should be noted that not all project-generated bus trips would pass through the maximum load point on a given route as some passengers may board after, or disembark prior to, a bus passing through its maximum load point.) According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, a detailed analysis of bus conditions is generally not required if a proposed action is projected to result in fewer than 50 peak-hour trips being assigned to a single bus route (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts. As shown in Table 12-10, a total of three local bus routes are expected to experience 50 or more new trips through their maximum load points in one or both peak hours and therefore require detailed analysis in this EIS – the M1, M4, and M42.

FIGURE 12-4: REZONING AREA EXPRESS BUS SERVICES



Source: Philip Habib & Associates, 2013

TABLE 12-10: NET INCREMENTAL PEAK HOUR LOCAL BUS TRIPS BY ROUTE

Total Bus Trips (Through Maximum Load Point)							
Bus Route	Direction	AM (In)	AM (Out)	AM (Total)	PM (In)	PM (Out)	PM (Total)
M1	NB	0	1	1	0	66	66
	SB	41	0	41	3	0	3
M2	NB	0	1	1	0	39	39
	SB	14	0	14	3	0	3
M3	NB	0	1	1	0	35	35
	SB	18	0	18	3	0	3
M4	NB	3	0	3	0	83	83
	SB	32	1	33	4	0	4
M5	NB	0	2	2	0	19	19
	SB	37	0	37	2	0	2
M7	NB	0	0	0	0	16	16
	SB	9	0	9	0	0	0
M15	NB	0	1	1	0	4	4
	SB	2	0	2	3	0	3
M15 SBS	NB	6	0	6	5	0	5
	SB	0	2	2	0	6	6
M31	EB	0	0	0	0	1	1
	WB	1	0	1	0	0	0
M42	EB	92	0	92	6	0	6
	WB	0	4	4	0	62	62
M50	EB	9	0	9	1	0	1
	WB	8	0	8	0	17	17
M57	EB	0	0	0	0	9	9
	WB	1	0	1	1	0	1
M101	NB	0	1	1	0	36	36
	SB	19	0	19	4	0	4
M102	NB	0	1	1	0	26	26
	SB	20	0	20	0	17	17
M103	NB	0	1	1	0	21	21
	SB	15	0	15	0	21	21
Q32	EB	3	0	3	0	27	27
	WB	29	0	29	2	0	2

MXX = Local Bus Route Which Exceeds 50 Incremental Trips in One Direction Through the Maximum Load Point due to the Proposed Action

The numbers of new trips using express bus services are expected to be fewer than those using local services—totaling approximately 469 and 552 in the AM and PM peak hours, respectively—and these trips would be distributed among a total of 54 express routes operated by NYCT, MTA Bus, and Bee-Line Bus. (An additional 38 and 65 trips during these periods, respectively, are also expected to utilize the NYCT Q32 local service between Manhattan and Queens.) Table 12-11 shows the numbers of rezoning area express bus routes by borough/county served and the estimated distribution of new incremental demand based on 2000 US Census journey-to-work data. For example, as shown in Table 12-11, in the AM peak hour there would be a total of approximately 101 new express bus trips using the 11 bus routes serving the Bronx, and 119 in the PM. There are 18 express bus routes available to serve the estimated 190 new AM peak-hour trips and 224 PM peak-hour trips that would be en route between the rezoning area and Queens; although it should be noted that some of these trips en route to/from Queens are likely to utilize the Q32 local bus service.

TABLE 12-11: NUMBER OF REZONING AREA EXPRESS BUS ROUTES AND ESTIMATED DISTRIBUTION OF NET INCREMENTAL PEAK HOUR EXPRESS BUS TRIPS BY BOROUGH/COUNTY

Borough/County Served	No. of Express Bus Routes	Percentage Distribution	Estimated Project Increment Trips	
			AM Peak Hour	PM Peak Hour
Bronx	11	21.5%	101	119
Brooklyn	9	13.6%	64	75
Queens	18	40.6%	190	224
Staten Island	15	22.2%	104	122
Westchester	1	2.1%	10	12
Total	54	100%	469	552

Source: 2000 US Census journey-to-work origin/destination data.
Note: Trip totals reflect inbound and outbound combined.

Although the Proposed Action would generate up to 552 peak-hour express bus trips, these trips would be widely distributed among a total of 54 express bus routes. It is therefore unlikely that any one express bus route would experience 50 or more new trips in one direction in any one peak hour. Consequently, the Proposed Action is not expected to result in any significant adverse impacts to express bus services based on *CEQR Technical Manual* criteria, and a detailed analysis of express bus conditions is not warranted.

12.5.2.4 Long Island Rail Road and Metro-North Railroad

The number of passengers using Long Island Rail Road (LIRR) and Metro-North Railroad (MNR) trains during peak periods will increase by approximately 1,557 during the AM peak and 1,821 during the PM peak as a result of the Proposed Action. Commuter train lengths are adjusted to conform to loading standards using train-by-train ridership data, which is regularly monitored by LIRR and MNR. Where

fiscally and operationally practicable, train lengths are modified to ensure that adequate seating is provided. Trains are lengthened if occupancy exceeds 95% of the train's seating; trains are shortened if the occupancy after the reduction in train length would not exceed 95%.

LIRR is expected to operate 24 12-car trains at Grand Central Terminal during the AM and PM peak hour in 2033. Consequently, the number of additional passengers per railcar will be less than five during the peak hour, which does not constitute a significant impact. The result is similar for MNR based on current service; taking into account expected loads due to background growth and increased service, the additional load resulting from the Proposed Action also would be below five per railcar.

12.5.2.5 Grand Central Terminal Pedestrian Flows

In response to public comment during scoping, an assessment of pedestrian flows within Grand Central Terminal due to the Proposed Action has been included as part of this EIS. The assessment was conducted by MTA and the results are presented below. Please note that this assessment is provided for informational purposes only and, as such, it does not necessarily fully conform to the guidelines of the *CEQR Technical Manual*.

The effects of the Proposed Action on pedestrian flows within Grand Central Terminal (GCT) were evaluated using the most recent data available and relying on data developed for a comprehensive modeling effort conducted for the East Side Access Project in 2009.[1] Pedestrian volumes from that study were updated in light of already planned infrastructural changes in GCT to reflect the No Action Condition. These infrastructural changes include new escalators to connect GCT's Biltmore Room and the new LIRR Concourse and the M30 stair that will provide additional capacity between the 105 East 42nd Street Passageway and the free zone of the Lexington mezzanine (referred to as fare control area R238). The analysis focused on the peak PM period which experiences higher volumes than the AM peak because of an increased number of tourists and shoppers during the afternoon period.

The incremental subway and railroad trips that would be generated from the potential development sites with the Proposed Action were estimated and assigned to routes within GCT. By 2033, the Proposed Action would generate approximately 310 subway customers, 160 LIRR customers, and 250 MNR customers primarily entering GCT from points west where the major rezoning parcels exist during the peak 15-minute period within the PM peak.

Pedestrian Flow Analysis Results

With the exception of the 105 East 42nd Street passageway leading to the No. 4/5/6/7 subway lines, areas in GCT would operate at acceptable levels of service (i.e., LOS A-C) in 2033 with or without the incremental increase in pedestrians generated by the potential development sites.

[1] Pedestrian Simulation of East Side Access and Grand Central Terminal, November 2009, prepared by STV Incorporated.

The 105 East 42nd Street corridor is congested today, and would worsen without MTA's already planned infrastructural changes. The M30 stair will provide a significant capacity increase in the ability of people to move up/down between GCT and fare control area R238. This stair will also allow people along the passageway to sort themselves on each side (i.e., down volumes on the west side, up volumes on the east side) to some degree so all will not have to congregate at the existing stair/escalator.

The Proposed Action would add approximately 310 subway customers to the 105 East 42nd Street Passageway, but the improvements that are part of the Proposed Action (intermodal connection from LIRR Concourse and MNR lower level to fare control area R238) would reduce railroad customers using the passageway by approximately 1,235. Therefore, the Action-With-Improvements would benefit pedestrian conditions in the passageway.

LOS in the passageway was calculated for the No Action, Action-Without-Improvements and Action-With-Improvements in accordance with guidance found in the *CEQR Technical Manual*. The narrowest effective width of about 21 feet occurs where there is an information kiosk placed in the center of passageway. A friction factor of 0.90 was applied to account two-way traffic in the passageway. The results are as follows:

- No-Action – 5,410 pedestrians; v/c = 1.27 (5,410/4,250); LOS D
- Action-With-Improvements – 4,485 pedestrians; v/c = 1.06 (4,485/4,250); LOS D
- Action-Without-Improvements – 5,720 pedestrians; v/c = 1.35 (5,720/4250); LOS E

According to *CEQR Technical Manual* criteria, the Action-Without-Improvements assessment result would be considered a significant impact. The *CEQR Technical Manual* defines significant impacts for passageways in terms of the width increment threshold (WIT) needed to bring the passageway back to its No-Action v/c ratio. The WIT for the Action-Without-Improvements condition is 14.4 inches, which exceeds the allowable WIT of 10 inches (for a No-Action v/c ratio of 1.27).

The Action-With-Improvements condition would result in an improvement to conditions in the passageway, with the v/c ratio decreasing from 1.27 (LOS D) in the No-Action condition to 1.06 (LOS D) in the Action-With-Improvements condition.

12.5.3 Pedestrians

Under *CEQR Technical Manual* criteria, detailed pedestrian analyses are generally warranted if a proposed action is projected to result in 200 or more peak-hour pedestrians at any sidewalk, corner area or crosswalk. As shown in Table 12-8, the proposed rezoning is expected to generate approximately 812 walk-only trips in the weekday AM peak hour, 10,180 in the Midday, and 1,578 in the PM peak hour. Persons en route to and from subway and commuter rail station entrances, bus stops and parking facilities

would add an additional 7,180 pedestrian trips to rezoning area sidewalks and crosswalks in the AM peak hour, 1,798 in the Midday, and 8,618 in the PM. In the weekday AM and PM peak hours, new pedestrian trips would be most concentrated on sidewalks and crosswalks adjacent to projected development sites as well as along corridors connecting these sites to area subway and commuter rail station entrances. In the Midday, pedestrian trips would tend to be more dispersed, as people travel throughout the area for lunch, shopping or errands.

An assignment of project increment pedestrian trips was prepared in order to identify locations for analysis. Subway, commuter rail, and bus trips were assigned to the most direct routes between these transit services and projected development sites, while walk-only trips to/from projected development sites were assumed to be distributed throughout the area. Pedestrian trips generated by the auto mode were assigned to the most direct paths between projected development sites and off-street public parking garages in the vicinity.

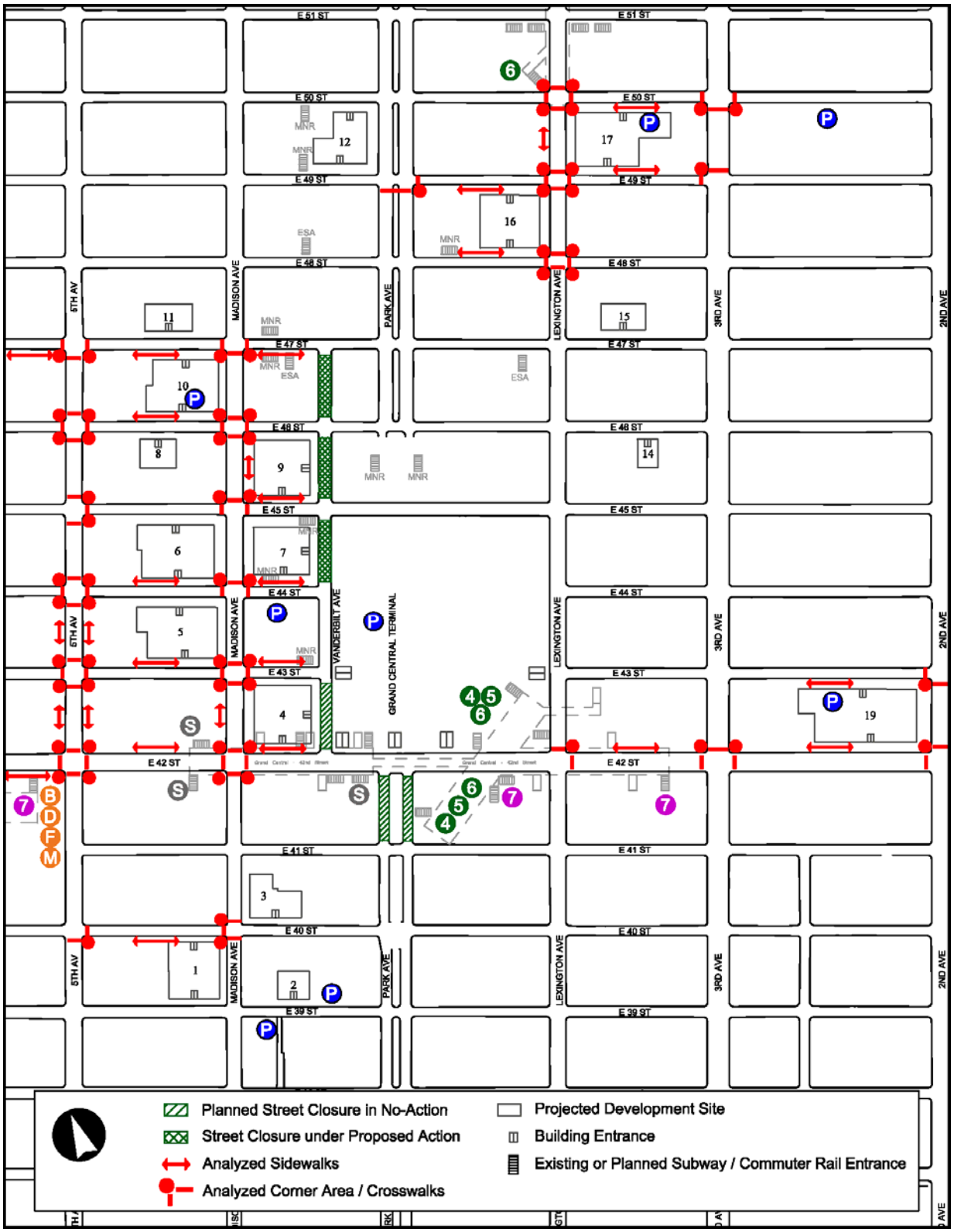
The selection of analysis locations focused on sidewalks, corner areas, and crosswalks in proximity to projected development sites and along corridors connecting these sites to area transit services, as it is along these corridors that new pedestrian demand from the Proposed Action is expected to be most concentrated. A total of 27 sidewalks, 62 corner reservoir areas, and 76 crosswalks along these corridors where project-generated pedestrian trips are expected to exceed the 200-trip *CEQR Technical Manual* analysis threshold were selected for quantitative analysis in this EIS. As shown in Figure 12-5, these pedestrian elements are generally concentrated along the Lexington Avenue, Madison Avenue and Fifth Avenue corridors in proximity to projected development sites and subway and commuter rail station entrances. Selected elements along Second, Third and Park Avenues are also included in the analysis.

While substantial numbers of new pedestrian trips are also expected along the Vanderbilt Avenue corridor, it is important to note that the block of Vanderbilt Avenue between East 42nd and East 43rd Streets is expected to be converted into a pedestrian plaza in the No-Action condition, and the blocks from East 44th Street to East 47th Street would be similarly closed to traffic under the Proposed Action. As a result, much of the existing vehicular traffic along this corridor would not be present in the future with the Proposed Action, and a substantial amount of new pedestrian space would be created. Significant adverse pedestrian impacts along this corridor would therefore be unlikely as many of the conflicting vehicular movements would be eliminated and there would be substantial increases in pedestrian space.

12.5.4 Parking

As a quantitative traffic analysis is necessary, analyses of on-street (curbside) and off-street public parking conditions were also performed as per the *CEQR Technical Manual*. These analyses focus on existing and future parking supply and demand near the projected development sites, which would generate the majority of the new vehicle trips and parking demand resulting with the Proposed Action.

FIGURE 12-5: PEDESTRIAN STUDY AREA



Source: Philip Habib & Associates, 2013

12.6 TRANSPORTATION ANALYSIS METHODOLOGIES

12.6.1 Traffic

12.6.1.1 Analysis Methodology

The traffic analysis examines conditions in the weekday AM, Midday, and PM peak hours when the increased travel demand attributable to the Proposed Action, especially the office components, is expected to be the greatest. The analysis peak hours are 8:00-9:00 a.m., 12:00-1:00 p.m., and 5:00-6:00 p.m. in accordance with the *CEQR Technical Manual* guidance for traffic analysis in the Manhattan Central Business District (CBD).

The capacity analyses at intersections are based on the methodology presented in the *Highway Capacity Manual (HCM) Software HCS+ Version 5.5.* Traffic data required for these analyses include the hourly volumes on each approach, turning movements, the percentage of trucks and buses, and pedestrian volumes at crosswalks. Field inventories are also necessary to document the physical layout and street widths, lane markings, curbside parking regulations, and other relevant characteristics needed for the analysis.

The HCM methodology produces a volume-to-capacity (v/c) ratio for each signalized intersection approach. The v/c ratio represents the ratio of traffic volume on an approach to the approach's carrying capacity. A v/c ratio of less than 0.90 is generally considered indicative of non-congested conditions in dense urban areas; when higher than this value, the ratio reflects increasing congestion. At a v/c ratio between 0.95 and 1.0, near-capacity conditions are reached and delays can become substantial. Ratios of greater than 1.0 indicate saturated conditions with queuing. The HCM methodology also expresses the quality of traffic flow in terms of level of service (LOS), which is based on the amount of delay that a driver typically experiences at an intersection. Levels of service range from A, representing minimal delay (10 seconds or less per vehicle), to F, which represents long delays (greater than 80 seconds per vehicle).

For unsignalized intersections, the HCM methodology generally assumes that traffic on major streets is not affected by traffic flows on minor streets. Left turns from a major street are assumed to be affected by the opposing, or oncoming, traffic flow on that major street. Traffic on minor streets is affected by all conflicting movements. Similar to signalized intersections, the HCM methodology expresses the quality of traffic flow at unsignalized intersections in terms of LOS based on the amount of delay that a driver experiences. Level of service definitions used to characterize traffic flows at unsignalized intersections differ somewhat from those used for signalized intersections, primarily because drivers anticipate different levels of performance from the two different kinds of intersections. For unsignalized intersections, LOS ranges from A, representing minimal delay (10 seconds or less per vehicle, as it is for signalized intersections), to F, which represents long delays (greater than 50 seconds per vehicle, compared to greater than 80 seconds per vehicle for signalized intersections).

Table 12-12 shows the LOS/delay relationship for signalized and unsignalized intersections using the HCM methodology. Levels of service A, B, and C generally represent highly favorable to fair levels of traffic flow. At LOS D, the influence of congestion becomes noticeable. LOS E is considered to be the limit of acceptable delay, and LOS F is considered to be unacceptable to most drivers. In these traffic impact analyses, a signalized lane grouping operating at LOS E or F or a v/c ratio of 0.90 or more is identified as congested. For unsignalized intersections, a movement with LOS E or F is also identified as congested.

TABLE 12-12: INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service (LOS)	Description	Average Delay per Vehicle (seconds)	
		Signalized Intersections	Unsignalized Intersections
A	Satisfactory – Little/No Delay	less than 10.1	less than 10.1
B	Satisfactory – Minor Delay	10.1 to 20.0	10.1 to 15.0
C	Satisfactory – With Some Delay	20.1 to 35.0	15.1 to 25.0
D	Borderline Congestion	35.1 to 55.0	25.1 to 35.0
E	Marginally Acceptable Congestion	55.1 to 80.0	35.1 to 50.0
F	Unsatisfactory – Highly Congested	greater than 80.0	greater than 50.0

Source: 2000 *Highway Capacity Manual*.

12.6.1.2 Significant Impact Criteria

The identification of significant adverse traffic impacts at analyzed intersections is based on criteria presented in the *CEQR Technical Manual*. If a lane group in the With-Action condition would be LOS A, B or C, or marginally acceptable LOS D (i.e., delay less than or equal to 45.0 seconds/vehicle for signalized intersections and 30.0 seconds/vehicle for unsignalized intersections), the impact is not considered significant. If the lane-group LOS would deteriorate from LOS A, B, or C in the No-Action condition to worse than mid-LOS D or to LOS E or F in the With-Action condition, a significant traffic impact is identified. For a lane group that would operate at LOS D in the No-Action condition, an increase in delay of 5.0 or more seconds in the With-Action condition is considered a significant impact if the With-Action delay would exceed mid-LOS D. For a lane group that would operate at LOS E in the No-Action condition, a projected With-Action increase in delay of 4.0 or more seconds is considered a significant impact. For a lane group that would operate at LOS F in the No-Action condition, a projected With-Action increase in delay of 3.0 or more seconds is considered a significant impact.

The same criteria apply to signalized and unsignalized intersections. However, for traffic on a minor street at an unsignalized intersection to result in a significant impact, 90 passenger car equivalents (PCEs) must be projected in the future With-Action condition in any peak hour.

12.6.2 Transit

12.6.2.1 Analysis Methodology

a. Subway

To determine existing conditions at analyzed subway station elements, subway ridership data were collected at the Grand Central-42nd Street subway station complex in the fall of 2012 and reflects pre-Superstorm Sandy ridership levels, and at other analyzed subway stations in January 2013. Factors provided by NYCT were applied to the January 2013 data to account for seasonal variation and reflect typical peak transit demand over the course of the year. The methodology for assessing subway station pedestrian circulation elements (stairs, escalators, and passageways), fare control elements (regular turnstiles, high entry/exit turnstiles [HEETs], and high exit turnstiles) compares existing and projected pedestrian volumes with the element's design capacity to yield a volume-to-capacity (v/c) ratio. All analyses reflect pedestrian flow volumes over a 15-minute interval during each peak hour. Based on existing pedestrian volumes, the peak periods selected for the analysis of subway station conditions are from 8:30-9:30 a.m. for the AM and 5:15-6:15 p.m. for PM. (As noted previously, transit analyses typically focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway and bus systems is usually highest.)

Under *CEQR Technical Manual* guidelines, the capacity of a stairway or passageway is determined based on four factors: the NYCT guideline capacity, the effective width, and surging and counter-flow factors, if applicable. NYCT guideline capacity is 10 passengers per minute per foot-width (pmf) for stairs and 15 pmf for passageways. The effective width of a stair or passageway is the actual width adjusted to reflect pedestrian avoidance of sidewalls and for center handrails, if present. A surging factor is applied to existing pedestrian volumes to reflect conditions where pedestrian flows tend to be concentrated (or surged) during shorter periods within the 15-minute analysis interval. This factor, which is based on the size of the station and the proximity of the pedestrian element to the station platforms, can reduce the calculated capacity by up to 25 percent. Lastly, a friction (or counter-flow) factor reducing calculated capacity by 10 percent is applied where opposing pedestrian flows use the same stair or passageway. (No friction factor is applied if the flow is all or predominantly in one direction.)

By contrast with stairways and passageways, under *CEQR Technical Manual* guidelines the capacity of an escalator or turnstile is determined based on only two factors: the NYCT guideline capacity for a 15-minute interval and a surging factor of up to 25 percent. Table 12-13 shows the *CEQR Technical Manual* level of service criteria for all subway station elements. As shown in Table 12-13, six levels of service are defined with letters A through F. LOS A is representative of free flow conditions without pedestrian conflicts and LOS F depicts severe congestion and queuing.

TABLE 12-13: LEVEL OF SERVICE CRITERIA FOR SUBWAY STATION ELEMENTS

LOS	Description	V/C Ratio
A	Free Flow	0.00 to 0.45
B	Fluid Flow	0.45 to 0.70
C	Fluid, somewhat restricted	0.70 to 1.00
D	Crowded, walking speed restricted	1.00 to 1.33
E	Congested, some shuffling and queuing	1.33 to 1.67
F	Severely congested, queued	> 1.67

Source: 2012 *CEQR Technical Manual*

b. Subway Line Haul

Maximum load point subway ridership data were provided by NYCT. Line haul capacity is based on the guideline capacity per subway car multiplied by the number of subway cars crossing the maximum load point in the peak hour. (Maximum guideline capacities established by NYCT for each car class are 110 passengers/car for a 51-foot subway car, 145 passengers/car for a 60-foot car, and 175 passengers/car for a 75-foot car.) The volume-to-capacity (v/c) ratio is determined by dividing the number of peak-hour passengers traveling through the maximum load point by the line haul capacity. The subway analyses focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway system is usually highest.

c. Bus

The operating conditions for bus service are measured in terms of the number of passengers carried per bus at the maximum load point for each route. This is determined by dividing the peak-hour passenger count by the number of buses during that hour. The bus load levels are compared with the NYCT loading guidelines of 54 passengers for a 40-foot standard bus and 85 passengers for a 60-foot articulated bus. The bus analyses focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the bus system is usually highest.

12.6.2.2 Significant Impact Criteria

a. Subway

The *CEQR Technical Manual* identifies a significant impact for stairways and passageways in terms of the minimum width increment threshold (WIT) based on the minimum amount of additional capacity that would be required to restore conditions to either their No-Action v/c ratio or to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Stairways that are substantially degraded in level of service or which experience the formation of extensive queues are classified as significantly impacted. Significant adverse stairway or passageway impacts are typically considered to have occurred once the thresholds shown in Table 12-14 are reached or exceeded.

TABLE 12-14: SIGNIFICANT IMPACT THRESHOLDS FOR STAIRWAYS AND PASSAGEWAYS

With-Action V/C Ratio	WIT for Significant Impact (inches)	
	Stairway	Passageway
1.00-1.09	8	13
1.10-1.19	7	11.5
1.20-1.29	6	10
1.30-1.39	5	8.5
1.40-1.49	4	6
1.50-1.59	3	4.5
≥1.6	2	3

Source: *CEQR Technical Manual*

For turnstiles, escalators, and high-wheel exit gates, the *CEQR Technical Manual* defines a significant impact as an increase from a No-Action v/c ratio of below 1.00 to a v/c ratio of 1.00 or greater. Where a facility is already at a v/c ratio of 1.00 or greater, a 0.01 change in v/c ratio is also considered significant.

b. Subway Line Haul

For subway line haul conditions, *CEQR Technical Manual* criteria specify that any increases in load levels that remain within practical capacity limits are generally not considered significant. However, significant adverse subway line haul impacts can occur if a proposed action is expected to generate an incremental increase averaging five or more riders per subway car on lines projected to carry loads at or exceeding guideline capacity. This is based on the general assumption that when subways are at or above practical capacity, the addition of even five or more riders per car is perceptible.

c. Bus

According to the *CEQR Technical Manual* and NYCT guidelines, additional bus service along a route is recommended when load levels exceed maximum capacity at the route's maximum load point. A significant impact is considered at the route's maximum load point where an increase in bus load levels would exceed the maximum capacity. NYCT's general policy is to provide additional bus service where demand warrants increased service, taking into account fiscal and operational constraints.

12.6.3 Pedestrians

12.6.3.1 Analysis Methodology

Data on peak period pedestrian flow volumes were collected along analyzed sidewalks, corner areas, and crosswalks in the vicinity of the rezoning area in January 2013. Peak hours were determined by comparing rolling hourly averages, and the highest 15-minute volumes within the selected peak hours were used for analysis. Based on existing peak pedestrian volumes along major corridors in the study area, the peak hours selected for the analyses are 8:15-9:15 a.m., 12:30-1:30 p.m., and 5:15-6:15 pm. Peak 15-minute

pedestrian flow conditions during the weekday AM, Midday, and PM peak hours are analyzed using the *2000 Highway Capacity Manual* methodology and procedures outlined in the *CEQR Technical Manual*. Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a "time-space" analysis methodology is employed which takes into consideration the traffic light cycle at intersections.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. Table 12-15 defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, as based on the *Highway Capacity Manual* methodology.

TABLE 12-15: PEDESTRIAN CROSSWALK/CORNER AREA AND SIDEWALK LEVELS OF SERVICE DESCRIPTIONS

LOS	Crosswalk/Corner	Crosswalk/Corner Area Criteria (sf/ped)	Non-Platoon Sidewalk Criteria (pmf)	Platoon Sidewalk Criteria (pmf)
A	(Unrestricted)	> 60	≤ 5	≤ 0.5
B	(Slightly Restricted)	> 40 to 60	> 5 to 7	> 0.5 to 3
C	(Restricted but fluid)	> 24 to 40	> 7 to 10	> 3 to 6
D	(Restricted, necessary to continuously alter walking stride and direction)	> 15 to 24	> 10 to 15	> 6 to 11
E	(Severely restricted)	> 8 to 15	> 15 to 23	> 11 to 18
F	(Forward progress only by shuffling; no reverse movement possible)	≤ 8	> 23	> 18

Source: *2010 Highway Capacity Manual*

Notes: Based on average conditions for 15 minutes
sf/ped – square feet of area per pedestrian
pmf – pedestrians per minute per foot of effective sidewalk width

The analysis of sidewalk conditions includes a "platoon" factor in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. "Platooning" is the tendency of pedestrians to move in bunched groups or "platoons" once they cross a street where cross traffic required them to wait. Platooning generally results in a level of service one level poorer than that determined for average flow rates.

12.6.3.2 Significant Impact Criteria

a. Sidewalks

For areas of Manhattan within the Central Business District (which is typically defined as the area south of 60th Street), *CEQR Technical Manual* criteria define a significant adverse sidewalk impact to have occurred under platoon conditions if the average pedestrian flow rate under the No-Action condition is less than 6.4 pedestrians/minute/foot (pmf) of effective sidewalk width, and the average flow rate under the With-Action condition is greater than 8.5 pmf (worse than LOS D). If the average flow rate under the With-Action condition is less than or equal to 8.5 pmf (mid-LOS D or better), the impact should not be considered significant. If the No-Action pedestrian flow rate is between 6.4 and 19 pmf, an increase in average flow rate under the With-Action condition should be considered significant based on Table 12-16, which shows a sliding-scale that identifies what increase is considered a significant impact for a given flow rate. If the increase in the average pedestrian flow rate is less than the value shown in Table 12-16, the impact should not be considered significant. If the average pedestrian flow rate under the No-Action condition is greater than 19 pmf, then an increase in pedestrian flow rate greater than or equal to 0.6 pmf should be considered significant.

TABLE 12-16: SIGNIFICANT IMPACT CRITERIA FOR SIDEWALKS WITH PLATOONED FLOW IN A CBD LOCATION

No-Action Condition Pedestrian Flow (pmf)			With-Action Condition Pedestrian Flow Increment to be Considered a Significant Impact (pmf)
< 6.4			With Action Condition > 8.5
6.4	to	7.0	Increment ≥ 2.2
7.1	to	7.8	Increment ≥ 2.1
7.9	to	8.6	Increment ≥ 2.0
8.7	to	9.4	Increment ≥ 1.9
9.5	to	10.2	Increment ≥ 1.8
10.3	to	11.0	Increment ≥ 1.7
11.1	to	11.8	Increment ≥ 1.6
11.9	to	12.6	Increment ≥ 1.5
12.7	to	13.4	Increment ≥ 1.4
13.5	to	14.2	Increment ≥ 1.3
14.3	to	15.0	Increment ≥ 1.2
15.1	to	15.8	Increment ≥ 1.1
15.9	to	16.6	Increment ≥ 1.0
16.7	to	17.4	Increment ≥ 0.9
17.5	to	18.2	Increment ≥ 0.8
18.3	to	19.0	Increment ≥ 0.7
> 19.0			Increment ≥ 0.6

Source: 2012 *CEQR Technical Manual*

b. Corners Areas and Crosswalks

For CBD areas of Manhattan, *CEQR Technical Manual* criteria define a significant adverse corner area or crosswalk impact to have occurred if the average pedestrian space under the No-Action condition is greater than 21.5 square feet/pedestrian (sf/ped) and, under the With-Action condition, the average pedestrian space decreases to less than 19.5 sf/ped (worse than mid-LOS D). If the pedestrian space under the With-Action condition is greater than or equal to 19.5 sf/ped (mid-LOS D or better), the impact should not be considered significant. If the average pedestrian space under the No-Action condition is between 5.1 and 21.5 sf/ped, a decrease in pedestrian space under the With-Action condition should be considered significant based on Table 12-17, which shows a sliding-scale that identifies what decrease in pedestrian space is considered a significant impact for a given amount of pedestrian space in the No-Action condition. If the decrease in pedestrian space is less than the value in Table 12-17, the impact is not considered significant. If the average pedestrian space under the No-Action condition is less than 5.1 sf/ped, then a decrease in pedestrian space greater than or equal to 0.2 sf/ped should be considered significant.

TABLE 12-17: SIGNIFICANT IMPACT CRITERIA FOR CORNERS AND CROSSWALKS IN A CBD LOCATION

No-Action Condition Pedestrian Space (sf/ped)			With-Action Condition Pedestrian Space Reduction to be Considered a Significant Impact (sf/ped)
> 21.5			With Action Condition < 19.5
21.3	to	21.5	Reduction ≥ 2.1
20.4	to	21.2	Reduction ≥ 2.0
19.5	to	20.3	Reduction ≥ 1.9
18.6	to	19.4	Reduction ≥ 1.8
17.7	to	18.5	Reduction ≥ 1.7
16.8	to	17.6	Reduction ≥ 1.6
15.9	to	16.7	Reduction ≥ 1.5
15.0	to	15.8	Reduction ≥ 1.4
14.1	to	14.9	Reduction ≥ 1.3
13.2	to	14.0	Reduction ≥ 1.2
12.3	to	13.1	Reduction ≥ 1.1
11.4	to	12.2	Reduction ≥ 1.0
10.5	to	11.3	Reduction ≥ 0.9
9.6	to	10.4	Reduction ≥ 0.8
8.7	to	9.5	Reduction ≥ 0.7
7.8	to	8.6	Reduction ≥ 0.6
6.9	to	7.7	Reduction ≥ 0.5
6.0	to	6.8	Reduction ≥ 0.4
5.1	to	5.9	Reduction ≥ 0.3
< 5.1			Reduction ≥ 0.2

Source: *CEQR Technical Manual*

12.6.4 Pedestrian and Vehicular Safety Evaluation

Under *CEQR Technical Manual* guidelines, an evaluation of vehicular and pedestrian safety is needed for locations within the traffic and pedestrian study areas that have been identified as high accident locations. High accident locations are defined as those with 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes occurring in any consecutive 12 months of the most recent 3-year period for which data are available. For such locations, accident trends are identified to determine whether project-generated vehicular and pedestrian volumes would further impact safety, or whether existing unsafe conditions could adversely impact the flow of the projected new vehicular and/or pedestrian trips. The determination of potential significant safety impacts depends on the nature and location of the impact, as well as on traffic and pedestrian volumes affected by or affecting such impacts, accident types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety are identified and coordinated with DOT.

12.6.5 Parking

12.6.5.1 Analysis Methodology

The parking analysis identifies the supply of on-street and off-street public parking near a proposed project and determines the extent to which the supply is utilized in existing conditions and in the future without and with the Proposed Action. The analysis considers anticipated changes in the study area's parking supply and demand, and compares project-generated parking demand with future parking availability to determine if a parking shortfall is likely to result. The displacement of existing parking capacity attributable to the proposed action or project is also considered. Typically, the analysis encompasses the parking facilities—public parking lots and garages and on-street curb spaces—that vehicular traffic destined to the project site or area would likely utilize. According to the *CEQR Technical Manual*, a ¼-mile radius around a project site is generally assumed as the distance that someone driving to the site would be willing to walk.

12.6.5.2 Impact Criteria

For proposed projects in Manhattan and other CBD areas in the City, the inability of a proposed project or the surrounding area to accommodate a project's future parking demands is considered a parking shortfall. However, it is generally not considered a significant impact due to the magnitude of alternative modes of transportation available in Manhattan and the other CBD areas.

12.7 TRAFFIC

12.7.1 Existing Conditions

12.7.1.1 Study Area Street Network

The street network within the study area comprises a grid of avenues and streets with the following general characteristics:

- **Avenues –** Avenues generally operate one-way, north-south, and are about 60 to 70 feet wide, curb-to-curb, with three to seven travel lanes depending on location and time of day. Sidewalk widths typically vary from 15 to 20 feet. The avenues alternate direction with First Avenue, Third Avenue, Madison Avenue, and Sixth Avenue running northbound and Second Avenue, Lexington Avenue, and Fifth Avenue running southbound. Park Avenue is a two-way, north-south roadway.

  Route 9A (also known as Twelfth Avenue along its segment within the study area) is a two-way, north-south roadway along the Hudson River waterfront that connects with the Henry Hudson Parkway to the north. Route 9A provides eight travel lanes within the study area (four northbound and four southbound) with on-street parking in some areas along the northbound side, a landscaped median and left-turn bays. A buffered bicycle and pedestrian greenway runs along the western edge of Route 9A within Hudson River Park.

  Most avenues, except for Park Avenue and Route 9A, have dedicated bus lanes during the peak periods. Madison Avenue has two dedicated bus lanes in effect from 2:00 p.m. to 7:00 p.m. First Avenue has a tunnel allowing through-traffic to bypass the intersections from East 42nd to East 48th Streets adjacent to the United Nations. Park Avenue has a one-way tunnel from East 33rd to East 40th Streets, allowing northbound through-traffic to bypass the intersections from East 34th to East 39th Streets, and a two-way viaduct running between East 40th and East 46th Streets, allowing through-traffic to bypass intersections in the Grand Central Terminal area. Vanderbilt Avenue is a short north-south roadway, generally two-way, which runs along the west side of Grand Central Terminal between East 42nd and East 47th Streets.

- **Streets –** Streets generally run east-west (crosstown), most carrying one-way traffic with curb-to-curb street widths from 30 to 34 feet and sidewalk widths of 10 to 15 feet. These one-way streets generally carry one to three lanes of traffic depending on location and time of day. Even-numbered streets generally serve eastbound traffic, while odd-numbered streets generally serve westbound traffic.

  There are two major two-way, east-west cross streets in the study area, 42nd and 57th Streets, which have a curb-to-curb width of about 70 feet and sidewalk widths ranging from 20 to 24 feet. These streets operate with two to three lanes in each direction, depending on time of day. During peak periods, there is a dedicated bus lane on the north and south sides of 42nd Street (west of Third Avenue) and 57th Street (west of Third Avenue).

a. Exceptions to the Grid System

The regular Midtown Manhattan street grid is interrupted by the following facilities that span more than 1 square block:

- Grand Central Terminal/MetLife Building (interrupts East 43rd and East 44th Streets between Lexington and Vanderbilt Avenues)
- Bryant Park/New York Public Library (interrupts West 41st Street between Fifth and Sixth Avenues)

b. Other Transportation Infrastructure

The study area lies adjacent to three major highway facilities: the Ed Koch Queensboro Bridge, Queens Midtown Tunnel, and Franklin D. Roosevelt (FDR) Drive.

The Ed Koch Queensboro Bridge is a toll-free facility connecting Midtown Manhattan with arterial roadways in Queens, including Northern Boulevard, Queens Boulevard, and 21st Street. The Queens Midtown Tunnel is a tolled facility operated by the Metropolitan Transportation Authority (MTA) Bridges and Tunnels, connecting Midtown Manhattan with Queens and Long Island via the Long Island Expressway.

The FDR Drive is a 6-lane, limited-access highway restricted to autos. The highway runs north-south and connects to the regional highway system, including the Brooklyn-Queens Expressway (via the Brooklyn Bridge), the Major Deegan Expressway (via the Willis Avenue Bridge), the New England Thruway (via the Robert F. Kennedy Bridge), and the George Washington Bridge (via the Harlem River Drive and the Trans-Manhattan Expressway).

c. Special Roadway Operations

THRU Streets

During the hours of 10:00 a.m. to 6:00 p.m. on weekdays, vehicular traffic is not allowed to make most turns along the following pairs of east-west streets between Third and Sixth Avenues within the study area, because they are designated by DOT as "*THRU* Streets:"

- 45th Street/46th Street;
- 49th Street/50th Street; and
- 53rd Street/54th Street.

Turns are permitted onto Park Avenue in both directions. The *THRU* Street program is designed to improve cross-town traffic flow and reduce pedestrian-vehicular conflicts.

Midtown in Motion

Midtown in Motion is a traffic management system used by DOT's Traffic Management Center (TMC) to improve traffic conditions in the Midtown Manhattan area bound by 57th Street on the north, 42nd Street on the south, First Avenue on the east, and Ninth Avenue on the west. The system is operated via microwave sensors, traffic video cameras and E-ZPass readers to identify and respond to traffic conditions in real time and remotely adjust traffic signal patterns to smooth the flow of traffic.

Select Bus Service

MTA New York City Transit (NYCT) and DOT have implemented Select Bus Service within the study area along First and Second Avenues. Select Bus Service uses exclusive bus lanes, which are created by removing either a parking lane or a general-purpose travel lane during certain hours of the day.

Bicycle Lanes

Within the study area, bicycle routes are located along the following roadways:

- First Avenue;
- Second Avenue (south of East 57th Street);
- Sixth Avenue (south of West 42nd Street);
- Route 9A;
- 39th Street;
- 40th Street;
- 43rd Street (west of Vanderbilt Avenue);
- 44th Street (west of Vanderbilt Avenue);
- 48th Street;
- 51st Street; and
- 54th Street.

Within the study area, the bicycle route along First Avenue varies from a protected path (Class I) to a bike lane (Class II). The bicycle route along Second Avenue is marked as a shared lane (Class III) and the bicycle route along Sixth Avenue is marked as a bike lane (Class II). The bicycle route along Route 9A is a buffered path (Class I) that runs through Hudson River Park. On crosstown streets, bicycle lanes are marked as bike lanes (Class II) or shared lanes (Class III); pavement markings vary from block to block along the length of the route.

Pedestrian Facilities

Nearly all intersections in the study area have pedestrian signals, pedestrian crosswalks, and curb cuts to accommodate wheelchairs.

d. Truck Routes

The City has established local and through truck routes to manage the flow of trucks and improve the quality of neighborhoods. Regulations that restrict trucks to local and through truck routes and other area-wide restrictions are in effect in parts of Midtown Manhattan. The City defines a truck as "a vehicle which is designed for transportation of property, which has either of the following characteristics: two axles and six tires or three or more axles."[2] Through trucks are defined as having "neither an origin nor a destination within the Borough of Manhattan."[3] There are no designated through truck routes within the study area, although a through truck route is designated along 34th Street just south of the study area. Through trucks are prohibited from using this route between the Queens Midtown Tunnel and Dyer Avenue between the hours of 11:00 a.m. and 6:00 p.m.

Local truck routes are designated routes for trucks that are "intended for the purpose of delivery, loading, or providing service within the Borough of Manhattan."[4] Generally, trucks must travel on local truck routes using the intersection nearest their destinations. Designated local truck routes in the study area are as follows: First Avenue, Second Avenue, Third Avenue, Lexington Avenue, 42nd Street, 57th Street, and 59th Street. In addition, Route 9A is a local truck route (south of the Henry Hudson Parkway) connecting with local cross-street truck routes at 42nd Street, 57th Street, and 59th Street.

e. Traffic Controls

Most intersections in the study area are controlled by traffic signals with a 90-second cycle. The major exception is Route 9A, which operates on either a 150-second or a 120-second cycle depending upon the time of day. The allocation of cycle time is generally 60 percent to the avenues, 35 percent to the streets, and 5 percent for clearance intervals (e.g., yellow and all-red phases). Pedestrian signals ("Walk" and "Don't Walk" symbols) are provided at nearly all intersections throughout the study area. At some intersections, a lead pedestrian interval or split phasing is provided to reduce pedestrian-vehicular conflicts.

12.7.1.2 Traffic Conditions

To establish the existing conditions traffic network, an extensive traffic data collection program–including automatic traffic recorder (ATR) counts, manual turning movement counts, vehicle classification counts, and travel time and delay surveys–was undertaken in October 2012. For some intersections in the vicinity of the United Nations, traffic data collected in June and September 2012 for

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

[3] Ibid.

[4] Ibid.

the United Nations Consolidation Building study were used. In addition, recent traffic counts from the DOT were obtained to supplement the traffic data.

Physical inventory data needed for operational analysis—e.g., the number of traffic lanes, lane widths, pavement markings, turn prohibitions, bus stops, and typical parking regulations—were collected in October and November 2012. Signal timing plans for signalized intersections within the study area were obtained from DOT.

Figure 12-6 through Figure 12-14 show existing traffic volumes during weekday AM, Midday, and PM peak hours.

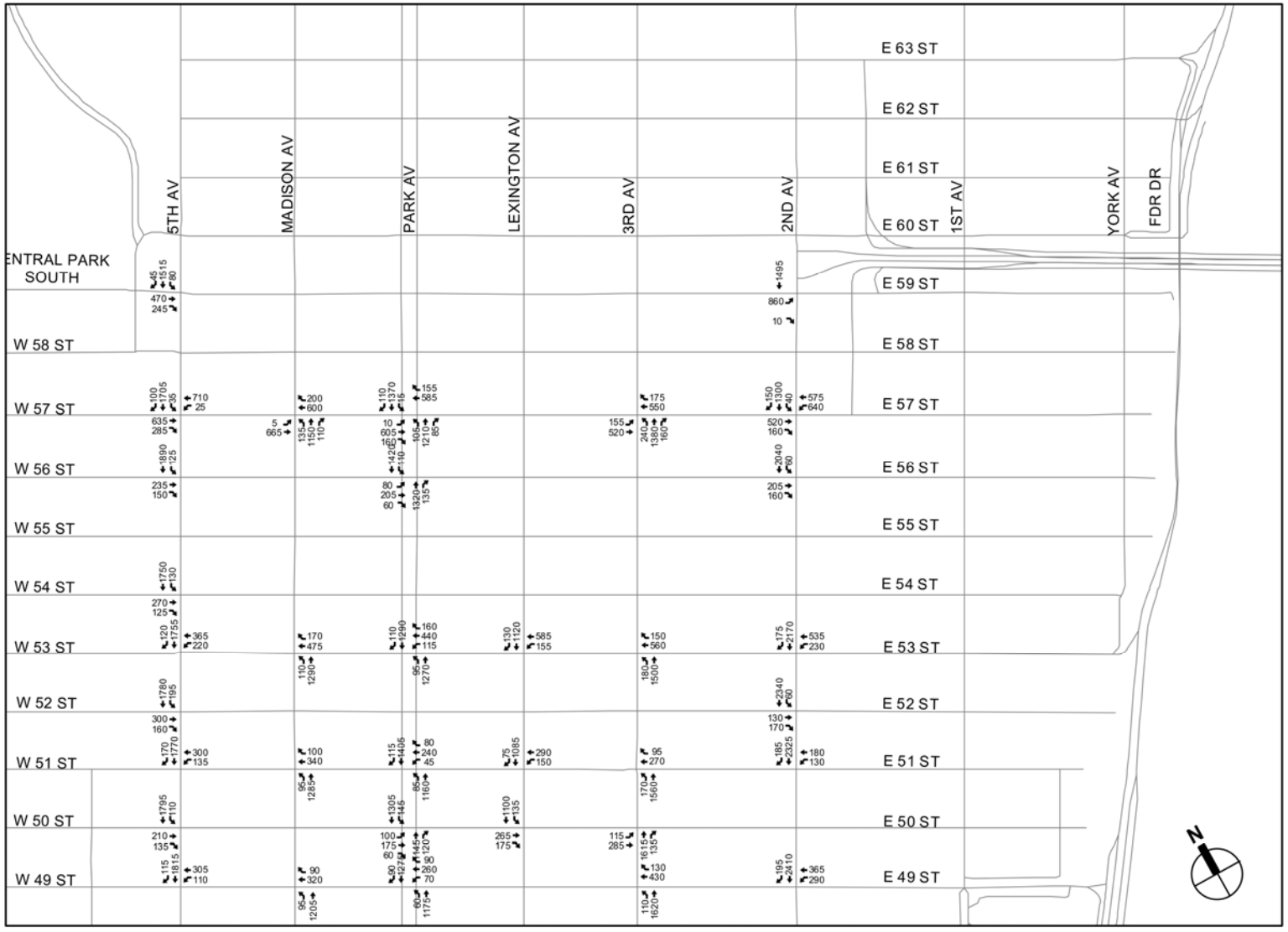
12.7.1.3 Intersection Capacity Analysis

Table 12-18 summarizes existing LOS by approach "movements"[5] for signalized and unsignalized intersections in the traffic study area. The 90 intersections analyzed have a total of 965 movements (939 at signalized intersections and 26 at unsignalized intersections). Although most approach movements operate at overall acceptable levels, individual approach movements at a number of intersections are considered congested (i.e., operate at LOS E or F and/or have a v/c ratio of 0.90 or above) in one or more of the peak hours. At signalized intersections, there are 78 movements with LOS E or worse, with 47 movements operating at LOS E and 31 movements operating at LOS F. There are also 77 movements operating at a v/c ratio of 0.90 or above. At unsignalized intersections, there are two movements with LOS E or worse, with one movement operating at LOS E and one movement operating at LOS F. Table 12-19 presents a more detailed analysis of individual intersections and movements operating at LOS E or worse and those with a v/c ratio of 0.90 or more; Table 12-19 provides the v/c ratio, average delay, and LOS for each movement. These movements are listed below.

Table 12-19 also identifies existing movements requiring modifications to HCS default factors so that the existing condition v/c ratio does not exceed a value of 1.05. These changes are documented in Appendix 4. These factors were also assumed to be in effect in the future No-Action and With-Action conditions.

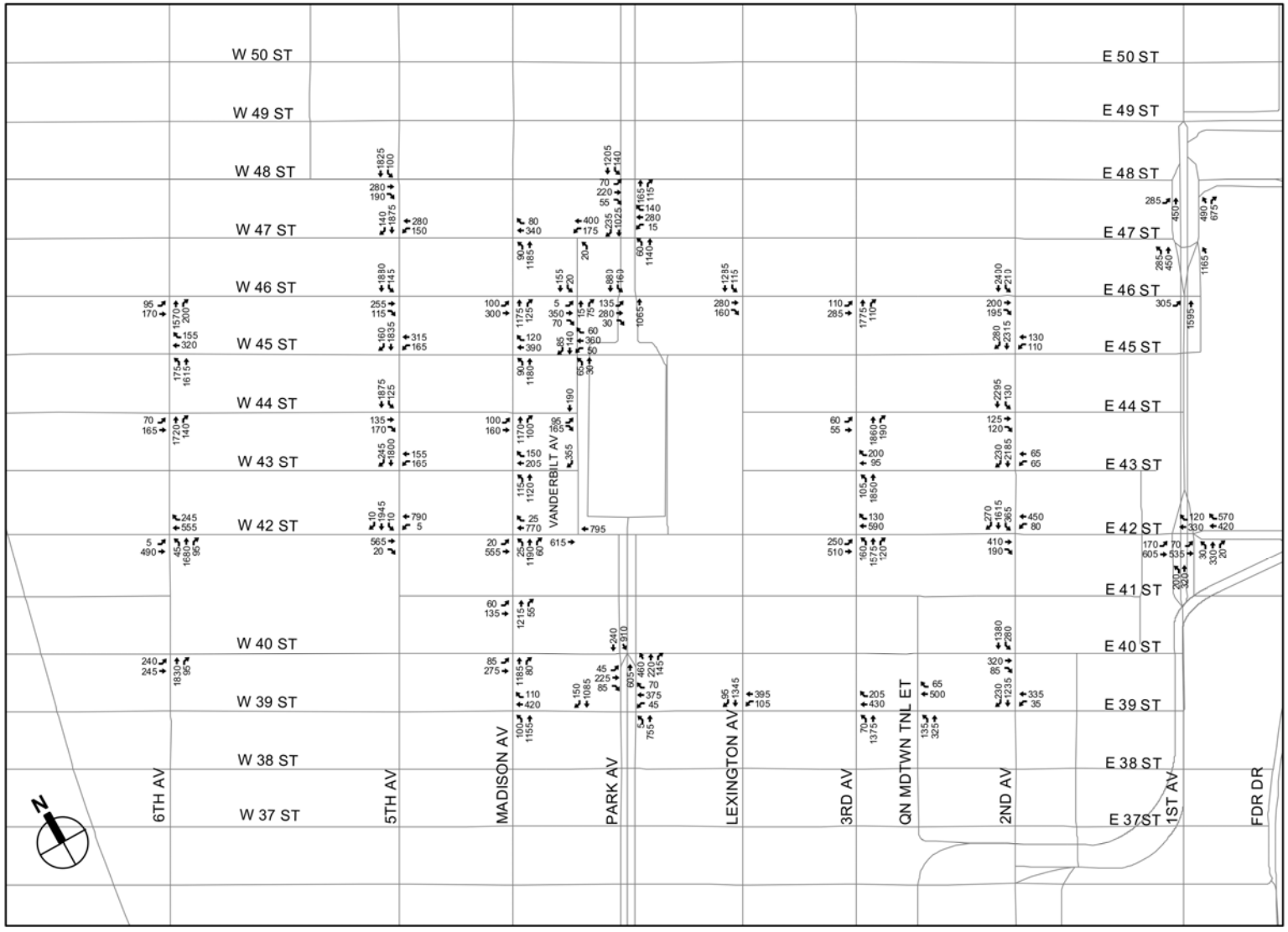
[5] A "movement" represents a component of intersection traffic flow at the approaches, for instance a through-, left-, or right-turn movement.

FIGURE 12-6: AM EXISTING TRAFFIC VOLUMES (1 OF 3)



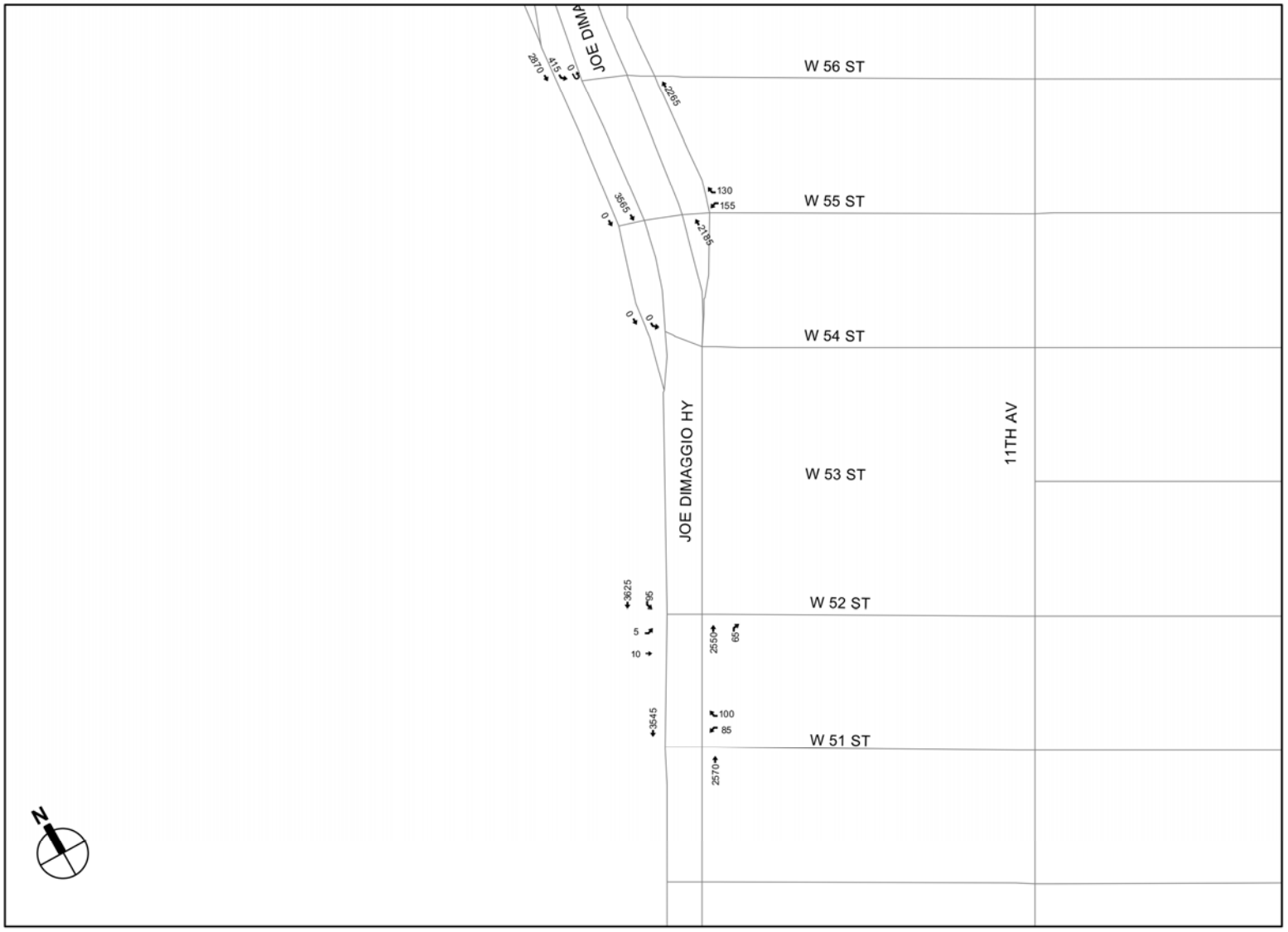
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-7: AM EXISTING TRAFFIC VOLUMES (2 OF 3)



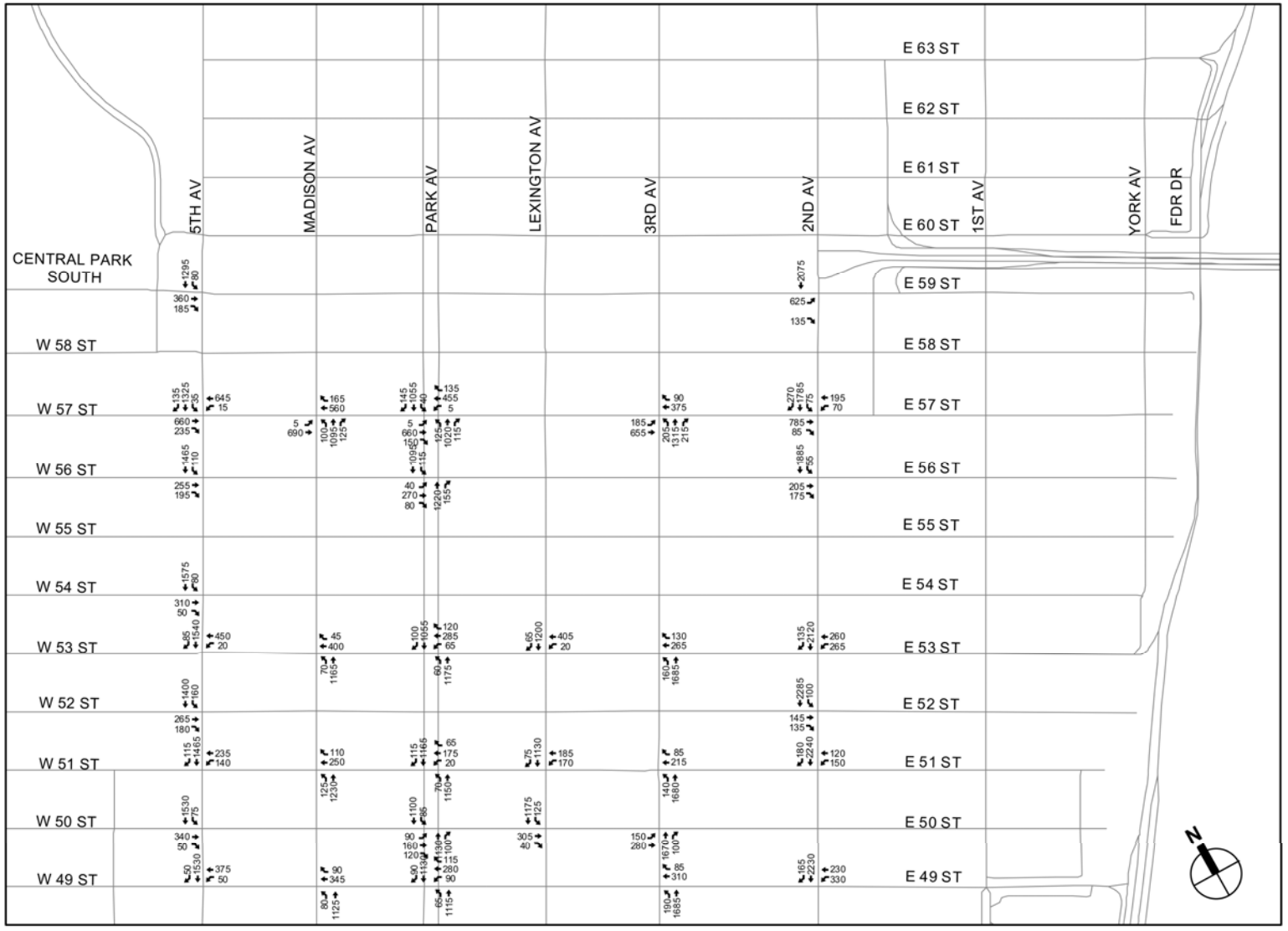
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-8: AM EXISTING TRAFFIC VOLUMES (3 OF 3)



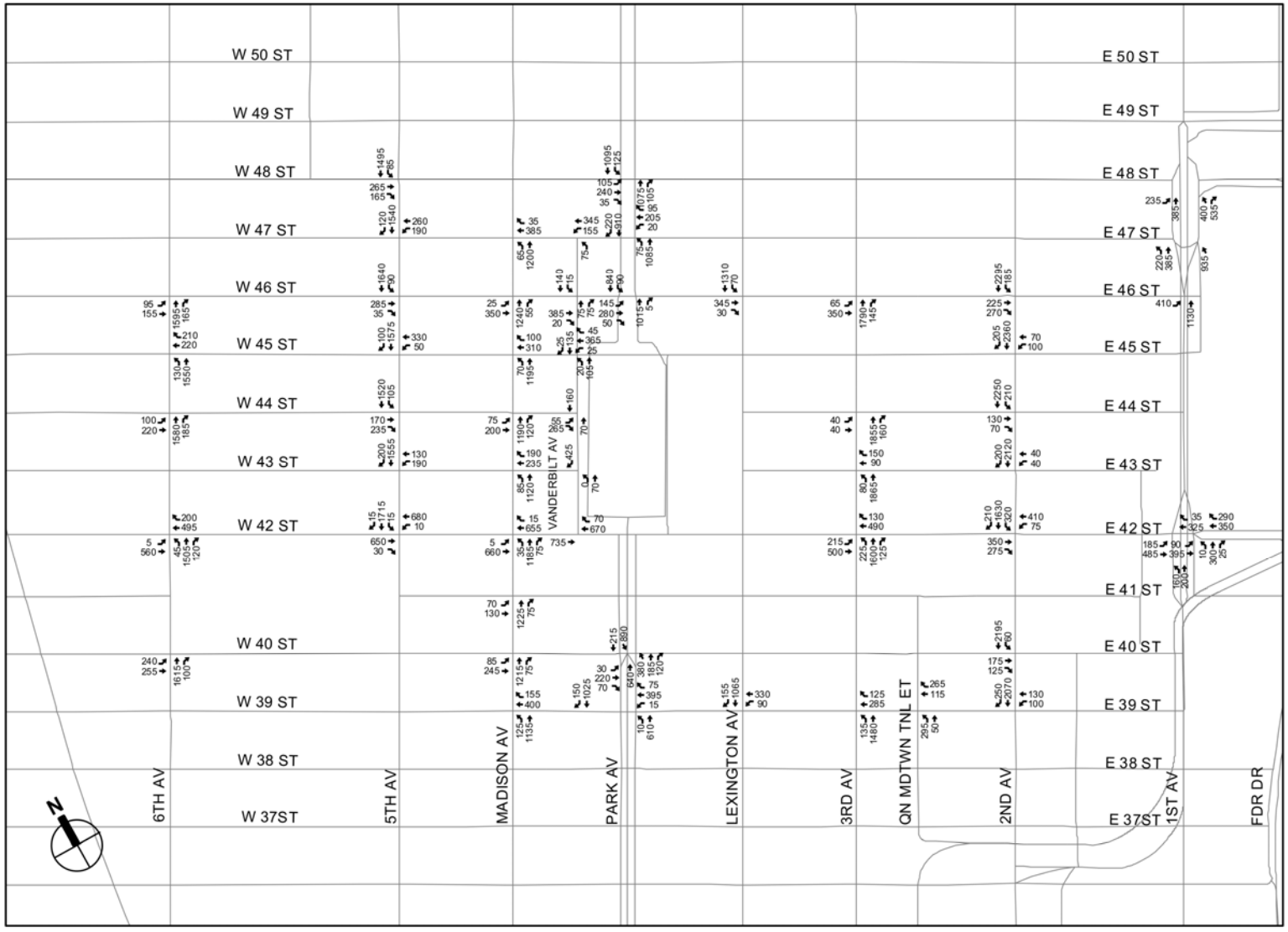
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-9: MIDDAY EXISTING TRAFFIC VOLUMES (1 OF 3)



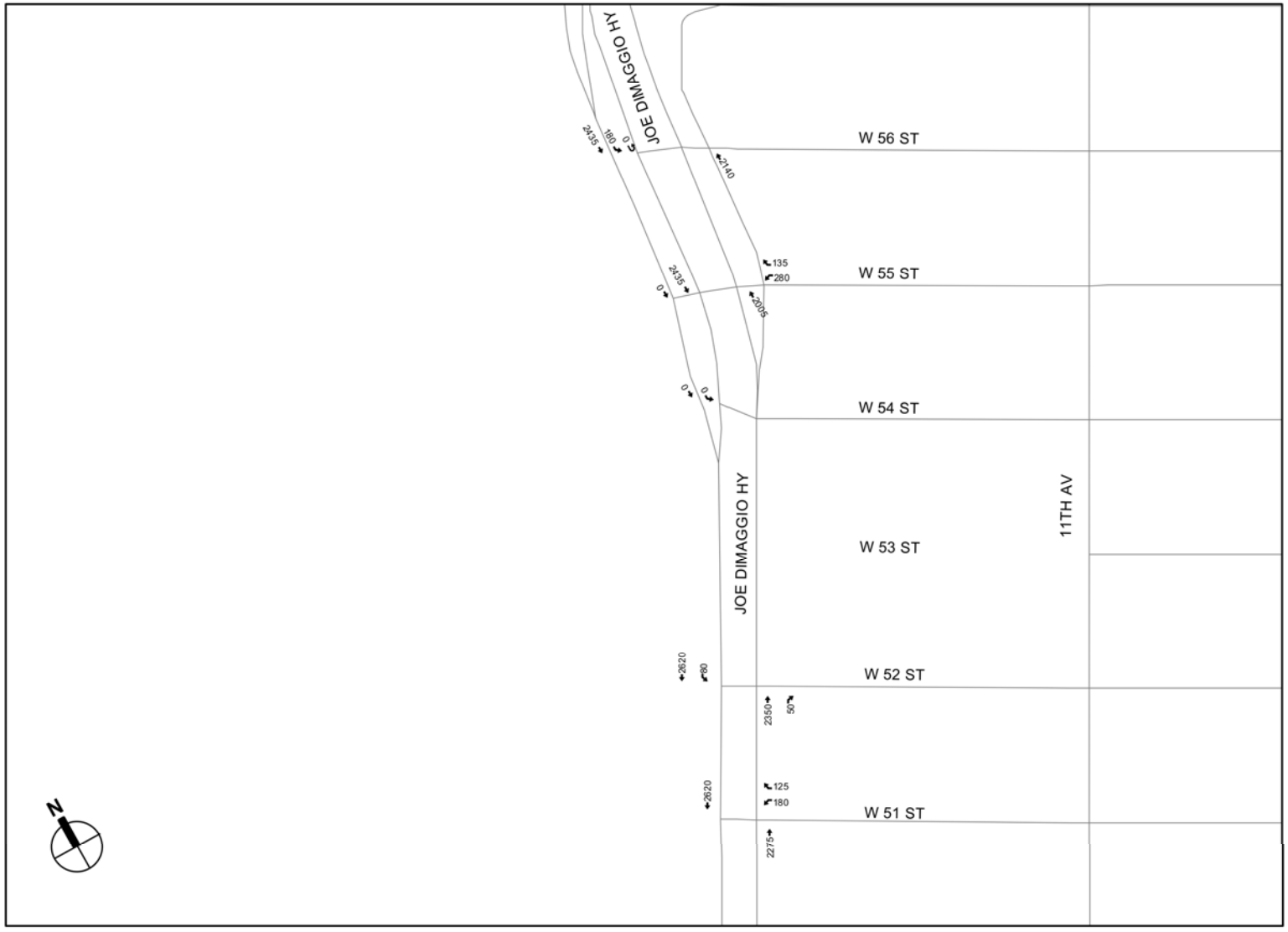
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-10: MIDDAY EXISTING TRAFFIC VOLUMES (2 OF 3)



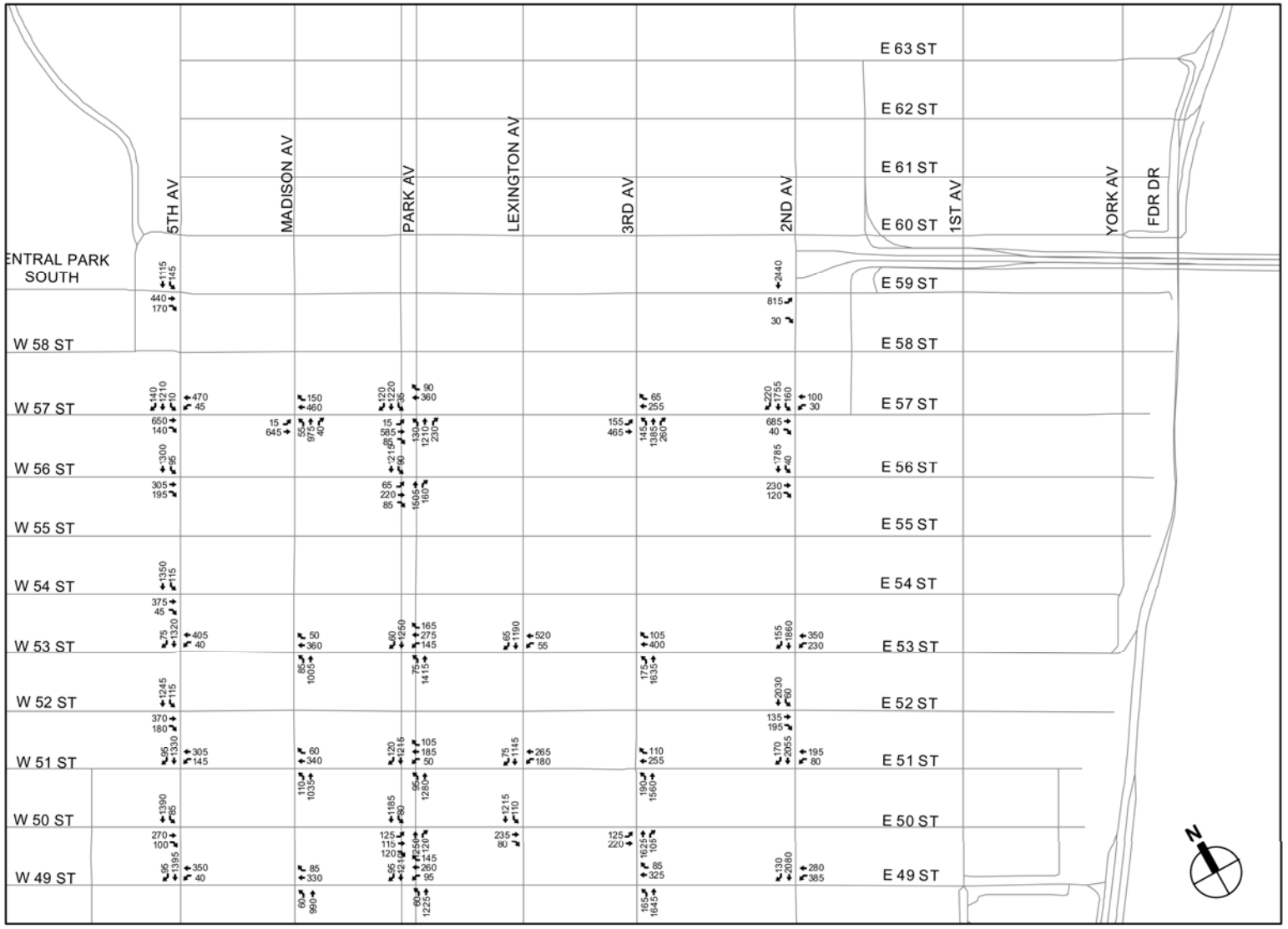
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-11: MIDDAY EXISTING TRAFFIC VOLUMES (3 OF 3)



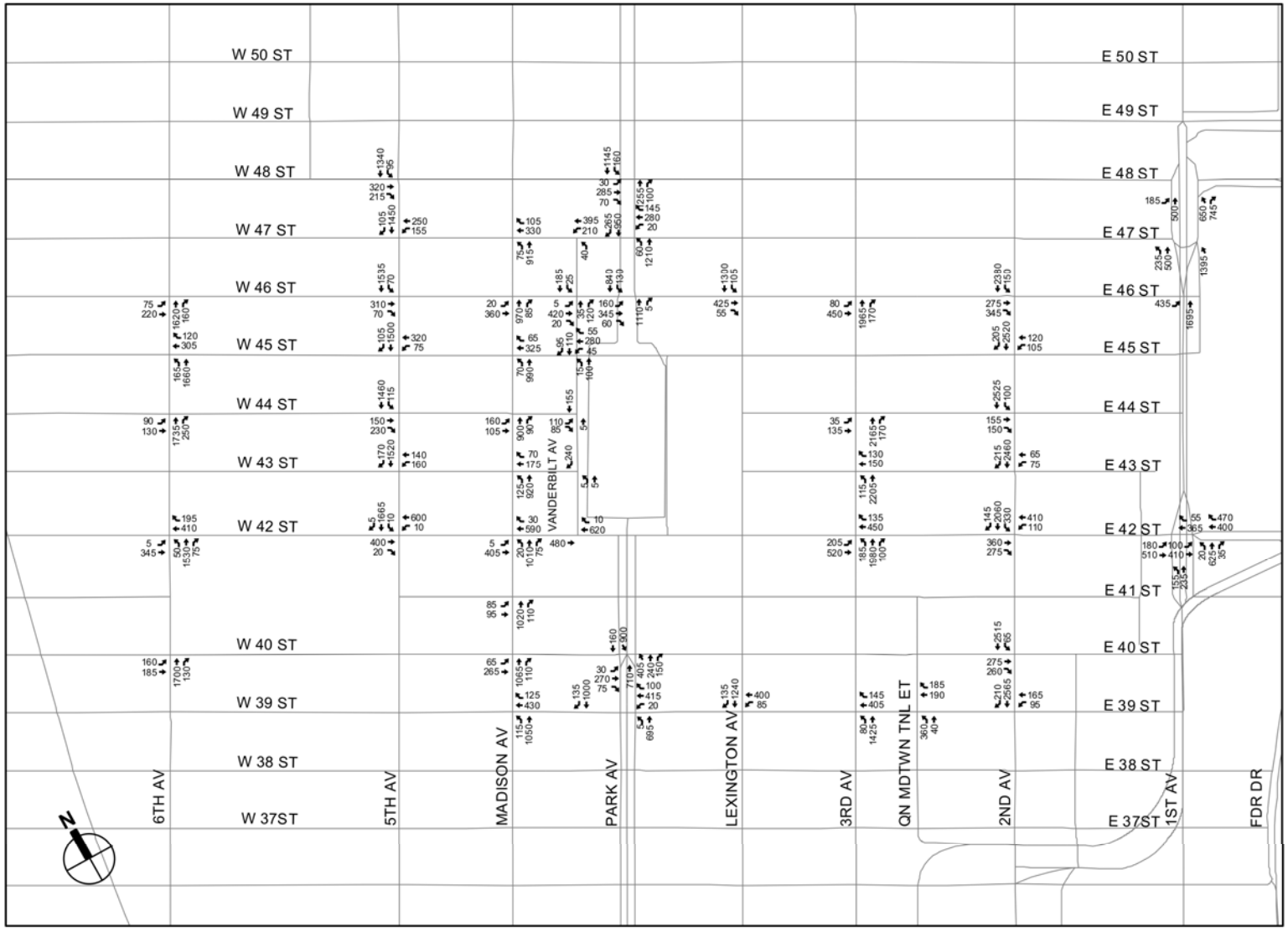
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-12: PM EXISTING TRAFFIC VOLUMES (1 OF 3)



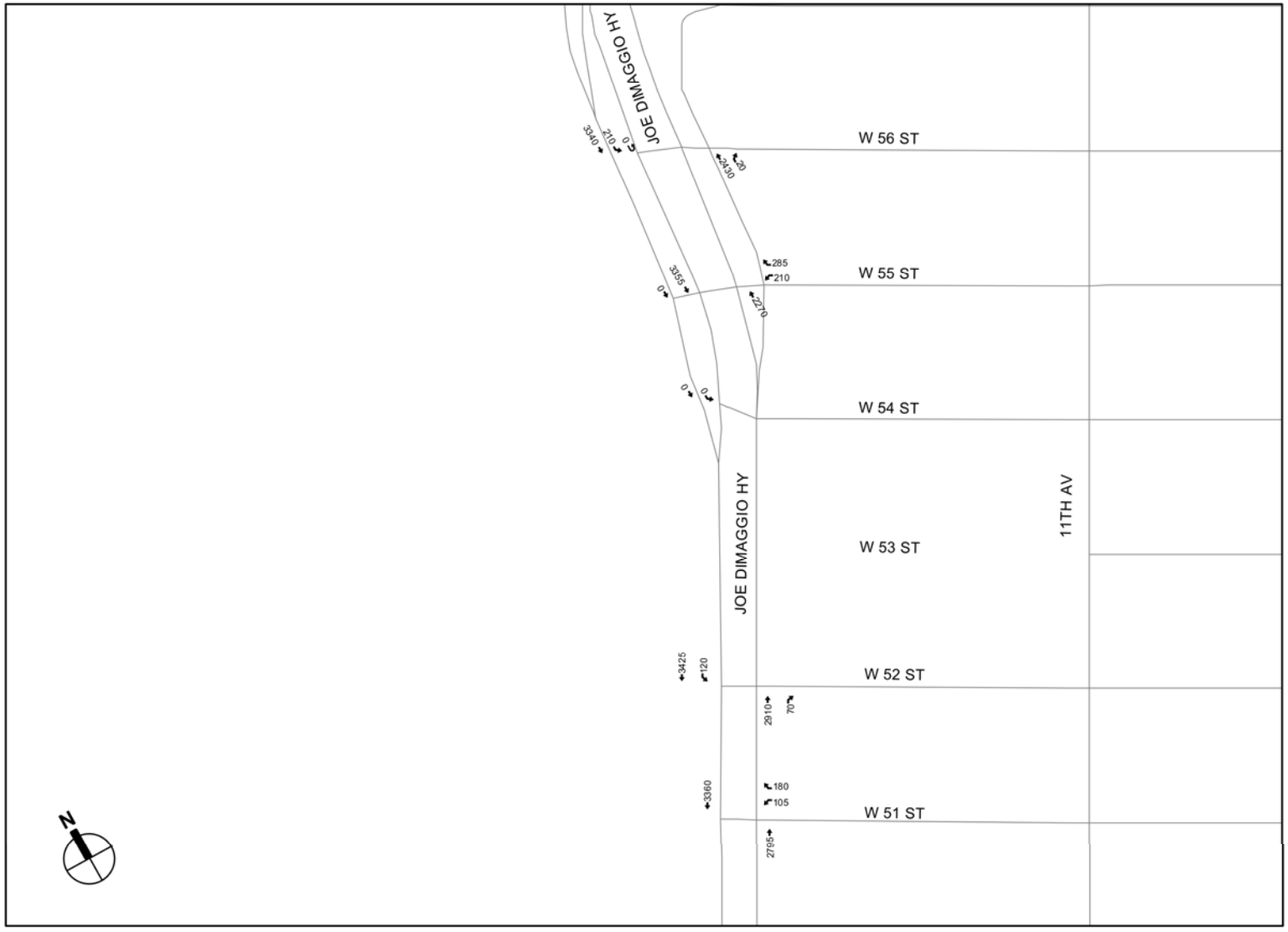
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-13: PM EXISTING TRAFFIC VOLUMES (2 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-14: PM EXISTING TRAFFIC VOLUMES (3 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

TABLE 12-18: SUMMARY OF EXISTING LEVELS OF SERVICE BY MOVEMENT

SIGNALIZED INTERSECTIONS				
Level of Service (LOS)	**Peak Hour**			**Total**
	AM	**Midday**	**PM**	
Movements at LOS A/B/C	230	236	244	710
Movements at LOS D	58	47	46	151
Movements at LOS E	19	11	17	47
Movements at LOS F	9	10	12	31
TOTAL	**316**	**304**	**319**	**939**
Movements at v/c ≥ 0.90	31	20	26	77
UNSIGNALIZED INTERSECTIONS				
Movements at LOS A/B/C	7	8	9	24
Movements at LOS D	0	0	0	0
Movements at LOS E	1	0	0	1
Movements at LOS F	0	1	0	1
TOTAL	**8**	**9**	**9**	**26**
Movements at v/c ≥ 0.90	0	1	0	1

Source: Parsons Brinckerhoff, Inc., 2013

Note: This table has been revised for the FEIS.

TABLE 12-19: INTERSECTIONS WITH EXISTING CONGESTED APPROACH MOVEMENTS

		AM Existing				MD Existing				PM Existing			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 42nd Street	EB									LT (east)	0.96	58.8	E
First Avenue @ East 42nd Street	EB	L (west)*	1.01	98.4	F	LT (west)*	1.03	70.6	E	LT (west)*	1.05	77.0	E
First Avenue @ East 47th Street	NB									TR (east)	1.00	39.5	D
First Avenue @ East 48th Street	NB	R	0.98	44.7	D					R	1.04	62.1	E
Second Avenue @ East 42nd Street	EB					R	0.98	76.2	E	R	0.92	61.2	E
Second Avenue @ East 44th Street	EB	TR	0.88	59.8	E					TR	1.04	93.1	F
Second Avenue @ East 46th Street	EB	R	0.86	60.4	E	R*	1.03	94.4	F	R*	1.05	92.6	F
Second Avenue @ East 49th Street	WB	L	1.02	89.8	F	LT	0.92	52.6	D	L	1.05	92.7	F
Second Avenue @ East 52nd Street	EB	TR	0.93	63.4	E					TR	1.02	83.7	F
Second Avenue @ East 53rd Street	WB	LT	1.04	73.4	E								
Second Avenue @ East 57th Street	EB	T	1.04	86.0	F								
Second Avenue @ East 57th Street	WB	L	0.99	72.5	E								
Second Avenue @ East 57th Street	SB					TR	0.90	27.5	C				
Third Avenue @ East 42nd Street	EB	L*	1.05	106.3	F	L	1.05	113.5	F	L	1.05	116.2	F
Third Avenue @ East 42nd Street	WB	T	1.00	70.6	E								
Third Avenue @ East 42nd Street	WB	R	0.93	90.1	F	R	0.92	88.5	F	R	1.00	110.0	F
Third Avenue @ East 42nd Street	NB									LT	0.92	30.7	C
Third Avenue @ East 53rd Street	WB	T	0.92	42.5	D								
Third Avenue @ East 57th Street	EB					LT	1.00	56.6	E				
Third Avenue @ East 57th Street	WB	R	0.88	68.2	E								
Lexington Avenue @ East 51st Street	WB					L	0.78	58.9	E				
Park Avenue @ West 39th Street	WB	LTR*	1.03	74.0	E	LTR	1.05	81.1	F	LTR*	1.04	75.0	E
Park Avenue @ West 39th Street	SB	TR	0.95	36.1	D	TR	0.90	30.5	C				
Park Avenue @ West 40th Street	NB									T (Tunnel Exit)	0.90	34.0	C
Park Avenue @ West 40th Street	SB	T (Viaduct Exit)*	1.05	63.6	E	T (Viaduct Exit)*	1.03	56.7	E	T (Viaduct Exit)*	1.04	59.9	E
Park Avenue @ West 47th Street	NB	T	0.91	33.8	C					T	0.96	40.0	D
Park Avenue @ West 48th Street	SB	T	0.94	36.1	D								
Park Avenue @ West 49th Street	NB									T	0.92	32.8	C
Park Avenue @ West 50th Street	SB	T	0.97	40.3	D								
Park Avenue @ West 51st Street	NB									T	0.93	33.7	C
Park Avenue @ West 53rd Street	NB									T	0.99	42.1	D
Park Avenue @ West 56th Street	SB	T	0.98	39.1	D								
Park Avenue @ West 57th Street	NB	TR	0.95	36.1	D					TR*	1.04	54.5	D
Park Avenue @ West 57th Street	SB					TR	0.94	34.1	C				
Madison Avenue @ East 39th Street	WB	R	0.72	60.4	E	R	0.95	95.7	F	R	0.73	59.4	E
Madison Avenue @ East 42nd Street	NB	LT	1.05	58.4	E	LT	0.98	36.6	D				
Madison Avenue @ East 46th Street	EB	LT	0.94	56.3	E								
Fifth Avenue @ 43rd Street	SB	R*	1.05	94.6	F	R*	1.05	99.7	F	R*	1.05	106.2	F
Fifth Avenue @ 44th Street	EB									R	0.87	55.0	E
Fifth Avenue @ 46th Street	EB	TR	0.99	71.0	E								
Fifth Avenue @ 47th Street	WB					L	0.82	61.2	E				
Fifth Avenue @ 47th Street	SB					R*	1.05	116.5	F	R	0.83	63.4	E
Fifth Avenue @ 48th Street	EB	R*	1.05	115.6	F	R	0.85	69.5	E	R*	1.05	113.0	F
Fifth Avenue @ 51st Street	SB					R*	1.03	117.2	F	R*	1.05	127.6	F
Fifth Avenue @ 52nd Street	EB					R	0.79	59.3	E	R	0.79	59.3	E
Fifth Avenue @ 57th Street	EB	R	0.90	55.9	E								
Fifth Avenue @ 59th Street	EB	R*	1.05	109.6	F	R	0.81	60.3	E				
Fifth Avenue @ 59th Street	SB	LT	0.97	34.2	C								
Sixth Avenue @ West 40th Street	EB					LT*	1.05	83.2	F				
Sixth Avenue @ West 40th Street	NB	TR	1.00	42.9	D					R*	1.05	116.7	F
Sixth Avenue @ West 42nd Street	WB	R*	1.05	101.6	F	R	0.93	71.4	E	R	0.92	70.7	E
Sixth Avenue @ West 44th Street	NB									R*	1.05	85.4	F
Route 9A @ West 51st Street	WB	L	0.38	58.7	E					L	0.46	61.1	E
Route 9A @ West 51st Street	WB	R	0.42	59.7	E					R	0.72	73.2	E
Route 9A @ West 52nd Street	SB	L	0.51	70.2	E	L*	1.05	151.4	F	L	0.88	114.6	F
Route 9A @ West 55th Street	WB	LT	0.61	65.3	E	LT	0.82	62.1	E	LT	0.79	77.8	E
Route 9A @ West 55th Street	WB									R	0.62	61.3	E
Route 9A @ West 55th Street	NB	L	0.07	69.4	E					L	0.11	68.0	E
Route 9A @ West 55th Street	SB	TR	0.91	27.4	C								
Route 9A @ West 56th Street	NB	T	0.93	46.0	D								
Route 9A @ West 56th Street-Service Rd	EB									T	0.57	56.8	E

		AM Existing				MD Existing				PM Existing			
Unsignalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 48th Street	EB	L*	0.80	44.3	E	L*	0.92	77.5	F				

Note: * Movement requiring modification(s) to HCS default factors

Source: Parsons Brinckerhoff, Inc., 2013

Note: This table has been revised for the FEIS.

- First Avenue
  - The East 42nd Street (East Side) eastbound approach to First Avenue operates at LOS E and a delay of 55.8 seconds with a v/c ratio of 0.96 during the PM peak hour.
  - The de facto left-turn lane on the East 42nd Street (West Side) eastbound approach to First Avenue operates at LOS F and a delay of 98.4 seconds with a v/c ratio of 1.01 during the AM peak hour, at LOS E and a delay of 70.6 seconds with a v/c ratio of 1.03 during the Midday peak hour, and at LOS E and a delay of 77.0 seconds with a v/c ratio of 1.05 during the PM peak hour.
  - The through lanes on the First Avenue northbound approach to East 47th Street operate at a v/c ratio of 1.00 during the PM peak hour.
  - The right-turn lane on the First Avenue northbound approach to East 48th Street operates at a v/c ratio of 0.98 during the AM peak hour and at LOS E and a delay of 62.1 seconds with a v/c ratio of 1.04 during the PM peak hour.
- Second Avenue
  - The right-turn lane on the East 42nd Street eastbound approach to Second Avenue operates at LOS E and a delay of 76.2 seconds with a v/c ratio of 0.98 during the Midday peak hour and at LOSE and a delay of 61.2 seconds with a v/c ratio of 0.92 during the PM peak hour.
  - The East 44th Street eastbound approach to Second Avenue operates at LOS E and a delay of 59.8 seconds with a v/c ratio of 0.88 during the AM peak hour and at LOS F and a delay of 93.1 seconds with a v/c ratio of 1.04 during the PM peak hour.
  - The East 46th Street eastbound approach to Second Avenue operates at LOS E and a delay of 60.4 seconds with a v/c ratio of 0.86 during the AM peak hour, at LOS F and a delay of 94.4 seconds and a v/c ratio of 1.30 during the Midday peak hour, and at LOS F and a delay of 92.6 seconds and a v/c ratio of 1.05 during the PM peak hour.
  - The left-turn lane on the East 49th Street westbound approach to Second Avenue operates at LOS F and a delay of 89.8 seconds with a v/c ratio of 1.02 during the AM peak hour and at LOS F and a delay of 92.7 seconds with a v/c ratio of 1.05 during the PM peak hour.
  - The East 49th Street westbound approach to Second Avenue operates at a v/c ratio of 0.92 during the Midday peak hour.
  - The East 52nd Street eastbound approach to Second Avenue operates at LOS E and a delay of 63.4 seconds with a v/c ratio of 0.93 during the AM peak hour and at LOS F and a delay of 83.7 seconds with a v/c ratio of 1.02 during the PM peak hour.
  - The East 53rd Street westbound approach to Second Avenue operates at LOS E and a delay of 73.4 seconds with a v/c ratio of 1.04 during the AM peak hour.
  - The East 57th Street eastbound approach to Second Avenue operates at LOS F and a delay of 86.0 seconds with a v/c ratio of 1.00 during the AM peak hour.

  - The left turn lane on the East 57th Street westbound approach to Second Avenue operates at LOS E and a delay of 72.5 seconds with a v/c ratio of 0.99 during the AM peak hour.
  - The Second Avenue southbound approach to East 57th Street operates at a v/c ratio of 0.90 during the Midday peak hour.

- Third Avenue
  - The left-turn lane on the East 42nd Street eastbound approach to Third Avenue operates at LOS F and a delay of 106.3 seconds with a v/c ratio of 1.05 during the AM peak hour, at LOS F and a delay of 113.5 seconds with a v/c ratio of 1.05 during the Midday peak hour, and LOS F and a delay of 116.2 seconds with a v/c ratio of 1.05 during the PM peak hour.
  - The through lanes on the East 42nd Street westbound approach to Third Avenue operate at LOS E and a delay of 70.6 seconds with a v/c ratio of 1.00 during the AM peak hour.
  - The right-turn lane on the East 42nd Street westbound approach to Third Avenue operates at LOS F and a delay of 90.1 seconds with a v/c ratio of 0.93 during the AM peak hour, at LOS F and a delay of 88.5 seconds with a v/c ratio of 0.92 during the Midday peak hour, and at LOS F and a delay of 110.0 seconds with a v/c ratio of 1.00 during the PM peak hour.
  - The Third Avenue northbound approach to East 42nd Street operates at a v/c ratio of 0.92 during the PM peak hour.
  - The through lane on the East 53rd Street westbound approach to Third Avenue operates at a v/c ratio of 0.90 during the AM peak hour.
  - The East 57th Street eastbound approach to Third Avenue operates at LOS E and a delay of 56.6 seconds with a v/c ratio of 1.00 during the Midday peak hour.
  - The right-turn lane on the East 57th Street westbound approach to Third Avenue operates at LOS E and a delay of 68.2 seconds with a v/c ratio of 0.88 during the AM peak hour.

- Lexington Avenue
  - The left-turn lane on the East 51st Street westbound approach to Lexington Avenue operates at LOS E and a delay of 58.9 seconds during the Midday peak hour.

- Park Avenue
  - The East 39th Street westbound approach to Park Avenue operates at LOS E and a delay of 74.0 seconds with a v/c ratio of 1.03 during the AM peak hour, at LOS F and a delay of 81.1 seconds with a v/c ratio of 1.05 during the Midday peak hour, and at LOS E and a delay of 75.0 seconds with a v/c ratio of 1.04 during the PM peak hour.
  - The Park Avenue southbound approach to East 39th Street operates at a v/c ratio of 0.95 during the AM peak hour and at a v/c ratio of 0.90 during the Midday peak hour.
  - The Park Avenue northbound approach to East 40th Street, exiting the Park Avenue Tunnel, operates at a v/c ratio of 0.90 during the PM peak hour.

- The Park Avenue southbound approach to East 40th Street, exiting the Park Avenue Viaduct, operates at LOS E and a delay of 63.6 seconds with a v/c ratio of 1.05 during the AM peak hour, at LOS E and a delay of 56.7 seconds with a v/c ratio of 1.03 during the Midday peak hour, and at LOS E and a delay of 59.9 seconds with a v/c ratio of 1.04 during the PM peak hour.
- The Park Avenue northbound approach to East 47th Street operates at a v/c ratio of 0.91 during the AM peak hour and at a v/c ratio of 0.96 during the PM peak hour.
- The Park Avenue southbound approach to East 48th Street operates at a v/c ratio of 0.94 during the AM peak hour.
- The Park Avenue northbound approach to East 49th Street operates at a v/c ratio of 0.92 during the PM peak hour.
- The Park Avenue southbound approach to East 50th Street operates at a v/c ratio of 0.97 during the AM peak hour.
- The Park Avenue northbound approach to East 51st Street operates at a v/c ratio of 0.93 during the PM peak hour.
- The Park Avenue northbound approach to East 53rd Street operates at a v/c ratio of 0.99 during the PM peak hour.
- The Park Avenue southbound approach to East 56th Street operates at a v/c ratio of 0.98 during the AM peak hour.
- The Park Avenue northbound approach to East 57th Street operates at a v/c ratio of 0.95 during the AM peak hour and at a v/c ratio of 1.04 during the PM peak hour.
- The Park Avenue southbound approach to East 57th Street operates at a v/c ratio of 0.94 during the Midday peak hour.

- Madison Avenue
  - The right-turn lane on the East 39th Street westbound approach to Madison Avenue operates at LOS E and a delay of 60.4 seconds during the AM peak hour, at LOS F and a delay of 95.7 seconds with a v/c ratio of 0.95 during the Midday peak hour, and at LOS E and a delay of 59.4 seconds during the PM peak hour.
  - The Madison Avenue northbound approach to East 42nd Street operates at LOS E and a delay of 58.4 seconds with a v/c ratio of 1.05 during the AM peak hour and at a v/c ratio of 0.98 during the Midday peak hour.
  - The East 46th Street eastbound approach to Madison Avenue operates at LOS E and a delay of 56.3 seconds with a v/c ratio of 0.94 during the AM peak hour.

- Fifth Avenue
  - The right-turn lane on the Fifth Avenue southbound approach to 43rd Street operates at LOS F and a delay of 94.6 seconds with a v/c ratio of 1.05 during the AM peak hour, at LOS F and a delay of 99.7 seconds with a v/c ratio of 1.05 during the Midday peak hour, and at LOS F and a delay of 106.2 seconds v/c ratio of 1.05 during the PM peak hour.
  - The 44th Street eastbound approach to Fifth Avenue operates at LOS E and a delay of 55.0 seconds during the PM peak hour.
  - The 46th Street eastbound approach to Fifth Avenue operates at LOS E and a delay of 71.0 seconds with a v/c ratio of 0.99 during the AM peak hour.
  - The left-turn lane on the 47th Street westbound approach to Fifth Avenue operates at LOS E and a delay of 61.2 seconds during the Midday peak hour.
  - The right-turn lane on the Fifth Avenue southbound approach to 47th Street operates at LOS F and a delay of 116.5 seconds with a v/c ratio of 1.05 during the Midday peak hour and at LOS E and a delay of 63.4 seconds during the PM peak hour.
  - The right-turn lane on the 48th Street eastbound approach to Fifth Avenue operates at LOS F and a delay of 115.6 seconds with a v/c ratio of 1.05 during the AM peak hour, at LOS E and a delay of 69.5 seconds during the Midday peak hour, and at LOS F and a delay of 113.0 seconds with a v/c ratio of 1.05 during the PM peak hour.
  - The right-turn lane on the Fifth Avenue southbound approach to 51st Street operates LOS F and a delay of 117.2 seconds with a v/c ratio of 1.03 during the Midday peak hour and at LOS F and a delay of 127.6 seconds with a v/c ratio of 1.05 during the PM peak hour.
  - The right-turn lane on the 52nd Street eastbound approach to Fifth Avenue operates at LOS E and a delay of 59.3 seconds during the Midday peak hour and at LOS E and a delay of 59.3 seconds during the PM peak hour.
  - The right-turn lane on the 57th Street eastbound approach to Fifth Avenue operates at LOS E and a delay of 55.9 seconds with a v/c ratio of 0.90 during the AM peak hour.
  - The right-turn lane on the 59th Street eastbound approach to Fifth Avenue operates at LOS F and a delay of 109.6 seconds and a v/c ratio of 1.05 during the AM peak hour and at LOS E and a delay of 60.3 seconds during the Midday peak hour.
  - The Fifth Avenue southbound approach to 59th Street operates at a v/c ratio of 0.97 during the AM peak hour.
- Sixth Avenue
  - The West 40th Street eastbound approach to Sixth Avenue operates at LOS F and a delay of 83.2 seconds with a v/c ratio of 1.05 during the Midday peak hour.

- The Sixth Avenue northbound approach to West 40th Street operates at a v/c ratio of 1.00 during the AM peak hour.
- The right-turn lane on the Sixth Avenue northbound approach to West 40th Street operates at LOS F and a delay of 116.7 seconds with a v/c ratio of 1.05 during the PM peak hour.
- The right-turn lane on the West 42nd Street westbound approach to Sixth Avenue operates at LOS F and a delay of 101.6 seconds with a v/c ratio of 1.05 during the AM peak hour, at LOS E and a delay of 71.4 seconds with a v/c ratio of 0.93 during the Midday peak hour, and at LOS E and a delay of 70.7 seconds with a v/c ratio of 0/92 during the PM peak hour.
- The right-turn lane on the Sixth Avenue northbound approach to West 44th Street operates at LOS F and a delay of 85.4 seconds with a v/c ratio of 1.05 during the PM peak hour.

- Route 9A
  - The left-turn lane on the West 51st Street westbound approach to Route 9A operates at LOS E and a delay of 58.7 seconds during the AM peak hour and at LOS E and a delay of 61.1 seconds during the PM peak hour.
  - The right-turn lane on the West 51st Street westbound approach to Route 9A operates at LOS E and a delay of 59.7 seconds during the AM peak hour and at LOS E and a delay of 73.2 seconds during the PM peak hour.
  - The left-turn lane on the Route 9A southbound approach to West 52nd Street operates at LOS E and a delay of 70.2 seconds during the AM peak hour, at LOS F and a delay of 151.4 seconds with a v/c ratio of 1.05 during the Midday peak hour, and at LOS F and a delay of 114.6 seconds during the PM peak hour.
  - The West 55th Street westbound approach to Route 9A operates at LOS E and a delay of 65.3 seconds during the AM peak hour, at LOS E and a delay of 62.1 seconds during the Midday peak hour, and at LOS E and a delay of 77.8 seconds during the PM peak hour.
  - The right-turn lane on the West 55th Street westbound approach to Route 9A operates at LOS E and a delay of 61.3 seconds during the PM peak hour.
  - The left-turn lane on the Route 9A northbound approach to West 55th Street operates at LOS E and a delay of 69.4 seconds during the AM peak hour and at LOS E and a delay of 68.0 seconds during the PM peak hour.
  - The Route 9A southbound approach to West 55th Street operates at a v/c ratio of 0.91 during the AM peak hour.
  - The through lanes on the Route 9A northbound approach to West 56th Street operate at a v/c ratio of 0.93 during the AM peak hour.
  - The through lane on the West 56th Street eastbound approach to Route 9A service road operates at LOS E and a delay of 56.8 seconds during the PM peak hour.

12.7.2 Future Traffic Conditions Without The Proposed Action (No-Action)

12.7.2.1 Future No-Action Traffic Growth

Between 2012 and 2033, it is expected that traffic demand in the study area will increase due to background growth, development that could occur pursuant to existing zoning (i.e., as-of-right-development) and development projects likely to occur within and in the vicinity of the study area in the No-Action condition. To account for general background traffic growth within and through the study area, annual background growth rates of 0.25 percent were assumed for the first 5 years (2012-2017) and 0.125 percent were assumed for year 6 and beyond (2017-2033), per *CEQR Technical Manual* guidance. When compounded, this represents a total background growth rate of 3.3 percent from 2012 to 2033. This background growth rate is applied to existing traffic volumes account for smaller projects and general increases in travel demand. In addition to background growth, the effects of projected future development independent of the Proposed Action were included in the No-Action traffic analysis. This includes development on projected development sites pursuant to existing zoning and 30 No-Action development projects: 24 projects in East Midtown, 4 projects in the vicinity of Route 9A, and 2 major development projects outside of the study area, as further described below.

Table 12-20 summarizes the No-Action projects in East Midtown that were included in the analysis of No-Action traffic conditions. As shown in Table 12-20, these represent a net total of 3,804,819 gsf of office space, 226,083 gsf of retail space, 2,567 hotel rooms, 5,996 dwelling units, and 124,950 gsf of community facility space. The locations of these No-Action projects are shown in Figure 2-9 in Chapter 2, "Land Use, Zoning, and Public Policy." Also included in the No-Action traffic analyses are the projected traffic volumes from environmental review documentation associated with several development projects in the vicinity of Route 9A, including the *625 West 57th Street FSEIS*, *770 Eleventh Avenue FEIS*, *Piers 92-94 Redevelopment EAS* and *Riverside Center FSEIS*, and traffic reassignments associated with proposed changes to enhance security at the United Nations. The Hudson Yards Rezoning and Western Rail Yard projects were also accounted for in the No-Action traffic analysis due to their large size and the potential effect on study area traffic volumes. Traffic growth attributable to these projects was calculated by comparing the total volume of vehicles that would be generated through the study area to a cordon line of existing traffic volumes around the study area. This methodology yielded a 3.1 percent increase in traffic volumes, which was then applied uniformly to all roadway segments within the study area.

TABLE 12-20: EAST MIDTOWN DEVELOPMENT PROJECTS INCLUDED IN THE NO-ACTION TRAFFIC ANALYSIS

Name	Office (gsf)	Retail (gsf)	Hotel (rooms)	Dwelling Units	Community Facility (gsf)
36 East 51st Street	65,276	4,000			
7-11 East 51st Street/12-16 East 52nd Street		19,322		269	
19 East 54th Street/532-538 Madison Avenue		11,166	253		
434 Park Avenue/40-50 East 57th Street		75,000		144	
686-700 Third Avenue		15,888	361		
451 Lexington Avenue		7,500	184		
614 Lexington Avenue		9,504	347	48	
Art & Design HS & PS 59: Second Ave & East 57th Street				320	
MOMA Tower: 53 West 53rd Street			167	300	
18-20 West 53rd Street			114	70	5,014
Hyatt Place Hotel: 208-210 East 52nd Street			225		
303 East 51st St. & 968 Second Avenue		8,036		112	
International Gem Tower: 50 West 47th Street	748,000				
227-235 East 44th Street			130		
516-520 Fifth Avenue	59,106				
231 East 43rd Street			90		
UNDC Project/Robert Moses Playground	950,000				
First Avenue Properties	1,532,437	71,167		4,166	119,936
7 Bryant Park: 1070 Sixth Avenue	450,000				
14-20 West 40th Street		4,500	146	87	
Refinery Hotel: 63 West 38th Street			197		
45 West 38th Street			180		
Spring Hill Suites by Marriott: 25 West 37th Street			173		
Perlbinder Site: Second Ave between East 36th and East 37th Streets				480	
TOTAL	**3,804,819**	**226,083**	**2,567**	**5,996**	**124,950**

Sources: DCP, Philip Habib & Associates, 2012.

12.7.2.2 Changes to the Study Area Street Network

The following modifications to the traffic study area's street network are anticipated in the No-Action condition.

Street Modifications/Closures

- Pershing Square West (the west side of Park Avenue between East 41st and East 42nd Streets): This street is currently closed part of the year (from approximately mid-April through mid-October) for use by an outdoor café. Pershing Square West will be closed permanently and a plaza will be created for year-round use. No-Action traffic volumes were adjusted to reroute traffic using this street segment to other roadways.
- Pershing Square East (the east side of Park Avenue between East 41st and East 42nd Streets): This street is currently open to traffic throughout the year. This street is proposed to be closed year round to enhance pedestrian safety and circulation, create a pedestrian plaza/open space and install a bike-share station. Daylighting, i.e., the elimination of on-street parking to create a limited travel lane, will be provided on the south side of East 41st Street at Park Avenue. No-Action traffic volumes were adjusted to reroute traffic using this street segment to other roadways.
- Vanderbilt Avenue: The portion of Vanderbilt Avenue between East 42nd and 43rd Streets will be closed to vehicular traffic and a pedestrian plaza will be created to improve pedestrian safety and circulation. No-Action traffic volumes were adjusted to reroute traffic using this street segment to other roadways.
- East 59th Street: The segment of East 59th Street immediately east of Second Avenue will revert back to one-way eastbound operation following reconstruction of water mains along East 59th Street. Eastbound local traffic on East 59th Street will not be routed via Second Avenue and East 58th Street. No-Action traffic volumes were adjusted to reflect traffic volume patterns without this street closure in place. These adjustments were made based on a review of traffic counts obtained at the intersection of Second Avenue and East 59th Street during periods with and without the reconstruction project.
- Fifth Avenue at 59th Street: The southbound right turn will be eliminated as the section of West 59th Street between Fifth Avenue and Grand Army Plaza will change from two-way operation to eastbound only.

Bus Lane Improvements

- Fifth Avenue Bus Lane Improvements: This project will expand the number of bus lanes from one lane to dual bus lanes along the west side of Fifth Avenue between 60th Street and 26th Street. These bus lanes will be in effect during the AM, Midday, and PM peak hours.
- Madison Avenue Bus Lane Improvements: Bus lane operating hours during the PM peak hour were extended in December 2012 to also be in effect during the AM and Midday peak hours. Plans are in

place to extend the existing dual bus lanes 1 block from 59th to 60th Streets and provide daylighting to better accommodate left turns and improve the capacity of the through lanes.

Bicycle Lane/Route Improvements

- An enhanced shared-lane bike route will be installed on Second Avenue from East 57th to 59th Streets upon completion of construction related to the Second Avenue Subway.

Mitigation Measures Associated with No-Action Development Projects

No-Action development projects in the study area include various mitigation measures, as identified through review of the EISs prepared for the development projects and consultation with DCP. Intersection mitigation measures identified in the respective environmental review documents for the 250 East 57th Street Redevelopment Proposed Changes to Enhance Security at the United Nations, Reconstruction of Pershing Square West, Riverside Center, and Western Rail Yard projects were incorporated in the No-Action condition. Appendix 4 includes a listing of the specific changes included in the No-Action condition.

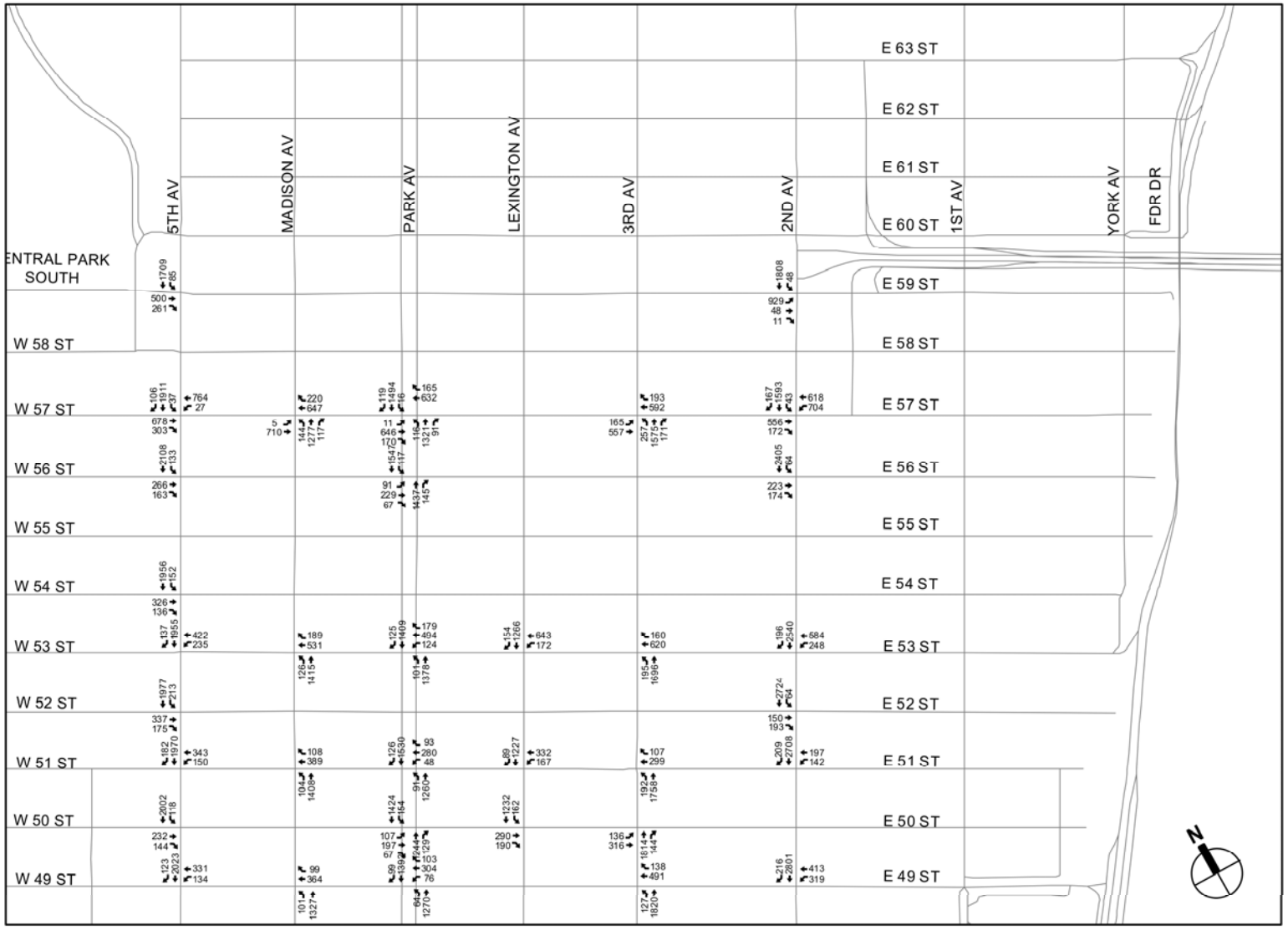
12.7.2.3 Intersection Capacity Analysis

Figure 12-15 through Figure 12-23 show the expected No-Action weekday AM, Midday, and PM traffic volumes at analyzed intersections in the study area.

Table 12-21 summarizes LOS by approach movements at signalized and unsignalized intersections for existing and future No-Action conditions. The 90 intersections analyzed have a total of 986 movements (965 at signalized intersections and 21 at unsignalized intersections).[6] In the No-Action condition, 172 approach movements at signalized intersections will operate at LOS E or worse, compared to 78 approach movements in existing conditions, with 72 movements operating at LOS E and 100 movements operating at LOS F. There will also be 240 movements operating at a v/c ratio of 0.90 or above, compared to 77 existing movements. At unsignalized intersections, two movements will operate at LOS E or worse, unchanged from existing conditions, with two movements operating at LOS F. Table 12-22 through Table 12-24 provide details on existing and No-Action conditions of individual intersections and movements that currently or in the future will operate at LOS E or worse and those with a v/c ratio of 0.90 or more; Table 12-22 through Table 12-24 provide the v/c ratio, average delay, and LOS for each movement.

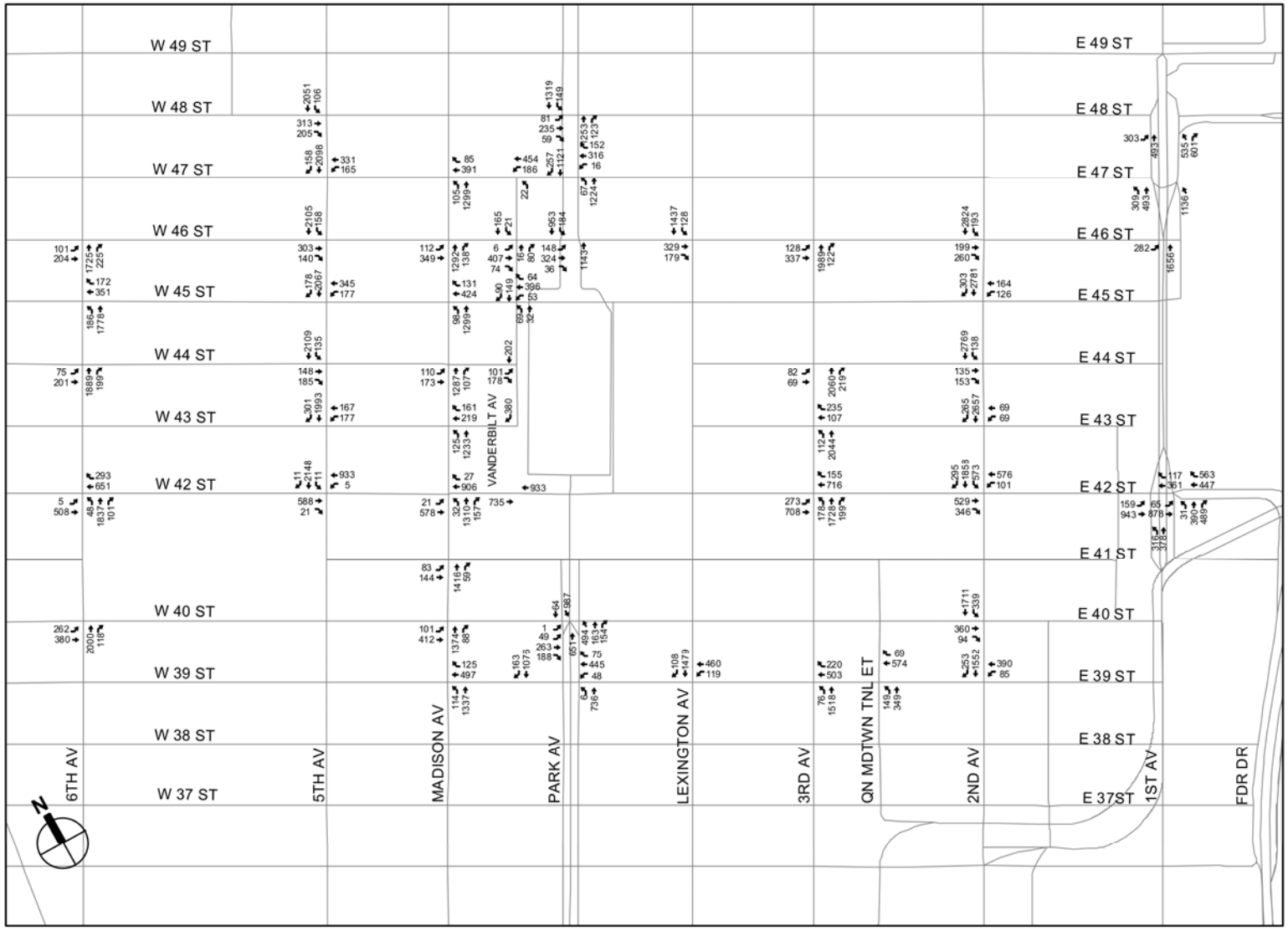
[6] The number of movements would increase from 939 to 965 from existing to No-Action conditions due to changes in the roadway network and operational changes.

FIGURE 12-15: AM NO-ACTION TRAFFIC VOLUMES (1 OF 3)



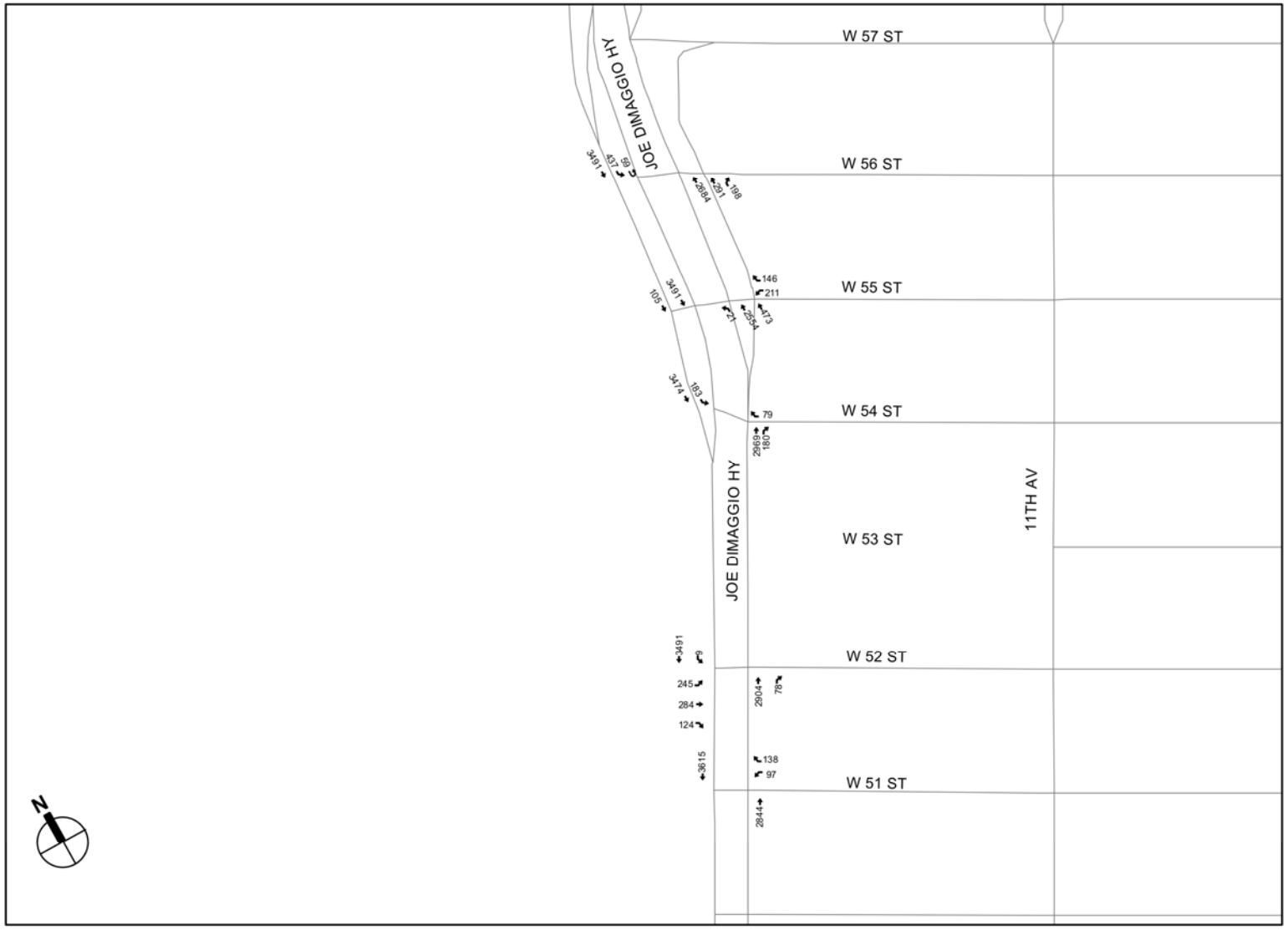
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-16: AM NO-ACTION TRAFFIC VOLUMES (2 OF 3)



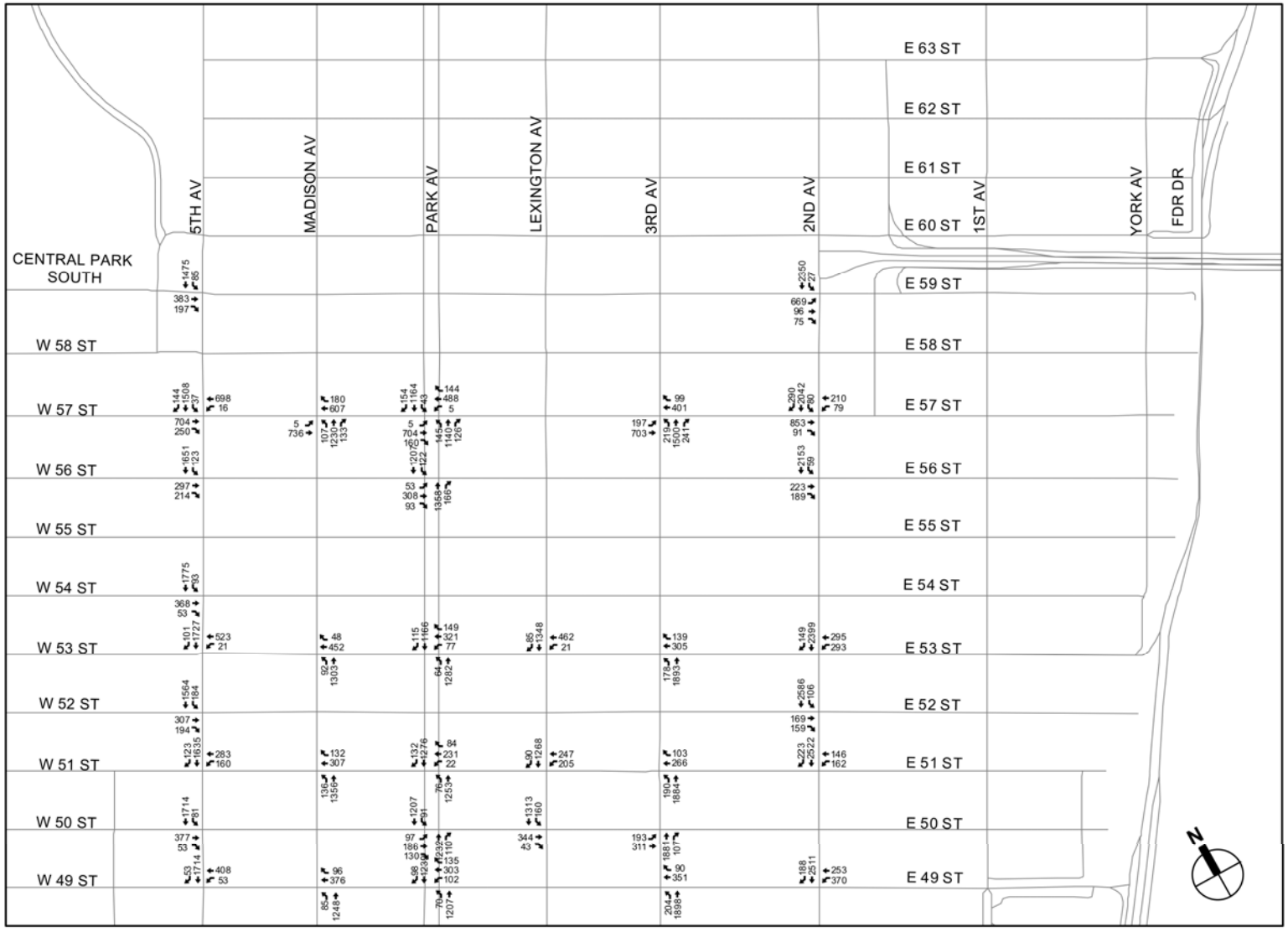
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-17: AM NO-ACTION TRAFFIC VOLUMES (3 OF 3)



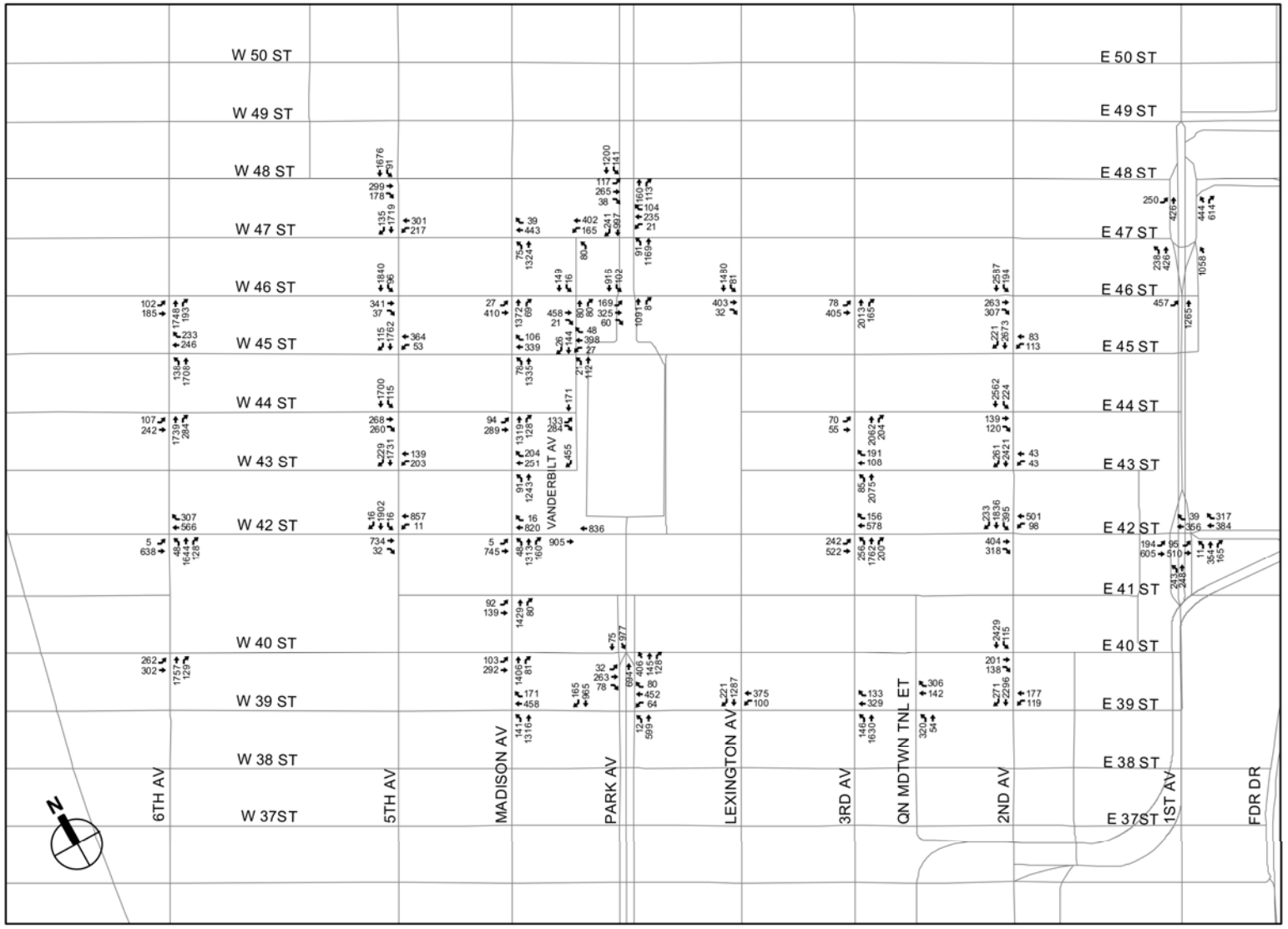
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-18: MIDDAY NO-ACTION TRAFFIC VOLUMES (1 OF 3)



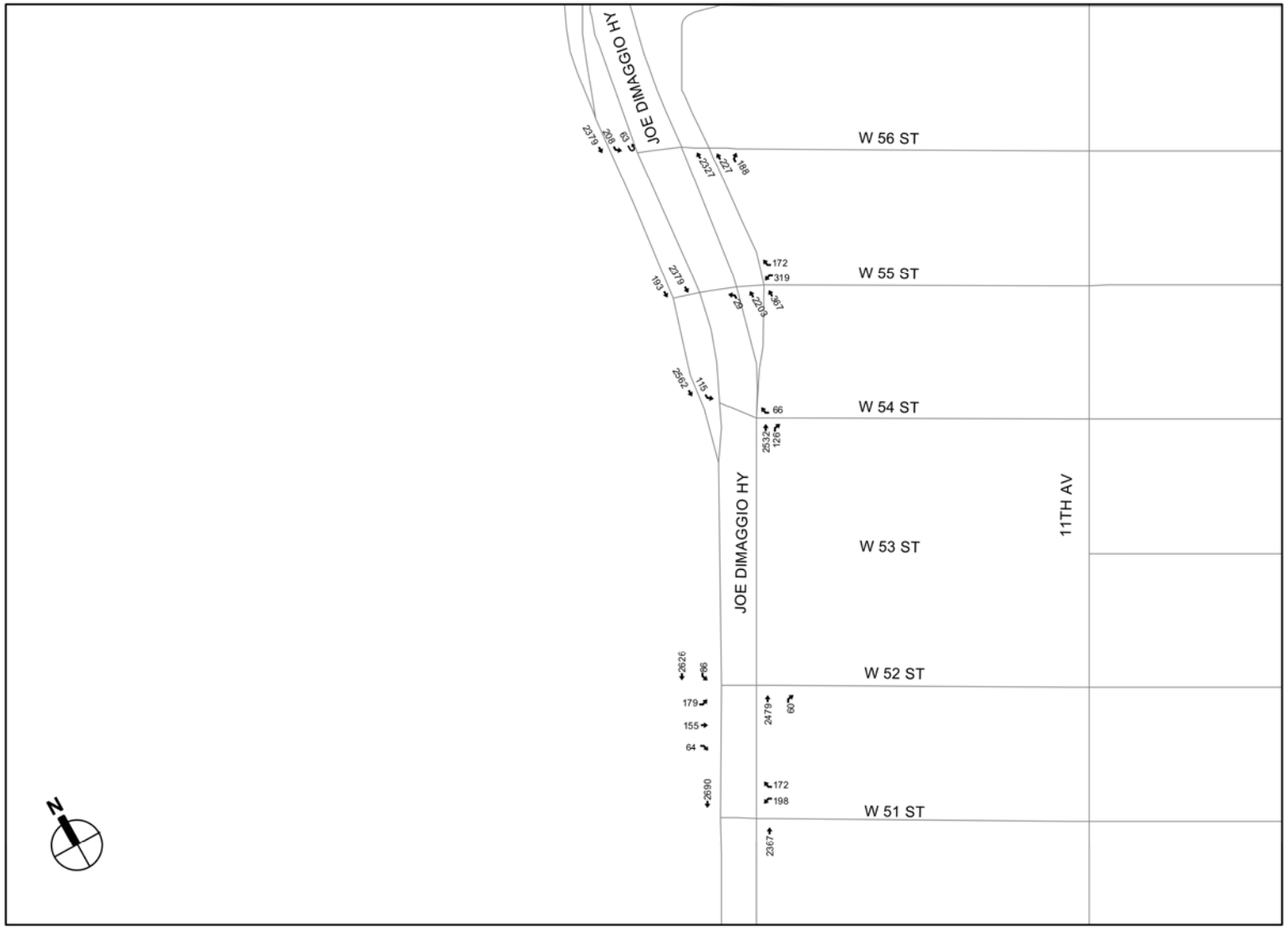
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-19: MIDDAY NO-ACTION TRAFFIC VOLUMES (2 OF 3)



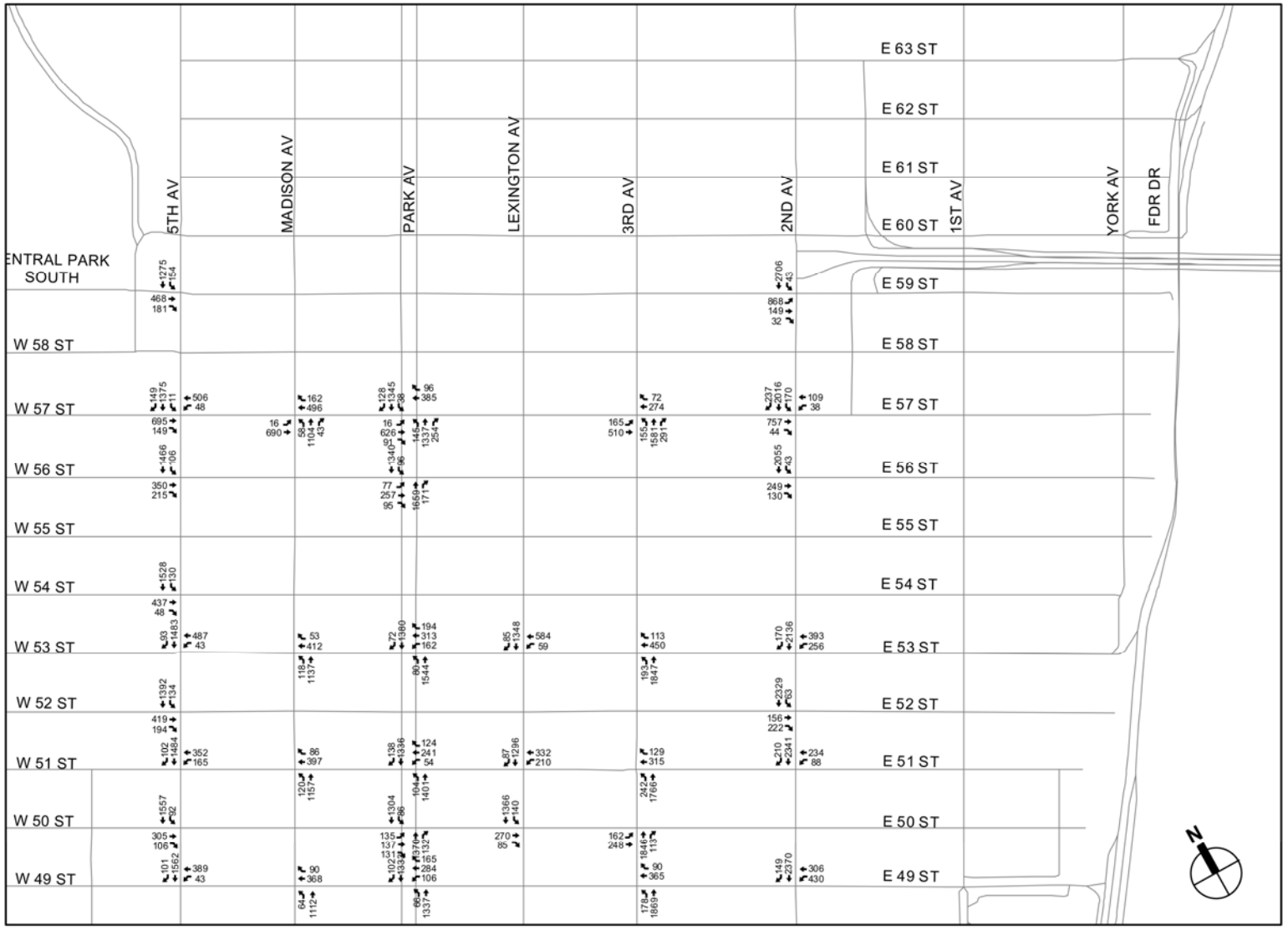
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-20: MIDDAY NO-ACTION TRAFFIC VOLUMES (3 OF 3)



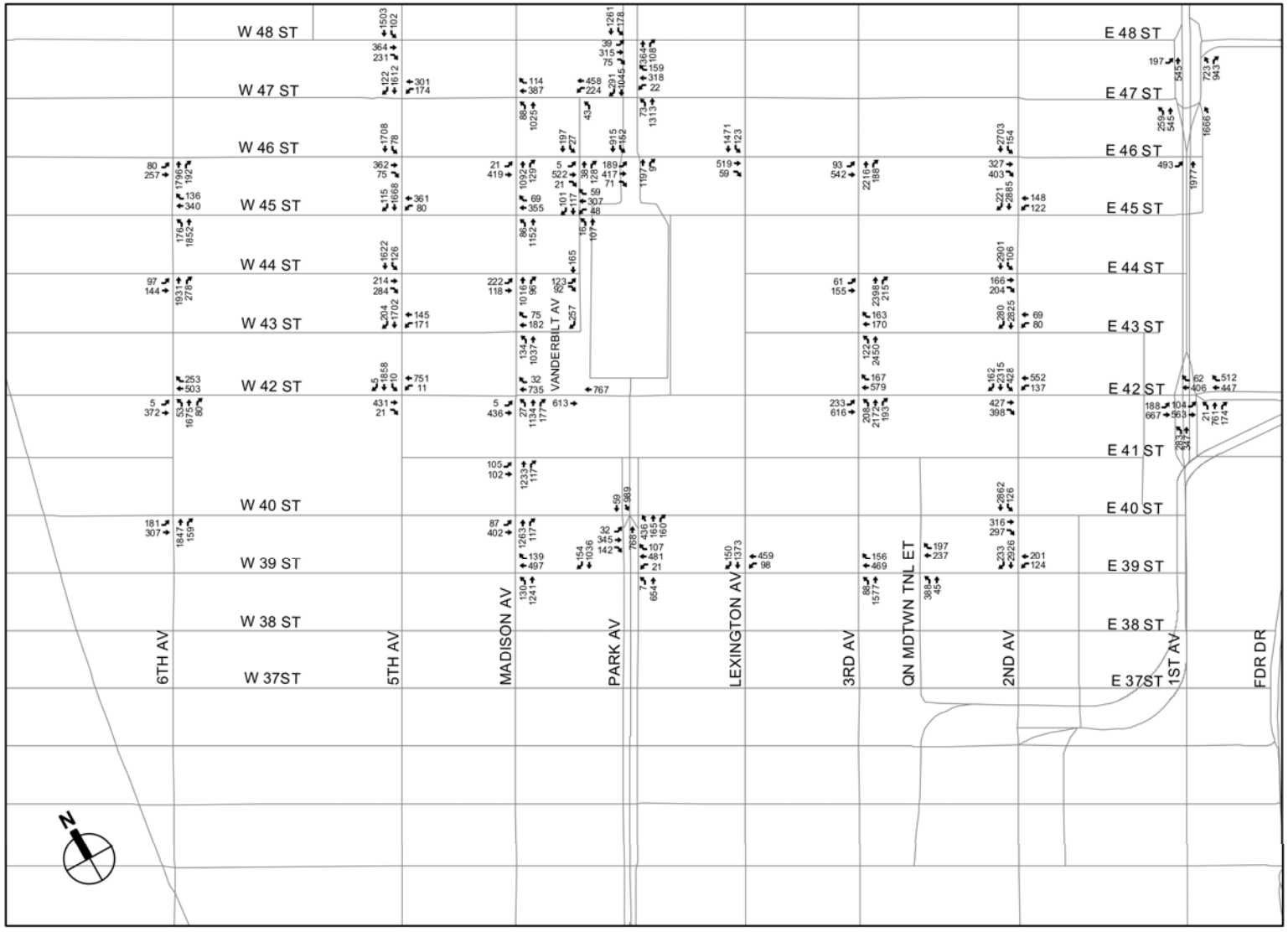
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-21: PM NO-ACTION TRAFFIC VOLUMES (1 OF 3)



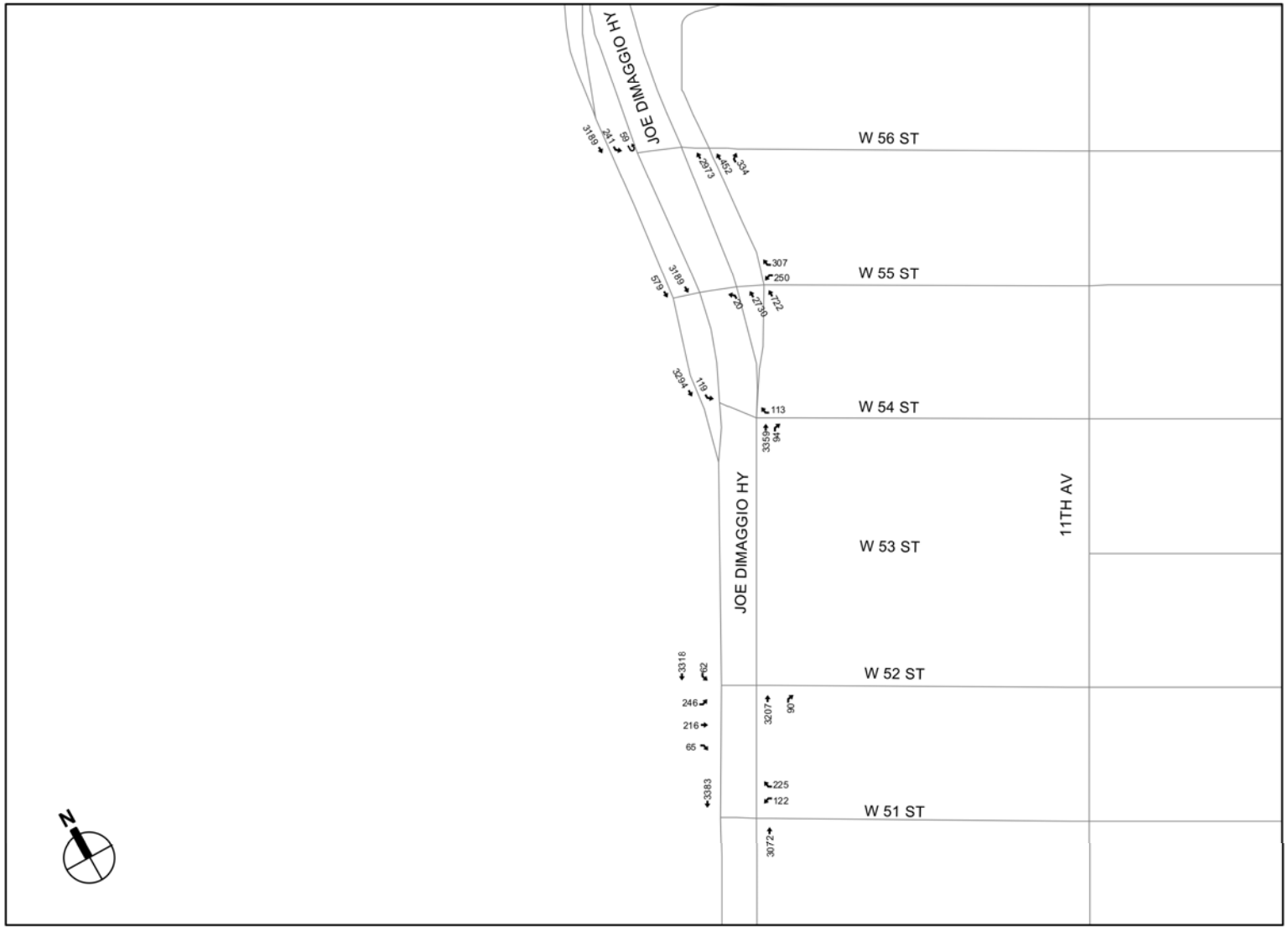
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-22: PM NO-ACTION TRAFFIC VOLUMES (2 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-23: PM NO-ACTION TRAFFIC VOLUMES (3 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

TABLE 12-21: SUMMARY OF EXISTING AND NO-ACTION LEVELS OF SERVICE BY MOVEMENT

	2012 Existing				2033 No-Action			
	Peak Hour				Peak Hour			
Level of Service (LOS)	AM	Midday	PM	Total	AM	Midday	PM	Total
Signalized Intersections								
Movements at LOS A/B/C	230	236	244	710	192	212	220	624
Movements at LOS D	58	47	46	151	57	58	54	169
Movements at LOS E	19	11	17	47	26	27	19	72
Movements at LOS F	9	10	12	31	50	17	33	100
TOTAL	**316**	**304**	**319**	**939**	**325**	**314**	**326**	**965**
Movements at v/c >= 0.90	31	20	26	77	91	71	78	240
Unsignalized Intersections								
Movements at LOS A/B/C	7	8	9	24	6	6	7	19
Movements at LOS D	0	0	0	0	0	0	0	0
Movements at LOS E	1	0	0	1	0	0	0	0
Movements at LOS F	0	1	0	1	1	1	0	2
TOTAL	**8**	**9**	**9**	**26**	**7**	**7**	**7**	**21**
Movements at v/c >= 0.90	0	1	0	1	1	1	0	2

Source: Parsons Brinckerhoff, Inc., 2013

Note: This table has been revised for the FEIS.

TABLE 12-22: EXISTING AND NO-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE AM PEAK HOUR

		Existing 2012 - AM				No-Action 2033 - AM			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 42nd Street	EB	T (east)	0.66	29.0	C	T (east)	1.08	85.4	F
First Avenue @ East 42nd Street	EB	L (west)*	1.01	98.4	F	L (west)	0.99	95.5	F
First Avenue @ East 42nd Street	EB	T (west)*	0.80	34.9	C	T (west)	1.24	149.9	F
First Avenue @ East 42nd Street	NB	R (east)	0.04	12.0	B	R (east)	0.91	41.6	D
First Avenue @ East 48th Street	NB	R	0.98	44.7	D	R	0.87	28.5	C
Second Avenue @ East 42nd Street	EB	R	0.70	38.0	D	R	1.84	425.3	F
Second Avenue @ East 42nd Street	WB	LT	0.78	34.4	C	LT	1.14	111.3	F
Second Avenue @ East 42nd Street	SB	L	0.84	34.9	C	L	1.36	195.6	F
Second Avenue @ East 44th Street	EB	TR	0.88	59.8	E	TR	1.07	105.0	F
Second Avenue @ East 45th Street	WB	LT	0.81	48.5	D	LT	1.10	113.8	F
Second Avenue @ East 46th Street	EB	R	0.86	60.4	E	R	1.16	138.6	F
Second Avenue @ East 46th Street	SB	LT	0.79	10.5	B	LT	0.91	14.5	B
Second Avenue @ East 49th Street	WB	L	1.02	89.8	F	L	1.14	126.4	F
Second Avenue @ East 51st Street	WB	LT	0.84	46.5	D	LT	0.92	57.7	E
Second Avenue @ East 52nd Street	EB	TR	0.93	63.4	E	TR	1.07	98.7	F
Second Avenue @ East 53rd Street	WB	LT	1.04	73.4	E	LT	1.13	105.5	F
Second Avenue @ East 57th Street	EB	T	1.04	86.0	F	T	1.11	109.7	F
Second Avenue @ East 57th Street	WB	L	0.99	72.5	E	L	0.82	34.9	C
Second Avenue @ East 57th Street	WB	LT	0.85	30.3	C	LT	0.94	46.3	D
Second Avenue @ East 59th Street	EB	TR	0.86	39.6	D	T (bridge)	1.30	176.7	F
Second Avenue @ East 59th Street	SB	L	0.55	7.9	A	L (bridge)	1.13	80.3	F
Third Avenue @ East 42nd Street	EB	L*	1.05	106.3	F	L	1.14	137.5	F
Third Avenue @ East 42nd Street	EB	T	0.86	37.5	D	T	1.19	127.9	F
Third Avenue @ East 42nd Street	WB	T	1.00	70.6	E	T	1.21	145.2	F
Third Avenue @ East 42nd Street	WB	R	0.93	90.1	F	R	1.10	138.2	F
Third Avenue @ East 42nd Street	NB	R	0.45	23.5	C	R	1.39	237.3	F
Third Avenue @ East 46th Street	NB	TR	0.84	25.6	C	TR	0.94	32.1	C
Third Avenue @ East 49th Street	NB	LT	0.80	25.9	C	LT	0.90	30.5	C
Third Avenue @ East 51st Street	NB	LT	0.79	24.2	C	LT	0.90	28.6	C
Third Avenue @ East 53rd Street	WB	T	0.92	42.5	D	T	1.02	64.7	E
Third Avenue @ East 57th Street	EB	LT	0.85	34.4	C	LT	0.93	43.0	D
Third Avenue @ East 57th Street	WB	R	0.88	68.2	E	R	0.97	86.6	F
Lexington Avenue @ East 39th Street	WB	T	0.83	38.5	D	T	0.96	57.7	E
Lexington Avenue @ East 51st Street	WB	L	0.69	51.9	D	L	0.77	58.5	E
Park Avenue @ West 39th Street	WB	LTR*	1.03	74.0	E	LTR	1.18	127.1	F
Park Avenue @ West 39th Street	SB	TR	0.95	36.1	D	TR	0.96	37.8	D
Park Avenue @ West 40th Street	SB	T (Viaduct Exit)*	1.05	63.6	E	T (Viaduct Exit)	1.14	95.5	F
Park Avenue @ West 47th Street	NB	T	0.91	33.8	C	T	0.98	44.1	D
Park Avenue @ West 48th Street	SB	T	0.94	36.1	D	T	1.03	55.1	E
Park Avenue @ West 49th Street	WB	LT	0.79	37.2	D	LT	0.90	50.0	D
Park Avenue @ West 49th Street	NB	T	0.89	30.2	C	T	0.96	39.2	D
Park Avenue @ West 50th Street	SB	T	0.97	40.3	D	T	1.06	64.4	E
Park Avenue @ West 51st Street	NB	T	0.85	25.9	C	T	0.92	31.9	C
Park Avenue @ West 53rd Street	WB	LTR	0.89	41.1	D	LTR	0.99	58.5	E
Park Avenue @ West 53rd Street	NB	T	0.89	27.3	C	T	0.96	36.8	D
Park Avenue @ West 56th Street	SB	T	0.98	39.1	D	T	1.07	63.9	E
Park Avenue @ West 57th Street	NB	TR	0.95	36.1	D	TR	1.04	57.1	E
Vanderbilt Avenue @ East 42nd Street	WB	TR	0.79	27.2	C	T	0.92	37.6	D
Madison Avenue @ East 39th Street	WB	T	0.83	37.8	D	T	0.98	60.4	E
Madison Avenue @ East 39th Street	WB	R	0.72	60.4	E	R	0.81	71.9	E
Madison Avenue @ East 39th Street	NB	LT	0.78	18.5	B	LT	0.90	24.5	C
Madison Avenue @ East 40th Street	NB	TR	0.78	18.5	B	TR	0.90	24.5	C
Madison Avenue @ East 42nd Street	WB	T	0.79	30.3	C	T	0.93	41.5	D
Madison Avenue @ East 42nd Street	NB	LT	1.05	58.4	E	LT	1.17	104.4	F

TABLE 12-22: EXISTING AND NO-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE AM PEAK HOUR (CONTINUED)

		Existing 2012 - AM				No-Action 2033 - AM			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
Madison Avenue @ East 43rd Street	NB	LT	0.58	13.3	B	T	1.02	48.5	D
Madison Avenue @ East 44th Street	NB	TR	0.59	13.4	B	T	1.15	93.8	F
Madison Avenue @ East 44th Street	NB	TR	0.59	13.4	B	R	1.02	107.6	F
Madison Avenue @ East 45th Street	NB	LT	0.57	13.1	B	T	1.05	57.8	E
Madison Avenue @ East 46th Street	EB	LT	0.94	56.3	E	LT	1.09	96.6	F
Madison Avenue @ East 46th Street	NB	TR	0.61	13.6	B	T	1.17	103.4	F
Madison Avenue @ East 47th Street	NB	LT	0.62	15.3	B	T	1.15	94.7	F
Madison Avenue @ East 49th Street	NB	LT	0.58	13.2	B	T	1.08	66.7	E
Madison Avenue @ East 51st Street	NB	LT	0.67	16.1	B	T	1.24	134.1	F
Madison Avenue @ East 53rd Street	NB	LT	0.63	13.9	B	T	1.20	113.9	F
Madison Avenue @ East 57th Street	NB	LTR	0.65	14.3	B	T	1.01	43.9	D
Fifth Avenue @ 42nd Street	WB	LT	0.86	34.8	C	LT	1.01	58.6	E
Fifth Avenue @ 42nd Street	SB	LT	0.78	16.5	B	LT	1.16	96.3	F
Fifth Avenue @ 43rd Street	SB	T	0.72	15.2	B	T	1.08	61.3	E
Fifth Avenue @ 43rd Street	SB	R*	1.05	94.6	F	R	1.36	204.7	F
Fifth Avenue @ 44th Street	SB	LT	0.84	18.6	B	LT	1.27	143.4	F
Fifth Avenue @ 45th Street	SB	T	0.73	15.3	B	T	1.11	74.4	E
Fifth Avenue @ 46th Street	EB	TR	0.99	71.0	E	TR	1.21	144.0	F
Fifth Avenue @ 46th Street	SB	LT	0.84	18.4	B	LT	1.27	140.9	F
Fifth Avenue @ 47th Street	SB	T	0.80	20.4	C	T	1.23	128.4	F
Fifth Avenue @ 48th Street	EB	R*	1.05	115.6	F	R	1.13	142.2	F
Fifth Avenue @ 48th Street	SB	LT	0.84	21.8	C	LT	1.28	151.2	F
Fifth Avenue @ 49th Street	SB	T	0.71	14.9	B	T	1.07	59.7	E
Fifth Avenue @ 50th Street	SB	LT	0.76	16.0	B	LT	1.15	89.5	F
Fifth Avenue @ 51st Street	SB	T	0.77	19.5	B	T	1.15	94.6	F
Fifth Avenue @ 51st Street	SB	R	0.82	49.4	D	R	0.94	67.5	E
Fifth Avenue @ 52nd Street	EB	R	0.71	52.4	D	R	0.78	58.4	E
Fifth Avenue @ 52nd Street	SB	LT	0.89	24.1	C	LT	1.35	179.8	F
Fifth Avenue @ 53rd Street	SB	T	0.68	14.5	B	T	1.04	48.6	D
Fifth Avenue @ 54th Street	SB	LT	0.75	15.8	B	LT	1.15	92.4	F
Fifth Avenue @ 56th Street	SB	LT	0.83	17.9	B	LT	1.22	122.4	F
Fifth Avenue @ 57th Street	EB	R	0.90	55.9	E	R	0.96	68.0	E
Fifth Avenue @ 57th Street	WB	LT	0.85	35.2	D	LT	0.92	42.4	D
Fifth Avenue @ 57th Street	SB	LT	0.70	14.9	B	LT	1.02	41.3	D
Fifth Avenue @ 59th Street	EB	R*	1.05	109.6	F	R	1.12	131.9	F
Fifth Avenue @ 59th Street	SB	LT	0.97	34.2	C	LT	1.61	301.4	F
Sixth Avenue @ West 40th Street	NB	TR	1.00	42.9	D	TR	1.11	79.7	E
Sixth Avenue @ West 42nd Street	WB	R*	1.05	101.6	F	R	1.26	174.0	F
Route 9A @ West 51st Street	WB	L	0.38	58.7	E	L	0.43	60.4	E
Route 9A @ West 51st Street	WB	R	0.42	59.7	E	R	0.58	65.8	E
Route 9A @ West 52nd Street	EB	LTR	0.00	49.6	D	LTR	1.32	219.4	F
Route 9A @ West 52nd Street	NB	TR	0.87	30.0	C	TR	0.98	43.0	D
Route 9A @ West 52nd Street	SB	L	0.51	70.2	E	L	0.05	58.0	E
Route 9A @ West 54th Street	SB	L	0.54	53.7	D	L	0.53	55.9	E
Route 9A @ West 55th Street	WB	LT	0.61	65.3	E	LT	0.83	83.2	F
Route 9A @ West 55th Street	NB	L	0.07	69.4	E	L	0.31	79.7	E
Route 9A @ West 55th Street	SB	TR	0.91	27.4	C	TR	0.99	38.1	D
Route 9A @ West 56th Street	NB	T	0.93	46.0	D	T	1.09	88.6	F

		Existing 2012 - AM				No-Action 2033 - AM			
Unsignalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 48th Street	EB	L*	0.80	44.3	E	L	0.92	65.3	F

Source: Parsons Brinckerhoff, Inc., 2013

Note: This table has been revised for the FEIS.

TABLE 12-23: EXISTING AND NO-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE MIDDAY PEAK HOUR

		Existing 2012 - Midday				No-Action 2033 - Midday			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 42nd Street	EB	LT (east)	0.76	33.9	C	LT (east)	0.96	54.8	D
First Avenue @ East 42nd Street	EB	LT (west)*	1.03	70.6	E	L (west)	0.93	72.7	E
First Avenue @ East 46th Street	EB	L	0.89	46.9	D	L	1.00	67.4	E
Second Avenue @ East 42nd Street	EB	R	0.98	76.2	E	R	1.22	155.5	F
Second Avenue @ East 42nd Street	SB	L	0.72	25.9	C	L	0.90	41.6	D
Second Avenue @ East 42nd Street	SB	TR	0.89	24.9	C	TR	1.01	41.2	D
Second Avenue @ East 44th Street	EB	TR	0.69	39.8	D	TR	0.95	72.1	E
Second Avenue @ East 46th Street	EB	R*	1.03	94.4	F	R	1.17	141.4	F
Second Avenue @ East 49th Street	WB	LT	0.92	52.6	D	LT	1.03	77.0	E
Second Avenue @ East 52nd Street	EB	TR	0.85	49.5	D	TR	1.00	77.1	E
Second Avenue @ East 57th Street	SB	TR	0.90	27.5	C	TR	1.01	44.8	D
Second Avenue @ East 59th Street	SB	L	0.69	14.9	B	L (bridge)	1.08	68.2	E
Third Avenue @ East 42nd Street	EB	L	1.05	113.5	F	L	1.19	158.7	F
Third Avenue @ East 42nd Street	WB	T	0.81	43.2	D	T	0.95	59.8	E
Third Avenue @ East 42nd Street	WB	R	0.92	88.5	F	R	1.08	130.1	F
Third Avenue @ East 42nd Street	NB	LT	0.83	26.1	C	LT	0.92	31.4	C
Third Avenue @ East 44th Street	NB	R	0.71	33.6	C	R	0.92	62.7	E
Third Avenue @ East 46th Street	NB	TR	0.83	25.0	C	TR	0.93	31.0	C
Third Avenue @ East 49th Street	NB	LT	0.84	27.2	C	LT	0.94	34.0	C
Third Avenue @ East 51st Street	NB	LT	0.79	23.9	C	LT	0.93	31.0	C
Third Avenue @ East 53rd Street	NB	LT	0.81	24.4	C	LT	0.91	29.1	C
Third Avenue @ East 57th Street	EB	LT	1.00	56.6	E	LT	1.06	71.4	E
Third Avenue @ East 57th Street	NB	R	0.73	44.3	D	R	0.89	70.1	E
Lexington Avenue @ East 51st Street	WB	L	0.78	58.9	E	L	0.94	83.0	F
Park Avenue @ West 39th Street	WB	LTR	1.05	81.1	F	LTR	1.30	177.5	F
Park Avenue @ West 39th Street	SB	TR	0.90	30.5	C	TR	0.88	28.4	C
Park Avenue @ West 40th Street	SB	T (Viaduct Exit)*	1.03	56.7	E	T (Viaduct Exit)	1.13	90.8	F
Park Avenue @ West 47th Street	NB	T	0.87	29.9	C	T	0.93	36.7	D
Park Avenue @ West 48th Street	SB	T	0.86	28.7	C	T	0.94	37.0	D
Park Avenue @ West 49th Street	WB	LT	0.87	45.5	D	LT	0.96	59.5	E
Park Avenue @ West 49th Street	NB	T	0.84	27.0	C	T	0.91	32.5	C
Park Avenue @ West 51st Street	NB	T	0.85	26.0	C	T	0.92	32.4	C
Park Avenue @ West 53rd Street	NB	T	0.82	23.2	C	T	0.90	28.0	C
Park Avenue @ West 57th Street	NB	TR	0.84	25.2	C	TR	0.94	33.9	C
Park Avenue @ West 57th Street	SB	TR	0.94	34.1	C	TR	1.03	53.3	D
Madison Avenue @ East 39th Street	WB	R	0.95	95.7	F	R	1.05	121.9	F
Madison Avenue @ East 42nd Street	NB	LT	0.98	36.6	D	LT	1.10	74.5	E
Madison Avenue @ East 43rd Street	NB	LT	0.52	12.4	B	T	0.97	34.8	C
Madison Avenue @ East 44th Street	EB	LT	0.71	32.9	C	LT	0.97	64.5	E
Madison Avenue @ East 44th Street	NB	TR	0.57	13.1	B	T	1.08	65.5	E
Madison Avenue @ East 45th Street	NB	LT	0.52	12.4	B	T	1.02	47.0	D
Madison Avenue @ East 46th Street	EB	LT	0.78	35.5	D	LT	0.91	48.8	D
Madison Avenue @ East 46th Street	NB	TR	0.54	12.7	B	T	1.14	90.5	F
Madison Avenue @ East 47th Street	WB	T	0.75	31.9	C	T	0.92	48.7	D
Madison Avenue @ East 47th Street	NB	LT	0.56	14.3	B	T	1.06	62.1	E
Madison Avenue @ East 49th Street	NB	LT	0.52	12.4	B	T	0.96	33.0	C
Madison Avenue @ East 51st Street	WB	R	0.62	50.0	D	R	0.74	59.5	E
Madison Avenue @ East 51st Street	NB	LT	0.61	15.0	B	T	1.08	66.5	E
Madison Avenue @ East 53rd Street	NB	LT	0.51	12.3	B	T	1.00	41.0	D
Madison Avenue @ East 57th Street	NB	LTR	0.57	13.0	B	T	0.93	28.3	C

TABLE 12-23: EXISTING AND NO-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE MIDDAY PEAK HOUR (CONTINUED)

		Existing 2012 - Midday				No-Action 2033 - Midday			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
Fifth Avenue @ 42nd Street	WB	LT	0.80	31.5	C	LT	1.00	57.5	E
Fifth Avenue @ 42nd Street	SB	LT	0.66	14.1	B	LT	0.98	32.4	C
Fifth Avenue @ 43rd Street	SB	R*	1.05	99.7	F	R	1.33	199.2	F
Fifth Avenue @ 44th Street	EB	R	0.80	43.9	D	R	0.90	56.3	E
Fifth Avenue @ 44th Street	SB	LT	0.67	14.3	B	LT	1.00	37.0	D
Fifth Avenue @ 45th Street	SB	T	0.60	13.3	B	T	0.91	23.5	C
Fifth Avenue @ 46th Street	SB	LT	0.68	14.5	B	LT	1.04	49.7	D
Fifth Avenue @ 47th Street	WB	L	0.82	61.2	E	L	0.93	79.0	E
Fifth Avenue @ 47th Street	SB	T	0.64	16.9	B	T	0.98	36.6	D
Fifth Avenue @ 47th Street	SB	R*	1.05	116.5	F	R	1.16	152.5	F
Fifth Avenue @ 48th Street	EB	R	0.85	69.5	E	R	0.91	80.3	F
Fifth Avenue @ 48th Street	SB	LT	0.68	17.7	B	LT	1.04	51.9	D
Fifth Avenue @ 50th Street	SB	LT	0.62	13.6	B	LT	0.94	26.4	C
Fifth Avenue @ 51st Street	SB	T	0.62	16.6	B	T	0.93	28.8	C
Fifth Avenue @ 51st Street	SB	R*	1.03	117.2	F	R	1.28	201.6	F
Fifth Avenue @ 52nd Street	EB	R	0.79	59.3	E	R	0.86	67.2	E
Fifth Avenue @ 52nd Street	SB	LT	0.71	18.2	B	LT	1.09	70.1	E
Fifth Avenue @ 54th Street	SB	LT	0.64	13.9	B	LT	0.99	35.3	D
Fifth Avenue @ 56th Street	SB	LT	0.63	13.8	B	LT	0.97	31.5	C
Fifth Avenue @ 57th Street	EB	R	0.84	49.5	D	R	0.91	59.5	E
Fifth Avenue @ 59th Street	EB	R	0.81	60.3	E	R	0.86	66.5	E
Fifth Avenue @ 59th Street	SB	LT	0.80	20.4	C	LT	1.34	178.8	F
Sixth Avenue @ West 40th Street	EB	LT*	1.05	83.2	F	LT	1.20	136.7	F
Sixth Avenue @ West 40th Street	NB	TR	0.85	25.0	C	TR	0.95	32.1	C
Sixth Avenue @ West 42nd Street	WB	R	0.93	71.4	E	R	1.44	249.0	F
Route 9A @ West 52nd Street	SB	L*	1.05	151.4	F	L	0.76	89.6	F
Route 9A @ West 55th Street	WB	LT	0.82	62.1	E	LT	0.94	78.9	E
Route 9A @ West 55th Street	NB	L	0.17	54.0	D	L	0.25	56.2	E
Route 9A @ West 56th Street-Service Rd	EB	T	0.62	53.4	D	T	0.71	58.6	E

		Existing 2012 - Midday				No-Action 2033 - Midday			
Unsignalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 48th Street	EB	L*	0.92	77.5	F	L	1.08	123.7	F

Source: Parsons Brinckerhoff, Inc., 2013

Note: This table has been revised for the FEIS.

TABLE 12-24: EXISTING AND NO-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE PM PEAK HOUR

		Existing 2012 - PM				No-Action 2033 - PM			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 42nd Street	EB	LT (east)	0.96	58.8	E	LT (east)	1.29	172.5	F
First Avenue @ East 42nd Street	EB	LT (west)*	1.05	77.0	E	L (west)	1.08	120.9	F
First Avenue @ East 42nd Street	WB	R (east)	0.81	47.5	D	R (east)	0.90	59.7	E
First Avenue @ East 42nd Street	NB	LT (east)	0.86	30.7	C	LT (east)	1.04	63.2	E
First Avenue @ East 46th Street	EB	L	0.84	39.3	D	L	0.95	55.1	E
First Avenue @ East 46th Street	NB	T	0.85	19.7	B	T	1.00	35.9	D
First Avenue @ East 47th Street	NB	TR (east)	1.00	39.5	D	TR (east)	1.19	109.5	F
First Avenue @ East 48th Street	NB	R	1.04	62.1	E	R	1.32	171.5	F
Second Avenue @ East 42nd Street	EB	R	0.92	61.2	E	R	1.95	472.5	F
Second Avenue @ East 42nd Street	WB	LT	0.81	36.2	D	LT	1.13	105.7	F
Second Avenue @ East 42nd Street	SB	L	0.77	29.3	C	L	1.04	73.3	E
Second Avenue @ East 42nd Street	SB	T	0.86	22.4	C	T	0.97	31.6	C
Second Avenue @ East 44th Street	EB	TR	1.04	93.1	F	TR	1.33	200.1	F
Second Avenue @ East 45th Street	WB	LT	0.76	44.9	D	LT	0.91	62.8	E
Second Avenue @ East 46th Street	EB	R*	1.05	92.6	F	R	1.23	157.7	F
Second Avenue @ East 49th Street	WB	L	1.05	92.7	F	L	1.18	135.9	F
Second Avenue @ East 52nd Street	EB	TR	1.02	83.7	F	TR	1.17	134.5	F
Second Avenue @ East 53rd Street	WB	LT	0.81	38.0	D	LT	0.91	47.3	D
Second Avenue @ East 59th Street	EB	TR	0.67	27.8	C	T (bridge)	0.96	50.5	D
Second Avenue @ East 59th Street	SB	L	0.78	17.9	B	L (bridge)	1.24	130.5	F
Third Avenue @ East 42nd Street	EB	L	1.05	116.2	F	L	1.20	163.9	F
Third Avenue @ East 42nd Street	EB	T	0.84	35.5	D	T	1.00	60.9	E
Third Avenue @ East 42nd Street	WB	T	0.74	39.6	D	T	0.95	60.1	E
Third Avenue @ East 42nd Street	WB	R	1.00	110.0	F	R	1.05	119.1	F
Third Avenue @ East 42nd Street	NB	LT	0.92	30.7	C	LT	1.02	47.7	D
Third Avenue @ East 42nd Street	NB	R	0.33	20.1	C	R	0.98	82.4	F
Lexington Avenue @ East 39th Street	WB	T	0.80	35.7	D	T	0.91	48.5	D
Lexington Avenue @ East 51st Street	WB	T	0.82	50.5	D	T	1.02	87.5	F
Park Avenue @ West 39th Street	WB	LTR*	1.04	75.0	E	LTR	1.18	124.6	F
Park Avenue @ West 39th Street	SB	TR	0.88	28.7	C	TR	0.93	33.9	C
Park Avenue @ West 40th Street	NB	T (Tunnel Exit)	0.90	34.0	C	T (Tunnel Exit)	0.98	46.7	D
Park Avenue @ West 40th Street	SB	T (Viaduct Exit)*	1.04	59.9	E	T (Viaduct Exit)	1.14	96.3	F
Park Avenue @ West 47th Street	NB	T	0.96	40.0	D	T	1.04	59.7	E
Park Avenue @ West 48th Street	SB	T	0.88	30.1	C	T	0.97	41.5	D
Park Avenue @ West 49th Street	WB	LT	0.83	40.5	D	LT	0.92	51.4	D
Park Avenue @ West 49th Street	NB	T	0.92	32.8	C	T	1.00	47.9	D
Park Avenue @ West 50th Street	SB	T	0.87	28.1	C	T	0.96	38.3	D
Park Avenue @ West 51st Street	NB	T	0.93	33.7	C	T	1.02	52.4	D
Park Avenue @ West 53rd Street	WB	LTR	0.78	33.7	C	LTR	0.90	42.6	D
Park Avenue @ West 53rd Street	NB	T	0.99	42.1	D	T	1.08	69.5	E
Park Avenue @ West 56th Street	NB	TR	0.84	21.9	C	TR	0.92	27.3	C
Park Avenue @ West 56th Street	SB	T	0.82	22.4	C	T	0.91	28.1	C
Park Avenue @ West 57th Street	NB	TR*	1.04	54.5	D	TR	1.14	94.5	F
Park Avenue @ West 57th Street	SB	TR	0.69	18.6	B	TR	1.14	95.1	F

TABLE 12-24: EXISTING AND NO-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE PM PEAK HOUR (CONTINUED)

		Existing 2012 - PM				No-Action 2033 - PM			
Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
Madison Avenue @ East 39th Street	WB	T	0.79	34.0	C	T	0.91	46.0	D
Madison Avenue @ East 39th Street	WB	R	0.73	59.4	E	R	0.81	68.0	E
Madison Avenue @ East 42nd Street	NB	LT	0.57	13.3	B	LT	0.92	27.7	C
Madison Avenue @ East 44th Street	EB	LT	0.82	43.6	D	LT	1.11	110.0	F
Madison Avenue @ East 44th Street	NB	R	0.26	11.7	B	R	1.53	320.7	F
Madison Avenue @ East 45th Street	NB	LT	0.60	13.8	B	T	0.92	27.4	C
Madison Avenue @ East 49th Street	NB	LT	0.60	13.8	B	T	0.90	26.2	C
Madison Avenue @ East 51st Street	NB	LT	0.70	17.2	B	T	0.99	41.1	D
Madison Avenue @ East 53rd Street	NB	LT	0.62	14.0	B	T	0.93	29.2	C
Fifth Avenue @ 42nd Street	SB	LT	0.66	14.1	B	LT	0.99	34.7	C
Fifth Avenue @ 43rd Street	SB	T	0.60	13.3	B	T	0.91	23.6	C
Fifth Avenue @ 43rd Street	SB	R*	1.05	106.2	F	R	1.33	200.7	F
Fifth Avenue @ 44th Street	EB	R	0.87	55.0	E	R	1.10	109.8	F
Fifth Avenue @ 44th Street	SB	LT	0.68	14.6	B	LT	1.01	40.6	D
Fifth Avenue @ 45th Street	SB	T	0.60	13.3	B	T	0.90	22.8	C
Fifth Avenue @ 46th Street	EB	TR	0.82	39.6	D	TR	1.00	68.8	E
Fifth Avenue @ 46th Street	SB	LT	0.66	14.3	B	LT	1.00	37.0	D
Fifth Avenue @ 47th Street	WB	L	0.68	49.7	D	L	0.76	56.0	E
Fifth Avenue @ 47th Street	SB	T	0.63	16.8	B	T	0.96	33.7	C
Fifth Avenue @ 47th Street	SB	R	0.83	63.4	E	R	1.05	115.6	F
Fifth Avenue @ 48th Street	EB	R*	1.05	113.0	F	R	1.11	130.8	F
Fifth Avenue @ 48th Street	SB	LT	0.66	17.4	B	LT	1.00	42.5	D
Fifth Avenue @ 50th Street	SB	LT	0.59	13.3	B	LT	0.90	22.9	C
Fifth Avenue @ 51st Street	SB	R*	1.05	127.6	F	R	1.19	174.6	F
Fifth Avenue @ 52nd Street	EB	R	0.79	59.3	E	R	0.86	67.2	E
Fifth Avenue @ 52nd Street	SB	LT	0.63	16.9	B	LT	0.98	36.9	D
Fifth Avenue @ 54th Street	SB	LT	0.60	13.3	B	LT	0.93	25.4	C
Fifth Avenue @ 56th Street	SB	LT	0.60	13.4	B	LT	0.90	23.5	C
Fifth Avenue @ 59th Street	EB	R	0.74	53.9	D	R	0.79	58.5	E
Fifth Avenue @ 59th Street	SB	LT	0.78	20.2	C	LT	1.31	166.9	F
Sixth Avenue @ West 40th Street	NB	R*	1.05	116.7	F	R	1.37	232.0	F
Sixth Avenue @ West 42nd Street	WB	R	0.92	70.7	E	R	1.22	162.6	F
Sixth Avenue @ West 44th Street	NB	R*	1.05	85.4	F	R	1.17	125.6	F
Route 9A @ West 51st Street	WB	L	0.46	61.1	E	L	0.53	63.8	E
Route 9A @ West 51st Street	WB	R	0.72	73.2	E	R	0.90	94.4	F
Route 9A @ West 52nd Street	EB	LTR	0.00	49.6	D	LTR	0.98	93.7	F
Route 9A @ West 52nd Street	NB	TR	0.86	27.0	C	TR	0.99	40.8	D
Route 9A @ West 52nd Street	SB	L	0.88	114.6	F	L	0.45	74.3	E
Route 9A @ West 55th Street	WB	LT	0.79	77.8	E	LT	0.94	100.7	F
Route 9A @ West 55th Street	WB	R	0.62	61.3	E	R	0.68	63.7	E
Route 9A @ West 55th Street	NB	L	0.11	68.0	E	L	0.21	71.0	E
Route 9A @ West 55th Street	SB	TR	0.84	24.6	C	TR	0.92	29.6	C
Route 9A @ West 56th Street-Service Rd	EB	T	0.57	56.8	E	T	0.65	60.4	E

Source: Parsons Brinckerhoff, Inc., 2013

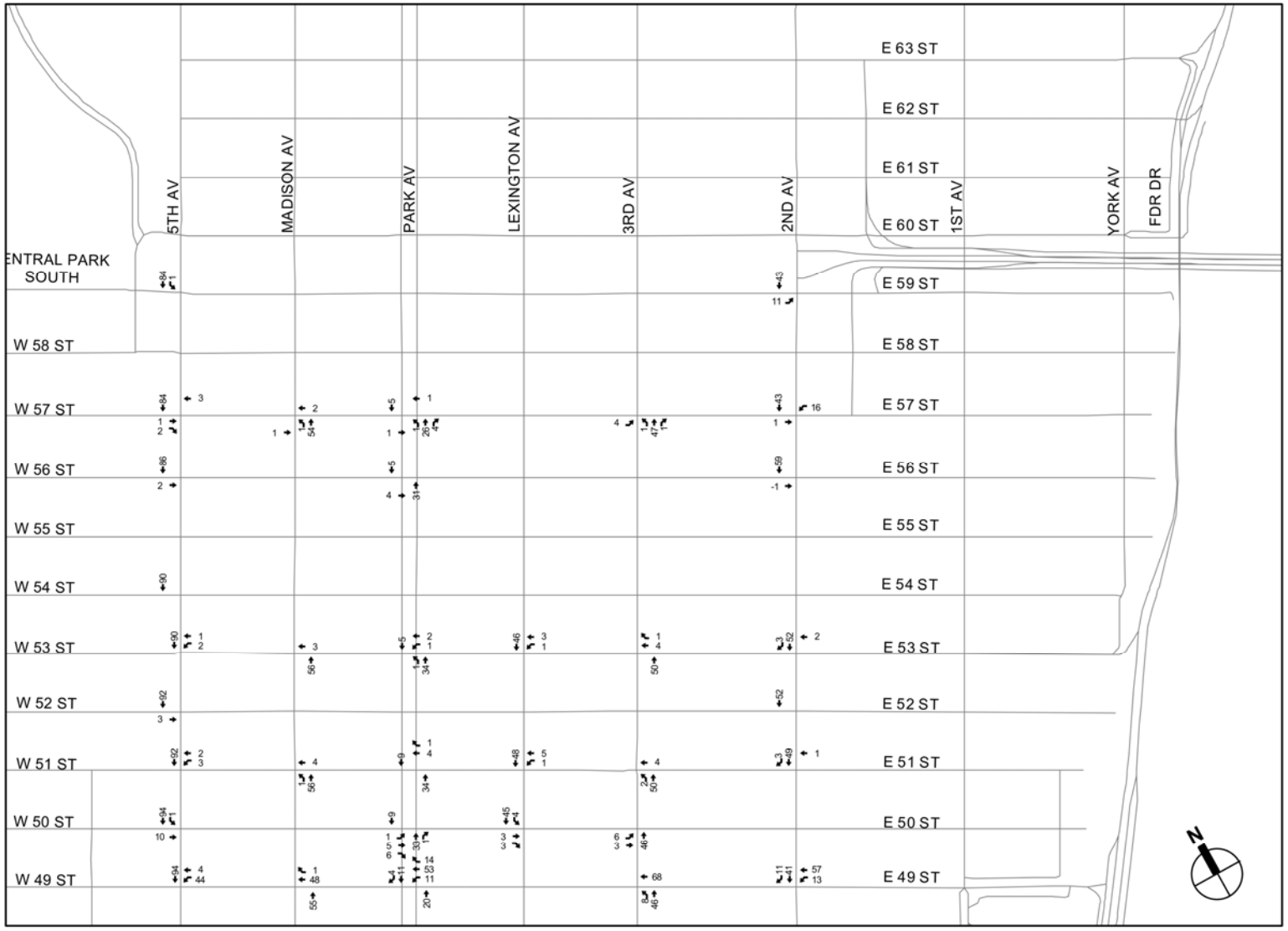
Note: This table has been revised for the FEIS.

12.7.3 Future Traffic Conditions with the Proposed Action

As discussed in Section 12.5, "Level 2 Screening Assessment," project-generated vehicle trips were assigned to the street network to identify the specific locations where the incremental increase in travel demand would require a quantitative analysis. Based upon the projected development associated with the Proposed Action, there would be 938, 705, and 972 additional vehicular trips during the AM, Midday, and PM peak hours, respectively.

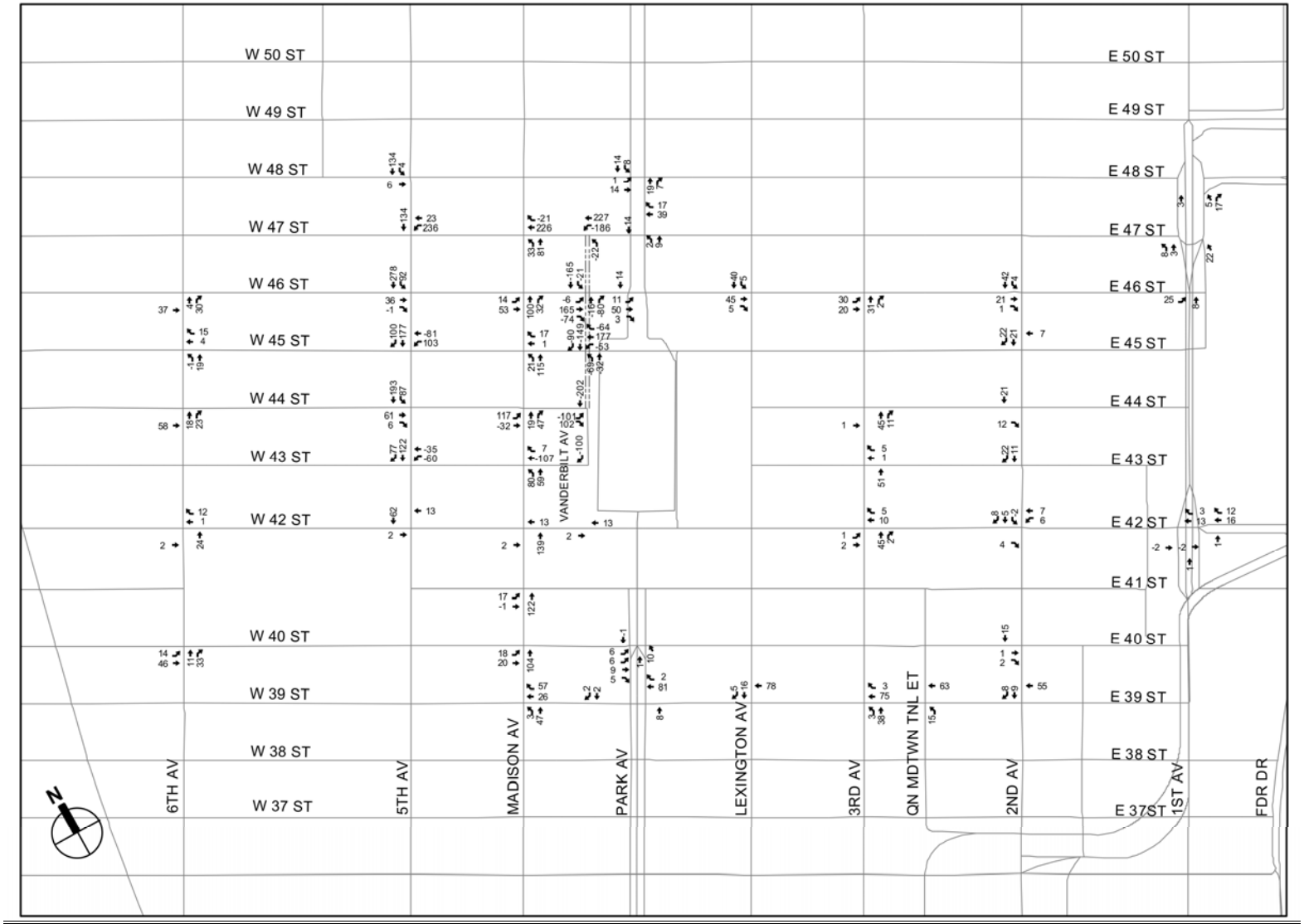
Project-generated auto trips were assigned to the most direct routes to approach and depart off-street parking facilities in the vicinity of the projected development sites (no on-street parking availability was assumed). The distribution of auto trips to off-street parking facilities is summarized in Appendix 4. Taxi trips were assigned to approach, pass by, and depart projected development sites, and truck trips were assigned to approach and depart projected development sites based on DOT truck route regulations. Figures 12-24 through 12-32 show the associated incremental traffic volumes during the weekday AM, Midday, and PM peak hours, respectively, which account for projected-generate trips from projected development sites as well as traffic that would be rerouted due to the closure of Vanderbilt Avenue between East 44th and East 47th Streets. Figures 12-33 through 12-41 show the expected With-Action weekday AM, Midday, and PM traffic volumes, respectively, and represent the vehicle trips projected to be generated by the Proposed Action, compared to No-Action traffic volumes.

FIGURE 12-24: AM PROJECT GENERATED TRAFFIC VOLUMES (1 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

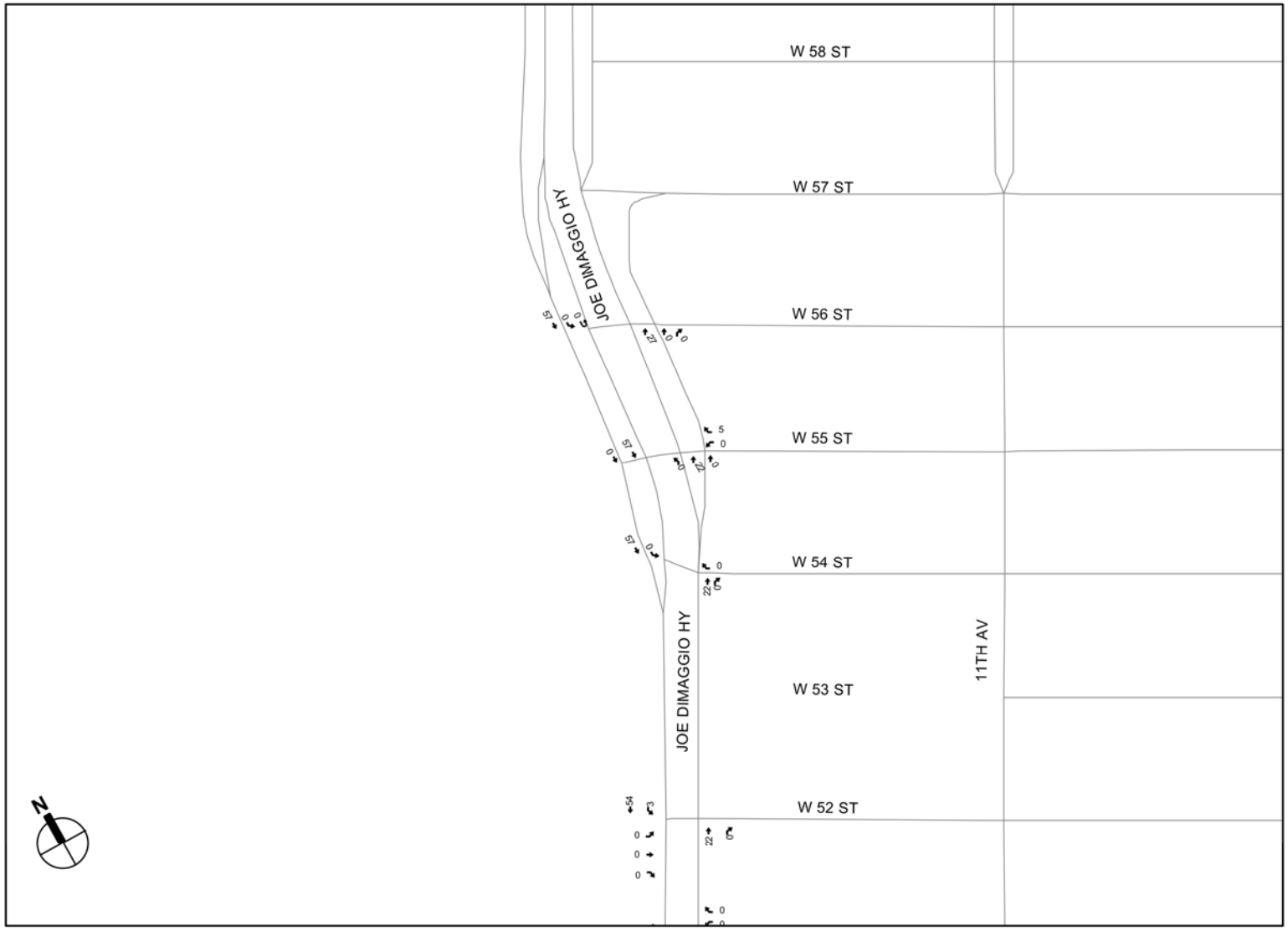
FIGURE 12-25: AM PROJECT GENERATED VOLUMES (2 OF 3)



Street Closure

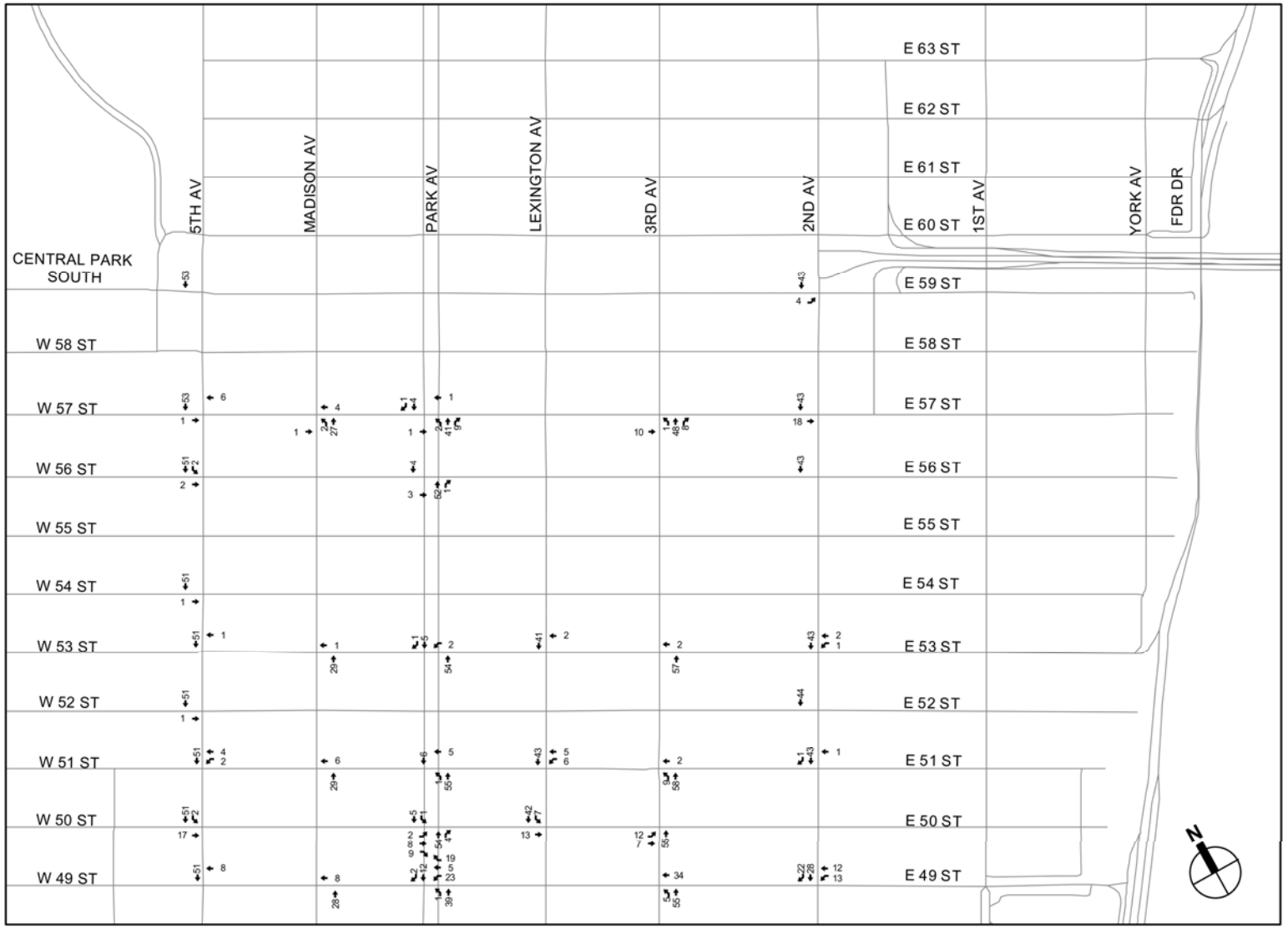
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-26: AM PROJECT GENERATED TRAFFIC VOLUMES (3 OF 3)



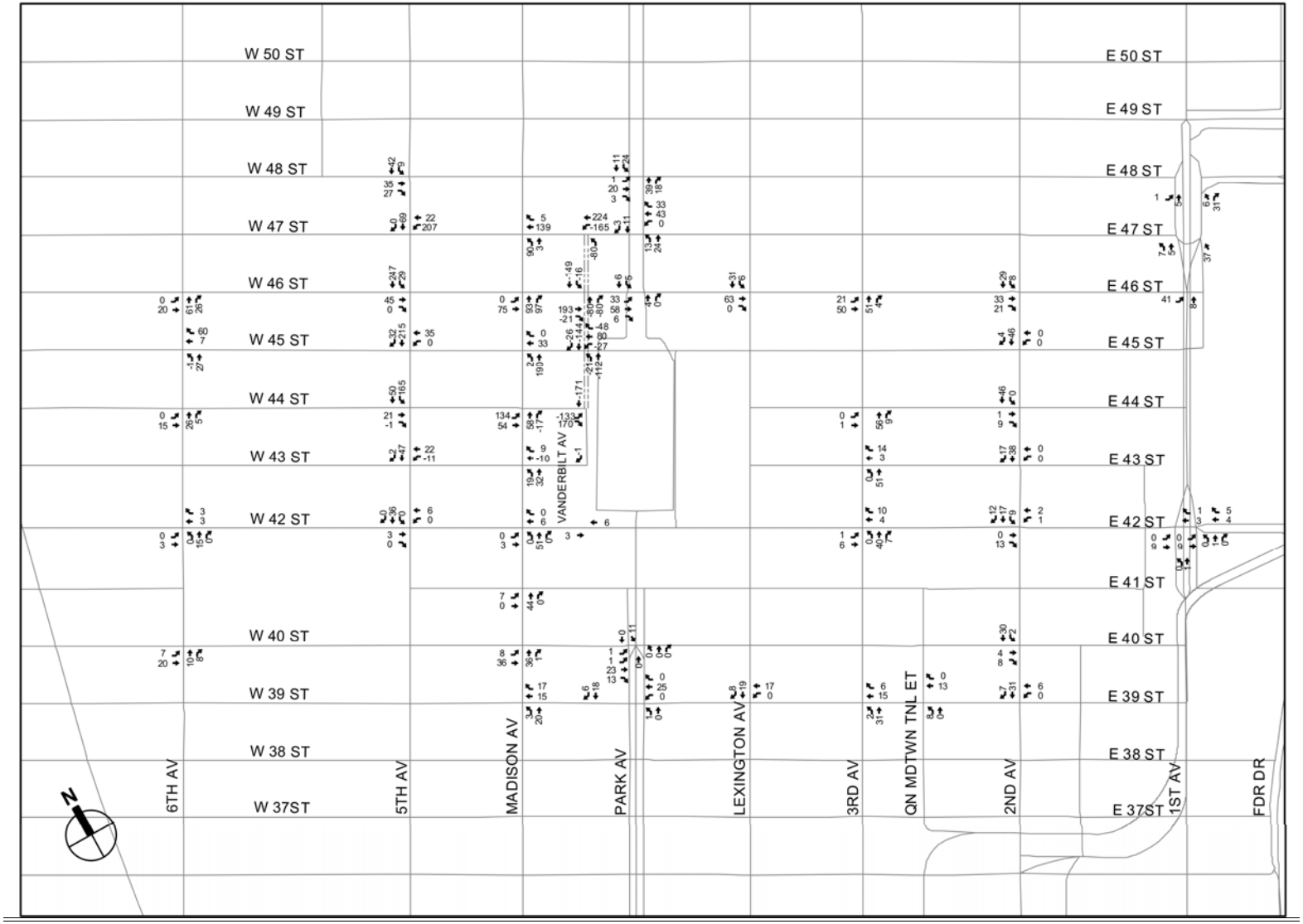
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-27: MIDDAY PROJECT GENERATED TRAFFIC VOLUMES (1 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

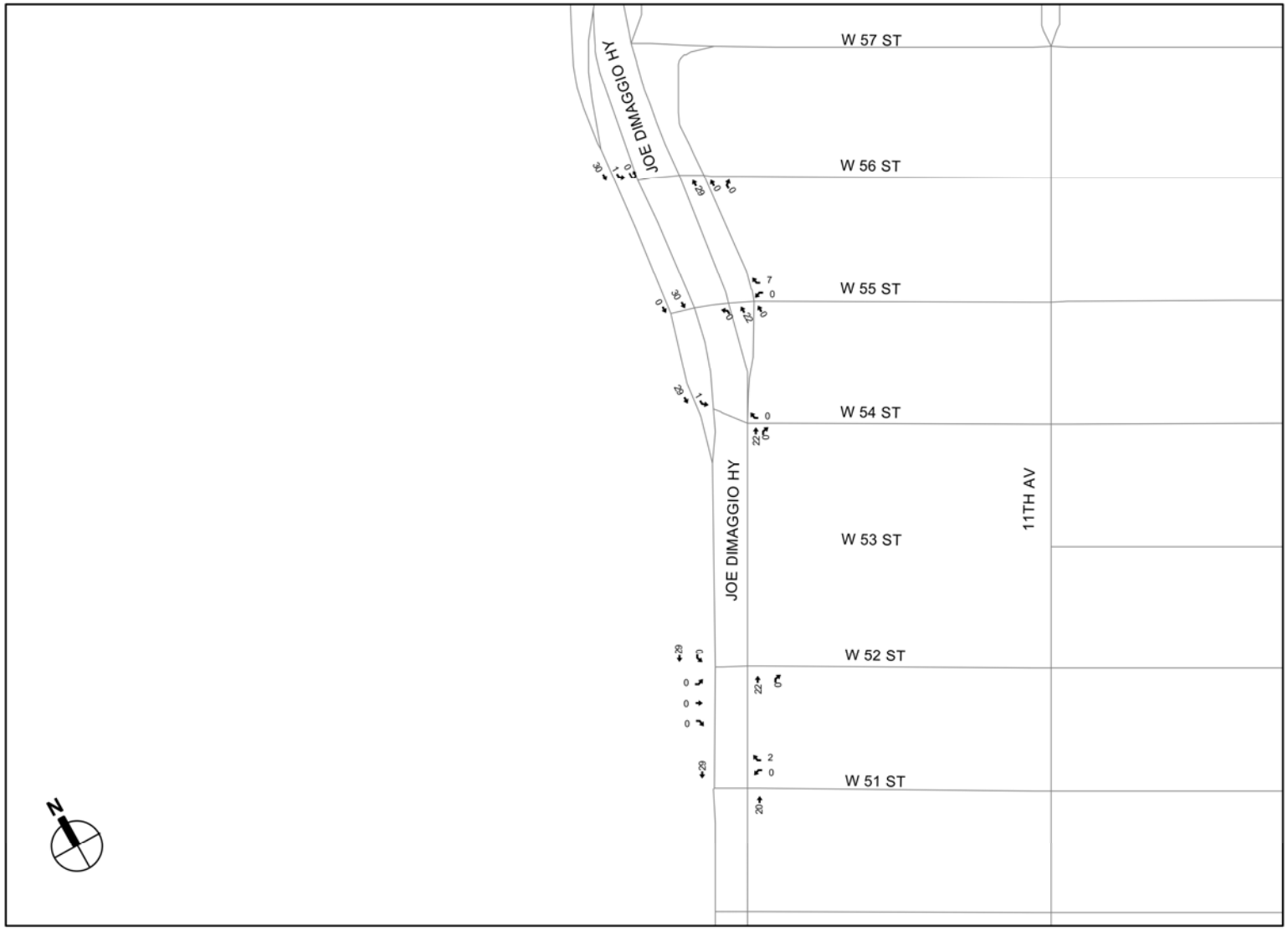
FIGURE 12-28: MIDDAY PROJECT GENERATED TRAFFIC VOLUMES (2 OF 3)



Street Closure

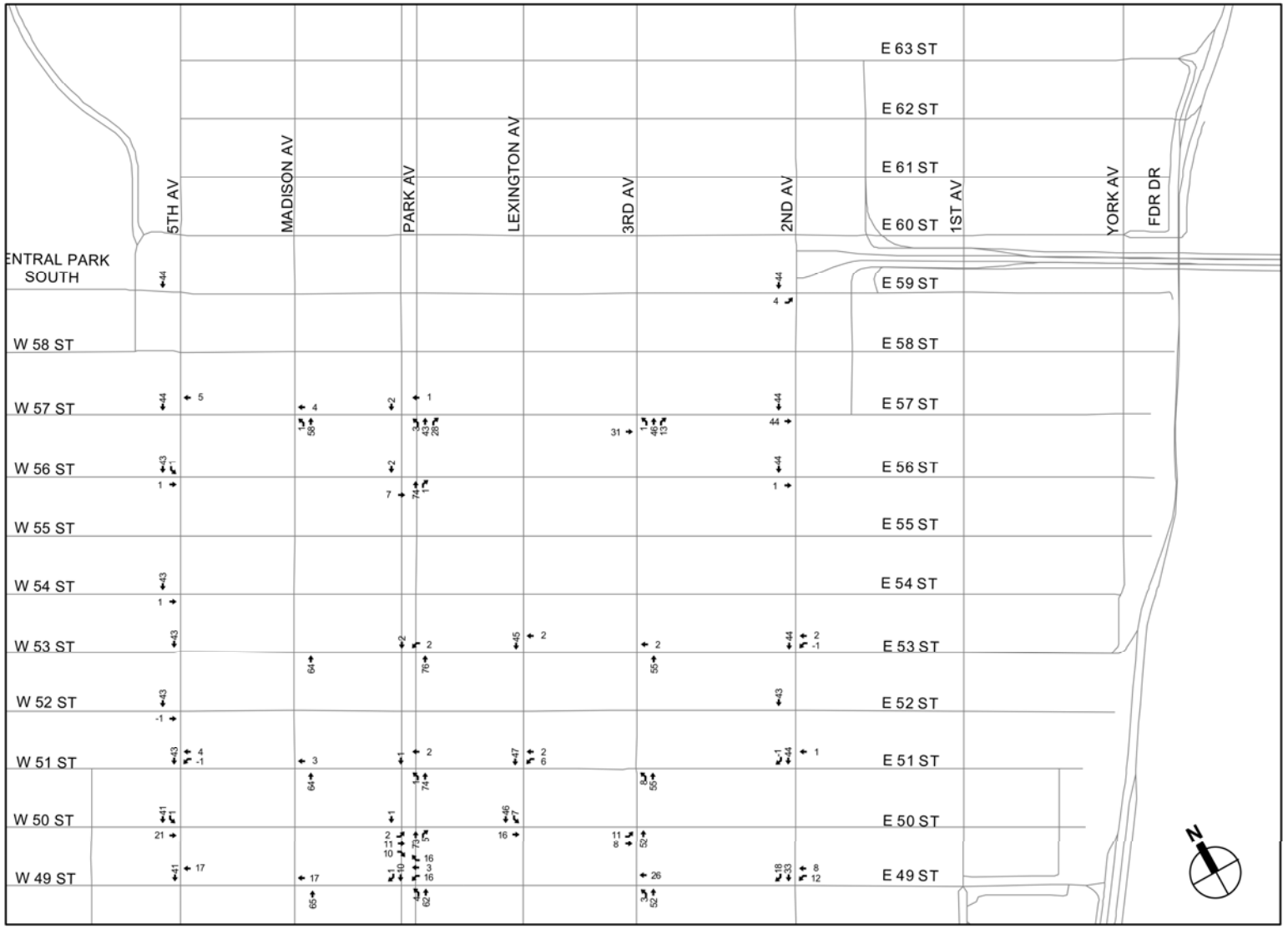
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-29: MIDDAY PROJECT GENERATED TRAFFIC VOLUMES (3 OF 3)



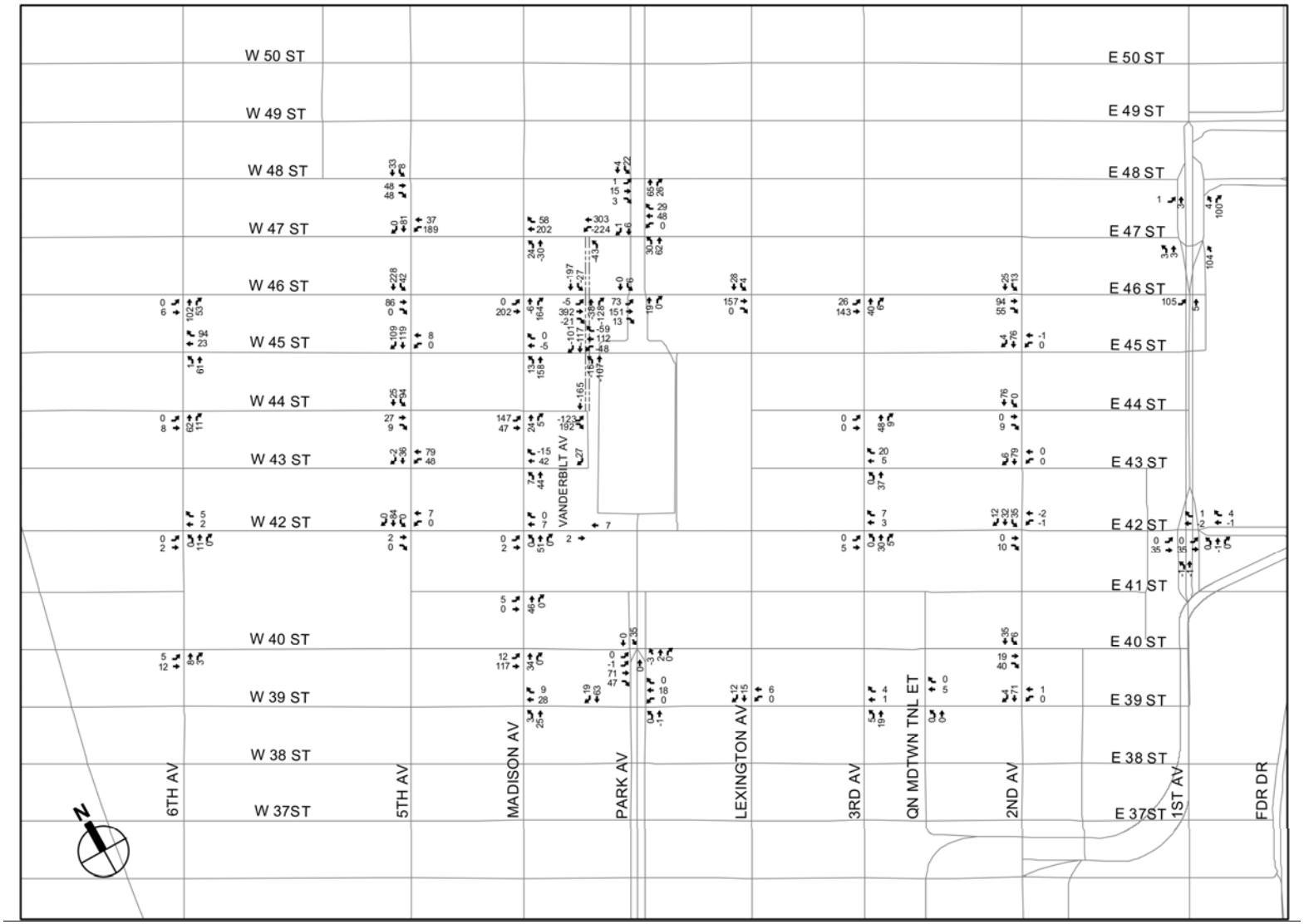
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-30: PM PROJECT GENERATED TRAFFIC VOLUMES (1 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

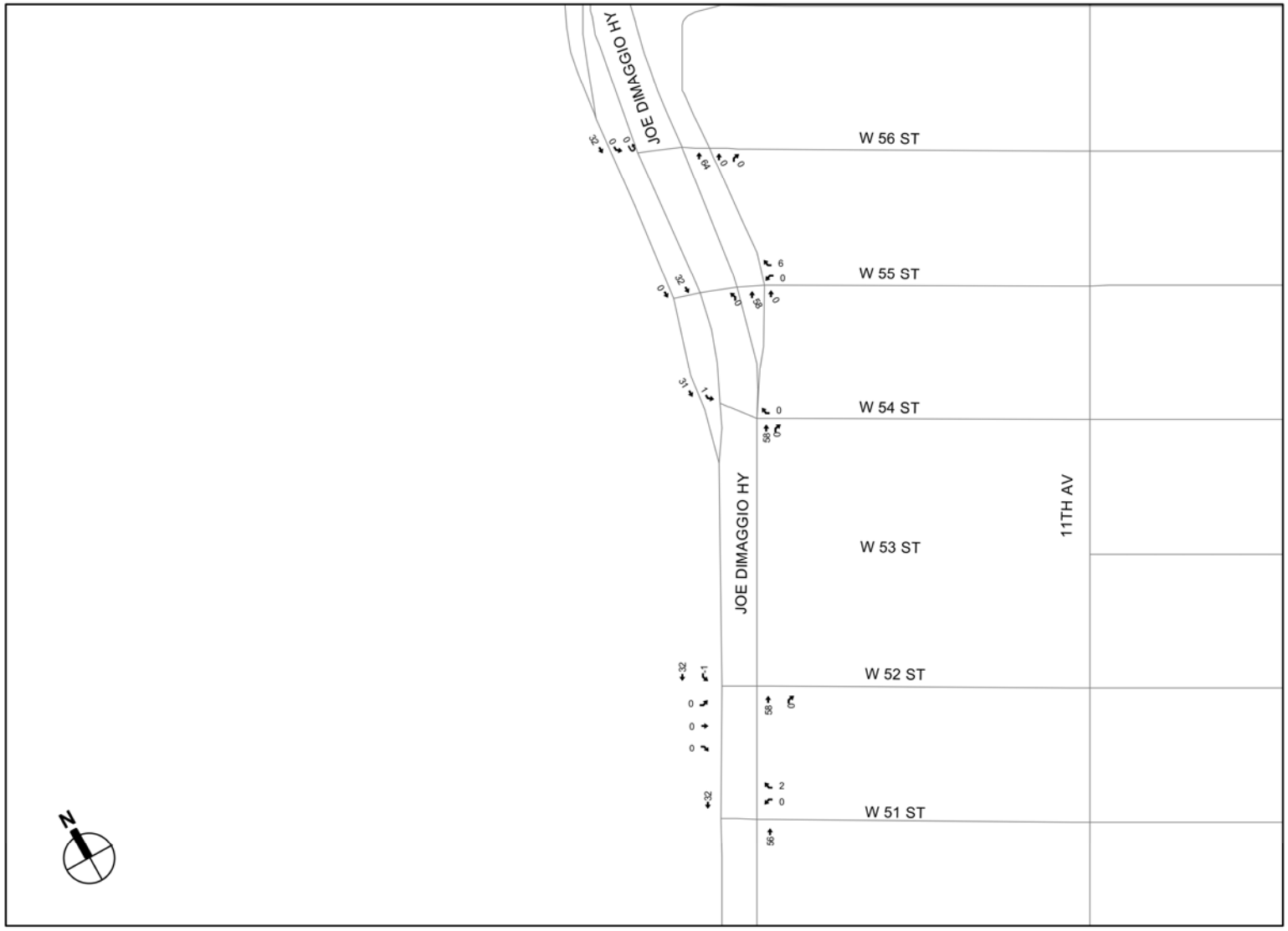
FIGURE 12-31: PM PROJECT GENERATED TRAFFIC VOLUMES (2 OF 3)



Street Closure

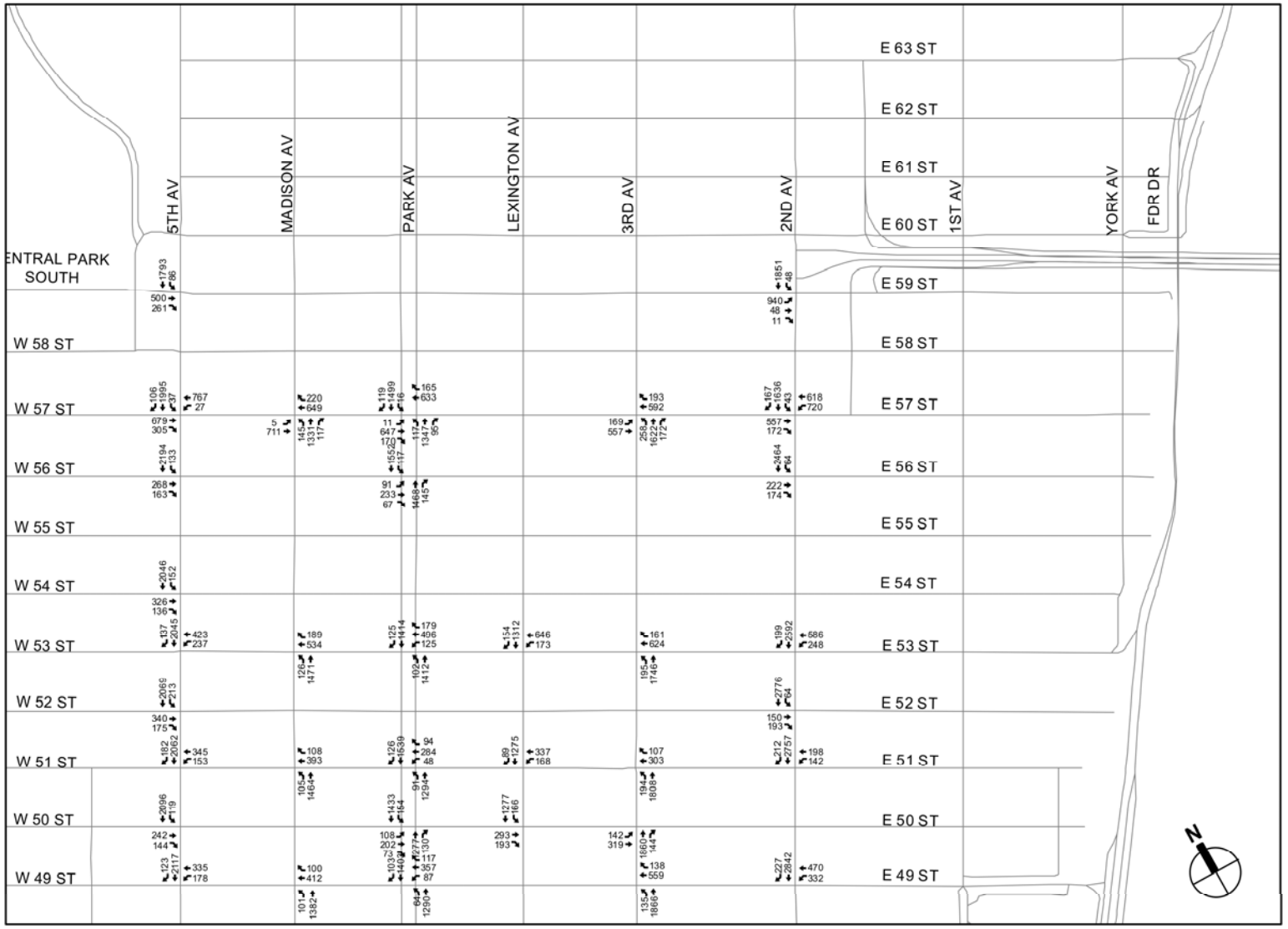
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-32: PM PROJECT GENERATED TRAFFIC VOLUMES (3 OF 3)



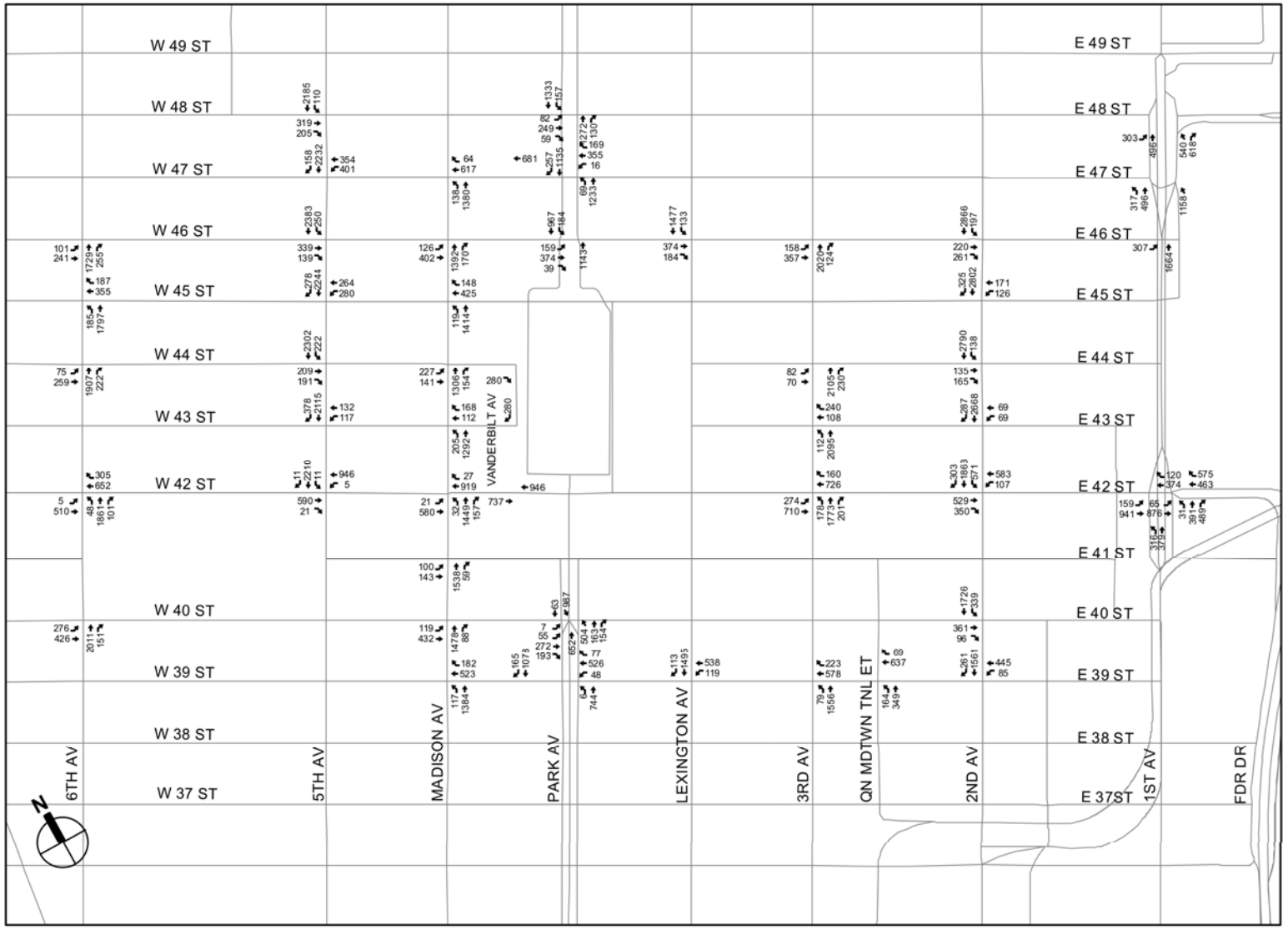
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-33: AM WITH-ACTION TRAFFIC VOLUMES (1 OF 3)



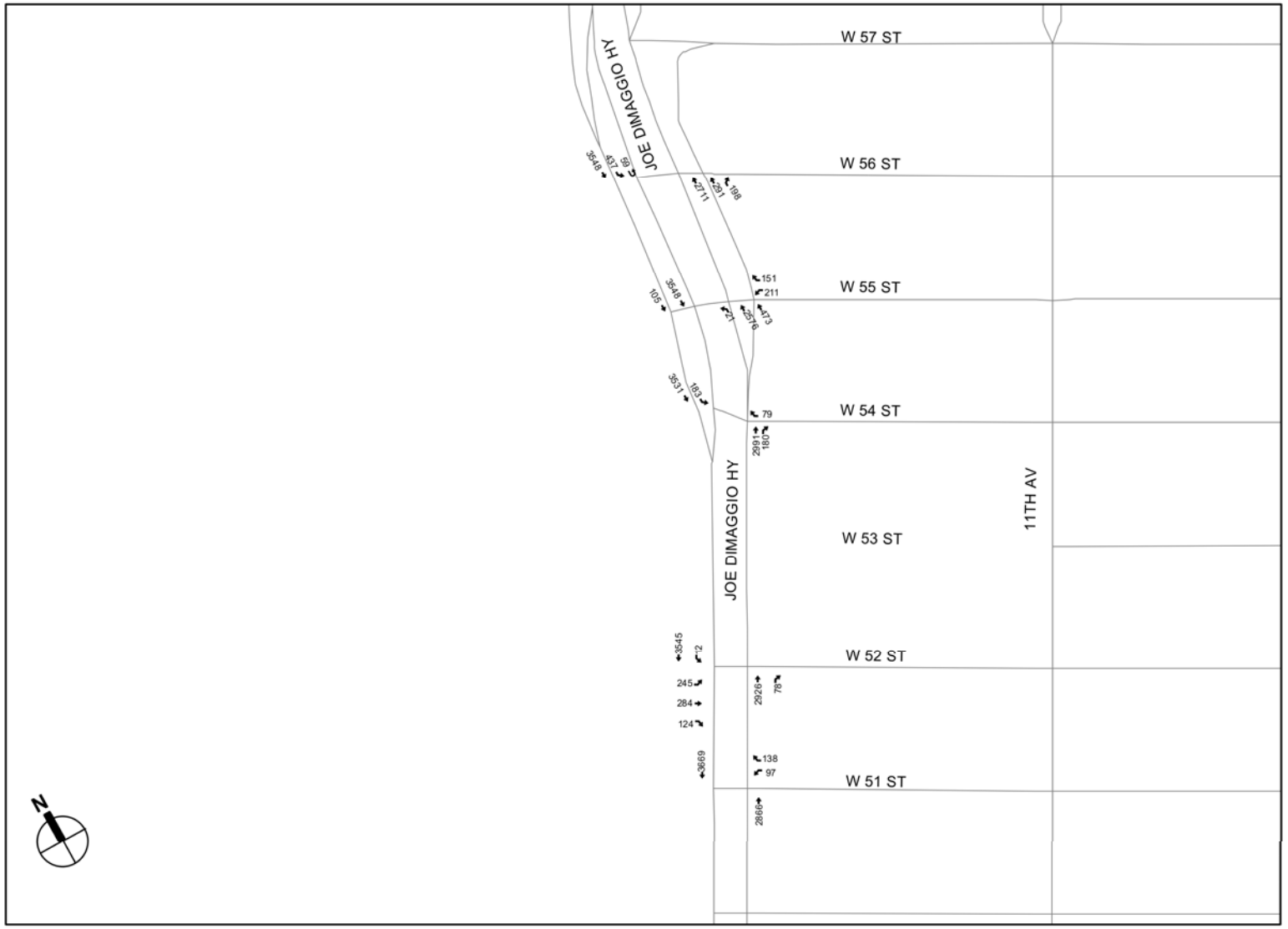
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-34: AM WITH-ACTION VOLUMES (2 OF 3)



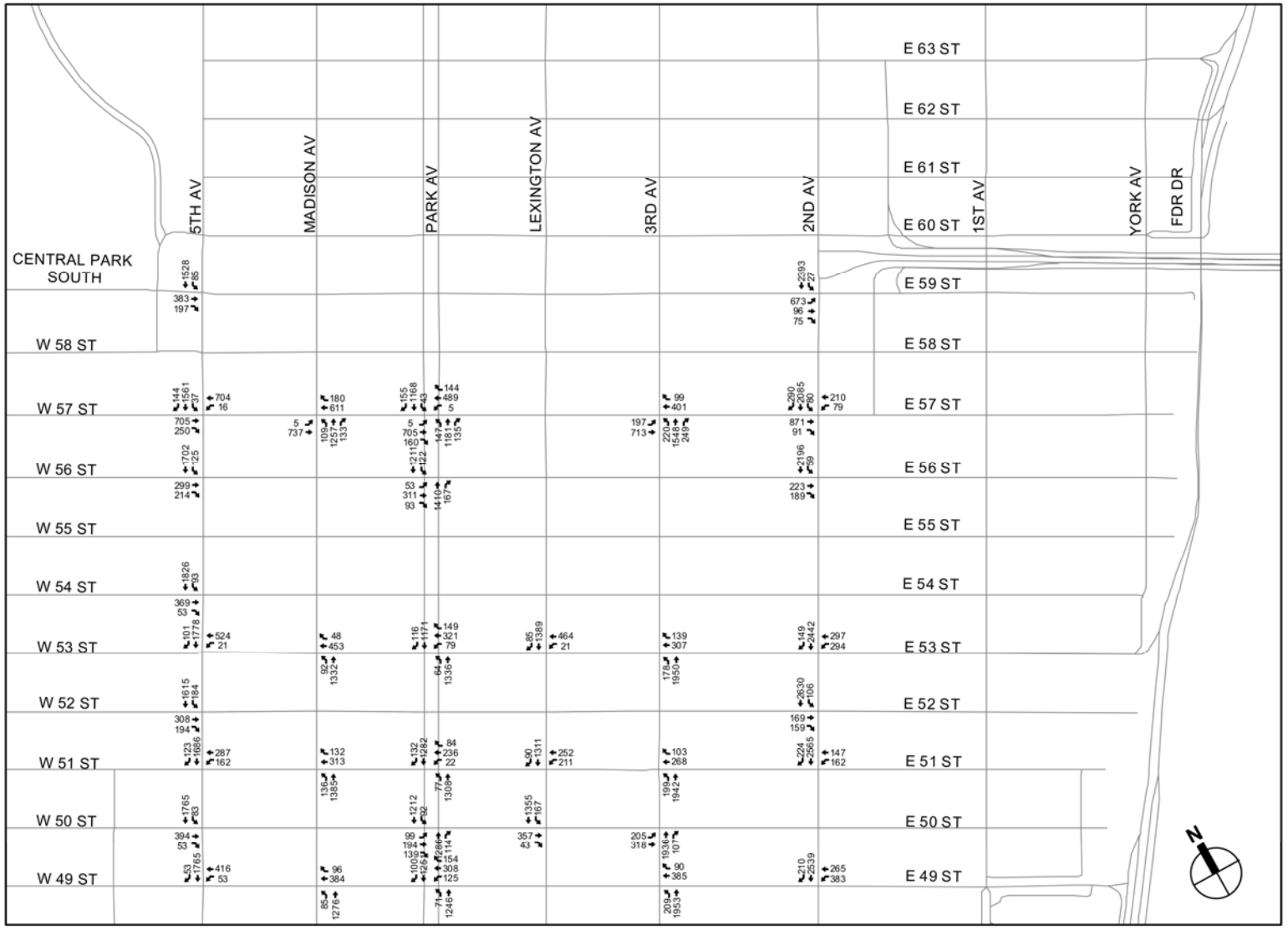
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-35: AM WITH-ACTION TRAFFIC VOLUMES (3 OF 3)



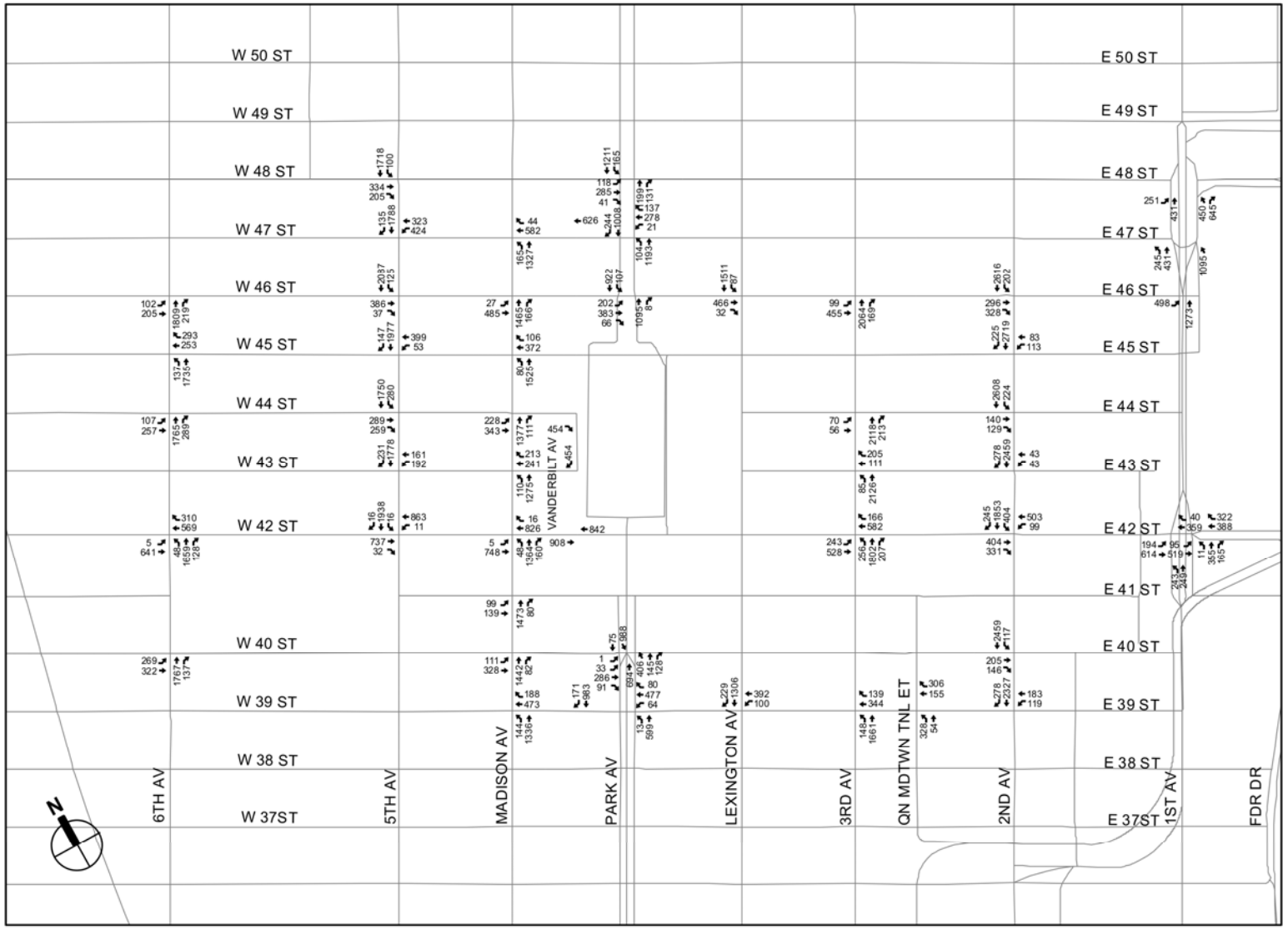
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-36: MIDDAY WITH-ACTION TRAFFIC VOLUMES (1 OF 3)



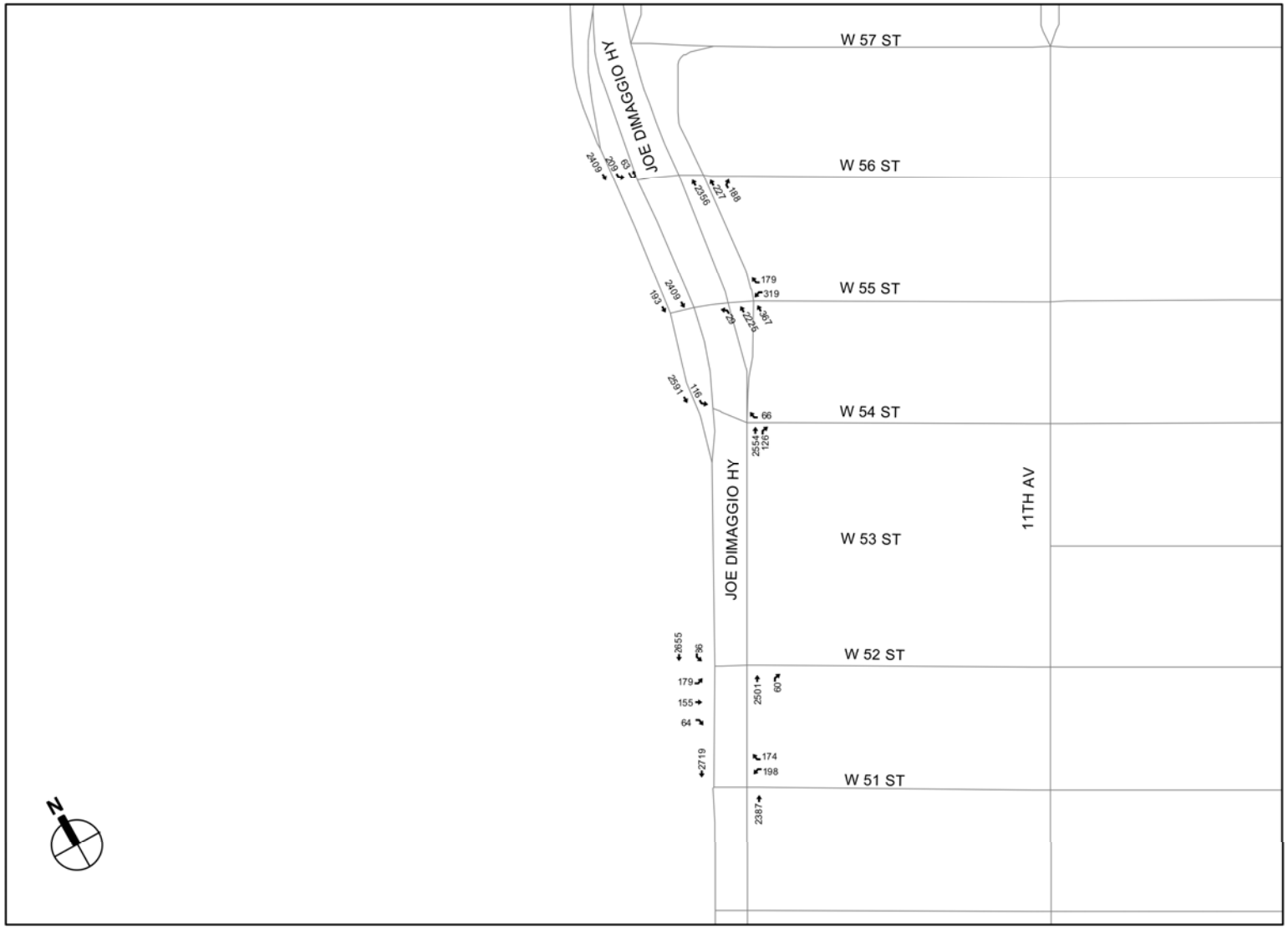
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-37: MIDDAY WITH-ACTION TRAFFIC VOLUMES (2 OF 3)



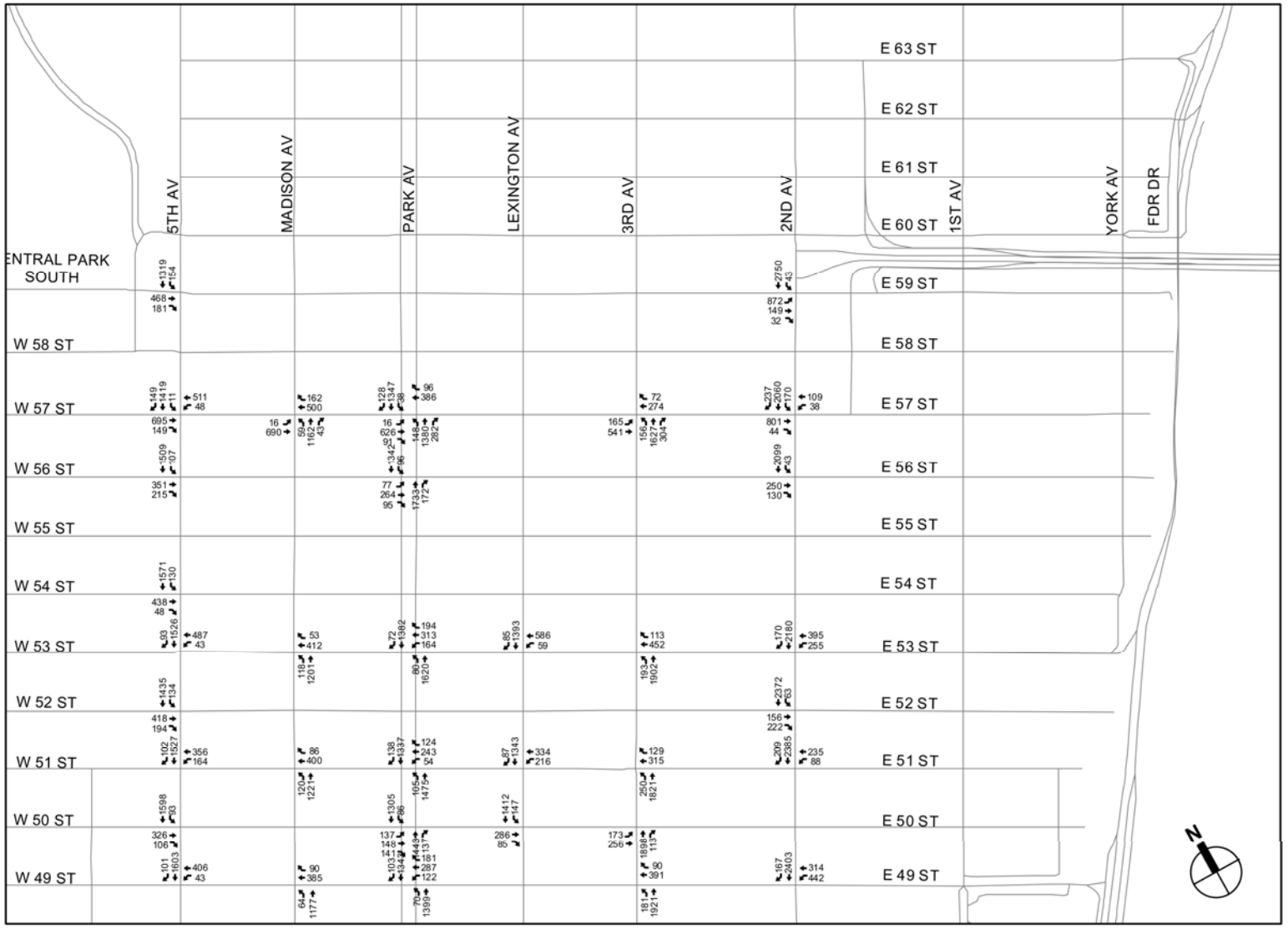
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-38: MIDDAY WITH-ACTION TRAFFIC VOLUMES (3 OF 3)



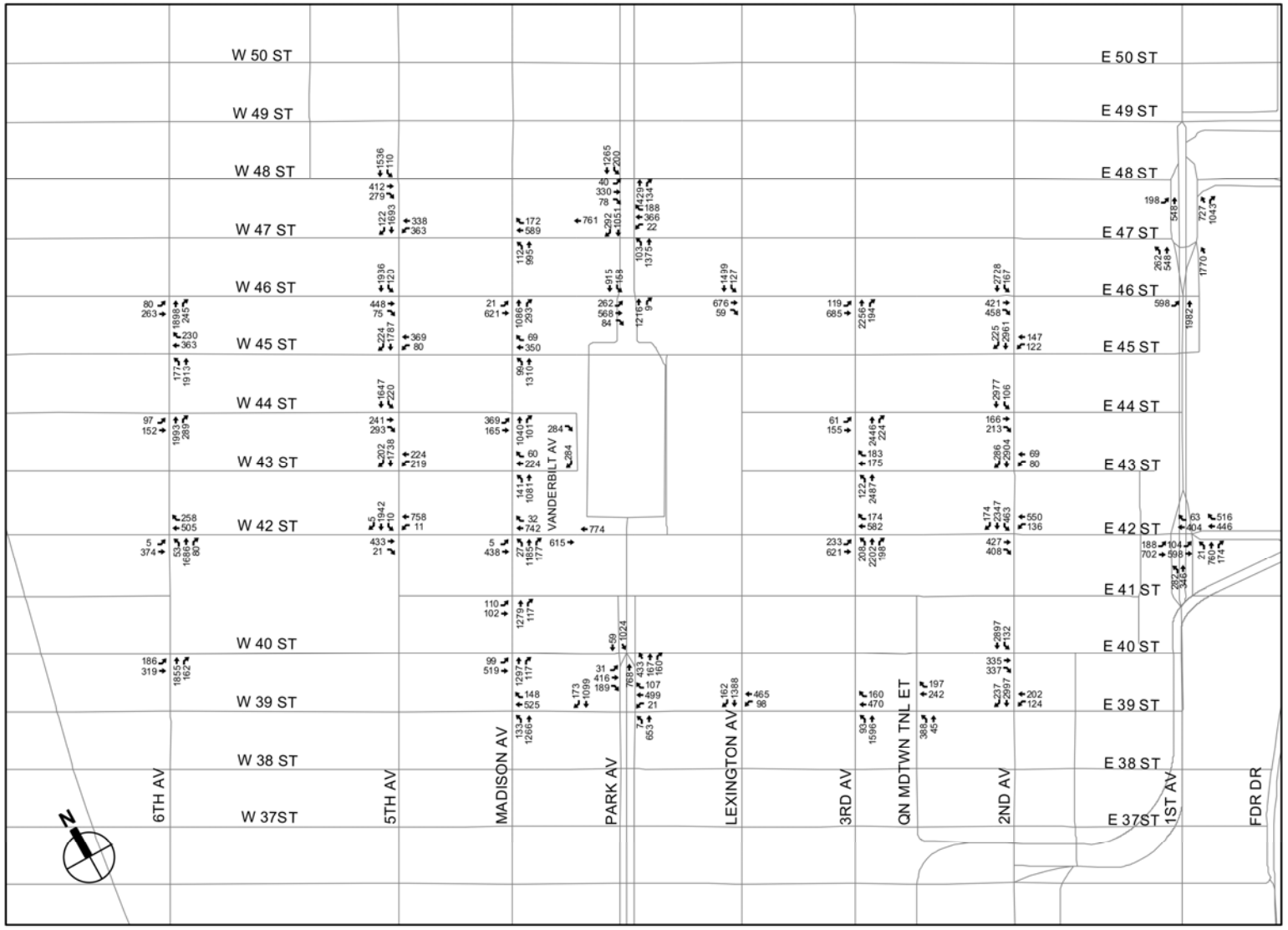
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-39: PM WITH-ACTION TRAFFIC VOLUMES (1 OF 3)



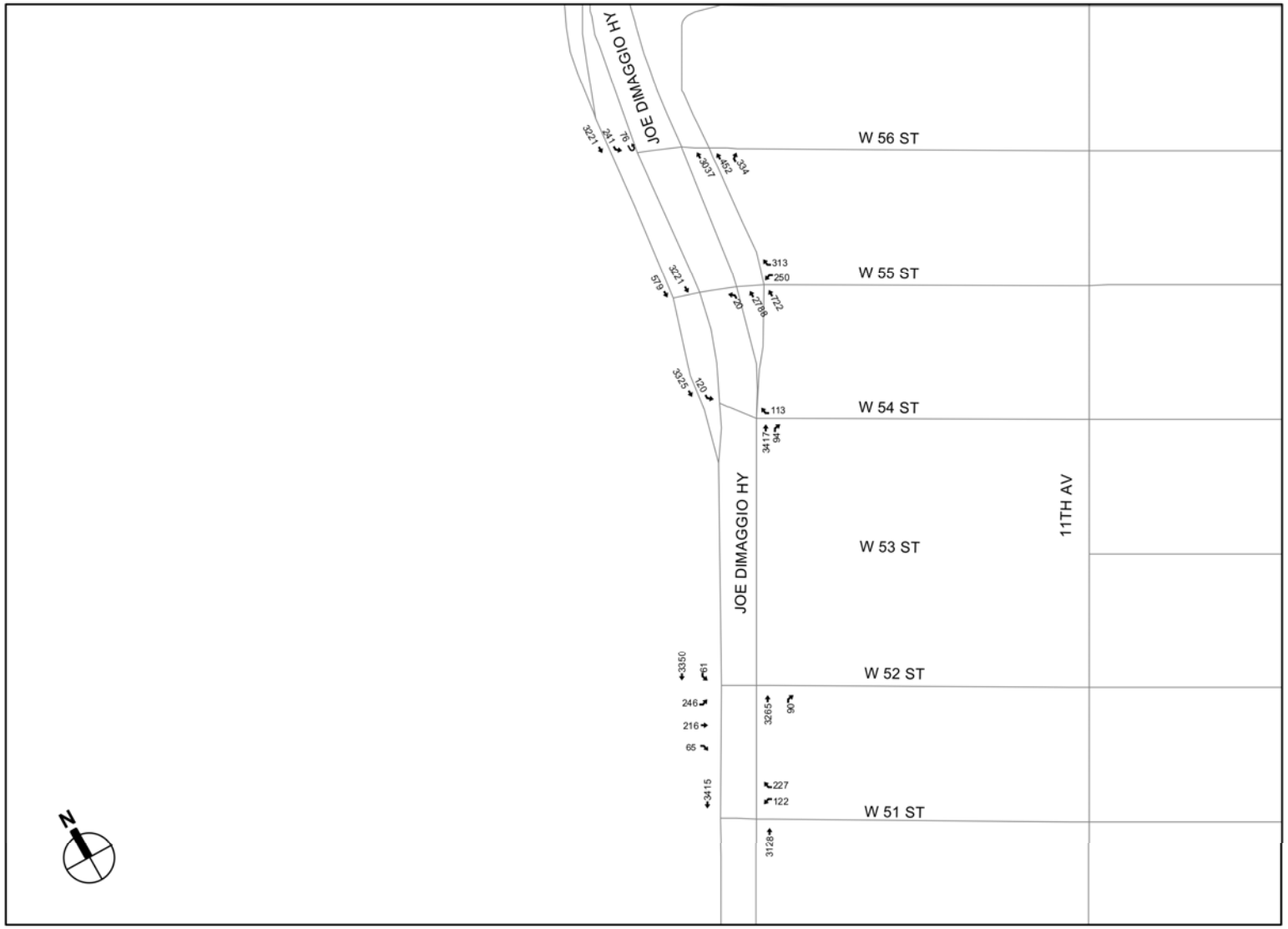
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-40: PM WITH-ACTION TRAFFIC VOLUMES (2 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-41: PM WITH-ACTION TRAFFIC VOLUMES (3 OF 3)



Source: Parsons Brinckerhoff, Inc., 2013

Table 12-25 summarizes LOS by approach movements at signalized and unsignalized intersections for future No-Action and With-Action conditions. The 90 intersections analyzed have a total of 965 movements (953 at signalized intersections and 12 at unsignalized intersections).[7] In the With-Action condition, 206 approach movements at signalized intersections would operate at LOS E or worse, compared to 172 approach movements for the No-Action condition, with 69 movements operating at LOS E and 137 movements operating at LOS F. There would also be 275 movements operating at a v/c ratio of 0.90 or above, compared to 240 for No-Action condition. At unsignalized intersections, two movements would operate at LOS E or worse, unchanged from the No-Action condition, with two movements operating at LOS F.

TABLE 12-25: SUMMARY OF NO-ACTION AND WITH-ACTION LEVEL OF SERVICE BY MOVEMENT

	2033 No-Action				2033 With-Action			
	Peak Hour				Peak Hour			
Level of Service (LOS)	AM	Midday	PM	Total	AM	Midday	PM	Total
Signalized Intersections								
Movements at LOS A/B/C	192	212	220	624	182	193	199	574
Movements at LOS D	57	58	54	169	54	62	57	173
Movements at LOS E	26	27	19	72	24	22	23	69
Movements at LOS F	50	17	33	100	61	33	43	137
TOTAL	**325**	**314**	**326**	**965**	**321**	**310**	**322**	**953**
Movements at v/c >= 0.90	91	71	78	240	101	84	90	275
Unsignalized Intersections								
Movements at LOS A/B/C	6	6	7	19	3	3	3	9
Movements at LOS D	0	0	0	0	0	0	1	1
Movements at LOS E	0	0	0	0	0	0	0	0
Movements at LOS F	1	1	0	2	1	1	0	2
TOTAL	**7**	**7**	**7**	**21**	**4**	**4**	**4**	**12**
Movements at v/c >= 0.90	1	1	0	2	1	1	0	2

Source: Parsons Brinckerhoff, Inc., 2013
Note: This table has been revised for the FEIS.

Table 12-26 through Table 12-28 provide details of individual intersections and movements that would operate at LOS E or worse and those with a v/c ratio of 0.90 or more in the No-Action and With-Action conditions; the tables present the v/c ratio, average delay, and LOS for each movement, as well as the movements that would be significantly impacted with the proposed project.

Table 12-29 summarizes the number of approach movements and intersections at which the proposed project would result in significant traffic impacts. In the With-Action condition, significant adverse impacts were identified at 55 approach movements at 42 intersections during the AM peak hour, 41 approach movements at 31 intersections in the Midday peak hour, and 46 approach movements at 33 intersections in the PM peak hour. Figure 12-42 through Figure 12-44 show the location of intersections were significant adverse impacts would occur during the weekday AM, Midday, and PM peak hours, respectively. Chapter 19, "Mitigation," discusses standard traffic engineering measures that could mitigate most of these significant adverse impacts.

[7] The number of movements decreased from 965 to 953 between the No-Action and With-Action conditions due to changes in the roadway network.

TABLE 12-26: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE AM PEAK HOUR

		No-Action 2033 - AM				With-Action 2033 - AM			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 42nd Street	EB	T (east)	1.08	85.4	F	T (east)	1.08	84.5	F
First Avenue @ East 42nd Street	EB	L (west)	0.99	95.5	F	L (west)	1.02	104.7	F
First Avenue @ East 42nd Street	EB	T (west)	1.24	149.9	F	T (west)	1.24	148.9	F
First Avenue @ East 42nd Street	NB	R (east)	0.91	41.6	D	R (east)	0.91	41.6	D
Second Avenue @ East 42nd Street	EB	R	1.84	425.3	F	R	1.86	434.1	F
Second Avenue @ East 42nd Street	WB	LT	1.14	111.3	F	LT	1.19	130.0	F
Second Avenue @ East 42nd Street	SB	L	1.36	195.6	F	L	1.36	196.3	F
Second Avenue @ East 44th Street	EB	TR	1.07	105.0	F	TR	1.13	124.5	F
Second Avenue @ East 45th Street	WB	LT	1.10	113.8	F	LT	1.12	120.8	F
Second Avenue @ East 46th Street	EB	R	1.16	138.6	F	R	1.16	140.2	F
Second Avenue @ East 46th Street	SB	LT	0.91	14.5	B	LT	0.92	15.4	B
Second Avenue @ East 49th Street	WB	L	1.14	126.4	F	L	1.18	142.4	F
Second Avenue @ East 49th Street	SB	T	0.89	17.5	B	T	0.91	18.3	B
Second Avenue @ East 51st Street	WB	LT	0.92	57.7	E	LT	0.92	58.2	E
Second Avenue @ East 52nd Street	EB	TR	1.07	98.7	F	TR	1.07	98.7	F
Second Avenue @ East 53rd Street	WB	LT	1.13	105.5	F	LT	1.13	106.5	F
Second Avenue @ East 57th Street	EB	T	1.11	109.7	F	T	1.11	110.4	F
Second Avenue @ East 57th Street	WB	LT	0.94	46.3	D	LT	0.94	46.3	D
Second Avenue @ East 59th Street	EB	T (bridge)	1.30	176.7	F	T (bridge)	1.31	182.9	F
Second Avenue @ East 59th Street	SB	L (bridge)	1.13	80.3	F	L (bridge)	1.13	80.3	F
Third Avenue @ East 42nd Street	EB	L	1.14	137.5	F	L	1.15	138.9	F
Third Avenue @ East 42nd Street	EB	T	1.19	127.9	F	T	1.20	129.2	F
Third Avenue @ East 42nd Street	WB	T	1.21	145.2	F	T	1.23	151.8	F
Third Avenue @ East 42nd Street	WB	R	1.10	138.2	F	R	1.14	149.4	F
Third Avenue @ East 42nd Street	NB	LT	0.89	29.1	C	LT	0.91	30.5	C
Third Avenue @ East 42nd Street	NB	R	1.39	237.3	F	R	1.41	245.5	F
Third Avenue @ East 46th Street	NB	TR	0.94	32.1	C	TR	0.95	34.0	C
Third Avenue @ East 49th Street	NB	LT	0.90	30.5	C	LT	0.93	32.6	C
Third Avenue @ East 51st Street	NB	LT	0.90	28.6	C	LT	0.92	30.3	C
Third Avenue @ East 53rd Street	WB	T	1.02	64.7	E	T	1.03	66.5	E
Third Avenue @ East 57th Street	EB	LT	0.93	43.0	D	LT	0.94	44.2	D
Third Avenue @ East 57th Street	WB	R	0.97	86.6	F	R	0.97	87.9	F
Third Avenue @ East 57th Street	NB	LTR	0.88	28.2	C	LTR	0.90	29.4	C
Lexington Avenue @ East 39th Street	WB	T	0.96	57.7	E	T	1.12	105.4	F
Lexington Avenue @ East 51st Street	WB	L	0.77	58.5	E	L	0.78	58.9	E

TABLE 12-26: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE AM PEAK HOUR (CONTINUED)

		No-Action 2033 - AM				With-Action 2033 - AM			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
Park Avenue @ West 39th Street	WB	LTR	1.18	127.1	F	LTR	1.34	193.4	F
Park Avenue @ West 39th Street	SB	TR	0.96	37.8	D	TR	0.96	38.5	D
Park Avenue @ West 40th Street	SB	T (Viaduct Exit)	1.14	95.5	F	T (Viaduct Exit)	1.14	95.5	F
Park Avenue @ West 47th Street	NB	T	0.98	44.1	D	T	0.99	45.8	D
Park Avenue @ West 48th Street	SB	T	1.03	55.1	E	T	1.04	58.3	E
Park Avenue @ West 49th Street	WB	LT	0.90	50.0	D	LT	1.06	86.2	F
Park Avenue @ West 49th Street	NB	T	0.96	39.2	D	T	0.98	42.1	D
Park Avenue @ West 50th Street	SB	T	1.06	64.4	E	T	1.07	66.6	E
Park Avenue @ West 51st Street	NB	T	0.92	31.9	C	T	0.95	35.1	D
Park Avenue @ West 51st Street	SB	TR	0.89	27.2	C	TR	0.90	27.5	C
Park Avenue @ West 53rd Street	WB	LTR	0.99	58.5	E	LTR	1.00	59.4	E
Park Avenue @ West 53rd Street	NB	T	0.96	36.8	D	T	0.99	41.6	D
Park Avenue @ West 56th Street	SB	T	1.07	63.9	E	T	1.07	65.3	E
Park Avenue @ West 57th Street	NB	TR	1.04	57.1	E	TR	1.06	64.5	E
Vanderbilt Avenue @ East 42nd Street	WB	T	0.92	37.6	D	T	0.93	39.4	D
Madison Avenue @ East 39th Street	WB	T	0.98	60.4	E	T	1.03	73.8	E
Madison Avenue @ East 39th Street	WB	R	0.81	71.9	E	R	1.19	167.7	F
Madison Avenue @ East 39th Street	NB	LT	0.90	24.5	C	LT	0.93	27.5	C
Madison Avenue @ East 40th Street	EB	L	0.62	52.2	D	L	0.74	61.3	E
Madison Avenue @ East 40th Street	EB	T	0.87	43.7	D	T	0.92	49.6	D
Madison Avenue @ East 40th Street	NB	TR	0.90	24.5	C	TR	0.95	30.0	C
Madison Avenue @ East 41st Street	NB	TR	0.87	20.6	C	TR	0.94	26.6	C
Madison Avenue @ East 42nd Street	WB	T	0.93	41.5	D	T	0.94	43.3	D
Madison Avenue @ East 42nd Street	NB	LT	1.17	104.4	F	LT	1.29	156.2	F
Madison Avenue @ East 43rd Street	NB	T	1.02	48.5	D	T	1.07	64.1	E
Madison Avenue @ East 44th Street	EB	LT	0.80	40.9	D	LT	1.26	170.1	F
Madison Avenue @ East 44th Street	NB	T	1.15	93.8	F	T	1.16	100.7	F
Madison Avenue @ East 44th Street	NB	R	1.02	107.6	F	R	1.72	388.6	F
Madison Avenue @ East 45th Street	NB	T	1.05	57.8	E	T	1.15	93.0	F
Madison Avenue @ East 46th Street	EB	LT	1.09	96.6	F	LT	1.25	158.5	F
Madison Avenue @ East 46th Street	NB	T	1.17	103.4	F	T	1.26	141.7	F
Madison Avenue @ East 47th Street	WB	T	0.80	35.7	D	T	1.26	159.6	F
Madison Avenue @ East 47th Street	NB	T	1.15	94.7	F	T	1.22	124.7	F
Madison Avenue @ East 49th Street	NB	T	1.08	66.7	E	T	1.12	83.8	F
Madison Avenue @ East 51st Street	NB	T	1.24	134.1	F	T	1.29	155.5	F
Madison Avenue @ East 53rd Street	NB	T	1.20	113.9	F	T	1.24	134.1	F
Madison Avenue @ East 57th Street	NB	T	1.01	43.9	D	T	1.05	56.5	E

TABLE 12-26: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE AM PEAK HOUR (CONTINUED)

		No-Action 2033 - AM				With-Action 2033 - AM			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
Fifth Avenue @ 42nd Street	WB	LT	1.01	58.6	E	LT	1.02	62.4	E
Fifth Avenue @ 42nd Street	SB	LT	1.16	96.3	F	LT	1.20	110.4	F
Fifth Avenue @ 43rd Street	SB	T	1.08	61.3	E	T	1.14	87.4	F
Fifth Avenue @ 43rd Street	SB	R	1.36	204.7	F	R	1.71	358.8	F
Fifth Avenue @ 44th Street	SB	LT	1.27	143.4	F	LT	1.47	233.1	F
Fifth Avenue @ 45th Street	SB	T	1.11	74.4	E	T	1.20	114.1	F
Fifth Avenue @ 46th Street	EB	TR	1.21	144.0	F	TR	1.29	177.3	F
Fifth Avenue @ 46th Street	SB	LT	1.27	140.9	F	LT	1.50	248.5	F
Fifth Avenue @ 47th Street	WB	L	0.73	52.9	D	L	1.76	395.3	F
Fifth Avenue @ 47th Street	SB	T	1.23	128.4	F	T	1.31	162.7	F
Fifth Avenue @ 48th Street	EB	R	1.13	142.2	F	R	1.13	142.2	F
Fifth Avenue @ 48th Street	SB	LT	1.28	151.2	F	LT	1.36	186.6	F
Fifth Avenue @ 49th Street	SB	T	1.07	59.7	E	T	1.12	79.2	E
Fifth Avenue @ 50th Street	SB	LT	1.15	89.5	F	LT	1.20	111.0	F
Fifth Avenue @ 51st Street	SB	T	1.15	94.6	F	T	1.20	117.4	F
Fifth Avenue @ 51st Street	SB	R	0.94	67.5	E	R	0.94	67.5	E
Fifth Avenue @ 52nd Street	EB	R	0.78	58.4	E	R	0.78	58.4	E
Fifth Avenue @ 52nd Street	SB	LT	1.35	179.8	F	LT	1.40	203.4	F
Fifth Avenue @ 53rd Street	SB	T	1.04	48.6	D	T	1.09	65.7	E
Fifth Avenue @ 54th Street	SB	LT	1.15	92.4	F	LT	1.20	112.9	F
Fifth Avenue @ 56th Street	SB	LT	1.22	122.4	F	LT	1.27	142.2	F
Fifth Avenue @ 57th Street	EB	R	0.96	68.0	E	R	0.97	69.4	E
Fifth Avenue @ 57th Street	WB	LT	0.92	42.4	D	LT	0.93	42.9	D
Fifth Avenue @ 57th Street	SB	LT	1.02	41.3	D	LT	1.06	55.0	E
Fifth Avenue @ 59th Street	EB	R	1.12	131.9	F	R	1.12	131.9	F
Fifth Avenue @ 59th Street	SB	LT	1.61	301.4	F	LT	1.69	336.5	F
Sixth Avenue @ West 40th Street	NB	TR	1.11	79.7	E	TR	1.15	96.3	F
Sixth Avenue @ West 42nd Street	WB	R	1.26	174.0	F	R	1.31	195.2	F
Route 9A @ West 51st Street	WB	L	0.43	60.4	E	L	0.43	60.4	E
Route 9A @ West 51st Street	WB	R	0.58	65.8	E	R	0.58	65.8	E
Route 9A @ West 52nd Street	EB	LTR	1.32	219.4	F	LTR	1.32	219.4	F
Route 9A @ West 52nd Street	NB	TR	0.98	43.0	D	TR	0.99	44.7	D
Route 9A @ West 52nd Street	SB	L	0.05	58.0	E	L	0.07	58.3	E
Route 9A @ West 54th Street	SB	L	0.53	55.9	E	L	0.53	55.9	E
Route 9A @ West 55th Street	WB	LT	0.83	83.2	F	LT	0.83	83.2	F
Route 9A @ West 55th Street	NB	L	0.31	79.7	E	L	0.31	79.7	E
Route 9A @ West 55th Street	SB	TR	0.99	38.1	D	TR	1.00	42.2	D
Route 9A @ West 56th Street	NB	T	1.09	88.6	F	T	1.10	93.1	F

		No-Action 2033 - AM				With-Action 2033 - AM			
Unsignalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 48th Street	EB	L	0.92	65.3	F	L	0.92	66.6	F

Note:
Shading denotes approach movement subject to significant adverse impact. No shading denotes movement with 55.0 or more seconds of delay, and/or a v/c ratio of 0.90 or higher, but not subject to significant adverse impact.

Source: Parsons Brinckerhoff, Inc., 2013
Note: This table has been revised for the FEIS.

TABLE 12-27: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE MIDDAY PEAK HOUR

		No-Action 2033 - MD				With-Action 2033 - MD			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 42nd Street	EB	LT (east)	0.96	54.8	D	LT (east)	0.97	58.0	E
First Avenue @ East 42nd Street	EB	L (west)	0.93	72.7	E	L (west)	0.93	73.8	E
First Avenue @ East 46th Street	EB	L	1.0	67.4	E	L	1.08	93.3	F
First Avenue @ East 48th Street	NB	R	0.89	31.5	C	R	0.94	38.0	D
Second Avenue @ East 42nd Street	EB	R	1.22	155.5	F	R	1.28	180.0	F
Second Avenue @ East 42nd Street	SB	L	0.90	41.6	D	L	0.93	47.8	D
Second Avenue @ East 42nd Street	SB	TR	1.01	41.2	D	TR	1.03	46.7	D
Second Avenue @ East 44th Street	EB	TR	0.95	72.1	E	TR	1.00	84.0	F
Second Avenue @ East 46th Street	EB	R	1.17	141.4	F	R	1.25	173.0	F
Second Avenue @ East 49th Street	WB	LT	1.03	77.0	E	LT	1.07	89.7	F
Second Avenue @ East 51st Street	SB	TR	0.89	16.6	B	TR	0.90	17.4	B
Second Avenue @ East 52nd Street	EB	TR	1.00	77.1	E	TR	1.00	77.1	E
Second Avenue @ East 57th Street	SB	TR	1.01	44.8	D	TR	1.03	49.9	D
Second Avenue @ East 59th Street	SB	L (bridge)	1.08	68.2	E	L (bridge)	1.08	68.2	E
Third Avenue @ East 42nd Street	EB	L	1.19	158.7	F	L	1.19	160.4	F
Third Avenue @ East 42nd Street	WB	T	0.95	59.8	E	T	0.96	61.3	E
Third Avenue @ East 42nd Street	WB	R	1.08	130.1	F	R	1.15	154.0	F
Third Avenue @ East 42nd Street	NB	LT	0.92	31.4	C	LT	0.94	33.3	C
Third Avenue @ East 44th Street	NB	R	0.92	62.7	E	R	0.96	71.4	E
Third Avenue @ East 46th Street	NB	TR	0.93	31.0	C	TR	0.95	33.7	C
Third Avenue @ East 49th Street	NB	LT	0.94	34.0	C	LT	0.97	38.1	D
Third Avenue @ East 51st Street	NB	LT	0.93	31.0	C	LT	0.96	34.8	C
Third Avenue @ East 53rd Street	NB	LT	0.91	29.1	C	LT	0.93	31.0	C
Third Avenue @ East 57th Street	EB	LT	1.06	71.4	E	LT	1.07	75.0	E
Third Avenue @ East 57th Street	NB	LTR	0.87	29.1	C	LTR	0.90	30.5	C
Third Avenue @ East 57th Street	NB	R	0.89	70.1	E	R	0.92	76.3	E
Lexington Avenue @ East 51st Street	WB	L	0.94	83.0	F	L	0.97	88.8	F
Park Avenue @ West 39th Street	WB	LTR	1.30	177.5	F	LTR	1.35	197.9	F
Park Avenue @ West 39th Street	SB	TR	0.88	28.4	C	TR	0.90	30.1	C
Park Avenue @ West 40th Street	SB	T (Viaduct Exit)	1.13	90.8	F	T (Viaduct Exit)	1.14	95.9	F
Park Avenue @ West 47th Street	NB	T	0.93	36.7	D	T	0.95	39.5	D
Park Avenue @ West 48th Street	SB	T	0.94	37.0	D	T	0.95	38.3	D
Park Avenue @ West 49th Street	WB	LT	0.96	59.5	E	LT	1.04	79.6	E
Park Avenue @ West 49th Street	NB	T	0.91	32.5	C	T	0.94	36.3	D
Park Avenue @ West 51st Street	NB	T	0.92	32.4	C	T	0.96	38.6	D
Park Avenue @ West 53rd Street	NB	T	0.90	28.0	C	T	0.93	32.1	C
Park Avenue @ West 57th Street	NB	TR	0.94	33.9	C	TR	0.98	40.7	D
Park Avenue @ West 57th Street	SB	TR	1.03	53.3	D	TR	1.03	54.4	D
Madison Avenue @ East 39th Street	WB	R	1.05	121.9	F	R	1.16	156.2	F
Madison Avenue @ East 41st Street	NB	TR	0.88	22.4	C	TR	0.90	24.2	C
Madison Avenue @ East 42nd Street	NB	LT	1.10	74.5	E	LT	1.14	90.8	F
Madison Avenue @ East 43rd Street	NB	T	0.97	34.8	C	T	0.99	40.3	D
Madison Avenue @ East 44th Street	EB	LT	0.97	64.5	E	LT	1.60	309.0	F
Madison Avenue @ East 44th Street	NB	T	1.08	65.5	E	T	1.12	83.4	F
Madison Avenue @ East 44th Street	NB	R	0.83	51.9	D	R	1.02	105.9	F
Madison Avenue @ East 45th Street	NB	T	1.02	47.0	D	T	1.17	100.4	F
Madison Avenue @ East 46th Street	EB	LT	0.91	48.8	D	LT	1.06	84.6	F
Madison Avenue @ East 46th Street	NB	T	1.14	90.5	F	T	1.22	122.7	F
Madison Avenue @ East 47th Street	WB	T	0.92	48.7	D	T	1.20	136.0	F
Madison Avenue @ East 47th Street	NB	L	0.52	24.9	C	L	1.61	334.6	F
Madison Avenue @ East 47th Street	NB	T	1.06	62.1	E	T	1.06	62.9	E

Note: This table has been revised for the FEIS.

TABLE 12-27: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE MIDDAY PEAK HOUR (CONTINUED)

		No-Action 2033 - MD				With-Action 2033 - MD			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
Madison Avenue @ East 49th Street	NB	T	0.96	33.0	C	T	0.98	37.1	D
Madison Avenue @ East 51st Street	WB	R	0.74	59.5	E	R	0.74	59.5	E
Madison Avenue @ East 51st Street	NB	T	1.08	66.5	E	T	1.10	75.1	E
Madison Avenue @ East 53rd Street	NB	T	1.00	41.0	D	T	1.02	46.6	D
Madison Avenue @ East 57th Street	NB	T	0.93	28.3	C	T	0.95	31.1	C
Fifth Avenue @ 42nd Street	WB	LT	1.00	57.5	E	LT	1.01	59.2	E
Fifth Avenue @ 42nd Street	SB	LT	0.98	32.4	C	LT	1.00	36.5	D
Fifth Avenue @ 43rd Street	SB	T	0.88	21.4	C	T	0.91	23.1	C
Fifth Avenue @ 43rd Street	SB	R	1.33	199.2	F	R	1.57	304.7	F
Fifth Avenue @ 44th Street	EB	R	0.90	56.3	E	R	0.94	65.5	E
Fifth Avenue @ 44th Street	SB	LT	1.00	37.0	D	LT	1.20	114.4	F
Fifth Avenue @ 45th Street	SB	T	0.91	23.5	C	T	1.02	43.1	D
Fifth Avenue @ 46th Street	EB	TR	0.86	43.4	D	TR	0.96	59.1	E
Fifth Avenue @ 46th Street	SB	LT	1.04	49.7	D	LT	1.20	112.5	F
Fifth Avenue @ 47th Street	WB	L	0.93	79.0	E	L	1.82	422.3	F
Fifth Avenue @ 47th Street	SB	T	0.98	36.6	D	T	1.02	46.1	D
Fifth Avenue @ 47th Street	SB	R	1.16	152.5	F	R	1.16	152.5	F
Fifth Avenue @ 48th Street	EB	R	0.91	80.3	F	R	1.05	115.2	F
Fifth Avenue @ 48th Street	SB	LT	1.04	51.9	D	LT	1.07	63.1	E
Fifth Avenue @ 49th Street	SB	T	0.88	21.4	C	T	0.91	23.3	C
Fifth Avenue @ 50th Street	SB	LT	0.94	26.4	C	LT	0.97	30.5	C
Fifth Avenue @ 51st Street	SB	T	0.93	28.8	C	T	0.96	32.6	C
Fifth Avenue @ 51st Street	SB	R	1.28	201.6	F	R	1.28	201.6	F
Fifth Avenue @ 52nd Street	EB	R	0.86	67.2	E	R	0.86	67.2	E
Fifth Avenue @ 52nd Street	SB	LT	1.09	70.1	E	LT	1.12	81.6	F
Fifth Avenue @ 53rd Street	SB	T	0.89	22.1	C	T	0.92	24.2	C
Fifth Avenue @ 54th Street	SB	LT	0.99	35.3	D	LT	1.02	41.8	D
Fifth Avenue @ 56th Street	SB	LT	0.97	31.5	C	LT	1.00	37.8	D
Fifth Avenue @ 57th Street	EB	R	0.91	59.5	E	R	0.91	59.5	E
Fifth Avenue @ 59th Street	EB	R	0.86	66.5	E	R	0.86	66.5	E
Fifth Avenue @ 59th Street	SB	LT	1.34	178.8	F	LT	1.39	198.1	F
Sixth Avenue @ West 40th Street	EB	LT	1.20	136.7	F	LT	1.26	159.7	F
Sixth Avenue @ West 40th Street	NB	TR	0.95	32.1	C	TR	0.96	33.8	C
Sixth Avenue @ West 42nd Street	WB	R	1.44	249.0	F	R	1.45	254.7	F
Sixth Avenue @ West 45th Street	WB	R	0.86	51.8	D	R	1.08	102.7	F
Route 9A @ West 52nd Street	SB	L	0.76	89.6	F	L	0.76	89.6	F
Route 9A @ West 55th Street	WB	LT	0.94	78.9	E	LT	0.94	78.9	E
Route 9A @ West 55th Street	NB	L	0.25	56.2	E	L	0.25	56.2	E
Route 9A @ West 56th Street-Service Rd	EB	T	0.71	58.6	E	T	0.72	58.9	E

		No-Action 2033 - MD				With-Action 2033 - MD			
Unsignalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 48th Street	EB	L	1.08	123.7	F	L	1.09	126.6	F

Note:
Shading denotes approach movement subject to significant adverse impact. No shading denotes movement with 55.0 or more seconds of delay, and/or a v/c ratio of 0.90 or higher, but not subject to significant adverse impact.

Source: Parsons Brinckerhoff, Inc., 2013
Note: This table has been revised for the FEIS.

TABLE 12-28: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE PM PEAK HOUR

		No-Action 2033 - PM				With-Action 2033 - PM			
Signalized Intersection	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
First Avenue @ East 42nd Street	EB	LT (east)	1.29	172.5	F	LT (east)	1.34	196.3	F
First Avenue @ East 42nd Street	EB	L (west)	1.08	120.9	F	L (west)	1.08	120.9	F
First Avenue @ East 42nd Street	WB	R (east)	0.90	59.7	E	R (east)	0.91	60.9	E
First Avenue @ East 42nd Street	NB	LT (east)	1.04	63.2	E	LT (east)	1.04	62.9	E
First Avenue @ East 46th Street	EB	L	0.95	55.1	E	L	1.15	116.2	F
First Avenue @ East 46th Street	NB	T	1.00	35.9	D	T	1.00	36.5	D
First Avenue @ East 47th Street	NB	TR (east)	1.19	109.5	F	TR (east)	1.26	141.2	F
First Avenue @ East 48th Street	NB	R	1.32	171.5	F	R	1.46	233.4	F
Second Avenue @ East 42nd Street	EB	R	1.95	472.5	F	R	2.00	493.1	F
Second Avenue @ East 42nd Street	WB	LT	1.13	105.7	F	LT	1.12	104.0	F
Second Avenue @ East 42nd Street	SB	L	1.04	73.3	E	L	1.14	106.1	F
Second Avenue @ East 42nd Street	SB	T	0.97	31.6	C	T	0.98	34.1	C
Second Avenue @ East 44th Street	EB	TR	1.33	200.1	F	TR	1.37	216.8	F
Second Avenue @ East 45th Street	WB	LT	0.91	62.8	E	LT	0.91	62.2	E
Second Avenue @ East 46th Street	EB	T	0.71	36.8	D	T	0.92	55.6	E
Second Avenue @ East 46th Street	EB	R	1.23	157.7	F	R	1.40	227.0	F
Second Avenue @ East 49th Street	WB	L	1.18	135.9	F	L	1.21	148.0	F
Second Avenue @ East 52nd Street	EB	TR	1.17	134.5	F	TR	1.17	134.5	F
Second Avenue @ East 53rd Street	WB	LT	0.91	47.3	D	LT	0.91	47.3	D
Second Avenue @ East 59th Street	EB	T (bridge)	0.96	50.5	D	T (bridge)	0.97	51.3	D
Second Avenue @ East 59th Street	SB	L (bridge)	1.24	130.5	F	L (bridge)	1.24	130.5	F
Third Avenue @ East 42nd Street	EB	L	1.20	163.9	F	L	1.20	163.9	F
Third Avenue @ East 42nd Street	EB	T	1.00	60.9	E	T	1.01	63.2	E
Third Avenue @ East 42nd Street	WB	T	0.95	60.1	E	T	0.96	61.3	E
Third Avenue @ East 42nd Street	WB	R	1.05	119.1	F	R	1.10	132.1	F
Third Avenue @ East 42nd Street	NB	LT	1.02	47.7	D	LT	1.03	51.8	D
Third Avenue @ East 42nd Street	NB	R	0.98	82.4	F	R	1.00	88.7	F
Lexington Avenue @ East 39th Street	WB	T	0.91	48.5	D	T	0.93	50.3	D
Lexington Avenue @ East 50th Street	SB	LT	0.87	21.4	C	LT	0.91	23.8	C
Lexington Avenue @ East 51st Street	WB	T	1.02	87.5	F	T	1.03	89.9	F
Park Avenue @ West 39th Street	WB	LTR	1.18	124.6	F	LTR	1.21	137.6	F
Park Avenue @ West 39th Street	SB	TR	0.93	33.9	C	TR	1.00	47.1	D
Park Avenue @ West 40th Street	EB	LT	0.81	39.8	D	LT	0.96	59.1	E
Park Avenue @ West 40th Street	NB	T (Tunnel Exit)	0.98	46.7	D	T (Tunnel Exit)	0.98	46.7	D
Park Avenue @ West 40th Street	SB	T (Viaduct Exit)	1.14	96.3	F	T (Viaduct Exit)	1.18	112.6	F

TABLE 12-28: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE PM PEAK HOUR (CONTINUED)

		No-Action 2033 - PM				With-Action 2033 - PM			
Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
Park Avenue @ West 47th Street	NB	T	1.04	59.7	E	T	1.09	76.5	E
Park Avenue @ West 48th Street	SB	T	0.97	41.5	D	T	0.97	42.3	D
Park Avenue @ West 49th Street	WB	LT	0.92	51.4	D	LT	0.97	61.4	E
Park Avenue @ West 49th Street	NB	T	1.00	47.9	D	T	1.05	61.3	E
Park Avenue @ West 50th Street	SB	T	0.96	38.3	D	T	0.96	38.4	D
Park Avenue @ West 51st Street	NB	T	1.02	52.4	D	T	1.08	70.2	E
Park Avenue @ West 53rd Street	WB	LTR	0.90	42.6	D	LTR	0.90	42.9	D
Park Avenue @ West 53rd Street	NB	T	1.08	69.5	E	T	1.13	90.2	F
Park Avenue @ West 56th Street	NB	TR	0.92	27.3	C	TR	0.95	31.5	C
Park Avenue @ West 56th Street	SB	T	0.91	28.1	C	T	0.91	28.2	C
Park Avenue @ West 57th Street	NB	TR	1.14	94.5	F	TR	1.20	119.4	F
Park Avenue @ West 57th Street	SB	TR	1.14	95.1	F	TR	1.14	95.7	F
Madison Avenue @ East 39th Street	WB	T	0.91	46.0	D	T	0.96	55.1	E
Madison Avenue @ East 39th Street	WB	R	0.81	68.0	E	R	0.86	76.0	E
Madison Avenue @ East 40th Street	EB	T	0.78	34.4	C	T	1.01	68.5	E
Madison Avenue @ East 42nd Street	NB	LT	0.92	27.7	C	LT	0.96	33.4	C
Madison Avenue @ East 44th Street	EB	LT	1.11	110.0	F	LT	1.87	433.0	F
Madison Avenue @ East 44th Street	NB	R	1.53	320.7	F	R	1.66	376.8	F
Madison Avenue @ East 45th Street	NB	T	0.92	27.4	C	T	1.04	53.8	D
Madison Avenue @ East 46th Street	EB	LT	0.88	44.0	D	LT	1.27	164.6	F
Madison Avenue @ East 46th Street	NB	R	0.80	46.6	D	R	1.82	414.9	F
Madison Avenue @ East 47th Street	WB	T	0.78	34.3	C	T	1.19	131.8	F
Madison Avenue @ East 47th Street	WB	R	0.58	46.8	D	R	0.88	74.7	E
Madison Avenue @ East 49th Street	NB	T	0.90	26.2	C	T	0.96	33.0	C
Madison Avenue @ East 51st Street	NB	T	0.99	41.1	D	T	1.04	55.6	E
Madison Avenue @ East 53rd Street	NB	T	0.93	29.2	C	T	0.98	38.1	D
Madison Avenue @ East 57th Street	NB	T	0.86	22.2	C	T	0.90	25.6	C
Fifth Avenue @ 42nd Street	SB	LT	0.99	34.7	C	LT	1.03	46.4	D
Fifth Avenue @ 43rd Street	SB	T	0.91	23.6	C	T	0.93	25.4	C
Fifth Avenue @ 43rd Street	SB	R	1.33	200.7	F	R	1.31	195.7	F
Fifth Avenue @ 44th Street	EB	R	1.10	109.8	F	R	1.17	135.6	F
Fifth Avenue @ 44th Street	SB	LT	1.01	40.6	D	LT	1.13	82.0	F
Fifth Avenue @ 45th Street	SB	T	0.90	22.8	C	T	0.96	30.2	C

TABLE 12-28: NO-ACTION AND WITH-ACTION INTERSECTIONS WITH LOS E/F OR V/C ≥ 0.90 IN THE PM PEAK HOUR (CONTINUED)

		No-Action 2033 - PM				With-Action 2033 - PM			
Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
Fifth Avenue @ 46th Street	EB	TR	1.00	68.8	E	TR	1.18	128.7	F
Fifth Avenue @ 46th Street	SB	LT	1.00	37.0	D	LT	1.16	96.9	F
Fifth Avenue @ 47th Street	WB	L	0.76	56.0	E	L	1.59	322.6	F
Fifth Avenue @ 47th Street	SB	T	0.96	33.7	C	T	1.01	44.1	D
Fifth Avenue @ 47th Street	SB	R	1.05	115.6	F	R	1.06	118.5	F
Fifth Avenue @ 48th Street	EB	R	1.11	130.8	F	R	1.34	219.0	F
Fifth Avenue @ 48th Street	SB	LT	1.00	42.5	D	LT	1.03	50.4	D
Fifth Avenue @ 50th Street	SB	LT	0.90	22.9	C	LT	0.92	24.8	C
Fifth Avenue @ 51st Street	SB	T	0.87	24.7	C	T	0.90	26.4	C
Fifth Avenue @ 51st Street	SB	R	1.19	174.6	F	R	1.19	174.6	F
Fifth Avenue @ 52nd Street	EB	R	0.86	67.2	E	R	0.86	67.2	E
Fifth Avenue @ 52nd Street	SB	LT	0.98	36.9	D	LT	1.00	42.8	D
Fifth Avenue @ 54th Street	SB	LT	0.93	25.4	C	LT	0.95	28.2	C
Fifth Avenue @ 56th Street	SB	LT	0.90	23.5	C	LT	0.93	25.7	C
Fifth Avenue @ 59th Street	EB	R	0.79	58.5	E	R	0.79	58.5	E
Fifth Avenue @ 59th Street	SB	LT	1.31	166.9	F	LT	1.35	183.5	F
Sixth Avenue @ West 40th Street	NB	R	1.37	232.0	F	R	1.40	245.2	F
Sixth Avenue @ West 42nd Street	WB	R	1.22	162.6	F	R	1.25	173.2	F
Sixth Avenue @ West 44th Street	NB	R	1.17	125.6	F	R	1.22	142.2	F
Sixth Avenue @ West 46th Street	NB	R	0.71	32.0	C	R	0.91	54.7	D
Route 9A @ West 51st Street	WB	L	0.53	63.8	E	L	0.53	63.8	E
Route 9A @ West 51st Street	WB	R	0.90	94.4	F	R	0.91	95.8	F
Route 9A @ West 52nd Street	EB	LTR	0.98	93.7	F	LTR	0.98	93.7	F
Route 9A @ West 52nd Street	NB	TR	0.99	40.8	D	TR	1.00	45.1	D
Route 9A @ West 52nd Street	SB	L	0.45	74.3	E	L	0.44	74.0	E
Route 9A @ West 54th Street	NB	TR	0.89	20.5	C	TR	0.90	21.5	C
Route 9A @ West 55th Street	WB	LT	0.94	100.7	F	LT	0.94	100.7	F
Route 9A @ West 55th Street	WB	R	0.68	63.7	E	R	0.69	64.2	E
Route 9A @ West 55th Street	NB	L	0.21	71.0	E	L	0.21	71.0	E
Route 9A @ West 55th Street	SB	TR	0.92	29.6	C	TR	0.93	30.5	C
Route 9A @ West 56th Street-Service Rd	EB	T	0.65	60.4	E	T	0.65	60.4	E

Note:
Shading denotes approach movement subject to significant adverse impact. No shading denotes movement with 55.0 or more seconds of delay, and/or a v/c ratio of 0.90 or higher, but not subject to significant adverse impact.

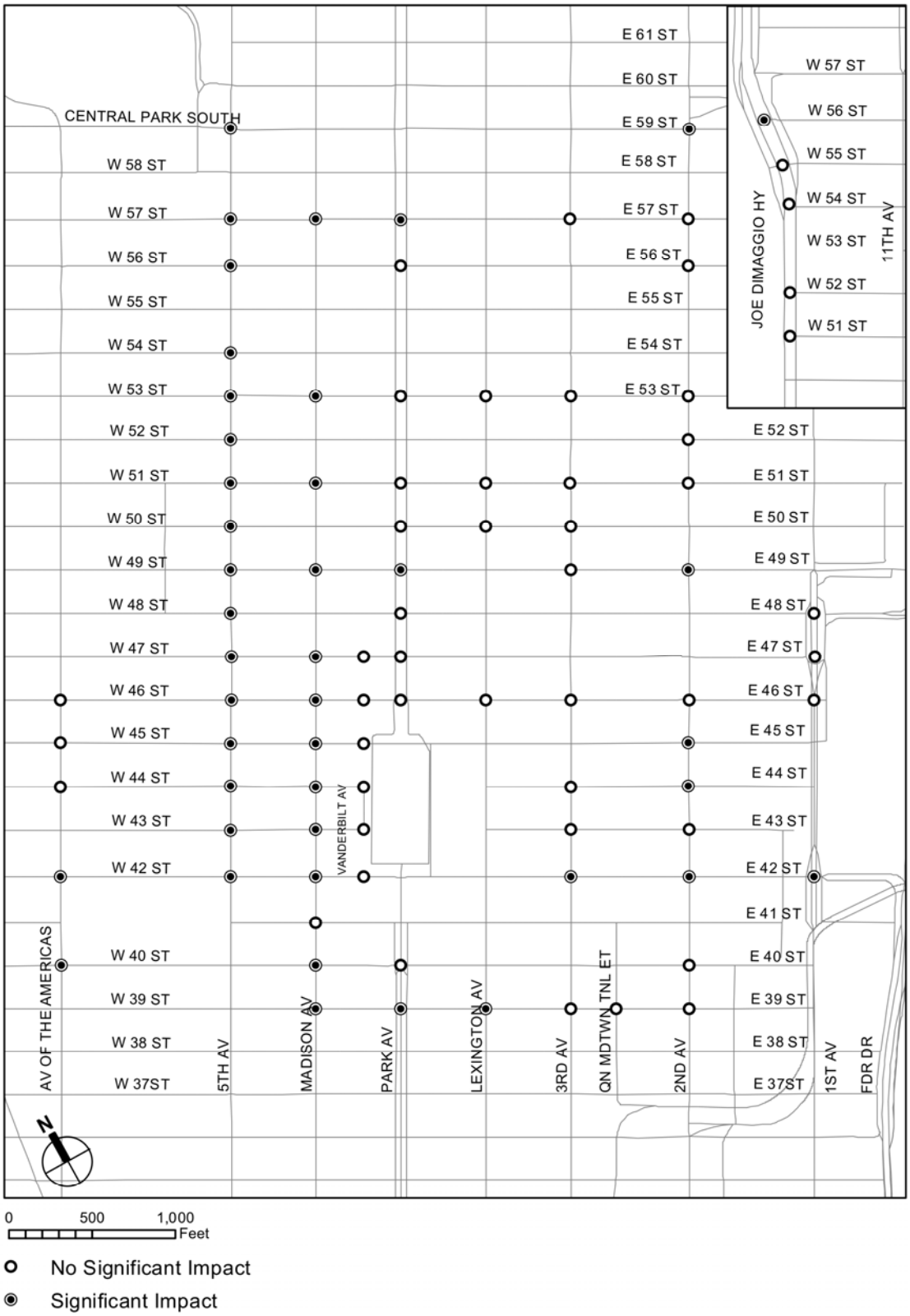
Source: Parsons Brinckerhoff, Inc., 2013
Note: This table has been revised for the FEIS.

TABLE 12-29: SUMMARY OF APPROACH MOVEMENTS AND INTERSECTIONS WITH SIGNIFICANT IMPACTS WITH THE PROPOSED ACTION

Locations with Significant Impacts	Peak Hour		
	AM	Midday	PM
Approach Movements	55	41	46
Intersections	42	31	33

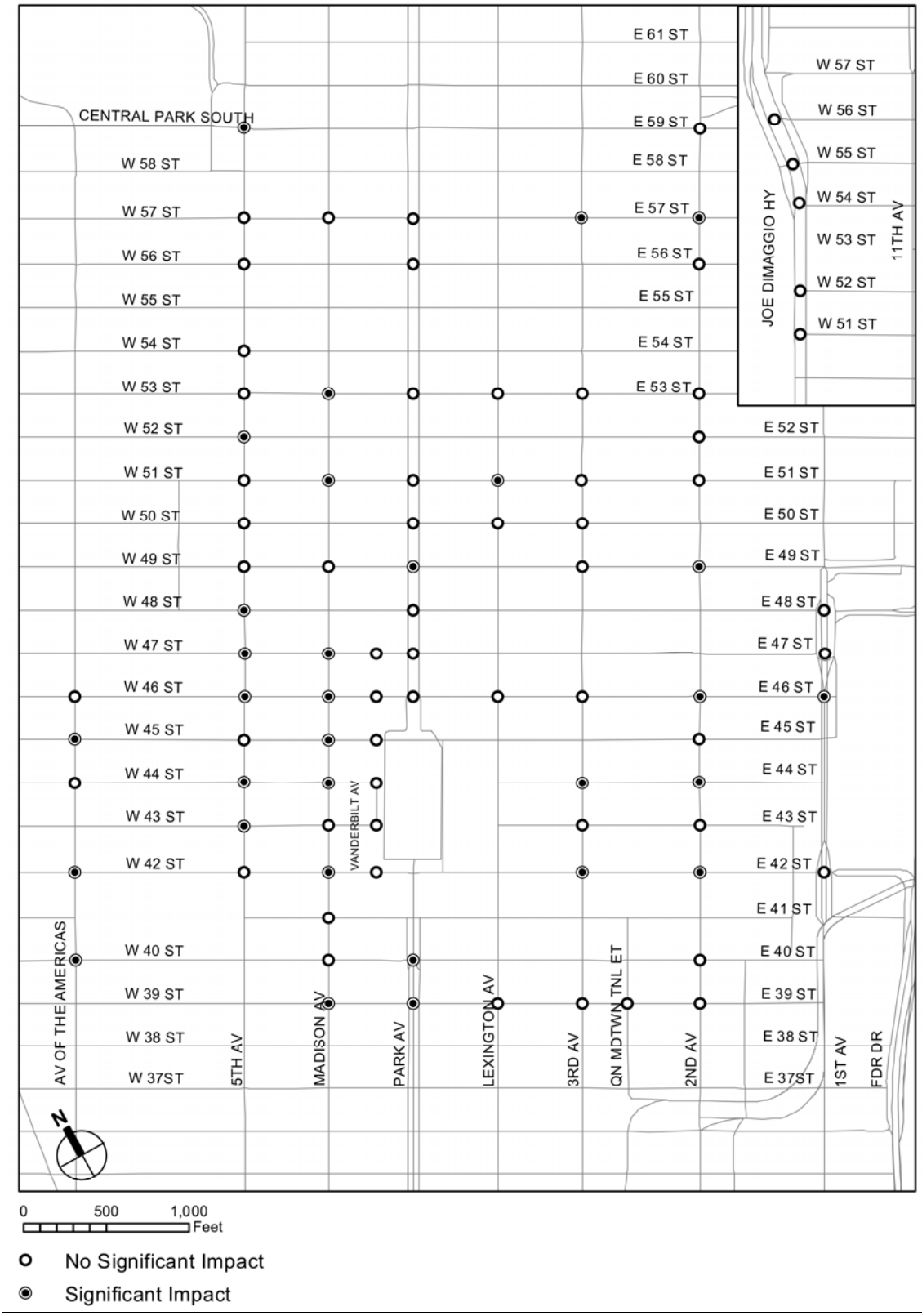
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-42: AM IMPACTED INTERSECTIONS



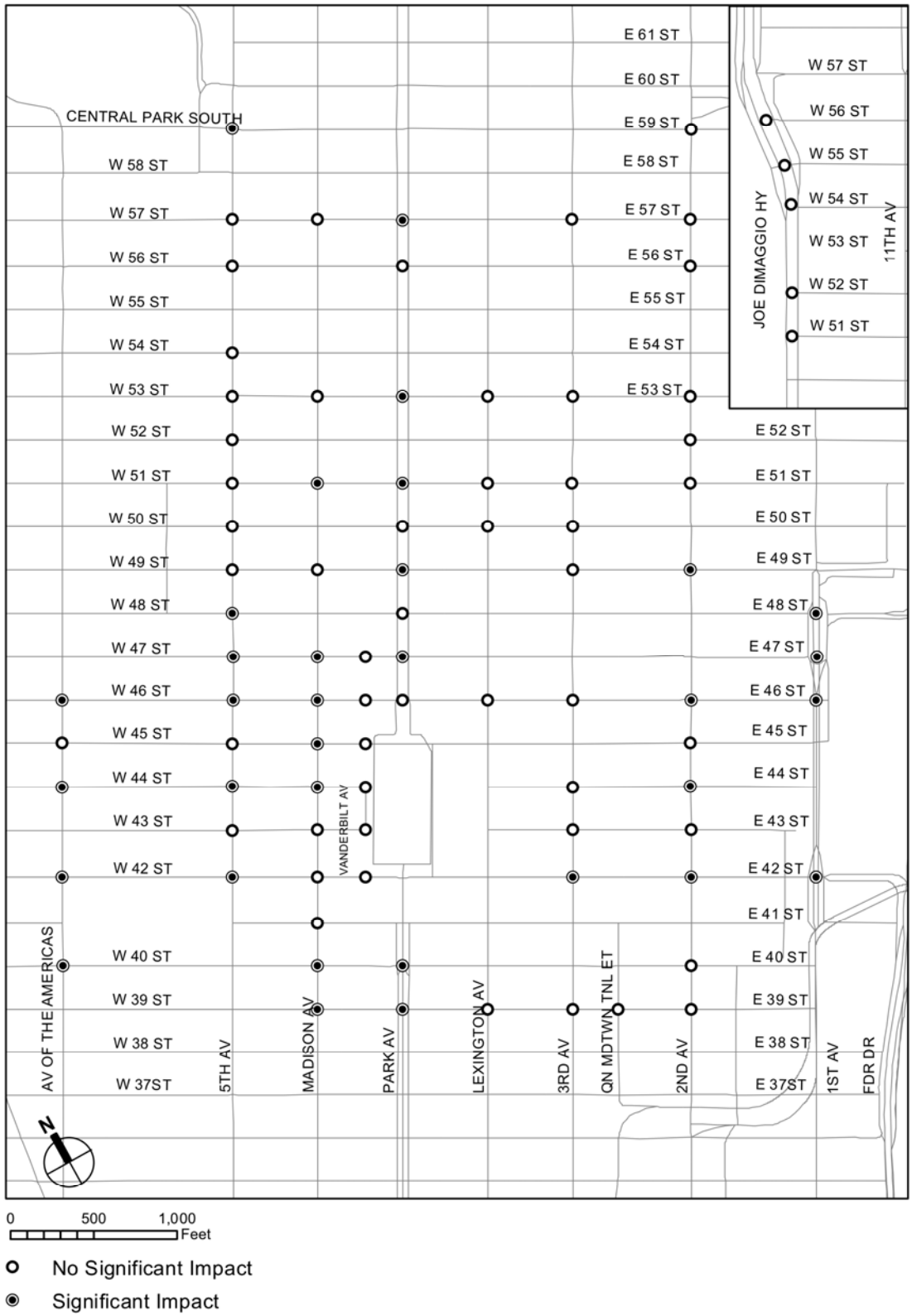
Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-43: MIDDAY IMPACTED INTERSECTIONS



Source: Parsons Brinckerhoff, Inc., 2013

FIGURE 12-44: PM IMPACTED INTERSECTIONS



Source: Parsons Brinckerhoff, Inc., 2013

12.8 TRANSIT

12.8.1 Existing Conditions

12.8.1.1 Subway Stations

As discussed in Section 12.5, "Level 2 Screening Assessment," project-generated trips at four subway stations/station complexes are expected to exceed the 200-trip *CEQR Technical Manual* analysis threshold in the weekday AM and/or PM peak hours. As shown in Table 12-9, these are:

- Grand Central-42nd Street
- 42nd St-Bryant Park/5th Avenue
- 47-50 Streets-Rockefeller Center
- 51st Street/Lexington Avenue-53rd Street

a. Grand Central-42nd Street

The Grand Central-42nd Street subway station complex is served by No. 4 and No. 5 express trains and No. 6 local trains operating along the Lexington Avenue Line. In addition, it is served by No. 7 express and local trains operating on the Flushing Line and S trains on the Grand Central Shuttle Line.

Lexington Line (4, 5, 6)

As shown is Figure 12-45, the Lexington Line platform is accessed primarily via Mezzanine A/B with several fare array areas (R238, R238A, R237, R237A, R237B and R240). Fare array areas have associated stairs to the street level and are configured as follows:

- The R238 fare array area has 15 turnstiles and connects via the M7 stair, escalators ES255 and ES256, and ADA elevator E204 to Grand Central Terminal on the north side of East 42nd Street between Park and Lexington Avenues. To the west of R238 is fare array area R238A, which has two high entry/exit turnstiles, and serves the unpaid shuttle passageway and M5 stair.
- At the south end of Mezzanine A/B is fare array area R237, which has seven turnstiles, and is served by stair O17 that leads to a street exit on the east side of Park Avenue south of East 42nd Street. Fare array area R237 is also served by stair MB2 that leads to the south side of East 42nd Street between Park and Lexington Avenues through the Bowery Savings Bank.
- Fare array area R237A is northeast of R237 and has one high exit turnstile that leads to the Bowery Savings Bank on the south side of East 42nd Street. East of fare array R237A is R237B, which consists of four turnstiles, and leads to the street through the Channin Building which is on the south side of East 42nd Street.

- At the north end of Mezzanine A/B is fare array area R240, which has eleven turnstiles, and connects to Grand Central Terminal via stair M8. It also connects to the Chrysler Building via stair O27 and to Lexington Avenue north of East 42nd Street via stair M9.

Two island platforms serve the uptown and downtown express and local tracks and are located on a level below Mezzanine A/B. Five stairways (P12, P14, P18, P20 and P22) connect the mezzanine to the southbound platform, and six stairways (P13, P15, P17, P19, P21 and P23) connect the mezzanine to the northbound platform.

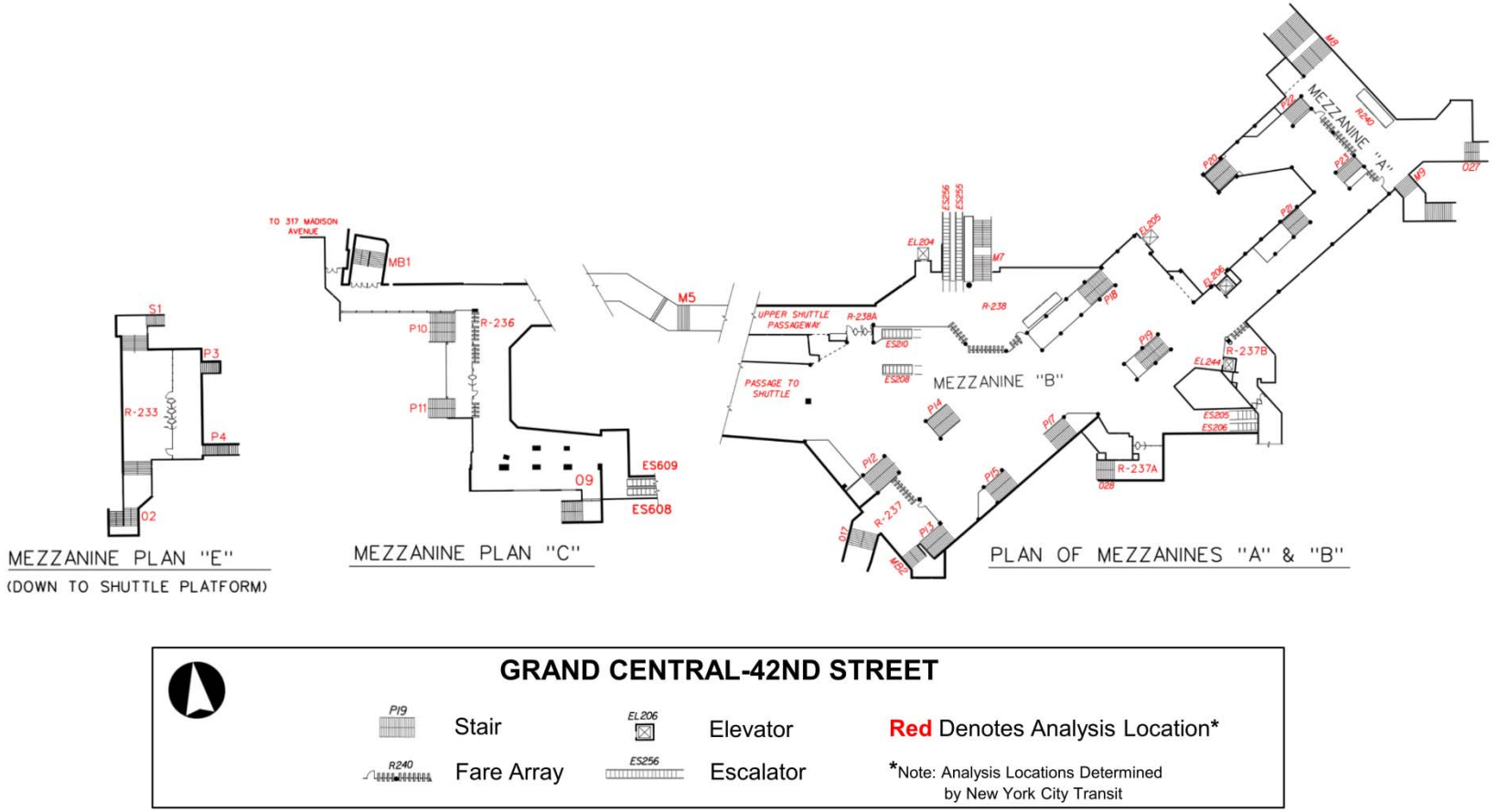
Flushing Line (7)

The Flushing Line platform is located underneath East 42nd Street, centered beneath Lexington Avenue and below the diagonal Lexington Line island platforms. As shown in Figure 12-46, the platform is served by three main vertical circulation cores: one at the western end, one in the center and one at the eastern end of the platform.

The western and center vertical circulation cores connect to Lexington Line Mezzanine A/B, and the third core, at the east end of the platform which connects to the street level. These circulation cores are configured as follows:

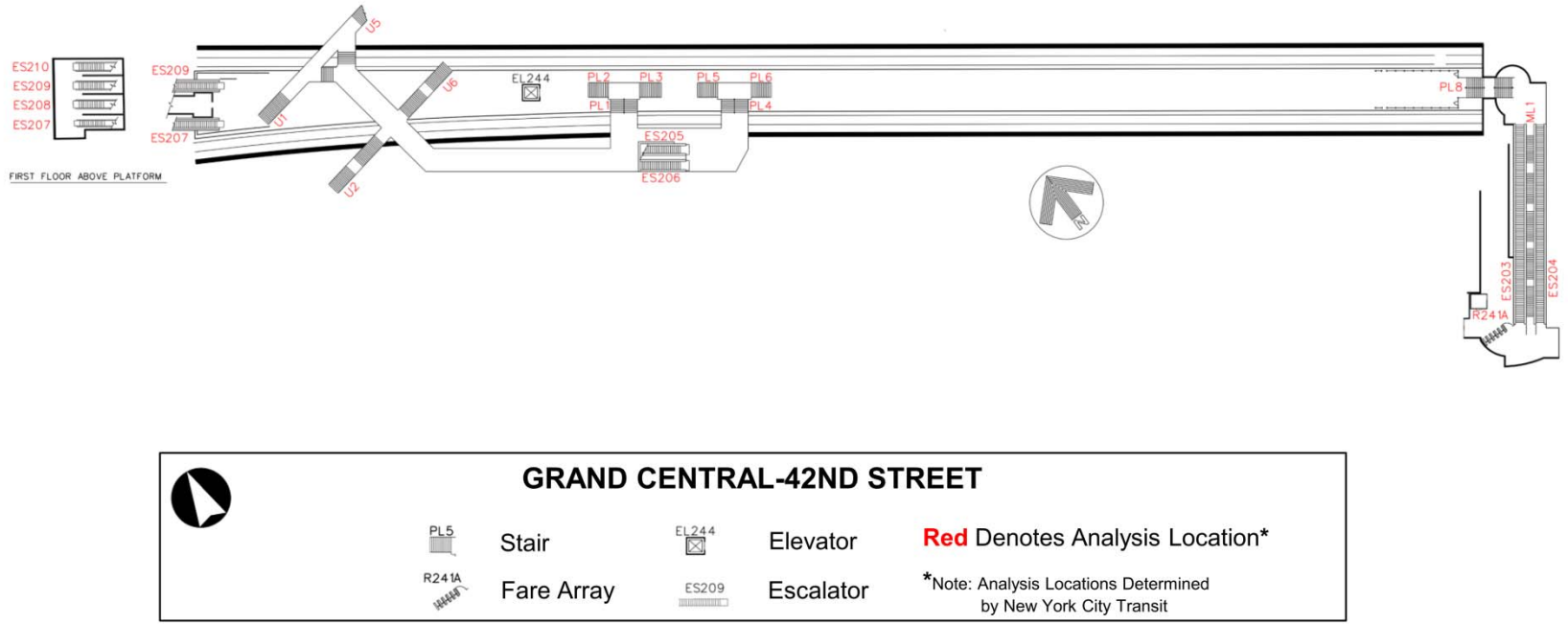
- At the western end of the platform are two switchback escalators (E207-8 and E209-10) that connect to the platform and Lexington Line Mezzanine A/B.
- The east end of the platform, stair PL8-9 leads to two escalators (ES203 and ES204) and then to a five-flight stair (ML1-5) up to fare array area R241A (Third Avenue core). Fare array area R241A, which has five turnstiles, is located at street level on the south side of East 42nd Street between Lexington and Third Avenues.
- At the center of the platform, there are two sets of splayed stairs (PL2 and PL3 feed PL1, and PL5 and PL6 feed PL 4) that lead to a lower mezzanine that has two escalators (ES205 and ES206) extending to Lexington Line Mezzanine A/B. The lower mezzanine also connects to the Flushing passageway that extends west below the Lexington Line island platforms. Stairs U1 and U5 connect from the Flushing passageway up to the southbound Lexington Line platform, and stairs U2 and U6 connect up to the northbound Lexington Line platform.

FIGURE 12-45: GRAND CENTRAL-42ND STREET SUBWAY STATION COMPLEX – LEXINGTON AVENUE LINE AND SHUTTLE MEZZANINE



Source: New York City Transit, 2013

FIGURE 12-46: GRAND CENTRAL-42ND STREET SUBWAY STATION COMPLEX – FLUSHING LINE



Source: New York City Transit, 2013

Shuttle Line (S)

The Shuttle Line platform area is underneath East 42nd Street primarily between Vanderbilt and Madison Avenues. It is comprised of two island platforms that join at its eastern end. This wide platform area connects to a paid zone passageway leading to Lexington Line Mezzanine A/B. There are also connections to the street as follows.

- The eastern end of the platform area also connects to stairs P10 and P11 that lead up to fare array area R236, which has 12 turnstiles and one high exit turnstile. At the south end of fare array area R236, there is a stair (O9) in One Grand Central Place that connects to street level on the south side of East 42nd Street between Madison and Park Avenues. Also at the south end of fare array area R236, there are two escalators (ES608 and ES609) that lead to street level at the southwest corner of East 42nd Street and Park Avenue. At the north end of the R236, there is a passageway that leads into 317 Madison Avenue and stair (MB1) that leads to street level in the building at 51 East 42nd Street. In addition, the north end of R236 connects to Grand Central Terminal and the shuttle unpaid passageway (leading to R238A and the Lexington Line Mezzanine A/B). See Figure 12-45, Mezzanine Plan "C."
- At the west end of the two Shuttle platforms, the northern platform is connected to fare array area R233 by stair P3 and the southern platform is connected to R233 by P4. Fare array area R233 has two high entry/exit turnstiles and one high exit turnstile. There are two street stairs, S1 and O2, that connect fare array area R233 to East 42nd Street, west of Madison Avenue. S1 is a sidewalk stair on the north side of East 42nd Street, and O2 is an easement stair in the Carbide building and is located on the south side of East 42nd Street. See Figure 12-45, Mezzanine Plan "E."

All of the elements discussed above and shown in Figure 12-45 and Figure 12-46 were selected for analysis by NYCT. Table 12-30 through Table 12-33 show the existing AM and PM peak-hour conditions at all analyzed stairs, escalators, passageways, and fare array areas at the Grand Central-42nd Street subway station complex, respectively. As shown in Table 12-30 through Table 12-33, all fare arrays currently operate at an acceptable LOS C or better in both the AM and PM peak hours. In addition, all the stairs, escalators and passageways serving the S Shuttle also operate at an acceptable LOS C or better in both the AM and PM peak hours.

As shown in Table 12-30 through Table 12-33, the following analyzed elements at the Grand Central-42nd Street subway station operate at LOS D or worse in at least one peak hour in the Existing condition.

In the AM peak hour these include:

- Free zone stair M7, located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, operates at LOS E, with a v/c ratio of 1.58.

- Free zone escalators ES255 and ES256, also located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, both operate at LOS D, with v/c ratios of 1.09.
- Street stair M9 located in the Strawberry store on the west side of Lexington Avenue north of East 42nd Street operates at LOS E, with a v/c ratio of 1.38.
- Lexington Line southbound platform stairs P12, P14, P18 and P22 operate at LOS E, E D and F, with v/c ratios of 1.38, 1.47, 1.28 and 1.69, respectively.
- Lexington Line northbound platform stair P23 operates at LOS E, with a v/c ratio of 1.49.
- Flushing Line platform stairs PL1 and PL2 both operate at LOS D, with v/c ratios of 1.14 and 1.26, respectively. In addition, Flushing Line platform stair PL6 operates at LOS E, with a v/c of 1.51.
- At the far eastern end of the Flushing Line platform, stair PL8 operates at LOS D, with a v/c ratio of 1.30.

In the PM peak hour these include:

- Street stair M7 operates at LOS E, with a v/c ratio of 1.46.
- Street stair M9 operates at LOS D, with a v/c ratio of 1.06.
- Southbound Lexington Line platform stairs P14 and P22 both operate at LOS D, with v/c ratios of 1.09 and 1.10, respectively.
- Northbound Lexington Line platform stair P23 operates at LOS F, with a v/c 1.75.
- One of the Flushing underpass stairs that connects to the northbound Lexington platform, U6, operates at LOS D with a v/c of 1.27.
- Flushing Line platform stairs (that connect through the center core) PL1, PL3, and PL6 operate at D with 1.04, 1.01 and 1.19, respectively.
- Escalator ES203, in the Third Avenue core to the far east of the Flushing platform, operates at LOS D with a v/c ratio of 1.14.

TABLE 12-30: EXISTING CONDITIONS STAIR ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION COMPLEX

Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor Up	Surging Factor Down	Friction Factor	V/C Ratio	LOS
				Down	Up					
AM	M7	10	8.75	1402	423	0.9	1	0.9	1.58	E
	M5	16	14.75	480	197	0.9	1	0.9	0.35	A
	017	14	12.75	54	642	0.9	1	0.9	0.45	A
	MB2	9.83	8.58	16	77	0.9	1	0.9	0.09	A
	M8	19.16	17.66	704	1178	0.9	1	0.9	0.84	C
	027	12	10.75	132	567	0.9	1	0.9	0.52	B
	M9	7.83	6.83	170	993	0.9	1	0.9	1.38	E
	028	11	9.75	0	131	0.9	N/A	1	0.10	A
	S1	4.75	3.75	13	173	1	0.8	0.9	0.45	B
	02	9	7.75	10	167	1	0.8	0.9	0.21	A
	09	9.166	7.916	21	135	1	0.8	0.9	0.18	A
	MB1	7.66	6.416	3	21	1	0.8	0.9	0.03	A
	P12	10	8.75	620	755	0.75	1	0.9	1.38	E
	P14	10	8.75	1188	410	0.75	1	0.9	1.47	E
	P18	10	8.75	559	669	0.75	0.9	0.9	1.28	D
	P20	10	8.75	303	489	0.75	1	0.9	0.81	C
	P22	6.16	5.16	491	514	0.75	1	0.9	1.69	F
	P13	10	8.75	91	506	0.75	1	0.9	0.65	B
	P15	10	8.75	240	281	0.75	1	0.9	0.52	B
	P17	10	8.75	259	289	0.75	1	0.9	0.55	B
	P19	10	8.75	271	326	0.75	0.9	0.9	0.62	B
	P21	10	8.75	50	761	0.75	1	0.9	0.90	C
	P23	6.16	5.16	102	700	0.75	1	0.9	1.49	E
	U1	6	5	236	183	0.95	0.75	0.9	0.75	C
	U5	6	5	141	356	0.95	0.75	0.9	0.83	C
	U2	6	5	171	89	0.95	0.75	0.9	0.48	B
	U6	6	5	192	157	0.95	0.75	0.9	0.62	B
	PL1	13.5	12.25	732	832	0.75	0.95	0.9	1.14	D
	PL2	7.583	6.583	341	570	0.75	0.95	0.9	1.26	D
	PL3	7.583	6.583	391	262	0.75	0.95	0.9	0.86	C
	PL4	13.916	12.66	7	1330	0.75	0.95	1	0.94	C
	PL5	7	6	1	318	0.75	0.95	1	0.47	B
	PL6	7	6	6	1012	0.75	0.95	1	1.51	E
	ML1-5	4.583	3.583	77	0	0.75	1	1	0.14	A
	PL8	10.416	9.166	77	1153	0.75	1	0.9	1.30	D
	P10	15.583	14.083	619	695	0.75	1	0.9	0.81	C
	P11	9.33	8.083	246	341	0.75	1	0.9	0.64	B
	P3	5	4	9	110	0.75	1	0.9	0.29	A
	P4	5	4	13	229	0.75	1	0.9	0.59	B
PM	M7	10	8.75	909	730	0.9	1	0.9	1.46	E
	M5	15.5	14.25	277	90	0.9	1	0.9	0.20	A
	017	14	12.75	480	103	0.9	1	0.9	0.35	A
	MB2	9.83	8.58	93	15	0.9	1	0.9	0.09	A
	M8	19.16	17.66	975	961	0.9	1	0.9	0.86	C
	027	12	10.75	312	28	0.9	1	0.9	0.24	A
	M9	7.83	6.83	663	286	0.9	1	0.9	1.06	D
	028	11	9.75	0	33	0.9	1	1	0.02	A
	S1	4.75	3.75	146	24	0.8	1	0.9	0.35	A
	02	9	7.75	115	21	0.8	1	0.9	0.13	A
	09	9.166	7.916	46	164	0.8	1	0.9	0.24	A
	MB1	7.66	6.416	7	26	0.8	1	0.9	0.04	A
	P12	10	8.75	368	334	0.75	1	0.9	0.69	B
	P14	10	8.75	1022	202	0.75	1	0.9	1.09	D
	P18	10	8.75	334	306	0.75	0.9	0.9	0.66	B
	P20	10	8.75	372	128	0.75	1	0.9	0.46	B
	P22	6.16	5.16	617	111	0.75	1	0.9	1.10	D
	P13	10	8.75	430	517	0.75	1	0.9	0.95	C
	P15	10	8.75	505	340	0.75	1	0.9	0.81	C
	P17	10	8.75	584	275	0.75	1	0.9	0.81	C
	P19	10	8.75	320	235	0.75	0.9	0.9	0.57	B
	P21	10	8.75	245	572	0.75	1	0.9	0.85	C
	P23	6.16	5.16	454	576	0.75	1	0.9	1.75	F
	U1	6	5	369	52	0.95	0.75	0.9	0.81	C
	U5	6	5	198	80	0.95	0.75	0.9	0.52	B
	U2	6	5	407	37	0.95	0.75	0.9	0.86	C
	U6	6	5	564	102	0.95	0.75	0.9	1.27	D
	PL1	13.5	12.25	1298	269	0.75	0.95	0.9	1.04	D
	PL2	7.583	6.583	542	194	0.75	0.95	0.9	0.93	C
	PL3	7.583	6.583	756	75	0.75	0.95	0.9	1.01	D
	PL4	13.916	12.66	659	428	0.75	0.95	0.9	0.71	C
	PL5	7	6	152	69	0.75	0.95	0.9	0.30	A
	PL6	7	6	508	359	0.75	0.95	0.9	1.19	D
	ML1-5	4.583	3.583	0	0	0.75	1	1	0.00	A
	PL8	10.416	9.166	857	72	0.75	1	0.9	0.77	C
	P10	15.583	14.083	725	567	0.75	1	0.9	0.78	C
	P11	9.33	8.083	332	208	0.75	1	0.9	0.56	B
	P3	5	4	80	16	0.75	1	0.9	0.19	A
	P4	5	4	204	31	0.75	1	0.9	0.45	B

Source: New York City Transit, 2013

TABLE 12-31: EXISTING CONDITIONS ESCALATOR ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION COMPLEX

Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS
AM	ES255 (UP)	40	90	945	982	0.95	1.09	D
	ES256 (UP)	40	90	945	982	0.95	1.09	D
	ES608 (UP)	40	90	945	228	0.8	0.30	A
	ES609 (DN)	40	90	945	28	1	0.03	A
	ES207-8 (UP)	40	90	945	598	0.75	0.84	C
	ES209-10 (UP)	40	90	945	598	0.75	0.84	C
	ES205 (UP)	40	90	945	689	0.8	0.91	C
	ES206 (UP)	40	90	945	689	0.8	0.91	C
	ES203 (UP)	32	90	750	577	0.8	0.96	C
	ES204 (UP)	32	90	750	577	0.8	0.96	C
PM	ES255 (DN)	40	90	945	931	1	0.99	C
	ES256 (UP)	40	90	945	857	0.95	0.95	C
	ES608 (DN)	40	90	945	169	1	0.18	A
	ES609 (UP)	40	90	945	38	0.8	0.05	A
	ES207-8 (DN)	40	90	945	573	1	0.61	B
	ES209-10 (UP)	40	90	945	392	0.75	0.55	B
	ES205 (UP)	40	90	945	426	0.8	0.56	B
	ES206 (DN)	40	90	945	419	1	0.44	A
	ES203 (DN)	32	90	750	857	1	1.14	D
	ES204 (UP)	32	90	750	72	0.8	0.12	A

Source: New York City Transit, 2013
Note: This table has been revised for the FEIS.

TABLE 12-32: EXISTING CONDITIONS PASSAGEWAY ANALYSIS AT THE GRAND CENTRAL42ND STREET (4, 5, 6, 7, S) SUBWAY STATION COMPLEX

Peak Period	Passageway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor West/Up	Surging Factor East/Dn	Friction Factor	V/C Ratio	LOS
				West/Up	East/Dn					
AM	317 Madison	5.25	3.25	40	2	0.8	1	0.9	0.08	A
	Flushing Passageway	12	10	784	739	0.9	0.95	0.9	0.81	C
	Paid Shuttle Passage	20	18	758	455	0.9	0.9	0.9	0.37	A
PM	317 Madison	5.25	3.25	41	7	0.8	1	0.9	0.08	A
	Flushing Passageway	12	10	271	1538	0.9	0.95	0.9	0.95	C
	Paid Shuttle Passage	20	18	692	855	0.9	0.9	0.9	0.47	B

Source: New York City Transit, 2013
Note: This table has been revised for the FEIS.

TABLE 12-33: EXISTING CONDITIONS FARE ARRAY ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION COMPLEX

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	R233	High Entry/Exit Turnstile	2	22	340	0.8	0.9	0.34	A
		High Exit Turnstile	1						
	R236	Two-way Turnstile	12	864	1037	0.8	0.9	0.36	A
		High Exit Turnstile	1						
	R237	High Entry/Exit Turnstile	7	70	719	0.9	0.9	0.22	A
	R237A	High Exit Turnstile	1	N/A	131	0.9	1	0.26	A
	R237B	Two-way Turnstile	4	34	614	0.9	0.9	0.32	A
	R238	Two-way Turnstile	15	1601	2538	0.9	0.9	0.61	B
	R238A	High Entry/Exit Turnstile	2	281	47	0.9	0.9	0.66	B
	R240	Two-way Turnstile	11	1006	2738	0.9	0.9	0.72	C
	R241A	Two-way Turnstile	5	77	1153	0.95	0.9	0.46	B
PM	R233	High Entry/Exit Turnstile	2	261	45	0.8	0.9	0.61	B
		High Exit Turnstile	1						
	R236	Two-way Turnstile	12	957	775	0.8	0.9	0.34	A
		High Exit Turnstile	1						
	R237	High Entry/Exit Turnstile	7	573	118	0.9	0.9	0.25	A
	R237A	High Exit Turnstile	1	0	33	0.9	1	0.07	A
	R237B	Two-way Turnstile	4	365	90	0.9	0.9	0.28	A
	R238	Two-way Turnstile	15	1843	1605	0.9	0.9	0.53	B
	R238A	High Entry/Exit Turnstile	2	275	71	0.9	0.9	0.68	B
	R240	Two-way Turnstile	11	1951	1274	0.9	0.9	0.69	B
	R241A	Two-way Turnstile	5	857	72	0.95	0.9	0.48	B

Source: New York City Transit, 2013

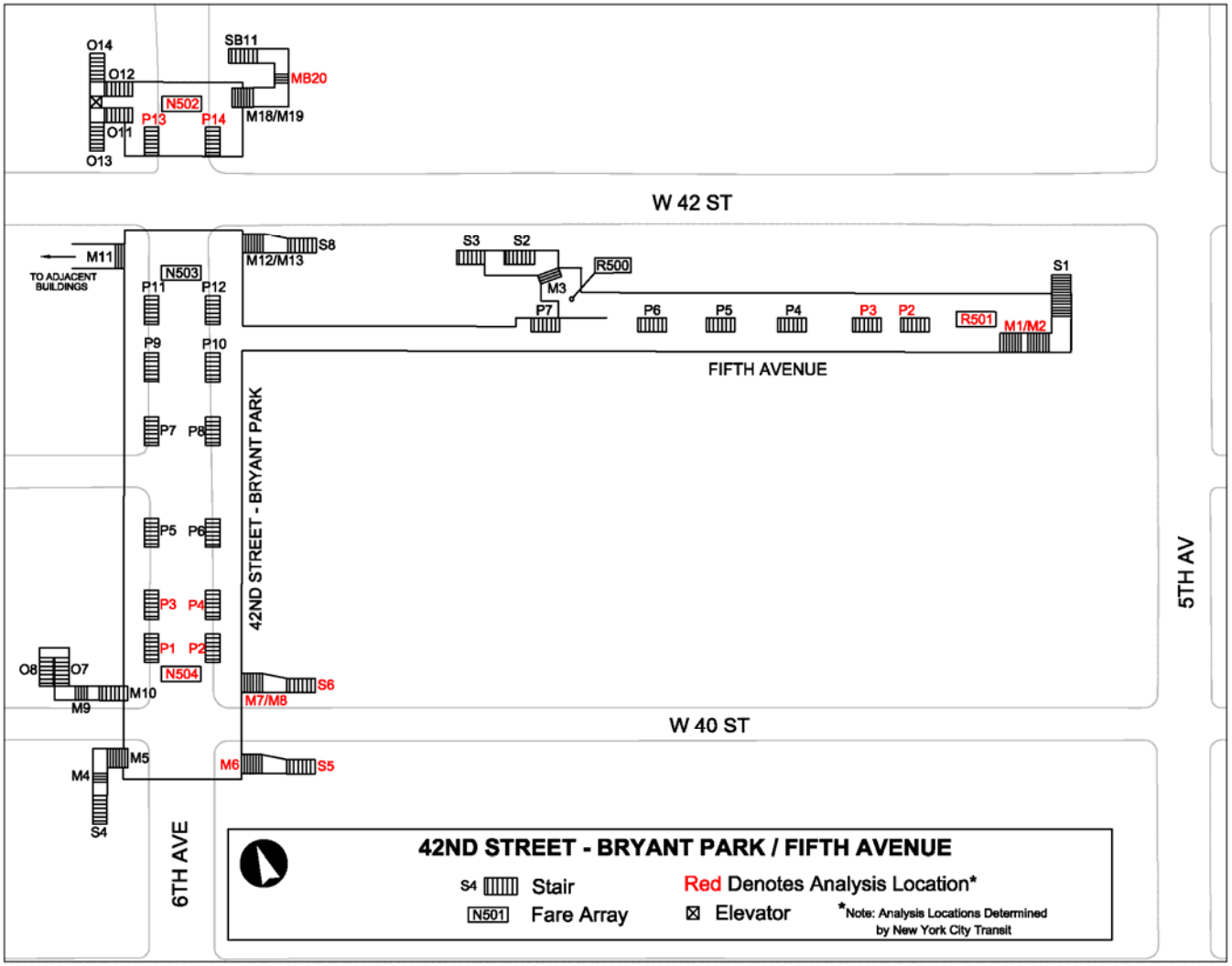
b. 42nd St-Bryant Park Subway Station

The 42nd Street-Bryant Park subway station is served by B and D express trains and F and M local trains operating along the Sixth Avenue Line. As shown in Figure 12-47, the 42nd Street-Bryant Park subway station includes two mezzanines, one on the north side of West 42nd Street and a second, larger mezzanine extending from the south side of West 42nd Street to West 40th Street. Two island platforms serving the uptown and downtown express and local tracks are located on a level below these mezzanines. Stairs providing access to the north mezzanine from street level include SB11 and intermediate stairs MB20 and M18/19 at the northeast corner of the intersection of West 42nd Street and Sixth Avenue, and stairs O11/O13 and O12/O14 at the northwest corner of the intersection. An elevator located at the northwest corner of the intersection provides ADA-compliant access to this mezzanine. Access to the platform level from the north mezzanine is controlled by fare array N502 consisting of five turnstiles, one HEET, and two high revolving exit gates. Stairs P13 and P14 provide access from the mezzanine to the downtown and uptown platforms, respectively.

Access to the mezzanine located south of West 42nd Street is controlled by two fare arrays, N503 located at West 42nd Street and N504 located at West 40th Street. As shown in Figure 12-47, street-level access at West 42nd Street is provided by stair S8 and intermediate stair M12/13 located at the southeast corner of the intersection, and a stairs O10 and M11 located within the adjacent building at the southwest corner of the intersection. Access into the paid zone at West 42nd Street is controlled by fare array N503 consisting of six turnstiles. Street-level access at the Sixth Avenue/West 40th Street intersection is provided at four entrances, one each at the northeast corner (stairs S6 and M7/M8), northwest corner (stairs O7/O8 and M9/M10), southeast corner (stairs S5 and M6), and southwest corner (stairs S4 and M4/M5). (It should be noted that stair S4 was closed due to construction during the count program at this station in January 2013, likely resulting in somewhat higher volumes at other station entrances.) Fare array N504 consists of six turnstiles and three HEETs. Six stairs arrayed along the length of the mezzanine provide access to each of the two island platforms (stairs P1 though P12 in Figure 12-47). A passageway located just south of West 42nd Street within the paid zone of the mezzanine connects the 42nd Street-Bryant Park subway station to the Fifth Avenue subway station.

As shown in Figure 12-47, based on anticipated demand from projected development sites, a total of three entrances, two fare arrays, and six platform stairs at the 42nd Street-Bryant Park subway station were selected for analysis by NYCT. These include stair MB20 (the most constrained of the series of four stairs at this entrance), fare array N502, and platform stairs P13 and P14 at the mezzanine on the north side of West 42nd Street; and stairs S5/M6 and S6/M7/M8, fare array N504, downtown platform stairs P1 and P3 and uptown platform stairs P2 and P4 at West 40th Street.

FIGURE 12-47: 42ND STREET-BRYANT PARK/FIFTH AVENUE SUBWAY STATION COMPLEX



Source: Philip Habib & Associates, 2013

Table 12-34 and Table 12-35 show the existing AM and PM peak-hour conditions at all analyzed stairs and fare arrays at the 42nd Street-Bryant Park subway station, respectively. As shown in Table 12-34 and Table 12-35, stair S5 at the southeast corner of Sixth Avenue and West 40th Street currently operates at LOS E in both the AM and PM peak hours, with v/c ratios of 1.37 and 1.40, during these periods, respectively. All other analyzed stairs at this station currently operate at an acceptable LOS C or better in both the AM and PM peak hours, as do both analyzed fare arrays.

TABLE 12-34: EXISTING CONDITIONS STAIR ANALYSIS AT THE 42ND STREET-BRYANT PARK (B, D, F, M) SUBWAY STATION

Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
					Down	Up				
AM	N504	S5	4.92	3.92	24	705	0.9	1.0	1.37	E
		M6	8.50	7.50	24	705	0.9	1.0	0.72	C
		S6	5.00	4.00	13	358	0.9	1.0	0.68	B
		M7/M8	8.50	7.50	13	358	0.9	1.0	0.37	A
		P1	6.75	5.75	9	280	0.75	1.0	0.44	A
		P2	6.75	5.75	12	478	0.75	1.0	0.75	C
		P3	6.67	5.67	10	425	0.75	1.0	0.68	B
		P4	6.67	5.67	29	474	0.75	0.9	0.86	C
	N502	MB20	10.00	8.75	17	593	0.9	1.0	0.51	B
		P13	10.00	8.75	22	328	0.75	0.9	0.39	A
		P14	10.00	8.75	20	728	0.75	1.0	0.75	C
PM	N504	S5	4.92	3.92	673	59	0.9	0.9	1.40	E
		M6	8.50	7.50	673	59	0.9	0.9	0.73	C
		S6	5.00	4.00	209	56	0.9	0.9	0.50	B
		M7/M8	8.50	7.50	209	56	0.9	0.9	0.27	A
		P1	6.75	5.75	215	127	0.75	0.9	0.50	B
		P2	6.75	5.75	126	31	0.75	0.9	0.22	A
		P3	6.67	5.67	474	111	0.75	0.9	0.81	C
		P4	6.67	5.67	370	46	0.75	0.9	0.56	B
	N502	MB20	10.00	8.75	494	57	0.9	0.9	0.47	B
		P13	10.00	8.75	568	54	0.75	0.9	0.54	B
		P14	10.00	8.75	288	91	0.75	0.9	0.35	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-35: EXISTING CONDITIONS FARE ARRAY ANALYSIS AT THE 42ND STREET-BRYANT PARK (B, D, F, M) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	N502	Two-way Turnstile	5	46	1129	0.9	1.0	0.28	A
		High Entry/Exit Turnstile	1						
		High Exit Turnstile	2						
	N504	Two-way Turnstile	6	36	2222	0.9	1.0	0.46	B
		High Entry/Exit Turnstile	3						
		High Exit Turnstile	0						
PM	N502	Two-way Turnstile	5	824	156	0.9	0.9	0.43	A
		High Entry/Exit Turnstile	1						
		High Exit Turnstile	2						
	N504	Two-way Turnstile	6	1721	127	0.9	0.9	0.61	B
		High Entry/Exit Turnstile	3						
		High Exit Turnstile	0						

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

c. Fifth Avenue Subway Station

The Fifth Avenue subway station is served by the No. 7 train providing express and local service on the Flushing Line (running along 42nd Street in Manhattan). As shown in Figure 12-47, the station consists of a mezzanine level that extends west from Fifth Avenue and is located above a single island platform. A passageway at the western end of the mezzanine provides access between the paid zones of this station and the 42nd Street-Bryant Park subway station. Access to the station is via two fare control areas, R501 with eight turnstiles, and fare array R500 at the western end of the mezzanine consisting of two HEETs and one high revolving exit gate. As shown in Figure 12-47, street level access to fare control area R501 is provided by a stairs S1/M1/M2 near the southwest corner of the intersection of Fifth Avenue and West 42nd Street adjacent to the New York Public Library. Street level access to the western end of the mezzanine is provided by stairs S2 and S3 located mid-block on the south side of West 42nd Street adjacent to Bryant Park. Six stairs (P2 and P3 though P7) provide access to the platform level.

As shown in Figure 12-47, based on anticipated demand from projected development sites, stairs M1/M2 (the most constrained point at this entrance), platform stairs P2 and P3, and fare array R501 at the Fifth Avenue subway station were selected for analysis by NYCT. As shown in Table 12-36 and Table 12-37, all of these analyzed station elements currently operate at an acceptable LOS A or B in both the AM and PM peak hours under existing conditions.

TABLE 12-36: EXISTING CONDITIONS STAIR ANALYSIS AT THE FIFTH AVENUE (7) SUBWAY STATION

Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up				
AM	S1	12.33	11.08	22	805	0.8	1.0	0.62	B
	M1/M2	11.33	10.08	22	805	0.8	1.0	0.68	B
	P2	8.25	7.00	7	180	0.75	1.0	0.24	A
	P3	8.00	6.75	11	172	0.75	0.9	0.26	A
PM	S1	12.33	11.08	626	108	0.8	0.9	0.51	B
	M1/M2	11.33	10.08	626	108	0.8	0.9	0.56	B
	P2	8.25	7.00	154	70	0.75	0.9	0.26	A
	P3	8.00	6.75	182	46	0.75	0.9	0.27	A
Notes: Methodology based on 2012 CEQR Technical Manual guidelines.									

Source: Philip Habib & Associates, 2013

TABLE 12-37: EXISTING CONDITIONS FARE ARRAY ANALYSIS AT THE FIFTH AVENUE (7) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	R501	Two-way Turnstile	8	22	805	0.8	1.0	0.20	A
PM	R501	Two-way Turnstile	8	626	108	0.8	0.9	0.24	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

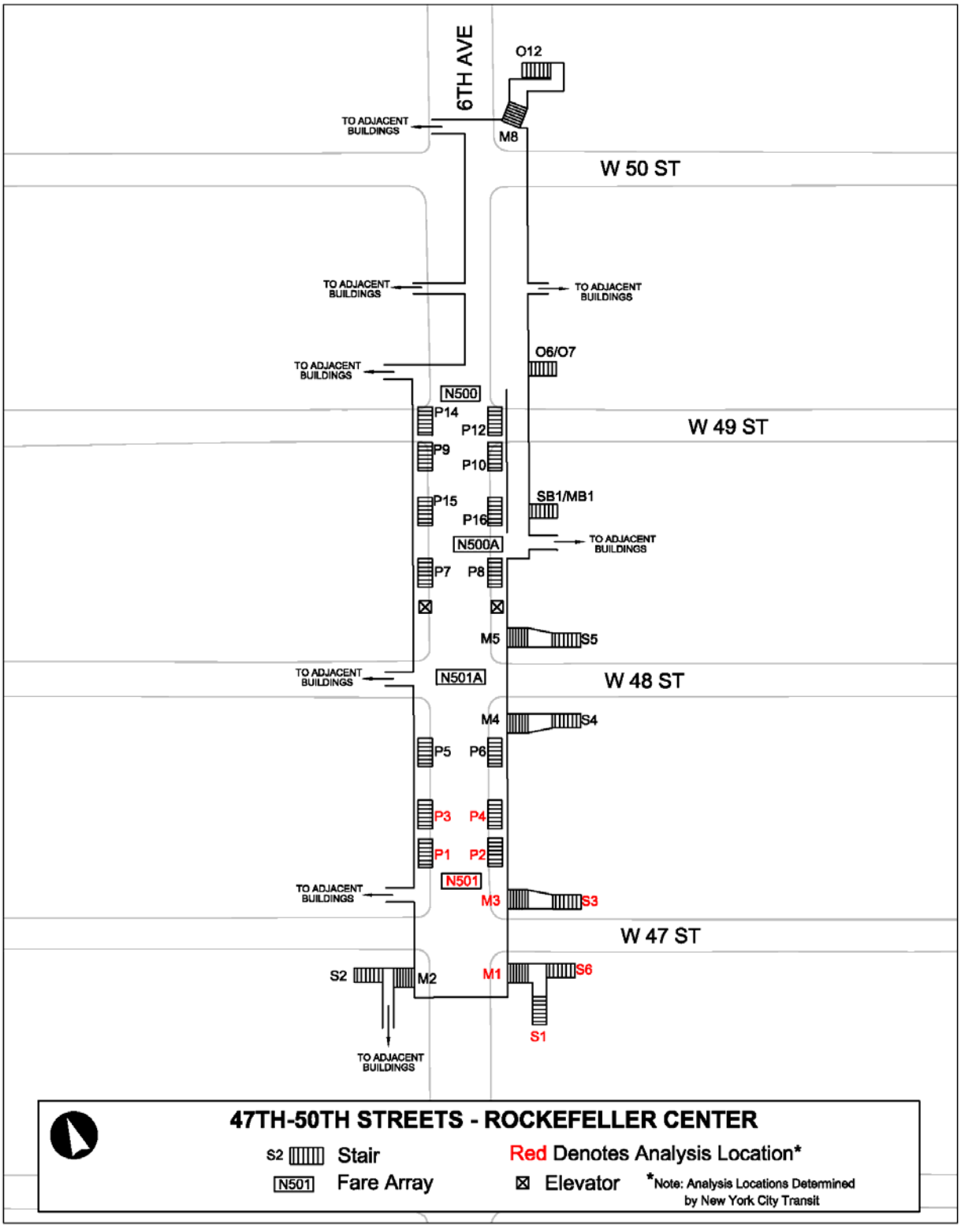
Source: Philip Habib & Associates, 2013

d. 47th – 50th Streets-Rockefeller Center Subway Station

The 47th-50th Streets-Rockefeller Center subway station is served by B and D express trains and F and M local trains operating along the Sixth Avenue Line. As shown in Figure 12-48, the 47th-50th Streets-Rockefeller Center subway station includes an extensive mezzanine level beneath Sixth Avenue extending from West 47th Street to West 50th Street, and there are numerous street-level entrances along its length. There are also numerous passageways connecting this mezzanine to adjacent buildings and below-grade retail concourses. Two island platforms serving the uptown and downtown express and local tracks are located below the mezzanine level with access provided by a total of 15 platform stairs and two elevators. A total of four fare control areas control access to the paid zone within this station, one at West 47th Street (N501), a second at West 48th Street (N501A), a third midblock between West 48th and West 49th Streets (N500A), and a fourth at West 49th Street (N500).

As shown in Figure 12-48, based on anticipated demand from projected development sites, a total of three street stairs, two intermediate stairs, one fare array and four platform stairs at the 47th-50th Streets-Rockefeller Center subway station were selected for analysis by NYCT. These include street stairs S1 and S6 and intermediate stair M1 at the southeast corner of Sixth Avenue and West 47th Street, street stair S3 and intermediate stair M3 at the northeast corner of this intersection, fare array N501, downtown platform stairs P1 and P3, and uptown platform stairs P2 and P4.

FIGURE 12-48: 47TH-50TH STREETS-ROCKEFELLER CENTER (B, D, F, M) SUBWAY STATION



Source: Philip Habib & Associates, 2013

As shown in Table 12-38, street stair S3 currently operates over its practical capacity in both the AM and PM peak hours with v/c ratios of 1.11 (LOS D) and 1.04 (LOS D), respectively. This is a relatively narrow stair, with a total width of approximately 4.33 feet. Platform stairs P1 through P4 were all also found to operate over their practical capacities in one or both peak hours. Downtown platform stair P1 operates with v/c ratios of 1.98 (LOS F) and 1.05 (LOS D) in the AM and PM peak hours, respectively, while adjacent stair P3 operates at a v/c ratio of 1.26 (LOS D) in the AM. Uptown platform stair P2 operates with v/c ratios of 1.67 (LOS F) in the AM peak hour and 1.22 (LOS D) in the PM, while adjoining stair P4 operates with a v/c ratio of 1.15 (LOS D) in the AM. Field observations indicate that some of the heavy AM demand at stairs P1 through P4 is from riders using these stairs to transfer from the downtown platform to the uptown platform. All other analyzed stairs currently operate at LOS C or better in both the AM and PM peak hours.

TABLE 12-38: EXISTING CONDITIONS STAIR ANALYSIS AT THE 47TH-50TH STREETS-ROCKEFELLER CENTER (B, D, F, M) SUBWAY STATION

Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up				
AM	S1	5.00	4.00	20	465	0.9	1.0	0.89	C
	S6	5.00	4.00	12	259	0.9	1.0	0.50	B
	M1	12.00	10.75	32	724	0.9	1.0	0.52	B
	S3	4.33	3.33	14	486	0.9	1.0	1.11	D
	M3	11.92	10.67	14	486	0.9	1.0	0.35	A
	P1	6.67	5.67	10	1254	0.75	1.0	1.98	F
	P2	6.67	5.67	243	777	0.75	0.9	1.67	F
	P3	8.83	7.58	10	1064	0.75	1.0	1.26	D
	P4	8.83	7.58	361	615	0.75	0.9	1.15	D
PM	S1	5.00	4.00	520	26	0.9	1.0	0.91	C
	S6	5.00	4.00	241	16	0.9	0.9	0.48	B
	M1	12.00	10.75	762	42	0.9	0.9	0.56	B
	S3	4.33	3.33	427	37	0.9	0.9	1.04	D
	M3	11.92	10.67	427	37	0.9	0.9	0.33	A
	P1	6.67	5.67	700	78	0.75	0.9	1.05	D
	P2	6.67	5.67	827	78	0.75	0.9	1.22	D
	P3	8.83	7.58	707	135	0.75	0.9	0.87	C
	P4	8.83	7.58	356	116	0.75	0.9	0.50	B

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

Analyzed fare array N501 consists of a total of eight two-way turnstiles, two HEETs, and two high exit turnstiles. As shown in Table 12-39, this fare array operates at an acceptable LOS A in both the AM and PM peak hours under existing conditions.

TABLE 12-39: EXISTING CONDITIONS FARE ARRAY ANALYSIS AT THE 47TH-50TH STREETS-ROCKEFELLER CENTER (B, D, F, M) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	N501	Two-way Turnstile	8	38	2071	0.9	1.0	0.32	A
		High Entry/Exit Turnstile	2						
		High Exit Turnstile	2						
PM	N501	Two-way Turnstile	8	1341	106	0.9	0.9	0.40	A
		High Entry/Exit Turnstile	2						
		High Exit Turnstile	2						

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

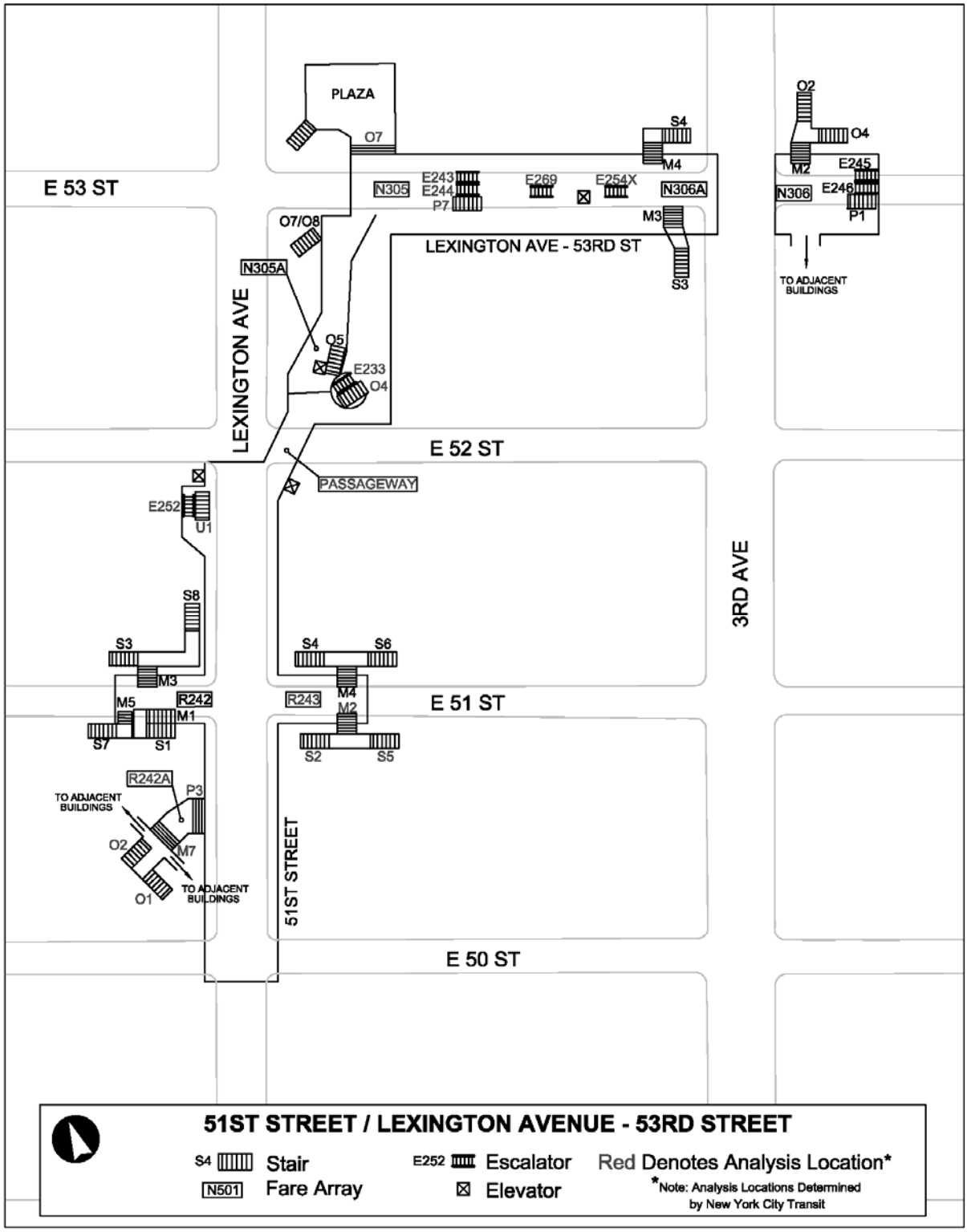
Source: Philip Habib & Associates, 2013

e. 51st Street Subway Station

The 51st Street subway station is a local stop served by No. 6 trains on the Lexington Avenue Line. As shown in Figure 12-49, the station consists of two side platforms, one for uptown trains and one for downtown trains, extending from East 50th Street to East 52nd Street. Three fare control areas are located at East 51st Street: R243 adjacent to the uptown platform with nine turnstiles, R242 adjacent to the downtown platform with nine turnstiles, and R242A, which also provides access to the downtown platform near East 50th Street and has five turnstiles. A passageway at the north end of the uptown platform provides access to a concourse connecting the 51st Street subway station to the paid zone at the Lexington Avenue-53rd Street subway station on the Queens Line (see below). The north end of the downtown platform is also connected to this concourse via an underpass, with vertical circulation provided by an escalator and stair combination at each end along with two elevators for ADA access.

As shown in Figure 12-49, the pedestrian circulation elements at the 51st Street subway station selected for analysis by NYCT based on anticipated demand from projected development sites include: street stairs S2 and S5, intermediate stair M2 and fare array R243 at the uptown platform; street stairs O1/O2, intermediate stair M7, fare array R242A and platform stair P3 at the downtown platform (near East 50th Street); the passageway from the uptown platform to the concourse connecting to the Lexington Avenue-53rd Street subway station; escalator E252 and adjoining stair U1 connecting the downtown platform to the underpass; and escalator E233 and adjoining stair O4 providing access between the underpass and the connecting concourse. As shown in Table 12-40 through Table 12-43, all of these pedestrian circulation elements currently operate at an acceptable LOS C or better in both the AM and PM peak hours with the exception of the two stairs and two escalators providing access to the underpass. As shown in Table 12-40, stair U1 at the north end of the downtown platform currently operates well over its practical capacity with a v/c ratio of 2.92 (LOS F) in the AM peak hour and 2.22 (LOS F) in the PM. As shown in Table 12-41, adjoining escalator E252 also operates over its practical capacity in the AM peak hour with a v/c ratio of 1.76 (LOS F). At the east end of the underpass, stair O4 currently operates with a v/c ratio of 1.41 (LOS E) in the AM peak hour while adjoining escalator E233 operates at a v/c ratio of 1.00 (LOS C) in the AM.

FIGURE 12-49: 51ST STREET/LEXINGTON AVENUE-53RD STREET (6) SUBWAY STATION COMPLEX



Source: Philip Habib & Associates, 2013

TABLE 12-40: EXISTING CONDITION STAIR ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
					Down	Up				
AM	R243	S2	5.17	4.17	22	266	0.75	0.9	0.67	B
		S5	4.08	3.08	15	192	0.75	0.9	0.65	B
		M2	9.83	8.58	37	458	0.75	0.9	0.56	B
	R242A	O1/O2	10.00	8.75	61	744	0.75	0.9	0.89	C
		M7	21.33	18.83	59	732	0.75	0.9	0.41	A
		P3	18.08	15.58	59	732	0.75	0.9	0.49	B
	N305A	U1	4.17	3.17	1005	47	0.75	1.0	2.92	F
		O4	10.00	9.00	1376	252	0.75	0.9	1.41	E
PM	R243	S2	5.17	4.17	257	100	0.75	0.9	0.69	B
		S5	4.08	3.08	106	74	0.75	0.9	0.49	B
		M2	9.83	8.58	362	174	0.75	0.9	0.51	B
	R242A	O1/O2	10.00	8.75	218	70	0.75	0.9	0.26	A
		M7	21.33	18.83	214	66	0.75	0.9	0.12	A
		P3	18.08	15.58	214	66	0.75	0.9	0.14	A
	N305A	U1	4.17	3.17	789	4	0.75	1.0	2.22	F
		O4	10.00	9.00	491	177	0.75	0.9	0.60	B

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-41: EXISTING CONDITION ESCALATOR ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS
AM	E233 (UP)	40	90	945	754	0.8	1.00	C
	E252 (UP)	40	90	945	1329	0.8	1.76	F
PM	E233 (UP)	40	90	945	487	0.8	0.64	B
	E252 (UP)	40	90	945	612	0.8	0.81	C

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-42: EXISTING CONDITION PASSAGEWAY ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Passageway	Peak Period	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				NB	SB				
To/From Lex Ave-53rd St	AM	15.25	13.3	560	504	0.75	0.9	0.47	B
	PM	15.25	13.3	685	550	0.75	0.9	0.55	B
Notes: Methodology based on 2012 CEQR Technical Manual guidelines.									

Source: Philip Habib & Associates, 2013

TABLE 12-43: EXISTING CONDITION FARE ARRAY ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	R242A	Two-way Turnstile	5	59	732	0.75	0.9	0.37	A
	R243	Two-way Turnstile	9	22	867	0.75	1.0	0.20	A
PM	R242A	Two-way Turnstile	5	214	66	0.75	0.9	0.14	A
	R243	Two-way Turnstile	9	604	319	0.75	0.9	0.26	A
Notes: Methodology based on 2012 CEQR Technical Manual guidelines.									

Source: Philip Habib & Associates, 2013

f. Lexington Avenue-53rd Street Subway Station

The Lexington Avenue-53rd Street subway station is served by E and M trains on the Queens Line. As shown in Figure 12-49, the station includes a mezzanine level beneath East 53rd Street extending from Lexington Avenue to Third Avenue, below which lies a single island platform. The platform level is relatively deep as it is located immediately to the west of the 53rd Street Tunnel under the East River. Three fare control areas provide access to the mezzanine from street level. Fare control area N305 at the east end of the station consists of 11 turnstiles. A large stair (O7) provides access to and from Citicorp Plaza at the northeast corner of Lexington Avenue and East 53rd Street. Access is also available from both the paid and unpaid zones of this fare control area to the concourse connecting this station to the 51st Street subway station.

Fare control area N306A, consisting of two HEETs, is located on the west side of Third Avenue with access via street stairs at the northwest and southwest corners of the intersection with East 53rd Street. A passageway connects fare control area N306A with fare control area N305. As shown in Figure 12-49, two escalators (E243 and E244) and a single stair (P7) provide access from the west end of this passageway to the platform level. Two additional escalators (E269 and E254X) are located at the middle and the western end of this passageway, respectively. Escalator E243 operates in the up direction and escalator E269 operates in the down direction in both the AM and PM peak periods. The direction of escalators E244 and E254X varies based on peak period, with both operating in the upward direction in the AM and in the downward direction in the PM.

Lastly, fare control area N306, consisting of eight turnstiles is located on the east side of Third Avenue. Two stairs at the northeast corner of Third Avenue and East 53rd Street provide access from street level, and two escalators and a stair provide access from the mezzanine level to the platform.

As shown in Figure 12-49, the pedestrian circulation elements at the Lexington Avenue-53rd Street subway station selected for analysis by NYCT based on anticipated demand from projected development sites include: street stair O7 and fare array N305, along with platform stair P7 and escalators E243, E244, E269, and E254X. As shown in Table 12-45, all four analyzed escalators currently operate above their practical capacities in one or both peak hours. Up escalator E243 operates at a v/c ratio of 1.39 (LOS E) in the AM peak hour, while down escalator E269 operates at a v/c ratio of 1.41 (LOS E) in the PM. Escalator E244 operates at v/c ratios of 1.35 (LOS E) in the upward direction in the AM peak hour and 1.26 (LOS D) in the downward direction in the PM. Lastly, escalator E254X operates at a v/c ratio of 1.35 (LOS E) in the upward direction in the AM peak hour. As shown in Table 12-44 and Table 12-46, fare array N305 and both analyzed stairs currently operate at an acceptable LOS A in both the AM and PM peak hours.

TABLE 12-44: EXISTING CONDITION STAIR ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up				
AM	O7	48.8	46.33	76	608	0.9	0.9	0.12	A
	P7	3.7	2.67	23	46	0.75	0.9	0.23	A
PM	O7	48.8	46.33	684	192	0.9	0.9	0.14	A
	P7	3.7	2.67	89	17	0.75	0.9	0.31	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-45: EXISTING CONDITION ESCALATOR ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS
AM	E243 (UP)	40	90	945	984	0.75	1.39	E
	E244 (UP)	40	90	945	959	0.75	1.35	E
	E254X (UP)	24	90	480	487	0.75	1.35	E
	E269 (DN)	40	90	945	792	0.95	0.88	C
PM	E243 (UP)	40	90	945	542	0.75	0.76	C
	E244 (DN)	40	90	945	1130	0.95	1.26	D
	E254X (DN)	24	90	480	186	1.00	0.39	A
	E269 (DN)	40	90	945	1263	0.95	1.41	E

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-46: EXISTING CONDITION FARE ARRAY ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	N305	Two-way Turnstile	11	59	1227	0.8	1.0	0.23	A
PM	N305	Two-way Turnstile	11	572	93	0.8	0.9	0.16	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

12.8.1.2 Subway Line Haul

Existing line-haul conditions are shown in Table 12-47. Three subway routes are currently operating above guideline capacity (a v/c ratio greater than 1.00) in the AM peak hour based on NYCT ridership data. The Nos. 4, 5, and 7 express routes exceed guideline capacity in the AM (with v/c ratios of 1.03, 1.02, and 1.02, respectively). These ratios are higher in the AM peak hour than in the PM as peak demand is typically more concentrated in the AM. No routes exceed guideline capacity in the PM peak hour.

TABLE 12-47: EXISTING CONDITION SUBWAY LINE HAUL ANALYSIS

Peak Hour	Route	Direction	Maximum Load Point (leaving station)	Average Trains Per Hour (1)	Cars Per Hour (1)	Passengers per Hour (1)	Peak Hour Capacity (2)	V/C Ratio (3)
AM	4	SB	86 St	14.1	141.0	15,955	15,485	**1.03**
	5	SB	86 St	12.8	128.0	14,357	14,131	**1.02**
	6	SB	68 St-Hunter College	22.5	225.0	23,515	24,750	0.95
	7 exp	SB	Woodside-61 St	13.0	143.0	15,983	15,670	**1.02**
	7 loc	SB	40 St-Lowery St	13.2	145.2	12,872	15,972	0.81
	7 loc	NB	Times Sq-42 St	26.0	286.0	7,447	31,460	0.24
	F	SB	Roosevelt Island	16.0	160.0	17,586	22,910	0.77
	4	NB	Fulton St	13.7	137.0	10,203	15,033	0.68
	5	NB	Fulton St	12.3	123.0	9,095	13,567	0.67
	D	NB	36 St	10.3	82.4	11,918	12,772	0.93
	F	NB	2 Av	13.9	139.0	17,026	18,765	0.91
	S	NB	Times Sq-42 St	29.5	98.5	5,825	10,835	0.54
PM	4	NB	59 St	12.5	125.0	13,562	13,750	0.99
	5	NB	59 St	12.8	128.0	12,870	14,025	0.92
	6	NB	59 St	20.3	203.0	21,050	22,367	0.94
	7	NB	Queensboro Plaza	23.2	232.0	19,974	28,012	0.71
	7	SB	Grand Central-42 St	26.0	286.0	7,596	31,460	0.24
	F	NB	Lexington Av/63 St	15.0	150.0	16,880	21,750	0.78
	4	SB	Bowling Green	13.0	130.0	11,640	14,300	0.81
	5	SB	Bowling Green	8.0	80.0	7,650	8,800	0.87
	B	SB	Atlantic Av	9.5	76.0	8,218	13,431	0.61
	D	SB	Pacific St	8.5	68.0	7,110	10,540	0.67
	F	SB	Jay St-Borough Hall	13.0	130.0	10,165	17,550	0.58
	S	SB	Grand Central-42 St	27.5	92.0	5,956	10,120	0.59

Notes:
(1) Based on Spring and Fall 2011 ridership and train throughput data from NYCT.
(2) Capacity based on NYCT rush hour guideline capacities.
(3) Volume-to-capacity ratio.

Source: New York City Transit, 2013

12.8.1.3 Bus

As shown Figure 12-3, the proposed rezoning area is served by a total of approximately 16 NYCT local bus routes that operate exclusively within Manhattan, and one local route – the Q32 – that connects midtown Manhattan to Jackson Heights, Queens via the Ed Koch Queensboro Bridge. Five of these routes—the M1, M2, M4, M5 and M101—feature limited-stop service in which buses stop only at major cross streets and transfer points. Three additional routes—the M15 operating along First and Second Avenues and the M34 and M34A operating along 34th Street—feature Select Bus Service, which typically incorporates the following elements designed to reduce travel time and increase the level of comfort for customers:

- High visibility stations
- Dedicated bus lanes
- A service plan that provides an easily understandable route map and schedule
- High capacity vehicles
- A faster fare collection system where customers pay before boarding
- Traffic Signal Priority (TSP) which gives buses priority at traffic lights
- System identity and branding which bring a unique and distinguished visibility to the service.

In addition to the Select Bus Service routes, many of the north-south avenues in the vicinity of the rezoning area (with the exception of Park Avenue) have dedicated bus lanes during the weekday peak periods. These include single dedicated bus lanes along Third, Lexington and Fifth Avenues, and two dedicated bus lanes along Madison Avenue. All of these bus lanes are in effect from 7:00 a.m. to 7:00 p.m. The curb lanes along both eastbound and westbound 42nd Street west of Third Avenue are also designated as bus lanes during the 7:00 a.m. to 10:00 a.m. and 4:00 p.m. to 7:00 p.m. weekday peak periods.

A brief overview of the local bus services operating in proximity to the rezoning area is provided below.

a. M1

The M1 provides daily service between a southern terminus at East 8th Street/Fourth Avenue in the East Village, and a northern terminus at East 126th Street/Lenox Avenue in Harlem, generally from 5:00 a.m. to 1:00 a.m. Extended service to West 147th Street/Lenox Avenue in Harlem is provided on the weekdays, as well as limited-stop service in the peak direction during weekday rush hours (southbound in the AM and northbound in the PM). M1 buses operate primarily along Lenox Avenue and Fifth and Madison Avenues.

b. M2

The M2 provides daily service between a southern terminus at East 8th Street/Fourth Avenue in the East Village, and a northern terminus at West 168th Street/Broadway in Washington Heights, operating at all times. Limited-stop service is provided south of 110th Street during the daytime, generally 6:30 a.m. to 6:30 p.m. on weekdays and 9:30 a.m. to 6:30 p.m. on weekends. Local service south of 110th Street is provided from 6:00 p.m. to 6:30 a.m. on weekdays and 5:30 p.m. to 10:30 a.m. on weekends. M2 buses operate primarily along Adam Clayton Powell Jr. Boulevard and Fifth and Madison Avenues.

c. M3

The M3 provides daily service between a southern terminus at East 8th Street/Fourth Avenue in the East Village, and a northern terminus at West 193rd Street/St. Nicholas Avenue in Washington Heights, generally from 6:00 a.m. to Midnight. This bus route operates primarily along St. Nicholas Avenue and Fifth and Madison Avenues.

d. M4

The M4 provides daily service between a southern terminus at West 32nd Street/Seventh Avenue (Penn Station) in Midtown, and a northern terminus at Fort Tryon Park in Washington Heights, generally from 5:30 a.m. to 11:30 p.m. (M4 buses continue into Fort Tyron Park to the Cloisters Museum when the museum is open.) Limited stop service is provided in the peak direction during the weekday rush hours (southbound in the AM and northbound in the PM). M4 buses operate primarily along Fort Washington Avenue, Broadway, Central Park North, and Fifth and Madison Avenues.

e. M5

The M5 provides daily service between a southern terminus at Whitehall Street/South Street (South Ferry), and a northern terminus at West 178th Street/Broadway (George Washington Bridge Bus Station) in Washington Heights, generally from 6:00 a.m. to Midnight. Limited-stop service is provided in the peak direction during the weekday rush hours (southbound in the AM and northbound in the PM), although buses make local stops in select areas along the bus route. M5 buses operate primarily along Broadway, Riverside Drive, Fifth and Sixth Avenues, and Church Street and Broadway.

f. M7

The M7 provides daily service between a southern terminus at West 14th Street/Sixth Avenue in Chelsea, and a northern terminus at West 147th Street/Adam Clayton Powell Boulevard in Harlem, operating at all times. M7 buses operate primarily along Lenox Avenue, Amsterdam and Columbus Avenues, Broadway, and Sixth and Seventh Avenues.

g. M15

The M15 provides daily service between a southern terminus at Whitehall Street/South Street (South Ferry), and a northern terminus at Second Avenue/East 126th Street in East Harlem, operating at all times.

Select Bus Service is also provided, generally from 5:00 a.m. to 11:00 p.m. M15 buses operate primarily along First and Second Avenues, Allen Street, and Water Street.

h. M31

The M31 provides daily service between a western terminus at West 54th Street/Eleventh Avenue in Midtown, and an eastern terminus at East 92nd Street/York Avenue in Yorkville, generally from 5:30 a.m. to 1:00 a.m. M31 buses primarily operate along York Avenue and 57th Street.

i. M34

The M34 provides daily Select Bus Service between a western terminus at Eleventh Avenue/West 34th Street in Midtown, and an eastern terminus at East 34th Street/FDR Drive, generally from 5:30 a.m. to 1:00 a.m. M34 buses operate primarily along 34th Street.

j. M34A

The M34 provides daily Select Bus Service between a western terminus at Ninth Avenue/West 43rd Street (Port Authority Bus Terminal) in Midtown, and an eastern terminus at Waterside Plaza/FDR Drive, generally from 5:00 a.m. to 1:00 a.m. M34A buses operate primarily along 34th Street, as well as Eighth and Ninth Avenues, Second Avenue, East 23rd Street, and the FDR Drive service road.

k. M42

The M42 provides daily service between a western terminus at West 42nd Street/Twelfth Avenue (42nd Street Pier) in Midtown, and an eastern terminus at East 42nd Street/First Avenue in Murray Hill (United Nations), operating at all times. M42 buses primarily operate along 42nd Street.

l. M50

The M50 provides daily service between a western terminus at West 42nd Street/Twelfth Avenue (42nd Street Pier) in Midtown, and an eastern terminus at East 49th Street/First Avenue in East Midtown, generally from 6:30 a.m. to 1:00 a.m. M50 buses operate primarily along 49th and 50th Streets and Twelfth Avenue.

m. M57

The M57 provides daily service between a western terminus at West 72nd Street/Broadway in the Upper West Side, and an eastern terminus at East 60th Street/York Avenue in the Upper East Side, generally from 6:00 a.m. to 1:00 a.m. M57 buses operate primarily along 57th Street and West End Avenue.

n. M101

The M101 provides local service at all times between a southern terminus at East 8th Street/Third Avenue in the East Village, and a northern terminus at West 193rd Street/Fort George Avenue in Inwood, operating at all times. Limited-stop service is provided between East 122nd Street and East 8th Street,

generally from 6:00 a.m. to 9:00 p.m. on weekdays and 10:00 a.m. to 7:00 p.m. on weekends. This bus route operates primarily along Amsterdam Avenue, 125th Street, and Lexington and Third Avenues.

o. M102

The M102 provides daily service at all times between a southern terminus at East 8th Street/Third Avenue in the East Village, and a northern terminus at West 147th Street/Adam Clayton Powell Boulevard in Harlem. This bus route operates primarily along Lenox Avenue, 125th Street, and Lexington and Third Avenues.

p. M103

The M103 provides daily service at all times between a southern terminus at Park Row/City Hall in lower Manhattan, and a northern terminus at East 125th Street/Lexington Avenue in Harlem. The M103 operates primarily along Lexington and Third Avenues, Bowery, and Park Row.

q. Q32

The Q32 provides daily service between a western terminus at West 32nd Street/Seventh Avenue (Penn Station) in Manhattan, and an eastern terminus at 81st Street/Northern Boulevard in Jackson Heights, Queens. The Q32 operates primarily along Madison and Fifth Avenues and East 59th and 60th Streets in Manhattan, and Queens Boulevard and Roosevelt Avenue in Queens via the Ed Koch Queensboro Bridge.

As shown in Table 12-10 and discussed previously, three of these local bus routes are expected to experience 50 or more new trips in one direction through their maximum load point in one or both peak hours and therefore require detailed analysis in this EIS – the M1, M4, and M42. Table 12-48 shows the existing number of buses and ridership at the maximum load point in each direction for each of these three local bus routes in the AM and PM peak hours. As shown in Table 12-48, all three of these routes (including the peak direction limited-stop services on the M1 and M4) currently operate with available capacity during both the AM and PM peak hours. The average number of peak hour passengers per bus ranges from 17 on the northbound M1 in the AM to 49 on both the eastbound M42 in the AM and the westbound M42 in the PM.

TABLE 12-48: EXISTING CONDITIONS LOCAL BUS ANALYSIS

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	Peak Hour Passengers (2)	Average Passengers Per Bus	Available Capacity (3)
AM	M1	NB	Madison Ave & E 58 St	4	67	17	149
		SB	5 Ave & W 72 St	4	133	33	83
		SB LTD	5 Ave & W 72 St	7	282	40	96
	M4	NB	W 32 St & 7 Ave	10	260	26	280
		SB	5 Ave & W 72 St	6	254	42	70
		SB LTD	Central Park N & 5 Ave	6	265	44	59
	M42	EB	W 42 St & Broadway	25	1,222	49	128
		WB	W 42 St & Broadway	13	371	29	331
PM	M1	NB	Madison Ave & E 72 St	6	205	34	119
		SB	5 Ave & W 72 St	9	288	32	198
		NB LTD	Madison Ave & E 58 St	6	231	39	93
	M4	NB	Madison Ave & E 57 St	6	237	40	87
		SB	5 Ave & W 72 St	8	257	32	175
		NB LTD	Madison Ave & E 96 St	6	247	41	77
	M42	EB	W 42 St & Broadway	15	369	25	441
		WB	E 42 St & Lexington Ave	14	687	49	69

Notes:
(1) Peak hours: weekday 8:00-9:00 AM and 5:00-6:00 PM.
(2) Based on most currently available data from NYCT from years 2010 and 2011.
(3) Available capacity based on MTA NYCT loading guidelines of 54 passengers per standard bus unless otherwise noted.

Source: Philip Habib & Associates, 2013

As shown in Figure 12-4 and discussed in Section 12.5, "Level 2 Screening Assessment," in addition to the local bus routes serving the rezoning area, a total of approximately 54 NYCT, MTA Bus, and Bee-Line Bus express routes connecting Manhattan to New York City's outer boroughs and to Westchester County also operate in proximity to the rezoning area, many along Madison and Fifth Avenues which are major north-south bus corridors. However, as it is unlikely that any one express bus route would experience 50 or more new trips in one direction in any one peak hour as a result of the Proposed Action, significant adverse impacts to express bus services are not anticipated based on *CEQR Technical Manual* criteria, and a detailed analysis of express bus conditions is not provided in this EIS.

12.8.2 Future Transit Conditions Without The Proposed Action (No-Action)

12.8.2.1 Subway Stations

To establish future No-Action conditions at analyzed subway stations, it was determined that use of simple growth rates would not be appropriate, due to the very substantial effects of large-scale projects directly impacting passenger demand in the study area. Instead, estimates of peak-hour trips were developed using outputs from MTA's Regional Transit Forecasting Model (RTFM). The RTFM is a model of regional travel in the New York metropolitan area, including NYCT subway and bus riders; MTA Bus Company riders; commuters using Metro-North Railroad, Long Island Rail Road (LIRR), and transit travel to/from New Jersey; automobile travelers to Manhattan or regional transit stops; and people using other travel modes, including taxi, bicycle, and walk. It uses TransCAD, a transportation planning software package that combines a geographic information system (GIS) with travel demand models and analysis tools. The model is based on socioeconomic forecasts developed by NYMTC; the Department of City Planning participated in the development of these forecasts by allocating borough-level growth to specific model analysis zones. Forecasts are available in five-year increments, so 2035 forecasts were used to represent 2033 conditions.

Planned improvements reflected in the RTFM data include the following three MTA capital projects, all of which are currently under construction:

- LIRR East Side Access – The LIRR East Side Access project will include new tunnels connecting the LIRR Mainline tracks in Queens to Grand Central Terminal via the existing 63rd Street Tunnel under the East River; and a new passenger concourse with eight tracks and four wide platforms, along with mezzanines and concourses, beneath Park Avenue at an elevation below Grand Central Terminal's existing lower level. New street-level entrances would be provided on the south side of East 47th Street east of Madison Avenue, on the north side of East 48th Street midblock between Park and Madison Avenues, and on the south side of East 47th Street midblock between Park and Lexington Avenues. LIRR trains are expected to begin serving Grand Central Terminal in 2019. In addition, connections to Grand Central Terminal will include escalators to the Biltmore Room and the Dining Concourse.
- Second Avenue Subway (Phase 1) – The Second Avenue Subway project will include a two-track line along Second Avenue from East 125th Street to the Financial District in Lower Manhattan. It will also include a connection from Second Avenue through the 63rd Street Tunnel to existing tracks for service to West Midtown and Brooklyn. Sixteen new ADA accessible stations will be constructed. The Second Avenue subway line is being built in phases; the first phase will provide service from East 96th Street to East 63rd Street as an extension of the Q train, and is expected to be in operation by the end of 2016. As funding for phases 2 through 4 has not been identified, completion of these phases is not assumed for the 2033 analysis year. Operation of Phase 1 of the Second Avenue Line is expected to ease crowding on the Lexington Avenue Line.

- No. 7 Subway Line Extension – The No. 7 subway is being extended approximately one mile west from its current terminus at Times Square to a new terminal station at West 34th Street and Eleventh Avenue. The line will extend west under West 41st Street and curve to the south under Eleventh Avenue. A terminal station will be located at approximately West 34th Street and Eleventh Avenue. Full operation of the No. 7 Line extension is expected in 2014.

For this EIS, the RTFM was used to estimate the percentage increase in peak hour entering and exiting demand at each analyzed subway station during the 2013 through 2033 period as a result of regional growth and planned improvements to the transit system. RTFM data were also used to estimate the percentage increase in transfer activity at the 51st Street/Lexington Avenue-53rd Street subway station.

Because of its unique complexity, a more elaborate procedure was used to analyze the Grand Central-42nd Street subway station. Volumes on each subway station element were sub-divided into different categories of subway demand, in order to distinguish between growth rates in moves between platforms and the street, transfers between subway platforms, and transfers to and from the commuter railroads. In most cases the RTFM was used to determine this growth. For certain transfer moves estimated growth was taken directly from either the Hudson Yards EIS or the East Side Access EIS. The growth in each market was then allocated back to individual station elements.

In addition to the changes in subway demand due to regional growth and MTA capital improvements, projected future development independent of the Proposed Action that would have a potential effect on baseline 2033 subway demand at analyzed stations was included in the No-Action subway analysis. Development on projected development sites pursuant to existing zoning was considered, as were the 24 other No-Action development projects in East Midtown summarized in Table 12-20.

The results of the analysis of subway station elements for the No-Action condition during the weekday AM and PM peak periods are discussed below.

a. Grand Central-42nd Street

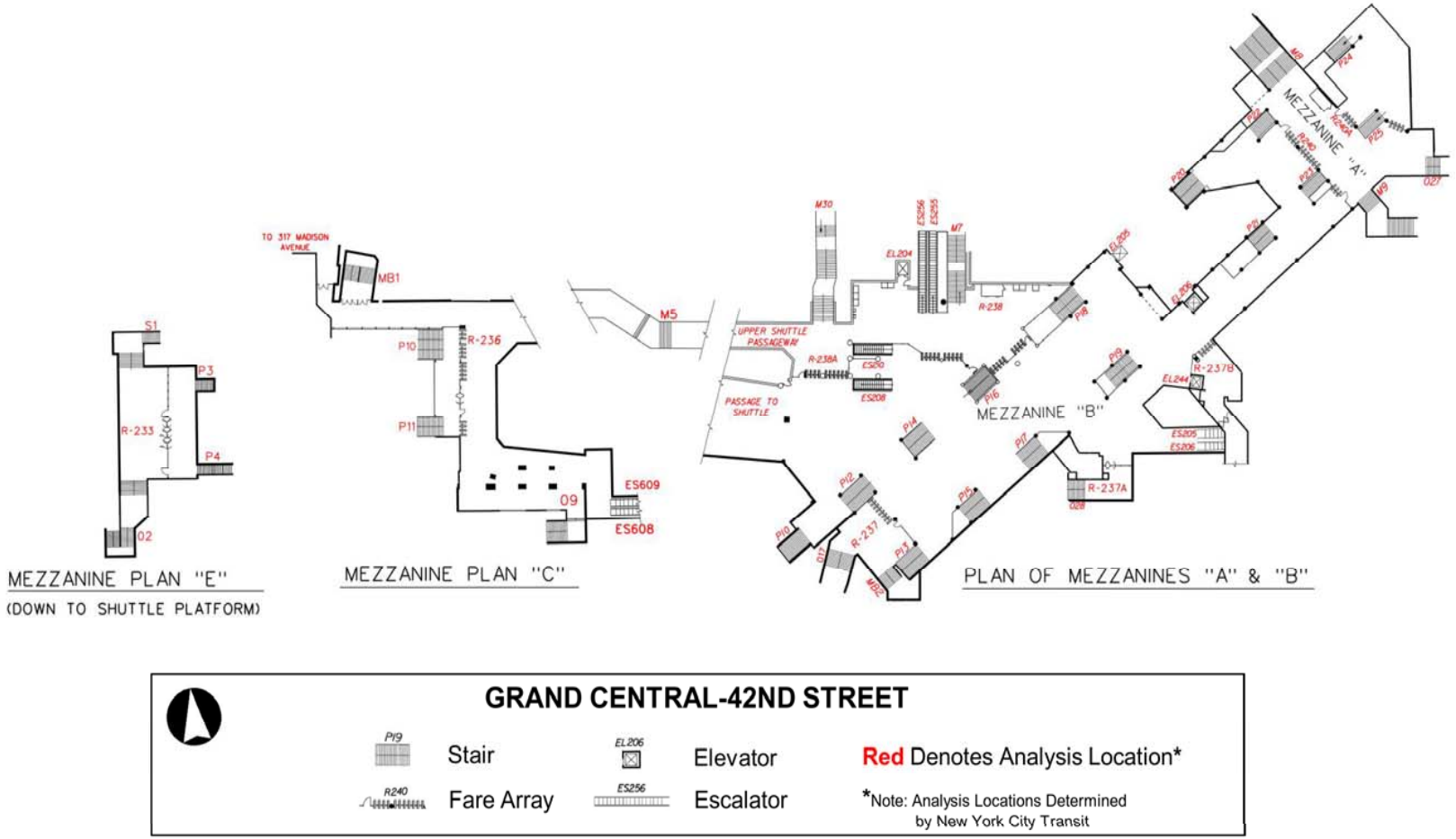
In the No-Action condition, the Grand Central-42nd Street subway station analysis includes the following station changes (see Figure 12-50 and Figure 12-51):

- A new 10-foot-wide street-level stair (M30) near the north side of East 42nd Street, east of Park Avenue, will have been added within Grand Central Terminal space currently leased to a Kenneth Cole store. This stair would be in lieu of reducing the width of stair M7 and adding a high speed escalator, which was identified as required mitigation in the No. 7 Extension-Hudson Yard Rezoning & Development Program Final GEIS.

- Fare Array (R238A), located west of the existing R238 fare array area and just in front of new stair M30, will have been expanded to include eight new turnstiles. This was identified as required mitigation in the East Side Access Final EIS.
- Two new Lexington Line southbound platform stairs (P10N and P16) will have been added. Stair P10N (7.5 feet wide) was identified as required mitigation in the *East Side Access Final EIS*. Stair P16 (9.25 feet wide) was identified as is required mitigation in both *East Side Access Final EIS* and *No. 7 Extension-Hudson Yard Rezoning & Development Program Final GEIS*.
- Additionally, a new Lexington Line southbound platform stair P24 (7 feet wide) and a northbound platform stair P25 (6 feet wide) will have been added. These stairs were identified as required mitigation in the *No. 7 Extension-Hudson Yards Rezoning & Development Program Final GEIS*. In addition, the north end of existing Lexington Line mezzanine A/B will have to be extended further north to service these two stairs and a new fare array area (R240A) with six (6) turnstiles will have to be created.
- Stairs (U1/U3 and U5/U7) that connect the Lexington Line southbound platform to the Flushing passageway underneath the Lexington Line tracks have been widened by 1 foot each. This was done in lieu of widening the U5/U7 stairs by two feet, which was identified as required mitigation in the *No. 7 Extension-Hudson Yards Rezoning & Development Program Final GEIS*, based on additional engineering done subsequent to the GEIS. (Note that in the tables and graphics, stairs U1/U3 and U5/U7 are labeled U1 and U5, respectively, since the stairs, which have a small landing between them, function as one stair, with the same passenger flows, width and resulting LOS.)
- Stair (PL8) at the far eastern end of the Flushing platform will have been widened by two feet. This was identified as required mitigation in the *First Avenue Properties Rezoning Final SEIS*.

In the No-Action condition, subway demand increases, resulting in most subway station elements becoming more crowded. The addition of stair M30 in the R238 control area enables stair M7 and escalators ES255 and ES256 to better accommodate projected growth in the No-Action condition; however, stair M30 would operate at LOS F in the AM peak hour and stair M7 would operate at LOS F in the PM peak hour in 2033. The addition of platform stairs P10N, P16, P23 and P24 enables the Lexington Line platform stairs to better accommodate growth and actually improves conditions on most of the platform stairs, however P16 would operate at LOS F in the AM peak hour. The widening of the U1 and U5 stairs helps mitigate the impact of growth on these stairs, but their LOS deteriorates in the AM peak hour.

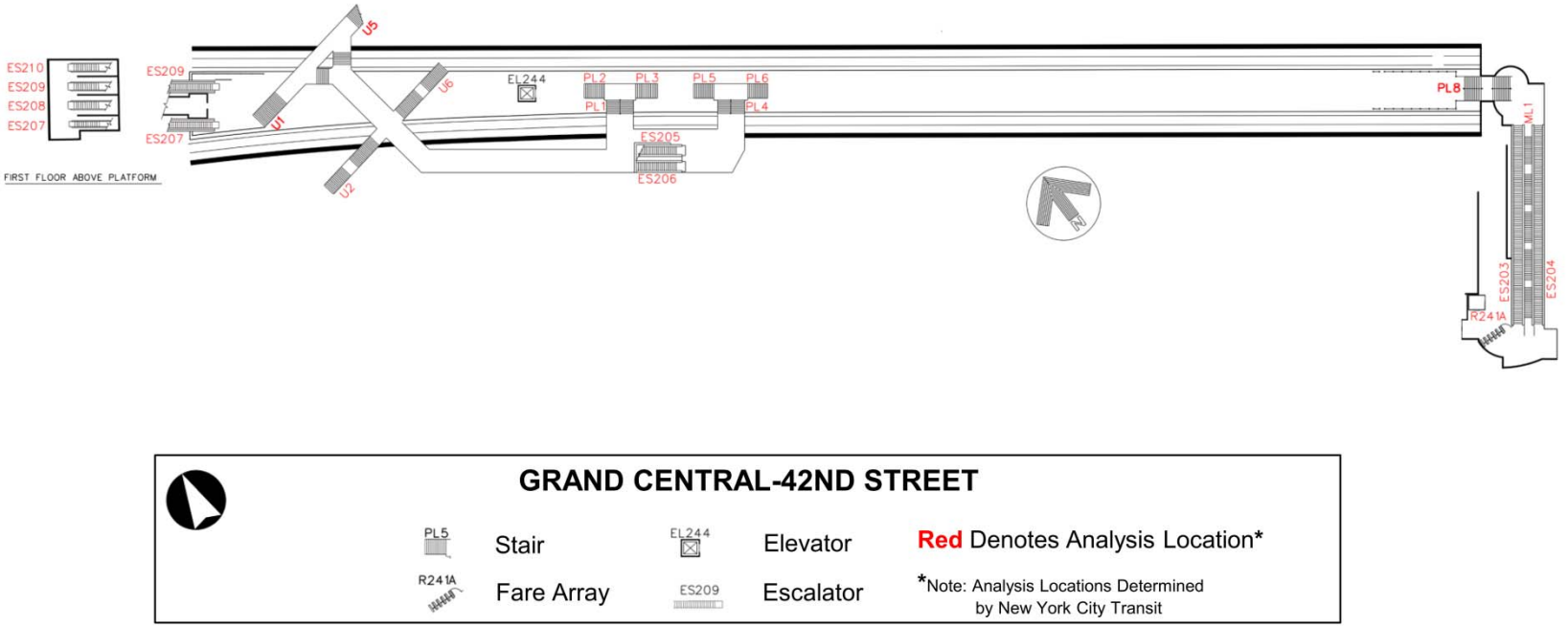
FIGURE 12-50: GRAND CENTRAL-42ND STREET SUBWAY STATION COMPLEX IN NO-ACTION CONDITION – LEXINGTON AVENUE LINE AND SHUTTLE MEZZANINE



Source: New York City Transit, 2013

Note: This figure has been revised for the FEIS.

FIGURE 12-51: GRAND CENTRAL-42ND STREET SUBWAY STATION COMPLEX IN NO-ACTION CONDITION – FLUSHING LINE



Source: New York City Transit, 2013

Table 12-49 through Table 12-52 show the No-Action AM and PM peak-hour conditions at all analyzed stairs, escalators, passageways, and fare array areas at the Grand Central -42nd Street subway station. All the stairs, escalators and passageways serving the S Shuttle will operate at an acceptable LOS C or better in both the AM and PM peak hours. In addition, during the PM peak hour, the southbound Lexington platform stairs will all operate at LOS C or better.

As shown in Table 12-49 through Table 12-52, the following analyzed elements at the Grand Central-42nd Street subway station are expected to operate at LOS D or worse in at least one peak hour in the No-Action condition.

In the AM peak hour these include:

- Free zone stair M7, located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, will operate at LOS E with a v/c ratio of 1.46.
- Free zone escalators ES255 and ES256, also located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area, will both operate at LOS D with v/c ratios of 1.11.
- Future free zone stair M30 will be overcapacity by 2033. Its LOS will be F with a v/c ratio of 1.71.
- Fare control R238A will operate at LOS D, with a v/c of 1.15
- Street stair M9 located in the Strawberry store on the west side of Lexington Avenue north of East 42nd Street will continue to operate at LOS E with a v/c ratio of 1.46.
- Lexington Line southbound platform stairs P12, P14, P16 and P22 will operate at LOS D, D. F and D, with v/c ratios of 1.09, 1.22, 1.69 and 1.27, respectively.
- Lexington Line northbound platform stair P17 will operate at LOS D with a v/c ratio of 1.01.
- Flushing platform escalators E207-8 and E209-10 that connect to the R238 fare array area will both operate at LOS D with a v/c ratio of 1.06.
- Flushing center core up escalators ES205 and ES206 will both operate at LOS D with a v/c of 1.06.
- Stairs U1 and U5, which descend below the southbound Lexington platform to the Flushing passageway, will operate at LOS E and D with v/c ratios of 1.37 and 1.13, respectively.
- Stairs U2 and U6, which descend below the northbound Lexington platform to the Flushing passageway, will operate at LOS E and D with v/c ratios of 1.45 and 1.19, respectively.
- The ramped Flushing passageway that connects the center core Flushing stairs to the Lexington platforms will operate at LOS E with a v/c ratio of 1.60.

- Flushing Line platform stairs PL1, PL2, PL3, PL4, PL5 and PL6 will operate at LOS F, F, E, E, E and F with v/c ratios of 1.69, 1.76, 1.39, 1.60, 1.39 and 1.97, respectively.
- At the far eastern end of the Flushing Line platform, stair PL8 will operate at LOS D with a v/c ratio of 1.11.

In the PM peak hour these include:

- Stair M7 will operate at LOS F during the PM peak hour with a v/c ratio of 1.88.
- Escalator ES255 will operate down at LOS D with a v/c ratio of 1.16, and escalator ES256, will operate up at LOS E, with a v/c of 1.45.
- Future Stair M30 will operate at LOS D with a v/c of 1.05.
- In the R240 control area, stair M9 will operate at LOS D with a v/c of 1.23. In addition, stair M8 – which connects this mezzanine to the Terminal – will be at LOS D and have a v/c of 1.19
- Five of the seven northbound Lexington platform stairs will operate at LOS D; they are P13, P19, P21, P23, and P25 and their v/c ratios will be 1.11, 1.08, 1.12, 1.13, and 1.01, respectively.
- The Flushing platform escalator pair that operates up in the PM, ES209-10, will operate at LOS E, with a v/c of 1.46.
- Stairs U2 and U6 from the northbound Lexington platform to the Flushing underpass will operate at LOS D with v/c 1.13 and LOS F with v/c 1.71, respectively.
- The ramped Flushing passageway will operate at LOS D with a v/c of 1.31.
- The Flushing center core stairs PL1, PL2, PL3, PL4, and PL6 will operate at LOS E, E, E, D, and E with v/c ratios of 1.58, 1.52, 1.42, 1.09 and 1.44, respectively.
- The Flushing center core escalator that operates up, ES205, will be at LOS D with a v/c of 1.22.
- Third Avenue Flushing core escalator ES203, which operates down in the PM, will be at LOS D with a v/c of 1.14.

TABLE 12-49: NO-ACTION STAIR ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor Down	Surging Factor Up	Friction Factor	V/C Ratio	LOS
					Down	Up					
AM	R238	M7	10	8.75	1081	580	1	0.9	0.9	**1.46**	**E**
	R238A	M30	10	8.75	2140	97	1	0.9	1	**1.71**	**F**
	R238A	M5	16	14.75	999	278	1	0.9	0.9	**0.66**	**B**
	R237	017	14	12.75	59	647	1	0.9	0.9	**0.45**	**B**
	R237	MB2	9.83	8.58	17	78	1	0.9	0.9	**0.09**	**A**
	R237A	028	11	9.75	0	135	1	0.9	1	**0.10**	**A**
	R240	M8	19.16	17.66	849	1256	1	0.9	0.9	**0.94**	**C**
	R240	027	12	10.75	150	587	1	0.9	0.9	**0.55**	**B**
	R240	M9	7.83	6.83	215	1018	1	0.9	0.9	**1.46**	**E**
	R233	S1	4.75	3.75	12	125	0.8	1	0.9	**0.33**	**A**
	R233	02	9	7.75	9	121	0.8	1	0.9	**0.15**	**A**
	R236	09	9.166	7.916	19	94	0.8	1	0.9	**0.13**	**A**
	R236	MB1	7.66	6.416	3	15	0.8	1	0.9	**0.03**	**A**
		P10N	7.5	6.5	271	451	1	0.75	0.9	**0.99**	**C**
		P12	10	8.75	919	274	1	0.75	0.9	**1.09**	**D**
		P14	10	8.75	889	419	1	0.75	0.9	**1.22**	**D**
		P16	9.25	8	1395	326	1	0.75	0.9	**1.69**	**F**
		P18	10	8.75	620	376	0.95	0.75	0.9	**0.98**	**C**
		P20	10	8.75	406	475	1	0.75	0.9	**0.88**	**C**
		P22	6.16	5.16	550	250	1	0.75	0.9	**1.27**	**D**
		P24	7	6	0	321	1	0.75	1	**0.48**	**B**
		P13	10	8.75	356	561	1	0.75	0.9	**0.93**	**C**
		P15	10	8.75	298	347	1	0.75	0.9	**0.64**	**B**
		P17	10	8.75	721	353	1	0.75	0.9	**1.01**	**D**
		P19	10	8.75	446	359	0.95	0.75	0.9	**0.80**	**C**
		P21	10	8.75	103	729	1	0.75	0.9	**0.91**	**C**
		P23	6.16	5.16	109	335	1	0.75	0.9	**0.80**	**C**
		P25	6	5	0	462	1	0.75	1	**0.82**	**C**
		U1	7	6	692	175	0.75	0.95	0.9	**1.37**	**E**
		U5	7	6	378	394	0.75	0.95	0.9	**1.13**	**D**
		U2	6	5	667	84	0.75	0.95	0.9	**1.45**	**E**
		U6	6	5	466	172	0.75	0.95	0.9	**1.19**	**D**
		PL1	13.5	12.25	1562	868	0.95	0.75	0.9	**1.69**	**F**
		PL2	7.583	6.583	726	599	0.95	0.75	0.9	**1.76**	**F**
		PL3	7.583	6.583	835	269	0.95	0.75	0.9	**1.39**	**E**
		PL4	13.916	12.66	621	1555	0.95	0.75	0.9	**1.60**	**E**
		PL5	7	6	601	372	0.95	0.75	0.9	**1.39**	**E**
		PL6	7	6	20	1183	0.95	0.75	0.9	**1.97**	**F**
		ML1-5	4.583	3.583	139	0	1	0.75	1	**0.26**	**A**
		PL8	12.416	11.166	139	1151	1	0.75	0.9	**1.11**	**D**
		P10	15.583	14.083	779	560	1	0.75	0.9	**0.80**	**C**
		P11	9.33	8.083	322	275	1	0.75	0.9	**0.63**	**B**
		P3	5	4	9	110	1	0.75	0.9	**0.29**	**A**
		P4	5	4	12	229	1	0.75	0.9	**0.59**	**B**
PM	R238	M7	10	8.75	120	1890	1	0.9	0.9	**1.88**	**F**
	R238A	M30	10	8.75	950	262	1	0.9	0.9	**1.05**	**D**
	R238A	M5	15.5	14.25	311	258	1	0.9	0.9	**0.31**	**A**
	R237	017	14	12.75	481	111	1	0.9	0.9	**0.35**	**A**
	R237	MB2	9.83	8.58	93	31	1	0.9	0.9	**0.11**	**A**
	R237A	028	11	9.75	0	40	1	0.9	1	**0.03**	**A**
	R240	M8	19.16	17.66	1022	1637	1	0.9	0.9	**1.19**	**D**
	R240	027	12	10.75	318	53	1	0.9	0.9	**0.26**	**A**
	R240	M9	7.83	6.83	666	418	1	0.9	0.9	**1.23**	**D**
	R233	S1	4.75	3.75	107	23	1	0.8	0.9	**0.27**	**A**
	R233	02	9	7.75	82	20	1	0.8	0.9	**0.10**	**A**
	R236	09	9.166	7.916	34	117	1	0.8	0.9	**0.17**	**A**
	R236	MB1	7.66	6.416	14	26	1	0.8	0.9	**0.05**	**A**
		P10N	7.5	6.5	161	305	1	0.75	0.9	**0.65**	**B**
		P12	10	8.75	441	181	1	0.75	0.9	**0.58**	**B**
		P14	10	8.75	488	236	1	0.75	0.9	**0.68**	**B**
		P16	9.25	8	665	182	1	0.75	0.9	**0.84**	**C**
		P18	10	8.75	504	233	0.95	0.75	0.9	**0.71**	**C**
		P20	10	8.75	267	308	1	0.75	0.9	**0.57**	**B**
		P22	6.16	5.16	432	183	1	0.75	0.9	**0.97**	**C**
		P24	7	6	0	186	1	0.75	1	**0.28**	**A**
		P13	10	8.75	437	652	1	0.75	0.9	**1.11**	**D**
		P15	10	8.75	454	363	1	0.75	0.9	**0.79**	**C**
		P17	10	8.75	558	374	1	0.75	0.9	**0.89**	**C**
		P19	10	8.75	686	419	0.95	0.75	0.9	**1.08**	**D**
		P21	10	8.75	114	903	1	0.75	0.9	**1.12**	**D**
		P23	6.16	5.16	230	416	1	0.75	0.9	**1.13**	**D**
		P25	6	5	0	568	1	0.75	1	**1.01**	**D**
		U1	7	6	483	101	0.75	0.95	0.9	**0.93**	**C**
		U5	7	6	249	155	0.75	0.95	0.9	**0.61**	**B**
		U2	6	5	514	72	0.75	0.95	0.9	**1.13**	**D**
		U6	6	5	710	198	0.75	0.95	0.9	**1.71**	**F**
		PL1	13.5	12.25	1607	692	0.95	0.75	0.9	**1.58**	**E**
		PL2	7.583	6.583	682	476	0.95	0.75	0.9	**1.52**	**E**
		PL3	7.583	6.583	925	216	0.95	0.75	0.9	**1.42**	**E**
		PL4	13.916	12.66	828	750	0.95	0.75	0.9	**1.09**	**D**
		PL5	7	6	435	188	0.95	0.75	0.9	**0.87**	**C**
		PL6	7	6	393	562	0.95	0.75	0.9	**1.44**	**E**
		ML1-5	4.583	3.583	0	0	1	0.75	1	**0.00**	**A**
		PL8	10.416	9.166	857	130	1	0.75	0.9	**0.83**	**C**
		P10	15.583	14.083	586	717	1	0.75	0.9	**0.81**	**C**
		P11	9.33	8.083	268	272	1	0.75	0.9	**0.58**	**B**
		P3	5	4	80	16	1	0.75	0.9	**0.19**	**A**
		P4	4	4	205	29	1	0.75	0.9	**0.45**	**B**

Source: New York City Transit, 2013

TABLE 12-50: NO-ACTION ESCALATOR ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS
AM	ES255 (UP)	40	90	945	996	0.95	1.11	D
	ES256 (UP)	40	90	945	996	0.95	1.11	D
	ES608 (UP)	40	90	945	163	0.8	0.22	A
	ES609 (DN)	40	90	945	26	1	0.03	A
	ES207-8 (UP)	40	90	945	750	0.75	1.06	D
	ES209-10 (UP)	40	90	945	750	0.75	1.06	D
	ES205 (UP)	40	90	945	798	0.8	1.06	D
	ES206 (UP)	40	90	945	799	0.8	1.06	D
	ES203 (UP)	32	90	750	576	0.8	0.96	C
	ES204 (UP)	32	90	750	576	0.8	0.96	C
PM	ES255 (DN)	40	90	945	989	1	1.16	D
	ES256 (UP)	40	90	945	1299	0.95	1.45	E
	ES608 (DN)	40	90	945	28	1	0.03	A
	ES609 (UP)	40	90	945	160	0.8	0.21	A
	ES207-8 (DN)	40	90	945	755	1	0.80	C
	ES209-10 (UP)	40	90	945	1036	0.75	1.46	E
	ES205 (UP)	40	90	945	923	0.8	1.22	D
	ES206 (DN)	40	90	945	479	1	0.51	B
	ES203 (DN)	32	90	750	857	1	1.14	D
	ES204 (UP)	32	90	750	130	0.8	0.22	A

Source: New York City Transit, 2013

Note: This table has been revised for the FEIS.

TABLE 12-51: NO-ACTION PASSAGEWAY ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

Peak Period	Passageway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor West/Up	Surging Factor East/Dn	Friction Factor	V/C Ratio	LOS
				West/Up/Entry	East/Dn					
AM	317 Madison	5.25	3.25	38	2	0.8	1	0.9	0.07	A
	Flushing Passageway	12	10	2203	825	0.95	0.9	0.9	1.60	E
	Paid Shuttle Passage	20	18	336	689	0.9	0.9	0.9	0.31	A
PM	317 Madison	5.25	3.25	7	36	1	0.8	0.9	0.08	A
	Flushing Passageway	12	10	527	1955	0.9	0.95	0.9	1.31	D
	Paid Shuttle Passage	20	18	511	778	0.9	0.9	0.9	0.39	A

Source: New York City Transit, 2013

TABLE 12-52: NO-ACTION FARE ARRAY ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	R233	High Entry/Exit Turnstile	2	21	246	0.8	0.9	0.25	A
		High Exit Turnstile	1						
	R236	Two-way Turnstile	12	1101	836	0.8	0.9	0.38	A
		High Exit Turnstile	1						
	R237	High Entry/Exit Turnstile	7	76	725	0.9	0.9	0.23	A
	R237A	High Exit Turnstile	1	N/A	135	0.9	1	0.27	A
	R237B	Two-way Turnstile	4	37	624	0.9	0.9	0.32	A
	R238	Two-way Turnstile	15	955	2549	0.9	0.9	0.49	B
	R238A	Two-way Turnstile	8	3265	300	0.9	0.9	1.15	D
	R240	Two-way Turnstile	11	1231	2104	0.9	0.9	0.66	B
	R240A	Two-way Turnstile	6	0	783	0.9	1	0.22	A
	R241A	Two-way Turnstile	5	139	1151	0.95	0.9	0.49	B
PM	R233	High Entry/Exit Turnstile	2	189	43	0.8	0.9	0.45	A
		High Exit Turnstile	1						
	R236	Two-way Turnstile	12	775	989	0.8	0.9	0.34	A
		High Exit Turnstile	1						
	R237	High Entry/Exit Turnstile	7	574	143	0.9	0.9	0.26	A
	R237A	High Exit Turnstile	1	0	40	0.9	1	0.08	A
	R237B	Two-way Turnstile	4	371	120	0.9	0.9	0.30	A
	R238	Two-way Turnstile	15	1109	3339	0.9	0.9	0.62	B
	R238A	Two-way Turnstile	8	1267	370	0.9	0.9	0.51	B
	R240	Two-way Turnstile	11	2002	1354	0.9	0.9	0.72	C
	R240A	Two-way Turnstile	6	0	754	0.9	1	0.22	A
	R241A	Two-way Turnstile	5	856	130	0.95	0.9	0.50	B

Source: New York City Transit, 2013

b. 42nd St-Bryant Park Subway Station

As shown in Table 12-53, three of the eleven analyzed stairs at the 42nd Street-Bryant Park subway station are expected to operate at LOS D or worse in at least one peak hour in the No-Action condition. These include:

- Street stair S5 at the southeast corner of Sixth Avenue and West 40th Street which will continue to operate over capacity, with LOS F conditions in both peak hours and v/c ratios of 1.83 in the AM and 1.72 in the PM;
- Downtown platform stair P3 which will operate at LOS D with a v/c ratio of 1.02 in the PM peak hour; and
- Uptown platform stair P4 which will operate at LOS D with a v/c ratio of 1.06 in the AM peak hour.

TABLE 12-53: NO-ACTION STAIR ANALYSIS AT THE 42ND STREET-BRYANT PARK (B, D, F, M) SUBWAY STATION

Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
					Down	Up				
AM	N504	S5	4.92	3.92	51	825	0.9	0.9	1.83	F
		M6	8.50	7.50	51	825	0.9	0.9	0.96	C
		S6	5.00	4.00	16	414	0.9	1.0	0.79	C
		M7/M8	8.50	7.50	16	414	0.9	1.0	0.42	A
		P1	6.75	5.75	17	337	0.75	1.0	0.54	B
		P2	6.75	5.75	19	582	0.75	1.0	0.92	C
		P3	6.67	5.67	21	512	0.75	1.0	0.83	C
		P4	6.67	5.67	39	578	0.75	0.9	1.06	D
	N502	MB20	10.00	8.75	21	707	0.9	1.0	0.61	B
		P13	10.00	8.75	27	387	0.75	0.9	0.46	B
		P14	10.00	8.75	24	856	0.75	1.0	0.89	C
PM	N504	S5	4.92	3.92	794	105	0.9	0.9	1.72	F
		M6	8.50	7.50	794	105	0.9	0.9	0.90	C
		S6	5.00	4.00	242	68	0.9	0.9	0.59	B
		M7/M8	8.50	7.50	242	68	0.9	0.9	0.31	A
		P1	6.75	5.75	274	158	0.75	0.9	0.62	B
		P2	6.75	5.75	157	43	0.75	0.9	0.28	A
		P3	6.67	5.67	592	142	0.75	0.9	1.02	D
		P4	6.67	5.67	457	71	0.75	0.9	0.72	C
	N502	MB20	10.00	8.75	595	70	0.9	0.9	0.57	B
		P13	10.00	8.75	672	66	0.75	0.9	0.64	B
		P14	10.00	8.75	342	111	0.75	0.9	0.41	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

As shown in Table 12-54, all analyzed fare arrays at the 42nd Street-Bryant Park subway station are expected to operate at an acceptable LOS C or better in both the AM and PM peak hours in the No-Action condition.

TABLE 12-54: NO-ACTION FARE ARRAY ANALYSIS AT THE 42ND STREET-BRYANT PARK (B, D, F, M) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	N502	Two-way Turnstile	5	56	1327	0.9	1.0	0.33	A
		High Entry/Exit Turnstile	1						
		High Exit Turnstile	2						
	N504	Two-way Turnstile	6	65	2581	0.9	1.0	0.54	B
		High Entry/Exit Turnstile	3						
		High Exit Turnstile	0						
PM	N502	Two-way Turnstile	5	977	190	0.9	0.9	0.51	B
		High Entry/Exit Turnstile	1						
		High Exit Turnstile	2						
	N504	Two-way Turnstile	6	2007	187	0.9	0.9	0.72	C
		High Entry/Exit Turnstile	3						
		High Exit Turnstile	0						

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

c. Fifth Avenue Subway Station

As shown in Table 12-55 and Table 12-56, all analyzed stairs and fare arrays at the Fifth Avenue subway station are expected to operate at an acceptable LOS C or better in both the AM and PM peak hours in the No-Action condition.

TABLE 12-55: NO-ACTION STAIR ANALYSIS AT THE FIFTH AVENUE (7) SUBWAY STATION

Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up				
AM	S1	12.33	11.08	48	773	0.8	0.9	0.68	B
	M1/M2	11.33	10.08	48	773	0.8	0.9	0.75	C
	P2	8.25	7.00	16	171	0.75	0.9	0.26	A
	P3	8.00	6.75	22	164	0.75	0.9	0.26	A
PM	S1	12.33	11.08	605	194	0.8	0.9	0.57	B
	M1/M2	11.33	10.08	605	194	0.8	0.9	0.62	B
	P2	8.25	7.00	147	122	0.75	0.9	0.33	A
	P3	8.00	6.75	174	82	0.75	0.9	0.31	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013

TABLE 12-56: NO-ACTION FARE ARRAY ANALYSIS AT THE FIFTH AVENUE (7) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	R501	Two-way Turnstile	8	48	773	0.8	0.9	0.22	A
PM	R501	Two-way Turnstile	8	605	194	0.8	0.9	0.25	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013

d. 47th – 50th Streets-Rockefeller Center Subway Station

As shown in Table 12-57, six of the nine analyzed stairs at the 47th-50th Streets-Rockefeller Center subway station are expected to operate at LOS D or worse in at least one peak hour in the No-Action condition. These include:

- Street stair S1 at the southeast corner of Sixth Avenue and West 47th Street which is expected to operate with LOS D conditions in both peak hours and v/c ratios of 1.09 in the AM and 1.12 in the PM;
- Street stair S3 at the northeast corner of Sixth Avenue and West 47th Street which is expected to operate at a v/c ratio of 1.35 (LOS E) in the AM peak hour and a v/c ratio of 1.26 (LOS D) in the PM;
- Downtown platform stair P1 which is expected to continue to operate well over practical capacity in the AM peak hour with a v/c ratio 2.34 (LOS F) in the AM peak hour; in the PM this stair is expected to operate at a v/c ratio of 1.26 (LOS D);
- Uptown platform stair P2 which is expected to continue to operate well over practical capacity in the AM peak hour with a v/c ratio 2.13 (LOS F) in the AM peak hour; in the PM this stair is expected to operate at a v/c ratio of 1.54 (LOS E);
- Downtown platform stair P3 which is expected to operate at a v/c ratio of 1.49 (LOS E) in the AM peak hour and a v/c ratio of 1.03 (LOS D) in the PM; and
- Uptown platform stair P4 which is expected to operate at a v/c ratio of 1.47 (LOS E) in the AM peak hour.

As shown in Table 12-58, analyzed fare array N501 at the 47th-50th Streets-Rockefeller Center subway station is expected to operate at an acceptable LOS A or B in both the AM and PM peak hours in the No-Action condition.

TABLE 12-57: NO-ACTION STAIR ANALYSIS AT THE 47TH-50TH STREETS-ROCKEFELLER CENTER (B, D, F, M) SUBWAY STATION

Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up				
AM	S1	5.00	4.00	24	568	0.9	1.0	1.09	D
	S6	5.00	4.00	21	371	0.9	0.9	0.80	C
	M1	12.00	10.75	45	939	0.9	1.0	0.67	B
	S3	4.33	3.33	18	593	0.9	1.0	1.35	E
	M3	11.92	10.67	18	593	0.9	1.0	0.42	A
	P1	6.67	5.67	14	1483	0.75	1.0	2.34	F
	P2	6.67	5.67	303	994	0.75	0.9	2.13	F
	P3	8.83	7.58	13	1258	0.75	1.0	1.49	E
	P4	8.83	7.58	449	789	0.75	0.9	1.47	E
PM	S1	5.00	4.00	635	31	0.9	1.0	1.12	D
	S6	5.00	4.00	363	23	0.9	0.9	0.72	C
	M1	12.00	10.75	999	54	0.9	0.9	0.73	C
	S3	4.33	3.33	518	46	0.9	0.9	1.26	D
	M3	11.92	10.67	518	46	0.9	0.9	0.40	A
	P1	6.67	5.67	841	90	0.75	0.9	1.26	D
	P2	6.67	5.67	1046	98	0.75	0.9	1.54	E
	P3	8.83	7.58	851	155	0.75	0.9	1.03	D
	P4	8.83	7.58	463	147	0.75	0.9	0.64	B

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-58: NO-ACTION FARE ARRAY ANALYSIS AT THE 47TH-50TH STREETS-ROCKEFELLER CENTER (B, D, F, M) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	N501	Two-way Turnstile	8	53	2584	0.9	1.0	0.40	A
		High Entry/Exit Turnstile	2						
		High Exit Turnstile	2						
PM	N501	Two-way Turnstile	8	1703	132	0.9	0.9	0.51	B
		High Entry/Exit Turnstile	2						
		High Exit Turnstile	2						

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

e. 51st Street Subway Station

While entering and exiting demand at the 51st Street subway station is expected to increase during the 2013 through 2033 period due to background growth and demand from new development in the area, transfer moves between the No. 6 train service at this station and the E and M trains at the adjacent Lexington Avenue-53rd Street subway station are expected to show decreases compared to existing levels as a result of the implementation of the completion of Phase 1 of the Second Avenue subway by 2033. As shown in Table 12-59 and Table 12-60, two of the eight analyzed stairs and one of the two analyzed escalators at the 51st Street subway station would continue to operate at LOS D or worse in at least one peak hour in the No-Action condition. These include:

- Underpass stair U1 on the downtown platform which is expected to operate at v/c ratios 2.65 (LOS F) and 2.14 (LOS F) in the AM and PM peak hours, respectively;
- Underpass stair O4 which is expected to operate at v/c ratio of 1.29 (LOS D) in the AM peak hour;
- Underpass escalator E252 (adjoining stair U1) which is expected to operate at a v/c ratio of 1.69 (LOS F) in the AM peak hour.

As shown in Table 12-61 and Table 12-62, analyzed fare arrays R242A and R243 at the 51st Street subway station and the analyzed passageway connecting this station to the Lexington Avenue-53rd Street subway station are all expected to operate at an acceptable LOS B or better in both the AM and PM peak hours in the No-Action condition.

TABLE 12-59: NO-ACTION STAIR ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
					Down	Up				
AM	R243	S2	5.17	4.17	32	286	0.75	0.9	0.73	C
		S5	4.08	3.08	17	202	0.75	0.9	0.69	B
		M2	9.83	8.58	49	489	0.75	0.9	0.60	B
	R242A	O1/O2	10.00	8.75	73	790	0.75	0.9	0.95	C
		M7	21.33	18.83	71	777	0.75	0.9	0.44	A
		P3	18.08	15.58	71	777	0.75	0.9	0.53	B
	N305A	U1	4.17	3.17	910	45	0.75	1.0	2.65	F
		O4	10.00	9.00	1246	242	0.75	0.9	1.29	D
PM	R243	S2	5.17	4.17	284	121	0.75	0.9	0.79	C
		S5	4.08	3.08	112	84	0.75	0.9	0.54	B
		M2	9.83	8.58	394	205	0.75	0.9	0.58	B
	R242A	O1/O2	10.00	8.75	235	90	0.75	0.9	0.30	A
		M7	21.33	18.83	231	85	0.75	0.9	0.14	A
		P3	18.08	15.58	231	85	0.75	0.9	0.16	A
	N305A	U1	4.17	3.17	759	4	0.75	1.0	2.14	F
		O4	10.00	9.00	472	160	0.75	0.9	0.56	B

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-60: NO-ACTION ESCALATOR ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS
AM	E233 (UP)	40	90	945	725	0.8	0.96	C
	E252 (UP)	40	90	945	1278	0.8	1.69	F
PM	E233 (UP)	40	90	945	554	0.8	0.73	C
	E252 (UP)	40	90	945	441	0.8	0.58	B

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-61: NO-ACTION PASSAGEWAY ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Passageway	Peak Period	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				NB	SB				
To/From Lex Ave-53rd St	AM	15.25	13.3	507	485	0.75	0.9	0.43	A
	PM	15.25	13.3	659	498	0.75	0.9	0.51	B

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-62: NO-ACTION FARE ARRAY ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	R242A	Two-way Turnstile	5	71	777	0.75	0.9	0.39	A
	R243	Two-way Turnstile	9	38	922	0.75	1.0	0.22	A
PM	R242A	Two-way Turnstile	5	231	85	0.75	0.9	0.16	A
	R243	Two-way Turnstile	9	654	372	0.75	0.9	0.29	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

f. Lexington Avenue-53rd Street Subway Station

As shown in Table 12-64 and summarized below, all four analyzed escalators at the Lexington Avenue-53rd Street subway station are expected to continue to operate above their practical capacities in one or both peak hours in the No-Action condition.

- Up escalator E243 is expected to operate at a v/c ratio of 1.47 (LOS E) in the AM peak hour;
- Down escalator E269 is expected to operate at v/c ratios of 1.01 (LOS D) in the AM and 1.49 (LOS E) in the PM;
- Escalator E244 is expected to operate at v/c ratios of 1.43 (LOS E) in the up direction in the AM peak hour and 1.33 (LOS E) in the down direction in the PM; and
- Escalator E254X is expected to operate at a v/c ratio of 1.43 (LOS E) in the up direction in the AM peak hour.

As shown in Table 12-63 and Table 12-65, analyzed stairs and analyzed fare array N305 at the Lexington Avenue-53rd Street subway station are all expected to operate at an acceptable LOS A in both the AM and PM peak hours in the No-Action condition.

TABLE 12-63: NO-ACTION STAIR ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up				
AM	O7	48.8	46.33	87	641	0.9	0.9	0.13	A
	P7	3.7	2.67	30	49	0.75	0.9	0.26	A
PM	O7	48.8	46.33	721	219	0.9	0.9	0.15	A
	P7	3.7	2.67	98	20	0.75	0.9	0.35	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-64: NO-ACTION ESCALATOR ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS
AM	E243 (UP)	40	90	945	1043	0.75	1.47	E
	E244 (UP)	40	90	945	1016	0.75	1.43	E
	E254X (UP)	24	90	480	516	0.75	1.43	E
	E269 (DN)	40	90	945	910	0.95	1.01	D
PM	E243 (UP)	40	90	945	642	0.75	0.91	C
	E244 (DN)	40	90	945	1196	0.95	1.33	E
	E254X (DN)	24	90	480	197	1.00	0.41	A
	E269 (DN)	40	90	945	1336	0.95	1.49	E

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-65: NO-ACTION FARE ARRAY ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out				
AM	N305	Two-way Turnstile	11	83	1310	0.8	0.9	0.28	A
PM	N305	Two-way Turnstile	11	622	126	0.8	0.9	0.17	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

12.8.2.2 Subway Line Haul

As shown in Table 12-66, three routes will operate above guideline capacity in the future without the Proposed Action.

- The southbound Nos. 4 and 5 will operate with v/c ratios of 1.12 and 1.03 in the AM peak hour, respectively, compared with 1.03 and 1.02, respectively, under existing conditions.
- In the PM peak hour, the northbound No. 4 will operate with a v/c of 1.04, compared with 0.99 in the existing condition.
- The southbound No. 7 express will operate with a v/c ratio of 1.07 in the AM peak hour, compared with 1.02 under existing conditions.

TABLE 12-66: NO-ACTION SUBWAY LINE HAUL ANALYSIS

Peak Hour	Route	Direction	Maximum Load Point (leaving station)	Average Trains Per Hour (1)	Cars Per Hour (1)	Passengers per Hour (2)	Peak Hour Capacity (3)	V/C Ratio (4)
AM	4	SB	86 St	14.1	141.0	17,364	15,485	**1.12**
	5	SB	86 St	13.8	138.0	15,625	15,235	**1.03**
	6	SB	68 St-Hunter College	22.5	225.0	22,497	24,750	0.91
	7 exp	SB	Woodside-61 St	14.0	153.6	17,993	16,831	**1.07**
	7 loc	SB	40 St-Lowery St	14.2	156.0	16,315	17,155	0.95
	7 loc	NB	Times Sq-42 St	26.0	286.0	8,490	31,460	0.27
	F	SB	Roosevelt Island	16.0	160.0	21,959	22,910	0.96
	4	NB	Fulton St	13.7	137.0	11,316	15,033	0.75
	5	NB	Fulton St	12.3	123.0	10,087	13,567	0.74
	D	NB	36 St	12.3	98.4	13,951	16,236	0.86
	F	NB	2 Av	14.9	148.9	19,551	20,105	0.97
	S	NB	Times Sq-42 St	29.5	98.5	4,602	10,835	0.42
PM	4	NB	59 St	12.5	125.0	14,273	13,750	**1.04**
	5	NB	59 St	12.8	128.0	12,587	14,025	0.90
	6	NB	59 St	20.3	203.0	20,139	22,367	0.90
	7	NB	Queensboro Plaza	23.2	232.0	22,402	28,012	0.80
	7	SB	Grand Central-42 St	26.0	286.0	8,660	31,460	0.28
	F	NB	Lexington Av/63 St	15.0	150.0	21,077	21,750	0.97
	4	SB	Bowling Green	13.0	130.0	12,910	14,300	0.90
	5	SB	Bowling Green	8.0	80.0	8,484	8,800	0.96
	B	SB	Atlantic Av	9.5	76.0	10,358	13,431	0.77
	D	SB	Pacific St	8.5	68.0	8,323	10,540	0.79
	F	SB	Jay St-Borough Hall	13.0	130.0	11,672	17,550	0.67
	S	SB	Grand Central-42 St	27.5	92.0	4,705	10,120	0.46

Notes:
(1) Based on existing average throughput and future anticipated capacity increases
(2) Based on Regional Transit Forecasting Model (RTFM) outputs.
(3) Capacity based on NYCT rush hour guideline capacities.
(4) Volume-to-capacity ratio.

Source: New York City Transit, 2013

These results reflect growth in demand from 2012 to 2033 based on population and employment projections, as well as additional subway capacity on the Lexington Avenue and Flushing lines anticipated from the opening of the first phase of the Second Avenue subway and the No. 7 extension.

12.8.2.3 Bus

Demand on both the local and express bus services operating in the vicinity of the rezoning area is expected to increase during the 2013 through 2033 period as a result of background growth as well as demand from new development. In determining future No-Action local bus demand, development on projected development sites pursuant to existing zoning was considered, as were the 24 other No-Action development projects in East Midtown summarized in Table 12-20. Notable among these is the First Avenue Properties project along First Avenue south of East 42nd Street, which is expected to generate substantial new demand on the M42 and other routes operating in East Midtown. Changes in local bus demand from the East Side Access project, which will bring LIRR trains (and riders) into Grand Central Terminal, were also considered. This major commuter rail project is expected to result in new demand on local bus routes serving Grand Central Terminal while at the same time resulting in some reduction in demand on routes connecting Penn Station and East Midtown.

Another MTA capital improvement project expected to result in changes to local bus demand in East Midtown is the Second Avenue Subway. This new subway line will provide a faster transit option compared to surface buses for northbound and southbound travel through the East Side, and will likely shift many existing transit users from the bus mode to the subway mode. However, it should be noted that only the first phase of the Second Avenue Subway (extending from East 63rd Street to East 96th Street) is expected to be completed by the 2033 analysis year, and specific route by route data on changes in bus demand related to Phase 1 are not readily available. The analysis of No-Action local bus conditions therefore takes a conservative approach with regard to the Second Avenue Subway and does not account for reductions in bus ridership due to a potential transit modal shift.

Similarly, the extension of the No. 7 subway line to Eleventh Avenue by 2014 will also likely result in some shift of crosstown bus ridership to the subway mode as it will provide an all-rail route to the far west side. The analysis of No-Action local bus conditions also takes a conservative approach with regard to this project and does not account for reductions in bus ridership due to a potential shift to the subway mode. (As noted above, however, the RTFM data used for estimating future subway ridership do reflect potential changes in demand at analyzed subway stations as a result of East Side Access, Second Avenue Subway and the No. 7 Subway Line Extension.)

It should also be noted that improvements to the dedicated bus lanes along both Fifth and Madison Avenues are planned by DOT. These include:

- An expansion of the number of bus lanes from one lane to dual bus lanes along the west side of Fifth Avenue between 60th Street and 26th Street; and
- Extending the existing dual bus lanes along Madison Avenue one block from East 59th Street to East 60th Street.

As shown in Table 12-67, existing levels of bus service would not be sufficient to provide adequate supply to meet the projected demand in the 2033 No-Action condition on the eastbound and westbound M42 route in both the AM and PM peak hours. This route would require additional capacity, which could be provided by either increasing the number of standard buses or converting the M42 route to articulated bus service. As shown in Table 12-67, based on a loading guideline of 54 passengers per standard bus, an additional 16 standard buses per hour would need to be added in the eastbound direction in the AM peak hour and one in the PM peak hour to accommodate projected No-Action demand. In the westbound direction, four buses would need to be added in the AM and 21 in the PM.

TABLE 12-67: NO-ACTION LOCAL BUS ANALYSIS

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	2033 Peak Hour Passengers (2)	No-Action Conditions with Current Service Levels			No-Action Conditions with Potential Service Adjustments		
					Peak Hour Buses (3)	Average Passengers/Bus	Available Capacity (4)	Peak Hour Buses (5)	Average Passengers/Bus	Available Capacity (4)
AM	M1	NB	Madison Ave & E 58 St	144	4	36	72	4	36	72
		SB	5 Ave & W 72 St	143	4	36	73	4	36	73
		SB LTD	5 Ave & W 72 St	303	7	43	75	7	43	75
	M4	NB	W 32 St & 7 Ave	365	10	37	175	10	37	175
		SB	5 Ave & W 72 St	270	6	45	54	6	45	54
		SB LTD	Central Park N & 5 Ave	284	6	47	40	6	47	40
	M42	EB	W 42 St & Broadway	2,186	25	87	-836	41	53	28
		WB	W 42 St & Broadway	869	13	67	-167	17	51	49
PM	M1	NB	Madison Ave & E 72 St	230	6	38	94	6	38	94
		SB	5 Ave & W 72 St	384	9	43	102	9	43	102
		NB LTD	Madison Ave & E 58 St	253	6	42	71	6	42	71
	M4	NB	Madison Ave & E 57 St	262	6	44	62	6	44	62
		SB	5 Ave & W 72 St	349	8	44	83	8	44	83
		NB LTD	Madison Ave & E 96 St	274	6	46	50	6	46	50
	M42	EB	W 42 St & Broadway	857	15	57	-47	16	54	7
		WB	E 42 St & Lexington Ave	1,884	14	135	-1,128	35	54	6

Notes:
(1) Peak hours: weekday 8:00-9:00 AM and 5:00-6:00 PM.
(2) Assumes 0.25% percent per year background growth for the first 5 years and 0.125% per year background growth for subsequent years for the 2013 through 2033 period plus demand from No-Action developments expected by 2033.
(3) Based on most currently available NYC Transit ridership summaries.
(4) Available capacity based on MTA NYCT loading guidelines of 54 passengers per standard bus.
(5) Assumes service levels adjusted to address capacity shortfalls during the 2013 through 2033 period.

Source: Philip Habib & Associates, 2013

It should be noted that much of the new demand on the M42 in the No-Action condition would be generated by the First Avenue Properties project located along First Avenue south of East 42nd Street. That project identified a need for an additional eight standard buses per hour per direction in the AM peak hour, and an additional seven eastbound and 14 westbound buses in the PM peak hour to accommodate project-generated demand. (This was based on a capacity of 65 passengers per standard bus as per NYCT guidelines in effect when the *First Avenue Properties Final Supplemental EIS* was prepared. As noted above, the current NYCT guideline capacity for a standard bus is 54 passengers.) Conversion to higher-capacity articulated buses was recommended in the *First Avenue Properties Final Supplemental EIS* as mitigation for impacts to M42 service.

The general policy of NYCT is to provide additional bus service where demand warrants, taking into account financial and operational constraints. Based on NYCT's ongoing passenger monitoring program and as new development occurs throughout East Midtown, a comprehensive service plan would be generated to respond to specific, known needs with capital and/or operational improvements where fiscally and operationally practicable. NYCT's capital program is developed on a five-year cycle; through this program, expansion of bus services would be provided as needs are determined. It is therefore anticipated that in the No-Action condition, NYCT would increase service frequency on the M42 route to address its capacity shortfalls.

12.8.3 Future Transit Conditions With The Proposed Action (With-Action)

12.8.3.1 Subway Stations

As shown in Table 12-9, the Proposed Action is expected to generate a net total of 3,922 and 4,708 new subway trips in the AM and PM peak hours, respectively. Based on trip assignment data provided by NYCT, the highest numbers of new peak hour subway trips are expected to occur at the Grand Central-42nd Street station complex which would experience approximately 1,822 new trips in the AM peak hour and 2,158 in the PM. The 42nd Street-Bryant Park/Fifth Avenue subway station complex would experience the second highest number of new peak-hour subway trips with 1,403 in the AM and 1,624 in the PM. New trips at 47th-50th Streets-Rockefeller Center subway station would total 392 and 463 in the AM and PM peak hours, respectively, while new trips at the 51st Street/Lexington Avenue-53rd Street subway station complex would total 200 and 354 during these periods, respectively.

Conditions at analyzed stairs, escalators, passageways and fare arrays at these subway stations in the future with the Proposed Action are discussed below. Significant adverse impacts are identified based on the criteria previously discussed in Section 12.6.2.2.

As noted in Chapter 1, "Project Description," the future with the Proposed Action condition incorporates the priority improvements to the analysis of the Grand Central-42nd Street subway station complex that would be implemented under the District Improvement Bonus (DIB) mechanism. In addition, an analysis is provided as part of the EIS that evaluates how and to what extent the priority DIB-funded public improvements in the Grand Central-42nd Street subway station complex avoid pedestrian and transit impacts resulting from the Proposed Action. Therefore, the Grand Central-42nd Street subway station analysis is presented first as the future with the Proposed Action with Station Improvements (Action-With-Improvements) and then as the future with the Proposed Action without Station Improvements (Action-Without-Improvements). This analysis approach provides the decision-makers with important information concerning the benefits of the improvements.

a. Grand Central-42nd Street with Station Improvements (Action-With-Improvements)

Improvements have been developed to enhance the passenger circulation conditions at Grand Central-42nd Street subway station (see Figure 12-52 and Figure 12-53) and whose implementation would be funded by the District Improvement Fund. The goals of these improvements include the following:

- Provide better access to/from the Flushing Line platforms;
- Provide new connections between Grand Central Terminal, particularly the new LIRR concourse and the lower level MNR tracks, and the subway station, effectively directing customers away from congested areas like the R238 fare array area and the Lexington Line platforms;
- Provide more Lexington Line platform space to make it easier for customers to board and alight Lexington Line trains, reducing train dwell time and increasing train capacity;

- Improve wayfinding in the station by opening up the Lexington Line mezzanine; and
- Provide more exit capacity to the street from the Lexington Line mezzanine.

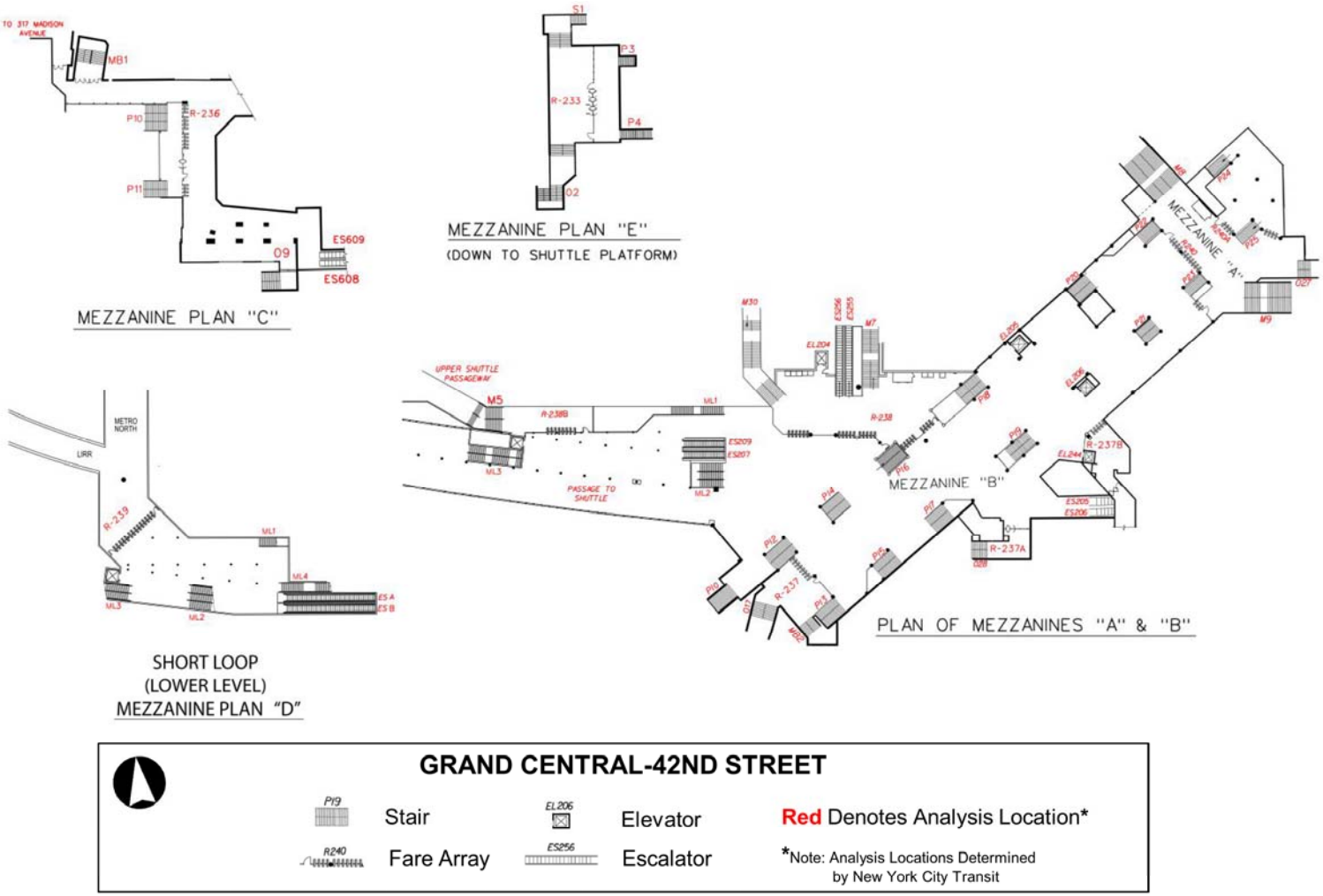
These goals, which are intended to improve the passenger circulation conditions at the Grand Central – 42nd Street subway station, can be accomplished through the following actions:

- Existing stair M9 in the Strawberry store would be widened by 7 feet 2 inches, for a total width of 15 feet (13.5 effective); the stair would also be straightened.
- On the Flushing platform, stair PL8 at the eastern end of the platform would be widened an additional 19 inches to a total width of 14 feet (12.5 effective).
- An unused track in Grand Central Terminal would be converted into a new passageway to service the new LIRR concourse under Vanderbilt Avenue. This passageway would connect to a new mezzanine below the Shuttle passageway. This new mezzanine would also have a connection to the MNR lower level tracks. Fare Array (R239) with 12 turnstiles would be built to serve the new mezzanine. The mezzanine would have a new 5-foot-wide (4-foot effective) stair (ML1) connecting to the R238 fare array area on Lexington mezzanine A/B. Another new 14-foot-wide (12.5-foot effective) stair (ML2) would connect to the Shuttle passageway leading toward Lexington mezzanine A/B, and new 10-foot-wide (8.75-foot effective) stair (ML3) would connect to the Shuttle passageway leading toward the Shuttle platform area. In addition, there would be two new 40-inch wide escalators (ESA and ESB) and a new 6-foot-wide (5-foot effective) stair (ML4) from the new mezzanine to the Flushing platform.
- The two existing west end Flushing escalator pairs ES207/208 and ES209/210, that are currently operating as switchback escalators, would be rebuilt as two new single escalators straight up from the Flushing platform to the Lexington mezzanine level in the Shuttle paid passageway, and named as ES207 and ES209. With these improved connections to the Flushing platform from the Shuttle paid passageway and the new mezzanine, the U1 and U5 stairs from the Lexington platform would no longer be widened by 1 foot as described in the No-Action scenario.
- One of the existing Flushing escalators, ES205, would be rebuilt from 90 feet-per-minute (FPM) to operate at 100 FPM.
- There would be two control area changes after these improvements. R238A would be eliminated because the Flushing escalators, as relocated above, would no longer separate the R238A fare array from the R238 fare array. This new control line would be called R238 and consist of 20 low turnstiles, and there would no longer be an R238A control area. In addition, in the Shuttle passageway, there would be a new fare array called R238B, which would separate the paid shuttle passageway from the unpaid shuttle passageway and existing stair M5.

- Escalators ES203 and ES204, which are located at the eastern end of the Flushing Line platform, would be transitioned to a higher feet-per-minute (FPM) rate, from 90 to 100.
- Space on the mezzanine, which is currently not public, would be opened to improve way finding throughout the station. For example, customers entering the mezzanine at the north end of the station would be able to easily find their way to Flushing escalators ES205 and ES206, or to the shuttle passageway.
- On both Lexington Line platforms, a number of changes would be made to the staircases and the nearby columns. Selected 10-foot-wide stairs would be reduced to nine feet, six inches. These stairs, while narrower, would still be of sufficient width to accommodate four lanes of pedestrian traffic. Once the tread height reaches six feet, eight inches, the space behind each stair would be opened for pedestrian circulation, and columns adjacent to the stair cases would be made narrower to accommodate pedestrian circulation along the express side of the southbound platform and the local side of the northbound platform. A total of nine stairs (four southbound, five northbound) would be altered in this fashion.

The Grand Central-42nd Street subway station elements were analyzed with these station improvements and the results are presented in Table 12-68 through Table 12-71. With these improvements, the congestion noted in the No-Action condition would be alleviated. For elements that would have an LOS of D or worse in the No-Action condition, there would be improved conditions at 21 elements during the AM peak hour and 13 elements during the PM peak hour. In addition, elements with LOS F would be improved to LOS D in most cases or at least to LOS E. However, as a result of the narrowing of certain stairs, the v/c ratio would worsen, with LOS D conditions or worse at six elements in the AM peak hour and 10 elements in the PM peak hour. As described above, the narrowing of these stairs would be made in order to facilitate movement on the Lexington Line platform and increase track capacity. Further, the short loop intermodal connection, which would improve overall pedestrian flows throughout the station, would encourage customers to use the stairs toward the south end of the Lexington platform, which would result in increases in the v/c ratios on some stairs. In addition, the widening of the U1 and U5 stair is no longer assumed as in the No-Action condition, because the short loop intermodal connection would provide a much more effective and comprehensive improvement. Overall, these improvements, with the stair narrowings, would improve circulation in the station complex.

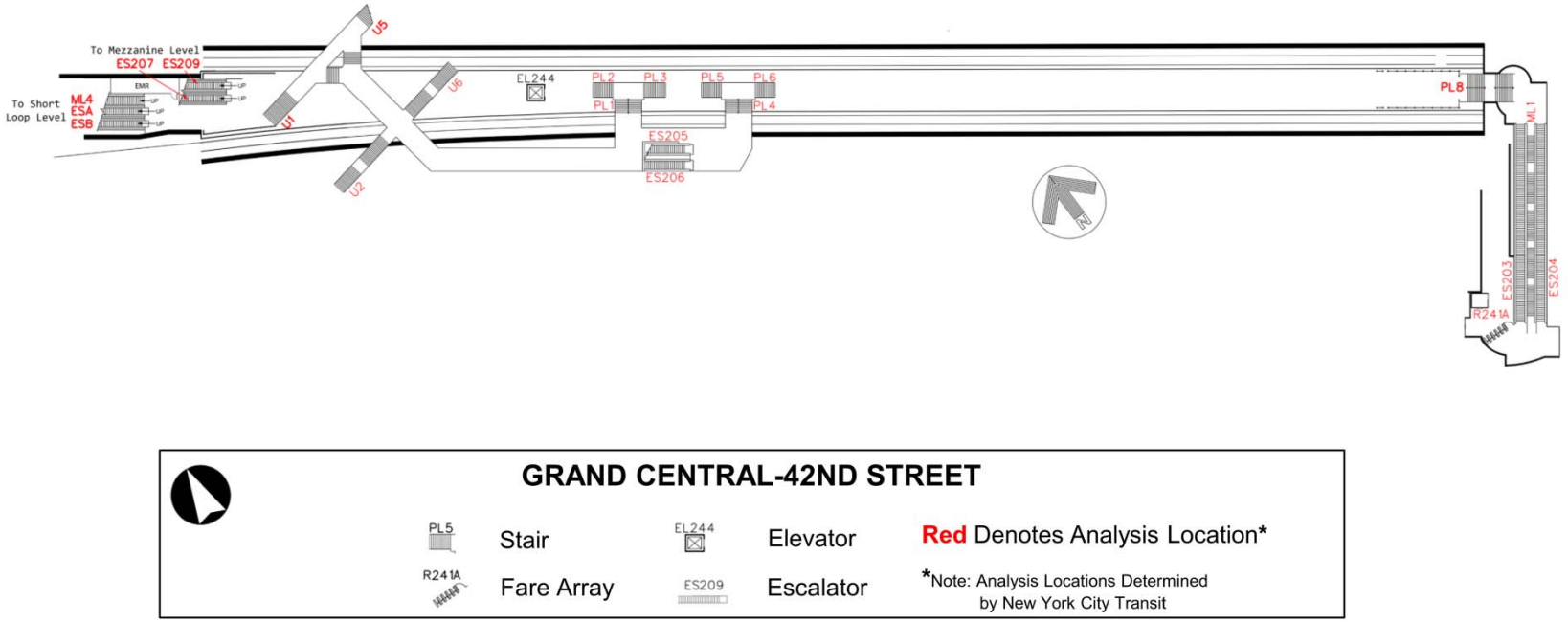
FIGURE 12-52: GRAND CENTRAL-42ND STREET SUBWAY STATION COMPLEX ACTION-WITH-IMPROVEMENTS CONDITION – LEXINGTON AVENUE LINE AND SHUTTLE MEZZANINE



Source: New York City Transit, 2013

Note: This figure has been revised for the FEIS.

FIGURE 12-53: GRAND CENTRAL-42ND STREET SUBWAY STATION COMPLEX ACTION–WITH-IMPROVEMENTS CONDITION – FLUSHING LINE



Source: New York City Transit, 2013

Below are the following AM peak-hour changes for elements with a LOS of D or worse (conditions that worsen are underlined):

- Stair M7 on the north side of East 42nd Street connecting the subway station with Grand Central Terminal would operate at LOS D with a v/c ratio of 1.05, improved from a v/c ratio of 1.46 (LOS E).
- Escalators ES255 and ES256 would operate at a v/c ratio of 1.11 (LOS D); the same as their No-Action v/c ratio.
- Stair M30, the future new stair that connects the subway station with Grand Central Terminal on the north side of East 42nd Street and currently within the Kenneth Cole retail space, would operate at LOS D with a v/c ratio of 1.08, improved from a v/c ratio of 1.71 (LOS F).
- Stair M9 from the mezzanine exiting to Lexington Avenue would operate at LOS D with a v/c ratio of 1.03, improved from a v/c ratio of 1.46 (LOS E).
- On the southbound Lexington line platform, the conditions of stairs P10N, P12, P1 and P18 would all worsen, with v/c ratios increasing from 0.99 (LOS C), 1.09 (LOS D), 1.22 (LOS D) and 0.98 (LOS C) to 1.23 (LOS D), 1.23 (LOS D), 1.34 (LOS E) and 1.22 (LOS D), respectively.
- The v/c ratios of stair P16 and P22 would improve from 1.69 (LOS F) and 1.27 (LOS D) to 1.35 (LOS E) and 1.20 (LOS D), respectively.
- On the northbound Lexington platform, stair P13 would experience an increase in its v/c ratio from 0.93 (LOS C) to 1.03 (LOS D). This would primarily be due to the new Short Loop connection, as more entries would be at the south end of the northbound platform. All of the remaining northbound platform stairs would operate at LOS C, with stair P17 showing improvement from the No-Action condition, with its v/c ratio going from 1.01 (LOS D) to 0.78 (LOS C).
- Underpass stairs U2 and U6 connecting the northbound Lexington platform to the Flushing passageway would show improvement. Stair U2 would improve from a v/c ratio of 1.45 (LOS E) to 0.65 (LOS B) and stair U6 would improve from a v/c ratio of 1.19 (LOS D) to 0.95 (LOS C).
- The two underpass stairs (U1 and U5) that connect the southbound Lexington platform to the Flushing passageway would both operate at LOS D with a v/c ratio of 1.22. For U1 this would represent an improvement from a v/c ratio of 1.37 (LOS E) and for U5 this would represent a worsening of conditions from a v/c ratio of 1.13 to 1.22. As noted above, these stairs would not be widened by 1 foot, as this previously identified mitigation would be replaced by the more effective connection provided by the short loop improvement.
- The ramped Flushing passageway that connects the U-stairs to the Flushing platform stairs would operate at LOS D with a v/c ratio of 1.18. This is improved from LOS E and a v/c ratio of 1.60.

- The six stairs from the Flushing passageway down to the Flushing platform would all show improvement. The stairs PL1, PL2, PL6 (all LOS F) with v/c ratios of 1.69, 1.76 and 1.97, respectively, would go to LOS D, D and E with v/c ratios of 1.23, 1.31and 1.52, respectively. Stairs PL3, PL4 and PL5 (all LOS E) with v/c ratios of 1.39, 1.60 and 1.39, respectively, would improve to LOS D, E and D with v/c ratios of 1.15, 1.39 and 1.21, respectively.
- Conditions at escalators ES205 and ES206 from the Flushing passageway to the mezzanine would improve, with both of their v/c ratios of 1.06 (LOS D) decreasing to 0.92 (LOS C).
- On the east end of the Flushing platform, stair PL8 would be widened to its maximum width, which improves its v/c ratio from 1.11 (LOS D) to 1.05 (LOS D).
- Escalator ES205, which operates up from the Flushing passageway to the mezzanine, would have an improved v/c ratio. It would decrease from a v/c ratio of 1.06 (LOS D) to 0.83 (LOS C) due to the change in transfer travel patterns as well as increasing the speed from 90 to 100 as mentioned above.
- Escalators E207 and E209 at the far west end of the Flushing platform would improve, with v/c ratios of 1.06 (LOS D) decreasing to 0.94 (LOS C).

Below are the following PM peak-hour changes for elements with a LOS of D or worse (conditions that worsen are underlined):

- Escalator ES255 on the north side of East 42nd Street connecting the subway station with Grand Central Terminal would improve from a v/c ratio of 1.16 (LOS D) to 0.99 (LOS C).
- The v/c ratio of escalator ES256, which operates up, would improve from 1.45 (LOS E) to 1.07 (LOS D).
- The v/c ratio of stair M7 would improve from 1.88 (LOS F) to 0.93 (LOS C).
- The v/c ratio of stair M30 would improve from 1.05 (LOS D) to 0.83 (LOS C).
- The v/c ratio of stair M8, which connects Grand Central Terminal's Lexington passage to the mezzanine, would improve from a v/c ratio of 1.19 (LOS D) to 0.86 (LOS C).
- The v/c ratio of stair M9, which connects the Lexington mezzanine to Lexington Avenue, would improve from 1.23 (LOS D) to 0.86 (LOS C).
- Underpass stairs U2 and U6 connecting the northbound Lexington Line platform to the Flushing Line passageway would both operate at LOS D. The v/c ratio of stair U2 would increase from 1.13 to 1.30 (LOS D), and the v/c ratio of stair U6 would decrease from 1.71 (LOS F) to 1.29 (LOS D). Underpass stairs U1 and U5 connecting the southbound Lexington platform to the Flushing passageway would both operate at LOS C.

- The ramped Flushing passageway that connects the U-stairs to the Flushing platform stairs would operate at LOS D with a v/c ratio of 1.13. This would be improved from a v/c ratio of 1.31(LOS D).
- Three (PL1, PL2 and PL3) of the six stairs from the Flushing passageway down to the Flushing platform would show improvement from LOS E to LOS D (see Table 12-68). The v/c ratios of stairs PL4 and PL6 would increase (to a v/c ratio of 1.11 from 1.09, LOS D, and a v/c ratio of 1.46 from 1.44, LOS E, respectively), as pedestrians transferring to the Lexington Avenue lines adjust their travel patterns in response to the new escalators at the west end of the platform. Stair PL5 would operate at LOS C.
- The v/c ratio of escalator ES203, at the eastern end of the Flushing line platform, would improve from 1.14 (LOS D) to 1.09 (LOS D).
- Escalator ES205, which operates up from the Flushing passageway to the mezzanine, would have an improved v/c ratio. It would decrease from a v/c ratio of 1.22 (LOS D) to 1.12 (LOS D) due to the change in transfer travel patterns as well as increasing the speed from 90 to 100 FPM as mentioned above.
- All seven northbound Lexington platform stairs would experience increased v/c ratios, with five (P13, P19, P21, P23 and P25) operating at LOS D (see Table 12-68). Stair P15 would remain at LOS C. These increases in v/c ratios would be due to the stair narrowing changes that facilitate pedestrian circulation on the platform, as described above.
- Flushing Line escalator ES209, located at the western end of the platform, which would operate straight up to the Lexington line mezzanine during the PM, would have an improved v/c ratio. It would decrease from a v/c ratio of 1.46 (LOS E) to 1.30 (LOS D). The down escalator E207 would also improve, with a v/c ratio of 0.80 (LOS C) declining to 0.54 (LOS B).

As detailed above, the Action-With-Improvements condition would result less crowding in the station, improved sightlines and additional Lexington Line express track capacity, with most station elements experiencing improved conditions. All of the significant adverse impacts identified in the Action-Without Improvements condition would be eliminated. Some stairs would become more congested in the Action-With-Improvements condition and may constitute a significant adverse impact. In most cases however, these stairs would be narrowed relative to the No-Action and the Action-Without-Improvements conditions in order to provide better platform circulation and improved track capacity. In another instance a planned stair widening in the No-Action and the Action-Without-Improvements conditions would be replaced by another more effective improvement.

TABLE 12-68: ACTION-WITH-IMPROVEMENTS STAIR ANALYSIS AT THE GRAND CENTRAL- 42ND STREET (4, 5, 6, 7, S) SUBWAY STATION COMPLEX

			With-Action									Action-with-Improvements								
Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.	15-Minute Pedestrian Volumes		Surging Factor Down	Surging Factor Up	Friction Factor	V/C Ratio	LOS	Width (ft.)	Effective Width (ft.	15-Minute Pedestrian Volumes		Surging Factor Down	Surging Factor U	Friction Factor	V/C Ratio	LOS
					Down	U								Down	U					
	R238	M	1	8.7	108	75	1	0.	0.	**1.6**	**E**	1	8.7	31	83	1	0.	0.	**1.0**	**D**
	R238A	M30	1	8.7	214	9	1	0.	1	**1.7**	**F**	1	8.7	1168	9	1	0.	0.	**1.0**	**D**
	R238A	M	1	14.75	99	33	1	0.	0.	**0.6**	**B**	1	14.75	63	33	1	0.	0.	**0.5**	**B**
	R237	01	1	12.75	5	67	1	0.	0.	**0.4**	**B**	1	12.75	5	67	1	0.	0.	**0.4**	**B**
	R237	MB	9.8	8.5	1	7	1	0.	0.	**0.0**	**A**	9.8	8.5	1	7	1	0.	0.	**0.0**	**A**
	R237A	02	1	9.7	0	13	1	0.	1	**0.1**	**A**	1	9.7	0	13	N/	0.	1	**0.1**	**A**
	R240	M	19.16	17.66	84	125	1	0.	0.	**0.9**	**C**	19.16	17.66	70	78	1	0.	0.	**0.6**	**B**
	R240	02	1	10.75	15	59	1	0.	0.	**0.5**	**B**	1	10.75	15	62	1	0.	0.	**0.5**	**B**
	R240	M	7.8	6.8	21	102	1	0.	0.	**1.4**	**E**	1	8.7	21	88	1	0.	0.	**1.0**	**D**
	R233	S	4.7	3.7	1	19	0.	1	0.	**0.49**	**B**	4.7	3.7	1	19	1	0.	0.	**0.49**	**B**
	R233	0	9	7.7	9	13	0.	1	0.	**0.17**	**A**	9	7.7	9	13	1	0.	0.	**0.17**	**A**
	R236	0	9.166	7.916	1	9	0.	1	0.	**0.13**	**A**	9.166	7.916	1	9	1	0.	0.	**0.13**	**A**
	R236	MB	7.6	6.416	6	4	0.	1	0.	**0.07**	**A**	7.6	6.416	6	4	1	0.	0.	**0.07**	**A**
		P10N	7.	6.	26	49	1	0.7	0.	**1.05**	**D**	7.	6.	42	49	1	0.7	0.	**1.23**	**D**
		P1	1	8.7	91	30	1	0.7	0.	**1.12**	**D**	9.2	8	91	30	1	0.7	0.	**1.23**	**D**
		P1	1	8.7	88	45	1	0.7	0.	**1.26**	**D**	9.2	8	84	45	1	0.7	0.	**1.34**	**E**
		P1	9.2	8	1395	35	1	0.7	0.	**1.73**	**F**	9.2	8	98	35	1	0.7	0.	**1.35**	**E**
		P1	1	8.7	62	41	0.9	0.7	0.	**1.02**	**D**	9.2	8	73	41	0.9	0.7	0.	**1.22**	**D**
		P2	1	8.7	40	47	1	0.7	0.	**0.88**	**C**	9.2	8	35	47	1	0.7	0.	**0.92**	**C**
		P2	6.1	5.1	55	25	1	0.7	0.	**1.2**	**D**	6.1	5.1	50	25	1	0.7	0.	**1.20**	**D**
		P2	7	6	0	32	1	0.7	1	**0.4**	**B**	7	6	0	32	1	0.7	1	**0.48**	**B**
		P1	1	8.7	35	59	1	0.7	0.	**0.9**	**C**	9.2	8	32	59	1	0.7	0.	**1.03**	**D**
		P1	1	8.7	29	37	1	0.7	0.	**0.6**	**B**	9.2	8	25	37	1	0.7	0.	**0.70**	**C**
A		P1	1	8.7	72	37	1	0.7	0.	**1.0**	**D**	9.2	8	34	37	1	0.7	0.	**0.78**	**C**
		P1	1	8.7	44	39	0.9	0.7	0.	**0.8**	**C**	9.2	8	35	39	0.9	0.7	0.	**0.83**	**C**
		P2	1	8.7	10	73	1	0.7	0.	**0.9**	**C**	9.2	8	7	73	1	0.7	0.	**0.97**	**C**
		P2	6.1	5.1	11	33	1	0.7	0.	**0.8**	**C**	6.1	5.1	10	33	1	0.7	0.	**0.79**	**C**
		P2	6	5	0	46	1	0.7	1	**0.8**	**C**	6	5	0	46	1	0.7	1	**0.83**	**C**
		ML										5	4	40	0	1	1	1	**0.67**	**B**
		ML										1	12.	0	1825	1	1	1	**0.97**	**C**
		ML										1	8.7	0	26	1	1	1	**0.20**	**A**
		ML										6	5	4	0	1	1	1	**0.0**	**A**
		U	7	6	69	17	0.7	0.9	0.	**1.3**	**E**	6	5	47	17	0.7	0.9	0.	**1.2**	**D**
		U	7	6	37	39	0.7	0.9	0.	**1.1**	**D**	6	5	30	39	0.7	0.9	0.	**1.2**	**D**
		U	6	5	66	8	0.7	0.9	0.	**1.4**	**E**	6	5	24	9	0.7	0.9	0.	**0.6**	**B**
		U	6	5	46	17	0.7	0.9	0.	**1.1**	**D**	6	5	35	15	0.7	0.9	0.	**0.9**	**C**
		PL	13.	12.25	1562	86	0.9	0.7	0.	**1.6**	**F**	13.	12.25	83	86	0.9	0.7	0.	**1.2**	**D**
		PL	7.583	6.583	72	59	0.9	0.7	0.	**1.7**	**F**	7.583	6.583	35	59	0.9	0.7	0.	**1.3**	**D**
		PL	7.583	6.583	83	26	0.9	0.7	0.	**1.3**	**E**	7.583	6.583	48	38	0.9	0.7	0.	**1.1**	**D**
		PL	13.916	12.66	62	156	0.9	0.7	0.	**1.6**	**E**	13.916	12.66	53	1355	0.9	0.7	0.	**1.3**	**E**
		PL	7	6	60	37	0.9	0.7	0.	**1.4**	**E**	7	6	52	31	0.9	0.7	0.	**1.2**	**D**
		PL	7	6	1	118	0.9	0.7	0.	**1.9**	**F**	7	6	1	91	0.9	0.7	0.	**1.5**	**E**
		ML1-5	4.583	3.583	14	0	1	0.7	1	**0.2**	**A**	4.583	3.583	14	0	1	0.7	1	**0.2**	**A**
		PL	12.416	11.166	14	118	1	0.7	0.	**1.1**	**D**	1	12.	14	1218	1	0.7	0.	**1.0**	**D**
		P1	15.583	14.083	77	62	1	0.7	0.	**0.8**	**C**	15.583	14.083	60	62	1	0.7	0.	**0.7**	**C**
		P1	9.3	8.083	32	27	1	0.7	0.	**0.6**	**B**	9.3	8.083	23	27	1	0.7	0.	**0.5**	**B**
		P	5	4	9	13	1	0.7	0.	**0.3**	**A**	5	4	9	13	1	0.7	0.	**0.3**	**A**
		P	5	4	1	28	1	0.7	0.	**0.7**	**C**	5	4	1	28	1	0.7	0.	**0.7**	**C**
	R238	M	1	8.7	12	189	1	0.	0.	**1.8**	**F**	1	8.7	12	87	1	0.	0.	**0.9**	**C**
	R238A	M30	1	8.7	101	39	1	0.	0.	**1.2**	**D**	1	8.7	71	24	1	0.	0.	**0.8**	**C**
	R238A	M	15.	14.25	32	25	1	0.	0.	**0.3**	**A**	15.	14.25	32	25	1	0.	0.	**0.3**	**A**
	R237	01	1	12.75	51	11	1	0.	0.	**0.3**	**A**	1	12.75	51	11	1	0.	0.	**0.3**	**A**
	R237	MB	9.8	8.5	9	3	1	0.	0.	**0.11**	**A**	9.8	8.5	9	3	1	0.	0.	**0.11**	**A**
	R237A	02	1	9.7	0	4	1	0.	1	**0.03**	**A**	1	9.7	0	4	1	0.	1	**0.03**	**A**
	R240	M	19.16	17.66	1022	1637	1	0.	0.	**1.19**	**D**	19.16	17.66	86	1055	1	0.	0.	**0.86**	**C**
	R240	02	1	10.75	33	6	1	0.	0.	**0.28**	**A**	1	10.75	33	6	1	0.	0.	**0.28**	**A**
	R240	M	7.8	6.8	66	42	1	0.	0.	**1.23**	**D**		8.7	33	28	1	0.	0.	**0.55**	**B**
	R233	S	4.7	3.7	22	2	1	0.	0.	**0.51**	**B**	4.7	3.7	22	2	1	0.	0.	**0.51**	**B**
	R233	0	9	7.7	9	2	1	0.	0.	**0.12**	**A**	9	7.7	9	2	1	0.	0.	**0.12**	**A**
	R236	0	9.166	7.916	4	11	1	0.	0.	**0.18**	**A**	9.166	7.916	4	11	1	0.	0.	**0.18**	**A**
	R236	MB	7.6	6.416	4	2	1	0.	0.	**0.08**	**A**	7.6	6.416	4	2	1	0.	0.	**0.08**	**A**
		P10N	7.	6.	16	30	1	0.7	0.	**0.66**	**B**	7.	6.	16	30	1	0.7	0.	**0.66**	**B**
		P1	1	8.7	49	18	1	0.7	0.	**0.6**	**B**	9.2	8	60	18	1	0.7	0.	**0.7**	**C**
		P1	1	8.7	54	23	1	0.7	0.	**0.7**	**C**	9.2	8	54	23	1	0.7	0.	**0.8**	**C**
		P1	9.2	8	68	18	1	0.7	0.	**0.8**	**C**	9.2	8	73	18	1	0.7	0.	**0.9**	**C**
		P1	1	8.7	50	23	0.9	0.7	0.	**0.7**	**C**	9.2	8	50	23	0.9	0.7	0.	**0.7**	**C**
		P2	1	8.7	27	30	1	0.7	0.	**0.5**	**B**	9.2	8	27	30	1	0.7	0.	**0.6**	**B**
		P2	6.1	5.1	43	18	1	0.7	0.	**0.9**	**C**	6.1	5.1	43	18	1	0.7	0.	**0.9**	**C**
		P2	7	6	0	18	1	0.7	1	**0.2**	**A**	7	6	0	18	1	0.7	1	**0.2**	**A**
		P1	1	8.7	50	65	1	0.7	0.	**1.1**	**D**	9.2	8	44	65	1	0.7	0.	**1.2**	**D**
		P1	1	8.7	51	36	1	0.7	0.	**0.8**	**C**	9.2	8	57	36	1	0.7	0.	**0.9**	**C**
P		P1	1	8.7	61	37	1	0.7	0.	**0.9**	**C**	9.2	8	67	37	1	0.7	0.	**1.0**	**D**
		P1	1	8.7	69	41	0.9	0.7	0.	**1.0**	**D**	9.2	8	79	41	0.9	0.7	0.	**1.29**	**D**
		P2	1	8.7	12	90	1	0.7	0.	**1.1**	**D**	9.2	8	12	90	1	0.7	0.	**1.23**	**D**
		P2	6.1	5.1	23	41	1	0.7	0.	**1.1**	**D**	6.1	5.1	23	41	1	0.7	0.	**1.14**	**D**
		P2	6	5	0	57	1	0.7	1	**1.0**	**D**	6	5	0	57	1	0.7	1	**1.02**	**D**
		ML										5	4	0	0	1	1	1	**0.00**	**A**
		ML										1	12.	1517	20	1	1	1	**0.92**	**C**
		ML										1	8.7	26	0	1	1	1	**0.20**	**A**
		ML										6	5	0	0	1	1	1	**0.00**	**A**
		U	7	6	48	10	0.7	0.9	0.	**0.9**	**C**	6	5	36	3	0.7	0.9	0.	**0.78**	**C**
		U	7	6	24	15	0.7	0.9	0.	**0.6**	**B**	6	5	36	6	0.7	0.9	0.	**0.83**	**C**
		U	6	5	51	7	0.7	0.9	0.	**1.1**	**D**	6	5	63	3	0.7	0.9	0.	**1.30**	**D**
		U	6	5	71	19	0.7	0.9	0.	**1.7**	**F**	6	5	59	7	0.7	0.9	0.	**1.29**	**D**
		PL	13.	12.25	1607	69	0.9	0.7	0.	**1.5**	**E**	13.	12.25	1607	37	0.9	0.7	0.	**1.3**	**D**
		PL	7.583	6.583	68	47	0.9	0.7	0.	**1.5**	**E**	7.583	6.583	80	23	0.9	0.7	0.	**1.3**	**D**
		PL	7.583	6.583	92	21	0.9	0.7	0.	**1.4**	**E**	7.583	6.583	80	13	0.9	0.7	0.	**1.1**	**D**
		PL	13.916	12.66	82	75	0.9	0.7	0.	**1.1**	**D**	13.916	12.66	82	77	0.9	0.7	0.	**1.1**	**D**
		PL	7	6	43	18	0.9	0.7	0.	**0.8**	**C**	7	6	43	19	0.9	0.7	0.	**0.8**	**C**
		PL	7	6	39	56	0.9	0.7	0.	**1.4**	**E**	7	6	39	57	0.9	0.7	0.	**1.4**	**E**
		ML1-5	4.583	3.583	0	0	1	0.7	1	**0.0**	**A**	4.583	3.583	0	0	1	0.7	1	**0.0**	**A**
		PL	10.416	9.166	90	13	1	0.7	0.	**0.8**	**C**	1	12.	90	13	1	0.7	0.	**0.6**	**B**
		P1	15.583	14.083	60	71	1	0.7	0.	**0.8**	**C**	15.583	14.083	60	45	1	0.7	0.	**0.6**	**B**
		P1	9.3	8.083	27	27	1	0.7	0.	**0.5**	**B**	9.3	8.083	27	27	1	0.7	0.	**0.5**	**B**
		P	5	4	12	1	1	0.7	0.	**0.2**	**A**	5	4	12	1	1	0.7	0.	**0.2**	**A**
		P	4	4	29	3	1	0.7	0.	**0.6**	**B**	5	4	29	3	1	0.7	0.	**0.6**	**B**

Source: New York City Transit, 2013
Note: This table has been revised for the FEIS.

TABLE 12-69: ACTION-WITH-IMPROVEMENTS ESCALATOR ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

					With-Action				Action with Improvements						
Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS
AM	ES255 (UP)	40	90	945	1034	0.95	1.15	D	40	90	945	998	0.95	1.11	D
	ES256 (UP)	40	90	945	1034	0.95	1.15	D	40	90	945	998	0.95	1.11	D
	ES608 (UP)	40	90	945	163	0.8	0.22	A	40	90	945	163	0.8	0.22	A
	ES609 (DN)	40	90	945	26	1	0.03	A	40	90	945	26	1	0.03	A
	ES207-8 (UP)	40	90	945	768	0.75	1.08	D	0	90	945	669	0.75	0.94	C
	ES209-10 (UP)	40	90	945	768	0.75	1.08	D	0	90	945	669	0.75	0.94	C
	ES205 (UP)	40	90	945	805	0.8	1.06	D	40	90	1050	698	0.8	0.83	C
	ES206 (UP)	40	90	945	806	0.8	1.07	D	40	90	945	699	0.8	0.92	C
	ES203 (UP)	32	90	750	594	0.8	0.99	C	32	100	825	609	0.8	0.92	C
	ES204 (UP)	32	90	750	594	0.8	0.99	C	32	90	825	609	0.8	0.92	C
	EscalatorA (UP)	40	90	945					40	90	945	381	0.75	0.54	B
	EscalatorB (DN)	40	90	945					40	90	945	771	1	0.82	C
PM	ES255 (DN)	40	90	945	1141	0.9	1.21	D	40	90	945	931	1	0.99	C
	ES256 (UP)	40	90	945	1294	0.95	1.44	E	40	90	945	964	0.95	1.07	D
	ES608 (DN)	40	90	945	124	1	0.13	A	40	90	945	124	1	0.13	A
	ES609 (UP)	40	90	945	36	0.8	0.05	A	40	90	945	136	0.8	0.05	A
	ES207-8 (DN)	40	90	945	813	1	0.86	C	40	90	945	510	1	0.54	B
	ES209-10 (UP)	40	90	945	1035	0.75	1.46	E	40	90	945	920	0.75	1.30	D
	ES205 (UP)	40	90	945	924	0.8	1.22	D	40	90	1050	943	0.8	1.12	D
	ES206 (DN)	40	90	945	480	1	0.51	B	40	90	945	480	1	0.51	B
	ES203 (DN)	32	90	825	901	1	1.20	D	32	100	825	901	1	1.09	D
	ES204 (UP)	32	90	825	132	0.8	0.22	A	32	90	825	132	0.8	0.20	A
	EscalatorA (UP)	40	90	945					40	90	945	412	0.75	0.58	B
	EscalatorB (DN)	40	90	945					40	90	945	303	1	0.32	A

Source: New York City Transit, 2013

Note: This table has been revised for the FEIS.

TABLE 12-70: ACTION-WITH-IMPROVEMENTS PASSAGEWAY ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

				With-Action							Action with Improvements						
Peak Period	Passageway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor West/Up	Surging Factor East/Dn	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		Surging Factor West/Up	Surging Factor East/Dn	Friction Factor	V/C Ratio	LOS
				West/Up	East/Dn						West/Up	East/Dn					
AM	317 Madison	5.25	3.25	38	2	0.8	1	0.9	0.07	A	38	2	0.8	1	0.9	0.07	A
	Flushing Passageway	12	10	825	2202	0.9	0.95	0.9	1.60	E	825	1391	0.9	0.95	0.9	1.18	D
	Paid Shuttle Passage	20	18	689	336	0.9	0.9	0.9	0.31	A	955	336	0.9	0.9	0.9	0.39	A
PM	317 Madison	5.25	3.25	7	41	0.8	1	0.9	0.07	A	7	41	0.8	1	0.9	0.07	A
	Flushing Passageway	12	10	527	1955	0.9	0.95	0.9	1.31	D	211	1955	0.9	0.95	0.9	1.13	D
	Paid Shuttle Passage	20	18	511	779	0.9	0.9	0.9	0.39	A	511	779	0.9	0.9	0.9	0.39	A

Source: New York City Transit, 2013

Note: This table has been revised for the FEIS.

TABLE 12-71: ACTION-WITH-IMPROVEMENTS FARE ARRAY ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

		With-Action								Action with Improvements							
Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out							In	Out				
AM	R233	High Entry/Exit Turnstile	2	21	325	0.8	0.9	0.32	A	High Entry/Exit Turnstile	2	21	325	0.8	0.9	0.32	A
		High Exit Turnstile	1							High Exit Turnstile	1						
	R236	Two-way Turnstile	12	1101	900	0.8	0.9	0.39	A	Two-way Turnstile	12	836	900	0.8	0.9	0.33	A
		High Exit Turnstile	1							High Exit Turnstile	1						
	R237	High Entry/Exit Turnstile	7	76	756	0.9	0.9	0.24	A	High Entry/Exit Turnstile	7	76	756	0.9	0.9	0.24	A
	R237A	High Exit Turnstile	1	0	135	0.9	1	0.27	A	High Exit Turnstile	1	0	135	0.9	1	0.27	A
	R237B	Two-way Turnstile	4	37	624	0.9	0.9	0.32	A	Two-way Turnstile	1	37	624	0.9	0.9	0.32	A
	R238	Two-way Turnstile	15	955	2813	0.9	0.9	0.53	B	Two-way Turnstile	20	2120	2647	0.9	0.9	0.53	B
	R238A	Two-way Turnstile	8	3260	344	0.9	0.9	1.16	D								
	R238B									Two-way Turnstile	6	633	332	0.95	0.9	0.38	A
	R239									Two-way Turnstile	12	2501	510	0.9	0.9	0.63	B
	R240	Two-way Turnstile	11	1234	2121	0.9	0.9	0.67	B	Two-way Turnstile	11	1093	2121	0.9	0.9	0.63	B
	R240A	Two-way Turnstile	6	0	790	0.9	1	0.23	A	Two-way Turnstile	6	0	790	0.9	1	0.23	A
	R241A	Two-way Turnstile	5	140	1188	0.95	0.9	0.50	B	Two-way Turnstile	5	140	1188	0.95	0.9	0.50	B
PM	R233	High Entry/Exit Turnstile	2	327	44	0.8	0.9	0.75	C	High Entry/Exit Turnstile	2	327	44	0.8	0.9	0.75	C
		High Exit Turnstile	1							High Exit Turnstile	1						
	R236	Two-way Turnstile	12	813	991	0.8	0.9	0.35	A	Two-way Turnstile	12	813	722	0.8	0.9	0.30	A
		High Exit Turnstile	1							High Exit Turnstile	1						
	R237	High Entry/Exit Turnstile	7	610	146	0.9	0.9	0.27	A	High Entry/Exit Turnstile	7	610	146	0.9	0.9	0.27	A
	R237A	High Exit Turnstile	1	0	40	0.9	1	0.08	A	High Exit Turnstile	1	0	40	0.9	1	0.08	A
	R237B	Two-way Turnstile	4	371	120	0.9	0.9	0.30	A	Two-way Turnstile	4	371	120	0.9	0.9	0.30	A
	R238	Two-way Turnstile	15	1261	3335	0.9	0.9	0.65	B	Two-way Turnstile	20	2520	2212	0.9	0.9	0.55	B
	R238A	Two-way Turnstile	8	1469	369	0.9	0.9	0.57	B								
	R238B									Two-way Turnstile	6	322	258	0.95	0.9	0.22	A
	R239									Two-way Turnstile	12	511	2097	0.9	0.9	0.45	A
	R240	Two-way Turnstile	11	2024	1360	0.9	0.9	0.72	C	Two-way Turnstile	11	2024	1024	0.9	0.9	0.66	B
	R240A	Two-way Turnstile	6	0	760	0.9	1	0.22	A	Two-way Turnstile	46	0	760	0.9	1	0.22	A
	R241A	Two-way Turnstile	5	900	132	0.95	0.9	0.52	B	Two-way Turnstile	5	900	132	0.95	0.9	0.52	B

Source: New York City Transit, 2013

Note: This table has been revised for the FEIS.

b. Grand Central-42nd Street without Station Improvements (Action-Without-Improvements)

This section presents an analysis of a future action condition without station improvements (Action-Without-Improvements), evaluating the Grand Central-42nd Street subway station complex transit impacts resulting from the development absent the DIB-funded public improvements in comparison to the No-Action condition.

The Action-Without-Improvements condition would increase v/c ratios for 39 elements (out of 67) during the AM peak period and 36 elements during the PM peak period in comparison to the No-Action condition (see Table 12-72 through Table 12-75). Most of these v/c ratio increases would be relatively small, but five would generate significant adverse impacts in the AM peak period and three would generate significant adverse impacts in the PM peak period according to the *CEQR Technical Manual* criteria. All of these significant impacts, which are detailed below, would not occur in the Action-With-Improvements condition.

The AM peak-hour significant impacts are detailed below:

- With the Proposed Action absent the DIB-funded public improvements, street stair M7 would have 177 additional trips (15-minute pedestrian volumes) in the down direction during the peak 15 minute period. Consequently, this stair would be expected to operate at a v/c ratio of 1.63 (LOS E) in the Action-Without-Improvements condition, compared to a v/c ratio of 1.46 (LOS E) in the No-Action condition. The calculated Width Increment Threshold (WIT) for significant impact on this stair is 11.21 inches which would be greater than the threshold value of 2 inches for a significant impact (see Table 12-72). Stair M7 would therefore be significantly adversely impacted based on the *CEQR Technical Manual* criteria
- With the Proposed Action absent the DIB-funded public improvements, street escalators ES255 and ES256 (both operating up), located near the north side of East 42nd Street and connecting Grand Central Terminal to the R238 fare array area would have 38 additional exit trips each. Consequently, these escalators would operate at a v/c ratio of 1.15 (LOS D) in the Action-Without-Improvements condition, compared to a v/c ratio of 1.11 (LOS D) in the No-Action condition. As the v/c ratio on these escalators would increase by 0.04 in the AM peak hour (greater than the 0.01 impact threshold), these escalators would be significantly adversely impacted in the AM based on *CEQR Technical Manual* criteria.
- Absent the DIB-funded public improvements, both escalator pairs ES207-ES208 and ES209-ES210 would have 18 more exit trips each, resulting in a change in the v/c ratio from 1.06 to 1.08 (LOS D) which would be a significant adverse impact.

In the AM peak hour, the following elements absent the DIB-funded public improvements would operate at LOS D or worse, and their v/c ratios would increase or remain the same. The v/c ratio increases would not constitute a significant impact based on the CEQR manual.

- With the Action-Without-Improvements condition, street stair M9, located in the Strawberry store on the west side of Lexington Avenue north of East 42nd Street, would have 11 more trips in the up direction. As a consequence, the stair would operate at a v/c ratio of 1.47 (LOS E) in the With-Action condition, compared to a v/c ratio of 1.46 (LOS E) in the No-Action condition.
- On the southbound Lexington Line platform stairs, the proposed action would add trips to all the stairs but only would result in a v/c ratio increase at six of the eight stairs. P10N, P12, P14, P16, P18 and P22 would all operate at a v/c ratio of 1.05 (LOS D), 1.12 (LOS D), 1.26 (LOS D), 1.73 (LOS F), 1.02 (LOS D) and 1.28 (LOS D).
- On the northbound platform with the Proposed Action, the v/c ratio on stair P17 would change from 1.01 to 1.04 (LOS D).
- The Flushing platform stairs PL5 and PL6 v/c ratios would increase from 1.39 to 1.40 and from 1.97 to 1.98, respectively, but remain at their No-Action LOS of E and F respectively.
- The v/c ratio of escalator ES206 would increase by 0.008 to 1.07 (LOS D), but this increase is slightly under the significant impact threshold of 0.01.
- Stairs U1, U5, U2, U6, PL1, PL2, PL3, PL4 and the Flushing passageway would have no significant additional trips with the Proposed Action and would continue to operate at the same LOS as those in the No-Action condition.
- Stair PL8, at the east end of the Flushing platform, v/c ratio would increase from 1.11 to 1.14 but remains at LOS D.
- Street stair M30, located near the north side of 42nd Street east of Park Avenue, would have no additional trips with the Proposed Action and would continue to operate with a v/c ratio of 1.71 (LOS F).

The following elements would be significantly impacted in the Action-Without Improvements condition as compared to the No-Action condition in the PM peak hour:

- Escalator ES255 would gain 152 additional trips down into the subway station during the peak 15 minutes, and therefore the v/c ratio would increase with the Proposed Action from 1.16 to 1.21 (LOS D) and trigger a significant impact as the change is over the 0.01 threshold.
- Stair M30 would gain 60 additional trips down into the subway station and 131 additional trips up out of the subway station during the peak 15 minutes. Consequently, this stair would be expected to operate at a v/c ratio of 1.23 (LOS D) in the Action-Without-Improvements condition, compared to a

v/c ratio of 1.05 (LOS D) in the No-Action condition. The calculated Width Increment Threshold (WIT) for significant impact on this stair is 16.55 inches which would be greater than the threshold value of 6 for a significant impact (see Table 12-72). Stair M30 would therefore be significantly adversely impacted based on the *CEQR Technical Manual* criteria.

- The Third Avenue core escalator ES203, which operates down during the PM, would gain approximately 44 new trips during the peak 15 minutes and the v/c ratio increases from 1.14 to 1.20 (LOS D) which would be a significant impact.

The following elements would operate at LOS D or worse in the PM peak hour. Five would have increased v/c ratios absent the DIB-funded public improvements, but there would be no significant impact based on the CEQR manual.

- Stair M7 would remain at LOS F, with a v/c ratio of 1.88.
- Demand at stair M30 would increase with 60 additional down moves and 131 up moves, increasing the v/c ratio with the Proposed Action from 1.05 to 1.23 (LOS D);
- Demand at escalator ES256, which operates up, would decrease by five trips with the Proposed Action, so although it would remain at LOS E, the v/c ratio would improve slightly to 1.44.
- In the R240 control area, stairs M8 and M9 would remain unchanged at LOS D with v/c ratios of 1.19 and 1.23, respectively.
- Five of the six northbound Lexington platform stairs (P13, P19, P21 P23 and P25) would operate at a LOS D, but only four (P13, P19, P23 and P25) would experience increased trip volumes and increased v/c ratios. These increases would not worsen the LOS of any of the elements and would not constitute a significant impact (see Table 12-72).
- The center core Flushing platform stair PL4 v/c ratio would increase from 1.09 to 1.10 (LOS D).
- The Flushing escalator pair on the west end that operates up to the Lexington mezzanine, ES209-10 would remain at LOS E with a v/c ratio of 1.46.
- Two of the four Lexington to Flushing underpass stairs, northbound Lexington underpass stairs U2 and U6, would remain unchanged, operating at a v/c ratio of 1.13 (LOS D) and 1.71 (LOS F), respectively.
- The ramped Flushing passageway would remain at LOS D with a v/c ratio of 1.31
- The center core Flushing platform stairs PL1, PL2, PL3 and PL 6 would not have a change in v/c ratio and would remain at LOS E.
- ES205, the center core Flushing escalator that operates up, would remain at LOS D with a v/c of 1.22.

TABLE 12-72: ACTION-WITHOUT-IMPROVEMENTS STAIR ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

					No-Action							Project Increment		Action-Without-Improvements								
Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor Down	Surging Factor Up	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor Down	Surging Factor Up	Friction Factor	V/C Ratio	LOS	WIT (in.)	WIT for Significant Impact (in.)
					Down	Up						Down	Up	Down	Up							
AM	R238	M7	10	8.75	1081	580	1	0.9	0.9	**1.46**	**E**	0	177	1081	757	1	0.9	0.9	**1.63**	**E**	**11.21**	**2**
	R238A	M30	10	8.75	2140	97	1	0.9	1	**1.71**	**F**	0	0	2140	97	1	0.9	1	**1.71**	**F**	-	-
	R238A	M5	16	14.75	999	278	1	0.9	0.9	**0.66**	**B**	-5	54	993	332	1	0.9	0.9	**0.68**	**B**	-	-
	R237	017	14	12.75	59	647	1	0.9	0.9	**0.45**	**B**	0	31	59	678	1	0.9	0.9	**0.47**	**B**	-	-
	R237	MB2	9.83	8.58	17	78	1	0.9	0.9	**0.09**	**A**	0	0	17	78	1	0.9	0.9	**0.09**	**A**	-	-
	R237A	028	11	9.75	0	135	1	0.9	1	**0.10**	**A**	0	0	0	135	1	0.9	1	**0.10**	**A**	-	-
	R240	M8	19.16	17.66	849	1256	1	0.9	0.9	**0.94**	**C**	0	0	849	1256	1	0.9	0.9	**0.94**	**C**	-	-
	R240	027	12	10.75	150	587	1	0.9	0.9	**0.55**	**B**	3	11	153	598	1	0.9	0.9	**0.56**	**B**	-	-
	R240	M9	7.83	6.83	215	1018	1	0.9	0.9	**1.46**	**E**	0	11	215	1029	1	0.9	0.9	**1.47**	**E**	0.72	4
	R233	S1	4.75	3.75	12	125	0.8	1	0.9	**0.33**	**A**	0	65	12	190	0.8	1	0.9	**0.49**	**B**	-	-
	R233	02	9	7.75	9	121	0.8	1	0.9	**0.15**	**A**	0	14	9	135	0.8	1	0.9	**0.17**	**A**	-	-
	R236	09	9.166	7.916	19	94	0.8	1	0.9	**0.13**	**A**	0	0	19	94	0.8	1	0.9	**0.13**	**A**	-	-
	R236	MB1	7.66	6.416	3	15	0.8	1	0.9	**0.03**	**A**	3	32	6	47	0.8	1	0.9	**0.07**	**A**	-	-
		P10N	7.5	6.5	271	451	1	0.75	0.9	**0.99**	**C**	-2	40	269	491	1	0.75	0.9	**1.05**	**D**	4.07	8
		P12	10	8.75	919	274	1	0.75	0.9	**1.09**	**D**	0	32	919	306	1	0.75	0.9	**1.12**	**D**	2.83	7
		P14	10	8.75	889	419	1	0.75	0.9	**1.22**	**D**	-1	32	887	451	1	0.75	0.9	**1.26**	**D**	2.48	6
		P16	9.25	8	1395	326	1	0.75	0.9	**1.69**	**F**	0	31	1395	356	1	0.75	0.9	**1.73**	**F**	1.71	2
		P18	10	8.75	620	376	0.95	0.75	0.9	**0.98**	**C**	0	35	620	410	0.95	0.75	0.9	**1.02**	**D**	1.63	8
		P20	10	8.75	406	475	1	0.75	0.9	**0.88**	**C**	0	3	406	478	1	0.75	0.9	**0.88**	**C**	-	-
		P22	6.16	5.16	550	250	1	0.75	0.9	**1.27**	**D**	2	3	552	253	1	0.75	0.9	**1.28**	**D**	0.35	6
		P24	7	6	0	321	1	0.75	1	**0.48**	**B**	0	4	0	325	1	0.75	1	**0.48**	**B**	-	-
		P13	10	8.75	356	561	1	0.75	0.9	**0.93**	**C**	0	34	356	595	1	0.75	0.9	**0.97**	**C**	-	-
		P15	10	8.75	298	347	1	0.75	0.9	**0.64**	**B**	-2	28	296	374	1	0.75	0.9	**0.67**	**B**	-	-
		P17	10	8.75	721	353	1	0.75	0.9	**1.01**	**D**	0	26	721	379	1	0.75	0.9	**1.04**	**D**	2.55	8
		P19	10	8.75	446	359	0.95	0.75	0.9	**0.80**	**C**	0	32	446	392	0.95	0.75	0.9	**0.84**	**C**	-	-
		P21	10	8.75	103	729	1	0.75	0.9	**0.91**	**C**	0	2	103	731	1	0.75	0.9	**0.91**	**C**	-	-
		P23	6.16	5.16	109	335	1	0.75	0.9	**0.80**	**C**	1	2	110	337	1	0.75	0.9	**0.80**	**C**	-	-
		P25	6	5	0	462	1	0.75	1	**0.82**	**C**	0	3	0	465	1	0.75	1	**0.83**	**C**	-	-
		U1	7	6	692	175	0.75	0.95	0.9	**1.37**	**E**	-1	0	691	175	0.75	0.95	0.9	**1.36**	**E**	-	-
		U5	7	6	378	394	0.75	0.95	0.9	**1.13**	**D**	0	0	378	394	0.75	0.95	0.9	**1.13**	**D**	-	-
		U2	6	5	667	84	0.75	0.95	0.9	**1.45**	**E**	0	0	667	84	0.75	0.95	0.9	**1.45**	**E**	-	-
		U6	6	5	466	172	0.75	0.95	0.9	**1.19**	**D**	0	0	466	172	0.75	0.95	0.9	**1.19**	**D**	-	-
		PL1	13.5	12.25	1562	868	0.95	0.75	0.9	**1.69**	**F**	0	0	1562	868	0.95	0.75	0.9	**1.69**	**F**	-	-
		PL2	7.583	6.583	726	599	0.95	0.75	0.9	**1.76**	**F**	0	0	726	599	0.95	0.75	0.9	**1.76**	**F**	-	-
		PL3	7.583	6.583	835	269	0.95	0.75	0.9	**1.39**	**E**	0	0	835	269	0.95	0.75	0.9	**1.39**	**E**	-	-
		PL4	13.916	12.66	621	1555	0.95	0.75	0.9	**1.60**	**E**	-1	13	620	1568	0.95	0.75	0.9	**1.60**	**E**	0.80	2
		PL5	7	6	601	372	0.95	0.75	0.9	**1.39**	**E**	0	6	601	379	0.95	0.75	0.9	**1.40**	**E**	0.47	4
		PL6	7	6	20	1183	0.95	0.75	0.9	**1.97**	**F**	-1	6	19	1189	0.95	0.75	0.9	**1.98**	**F**	0.31	2
		ML1-5	4.583	3.583	139	0	1	0.75	1	**0.26**	**A**	1	0	140	0	1	0.75	1	**0.26**	**A**	-	-
		PL8	12.416	11.166	139	1151	1	0.75	0.9	**1.11**	**D**	1	37	140	1188	1	0.75	0.9	**1.14**	**D**	3.89	7
		P10	15.583	14.083	779	560	1	0.75	0.9	**0.80**	**C**	0	64	779	624	1	0.75	0.9	**0.85**	**C**	-	-
		P11	9.33	8.083	322	275	1	0.75	0.9	**0.63**	**B**	0	0	322	275	1	0.75	0.9	**0.63**	**B**	-	-
		P3	5	4	9	110	1	0.75	0.9	**0.29**	**A**	0	20	9	130	1	0.75	0.9	**0.34**	**A**	-	-
		P4	5	4	12	229	1	0.75	0.9	**0.59**	**B**	0	59	12	288	1	0.75	0.9	**0.73**	**C**	-	-
PM	R238	M7	10	8.75	120	1890	1	0.9	0.9	**1.88**	**F**	0	0	120	1890	1	0.9	0.9	**1.88**	**F**	-	-
	R238A	M30	10	8.75	950	262	1	0.9	0.9	**1.05**	**D**	60	131	1010	393	1	0.9	0.9	**1.23**	**D**	16.55	6
	R238A	M5	15.5	14.25	311	258	1	0.9	0.9	**0.31**	**A**	11	0	322	258	1	0.9	0.9	**0.32**	**A**	-	-
	R237	017	14	12.75	481	111	1	0.9	0.9	**0.35**	**A**	36	3	517	115	1	0.9	0.9	**0.37**	**A**	-	-
	R237	MB2	9.83	8.58	93	31	1	0.9	0.9	**0.11**	**A**	0	0	93	31	1	0.9	0.9	**0.11**	**A**	-	-
	R237A	028	11	9.75	0	40	1	0.9	1	**0.03**	**A**	0	0	0	40	1	0.9	1	**0.03**	**A**	-	-
	R240	M8	19.16	17.66	1022	1637	1	0.9	0.9	**1.19**	**D**	0	0	1022	1637	1	0.9	0.9	**1.19**	**D**	-	-
	R240	027	12	10.75	318	53	1	0.9	0.9	**0.26**	**A**	20	8	338	61	1	0.9	0.9	**0.28**	**A**	-	-
	R240	M9	7.83	6.83	666	418	1	0.9	0.9	**1.23**	**D**	2	4	668	422	1	0.9	0.9	**1.23**	**D**	0.41	6
	R233	S1	4.75	3.75	107	23	1	0.8	0.9	**0.27**	**A**	122	0	229	24	1	0.8	0.9	**0.51**	**B**	-	-
	R233	02	9	7.75	82	20	1	0.8	0.9	**0.10**	**A**	17	0	98	20	1	0.8	0.9	**0.12**	**A**	-	-
	R236	09	9.166	7.916	34	117	1	0.8	0.9	**0.17**	**A**	11	1	45	118	1	0.8	0.9	**0.18**	**A**	-	-
	R236	MB1	7.66	6.416	14	26	1	0.8	0.9	**0.05**	**A**	26	1	40	26	1	0.8	0.9	**0.08**	**A**	-	-
		P10N	7.5	6.5	161	305	1	0.75	0.9	**0.65**	**B**	7	0	168	305	1	0.75	0.9	**0.66**	**B**	-	-
		P12	10	8.75	441	181	1	0.75	0.9	**0.58**	**B**	56	1	496	181	1	0.75	0.9	**0.62**	**B**	-	-
		P14	10	8.75	488	236	1	0.75	0.9	**0.68**	**B**	56	0	544	236	1	0.75	0.9	**0.73**	**C**	-	-
		P16	9.25	8	665	182	1	0.75	0.9	**0.84**	**C**	19	0	683	182	1	0.75	0.9	**0.86**	**C**	-	-
		P18	10	8.75	504	233	0.95	0.75	0.9	**0.71**	**C**	2	0	506	233	0.95	0.75	0.9	**0.71**	**C**	-	-
		P20	10	8.75	267	308	1	0.75	0.9	**0.57**	**B**	5	1	271	309	1	0.75	0.9	**0.58**	**B**	-	-
		P22	6.16	5.16	432	183	1	0.75	0.9	**0.97**	**C**	4	1	436	184	1	0.75	0.9	**0.98**	**C**	-	-
		P24	7	6	0	186	1	0.75	1	**0.28**	**A**	0	3	0	189	1	0.75	1	**0.28**	**A**	-	-
		P13	10	8.75	437	652	1	0.75	0.9	**1.11**	**D**	63	-1	500	651	1	0.75	0.9	**1.16**	**D**	6.02	7
		P15	10	8.75	454	363	1	0.75	0.9	**0.79**	**C**	65	0	519	363	1	0.75	0.9	**0.85**	**C**	-	-
		P17	10	8.75	558	374	1	0.75	0.9	**0.89**	**C**	60	0	618	374	1	0.75	0.9	**0.95**	**C**	-	-
		P19	10	8.75	686	419	0.95	0.75	0.9	**1.08**	**D**	8	0	693	419	0.95	0.75	0.9	**1.09**	**D**	-	-
		P21	10	8.75	114	903	1	0.75	0.9	**1.12**	**D**	8	1	122	905	1	0.75	0.9	**1.12**	**D**	-	-
		P23	6.16	5.16	230	416	1	0.75	0.9	**1.13**	**D**	5	2	235	417	1	0.75	0.9	**1.14**	**D**	0.57	7
		P25	6	5	0	568	1	0.75	1	**1.01**	**D**	0	3	0	571	1	0.75	1	**1.02**	**D**	0.32	8
		U1	7	6	483	101	0.75	0.95	0.9	**0.93**	**C**	0	0	483	101	0.75	0.95	0.9	**0.93**	**C**	-	-
		U5	7	6	249	155	0.75	0.95	0.9	**0.61**	**B**	0	0	249	155	0.75	0.95	0.9	**0.61**	**B**	-	-
		U2	6	5	514	72	0.75	0.95	0.9	**1.13**	**D**	0	0	514	72	0.75	0.95	0.9	**1.13**	**D**	-	-
		U6	6	5	710	198	0.75	0.95	0.9	**1.71**	**F**	0	0	710	198	0.75	0.95	0.9	**1.71**	**F**	-	-
		PL1	13.5	12.25	1607	692	0.95	0.75	0.9	**1.58**	**E**	0	0	1607	692	0.95	0.75	0.9	**1.58**	**E**	-	-
		PL2	7.583	6.583	682	476	0.95	0.75	0.9	**1.52**	**E**	0	0	682	476	0.95	0.75	0.9	**1.52**	**E**	-	-
		PL3	7.583	6.583	925	216	0.95	0.75	0.9	**1.42**	**E**	0	0	925	216	0.95	0.75	0.9	**1.42**	**E**	-	-
		PL4	13.916	12.66	828	750	0.95	0.75	0.9	**1.09**	**D**	1	1	829	751	0.95	0.75	0.9	**1.10**	**D**	0.20	7
		PL5	7	6	435	188	0.95	0.75	0.9	**0.87**	**C**	0	0	435	188	0.95	0.75	0.9	**0.87**	**C**	-	-
		PL6	7	6	393	562	0.95	0.75	0.9	**1.44**	**E**	1	1	394	563	0.95	0.75	0.9	**1.44**	**E**	-	-
		ML1-5	4.583	3.583	0	0	1	0.75	1	**0.00**	**A**	0	0	0	0	1	0.75	1	**0.00**	**A**	-	-
		PL8	12.416	11.166	857	130	1	0.75	0.9	**0.68**	**B**	44	2	901	132	1	0.75	0.9	**0.87**	**C**	-	-
		P10	15.583	14.083	586	717	1	0.75	0.9	**0.81**	**C**	19	2	605	719	1	0.75	0.9	**0.82**	**C**	-	-
		P11	9.33	8.083	268	272	1	0.75	0.9	**0.58**	**B**	8	0	276	272	1	0.75	0.9	**0.59**	**B**	-	-
		P3	5	4	80	16	1	0.75	0.9	**0.19**	**A**	46	0	126	16	1	0.75	0.9	**0.27**	**A**	-	-
		P4	4	4	205	29	1	0.75	0.9	**0.45**	**B**	92	1	297	30	1	0.75	0.9	**0.62**	**B**	-	-

Source: New York City Transit, 2013

Note: This table has been revised for the FEIS.

TABLE 12-73: ACTION-WITHOUT-IMPROVEMENTS ESCALATOR ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

					No-Action				Project Increment	Action-Without-Improvements				
Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	V/C Ratio Increase
AM	ES255 (UP)	40	90	945	996	0.95	1.11	D	38	1034	0.95	1.15	D	**0.042**
	ES256 (UP)	40	90	945	996	0.95	1.11	D	38	1034	0.95	1.15	D	**0.042**
	ES608 (UP)	40	90	945	163	0.8	0.22	A	0	163	0.8	0.22	A	-
	ES609 (DN)	40	90	945	26	1	0.03	A	0	26	1	0.03	A	-
	ES207-8 (UP)	40	90	945	750	0.75	1.06	D	18	768	0.75	1.08	D	**0.025**
	ES209-10 (UP)	40	90	945	750	0.75	1.06	D	18	768	0.75	1.08	D	**0.026**
	ES205 (UP)	40	90	945	798	0.8	1.06	D	6	805	0.8	1.06	D	-
	ES206 (UP)	40	90	945	799	0.8	1.06	D	6	806	0.8	1.07	D	0.008
	ES203 (UP)	32	90	750	576	0.8	0.96	C	18	594	0.8	0.99	C	-
	ES204 (UP)	32	90	750	576	0.8	0.96	C	18	594	0.8	0.99	C	-
PM	ES255 (DN)	40	90	945	989	1	1.16	D	152	1141	1	1.21	D	**0.045**
	ES256 (UP)	40	90	945	1299	0.95	1.45	E	-5	1294	0.95	1.44	E	-
	ES608 (DN)	40	90	945	124	1	0.13	A	0	124	1	0.13	A	-
	ES609 (UP)	40	90	945	36	0.8	0.05	A	0	36	0.8	0.05	A	-
	ES207-8 (DN)	40	90	945	755	1	0.80	C	57	813	1	0.86	C	-
	ES209-10 (UP)	40	90	945	1036	0.75	1.46	E	-1	1035	0.75	1.46	E	-
	ES205 (UP)	40	90	945	923	0.8	1.22	D	1	924	0.8	1.22	D	-
	ES206 (DN)	40	90	945	479	1	0.51	B	2	480	1	0.51	B	-
	ES203 (DN)	32	90	750	857	1	1.14	D	44	901	1	1.20	D	**0.058**
	ES204 (UP)	32	90	750	130	0.8	0.22	A	2	132	0.8	0.22	A	-

Source: New York City Transit, 2013

Note: This table has been revised for the FEIS.

TABLE 12-74: ACTION-WITHOUT-IMPROVEMENTS PASSAGEWAY ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

				No-Action							Project Increment		Action-Without-Improvements						
Peak Period	Passageway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor West/Up	Surging Factor East/Dn	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor West/Up	Surging Factor East/Dn	Friction Factor	V/C Ratio	LOS
				West/Up/Entry	East/Dn						West/Up	East/Dn	West/Up	East/Dn					
AM	317 Madison	5.25	3.25	38	2	0.8	1	0.9	0.07	A	0	0	38	2	0.8	1	0.9	0.07	A
	Flushing Passageway	12	10	825	2203	0.9	0.95	0.9	1.60	E	-1	0	825	2202	0.9	0.95	0.9	1.60	E
	Paid Shuttle Passage	20	18	689	336	0.9	0.9	0.9	0.31	A	0	0	689	336	0.9	0.9	0.9	0.31	A
PM	317 Madison	5.25	3.25	7	41	0.8	1	0.9	0.07	A	0	0	7	41	0.8	1	0.9	0.07	A
	Flushing Passageway	12	10	527	1955	0.9	0.95	0.9	1.31	D	0	0	527	1955	0.9	0.95	0.9	1.31	D
	Paid Shuttle Passage	20	18	511	778	0.9	0.9	0.9	0.39	A	1	2	511	779	0.9	0.9	0.9	0.39	A

Note: This table has been revised for the FEIS.

TABLE 12-75: ACTION-WITHOUT-IMPROVEMENTS FARE ARRAY ANALYSIS AT THE GRAND CENTRAL-42ND STREET (4, 5, 6, 7, S) SUBWAY STATION

				No-Action						Project Increment		Action-Without-Improvements						
Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	V/C Ratio Increase
				In	Out					In	Out	In	Out					
AM	R233	High Entry/Exit Turnstile	2	21	246	0.8	0.9	0.25	A	0	79	21	325	0.8	0.9	0.32	A	-
		High Exit Turnstile	1															
	R236	Two-way Turnstile	12	1101	836	0.8	0.9	0.38	A	0	836	1101	900	0.8	0.9	0.39	A	-
		High Exit Turnstile	1															
	R237	High Entry/Exit Turnstile	7	76	725	0.9	0.9	0.23	A	0	31	76	756	0.9	0.9	0.24	A	-
	R237A	High Exit Turnstile	1	N/A	135	0.9	1	0.27	A	0	0	0	135	0.9	1	0.27	A	-
	R237B	Two-way Turnstile	4	37	624	0.9	0.9	0.32	A	0	0	37	624	0.9	0.9	0.32	A	-
	R238	Two-way Turnstile	15	955	2549	0.9	0.9	0.49	B	0	264	955	2813	0.9	0.9	0.53	B	-
	R238A	Two-way Turnstile	8	3265	300	0.9	0.9	1.15	D	-5	44	3260	344	0.9	0.9	1.16	D	0.009
	R240	Two-way Turnstile	11	1231	2104	0.9	0.9	0.66	B	3	17	1234	2121	0.9	0.9	0.67	B	-
	R240A	Two-way Turnstile	6	0	783	0.9	1	0.22	A	0	7	0	790	0.9	1	0.23	A	-
	R241A	Two-way Turnstile	5	139	1151	0.95	0.9	0.49	B	1	37	140	1188	0.95	0.9	0.50	B	-
PM	R233	High Entry/Exit Turnstile	2	189	43	0.8	0.9	0.45	A	138	1	327	44	0.8	0.9	0.75	C	-
		High Exit Turnstile	1															
	R236	Two-way Turnstile	12	775	989	0.8	0.9	0.34	A	38	2	813	991	0.8	0.9	0.35	A	-
		High Exit Turnstile	1															
	R237	High Entry/Exit Turnstile	7	574	143	0.9	0.9	0.26	A	36	3	610	146	0.9	0.9	0.27	A	-
	R237A	High Exit Turnstile	1	0	40	0.9	1	0.08	A	0	0	0	40	0.9	1	0.08	A	-
	R237B	Two-way Turnstile	4	371	120	0.9	0.9	0.30	A	0	0	371	120	0.9	0.9	0.30	A	-
	R238	Two-way Turnstile	15	1109	3339	0.9	0.9	0.62	B	152	-4	1261	3335	0.9	0.9	0.65	B	-
	R238A	Two-way Turnstile	8	1267	370	0.9	0.9	0.51	B	202	-1	1469	369	0.9	0.9	0.57	B	-
	R240	Two-way Turnstile	11	2002	1354	0.9	0.9	0.72	C	23	6	2024	1360	0.9	0.9	0.72	C	-
	R240A	Two-way Turnstile	6	0	754	0.9	1	0.22	A	0	6	0	760	0.9	1	0.22	A	-
	R241A	Two-way Turnstile	5	856	130	0.95	0.9	0.50	B	44	2	900	132	0.95	0.9	0.52	B	-

Source: New York City Transit, 2013

Note: This table has been revised for the FEIS.

c. 42nd St-Bryant Park Subway Station

As shown in Table 12-76, three of the eleven analyzed stairs at the 42nd Street-Bryant Park subway station are expected to operate over practical capacity (LOS D or worse) in at least one peak hour in the With-Action condition. These include street stair S5 in both the AM and PM peak hours, downtown platform stair P3 in the PM and uptown platform stair P4 in the AM. However, as the width increment threshold required to return them to a v/c ratio of 1.00 would remain below *CEQR Technical Manual* impact thresholds, none of these stairs would be considered significantly adversely impacted in either peak hour as a result of new demand from the Proposed Action. In addition, as shown in Table 12-77, both analyzed fare arrays at this station would continue to operate at an acceptable LOS C or better in both the AM and PM peak hours. Therefore, the Proposed Action would not result in any significant adverse impacts at the 42nd Street-Bryant Park subway station.

TABLE 12-76: WITH-ACTION STAIR ANALYSIS AT THE 42ND STREET-BRYANT PARK (B, D, F, M) SUBWAY STATION

					No-Action						Project Increment		With-Action							
Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	WIT (in.)	WIT for Significant Impact (in.)
					Down	Up					Down	Up	Down	Up						
AM	N504	S5	4.92	3.92	51	825	0.9	0.9	1.83	F	1	23	52	848	0.9	0.9	1.88	F	1.29	2
		M6	8.50	7.50	51	825	0.9	0.9	0.96	C	1	23	52	848	0.9	0.9	0.98	C	-	-
		S6	5.00	4.00	16	414	0.9	1.0	0.79	C	0	0	16	414	0.9	1.0	0.79	C	-	-
		M7/M8	8.50	7.50	16	414	0.9	1.0	0.42	A	0	0	16	414	0.9	1.0	0.42	A	-	-
		P1	6.75	5.75	17	337	0.75	1.0	0.54	B	0	4	17	341	0.75	1.0	0.55	B	-	-
		P2	6.75	5.75	19	582	0.75	1.0	0.92	C	0	7	19	589	0.75	1.0	0.93	C	-	-
		P3	6.67	5.67	21	512	0.75	1.0	0.83	C	1	5	22	517	0.75	1.0	0.84	C	-	-
		P4	6.67	5.67	39	578	0.75	0.9	1.06	D	0	8	39	586	0.75	0.9	1.07	D	0.88	8
	N502	MB20	10.00	8.75	21	707	0.9	1.0	0.61	B	0	21	21	728	0.9	1.0	0.63	B	-	-
		P13	10.00	8.75	27	387	0.75	0.9	0.46	B	0	8	27	395	0.75	0.9	0.47	B	-	-
		P14	10.00	8.75	24	856	0.75	1.0	0.89	C	0	13	24	869	0.75	1.0	0.90	C	-	-
PM	N504	S5	4.92	3.92	794	105	0.9	0.9	1.72	F	27	2	821	107	0.9	0.9	1.78	F	1.52	2
		M6	8.50	7.50	794	105	0.9	0.9	0.90	C	27	2	821	107	0.9	0.9	0.93	C	-	-
		S6	5.00	4.00	242	68	0.9	0.9	0.59	B	0	0	242	68	0.9	0.9	0.59	B	-	-
		M7/M8	8.50	7.50	242	68	0.9	0.9	0.31	A	0	0	242	68	0.9	0.9	0.31	A	-	-
		P1	6.75	5.75	274	158	0.75	0.9	0.62	B	7	0	281	158	0.75	0.9	0.63	B	-	-
		P2	6.75	5.75	157	43	0.75	0.9	0.28	A	3	0	160	43	0.75	0.9	0.28	A	-	-
		P3	6.67	5.67	592	142	0.75	0.9	1.02	D	11	1	603	143	0.75	0.9	1.04	D	1.11	8
		P4	6.67	5.67	457	71	0.75	0.9	0.72	C	7	1	464	72	0.75	0.9	0.73	C	-	-
	N502	MB20	10.00	8.75	595	70	0.9	0.9	0.57	B	22	-1	617	69	0.9	0.9	0.59	B	-	-
		P13	10.00	8.75	672	66	0.75	0.9	0.64	B	14	-1	686	66	0.75	0.9	0.66	B	-	-
		P14	10.00	8.75	342	111	0.75	0.9	0.41	A	9	-1	351	110	0.75	0.9	0.42	A	-	-

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-77: WITH-ACTION FARE ARRAY ANALYSIS AT THE 42ND STREET-BRYANT PARK (B, D, F, M) SUBWAY STATION

				No-Action						Project Increment		With-Action					
Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out					In	Out	In	Out				
AM	N502	Two-way Turnstile	5	56	1327	0.9	1.0	0.33	A	0	21	56	1348	0.9	1.0	0.33	A
		High Entry/Exit Turnstile	1														
		High Exit Turnstile	2														
	N504	Two-way Turnstile	6	65	2581	0.9	1.0	0.54	B	1	23	66	2604	0.9	1.0	0.55	B
		High Entry/Exit Turnstile	3														
		High Exit Turnstile	0														
PM	N502	Two-way Turnstile	5	977	190	0.9	0.9	0.51	B	22	-1	999	189	0.9	0.9	0.52	B
		High Entry/Exit Turnstile	1														
		High Exit Turnstile	2														
	N504	Two-way Turnstile	6	2007	187	0.9	0.9	0.72	C	27	2	2034	189	0.9	0.9	0.73	C
		High Entry/Exit Turnstile	3														
		High Exit Turnstile	0														

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013

d. Fifth Avenue Subway Station

As shown in Table 12-78 and Table 12-79, all analyzed stairs and fare arrays at the Fifth Avenue subway station would operate at an acceptable LOS C or better in both the AM and PM peak hours in the With-Action condition. The Proposed Action would therefore not result in significant adverse impacts at this subway station based on *CEQR Technical Manual* criteria.

TABLE 12-78: WITH-ACTION STAIR ANALYSIS AT THE FIFTH AVENUE (7) SUBWAY STATION

				No-Action						Project Increment		With-Action					
Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up					Down	Up	Down	Up				
AM	S1	12.33	11.08	48	773	0.8	0.9	0.68	B	0	305	48	1078	0.8	1.0	0.84	C
	M1/M2	11.33	10.08	48	773	0.8	0.9	0.75	C	0	305	48	1078	0.8	1.0	0.92	C
	P2	8.25	7.00	16	171	0.75	0.9	0.26	A	0	57	16	228	0.75	0.9	0.34	A
	P3	8.00	6.75	22	164	0.75	0.9	0.26	A	0	55	22	219	0.75	0.9	0.34	A
PM	S1	12.33	10.08	605	194	0.8	0.9	0.62	B	351	5	956	199	0.8	0.9	0.89	C
	M1/M2	11.33	10.08	605	194	0.8	0.9	0.62	B	351	5	956	199	0.8	0.9	0.89	C
	P2	8.25	7.00	147	122	0.75	0.9	0.33	A	64	2	211	124	0.75	0.9	0.40	A
	P3	8.00	6.75	174	82	0.75	0.9	0.31	A	65	2	239	84	0.75	0.9	0.39	A

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013

TABLE 12-79: WITH-ACTION FARE ARRAY ANALYSIS AT THE FIFTH AVENUE (7) SUBWAY STATION

				No-Action						Project Increment		With-Action					
Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out					In	Out	In	Out				
AM	R501	Two-way Turnstile	8	48	773	0.8	0.9	0.22	A	0	305	48	1078	0.8	1.0	0.28	A
PM	R501	Two-way Turnstile	8	605	194	0.8	0.9	0.25	A	351	5	956	199	0.8	0.9	0.37	A

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013

e. 47th – 50th Streets-Rockefeller Center Subway Station

As shown in Table 12-80, six of the nine analyzed stairs at the 47th-50th Streets-Rockefeller Center subway station are expected to operate over practical capacity (LOS D or worse) in at least one peak hour in the With-Action condition. These include street stairs S1 and S3 and platform stairs P1, P2 and P3 in both the AM and PM, and platform stair P4 in the AM. However, as the width increment threshold required to return them to a v/c ratio of 1.00 would remain below *CEQR Technical Manual* impact thresholds, none of these stairs would be significantly adversely impacted in either peak hour as a result of new demand from the Proposed Action. In addition, as shown in Table 12-81, analyzed fare N501 would continue to operate at an acceptable LOS B or better in both the AM and PM peak hours. Therefore, the Proposed Action would not result in any significant adverse impacts at the 47th-50th Streets-Rockefeller Center subway station.

TABLE 12-80: WITH-ACTION STAIR ANALYSIS AT THE 47TH-50TH STREETS-ROCKEFELLER CENTER (B, D, F, M) SUBWAY STATION

				No-Action						Project Increment		With-Action						
Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	WIT (in.)	WIT for Significant Impact (in.)
				Down	Up					Down	Up	Down	Up						
AM	S1	5.00	4.00	24	568	0.9	1.0	1.09	D	-1	36	23	604	0.9	1.0	1.16	D	2.84	7
	S6	5.00	4.00	21	371	0.9	0.9	0.80	C	1	61	22	432	0.9	1.0	0.84	C	-	-
	M1	12.00	10.75	45	939	0.9	1.0	0.67	B	-1	97	45	1036	0.9	1.0	0.74	C	-	-
	S3	4.33	3.33	18	593	0.9	1.0	1.35	E	0	2	18	595	0.9	1.0	1.36	E	0.13	5
	M3	11.92	10.67	18	593	0.9	1.0	0.42	A	0	2	18	595	0.9	1.0	0.42	A	-	-
	P1	6.67	5.67	14	1483	0.75	1.0	2.34	F	1	39	15	1522	0.75	1.0	2.41	F	1.82	2
	P2	6.67	5.67	303	994	0.75	0.9	2.13	F	-1	13	302	1007	0.75	0.9	2.15	F	0.63	2
	P3	8.83	7.58	13	1258	0.75	1.0	1.49	E	1	33	14	1291	0.75	1.0	1.53	E	2.43	3
	P4	8.83	7.58	449	789	0.75	0.9	1.47	E	-1	13	448	802	0.75	0.9	1.48	E	0.88	4
PM	S1	5.00	4.00	635	31	0.9	1.0	1.12	D	41	-2	676	30	0.9	1.0	1.18	D	2.88	7
	S6	5.00	4.00	363	23	0.9	0.9	0.72	C	71	1	434	24	0.9	0.9	0.85	C	-	-
	M1	12.00	10.75	999	54	0.9	0.9	0.73	C	112	0	1111	54	0.9	1.0	0.73	C	-	-
	S3	4.33	3.33	518	46	0.9	0.9	1.26	D	2	3	520	49	0.9	0.9	1.28	D	0.35	6
	M3	11.92	10.67	518	46	0.9	0.9	0.40	A	2	3	520	49	0.9	0.9	0.40	A	-	-
	P1	6.67	5.67	841	90	0.75	0.9	1.26	D	15	-1	856	90	0.75	0.9	1.28	D	1.10	6
	P2	6.67	5.67	1046	98	0.75	0.9	1.54	E	25	3	1071	101	0.75	0.9	1.58	E	1.66	3
	P3	8.83	7.58	851	155	0.75	0.9	1.03	D	16	-1	867	154	0.75	0.9	1.05	D	1.36	5
	P4	8.83	7.58	463	147	0.75	0.9	0.64	B	58	1	521	148	0.75	0.9	0.70	C	-	-

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-81: WITH-ACTION FARE ARRAY ANALYSIS AT THE 47TH-50TH STREETS-ROCKEFELLER CENTER (B, D, F, M) SUBWAY STATION

				No-Action						Project Increment		With-Action					
Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out					In	Out	In	Out				
AM	N501	Two-way Turnstile	8	53	2584	0.9	1.0	0.40	A	-1	99	52	2683	0.9	1.0	0.42	A
		High Entry/Exit Turnstile	2														
		High Exit Turnstile	2														
PM	N501	Two-way Turnstile	8	1703	132	0.9	0.9	0.51	B	113	3	1816	135	0.9	0.9	0.54	B
		High Entry/Exit Turnstile	2														
		High Exit Turnstile	2														

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013

f. 51st Street Subway Station

As shown in Table 12-82, two of the eight analyzed stairs at the 51st Street subway station are expected to operate over practical capacity (LOS D or worse) in one or both peak hours in the With-Action condition. These include underpass stair U1 on the downtown platform in the AM and PM, and underpass stair O4 in the AM. However, as the width increment threshold required to return these stairs to a v/c ratio of 1.00 would remain below *CEQR Technical Manual* impact thresholds, neither stair would be significantly adversely impacted in either peak hour as a result of new demand from the Proposed Action. Similarly, as shown in Table 12-83, underpass escalator E252 would continue to operate over practical capacity in the AM peak hour. However, as its v/c ratio would increase by less than 0.01 as a result of the Proposed Action, this escalator would not be significantly adversely impacted based on *CEQR Technical Manual* criteria. In addition, as shown in Table 12-84 and Table 12-85, the passageway connecting this station to the Lexington Avenue-53rd Street subway station would continue to operate at an acceptable LOS B or better in both peak hours in the With-Action condition, while analyzed fare arrays R242A and R243 would each operate at an acceptable LOS A in both periods. Therefore, the Proposed Action would not result in any significant adverse impacts at the 51st Street subway station.

It should be noted, however, that potential transit improvements funded under the District Improvement Fund may include the replacement of existing 4-foot-wide stair U1 and escalator E252 at the north end of the southbound platform with a new 15-foot-wide stair. As shown in Table 12-86, existing stair U1 is projected to operate at a congested LOS F in both the AM and PM peak hours in the With-Action condition, with v/c ratios of 2.65 and 2.14 during these periods respectively. By contrast, replacement of this stair and adjoining escalator E252 by a 15-foot-wide stair would result in LOS E conditions in the AM peak hour and LOS C in the PM in the future with the Proposed Action, with v/c ratios of 1.39 and 0.80 during these periods, respectively.

As there would be no significant adverse impact to existing stair U1 or escalator E252 under the Proposed Action based on *CEQR Technical Manual* criteria, this improvement would not be considered as mitigation in the context of CEQR, but as a measure that could potentially address an underlying issue at this station. The analysis of the effects of this potential improvement measure is provided for informational purposes.

TABLE 12-82: WITH-ACTION STAIR ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

					No-Action						Project Increment		With-Action							
Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	WIT (in.)	WIT for Significant Impact (in.)
					Down	Up					Down	Up	Down	Up						
AM	R243	S2	5.17	4.17	32	286	0.75	0.9	0.73	C	6	6	38	292	0.75	0.9	0.76	C	-	-
		S5	4.08	3.08	17	202	0.75	0.9	0.69	B	0	0	17	202	0.75	0.9	0.69	B	-	-
		M2	9.83	8.58	49	489	0.75	0.9	0.60	B	6	6	55	495	0.75	0.9	0.62	B	-	-
	R242A	O1/O2	10.00	8.75	73	790	0.75	0.9	0.95	C	4	10	77	800	0.75	0.9	0.97	C	-	-
		M7	21.33	18.83	71	777	0.75	0.9	0.44	A	4	10	75	787	0.75	0.9	0.44	A	-	-
		P3	18.08	15.58	71	777	0.75	0.9	0.53	B	4	10	75	787	0.75	0.9	0.53	B	-	-
	N305A	U1	4.17	3.17	910	45	0.75	1.0	2.65	F	0	0	910	45	0.75	1.0	2.65	F	0.00	2
		O4	10.00	9.00	1246	242	0.75	0.9	1.29	D	0	0	1246	242	0.75	0.9	1.29	D	0.00	5
PM	R243	S2	5.17	4.17	284	121	0.75	0.9	0.79	C	15	9	299	130	0.75	0.9	0.84	C	-	-
		S5	4.08	3.08	112	84	0.75	0.9	0.54	B	0	0	112	84	0.75	0.9	0.54	B	-	-
		M2	9.83	8.58	394	205	0.75	0.9	0.58	B	15	9	409	214	0.75	0.9	0.60	B	-	-
	R242A	O1/O2	10.00	8.75	235	90	0.75	0.9	0.30	A	8	13	243	103	0.75	0.9	0.32	A	-	-
		M7	21.33	18.83	231	85	0.75	0.9	0.14	A	8	13	239	98	0.75	0.9	0.15	A	-	-
		P3	18.08	15.58	231	85	0.75	0.9	0.16	A	8	13	239	98	0.75	0.9	0.18	A	-	-
	N305A	U1	4.17	3.17	759	4	0.75	1.0	2.14	F	0	0	759	4	0.75	1.0	2.14	F	0.00	2
		O4	10.00	9.00	472	160	0.75	0.9	0.56	B	0	0	472	160	0.75	0.9	0.56	B	-	-

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013

Note: This table has been revised for the FEIS.

TABLE 12-83: WITH-ACTION ESCALATOR ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

					No-Action				Project Increment	With-Action				
Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	V/C Ratio Increase
AM	E233 (UP)	40	90	945	725	0.8	0.96	C	0	725	0.8	0.96	C	-
	E252 (UP)	40	90	945	1278	0.8	1.69	F	0	1278	0.8	1.69	F	-
PM	E233 (UP)	40	90	945	554	0.8	0.73	C	0	554	0.8	0.73	C	-
	E252 (UP)	40	90	945	441	0.8	0.58	B	0	441	0.8	0.58	B	-

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-84: WITH-ACTION PASSAGEWAY ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

				No-Action						Project Increment		With-Action					
Passageway	Peak Period	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				NB	SB					NB	SB	NB	SB				
To/From Lex	AM	15.25	13.3	507	485	0.75	0.9	0.43	A	0	0	507	485	0.75	0.9	0.43	A
Ave-53rd St	PM	15.25	13.3	659	498	0.75	0.9	0.51	B	0	0	659	498	0.75	0.9	0.51	B

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.
Decreases in demand from Existing to No-Action reflect changes in subway ridership patterns due to completion of the Second Avenue subway and other MTA capital improvements.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-85: WITH-ACTION FARE ARRAY ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

				No-Action						Project Increment		With-Action					
Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out					In	Out	In	Out				
AM	R242A	Two-way Turnstile	5	71	777	0.75	0.9	0.39	A	4	10	75	787	0.75	0.9	0.40	A
	R243	Two-way Turnstile	9	38	922	0.75	1.0	0.22	A	6	6	44	928	0.75	1.0	0.22	A
PM	R242A	Two-way Turnstile	5	231	85	0.75	0.9	0.16	A	8	13	239	98	0.75	0.9	0.17	A
	R243	Two-way Turnstile	9	654	372	0.75	0.9	0.29	A	15	9	669	381	0.75	0.9	0.29	A

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013

Note: This table has been revised for the FEIS.

TABLE 12-86: ACTION-WITH-IMPROVEMENTS STAIR ANALYSIS AT THE 51ST STREET (6) SUBWAY STATION

			With-Action								Action-With-Improvements							
Peak Period	Fare Control Area	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
					Down	Up							Down	Up				
AM	N305A	U1	4.17	3.17	910	45	0.75	1.0	2.65	F	15.00	13.50	910	1323	0.75	0.9	1.39	E
PM	N305A	U1	4.17	3.17	759	4	0.75	1.0	2.14	F	15.00	13.50	759	445	0.75	0.9	0.80	C

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.
Due the removal of Escalator E252 as part of the Action-With-Improvements, 'Up' volumes on stair U1 accommodate the With-Action volumes on E252.

Source: Philip Habib & Associates, 2013

Note: This table has been revised for the FEIS.

g. Lexington Avenue-53rd Street Subway Station

As shown in Table 12-87 and Table 12-89, both analyzed stairs at the Lexington Avenue-53rd Street subway station—entrance stair O7 and platform stair P7—are expected to operate at an uncongested LOS A in both the AM and PM peak hours in the With-Action condition, as would analyzed fare array N305. However, as shown in Table 12-88 and discussed below, all four of the analyzed escalators are expected to operate over practical capacity in one or both periods.

- In the AM peak hour, the Proposed Action would add approximately six additional trips in the peak 15 minutes to up escalator E243. Consequently, this escalator is expected to operate at a v/c ratio of 1.48 (LOS E) in the AM in the With-Action condition, compared to a v/c ratio of 1.47 (LOS E) in the No-Action. However, as the v/c ratio would increase by only 0.008 (less than the 0.01 impact threshold), escalator E243 would not be significantly adversely impacted in the AM peak hour based on *CEQR Technical Manual* criteria.
- The Proposed Action would add approximately eight additional trips in the down direction in the peak 15 minutes to escalator E269 in the AM peak hour, and six trips in the down direction in the PM. Consequently, this escalator is expected to operate at v/c ratios of 1.02 (LOS D) and 1.49 (LOS E) in the AM and PM, respectively, compared to v/c ratios of 1.01 (LOS D) and 1.49 (LOS E) in the No-Action. As the v/c ratio on escalator E269 would increase by 0.009 in the AM peak hour and by 0.007 in the PM peak hour, this escalator would not be considered significantly adversely impacted in either the AM or PM.
- The Proposed Action would add approximately six additional trips in the up direction in the peak 15 minutes to escalator E244 in the AM peak hour, and six trips in the down direction in the PM. Consequently, this escalator is expected to operate at v/c ratios of 1.44 (LOS E) and 1.34 (LOS E) in the AM and PM, respectively, compared to v/c ratios of 1.43 (LOS E) and 1.33 (LOS E) in the No-Action. However, as the v/c ratio at escalator E244 would increase by only 0.008 in the AM peak hour and 0.007 in the PM (less than the 0.01 *CEQR Technical Manual* impact threshold), this escalator would not be significantly adversely impacted in either peak hour.
- Escalator E254X is expected to operate at a v/c ratio of 1.44 (LOS E) in the upward direction in the AM peak hour in the With-Action condition, compared to a v/c ratio of 1.43 (LOS E) in the No-Action condition, and at a v/c ratio of 0.41 (LOS A) in the PM. This escalator would therefore not be significantly adversely impacted in either peak hour based on *CEQR Technical Manual* impact criteria.

It should be noted, however, that potential transit improvements funded under the District Improvement Fund may include the replacement of existing 24-inch-wide escalator E254X with a new 40-inch-wide escalator that would operate in the up direction in both the AM and PM peak hours. The potential

improvements may also include operating this and all other analyzed escalators at a higher speed (100 feet per minute versus 90 feet per minute). It is therefore anticipated that pedestrain flow patterns would change at all four analyzed escalators as a result of the additional capacity, as well as the change in direction (from down to up) in the PM peak hour at escalator E254X, The Action-With-Improvements volumes shown in Table 12-90 reflect the anticiapted reallocation of pedestrians among the four analyzed escalators. As shown in Table 12-90, in the future with the Proposed Action, existing escalator E254X is projected to operate at a congested LOS E in the up direction in the AM peak hour and an uncongested LOS A in the down direction in the PM, with v/c ratios of 1.44 and 0.41 during these periods respectively. By contrast, the installation of a 40-inch escalator operating at a higher speed at E254X would result in LOS D conditions in the AM peak hour and LOS A in the PM in the Action-With-Improvements condition, with v/c ratios of 1.09 and 0.42 during these periods, respectively. Conditions at each of the other three analyzed escalators would also improve in both the AM and PM peak hours relative to the With-Action condition as a result of the higher operating speeds and the anticipated reallocation of pedestrian flows.

As there would no significant adverse impacts to any analyzed escalator under the Proposed Action based on *CEQR Technical Manual* criteria, these improvements would not be considered as mitigation in the context of CEQR, but as measures that could potentially address underlying issues at this station. The analysis of the effects of these potential improvement measures is provided for informational purposes.

TABLE 12-87: WITH-ACTION STAIR ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

				No-Action						Project Increment		With Action					
Peak Period	Stairway	Width (ft.)	Effective Width (ft.)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				Down	Up					Down	Up	Down	Up				
AM	O7	48.8	46.33	87	641	0.9	0.9	0.13	A	0	2	87	643	0.9	0.9	0.13	A
	P7	3.7	2.67	30	49	0.75	0.9	0.26	A	3	0	33	49	0.75	0.9	0.27	A
PM	O7	48.8	46.33	721	219	0.9	0.9	0.15	A	3	0	724	219	0.9	0.9	0.15	A
	P7	3.7	2.67	98	20	0.75	0.9	0.35	A	6	1	104	21	0.75	0.9	0.37	A

Notes:
Methodology based on 2012 CEQR Technical Manual guidelines.

Source: Philip Habib & Associates, 2013

TABLE 12-88: WITH-ACTION ESCALATOR ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

					No-Action				Project Increment	With-Action				
Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	V/C Ratio Increase
AM	E243 (UP)	40	90	945	1043	0.75	1.47	E	6	1049	0.75	1.48	E	0.008
	E244 (UP)	40	90	945	1016	0.75	1.43	E	6	1022	0.75	1.44	E	0.008
	E254X (UP)	24	90	480	516	0.75	1.43	E	3	519	0.75	1.44	E	0.008
	E269 (DN)	40	90	945	910	0.95	1.01	D	8	918	0.95	1.02	D	0.009
PM	E243 (UP)	40	90	945	642	0.75	0.91	C	20	662	0.75	0.93	C	-
	E244 (DN)	40	90	945	1196	0.95	1.33	E	6	1202	0.95	1.34	E	0.007
	E254X (DN)	24	90	480	197	1.00	0.41	A	2	199	1.00	0.41	A	-
	E269 (DN)	40	90	945	1336	0.95	1.49	E	6	1342	0.95	1.49	E	0.007

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.
* Denotes a significant adverse impact based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013
Note: This table has been revised for the FEIS.

TABLE 12-89: WITH-ACTION FARE ARRAY ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

				No-Action						Project Increment		With-Action					
Peak Period	Fare Array	Control Element	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS	15-Minute Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out					In	Out	In	Out				
AM	N305	Two-way Turnstile	11	83	1310	0.8	0.9	0.28	A	11	14	94	1324	0.8	0.9	0.28	A
PM	N305	Two-way Turnstile	11	622	126	0.8	0.9	0.17	A	20	20	642	146	0.8	0.9	0.18	A

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.

Source: Philip Habib & Associates, 2013

Note: This table has been revised for the FEIS.

TABLE 12-90: ACTION-WITH-IMPROVEMENTS ESCALATOR ANALYSIS AT THE LEXINGTON AVENUE/53RD STREET SUBWAY STATION

					No-Action				Project Increment			Action-With-Improvements							
Peak Period	Escalator	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	Reallocated Volumes	New Demand	Total Increment	Width (in.)	Feet Per Minute	Guideline Capacity	15-Minute Pedestrian Volumes	Surging Factor	V/C Ratio	LOS	V/C Ratio Increase
AM	E243 (UP)	40	90	945	1043	0.75	1.47	E	-193	5	-188	40	100	1050	855	0.75	1.09	D	-0.386
	E244 (UP)	40	90	945	1016	0.75	1.43	E	-166	5	-161	40	100	1050	855	0.75	1.09	D	-0.348
	E254X (UP)	24	90	480	516	0.75	1.43	E	334	5	339	40	100	1050	855	0.75	1.09	D	-0.348
	E269 (DN)	40	90	945	910	0.95	1.01	D	-	8	8	40	100	1050	918	0.95	0.92	C	-0.093
PM	E243 (UP)	40	90	945	642	0.75	0.91	C	-321	10	20	40	100	1050	662	0.75	0.84	C	-
	E244 (DN)	40	90	945	1196	0.95	1.33	E	99	7	106	40	100	1050	1302	0.95	1.30	D	-0.027
	E254X (UP)*	24	90	480	197	1.00	0.41	A	124	10	134	40	100	1050	331	0.75	0.42	A	-
	E269 (DN)	40	90	945	1336	0.95	1.49	E	99	7	106	40	100	1050	1442	0.95	1.45	E	-0.043

Notes:
Methodology based on 2012 *CEQR Technical Manual* guidelines.
* During the PM peak period in the No-Action condition, Escalator 254X operates in the down direction.

Source: Philip Habib & Associates, 2013

Note: This table has been revised for the FEIS.

12.8.3.2 Subway Line Haul

a. Action-With-Improvements

It is anticipated that the platform circulation improvements on Lexington Avenue Line platforms at the Grand Central-42nd Street subway station would reduce dwell time on the No. 4 and No. 5 trains and would result in additional capacity of one peak-hour train on the northbound PM and southbound AM Lexington Avenue express service. The line haul analysis for the future Action-with-Improvements condition is shown in Table 12-91. For purposes of the line haul analysis this capacity increase is deemed to be one additional No. 4 train in the Action-With-Improvements condition, but service reliability and capacity improvements would benefit both No. 4 and No. 5 riders in Manhattan where the two lines provide the same service.

- In the AM peak hour, southbound No. 4 trains would operate with an improved v/c ratio of 1.06, compared to a v/c ratio of 1.13 without the improvements.
- In the PM peak hour, the northbound the No. 4 would operate with a v/c ratio of 0.97, compared to 1.05 without the improvements.

b. Action-Without-Improvements

Project-generated trip assignment volumes and the number of trains by route that would be operating through the rezoning area by 2033 were used to determine the average incremental increase in peak-hour trips per subway car attributable to the Proposed Action.

As shown in Table 12-92, in the AM peak hour the southbound Lexington Avenue express and the Flushing express would both continue to operate above guideline capacity in the future with the Proposed Action.

- In the AM peak the No. 4 and No. 5 southbound would operate with v/c ratios of 1.13 and 1.04, respectively, compared to No-Action v/c ratios of 1.12 and 1.03, respectively. In the PM peak hour, the northbound No. 4 would continue to operate above guideline capacity, with a v/c ratio of 1.05, compared to a No-Action v/c ratio of 1.04.
- In the AM peak hour, the southbound No. 7 express would operate with a v/c ratio of 1.08, compared with a No-Action v/c ratio of 1.07.

All other routes analyzed would continue to operate below capacity in the peak direction in the AM and PM at their maximum load points in 2033.

The greatest increase in incremental trips per subway car would total six trips per car on the shuttle leaving Grand Central-42nd Street in the PM peak hour. Since this route is not projected to exceed guideline capacity in the future with the Proposed Action, this increase is not significant. All other routes are expected to experience fewer than five incremental trips per car in each direction in each peak hour as a result of the Proposed Action, therefore significant adverse impacts to subway line haul conditions are not anticipated based on *CEQR Technical Manual* criteria.

TABLE 12-91: ACTION-WITH-IMPROVEMENTS SUBWAY LINE HAUL ANALYSIS

				NO ACTION					WITH ACTION							IMPROVEMENTS				
Peak Hour	Route	Direction	Maximum Load Point (leaving station)	Average Trains Per Hour (1)	Cars Per Hour (1)	Passengers per Hour (2)	Peak Hour Capacity (3)	V/C Ratio (4)	Build Increment Pass/Hr	Average Trains Per Hour (1)	Cars Per Hour (1)	Passengers per Hour	Peak Hour Capacity (3)	V/C Ratio (4)	Avg. Added Passengers per Car	Average Trains Per Hour	Cars Per Hour	Passengers per Hour	Peak Hour Capacity (3)	V/C Ratio (4)
AM	4	SB	86 St	14.1	141.0	17,364	15,485	**1.12**	190	14.1	141.0	17,554	15,510	**1.13**	1.3	15.1	151.0	17,554	16,610	**1.06**
	5	SB	86 St	13.8	138.0	15,625	15,235	**1.03**	171	13.8	138.0	15,796	15,180	**1.04**	1.2	13.8	138.0	15,796	15,180	**1.04**
	6	SB	68 St-Hunter College	22.5	225.0	22,497	24,750	0.91	334	22.5	225.0	22,831	24,750	0.92	1.5					
	7 exp	SB	Woodside-61 St	14.0	153.6	17,993	16,831	**1.07**	129	14.0	154.0	18,122	16,831	**1.08**	0.8					
	7 loc	SB	40 St-Lowery St	14.2	156.0	16,315	17,155	0.95	159	14.2	156.2	16,474	17,155	0.96	1.0					
	7 loc	NB	Times Sq-42 St	26.0	286.0	8,490	31,460	0.27	458	26.0	286.0	8,948	31,460	0.28	1.6					
	F	SB	Roosevelt Island	16.0	160.0	21,959	22,910	0.96	256	16.0	160.0	22,215	22,910	0.97	1.6					
	4	NB	Fulton St	13.7	137.0	11,316	15,033	0.75	246	13.7	137.0	11,562	15,033	0.77	1.8					
	5	NB	Fulton St	12.3	123.0	10,087	13,567	0.74	220	12.3	123.0	10,307	13,567	0.76	1.8					
	D	NB	36 St	12.3	98.4	13,951	16,236	0.86	205	12.3	98.4	14,156	16,236	0.87	2.1					
	F	NB	2 Av	14.9	148.9	19,551	20,105	0.97	294	14.9	148.9	19,845	20,105	0.99	2.0					
	S	NB	Times Sq-42 St	29.5	98.5	4,602	10,835	0.42	475	29.5	98.5	5,077	10,835	0.47	4.8					
PM	4	NB	59 St	12.5	125.0	14,273	13,750	**1.04**	203	12.5	125.0	14,476	13,750	**1.05**	1.6	13.5	135.0	14,476	14,850	0.97
	5	NB	59 St	12.8	128.0	12,587	14,025	0.90	206	12.8	128.0	12,793	14,080	0.91	1.6	12.8	128.0	12,793	14,080	0.91
	6	NB	59 St	20.3	203.0	20,139	22,367	0.90	426	20.3	203.0	20,565	22,367	0.92	2.1					
	7	NB	Queensboro Plaza	23.2	232.0	22,402	28,012	0.80	353	23.2	232.0	22,755	28,012	0.81	1.5					
	7	SB	Grand Central-42 St	26.0	286.0	8,660	31,460	0.28	539	26.0	286.0	9,199	31,460	0.29	1.9					
	F	NB	Lexington Av/63 St	15.0	150.0	21,077	21,750	0.97	341	15.0	150.0	21,418	21,750	0.98	2.3					
	4	SB	Bowling Green	13.0	130.0	12,910	14,300	0.90	318	13.0	130.0	13,228	14,300	0.93	2.4					
	5	SB	Bowling Green	8.0	80.0	8,484	8,800	0.96	234	8.0	80.0	8,718	8,800	0.99	2.9					
	B	SB	Atlantic Av	9.5	76.0	10,358	13,431	0.77	216	9.5	76.0	10,574	13,431	0.79	2.8					
	D	SB	Pacific St	8.5	68.0	8,323	10,540	0.79	281	8.5	68.0	8,604	10,540	0.82	4.1					
	F	SB	Jay St-Borough Hall	13.0	130.0	11,672	17,550	0.67	323	13.0	130.0	11,995	17,550	0.68	2.5					
	S	SB	Grand Central-42 St	27.5	92.0	4,705	10,120	0.46	549	27.5	92.0	5,254	10,120	0.52	6.0					

Notes:
(1) Based on existing average throughput and future anticipated capacity increases
(2) Based on Regional Transit Forecasting Model (RTFM) outputs.
(3) Capacity based on NYCT rush hour guideline capacities.
(4) Volume-to-capacity ratio.

Source: New York City Transit, 2013

TABLE 12-92: ACTION-WITHOUT-IMPROVEMENTS SUBWAY LINE HAUL ANALYSIS

				NO ACTION					WITH ACTION						
Peak Hour	Route	Direction	Maximum Load Point (leaving station)	Average Trains Per Hour (1)	Cars Per Hour (1)	Passengers per Hour (2)	Peak Hour Capacity (3)	V/C Ratio (4)	Build Increment Pass/Hr	Average Trains Per Hour	Cars Per Hour	Passengers per Hour	Hour Capacity (2)	V/C Ratio (3)	Avg. Added Passengers per Car
AM	4	SB	86 St	14.1	141.0	17,364	15,485	**1.12**	190	14.1	141.0	17,554	15,510	**1.13**	1.3
	5	SB	86 St	13.8	138.0	15,625	15,235	**1.03**	171	13.8	138.0	15,796	15,180	**1.04**	1.2
	6	SB	68 St-Hunter College	22.5	225.0	22,497	24,750	0.91	334	22.5	225.0	22,831	24,750	0.92	1.5
	7 exp	SB	Woodside-61 St	14.0	153.6	17,993	16,831	**1.07**	129	14.0	154.0	18,122	16,831	**1.08**	0.8
	7 loc	SB	40 St-Lowery St	14.2	156.0	16,315	17,155	0.95	159	14.2	156.2	16,474	17,155	0.96	1.0
	7 loc	NB	Times Sq-42 St	26.0	286.0	8,490	31,460	0.27	458	26.0	286.0	8,948	31,460	0.28	1.6
	F	SB	Roosevelt Island	16.0	160.0	21,959	22,910	0.96	256	16.0	160.0	22,215	22,910	0.97	1.6
	4	NB	Fulton St	13.7	137.0	11,316	15,033	0.75	246	13.7	137.0	11,562	15,033	0.77	1.8
	5	NB	Fulton St	12.3	123.0	10,087	13,567	0.74	220	12.3	123.0	10,307	13,567	0.76	1.8
	D	NB	36 St	12.3	98.4	13,951	16,236	0.86	205	12.3	98.4	14,156	16,236	0.87	2.1
	F	NB	2 Av	14.9	148.9	19,551	20,105	0.97	294	14.9	148.9	19,845	20,105	0.99	2.0
	S	NB	Times Sq-42 St	29.5	98.5	4,602	10,835	0.42	475	29.5	98.5	5,077	10,835	0.47	4.8
PM	4	NB	59 St	12.5	125.0	14,273	13,750	**1.04**	203	12.5	125.0	14,476	13,750	**1.05**	1.6
	5	NB	59 St	12.8	128.0	12,587	14,025	0.90	206	12.8	128.0	12,793	14,080	0.91	1.6
	6	NB	59 St	20.3	203.0	20,139	22,367	0.90	426	20.3	203.0	20,565	22,367	0.92	2.1
	7	NB	Queensboro Plaza	23.2	232.0	22,402	28,012	0.80	353	23.2	232.0	22,755	28,012	0.81	1.5
	7	SB	Grand Central-42 St	26.0	286.0	8,660	31,460	0.28	539	26.0	286.0	9,199	31,460	0.29	1.9
	F	NB	Lexington Av/63 St	15.0	150.0	21,077	21,750	0.97	341	15.0	150.0	21,418	21,750	0.98	2.3
	4	SB	Bowling Green	13.0	130.0	12,910	14,300	0.90	318	13.0	130.0	13,228	14,300	0.93	2.4
	5	SB	Bowling Green	8.0	80.0	8,484	8,800	0.96	234	8.0	80.0	8,718	8,800	0.99	2.9
	B	SB	Atlantic Av	9.5	76.0	10,358	13,431	0.77	216	9.5	76.0	10,574	13,431	0.79	2.8
	D	SB	Pacific St	8.5	68.0	8,323	10,540	0.79	281	8.5	68.0	8,604	10,540	0.82	4.1
	F	SB	Jay St-Borough Hall	13.0	130.0	11,672	17,550	0.67	323	13.0	130.0	11,995	17,550	0.68	2.5
	S	SB	Grand Central-42 St	27.5	92.0	4,705	10,120	0.46	549	27.5	92.0	5,254	10,120	0.52	6.0

Notes:
(1) Based on existing average throughput and future anticipated capacity increases
(2) Based on Regional Transit Forecasting Model (RTFM) outputs.
(3) Capacity based on NYCT rush hour guideline capacities.
(4) Volume-to-capacity ratio.

Source: New York City Transit, 2013

12.8.3.3 Bus

As shown in Table 12-8, projected development sites are expected to generate a net total of approximately 1,208 and 1,468 new trips on the local and express bus services operating in proximity to the rezoning area during the weekday AM and PM peak hours, respectively. As shown in Table 12-93, demand on the M1 route (local and Limited service combined) is expected to increase by approximately one northbound trip and 41 southbound trips at the maximum load points in the AM peak hour, and by 65 northbound and three southbound trips in the PM. Demand on the M4 route (local and Limited service combined) is expected to increase by approximately three northbound trips and 33 southbound trips at the maximum load points in the AM peak hour, and by 83 northbound and four southbound trips in the PM. Demand on the M42 route is expected to increase by approximately 92 eastbound trips and four westbound trips at the maximum load points in the AM peak hour, and by six eastbound and 62 westbound trips in the PM.

TABLE 12-93: WITH-ACTION LOCAL BUS ANALYSIS

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	No-Action Available Capacity (3)	Project Increment	Available Capacity w/Proposed Action (3)	
AM	M1	NB	Madison Ave & E 58 St	4	72	1	71	
		SB	5 Ave & W 72 St	4	73	13	60	
		SB LTD	5 Ave & W 72 St	7	75	28	47	
	M4	NB	W 32 St & 7 Ave	10	175	3	172	
		SB	5 Ave & W 72 St	6	54	1	53	
		SB LTD	Central Park N & 5 Ave	6	40	32	8	
	M42	EB	W 42 St & Broadway	41	28	92	-64	*
		WB	W 42 St & Broadway	17	49	4	45	
PM	M1	NB	Madison Ave & E 72 St	6	94	36	58	
		SB	5 Ave & W 72 St	9	102	3	99	
		NB LTD	Madison Ave & E 58 St	6	71	29	42	
	M4	NB	Madison Ave & E 57 St	6	62	45	17	
		SB	5 Ave & W 72 St	8	83	4	79	
		NB LTD	Madison Ave & E 96 St	6	50	38	12	
	M42	EB	W 42 St & Broadway	16	7	6	1	
		WB	E 42 St & Lexington Ave	35	6	62	-56	*

Notes:
(1) Peak hours: weekday 8:00-9:00 AM and 5:00-6:00 PM.
(2) Assumes service levels adjusted to address capacity shortfalls in the No-Action condition.
(3) Available capacity based on MTA NYCT loading guidelines of 54 passengers per standard bus.
* Denotes a significant adverse impact based on current NYC Transit guidelines.

Source: Philip Habib & Associates, 2013

As shown in Table 12-93, based on projected levels of bus service in the No-Action condition, the Proposed Action would result in capacity shortfalls of 64 spaces on the eastbound M42 service in the AM

peak hour and 56 spaces on the westbound M42 service in the PM. Therefore, eastbound M42 service would be significantly adversely impacted in the AM peak hour based on *CEQR Technical Manual* criteria, as would westbound M42 service in the PM. M42 service would require additional capacity, which could be provided by either increasing the number of standard buses or converting the M42 route to articulated bus service. Potential mitigation for these significant adverse bus impacts is discussed in Chapter 19, "Mitigation."

12.9 PEDESTRIANS

12.9.1 Existing Conditions

East Midtown is characterized by heavy pedestrian flows during peak periods, especially along corridors providing access to area transit facilities such as subway stations and Grand Central Terminal. As shown in Figure 12-5 and discussed previously in Section 12.5, "Level 2 Screening Assessment," a total of 27 sidewalks, 76 crosswalks, and 62 corner reservoir areas in proximity to projected development sites and along corridors connecting these sites to area transit services were selected for analysis. These pedestrian elements are generally concentrated along the Lexington Avenue, Madison Avenue and Fifth Avenue corridors in proximity to projected development sites and subway and commuter rail station entrances. Selected locations along Second, Third, and Park Avenues are also analyzed.

12.9.1.1 Sidewalks

Pedestrian flows within the study area tend to highest along the East 42nd Street corridor and Fifth and Madison Avenues, especially in the vicinity of Grand Central Terminal and major subway station entrances. As shown in Table 12-94, analyzed sidewalks within East Midtown vary in width from approximately 9.5 feet to 23.25 feet, with narrower sidewalks generally found along Lexington and Madison Avenues and the cross streets, and wider sidewalks generally found along Fifth Avenue and East 42nd Street. Features typically present along sidewalks in East Midtown that can reduce the effective width available for pedestrian flow include street furniture such as sign posts, traffic signal and lamp posts, fire hydrants, newspaper dispensers and waste receptacles, as well as larger installations such as newsstands and subway stairs.

Table 12-94 shows the existing peak-hour pedestrian volumes, flow rates (in persons per minute per foot of effective width or PMF) and platoon-adjusted levels of service at analyzed sidewalks. As shown in Table 12-94, six of the 27 sidewalks analyzed currently operate at a congested LOS D, E or F in the weekday AM peak hour, one in the Midday, and seven in the PM peak hour.

TABLE 12-94: EXISTING SIDEWALK CONDITIONS

Location		Total Width (feet)	Effective Width (feet)	Peak Hour Volumes			Flow Rate (PMF)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
(S1) East 43rd Street Second Ave to Third Ave	South	13.0	5.5	864	685	859	3.1	2.4	2.9	A	A	A	C	B	B
(S2) East 42nd Street Second Ave to Third Ave	North	21.5	10.5	1195	1243	1359	2.5	2.4	2.5	A	A	A	B	B	B
(S3) East 50th Street Third Ave to Lexington Ave	South	12.5	5.5	598	509	518	2.4	2.0	2.0	A	A	A	B	B	B
(S4) East 49th Street Third Ave to Lexington Ave	North	15.3	6.0	547	617	466	2.0	2.3	1.4	A	A	A	B	B	B
(S5) East 42nd Street Third Ave to Lexington Ave	North	19.8	8.5	2910	1949	3143	6.4	4.1	6.5	B	A	B	D	C	D
(S6) Lexington Ave East 49th St to East 50th St	West	11.5	5.0	2269	1250	1970	8.2	5.5	7.3	C	B	C	D	C	D
(S7) East 49th Street Lexington Ave to Park Ave	South	14.8	5.8	1016	375	839	3.9	1.2	2.6	A	A	A	C	B	B
(S8) East 48th Street Lexington Ave to Park Ave	North	14.9	6.3	823	498	830	2.2	1.7	2.4	A	A	A	B	B	B
(S9) East 47th Street Vanderbilt Ave to Madison Ave	South	15.5	7.5	1239	1096	1112	2.9	2.6	3.2	A	A	A	B	B	C
(S10) East 45th Street Vanderbilt Ave to Madison Ave	North	9.5	4.5	811	1187	775	4.4	4.9	3.5	A	A	A	C	C	C
(S11) East 44th Street Vanderbilt Ave to Madison Ave	North	14.5	8.3	1090	1051	1785	2.4	2.2	3.8	A	A	A	B	B	C
(S12) East 43rd Street Vanderbilt Ave to Madison Ave	North	10.0	3.5	1880	797	1728	10.8	4.0	8.9	D	A	C	D	C	D
(S13) East 42nd Street Vanderbilt Ave to Madison Ave	North	22.5	10.0	4115	1051	5159	7.3	5.7	10.0	C	B	C	D	C	D
(S14) Madison Ave East 45th St to East 46th St	East	13.2	7.3	929	1243	1567	2.4	3.0	4.0	A	A	A	B	B	C
(S15) Madison Ave East 42nd St to East 43rd St	West	12.7	4.5	2007	1725	1945	9.8	6.8	8.2	C	B	C	D	D	D
(S16) East 47th Street Madison Ave to Fifth Ave	South	13.0	5.6	1403	978	1128	4.8	3.2	3.6	A	A	A	C	C	C
(S17) East 46th Street Madison Ave to Fifth Ave	North	13.3	5.7	662	608	766	2.2	1.9	2.9	A	A	A	B	B	B
(S18) East 44th Street Madison Ave to Fifth Ave	North	12.0	4.5	631	612	868	2.8	2.6	3.9	A	A	A	B	B	C
(S19) East 43rd Street Madison Ave to Fifth Ave	North	12.0	4.3	1349	1087	1878	6.1	4.5	7.8	B	A	C	D	C	D
(S20) East 42nd Street Madison Ave to Fifth Ave	North	20.5	10.8	2346	1651	3123	4.0	2.8	4.9	A	A	A	C	B	C
(S21) East 40th Street Madison Ave to Fifth Ave	South	12.7	5.1	1418	1218	1600	5.4	4.2	5.7	B	A	B	C	C	C
(S22) East 47th Street Fifth Ave to Sixth Ave	South	17.7	5.2	1051	1430	1446	4.2	4.9	5.4	A	A	B	C	C	C
(S23) Fifth Ave East 43rd St to East 44th St	West	22.8	16.2	1866	2535	3435	2.3	2.8	3.8	A	A	A	B	B	C
(S24) Fifth Ave East 43rd St to East 44th St	East	22.5	14.5	1792	2424	2431	2.5	3.1	3.2	A	A	A	B	C	C
(S25) Fifth Ave East 42nd St to East 43rd St	West	23.3	13.2	2147	1820	2144	3.0	3.1	3.0	A	A	A	B	C	B
(S26) Fifth Ave East 42nd St to East 43rd St	East	22.3	14.0	1352	2392	2042	1.8	3.3	2.8	A	A	A	B	C	B
(S27) 42nd Street Fifth Ave to Sixth Ave	South	21.0	10.0	1913	1773	3478	4.4	3.3	6.6	A	A	B	C	C	D
Number of Sidewalks at LOS D or worse													**6**	**1**	**7**

Notes:
PMF - pedestrians per minute per foot

Source: Philip Habib & Associates, 2013

12.9.1.2 Crosswalks

With the exception of some stop-controlled locations along Vanderbilt Avenue, intersections within the study area are generally signalized and include pedestrian signals. Analyzed crosswalks generally range from 12 to 25 feet in width, with wider crosswalks typically found at intersections along Madison and Fifth Avenues. With the exception of some intersections along Third Avenue, most analyzed crosswalks feature high visibility striping. Table 12-95 shows the peak-hour volumes, average pedestrian space (in square feet per pedestrian or SFP) and levels of service at analyzed crosswalks. As shown in Table 12-95, 21 of the 76 crosswalks analyzed currently operate at a congested LOS D, E or F in the weekday AM peak hour, 12 in the Midday and 24 in the PM peak hour.

12.9.1.3 Corner Areas

Table 12-96 shows the peak-hour volumes, average pedestrian space (in SFP) and levels of service at analyzed corner areas. As shown in Table 12-96, eight of the 62 corner areas analyzed currently operate at a congested LOS D, E, or F in the weekday AM peak hour, three in the Midday, and eight in the PM peak hour.

TABLE 12-95: EXISTING CROSSWALK CONDITIONS

Intersection	Crosswalk	Peak Hour Volume			Avg. Pedestrian Space (SFP)			Level of Service		
		AM	MD	PM	AM	MD	PM	AM	MD	PM
(1) Second Ave @ East 43rd St	South	458	451	495	32.2	39.3	32.3	C	C	C
	West	644	734	717	77.8	78.3	76.2	A	A	A
(2) Second Ave @ East 42nd St	North	879	563	786	44.7	84.6	48.8	B	A	B
	West	710	581	706	83.2	103.4	83.2	A	A	A
(3) Third Ave @ East 50th St	South	381	422	447	74.2	84.4	72.1	A	A	A
	East	1950	1342	2049	12.9	25.6	13.5	E	C	E
	West	1487	1491	1416	20.5	26.9	28.1	D	C	C
(4) Third Ave @ East 49th St	North	288	506	327	54.6	33.0	52.2	B	C	B
	West	1261	1319	1136	24.7	25.7	29.8	C	C	C
(5) Third Ave @ East 42nd St	North	1884	923	1657	10.4	25.7	13.9	E	C	E
	East	1732	1497	1466	26.9	31.7	32.0	C	C	C
	West	1674	1253	2087	22.9	32.4	17.7	D	C	D
(6) Lexington Ave @ East 50th St	North	1222	597	852	17.2	49.2	27.9	D	B	C
	South	853	583	750	28.9	26.1	36.1	C	C	C
	East	1998	1382	2316	15.4	16.8	12.3	D	D	E
	West	2005	976	1556	21.6	50.4	29.4	D	B	C
(7) Lexington Ave @ East 49th St	North	596	505	405	48.4	52.1	81.1	B	B	A
	South	578	344	458	47.0	102.3	70.6	B	A	A
	East	978	922	1335	39.0	39.4	25.3	C	C	C
	West	1276	812	1231	20.1	42.0	24.9	D	B	C
(8) Lexington Ave @ East 48th St	North	631	349	654	55.4	106.3	55.4	B	A	B
	South	401	401	369	32.9	29.6	35.8	C	C	C
	East	830	916	974	46.2	40.9	42.6	B	B	B
	West	835	686	792	40.0	50.7	46.3	C	B	B
(9) Lexington Ave @ East 42nd St	North	2233	1497	2167	19.9	24.9	22.3	D	C	D
	East	1324	1343	1243	27.7	30.0	33.8	C	C	C
(10) Park Ave @ East 49th St	South	575	459	438	42.7	51.3	49.9	B	B	B
	East	2045	1093	1921	20.6	44.9	23.5	D	B	D
(13) Madison Ave @ East 47th St	South	1244	997	1047	39.8	49.5	46.6	C	B	B
	East	1030	1311	1344	46.8	36.0	35.2	B	C	C
	West	939	1580	1527	41.8	24.9	21.7	B	C	D
(14) Madison Ave @ East 46th St	North	636	609	635	41.6	48.4	49.0	B	B	B
	South	765	965	810	45.0	35.9	40.1	B	C	B
	East	826	959	1314	39.8	39.2	28.5	C	C	C
	West	1177	1666	1423	32.0	24.6	25.0	C	C	C
(15) Madison Ave @ East 45th St	North	1203	1149	996	19.6	20.4	24.3	D	D	C
	East	1556	1865	2071	21.4	18.4	16.2	D	D	D
	West	896	1284	1336	46.4	30.9	25.8	B	C	C
(16) Madison Ave @ East 44th St	North	401	443	578	78.0	65.9	52.2	A	A	B
	East	938	1122	1402	48.1	39.1	32.4	B	C	C
	West	1030	1216	1269	45.2	41.5	33.3	B	B	C
(17) Madison Ave @ East 43rd St	North	1371	885	1493	16.2	29.7	17.5	D	C	D
	South	1435	703	1279	20.1	43.9	24.8	D	B	C
	East	1076	1062	712	36.4	41.7	64.8	C	B	A
	West	1186	1485	1537	25.0	25.6	22.1	C	C	D
(18) Madison Ave @ East 42nd St	North	3504	2867	4729	9.3	14.6	7.8	E	E	F
	South	2241	2033	2459	14.8	19.1	13.1	E	D	E
	East	2197	1699	2135	18.2	30.6	23.7	D	C	D
	West	1450	1572	1472	34.7	40.9	41.5	C	B	B
(19) Madison Ave @ East 40th St	North	618	985	865	26.4	14.3	16.9	C	E	D
	South	836	1090	927	53.9	34.6	39.8	B	C	C
	West	1050	1639	1149	46.8	21.6	39.8	B	D	C
(20) Fifth Ave @ East 47th St	South	974	533	929	13.1	27.9	16.1	E	C	D
	East	924	1792	1613	59.0	31.4	35.8	B	C	C
	West	1025	2431	2540	49.5	18.6	19.1	B	D	D
(21) Fifth Ave @ East 46th St	North	564	437	720	77.2	98.6	57.6	A	A	B
	South	747	1010	810	29.3	26.0	28.5	C	C	C
	East	1138	1978	2037	47.3	33.8	31.0	B	C	C
	West	977	1852	1925	62.7	29.3	27.4	A	C	C
(22) Fifth Ave @ East 45th St	North	929	1193	978	38.9	35.3	42.9	C	C	B
	South	875	1053	1193	31.5	32.7	28.6	C	C	C
	East	1273	2020	1869	51.9	32.4	38.8	B	C	C
(23) Fifth Ave @ East 44th St	North	773	919	1165	38.6	34.1	24.7	C	C	C
	South	1018	1231	2624	34.2	24.8	11.5	C	C	E
	East	1904	2878	2793	18.1	14.4	13.0	D	E	E
	West	1456	2536	2930	30.8	19.0	14.7	C	D	E
(24) Fifth Ave @ East 43rd St	North	1858	1300	1364	18.9	32.2	26.1	D	C	C
	South	1334	712	1450	27.3	52.5	27.5	C	B	C
	East	638	1532	2192	102.6	46.1	29.9	A	B	C
	West	1506	2017	3042	37.8	29.6	18.8	C	C	D
(25) Fifth Ave @ East 42nd St	North	1733	1669	2120	24.1	27.3	19.7	C	C	D
	South	2397	1428	2208	18.3	34.8	19.0	D	C	D
	East	1727	2273	2943	34.4	27.0	18.4	C	C	D
	West	1449	1652	2098	41.7	43.5	34.3	B	B	C
(26) Fifth Ave @ East 40th St	South	1218	1660	1557	26.8	18.4	17.5	C	D	D
	East	1059	2066	1825	51.6	23.7	28.1	B	D	C
Number of Crosswalks at LOS D or worse								**21**	**12**	**24**

Notes:
SFP - square feet per pedestrian

Source: Philip Habib & Associates, 2013

TABLE 12-96: EXISTING CORNER CONDITIONS

Intersection	Corner	Avg Pedestrian Space (SFP)			Level of Service		
		AM	MD	PM	AM	MD	PM
(1) Second Ave @ East 43rd St	SW	80.0	88.8	88.2	A	A	A
(2) Second Ave @ East 42nd St	NW	129.6	190.8	137.6	A	A	A
(3) Third Ave @ East 50th St	SE	42.1	58.5	31.2	B	B	C
	SW	115.8	141.9	135.5	A	A	A
(4) Third Ave @ East 49th St	NW	345.6	341.3	408.7	A	A	A
(5) Third Ave @ East 42nd St	NE	50.0	75.9	56.7	B	A	B
	NW	35.0	81.5	45.4	C	A	B
(6) Lexington Ave @ East 50th St	NE	12.8	28.1	17.4	E	C	D
	NW	16.0	50.4	25.2	D	B	C
	SE	21.5	19.7	16.4	D	D	D
	SW	15.9	23.6	22.8	D	D	D
(7) Lexington Ave @ East 49th St	NE	53.5	57.6	51.0	B	B	B
	NW	31.8	54.7	45.0	C	B	B
	SE	49.8	59.1	36.7	B	B	C
	SW	38.3	77.8	48.0	C	A	B
(8) Lexington Ave @ East 48th St	NE	62.4	71.5	58.3	A	A	B
	NW	41.9	67.1	49.0	B	A	B
	SE	55.9	46.0	50.8	B	B	B
	SW	76.9	77.8	86.8	A	A	A
(9) Lexington Ave @ East 42nd St	NE	36.0	49.2	36.2	C	B	C
(10) Park Ave @ East 49th St	SE	40.9	79.5	54.3	B	A	B
(13) Madison Ave @ East 47th St	SE	50.9	51.8	50.5	B	B	B
	SW	41.2	35.1	34.6	B	C	C
(14) Madison Ave @ East 46th St	NE	57.1	70.6	56.1	B	A	B
	NW	43.5	34.0	32.9	B	C	C
	SE	57.1	52.4	47.7	B	B	B
	SW	39.5	32.0	37.5	C	C	C
(15) Madison Ave @ East 45th St	NE	9.9	8.1	7.7	E	E	F
	NW	35.2	24.7	22.5	C	C	D
(16) Madison Ave @ East 44th St	NE	90.4	72.0	59.1	A	A	B
	NW	63.6	51.0	39.4	A	B	C
(17) Madison Ave @ East 43rd St	NE	13.9	31.6	25.5	E	C	C
	NW	34.0	35.5	20.7	C	C	D
	SE	28.3	56.3	53.1	C	B	B
	SW	27.7	38.7	26.4	C	C	C
(18) Madison Ave @ East 42nd St	NE	17.1	31.3	18.0	D	C	D
	NW	17.1	27.1	14.3	D	C	E
	SE	37.8	67.0	44.0	C	A	B
	SW	152.8	193.4	156.4	A	A	A
(19) Madison Ave @ East 40th St	NW	65.6	29.4	50.6	A	C	B
	SW	67.6	35.9	54.2	A	C	B
(20) Fifth Ave @ East 47th St	SE	72.5	61.7	56.7	A	A	B
	SW	105.2	77.4	74.7	A	A	A
(21) Fifth Ave @ East 46th St	NE	198.6	149.8	128.5	A	A	A
	NW	93.9	53.7	48.1	A	B	B
	SE	70.2	50.1	52.6	A	B	B
	SW	81.3	50.9	48.7	A	B	B
(22) Fifth Ave @ East 45th St	NE	71.5	48.2	56.5	A	B	B
	SE	59.0	47.0	51.5	B	B	B
(23) Fifth Ave @ East 44th St	NE	58.7	45.0	36.5	B	B	C
	NW	71.1	49.5	36.5	A	B	C
	SE	45.3	38.2	26.8	B	C	C
	SW	64.6	44.6	25.8	A	B	C
(24) Fifth Ave @ East 43rd St	NE	70.1	64.5	45.0	A	A	B
	NW	43.1	47.7	31.8	B	B	C
	SE	65.8	71.2	39.7	A	A	C
	SW	58.9	63.7	41.7	B	A	B
(25) Fifth Ave @ East 42nd St	NE	87.5	80.3	58.8	A	A	B
	NW	80.6	80.7	64.3	A	A	A
	SE	66.0	77.8	43.6	A	A	B
	SW	58.6	91.8	65.9	B	A	A
(26) Fifth Ave @ East 40th St	SE	73.4	37.5	37.3	A	C	C
Number of Corners at LOS D or worse					**8**	**3**	**8**

Notes:
SFP - square feet per pedestrian

Source: Philip Habib & Associates, 2013

12.9.2 Future Pedestrian Conditions Without The Proposed Action (No-Action)

Pedestrian volumes along analyzed sidewalks, crosswalks, and corner areas are expected to increase during the 2013 through 2033 period as a result of background growth as well as demand from new development. In determining future No-Action pedestrian volumes, development on projected development sites pursuant to existing zoning was considered, as were the 24 other No-Action development projects in East Midtown summarized in Table 12-20. Traffic and pedestrian mitigation measures associated with these development projects were also considered for the analysis of No-Action pedestrian conditions. In addition, the No-Action pedestrian analysis reflects new demand on the pedestrian network from the East Side Access project which will bring LIRR trains (and riders) into a new facility at Grand Central Terminal. This facility is expected to include new street-level entrances on the south side of East 47th Street east of Madison Avenue, on the north side of East 48th Street midblock between Park and Madison Avenues, and on the south side of East 47th Street midblock between Park and Lexington Avenues.

In addition to changes in pedestrian demand, it is also anticipated that substantial new pedestrian spaces will be created in East Midtown during the 2013 through 2033 period. These include:

- Pershing Square West (the west side of Park Avenue between East 41st and East 42nd Streets) which will be permanently closed to vehicular traffic. A pedestrian plaza will be created for year-round use. (This block is currently closed to traffic for part of the year for an outdoor café.)
- Pershing Square East (the east side of Park Avenue between East 41st and East 42nd Streets) which will be permanently closed to vehicular traffic to enhance pedestrian safety and circulation. A pedestrian plaza/open space with a bike-share station will be created.
- Vanderbilt Avenue between East 42nd and 43rd Streets will be closed to vehicular traffic and a pedestrian plaza will be created to improve pedestrian safety and circulation.
- Anticipated conditions at analyzed pedestrian facilities in the No-Action condition are shown in Table 12-97 through Table 12-99 and summarized below.

12.9.2.1 Sidewalks

Table 12-97 shows the No-Action peak-hour pedestrian volumes, flow rates, and platoon-adjusted levels of service at analyzed sidewalks. As shown in Table 12-97, nine of the 27 sidewalks are expected to operate at a congested LOS D, E or F in the weekday AM peak hour, four in the Midday, and 11 in the PM peak hour. This compares to six, one, and seven congested locations during these same periods, respectively, under Existing conditions.

TABLE 12-97: NO-ACTION SIDEWALK CONDITIONS

Location		Total Width (feet)	Effective Width (feet)	Peak Hour Volumes			Flow Rate (PMF)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
(S1) East 43rd Street Second Ave to Third Ave	South	13.0	5.5	914	871	934	3.3	3.1	3.2	A	A	A	C	C	C
(S2) East 42nd Street Second Ave to Third Ave	North	21.5	10.5	1543	1426	1721	3.3	2.8	3.1	A	A	A	C	B	C
(S3) East 50th Street Third Ave to Lexington Ave	South	12.5	5.5	724	1008	883	2.9	4.0	3.2	A	A	A	B	C	C
(S4) East 49th Street Third Ave to Lexington Ave	North	15.3	6.0	708	1030	834	2.5	3.9	2.5	A	A	A	B	C	B
(S5) East 42nd Street Third Ave to Lexington Ave	North	19.8	8.5	3795	2110	3957	8.3	4.5	8.2	C	A	C	D	C	D
(S6) Lexington Ave East 49th St to East 50th St	West	11.5	5.0	2345	1305	2039	8.5	5.8	7.5	C	B	C	D	C	D
(S7) East 49th Street Lexington Ave to Park Ave	South	14.8	5.8	1056	477	883	4.1	1.5	2.7	A	A	A	C	B	B
(S8) East 48th Street Lexington Ave to Park Ave	North	14.9	6.3	868	563	880	2.4	1.9	2.6	A	A	A	B	B	B
(S9) East 47th Street Vanderbilt Ave to Madison Ave	South	15.5	7.5	2775	1721	2850	6.5	4.0	8.3	B	A	C	D	C	D
(S10) East 45th Street Vanderbilt Ave to Madison Ave	North	9.5	4.5	845	1215	815	4.6	5.0	3.7	A	A	A	C	C	C
(S11) East 44th Street Vanderbilt Ave to Madison Ave	North	14.5	8.3	1160	1124	1877	2.5	2.3	4.0	A	A	A	B	B	C
(S12) East 43rd Street Vanderbilt Ave to Madison Ave	North	10.0	3.5	3217	1380	3003	18.4	6.9	15.4	E	B	E	F	D	E
(S13) East 42nd Street Vanderbilt Ave to Madison Ave	North	22.5	10.0	4564	3536	5590	8.1	6.1	10.8	C	B	D	D	D	D
(S14) Madison Ave East 45th St to East 46th St	East	13.2	7.3	1740	1616	2069	4.4	3.9	5.3	A	A	B	C	C	C
(S15) Madison Ave East 42nd St to East 43rd St	West	12.7	4.5	2069	1771	2002	10.1	7.0	8.5	D	B	C	D	D	D
(S16) East 47th Street Madison Ave to Fifth Ave	South	13.0	5.6	2180	1365	1948	7.4	4.5	6.2	C	A	B	D	C	D
(S17) East 46th Street Madison Ave to Fifth Ave	North	13.3	5.7	951	742	1087	3.3	2.3	4.1	A	A	A	C	B	C
(S18) East 44th Street Madison Ave to Fifth Ave	North	12.0	4.5	827	716	1055	3.7	3.1	4.8	A	A	A	C	C	C
(S19) East 43rd Street Madison Ave to Fifth Ave	North	12.0	4.3	1906	1301	2405	8.7	5.4	10.0	C	B	C	D	C	D
(S20) East 42nd Street Madison Ave to Fifth Ave	North	20.5	10.8	2746	1798	3512	4.6	3.1	5.6	A	A	B	C	C	C
(S21) East 40th Street Madison Ave to Fifth Ave	South	12.7	5.1	1523	1394	1760	5.8	4.8	6.3	B	A	B	C	C	D
(S22) East 47th Street Fifth Ave to Sixth Ave	South	17.7	5.2	1798	2040	2275	7.1	7.0	8.5	C	B	C	D	D	D
(S23) Fifth Ave East 43rd St to East 44th St	West	22.8	16.2	2017	2768	3653	2.5	3.0	4.0	A	A	A	B	B	C
(S24) Fifth Ave East 43rd St to East 44th St	East	22.5	14.5	1958	2515	2614	2.7	3.2	3.5	A	A	A	B	C	C
(S25) Fifth Ave East 42nd St to East 43rd St	West	23.3	13.2	2257	1894	2260	3.2	3.2	3.2	A	A	A	C	C	C
(S26) Fifth Ave East 42nd St to East 43rd St	East	22.3	14.0	1434	2485	2129	1.9	3.4	2.9	A	A	A	B	C	B
(S27) 42nd Street Fifth Ave to Sixth Ave	South	21.0	10.0	2016	1831	3639	4.6	3.4	6.9	A	A	B	C	C	D
Number of Sidewalks at LOS D or worse													**9**	**4**	**11**

Notes:
PMF - pedestrians per minute per foot

Source: Philip Habib & Associates, 2013

12.9.2.2 Crosswalks

Table 12-98 shows the peak-hour volumes, average pedestrian space, and levels of service at analyzed crosswalks in the No-Action condition. As shown in Table 12-98, 31 of the 76 crosswalks analyzed are expected to operate at a congested LOS D, E, or F in the weekday AM peak hour, 26 in the Midday, and 40 in the PM peak hour. This compares to 21, 12, and 24 congested locations during these same periods, respectively, under Existing conditions.

12.9.2.3 Corner Areas

Table 12-99, shows the average pedestrian space and levels of service at analyzed corner areas in the No-Action condition. As shown in Table 12-99, 10 of the 62 corner areas analyzed are expected to operate at a congested LOS D, E or F in the weekday AM peak hour, six in the Midday, and 12 in the PM peak hour. This compares to eight, three, and eight congested locations during these same periods, respectively, under Existing conditions.

TABLE 12-98: NO-ACTION CROSSWALK CONDITIONS

Intersection	Crosswalk	Peak Hour Volume			Avg. Pedestrian Space (SFP)			Level of Service		
		AM	MD	PM	AM	MD	PM	AM	MD	PM
(1) Second Ave @ East 43rd St	South	538	502	595	27.0	35.0	26.4	C	C	C
	West	776	826	877	61.7	66.0	58.3	A	A	B
(2) Second Ave @ East 42nd St	North	1172	902	1125	32.1	51.7	35.8	C	B	C
	West	843	652	866	68.9	90.6	63.2	A	A	A
(3) Third Ave @ East 50th St	South	467	617	638	59.9	56.8	49.7	B	B	B
	East	2062	1474	2216	11.9	18.8	12.2	E	D	E
	West	1619	1712	1650	18.6	22.9	23.6	D	D	D
(4) Third Ave @ East 49th St	North	397	719	551	39.2	22.8	30.3	C	D	C
	West	1387	1548	1367	21.8	21.0	23.8	D	D	D
(5) Third Ave @ East 42nd St	North	2588	1070	2362	6.8	21.2	8.9	F	D	E
	East	2053	1627	1810	21.1	27.6	23.9	D	C	D
	West	2070	1446	2542	17.9	27.0	13.8	D	C	E
(6) Lexington Ave @ East 50th St	North	1287	729	922	16.2	39.7	25.5	D	C	C
	South	901	786	821	26.9	18.9	32.5	C	D	C
	East	2155	1726	2557	13.7	12.5	10.6	E	E	E
	West	2086	1118	1644	20.6	43.4	27.5	D	B	C
(7) Lexington Ave @ East 49th St	North	634	737	474	45.3	34.9	68.7	B	C	A
	South	600	431	482	44.2	80.7	66.8	B	A	A
	East	1025	1130	1408	37.0	31.4	23.7	C	C	D
	West	1324	941	1287	19.1	35.5	23.6	D	C	D
(8) Lexington Ave @ East 48th St	North	671	377	697	51.9	98.1	51.7	B	A	B
	South	489	496	445	27.1	23.6	29.0	C	D	C
	East	872	1059	1031	43.4	34.7	39.8	B	C	C
	West	868	759	829	38.3	45.3	44.0	C	B	B
(9) Lexington Ave @ East 42nd St	North	3404	1715	3366	11.7	30.1	14.2	E	C	E
	East	1601	1465	1569	21.3	26.8	23.9	D	C	D
(10) Park Ave @ East 49th St	South	601	523	463	40.7	44.5	22.6	B	B	D
	East	2113	1140	1986	19.7	42.8	46.8	D	B	B
(13) Madison Ave @ East 47th St	South	1847	1282	1637	25.4	37.7	28.8	C	C	C
	East	1697	1609	1937	26.4	28.6	23.0	C	C	D
	West	997	1645	1621	38.7	23.6	20.1	C	D	D
(14) Madison Ave @ East 46th St	North	866	730	902	26.0	39.7	33.7	C	C	C
	South	1259	1103	1265	29.5	31.1	24.6	C	C	C
	East	1516	1270	2023	19.4	28.1	16.4	D	C	D
	West	1286	1728	1562	28.8	23.6	22.3	C	D	D
(15) Madison Ave @ East 45th St	North	1468	1265	1211	15.4	18.2	19.2	D	D	D
	East	2342	2197	2758	13.1	15.1	11.2	E	D	E
	West	917	1328	1370	45.0	29.5	24.8	B	C	C
(16) Madison Ave @ East 44th St	North	625	531	786	48.4	53.7	35.3	B	B	C
	East	1915	1449	2277	21.9	29.2	18.4	D	C	D
	West	1107	1234	1356	41.6	40.8	30.7	B	B	C
(17) Madison Ave @ East 43rd St	North	1966	1145	2006	10.4	22.1	11.9	E	D	E
	South	1706	814	1525	16.3	37.5	20.4	D	C	D
	East	1720	1409	1280	20.6	30.3	31.6	D	C	C
	West	1224	1495	1575	23.9	25.3	21.3	D	C	D
(18) Madison Ave @ East 42nd St	North	4029	3061	5313	7.8	13.5	6.7	F	E	F
	South	2501	2104	2758	13.2	18.4	11.4	E	D	E
	East	2610	1831	2540	14.4	26.8	18.1	E	C	D
	West	1593	1616	1631	31.1	39.4	36.9	C	C	C
(19) Madison Ave @ East 40th St	North	652	1039	916	24.9	13.4	15.8	C	E	D
	South	875	1145	978	51.3	32.8	37.5	B	C	C
	West	1085	1703	1192	45.2	20.7	38.1	B	D	C
(20) Fifth Ave @ East 47th St	South	1464	896	1462	9.0	15.9	9.6	E	D	E
	East	1063	1997	1778	50.5	27.7	31.9	B	C	C
	West	1093	2727	2669	45.2	15.9	17.6	B	D	D
(21) Fifth Ave @ East 46th St	North	879	600	1085	48.3	70.9	37.1	B	A	C
	South	989	1216	1019	22.5	21.1	22.2	D	D	D
	East	1379	2144	2320	37.6	30.7	26.4	C	C	C
	West	1105	2215	2102	54.3	23.8	24.5	B	D	C
(22) Fifth Ave @ East 45th St	North	1061	1276	1106	33.9	32.8	37.8	C	C	C
	South	907	1095	1237	30.0	31.2	27.3	C	C	C
	East	1414	2128	2007	47.3	30.5	35.8	B	C	C
(23) Fifth Ave @ East 44th St	North	892	992	1267	33.5	31.4	22.4	C	C	D
	South	1052	1264	2708	32.6	23.5	10.5	C	D	E
	East	2019	3002	2939	16.8	13.5	12.1	D	E	E
	West	1498	2641	3018	29.9	18.1	14.2	C	D	E
(24) Fifth Ave @ East 43rd St	North	2208	1448	1599	16.0	28.7	21.5	D	C	D
	South	1477	784	1589	24.1	46.8	24.6	C	B	C
	East	911	1684	2523	69.6	41.5	25.5	A	B	C
	West	1557	2098	3138	34.6	27.6	17.6	C	C	D
(25) Fifth Ave @ East 42nd St	North	1895	1768	2275	21.9	25.6	18.1	D	C	D
	South	2481	1470	2284	17.6	34.2	18.3	D	C	D
	East	1962	2375	3221	29.8	25.7	16.4	C	C	D
	West	1535	1723	2209	39.2	41.5	32.4	C	B	C
(26) Fifth Ave @ East 40th St	South	1560	1959	2028	20.6	15.0	13.0	D	E	E
	East	1291	2168	2121	41.3	22.2	23.0	B	D	D
Number of Crosswalks at LOS D or worse								**31**	**26**	**40**

Notes:
SFP - square feet per pedestrian

Source: Philip Habib & Associates, 2013

TABLE 12-99: NO-ACTION CORNER CONDITIONS

Intersection	Corner	Avg Pedestrian Space (SFP)			Level of Service		
		AM	MD	PM	AM	MD	PM
(1) Second Ave @ East 43rd St	SW	65.5	78.6	76.0	A	A	A
(2) Second Ave @ East 42nd St	NW	98.2	143.9	104.1	A	A	A
(3) Third Ave @ East 50th St	SE	38.2	47.6	25.4	C	B	C
	SW	103.1	115.4	109.2	A	A	A
(4) Third Ave @ East 49th St	NW	301.9	274.9	315.2	A	A	A
(5) Third Ave @ East 42nd St	NE	37.6	67.4	37.8	C	A	C
	NW	19.9	68.9	33.0	D	A	C
(6) Lexington Ave @ East 50th St	NE	11.3	21.1	14.9	E	D	E
	NW	14.8	41.3	22.8	E	B	D
	SE	19.4	13.5	14.1	D	E	E
	SW	14.8	16.2	20.6	E	D	D
(7) Lexington Ave @ East 49th St	NE	50.3	42.5	46.6	B	B	B
	NW	29.9	39.8	41.1	C	C	B
	SE	47.4	46.6	34.1	B	B	C
	SW	36.6	63.5	45.4	C	A	B
(8) Lexington Ave @ East 48th St	NE	58.7	62.2	54.3	B	A	B
	NW	39.3	58.5	46.1	C	B	B
	SE	50.3	37.4	43.8	B	C	B
	SW	68.4	65.9	78.2	A	A	A
(9) Lexington Ave @ East 42nd St	NE	24.2	42.6	19.7	C	B	D
(10) Park Ave @ East 49th St	SE	38.9	71.8	51.7	C	A	B
(13) Madison Ave @ East 47th St	SE	25.6	38.6	28.1	C	C	C
	SW	32.3	29.8	24.2	C	C	C
(14) Madison Ave @ East 46th St	NE	36.4	54.3	34.5	C	B	C
	NW	35.2	30.3	26.3	C	C	C
	SE	28.1	40.7	28.1	C	B	C
	SW	28.7	28.9	27.7	C	C	C
(15) Madison Ave @ East 45th St	NE	5.5	5.7	3.2	F	F	F
	NW	30.6	22.5	18.2	C	D	D
(16) Madison Ave @ East 44th St	NE	42.9	54.9	35.4	B	B	C
	NW	53.0	47.0	31.5	B	B	C
(17) Madison Ave @ East 43rd St	NE	2.5	21.4	16.4	F	D	D
	NW	27.6	30.6	13.5	C	C	E
	SE	18.3	43.2	32.9	D	B	C
	SW	24.6	35.6	21.9	C	C	D
(18) Madison Ave @ East 42nd St	NE	12.1	27.9	14.0	E	C	E
	NW	13.4	25.1	11.7	E	C	E
	SE	33.1	63.0	36.0	C	A	C
	SW	137.7	187.0	139.3	A	A	A
(19) Madison Ave @ East 40th St	NW	62.3	27.5	47.8	A	C	B
	SW	64.6	33.9	51.2	A	C	B
(20) Fifth Ave @ East 47th St	SE	49.7	47.2	43.9	B	B	B
	SW	83.9	61.1	56.6	A	A	B
(21) Fifth Ave @ East 46th St	NE	147.7	131.3	102.6	A	A	A
	NW	74.4	43.0	37.2	A	B	C
	SE	54.1	43.8	44.9	B	B	B
	SW	68.0	41.3	41.4	A	B	B
(22) Fifth Ave @ East 45th St	NE	61.6	44.7	51.1	A	B	B
	SE	54.9	44.4	47.9	B	B	B
(23) Fifth Ave @ East 44th St	NE	52.5	42.1	33.8	B	B	C
	NW	66.1	46.5	34.0	A	B	C
	SE	42.8	36.6	25.3	B	C	C
	SW	62.3	42.6	24.5	A	B	C
(24) Fifth Ave @ East 43rd St	NE	52.3	57.3	38.0	B	B	C
	NW	38.4	43.4	27.5	C	B	C
	SE	52.7	64.5	34.3	B	A	C
	SW	54.8	59.8	38.8	B	B	C
(25) Fifth Ave @ East 42nd St	NE	75.8	75.8	53.8	A	A	B
	NW	74.9	76.4	59.3	A	A	B
	SE	60.9	74.5	39.5	A	A	C
	SW	55.5	88.0	62.8	B	A	A
(26) Fifth Ave @ East 40th St	SE	56.7	32.6	28.5	B	C	C
Number of Corners at LOS D or worse					**10**	**6**	**12**

Notes:
SFP - square feet per pedestrian

Source: Philip Habib & Associates, 2013

12.9.3 Future Pedestrian Conditions with the Proposed Action (With-Action)

The Proposed Action would generate new pedestrian demand on analyzed sidewalks, crosswalks, and corner areas by 2033. This new demand would include trips made solely by walking, as well as pedestrian trips en route to and from subway and commuter rail station entrances, bus stops, and outlying off-street public parking garages. Pedestrian trips generated by the Proposed Action are expected to be most concentrated in proximity to projected development sites and along corridors connecting these sites to area transit services.

As shown in Table 12-7, the Proposed Action is expected to generate approximately 812 walk-only trips in the weekday AM peak hour, 10,180 in the Midday, and 1,578 in the PM peak hour. Persons en route to and from subway and commuter rail station entrances, bus stops, and parking facilities would add an additional 7,180 pedestrian trips to rezoning area sidewalks and crosswalks in the AM peak hour, 1,798 in the Midday, and 8,618 in the PM. These pedestrian volumes were added to the projected No-Action volumes to generate the With-Action pedestrian volumes for analysis.

In addition to generating new pedestrian demand, the Proposed Action would also result in the creation of a substantial amount of new pedestrian space along sidewalks adjacent to development sites as well as along the Vanderbilt Avenue corridor. Under the Proposed Action, the zoning regulations for the proposed East Midtown Subdistrict would mandate that new buildings with full-block frontages along Madison and Lexington Avenues between East 39th and East 49th Streets be set back to provide 20-foot-wide sidewalks. New buildings with full-block frontages along crosstown streets between Vanderbilt and Madison Avenues from East 43rd Street to East 46th Street, inclusive, would need to be similarly set-back to provide 15-foot-wide sidewalks. The following sidewalks adjacent to projected development sites have been identified as likely to be widened under the RWCDS.

- Site 1: Madison Avenue west sidewalk from East 39th to East 40th Streets (widened from approximately 15 feet to 20 feet)
- Site 4: Madison Avenue east sidewalk from East 42nd to East 43rd Streets (widened from approximately 13 feet to 20 feet); the East 43rd Street south sidewalk from Vanderbilt to Madison Avenues would remain at 15 feet
- Site 5: Madison Avenue west sidewalk from East 43rd to East 44th Streets (widened from approximately 13 feet to 20 feet)
- Site 6: Madison Avenue west sidewalk from East 44th to East 45th Streets (widened from approximately 13 feet to 20 feet)
- Site 7: Madison Avenue east sidewalk from East 44th to East 45th Streets (widened from approximately 13 feet to 20 feet), and East 45th Street south sidewalk from Vanderbilt to Madison Avenues (widened

from approximately 13 feet to 15 feet); the East 44th Street north sidewalk from Vanderbilt to Madison Avenues would remain at 15 feet

- Site 9: Madison Avenue east sidewalk from East 45th to East 46th Streets (widened from approximately 13 feet to 20 feet), and East 45th Street north sidewalk from Vanderbilt to Madison Avenues (widened from approximately 10 feet to 15 feet); the East 46th Street south sidewalk from Vanderbilt to Madison Avenues would remain at 15 feet
- Site 10: Madison Avenue west sidewalk from East 46th to East 4^{7th} Streets (widened from approximately 13 feet to 20 feet)
- Site 16: Lexington Avenue west sidewalk from East 48th to East 49th Streets (widened from approximately 12 feet to 20 feet)

As described in Chapter 1, "Project Description," along with the required sidewalks widenings, the Proposed Action would include the closure of Vanderbilt Avenue to vehicular traffic from East 44th Street to East 47th Street and the creation of new pedestrian plazas along these blocks, improving pedestrian safety and circulation. As previously noted, the block of Vanderbilt Avenue between East 42nd and East 43rd Streets is expected to be closed to vehicular traffic in the No-Action condition. Therefore, in the with-Action condition, vehicular traffic would only remain along the block of Vanderbilt Avenue from East 43rd Street to East 44th Street to accommodate vehicular circulation along these cross-streets and service to adjacent land uses.

Anticipated conditions and significant adverse impacts at analyzed sidewalks, crosswalks, and corner areas in the future with the Proposed Action are shown in Table 12-100 through Table 12-102 and summarized below. Chapter 19, "Mitigation" addresses practicable measures to address these impacts.

12.9.3.1 Sidewalks

Table 12-100 shows the incremental change in peak hour pedestrian volumes attributable to the proposed rezoning and the total With-Action pedestrian volumes, flow rates, and platoon-adjusted levels of service at analyzed sidewalks. (Sidewalk widenings required under the proposed rezoning are reflected in the analysis where applicable.) Also identified in Table 12-100 are those sidewalks that are expected to be significantly adversely impacted in one or more peak hours based on the *CEQR Technical Manual* criteria shown in Table 12-16 in Section 12.6.3. As shown in Table 12-100, there would be significant adverse impacts in the AM and PM peak hours (and none in the Midday) at two of the 27 analyzed sidewalks—the north sidewalk along East 43rd Street between Vanderbilt and Madison Avenues and the north sidewalk along East 43rd Street between Madison and Fifth Avenues. The impacts to the north sidewalk along East 43rd Street between Vanderbilt and Madison Avenues would occur at the location of security bollards adjacent to a Metro-North entrance at the east end of this sidewalk, while the impacts to the north

sidewalk along East 43rd Street between Madison and Fifth Avenues would occur at the location of tree pits located along this sidewalk in front of the Fifth Church of Christ, Scientist church.

12.9.3.2 Crosswalks

Table 12-101 shows the incremental change in peak hour pedestrian volumes attributable to the Proposed Action and the total With-Action pedestrian volumes, average pedestrian space, and levels of service at analyzed crosswalks. Also identified in Table 12-101 are those crosswalks that are expected to be significantly adversely impacted in one or more peak hours based on the *CEQR Technical Manual* criteria shown in Table 12-17 in Section 12.6.3. As shown in Table 12-101, 25 of the 76 crosswalks analyzed would be significantly adversely impacted in one or more peak hours. There would be 13 crosswalks with significant adverse impacts in the AM peak hour, 16 in the Midday, and 16 in the PM peak hour. Four of these crosswalks would be located on Fifth Avenue, four on Madison Avenue, and two each on Lexington and Third Avenues. The remaining 13 impacted crosswalks would be located on cross-streets, including three on East 43rd Street, two each on 44th and 46th Streets, and one each on East 40th, East 42nd, East 45th, East 47th, East 49th, and East 50th Streets.

12.9.3.3 Corner Areas

Table 12-102 shows the incremental change in peak-hour pedestrian volumes attributable to the Proposed Action and the total With-Action pedestrian volumes, average pedestrian space, and levels of service at analyzed corner areas. (Sidewalk widenings required under the proposed rezoning have been included in the analysis where applicable.) Also identified in Table 12-102 are those corner areas that are expected to be significantly adversely impacted in one or more peak hours based on the *CEQR Technical Manual* criteria shown in Table 12-17 in Section 12.6.3. As shown in Table 12-102, eight of the 62 corner areas analyzed would be significantly adversely impacted in one or more peak hours. There would be five significantly impacted corner areas at a total of four intersections in the AM peak hour, five impacted corner areas at three intersections in the Midday, and six impacted corner areas at three intersections in the PM peak hour. Three of the corner areas with significant impacts would be located along Madison Avenue, four along Lexington Avenue, and one on Third Avenue.

TABLE 12-100: WITH-ACTION SIDEWALK CONDITIONS

WITH-ACTION SIDEWALK CONDITIONS

Location		Total Width (feet)	Effective Width (feet)	With-Action Volume Increment			Peak Hour Volumes			Flow Rate (PMF)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
(S1) East 43rd Street Second Ave to Third Ave	South	13.0	5.5	67	371	203	981	1242	1137	3.5	4.4	3.9	A	A	A	C	C	C
(S2) East 42nd Street Second Ave to Third Ave	North	21.5	10.5	326	543	467	1869	1969	2188	4.0	3.8	3.9	A	A	A	C	C	C
(S3) East 50th Street Third Ave to Lexington Ave	South	12.5	5.5	130	286	264	854	1294	1147	3.4	5.2	4.2	A	B	A	C	C	C
(S4) East 49th Street Third Ave to Lexington Ave	North	15.3	6.0	89	214	206	797	1244	1040	2.9	4.7	3.1	A	A	A	B	C	C
(S5) East 42nd Street Third Ave to Lexington Ave	North	19.8	8.5	211	326	226	4006	2436	4183	8.8	5.2	8.6	C	B	C	D	C	D
(S6) Lexington Ave East 49th St to East 50th St	West	11.5	5.0	168	314	329	2513	1619	2368	9.1	7.2	8.8	C	C	C	D	D	D
(S7) East 49th Street Lexington Ave to Park Ave	South	14.8	5.8	195	563	447	1251	1040	1330	4.8	3.3	4.1	A	A	A	C	C	C
(S8) East 48th Street Lexington Ave to Park Ave	North	14.9	6.3	164	451	393	1032	1014	1273	2.8	3.4	3.7	A	A	A	B	C	C
(S9) East 47th Street Vanderbilt Ave to Madison Ave	South	15.5	7.5	198	120	243	2973	1841	3093	6.9	4.3	9.0	B	A	C	D	C	D
(S10) East 45th Street Vanderbilt Ave to Madison Ave	North	15.0	10.5	715	746	821	1560	1961	1636	3.6	3.5	3.1	A	A	A	C	C	C
(S11) East 44th Street Vanderbilt Ave to Madison Ave	North	15.0	8.8	237	350	188	1397	1474	2065	2.8	2.9	4.2	A	A	A	B	B	C
(S12) East 43rd Street Vanderbilt Ave to Madison Ave	North	10.0	3.5	358	102	423	3575	1482	3426	20.5	7.4	17.6	E	C	E	F *	D	E *
(S13) East 42nd Street Vanderbilt Ave to Madison Ave	North	22.5	10.0	290	161	284	4854	3697	5874	8.6	6.4	11.4	C	B	D	D	D	E
(S14) Madison Ave East 45th St to East 46th St	East	20.0	14.2	215	733	205	1955	2349	2274	2.6	2.9	3.0	A	A	A	B	B	B
(S15) Madison Ave East 42nd St to East 43rd St	West	12.7	4.5	189	146	184	2258	1917	2186	11.0	7.6	9.2	D	C	C	D	D	D
(S16) East 47th Street Madison Ave to Fifth Ave	South	13.0	5.6	294	253	324	2474	1618	2272	8.4	5.4	7.2	C	B	C	D	C	D
(S17) East 46th Street Madison Ave to Fifth Ave	North	13.3	5.7	249	377	268	1200	1119	1355	4.1	3.5	5.1	A	A	B	C	C	C
(S18) East 44th Street Madison Ave to Fifth Ave	North	12.0	4.5	453	150	361	1280	866	1416	5.7	3.7	6.4	B	A	B	C	C	D
(S19) East 43rd Street Madison Ave to Fifth Ave	North	12.0	4.3	452	494	542	2358	1795	2947	10.7	7.5	12.3	D	C	D	D *	D	E *
(S20) East 42nd Street Madison Ave to Fifth Ave	North	20.5	10.8	328	114	351	3074	1912	3863	5.2	3.3	6.1	B	A	B	C	C	D
(S21) East 40th Street Madison Ave to Fifth Ave	South	12.7	5.1	209	270	250	1732	1664	2010	6.6	5.7	7.2	B	B	C	D	C	D
(S22) East 47th Street Fifth Ave to Sixth Ave	South	17.7	5.2	294	114	334	2092	2154	2609	8.3	7.4	9.8	C	C	C	D	D	D
(S23) Fifth Ave East 43rd St to East 44th St	West	22.8	16.2	203	135	211	2220	2903	3864	2.8	3.2	4.2	A	A	A	B	C	C
(S24) Fifth Ave East 43rd St to East 44th St	East	22.5	14.5	333	137	325	2291	2652	2939	3.2	3.5	3.9	A	A	A	C	C	C
(S25) Fifth Ave East 42nd St to East 43rd St	West	23.3	13.2	299	124	335	2556	2018	2595	3.6	3.4	3.6	A	A	A	C	C	C
(S26) Fifth Ave East 42nd St to East 43rd St	East	22.3	14.0	612	171	686	2046	2656	2815	2.7	3.6	3.8	A	A	A	B	C	C
(S27) 42nd Street Fifth Ave to Sixth Ave	South	21.0	10.0	1	65	0	2017	1896	3639	4.6	3.6	6.9	A	A	B	C	C	D
Number of Sidewalks		27																
Number of Impacted Sidewalks		2																

Notes:
PMF - pedestrians per minute per foot
* - denotes a significant adverse impact based on CEQR Technical Manual criteria.

Source: Philip Habib & Associates, 2013

TABLE 12-101: WITH-ACTION CROSSWALK CONDITIONS

Intersection	Crosswalk	With-Action Volume Increment AM	MD	PM	Peak Hour Volume AM	MD	PM	Avg. Pedestrian Space (SFP) AM	MD	PM	Level of Service AM	MD	PM
(1) Second Ave @ East 43rd St	South	33	186	101	571	688	696	25.4	25.0	22.3	C	C	D
	West	33	186	101	809	1012	978	57.9	52.3	51.5	B	B	B
(2) Second Ave @ East 42nd St	North	58	200	157	1230	1102	1282	30.6	41.8	28.9	C	B	C
	West	47	186	143	890	838	1009	64.8	69.2	57.2	A	A	B
(3) Third Ave @ East 50th St	South	108	198	226	575	815	864	48.3	42.3	36.0	B	B	C
	East	14	66	34	2076	1540	2250	11.8	21.7	12.0	E	D	E
	West	27	94	62	1646	1806	1712	18.2	21.5	22.6	D	D	D
(4) Third Ave @ East 49th St	North	65	150	156	462	869	707	33.4	18.6	22.7	C	D *	D
	West	36	126	86	1423	1674	1453	21.0	19.1	22.1	D	D	D
(5) Third Ave @ East 42nd St	North	272	220	381	2860	1290	2743	6.0	17.1	7.4	F *	D *	F *
	East	64	119	114	2117	1746	1924	20.4	25.5	22.3	D	C	D
	West	64	119	114	2134	1565	2656	17.3	24.7	13.1	D	C	E
(6) Lexington Ave @ East 50th St	North	63	102	134	1350	831	1056	15.3	34.4	21.8	D	C	D
	South	100	199	173	1001	985	994	24.0	14.8	26.3	D	E *	C
	East	88	210	165	2243	1936	2722	13.0	10.8	9.8	E	E *	E
	West	83	162	165	2169	1280	1809	19.7	37.3	24.6	D	C	C
(7) Lexington Ave @ East 49th St	North	54	178	125	688	915	599	41.5	27.6	53.7	B	C	B
	South	84	216	198	684	647	680	38.2	52.7	46.4	C	B	B
	East	50	166	120	1075	1296	1528	35.1	26.9	21.6	C	C	D
	West	215	446	437	1539	1387	1724	15.9	22.5	16.5	D *	D	D *
(8) Lexington Ave @ East 48th St	North	85	229	205	756	606	902	45.6	59.5	39.0	B	B	C
	South	41	118	98	530	614	543	24.9	18.7	23.4	C	D *	D
	East	40	147	100	912	1206	1131	41.1	29.8	35.7	B	C	C
	West	76	205	185	944	964	1014	34.8	34.6	35.1	C	C	C
(9) Lexington Ave @ East 42nd St	North	119	139	131	3523	1854	3497	11.2	27.6	13.5	E	C	E
	East	0	0	0	1601	1465	1569	21.3	26.7	23.7	D	C	D
(10) Park Ave @ East 49th St	South	15	220	35	616	743	498	39.4	30.5	43.0	C	C	B
	East	40	202	64	2153	1342	2050	19.3	35.6	21.7	D	C	D
(13) Madison Ave @ East 47th St	South	283	202	322	2130	1484	1959	21.7	32.1	23.5	D	C	D
	East	27	159	48	1724	1768	1985	25.9	25.6	22.3	C	C	D
	West	51	326	91	1048	1971	1712	35.7	17.7	18.7	C	D *	D
(14) Madison Ave @ East 46th St	North	133	383	133	999	1113	1035	25.0	25.2	29.1	C	C	C
	South	119	203	146	1378	1306	1411	23.7	25.8	21.8	D	C	D
	East	209	373	228	1725	1643	2251	16.4	19.0	12.2	D *	D *	E *
	West	37	309	9	1323	2037	1571	27.9	19.4	22.2	C	D *	D
(15) Madison Ave @ East 45th St	North	338	366	325	1806	1631	1536	12.0	13.4	14.8	E *	E *	E *
	East	207	512	212	2549	2709	2970	11.8	11.6	10.2	E *	E *	E *
	West	63	401	-9	980	1729	1361	40.9	21.7	24.6	B	D	C
(16) Madison Ave @ East 44th St	North	349	191	322	974	722	1108	26.9	34.4	20.8	C	C	D
	East	142	427	151	2057	1876	2428	19.2	21.9	16.9	D *	D	D
	West	132	325	83	1239	1559	1439	36.5	31.3	28.3	C	C	C
(17) Madison Ave @ East 43rd St	North	142	187	162	2108	1332	2168	9.4	18.5	10.8	E *	D *	E *
	South	6	202	-7	1712	1016	1518	16.2	29.5	20.5	D	C	D
	East	112	108	98	1832	1517	1378	19.3	27.8	29.7	D	C	C
	West	194	309	188	1418	1804	1763	18.6	20.0	18.5	D *	D	D *
(18) Madison Ave @ East 42nd St	North	299	106	340	4328	3167	5653	7.2	12.9	6.2	F *	E	F *
	South	68	43	70	2569	2147	2828	12.9	18.0	11.0	E	D	E
	East	73	185	71	2683	2016	2611	13.8	24.0	17.7	E	D	D
	West	126	72	146	1719	1688	1777	28.6	37.5	33.6	C	C	C
(19) Madison Ave @ East 40th St	North	55	151	74	707	1190	990	22.9	11.5	14.6	D	E *	E
	South	158	110	189	1033	1255	1167	43.0	29.6	31.1	B	C	C
	West	196	174	240	1281	1877	1432	37.2	18.4	31.0	C	D *	C
(20) Fifth Ave @ East 47th St	South	260	157	291	1724	1053	1753	7.2	13.3	7.9	F *	E *	F *
	East	8	182	20	1071	2179	1798	50.1	25.1	31.6	B	C	C
	West	5	141	9	1098	2868	2678	44.9	14.9	17.6	B	E	D
(21) Fifth Ave @ East 46th St	North	187	207	199	1066	807	1284	39.4	51.8	31.0	C	B	C
	South	109	234	135	1098	1450	1154	19.5	17.2	19.1	D	D *	D *
	East	163	146	188	1542	2290	2508	30.8	27.8	23.4	C	C	D
	West	190	163	164	1295	2378	2266	45.8	21.9	22.6	B	D	D
(22) Fifth Ave @ East 45th St	North	130	284	133	1191	1560	1239	29.5	26.3	33.2	C	C	C
	South	93	155	47	1000	1250	1284	24.4	27.1	26.4	C	C	C
	East	145	128	136	1559	2256	2143	42.6	28.5	33.3	B	C	C
(23) Fifth Ave @ East 44th St	North	93	181	43	985	1173	1310	29.5	26.1	21.7	C	C	D
	South	107	194	106	1159	1458	2814	29.0	20.2	10.1	C	D	E
	East	366	192	361	2385	3194	3300	12.6	10.9	9.6	E *	E *	E *
	West	164	172	162	1662	2813	3180	26.1	16.8	13.2	C	D	E
(24) Fifth Ave @ East 43rd St	North	48	161	50	2256	1609	1649	15.6	25.6	20.9	D	C	D
	South	71	86	61	1548	870	1650	24.1	42.3	22.6	C	B	D
	East	687	108	758	1598	1792	3281	37.9	38.8	18.3	C	C	D *
	West	262	174	287	1819	2272	3425	26.7	25.1	15.7	C	C	D *
(25) Fifth Ave @ East 42nd St	North	392	137	439	2287	1905	2714	17.5	23.6	15.1	D *	D	D *
	South	625	87	717	3106	1557	3001	13.1	31.6	12.6	E *	C	E *
	East	478	169	542	2440	2544	3763	23.3	23.8	14.0	D	D	E *
	West	664	129	766	2199	1852	2975	25.0	38.4	22.5	C	C	D
(26) Fifth Ave @ East 40th St	South	106	88	126	1666	2047	2154	19.0	14.2	12.1	D	E	E
	East	51	72	60	1342	2240	2181	39.0	21.1	21.1	C	D	D
Number of Crosswalks								**76**					
Number of Impacted Crosswalks								**25**					

Notes:
SFP - square feet per pedestrian
***** - denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

Source: Philip Habib & Associates, 2013

TABLE 12-102: WITH-ACTION CORNER CONDITIONS

Intersection	Corner	Avg. Pedestrian Space (SFP)			Level of Service		
		AM	MD	PM	AM	MD	PM
(1) Second Ave @ East 43rd St	SW	62.0	59.1	61.0	A	B	A
(2) Second Ave @ East 42nd St	NW	93.6	115.8	90.2	A	A	A
(3) Third Ave @ East 50th St	SE	35.8	40.8	22.0	C	B	D
	SW	96.2	101.6	95.8	A	A	A
(4) Third Ave @ East 49th St	NW	285.9	241.0	277.3	A	A	A
(5) Third Ave @ East 42nd St	NE	34.7	59.1	31.4	C	B	C
	NW	16.7	58.8	29.0	D *	B	C
(6) Lexington Ave @ East 50th St	NE	10.4	17.8	12.9	E *	D *	E *
	NW	13.6	34.6	19.0	E	C	D *
	SE	17.4	10.0	11.5	D *	E *	E *
	SW	13.7	11.3	16.8	E	E *	D *
(7) Lexington Ave @ East 49th St	NE	47.0	34.8	40.2	B	C	B
	NW	25.7	25.3	29.9	C	C	C
	SE	43.1	35.8	28.1	B	C	C
	SW	67.7	85.6	69.0	A	A	A
(8) Lexington Ave @ East 48th St	NE	53.5	47.4	44.3	B	B	B
	NW	86.1	94.9	83.0	A	A	A
	SE	46.9	30.4	36.9	B	C	C
	SW	62.5	50.8	62.2	A	B	A
(9) Lexington Ave @ East 42nd St	NE	23.4	40.3	18.8	D	B	D
(10) Park Ave @ East 49th St	SE	37.8	55.2	49.3	C	B	B
(13) Madison Ave @ East 47th St	SE	22.8	33.2	24.7	D	C	C
	SW	47.8	41.6	37.2	B	B	C
(14) Madison Ave @ East 46th St	NE	30.9	37.2	30.2	C	C	C
	NW	58.2	42.8	48.1	B	B	B
	SE	49.8	58.1	45.4	B	B	B
	SW	26.0	22.9	26.1	C	D	C
(15) Madison Ave @ East 45th St	NE	30.6	26.2	27.0	C	C	C
	NW	23.8	15.1	15.2	D	D *	D *
(16) Madison Ave @ East 44th St	NE	58.1	65.7	51.2	B	A	B
	NW	69.9	61.3	48.3	A	A	B
(17) Madison Ave @ East 43rd St	NE	1.5	18.1	15.0	F *	D *	E
	NW	44.5	47.6	28.5	B	B	C
	SE	36.6	66.9	59.2	C	A	B
	SW	21.9	27.3	20.9	D	C	D
(18) Madison Ave @ East 42nd St	NE	25.9	47.9	27.0	C	B	C
	NW	11.0	23.5	10.3	E *	D	E *
	SE	31.7	59.1	34.4	C	B	C
	SW	129.8	180.8	130.6	A	A	A
(19) Madison Ave @ East 40th St	NW	53.2	23.1	40.6	B	D	B
	SW	77.9	43.8	57.8	A	B	B
(20) Fifth Ave @ East 47th St	SE	45.5	41.1	36.7	B	B	C
	SW	69.8	55.6	52.8	A	B	B
(21) Fifth Ave @ East 46th St	NE	123.4	111.8	87.4	A	A	A
	NW	61.2	37.6	33.6	A	C	C
	SE	48.4	38.2	39.2	B	C	C
	SW	57.5	36.2	37.9	B	C	C
(22) Fifth Ave @ East 45th St	NE	55.2	38.5	45.5	B	C	B
	SE	49.9	39.3	44.5	B	C	B
(23) Fifth Ave @ East 44th St	NE	45.8	37.5	29.2	B	C	C
	NW	58.7	41.2	32.2	B	B	C
	SE	36.4	32.9	23.3	C	C	D
	SW	54.3	37.9	23.6	B	C	D
(24) Fifth Ave @ East 43rd St	NE	42.8	51.8	29.6	B	B	C
	NW	35.3	38.9	25.0	C	C	C
	SE	37.9	57.0	28.6	C	B	C
	SW	47.6	54.4	36.3	B	B	C
(25) Fifth Ave @ East 42nd St	NE	62.6	69.9	42.4	A	A	B
	NW	56.0	70.8	44.4	B	A	B
	SE	47.4	69.3	28.6	B	A	C
	SW	36.7	81.8	47.6	C	A	B
(26) Fifth Ave @ East 40th St	SE	53.6	30.9	26.1	B	C	C
Number of Corners		**62**					
Number of Impacted Corners		**8**					

Notes:
SFP - square feet per pedestrian
***** - denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

Source: Philip Habib & Associates, 2013

12.10 VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Accident data for the study area intersections were obtained from DOT for the 3-year period between January 1, 2008 and December 31, 2010. The data quantify the total number of reportable (involving a fatality, injury, or more than $1,000 in property damage) and non-reportable accidents as well as the total number of accidents involving injuries to pedestrians or bicyclists. During the 3-year reporting period, a total of 1,714 reportable and non-reportable accidents, 8 fatalities, and 518 pedestrian/bicyclist-related injury accidents occurred at study area intersections.

Table 12-103 provides details of accident characteristics by intersection during the 2008 to 2010 period, as well as a breakdown of pedestrian and bicycle accidents by year and location.

According to the *CEQR Technical Manual*, a high accident location is one where there were 48 or more reportable and non-reportable accidents or five or more pedestrian/bicyclist-related accidents in any consecutive 12 months within the most recent 3-year period for which data are available. No intersections in the study area had 48 or more crashes in any consecutive 12 months during the most recent 3-year period for which data are available. However, 21 intersections had five or more pedestrian/bicyclist-related accidents within a consecutive 12-month period. These intersections, identified as high accident locations in Table 12-103, are the following:

- First Avenue – intersection of First Avenue and East 42nd Street;
- Second Avenue – intersections of Second Avenue and East 42nd Street, East 44th Street, East 49th Street, East 53rd Street, East 57th Street, and East 59th Street;
- Third Avenue – intersections of Third Avenue and East 39th Street, East 42nd Street, East 53rd Street, and East 57th Street;
- Lexington Avenue – intersection of Lexington Avenue and East 42nd Street;
- Park Avenue – intersection of Park Avenue and East 57th Street;
- Madison Avenue – intersections of Madison Avenue and East 42nd Street and East 57th Street;
- Fifth Avenue – intersections of Fifth Avenue and 42nd Street, 43rd Street, and 46th Street; and
- Sixth Avenue – intersections of Sixth Avenue and West 42nd Street, West 45th Street, and West 46th Street.

TABLE 12-103: SUMMARY OF MOTOR VEHICLE ACCIDENT DATA, 2008-2010

Intersection		Pedestrian Injury Accidents			Bicycle Injury Accidents			Total Pedestrian/Bicycle Injury Accidents			Total Accidents (Reportable + Non-Reportable)			
		2008	2009	2010	2008	2009	2010	2008	2009	2010	2008	2009	2010	Fatalities
First Avenue	**East 42nd Street‡**	3	3	2	0	0	0	3	3	2	12	14	11	
	East 46th Street	0	2	1	0	0	0	0	2	1	0	5	2	
	East 47th Street	0	0	0	0	1	0	0	1	0	3	1	0	
	East 48th Street	0	0	0	1	1	1	1	1	1	4	3	4	
Second Avenue	East 39th Street	1	2	2	0	0	1	1	2	3	3	3	4	
	East 40th Street	1	0	1	3	0	0	4	0	1	8	2	5	
	East 42nd Street†	2	1	10	0	1	0	2	2	**10**	12	14	16	
	East 43rd Street	1	0	2	0	1	0	1	1	2	7	2	4	
	East 44th Street‡	0	2	1	0	1	1	0	3	2	3	3	3	
	East 45th Street	1	2	3	0	0	0	1	2	3	5	7	8	
	East 46th Street	1	2	2	0	0	0	1	2	2	2	5	4	
	East 49th Street†	5	6	5	1	0	1	**6**	**6**	**6**	15	10	9	
	East 51st Street	2	0	3	0	2	1	2	2	4	5	6	10	
	East 52nd Street	1	0	0	0	1	1	1	1	1	8	4	3	
	East 53rd Street†	4	4	3	1	2	1	**5**	**6**	4	16	10	11	
	East 56th Street	3	0	1	0	0	0	3	0	1	6	5	3	
	East 57th Street†	2	0	4	0	1	2	2	1	**6**	11	5	24	
	East 59th Street†	1	0	5#	0	3	2#	1	3	**7**	24	21	33	2
Tunnel Exit Street	East 39th Street	1	0	2	0	0	0	1	0	2	3	0	3	
Third Avenue	**East 39th Street†**	4	1	2	1	0	0	**5**	1	2	9	5	5	
	East 42nd Street†	3	7	5	0	2	0	3	**9**	**5**	16	13	15	
	East 43rd Street	0	0	3	0	0	0	0	0	3	1	3	6	
	East 44th Street	0	0	0	0	0	2#	0	0	2	1	2	5	1
	East 46th Street	2	1	0	0	1	2	2	2	2	5	3	3	
	East 49th Street	1	2	1	0	0	0	1	2	1	8	5	6	
	East 50th Street	1	2	1	1	0	2	2	2	3	4	6	4	
	East 51st Street	0	0	3	0	1	1	0	1	4	2	6	6	
	East 53rd Street†	3	6	3	1	0	2	4	**6**	**5**	7	10	8	
	East 57th Street†	6#	4	14	2	0	3	**8**	4	**17**	22	13	28	1
Lexington Avenue	East 39th Street	1	0	2	1	0	0	2	0	2	6	2	13	
	East 42nd Street†	6	2	5#	1	1	3	**7**	3	**11**	13	12	11	1
	East 46th Street	0	1	2	0	0	0	0	1	2	3	2	4	
	East 48th Street	2	1	1	1	0	0	3	1	1	7	5	4	
	East 49th Street	0	0	2	0	0	0	0	0	2	5	2	4	
	East 50th Street	3	0	0	0	0	1	3	0	1	7	6	4	
	East 51st Street	0	0	3	0	0	0	0	0	3	1	4	6	
	East 53rd Street	0	1	0	0	1	1	0	2	1	5	4	3	
Park Avenue	East 39th Street	0	1	0	0	0	0	0	1	0	10	15	8	
	East 40th Street	1	0	0	0	0	0	1	0	0	6	3	2	
	East 46th Street	1	0	1	0	0	0	1	0	1	7	6	2	
	East 47th Street	0	1	2	1	1	0	1	2	2	11	12	7	
	East 48th Street	0	2	0	0	0	2	0	2	2	5	7	11	
	East 49th Street	1	0	0	1	0	1	2	0	1	8	3	5	
	East 50th Street	0	3	1	2	1	1	2	4	2	9	10	2	1
	East 51st Street	1	4	0	0	0	0	1	4	0	6	9	4	
	East 53rd Street	1	3	1	1	0	0	2	3	1	12	11	2	
	East 56th Street	1	1	1	0	1	0	1	2	1	8	9	4	
	East 57th Street†	1	1	2	1	0	3	2	1	**5**	12	12	10	
Vanderbilt Avenue	East 42nd Street	2	1	1	0	3	1	2	4	2	5	4	3	
	East 43rd Street	0	1	0	0	0	0	0	1	0	0	1	0	
	East 44th Street	1	1	0	0	0	0	1	1	0	1	3	0	
	East 45th Street	0	0	1	0	0	0	0	0	1	0	1	3	
	East 46th Street	0	0	0	0	0	0	0	0	0	1	0	1	
	East 47th Street	2	0	1	0	0	1	2	0	2	3	1	4	

TABLE 12-103: SUMMARY OF MOTOR VEHICLE ACCIDENT DATA, 2008-2010 (CONTINUED)

Intersection		Pedestrian Injury Accidents			Bicycle Injury Accidents			Total Pedestrian/Bicycle Injury Accidents			Total Accidents (Reportable + Non-Reportable)			
		2008	2009	2010	2008	2009	2010	2008	2009	2010	2008	2009	2010	Fatalities
Madison Avenue	East 39th Street	1	0	0	0	0	0	1	0	0	6	2	1	
	East 40th Street	0	2	1	0	0	0	0	2	1	3	4	1	
	East 41st Street	0	0	1	0	0	0	0	0	1	0	1	1	
	East 42nd Street†	6	2	1	1	0	0	**7**	2	1	12	4	3	
	East 43rd Street	0	0	0	0	1	0	0	1	0	0	2	1	
	East 44th Street	1	2	1	1	1	0	2	3	1	3	4	1	
	East 45th Street	0	2	1	0	0	2	0	2	3	6	5	4	
	East 46th Street	3	0	1	1	1	1	4	1	2	5	3	5	
	East 47th Street	0	1	0	1	0	0	1	1	0	1	3	2	
	East 49th Street	0	1	0	0	0	0	0	1	0	4	5	1	
	East 51st Street	3	1	1	0	0	0	3	1	1	5	2	2	
	East 53rd Street	0	0	0	0	0	0	0	0	0	4	2	4	
	East 57th Street‡	2	3	3	0	1	1	2	4	4	7	7	13	
Fifth Avenue	40th Street	1	1	0	1	2	0	2	3	0	6	7	8	
	42nd Street†	4	3	4	0	0	3	4	3	**7**	17	9	14	
	43rd Street†	3	2	2	2	0	0	**5**	2	2	7	4	3	
	44th Street	1	0	1	2	0	1	3	0	2	4	3	4	
	45th Street	0	2	0	0	0	1	0	2	1	2	4	3	
	46th Street‡	2	2	1	1	2	1	3	4	2	6	10	2	
	47th Street	1	2	0	0	1	0	1	3	0	4	4	3	
	48th Street	2	1	0	0	0	0	2	1	0	4	6	2	
	49th Street	1	2	1	1	1	1	2	3	2	3	3	2	
	50th Street	0	3	2	0	0	0	0	3	2	4	7	6	
	51st Street	2	1	2	0	3	0	2	4	2	8	8	5	
	52nd Street	1	1	0	0	0	1	1	1	1	5	5	6	
	53rd Street	1	1	1	1	1	1	2	2	2	2	2	6	
	54th Street	3	0	2	1	0	0	4	0	2	8	2	5	
	56th Street	0	3	0	0	0	0	0	3	0	4	7	4	
	57th Street	2	0	2	0	2	2	2	2	4	4	7	10	
	59th Street	1	3	3	0	0	0	1	3	3	7	13	15	
Sixth Avenue	West 40th Street	0	0	2	0	0	0	0	0	2	5	5	4	
	West 42nd Street†	6	5	2	3	1	2	**9**	**6**	4	28	14	11	
	West 44th Street	3	3	1	0	0	0	3	3	1	6	5	7	
	West 45th Street‡	2	2	0	2	2	2	4	4	2	6	5	8	
	West 46th Street‡	0	2	2	0	1	1	0	3	3	3	6	8	
Route 9A	West 51st Street	0	0	0	0	0	0	0	0	0	3	0	2	
	West 52nd Street	0	0	0	0	0	0	0	0	0	9	9	4	
	West 54th Street	0	0	0	0	1	1	0	1	1	10	9	3	
	West 55th Street	1	1	0	1	0	0	2	1	0	7	10	5	
	West 56th Street	0	0	0	0	0	0	0	0	0	9	12	5	2

Notes:

† Denotes five or more total pedestrian and/or bicycle injury crashes at an intersection in a single calendar year.

‡ Denotes five or more total pedestrian and/or bicycle injury crashes at an intersection in a consecutive 12-month period.

Number includes one accident with a pedestrian/bicyclist fatality.

Source: NYCDOT and Parsons Brinckerhoff, Inc., 2012

Of the 21 high accident locations, the following 10 intersections are anticipated to see significant increases in pedestrian traffic and/or turning vehicles conflicting with pedestrians as a result of the Proposed Action:

- Second Avenue and East 42nd Street – With the Proposed Action, this intersection would experience increases in pedestrian volumes on the north and west crosswalks. Based on a review of the accident data, no prevailing trends were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has a leading pedestrian interval, pedestrian countdown signals on all crosswalks, an advance stop bar on the southbound approach, four high visibility crosswalks, "LOOK!" pavement markings on all crosswalks, an exclusive southbound left-turn lane, and a southbound shared bicycle lane. Measures to improve pedestrian safety at this intersection could include the installation of "Turning Vehicles Yield to Pedestrians" signage and advance stop bars on the eastbound and westbound approaches.
- Third Avenue and East 42nd Street – With the Proposed Action, this intersection would experience increases in pedestrian volumes on the north, east, and west crosswalks and increases in turning vehicles conflicting with pedestrians on the east crosswalk. Of the 12 pedestrian-related accidents that occurred in 2009 and 2010, seven involved pedestrians crossing against the signal or did not occur at the crosswalk. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has a leading pedestrian interval, pedestrian countdown signals on all crosswalks, an eastbound left-turn lane and protected signal phase, an advance stop bar on the northbound approach, and four high visibility crosswalks. Measures to improve pedestrian safety at this intersection could include the installation of "LOOK!" pavement markings on crosswalks and "Turning Vehicles Yield to Pedestrians" signage.
- Lexington Avenue and East 42nd Street – With the Proposed Action, this intersection would experience increases in pedestrian volumes on the north and east crosswalks. Of the 11 pedestrian-related accidents that occurred in 2008 and 2010, five involved pedestrians crossing against the signal, playing in the roadway, or did not occur at the crosswalk. Additionally, five of the 11 pedestrian-related accidents in 2008 and 2010 occurred outside of daylight hours. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has a leading pedestrian interval, pedestrian countdown signals on all crosswalks, an advance stop bar on the southbound approach, and four high visibility crosswalks. All eastbound vehicles (except buses) are restricted from making right turns during the AM and PM peak hours and all westbound vehicles are restricted from making left turns during the AM, Midday, and PM peak hours. Measures to improve pedestrian safety at this intersection could include the installation of "LOOK!" pavement markings on crosswalks and "Turning Vehicles Yield to Pedestrians" signage on the southbound approach.

- Park Avenue and East 57th Street – With the Proposed Action, this intersection would experience increases in turning vehicles conflicting with pedestrians on the east crosswalk. Based on a review of the accident data, no prevailing trends were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has pedestrian countdown signals on all crosswalks, advance stop bars on the eastbound and westbound approaches, two school crosswalks and two high visibility crosswalks. All eastbound and westbound vehicles are restricted from making left turns during the AM, Midday, and PM peak hours. As described in Chapter 19, "Mitigation," all of the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the Proposed Action is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, measures to improve pedestrian safety at this intersection could include the installation of "LOOK!" pavement markings on crosswalks and "Turning Vehicles Yield to Pedestrians" signage.

- Madison Avenue and East 42nd Street – With the Proposed Action, this intersection would experience increases in pedestrian volumes on the north, south, east, and west crosswalks. Of the six pedestrian-related accidents that occurred in 2008, five involved pedestrians crossing against the signal or did not occur at the crosswalk. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has pedestrian countdown signals on all crosswalks, advance stop bars on the northbound, eastbound, and westbound approaches, four high visibility crosswalks, and an exclusive northbound right-turn lane. All eastbound vehicles (except buses) are restricted from making left turns, all westbound vehicles are restricted from making right turns, and all northbound vehicles (except taxis with passengers) are restricted from making left turns during the AM, Midday, and PM peak hours. As described in Chapter 19, "Mitigation," all of the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the Proposed Action is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, measures to improve pedestrian safety at this intersection could include the installation of "LOOK!" pavement markings on crosswalks and "Turning Vehicles Yield to Pedestrians" signage on the northbound approach.

- Fifth Avenue and 42nd Street – With the Proposed Action, this intersection would experience increases in pedestrian volumes on the north, south, east, and west crosswalks. Based on a review of the accident data, no prevailing trends were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has pedestrian countdown signals on all crosswalks, an advance stop bar on the southbound approach, four high visibility crosswalks, and "LOOK!" pavement markings on all crosswalks. All vehicles (except buses) are restricted from making any turns during the AM, Midday, and PM peak hours. Measures to improve pedestrian safety at this

intersection could include the installation of advance stop bars on the eastbound and westbound approaches.

- Fifth Avenue and 43rd Street – With the Proposed Action, this intersection would experience increases in pedestrian volumes on the north, south, east, and west crosswalks and increases in turning vehicles conflicting with pedestrians on the south and west crosswalks. Of the five pedestrian and bicycle-related accidents that occurred in 2008, three involved bicyclists. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has pedestrian countdown signals on the north and south crosswalks, advance stop bars on the southbound and westbound approaches, four high visibility crosswalks, an exclusive westbound left-turn lane, and a bicycle lane on the westbound approach. Measures to improve pedestrian safety at this intersection could include the installation of "LOOK!" pavement markings on crosswalks and "Turning Vehicles Yield to Pedestrians" signage.

- Fifth Avenue and 46th Street – With the Proposed Action, this intersection would experience increases in pedestrian volumes on the north, south, east, and west crosswalks and increases in turning vehicles conflicting with pedestrians on the east crosswalk. Based on a review of the accident data, no prevailing trends were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has pedestrian countdown signals on the north and south crosswalks, an advance stop bar on the southbound approach, and four high visibility crosswalks. All eastbound vehicles are restricted from making right turns during the Midday and PM peak hours. Measures to improve pedestrian safety at this intersection could include the installation of "LOOK!" pavement markings on crosswalks and "Turning Vehicles Yield to Pedestrians" signage.

- Sixth Avenue and West 45th Street – With the Proposed Action, this intersection would experience increases in turning vehicles conflicting with pedestrians on the north crosswalk. Based on a review of the accident data, no prevailing trends were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has two high visibility crosswalks and two standard crosswalks, and an exclusive westbound right-turn lane. As described in Chapter 19, "Mitigation," all of the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the Proposed Action is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, measures to improve pedestrian safety at this intersection could include the installation of pedestrian countdown signals on the north and south crosswalks, advance stop bars, high visibility crosswalks on the east and west legs, "LOOK!" pavement markings on crosswalks, and "Turning Vehicles Yield to Pedestrians" signage.

- Sixth Avenue and West 46th Street – With the Proposed Action, this intersection would experience increases in turning vehicles conflicting with pedestrians on the east crosswalk. Based on a review of

the accident data, no prevailing trends were identified as the primary causes of recorded accidents at this intersection. With respect to geometric deficiencies that could potentially cause safety hazards, this intersection is currently signalized and has an eastbound left-turn lane and protected signal phase, two high visibility crosswalks and two standard crosswalks. As described in Chapter 19, "Mitigation," all of the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures. Therefore, the Proposed Action is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, measures to improve pedestrian safety at this intersection could include the installation of pedestrian countdown signals on the north and south crosswalks, high visibility crosswalks on the east and west legs, "LOOK!" pavement markings on crosswalks, and "Turning Vehicles Yield to Pedestrians" signage.

As described above, most of these intersections are located along the 42nd Street corridor and all have significant existing volumes of pedestrians. While the addition of pedestrian trips and vehicle trips at high accident locations could result in increasingly unsafe conditions, a variety of pedestrian and bicycle safety improvements have been made by DOT at these intersections subsequent to the 2008-2010 period in which accident data were reviewed and additional improvements could be further employed to increase pedestrian safety.[8]

[8] Safety improvements implemented in the study area since 2010 have included pedestrian countdown signals, advance stop bars, "LOOK!" pavement markings, and crosstown bicycle lanes.

12.11 PARKING

12.11.1 Existing Off-Street Parking in the Study Area

Off-street parking facilities within a ¼-mile radius of the rezoning area were inventoried during the period of September-December 2012. Interviews were conducted with parking attendants to determine the utilization levels of each facility during the Midday peak period (Noon to 2:00 p.m.) on a typical weekday. Figure 12-54 shows the locations of existing off-street public parking facilities and Table 12-104 provides a summary of the name, address, license number, capacity, and estimated utilization of each parking lot or garage. Within a ¼-mile radius of the rezoning area, 135 off-street parking facilities were inventoried; the facilities have a combined capacity of 17,623 spaces. Approximately 76 percent of these spaces are utilized during the weekday Midday peak period, leaving a residual supply of 4,162 available parking spaces.

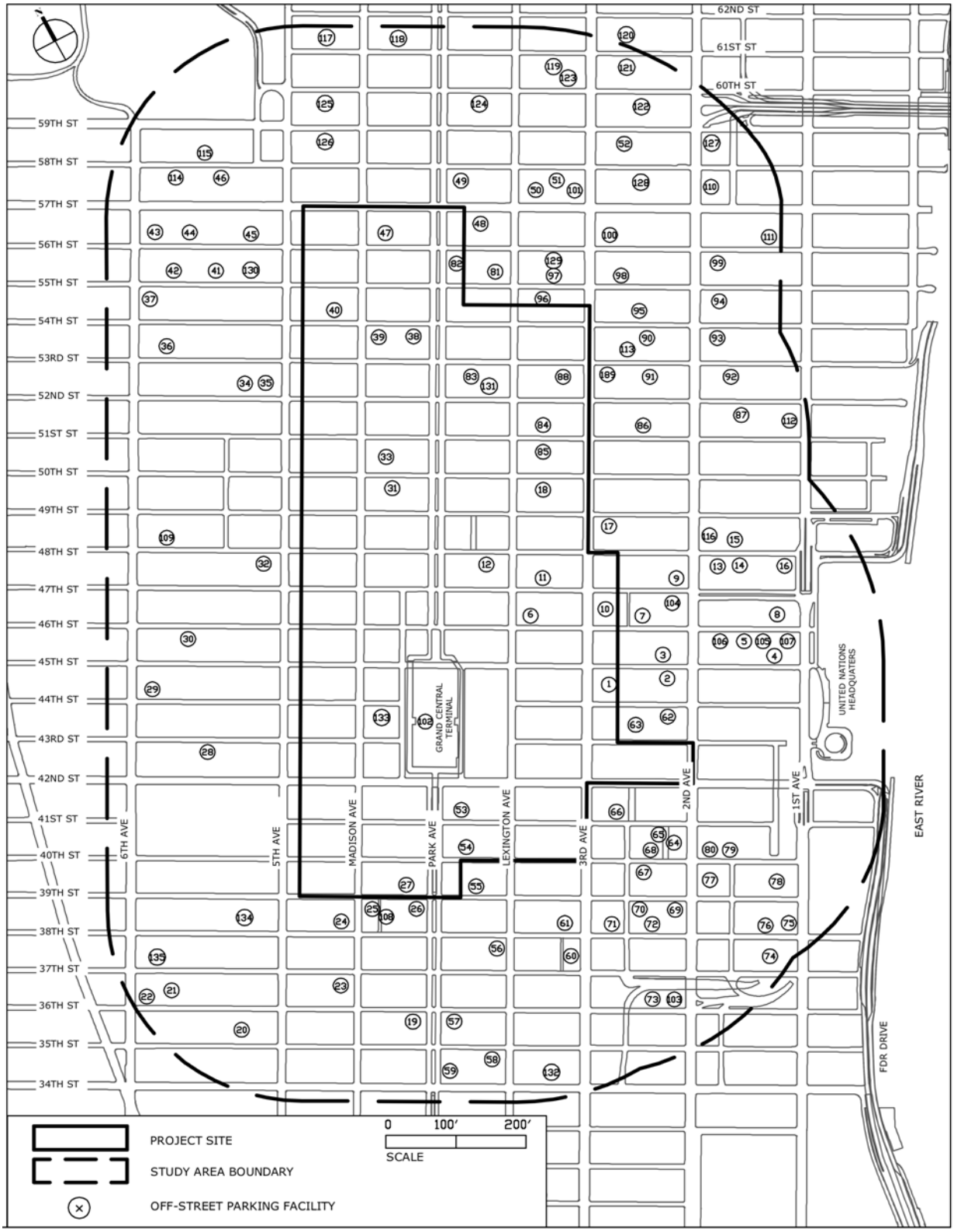
12.11.2 No-Action Off-Street Parking

Between 2012 and 2033, demand for off-street parking is expected to increase due to background growth, development that could occur pursuant to existing zoning, and the No-Action development projects listed in Table 12-20. Similar to the traffic analysis, a total background growth rate of 3.3 percent from 2012 to 2033 was applied to existing parking utilization levels to account for smaller projects and general increases in parking demand. It is anticipated that No-Action projects will provide 968 new public parking spaces and displace 540 spaces at six public parking facilities (for a net increase of 428 spaces). As summarized in Table 12-105, off-street parking utilization is expected to increase to 86 percent, leaving a total of 2,555 parking spaces available during the weekday Midday peak period.

12.11.3 With Action Off-Street Parking

The Proposed Action would provide 701 new public parking spaces and displace 284 spaces at two public parking facilities (for a net increase of 417 spaces). Parking demand would increase by 591 spaces as a result of development on projected development sites. A comparison of projected No-Action and With-Action parking demand and capacity is provided in Table 12-106. Off-street parking utilization would increase to 87 percent, leaving a total of 2,381 spaces available during the weekday Midday peak period, with no parking shortfall.

FIGURE 12-54: LOCATIONS OF OFF-STREET PARKING FACILITIES IN STUDY AREA



Source: Parsons Brinckerhoff, Inc., 2012

TABLE 12-104: EXISTING OFF-STREET PARKING FACILITIES IN STUDY AREA

Map #*	Name	Address(es)	License Number	Licensed Capacity	Estimated Utilization	Available Capacity
1	Seven Eleven Car Park, LLC	711 3rd Ave.	992903	165	100%	0
2	Sharp Parking, LLC	825-835 2nd Ave.	916698	126	100%	0
3	Valor Parking, LLC	235 E. 45th St.	369201	90	100%	0
4	45 East, LLC	333 E. 45th St.	1154974	35	100%	0
5	Elko Parking Systems, Inc	302 E. 46th St.	120087	67	95%	3
6	Kinney Parking Systems, Inc	477-499 Lexington Ave.	1205112	100	85%	15
7	Basic Parking Corp.	225 E. 46th St.	920557	26	75%	7
8	Parking, LLC	333 E. 46th St.	915987	34	95%	2
9	Nations 47 Parking, LLC	885 2nd Ave.	1291835	227	80%	45
10	East 47th Garage Corp	212-214 E. 47th St.	1319230	105	80%	21
11	Central Parking System of NY, Inc	135 E. 47th St.	971313	149	95%	7
12	Manhattan Parking System	277 Park Ave.	368594	40	80%	8
13	Quick Park 48th St., LLC	300-04 E. 48th St.	1251111	51	100%	0
14	310 East 48th Garage, LLC	310 E. 48th St.	1155370	300	60%	120
15	Plaza 48 Parking, LLC	329-341 E. 48th St.	1246949	121	100%	0
16	Imperial Palace Garage, LLC	845 1st Ave.	1133585	76	80%	15
17	Carol Storage Corp	777 3rd Ave.	368322	92	65%	32
18	Central Parking System of NY, Inc	138-146 E. 50th St.	1144401	185	100%	0
19	Champion Parking 36, LLC	30 Park Ave.	1209498	142	60%	57
20	9 W. 35th St., LLC	9 W. 35th St.	1180979	225	80%	45
21	52 West 36th St. Parking, LLC	552 W. 36th St.	429528	150	80%	30
22	(Icon) Pace Parking, LLC	990-996 6th Ave.	1179983	120	75%	30
23	220 Madison Group Corp	220 Madison Ave.	1376369	42	80%	8
24	Regal Parking, LLC	250-264 Madison Ave.	429658	155	80%	31
25	Affiliated Parking, LLC	247-261 Madison Ave.	429844	80	70%	24
26	Imperial Parking, Inc	80 Park Ave.	1387690	91	100%	0
27	Park Avenue 39	90 Park Ave.	1298776	150	90%	15
28	1114 Sixth Parking, LLC	1114 6th Ave.	1020999	188	80%	38
29	Park Fast Edison Parking, LLC	1120 6th Ave.	1250358	648	80%	130
30	Kinney Parking Systems, Inc	38-42 W. 46th St.	1137171	225	85%	34
31	Sweets Parking	437 Madison Ave.	1221665	116	40%	70
32	Central Parking System of NY, Inc	12 W. 48th St.	1232553	200	75%	50
33	Kinney Hotel Services	451-457 Madison Ave.	1196453	94	95%	5
34	Central Parking System	27-49 W. 52nd St.	1107288	120	90%	12
35	Modern Parking	666 5th Ave.	1166505	90	60%	36
36	Icon	57-59 W. 53rd St.	1127867	225	75%	56
37	Icon	1350-1358 6th Ave.	1127872	99	70%	30
38	Quick Park	390 Park Ave.	1446479	149	80%	30
39	Champion Parking	527 Madison Ave.	835271	26	95%	1
40	Ampco	13-17 E. 54th St.	1288781	225	50%	113
41	Bricin Parking Corp	65 W. 55th St.	368410	24	50%	12
42	Quick Park	73-77 W. 55th St.	1271791	61	85%	9
43	Champion Parking	65 W. 56th St.	368238	80	50%	40
44	Central Parking System	51 W. 56th St.	1323991	140	80%	28

TABLE 12-104: EXISTING OFF-STREET PARKING FACILITIES IN STUDY AREA (CONTINUED)

Map #*	Name	Address(es)	License Number	Licensed Capacity	Estimated Utilization	Available Capacity
45	Regal Car Park, LLC	33 W. 56th St.	1326426	76	100%	0
46	Quick Park West 57, LLC	9 W. 57th St.	1330550	200	80%	40
47	Manhattan Enterprises	575 Madison Ave.	1342885	99	75%	25
48	Champion Parking	110 E. 57th St.	897530	65	70%	20
49	Central Parking System	110 E. 58th St.	113133	94	50%	47
50	157-57 Third Corp	153 E. 57th St.	1005177	38	80%	8
51	Lexington 58 Parking, LLC	150 E. 58th St.	1298768	260	80%	52
52	Square Parking	206 E. 59th St.	1206789	225	75%	56
53	Grand Central Park, LLC	110 E. 42nd St.	1320538	77	45%	42
54	Quick Park, LLC	101 Park Ave.	1293753	124	100%	0
55	Rapid Park 99 Park Avenue Corp	99 Park Ave.	1181507	75	40%	45
56	310 Lex Parking Mgmt, LLC	310 Lexington Ave.	1246823	26	100%	0
57	Quick Park Real, LLC	35 Park Ave.	1192939	47	60%	19
58	Zephyr Parking, LLC	132 E. 35th St.	369933	85	70%	26
59	9-11 Park Ave, LLC	9-11 Park Ave.	999137	150	50%	75
60	MHM Parking, LLC	560 3rd Ave.	731394	300	80%	60
61	Murray 38 Parking, LLC	155 E. 38th St.	1232880	67	60%	27
62	Parkon 44th St. Corp	230 E. 44th St	916799	103	80%	21
63	Kinney Parking System	213 E. 43rd St.	199939	250	80%	50
64	245 E. 40th St. Parking, LLC	747-759 2nd Ave.	1001573	130	90%	13
65	Quick Park Eagle, LLC	240 E. 41st St.	1192937	74	90%	7
66	Champion 42, LLC	214 E. 42nd St.	1059291	115	85%	17
67	Gemini Garage	222 E. 40th St.	1347115	750	70%	225
68	Dynamic Parking, LLC	222 E. 41st St.	1117862	76	100%	0
69	Proto Garage, LTD	250 E. 39th St.	1375436	35	80%	7
70	Eastgate Parking Leasehold, LLC	222 E. 39th St.	1379205	86	80%	17
71	205 E. 38th St. Parking LLC	205 E. 39th St.	427177	125	70%	38
72	East 39th Realty, LLC	221 E. 38th St.	1190557	95	70%	29
73	Quick Park East 36th St., LLC	221-235 E. 36th St.	1278457	64	100%	0
74	Corinthian Parking Mgmt, LLC	330 E. 37th St.	1364181	186	75%	47
75	NYULMC E Garage Corp	333 E. 38th St.	1340052	146	80%	29
76	Realpro Parking, LLC	330 E. 39th St.	1135063	208	60%	83
77	Noble Parking, LLC	310 E. 40th St.	369346	235	90%	24
78	Quick Park East 39th St. Lot, LLC	331-345 E. 39th St.	1338641	150	50%	75
79	Enterprise 40th Parking Corp	315 E. 40th St.	1312149	334	80%	67
80	Innovative Parking, LLC	301-311 E. 40th St.	888338	108	70%	32
81	Champion 55, LLC	131 E. 55th St. 662 Lexington Ave.	1063776	67	80%	13
82	Champion Parking 425, LLC	425 Park Ave.	1195484	130	65%	46
83	Central Parking System	375 Park Ave.	1189587	150	90%	15
84	575 Lex Garage, LLC	575 Lexington Ave.	1332946	150	50%	75
85	Metropolitan 51 Parking, LLC	569-573 Lexington Ave.	1234298	200	75%	50
86	New York Parking 51st Street Corp	251 E. 51st St.	367195	54	65%	19
87	Support Parking, LLC	350 E. 52nd St.	367606	80	70%	24

TABLE 12-104: EXISTING OFF-STREET PARKING FACILITIES IN STUDY AREA (CONTINUED)

Map #*	Name	Address(es)	License Number	Licensed Capacity	Estimated Utilization	Available Capacity
88	Central Parking System of NY, Inc	154 E. 53rd St.	1107285	149	70%	45
89	Hawthorne Garage	211 E. 53rd St.	469824	90	85%	14
90	Friend 54 Management, LLC	234-240 E. 54th St.	1357137	188	75%	47
91	MP 53, LLC	250 E. 53rd St.	1280323	28	100%	0
92	53rd Sterling Parking, LLC	304 E. 53rd St.	1256221	18	80%	4
93	Connaught Tower Car Park, LLC	300 E. 54th St.	1400292	73	70%	22
94	54th and 2nd Parking, LLC	300 E. 55th St.	1196302	25	70%	8
95	East 54th Operating, LLC	245 E. 54th St.	1418775	178	80%	36
96	Lexington 55th Garage Corp	136 E. 55th St.	469374	101	50%	51
97	Bricin Parking Corp	155 E. 55th St.	368185	42	50%	21
98	919 Third Garage Company, LLC	918 3rd Ave.	959289	316	60%	126
99	56th Realty, LLC	300 E. 56th St.	1081571	300	60%	120
100	MP 56, LLC	201 E. 56th St.	1407898	150	65%	53
101	157 57th Street Corp	952 3rd Ave.	1005180	83	65%	29
102	Sentry Parking, Inc	200-214 Park Ave.	975541	315	80%	63
103	245 East 36th St. Garage Corp	245 E. 36th St.	800698	35	60%	14
104	Dag Parking Mgmt, LLC	240 E. 47th St.	1379011	37	80%	7
105	East 46th Realty, LLC	320 E. 46th St.	1070435	49	80%	10
106	Quick Park E. 46th St, LLC	300-302 E. 46th St.	1415772	36	100%	0
107	Ever Ready Parking, Inc	330 E. 46th St.	976183	155	100%	0
108	Affiliated Parking, LLC	23B E. 39th St. 23 E. 38th St.	469319	25	70%	8
109	Rockefeller Center Garage	25-43 W. 48th St.	962865	652	85%	98
110	Select Parking, LLC	301-311 E. 57th St.	914923	328	60%	131
111	Bamford Realty	333 E. 56th St.	1070778	150	65%	53
112	Rox Parking LLC	351 E. 51st St.	140693226	26	75%	7
113	Manhattan Parking Gold Corp.	220 E. 54th St.	1338875	30	100%	0
114	Kinney Parking System Inc	58 W. 58th St.	1202746	160	85%	24
115	Champion 58, LLC	33 W. 58th St.	1059262	108	95%	5
116	910 Garage Corp	910 2nd Ave.	901734	42	80%	8
117	615 Garage Corp	800 5th Ave.	900020	150	90%	15
118	Distinctive Parking, LLC	35-39 E. 67th St.	367984	129	80%	26
119	Imperial Parking Systems	150 E. 61st St.	1361354	69	85%	10
120	Premier Parking, LLC	203 E. 61st St.	976075	131	85%	20
121	DL Garage Holdings, LLC	200 E. 61st St.	1222749	70	75%	18
122	60th Storage Corp.	220 E. 60th St.	0941633	32	70%	10
123	Quik Park Bloom, LLC	169-175 E. 60th St.	1262707	34	70%	10
124	Ampco System Parking	750 Lexington Ave.	1306361	72	100%	0
125	785 Garage Corp.	785 5th Ave.	1191060	17	85%	3
126	59 and 5th Parking, LLC	767 5th Ave.	1157112	136	85%	20
127	MPC Parking, LLC	1104-1116 2nd Ave.	1153766	227	70%	68
128	Kinney Parking Systems	222 E. 58th St. 221-225 E. 57th St.	1202660	36	70%	11
129	Quik Park	140 E. 56th St.	1192830	50	60%	20

TABLE 12-104: EXISTING OFF-STREET PARKING FACILITIES IN STUDY AREA (CONTINUED)

Map #*	Name	Address(es)	License Number	Licensed Capacity	Estimated Utilization	Available Capacity
130	Kinney Parking Systems Inc	25 W. 55th St.	199824	150	70%	45
131	Parklex Garage Inc	345 Park Ave.	369823	150	75%	38
132	Quick Park Garment, LLC	155 E. 34th St.	1192895	66	70%	20
133	Central Parking System	335 Madison Ave.	0368723	90	80%	18
134	Bryant Car Park, LLC	13 W. 39th St. 14-20 W. 40th St.	1001165	76	80%	15
135	1010 6th Ave Garage Corp	1010 6th Ave.	1180712	86	80%	17
Totals				**17,623**	**76%**	**4,162**

Source: Surveys and interviews conducted by Parsons Brinckerhoff, September - December 2012
Notes: *See Figure 12-54 for locations
Estimated utilizations are for weekday Midday period

TABLE 12-105: EXISTING AND NO-ACTION PARKING CAPACITY, DEMAND, AND UTILIZATION

Capacity	
Existing Capacity	17,623
Capacity Displaced by No-Action Developments	(540)
New Capacity Provided by No-Action Developments[1,2]	968
Total No-Action Capacity	18,051
Demand	
Existing Demand	13,461
Demand from Background Growth	444
Projected Demand from No-Action Developments[1,2]	1,591
Total No-Action Demand	15,496
Utilization	
No-Action Utilization	86%
No-Action Available Capacity	2,555

Notes:
1. Excludes parking capacity and demand associated with No-Action project at 616 First Avenue, which is located outside of the parking study area.
2. Excludes accessory parking capacity and demand associated with No-Action projects.
Source: Parsons Brinckerhoff, Inc., 2012

TABLE 12-106: NO-ACTION AND WITH-ACTION PARKING CAPACITY, DEMAND, AND UTILIZATION

Capacity	
No-Action Capacity	18,051
Capacity Displaced by Proposed Action	(284)
New Capacity Provided by Proposed Action	701
Total With-Action Capacity	**18,468**
Demand	
No-Action Demand	15,496
Projected Demand from Proposed Action	591
Total With-Action Demand	**16,087**
Utilization	
With-Action Utilization	87%
With-Action Available Capacity	2,381

Source: Parsons Brinckerhoff, Inc., 2012

12.11.3.1 Existing On-Street Parking in the Study Area

An inventory of existing parking regulations within a ¼-mile radius of the rezoning area was compiled in the fall of 2012. Curbside parking regulations for all block faces are shown in Figure 12-55 and summarized in Table 12-107. On-street parking for the general public is highly restricted during the weekday daytime hours—especially from 7:00-10:00 a.m. and 4:00-7:00 p.m.—with many curbside regulations limiting usage to commercial vehicle loading and unloading activities, authorized vehicles, or prohibit parking overall. Commercial vehicles in this area of Manhattan are generally required to pay for on-street parking at muni-meters on weekdays between 7:00 a.m. and 6:00 p.m. A limited amount of 1-hour metered parking is available to the public in some parts of the study area, primarily along Second Avenue. Based on field observations, the limited amount of on-street public parking within a ¼-mile radius of the rezoning area is generally fully utilized during the weekday daytime hours.

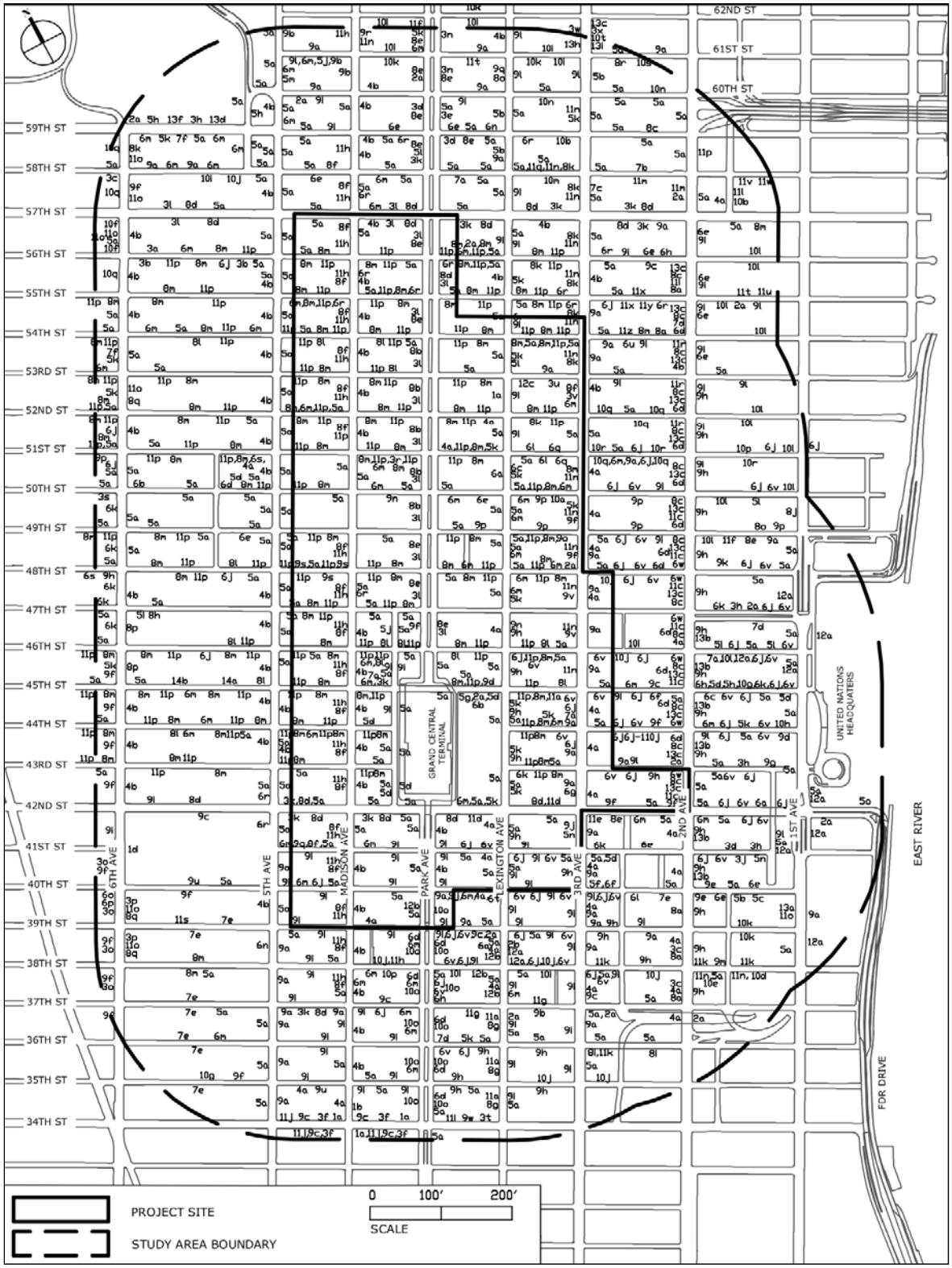
12.11.3.2 No-Action On-Street Parking

As described in Section 12.7.2.2, street closures of Pershing Square East, Pershing Square West, and Vanderbilt Avenue (between East 42nd and East 43rd Streets) and bus lane improvements along Madison and Fifth Avenues will occur in the No-Action condition. It is not be expected that these changes will have an effect on public on-street parking conditions because the curbside regulations on these block faces limit usage to commercial vehicle loading and unloading activities, authorized vehicles, bus stops, or prohibit parking overall. As such, the availability of on-street public parking is not expected to change significantly in the No-Action condition and on-street parking utilization is expected to continue to be very high. Any increase in on-street parking demand is expected to be handled by off-street parking facilities.

12.11.3.3 With-Action On-Street Parking

The street closures associated with the Proposed Action on Vanderbilt Avenue between East 44th and East 47th Streets would not be expected to have an effect on public on-street parking conditions because the curbside regulations on these block faces limit usage to commercial vehicle loading and unloading activities or prohibit parking overall. As all of the additional public parking demand generated by projected development sites would be accommodated in new or existing off-street parking facilities, the Proposed Action would not affect on-street public parking utilization.

FIGURE 12-55: ON-STREET PARKING REGULATIONS IN STUDY AREA



Source: Parsons Brinckerhoff, Inc., 2012

Note: See Table 12-107 for Parking Regulation Code Definitions.

TABLE 12-107: PARKING REGULATION CODE DEFINITIONS

Code*	Parking Regulation
1a	Bus Lane, 7am-7pm, Mon-Fri
1b	Bus Only, 2pm-7pm, Mon-Fri
1c	Bus Only 7am-10am, 4pm-7pm, Mon-Fri
1d	Bus Only 4pm-7pm, Mon-Fri
2a	No Parking Anytime
2b	No Parking Anytime, Temporary Construction Regulation
2c	No Parking, Unauthorized Vehicles will be Towed at Owners Expense
3a	No Parking, 3am-6am, Mon & Thu
3b	No Parking, 3am-6am, Tue & Fri
3c	No Parking, 7am-7pm, Except Sun
3d	No Parking, 7am-7pm, Mon-Fri
3e	No Parking, 7am-4pm, Except Sun, Except Authorized Vehicles
3f	No Parking, 7am-Midnight
3g	No Parking, 7am-Midnight, Except Sun
3h	No Parking, 8am-6am, Mon-Fri
3i	No Parking, 9am-10:30am, Tue & Fri
3j	No Parking, 10am-11:30am, Tue & Fri
3k	No Parking, 10am-4pm, Except Sun, Except Commercial Vehicles, Metered Parking 3hr Limit
3l	No Parking, 10am-4pm, Mon-Fri, Except Commercial Vehicles, Metered Parking 3Hr Limit
3m	No Parking, 11am-12:30pm, Mon & Thu
3n	No Parking, 11am-12:30pm, Tue & Fri
3o	No Parking, 2am-6am, Mon, Wed, Fri
3p	No Parking, 2am-6am, Tue, Thu, Sat
3r	No Parking, Midnight-3am, Tue & Fri
3s	No Parking, 7am-Midnight
3t	No Parking, 4pm-Midnight, Including Sun
3u	No Parking, Passenger Loading Zone
3v	No Parking, 4pm-7pm, Except Sunday
4a	No Standing
4b	No Standing, Bus
5a	No Standing Anytime
5b	No Standing Anytime, Bus Layover
5c	No Standing Anytime, Bus Layover Area, MTA Buses
5d	No Standing Anytime, Except Authorized Vehicles
5e	No Standing Anytime, Except Authorized Vehicles, Fire Department
5f	No Standing Anytime, Except Authorized Vehicles, NYS Police
5g	No Standing Anytime, Except Authorized Vehicles, Post Office Vehicles
5h	No Standing Anytime, Except Authorized Vehicles, US Govt Vehicles Only

TABLE 12-107: PARKING REGULATION CODE DEFINITIONS (CONTINUED)

Code*	Parking Regulation
5i	No Standing Anytime, Except Sun
5j	No Standing Anytime, Except Sun, Except Trucks Loading & Unloading
5k	No Standing Anytime, Taxi Stand
5l	No Standing Anytime, Temporary Construction Regulation
5m	No Standing Anytime, Except Trucks Loading & Unloading
5n	No Standing Anytime, Except Vehicles with NYP License Plates
5o	No Standing Anytime, Temporary Construction Regulation
6a	No Standing, Consul-C Diplomat A & D License Plate
6b	No Standing, Except Authorized Vehicles, U.S. Mail
6c	No Standing, Except City Authorized Vehicles
6d	No Standing, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
6e	No Standing, Except Commercial Vehicles, Metered Parking, 3 Hour Limit, Except Sun
6f	No Standing, Except Horse Drawn Cabs
6g	No Standing, Except Taxis
6h	No Standing, Except Trucks Loading & Unloading
6e	No Standing, Except Trucks Loading & Unloading, Except Sun
6j	No Standing, Except Vehicles with Consul-C Diplomat A & D, License Plate
6k	No Standing, Except Vehicles with NYP License Plates, 3 Hr Limit
6l	No Standing, Fire Zone
6m	No Standing, Hotel Loading Zone
6n	No Standing, Access a Ride Bus Stop
6o	1 Hour Limit Relief Stand, Taxi/FHV
6p	No Parking Anytime, Except Taxis/FHVs
6q	No Standing, Except City Owned Vehicles
6r	No Standing During Emergency, Snow Route, Vehicles Towed
6s	No Standing, Except Authorized Vehicles, Consul- A & D, Diplomat A & D, License Plate Consul/Diplomat Guyana
6t	No Standing, Including Sun, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
6u	No Standing, Except Authorized Vehicles
6v	D/S Decals Only
6w	Except Vehicles with Consul-C Diplomat A & D License Plates, Delivery Decal Required, 30 min Limit
7a	No Standing, 3am-5am, Except Sun
7b	No Standing, 6am-10am, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hr Limit
7c	No Standing, 6am-3pm, 8pm-Midnight, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hr Limit
7d	No Standing, 6am-6pm, Wed, Except Farmers Market, Other Times No Standing
7e	No Standing, 6am-7pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
7f	No Standing, 1am-3am, Except Sun

TABLE 12-107: PARKING REGULATION CODE DEFINITIONS (CONTINUED)

Code*	Parking Regulation
8a	No Standing, 7am-10am, 2pm-7pm, Mon-Fri
8b	No Standing, 7am-10am, 3pm-7pm, Including Sunday
8c	No Standing, 7am-10am, 3pm-8pm, Except Sun
8d	No Standing, 7am-10am, 4pm-7pm, Except Sun
8e	No Standing, 7am-10am, 4pm-7pm, Mon-Fri
8f	No Standing, 7am-1pm, Except Sun, Except Commercial Vehicle, Metered Parking, 3 Hour Limit
8g	No Standing, 7am-1pm, Mon-Fri
8h	No Standing, 7am-2pm, Mon-Fri
8i	No Standing, 7am-3pm, Except Sun, Except Commercial Vehicle, Metered Parking, 3 Hour Limit
8j	No Standing, 7am-3pm, Except Sun, Except Trucks Loading & Unloading, Other Times No Standing
8k	No Standing, 7am-4pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
8l	No Standing, 7am-6pm, Mon-Fri
8m	No Standing, 7am-6pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
8n	No Standing, 7am-6pm, Mon-Fri, Except Trucks Loading & Unloading
8o	No Standing, 7am-10am, Mon-Fri
8p	No Standing, 7am-10pm, Including Sun
8q	No Standing, 7am-4pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit Mon-Fri
9a	No Standing, 7am-7pm, Except Sun
9b	No Standing, 7am-7pm, Including Sun
9c	No Standing, 7am-7pm, Mon-Fri
9d	No Standing, 7am-7pm, Mon-Fri, Except Authorized Vehicles, NYSJ
9e	No Standing, 7am-7pm, Mon-Fri, Except Authorized Vehicles, NYS Police
9f	No Standing, 7am-7pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
9g	No Standing, 7am-7pm, Mon-Fri, Except Trucks Loading & Unloading
9h	No Standing, 7am-7pm, Except Sun, Except Commercial Vehicles, 3 Hour Limit
9i	No Standing, 7am-7pm, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
9j	No Standing, 7am-7pm, Except Trucks Loading & Unloading
9k	No Standing, 7am-7pm, Including Sun, Except Trucks Loading & Unloading
9l	No Standing, 7am-7pm, Except Sun, Except Trucks Loading & Unloading
9m	No Standing, 7am-9pm, Except Sun, Except Trucks Loading & Unloading
9n	No Standing, 7am-Midnight
9o	No Standing, 7am-Midnight, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
9p	No Standing, 7am-Midnight, Including Sun
9q	No Standing, 7pm-1am, Mon-Fri, Except TLC License Vehicles, Pre-arranged Service Only
9r	No Standing, 7am-4pm, Except Trucks Loading & Unloading, Except Sun
9s	No Standing, 7am-4pm, 7pm-10pm, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hour Limit

TABLE 12-107: PARKING REGULATION CODE DEFINITIONS (CONTINUED)

Code*	Parking Regulation
9t	No Standing, 7am-10pm, Except Sun
9u	No Standing, 7am-7pm, Mon-Sat, Except Commercial Vehicles, Metered Parking 3 Hour Limit
9v	No Standing, 7am-4pm, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
9w	No Standing, 7am-7pm, Mon-Fri; 1pm-7pm, Sat & Sun
10a	No Standing, 8am-10am, 1 Hour Parking
10b	No Standing, 8am-3pm, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hr Limit
10c	No Standing, 8am-3pm, 8pm-Midnight, Including Sun, Except trucks Loading & Unloading
10d	No Standing, 8am-4pm, Except Sun, Except Trucks Loading & Unloading
10e	No Standing, 8am-4pm, Except Trucks Loading & Unloading
10f	No Standing, 8am-4pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
10g	No Standing, 8am-4pm, School Days, Except School Busses
10h	No Standing, 8am-6pm, Mon-Fri, Except Trucks Loading or Unloading
10i	No Standing, 8am-7pm, Except Sun
10j	No Standing, 8am-7pm, Except Sun, Except Commercial Vehicles Metered Parking 3 Hour Limit
10k	No Standing, 8am-7pm, Except Sun, Except Trucks Loading & Unloading
10l	No Standing, 8am-7pm, Mon-Fri, Except Trucks Loading or Unloading
10m	No Standing, 8am-Midnight, Sat & Sun, Except Trucks Loading & Unloading
10n	No Standing, 8am-Midnight, Mon-Sat Except Commercial Vehicles Metered Parking 3 Hour Limit
10o	No Standing, 8am-6pm, Mon-Fri Except Commercial Vehicles Metered Parking 3 Hour Limit
10p	No Standing, 8am-6pm, Except Sun
10q	No Standing, 8am-7pm, Mon-Fri, Except Commercial Vehicle, Metered Parking, 3 Hour Limit
10r	No Standing, 8am-7pm, Mon-Fri
11a	No Standing, 9am-9pm, Mon-Fri, Ambulette Drop Off & Pick Up Only
11b	No Standing, 9am-9pm, Mon-Sat, Ambulette Drop Off & Pick Up Only
11c	No Standing, 10am-2pm, Mon-Fri
11d	No Standing, 10am-4pm, Except Sun, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
11e	No Standing, 10am-4pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
11f	No Standing, 10am-4pm, Mon-Fri, Except Trucks Loading & Unloading
11g	No Standing, 10am-7pm, Except Sun, Except Commercial Vehicles, Metered Parking 3hr Limit
11h	No Standing, 1pm-7pm, Except Sunday
11i	No Standing, 1pm-7pm, Mon-Fri, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
11j	No Standing, 1pm-7pm, Sat-Sun
11k	No Standing, 3pm-7pm, Except Sun
11l	No Standing, 3pm-8pm, Except Sun
11m	No Standing, 3pm-8pm, Mon-Fri
11n	No Standing, 4pm-7pm, Except Sun
11o	No Standing, 4pm-7pm, Mon-Fri
11p	No Standing, 6pm-Midnight, Mon-Fri, 8am-Midnight Sat

TABLE 12-107: PARKING REGULATION CODE DEFINITIONS (CONTINUED)

Code*	Parking Regulation
11q	No Standing, 10pm-2am, Including Sunday, Except Trucks Loading & Unloading
11r	No Standing, 11pm-6am, Thu-Fri-Sat
11s	No Standing, 10pm-6am, Including Sun
11t	No Standing, 10am-7pm, Except Sun, Except Trucks Loading & Unloading
11u	No Standing, 7am-10am, Except Sun
11v	No Standing, 7am-9pm, Mon-Fri, Except Trucks Loading & Unloading
11w	No Standing, 3pm-Midnight, Including Sun
11x	No Standing, 3pm-8pm, Mon-Fri, Bus Layover Zone
11y	No Standing, 7am-3pm Mon-Fri, 7am-7pm Sat, Except Commercial Vehicles, Metered Parking, 3 Hour Limit
11z	No Standing, 7am-7pm, Tue-Fri
12a	No Stopping Anytime
12b	No Stopping, 7am-1pm, Mon-Fri
12c	No Stopping
13a	1 Hour Parking, 9am-4pm, Mon-Fri, 9am-7pm Sat
13b	1 Hour Parking, 9am-7pm, Except Sunday
13c	1 Hour Parking, 9am-7pm, Sat
13d	1 Hour Meter Parking, 8am-10pm, Except Sun
13e	1 Hour Meter Parking, 9am-4pm, Mon-Sat; 9am-7pm, Sun
13f	1 Hour Meter Parking, 9am-10pm, Sat
13g	1 Hour Meter Parking, 6pm-10pm, Mon-Fri
14a	Meter Parking, 8am-Midnight, Sat
14b	Meter Parking, 6pm-Midnight, Mon-Fri

Source: Parsons Brinckerhoff surveys (fall of 2012)

* Codes on Figure 12-55.