Chapter 14: Transportation

A. INTRODUCTION

Following the guidance of the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, this chapter considers the potential transportation impacts from the proposed actions. As described in Chapter 1, "Project Description," two applicants—DD West 29th LLC (Applicant A) and West 30th Street LLC (Applicant B)—are requesting discretionary actions to facilitate the redevelopment of two project sites in the West Chelsea neighborhood of Manhattan Community District 4. The project sites consist of project site A located at 601 West 29th Street (Block 675, Lots 12, 29, and 36) and project site B located at 606 West 30th Street (Block 675, Lot 39), which are on the block bounded by West 29th and West 30th Streets, Route 9A/Twelfth Avenue, and Eleventh Avenue (see **Figure 14-1**). The Project Area includes the two project sites as well as an intervening lot (Lot 38), which is not part of either project site. The two project sites and Lot 38 would be rezoned and included in the Special Hudson River Park District.

This chapter examines the potential effects of the proposed development programs on study area transportation systems by comparing the future with the proposed actions (With Action condition) to the future without the proposed actions (No Action condition) in the 2022 analysis year. The analysis identifies the potential for significant adverse impacts, and, as appropriate, discusses feasible mitigation measures to address those impacts (see Chapter 21, "Mitigation"). The travel demand projections, trip assignments, and capacity analysis contained in this chapter were conducted pursuant to the methodologies outlined in the *CEQR Technical Manual*.

PROJECT SITE A

Project site A currently contains:

- A Mobil Gas station and minimart at 309 Eleventh Avenue (the corner of West 30th Street and Eleventh Avenue). The gas station includes a 1,056 gsf building on a 9,875 sf lot (Lot 36).
- A center of operations for the American artist Jeff Koons, who is known for his oversized sculptures of balloon animals, at 609, 603, and 601 West 29th Street (portion of Lot 12 and Lot 29). The Koons facility operates within a single-story garage with frontage on West 29th Street (Lot 29), a four-story loft building (portion of Lot 12), as well as a two-story art studio space. The Koons studio employs approximately 150 people as painters, sculptors, digital artists, and administrators in a total of 43,859 gsf of space.
- A New York Department of Sanitation (DSNY) facility at 613 West 29th Street (portion of Lot 12). The DSNY facility includes a two-story office building totaling 11,950 gsf and is used for employee support space for the Manhattan 6 (M6) Garage (offices, locker rooms, and washrooms). DSNY has plans to vacate the property and is currently seeking approvals to construct a replacement facility on Manhattan's East Side, closer to the District 6 service area (CEQR#13DOS007M).



BLOCK 675 EAST

Project Sites
Figure 14-1

- A PANYNJ lot at 615 West 29th Street (portion of Lot 12). PANYNJ uses this lot for security and office functions, as well as vehicle parking.

In the future No Action condition, the project site's existing uses or similar uses are assumed to remain on site.

As shown in **Table 14-1**, in the future With Action condition, the proposed development is assumed to include up to 990 residential units, approximately 15,000-gsf of local retail uses, a potentially 12,500-gsf public facility (a New York City Fire Department-Emergency Medical Services [FDNY-EMS] Station), and a parking structure of up to 198 parking spaces. The residential entrance would be located on the corner of Eleventh Avenue and West 29th Street. Local retail use is proposed for the ground level of the building, fronting Eleventh Avenue and West 30th Street. Parking for the proposed development would be located on the ground level, behind the development mid-block, with access along West 29th Street between Eleventh and Twelfth Avenues. The potential FDNY-EMS Station would also have access from West 29th Street.

Table 14-1
Development Program for Analysis (Approximate gsf) Project Area

Use	Project Site A	Project Site B	Lot 38[1]	Total
Commercial	Up to 15,000	22,458	2,570	40,028
Residential	Up to 905,000 (up to 990 units)	200,327 (219 units)	30,309 (33 units)	1,135,636 (1,242 units)
EMS Facility	Up to 12,500	—	—	12,500
Parking	Up to 198 spaces	47 spaces	7 spaces	252 spaces
Total[2]	**Up to 960,000**	**262,292**	**33,548**	**1,255,840**

Notes:
[1] There is no proposal to develop Lot 38 at this time. However, because Lot 38 would be rezoned and included in the Special Hudson River Park District as part of the proposed actions, its potential to be redeveloped under the proposed rezoning is conservatively considered as part of the environmental review.
[2] Includes mechanical space.
Sources: Project site A—FXFOWLE Architects; Project site B and Lot 38—Ismael Leyva Architects.

For conservative analysis purposes in determining incremental trip generation associated with project site A, no credit was taken for trips associated with existing uses.

PROJECT SITE B

Project site B (Lot 39) currently contains a one-story, approximately 16,052-gsf building used for vehicle maintenance and storage. In the future No Action condition, the project site's existing use or a similar use is assumed to remain on site. As shown in **Table 14-1**, in the future With Action condition, the proposed development for project site B would include approximately 219 residential units, 22,458-gsf of local retail uses, and a parking structure of up to 47 parking spaces. The entrances to all proposed uses on project site B would be located along West 30th Street between Eleventh and Twelfth Avenues. For conservative analysis purposes in determining incremental trip generation associated with project site B, no credit was taken for trips associated with existing uses.

LOT 38

Lot 38 currently contains a one-story, approximately 2,468-gsf building housing an auto repair shop. In the future No Action condition, the existing use or a similar use is assumed to remain on Lot 38. Although there is no proposal to develop Lot 38 at this time, since it would be rezoned and included in the Special Hudson River Park District, its potential to be redeveloped under the

proposed actions would be conservatively considered as part of the screening assessments provided below. As shown in **Table 14-1**, in the future With Action condition, the hypothetical development associated with Lot 38 would include approximately 33 residential units, 2,570-gsf of local retail uses, and a parking for up to 7 spaces. As with Site A and Site B, for conservative analysis purposes in determining incremental trip generation associated with Lot 38, no credit was taken for trips associated with existing uses.

PRINCIPAL CONCLUSIONS

TRAFFIC

Based on a detailed assignment of project-generated vehicle trips, four intersections were identified as warranting detailed analysis for the weekday AM, midday, and PM peak hours. The detailed analysis concluded that in the future with the proposed actions, there would be the potential for significant adverse impacts at two intersections during the weekday AM peak hour, two intersections during the midday peak hour, and one intersection during the PM peak hour. **Table 14-2** provides a summary of the impacted locations by lane group and analysis time period. Potential measures to mitigate the projected traffic impacts are described in Chapter 21, "Mitigation."

Table 14-2
Summary of Significant Adverse Traffic Impacts

Intersection		Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour
EB/WB Street	NB/SB Street			
West 30th Street	Route 9A/Twelfth Avenue	SB-L	SB-L	SB-L
West 29th Street	Route 9A/Twelfth Avenue	WB-L WB-R	WB-R	
Total Impacted Intersections/Lane Groups		2/3	2/2	1/1

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

TRANSIT

As described below, the projected peak hour incremental subway trips would exceed the CEQR threshold of 200 riders during the weekday AM and PM peak hours. Based on discussions with New York City Transit (NYCT) regarding the likely distribution of subway trips to the newly constructed 34th Street-Hudson Yards (No. 7 train) Station, the 34th Street-Penn Station (A, C, and E, and No. 1, 2, and 3 trains) Station, and the 28th Street (No. 1 train) Station, a detailed analysis of station circulation elements and control areas is warranted for the 34th Street-Hudson Yards subway station (No. 7 line) for the weekday AM and PM peak hours. A subway line-haul (No. 7 line) analysis was also conducted for the weekday AM and PM peak hours. The subway station and line haul analyses concluded that the proposed projects would not result in the potential for a significant adverse subway line-haul impact.

PEDESTRIANS

Weekday peak period pedestrian conditions were evaluated at key area sidewalk, corner reservoir, and crosswalk locations. Based on the detailed assignment of pedestrian trips, eight sidewalks, 16 corner reservoirs, and 11 crosswalks were selected for detailed analysis for the weekday AM, midday, and PM peak hours. As summarized in **Table 14-3**, significant adverse

impacts were identified for one crosswalk during the weekday AM, midday, and PM peak hours, and another crosswalk only during the weekday midday peak hour. Potential measures to mitigate the projected pedestrian impacts are described in Chapter 21, "Mitigation."

Table 14-3
Summary of Significant Adverse Pedestrian Impacts

Pedestrian Elements	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour
South Crosswalk of 33rd Street and Eleventh Avenue	Impacted	Impacted	Impacted
East Crosswalk of 33rd Street and Eleventh Avenue		Impacted	

VEHICULAR AND PEDESTRIAN SAFETY

Crash data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between November 1, 2013, and October 31, 2016. During this period, a total of 20 injuries, and three pedestrian/bicyclist-related accidents occurred at study area intersections. A rolling total of accident data identified zero high crash locations in the 2013 to 2016 period.

PARKING

The proposed projects would include a total of 252 accessory parking spaces, which is enough parking to meet the parking demands associated with the Proposed Actions that are estimated at 156, 118, 150, and 211 vehicles during the weekday morning, midday, evening, and overnight night time periods, respectively. However, as detailed in Chapter 2, "Analytical Framework," the adjacent Hudson Tunnel project may temporarily use the accessory parking on Project Site A for construction staging. If this occurs, Site A's parking demand would need to be met off-site. The public parking utilization in the ¼-mile radius is projected to increase from 62, 78, 67, and 65-percent in the Existing Condition, to 86, 108, 94, and 74-percent in the No Action Condition during the weekday morning, midday, evening, and overnight time periods, respectively. Assuming that Site A's parking supply is temporarily not available due to ongoing use of this area by the Hudson Tunnel project, the With Action public parking utilization is expected to increase to 102, 120, 109, and 95-percent during the weekday morning, midday, evening, and overnight peak periods. These utilization levels represent parking shortfalls of 16, 160, and 69 spaces during the weekday morning, midday, and evening peak periods, respectively. This temporary excess parking demand would need to be accommodated on-street, which has very limited availability, or by off-street parking facilities beyond a ¼-mile walk from the project sites. While there could be a temporary parking shortfall, as stated in the *CEQR Technical Manual*, a parking shortfall in Manhattan and other transit-rich areas of New York City generally doesn't constitute a significant adverse parking impact, due to the variety of alternative modes of transportation that are available in these areas.

B. PRELIMINARY ANALYSIS METHODOLOGY AND SCREENING ASSESSMENT

The *CEQR Technical Manual* recommends a two-tier screening procedure for the preparation of a "preliminary analysis" to determine if quantified analyses of transportation conditions are warranted. As discussed below, the preliminary analysis begins with a trip generation analysis to estimate the volume of person and vehicle trips attributable to the proposed project. 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 (Level 1 screening assessment). When these thresholds are exceeded, detailed trip assignments are performed to estimate the incremental trips at specific transportation elements and to identify potential locations for further analyses (Level 2 screening assessment). If the trip assignments show that the proposed project would result in 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a subway station, 200 or more peak hour subway riders in one direction along a subway line, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a pedestrian element, then further quantified analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, vehicular and pedestrian safety, and parking.

LEVEL 1 SCREENING ASSESSMENT

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

TRANSPORTATION PLANNING ASSUMPTIONS

Trip generation factors for the proposed actions were developed based on information from the *CEQR Technical Manual*, U.S. Census Data, New York City Department of Transportation (DOT)'s Trip Generation and Mode Choice Study, the 2009 *Western Rail Yard FEIS*, and other approved EASs and EISs—as summarized in **Table 14-4**.

Residential

The daily person trip rate and temporal distribution for the residential component were obtained from the *CEQR Technical Manual*. Peak period Journey-to-Work (JTW) data from the 2011–2015 U.S. Census Bureau American Community Survey (ACS) for Manhattan census tracts 83, 89, 93, 97, 99, 103, 111, and 117 were used for residential modal splits. The directional distribution for all peak periods is from the *Western Rail Yard FEIS*. The vehicle occupancies are from the 2011–2015 U.S. Census ACS for autos and from the *Western Rail Yard FEIS* for taxis. The daily delivery trip rate and temporal and directional distributions are from the *CEQR Technical Manual*.

Local Retail

The daily trip generation and delivery vehicle trip generation rates for the local neighborhood retail component were obtained from the *CEQR Technical Manual*. In line with accepted City practice, a 25 percent linked trip credit was applied to the local retail trip generation estimates. The modal splits were obtained from the DOT Trip Generation and Mode Choice Study. The vehicle occupancies were obtained from the *Western Rail Yard FEIS*. The temporal and directional distributions for all peak periods were obtained from the *CEQR Technical Manual* and the *Western Rail Yard FEIS*, respectively. The daily delivery trip rate and temporal and directional distributions are from the *CEQR Technical Manual*.

Table 14-4
Travel Demand Assumptions

Use	Residential			Local Retail			EMS Facility[6]		
Total Daily Person Trip	(1) Weekday 8.075 Trips/DU			(1) Weekday 205 Trips/KSF					
Trip Linkage	0%			25%					
Net Daily Person trip	Weekday 8.075 Trips/DU			Weekday 154 Trips/KSF					
	AM	MD	PM	AM	MD	PM			
Temporal	(1)			(1)					
	10%	5%	11%	3%	19%	10%			
Direction	(2)			(2)					
In	15%	50%	70%	50%	50%	50%			
Out	85%	50%	30%	50%	50%	50%			
Total	100%	100%	100%	100%	100%	100%			
Modal Split	(3)			(4)			(5)		
	AM	MD	PM	AM	MD	PM	AM	MD	PM
Auto	6.0%	6.0%	6.0%	2.5%	2.5%	2.5%	18.0%	18.0%	18.0%
Taxi	6.0%	6.0%	6.0%	0.5%	0.5%	0.5%	2.0%	2.0%	2.0%
Subway	42.0%	42.0%	42.0%	16.5%	16.5%	16.5%	51.0%	51.0%	51.0%
Railroad	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	11.0%	11.0%	11.0%
Bus	5.0%	5.0%	5.0%	4.0%	4.0%	4.0%	11.0%	11.0%	11.0%
Walk	38.0%	38.0%	38.0%	76.5%	76.5%	76.5%	7.0%	7.0%	7.0%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy	(2, 3) Weekday/Saturday			(2) Weekday/Saturday					
Auto	1.13			1.65					
Taxi	1.40			1.40					
Daily Delivery Trip Generation Rate	(1) Weekday 0.06 Delivery Trips/DU			(1) Weekday 0.35 Delivery Trips/KSF					
	AM	MD	PM	AM	MD	PM			
Delivery Temporal	(1)			(1)					
	12%	9%	2%	8%	11%	2%			
Delivery Direction	(1)			(1)					
In	50%	50%	50%	50%	50%	50%			
Out	50%	50%	50%	50%	50%	50%			
Total	100%	100%	100%	100%	100%	100%			

Sources:
(1) 2014 *CEQR Technical Manual*
(2) *Western Rail Yard FEIS* (2009)
(3) U.S. Census Bureau, ACS 2011–2015 Five-Year Estimates—Journey-to-Work (JTW) Data
(4) NYCDOT Trip Generation and Mode Choice Study
(5) U.S. Census Bureau, ACS 2006–2010 Five-Year Estimates—Reverse-Journey-to-Work (RJTW) Data
(6) Trip Generation Rates developed from *FDNY/EMS Emergency Ambulance Deployment Matrix* provided by FDNY.

Emergency Medical Services (EMS Facility)

Trip generation factors for the potential EMS facility are primarily based on the *FDNY/EMS Emergency Ambulance Deployment Matrix*, which provides information on the daily worker shifts expected at the facility. The daily staff person trip rate assumes that each EMS staff member would generate one commuting trip in the beginning of their shift and one commuting trip out at the end of their shift. Similarly, one EMS ambulance trip would be generated at the beginning and end of each shift. Based on FDNY-EMS's anticipated shift allocations, the various staff shifts were distributed over the 24-hour period to develop peak hour worker and ambulance trips, as shown in **Table 14-5**.

Table 14-5
EMS Facility Staff Peak Hour Trips

Time Period Begin–End	EMS Facility						
	Staff			Ambulance			Total Trips
	In	Out	Total	In	Out	Total	
12:00 AM–1:00 AM		4	4	2		2	6
1:00 AM–2:00 AM		2	2	1		1	3
2:00 AM–3:00 AM		4	4	2		2	6
3:00 AM–4:00 AM			0			0	0
4:00 AM–5:00 AM			0			0	0
5:00 AM–6:00 AM	3	1	4		1	1	5
6:00 AM–7:00 AM	4	2	6	1	2	3	9
7:00 AM–8:00 AM	6	6	12	3	3	6	18
8:00 AM–9:00 AM	2	2	4	1	1	2	6
9:00 AM–10:00 AM	4		4		2	2	6
10:00 AM–11:00 AM			0			0	0
11:00 AM–12:00 PM			0			0	0
12:00 PM–1:00 PM			0			0	0
1:00 PM–2:00 PM	3	1	4		1	1	5
2:00 PM–3:00 PM	4	2	6	1	2	3	9
3:00 PM–4:00 PM	6	6	12	3	3	6	18
4:00 PM–5:00 PM	2	4	6	2	1	3	9
5:00 PM–6:00 PM	4	2	6	1	2	3	9
6:00 PM–7:00 PM		4	4	2		2	6
7:00 PM–8:00 PM			0			0	0
8:00 PM–9:00 PM			0			0	0
9:00 PM–10:00 PM	3	1	4		1	1	5
10:00 PM–11:00 PM	6	2	8	1	3	4	12
11:00 PM–12:00 AM	2	6	8	3	1	4	12

The modal splits for all peak periods are based on the Reverse Journey-to-Work (RJTW) data from the 2006–2010 U.S. Census Bureau ACS for Manhattan census tracts 83, 89, 93, 97, 99, 103, 111, and 117.

TRAVEL DEMAND PROJECTION SUMMARY

As summarized in **Table 14-6,** the proposed projects are estimated to generate approximately 1,192, 1,672, and 1,726 person trips during the weekday AM, midday, and PM peak hours, respectively. Approximately 153, 98, and 162 vehicle trips would be generated during the same respective time periods.

Traffic

As shown in **Table 14-6**, the incremental trips generated by the proposed projects would be 153, 98, and 162 vehicle trips during the weekday AM, midday, and PM peak hours, respectively. Since the incremental vehicle trips would be greater than 50 vehicles during the weekday AM, midday, and PM peak hours, a Level 2 screening assessment (presented in the section below) was conducted to determine if a quantified traffic analysis is warranted.

Transit

As shown in **Table 14-6**, the incremental transit trips generated by the proposed projects would be 455, 404, and 568 person trips by subway during the weekday AM, midday, and PM peak hours, respectively. A Level 2 screening assessment (presented in the section below) was conducted to determine if there is a need for additional quantified subway analyses.

Incremental railroad trips generated by the proposed projects would be 31, 14, and 33 person trips during the weekday AM, midday, and PM peak hours, respectively. Since these increments do not exceed the *CEQR Technical Manual* analysis threshold of 200 peak hour trips made by rail, a detailed analysis of rail facilities is not warranted and the proposed actions are not expected to result in any significant adverse rail impacts.

As shown in **Table 14-6**, the incremental bus trips generated by the proposed projects would be 56, 72, and 81 person trips during the weekday AM, midday, and PM peak hours, respectively. Considering that these trips would be further dispersed among the multiple local bus routes serving the study area, including the M11, M12, and M34 SBS routes, no single bus route would exceed the *CEQR Technical Manual* analysis threshold of 50 or more peak hour bus riders in a single direction. Therefore, a detailed bus line-haul analysis is also not warranted and the proposed actions are not expected to result in any significant adverse bus line-haul impacts.

Table 14-6
Trip Generation Summary: Incremental Trips

Program		Peak Hour	In/Out	Person Trip							Vehicle Trip				
				Auto	Taxi	Subway	Railroad	Bus	Walk	Total	Auto	Taxi	Ambulance	Delivery	Total
Site A	Residential	AM	In	7	7	50	4	6	46	120	6	33	0	4	43
			Out	41	41	285	20	34	258	679	36	33	0	4	73
			Total	48	48	335	24	40	304	799	42	66	0	8	116
		Midday	In	12	12	84	6	10	76	200	11	15	0	3	29
			Out	12	12	84	6	10	76	200	11	15	0	3	29
			Total	24	24	168	12	20	152	400	22	30	0	6	58
		PM	In	37	37	259	18	31	234	616	33	30	0	1	64
			Out	16	16	111	8	13	100	264	14	30	0	1	45
			Total	53	53	370	26	44	334	880	47	60	0	2	109
	Local Retail	AM	In	1	0	6	0	1	26	34	1	0	0	0	1
			Out	1	0	6	0	1	26	34	1	0	0	0	1
			Total	2	0	12	0	2	52	68	2	0	0	0	2
		Midday	In	5	1	36	0	9	168	219	3	2	0	0	5
			Out	5	1	36	0	9	168	219	3	2	0	0	5
			Total	10	2	72	0	18	336	438	6	4	0	0	10
		PM	In	3	1	19	0	5	88	116	2	2	0	0	4
			Out	3	1	19	0	5	88	116	2	2	0	0	4
			Total	6	2	38	0	10	176	232	4	4	0	0	8
	EMS Facility	AM	In	1	0	1	0	0	0	2	1	0	1	0	2
			Out	1	0	1	0	0	0	2	1	0	1	0	2
			Total	2	0	2	0	0	0	4	2	0	2	0	4
		Midday	In	0	0	0	0	0	0	0	0	0	0	0	0
			Out	0	0	0	0	0	0	0	0	0	0	0	0
			Total	0	0	0	0	0	0	0	0	0	0	0	0
		PM	In	2	0	2	0	0	0	4	2	0	1	0	3
			Out	1	0	1	0	0	0	2	1	0	2	0	3
			Total	3	0	3	0	0	0	6	3	0	3	0	6
Site B	Residential	AM	In	2	2	11	1	1	10	27	2	7	0	1	10
			Out	9	9	63	5	8	57	151	8	7	0	1	16
			Total	11	11	74	6	9	67	178	10	14	0	2	26
		Midday	In	3	3	19	1	2	17	45	3	3	0	1	7
			Out	3	3	19	1	2	17	45	3	3	0	1	7
			Total	6	6	38	2	4	34	90	6	6	0	2	14
		PM	In	8	8	57	4	7	52	136	7	7	0	0	14
			Out	4	4	25	2	3	22	60	4	7	0	0	11
			Total	12	12	82	6	10	74	196	11	14	0	0	25
	Local Retail	AM	In	1	0	9	0	2	40	52	1	0	0	0	1
			Out	1	0	9	0	2	40	52	1	0	0	0	1
			Total	2	0	18	0	4	80	104	2	0	0	0	2
		Midday	In	8	2	54	0	13	251	328	5	2	0	0	7
			Out	8	2	54	0	13	251	328	5	2	0	0	7
			Total	16	4	108	0	26	502	656	10	4	0	0	14
		PM	In	4	1	28	0	7	132	172	2	2	0	0	4
			Out	4	1	28	0	7	132	172	2	2	0	0	4
			Total	8	2	56	0	14	264	344	4	4	0	0	8
Lot 38	Residential	AM	In	0	0	2	0	0	2	4	0	1	0	0	1
			Out	1	1	10	1	1	9	23	1	1	0	0	2
			Total	1	1	12	1	1	11	27	1	2	0	0	3
		Midday	In	0	0	3	0	0	3	6	0	0	0	0	0
			Out	0	0	3	0	0	3	6	0	0	0	0	0
			Total	0	0	6	0	0	6	12	0	0	0	0	0
		PM	In	1	1	9	1	1	8	21	1	2	0	0	3
			Out	1	1	4	0	0	3	9	1	2	0	0	3
			Total	2	2	13	1	1	11	30	2	4	0	0	6
	Local Retail	AM	In	0	0	1	0	0	5	6	0	0	0	0	0
			Out	0	0	1	0	0	5	6	0	0	0	0	0
			Total	0	0	2	0	0	10	12	0	0	0	0	0
		Midday	In	1	0	6	0	2	29	38	1	0	0	0	1
			Out	1	0	6	0	2	29	38	1	0	0	0	1
			Total	2	0	12	0	4	58	76	2	0	0	0	2
		PM	In	0	0	3	0	1	15	19	0	0	0	0	0
			Out	0	0	3	0	1	15	19	0	0	0	0	0
			Total	0	0	6	0	2	30	38	0	0	0	0	0
Total		AM	In	12	9	80	5	10	129	245	11	41	1	5	58
			Out	54	51	375	26	46	395	947	48	41	1	5	95
			Total	66	60	455	31	56	524	1,192	59	82	2	10	153
		Midday	In	29	18	202	7	36	544	836	23	22	0	4	49
			Out	29	18	202	7	36	544	836	23	22	0	4	49
			Total	58	36	404	14	72	1,088	1,672	46	44	0	8	98
		PM	In	55	48	377	23	52	529	1,084	47	43	1	1	92
			Out	29	23	191	10	29	360	642	24	43	2	1	70
			Total	84	71	568	33	81	889	1,726	71	86	3	2	162

Pedestrians

All person trips generated by the proposed projects would traverse the pedestrian elements surrounding the Project Area. As shown in **Table 14-6**, the net incremental pedestrian trips would be greater than 200 during the weekday AM, midday, and PM peak hours. A Level 2 screening assessment (presented in the section below) was conducted to determine if there is a need for additional quantified pedestrian analyses.

LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the distribution and assignment of projected trips to the transportation network and the determination of whether specific locations are expected to experience incremental trips exceeding *CEQR Technical Manual* thresholds. Typically, if the results of this analysis show that the proposed project would result in 50 or more peak hour vehicle trips through an intersection, 200 or more peak hour subway passengers per station, 200 or more peak hour subway riders on a subway line in a single direction, 50 or more peak hour bus riders on a bus route in a single direction, or 200 or more peak hour pedestrian trips per pedestrian element, further quantified analyses may be warranted to evaluate the potential for significant adverse traffic, transit, pedestrian, and parking impacts. Based on consultation with NYCDOT and in consideration of congested conditions currently experienced in the area, numerous locations that are expected to incur fewer trips than these thresholds were also included in the analyses.

SITE ACCESS AND EGRESS

As part of the Level 2 screening assessment, With Action trips were assigned to specific pedestrian elements near the Project Area. As previously stated, according to *CEQR Technical Manual* methodology, further quantified analyses to assess the potential impacts of the proposed actions on the transportation system may be warranted if the trip assignments were to identify traffic intersections incurring 50 or more peak hour incremental vehicle trips or pedestrian elements incurring 200 or more peak hour incremental pedestrian trips.

For the proposed building on project site A, the residential entrance would be located on the corner of Eleventh Avenue and West 29th Street. The proposed local retail use would be located on the ground level of the building fronting Eleventh Avenue and West 30th Street. Parking for the proposed development, as well as entrance to the EMS facility, would be located on the ground level, behind the development mid-block, with access along West 29th Street between Eleventh and Twelfth Avenues.

For the proposed buildings on project site B and Lot 38, the residential and retail entrances would be located along West 30th Street between Eleventh and Twelfth Avenues. Similarly, access to parking structures for the proposed developments would be located along West 30th Street between Eleventh and Twelfth Avenues.

Traffic

As shown in **Table 14-6**, incremental vehicle trips resulting from the proposed projects would exceed the *CEQR* Level 1 screening threshold during the weekday AM, midday, and PM peak hours. These vehicle trips were assigned to the surrounding roadway network based on the most likely travel routes to and from the project site, prevailing travel patterns, commuter origin-destination (O-D) summaries from the census data, the configuration of the roadway network, the anticipated locations of site access and egress, and nearby land use and population

characteristics. Auto trips were assigned to the Project Area's parking garages. Taxi trips were assigned to the block faces along Eleventh Avenue, West 29th Street, and West 30th Street. All delivery trips were assigned to the project site's loading dock via the NYCDOT designated truck routes.

Residential

Auto trips generated by the proposed residential use were assigned based on the 2006–2010 U.S. Census ACS JTW origin-destination estimates. Many of the destinations for the residential trips would be toward Manhattan south of the Project Area (31 percent) and New Jersey (29 percent). The remaining trips would be toward Manhattan north of the Project Area (12 percent), the Bronx (2 percent), Queens (2 percent), Brooklyn (8 percent), Upstate New York (9 percent), Long Island (2 percent), and Connecticut (5 percent). The vehicle trips were assigned to the Project Area's parking garages via the most direct routes available, primarily along Eleventh and Twelfth Avenues and West 29th and West 30th Streets. The majority of the trips destined for New Jersey would use the Lincoln Tunnel via various access points nearby.

Local Retail

The proposed local retail uses are expected to serve the immediate surrounding area. Therefore, auto trips were generally assigned from local origins within the neighborhood and adjacent residential areas. Overall, the vehicle trips generated by the local retail component were distributed to the study area streets/roadways in the following manner: approximately 25 percent were assigned from points north of the project sites, 50 percent from points east of the sites, and 25 percent were assigned from points south of the sites.

Emergency Medical Services (EMS Facility)

Auto trips generated by staff of the EMS component were based on the 2006–2010 U.S. Census ACS RJTW origin-destination estimates. Many of the auto trips made by workers would originate from New Jersey (23 percent), Queens (15 percent), Brooklyn (12 percent), the Bronx (11 percent), Long Island (12 percent), and Upstate New York (10 percent). The remaining trips would originate from within Manhattan (11 percent), Staten Island (4 percent), and from Connecticut (2 percent). The vehicle trips were assigned to the project site A's parking garage via the most direct routes available, primarily along Eleventh and Twelfth Avenues and West 29th Street. The majority of the trips with origins or destinations in New Jersey would use the Lincoln Tunnel via various access points nearby.

Taxis

Taxi pick-ups and drop-offs for all project components were assigned to pick up and drop off along the project site frontages on Eleventh Avenue and West 29th and West 30th Streets.

Deliveries

Truck delivery trips for all project components were assigned to NYCDOT-designated truck routes. Trucks were assigned to the study area from regional origins via Tenth and Twelfth Avenues and West 29th and West 30th Streets.

Summary

According to the *CEQR Technical Manual*, intersections expected to incur 50 or more incremental peak hour vehicle trips as a result of a proposed project would have the potential for

significant adverse traffic impacts and should be assessed in a quantified traffic impact analysis. As shown in **Figures 14-2 through 14-4** and presented in **Table 14-7** and **Figure 14-5**, four intersections would incur incremental vehicle trips exceeding the CEQR threshold and have therefore been selected for analysis.

Table 14-7
Traffic Level 2 Screening Analysis Results
With Action Incremental Vehicle Trips

Intersection	Weekday			Selected Analysis locations
	AM	Midday	PM	
Twelfth Avenue and West 30th Street	**68**	45	**73**	✓
Twelfth Avenue and West 29th Street	**87**	49	**77**	✓
Twelfth Avenue and West 28th Street	44	20	46	
Eleventh Avenue and West 30th Street	**62**	48	**76**	✓
Eleventh Avenue and West 29th Street	**63**	**52**	**90**	✓
Eleventh Avenue and West 28th Street	21	12	19	
Tenth Avenue and West 30th Street	23	16	16	
Tenth Avenue and West 29th Street	24	20	30	
Tenth Avenue and West 28th Street	19	11	20	

Note: ✓ denotes intersections selected for detailed traffic analysis.
Bold numbers indicate 50 or more incremental vehicle trips.

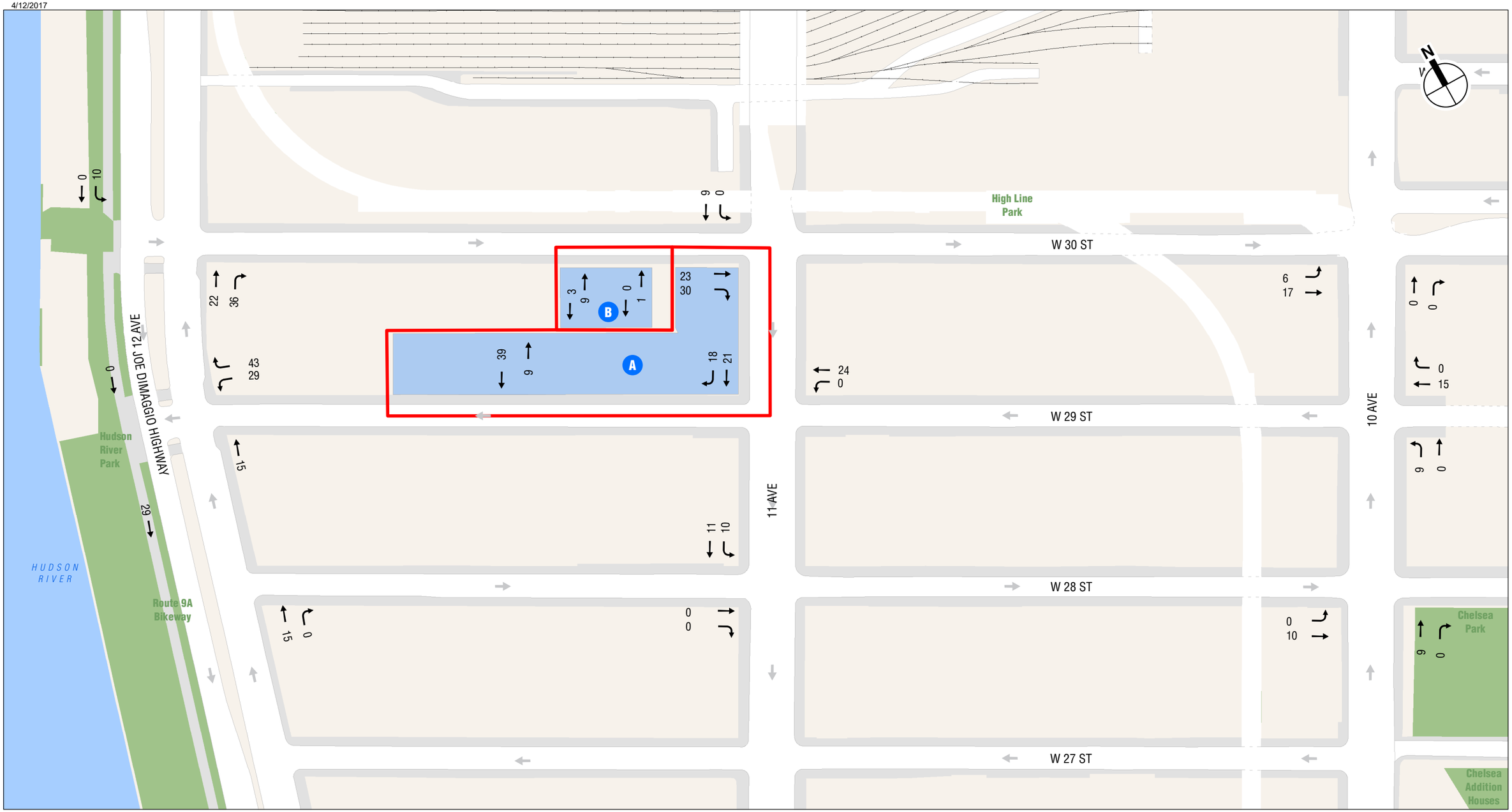
TRANSIT

As shown in **Table 14-6**, the projected peak hour incremental subway trips would exceed the CEQR analysis threshold of 200 riders during the weekday AM and PM peak hours, the critical commuter hours for which a transit analysis is typically prepared. The project sites are in the vicinity of the newly constructed 34th Street-Hudson Yards (No. 7 train) Station, the 34th Street-Penn Station (A, C, and E, and No. 1, 2, and 3 trains) Station, and the 28th Street (No. 1 train) Station. Based on discussions with New York City Transit (NYCT), it is expected that 85 percent of the project-generated subway trips would use the 34th Street-Hudson Yards Station, with the remaining 15 percent using the 34th Street-Penn Station and the 28th Street Station. This distribution would yield more than 200 incremental peak hour subway trips added to the 34th Street-Hudson Yards Station resulting from the proposed actions. Therefore analysis of key station elements at this station and subway line-haul for the No. 7 line for the weekday AM and PM peak hours is warranted.

PEDESTRIANS

As shown in **Table 14-6**, the projected peak hour incremental pedestrian trips would exceed the CEQR analysis threshold of 200 pedestrians during the weekday AM, midday, and PM peak hours. Level 2 incremental pedestrian trip assignments were individually developed for the proposed project components and are shown in **Figures 14-6 through 14-8** and discussed below.

- Auto Trips—Person-trips made by autos were assigned to the block faces immediately adjacent to the proposed buildings.
- Taxi Trips—Taxi patrons would get dropped off and picked up along Eleventh Avenue, West 29th Street, and West 30th Street.



A Project Sites

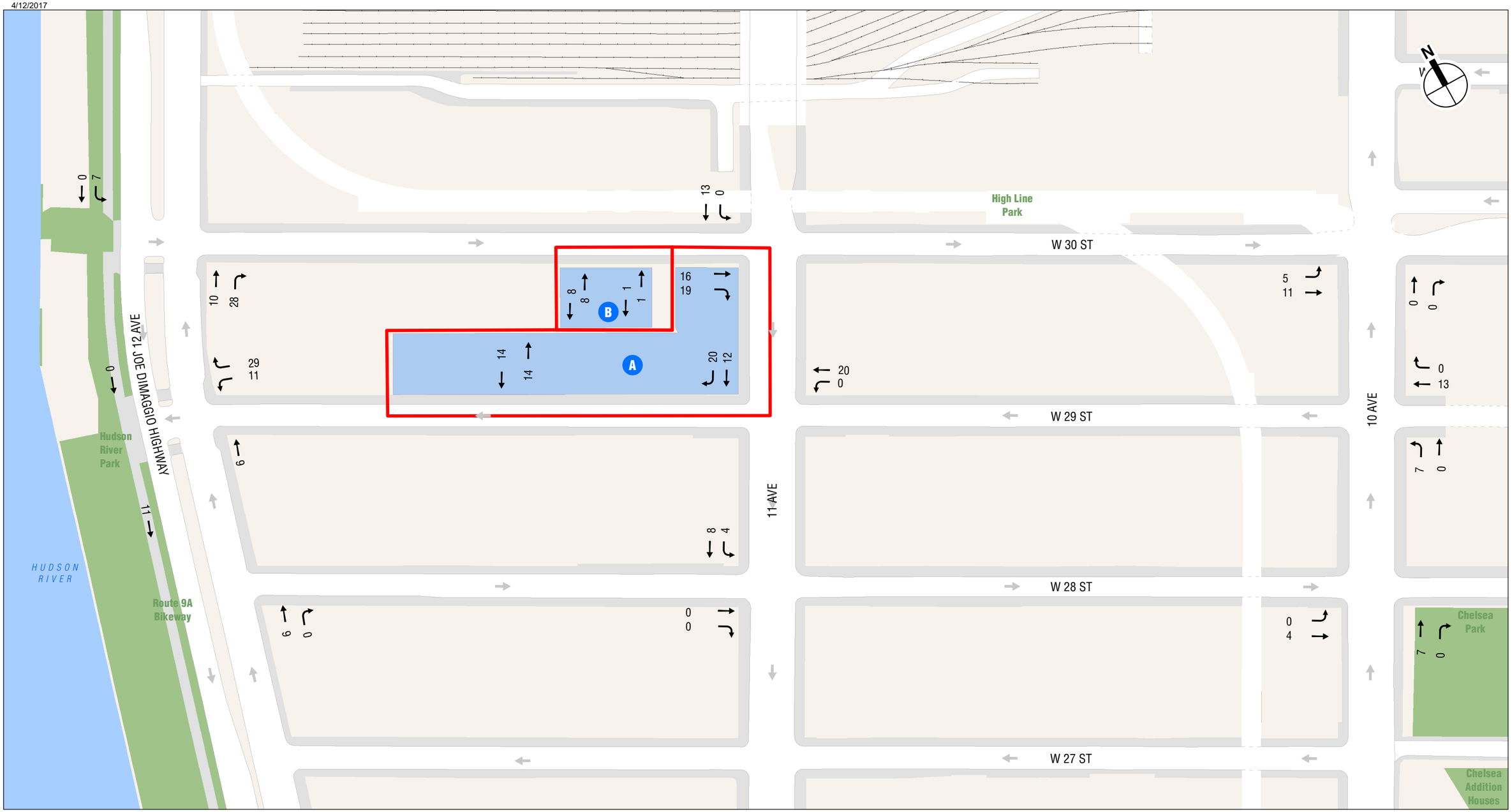
Proposed C6-4X

0 200 FEET

With Action Incremental Vehicle Trips
Weekday AM Peak Hour

BLOCK 675 EAST

Figure 14-2

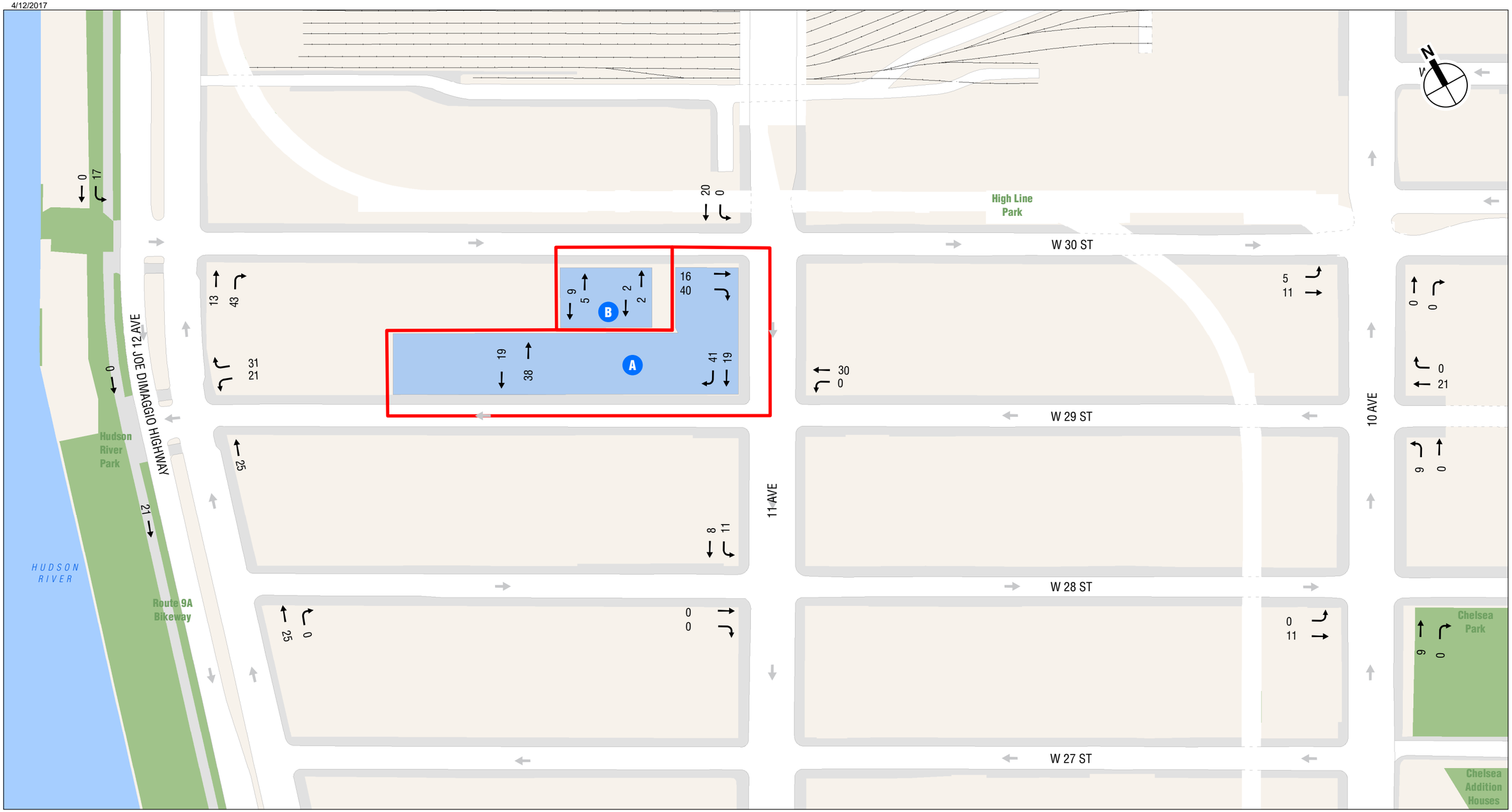


A Project Sites

Proposed C6-4X

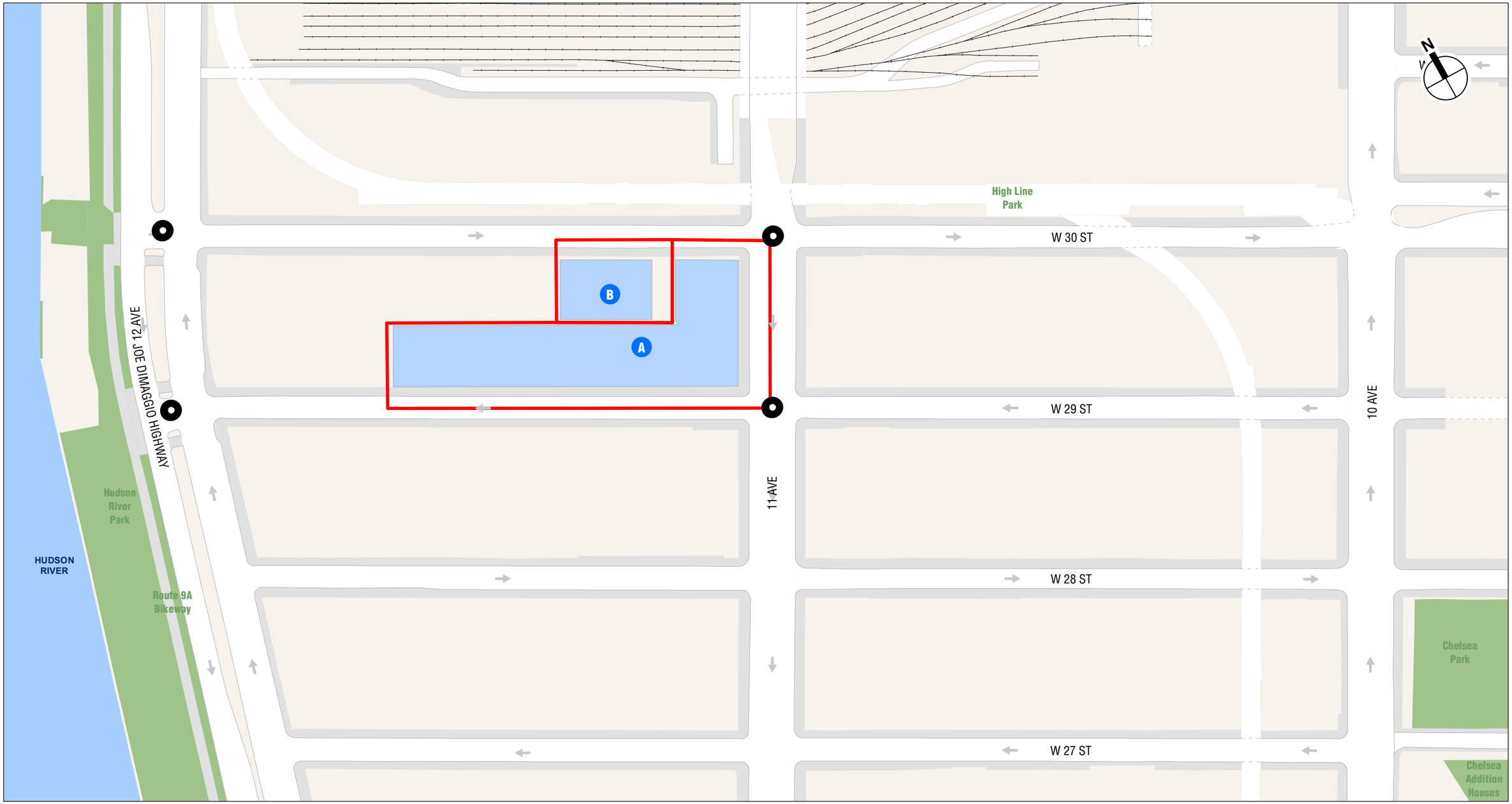
BLOCK 675 EAST

With Action Incremental Vehicle Trips
Weekday Midday Peak Hour
Figure 14-3



With Action Incremental Vehicle Trips
Weekday PM Peak Hour
Figure 14-4

BLOCK 675 EAST

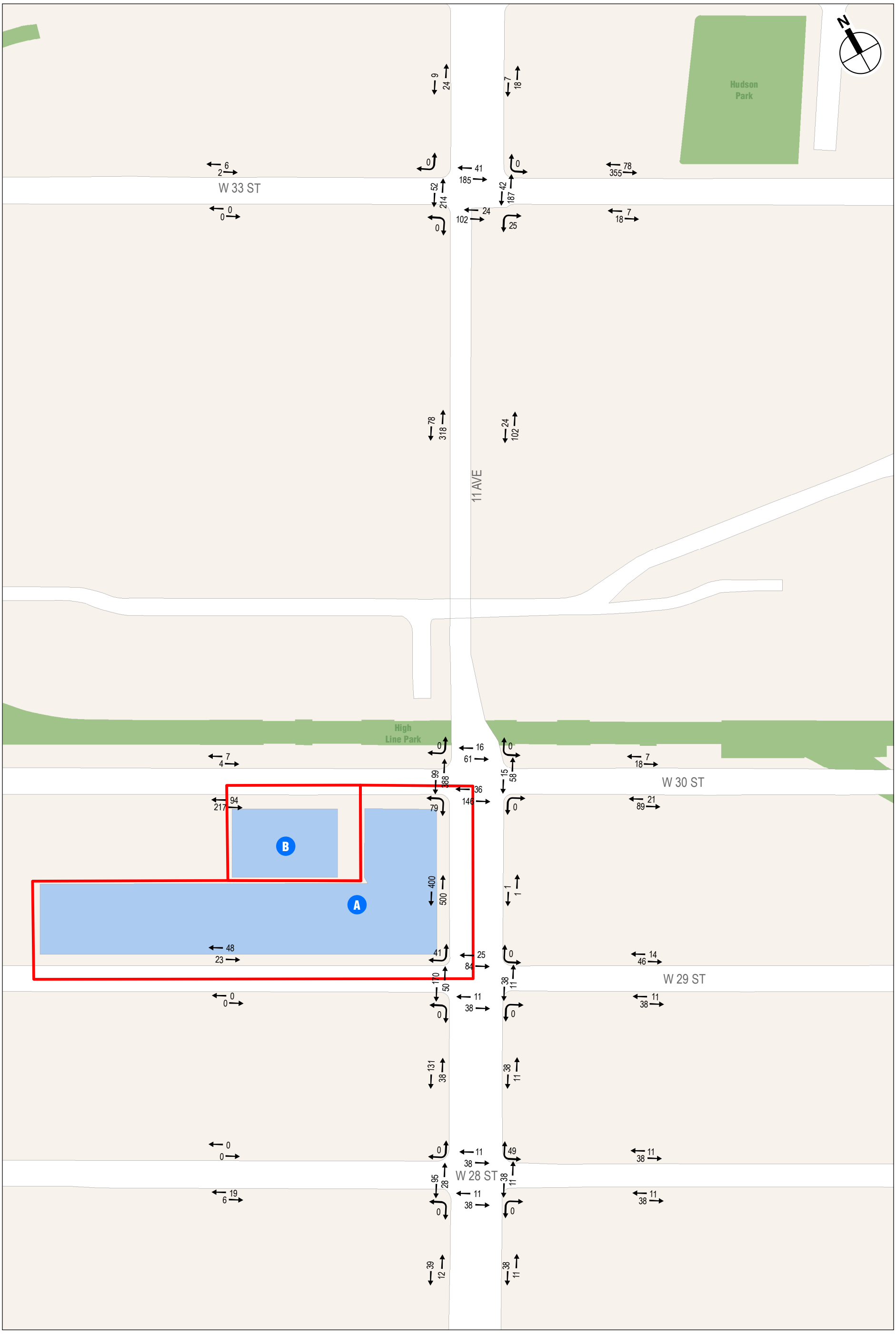


Traffic Analysis Locations

BLOCK 675 EAST

Figure 14-5

6/2/2017



A Project Sites

Proposed C6-4X

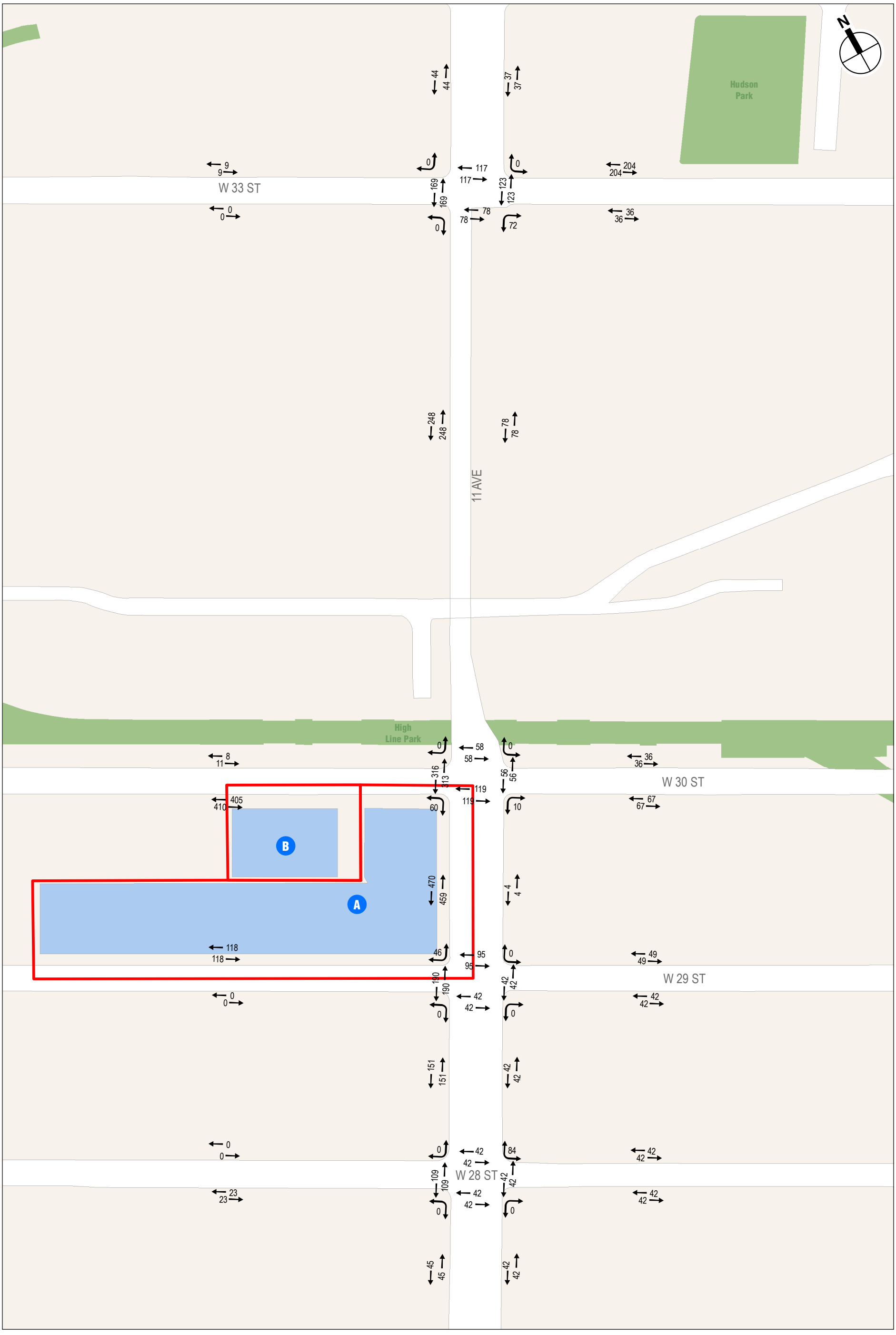
0 300 FEET

With Action Incremental Pedestrian Trips
Weekday AM Peak Hour

BLOCK 675 EAST

Figure 14-6

6/2/2017



A Project Sites

Proposed C6-4X

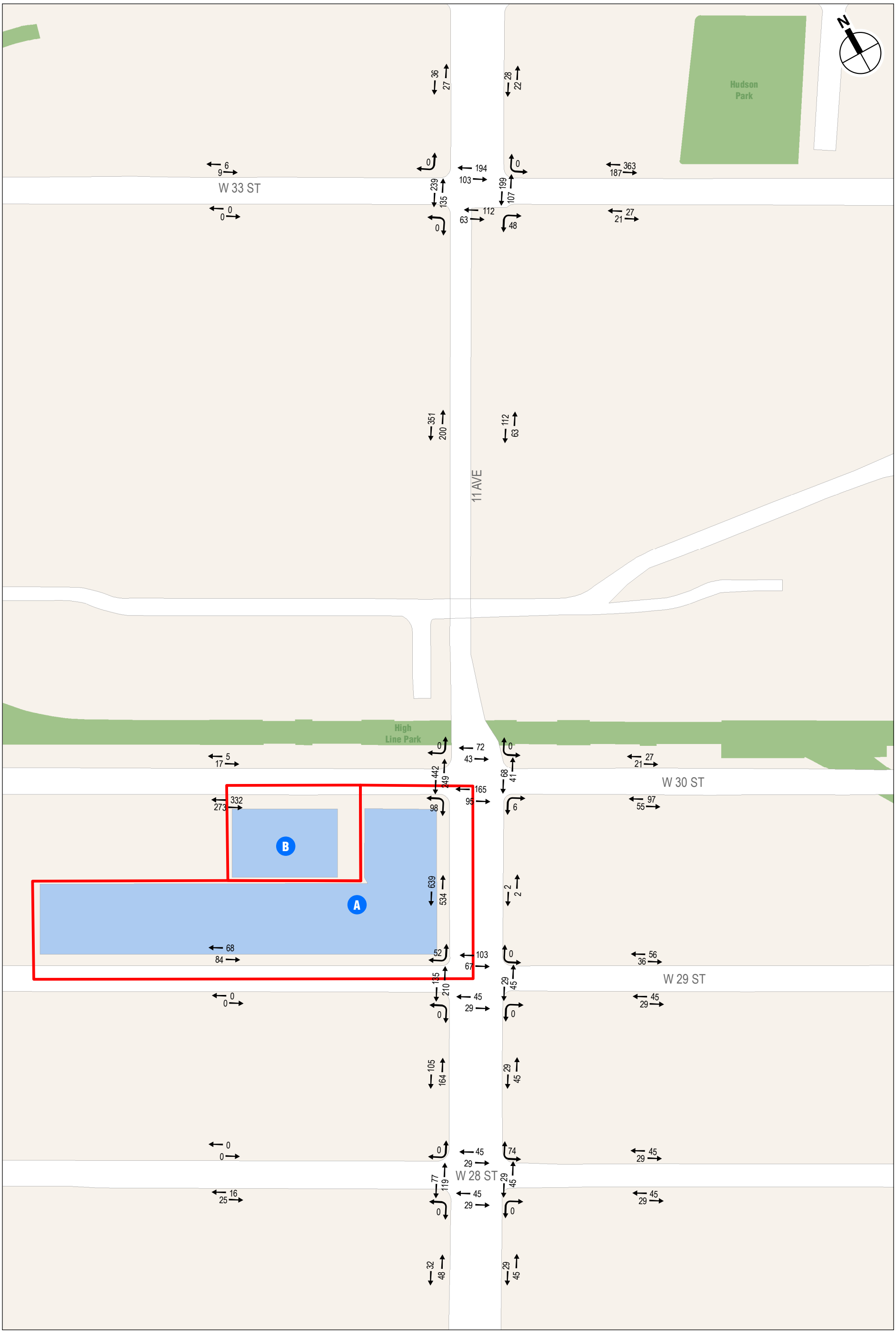
0 300 FEET

With Action Incremental Pedestrian Trips
Weekday Midday Peak Hour

BLOCK 675 EAST

Figure 14-7

6/2/2017



With Action Incremental Pedestrian Trips
Weekday PM Peak Hour

BLOCK 675 EAST

Figure 14-8

- City Bus Trips—City bus riders would use buses stopping on West 34th Street, and Tenth, Eleventh, and Twelfth Avenues and would get on and off at bus stops nearest to the Project Area.
- Subway Trips—Subway riders were assigned to the 34th Street-Hudson Yards Station (No. 7 train), the 34th Street-Penn Station (A, C, and E, and Nos. 1, 2, and 3 trains) Station, and the 28th Street (No. 1 train) Station.
- Walk-Only Trips—Pedestrian walk-only trips were developed by distributing project-generated person trips to surrounding pedestrian facilities (i.e., sidewalks, corner reservoirs, and crosswalks) based on population origin-destination data as well as the land use characteristics of the surrounding neighborhood.

Based on the detailed assignment of incremental pedestrian trips, 8 sidewalks, 16 corners, and 11 crosswalks have been selected for detailed analysis for the weekday AM, midday, and PM peak hours, as shown in **Table 14-8** and **Figure 14-9**.

Table 14-8
Pedestrian Level 2 Screening Analysis Results
With Action Incremental Pedestrian Trips

Pedestrian Elements	Weekday			Selected Analysis Location
	AM	Midday	PM	
Eleventh Avenue and West 33rd Street				
East Sidewalk along Eleventh Avenue between 33rd Street and 34th Street	25	74	50	
West Sidewalk along Eleventh Avenue between 33rd Street and 34th Street	33	88	63	
East Sidewalk along Eleventh Avenue between 33rd Street and 30th Street	126	156	175	✓
West Sidewalk along Eleventh Avenue between 33rd Street and 30th Street	**396**	**496**	**551**	✓
North Sidewalk along 33rd Street between Eleventh Avenue and Tenth Avenue	**433**	**408**	**550**	✓
South Sidewalk along 33rd Street between Eleventh Avenue and Tenth Avenue	25	72	48	
North Sidewalk along 33rd Street between Eleventh Avenue and Twelfth Avenue	8	18	15	
South Sidewalk along 33rd Street between Eleventh Avenue and Twelfth Avenue	0	0	0	
Northeast Corner	**455**	**480**	**603**	✓
Southeast Corner	**380**	**474**	**529**	✓
Northwest Corner	**492**	**572**	**671**	✓
Southwest Corner	**392**	**494**	**549**	✓
North Crosswalk	**226**	**234**	**297**	✓
South Crosswalk	126	156	175	✓
East Crosswalk	**229**	**246**	**306**	✓
West Crosswalk	**266**	**338**	**374**	✓
Eleventh Avenue and West 30th Street				
East Sidewalk along Eleventh Avenue between 30th Street and 29th Street	2	8	4	
West Sidewalk along Eleventh Avenue between 30th Street and 29th Street	**900**	**929**	**1173**	✓
North Sidewalk along 30th Street between Eleventh Avenue and Tenth Avenue	25	72	48	
South Sidewalk along 30th Street between Eleventh Avenue and Tenth Avenue	110	134	152	✓
North Sidewalk along 30th Street between Eleventh Avenue and Twelfth Avenue	11	19	22	
South Sidewalk along 30th Street between Eleventh Avenue and Twelfth Avenue	**311**	**815**	**605**	✓
Northeast Corner	150	**228**	**224**	✓
Southeast Corner	**255**	**360**	**375**	✓
Northwest Corner	**564**	**745**	**806**	✓
Southwest Corner	**748**	**927**	**1049**	✓
North Crosswalk	77	116	115	✓
South Crosswalk	182	**238**	**260**	✓
East Crosswalk	73	112	109	✓
West Crosswalk	**487**	**629**	**691**	✓
Eleventh Avenue and West 29th Street				
East Sidewalk along Eleventh Avenue between 29th Street and 28th Street	49	84	74	
West Sidewalk along Eleventh Avenue between 29th Street and 28th Street	169	**302**	**269**	✓
North Sidewalk along 29th Street between Eleventh Avenue and Tenth Avenue	60	98	92	
South Sidewalk along 29th Street between Eleventh Avenue and Tenth Avenue	49	84	74	
North Sidewalk along 29th Street between Eleventh Avenue and Twelfth Avenue	71	**236**	152	✓
South Sidewalk along 29th Street between Eleventh Avenue and Twelfth Avenue	0	0	0	
Northeast Corner	158	**274**	**244**	✓
Southeast Corner	98	168	148	✓
Northwest Corner	**370**	**616**	**567**	✓
Southwest Corner	**269**	**494**	**419**	✓
North Crosswalk	109	190	170	✓
South Crosswalk	49	84	74	
East Crosswalk	49	84	74	
West Crosswalk	**220**	**380**	**345**	✓
Eleventh Avenue and West 28th Street				
East Sidewalk along Eleventh Avenue between 28th Street and 27th Street	49	84	74	
West Sidewalk along Eleventh Avenue between 28th Street and 27th Street	51	90	80	
North Sidewalk along 28th Street between Eleventh Avenue and Tenth Avenue	49	84	74	
South Sidewalk along 28th Street between Eleventh Avenue and Tenth Avenue	49	84	74	
North Sidewalk along 28th Street between Eleventh Avenue and Twelfth Avenue	0	0	0	
South Sidewalk along 28th Street between Eleventh Avenue and Tenth Avenue	25	46	41	
Northeast Corner	147	**252**	**222**	✓
Southeast Corner	98	168	148	✓
Northwest Corner	172	**302**	**270**	✓
Southwest Corner	172	**302**	**270**	✓
North Crosswalk	49	84	74	
South Crosswalk	49	84	74	
East Crosswalk	49	84	74	
West Crosswalk	123	**218**	196	✓

Table 14-8 (cont'd)
Pedestrian Level 2 Screening Analysis Results
With Action Incremental Pedestrian Trips

Pedestrian Elements	Weekday			Selected Analysis Location
	AM	Midday	PM	
Twelfth Avenue and West 33rd Street				
East Sidewalk along Twelfth Avenue between 33rd Street and 34th Street	25	72	48	
West Sidewalk along Twelfth Avenue between 33rd Street and 34th Street	0	0	0	
East Sidewalk along Twelfth Avenue between 33rd Street and 30th Street	34	90	83	
West Sidewalk along Twelfth Avenue between 33rd Street and 30th Street	0	0	0	
Twelfth Avenue and West 30th Street				
East Sidewalk along Twelfth Avenue between 30th Street and 29th Street	2	20	10	
West Sidewalk along Twelfth Avenue between 30th Street and 29th Street	0	0	0	
North Sidewalk along 30th Street between Twelfth Avenue and Hudson River Greenway	0	0	0	
South Sidewalk along 30th Street between Twelfth Avenue and Hudson River Greenway	0	0	0	
Northeast Corner	36	91	82	
Southeast Corner	27	88	68	
Northwest Corner	0	0	0	
Southwest Corner	0	0	0	
North Crosswalk	0	0	0	
South Crosswalk	0	0	0	
East Crosswalk	25	72	60	
West Crosswalk	0	0	0	
Twelfth Avenue and West 29th Street				
East Sidewalk along Twelfth Avenue between 29th Street and 28th Street	4	26	14	
West Sidewalk along Twelfth Avenue between 29th Street and 28th Street	0	0	0	
North Sidewalk along 29th Street between Twelfth Avenue and Hudson River Greenway	0	0	0	
South Sidewalk along 29th Street between Twelfth Avenue and Hudson River Greenway	0	0	0	
Northeast Corner	4	30	16	
Southeast Corner	4	26	14	
Northwest Corner	0	0	0	
Southwest Corner	0	0	0	
North Crosswalk	0	0	0	
South Crosswalk	0	0	0	
East Crosswalk	4	26	14	
West Crosswalk	0	0	0	
Twelfth Avenue and West 28th Street				
East Sidewalk along Twelfth Avenue between 28th Street and 27th Street	29	74	53	
West Sidewalk along Twelfth Avenue between 28th Street and 27th Street	0	0	0	
Eleventh Avenue and West 34th Street				
East Sidewalk along Eleventh Avenue between West 33rd Street and West 34th Street	25	74	50	
South Sidewalk along West 34th Street between Tenth Avenue and Eleventh Avenue	0	0	0	
Southeast Corner	0	0	0	

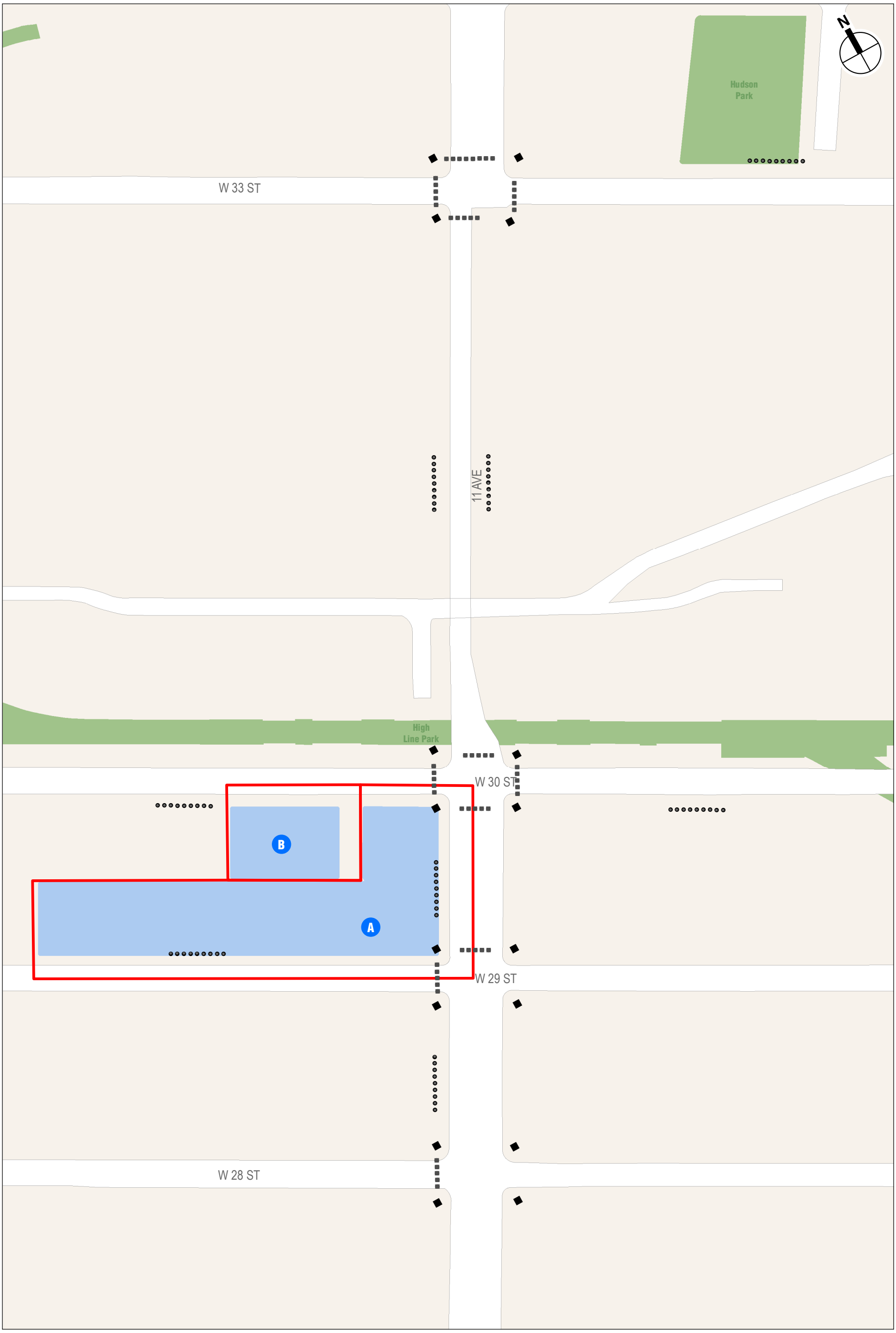
Note: ✓ denotes pedestrian elements selected for detailed analysis.
Bold numbers indicate 200 or more incremental pedestrian trips.

C. TRANSPORTATION ANALYSIS METHODOLOGIES

TRAFFIC OPERATIONS

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

6/16/2017



■ *Corners*

Crosswalk

Sidewalk

Proposed C6-4X

A *Project Sites*

BLOCK 675 EAST

0 300 FEET

Pedestrian Analysis Locations

Figure 14-9

SIGNALIZED INTERSECTIONS

The average control delay per vehicle is the basis for LOS determination for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. The levels of service are defined in **Table 14-9**.

Table 14-9
Level of Service Criteria for Signalized Intersections

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

Although the HCM methodology calculates a volume-to-capacity (v/c) ratio, there is no strict relationship between v/c ratios and LOS as defined in the *HCM*. A high v/c ratio indicates substantial traffic passing through an intersection, but a high v/c ratio combined with low average delay actually represents the most efficient condition in terms of traffic engineering standards, where an approach or the whole intersection processes traffic close to its theoretical maximum capacity with minimal delay. However, very high v/c ratios—especially those approaching or greater than 1.0—are often correlated with a deteriorated LOS. Other important variables affecting delay include cycle length, progression, and green time. LOS A and B indicate good operating conditions with minimal delay. At LOS C, the number of vehicles stopping is higher, but congestion is still fairly light. LOS D describes a condition where congestion levels are more noticeable and individual cycle failures (a condition where motorists may have to wait for more than one green phase to clear the intersection) can occur. Conditions at LOS E and F reflect poor service levels, and cycle breakdowns are frequent. The *HCM* methodology also provides for a summary of the total intersection operating conditions. The analysis chooses the two critical movements (the worst case from each roadway) and calculates a summary critical v/c ratio. The overall intersection delay, which determines the intersection's LOS, is based on a weighted average of control delays of the individual lane groups. Within New York City, the midpoint of LOS D (45 seconds of delay) is generally considered as the threshold between acceptable and unacceptable operations.

Significant Impact Criteria

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

TRANSIT OPERATIONS

SUBWAY STATION ELEMENTS

The methodology for assessing station circulation (stairs, escalators, and passageways) and fare control (regular turnstiles, high entry/exit turnstiles, and high exit turnstiles) elements compares the user volume with the analyzed element's design capacity, resulting in a v/c ratio. For stairs, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction or counter-flow between upward and downward pedestrians (up to 10 percent capacity reduction is applied to account for counter-flow friction), surging of entering and exiting pedestrians (up to 25 percent capacity reduction is applied to account for surged flows off of platforms and onto platforms), and the average area required for circulation. For passageways, similar considerations are made. For escalators and turnstiles, capacities are measured by the number and width of an element and the NYCT optimum capacity per element, also account for the potential for surging of entering and exiting pedestrians. In the analysis for each of these elements, volumes and capacities are presented for 15-minute intervals. The estimated v/c ratio is compared with NYCT criteria to determine a LOS for the operation of an element, as summarized in **Table 14-10**.

Table 14-10
Level of Service Criteria for Subway Station Elements

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

Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

At LOS A ("free flow") and B ("fluid flow"), there is sufficient area to allow pedestrians to freely select their walking speed and bypass slower pedestrians. When cross and reverse flow movement exists, only minor conflicts may occur. At LOS C ("fluid, somewhat restricted"), movement is fluid although somewhat restricted. While there is sufficient room for standing without personal contact, circulation through queuing areas may require adjustments to walking speed. At LOS D ("crowded, walking speed restricted"), walking speed is restricted and reduced. Reverse and cross flow movement is severely restricted because of congestion and the difficult passage of slower moving pedestrians. At LOS E ("congested, some shuffling and queuing") and F ("severely congested, queued"), walking speed is restricted. There is also insufficient area to bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

Significant Impact Criteria

The determination of significant impacts for station elements varies based on their type and use. For stairs and passageways, significant impacts are defined in term of width increment threshold (WIT) based on the minimum amount of additional capacity that would be required either to mitigate the location to its service conditions (LOS) under the No Action levels, or to bring it to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Significant impacts are typically considered to occur once the WITs in **Table 14-11** are reached or exceeded.

Table 14-11
Significant Impact Guidance for Stairs and Passageways

With Action V/C Ratio	WIT for Significant Impact (inches)	
	Stairway	Passageway
1.00 to 1.09	8.0	13.0
1.10 to 1.19	7.0	11.5
1.20 to 1.29	6.0	10.0
1.30 to 1.39	5.0	8.5
1.40 to 1.49	4.0	6.0
1.50 to 1.59	3.0	4.5
1.60 and up	2.0	3.0

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

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

SUBWAY AND BUS LINE-HAUL CAPACITIES

As per the *CEQR Technical Manual*, line-haul capacities are evaluated when a proposed project is anticipated to generate a perceptible number of passengers on particular subway and bus routes. For subways, if a subway line is expected to incur 200 or more passengers in one direction of travel during the commuter peak hours, a detailed review of ridership level at its maximum load point and/or other project-specific load points would be required to determine if the route's guideline (or practical) capacity would be exceeded. NYCT operates six different types of subway cars with different seating and guideline capacities. The peak period guideline capacity of a subway car, which ranges from 110 to 175 passengers, is compared with ridership levels to determine the acceptability of conditions.

Bus line-haul capacities are evaluated when a proposed project is anticipated to generate 50 or more bus passengers to a single bus line in one direction. The assessment of bus line-haul conditions involves analyzing bus routes at their peak load points and, if necessary, also their bus stops closest to the project site to identify the potential for the analyzed routes to exceed their guideline (or practical) capacities. NYCT and the MTA Bus Company operate three types of buses: standard and articulated buses, and over-the-road coaches. During peak hours, standard buses operate with up to 54 passengers per bus, articulated buses operate with up to 85 passengers per bus, and over-the-road coaches operate with up to 55 passengers per bus.

Significant Impact Criteria

For subways, projected increases from the No Action condition within guideline capacity to a With Action condition that exceeds guideline capacity may be considered a significant adverse impact, if a subway car for a particular route is expected to incur five or more riders from a proposed project. Since there are constraints on what service improvements are available to NYCT, significant line-haul capacity impacts on subway routes are generally disclosed but would usually remain unmitigated. For buses, an increase in bus load levels greater than the maximum capacity at any load point is defined as a significant adverse impact. While subject to operational and fiscal constraints, bus impacts can typically be mitigated by increasing service

frequency. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalk, crosswalk, and corner reservoir capacities in relation to the demand imposed on them is evaluated based on the methodologies presented in the 2010 *HCM*, pursuant to procedures detailed in the *CEQR Technical Manual*.

The primary performance measure for sidewalks and walkways is pedestrian space, expressed as square feet per pedestrian (SFP), which is an indicator of the quality of pedestrian movement and comfort. The calculation of the sidewalk SFP is based on the pedestrian volumes by direction, the effective sidewalk or walkway width, and average walking speed. The SFP forms the basis for a sidewalk LOS analysis. The determination of sidewalk LOS is also dependent on whether the pedestrian flow being analyzed is best described as "non-platoon" or "platoon." Non-platoon flow occurs when pedestrian volume within the peak 15-minute period is relatively uniform, whereas, platoon flow occurs when pedestrian volumes vary significantly with the peak 15-minute period. Such variation typically occurs near bus stops, subway stations, and/or where adjacent crosswalks account for much of the walkway's pedestrian volume.

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

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

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

The LOS standards for sidewalks, crosswalks, and corner reservoirs are summarized in **Table 14-12**. The *CEQR Technical Manual* specifies acceptable LOS in Central Business District (CBD) areas is mid-LOS D or better.

Table 14-12
Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks		Corner Reservoirs
	Non-Platoon Flow	Platoon Flow	
A	> 60 SFP	> 530 SFP	> 60 SFP
B	> 40 and ≤ 60 SFP	> 90 and ≤ 530 SFP	> 40 and ≤ 60 SFP
C	> 24 and ≤ 40 SFP	> 40 and ≤ 90 SFP	> 24 and ≤ 40 SFP
D	> 15 and ≤ 24 SFP	> 23 and ≤ 40 SFP	> 15 and ≤ 24 SFP
E	> 8 and ≤ 15 SFP	> 11 and ≤ 23 SFP	> 8 and ≤ 15 SFP
F	≤ 8 SFP	≤ 11 SFP	≤ 8 SFP

Note: SFP = square feet per pedestrian.
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

SIGNIFICANT IMPACT CRITERIA

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

Sidewalks

There are two sliding-scale formulas for determining significant sidewalk impacts. For non-platoon flow, the determination of significant sidewalk impacts is based on the sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. For platoon flow, the sliding-scale formula is $Y \geq X/(9.5 - 0.321)$. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, these formulas would apply only if the With Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 14-13** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Table 14-13
Significant Impact Guidance for Sidewalks

Non-Platoon Flow				Platoon Flow			
Sliding Scale Formula: ***Y ≥ X/9.0 – 0.31***				**Sliding Scale Formula:** ***Y ≥ X/(9.5 – 0.321)***			
Non-CBD Areas		**CBD Areas**		**Non-CBD Areas**		**CBD Areas**	
No Action Ped. Space (X, SFP)	**With Action Ped. Space Reduc. (Y, SFP)**	**No Action Ped. Space (X, SFP)**	**With Action Ped. Space Reduc. (Y, SFP)**	**No Action Ped. Space (X, SFP)**	**With Action Ped. Space Reduc. (Y, SFP)**	**No Action Ped. Space (X, SFP)**	**With Action Ped. Space Reduc. (Y, SFP)**
–	–	–	–	43.5 to 44.3	≥ 4.3	–	–
–	–	–	–	42.5 to 43.4	≥ 4.2	–	–
–	–	–	–	41.6 to 42.4	≥ 4.1	–	–
–	–	–	–	40.6 to 41.5	≥ 4.0	–	–
–	–	–	–	39.7 to 40.5	≥ 3.9	–	–
–	–	–	–	38.7 to 39.6	≥ 3.8	38.7 to 39.2	≥ 3.8
–	–	–	–	37.8 to 38.6	≥ 3.7	37.8 to 38.6	≥ 3.7
–	–	–	–	36.8 to 37.7	≥ 3.6	36.8 to 37.7	≥ 3.6
–	–	–	–	35.9 to 36.7	≥ 3.5	35.9 to 36.7	≥ 3.5
–	–	–	–	34.9 to 35.8	≥ 3.4	34.9 to 35.8	≥ 3.4
–	–	–	–	34.0 to 34.8	≥ 3.3	34.0 to 34.8	≥ 3.3
–	–	–	–	33.0 to 33.9	≥ 3.2	33.0 to 33.9	≥ 3.2
–	–	–	–	32.1 to 32.9	≥ 3.1	32.1 to 32.9	≥ 3.1
–	–	–	–	31.1 to 32.0	≥ 3.0	31.1 to 32.0	≥ 3.0
–	–	–	–	30.2 to 31.0	≥ 2.9	30.2 to 31.0	≥ 2.9
–	–	–	–	29.2 to 30.1	≥ 2.8	29.2 to 30.1	≥ 2.8
25.8 to 26.6	≥ 2.6	–	–	28.3 to 29.1	≥ 2.7	28.3 to 29.1	≥ 2.7
24.9 to 25.7	≥ 2.5	–	–	27.3 to 28.2	≥ 2.6	27.3 to 28.2	≥ 2.6
24.0 to 24.8	≥ 2.4	–	–	26.4 to 27.2	≥ 2.5	26.4 to 27.2	≥ 2.5
23.1 to 23.9	≥ 2.3	–	–	25.4 to 26.3	≥ 2.4	25.4 to 26.3	≥ 2.4
22.2 to 23.0	≥ 2.2	–	–	24.5 to 25.3	≥ 2.3	24.5 to 25.3	≥ 2.3
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1	23.5 to 24.4	≥ 2.2	23.5 to 24.4	≥ 2.2
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0	22.6 to 23.4	≥ 2.1	22.6 to 23.4	≥ 2.1
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9	21.6 to 22.5	≥ 2.0	21.6 to 22.5	≥ 2.0
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8	20.7 to 21.5	≥ 1.9	20.7 to 21.5	≥ 1.9
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7	19.7 to 20.6	≥ 1.8	19.7 to 20.6	≥ 1.8
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6	18.8 to 19.6	≥ 1.7	18.8 to 19.6	≥ 1.7
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5	17.8 to 18.7	≥ 1.6	17.8 to 18.7	≥ 1.6
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4	16.9 to 17.7	≥ 1.5	16.9 to 17.7	≥ 1.5
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3	15.9 to 16.8	≥ 1.4	15.9 to 16.8	≥ 1.4
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2	15.0 to 15.8	≥ 1.3	15.0 to 15.8	≥ 1.3
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1	14.0 to 14.9	≥ 1.2	14.0 to 14.9	≥ 1.2
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0	13.1 to 13.9	≥ 1.1	13.1 to 13.9	≥ 1.1
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9	12.1 to 13.0	≥ 1.0	12.1 to 13.0	≥ 1.0
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8	11.2 to 12.0	≥ 0.9	11.2 to 12.0	≥ 0.9
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7	10.2 to 11.1	≥ 0.8	10.2 to 11.1	≥ 0.8
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6	9.3 to 10.1	≥ 0.7	9.3 to 10.1	≥ 0.7
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5	8.3 to 9.2	≥ 0.6	8.3 to 9.2	≥ 0.6
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4	7.4 to 8.2	≥ 0.5	7.4 to 8.2	≥ 0.5
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3	6.4 to 7.3	≥ 0.4	6.4 to 7.3	≥ 0.4
< 5.1	≥ 0.2	< 5.1	≥ 0.2	< 6.4	≥ 0.3	< 6.4	≥ 0.3

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

Corner Reservoirs and Crosswalks

The determination of significant corner and crosswalks impacts is also based on a sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, this formula would apply only if the With Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 14-14** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir and crosswalk impacts.

Table 14-14
Significant Impact Guidance for Corners and Crosswalks

Sliding Scale Formula: *Y ≥ X/9.0 – 0.31*			
Non-CBD Areas		**CBD Areas**	
No Action Pedestrian Space (X, SFP)	**With Action Pedestrian Space Reduction (Y, SFP)**	**No Action Pedestrian Space (X, SFP)**	**With Action Pedestrian Space Reduction (Y, SFP)**
25.8 to 26.6	≥ 2.6	–	–
24.9 to 25.7	≥ 2.5	–	–
24.0 to 24.8	≥ 2.4	–	–
23.1 to 23.9	≥ 2.3	–	–
22.2 to 23.0	≥ 2.2	–	–
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2	< 5.1	≥ 0.2
Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No Action pedestrian space in SFP.			
Sources: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.			

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

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

PARKING CONDITIONS ASSESSMENT

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

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

D. DETAILED TRAFFIC ANALYSIS

As described above in Section B, "Preliminary Analysis Methodology and Screening Assessment," four signalized intersections have been selected for analysis in the weekday AM, midday, and PM peak hours.

EXISTING CONDITIONS

ROADWAY NETWORK AND TRAFFIC STUDY AREA

The key roadways in the study area include West 30th Street, West 29th Street, Route 9A/Twelfth Avenue, and Eleventh Avenue. The physical and operational characteristics of the study area roadways are as follows:

- West 30th Street is a one-way eastbound roadway that has one moving lane with a bike lane, and has a curb-to-curb width of approximately 35 feet. West of Eleventh Avenue, there is curbside parking available on both sides of the street.
- West 29th Street is a one-way westbound roadway that operates with one to two moving lanes with a bike lane, and has a curb-to-curb width of approximately 32 feet. Regulated curbside parking is available for DSNY vehicles.
- Route 9A/Twelfth Avenue is a two-way major north-south roadway with four moving lanes in each direction. It has a curb-to-curb width of approximately 100 feet with a 20 feet median in the center. There is no curbside parking provided.
- Eleventh Avenue is a major one-way southbound roadway with four to five moving lanes. It operates with a width of approximately 70 feet. Curbside parking is provided along both sides of the street.

TRAFFIC CONDITIONS

Traffic data were collected in June 2016 for the weekday AM, midday, and PM peak periods of 7:00 AM to 10:00 AM, 11:00 AM to 2:00 PM, and 4:00 PM to 7:00 PM, respectively, via a combination of manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) counts. Existing peak period traffic volumes were developed based on these counts. Although the typical weekday AM, midday, and PM peak hours of traffic in Manhattan are 8:00 AM to 9:00 AM, noon to 1:00 PM, and 5:00 PM to 6:00 PM, respectively, for analysis purposes, the highest peak hour traffic volumes during the respective peak periods based on the collected data were used. Inventories of roadway geometry, traffic controls, bus stops, and parking regulations/activities were recorded to provide appropriate inputs for the operational analyses. It

should be noted that one of the travel lanes on the southbound approach of Eleventh Avenue at West 30th Street was closed to accommodate Eastern Rail Yard's construction activities. Hence, this approach was analyzed with three travel lanes in the existing conditions analyses presented below. Official signal timings were also obtained from DOT for use in the analysis of the study area signalized intersections. **Figures 14-10 through 14-12** show the existing traffic volumes for the weekday AM, midday, and PM peak hours, respectively.

LEVELS OF SERVICE

A summary of the existing conditions traffic analysis results are presented in **Table 14-15**. Details on LOS, v/c ratios, and average delays are presented in **Table 14-16**. The capacity analysis indicates that most of the study area's intersection approaches/lane groups operate acceptably—at mid-LOS D or better (delays of 45 seconds or less per vehicle for the study area's signalized intersections) for the peak hours. Approaches/lane groups operating beyond mid-LOS D and those with v/c ratios of 0.90 or greater are listed below.

Table 14-15
Summary of Existing Traffic Analysis Results

Level of Service	Analysis Peak Hours		
	Weekday AM	Weekday Midday	Weekday PM
Signalized Intersections			
Lane Groups at LOS A/B/C	11	11	11
Lane Groups at LOS D	0	2	2
Lane Groups at LOS E	2	1	0
Lane Groups at LOS F	1	0	1
Total	14	14	14
Lane Groups with v/c ≥ 0.90	0	0	2

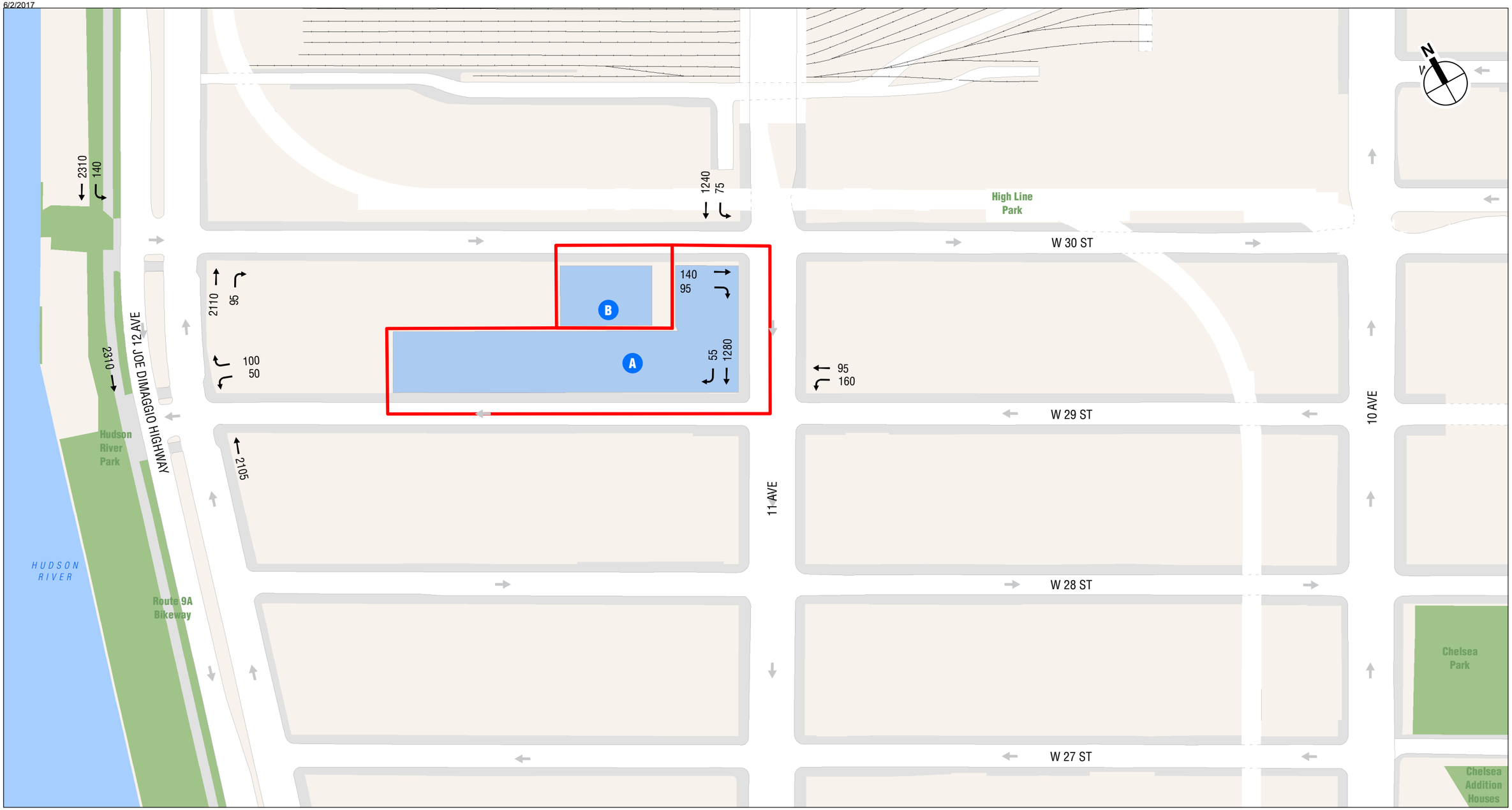
Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio.

Table 14-16
Existing Conditions Level of Service Analysis
Signalized Intersections

Intersection	Weekday AM				Weekday Midday				Weekday PM			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/Twelfth Avenue and West 30th Street												
Northbound	TR	0.66	15.9	B	TR	0.66	17.0	B	TR	0.75	18.0	B
Southbound	L	0.79	91.1	F	L	0.82	79.9	E	L	1.05	137.1	F
	T	0.82	21.3	C	T	0.86	24.2	C	T	0.91	26.5	C
Route 9A/Twelfth Avenue and West 29th Street												
Westbound	L	0.27	56.5	E	L	0.15	39.0	D	L	0.21	45.4	D
	R	0.47	62.5	E	R	0.65	53.5	D	R	0.54	54.0	D
Northbound	T	0.56	8.9	A	T	0.56	10.3	B	T	0.71	17.1	B
Southbound	T	0.74	12.2	B	T	0.70	13.0	B	T	0.88	24.4	C
Eleventh Avenue and West 30th Street												
Eastbound	T	0.24	16.3	B	T	0.38	18.5	B	T	0.43	19.5	B
	R	0.22	16.4	B	R	0.29	17.6	B	R	0.30	17.6	B
Southbound	LT	0.73	23.1	C	LT	0.82	26.0	C	LT	0.64	21.2	C
Eleventh Avenue and West 29th Street												
Westbound	L	0.33	17.9	B	L	0.31	17.5	B	L	0.34	18.0	B
	T	0.16	15.5	B	T	0.28	16.9	B	T	0.31	17.4	B
Southbound	T	0.62	20.4	C	T	0.57	19.6	B	T	0.43	17.7	B
	R	0.21	17.0	B	R	0.15	15.5	B	R	0.22	17.1	B

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service

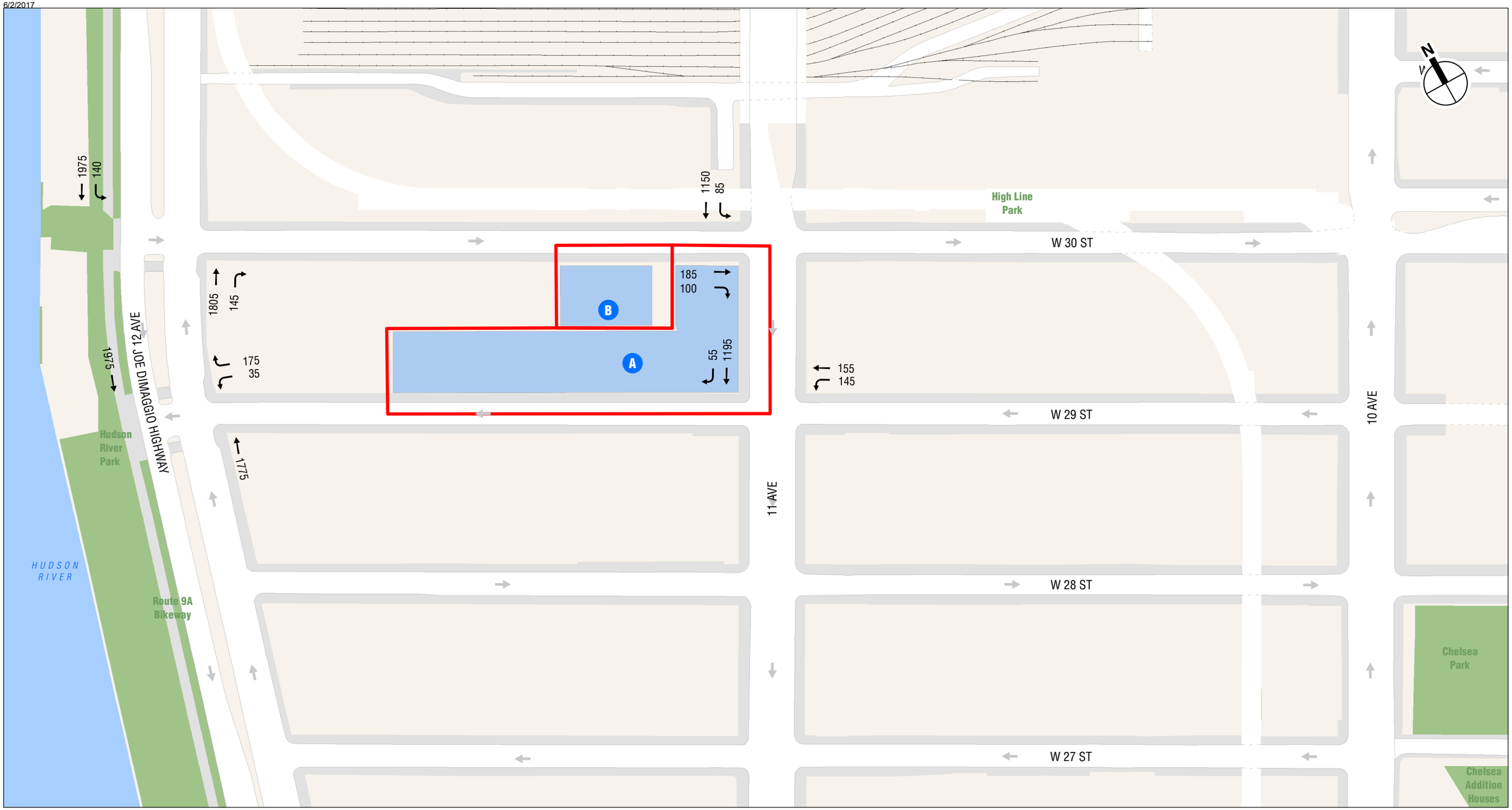
6/2/2017



BLOCK 675 EAST

Existing Traffic Volumes
Weekday AM Peak Hour
Figure 14-10

6/2/2017



A Project Sites

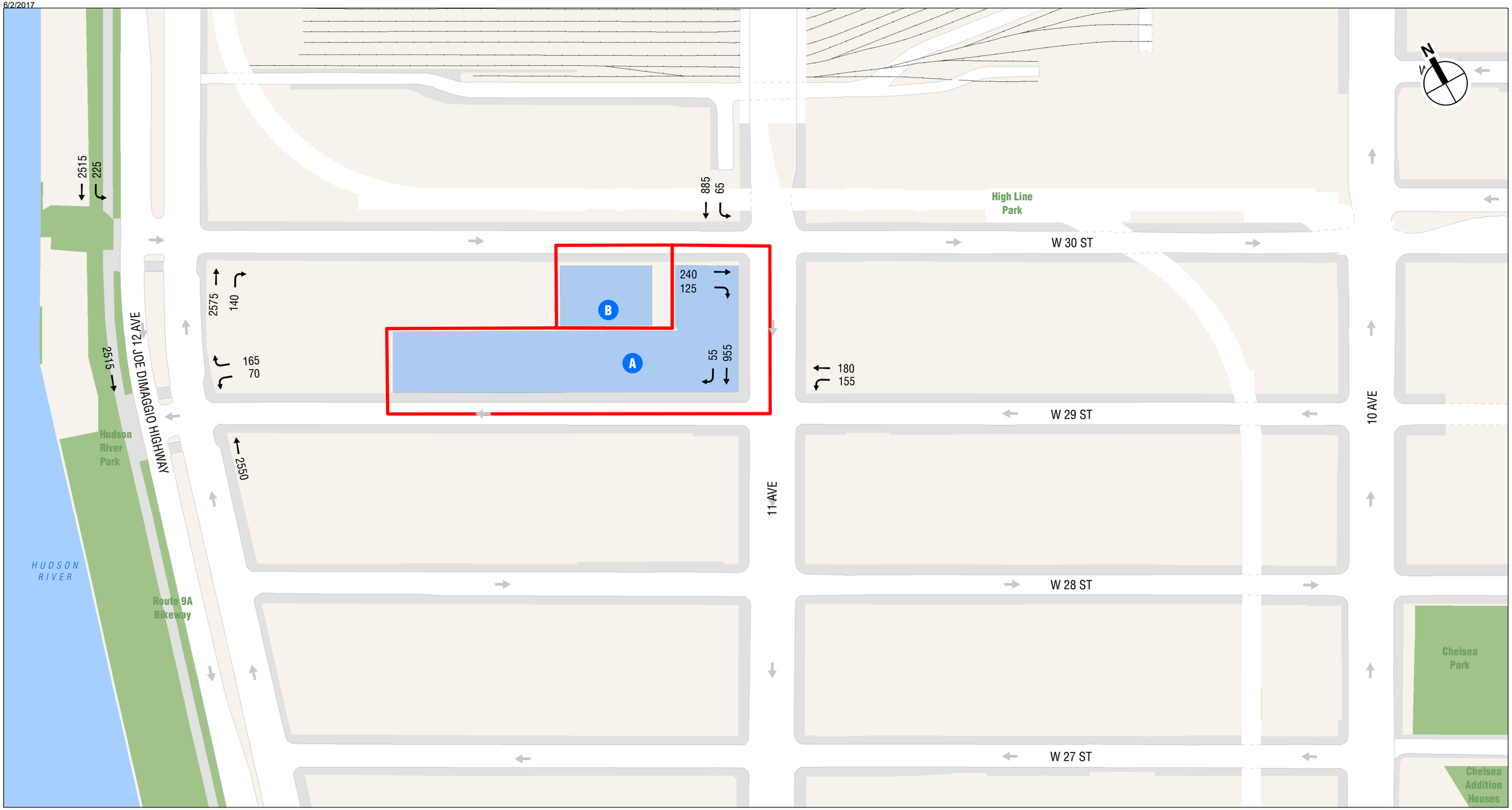
Proposed C6-4X

0 200 FEET

BLOCK 675 EAST

Existing Traffic Volumes
Weekday Midday Peak Hour
Figure 14-11

6/2/2017



A Project Sites

Proposed C6-4X

0 200 FEET

BLOCK 675 EAST

Existing Traffic Volumes
Weekday PM Peak Hour
Figure 14-12

- Southbound left-turn at the Twelfth Avenue and West 30th Street intersection (LOS F with a v/c ratio of 0.79 and a delay of 91.1 seconds per vehicle [spv] during the weekday AM peak hour; LOS E with a v/c ratio of 0.82 and a delay of 79.9 spv during the weekday midday peak hour; and LOS F with a v/c ratio of 1.05 and a delay of 137.1 spv during the weekday PM peak hour);
- Southbound through at the Twelfth Avenue and West 30th Street intersection (LOS C with a v/c ratio of 0.91 and a delay of 26.5 spv during the weekday PM peak hour);
- Westbound left-turn at the Twelfth Avenue and West 29th Street intersection (LOS E with a v/c ratio of 0.27 and a delay of 56.5 spv during the weekday AM peak hour; and LOS D with a v/c ratio of 0.21 and a delay of 45.4 spv during the weekday PM peak hour); and
- Westbound right-turn at the Twelfth Avenue and West 29th Street intersection (LOS E with a v/c ratio of 0.47 and a delay of 62.5 spv during the weekday AM peak hour; LOS D with a v/c ratio of 0.65 and a delay of 53.5 spv during the weekday midday peak hour; and LOS D with a v/c ratio of 0.54 and a delay of 54.0 spv during the weekday PM peak hour).

THE FUTURE WITHOUT THE PROPOSED ACTIONS

The No Action condition was developed by increasing the existing traffic levels by the expected growth in overall travel through and within the study area. As per *CEQR Technical Manual* guidelines, an annual background growth rate of 0.25 percent was applied to grow traffic to the proposed projects' anticipated build year of 2022. A total of 37 development projects expected to occur in the No Action condition (No Build projects) were identified as being planned for the ½-mile study area (see **Figure 14-13**). After reviewing the development programs for each of the planned projects, it was determined that background growth will address the increase in traffic and pedestrian levels for three of the small- to moderate-sized projects in the study area. This review took into account the likely trip generation and traffic routing of these projects in relation to background growth added to the study area intersections. Discrete trips generated by Eastern Rail Yard were incorporated into the No Action analyses. The remaining 33 No Build projects were grouped into three clusters (A, B, and C) due to their proximity to one another. **Table 14-17** and **Figure 14-13** summarize the projects that were accounted for in this future 2022 baseline.

As discussed above in the "Level 1 Screening Assessment" section of Section B, "Preliminary Analysis Methodology and Screening Assessment," absent the proposed projects, existing uses on the project sites are assumed to remain unchanged.

6/16/2017



Project Area

Study Area (Half-mile boundary)

(1) *No Build Sites*

0 1,000 FEET

BLOCK 675 EAST

No Build Sites
Figure 14-13

Table 14-17
No Action Projects Anticipated to be Complete by 2022

Map ID No.	Address/Name	Program	Transportation Assumptions	Build Year
1	550 West 29th St.	32 DU, 4,572 sf retail	Transportation assumptions from *CEQR Technical Manual, Western Rail Yards FEIS*, 2011–2015 U.S. Census Bureau ACS Journey to Work estimates, 2006–2010 U.S. Census Bureau ACS Reverse Journey to Work estimates, and other previously approved studies.	2017
2	520 West 30th St.	179 DU, 13,219 sf retail	See project site 1, above	2017
3	522 West 29th St.	31 DU, 906 sf retail	See project site 1, above	2017
4	Eastern Rail Yard	2,200 DU, 1 million sf retail, 220,000 sf hotel, 200,000 sf community facility, 6.8 million sf office, 950 parking spaces, 7 acres of open space	See project site 1, above	2022
5	525 West 27th St.	36 DU, 6,490 sf retail	See project site 1, above	2017
6	510 West 28th St.	40 DU, 11,183 sf retail	See project site 1, above	2017
7	507 West 28th St.	375 DU, 16,068 sf retail	See project site 1, above	2017
8	505-511 West 27th St.	14,572 sf retail	See project site 1, above	2022
9	220 Eleventh Avenue	43 DU, 3,482 sf retail	See project site 1, above	2021
10	540 West 26th St.	29,710 sf community facility, 98,657 sf office	See project site 1, above	2017
11	400 Eleventh Avenue	1.8 million sf office	See project site 1, above	2021
12	540 West 25th St.	48,761 sf retail	See project site 1, above	2019
13	435 Tenth Avenue	2.2 million sf office	See project site 1, above	2022
14	432 West 31st St.	220 hotel rooms	Included in background growth	2017
15	188 Eleventh Avenue	11 DU, 9,053 sf retail	See project site 1, above	2022
16	559 West 23rd St.	6 DU	See project site 1, above	2022
17	514 West 24th St.	14 DU, 5,306 sf retail	See project site 1, above	2017
18	428 Tenth Avenue	399 hotel rooms	See project site 1, above	2018
19	431 West 33rd St.	24 DU, 5,461 sf retail	Included in background growth	2022
20	444 Tenth Avenue	111 hotel rooms	See project site 1, above	2016
21	511 West 23rd St.	3,636 sf retail, 4,839 sf office	See project site 1, above	2022
22	536 West 23rd St.	337 DU, 25,157 sf retail	See project site 1, above	2019
23	515 West 36th St.	251 DU, 13,573 sf retail, 35,974 sf community facility	See project site 1, above	2018
24	445 West 35th St.	125 DU, 4,920 sf retail, 1,188 sf community facility	See project site 1, above	2017
25	411 Ninth Avenue	12 DU, 1,231 sf retail	Included in background growth	2022
26	548 West 22nd St.	21 DU, 7,175 sf retail	See project site 1, above	2022
27	542 West 22nd St.	31,985 sf office	See project site 1, above	2018

Table 14-17 (cont'd)
No Action Projects Anticipated to be Complete by 2022

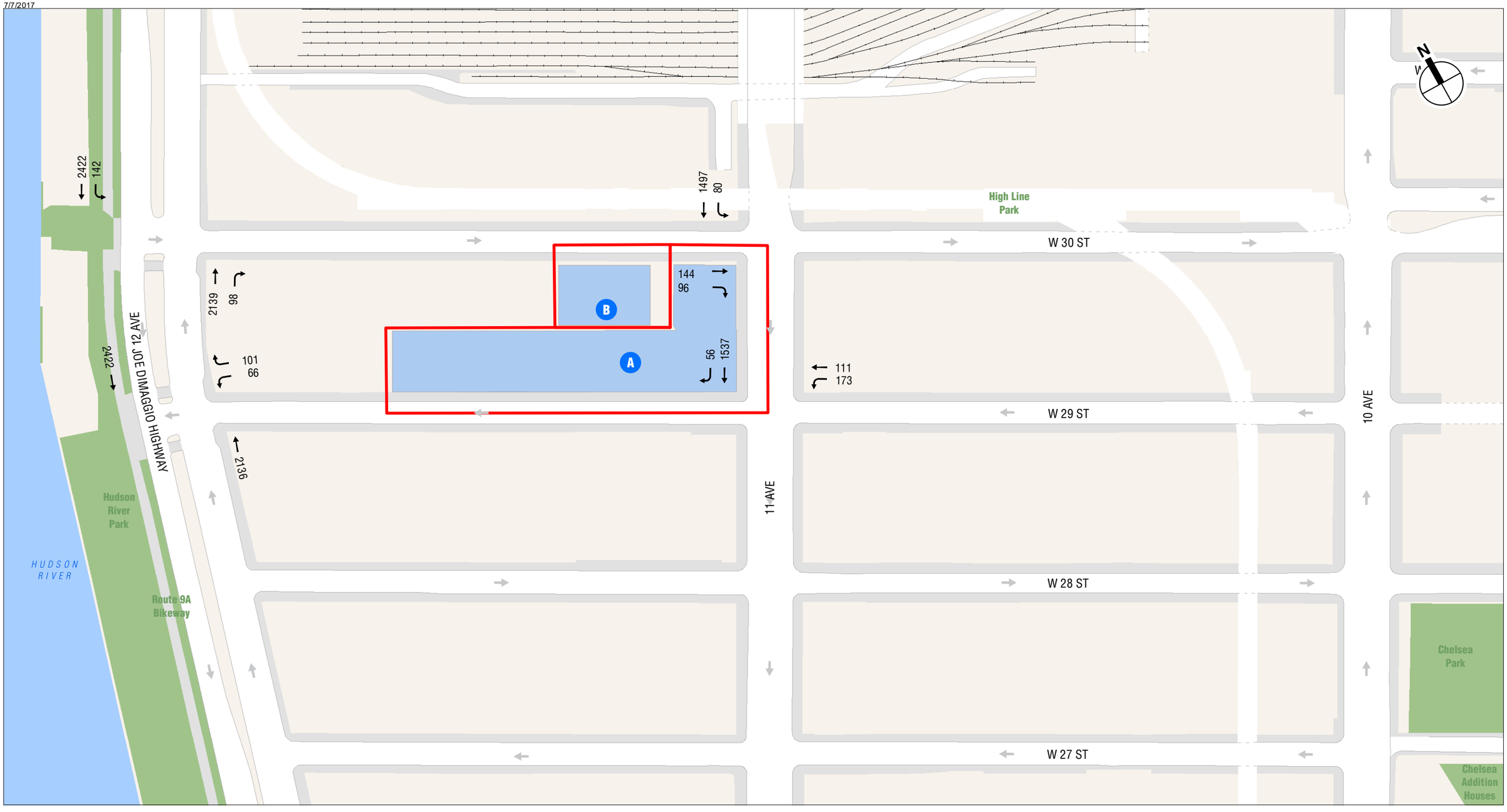
Map ID No.	Address/Name	Program	Transportation Assumptions	Build Year
28	545 West 37st St.	131 DU, 358 hotel rooms	See project site 1, above	2019
29	551 West 21st St.	44 DU, 10,610 sf retail	See project site 1, above	2017
30	510 West 22nd St.	137,081 sf retail	See project site 1, above	2017
31	411 West 35th St.	186 DU, 14,586 sf retail	See project site 1, above	2017
32	500 West 22nd St.	8 DU, 1,959 sf retail, 21,765 sf community facility	See project site 1, above	2019
33	Hudson Yards Projected Site 26	304 DU, 12,678 sf retail	See project site 1, above	2022
34	509 West 38th St.	225 DU, 13,739 sf retail, 29,180 sf community facility	See project site 1, above	2017
35	Bayview Correctional Facility	100,000 sf community facility	See project site 1, above	2018
36	323 Tenth Avenue	220 DU	See project site 1, above	
37	517 West 29th St.	43 DU	See project site 1, above	
38	338 West 36th St.	568 hotel rooms	Outside Half-mile boundary	2018
39	501 West 18th St.	63 DU, 10,291 sf retail	Outside Half-mile boundary	2019
40	337 West 36th St.	89 hotel rooms	Outside Half-mile boundary	2021
41	547 Tenth Avenue	600 DU, 5,780 sf retail, 93,208 sf community facility	Outside Half-mile boundary	2016
42	320 West 36th St.	249 hotel rooms	Outside Half-mile boundary	2017
43	326 West 37th St.	252 hotel rooms	Outside Half-mile boundary	2022
44	76 Eleventh Avenue	310 DU, 62,578 sf retail	Outside Half-mile boundary	2019
45	572 Eleventh Avenue	163 DU, 10,827 sf retail	Outside Half-mile boundary	2018
46	Pier 57 (Hudson River Park)	122,976 sf retail, 43,700 sf community facility, 206,269 sf office, 3 acres of open space	Outside Half-mile boundary	2018
47	144 West 28th St.	522 hotel rooms	Outside Half-mile boundary	2022
48	225 West 28th St.	112 DU, 13,560 sf retail	Outside Half-mile boundary	2022
49	211 West 29th St.	42 DU, 3,192 sf retail	Outside Half-mile boundary	2022
50	255 West 34th St.	300 hotel rooms	Outside Half-mile boundary	2022
51	142 West 29th St.	37 DU, 3,209 sf retail	Outside Half-mile boundary	2022
52	511–515 West 18th St.	117 DU	Outside Half-mile boundary	2022

Notes: DU= Dwelling Units
Projects for which an expected date of completion is not available are assumed to be complete by 2022.
Sources: New York City Department of City Planning; New York City Department of Buildings; media coverage; AKRF field visits, Spring 2017.

TRAFFIC OPERATIONS

The No Action condition traffic volumes are shown in **Figures 14-14 through 14-16** for the weekday AM, midday, and PM peak hours, respectively. The No Action condition traffic volumes were projected by layering on top of the existing traffic volumes the following: background growth and trips generated by discrete No Build projects in the area. A summary of the 2022 No Action condition traffic analysis results is presented in **Table 14-18**. Details on level-of-service, v/c ratios, and average delays are presented in **Table 14-19**. As stated for existing conditions, the southbound approach of Eleventh Avenue at West 30th Street was constrained (i.e., narrowed to three travel lanes) due to construction activities. This temporary loss of traffic capacity is expected to be restored by the 2022 analysis year. Hence, the future condition analyses presented in this and the next sections assumed that conditions prior to construction (i.e., four travel lanes) would be available to process the projected traffic volumes.

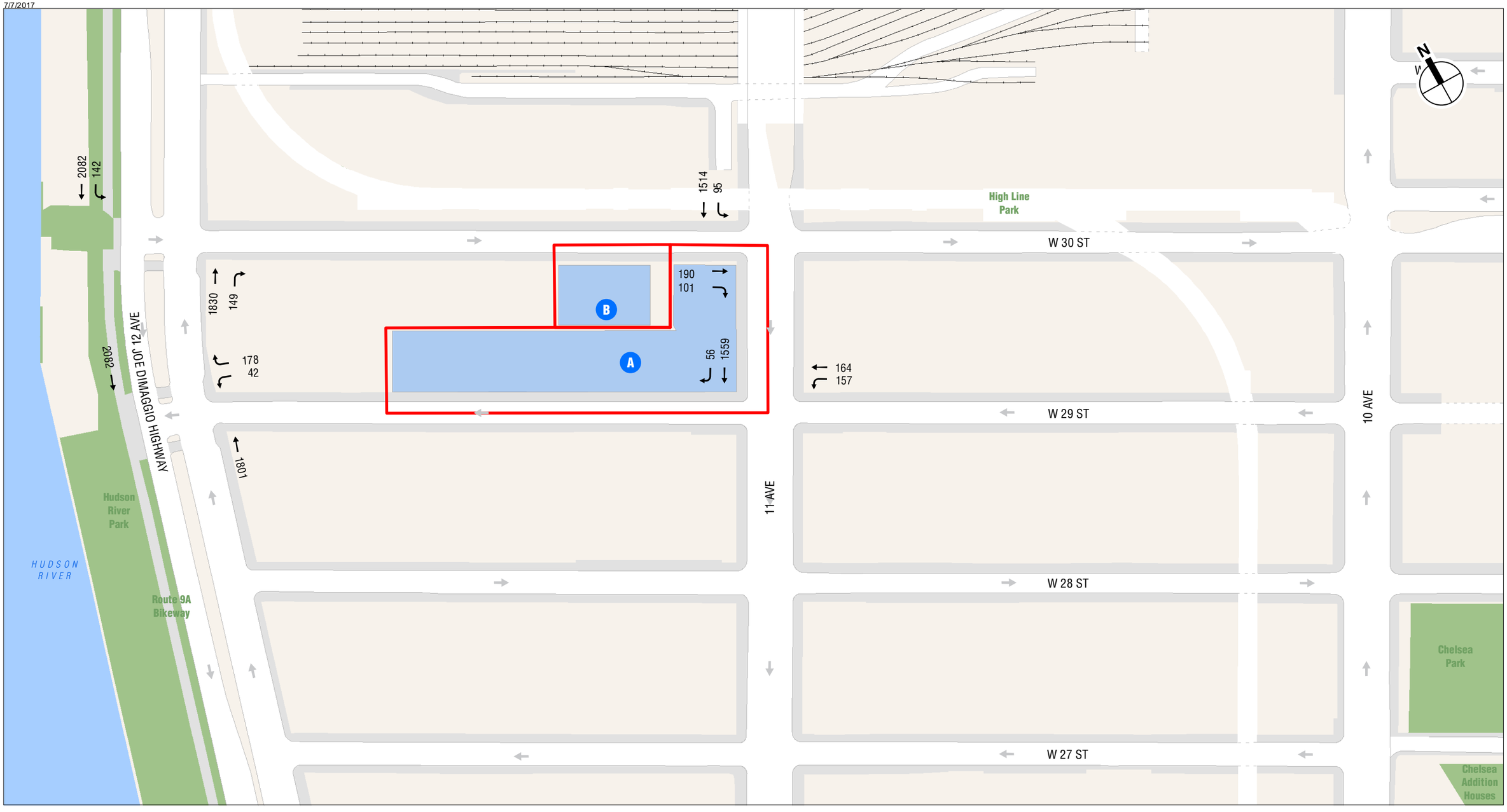
7/7/2017



2022 No Action Traffic Volumes
Weekday AM Peak Hour
Figure 14-14

BLOCK 675 EAST

7/7/2017



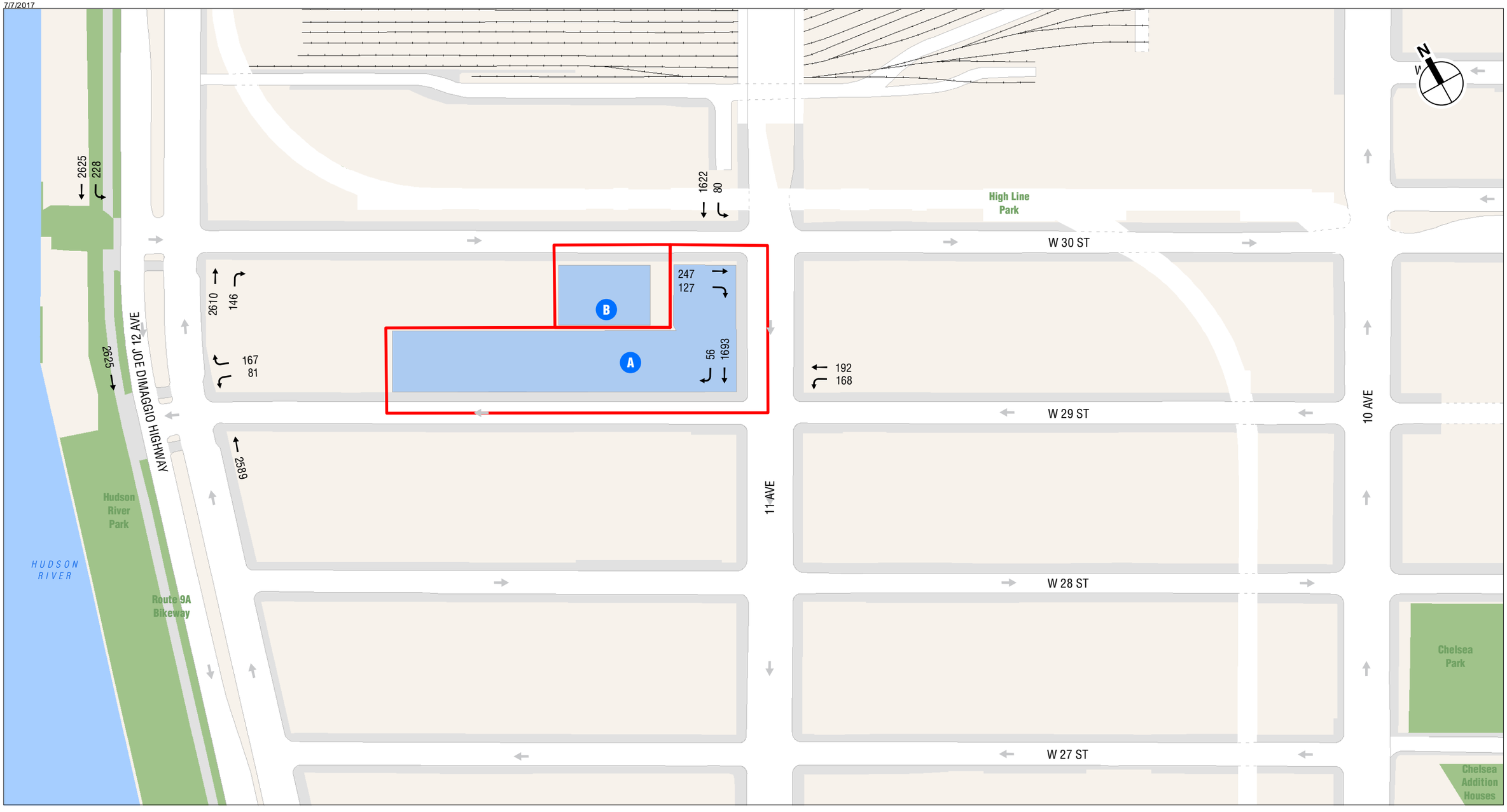
A *Project Sites*

Proposed C6-4X

2022 No Action Traffic Volumes
Weekday Midday Peak Hour
Figure 14-15

BLOCK 675 EAST

7/7/2017



A *Project Sites*

Proposed C6-4X

2022 No Action Traffic Volumes
Weekday PM Peak Hour

BLOCK 675 EAST

Figure 14-16

Table 14-18
Summary of No Action Traffic Analysis Results

Level of Service	Analysis Peak Hours		
	Weekday AM	Weekday Midday	Weekday PM
Signalized Intersections			
Lane Groups at LOS A/B/C	11	11	11
Lane Groups at LOS D	0	2	2
Lane Groups at LOS E	2	0	0
Lane Groups at LOS F	1	1	1
Total	14	14	14
Lane Groups with v/c ≥ 0.90	1	2	4

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio.

Table 14-19
Existing and 2022 No Action Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM								Weekday Midday								Weekday PM							
	Existing				No Action				Existing				No Action				Existing				No Action			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/Twelfth Avenue and West 30th Street																								
Northbound	TR	0.66	15.9	B	TR	0.67	16.2	B	TR	0.66	17.0	B	TR	0.67	17.2	B	TR	0.75	18.0	B	TR	0.76	18.3	B
Southbound	L	0.79	91.1	F	L	0.80	92.4	F	L	0.82	79.9	E	L	0.83	81.3	F	L	1.05	137.1	F	L	1.06	141.1	F
	T	0.82	21.3	C	T	0.86	23.4	C	T	0.86	24.2	C	T	0.91	27.5	C	T	0.91	26.5	C	T	0.95	30.9	C
Route 9A/Twelfth Avenue and West 29th Street																								
Westbound	L	0.27	56.5	E	L	0.35	58.7	E	L	0.15	39.0	D	L	0.17	39.5	D	L	0.21	45.4	D	L	0.24	46.0	D
	R	0.47	62.5	E	R	0.48	62.7	E	R	0.65	53.5	D	R	0.66	54.3	D	R	0.54	54.0	D	R	0.55	54.3	D
Northbound	T	0.56	8.9	A	T	0.57	9.0	A	T	0.56	10.3	B	T	0.56	10.4	B	T	0.71	17.1	B	T	0.72	17.3	B
Southbound	T	0.74	12.2	B	T	0.77	13.2	B	T	0.70	13.0	B	T	0.74	13.9	B	T	0.88	24.4	C	T	0.92	27.5	C
Eleventh Avenue and West 30th Street																								
Eastbound	T	0.24	16.3	B	T	0.24	16.4	B	T	0.38	18.5	B	T	0.39	18.6	B	T	0.43	19.5	B	T	0.45	19.7	B
	R	0.22	16.4	B	R	0.21	16.2	B	R	0.29	17.6	B	R	0.27	17.2	B	R	0.60	17.6	B	R	0.28	17.3	B
Southbound	LT	0.73	23.1	C	LT	0.68	21.4	C	LT	0.82	26.0	C	LT	0.83	25.8	C	LT	0.64	21.2	C	LT	0.89	28.5	C
Eleventh Avenue and West 29th Street																								
Westbound	L	0.33	17.9	B	L	0.36	18.3	B	L	0.31	17.5	B	L	0.33	17.9	B	L	0.34	18.0	B	L	0.37	18.5	B
	T	0.16	15.5	B	T	0.19	15.8	B	T	0.28	16.9	B	T	0.30	17.2	B	T	0.31	17.4	B	T	0.33	17.7	B
Southbound	T	0.62	20.4	C	T	0.74	23.0	C	T	0.57	19.6	B	T	0.74	22.9	C	T	0.43	17.7	B	T	0.76	23.3	C
	R	0.21	17.0	B	R	0.22	17.1	B	R	0.15	15.5	B	R	0.15	15.6	B	R	0.22	17.1	B	R	0.23	17.2	B

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service

Based on the analysis results presented in **Table 14-17**, the majority of the approaches/lane-groups in the No Action condition will operate at the same LOS as in existing conditions or within acceptable mid-LOS D or better (delays of 45 seconds or less per vehicle for signalized intersections) for all peak hours. The following approach/lane-group in the No Action condition is expected to operate at deteriorated LOS when compared to existing conditions:

- Southbound left-turn at the Route 9A/Twelfth Avenue and West 30th Street intersection will deteriorate to LOS F with a v/c ratio of 0.83 and a delay of 81.3 spv during the weekday midday peak hour.

THE FUTURE WITH THE PROPOSED ACTIONS

As noted above, in the future with the proposed actions, the Project Area would be developed with a total of approximately 1,242 new dwelling units, 40,028-gsf of new local retail, approximately 12,500-gsf of new community facility use, and 252 parking spaces. The proposed projects would result in approximately 153, 98, and 161 incremental vehicle trips during the weekday AM, midday, and PM peak hours, respectively. The incremental auto trips were assigned to the Project Area's parking garages. Taxi trips were distributed to project site

frontages on Eleventh Avenue and West 29th and West 30th Streets. All delivery trips were assigned to the Project Area via DOT-designated truck routes.

TRAFFIC OPERATIONS

The 2022 With Action condition traffic volumes are shown in **Figures 14-17 through 14-19** for the weekday AM, midday, and PM peak hours. The 2022 With Action traffic volumes were developed by layering on top of the No Action condition traffic volumes the incremental vehicle trips shown in **Figures 14-2 through 14-4**. A summary of the 2022 With Action condition traffic analysis results is presented in **Table 14-20**.

Table 14-20
Summary of With Action Traffic Analysis Results

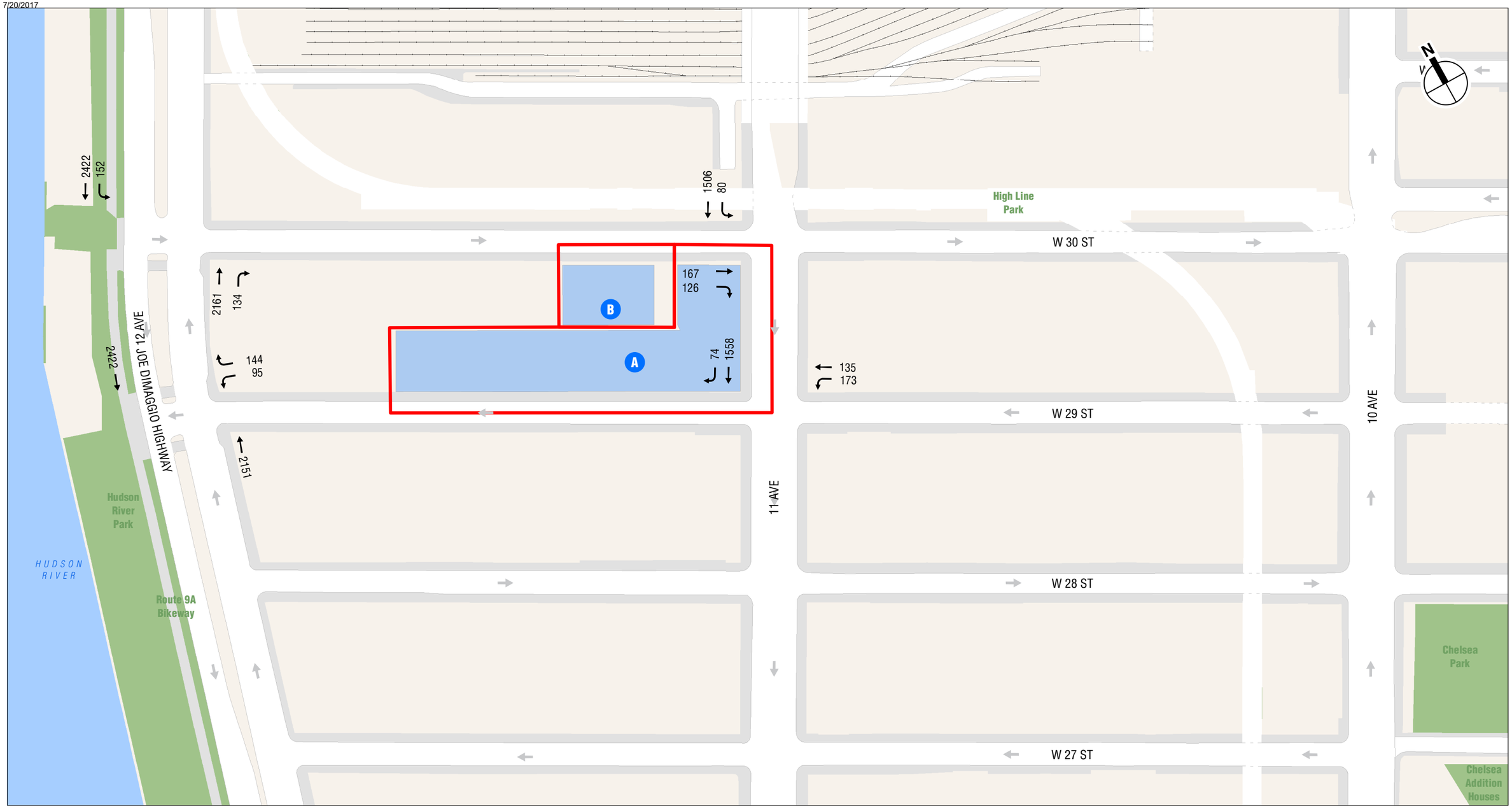
Level of Service	Analysis Peak Hours		
	Weekday AM	Weekday Midday	Weekday PM
Signalized Intersections			
Lane Groups at LOS A/B/C	11	11	11
Lane Groups at LOS D	0	1	1
Lane Groups at LOS E	2	1	1
Lane Groups at LOS F	1	1	1
Total	14	14	14
Lane Groups with v/c ≥ 0.90	1	2	4

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio.

Significant Adverse Impacts

Details on level-of-service, volume-to-capacity (v/c) ratios, and average delays are presented in **Table 14-21**. As discussed below, significant adverse traffic impacts were identified at three approaches/lane groups (of two different intersections). Potential measures that can be implemented to mitigate these significant adverse traffic impacts are discussed in Chapter 21, "Mitigation."

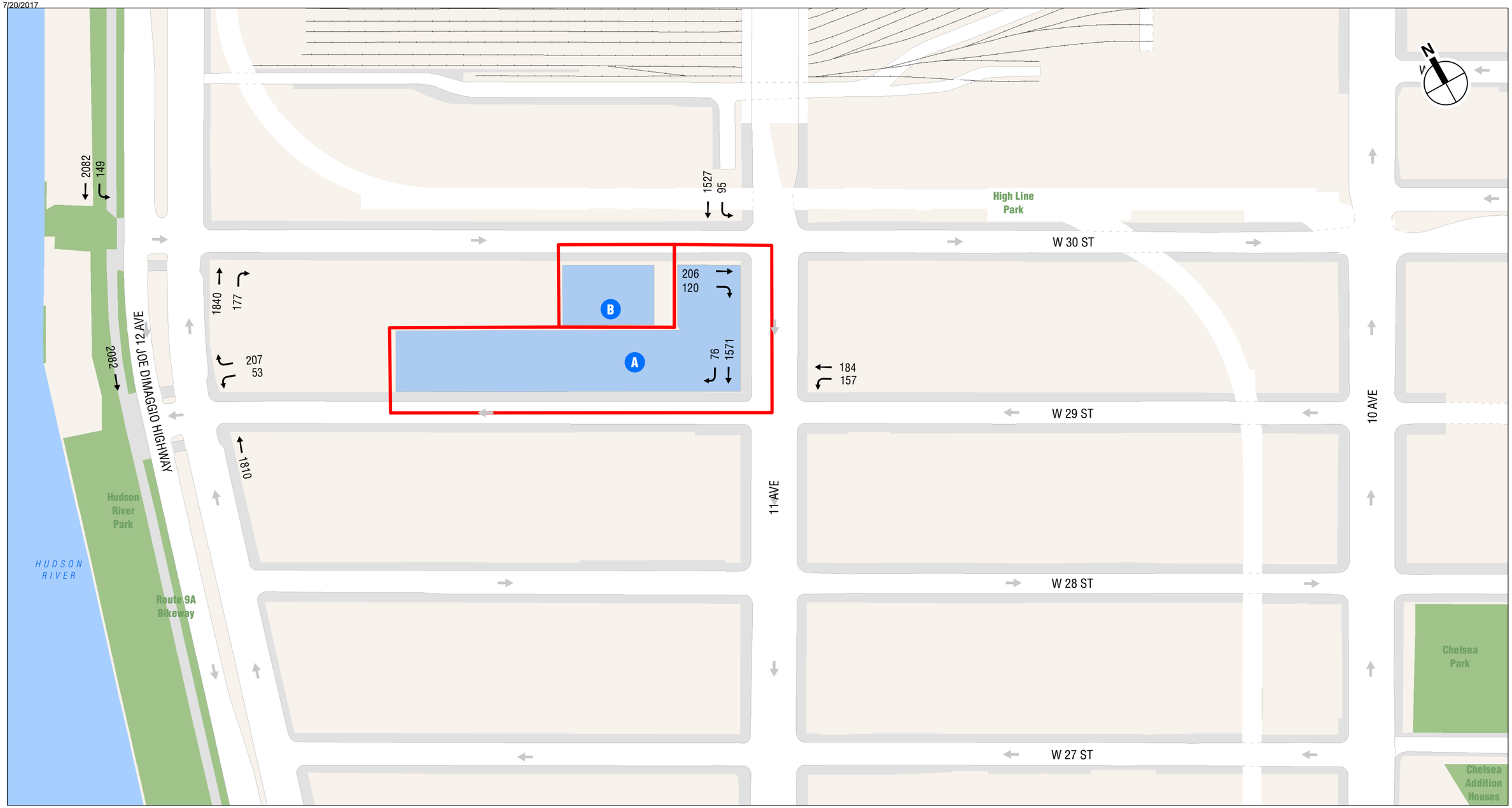
7/20/2017



2022 With Action Traffic Volumes
Weekday AM Peak Hour
Figure 14-17

BLOCK 675 EAST

7/20/2017



A Project Sites

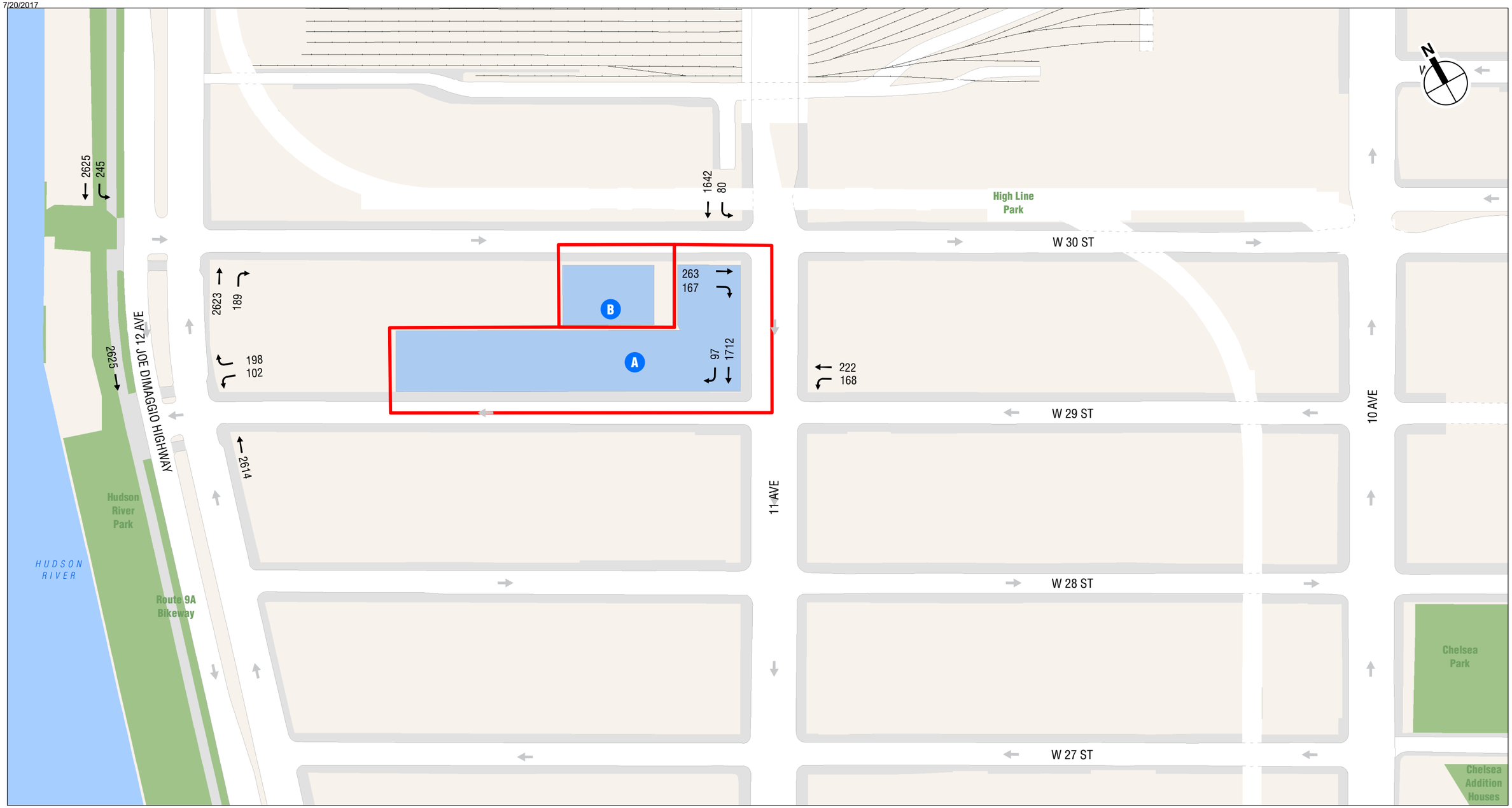
Proposed C6-4X

0 200 FEET

BLOCK 675 EAST

2022 With Action Traffic Volumes
Weekday Midday Peak Hour
Figure 14-18

7/20/2017



A Project Sites

Proposed C6-4X

0 200 FEET

2022 With Action Traffic Volumes
Weekday PM Peak Hour
Figure 14-19

BLOCK 675 EAST

Table 14-21
2022 No Action and With Action Conditions Level of Service Analysis
Signalized Intersections

	Weekday AM								Weekday Midday								Weekday PM							
	No Action				With Action				No Action				With Action				No Action				With Action			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/Twelfth Avenue and West 30th Street																								
Northbound	TR	0.67	16.2	B	TR	0.69	16.7	B	TR	0.67	17.2	B	TR	0.69	17.5	B	TR	0.76	18.3	B	TR	0.78	18.9	B
Southbound	L	0.80	92.4	F	L	0.85	99.8	F +	L	0.83	81.3	F	L	0.87	87.4	F +	L	1.06	141.1	F	L	1.14	166.3	F +
	T	0.86	23.4	C	T	0.86	23.4	C	T	0.91	27.5	C	T	0.91	27.5	C	T	0.95	30.9	C	T	0.95	30.9	C
Route 9A/Twelfth Avenue and West 29th Street																								
Westbound	L	0.35	58.7	E	L	0.51	64.0	E +	L	0.17	39.5	D	L	0.22	40.3	D	L	0.24	46.0	D	L	0.30	47.3	D
	R	0.48	62.7	E	R	0.69	73.3	E +	R	0.66	54.3	D	R	0.77	61.6	E +	R	0.55	54.3	D	R	0.65	58.6	E
Northbound	T	0.57	9.0	A	T	0.57	9.0	A	T	0.56	10.4	B	T	0.57	10.5	B	T	0.72	17.3	B	T	0.73	17.5	B
Southbound	T	0.77	13.2	B	T	0.77	13.2	B	T	0.74	13.9	B	T	0.74	13.9	B	T	0.92	27.5	C	T	0.92	27.5	C
Eleventh Avenue and West 30th Street																								
Eastbound	T	0.24	16.4	B	T	0.28	16.9	B	T	0.39	18.6	B	T	0.42	19.2	B	T	0.45	19.7	B	T	0.47	20.3	C
	R	0.21	16.2	B	R	0.31	17.9	B	R	0.27	17.2	B	R	0.39	19.7	B	R	0.28	17.3	B	R	0.46	21.0	C
Southbound	LT	0.68	21.4	C	LT	0.68	21.5	C	LT	0.83	25.8	C	LT	0.84	26.1	C	LT	0.89	28.5	C	LT	0.90	29.2	C
Eleventh Avenue and West 29th Street																								
Westbound	L	0.36	18.3	B	L	0.43	20.0	C	L	0.33	17.9	B	L	0.35	18.3	B	L	0.37	18.5	B	L	0.39	19.0	B
	T	0.19	15.8	B	T	0.23	16.3	B	T	0.30	17.2	B	T	0.33	17.7	B	T	0.33	17.7	B	T	0.38	18.5	B
Southbound	T	0.74	23.0	C	T	0.75	23.2	C	T	0.74	22.9	C	T	0.75	23.0	C	T	0.76	23.3	C	T	0.77	23.6	C
	R	0.22	17.1	B	R	0.29	18.3	B	R	0.15	15.6	B	R	0.34	19.5	B	R	0.23	17.2	B	R	0.47	23.4	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
+ Denotes a significant adverse traffic impact

- Southbound left-turn at the Route 9A/Twelfth Avenue and West 30th Street intersection would deteriorate within LOS F (from a v/c ratio of 0.80 and 92.4 spv of delay to a v/c ratio of 0.85 and 99.8 spv of delay), within LOS F (from a v/c ratio of 0.83 and 81.3 spv of delay to a v/c ratio of 0.87 and 87.4 spv of delay), and within LOS F (from a v/c ratio of 1.06 and 141.1 spv of delay to a v/c ratio of 1.14 and 166.3 spv of delay), increases in delay of more than 3 seconds, during the weekday AM, midday and PM peak hours, respectively. These projected increases in delay constitute significant adverse impacts;
- Westbound left-turn at the Route 9A/Twelfth Avenue and West 29th Street intersection would deteriorate within LOS E (from a v/c ratio of 0.35 and 58.7 spv of delay to a v/c ratio of 0.51 and 64.0 spv of delay), an increase in delay of more than 4 seconds, during the weekday AM peak hour. This projected increase in delay constitutes a significant adverse impact; and
- Westbound right-turn at the Route 9A/Twelfth Avenue and West 29th Street intersection would deteriorate within LOS E (from a v/c ratio of 0.48 and 62.7 spv of delay to a v/c ratio of 0.69 and 73.3 spv of delay), and from LOS D (a v/c ratio of 0.66 and 54.3 spv of delay) to LOS E (a v/c ratio of 0.77 and 61.6 spv of delay), increases in delay of more than 4 seconds, and 5 seconds, during the weekday AM and midday peak hours, respectively. These projected increases in delay constitute significant adverse impacts.

E. DETAILED TRANSIT ANALYSIS

As described above in Section B, "Preliminary Analysis Methodology and Screening Assessment," the 34th Street-Hudson Yards Station has been selected for station analysis for the weekday AM and PM peak hours. Subway line-haul analysis for the No. 7 line was also conducted for weekday AM and PM peak hours.

EXISTING CONDITIONS

As of this writing, certain access points to the 34th Street-Hudson Yards (No. 7 train) Station, including street access from 33rd Street and a station entrance at 35th Street, are under construction. Therefore, existing conditions at the station do not represent an accurate baseline for station analysis. The planned access points include the primary station entrance along Hudson Boulevard East between West 33rd and West 34th Streets and a secondary entrance at Hudson Boulevard East and West 35th Street. The scheduled completion of the 34th Street-Hudson Yards Station is yet to be determined. The No Action volume estimates for the 34th Street-Hudson Yards (No. 7 train) Station were provided by NYCT; the No Action and With Action station analyses based on these NYCT estimates are included below.

With regard to subway line-haul conditions, data from the MTA Cordon Count report were reviewed to identify ridership levels for the No. 7 line's peak load points in the peak direction of travel. As summarized in **Table 14-22**, the No. 7 line is currently operating at approximately 18 percent and 63 percent capacity in the peak eastbound and westbound directions, respectively, during the weekday AM peak hour, and at 56 percent and 17 percent capacity in the peak eastbound and westbound directions, respectively, during the weekday PM peak hour.

Table 14-22
Existing Conditions Subway Line-haul Analysis
No. 7 Line

Subway line	Max. Load Point	Trains/hr	Cars/Train	Total Number of Cars/hr	Passengers/hr	Peak Hour Capacity	V/C Ratio
Weekday AM Peak Hour							
No. 7 EB	Grand Central Station	26	11	286	5,794	31,460	0.18
No. 7 WB	Vernon-Jackson Avenue	27	11	297	20,611	32,670	0.63
Weekday PM Peak Hour							
No. 7 EB	Grand Central Station	24	11	264	16,150	29,040	0.56
No. 7 WB	Vernon-Jackson Avenue	24	11	264	4,952	29,040	0.17

THE FUTURE WITHOUT THE PROPOSED ACTIONS

SUBWAY SERVICE

Subway station data were provided by NYCT to establish the No Action volumes for the subway station and line haul analyses. In addition to the changes in subway demand due to regional growth and MTA capital improvements, projected future development independent of the proposed actions that would have a potential effect on baseline 2022 subway demand at the analyzed station and subway line was included in the No Action subway analyses. A continuation of existing uses on the project sites was assumed, and No Action development projects in the study area were taken into account.

As shown in **Tables 14-23 through 14-25**, all critical analysis elements at the 34th Street-Hudson Yards subway station, including vertical circulation elements and control areas, will operate at acceptable levels of service during the weekday AM and PM peak periods. During the AM peak period, all 21 elements will operate in the LOS A range. During the weekday PM peak period, 20 of the 21 elements operating in the LOS A range and one (1) element operating in the LOS B range. As summarized in **Table 14-26**, the No. 7 line will operate at approximately 22 percent and 87 percent capacity in the peak eastbound and westbound directions, respectively, during the weekday AM peak hour, and at 78 percent and 20 percent capacity in the peak eastbound and westbound directions, respectively, during the weekday PM peak hour.

Table 14-23
2022 No Action Condition Subway Vertical Circulation Element Analysis: Stairs
34th Street-Hudson Yards Station

Stair	Location	Effective Width (ft)	Peak Hour Volumes[1]		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
			Entry (Down)	Exit (Up)	Entry (Down)	Exit (Up)		Up	Down		
AM Peak Hour											
P2	No. 7 Platform	8.25	7	570	2	171	0.90	0.75	1.00	0.21	A
P3	No. 7 Platform	14.49	20	557	6	167	0.90	0.75	1.00	0.12	A
P4	No. 7 Platform	14.49	20	570	6	171	0.90	0.75	1.00	0.12	A
P5	No. 7 Platform	6.75	7	570	2	171	0.90	0.75	1.00	0.25	A
P6	No. 7 Platform	6.75	7	570	2	171	0.90	0.75	1.00	0.25	A
P7	No. 7 Platform	14.49	20	570	6	171	0.90	0.75	1.00	0.12	A
P8	No. 7 Platform	14.49	20	570	6	171	0.90	0.75	1.00	0.12	A
P9	No. 7 Platform	8.25	7	570	2	171	0.90	0.75	1.00	0.21	A
S1	Street Level	4.50	0	227	0	68	0.90	0.90	0.90	0.12	A
S2	Street Level	4.50	7	230	2	69	0.90	0.90	0.90	0.13	A
PM Peak Hour											
P2	No. 7 Platform	8.25	193	10	58	3	0.90	0.75	1.00	0.06	A
P3	No. 7 Platform	14.49	773	20	232	6	0.90	0.75	1.00	0.46	B
P4	No. 7 Platform	14.49	773	10	232	3	0.90	0.75	1.00	0.12	A
P5	No. 7 Platform	6.75	193	10	58	3	0.90	0.75	1.00	0.07	A
P6	No. 7 Platform	6.75	193	10	58	3	0.90	0.75	1.00	0.07	A
P7	No. 7 Platform	14.49	773	10	232	3	0.90	0.75	1.00	0.12	A
P8	No. 7 Platform	14.49	773	10	232	3	0.90	0.75	1.00	0.12	A
P9	No. 7 Platform	8.25	193	10	58	3	0.90	0.75	1.00	0.06	A
S1	Street Level	4.50	193	10	58	3	0.90	0.90	0.90	0.21	A
S2	Street Level	4.50	773	20	232	6	0.90	0.90	0.90	0.32	A

Note: [1] Vertical Circulation Elements' projected volumes were provided by NYCT.

Table 14-24
2022 No Action Condition Subway Vertical Circulation Element Analysis: Escalators
34th Street-Hudson Yards Station

Escalator	Location	Tread Width (inches)	Peak Hour Volumes[1]		Peak 15-Minute Volumes		Surge Factor		Capacity	V/C Ratio	LOS
			Entry (Down)	Exit (Up)	Entry (Down)	Exit (Up)	Up	Down			
AM Peak Hour											
ES621	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,137	0	341	0.90	0.90	1,050	0.36	A
ES622	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,137	0	341	0.90	0.90	1,050	0.36	A
ES623	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,137	0	341	0.90	0.90	1,050	0.36	A
ES624	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	107	0	32	0	0.90	0.90	1,050	0.03	A
ES625	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,137	0	341	0.90	0.90	1,050	0.36	A
ES626	R550 Free Zone	40	0	1,363	0	409	0.90	0.90	1,050	0.43	A
ES627	R550 Free Zone	40	0	1,363	0	409	0.90	0.90	1,050	0.43	A
ES628	R550 Free Zone	40	0	1,363	0	409	0.90	0.90	1,050	0.43	A
ES629	R550 Free Zone	40	101	0	30	0	0.90	0.90	1,050	0.03	A
PM Peak Hour											
ES621	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	967	0	290	0	0.90	0.90	1,050	0.31	A
ES622	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	967	0	290	0	0.90	0.90	1,050	0.31	A
ES623	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	967	0	290	0	0.90	0.90	1,050	0.31	A
ES624	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	90	0	27	0.90	0.90	1,050	0.03	A
ES625	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	967	0	290	0	0.90	0.90	1,050	0.31	A
ES626	R550 Free Zone	40	967	0	290	0	0.90	0.90	1,050	0.31	A
ES627	R550 Free Zone	40	967	0	290	0	0.90	0.90	1,050	0.31	A
ES628	R550 Free Zone	40	967	0	290	0	0.90	0.90	1,050	0.31	A
ES629	R550 Free Zone	40	0	87	0	26	0.90	0.90	1,050	0.03	A

Note: [1] Vertical Circulation Elements' projected volumes were provided by NYCT.

Table 14-25
2022 No Action Condition Fare Array Analysis
34th Street-Hudson Yards Station

Control Element	Quantity	Peak Hour Volumes[(1)]		Peak 15-Minute Volumes		Surging Factor	Friction Factor	v/c Ratio	LOS
		Entry	Exit	Entry	Exit				
AM Peak Hour									
Two-way Turnstile (North Bank)	12	80	3,410	24	1,023	0.90	0.90	0.17	A
Two-way Turnstile (South Bank)	4	27	1,137	8	341	0.90	0.90	0.17	A
PM Peak Hour									
Two-way Turnstile (North Bank)	12	2,900	67	870	20	0.90	0.90	0.19	A
Two-way Turnstile (South Bank)	4	967	23	290	7	0.90	0.90	0.20	A

Note: [1] Fare Array projected volumes were provided by NYCT.

Table 14-26
2022 No Action Condition Subway Line-haul Analysis
No. 7 Line

Subway line	Max. Load Point	Trains/hr	Cars/Train	Total Number of Cars/hr	Passengers/hr	Peak Hour Capacity	V/C Ratio
Weekday AM Peak Hour							
No. 7 EB	Grand Central Station	26	11	286	6,795	31,460	0.22
No. 7 WB	Vernon-Jackson Avenue	27	11	297	28,334	32,670	0.87
Weekday PM Peak Hour							
No. 7 EB	Grand Central Station	24	11	264	22,697	29,040	0.78
No. 7 WB	Vernon-Jackson Avenue	24	11	264	5,802	29,040	0.20

THE FUTURE WITH THE PROPOSED ACTIONS

SUBWAY SERVICE

Based on discussions with NYCT, 85 percent of the project-generated subway trips are expected to be distributed to the 34th Street-Hudson Yards (No. 7) Station. The subway station analysis results presented in **Tables 14-27 and 14-28** show that no potential significant adverse stairway or escalator impacts would be expected for the 34th Street-Hudson Yards (No. 7) Station. As shown in **Table 14-29**, control areas at that station would also continue to operate within operating capacities. With regard to subway line-haul conditions, trip increments associated with the proposed projects would be expected to result in increases in ridership levels for the No. 7 line. However, as shown in **Table 14-30**, no significant adverse line-haul impacts would be expected from these increases in ridership levels.

Table 14-27
2022 With Action Condition Subway Vertical Circulation Element Analysis: Stairs
34th Street-Hudson Yards Station

Stair	Location	Effective Width (ft)	Peak Hour Volumes		Peak 15-Minute Volumes		Friction Factor	Surge Factor		V/C Ratio	LOS
			Entry (Down)	Exit (Up)	Entry (Down)	Exit (Up)		Up	Down		
AM Peak Hour											
P2	No. 7 Platform	8.25	20	577	6	173	0.90	0.75	1.00	0.21	A
P3	No. 7 Platform	14.49	93	577	28	173	0.90	0.75	1.00	0.13	A
P4	No. 7 Platform	14.49	83	577	25	173	0.90	0.75	1.00	0.13	A
P5	No. 7 Platform	6.75	20	577	6	173	0.90	0.75	1.00	0.26	A
P6	No. 7 Platform	6.75	20	577	6	173	0.90	0.75	1.00	0.26	A
P7	No. 7 Platform	14.49	83	577	25	173	0.90	0.75	1.00	0.13	A
P8	No. 7 Platform	14.49	83	577	25	173	0.90	0.75	1.00	0.13	A
P9	No. 7 Platform	8.25	20	577	6	173	0.90	0.75	1.00	0.21	A
S1	Street Level	4.50	0	230	0	69	0.90	0.90	0.90	0.13	A
S2	Street Level	4.50	20	233	6	70	0.90	0.90	0.90	0.14	A
PM Peak Hour											
P2	No. 7 Platform	8.25	200	50	60	15	0.90	0.75	1.00	0.07	A
P3	No. 7 Platform	14.49	810	60	243	18	0.90	0.75	1.00	0.52	B
P4	No. 7 Platform	14.49	807	50	242	15	0.90	0.75	1.00	0.13	A
P5	No. 7 Platform	6.75	200	50	60	15	0.90	0.75	1.00	0.09	A
P6	No. 7 Platform	6.75	200	50	60	15	0.90	0.75	1.00	0.09	A
P7	No. 7 Platform	14.49	807	50	242	15	0.90	0.75	1.00	0.13	A
P8	No. 7 Platform	14.49	807	50	242	15	0.90	0.75	1.00	0.13	A
P9	No. 7 Platform	8.25	200	50	60	15	0.90	0.75	1.00	0.07	A
S1	Street Level	4.50	407	0	122	0	0.90	0.90	0.90	0.22	A
S2	Street Level	4.50	603	20	181	6	0.90	0.90	0.90	0.34	A

Table 14-28
2022 With Action Condition Subway Vertical Circulation Element Analysis: Escalators
34th Street-Hudson Yards Station

Escalator	Location	Tread Width (inches)	Peak Hour Volumes		Peak 15-Minute Volumes		Surge Factor		Capacity	V/C Ratio	LOS
			Entry (Down)	Exit (Up)	Entry (Down)	Exit (Up)	Up	Down			
AM Peak Hour											
ES621	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,153	0	346	0.90	0.90	1,050	0.37	A
ES622	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,153	0	346	0.90	0.90	1,050	0.37	A
ES623	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,153	0	346	0.90	0.90	1,050	0.37	A
ES624	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	423	0	127	0	0.90	0.90	1,050	0.13	A
ES625	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	1,153	0	346	0.90	0.90	1,050	0.37	A
ES626	R550 Free Zone	40	0	1,383	0	415	0.90	0.90	1,050	0.44	A
ES627	R550 Free Zone	40	0	1,383	0	415	0.90	0.90	1,050	0.44	A
ES628	R550 Free Zone	40	0	1,383	0	415	0.90	0.90	1,050	0.44	A
ES629	R550 Free Zone	40	402	0	121	0	0.90	0.90	1,050	0.13	A
PM Peak Hour											
ES621	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	1,007	0	302	0	0.90	0.90	1,050	0.32	A
ES622	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	1,007	0	302	0	0.90	0.90	1,050	0.32	A
ES623	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	1,007	0	302	0	0.90	0.90	1,050	0.32	A
ES624	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	0	410	0	123	0.90	0.90	1,050	0.13	A
ES625	33rd Street/34th Street Entrance: Upper/Lower Mezzanine	40	1,010	0	303	0	0.90	0.90	1,050	0.32	A
ES626	R550 Free Zone	40	1,007	0	302	0	0.90	0.90	1,050	0.32	A
ES627	R550 Free Zone	40	1,007	0	302	0	0.90	0.90	1,050	0.32	A
ES628	R550 Free Zone	40	1,007	0	302	0	0.90	0.90	1,050	0.32	A
ES629	R550 Free Zone	40	0	390	0	117	0.90	0.90	1,050	0.12	A

Table 14-29
2022 With Action Condition Fare Array Analysis
34th Street-Hudson Yards Station

Control Element	Quantity	Peak Hour Volumes		Peak 15-Minute Volumes		Surging Factor	Friction Factor	v/c Ratio	LOS
		Entry	Exit	Entry	Exit				
AM Peak Hour									
Two-way Turnstile (North Bank)	12	317	3,460	95	1,038	0.90	0.90	0.19	A
Two-way Turnstile (South Bank)	4	107	1,153	32	346	0.90	0.90	0.19	A
PM Peak Hour									
Two-way Turnstile (North Bank)	12	3,023	307	907	92	0.90	0.90	0.21	A
Two-way Turnstile (South Bank)	4	1,007	103	302	31	0.90	0.90	0.21	A

Table 14-30
2022 With Action Condition Subway Line-haul Analysis
No. 7 Line

Subway line	Max. Load Point	Trains/hr	Cars/Train	Total Number of Cars/hr	Passengers/hr	Peak Hour Capacity	V/C Ratio
Weekday AM Peak Hour							
No. 7 EB	Grand Central Station	26	11	286	7,115	31,460	0.23
No. 7 WB	Vernon-Jackson Avenue	27	11	297	28,420	32,670	0.87
Weekday PM Peak Hour							
No. 7 EB	Grand Central Station	24	11	264	22,875	29,040	0.79
No. 7 WB	Vernon-Jackson Avenue	24	11	264	6,125	29,040	0.21

F. DETAILED PEDESTRIAN ANALYSIS

As described above in Section B, "Preliminary Analysis Methodology and Screening Assessment," Level 1 and Level 2 screening analyses were prepared to identify the pedestrian elements that warranted a detailed analysis. Based on the assignment of pedestrian trips, 8 sidewalks, 16 corners, and 11 crosswalks were selected for analysis for the weekday AM, midday, and PM peak hours.

EXISTING CONDITIONS

Pedestrian data were collected in June 2016 and May 2017 in accordance with procedures outlined in the *CEQR Technical Manual* during the weekday hours of 7:00 AM to 10:00 AM, 11:00 AM to 2:00 PM, and 4:00 PM to 7:00 PM.

PEDESTRIAN OPERATIONS

Peak hours were determined by comparing rolling hourly averages for each of the analysis peak periods. Due to ongoing construction activities in the vicinity of Block 675, a number of study area pedestrian analysis elements were closed or had temporarily augmented geometries during the existing data collection. Specifically, both the east and west sidewalks of Eleventh Avenue between West 30th and West 33rd Streets were closed under existing conditions; however, a temporary sidewalk protected by jersey barriers is provided on the west curb lane to accommodate pedestrians traveling in the northbound and southbound directions. West 33rd Street between Tenth and Eleventh Avenues is closed to both traffic and pedestrians. Closed pedestrian analysis elements are noted in the pedestrian analysis tables below; elements whose geometries were affected by construction will have updated geometry measurements in the No Action and With Action conditions analyses.

The existing peak hour pedestrian volumes are shown in **Figures 14-20 through 14-22**. A summary of the existing conditions pedestrian analysis results is presented in **Table 14-31**.

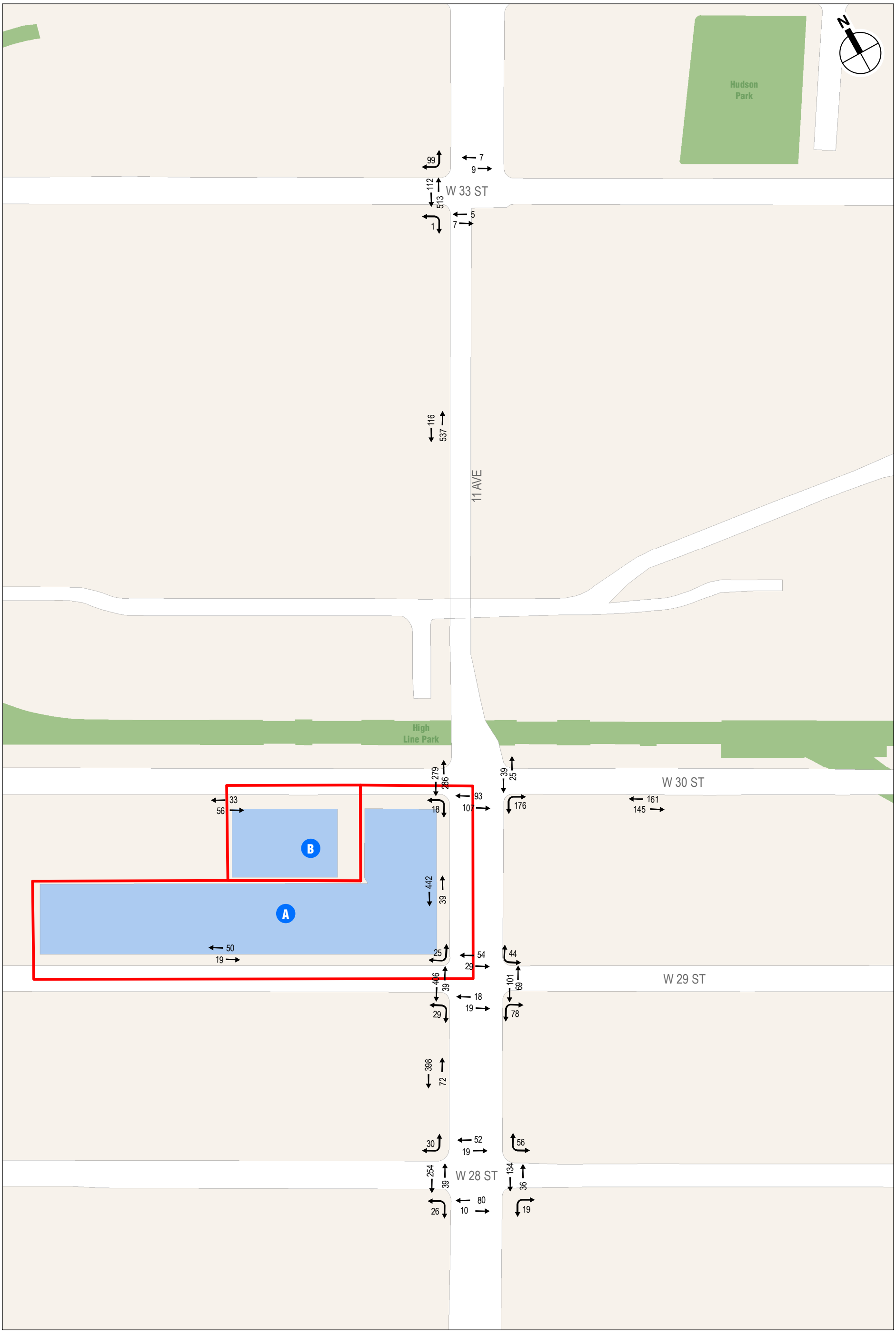
Table 14-31
Summary of Existing Pedestrian Analysis Results

Level of Service	Analysis Peak Hours		
	Weekday AM	Weekday Midday	Weekday PM
Sidewalks			
Sidewalks at LOS A/B/C	5	6	5
Sidewalks at LOS D	1	0	1
Sidewalks at LOS E	0	0	0
Sidewalks at LOS F	0	0	0
Total	6	6	6
Corners			
Corners at LOS A/B/C	12	12	12
Corners at LOS D	0	0	0
Corners at LOS E	0	0	0
Corners at LOS F	0	0	0
Total	12	12	12
Crosswalks			
Crosswalks at LOS A/B/C	6	6	6
Crosswalks at LOS D	0	0	0
Crosswalks at LOS E	0	0	0
Crosswalks at LOS F	0	0	0
Total	6	6	6
Note: LOS = Level of Service			

As shown in **Tables 14-32 through 14-34**, all sidewalk, corner reservoir, and crosswalk analysis locations currently operate at acceptable LOS C or better (minimum of 31.5 SFP platoon flow for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except for the following location:

- The west sidewalk of Eleventh Avenue between West 30th and West 33rd Streets, which operates at LOS D with 27.4 SFP during the weekday AM peak hour, and at LOS D with 30.1 SFP during the weekday PM peak hour.

6/1/2017



A Project Sites

Proposed C6-4X

0 300 FEET

BLOCK 675 EAST

Existing Pedestrian Volumes
Weekday AM Peak Hour
Figure 14-20

6/1/2017

Hudson Park

High Line Park

W 33 ST

W 30 ST

W 29 ST

W 28 ST

11 AVE

147
5
1
100
132
3
2
7
101
124
117
106
27
20
42
64
107
108
5
261
139
221
B
A
83
53
21
25
6
32
36
70
110
82
26
15
66
55
21
91
167
131
30
32
34
64
62
62
66
56
32
29
31
32

A Project Sites

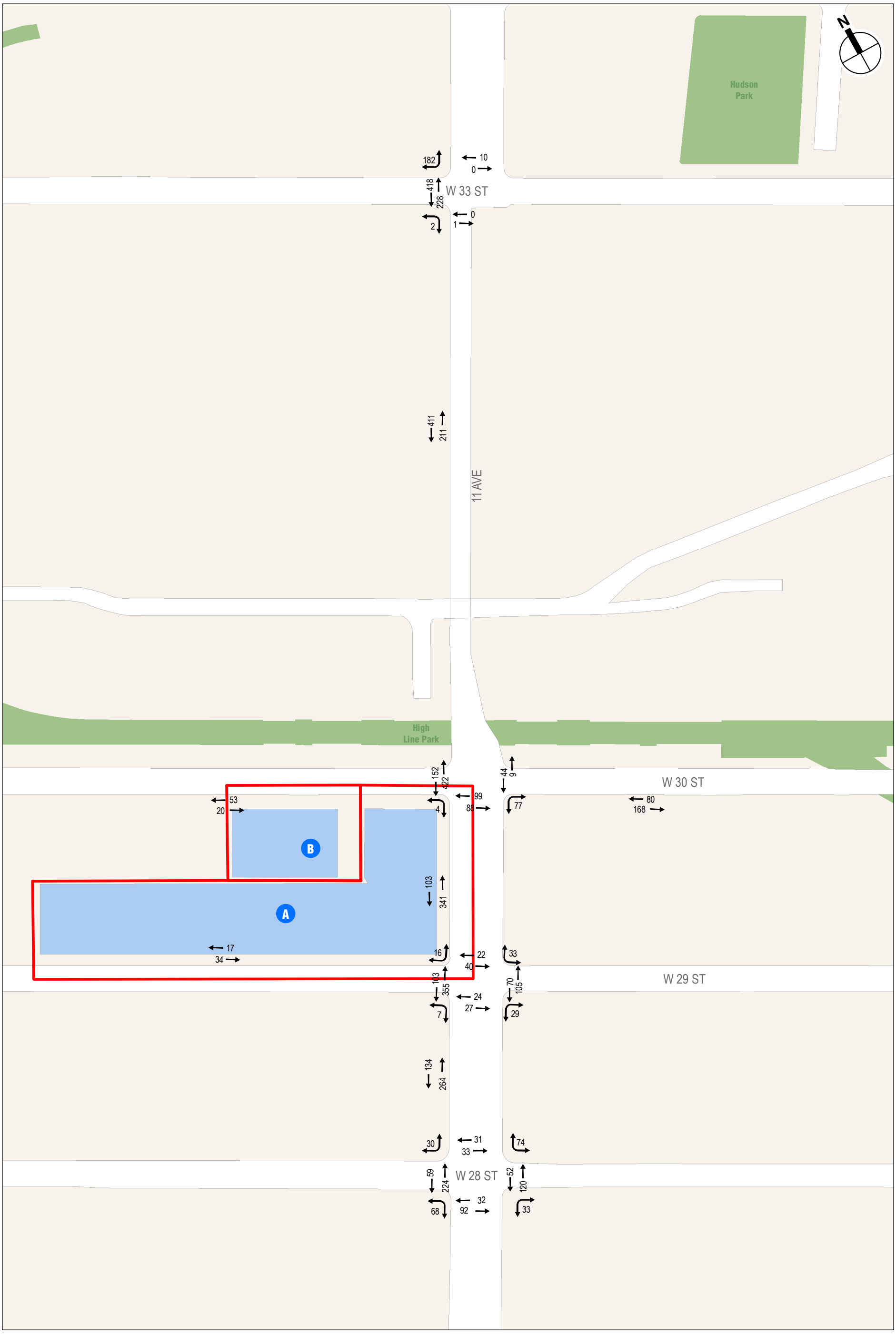
Proposed C6-4X

0 300 FEET

BLOCK 675 EAST

Existing Pedestrian Volumes
Weekday Midday Peak Hour
Figure 14-21

6/1/2017



A Project Sites

Proposed C6-4X

0 300 FEET

BLOCK 675 EAST

Existing Pedestrian Volumes
Weekday PM Peak Hour
Figure 14-22

Table 14-32
Existing Conditions: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	N/A	N/A	N/A	N/A	N/A
Eleventh Avenue between 33rd Street and 30th Street	East	N/A	N/A	N/A	N/A	N/A
Eleventh Avenue between 33rd Street and 30th Street	West	1.5	653	0.81	27.6	D
30th Street between Eleventh Avenue and Tenth Avenue	South	2.5	306	0.80	103.0	B
30th Street between Eleventh Avenue and Twelfth Avenue	South	5.5	89	0.80	783.0	A
Eleventh Avenue between 29th Street and 28th Street	West	5.5	470	0.90	167.2	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	481	0.80	197.3	B
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	69	0.82	1037.1	A
Weekday Midday Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	N/A	N/A	N/A	N/A	N/A
Eleventh Avenue between 33rd Street and 30th Street	East	N/A	N/A	N/A	N/A	N/A
Eleventh Avenue between 33rd Street and 30th Street	West	1.5	225	0.84	88.0	C
30th Street between Eleventh Avenue and Tenth Avenue	South	2.5	360	0.84	91.9	B
30th Street between Eleventh Avenue and Twelfth Avenue	South	5.5	106	0.80	657.4	A
Eleventh Avenue between 29th Street and 28th Street	West	5.5	298	0.83	241.8	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	136	0.80	698.7	A
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	46	0.82	1555.7	A
Weekday PM Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	N/A	N/A	N/A	N/A	N/A
Eleventh Avenue between 33rd Street and 30th Street	East	N/A	N/A	N/A	N/A	N/A
Eleventh Avenue between 33rd Street and 30th Street	West	1.5	622	0.83	30.1	D
30th Street between Eleventh Avenue and Tenth Avenue	South	2.5	248	0.86	137.1	B
30th Street between Eleventh Avenue and Twelfth Avenue	South	5.5	73	0.80	954.7	A
Eleventh Avenue between 29th Street and 28th Street	West	5.5	398	0.80	174.8	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	444	0.81	216.5	B
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	51	0.80	1366.5	A

Note: SFP = square feet per pedestrian; N/A = Not analyzed due to construction.

Table 14-33
Existing Conditions: Corner Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS
Eleventh Avenue and 33rd Street	Northwest	130.7	A	245.9	A	115.0	A
	Northeast	N/A	N/A	N/A	N/A	N/A	N/A
	Southwest	135.2	A	362.0	A	144.3	A
	Southeast	N/A	N/A	N/A	N/A	N/A	N/A
Eleventh Avenue and 30th Street	Northwest	N/A	N/A	N/A	N/A	N/A	N/A
	Northeast	N/A	N/A	N/A	N/A	N/A	N/A
	Southwest	117.1	A	206.9	A	101.7	A
	Southeast	313.6	A	213.6	A	339.6	A
Eleventh Avenue and 29th Street	Northwest	194.0	A	393.0	A	206.6	A
	Northeast	422.2	A	510.0	A	454.2	A
	Southwest	312.5	A	586.2	A	295.5	A
	Southeast	405.7	A	511.7	A	444.2	A
Eleventh Avenue and 28th Street	Northwest	236.5	A	406.0	A	243.3	A
	Northeast	403.1	A	493.6	A	389.1	A
	Southwest	298.6	A	550.4	A	238.1	A
	Southeast	370.2	A	530.9	A	311.0	A

Note: SFP = square foot per pedestrian; N/A = Not analyzed due to construction.

Table 14-34
Existing Conditions: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	2-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Eleventh Avenue and 33rd Street	North	N/A	N/A	N/A	N/A	N/A
	East	N/A	N/A	N/A	N/A	N/A
	South	N/A	N/A	N/A	N/A	N/A
	West	34	16	625	86.7	A
Eleventh Avenue and 30th Street	North	N/A	N/A	N/A	N/A	N/A
	East	N/A	N/A	N/A	N/A	N/A
	South	70	13	200	147.9	A
	West	34	14	565	70.0	A
Eleventh Avenue and 29th Street	North	70	13	83	354.6	A
	West	35	14	445	85.7	A
Eleventh Avenue and 28th Street	West	35	14	293	153.9	A
Weekday Midday Peak Hour						
Eleventh Avenue and 33rd Street	North	N/A	N/A	N/A	N/A	N/A
	East	N/A	N/A	N/A	N/A	N/A
	South	N/A	N/A	N/A	N/A	N/A
	West	34	16	232	244.1	A
Eleventh Avenue and 30th Street	North	N/A	N/A	N/A	N/A	N/A
	East	N/A	N/A	N/A	N/A	N/A
	South	70	13	215	130.3	A
	West	34	14	223	178.0	A
Eleventh Avenue and 29th Street	North	70	13	68	401.1	A
	West	35	14	192	194.8	A
Eleventh Avenue and 28th Street	West	35	14	124	352.5	A
Weekday PM Peak Hour						
Eleventh Avenue and 33rd Street	North	N/A	N/A	N/A	N/A	N/A
	East	N/A	N/A	N/A	N/A	N/A
	South	N/A	N/A	N/A	N/A	N/A
	West	34	16	646	91.1	A
Eleventh Avenue and 30th Street	North	N/A	N/A	N/A	N/A	N/A
	East	N/A	N/A	N/A	N/A	N/A
	South	70	13	187	134.0	A
	West	34	14	574	59.8	B
Eleventh Avenue and 29th Street	North	70	13	62	439.9	A
	West	35	14	458	83.7	A
Eleventh Avenue and 28th Street	West	35	14	283	151.1	A

Note: SFP = square feet per pedestrian; N/A = Not analyzed due to construction

THE FUTURE WITHOUT THE PROPOSED ACTIONS

Future 2022 No Action condition pedestrian volumes were estimated by increasing existing pedestrian levels to reflect expected growth in overall travel through and within the study area. As per CEQR guidelines, an annual background growth rate of 0.25 percent was assumed for the proposed projects' anticipated build year of 2022. Pedestrian volumes from projects that are anticipated to be completed in the study area, as shown in **Table 14-17** and cited in the Traffic discussion above, were also added to determine the No Action condition pedestrian volumes. The 2022 No Action pedestrian volumes for the weekday AM, midday, and PM peak hours are presented in **Figures 14-23 through 14-25**. As outlined above under existing conditions, during data collection, a number of pedestrian analysis elements were closed or had temporarily augmented geometries. In order to analyze these elements, the physical characteristics (such as sidewalk widths, street furniture, and corner dimensions) were assumed to be restored to those in existence prior to their closure. It should be noted that where pedestrian flow was restricted or redirected under existing conditions, portions of the sidewalks, corners, and crosswalks subject to analysis were present physically. So where possible, measurements were made at these

7/10/2017

Hudson Park

W 33 ST

11 AVE

High Line Park

W 30 ST

W 29 ST

W 28 ST

B

A

Project Sites

Proposed C6-4X

0 300 FEET

2022 No Action Pedestrian Volumes
Weekday AM Peak Hour

Figure 14-23

BLOCK 675 EAST

7/10/2017

Hudson Park

W 33 ST

11 AVE

High Line Park

W 30 ST

W 29 ST

W 28 ST

149 59 80 497 748 776

230 240 1452 1438

3 116 98 474

140 152 1921 1913

5 70 64 535 150 138 1079 1079

138 32 60 60 5 140 380 461

B

A

187 143

80 25 6 149 153 77 120 84 1080 1074 27 16 92

177 133

30 43 40 209 240 63 1046 1041 327 333 32 156

A Project Sites

Proposed C6-4X

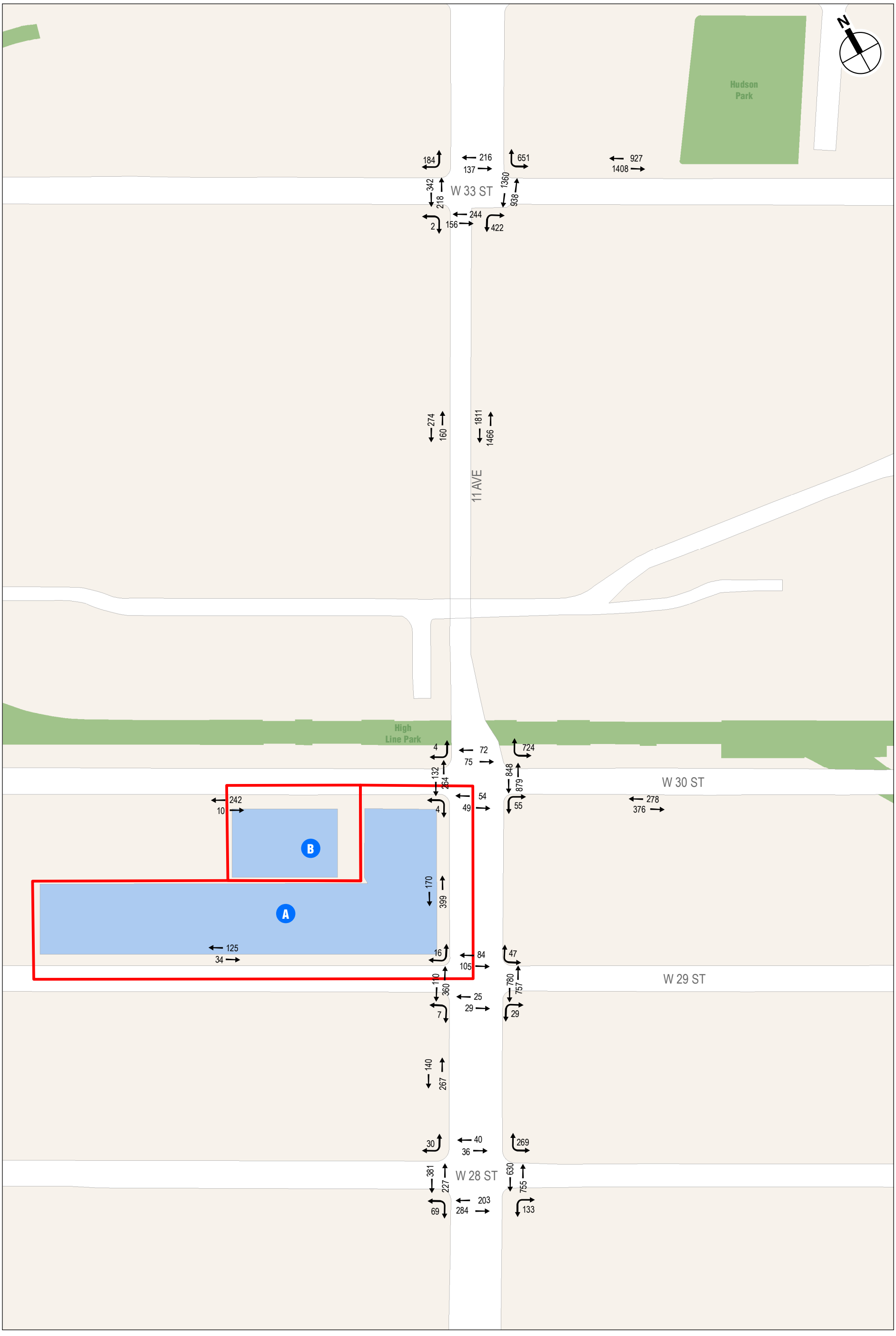
0 300 FEET

2022 No Action Pedestrian Volumes
Weekday Midday Peak Hour

BLOCK 675 EAST

Figure 14-24

7/10/2017



A *Project Sites*

Proposed C6-4X

2022 No Action Pedestrian Volumes
Weekday PM Peak Hour

BLOCK 675 EAST

Figure 14-25

locations, for example all crosswalks and connecting sidewalks at the intersection of Eleventh Avenue and West 33rd Street, and used as basis for the analysis, where appropriate. In addition, pedestrian space and circulation changes associated with the completion of the ongoing Eastern Rail Yard construction between Tenth and Eleventh Avenues from West 30th to West 33rd Streets were accounted for based on publicly available information. Specifically, the information provided geometries for the east crosswalk and east sidewalk of Eleventh Avenue and West 33rd Street, and the northeast corner of Eleventh Avenue and West 30th Street. At sidewalk and crosswalk elements that were closed during the data collection period, future pedestrian volumes at these locations were estimated by shifting some of the existing volumes recorded at adjacent pedestrian elements to establish a "base" onto which No Action and With Action project-generated pedestrian volumes were overlaid to establish the No Action and With Action pedestrian conditions, respectively.

PEDESTRIAN OPERATIONS

A summary of the 2022 No Action condition pedestrian analysis results is presented in **Table 14-35**.

Table 14-35
Summary of 2022 No Action Pedestrian Analysis Results

Level of Service	Analysis Peak Hours		
	Weekday AM	Weekday Midday	Weekday PM
Sidewalks			
Sidewalks at LOS A/B/C	8	7	7
Sidewalks at LOS D	0	0	1
Sidewalks at LOS E	0	1	0
Sidewalks at LOS F	0	0	0
Total	8	8	8
Corners			
Corners at LOS A/B/C	16	16	16
Corners at LOS D	0	0	0
Corners at LOS E	0	0	0
Corners at LOS F	0	0	0
Total	16	16	16
Crosswalks			
Crosswalks at LOS A/B/C	10	9	8
Crosswalks at LOS D	1	1	2
Crosswalks at LOS E	0	1	0
Crosswalks at LOS F	0	0	1
Total	11	11	11

Note: LOS = Level of Service

As shown in **Tables 14-36 through 14-38**, all sidewalk, corner reservoir, and crosswalk analysis locations will operate at acceptable mid-LOS D or better service levels (31.5 SFP platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks) or will operate at the same LOS as under existing conditions, except for the pedestrian elements listed below:

- East sidewalk on Eleventh Avenue between West 30th Street and West 33rd Street will operate at LOS E with 22.6 SFP during the weekday midday peak hour and at LOS D with 27.1 SFP during the weekday PM peak hour;

Table 14-36
2022 No Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	9.5	1838	0.80	64.7	C
Eleventh Avenue between 33rd Street and 30th Street	East	7.5	1910	0.80	48.7	C
Eleventh Avenue between 33rd Street and 30th Street	West	8.5	386	0.81	281.7	B
30th Street between Eleventh Avenue and Tenth Avenue	South	4.0	557	0.80	90.4	B
30th Street between Eleventh Avenue and Twelfth Avenue	South	6.0	71	0.80	1070.8	A
Eleventh Avenue between 29th Street and 28th Street	West	5.5	477	0.90	164.8	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	547	0.80	2173.4	B
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	82	0.82	872.7	A
Weekday Midday Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	9.5	1524	0.80	78.3	C
Eleventh Avenue between 33rd Street and 30th Street	East	7.5	3834	0.80	22.6	E
Eleventh Avenue between 33rd Street and 30th Street	West	8.5	292	0.84	387.0	B
30th Street between Eleventh Avenue and Tenth Avenue	South	4.0	841	0.84	62.5	C
30th Street between Eleventh Avenue and Twelfth Avenue	South	6.0	170	0.80	447.1	B
Eleventh Avenue between 29th Street and 28th Street	West	5.5	310	0.83	232.4	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	330	0.80	287.8	B
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	105	0.82	681.5	A
Weekday PM Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	9.5	2335	0.80	50.5	D
Eleventh Avenue between 33rd Street and 30th Street	East	7.5	3277	0.80	27.1	D
Eleventh Avenue between 33rd Street and 30th Street	West	8.5	434	0.83	257.8	B
30th Street between Eleventh Avenue and Tenth Avenue	South	4.0	654	0.86	82.8	C
30th Street between Eleventh Avenue and Twelfth Avenue	South	6.0	252	0.80	301.5	B
Eleventh Avenue between 29th Street and 28th Street	West	5.5	407	0.80	170.9	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	569	0.81	168.8	B
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	159	0.80	438.2	B

Table 14-37
2022 No Action Condition: Corner Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS
Eleventh Avenue and 33rd Street	Northwest	104.1	A	122.4	A	86.2	A
	Northeast	93.6	A	57.2	B	62.7	A
	Southwest	95.3	A	115.8	A	87.1	A
	Southeast	63.2	A	34.2	C	41.4	B
Eleventh Avenue and 30th Street	Northwest	233.9	A	281.4	A	207.2	A
	Northeast	58.6	B	33.6	C	38.3	C
	Southwest	203.4	A	223.3	A	163.0	A
	Southeast	81.3	A	36.6	C	48.8	B
Eleventh Avenue and 29th Street	Northwest	177.4	A	197.1	A	159.1	A
	Northeast	120.4	A	46.8	B	60.6	A
	Southwest	306.4	A	555.3	A	286.8	A
	Southeast	117.6	A	50.4	B	62.3	A
Eleventh Avenue and 28th Street	Northwest	209.0	A	207.4	A	120.1	A
	Northeast	117.4	A	48.1	B	63.1	A
	Southwest	206.1	A	114.1	A	90.6	A
	Southeast	99.0	A	30.7	C	43.1	B

Table 14-38
2022 No Action Condition: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	2-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Eleventh Avenue and 33rd Street	North	70.0	17.0	323	47.1	B
	East	35.0	15.0	1453	34.6	C
	South	70.0	10.0	351	18.5	D
	West	34.0	15.5	405	137.3	A
Eleventh Avenue and 30th Street	North	70.0	11.0	161	141.6	A
	East	34.0	13.5	1004	30.8	C
	South	70.0	13.0	109	273.1	A
	West	34.0	13.5	343	118.0	A
Eleventh Avenue and 29th Street	North	70.0	13.0	123	238.6	A
	West	34.5	14.0	453	84.0	A
Eleventh Avenue and 28th Street	West	35.0	14.0	324	138.4	A
Weekday Midday Peak Hour						
Eleventh Avenue and 33rd Street	North	70.0	17.0	139	101.9	A
	East	35.0	15.0	2890	16.1	D
	South	70.0	10.0	214	24.8	C
	West	34.0	16.0	704	115.7	A
Eleventh Avenue and 30th Street	North	70.0	11.0	134	181.9	A
	East	34.0	14.0	2158	12.6	E
	South	70.0	13.0	120	235.0	A
	West	34.0	14.0	882	142.4	A
Eleventh Avenue and 29th Street	North	70.0	13.0	302	88.5	A
	West	35.0	14.0	204	183.1	A
Eleventh Avenue and 28th Street	West	35.0	14.0	303	140.0	A
Weekday PM Peak Hour						
Eleventh Avenue and 33rd Street	North	70.0	17.0	533	46.2	B
	East	35.0	15.0	2982	22.5	D
	South	70.0	10.0	400	2.5	F
	West	34.0	15.5	560	105.9	A
Eleventh Avenue and 30th Street	North	70.0	11.0	147	155.5	A
	East	34.0	13.5	1727	16.6	D
	South	70.0	13.0	103	244.8	A
	West	34.0	13.5	396	89.4	A
Eleventh Avenue and 29th Street	North	70.0	13.0	189	142.8	A
	West	34.5	14.0	470	81.5	A
Eleventh Avenue and 28th Street	West	35.0	14.0	608	68.5	A

- East crosswalk of Eleventh Avenue and West 33rd Street will operate at LOS D with 16.1 SFP during the weekday midday peak hour;
- South crosswalk of Eleventh Avenue and West 33rd Street will operate at LOS D with 18.5 SFP during the weekday AM peak hour and at LOS F with 2.5 SFP during the weekday PM peak hour; and
- East crosswalk of Eleventh Avenue and West 30th Street will operate at LOS E with 12.6 SFP during the weekday midday peak hour and at LOS D with 16.6 SFP during the weekday PM peak hour.

THE FUTURE WITH THE PROPOSED ACTIONS

Project-generated pedestrian volumes were assigned to the pedestrian network considering current land uses in the area, population distribution, nearby parking locations, available transit services, and surrounding pedestrian facilities. The hourly incremental pedestrian volumes presented above in **Figures 14-6 through 14-8**, were added to the projected 2021 No Action

volumes to generate the 2022 With Action pedestrian volumes for analysis (see **Figures 14-26 through 14-28**).

PEDESTRIAN OPERATIONS AND SIGNIFICANT ADVERSE IMPACTS

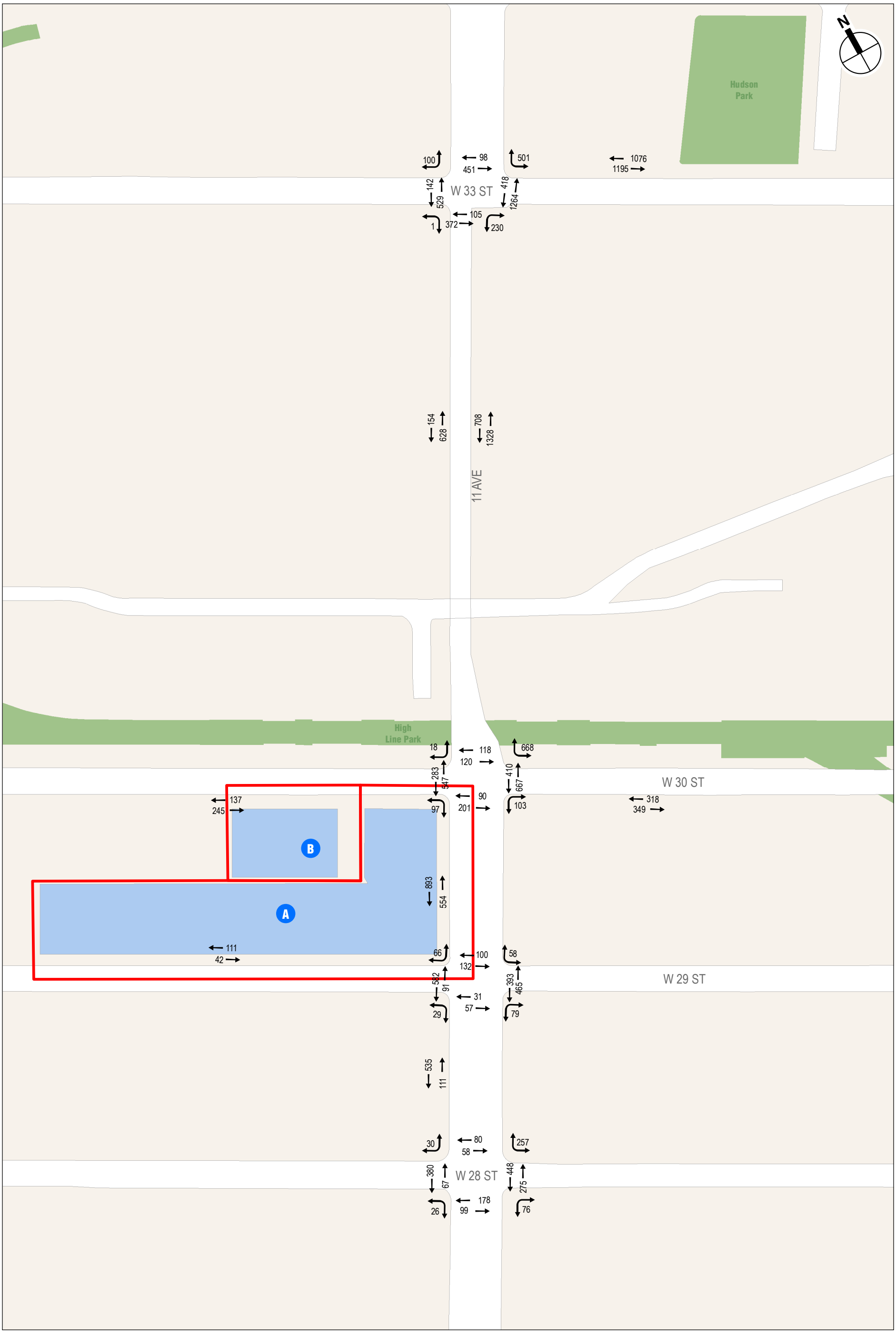
A summary of the 2022 With Action condition pedestrian analysis results is presented in **Table 14-39**. Details on SFP and level-of-service results are presented in **Tables 14-40 to 14-42**. Based on the *CEQR Technical Manual* sliding scale impact thresholds, significant adverse pedestrian impacts, as detailed below, were identified for one crosswalk during the weekday AM, midday, and PM peak hours, and another crosswalk only during the weekday midday peak hour.

Table 14-39
Summary of 2022 With Action Pedestrian Analysis Results

Level of Service	Analysis Peak Hours		
	Weekday AM	Weekday Midday	Weekday PM
Sidewalks			
Sidewalks at LOS A/B/C	8	7	7
Sidewalks at LOS D	0	0	1
Sidewalks at LOS E	0	1	0
Sidewalks at LOS F	0	0	0
Total	8	8	8
Corners			
Crosswalks at LOS A/B/C	16	16	16
Crosswalks at LOS D	0	0	0
Crosswalks at LOS E	0	0	0
Crosswalks at LOS F	0	0	0
Total	16	16	16
Crosswalks			
Corners at LOS A/B/C	10	8	7
Corners at LOS D	0	0	2
Corners at LOS E	1	3	0
Corners at LOS F	0	0	1
Total	11	11	11

Note: LOS = Level-of-Service.

8/15/2017



A Project Sites

Proposed C6-4X

0 300 FEET

2022 With Action Pedestrian Volumes
Weekday AM Peak Hour

BLOCK 675 EAST

Figure 14-26

7/20/2017

Hudson Park

W 33 ST

11 AVE

High Line Park

W 30 ST

W 29 ST

W 28 ST

149
176
197
497
952
980
399
409
1575
1561
3
194
176
546
388
400
1999
1991
5
128
122
535
466
451
1135
1135
543
442
65
179
179
150
447
528
B
A
657
602
198
143
52
244
248
77
310
274
1122
1116
69
58
21
92
328
284
30
85
82
293
349
172
1088
1083
32
369
375
156

A Project Sites

Proposed C6-4X

0 300 FEET

2022 With Action Pedestrian Volumes
Weekday Midday Peak Hour

BLOCK 675 EAST

Figure 14-27

7/20/2017

Hudson Park

W 33 ST

11 AVE

High Line Park

W 30 ST

W 29 ST

W 28 ST

A Project Sites

Proposed C6-4X

0 300 FEET

2022 With Action Pedestrian Volumes
Weekday PM Peak Hour

Figure 14-28

BLOCK 675 EAST

Table 14-40
2022 With Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	9.5	2271	0.80	52.0	C
Eleventh Avenue between 33rd Street and 30th Street	East	7.5	2036	0.80	45.5	C
Eleventh Avenue between 33rd Street and 30th Street	West	8.5	782	0.81	138.8	B
30th Street between Eleventh Avenue and Tenth Avenue	South	4.0	667	0.80	75.3	C
30th Street between Eleventh Avenue and Twelfth Avenue	South	6.0	382	0.80	198.8	B
Eleventh Avenue between 29th Street and 28th Street	West	5.5	646	0.90	121.4	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	1447	0.80	64.9	C
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	153	0.82	467.6	B
Weekday Midday Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	9.5	1932	0.80	61.4	C
Eleventh Avenue between 33rd Street and 30th Street	East	7.5	3990	0.80	21.5	E
Eleventh Avenue between 33rd Street and 30th Street	West	8.5	788	0.84	143.1	B
30th Street between Eleventh Avenue and Tenth Avenue	South	4.0	975	0.84	53.7	C
30th Street between Eleventh Avenue and Twelfth Avenue	South	6.0	985	0.80	76.5	C
Eleventh Avenue between 29th Street and 28th Street	West	5.5	612	0.83	117.4	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	1259	0.80	74.8	C
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	341	0.82	209.6	B
Weekday PM Peak Hour						
33rd Street between Eleventh Avenue and Tenth Avenue	North	9.5	2885	0.80	40.4	C
Eleventh Avenue between 33rd Street and 30th Street	East	7.5	3452	0.80	25.6	D
Eleventh Avenue between 33rd Street and 30th Street	West	8.5	985	0.83	113.2	B
30th Street between Eleventh Avenue and Tenth Avenue	South	4.0	806	0.86	66.9	C
30th Street between Eleventh Avenue and Twelfth Avenue	South	6.0	857	0.80	88.1	C
Eleventh Avenue between 29th Street and 28th Street	West	5.5	676	0.80	102.6	B
Eleventh Avenue between 30th Street and 29th Street	West	7.5	1742	0.81	54.3	C
29th Street between Eleventh Avenue and Twelfth Avenue	North	5.5	311	0.80	223.9	B

Notes: SFP = square feet per pedestrian.
+ Denotes a significant adverse pedestrian impact.

Table 14-41
2022 With Action Condition: Corner Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS
Eleventh Avenue and 33rd Street	Northwest	58.8	B	64.6	A	49.8	B
	Northeast	77.2	A	48.8	B	50.5	B
	Southwest	57.0	B	63.0	A	52.7	B
	Southeast	51.9	B	29.1	C	33.8	C
Eleventh Avenue and 30th Street	Northwest	110.3	A	96.8	A	76.5	A
	Northeast	53.8	B	30.2	C	34.0	C
	Southwest	68.8	A	61.5	A	47.6	B
	Southeast	66.8	A	30.5	C	38.2	C
Eleventh Avenue and 29th Street	Northwest	103.8	A	83.8	A	82.6	A
	Northeast	103.1	A	40.4	B	51.5	B
	Southwest	199.1	A	196.8	A	154.9	A
	Southeast	105.8	A	45.8	B	55.9	B
Eleventh Avenue and 28th Street	Northwest	145.6	A	115.7	A	85.3	A
	Northeast	101.4	A	42.4	B	55.1	B
	Southwest	156.8	A	84.3	A	71.4	A
	Southeast	89.3	A	28.4	C	39.1	C

Notes: SFP = square foot per pedestrian; + Denotes a significant adverse pedestrian impact.

Table 14-42
2022 With Action Condition: Crosswalk Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	2-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Eleventh Avenue and 33rd Street	North	70.0	17.0	549	27.0	C
	East	35.0	15.0	1682	29.2	C
	South	70.0	10.0	477	13.3	E+
	West	34.0	15.5	671	80.6	A
Eleventh Avenue and 30th Street	North	70.0	11.0	238	95.2	A
	East	34.0	13.5	1077	28.4	C
	South	70.0	13.0	291	98.8	A
	West	34.0	13.5	830	45.9	B
Eleventh Avenue and 29th Street	North	70.0	13.0	232	125.4	A
	West	34.5	14.0	673	54.2	B
Eleventh Avenue and 28th Street	West	35.0	14.0	447	98.8	A
Weekday Midday Peak Hour						
Eleventh Avenue and 33rd Street	North	70.0	17.0	373	41.1	B
	East	35.0	15.0	3136	14.6	E+
	South	70.0	10.0	370	14.1	E+
	West	34.0	15.5	808	66.8	A
Eleventh Avenue and 30th Street	North	70.0	11.0	250	90.5	A
	East	34.0	13.5	2270	11.8	E
	South	70.0	13.0	358	76.4	A
	West	34.0	13.5	917	40.1	B
Eleventh Avenue and 29th Street	North	70.0	13.0	492	53.4	B
	West	34.5	14.0	584	60.3	A
Eleventh Avenue and 28th Street	West	35.0	14.0	521	80.0	A
Weekday PM Peak Hour						
Eleventh Avenue And 33rd Street	North	70.0	17.0	650	24.5	C
	East	35.0	15.0	2604	19.5	D
	South	70.0	10.0	575	1.7	F+
	West	34.0	15.5	934	61.7	A
Eleventh Avenue and 30th Street	North	70.0	11.0	262	86.2	A
	East	34.0	13.5	1836	15.5	D
	south	70.0	13.0	363	66.2	A
	West	34.0	13.5	1087	30.2	C
Eleventh Avenue and 29th Street	North	70.0	13.0	359	74.1	A
	West	34.5	14.0	815	43.9	B
Eleventh Avenue and 28th Street	West	35.0	14.0	804	50.9	B

Note: SFP = square feet per pedestrian; + Denotes a significant adverse pedestrian impact.

Crosswalks

- The south crosswalk of West 33rd Street and Eleventh Avenue would deteriorate from LOS D with 18.5 SFP to LOS E with 13.3 SFP, from LOS C with 24.8 SFP to LOS E with 14.1 SFP, and within LOS F from 2.5 SFP to 1.7 SFP, during the weekday AM, midday, and PM peak hours, respectively; these degradations in pedestrian operations constitute significant adverse impacts; and
- The east crosswalk of West 33rd Street and Eleventh Avenue would deteriorate from LOS D with 16.1 SFP to LOS E with 14.6 SFP during the weekday midday peak hour, this degradation in pedestrian operations constitutes a significant adverse impact.

Potential measures that can be implemented to mitigate these significant adverse pedestrian impacts are discussed in Chapter 21, "Mitigation."

G. VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Crash data for the study area intersections were obtained from the NYSDOT for the time period between November 1, 2013, and October 31, 2016. The data obtained quantify the total number of reportable crashes (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of vehicular crashes with pedestrians and bicycles at each location.

During the November 1, 2013, and October 31, 2016, three-year period, a total of 20 injuries, and three pedestrian/bicyclist-related crashes occurred at the study area intersections. A rolling total of crash data identified zero high crash locations in the 2013 to 2016 period. **Table 14-43** depicts total crash characteristics by intersection during the study period, as well as a breakdown of pedestrian and bicycle crashes by year and location.

Table 14-43
Accident Summary

Intersection		Study Period						Accidents by Year							
North-South Roadway	East-West Roadway	All Accidents by Year				Total Fatalities	Total Injuries	Pedestrian				Bicycle			
		2013	2014	2015	2016			2013	2014	2015	2016	2013	2014	2015	2016
Eleventh Avenue	W. 30th Street	0	3	1	3	0	3	0	0	0	0	0	0	0	1
Eleventh Avenue	W. 29th Street	0	3	1	0	0	2	0	1	0	0	0	0	0	0
Twelfth Avenue	W. 30th Street	0	7	4	3	0	14	0	0	0	0	0	1	0	0
Twelfth Avenue	W. 29th Street	0	0	0	1	0	1	0	0	0	0	0	0	0	0

Source: NYSDOT November 1, 2013, through October 31, 2016, accident data.
Note: Bold intersections are high accident locations.

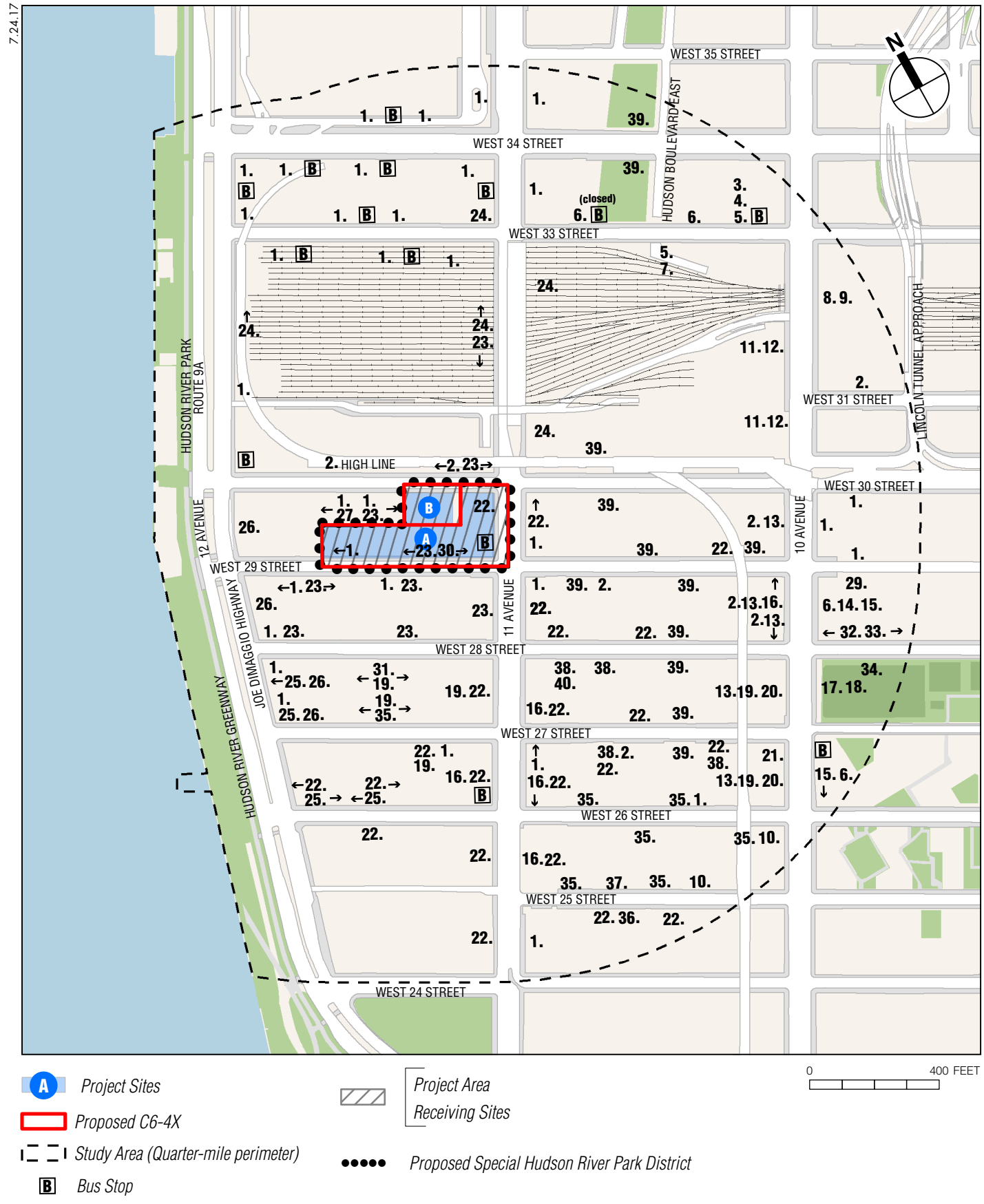
H. PARKING ASSESSMENT

EXISTING CONDITIONS

Inventories of on-street and off-street parking within a ¼-mile of the project sites were conducted in March 2016 and May 2016. The on-street survey involved recording curbside regulations and performing general observations of daytime utilization. The off-street survey provided an inventory of the area's public parking facilities and their legal capacities and daytime utilization.

ON-STREET PARKING

Curbside parking regulations within a ¼-mile of the project sites are illustrated in **Figure 14-29** and summarized in **Table 14-44.** The curbside regulations in the area generally include limited one-hour metered parking, no standing or no parking anytime except authorized vehicles, and alternate-side parking to accommodate street-cleaning. Based on field observations, on-street parking in the area is generally at or near full utilization during weekday daytime hours.



BLOCK 675 EAST

On-Street Parking Regulations

Figure 14-29

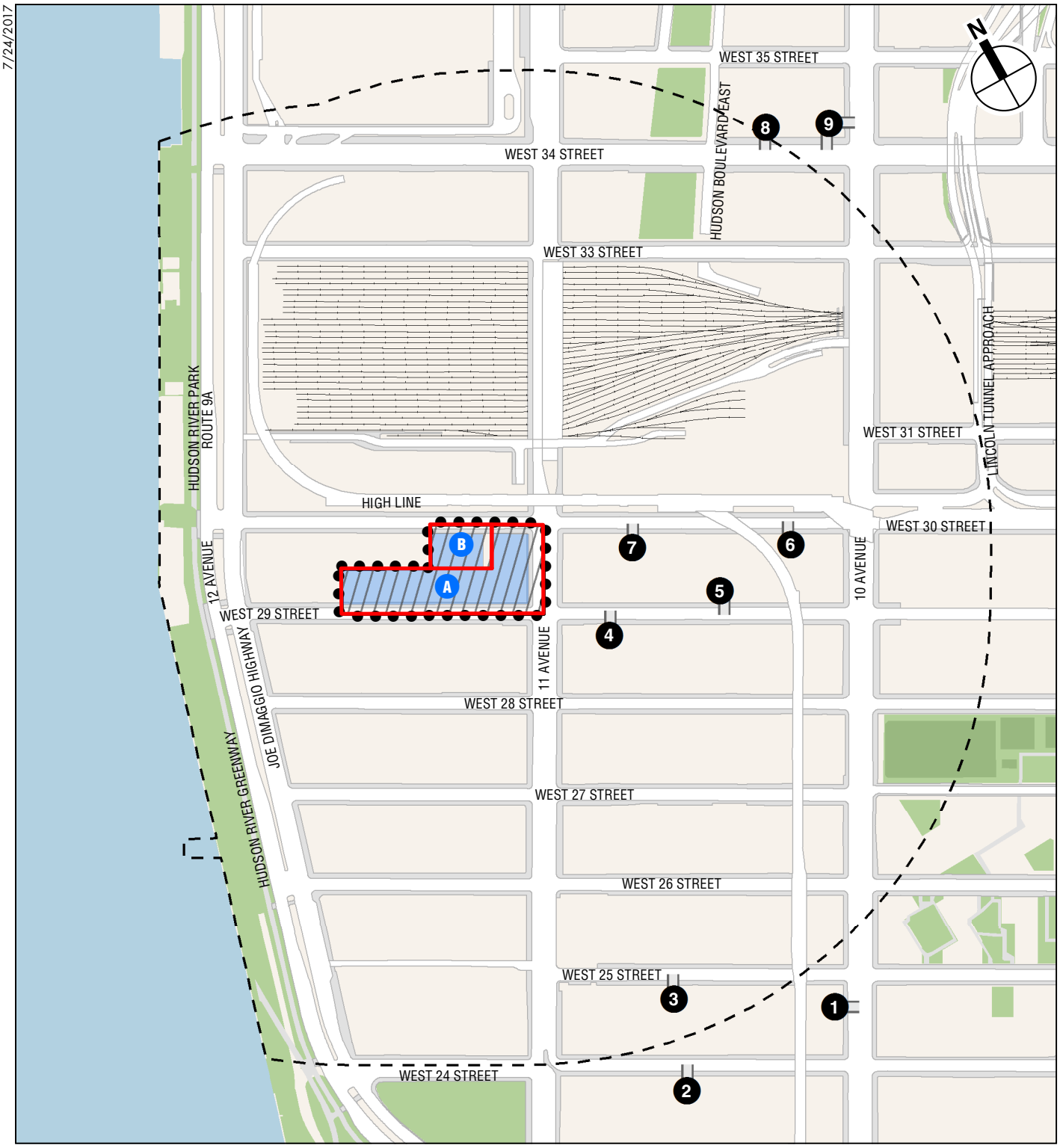
Table 14-44
On-Street Parking Regulations

No.	Regulation	No.	Regulation
1	NS Anytime	**22**	NP 8AM–6PM Mon.–Fri.
2	NP Anytime	**23**	Authorized Veh. Only – Dept. of Sanitation
3	NS 7AM–10AM, 4PM–7PM Incl. Sun.	**24**	NP Truck Waiting Line
4	NS Ex. Trucks Loading/Unloading 10AM–4PM Incl. Sun.	**25**	NS Ex. Trucks Loading/Unloading 7AM–7PM Mon.–Fri.
5	NP 7PM–Midnight Incl. Sun.	**26**	NP Midnight–3AM Tue. & Fri.
6	NSA Temporary Construction Regulation	**27**	Non-MTA Bus Layover Only
7	NS 7AM–7PM Incl. Sun.	**28**	NS Ex. Authorized Veh. – Postal Inspectors
8	NS 7AM–10AM, 4PM–7PM Ex. Sun.	**29**	No Stopping Anytime
9	NS Ex. Trucks Loading/Unloading 10AM–4PM Ex. Sun.	**30**	NP 7AM–7PM Ex. Sun
10	NS 7AM–4PM School Days	**31**	NS Ex. Trucks Loading/Unloading 8AM–7PM Mon.–Fri.
11	NS 4PM–7PM Ex. Sun.	**32**	NSA Taxi Stand
12	NS Ex. Trucks Loading/Unloading 7AM–4PM Ex. Sun.	**33**	NS 8AM–7PM Mon.–Fri.
13	NS 4PM–7PM Mon.–Fri.	**34**	NP 11AM–12:30PM Tue. & Fri.
14	1-Hr Metered Parking 9AM–7PM	**35**	NP Loading Zone 8AM–6PM Mon.–Fri.
15	Bus Layover Only Mon.–Fri. 8AM–6PM	**36**	NSA Ex. Authorized Vehicles
16	Taxi Stand NS Ex. Taxis 10PM–4AM Incl. Sun.	**37**	NP 7AM–6PM Mon.–Fri. – Temporary Construction
17	NS 7AM–10AM, 4PM–7PM Mon.–Fri.	**38**	NS 10P–6AM Incl. Sun.
18	1-Hr Metered Parking Mon.–Fri.10AM–4PM, Sat. 9AM–7PM	**39**	NSA Temporary Construction Regulation
19	NP 11PM–6AM Incl. Sun.	**40**	Truck Loading Only Mon.–Fri. 8AM–7PM
20	NP 6AM–4PM Mon.-Fri.	**B**	Bus Stop
21	Taxi 1 Hr Limit Relief Stand		

Notes: NP = No Parking; NS = No Standing; Sun = Sunday; Mon = Monday; Tue = Tuesday; Wed = Wednesday; Thu = Thursday; Fri = Friday; Sat = Saturday
Sources: Surveys conducted by AKRF, Inc.; May 2016

OFF-STREET PARKING

Off-street publicly accessible parking lots and garages (see **Figure 14-30**) within ¼-mile of the project sites was surveyed in March 2016. Each facility's operating license and legal capacity were noted. Based on responses given by parking attendants and visual inspections, where possible, estimates were made on the parking occupancy or utilization at each facility for the weekday morning, midday, evening, and overnight time periods. A summary of the recorded information and the area's overall off-street public parking supply and utilization is presented in **Table 14-45.** Within the ¼-mile parking study area, a total of nine public parking facilities were inventoried. The combined capacity of these facilities totals 1,086 parking spaces. Overall, they were 62, 78, 67, and 65-percent utilized, with 416, 244, 358, and 314 parking spaces available during the weekday morning, midday, evening, and overnight time periods, respectively.



BLOCK 675 EAST

Off-Street Parking Facilities
Figure 14-30

Table 14-45
Existing Weekday Off-Street Parking Supply and Utilization
Approximately ¼-Mile Study Area

Map #	Name/Address	License Number	Licensed Capacity	Utilization Rate				Utilized Spaces				Available Spaces			
				AM	MD	PM	ON	AM	MD	PM	ON	AM	MD	PM	ON
1	249 Parking Corporation: 249 10th Avenue	427868	120	60%	80%	50%	50%	72	96	60	60	48	24	60	60
2	555 W. Garage Corporation: 549 W. 23rd Street	1214704	70	70%	75%	45%	60%	49	53	32	42	21	17	38	28
3	550 W. 25th Street Car Park LLC: 550 W. 25th Street	1192617	163	80%	80%	80%	80%	130	130	130	130	33	33	33	33
4	SP Plus Parking: 525 W. 28th Street	2012918	145	50%	85%	75%	66%	73	123	109	96	72	22	36	49
5	MP West 29th Street: 529 W. 29th Street	2015756	29	90%	90%	80%	80%	26	26	23	23	3	3	6	6
6	MP West 30 LLC: 500 W. 30th Street	2013235	79	70%	70%	70%	60%	55	55	55	47	24	24	24	32
7	Eleventh Ave Garage Corp.: 314 11th Avenue	1345891	181	55%	85%	85%	60%	100	154	154	109	81	27	27	72
8	One Parking 34th Street: 509 W. 34th Street	2026307	200	50%	70%	50%	Closed	100	140	100	Closed	100	60	100	Closed
9	One Parking 34th Street: 435 10th Avenue	2026305	99	66%	66%	66%	66%	65	65	65	65	34	34	34	34
¼-Mile Area Totals			**1,086**	**62%**	**78%**	**67%**	**65%**	**670**	**842**	**728**	**572**	**416**	**244**	**358**	**314**

Notes: MD = Midday; ON = Overnight; N/A = Not Available
Sources: Survey conducted by AKRF Inc. March 2016

THE FUTURE WITHOUT THE PROPOSED ACTIONS

Overall public parking utilization is expected to experience the same growth as projected for traffic. In the No Action condition, No Build projects are expected to displace two public parking facilities, for a total displacement of approximately 299 spaces. Many of the No Build projects are expected to provide parking facilities to accommodate projected demand from their respective projects. As presented in **Table 14-46**, accounting for the parking demand generated from background growth, the No Action condition public parking utilization is expected to increase to 86, 108, 94, and 74-percent during the weekday morning, midday, evening, and overnight time periods, respectively, in the ¼-mile off-street parking study area. This represents parking shortfalls of 67 spaces during the weekday midday peak period.

Table 14-46
Existing and 2022 No Action Parking Supply and Utilization (¼-Mile)

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight
Existing Public Parking Supply	1,086	1,086	1,086	886
Existing Public Parking Demand	670	842	728	572
Existing Public Parking Utilization	62%	78%	67%	65%
Displaced Public Parking Supply Total	-299	-299	-299	-99
2022 No Action Public Parking Supply Total	787	787	787	787
2022 No Action Background Incremental Demand	9	12	10	8
2022 No Action Public Parking Demand Total	679	854	738	580
2022 No Action Public Parking Utilization	86%	108%	94%	74%
2022 No Action Available Spaces (Shortfall)	108	(67)	49	207

THE FUTURE WITH THE PROPOSED ACTIONS

The proposed projects would include 252 accessory parking spaces on the Project Area. The weekday parking demand generated by the proposed projects are presented in **Table 14-47.** Since the on-site parking supply would adequately accommodate the estimated parking demand from the proposed projects, the proposed projects would not be expected to worsen the parking shortfall described above for the No Action condition.

Table 14-47
Parking Demand from Proposed Projects – Weekday

Hour	Residential			Local Retail			Total
	Site A	Site B	Lot 38	Site A	Site B	Lot 38	
12 AM–01 AM	168	37	6	0	0	0	211
01 AM–02 AM	168	37	6	0	0	0	211
02 AM–03 AM	168	37	6	0	0	0	211
03 AM–04 AM	168	37	6	0	0	0	211
04 AM–05 AM	168	37	6	0	0	0	211
05 AM–06 AM	168	37	6	0	0	0	211
06 AM–07 AM	168	37	6	0	0	0	211
07 AM–08 AM	154	34	5	0	0	0	193
08 AM–09 AM	124	28	4	0	0	0	156
09 AM–10 AM	108	24	3	0	0	0	135
10 AM–11 AM	97	22	3	0	0	0	122
11 AM–12 PM	93	22	3	0	0	0	118
12 PM–01 PM	93	22	3	0	0	0	118
01 PM–02 PM	92	22	3	0	0	0	117
02 PM–03 PM	92	22	3	0	0	0	117
03 PM–04 PM	93	23	3	0	0	0	119
04 PM–05 PM	99	24	4	0	0	0	127
05 PM–06 PM	118	28	4	0	0	0	150
06 PM–07 PM	134	31	5	0	0	0	170
07 PM–08 PM	149	34	6	0	0	0	189
08 PM–09 PM	155	35	6	0	0	0	196
09 PM–10 PM	160	36	6	0	0	0	202
10 PM–11 PM	164	37	6	0	0	0	207
11 PM–12 AM	168	37	6	0	0	0	211

Source: Seward Park FGEIS Weekday 24-hour parking demand projections.

As detailed in Chapter 2, "Analytical Framework," the adjacent Hudson Tunnel project may temporarily use the accessory parking on project site A for construction staging. If this occurs, this site's parking demand would need to be met off-site, which would further exacerbate the No Action condition parking shortfall, by 93 additional spaces (increase to 120 percent utilization), during the weekday midday peak period. In addition, **Table 14-48** presents a summary of the future With Action condition with a temporary loss of parking at project site A. As shown, the ¼-mile off-street parking utilization would increase to 102, 120, 109, and 95-percent during the weekday morning, midday, evening, and overnight time periods, respectively. These utilization levels represent parking shortfalls of 16, 160, and 69 spaces during the weekday AM, midday, and PM peak periods, respectively. It is expected that this excess parking demand would need to be accommodated on-street, which has very limited availability, or by off-street parking facilities beyond ¼-mile walk from the project sites.

Table 14-48
2022 No Action and With Action Parking Supply and Utilization (¼-Mile) – Temporary Loss of Parking at Project Site A

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight
2022 No Action Public Parking Supply	787	787	787	787
2022 No Action Public Parking Demand	679	854	738	580
2022 No Action Public Parking Utilization	86%	108%	94%	74%
Project Site A Parking Demand	124	93	118	168
Project Site A Accessory Parking Spaces	0	0	0	0
Project Site A Parking Demand Accommodated by Accessory Parking	0	0	0	0
Project Site A Parking Demand Accommodated by Public Parking	124	93	118	168
2022 With Action Public Parking Demand Total	803	947	856	748
2022 With Action Public Parking Utilization	102%	120%	109%	95%
2022 With Action Available Spaces (Shortfall)	(16)	(160)	(69)	39

As stated in the *CEQR Technical Manual* and discussed above in the parking analysis methodology section, a parking shortfall resulting from a project located in Manhattan does not constitute a significant adverse parking impact, due to the magnitude of available alternative modes of transportation. Nonetheless, an inventory of off-street parking resources beyond ¼-mile from the project sites was conducted to determine if the overflow of demand could be accommodated at a slightly longer walking distance. This inventory showed that there are 20 additional parking facilities between ¼-mile and ½-mile of the project sites that would yield 1,235, 945, and 1,616 available parking spaces during the weekday AM, midday and PM peak periods. Considering that the projected ¼-mile temporary parking shortfall is up to only 160 spaces, these additional resources would be adequate in accommodating the overflow demand resulting from construction staging of the Hudson Tunnel project at project site A. ✷