APPENDIX B:
DRAFT TRANSPORTATION PLANNING FACTORS AND TRAVEL DEMAND FORECAST MEMORANDUM

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DRAFT

TECHNICAL MEMORANDUM

TO: **NYCDCP**

FROM: **Philip Habib & Associates**

DATE: **January 15, 2025**

PROJECT: **Midtown South Mixed-Use Plan (PHA No. 2152C)**

RE: **Transportation Planning Factors and Travel Demand Forecast**

This memorandum summarizes the transportation planning factors to be used for the analyses of traffic, transit, pedestrian, and parking conditions for the *Midtown South Mixed-Use Plan EIS*. Estimates of the peak travel demand for the Proposed Actions' reasonable worst-case development scenario (RWCDS) are provided, along with a discussion of trip assignment methodologies and study area definitions.

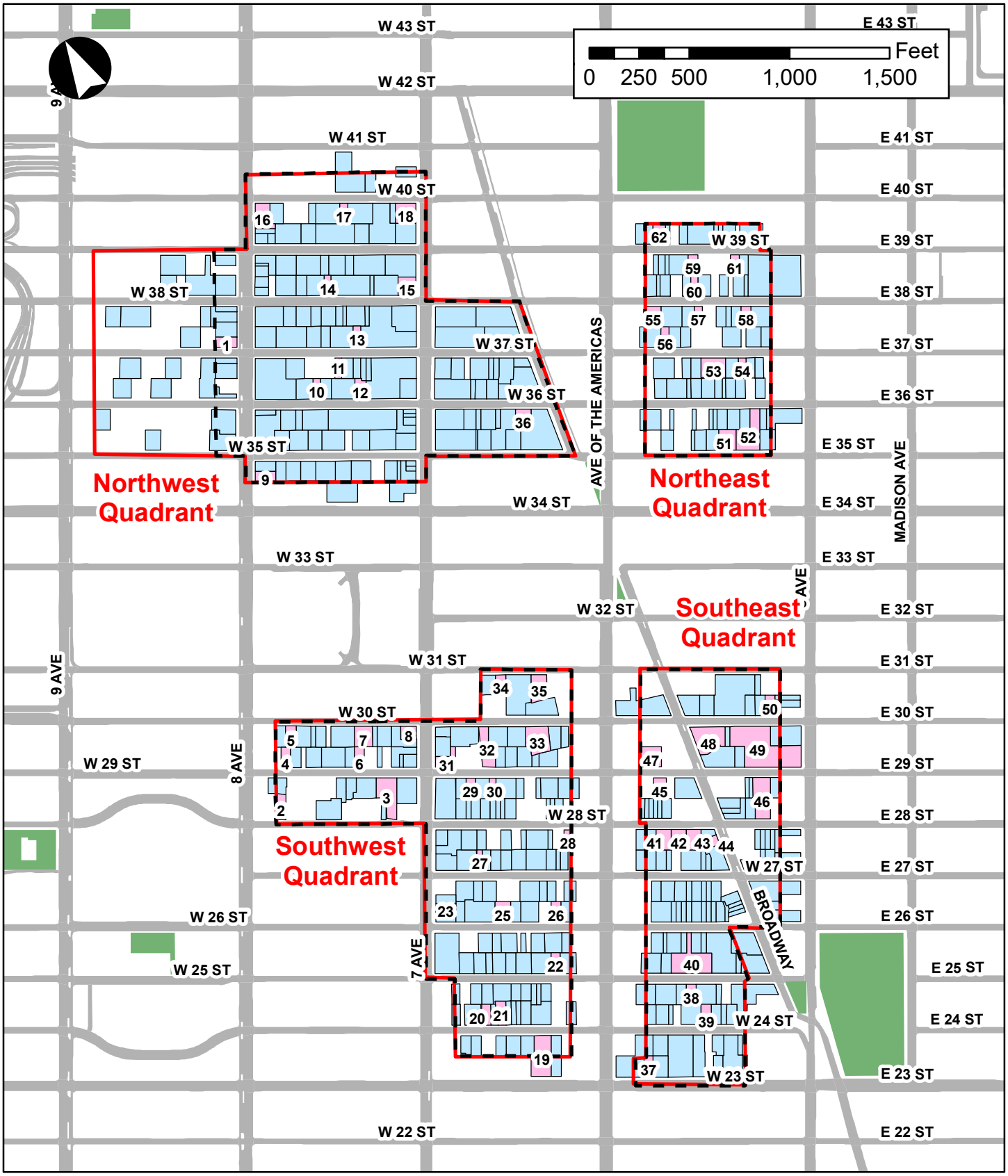
THE PROPOSED ACTIONS

The New York City Department of City Planning (DCP) is proposing a series of land use actions, including zoning map amendments and zoning text amendments (the "Proposed Actions") that would implement land use and zoning changes to nurture a more vibrant, mixed-use neighborhood, create opportunities for new housing through both ground-up development and conversions, support commercial activity and job growth, stabilize the commercial real estate market in the wake of the COVID-19 pandemic and shifting work patterns, and reflect the historic architectural legacy and industrial character of the Midtown South neighborhood.

The Proposed Actions would affect an approximately 141-acre area (the "Affected Area") consisting of all or parts of 42 blocks of the Midtown South neighborhood, and is roughly bounded by 40th Street to the north, Fifth Avenue to the east, 23rd Street to the south, and Ninth Avenue to the west. The Affected Area is comprised of Subdistrict A-2 in the Special Garment District, and the "Rezoning Area." The Rezoning Area is an approximately 127-acre area consisting of all or parts of 42 blocks of the Midtown South neighborhood with a majority of the Rezoning Area (all or portions of 35 blocks) is located in Manhattan Community District 5, while the remaining (all or portions of seven blocks) is located in Manhattan Community District 4. The Rezoning Area consists of four noncontiguous manufacturing-zoned areas ("quadrants") roughly bounded by 40th Street to the north, Fifth Avenue to the east, 23rd Street to the south, and Eighth Avenue to the west (see **Figure 1**).

THE REASONABLE WORST CASE DEVELOPMENT SCENARIO (RWCDS)

In order to assess the potential effects of the Proposed Actions, a RWCDS for both "future without the proposed actions" (No-Action) and "future with the proposed actions" (With-Action) conditions are analyzed for an analysis year of 2034. To develop a reasonable estimate of future growth, likely development sites were identified and divided into two categories: projected development sites and potential development sites. The projected development sites are those considered more likely to be developed within the ten-year analysis period for the Proposed Actions (i.e., by the 2034 analysis year), while potential sites are considered less likely to be developed over the same period. As such, a total of



Legend

Rezoning Area | Affected Area | Potential Conversion Sites | Projected Development Sites

61 projected development sites were identified within the Affected Area and are considered for the purposes of the transportation analyses.

The RWCDS also modeled the potential for the conversion of existing non-residential floor area to residential use in the study area. The non-residential area modeled as eligible residential conversion area was informed by NYCDCP's understanding of historical conversion patterns from 2010 to 2020 and the potential for conversions in the study area under the RWCDS With-Action condition. NYCDCP's model for assumed residential conversions in the Affected Area excluded projected and potential development sites and recent hotel development, which are unlikely to convert to residential use.

Future Without the Proposed Actions (No-Action Condition)

In the future without the Proposed Actions, the identified projected development sites are assumed to remain unchanged from existing conditions. Given the outdated manufacturing zoning and low demand for ground-up manufacturing and commercial development in the area, vacant parcels and sites occupied by low intensity uses are not likely to be developed as-of-right. Additionally, as-of-right residential development would not be able to occur without a zoning map amendment. As such, the total No-Action development would comprise of approximately 81,610 gross square feet (gsf) of existing residential space (54 dwelling units [DUs]), 431,623 gsf of local retail space, 799,323 gsf of office space, 13,984 gsf of community facility space (house of worship), 52,396 gsf of warehouse space, 17,386 gsf of light industrial space, 69,500 gsf of parking garage space, and 1,093,808 gsf of non-residential area eligible for residential conversions.

Future With the Proposed Actions (With-Action Condition)

In the future with the Proposed Actions, the zoning map and zoning text amendments would be approved, allowing for significant housing production in the Affected Area. As such, the total development expected to occur on the 61 projected development sites under the Proposed Actions would consist of approximately 8,774,191 gsf of residential space (8,949 total DUs), approximately 893,752 gsf of local retail space, approximately 66,704 gsf of commercial office space, and approximately 95,739 gsf of community facility space (consisting of approximately 13,984 gsf of house of worship space and approximately 81,755 gsf of elementary school space (approximately 238 seats).

Table 1 shows the total anticipated No-Action and With-Action land uses across the 61 projected development sites. As shown in **Table 1**, the projected incremental (net) change between the No-Action and With-Action conditions that would result from the Proposed Actions for the projected development sites would be a net increase of approximately 8,692,581 gsf of residential space (8,895 DUs), approximately 462,129 gross square feet (gsf) of local retail space, and approximately 81,755 gsf of elementary school space (approximately 238 seats). In addition, it is estimated that there would be a decrease of approximately 732,619 gsf of commercial office space, approximately 52,396 gsf of warehouse space, 17,386 gsf of light industrial space, and approximately 69,500 gsf of parking garage space.

In addition to the 61 projected development sites, it is estimated that approximately 1,093,808 gsf of existing non-residential space (assumed to be office space) will be converted to residential uses, yielding an additional 782 new DUs within the four Affected Area quadrants (refer to **Table 2**).

Table 1
2034 RWCDS No-Action and With-Action Land Uses on Projected Development Sites

Land Use	No-Action Condition	With-Action Condition	Net Increment
Residential			
Total Residential	81,610 gsf	8,774,191 gsf	+ 8,692,581 gsf
	54 DUs	***8,949 DUs***	***+ 8,895 DUs***
Commercial			
Local Retail	431,623 gsf	893,752 gsf	+ 462,129 gsf
Office	799,323 gsf	66,704 gsf	- 732,619 gsf
Total Commercial	***1,230,946 gsf***	***960,456 gsf***	***+ 270,490 gsf***
Community Facility			
House of Worship	13,984 gsf	13,984 gsf	+ 0 gsf
Elementary School	0 gsf	81,755 gsf	+ 81,755 gsf
	0 seats	238 seats	+ 238 seats
Total Community Facility	***13,984 gsf***	***95,739 gsf***	***+ 81,755 gsf***
Industrial			
Light Industrial	17,386 gsf	0 gsf	- 17,386 gsf
Warehouse	52,396 gsf	0 gsf	- 52,396 gsf
Total Industrial	***69,782 gsf***	***0 gsf***	***- 69,782 gsf***
Parking			
Parking Garage	69,500 gsf	0 gsf	- 69,500 gsf
	225 spaces	0 spaces	- 225 spaces

Table 2
2034 No-Action and With-Action Commercial to Residential Conversion

Land Use by Quadrant	No-Action Condition [(1)]	With-Action Condition [(1)]	Net Increment [(1)]
Residential			
NE Quadrant	0 gsf	138,128 gsf	+ 138,128 gsf
	0 DUs	99 DUs	+ 99 DUs
SE Quadrant	0 gsf	158,910 gsf	+ 158,910 gsf
	0 DUs	114 DUs	+ 114 DUs
SW Quadrant	0 gsf	232,343 gsf	+ 232,343 gsf
	0 DUs	166 DUs	+ 166 DUs
NW Quadrant	0 gsf	564,427 gsf	+ 564,427 gsf
	0 DUs	403 DUs	+ 403 DUs
Total Residential	***0 gsf***	***1,093,808 gsf***	***+ 1,093,808 gsf***
	0 DUs	***782 DUs***	***+ 782 DUs***
Commercial (Office)			
NE Quadrant	138,128 gsf	0 gsf	- 138,128 gsf
SE Quadrant	158,910 gsf	0 gsf	- 158,910 gsf
SW Quadrant	232,343 gsf	0 gsf	-232,343 gsf
NW Quadrant	564,427 gsf	0 gsf	-564,427 gsf
Total Commercial (Office)	***1,093,808 gsf***	***0 gsf***	***- 1,093,808 gsf***

Notes:
[(1)] Excludes floor area on projected development sites (**Table 1**).

Table 3 shows the total anticipated No-Action and With-Action land uses on projected development sites and potential residential conversions that were assumed for the purposes of the transportation

analyses. As shown in **Table 3**, the total projected incremental change between the No-Action condition and the With-Action condition with residential conversion as a result of the Proposed Actions would be a net increase of approximately 9,786,389 gsf of residential space (9,677 DUs), approximately 462,129 gsf of local retail space, and approximately 81,755 gsf of elementary school space (approximately 238 seats). In addition, it is estimated that there would be a net decrease of approximately 1,826,427 gsf of commercial office space, approximately 52,396 gsf of warehouse space, and 17,386 gsf of light industrial space. There would also be a net decrease of approximately 69,500 gsf of parking garage space, which is conservatively not included in the travel demand forecast.

Table 3
2034 RWCDS No-Action and With-Action Land Uses (with Residential Conversion) for the Transportation Analyses

Land Use	No-Action Condition [2]	With-Action Condition	Net Increment
Residential			
Total Residential [1]	81,610 gsf	9,867,999 gsf	+ 9,786,389 gsf
	54 DUs	***9,731 DUs***	***+ 9,677 DUs***
Commercial			
Local Retail	431,623 gsf	893,752 gsf	+ 462,129 gsf
Office [1]	1,893,131 gsf	66,704 gsf	- 1,826,427 gsf
Total Commercial	***2,324,754 gsf***	***960,456 gsf***	***- 1,364,298 gsf***
Community Facility			
House of Worship	13,984 gsf	13,984 gsf	+ 0 gsf
Elementary School	0 gsf	81,755 gsf	+ 81,755 gsf
	0 seats	238 seats	+ 238 seats
Total Community Facility	***13,984 gsf***	***95,739 gsf***	***+ 81,755 gsf***
Industrial			
Light Industrial	17,386 gsf	0 gsf	- 17,386 gsf
Warehouse	52,396 gsf	0 gsf	- 52,396 gsf
Total Industrial	***69,782 gsf***	***0 gsf***	***- 69,782 gsf***

Notes:
[1] Includes commercial to residential conversion floor area (refer to **Table 2**).
[2] The No-Action RWCDS includes a 69,500 gsf parking garage, which is conservatively not included in the travel demand forecast and therefore is not reflected in the table.

TRANSPORTATION PLANNING FACTORS

The transportation planning factors used to forecast the travel demand that would be generated by the No-Action and With-Action land uses on projected development sites and with the commercial to residential conversion are summarized in **Table 4** and discussed below.

The trip generation rates, temporal distributions, modal splits, vehicle occupancies, and truck trip factors for each projected land use were primarily based on those cited in the 2021 *City Environmental Quality Review (CEQR) Technical Manual*, factors developed for recent environmental reviews in the area, American Association of State Highway and Transportation Officials (AASHTO) Census Transportation Planning Products Program (CTPP) reverse journey-to-work 5-year (2012-2016) data for Manhattan census tracts near the Affected Area, and data from other standard professional references. Factors are shown for the weekday AM and PM peak hours (typical peak periods for commuter travel demand) and the weekday midday and Saturday peak hours (typical peak periods for retail demand).

Office

Commercial office person trip rates and temporal distributions reflect data from the 2021 *CEQR Technical Manual.* Weekday modal splits and vehicle occupancies were based on the 2022 *Pennsylvania Station Area Civic and Land Use Improvement Project FEIS*. The modal splits and vehicle occupancies for the Saturday are assumed to be the same as the weekday. Directional in/out splits were based on data provided by the New York City Department of Transportation (NYCDOT). Truck trip rates and temporal distributions also reflect data from the 2021 *CEQR Technical Manual*.

Residential

Residential person trip rates and temporal distributions reflect data from the 2021 *CEQR Technical Manual*. Weekday modal splits and vehicle occupancies were based on 2022 *Pennsylvania Station Area Civic and Land Use Improvement Project FEIS*. The modal splits and vehicle occupancies for the Saturday are assumed to be the same as the weekday. Directional in/out splits were based on data provided by NYCDOT. Truck trip rates and temporal distributions also reflect data from the 2021 *CEQR Technical Manual*.

Local Retail

The trip generation rates and temporal distributions for local retail were based on data from the 2021 *CEQR Technical Manual*. Weekday vehicle occupancies were based on the 2022 *Pennsylvania Station Area Civic and Land Use Improvement Project FEIS.* Vehicle occupancies for the Saturday are assumed to be the same as the weekday. Modal splits and directional in/out splits were based on data provided by NYCDOT. Truck trip rates and temporal distributions were also based on data from the 2021 *CEQR Technical Manual*. Based on consultation with NYCDOT/NYCDCP, a 75 percent pass-by trip credit was applied to the local retail use.

Light Industrial

Factors for the light industrial use were based on data from the 2021 *Soho/Noho Neighborhood Plan FEIS* and 2012-2016 AASHTO reverse journey-to-work data for New York (Manhattan) County census tracts 58, 76, 84, 91, 95, 101, 109, 111, 113, and 115.

Warehouse

Factors for the warehouse use were based on data from NYCDCP/NYCDOT, the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition*, Land Use Code 150 (Warehousing), and 2012-2016 AASHTO reverse journey-to-work data for New York (Manhattan) County census tracts 58, 76, 84, 91, 95, 101, 109, 111, 113, and 115.

Table 4
Transportation Planning Factors

Land Use:	Office		Residential		Local Retail		Light Industrial		Warehouse		Elementary School Students		School Staff		Elementary School Parents	
Trip Generation:	(1)		(1)		(1)		(2)		(5)		(1)		(1)		(1)(9)	
Weekday	18.0		8.18		329		14.7		2.36		2.0		2.0		4.0	
Saturday	3.9		9.08		358		2.2		0.20		N/A		N/A		N/A	
	per 1,000 sf		per DU		per 1,000 sf		per 1,000 sf		per 1,000 sf		per Student		per Staff		per Parents	
Temporal Distribution:	(1)		(1)		(1)		(2)		(5)		(1)(8)		(1)		(1)(8)	
AM	12.4%		9.3%		4.8%		13.2%		10.0%		49.5%		40.0%		49.5%	
MD	11.0%		5.6%		8.0%		11.0%		9.0%		N/A		N/A		N/A	
PM	10.5%		8.5%		10.9%		14.2%		11.0%		5.0%		40.0%		5.0%	
SAT	14.1%		8.4%		11.7%		10.7%		33.0%		N/A		N/A		N/A	
Modal Splits:	(11)(12)		(11)(12)		(4)		(3)	(2)	(3)		(10)		(3)		(9)	
	AM/PM/SAT	MD	All Periods		All Periods		AM/PM/SAT	MD	All Periods		AM/MD/SAT	PM	All Periods		All Periods	
Auto	4.0%	1.5%	4.0%		4.0%		8.8%	2.0%	8.8%		2.0%	2.0%	8.8%		0.0%	
Taxi	3.0%	3.0%	3.0%		1.0%		0.6%	3.0%	0.6%		0.0%	0.0%	0.6%		0.0%	
Subway	52.0%	6.0%	42.0%		1.0%		55.9%	6.0%	55.9%		9.7%	9.7%	55.9%		10.5%	
Rail	23.0%	1.5%	6.0%		0.0%		16.0%	0.0%	16.0%		0.0%	0.0%	16.0%		0.0%	
Bus	13.0%	5.0%	3.0%		1.0%		12.1%	6.0%	12.1%		2.3%	2.3%	12.1%		2.5%	
Bike	0.0%	0.0%	0.0%		1.0%		0.8%	0.0%	0.8%		3.0%	3.0%	0.8%		0.0%	
School Bus	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%		3.0%	3.0%	0.0%		0.0%	
Walk/Other	5.0%	83.0%	42.0%		92.0%		5.8%	83.0%	5.8%		80.0%	80.0%	5.8%		87.0%	
Total	100.0%	100.0%	100.0%		100.0%		100.0%	100.0%	100.0%		100.0%	100.0%	100.0%		100.0%	
In/Out Splits:	(4)		(4)		(4)		(2)		(5)		(1)		(1)		(1)	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	86%	14%	22%	78%	52%	48%	88%	12%	77%	23%	100%	0%	100%	0%	50%	50%
MD	52%	48%	50%	50%	50%	50%	50%	50%	53%	47%	N/A	N/A	N/A	N/A	N/A	N/A
PM	16%	84%	62%	38%	50%	50%	12%	88%	27%	73%	0%	100%	0%	100%	50%	50%
SAT	48%	52%	55%	45%	50%	50%	47%	53%	64%	36%	N/A	N/A	N/A	N/A	N/A	N/A
Vehicle Occupancy:	(11)(12)		(11)(12)		(11)(12)		(3)		(3)		(8)		(3)			
Auto	1.14		1.11		1.65		1.15		1.15		1.30		1.15		N/A	
Taxi	1.40		1.40		1.40		1.15		1.15		1.30		1.15		N/A	
School Bus											35.0					
Truck Trip Generation:	(1)		(1)		(1)		(2)		(5)(6)		(8)					
Weekday	0.32		0.06		0.35		0.67		0.91		0.03		N/A		N/A	
Saturday	0.01		0.02		0.04		0.67		0.08		0.03		N/A		N/A	
	per 1,000 sf		per DU		per 1,000 sf		per 1,000 sf		per 1,000 sf		per 1,000 sf					
Truck Temporal Distribution:	(1)		(1)		(1)		(2)		(5)(7)		(8)					
AM	10.0%		12.0%		8.0%		14.0%		9.9%		9.6%		N/A		N/A	
MD	11.0%		9.0%		11.0%		9.0%		8.0%		11.0%		N/A		N/A	
PM	2.0%		2.0%		2.0%		1.0%		7.0%		1.0%		N/A		N/A	
SAT	11.0%		9.0%		11.0%		0.0%		28.0%		0.0%		N/A		N/A	
Truck In/Out Splits:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
All Periods	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%			50.0%	50.0%	N/A	N/A	N/A	N/A
AM									67%	33%						
MD									57%	43%						
PM									60%	40%						
SAT									42%	58%						

Notes:

(1) Based on 2021 *City Environmental Quality Review (CEQR) Technical Manual* .

(2) Based on *Soho/Noho Neigbhorhood Plan FEIS* (2021).

(3) Based on data from the 2012-2016 ACS Reverse Journey-to-Work census data for New York (Manhattan) County census tracts 58,76,84,91,95,101,109,111,113, and 115.

(4) Based on data provided by NYCDOT.

(5) Based on data from ITE Trip Generation Manual, 10th Edition, Land Use Code 150 (Warehousing); includes 1.51 adjustment factor based on NYCDOT survey data.

(6) Saturday truck trips adjusted as per the weekday/Saturday ratio from ITE Trip Generation Handbook, 10th Edition, Land Use Code 150, (Warehousing).

(7) Based on NYCDOT survey data.

(8) Based on *Gowannus Neigbhorhood Plan FEIS* (2021).

(9) Assumes a 1:1.3 parent-to-PS student ratio taking subway, rail, bus, and walk modes. Parent modal split adjusted for pedestrian related trips only.

(10) Based on data provided by NYCDCP.

(11) Based on *Pennsylvania Station Area Civic and Land Use Improvement Project FEIS* (2022). Modal split for Rail includes Railroad and PATH.

(12) Assumes the modal splits and vehicle occupancies for Saturday are the same as the weekday.

Elementary School

The person and truck trip generation rates and directional splits for elementary students, staff, and parents were based on data from the 2021 *CEQR Technical Manual* and the 2021 *Gowanus Neighborhood Plan FEIS*. The vehicle occupancies for the students were also based on the 2021 *Gowanus Neighborhood Plan FEIS.* The modal splits for the students and parents were based on data provided by NYCDCP. The modal splits and auto vehicle occupancy for the staff were based on American Association of State Highway and Transportation Officials (AASHTO) Census Transportation Planning Products (CTPP) reverse journey-to-work Five-Year (2012-2016) data for Manhattan census tracts in close proximity to the project site (census tracts 58, 76, 84, 91, 95, 101, 109, 111, 113, and 115). For conservative analysis purposes, it was assumed that all 238 elementary students would be present during the school day. A parent to student ratio of 1 to 1.3 was assumed for the combined student walk-only and transit (public bus and subway) mode shares for the elementary students. A staff to student ratio of 1 to 10 was also assumed.

TRIP GENERATION

The net incremental change in person and vehicle trips expected to result from the Proposed Actions by the 2034 analysis year was derived based on the net change in land uses shown in **Table 3** and the transportation planning factors shown in **Table 4**. **Table 5** shows an estimate of the net incremental change in peak hour person trips and vehicle trips, (versus the No-Action condition) that would occur in 2034 with implementation of the Proposed Actions. It should be noted that for travel demand forecasting and trip assignment purposes, the residential conversion sites were grouped in a total of 25 "clusters." These clusters were defined based on the rezoning area roadway network characteristics and the likely travel routes of vehicle trips to and from the residential conversion sites. As shown in **Table 5**, under the RWCDS with the residential conversion, the Proposed Actions would generate a net increase of approximately 5,672 person trips in the weekday AM peak hour, 3,846 in the weekday midday, 7,460 in the weekday PM peak hour and 11,240 in the Saturday peak hour.

Peak hour vehicle trips (including auto, truck, and taxi trips balanced to reflect that 50 percent of the inbound taxis would not depart empty) would increase by a net total of approximately 360, 351, 436, and 736 (in and out combined) in the weekday AM, midday and PM, and Saturday peak hours, respectively. Peak hour bike trips would increase by a net total of approximately 7, 0, 1, and 0 trips during these periods.

Peak hour subway trips would increase by a net total of approximately 987, 1,653, 992, and 2,563 trips during the weekday AM, midday, and PM, and Saturday peak periods, respectively. Peak hour trips by rail would experience a net incremental change of approximately -512, 223, -403, and 206 trips during the weekday AM, midday, and PM, and Saturday peak hours, respectively. Lastly, transit bus trips would decrease by approximately 302, 24, and 215 trips during the weekday AM, midday, and PM peak periods, respectively and increase by approximately 126 trips during the Saturday peak period. Lastly, walk-only trips would increase by 5,163, 1,649, 6,618, and 7,603 trips during the weekday AM, midday and PM, and Saturday peak hours, respectively.

Table 5
Travel Demand Forecast - RWCDS with Residential Conversion

Land Use:	Office		Residential		Local Retail		Light Industrial		Warehouse		Elementary School		School Staff		Elementary School Parents		Total	
Size/Units:	-1,826,427 gsf		9,677 DU		462,129 gsf		-17,386 gsf		-52,396 gsf		238 students 81,755 gsf		24 staff		168 parents			
Peak Hour Trips:																		
AM	-4,114		7,400		1,848		-34		-18		236		20		334		5,672	
Midday	-3,652		4,478		3,064		-30		-14		0		0		0		3,846	
PM	-3,496		6,772		4,164		-38		-20		24		20		34		7,460	
Saturday	-1,030		7,418		4,860		-6		-2		0		0		0		11,240	
Person Trips:																		
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-137	-13	67	228	30	27	-3	0	0	0	5	0	2	0	0	0	-36	242
Taxi	-103	-7	38	168	5	5	0	0	0	0	0	0	0	0	0	0	-60	166
Subway	-1,882	-301	693	2,435	5	5	-18	-3	-17	-1	23	0	12	0	18	18	-1,166	2,153
Rail	-823	-127	99	341	0	0	-5	0	0	0	0	0	3	0	0	0	-726	214
Bus	-460	-71	39	169	5	5	-4	0	0	0	5	0	2	0	4	4	-409	107
Bike	0	0	0	0	5	5	0	0	0	0	7	0	0	0	0	0	12	5
School Bus	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	0
Walk/Other	-170	-20	690	2,433	900	851	-1	0	0	0	189	0	1	0	145	145	1,754	3,409
Total	-3,575	-539	1,626	5,774	950	898	-31	-3	-17	-1	236	0	20	0	167	167	-624	6,296
MD	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-18	-15	90	90	61	61	0	0	0	0	0	0	0	0	0	0	133	136
Taxi	-50	-50	72	72	8	8	0	0	0	0	0	0	0	0	0	0	30	30
Subway	-114	-103	935	935	8	8	-1	-1	-7	-7	0	0	0	0	0	0	821	832
Rail	-18	-15	128	128	0	0	0	0	0	0	0	0	0	0	0	0	110	113
Bus	-96	-86	72	72	8	8	-1	-1	0	0	0	0	0	0	0	0	-17	-7
Bike	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	8	8
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk/Other	-1,598	-1,489	942	942	1,439	1,439	-13	-13	0	0	0	0	0	0	0	0	770	879
Total	-1,894	-1,758	2,239	2,239	1,532	1,532	-15	-15	-7	-7	0	0	0	0	0	0	1,855	1,991
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-13	-116	162	102	83	83	0	-3	0	0	0	0	0	2	0	0	232	68
Taxi	-7	-87	122	82	14	14	0	0	0	0	0	0	0	0	0	0	129	9
Subway	-292	-1,562	1,756	1,087	14	14	-3	-20	-1	-19	0	2	0	12	2	2	1,476	-484
Rail	-125	-682	252	155	0	0	-1	-5	0	0	0	0	0	3	0	0	126	-529
Bus	-67	-380	123	82	14	14	0	-4	0	0	0	1	0	2	0	0	70	-285
Bike	0	0	0	0	14	14	0	0	0	0	0	1	0	0	0	0	14	15
School Bus	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Walk/Other	-17	-148	1,755	1,094	1,943	1,943	0	-2	0	0	0	19	0	1	15	15	3,696	2,922
Total	-521	-2,975	4,170	2,602	2,082	2,082	-4	-34	-1	-19	0	24	0	20	17	17	5,743	1,717
SAT	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-7	-8	160	127	97	97	0	0	0	0	0	0	0	0	0	0	250	216
Taxi	-7	-7	119	100	18	18	0	0	0	0	0	0	0	0	0	0	130	111
Subway	-282	-315	1,722	1,410	18	18	-3	-3	-1	-1	0	0	0	0	0	0	1,454	1,109
Rail	-113	-124	245	198	0	0	0	0	0	0	0	0	0	0	0	0	132	74
Bus	-56	-73	119	100	18	18	0	0	0	0	0	0	0	0	0	0	81	45
Bike	0	-1	0	0	18	18	0	0	0	0	0	0	0	0	0	0	18	17
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk/Other	-16	-21	1,714	1,404	2,261	2,261	0	0	0	0	0	0	0	0	0	0	3,959	3,644
Total	-481	-549	4,079	3,339	2,430	2,430	-3	-3	-1	-1	0	0	0	0	0	0	6,024	5,216

***Note**: 75% pass-by trip credit applied to local retail use.*
50% of taxis inbound with passengers are assumed to depart with outbound passengers.

Table 5
Travel Demand Forecast - RWCDS with Residential Conversion (continued)

Land Use:	Office		Residential		Local Retail		Light Industrial		Warehouse		Elementary School		School Staff		Elementary School Parents		Total	
Size/Units:	-1,826,427 gsf		9,677 DU		462,129 gsf		-17,386 gsf		-52,396 gsf		238 students 81,755 gsf		24 staff		168 parents			
Peak Hour Trips:																		
AM	-4,114		7,400		1,848		-34		-18		236		20		334		5,672	
Midday	-3,652		4,478		3,064		-30		-14		0		0		0		3,846	
PM	-3,496		6,772		4,164		-38		-20		24		20		34		7,460	
Saturday	-1,030		7,418		4,860		-6		-2		0		0		0		11,240	
Vehicle Trips :																		
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-130	-13	66	218	23	20	-3	0	0	0	4	4	2	0	0	0	-38	229
Taxi (Balanced)	-79	-79	149	149	10	10	0	0	0	0	0	0	0	0	0	0	80	80
Truck	-19	-19	22	22	2	2	-1	-1	-1	0	0	0	0	0	0	0	3	4
School Bus	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
Total	-228	-111	237	389	35	32	-4	-1	-1	0	5	5	2	0	0	0	46	314
MD	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-18	-15	89	89	46	46	0	0	0	0	0	0	0	0	0	0	117	120
Taxi (Balanced)	-82	-82	130	130	14	14	0	0	0	0	0	0	0	0	0	0	62	62
Truck	-24	-24	14	14	5	5	0	0	0	0	0	0	0	0	0	0	-5	-5
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-124	-121	233	233	65	65	0	0	0	0	0	0	0	0	0	0	174	177
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-13	-109	158	101	60	60	0	-3	0	0	0	0	0	2	0	0	205	51
Taxi (Balanced)	-77	-77	143	143	22	22	0	0	0	0	0	0	0	0	0	0	88	88
Truck	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
School Bus	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
Total	-90	-186	302	245	82	82	0	-3	0	0	1	1	0	2	0	0	295	141
SAT	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-7	-8	156	125	67	67	0	0	0	0	0	0	0	0	0	0	216	184
Taxi (Balanced)	-14	-14	156	156	25	25	0	0	0	0	0	0	0	0	0	0	167	167
Truck	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-21	-22	313	282	92	92	0	0	0	0	0	0	0	0	0	0	384	352

***Note**: 75% pass-by trip credit applied to local retail use.*
50% of taxis inbound with passengers are assumed to depart with outbound passengers.

Additionally, **Table 6** shows the net incremental change in peak hour vehicle trips (auto, taxi and truck) that would be generated by each of the 61 projected development sites as well as the anticipated residential conversion sites during the weekday AM, midday and PM, and Saturday peak hours. For the Level 1 screening assessment, incremental vehicle trips for the residential conversion sites are grouped together by each of the four Affected Area quadrants (refer to **Figure 1**). As shown in **Table 6**, Projected Development Site 49 would generate the greatest number of new vehicle trips, with up to 67 incremental vehicle trips per hour. Projected Development Sites 40 and 52 would generate the next highest number of incremental trips, with up to 43 and 32 vehicle trips per hour, respectively. Under the RWCDS, there would be net decreases in vehicle trips during all analyzed peak hours at the four Affected Area quadrants for the residential conversion sites with the exception of the northeast, southeast, and northwest quadrant during the Saturday peak hour, due to the reduction in office space on the conversion sites compared to the No-Action condition.

Table 6
Net Incremental Vehicle Trips – Total Affected Area

Location [1]	Weekday Peak Hour			Saturday Peak Hour
	AM	MD	PM	
PD Site 1	3	4	6	9
PD Site 2	5	2	5	10
PD Site 3	6	14	9	21
PD Site 4	7	8	9	8
PD Site 5	7	8	10	13
PD Site 6	6	8	8	13
PD Site 7	13	10	11	11
PD Site 8	7	6	7	7
PD Site 9	5	6	7	7
PD Site 10	0	0	5	8
PD Site 11	1	4	5	8
PD Site 12	3	4	6	9
PD Site 13	2	4	5	8
PD Site 14	4	2	6	6
PD Site 15	3	0	3	9
PD Site 16	19	8	10	6
PD Site 17	5	6	6	6
PD Site 18	10	6	5	10
PD Site 19	27	24	23	25
PD Site 20	1	4	5	8
PD Site 21	6	8	11	12
PD Site 22	4	6	8	8
PD Site 23	4	2	6	6
PD Site 24	0	0	0	0
PD Site 25	7	8	6	10
PD Site 26	2	8	5	8
PD Site 27	2	0	4	6
PD Site 28	3	2	4	8
PD Site 29	4	8	8	8
PD Site 30	3	0	6	8
PD Site 31	5	6	6	10
PD Site 32	15	18	15	19
PD Site 33	16	16	18	29
PD Site 34	2	8	6	9
PD Site 35	12	10	13	18
PD Site 36	9	2	5	9
PD Site 37	3	4	6	8
PD Site 38	5	8	9	9
PD Site 39	7	8	9	9
PD Site 40	43	20	26	25
PD Site 41	7	4	6	10
PD Site 42	11	8	7	10
PD Site 43	9	6	4	8
PD Site 44	3	2	4	8
PD Site 45	10	8	13	16
PD Site 46	27	22	24	26
PD Site 47	3	6	6	15
PD Site 48	15	8	8	12
PD Site 49	67	48	58	67
PD Site 50	2	4	6	9
PD Site 51	5	8	6	10
PD Site 52	31	28	29	32
PD Site 53	16	14	13	17
PD Site 54	4	2	6	6
PD Site 55	9	6	7	11
PD Site 56	5	8	8	8
PD Site 57	2	6	5	8
PD Site 58	2	8	6	9
PD Site 59	2	8	6	9
PD Site 60	1	8	7	8
PD Site 61	3	4	4	4
PD Site 62	10	8	9	10
NE Quadrant [2]	-22	-25	-17	1
SE Quadrant [2]	-25	-29	-22	0
SW Quadrant [2]	-37	-38	-31	-1
NW Quadrant [2]	-86	-51	-58	2
Total Project Area [3]	**360**	**351**	**436**	**736**

Notes:
[1] "PD" refers to Projected Development Sites.
[2] Inclusive of residential conversion sites; excludes projected development sites.
[3] Summation of net vehicle trips generated for projected development and residential conversion sites.

LEVEL 1 SCREENING ASSESSMENT

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 of this memorandum, the preliminary analysis begins with a trip generation (a Level 1 screening assessment) analysis to estimate the numbers of person and vehicle trips attributable to a proposed action. According to the *CEQR Technical Manual*, if a proposed action is expected to result in fewer than 50 peak hour vehicle or ferry 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 (a Level 2 screening assessment) are to be performed to estimate the incremental trips that could occur at specific transportation elements and to identify potential locations for further analysis. If the trip assignments demonstrate that a proposed action would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, 25 or more peak hour trips by Citywide Ferry Service ("CWFS") in a single direction on a single route or 50 or more at a ferry landing, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area, or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrian, vehicular and pedestrian safety, and parking conditions.

Traffic

Based on *CEQR Technical Manual* guidelines, a quantified traffic analysis is typically required if a proposed action would result in 50 or more vehicle trip ends in a peak hour at one or more intersections. As shown in **Table 6**, the net number of incremental vehicle trips – 360, 351, 436, and 736 – would exceed the 50-trip threshold for vehicles in the weekday AM, midday, PM, and Saturday periods, respectively. Therefore, a Level 2 screening analysis is warranted for all periods to determine which intersections would require a quantified analysis.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority and specified in the *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 route 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 and/or subway analysis would be warranted. 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.

As shown in **Table 5**, the Proposed Actions are expected to generate an increase of approximately 987 and 992 subway trips in the weekday AM and PM peak hour, respectively. As these number of incremental subway trips exceeds the 200-trip threshold in either peak period, a Level 2 screening analysis is warranted to determine which if any subway station and routes would require quantified analysis.

Additionally, as also shown in **Table 5**, the Proposed Actions are expected to result in a net decrease of 302 and 215 bus trips in the weekday AM and PM peak hours, as well as a net decrease of 512 and 403 rail trips in the same peak hours. As such, significant impacts to surrounding bus stops and rail stations

are not anticipated as a result of the Proposed Actions, and detailed bus and rail analyses are not warranted.

Pedestrians

According to *CEQR Technical Manual* guidelines, a quantified analysis of pedestrian conditions is typically required if a proposed action would result in 200 or more peak hour pedestrian trips at any pedestrian element (sidewalk, corner area, or crosswalk). As shown in **Table 5**, the Proposed Actions would generate approximately 5,336, 3,501, 6,992 and 10,498 total pedestrian trips (including walk-only trips and pedestrians en route to/from nearby subway stations, rail stations, and bus stops) in the weekday AM, weekday midday, weekday PM, and Saturday peak hours, respectively. As these trips would exceed the 200-trip threshold in all periods, a Level 2 screening analysis is warranted to determine which pedestrian elements would require quantified analysis.

LEVEL 2 SCREENING ASSESSMENT

As discussed above, when Level 1 screening analysis thresholds are exceeded, detailed trip assignments (a Level 2 assessment) are performed to estimate the incremental trips that could occur at specific transportation elements and to identify potential locations for further analysis. As the Level 1 screening analysis thresholds were exceeded for traffic, subway, and pedestrians, Level 2 screening assessments for these modes were prepared and are discussed below. If the trip assignments show that the Proposed Actions would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak-hour subway trips at a subway station, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, subway, and pedestrian conditions.

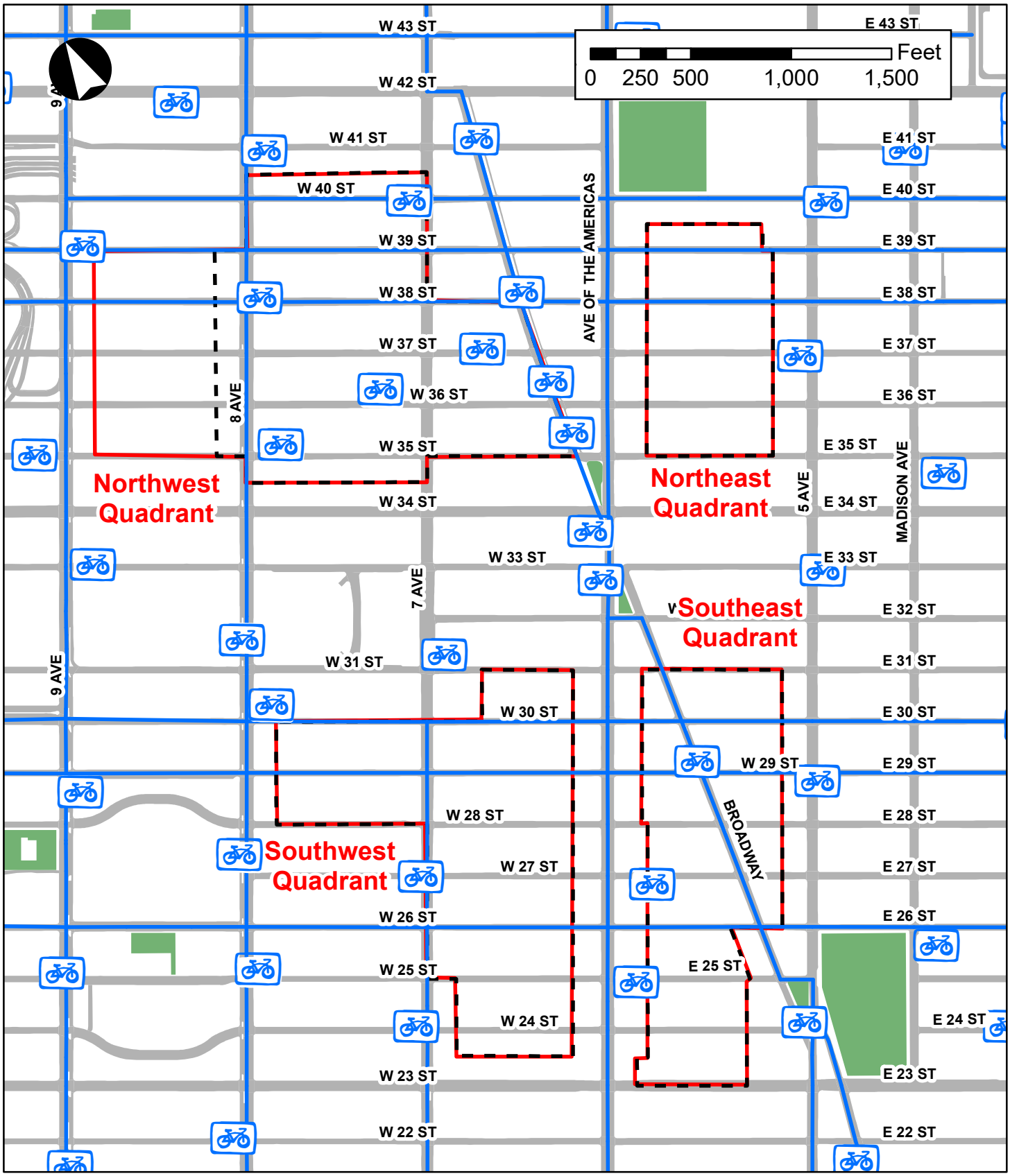
Traffic

Affected Area Street Network

As shown in **Figure 1**, the street network serving the Affected Area is comprised of an irregular street grid, typical for this area of Manhattan. As discussed above, the Affected Area encompasses an approximately 141-acre, 42-block area, consisting of four noncontiguous manufacturing-zoned areas ("quadrants") roughly bounded by 40th Street to the north, Fifth Avenue to the east, 23rd Street to the south, and Ninth Avenue to the west.

Specifically, the northwest quadrant is generally bounded by West 40th Street to the north, Broadway to the east, and West 35th Street to the south, and Eighth And Ninth Avenues to the west for the Rezoning Area and Affected Area, respectively. **East/West 40th Street** is a one-way eastbound street that extends across Manhattan from West Street/12th Avenue to First Avenue. It typically operates with two moving lanes, a conventional bicycle lane, and curbside parking along one or both curbs. **Broadway** extends the length of Manhattan from Bowling Green to Inwood where it bridges the Harlem River and continues into The Bronx. It is closed to vehicular traffic for multiple segments within the Affected Area, including between West 24th And West 25th Streets, West 26th And West 27th Streets, West 32nd and West 35th Streets, West 39th And West 40th Streets, and between West 42nd and West 47th Streets. As part of the Broadway Vision project, within the Affected Area, Broadway is a two-way bike boulevard from West 25th Street to West 32nd Street (refer to **Figure 2** for the bike network). North of West 35th Street,

Bike Routes and Citi Bike Stations



Legend

Rezoning Area | Affected Area | Citi Bike Stations | Bike Routes

Broadway typically operates one-way southbound with one moving lane, a conventional or protected bicycle lane, and curbside parking along one or both curbs. South of East 14th Street, Broadway operates with two moving lanes for general traffic, an exclusive bus lane, a conventional bicycle lane, and curbside parking. At bus stop locations, the west sidewalk has been extended into the parking lane to allow buses to board/discharge passengers from the bus lane. A number of local and express bus services traverse Broadway south of the Affected Area. South of West 31st Street, Broadway is also a designated Local Truck Route. **East/West 35th Street** is a one-way westbound street that extends across Manhattan from Marginal Street to 11th Avenue. It typically operates with two moving lanes, a conventional bicycle lane, and curbside parking along one or both curbs. **Eighth Avenue** is a one-way northbound street that branches off Hudson Street in the West Village and extends to West 59th Street/Columbus Circle, where it becomes Central Park West. North of Frederick Douglass Circle, it resumes as Eighth Avenue (also known as Frederick Douglass Boulevard) and ends north of 155th Street where it merges into the Harlem River Drive. In the Affected Area, Eighth Avenue typically operates with two to three moving lanes, a protected bicycle lane, and curbside parking along one or both sides. The NYCT M20 local bus route operates along Eighth Avenue between the West Village and Columbus Circle. Eighth Avenue is also a designated Local Truck Route south of Central Park South. **Ninth Avenue** is a one-way southbound principal arterial that continues as Columbus Avenue north of West 59th Street and Hudson Street south of West 14th Street. It typically operates with four moving lanes, a protected bicycle lane, and curbside parking along both curbs. The NYCT M11 local bus route operates along Ninth Avenue operates along Ninth Avenue between West 14th Street and West 110th Street. Ninth Avenue is also a designated Local Truck Route.

The northeast quadrant is generally bounded by West 39th Street to the north, Fifth Avenue to the east, West 35th Street to the south, and Sixth Avenue (Avenue of the Americas) to the west. **East/West 39th Street** is a one-way westbound street that extends across Manhattan from First Avenue to 11th Avenue. It typically operates with two moving lanes, a protected bicycle lane, and curbside parking along one or both curbs.

Fifth Avenue is north-south thoroughfare extending from West 143rd Street in Harlem to Washington Square Park in Greenwich Village. In the Affected Area, Fifth Avenue operates in the southbound direction with two to three moving lanes, one to two dedicated bus lanes, and curbside parking along one or both sides. Multiple local MTA bus routes operate along Fifth Avenue, including the M1, M2, M3, M4, and M5 bus routes. South of West 23rd Street, Fifth Avenue has a protected bicycle lane on the eastern curb. Parallel to Fifth Avenue is northbound **Sixth Avenue** (also known as Avenue of the Americas), which branches off from Church Street in Tribeca and continues north to West 59th Street in Midtown. Within the Affected Area, it typically operates with three to four moving lanes plus a protected bicycle lane, bus lane, and parking along one or both curbs. Multiple NYCT local and express buses traverse Sixth Avenue through the Affected Area. South of West 31st Street, it is also designated as a Local Truck Route.

The southwest quadrant is generally bounded by West 31st Street to the north, Sixth Avenue to the east, West 23rd Street to the south, and Eighth Avenue to the west while the southeast quadrant is generally bounded by West 31st Street to the north, Fifth Avenue to the east, West 23rd Street to the south, and Sixth Avenue to the west. **East/West 31st Street** is a one-way westbound street that extends across Manhattan from Second Avenue to 10th Avenue. It typically operates with one moving lane and curbside parking along one or both curbs. Within the Affected Area, it is designated as a Local Truck Route. **East/West 23rd Street** is a two-way east-west throughfare that runs across Manhattan between the FDR Drive and 11th Avenue. In the Affected Area, West 23rd Street operates with one moving lane for general

traffic and one dedicated bus lane in each direction as well as curbside parking along both curbs. It is also designated as a Local Truck Route.

Seventh Avenue runs between the northwest and southwest quadrants within the Affected Area. It begins at West 59th Street in Midtown and operates one-way southbound to Carmine Street where it continues as Varick Street until merging with West Broadway in Tribeca. In the Affected Area, Seventh Avenue typically operates with three moving lanes, a parking lane along the west curb. Within the Affected Area, there is a protected bicycle lane along the east curb of the Seventh Avenue corridor north of West 42nd Street and south of West 30th Street. NYCT M7 and M20 local buses traverse Seventh Avenue. It is also designated as a Local Truck Route south of West 31st Street. **East/West 42nd Street** is a two-way east-west throughfare that extends across Manhattan between the FDR Drive and West Street/12th Avenue. In the vicinity of the Affected Area, West 42nd Street typically operates with one moving lane for general traffic and one dedicated bus lane in each direction as well as curbside parking along both curbs. Multiple local and express NYCT buses traverse along 42nd Street. It is designated a Local Truck Route east of Ninth Avenue and a Through Truck Route between Ninth And 11th Avenues. **East/West 34th Street** is another two-way east-west throughfare that runs across Manhattan between the FDR Drive and West Street/12th Avenue. Near the Affected Area, West 34th Street typically operates with one moving lane for general traffic and one dedicated bus lane in each direction as well as curbside parking along one or both curbs. Multiple local and express NYCT buses traverse along 34th Street. It is designated as a Through Truck Route.

Two additional roadways of note that are located outside of the Affected Area are West Street/12th Avenue and the Franklin Delano Roosevelt (FDR) Drive. **West Street/12th Avenue (Route 9A**) runs along Manhattan's Hudson River waterfront from The Battery to West 57th Street, north of which it continues as the Henry Hudson Parkway. In the vicinity of the Affected Area, it operates with three to four moving lanes in each direction. Route 9A provides access to a number of river crossings including (south to north) the Hugh L. Carey (Brooklyn-Battery) Tunnel to Brooklyn, the Holland and Lincoln tunnels and George Washington Bridge to New Jersey, and the Henry Hudson Bridge to The Bronx. Northbound NYCT M12 buses use West Street/12th Avenue from West 14th Street to West 57th Street, and M50 buses traverse the corridor in both directions between West 42nd Street and West 50th Street. West Street/12th Avenue is designated as a Through Truck Route from The Battery to West 34th Street, and as a Local Truck route from West 34th Street to West 57th Street. Trucks are prohibited from using the Henry Hudson Parkway.

To the east of the Affected Area is the **FDR Drive**, a limited-access parkway restricted to non-commercial vehicles that runs along Manhattan's East River waterfront from South Ferry in Lower Manhattan to the RFK (Triborough) Bridge. En route it provides direct access to/from the Brooklyn Bridge. North of the RFK Bridge, the parkway becomes the Harlem River Drive which continues along the west bank of the Harlem River to Tenth Avenue and Dyckman Street in Inwood and provides access to and from the George Washington Bridge (I-95) to New Jersey.

Most other roadways comprising the Affected Area street network typically provide local access and operate one-way with one to two moving lanes and parking along one or both curbs.

Traffic Assignment and Analyzed Intersections

As shown in **Table 6** and discussed above, the Proposed Actions' RWCDS is expected to result in a net incremental increase of approximately 360, 351, 436, and 736 vehicle trips (including auto, taxi, and truck trips) in the weekday AM, midday, and PM and Saturday peak hours, respectively. As these traffic

volumes exceed 50 trips in each peak hour (the *CEQR Technical Manual* Level 1 screening threshold for a detailed analysis), an assignment of these incremental traffic volumes was prepared for each period to help identify individual intersections for analysis (a Level 2 screening assessment).

The assignments of auto and taxi trips to the street network in proximity to the Affected Area were based on the locations of each projected development site and conversion site cluster within each quadrant and the anticipated origins and destinations of vehicle trips associated with the different land uses under the RWCDS. **Table 7** shows the directional distributions of incremental auto and taxi trips by land use based on the origin/destination data. The origins/destinations of residential trips are based on 2015-2019 ACS journey-to-work data for New York (Manhattan) County census tracts 58, 76, 84, 91, 95, 101, 109, 111, 113, and 115, while origins/destinations of office, light industrial, warehouse, and elementary school (staff) uses are based on 2012-2016 reverse journey-to-work data for the same tracts. Origins/destinations for uses that generate mostly local trips, including local retail and elementary school, were based on population density in proximity to the Affected Area and surrounding neighborhoods within a half-mile radius. Although much of the project-generated auto demand is expected to park at off-street public parking facilities in the area or on-street, auto trips were assigned directly to their respective projected development sites. This can be considered a conservative approach with respect to the traffic impact analysis as it concentrates project traffic at analyzed intersections in proximity to the Affected Area rather than dispersing it to outlying public parking facilities in the adjacent neighborhoods.

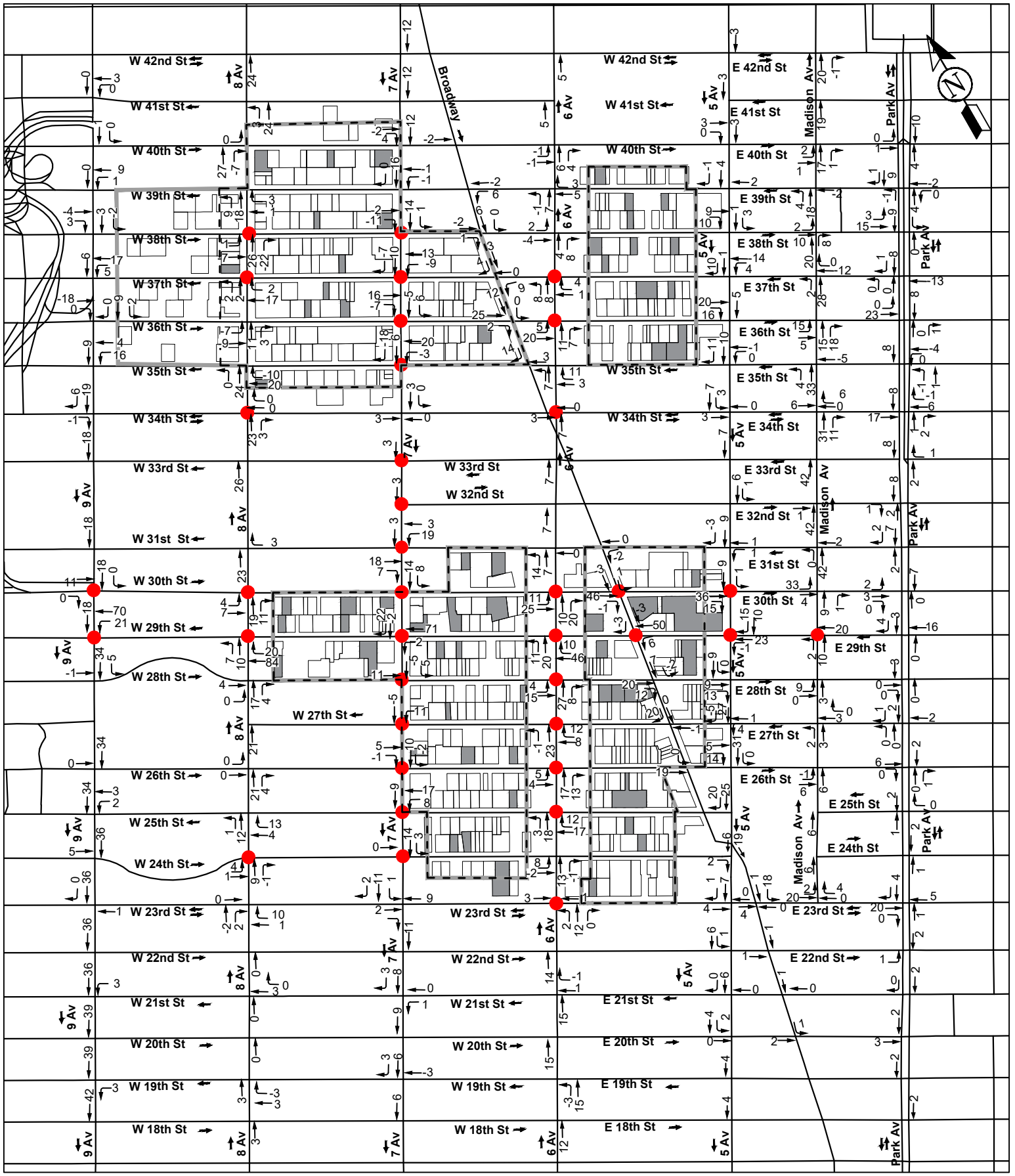
Using the distributions shown in **Table 7**, auto and taxi trips were first assigned to various portals on the periphery of the Affected Area and from there via the most direct route to each projected development site and conversion site clusters. Truck trips en route to and from each site were assigned to designated through and local truck routes and then to the most direct paths to and from the projected sites and conversion site clusters.

Table 7
Directional Distribution of Auto/Taxi Trips by Land Use

Land Use	Manhattan				Brooklyn	Bronx	Queens	Long Island	Staten Island	New Jersey/ MD/PA	Upstate NY/ CT/MA
	N	S	E	W							
Residential	17%	9%	0%	3%	11%	0%	0%	18%	0%	24%	18%
Office/ Light Industrial/ Warehouse/ Elementary School Staff	5%	2%	1%	1%	11%	7%	14%	12%	3%	32%	13%
Local Retail/ Elementary School Students	8%	25%	43%	24%	---	---	---	---	---	---	---

Figures 3a through 3d show the assignment of net incremental peak hour vehicle trips from the Proposed Actions' RWCDS at intersections in proximity to the Affected Area in the weekday AM, midday, and PM and Saturday peak hours, respectively. The assignment helps to identify potential intersections that would exceed the 50-trip threshold. 37 representative intersections (all signalized) were selected for a detailed analysis as shown in **Figures 3a through 3d** and listed below. These locations were selected based on consultation and coordination with NYCDCP and NYCDOT.

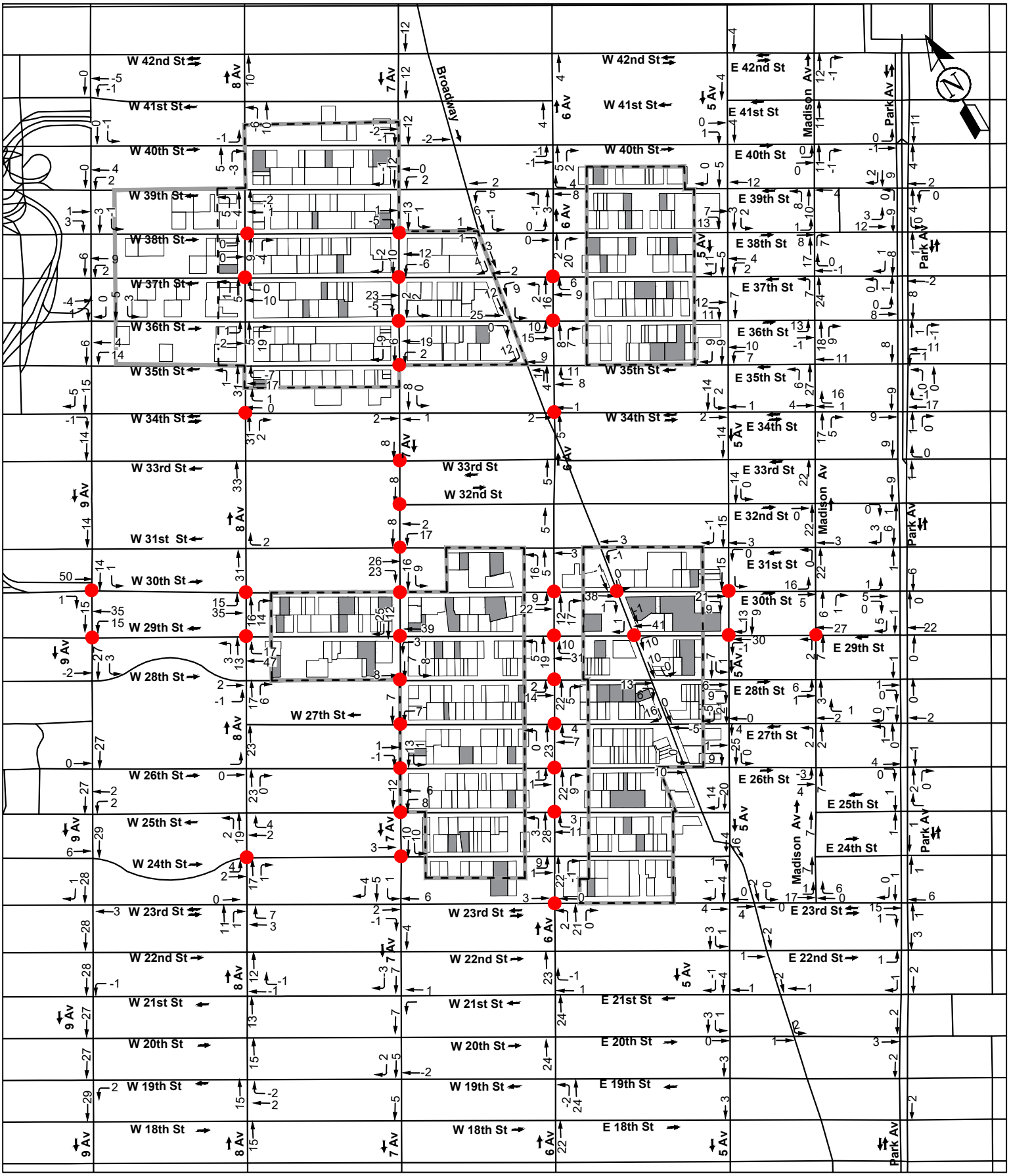
Weekday AM Peak Hour Incremental Project Traffic Volumes



LEGEND

- Affected Area
- Projected Development Sites
- Potential Conversion Sites
- Rezoning Area
- Analyzed Traffic Location
- 2 = Weekday AM Incremental Project Traffic Volume

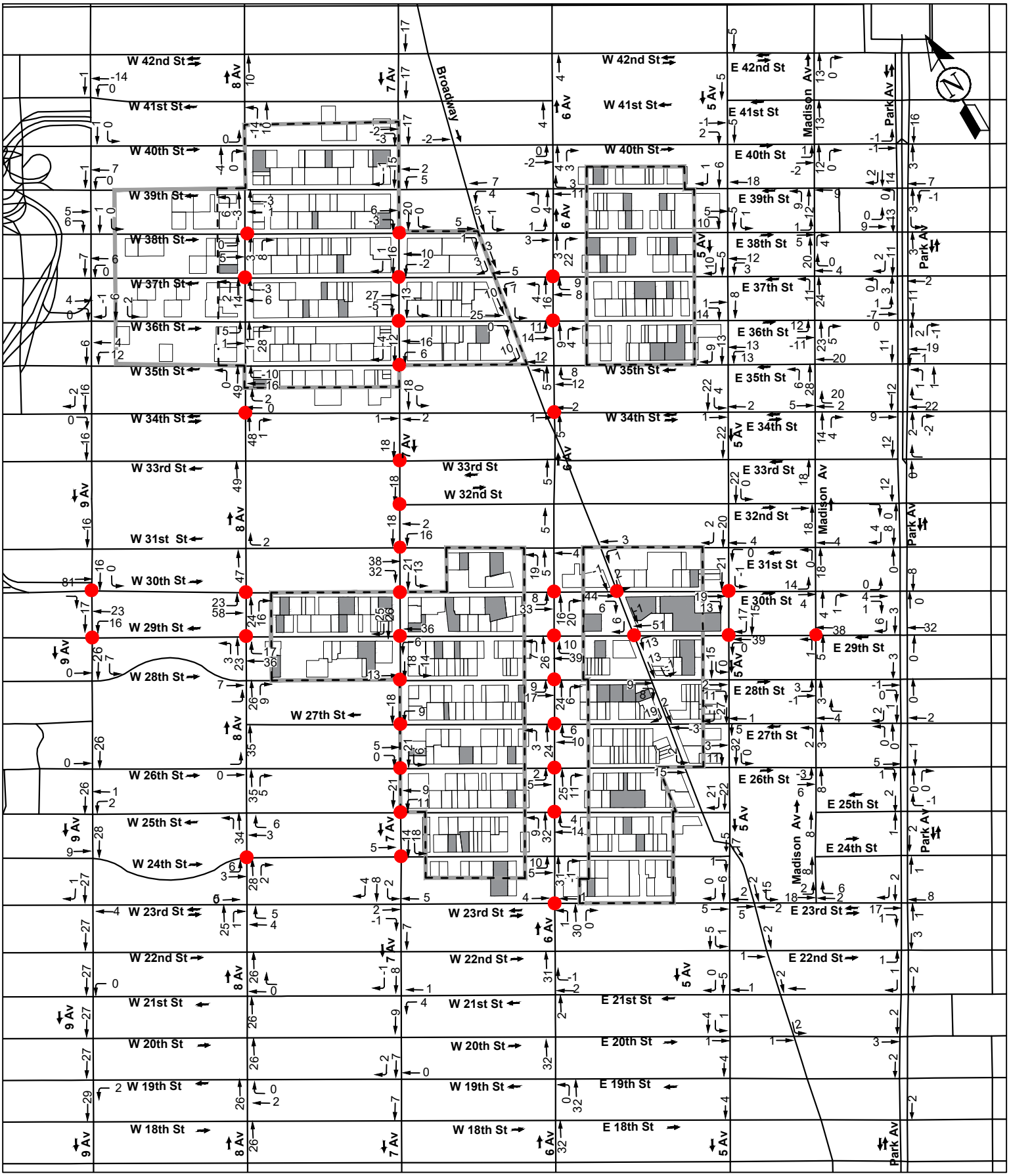
Weekday Midday Peak Hour Incremental Project Traffic Volumes



LEGEND

- Affected Area
- Projected Development Sites
- Potential Conversion Sites
- Rezoning Area
- Analyzed Traffic Location
- 2 = Weekday MD Incremental Project Traffic Volume

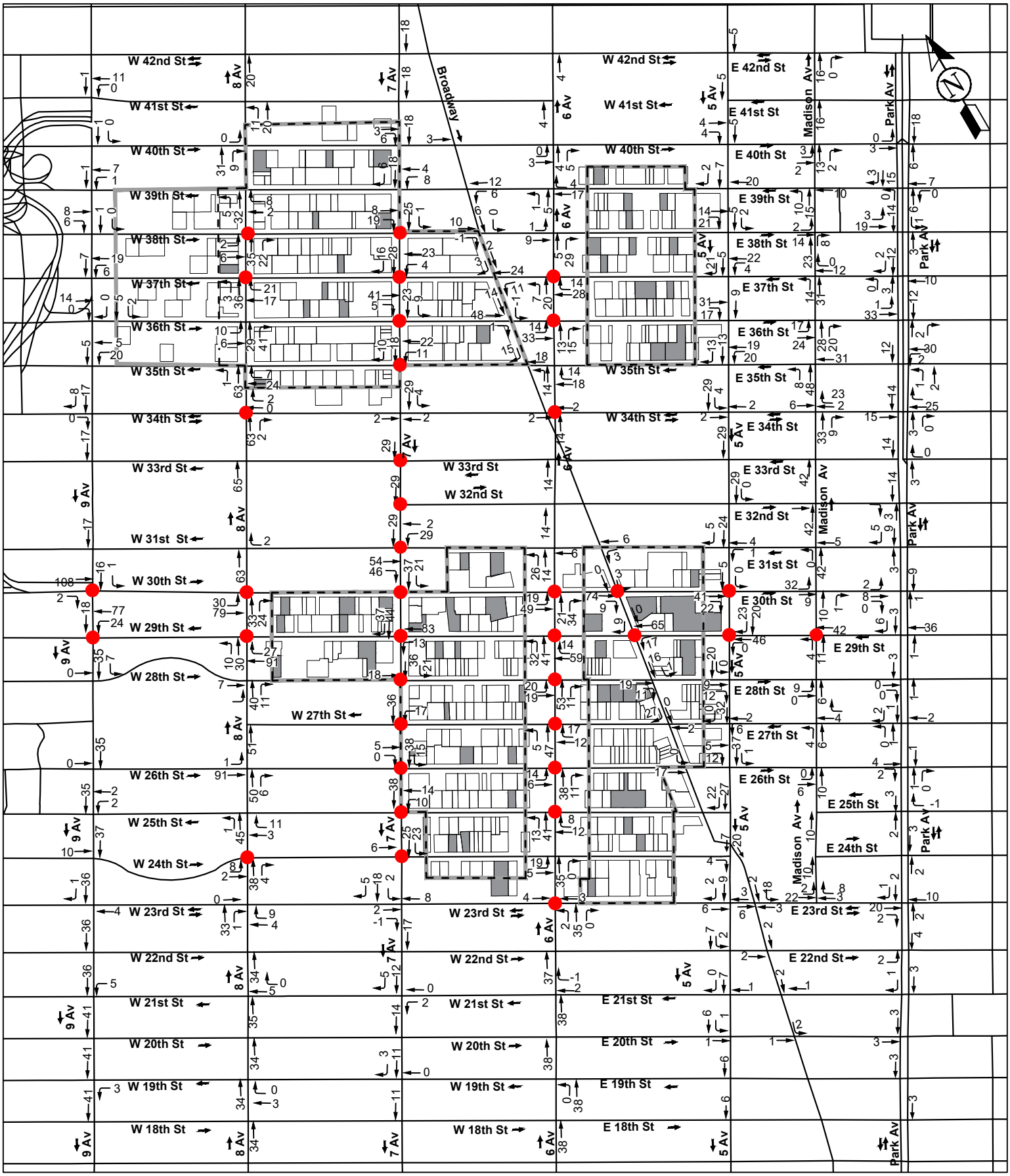
Weekday PM Peak Hour Incremental Project Traffic Volumes



LEGEND

- Affected Area
- Projected Development Sites
- Potential Conversion Sites
- Rezoning Area
- Analyzed Traffic Location
- 2 = Weekday PM Incremental Project Traffic Volume

Saturday Peak Hour Incremental Project Traffic Volumes



LEGEND

- Affected Area
- Projected Development Sites
- Potential Conversion Sites
- Rezoning Area
- Analyzed Traffic Location
- 2 = Saturday Incremental Project Traffic Volume

Analyzed Traffic Locations

Signalized Intersections

1. Madison Avenue at East 29th Street
2. Fifth Avenue at East 29th Street
3. Fifth Avenue at East 30th Street
4. Broadway at West 29th Street
5. Broadway at West 30th Street
6. Sixth Avenue at West 23rd Street
7. Sixth Avenue at West 25th Street
8. Sixth Avenue at West 26th Street
9. Sixth Avenue at West 27th Street
10. Sixth Avenue at West 28th Street
11. Sixth Avenue at West 29th Street
12. Sixth Avenue at West 30th Street
13. Sixth Avenue at West 34th Street
14. Sixth Avenue at West 36th Street
15. Sixth Avenue at West 37th Street
16. Seventh Avenue at West 24th Street
17. Seventh Avenue at West 25th Street
18. Seventh Avenue at West 26th Street
19. Seventh Avenue at West 27th Street
20. Seventh Avenue at West 28th Street
21. Seventh Avenue at West 29th Street
22. Seventh Avenue at West 30th Street
23. Seventh Avenue at West 31st Street
24. Seventh Avenue at West 32nd Street
25. Seventh Avenue at West 33rd Street
26. Seventh Avenue at West 35th Street
27. Seventh Avenue at West 36th Street
28. Seventh Avenue at West 37th Street
29. Seventh Avenue at West 38th Street
30. Eighth Avenue at West 24th Street
31. Eighth Avenue at West 29th Street
32. Eighth Avenue at West 30th Street
33. Eighth Avenue at West 34th Street
34. Eighth Avenue at West 37th Street
35. Eighth Avenue at West 38th Street
36. Ninth Avenue at West 29th Street
37. Ninth Avenue at West 30th Street

TRANSIT

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual,* detailed transit analyses are required if a proposed action is projected to result in greater than 200 peak hour subway riders. If a proposed action would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a subway analysis would be warranted.

Subway Analysis

Subway Stations

There are a total of fourteen NYCT subway stations or station complexes in proximity to projected development sites that are expected to experience new demand as a result of the Proposed Actions. These stations, which are all below-grade, are shown in **Figure 4** and **Table 8**, along with the subway routes serving each facility. As shown in **Figure 4**, No. 6 trains operating in local service on the Lexington Avenue Line serve two stations along the east side of the Affected Area. These include the 28th Street and 33rd Street stations, all of which are located beneath Park Avenue South. No. 7 trains operating on the Flushing Line serve two stations along the north side of the Affected Area – 42nd Street-Times Square and 5th Avenue. Also located along the north side of the Affected Area is the 42nd Street Shuttle, which is located beneath 42nd Street and connects Times Square and Grand Central.

R and W local trains operating on the Broadway Line serve four stations within the Affected Area—23rd Street, 28th Street, 34th Street-Herald Square, and 42nd Street-Times Square—all of which are located beneath Broadway. N and Q trains provide express service along the Broadway Line via the 34th Street-Herald Square and 42nd Street-Times Square stations.

F and M local trains operating on the Sixth Avenue Line serve three stations within the Affected Area—23rd Street, 34th Street-Herald Square, and 42nd Street-Bryant Park—all of which are located beneath Sixth Avenue. B and D trains provide express service along the Sixth Avenue Line via the 34th Street-Herald Square and 42nd Street-Bryant stations.

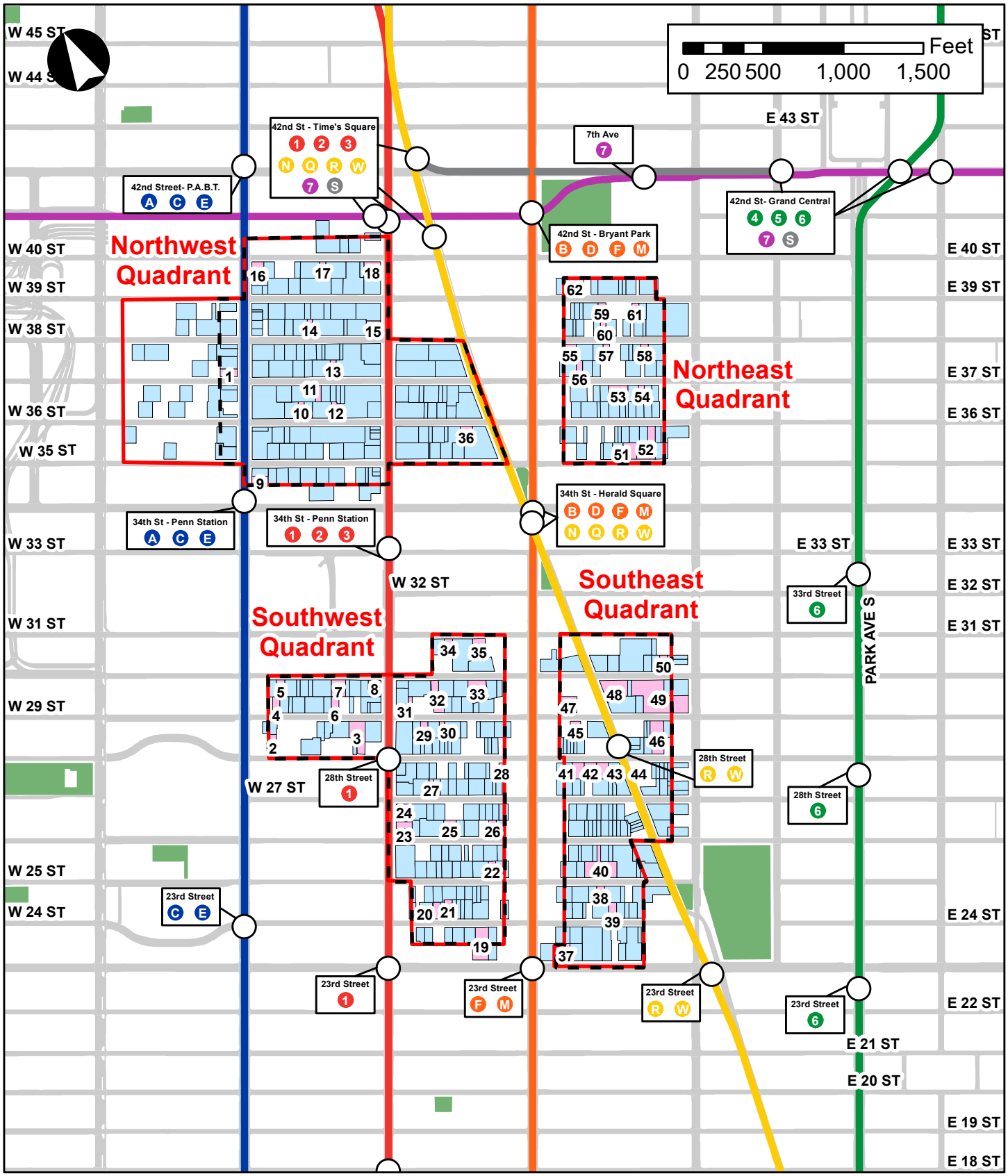
No. 1 local trains operating on the Seventh Avenue line serve four stations within the Affected Area – 23rd Street, 28th Street, 34th Street-Penn Station, and 42nd Street-Times Square—all of which are located beneath Seventh Avenue. Nos. 2 and 3 trains provide express service along the Seventh Avenue Line via the 34th Street-Penn Station and 42nd Street-Times Square stations.

C and E local trains operating on the Eighth Avenue line serve three stations within the Affected Area – 23rd Street, 34th Street-Penn Station, and 42nd Street-Port Authority Bus Terminal—all of which are located beneath Eighth Avenue. A trains provide express service along the Eighth Avenue Line via the 34th Street-Penn Station and 42nd Street-Port Authority Bus Terminal stations.

The 34th Street-Herald Square stations on the Broadway (N/Q/R/W) and Sixth Avenue (B/D/F/M) Lines are all linked, and together comprise an interconnected station complex. The 34th Street-Herald Square station complex and 23rd Street (F/M) station provides access to the Hoboken-33rd Street and Journal Square-33rd Street lines on the PATH system, which provides connection between New Jersey and Manhattan. The 42nd Street-Times Square stations on the Broadway (N/Q/R/W), Seventh Avenue (1/2/3), Flushing (7), and 42nd Street Shuttle (S) Lines are all linked, and together comprise an interconnected station complex. The 42nd Street-Bryant Park station on the Sixth Avenue (B/D/F/M) line and the 5th Avenue station on the Flushing (7) Line are also all linked, and together comprise an interconnected station complex.

Subway Assignment and Analyzed Stations

As shown in **Table 3**, under the RWCDS, the Proposed Actions would generate a net increment of approximately 987 and 992 subway trips during the weekday AM and PM commuter peak hours,



Legend

Rezoning Area | Affected Area | Potential Conversion Sites | Projected Development Sites

Subway Stops

respectively. Trips from each projected development site and conversion site cluster were assigned to the individual stations serving the Affected Area based on their proximity. **Table 8** shows the estimated net incremental subway trips generated by the Proposed Actions during the weekday AM and PM peak hours at each of the subway stations/station complexes serving the Affected Area. As shown in **Table 8**, the highest number of incremental subway trips is expected to occur at the 34th Street – Herald Square (B/D/F/M/N/Q/R/W) station complex which would experience approximately 370 incremental trips in the AM peak hour and 377 in the PM peak hour. All other subway stations serving the Affected Area are expected to experience fewer than 200 incremental trips in the AM and PM peak hours.

Table 8
Net Incremental Peak Hour Subway Trips by Station

Subway Station	AM Peak Hour Trips			PM Peak Hour Trips		
	Into Project	Out of Project	Total	Into Project	Out of Project	Total
Project Summary						
Peak Hour Project-Generated Trips:	-624	6,296	5,672	5,743	1,717	7,460
Peak Hour Project-Generated Subway Trips:	-1,116	2,153	987	1,476	-484	992
Subway Station Summary						
23rd Street (1)	-22	49	27	34	-7	27
23rd Street (F/M)	-43	195	152	131	-5	126
23rd Street (C/E)	-62	48	-14	31	-38	-7
23rd Street (R/W)	2	63	65	41	6	47
28th Street (1)	-87	148	61	101	-37	64
28th Street (R/W)	-36	223	187	156	13	169
28th Street (6)	0	55	55	40	12	52
33rd Street (6)	2	26	28	19	7	26
34th Street - Herald Square (B/D/F/M/N/Q/R/W)	-246	616	370	431	-51	377
34th Street - Penn Station (1/2/3)	-213	256	43	174	-111	63
34th Street - Penn Station (A/C/E)	-128	91	-37	58	-83	-25
42nd Street - Bryant Park / Fifth Avenue (B/D/F/M/7)	-80	105	25	72	-41	31
42nd Street - Port Authority Bus Terminal (A/C/E)	-90	86	-4	57	-55	2
Times Square – 42nd Street (1/2/3/7/N/Q/R/W/S)	-163	192	29	131	-91	40
Total	**-1,116**	**2,153**	**987**	**1,476**	**-484**	**992**

As incremental peak hour demand from the Proposed Actions is expected to exceed the 200-trip *CEQR Technical Manual* analysis threshold at the 34th Street – Herald Square (B/D/F/M/N/Q/R/W) station complex, this facility will be analyzed in the EIS. Key circulation elements (i.e., stairs and fare arrays) at these stations that are expected to be used by concentrations of new demand from the Proposed Actions will be analyzed.

Subway Line Haul

As discussed above, the Affected Area is served by a total of 17 NYCT subway routes, including the A, B, C, D, E, F, M, N, Q, R, W, S, and Nos. 1, 2, 3, 6, and 7. As the Proposed Actions may potentially generate

200 or more new subway trips in one direction on one or more of these routes, an analysis of subway line haul conditions will be included in the EIS. The analysis will use existing maximum load point subway service and ridership data provided by NYCT to assess existing, future No-Action, and future With-Action conditions at the peak load points of the respective subway lines during the weekday AM and PM peak hours.

Pedestrians

Based on *CEQR Technical Manual* guidance, detailed pedestrian analyses are generally warranted if a proposed action is projected to result in 200 or more new peak hour pedestrians at any sidewalk, corner area, or crosswalk. As shown in **Table 5**, the development under the Proposed Actions would generate an incremental increase of 5,163, 1,649, 6,618, and 7,603 walk-only trips (in and out combined) during the weekday AM, midday, and PM and Saturday peak periods, respectively. In addition to the walk-only trips, transit trips (subway, bus, and rail trips) also include walk portions of the trip. Therefore, the Proposed Actions would generate a total of 5,336, 3,501, 6,992, and 10,498 pedestrian trips in the weekday AM, weekday midday, weekday PM, and Saturday peak periods, respectively. During the weekday AM and PM peak hours, new pedestrian trips would be most concentrated on sidewalks and crosswalks adjacent to the Affected Area and along corridors connecting the site to nearby transit stations and bus stops. In the midday and Saturday periods, pedestrian trips would tend to be more dispersed, as people travel throughout the area for dining, shopping and/or running errands.

Given the relatively large numbers of pedestrian trips that would be generated by the Proposed Actions, an assignment of net increment pedestrian volumes was prepared for each period to help identify potential elements for analysis (a Level 2 screening assessment). The analysis of pedestrian conditions in the EIS will focus on representative pedestrian elements where new trips generated by projected developments are expected to be most concentrated. It is expected that these elements—sidewalks, corner areas and crosswalks—will be primarily located in the vicinity of major projected development sites and along corridors connecting these sites to area subway station entrances and bus routes.

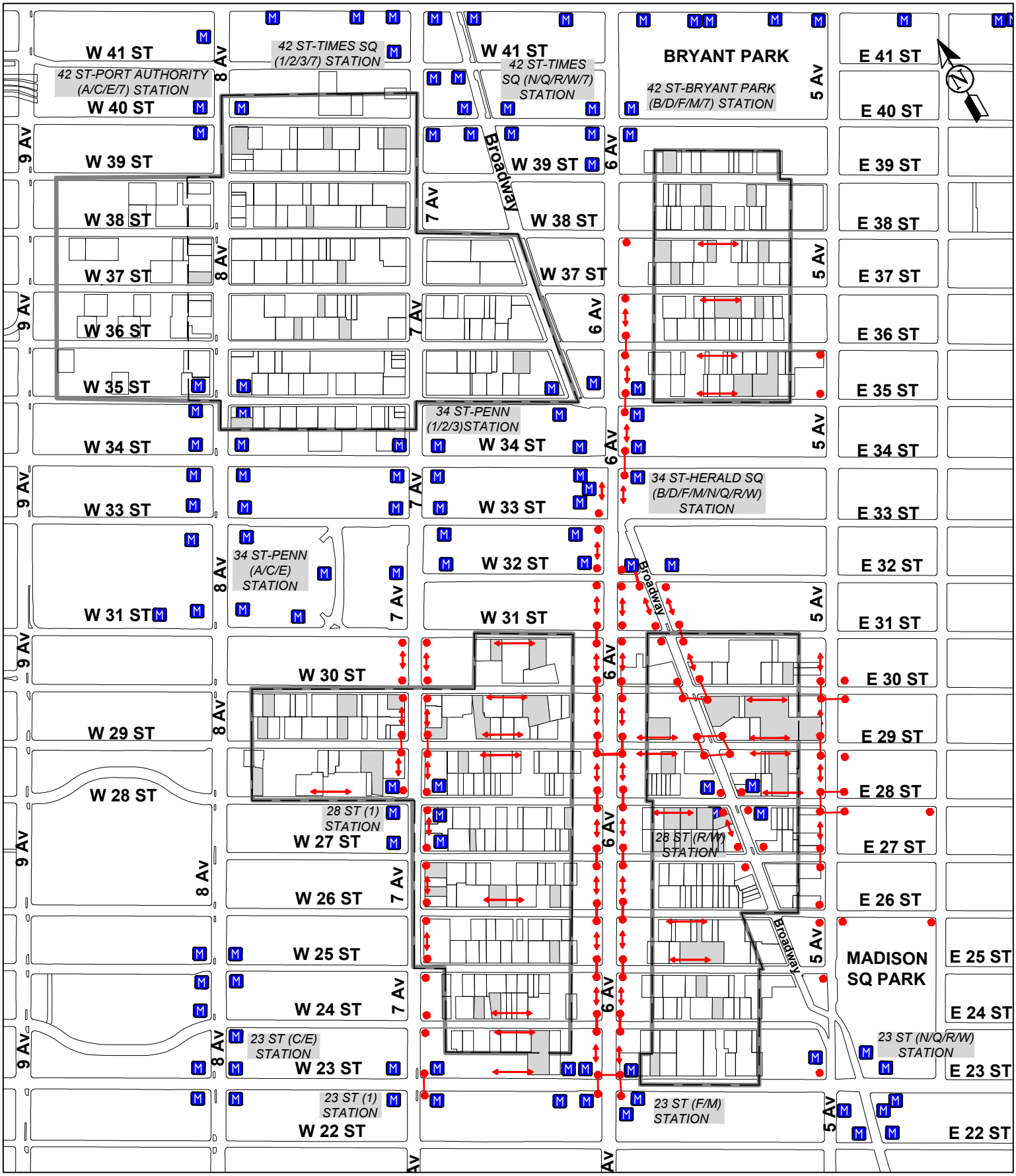
Based on the assignment of incremental peak hour pedestrian trips, a total of 220 pedestrian elements (63 sidewalks, 41 crosswalks, and 116 corner areas) were selected for a detailed pedestrian analysis and are listed below (refer to **Figure 5**). The pedestrian analysis locations were selected based on consultation with NYCDCP and NYCDOT.

<u>Pedestrian Analysis Locations</u>

Sidewalks

1. East sidewalk along Broadway between West 30th Street and West 31st Street
2. East sidewalk along Broadway between West 31st Street and West 32nd Street
3. East sidewalk along Seventh Avenue between West 25th Street and West 26th Street
4. East sidewalk along Seventh Avenue between West 26th Street and West 27th Street
5. East sidewalk along Seventh Avenue between West 27th Street and West 28th Street
6. East sidewalk along Seventh Avenue between West 28th Street and West 29th Street
7. East sidewalk along Seventh Avenue between West 29th Street and West 30th Street
8. East sidewalk along Seventh Avenue between West 30th Street and West 31st Street
9. East sidewalk along Sixth Avenue between West 23rd Street and West 24th Street
10. East sidewalk along Sixth Avenue between West 24th Street and West 25th Street

Proposed Analyzed Pedestrian Elements



LEGEND

- Projected Development Site
- Potential Conversion Site
- Affected Area
- Rezoning Area
- Corner
- Sidewalk
- Crosswalk
- Pedestrian Analysis Locations
- Subway Station Entrance

11. East sidewalk along Sixth Avenue between West 25th Street and West 26th Street
12. East sidewalk along Sixth Avenue between West 26th Street and West 27th Street
13. East sidewalk along Sixth Avenue between West 27th Street and West 28th Street
14. East sidewalk along Sixth Avenue between West 28th Street and West 29th Street
15. East sidewalk along Sixth Avenue between West 29th Street and West 30th Street
16. East sidewalk along Sixth Avenue between West 30th Street and West 31st Street
17. East sidewalk along Sixth Avenue between West 31st Street and West 32nd Street
18. East sidewalk along Sixth Avenue between West 33rd Street and West 34th Street
19. East sidewalk along Sixth Avenue between West 34th Street and West 35th Street
20. East sidewalk along Sixth Avenue between West 35th Street and West 36th Street
21. East sidewalk along Sixth Avenue between West 36th Street and West 37th Street
22. North sidewalk along West 23rd Street between Sixth Avenue and Seventh Avenue
23. North sidewalk along West 24th Street between Sixth Avenue and Seventh Avenue
24. North sidewalk along West 25th Street between Broadway and Sixth Avenue
25. North sidewalk along West 26th Street between Sixth Avenue and Seventh Avenue
26. North sidewalk along West 28th Street between Fifth Avenue and Broadway
27. North sidewalk along West 28th Street between Seventh Avenue and Eighth Avenue
28. North sidewalk along West 29th Street between Broadway and Sixth Avenue
29. North sidewalk along West 29th Street between Fifth Avenue and Broadway
30. North sidewalk along West 29th Street between Sixth Avenue and Seventh Avenue
31. North sidewalk along West 35th Street between Fifth Avenue and Sixth Avenue
32. South sidewalk along West 24th Street between Sixth Avenue and Seventh Avenue
33. South sidewalk along West 26th Street between Broadway and Sixth Avenue
34. South sidewalk along West 28th Street between Sixth Avenue and Broadway
35. South sidewalk along West 29th Street between Broadway and Sixth Avenue
36. South sidewalk along West 29th Street between Fifth Avenue and Broadway
37. South sidewalk along West 29th Street between Sixth Avenue and Seventh Avenue
38. South sidewalk along West 30th Street between Fifth Avenue and Broadway
39. South sidewalk along West 30th Street between Sixth Avenue and Seventh Avenue
40. South sidewalk along West 31st Street between Sixth Avenue and Seventh Avenue
41. South sidewalk along West 36th Street between Fifth Avenue and Sixth Avenue
42. South sidewalk along West 37th Street between Fifth Avenue and Sixth Avenue
43. South sidewalk along West 38th Street between Fifth Avenue and Sixth Avenue
44. West sidewalk along Broadway between West 27th Street and West 28th Street
45. West sidewalk along Broadway between West 31st Street and West 32nd Street
46. West sidewalk along Fifth Avenue between West 27th Street and West 28th Street
47. West sidewalk along Fifth Avenue between West 28th Street and West 29th Street
48. West sidewalk along Fifth Avenue between West 29th Street and West 30th Street
49. West sidewalk along Fifth Avenue between West 30th Street and West 31st Street
50. West sidewalk along Seventh Avenue between West 28th Street and West 29th Street
51. West sidewalk along Seventh Avenue between West 29th Street and West 30th Street
52. West sidewalk along Seventh Avenue between West 30th Street and West 31st Street
53. West sidewalk along Sixth Avenue between West 23rd Street and West 24th Street
54. West sidewalk along Sixth Avenue between West 24th Street and West 25th Street
55. West sidewalk along Sixth Avenue between West 25th Street and West 26th Street
56. West sidewalk along Sixth Avenue between West 26th Street and West 27th Street
57. West sidewalk along Sixth Avenue between West 27th Street and West 28th Street
58. West sidewalk along Sixth Avenue between West 28th Street and West 29th Street

59. West sidewalk along Sixth Avenue between West 29th Street and West 30th Street
60. West sidewalk along Sixth Avenue between West 30th Street and West 31st Street
61. West sidewalk along Sixth Avenue between West 31st Street and West 32nd Street
62. West sidewalk along Sixth Avenue between West 32nd Street and West 33rd Street
63. West sidewalk along Sixth Avenue between West 33rd Street and West 34th Street

Crosswalks

1. East crosswalk of Seventh Avenue and West 23rd Street
2. East crosswalk of Seventh Avenue and West 29th Street
3. West crosswalk of Seventh Avenue and West 29th Street
4. North crosswalk of Sixth Avenue and West 23rd Street
5. East crosswalk of Sixth Avenue and West 23rd Street
6. West crosswalk of Sixth Avenue and West 23rd Street
7. East crosswalk of Sixth Avenue and West 24th Street
8. West crosswalk of Sixth Avenue and West 24th Street
9. East crosswalk of Sixth Avenue and West 25th Street
10. West crosswalk of Sixth Avenue and West 25th Street
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13. East crosswalk of Sixth Avenue and West 27th Street
14. West crosswalk of Sixth Avenue and West 27th Street
15. East crosswalk of Sixth Avenue and West 28th Street
16. West crosswalk of Sixth Avenue and West 28th Street
17. East crosswalk of Sixth Avenue and West 29th Street
18. South crosswalk of Sixth Avenue and West 29th Street
19. West crosswalk of Sixth Avenue and West 29th Street
20. East crosswalk of Sixth Avenue and West 30th Street
21. West crosswalk of Sixth Avenue and West 30th Street
22. West crosswalk of Sixth Avenue and West 31st Street
23. East crosswalk of Sixth Avenue and West 34th Street
24. East crosswalk of Sixth Avenue and West 35th Street
25. East crosswalk of Sixth Avenue and West 36th Street
26. West crosswalk of Fifth Avenue and West 27th Street
27. North crosswalk of Fifth Avenue and West 28th Street
28. South crosswalk of Fifth Avenue and West 28th Street
29. West crosswalk of Fifth Avenue and West 28th Street
30. West crosswalk of Fifth Avenue and West 29th Street
31. South crosswalk of Fifth Avenue and West 30th Street
32. West crosswalk of Fifth Avenue and West 30th Street
33. North crosswalk of Broadway and West 29th Street
34. East crosswalk of Broadway and West 29th Street
35. South crosswalk of Broadway and West 29th Street
36. West crosswalk of Broadway and West 29th Street
37. East crosswalk of Broadway and West 30th Street
38. South crosswalk of Broadway and West 30th Street
39. West crosswalk of Broadway and West 30th Street
40. East crosswalk of Broadway and West 31st Street

41. West crosswalk of Broadway and West 32nd Street

Corner Areas

1. SW corner of Madison Avenue and West 26th Street
2. SW corner of Madison Avenue and West 28th Street
3. NW corner of Fifth Avenue and West 23rd Street
4. SW corner of Fifth Avenue and West 25th Street
5. NW corner of Fifth Avenue and West 26th Street
6. SE corner of Fifth Avenue and West 26th Street
7. SW corner of Fifth Avenue and West 26th Street
8. NW corner of Fifth Avenue and West 27th Street
9. SW corner of Fifth Avenue and West 27th Street
10. NE corner of Fifth Avenue and West 28th Street
11. NW corner of Fifth Avenue and West 28th Street
12. SE corner of Fifth Avenue and West 28th Street
13. SW corner of Fifth Avenue and West 28th Street
14. NW corner of Fifth Avenue and West 29th Street
15. SE corner of Fifth Avenue and West 29th Street
16. SW corner of Fifth Avenue and West 29th Street
17. NE corner of Fifth Avenue and West 30th Street
18. NW corner of Fifth Avenue and West 30th Street
19. SE corner of Fifth Avenue and West 30th Street
20. SW corner of Fifth Avenue and West 30th Street
21. NW corner of Fifth Avenue and West 35th Street
22. SW corner of Fifth Avenue and West 36th Street
23. NE corner of Sixth Avenue and West 23rd Street
24. NW corner of Sixth Avenue and West 23rd Street
25. SE corner of Sixth Avenue and West 23rd Street
26. SW corner of Sixth Avenue and West 23rd Street
27. NE corner of Sixth Avenue and West 24th Street
28. NW corner of Sixth Avenue and West 24th Street
29. SE corner of Sixth Avenue and West 24th Street
30. SW corner of Sixth Avenue and West 24th Street
31. NE corner of Sixth Avenue and West 25th Street
32. NW corner of Sixth Avenue and West 25th Street
33. SE corner of Sixth Avenue and West 25th Street
34. SW corner of Sixth Avenue and West 25th Street
35. NE corner of Sixth Avenue and West 26th Street
36. NW corner of Sixth Avenue and West 26th Street
37. SE corner of Sixth Avenue and West 26th Street
38. SW corner of Sixth Avenue and West 26th Street
39. NE corner of Sixth Avenue and West 27th Street
40. NW corner of Sixth Avenue and West 27th Street
41. SE corner of Sixth Avenue and West 27th Street
42. SW corner of Sixth Avenue and West 27th Street
43. NE corner of Sixth Avenue and West 28th Street
44. NW corner of Sixth Avenue and West 28th Street
45. SE corner of Sixth Avenue and West 28th Street

46. SW corner of Sixth Avenue and West 28th Street
47. NE corner of Sixth Avenue and West 29th Street
48. NW corner of Sixth Avenue and West 29th Street
49. SE corner of Sixth Avenue and West 29th Street
50. SW corner of Sixth Avenue and West 29th Street
51. NE corner of Sixth Avenue and West 30th Street
52. NW corner of Sixth Avenue and West 30th Street
53. SE corner of Sixth Avenue and West 30th Street
54. SW corner of Sixth Avenue and West 30th Street
55. NE corner of Sixth Avenue and West 31st Street
56. NW corner of Sixth Avenue and West 31st Street
57. SE corner of Sixth Avenue and West 31st Street
58. SW corner of Sixth Avenue and West 31st Street
59. NE corner of Sixth Avenue and West 32nd Street
60. NW corner of Sixth Avenue and West 32nd Street
61. SE corner of Sixth Avenue and West 32nd Street
62. SW corner of Sixth Avenue and West 32nd Street
63. NW corner of Sixth Avenue and West 33rd Street
64. SW corner of Sixth Avenue and West 33rd Street
65. NE corner of Sixth Avenue and West 34th Street
66. SE corner of Sixth Avenue and West 34th Street
67. NE corner of Sixth Avenue and West 35th Street
68. SE corner of Sixth Avenue and West 35th Street
69. NE corner of Sixth Avenue and West 36th Street
70. SE corner of Sixth Avenue and West 36th Street
71. SE corner of Sixth Avenue and West 37th Street
72. SE corner of Sixth Avenue and West 38th Street
73. NE corner of Seventh Avenue and West 23rd Street
74. SE corner of Seventh Avenue and West 23rd Street
75. NE corner of Seventh Avenue and West 24th Street
76. SE corner of Seventh Avenue and West 24th Street
77. NE corner of Seventh Avenue and West 25th Street
78. SE corner of Seventh Avenue and West 25th Street
79. NE corner of Seventh Avenue and West 26th Street
80. SE corner of Seventh Avenue and West 26th Street
81. NE corner of Seventh Avenue and West 27th Street
82. SE corner of Seventh Avenue and West 27th Street
83. NE corner of Seventh Avenue and West 28th Street
84. SE corner of Seventh Avenue and West 28th Street
85. NW corner of Seventh Avenue and West 28th Street
86. NE corner of Seventh Avenue and West 29th Street
87. NW corner of Seventh Avenue and West 29th Street
88. SE corner of Seventh Avenue and West 29th Street
89. SW corner of Seventh Avenue and West 29th Street
90. NE corner of Seventh Avenue and West 30th Street
91. NW corner of Seventh Avenue and West 30th Street
92. SE corner of Seventh Avenue and West 30th Street
93. SW corner of Seventh Avenue and West 30th Street

94. SE corner of Seventh Avenue and West 31st Street
95. SW corner of Seventh Avenue and West 31st Street
96. NE corner of Broadway and West 27th Street
97. NW corner of Broadway and West 27th Street
98. SW corner of Broadway and West 27th Street
99. NE corner of Broadway and West 28th Street
100. NW corner of Broadway and West 28th Street
101. SE corner of Broadway and West 28th Street
102. SW corner of Broadway and West 28th Street
103. NE corner of Broadway and West 29th Street
104. NW corner of Broadway and West 29th Street
105. SE corner of Broadway and West 29th Street
106. SW corner of Broadway and West 29th Street
107. NE corner of Broadway and West 30th Street
108. NW corner of Broadway and West 30th Street
109. SE corner of Broadway and West 30th Street
110. SW corner of Broadway and West 30th Street
111. NE corner of Broadway and West 31st Street
112. NW corner of Broadway and West 31st Street
113. SE corner of Broadway and West 31st Street
114. SW corner of Broadway and West 31st Street
115. SE corner of Broadway and West 32nd Street
116. SW corner of Broadway and West 32nd Street

Parking

As the Proposed Actions' RWCDS does not include any on-site parking on projected development sites, nor any new off-street public parking, a parking demand forecast will be provided in the EIS to document the amount of new parking demand that would be introduced to the Affected Area under the Proposed Actions' RWCDS. The potential for the Proposed Actions to result in a significant adverse parking shortfall will then be assessed.

Parking demand from retail uses typically peaks in the weekday midday period and declines during the afternoon and evening. By contrast, residential demand typically peaks during the overnight period. The forecast of parking demand generated by the residential component of the Proposed Actions' RWCDS will be based on 2015-2019 ACS journey-to-work data for New York (Manhattan) County census tracts 58, 76, 84, 91, 95, 101, 109, 111, 113, and 115 which encompass the Affected Area. Parking demands from all other uses will be derived from the forecasts of daily auto trips from these uses. Estimates of future parking utilization will account for net reductions in demand associated with No-Action land uses displaced from projected development sites under the RWCDS.

Vehicular and Pedestrian Safety

Under *CEQR Technical Manual* guidance, an evaluation of vehicular and pedestrian safety is needed for locations within traffic and pedestrian study areas that have been identified as high crash locations These are defined as locations along a Vision Zero priority intersection or locations where five or more pedestrian/bicyclist injury crashes have occurred in any consecutive 12 months of the most recent three-year period for which data are available. In addition, any location along a Vision Zero priority corridor

with three or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available should be identified as a high crash location. For these locations, crash trends will be identified to determine whether projected vehicular and pedestrian traffic would further impact safety, or whether existing unsafe conditions could adversely impact the flow of the projected new trips.

Vision Zero Manhattan Pedestrian Safety Action Plan

Consistent with the city's Vision Zero initiative, the *Vision Zero Manhattan Pedestrian Safety Action Plan* was released in 2015 and updated in 2019. The plan identifies a series of engineering/planning, enforcement, and education/awareness campaign strategies to enhance pedestrian safety along the borough's Priority Corridors and Priority Intersections. These strategies include measures such as reducing the speed limit to 25 miles per hour, expanding exclusive pedestrian crossing time, installing additional lighting around key transit stops, expanding the bicycle network, prioritizing targeted enforcement and deploying speed cameras, and targeting intensive street-level outreach. Within a ¼-mile of the Affected Area, the plan identifies Sixth, Seventh, Eighth, and Ninth Avenues and, 23rd, 34th, 40th, and 42nd Streets as "Priority Corridors." In addition, West 23rd and West 34th Streets at Sixth Avenue and West 34th And West 40th Streets at Eighth Avenue were also identified as Priority Intersections within the study area. In addition, the Affected Area is located within a Senior Pedestrian Focus Area and a Priority Area.

Crash Data

Table 8 shows the crash data summary for the three-year reporting period between January 1, 2017 and December 31, 2019 that were obtained from NYCDOT. This is the most recent three-year period for which data are available. The data obtained quantify the total number of reportable crashes (crashes involving a fatality, injury, or more than $1,000 in property damage), as well as a yearly breakdown of fatalities, injuries, and vehicular crashes involving pedestrians and bicycles at each location. **Table 8** summarizes the crash data for each intersection within the quarter-mile study area during the study period, including a breakdown of pedestrian and bicycle crashes by year.

During the three-year period, a total of 2,791 reportable and non-reportable crashes, four fatalities, 1,334 total injuries, and 688 pedestrian/bicyclist injury crashes occurred at intersections within the quarter-mile study area. As shown in **Table 8**, 53 intersections along Priority Corridors were found to have experienced a total of three or more pedestrian/bicyclist injury crashes in any one year during the three-year period and were therefore identified as high crash locations. No additional high crash locations were identified outside of Priority Corridors. For selected high crash locations, crash trends will be identified to determine whether projected vehicular and pedestrian traffic would further impact safety, or whether existing unsafe conditions could adversely impact the flow of the projected new trips. The selected analysis locations will be based on consultation with NYCDCP and NYCDOT.

Table 8
Crash Data Summary 2017-2019

Intersection		Pedestrian Injury Crashes			Bicycle Injury Crashes			Total Pedestrian/Bicyclist Injury Crashes			Total Crashes (Reportable + Non-Reportable)		
		2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
PARK AVENUE SOUTH	E. 26 STREET	2	2	2	0	1	2	2	3	4	4	5	10
	E. 27 STREET	1	0	2	0	1	0	1	1	2	1	5	7
	E. 28 STREET	1	0	1	1	0	1	2	0	2	2	3	5
	E. 29 STREET	1	1	0	0	1	0	1	2	0	2	5	5
	E. 30 STREET	0	0	1	1	0	0	1	0	1	2	5	5
	E. 31 STREET	0	1	0	1	0	1	1	1	1	2	3	2
	E. 32 STREET	0	2	1	0	0	1	0	2	2	1	5	4
	E. 33 STREET	0	2	0	0	1	0	0	3	0	2	8	2
	E. 34 STREET	1	2	2	0	1	0	1	**3**	2	7	14	14
	E. 35 STREET	1	3	4	0	1	0	1	4	4	3	10	18
	E. 36 STREET	1	2	4	0	1	0	1	3	4	3	12	10
	E. 37 STREET	1	2	0	1	0	0	2	2	0	9	14	14
MADISON AVENUE	E. 23 STREET	1	0	0	0	0	0	1	0	0	2	0	2
	E. 24 STREET	0	0	0	0	0	1	0	0	1	1	4	3
	E. 25 STREET	0	0	0	0	0	0	0	0	0	1	0	1
	E. 26 STREET	0	1	0	0	1	0	0	2	0	0	5	4
	E. 27 STREET	2	0	0	0	0	0	2	0	0	3	1	2
	E. 28 STREET	0	1	0	1	0	0	1	1	0	2	3	1
	E. 29 STREET	0	1	0	0	0	0	0	1	0	1	2	1
	E. 30 STREET	1	2	1	0	0	0	1	2	1	4	6	3
	E. 31 STREET	0	0	0	0	0	0	0	0	0	0	0	2
	E. 32 STREET	0	1	1	0	0	0	0	1	1	1	3	2
	E. 33 STREET	0	0	0	0	0	0	0	0	0	1	0	1
	E. 34 STREET	0	0	0	1	0	0	1	0	0	4	6	3
	E. 35 STREET	0	0	0	0	0	0	0	0	0	4	0	2
	E. 36 STREET	1	1	1	0	0	1	1	1	2	1	5	9
	E. 37 STREET	0	2	1	0	0	1	0	2	2	1	4	6
	E. 38 STREET	1	0	0	0	0	0	1	0	0	4	6	3
	E. 39 STREET	1	1	0	0	1	2	1	2	2	5	5	4
	E. 40 STREET	0	0	1	0	0	0	0	0	1	0	3	4
5 AVENUE	E./W. 19 STREET	0	0	0	0	0	0	0	0	0	1	3	0
	E./W. 20 STREET	1	0	0	0	2	1	1	2	1	2	5	6
	E./W. 21 STREET	0	1	1	0	1	0	0	2	1	0	5	1
	E./W. 22 STREET	1	1	1	0	0	0	1	1	1	2	3	3
	E./W. 23 STREET	1	1	1	1	0	1	2	1	2	5	7	8
	E./W. 25 STREET	0	0	0	0	1	2	0	1	2	1	2	5
	E./W. 26 STREET	1	1	0	0	1	0	1	2	0	2	5	5
	E./W. 27 STREET	3	2	2	0	1	0	3	3	2	5	12	3
	E./W. 28 STREET	2	0	0	0	1	1	2	1	1	4	4	6
	E./W. 29 STREET	2	1	0	1	0	0	3	1	0	3	7	2
	E./W. 30 STREET	0	1	0	0	1	0	0	2	0	1	3	0
	E./W. 31 STREET	0	0	0	0	1	0	0	1	0	0	5	2
	E./W. 32 STREET	3	2	1	0	1	0	3	3	1	6	12	6
	E./W. 33 STREET	1	1	3	0	0	0	1	1	3	3	7	7
	E./W. 34 STREET	0	1	3	0	1	0	0	2	**3**	8	14	10
	E./W. 35 STREET	0	1	0	1	1	0	1	2	0	4	9	4
	E./W. 36 STREET	0	0	1	0	1	0	0	1	1	2	14	7
	E./W. 37 STREET	1	1	0	0	1	0	1	2	0	10	13	6
	E./W. 38 STREET	1	0	0	0	1	0	1	1	0	1	5	6
	E./W. 39 STREET	0	0	0	1	0	0	1	0	0	1	4	1
	E./W. 40 STREET	0	1	0	0	0	1	0	1	1	2	3	4
	E./W. 41 STREET	0	0	0	0	0	0	0	0	0	2	2	2
	E./W. 42 STREET	2	4	5	0	1	1	2	**5**	**6**	9	15	12

Table 8 (cont.)
Crash Data Summary 2017-2019

Intersection		Pedestrian Injury Crashes			Bicycle Injury Crashes			Total Pedestrian/Bicyclist Injury Crashes			Total Crashes (Reportable + Non-Reportable)		
		2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
BROADWAY	W. 21 STREET	0	0	0	2	0	1	2	0	1	2	1	5
	W. 22 STREET	1	0	0	0	0	0	1	0	0	3	1	1
	W. 23 STREET	1	3	0	1	1	0	2	**4**	0	3	7	1
	W. 24 STREET / 5 AVENUE	0	0	0	2	0	1	2	0	1	2	3	1
	W. 25 STREET	0	0	0	0	0	0	0	0	0	0	1	0
	W. 26 STREET	0	0	0	0	2	1	0	2	1	0	4	1
	W. 27 STREET	0	0	1	0	0	0	0	0	1	3	0	2
	W. 28 STREET	0	1	1	0	0	1	0	1	2	0	1	4
	W. 29 STREET	0	1	0	0	1	0	0	2	0	0	3	1
	W. 30 STREET	0	0	0	0	0	0	0	0	0	0	1	1
	W. 31 STREET	0	1	0	0	0	0	0	1	0	0	2	0
	W. 32 STREET	0	0	0	0	0	0	0	0	0	0	2	2
	W. 35 STREET	1	1	0	0	0	0	1	1	0	1	4	1
	W. 36 STREET	0	0	1	0	0	0	0	0	1	0	0	4
	W. 37 STREET	0	0	1	0	0	0	0	0	1	2	3	1
	W. 38 STREET	0	0	1	0	0	0	0	0	1	2	1	2
	W. 39 STREET	2	0	0	0	2	0	2	2	0	3	3	1
	W. 40 STREET	0	0	2	0	0	0	0	0	2	3	1	4
	W. 41 STREET	0	0	2	0	0	0	0	0	2	1	1	5
	W. 42 STREET	1	4	0	2	2	0	**3**	**6**	0	5	14	3
6 AVENUE (AVENUE OF THE AMERICAS)	W. 18 STREET	1	2	0	1	0	1	2	2	1	4	9	6
	W. 19 STREET	0	0	1	1	1	0	1	1	1	4	5	4
	W. 20 STREET	0	2	1	1	0	0	1	2	1	2	9	6
	W. 21 STREET	0	3	1	3	1	2	**3**	**4**	**3**	11	9	8
	W. 22 STREET	2	0	1	1	0	0	**3**	0	1	5	9	11
	W. 23 STREET	4	5	2	1	1	4	**5**	**6**	**6**	11	22	23
	W. 24 STREET	0	2	0	0	2	0	0	**4**	0	4	5	7
	W. 25 STREET	0	0	1	0	0	1	0	0	2	2	5	9
	W. 26 STREET	3	1	1	1	0	0	**4**	1	1	9	10	9
	W. 27 STREET	1	2	0	1	1	0	2	**3**	0	2	11	7
	W. 28 STREET	0	1	1	0	0	1	0	1	2	0	6	12
	W. 29 STREET	0	1	0	0	1	1	0	2	1	0	11	7
	W. 30 STREET	0	1	2	0	0	1	0	1	**3**	4	7	6
	W. 31 STREET	0	0	3	0	1	1	0	1	**4**	1	7	10
	W. 32 STREET	0	1	1	1	1	0	1	2	1	4	10	5
	W. 33 STREET	0	1	1	2	1	2	2	2	**3**	2	10	10
	W. 34 STREET	3	2	6	0	1	0	**3**	**3**	**6**	9	15	15
	W. 35 STREET	0	0	0	1	0	0	1	0	0	6	5	6
	W. 36 STREET	2	2	2	0	0	0	2	2	2	3	6	13
	W. 37 STREET	0	0	2	0	0	0	0	0	2	3	16	8
	W. 38 STREET	1	0	3	0	0	0	1	0	**3**	2	5	8
	W. 39 STREET	1	0	0	0	0	0	1	0	0	4	6	7
	W. 40 STREET	2	0	1	1	1	2	**3**	1	**3**	3	9	8
	W. 41 STREET	0	0	0	0	2	0	0	2	0	2	5	6
	W. 42 STREET	1	1	1	2	2	2	**3**	**3**	**3**	5	22	14
7 AVENUE	W. 19 STREET	0	0	0	0	0	0	0	0	0	0	3	4
	W. 20 STREET	0	1	1	1	0	0	1	1	1	3	7	3
	W. 21 STREET	1	1	0	0	0	0	1	1	0	4	3	6
	W. 22 STREET	2	2	2	1	0	0	**3**	2	2	3	5	3
	W. 23 STREET	2	4	1	1	1	2	**3**	**5**	**3**	5	8	7
	W. 24 STREET	1	0	2	0	0	0	1	0	2	4	4	6
	W. 25 STREET	2	2	0	0	0	0	2	2	0	4	6	0
	W. 26 STREET	1	0	1	0	2	0	1	2	1	4	8	5
	W. 27 STREET	3	2	1	0	0	1	**3**	2	2	6	9	6
	W. 28 STREET	3	3	2	1	0	0	**4**	**3**	2	5	8	10
	W. 29 STREET	0	2	2	2	0	1	2	2	**3**	3	5	8

Table 8 (cont.)
Crash Data Summary 2017-2019

Intersection		Pedestrian Injury Crashes			Bicycle Injury Crashes			Total Pedestrian/Bicyclist Injury Crashes			Total Crashes (Reportable + Non-Reportable)		
		2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
7 AVENUE	W. 30 STREET	0	0	0	1	0	1	1	0	1	2	8	9
	W. 31 STREET	2	2	1	0	0	0	2	2	1	7	27	9
	W. 32 STREET	1	1	2	2	1	1	**3**	2	**3**	8	8	16
	W. 33 STREET	0	0	2	0	0	1	0	0	**3**	1	10	8
	W. 34 STREET	3	4	2	2	0	3	**5**	**4**	**5**	11	12	15
	W. 35 STREET	2	1	1	0	1	0	2	2	1	7	10	5
	W. 36 STREET	2	0	2	0	0	1	2	0	**3**	6	5	12
	W. 37 STREET	2	3	1	0	0	0	2	**3**	1	6	7	6
	W. 38 STREET	0	2	1	0	1	0	0	**3**	1	4	8	6
	W. 39 STREET	3	1	2	0	2	0	**3**	**3**	2	7	7	6
	W. 40 STREET	2	1	1	0	0	1	2	1	2	4	5	5
	W. 41 STREET	0	4	1	0	0	0	0	**4**	1	0	9	4
	W. 42 STREET	4	3	0	2	0	1	**6**	**3**	1	11	16	15
	W. 43 STREET	1	1	0	0	0	0	1	1	0	1	12	5
8 AVENUE	W. 23 STREET	2	0	2	1	1	0	**3**	1	2	6	8	6
	W. 24 STREET	0	0	0	0	0	0	0	0	0	4	0	0
	W. 25 STREET	2	0	2	2	0	0	**4**	0	2	11	2	3
	W. 26 STREET	2	1	1	1	0	0	**3**	1	1	7	3	6
	W. 27 STREET	1	0	0	0	0	0	1	0	0	1	1	2
	W. 28 STREET	0	0	1	0	0	0	0	0	1	3	7	5
	W. 29 STREET	1	2	1	1	4	0	2	**6**	1	5	10	4
	W. 30 STREET	1	4	2	0	0	1	1	**4**	**3**	1	10	8
	W. 31 STREET	0	3	1	0	1	0	0	**4**	1	11	17	20
	W. 33 STREET	0	1	0	0	0	2	0	1	2	4	12	13
	W. 34 STREET	2	4	1	0	1	1	2	**5**	2	6	14	8
	W. 35 STREET	0	3	1	0	1	0	0	**4**	1	4	10	7
	W. 36 STREET	1	1	2	0	0	0	1	1	2	5	5	10
	W. 37 STREET	2	0	2	0	0	0	2	0	2	3	8	11
	W. 38 STREET	0	2	3	0	0	0	0	2	**3**	3	13	12
	W. 39 STREET	2	3	1	1	0	2	**3**	**3**	**3**	7	13	9
	W. 40 STREET	0	3	3	0	1	0	0	**4**	**3**	2	13	21
	W. 41 STREET	0	2	1	0	0	2	0	2	**3**	2	8	10
	W. 42 STREET	3	5	5	0	1	2	**3**	**6**	**7**	7	28	20
	W. 43 STREET	2	2	1	1	0	0	**3**	2	1	8	5	7
	W. 44 STREET	1	3	2	2	0	0	**3**	**3**	2	6	15	7
9 AVENUE	W. 28 STREET	0	1	0	1	1	1	1	2	1	5	4	3
	W. 29 STREET	1	1	0	0	0	0	1	1	0	4	3	1
	W. 30 STREET	1	2	0	0	1	0	1	**3**	0	6	8	7
	W. 31 STREET	0	1	4	0	0	1	0	1	**5**	2	8	11
	W. 33 STREET	1	1	2	0	0	0	1	1	2	1	4	6
	W. 34 STREET	1	1	3	0	0	0	1	1	**3**	5	14	7
	W. 35 STREET	1	0	0	0	0	0	1	0	0	3	4	10
	W. 36 STREET	1	2	2	0	0	0	1	2	2	3	13	8
	W. 37 STREET	2	4	0	0	0	0	2	**4**	0	9	15	8
	W. 38 STREET	0	2	2	0	0	0	0	2	2	4	12	7
	W. 39 STREET	1	1	2	0	0	0	1	1	2	4	11	6
	W. 40 STREET	2	1	1	0	0	0	2	1	1	8	16	14
	W. 41 STREET	3	1	1	0	0	0	**3**	1	1	15	19	12
	W. 42 STREET	3	4	2	2	3	2	**5**	**7**	**4**	12	31	22
	W. 43 STREET	2	2	2	0	0	0	2	2	2	5	11	10
DYER AVENUE	LINCOLN TUNNEL EXIT	0	2	0	0	0	1	0	2	1	0	7	4

Notes:
Shading denotes a high crash location based on *CEQR Technical Manual* criteria.