

A. INTRODUCTION

As described in Chapter 1, “Project Description,” the Proposed Project would result in the construction of a mixed-use development containing residential, community facility space, and retail space on the block east of Eleventh Avenue between West 44th and West 45th Streets in Manhattan. This chapter discusses the potential impacts of new vehicle trips associated with the Proposed Actions on the local street network and at key intersections in the study area as well as the effect on off-street parking facilities. The actions’ potential impacts to transit and pedestrian facilities are described in Chapter 16, “Transit and Pedestrians.”

The traffic and parking analysis includes eight signalized intersections along Tenth and Eleventh Avenues. Three weekday peak hours (AM, midday, and PM) were analyzed to determine whether the Proposed Actions would cause any significant adverse traffic impacts at these intersection locations. The study area’s on- and off-street parking conditions and intersection traffic safety are also summarized.

PRINCIPAL CONCLUSIONS

Analysis results show that the Proposed Actions would result in significant adverse traffic impacts at four intersections (at the Tenth Avenue intersections with West 42nd and West 45th Streets, and at the Eleventh Avenue intersections with West 44th and West 45th Streets) during the AM, midday and PM peak hours. There would be no significant parking impacts. Measures that would mitigate the predicted traffic impacts are presented in Chapter 21, “Mitigation.”

B. METHODOLOGY**OVERVIEW**

Planning for a transportation impact analysis begins with understanding the travel characteristics associated with the Proposed Actions and the roadway network and regional transportation systems surrounding the Project Site. Depending on the size and anticipated trip generation of the Proposed Actions, various transportation elements may need to be evaluated quantitatively. Guidelines presented in the *City Environmental Quality Review (CEQR) Technical Manual* determine analysis needs for projects in New York City. Impacts on vehicular flow, parking supply and demand, and vehicle-pedestrian safety are evaluated as part of this chapter, while potential impacts on transit service and pedestrian circulation are assessed in Chapter 17, “Transit and Pedestrians.”

Once the analysis needs have been determined, a study area is developed for each specific transportation element. At the same time, the appropriate analysis time periods are determined. Typically, the weekday AM, midday, and PM peak hours are selected as representative peak periods for analysis. However, based on the types of use, these periods could vary to also include

late evening or weekend hours. To provide the basic parameters for analysis, baseline traffic, parking, transit, and pedestrian data, along with physical and operational characteristics, are collected to develop the baseline conditions, often referred to as the “existing conditions.” Once the basic analysis parameters have been established, operating levels for each of the transportation analysis areas are determined.

The future without the Proposed Actions, or the “No Build condition,” builds on the existing conditions analysis by incorporating background growth, other nearby projects expected to be completed by the Proposed Actions’ build year, and anticipated changes in the transportation network. Again, operating levels are computed. The analysis results become the future baseline onto which projected increments associated with the Proposed Actions are layered to formulate the “Build condition.” If the future Build analysis concludes that the Proposed Actions would result in significant transportation-related impacts, as defined by the *CEQR Technical Manual*, mitigation measures to alleviate these impacts are examined.

ANALYSIS METHODOLOGY FOR SIGNALIZED INTERSECTIONS

The operation of signalized intersections within the study area was analyzed in accordance with CEQR guidelines by applying the methodologies presented in the 2000 *Highway Capacity Manual (HCM)*, using the *Highway Capacity Software (HCS+)* Version 5.4 Beta. This procedure evaluates signalized intersections for average delay per vehicle and level of service (LOS).

LOS for signalized intersections is based on the average stopped delay per vehicle for the various lane group movements within the intersection. This delay is the basis for an LOS determination for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. The LOS criteria for signalized intersections are defined in **Table 15-1** below.

**Table 15-1
Level of Service Criteria for Signalized Intersections**

LOS	Average 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—often are 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 remains fairly light. LOS D describes a condition where congestion is 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. The midpoint of this service level (45 seconds of delay) is considered the threshold of acceptable operating conditions. Conditions at LOS E and F reflect poor service levels, and cycle failures are frequent. The HCM methodology provides a summary of the total intersection operating conditions by identifying the two critical movements (the worst case from each roadway) and calculating a summary of critical v/c ratio, delay, and LOS.

C. EXISTING CONDITIONS

PROJECT SITE

The approximately 3.1-acre Project Site is currently occupied by a 300-space public parking lot, a 50-space parking area used by the New York City Police Department (NYPD), a stable, a vacant building, and P.S. 51, a 238-seat elementary school. The public parking lot has two driveways on Eleventh Avenue and one driveway onto West 45th Street. P.S. 51's main entrance is located on West 45th Street between Tenth and Eleventh Avenues. At approximately 150-feet west of Tenth Avenue, the block is bisected by a rail cut with tracks used by AMTRAK'S Empire Line.

STUDY AREA

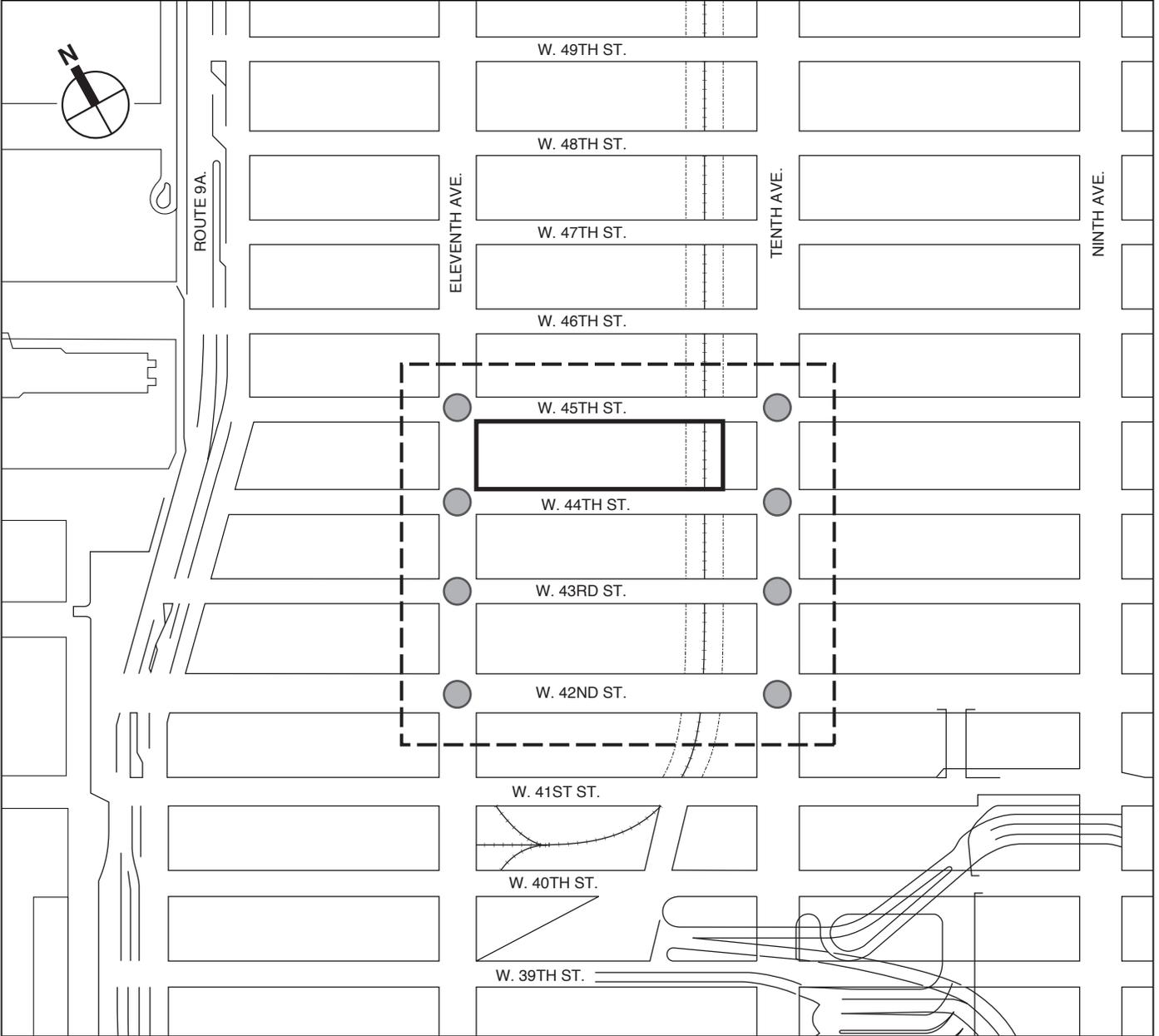
To assess the traffic impacts associated with the Proposed Actions, an overall study area was defined that considers the location of the Proposed Project, primary access routes to and from the site, and key intersections likely to be affected by project-generated trips. The traffic study area is part of Manhattan's Midtown grid, consisting of primarily north and southbound avenues and east and westbound cross-town streets. For the purposes of this analysis, the traffic study area encompasses intersections in the area bounded by West 42nd Street to the south, West 45th Street to the north, Tenth Avenue to the east, and Eleventh Avenue to the west, as depicted in **Figure 15-1** and summarized below. In total, eight signalized intersections were selected for analysis.

- Eleventh Avenue at West 42nd, West 43rd, West 44th, and West 45th Streets;
- Tenth Avenue at West 42nd, West 43rd, West 44th, and West 45th Streets.

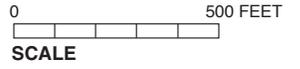
STUDY AREA INTERSECTION AND ROADWAY CHARACTERISTICS

The traffic study area consists of several major and minor roadways. The crosstown (east-west) roadways include West 42nd, West 43rd, West 44th, and West 45th Streets. The north-south roadways include Tenth and Eleventh Avenues.

- Within the study area, West 42nd Street is a two-way street operating with one eastbound and two westbound moving lanes at Tenth Avenue and three eastbound and two westbound moving lanes at Eleventh Avenue. Depending on the block, curbside lanes are used for bus stops, truck loading, or angle parking. The eastbound curb lane approaching Eleventh Avenue is currently blocked off for construction. West 42nd Street is a New York City Department of Transportation (NYCDOT) through truck route between Dyer and Eleventh Avenues and a local truck route for the rest the corridor between Twelfth and First Avenues.



-  *Project Site*
-  *Study Area Boundary*
-  *Intersection for Analysis*



West 44th Street and Eleventh Avenue Rezoning

- Within the study area, West 43rd Street is a one-way westbound street with typically one moving lane and restricted daytime parking/standing on both sides. There is a single eastbound lane approaching Tenth Avenue, which extends for approximately half the distance to Eleventh Avenue.
- Within the study area, West 44th Street is a one-way eastbound street with one or two moving lanes and restricted daytime parking/standing on both sides.
- Within the study area, West 45th Street is a one-way westbound street with one moving lane and restricted parking/standing or truck loading on both sides.
- Within the study area, Tenth Avenue is a six-lane northbound arterial. Metered parking is generally permitted on both curbs, subject to peak period restrictions. Tenth Avenue is a NYCDOT local truck route.
- Within the study area, Eleventh Avenue is a seven-lane arterial which operates as a one-way southbound roadway south of West 44th Street. North of West 44th Street, Eleventh Avenue carries two-way traffic with two moving lanes in each direction. The center lane is a dedicated left-turn lane. Curbside parking/standing is prohibited on some blocks, with truck loading or metered parking on others. Eleventh Avenue is a NYCDOT local truck route.

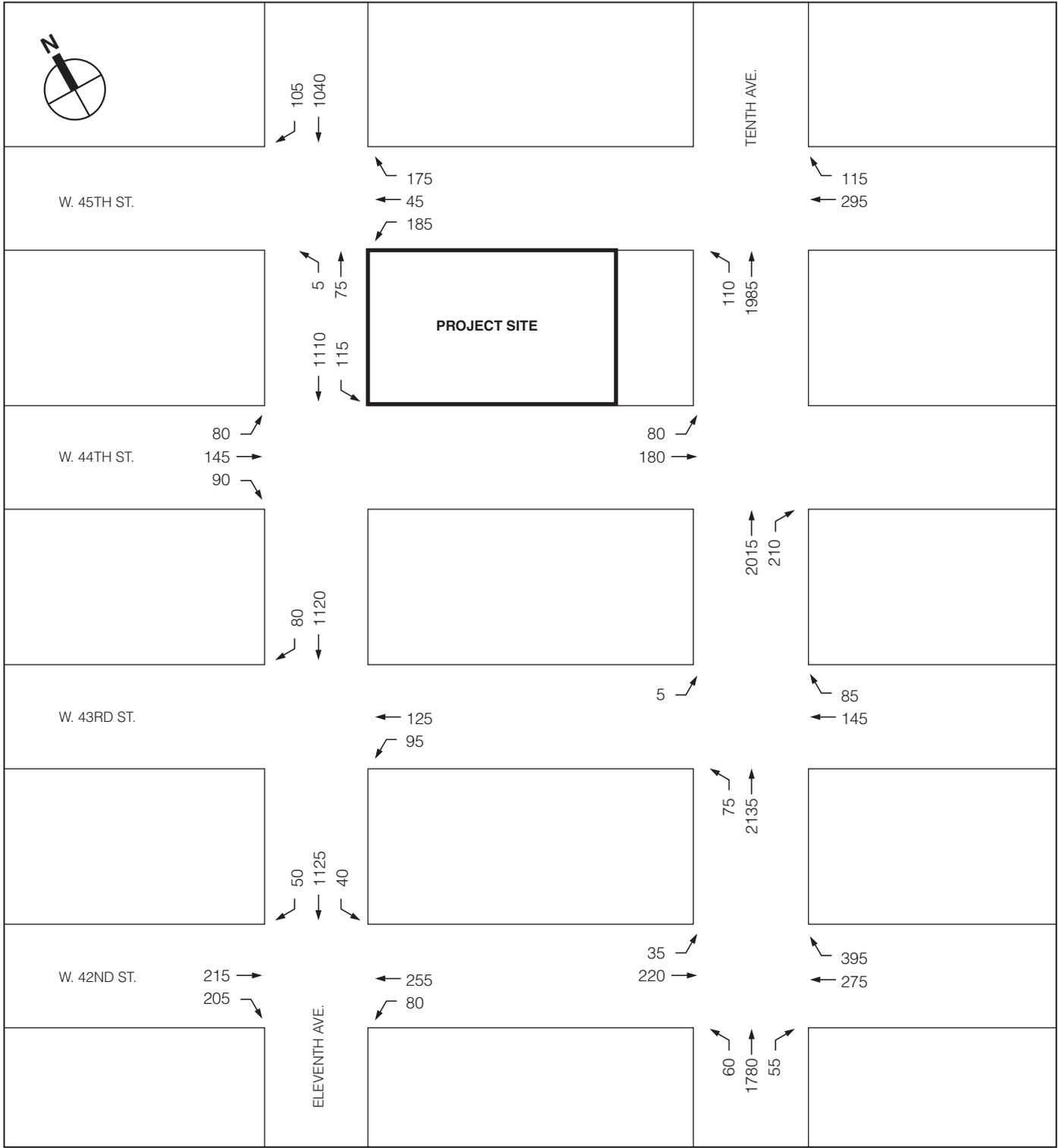
TRAFFIC VOLUMES

Existing traffic volumes in the study area were generated based on traffic data collected in early November 2008 and supplemented with data received from the City of New York. The initial field program conducted in November 2008 included traffic data collection at all study area intersections. Automated traffic recorders (ATRs) were placed at key locations from Wednesday, November 12 to Tuesday, November 25, 2008, to identify temporal and daily traffic variations. Manual turning movement and vehicle classification counts were conducted at study area intersections during the weekday AM, midday, and PM peak hours on Thursday, November 20, 2008. An inventory of the analyzed intersections was performed to determine traffic signal timings, phasing, and cycle lengths, street and curbside signage, pavement markings, and lane dimensions to be used in the calculation of street capacities. Official signal timing data were also collected from the New York City Department of Transportation (NYCDOT) to confirm field observations and for incorporation into the HCS analysis.

The respective peak hours used for analysis are 8 AM to 9 AM, 12 PM to 1 PM, and 5 PM to 6 PM. These peak hours of existing traffic correspond with the peak hours of project-generated trips, and therefore have been selected as the analysis periods for the Proposed Actions. On the one-way avenues, intersection approach volumes generally range from 1,000 to 2,000 vehicles in one direction during the AM, midday, and PM peak hours. During all three analysis time periods, Tenth Avenue carries the greatest number of vehicles. Total road volumes in the northbound direction, are approximately 2,095, 1,935, and 1,885 during the AM, midday, and PM peak hours, respectively. The cross-town streets carry 220 to 730 vehicles during each peak hour. The existing AM, midday, and PM peak hour balanced traffic volumes are presented in **Figures 15-2, 15-3, and 15-4**, respectively.

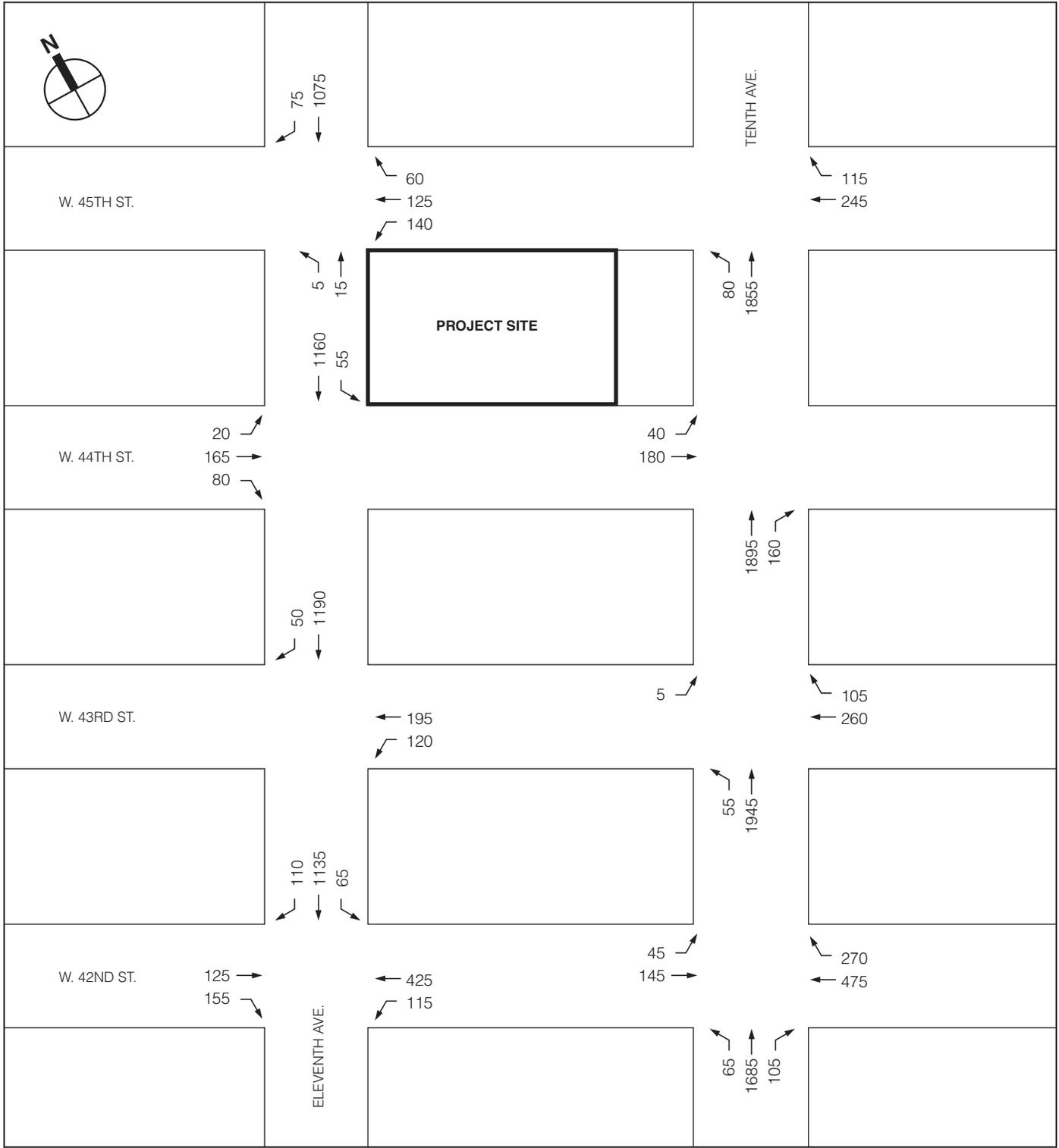
LEVEL OF SERVICE

Capacity analysis results for the study area intersections are presented in **Table 15-2**. Locations with notable service constraints, those operating at mid-LOS D (45.0 seconds per vehicle [spv] of delay) or worse and/or those having v/c ratios of 0.90 or greater, are described below.



NOT TO SCALE

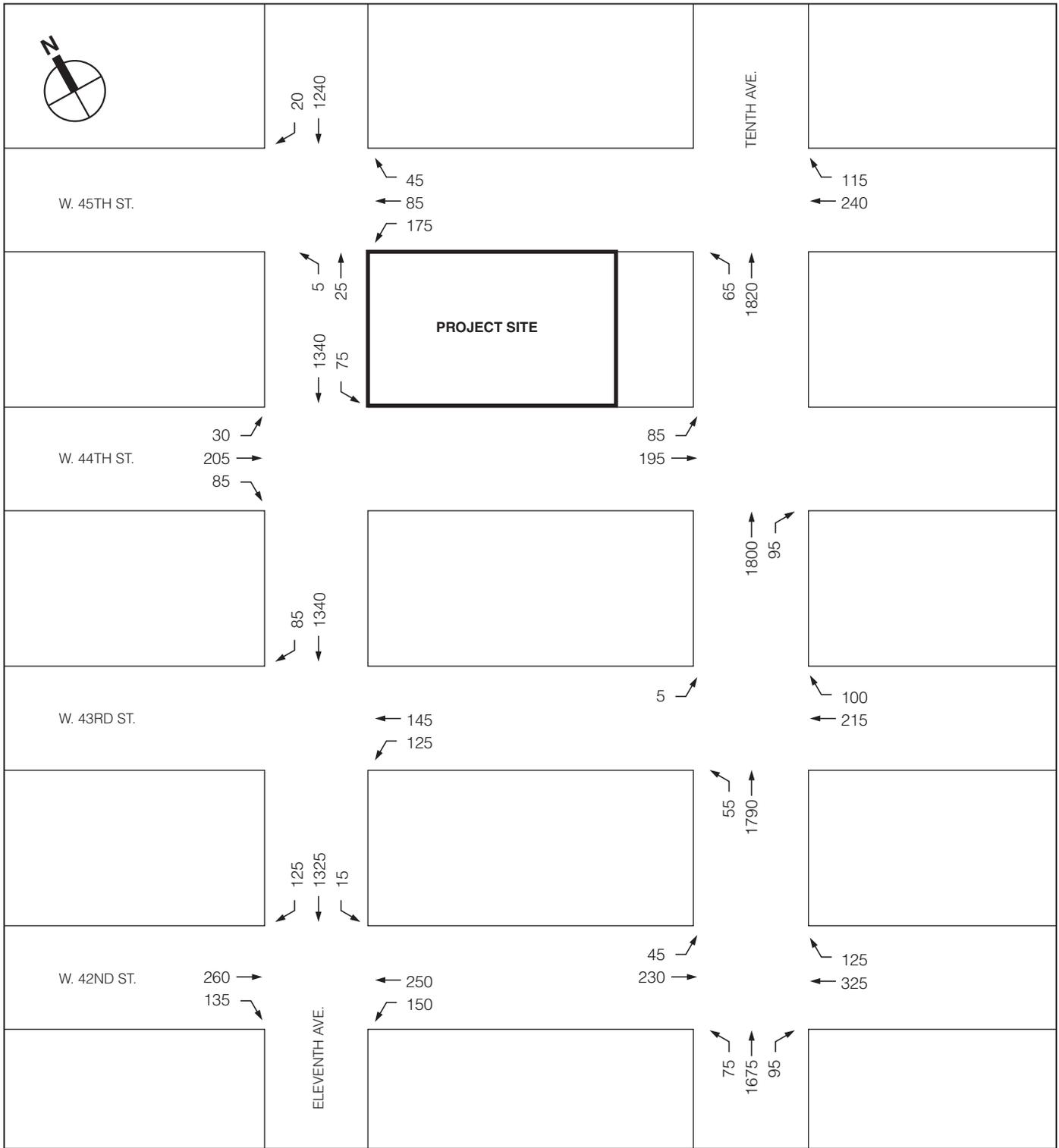
2008 Existing Traffic Volumes Weekday AM Peak Hour



NOT TO SCALE

2008 Existing Traffic Volumes Weekday Midday Peak Hour

Figure 15-3



NOT TO SCALE

2008 Existing Traffic Volumes Weekday PM Peak Hour

**Table 15-2
2008 Existing Conditions Level of Service Analysis**

Intersection / Approach	AM Peak Hour				Midday Peak Hour				PM Peak Hour			
	Lane Group	V/C	Delay (spv)	LOS	Lane Group	V/C	Delay (spv)	LOS	Lane Group	V/C	Delay (spv)	LOS
Tenth Avenue and West 42nd Street												
Eastbound	LT	0.92	65.1	E	LT	1.04	108.3	F	LT	0.98	77.3	E
Westbound	T	0.34	25.0	C	TR	1.05	78.7	E	T	0.38	25.4	C
	R	1.05	90.1	F					R	0.41	28.2	C
Northbound	LT	0.75	15.9	B	LTR	0.71	15.0	B	L	0.13	9.6	A
	R	0.16	10.3	B					T	0.61	13.4	B
<i>Intersection</i>			31.5	C			38.2	D			22.3	C
Tenth Avenue and West 43rd Street												
Eastbound	L	0.02	17.0	B	L	0.02	17.1	B	L	0.02	17.0	B
Westbound	TR	0.25	19.2	B	TR	0.40	21.1	C	TR	0.31	19.9	B
Northbound	LT	0.93	23.4	C	LT	0.89	20.9	C	L	0.10	9.4	A
									T	0.68	14.4	B
<i>Intersection</i>			23.0	C			20.9	C			15.1	B
Tenth Avenue and West 44th Street												
Eastbound	LT	0.37	24.2	C	LT	0.25	22.5	C	LT	0.38	24.3	C
Northbound	T	0.79	13.2	B	TR	0.88	16.7	B	TR	0.69	11.1	B
	R	0.44	10.6	B								
<i>Intersection</i>			14.1	B			17.2	B			12.8	B
Tenth Avenue and West 45th Street												
Westbound	TR	0.91	51.5	D	TR	0.83	42.7	D	TR	1.00	75.3	F
Northbound	LT	0.82	14.7	B	LT	0.83	15.3	B	L	0.12	7.3	A
									T	0.67	11.4	B
<i>Intersection</i>			20.8	C			19.6	B			21.4	C
Eleventh Avenue and West 42th Street												
Eastbound	TR	0.48	23.7	C	TR	0.39	22.6	C	TR	0.47	23.6	C
Westbound	L	0.27	14.6	B	L	0.34	15.2	B	L	0.48	18.3	B
	LT	0.26	13.5	B	LT	0.39	15.0	B	LT	0.24	13.4	B
Southbound	LT	0.66	22.3	C	LT	0.67	22.5	C	LT	0.56	20.3	C
	R	0.06	15.7	B	R	0.16	16.7	B	R	0.16	16.6	B
<i>Intersection</i>			21.0	C			20.3	C			19.8	B
Eleventh Avenue and West 43th Street												
Westbound	LT	0.27	22.1	C	LT	0.50	32.0	C	LT	0.47	31.6	C
Southbound	T	0.35	8.2	A	TR	0.29	3.4	A	TR	0.37	3.6	A
	R	0.14	7.5	A								
<i>Intersection</i>			10.4	B			9.1	A			8.1	A
Eleventh Avenue and West 44th Street												
Eastbound	LTR	0.76	37.9	D	LTR	0.74	44.0	D	LTR	0.93	66.5	E
Southbound	L	0.15	7.4	A	L	0.06	6.0	A	L	0.08	6.2	A
	T	0.77	15.0	B	T	0.68	12.2	B	T	0.76	14.3	B
<i>Intersection</i>			19.1	B			17.7	B			23.6	C
Eleventh Avenue and West 45th Street												
Westbound	LTR	0.95	57.6	E	LTR	1.05	97.3	F	LTR	1.05	100.1	F
Northbound	L	0.05	12.4	B	L	0.03	6.1	A	L	0.03	6.2	A
	T	0.05	11.6	B	T	0.01	5.7	A	T	0.01	5.7	A
Southbound	T	0.80	19.4	B	TR	0.71	13.1	B	T	0.72	13.1	B
	R	0.20	10.3	B					R	0.03	5.9	A
<i>Intersection</i>			27.9	C			31.3	C			29.5	C
Notes: L = Left Turn; T = Through; R = Right Turn; V/C = Volume to Capacity ratio; spv = seconds per vehicle; LOS = Level of Service												

West 44th Street and Eleventh Avenue Rezoning

AM PEAK HOUR

- *Tenth Avenue and West 42nd Street:* The eastbound approach operates at LOS E with 65.1 spv of delay and a v/c ratio of 0.92. The westbound right turn movement operates at LOS F with 90.1 spv of delay and a v/c ratio of 1.05.
- *Tenth Avenue and West 45th Street:* The westbound approach operates at LOS D with 51.5 spv of delay and a v/c ratio of 0.91.
- *Eleventh Avenue and West 45th Street:* The westbound approach operates at LOS E with 57.6 spv of delay and a v/c ratio of 0.95.

MIDDAY PEAK HOUR

- *Tenth Avenue and West 42nd Street:* The eastbound approach operates at LOS F with 108.3 spv of delay and a v/c ratio of 1.04. The westbound through-right movement operates at LOS E with 78.7 spv of delay and a v/c ratio of 1.05.
- *Eleventh Avenue and West 45th Street:* The westbound approach operates at LOS F with 97.3 spv of delay and a v/c ratio of 1.05.

PM PEAK HOUR

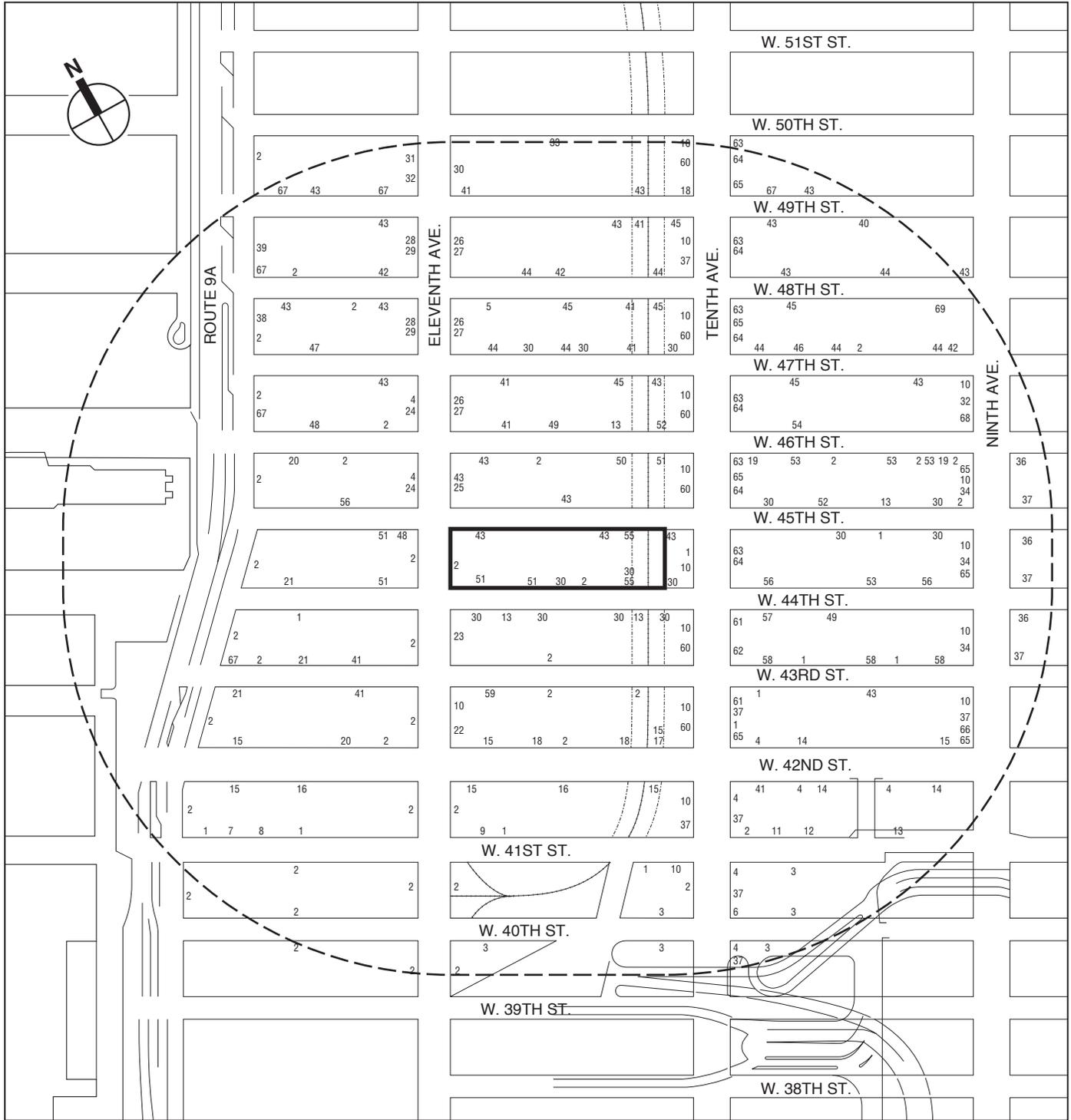
- *Tenth Avenue and West 42nd Street:* The eastbound approach operates at LOS E with 77.3 spv of delay and a v/c ratio of 0.98.
- *Tenth Avenue and West 45th Street:* The westbound approach operates at LOS E with 75.3 spv of delay and a v/c ratio of 1.00.
- *Eleventh Avenue and West 44th Street:* The eastbound approach operates at LOS E with 66.5 spv of delay and a v/c ratio of 0.93.
- *Eleventh Avenue and West 45th Street:* The westbound approach operates at LOS F with 100.1 spv of delay and a v/c ratio of 1.05.

PARKING SUPPLY AND UTILIZATION

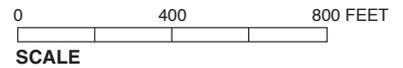
Existing study area parking conditions were evaluated for an area within ¼ mile of the Project Site, in accordance with *CEQR Technical Manual* guidance. Because the future parking demand associated with the Proposed Actions is expected to be primarily accommodated off-street, the on-street parking assessment involved only an inventory of the area's on-street parking regulations, whereas detailed surveys of supply and utilization were conducted at the area's off-street parking facilities.

ON-STREET PARKING

On-street parking regulations within ¼ mile of the Project Site were surveyed and illustrated in **Table 15-3** and **Figure 15-5**. Most of the study area's cross street curbside regulations restrict weekday daytime usage to commercial loading and unloading activities and authorized vehicles. Regulations on Tenth Avenue limit the on-street parking supply during the morning and evening commuter peak periods (i.e., 7 AM to 10 AM and 4 PM to 7 PM, respectively).



- Project Site
- Study Area Boundary (1/4-Mile Perimeter)
- 2 On Street Parking Regulation



**Table 15-3
On-Street Parking Regulations**

No.	Regulation	No.	Regulation
1	NP Anytime	35	MP 2-Hr Limit 9AM-4PM Except Sunday
2	NS Anytime	36	NS 7AM-10AM Except Sunday
3	NS 8AM-10PM Including Sunday	37	NP 7AM-7PM Except Sunday
4	NS 7AM-10AM, 4PM-7PM Except Sunday	38	NS Except Taxis 8AM-1PM Saturday & Sunday
5	NP 7AM-7PM Except Sunday	39	NS Except Trucks Loading/Unloading 7AM-3PM; Other Times NS Anytime
6	NP 2AM-6AM Tuesday, Thursday, Saturday	40	NP 7AM-7PM Except Sunday Except Faculty Vehicles
7	NS 6PM-10:30AM Including Sunday	41	NS Anytime – Temporary Construction Regulation
8	MP 2-Hr Limit 10:30AM-6PM Except Sunday	42	NS Except Trucks Loading/Unloading 8AM-7PM Monday-Friday
9	No Stopping 4PM-7PM Including Sunday	43	NS Except Trucks Loading/Unloading 7AM-7PM Except Sunday
10	NS 4PM-7PM Except Sunday	44	NP 8:30AM-10AM Monday & Thursday
11	NS 7AM-10PM, 4PM-10PM Including Sunday	45	NP 8:30AM-10AM Tuesday & Friday
12	NS 7AM-10PM, 4PM-10PM Monday-Friday Except AV	46	NS – Access-A-Ride Bus Stop
13	Taxi 1-Hr Limit Relief Stand	47	NS Except Trucks Loading/Unloading 8AM-6PM Monday-Friday
14	NS Except Trucks Loading/Unloading 10AM-4PM Except Sunday	48	NS Except Trucks Loading/Unloading 6AM-6PM
15	NS Bus Stop – M42	49	NP 11AM-12:30PM Tuesday & Friday
16	NS Anytime Except AV (Police Vehicles Only)	50	NS Anytime Except AV (Ambulette)
17	NS Anytime Except AV – No Permit Zone	51	NS Anytime – Bus Layover Area
18	NS Hotel Loading Zone	52	NS Anytime Except AV
19	NS Except Trucks Loading/Unloading 7AM-7PM Except Sunday	53	NP 11AM-12:30PM Monday & Thursday
20	NS Except Trucks Loading/Unloading	54	NS 8AM-Midnight Except Sunday
21	NS Except Trucks Loading/Unloading 8AM-6PM Monday- Friday	55	NS 7AM-4PM – School Days
22	MP 2-Hr Limit 9AM-4PM Except Sunday	56	NS Except Trucks Loading/Unloading
23	NP 8AM-8:30AM Tuesday & Friday	57	NS Except Trucks Loading/Unloading 8AM-6PM Except Sunday
24	NP 10AM-4PM Except Sunday	58	NS 7AM-7PM Except Sunday
25	NS Anytime – Taxi Stand	59	NS Anytime Except AV (Fire Department)
26	NP 8AM-8:30AM Except Sunday	60	MP 1-Hr Limit 9AM-4PM Except Sunday
27	MP 2-Hr Limit 8:30AM-7PM Except Sunday	61	NS 7AM-10AM Monday-Friday
28	NS 6AM-11AM Monday-Friday	62	NP 10AM-7PM Monday-Friday
29	NS Except Trucks Loading/Unloading 11AM-7PM Monday-Friday	63	NS 7AM-10AM, 4PM-7PM Monday-Friday
30	NP 8AM-6PM Monday-Friday	64	MP 1-Hr 10AM-4PM Monday-Friday, Saturday 9AM- 7PM
31	NP 7:30AM-8AM Except Sunday	65	NS Bus Stop – M11
32	MP 1-Hr Limit 9AM-4PM Saturday	66	NS Bus Stop – M16
33	NS Except Trucks Loading/Unloading 7AM-7PM Monday-Friday	67	NS Bus Stop – M50
34	NP 7AM-4PM Monday-Friday		

Notes: NP = No Parking; NS = No Standing; MP = Metered Parking; AV = Authorized Vehicles; CV = Commercial Vehicles; TLU = Truck Loading & Unloading; Sun = Sunday; Mon = Monday; Tue = Tuesday; Wed = Wednesday; Thu = Thursday; Fri = Friday; Sat = Saturday
Sources: Surveys conducted by AKRF, Inc.

There are also street cleaning regulations which prohibit on-street parking for brief periods for one or two days each week on most streets. Muni-Meter parking is scattered throughout the study area and provides the majority of available on-street parking spaces. Based on field observations, on-street parking is at or near capacity during most of the day.

West 44th Street and Eleventh Avenue Rezoning

OFF-STREET PARKING

An inventory of licensed capacities at public parking lots and garages within ¼ mile of the Project Site and of their approximate utilization during different time periods of the day was conducted in November 2008. Within this parking study area, 13 facilities with a combined capacity of 2,875 spaces were identified, as shown in **Figure 15-6**. Based on the estimated parking utilization shown in **Table 15-4**, the area’s parking demand is the lowest overnight (less than 30 percent) and peaks during the midday at approximately 91 percent of the area’s overall off-street parking supply, with approximately 266 spaces available.

**Table 15-4
2008 Existing Off-Street Parking Utilization**

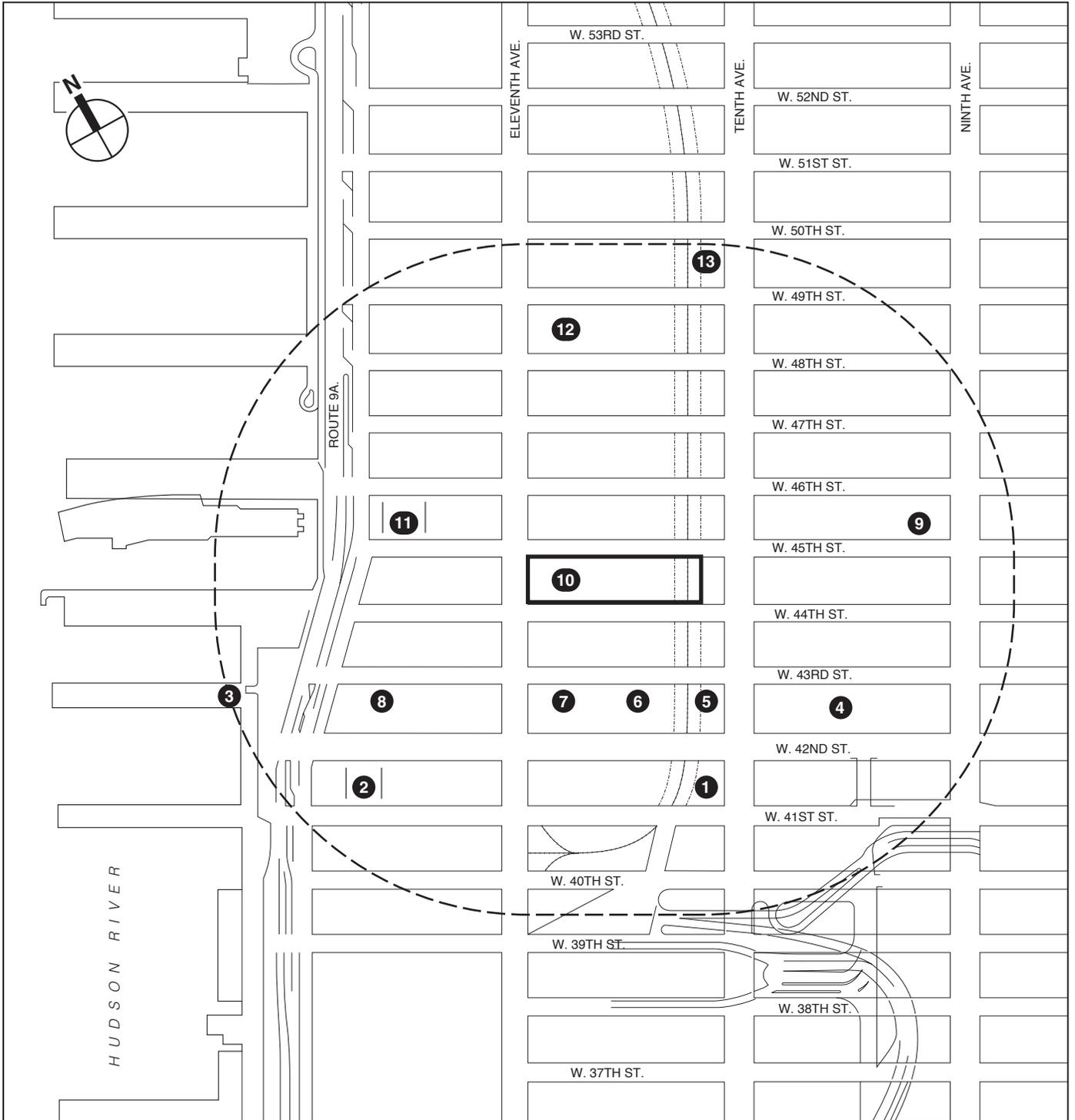
Map No.	Company Name	Address	License No.	Capacity	Utilization Rate (%)				Utilized Spaces				Available Spaces			
					AM	MD	PM	ON	AM	MD	PM	ON	AM	MD	PM	ON
1	JDS Parking, LLC	561 Tenth Ave	1130760	71	75%	90%	65%	45%	53	64	46	32	18	7	25	39
2	Quik Park - West 41st Street, LLC	601 W 41st St	1266247	194	85%	90%	75%	40%	165	175	146	78	29	19	48	116
3	Circle Line Sight Seeing Yachts Inc. Parking	Pier 83 - North River, NY	369040	270	85%	100%	0%	0%	230	270	0	0	40	0	270	270
4	MP Manhattan Plaza, LLC	401-472 W 42nd St	1258659	998	70%	85%	70%	35%	699	848	699	349	299	150	299	649
5	Alliance Parking - West 43rd Street, LLC	500 W 43rd St	1246208	62	75%	95%	75%	50%	47	59	47	31	15	3	15	31
6	520 West Parking Corp.	520 W 43rd St	984363	75	65%	80%	55%	45%	49	60	41	34	26	15	34	41
7	Alliance Riverbank Parking	500 W 43rd St	1286769	84	70%	90%	60%	35%	59	76	50	29	25	8	34	55
8	Atelier Car Park	627 W 42nd St	1257570	100	85%	95%	65%	25%	85	95	65	25	15	5	35	75
9	Theatre Parking, LLC	413-419 W 45th St	1001638	100	70%	95%	70%	35%	70	95	70	35	30	5	30	65
10	Park Right Car Park Corp.	600 Eleventh Ave	882717	300	83%	93%	72%	10%	248	280	215	30	52	20	85	270
11	MTP Operating Corporation	510-540 W 49th St	1013511	240	60%	90%	70%	25%	144	216	168	60	96	24	72	180
13	Icon Primary Parking, LLC	721-735 Tenth Ave	780839	181	100%	100%	95%	35%	181	181	172	63	0	0	9	118
Total				2,875	77%	91%	63%	28%	2,210	2,609	1,819	806	665	266	1,056	2,069

Note: Data collected by AKRF, Inc. November 2008 and supplemented by counts at the Project Site (#10 above) on Wednesday October 15, 2008.

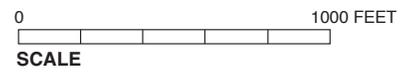
The Project Site includes a private parking lot used by NYPD’s traffic enforcement division (parking facility #10 in **Table 15-4**, above). Since this lot does not allow for public parking, it is not included in the analysis of off-street parking facilities.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

Traffic and parking conditions in the future without the Proposed Actions were assessed to establish a baseline, or the “No Build” condition, against which to evaluate the potential project impacts. The No Build analysis focuses on conditions in 2013, the year that the Proposed Project



- Project Site
- Study Area Boundary (1/4-Mile Perimeter)
- 1 Off-Street Parking Facility



would be completed. As discussed in Chapter 2, “Land Use, Zoning, and Public Policy,” a number of developments within or just outside of the traffic and land use study areas were identified, independent of the Proposed Project. In the future No Build Condition the Project Site is expected to remain operating as a public parking lot, private parking lot, stable, and a public school.

TRAFFIC

Future 2013 No Build peak hour traffic levels were estimated by first applying a background growth of 0.5 percent per year (as recommended by the *CEQR Technical Manual*), for a total of 2.5 percent by 2013. Trips generated by each of the “No Build projects” were developed based on information provided in approved studies and standard references, such as the *No. 7 Extension—Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement* (2004), the *CEQR Technical Manual*, Pushkarev and Zupan’s *Urban Space for Pedestrians* and the U.S. census database. The estimated vehicle trips were then assigned to the study area analysis locations. No Build projects within approximately ½-mile of the Project Site, as listed in Chapter 2, “Land Use, Zoning, and Public Policy,” were included in the No Build network for analysis. **Figures 15-7, 15-8, and 15-9** present the future 2013 No Build traffic volumes for the weekday AM, midday, and PM peak analysis hours.

LEVEL OF SERVICE

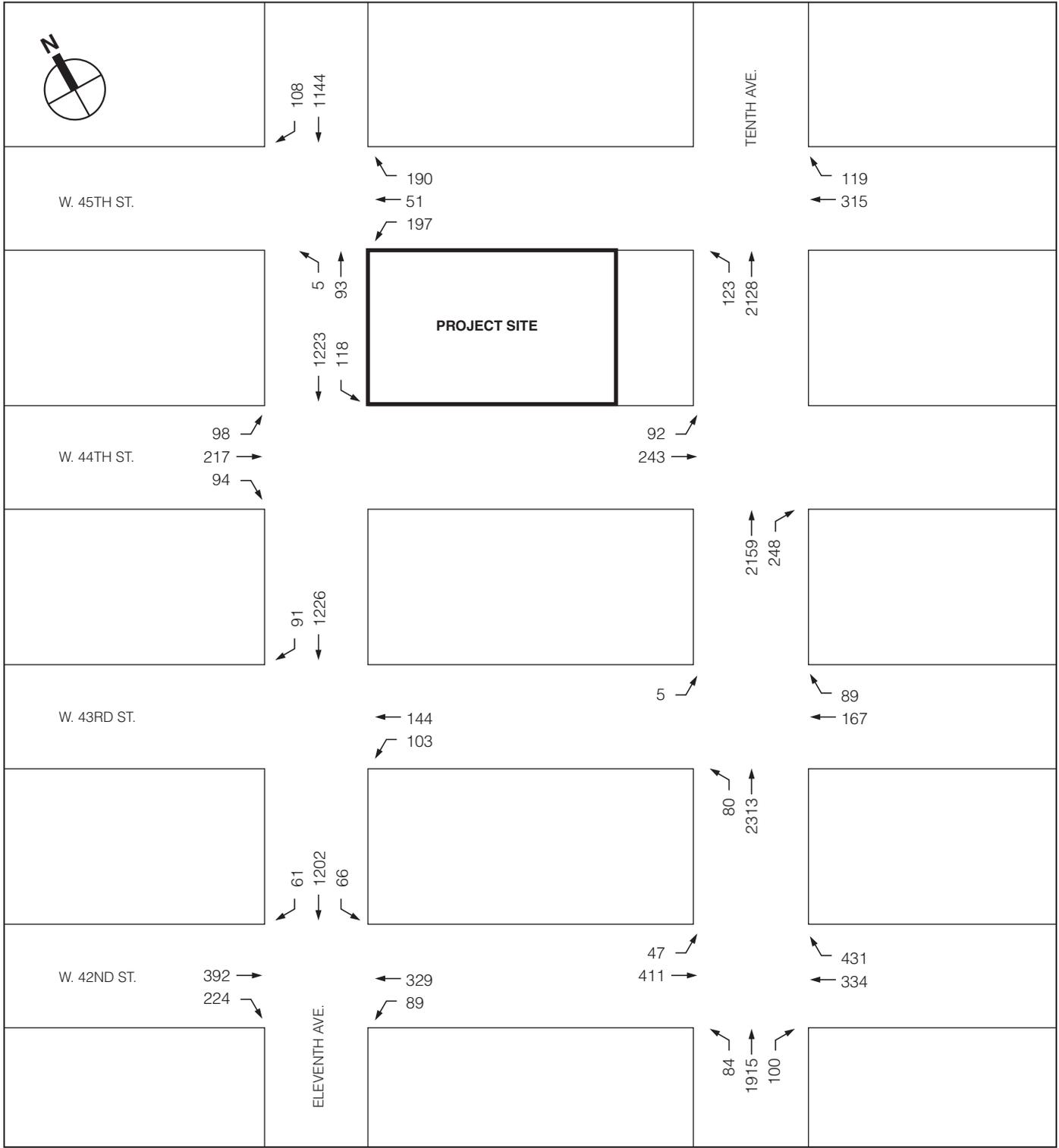
Table 15-5 presents a comparison of the existing and No Build service conditions for the study area intersections. The following are the notable deteriorations in LOS at the analyzed intersections:

AM PEAK HOUR

- *Tenth Avenue and West 42nd Street:* The eastbound approach will deteriorate from LOS E with a delay of 65.1 spv and a v/c ratio of 0.92 to LOS F with a delay of 341.2 spv and a v/c ratio of 1.66.
- *Tenth Avenue and West 45th Street:* The westbound approach will deteriorate from LOS D with a delay of 51.5 spv and a v/c ratio of 0.91 to LOS E with a delay of 60.4 spv and a v/c ratio of 0.96.
- *Eleventh Avenue and West 44th Street:* The eastbound approach will deteriorate from LOS D with a delay of 37.9 spv and a v/c ratio of 0.76 to LOS E with a delay of 67.3 and a v/c ratio of 0.98.

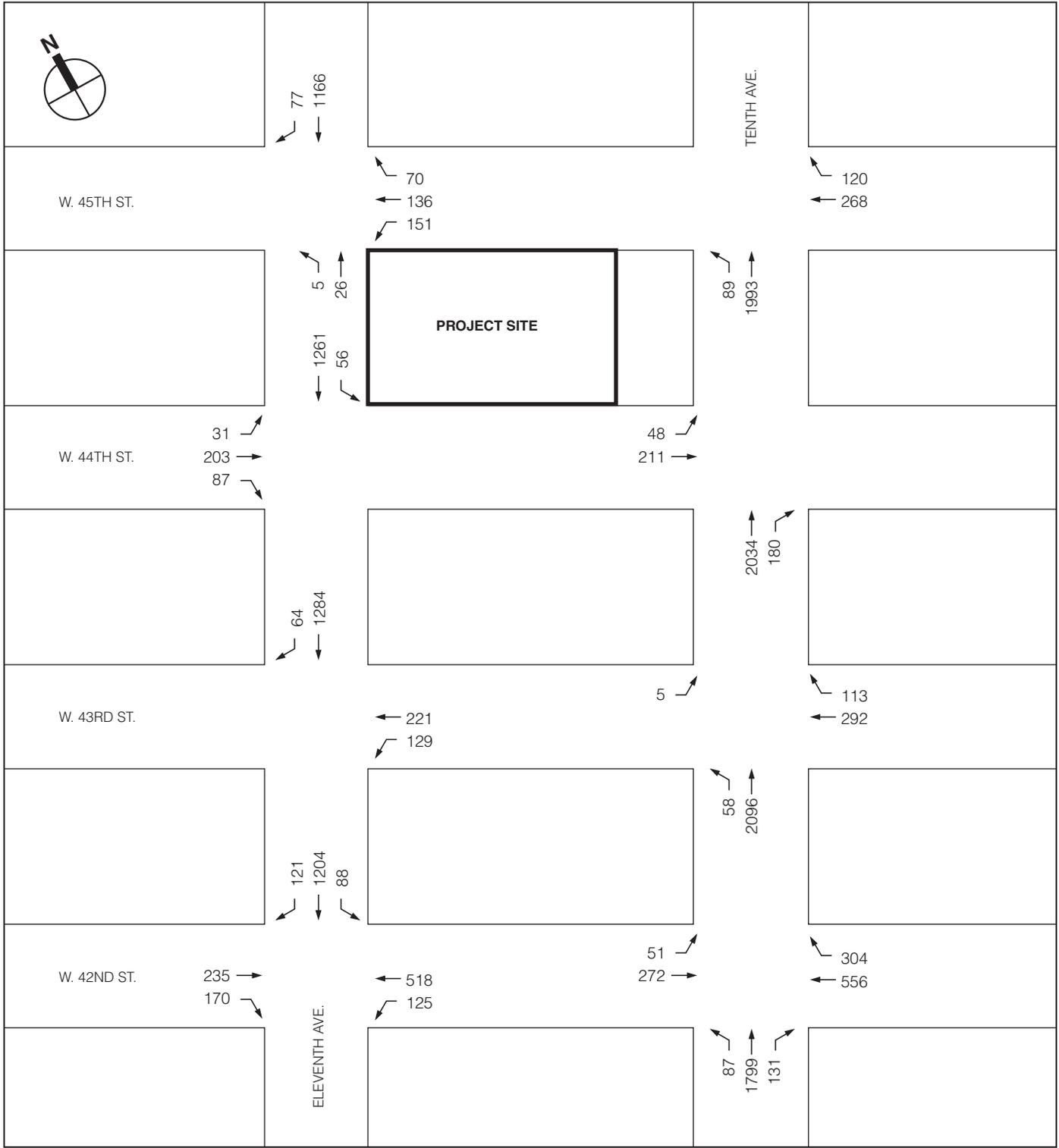
MIDDAY PEAK HOUR

- *Tenth Avenue and West 42nd Street:* The westbound approach will deteriorate from LOS E with a delay of 78.7 spv and a v/c ratio of 1.05 to LOS F with a delay of 145.8 spv and a v/c ratio of 1.23.
- *Tenth Avenue and West 45th Street:* The westbound approach will deteriorate within LOS D from a delay of 42.7 spv and a v/c ratio of 0.83 to a delay of 50.0 and a v/c ratio of 0.89.
- *Eleventh Avenue and West 44th Street:* The eastbound approach will deteriorate from LOS D with a delay of 44.0 spv and a v/c ratio of 0.74 to LOS E with a delay of 60.1 and a v/c ratio of 0.90.



NOT TO SCALE

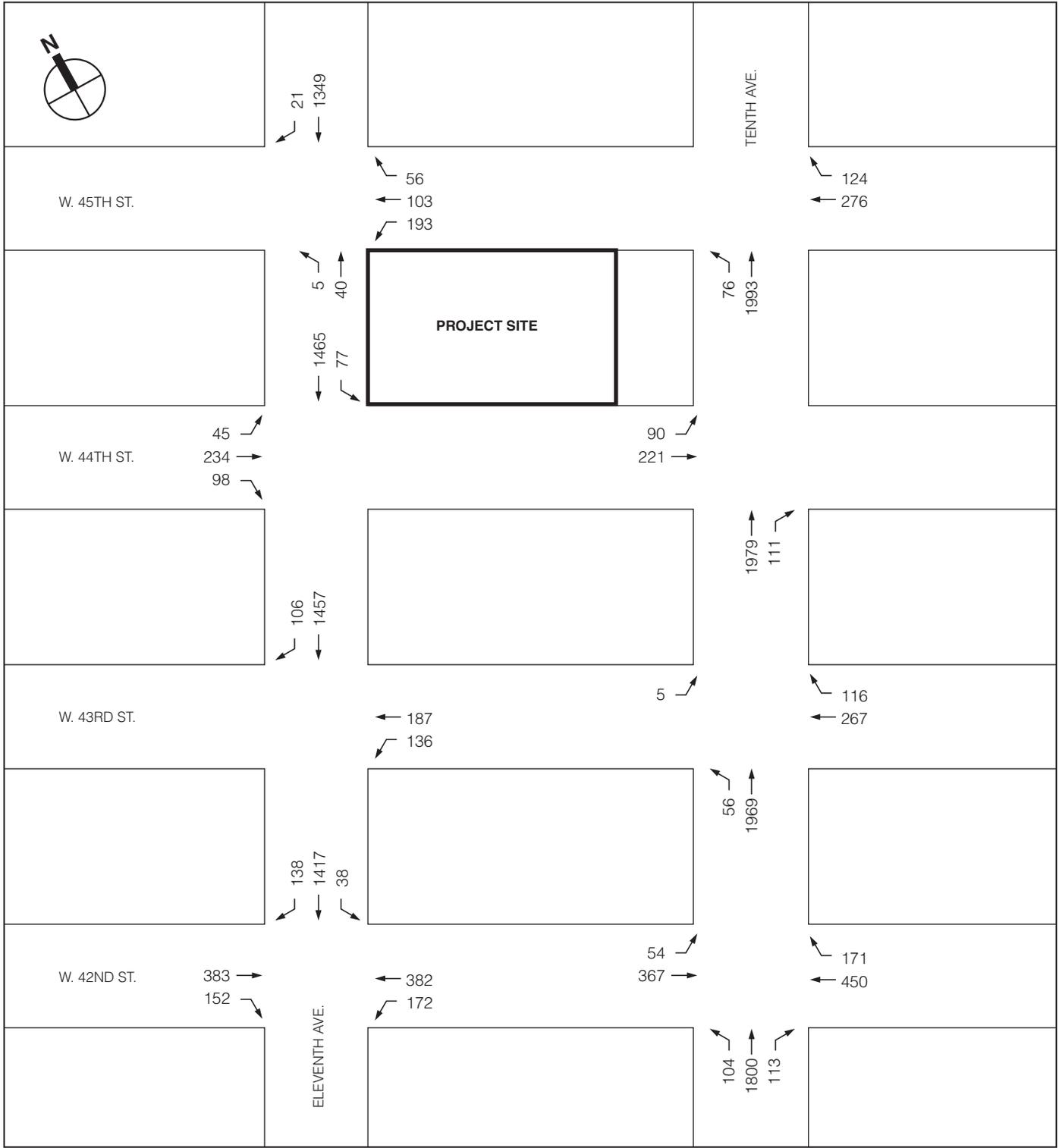
2013 No Build Traffic Volumes Weekday AM Peak Hour



NOT TO SCALE

2013 No Build Traffic Volumes Weekday Midday Peak Hour

3.6.09



NOT TO SCALE

2013 No Build Traffic Volumes
Weekday PM Peak Hour

West 44th Street and Eleventh Avenue Rezoning

Table 15-5

2008 Existing and 2013 No Build Conditions LOS Summary

Int / App	AM Peak Hour								Midday Peak Hour								PM Peak Hour							
	2008 Existing				2013 No Build				2008 Existing				2013 No Build				2008 Existing				2013 No Build			
	Ln Grp	V/C	Delay (SPV)	LOS	Ln Grp	V/C	Delay (SPV)	LOS	Ln Grp	V/C	Delay (SPV)	LOS	Ln Grp	V/C	Delay (SPV)	LOS	Ln Grp	V/C	Delay (SPV)	LOS	Ln Grp	V/C	Delay (SPV)	LOS
Tenth Avenue and West 42nd Street																								
EB	LT	0.92	65.1	E	LT	1.66	341.2	F	LT	1.04	108.3	F	LT	2.06	529.5	F	LT	0.98	77.3	E	LT	1.79	400.6	F
WB	T	0.34	25.0	C	T	0.41	26.0	C	TR	1.05	78.7	E	TR	1.23	145.8	F	T	0.38	25.4	C	T	0.53	27.7	C
	R	1.05	90.1	F	R	1.16	129.4	F									R	0.41	28.2	C	R	0.60	35.1	D
NB	LT	0.75	15.9	B	LT	0.82	17.7	B	LTR	0.71	15.0	B	LTR	0.79	16.7	B	L	0.13	9.6	A	L	0.18	10.1	B
	R	0.16	10.3	B	R	0.35	13.7	B									T	0.61	13.4	B	T	0.66	14.0	B
																	R	0.21	10.6	B	R	0.35	13.4	B
INT			31.5	C			77.5	E			38.2	D			102.4	F			22.3	C			70.2	E
Tenth Avenue and West 43rd Street																								
EB	L	0.02	17.0	B	L	0.02	17.0	B	L	0.02	17.1	B	L	0.02	17.1	B	L	0.02	17.0	B	L	0.02	17.1	B
WB	TR	0.25	19.2	B	TR	0.28	19.5	B	TR	0.40	21.1	C	TR	0.44	21.7	C	TR	0.31	19.9	B	TR	0.39	20.9	C
NB	LT	0.93	23.4	C	LT	1.00	36.0	D	LT	0.89	20.9	C	LT	0.96	27.2	C	L	0.10	9.4	A	L	0.11	9.5	A
																	T	0.68	14.4	B	T	0.75	15.6	B
INT			23.0	C			34.3	C			20.9	C			26.4	C			15.1	B			16.3	B
Tenth Avenue and West 44th Street																								
EB	LT	0.37	24.2	C	LT	0.48	26.1	C	LT	0.25	22.5	C	LT	0.30	23.1	C	LT	0.38	24.3	C	LT	0.43	25.2	C
NB	T	0.79	13.2	B	T	0.85	14.9	B	TR	0.88	16.7	B	TR	0.96	23.9	C	TR	0.69	11.1	B	TR	0.77	12.5	B
	R	0.44	10.6	B	R	0.58	14.2	B																
INT			14.1	B			16.2	B			17.2	B			23.8	C			12.8	B			14.1	B
Tenth Avenue and West 45th Street																								
WB	TR	0.91	51.5	D	TR	0.96	60.4	E	TR	0.83	42.7	D	TR	0.89	50.0	D	TR	1.00	75.3	E	TR	1.12	113.4	F
NB	LT	0.82	14.7	B	LT	0.89	17.4	B	LT	0.83	15.3	B	LT	0.90	18.5	B	L	0.12	7.3	A	L	0.16	7.7	A
																	T	0.67	11.4	B	T	0.73	12.4	B
INT			20.8	C			24.4	C			19.6	B			23.5	C			21.4	C			28.7	C
Eleventh Avenue and West 42nd Street																								
EB	TR	0.48	23.7	C	TR	0.69	28.2	C	TR	0.39	22.6	C	TR	0.54	25.1	C	TR	0.47	23.6	C	TR	0.63	26.8	C
WB	L	0.27	14.6	B	L	0.38	17.7	B	L	0.34	15.2	B	L	0.42	17.1	B	L	0.48	18.3	B	L	0.59	22.6	C
	LT	0.26	13.5	B	LT	0.36	14.7	B	LT	0.39	15.0	B	LT	0.49	16.5	B	LT	0.24	13.4	B	LT	0.39	15.0	B
SB	LT	0.66	22.3	C	LT	0.72	23.5	C	LT	0.67	22.5	C	LT	0.73	23.7	C	LT	0.56	20.3	C	LT	0.61	21.0	C
	R	0.06	15.7	B	R	0.10	16.2	B	R	0.16	16.7	B	R	0.27	18.4	B	R	0.16	16.6	B	R	0.30	18.7	B
INT			21.0	C			23.1	C			20.3	C			21.8	C			19.8	B			21.2	C
Eleventh Avenue and West 43rd Street																								
WB	LT	0.27	22.1	C	LT	0.30	22.5	C	LT	0.50	32.0	C	LT	0.62	35.1	D	LT	0.47	31.6	C	LT	0.55	33.3	C
SB	L	0.35	8.2	A	T	0.38	8.5	A	TR	0.29	3.4	A	TR	0.36	3.6	A	TR	0.37	3.6	A	TR	0.41	3.8	A
	R	0.14	7.5	A	R	0.19	8.1	A																
INT			10.4	B			10.7	B			9.1	A			10.1	B			8.1	A			8.9	A
Eleventh Avenue and West 44th Street																								
EB	LTR	0.76	37.9	D	LTR	0.98	67.3	E	LTR	0.74	44.0	D	LTR	0.90	60.1	E	LTR	0.93	66.5	E	LTR	1.10	110.0	F
SB	L	0.15	7.4	A	L	0.16	7.5	A	L	0.06	6.0	A	L	0.06	6.1	A	L	0.08	6.2	A	L	0.08	6.2	A
	T	0.77	15.0	B	T	0.85	18.1	B	T	0.68	12.2	B	T	0.74	13.6	B	T	0.76	14.3	B	T	0.84	17.0	B
INT			19.1	B			28.9	C			17.7	B			22.5	C			23.6	C			34.8	C
Eleventh Avenue and West 45th Street																								
WB	LTR	0.95	57.6	E	LTR	1.02	76.3	E	LTR	1.05	97.3	F	LTR	1.16	133.6	F	LTR	1.05	100.1	F	LTR	1.22	157.9	F
NB	L	0.05	12.4	B	L	0.06	12.9	B	L	0.03	6.1	A	L	0.03	6.2	A	L	0.03	6.2	A	L	0.04	6.4	A
	T	0.05	11.6	B	T	0.07	11.7	B	T	0.01	5.7	A	T	0.01	5.7	A	T	0.01	5.7	A	T	0.02	5.8	A
SB	T	0.80	19.4	B	T	0.88	23.7	C	TR	0.71	13.1	B	TR	0.77	14.7	B	T	0.72	13.1	B	T	0.78	15.0	B
	R	0.20	10.3	B	R	0.20	10.4	B									R	0.03	5.9	A	R	0.03	5.9	A
INT			27.9	C			35.1	D			31.3	C			40.6	D			29.5	C			43.1	D
Notes:																								
EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; INT = Intersection.																								
L = Left-Turn; T = Through; R = Right-Turn.																								
V/C = Volume to Capacity; SPV = Seconds per Vehicle; LOS = Level of Service.																								

PM PEAK HOUR

- *Tenth Avenue and West 42nd Street:* The eastbound approach will deteriorate from LOS E with a delay of 77.3 spv and a v/c ratio of 0.98 to LOS F with a delay of 400.6 spv and a v/c ratio of 1.79.
- *Tenth Avenue and West 45th Street:* The westbound approach will deteriorate from LOS E with a delay of 75.3 spv and a v/c ratio of 1.00 to LOS F with a delay of 113.4 spv and a v/c ratio of 1.12.
- *Eleventh Avenue and West 44th Street:* The eastbound approach will deteriorate from LOS E with a delay of 66.5 spv and a v/c ratio of 0.93 to LOS F with a delay of 110.0 and a v/c ratio of 1.10.

PARKING SUPPLY AND UTILIZATION

The utilization of off-street parking facilities in the study area will increase due to the area’s background growth in traffic (2.5 percent over existing by 2013) and additional demand generated by nearby developments. As shown in **Table 15-6**, the overall utilization rates of the off-street parking facilities in the study area will increase to approximately 85, 94, 72, and 45 percent (with 507, 191, 935, and 1,820 available spaces) during the AM, midday, PM and overnight hours, respectively. As with existing conditions, on-street parking in the area will be at or near capacity during most of the day under the future without the Proposed Actions.

**Table 15-6
No Build Parking Condition**

	Existing Conditions				No Build Condition			
	Total Capacity	Estimated Demand	Spaces Available	Utilization	Total Capacity*	Estimated Demand**	Spaces Available	Utilization
Weekday AM	2,875	2,210	665	77%	3,292	2,785	507	85%
Weekday Midday	2,875	2,609	266	91%	3,292	3,101	191	94%
Weekday PM	2,875	1,819	1,056	63%	3,292	2,357	935	72%
Weekday Overnight	2,875	806	2,069	28%	3,292	1,472	1,820	45%

Notes: * Assumes that the 360-space parking garage on No Build Site 8 (Theater Row II) would be public.
** Includes 0.05 percent per year background growth

E. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The assessment of potential adverse impacts associated with the Proposed Actions begins with and builds on the future No Build condition described in the preceding section. As with the future No Build evaluation, 2013 is used as the analysis year for assessing project impacts, reflecting the time when all project elements are anticipated for completion.

The Proposed Project would result in the construction of a mixed-use development containing 1,350 residential units, 17,500 square feet of retail, and a 630-seat public school. To accommodate the proposed development’s parking needs an indoor accessory garage containing 204 spaces would be constructed. Access to the accessory garage would be provided from West 45th Street. The future with the Proposed Actions analysis analyzes the incremental number of students that would attend the expanded school on the Project Site. As the existing school has an enrollment of approximately 276 students and the proposed school would have approximately 630 seats, an increment of 354 student seats was analyzed. The next section describes the trip generation characteristics for the proposed uses on the Project Site.

TRIP GENERATION

Travel demand forecasts for different uses estimate person trips by transportation modes and vehicle trips during typical weekday peak hours: 8 AM to 9 AM, 12 PM to 1 PM and 5 PM to 6 PM. **Table 15-7** presents the transportation planning assumptions used to estimate the trips generated by the Proposed Project.

**Table 15-7
Weekday Trip Generation Factors**

Rates	Residential			PS/IS - Students			PS/IS - Faculty			Local Retail		
Person Trips												
Daily Trip Rate	8.075 / DU ¹			2 / Seat ²			2.0 / Staff ²			205.0 / 1,000 SF ¹		
Link Trip Credit	-			-			-			25% ¹		
Modal Split	AM ²	MD ²	PM ²	AM ²	MD ²	PM ²	AM ²	MD ²	PM ²	AM ⁵	MD ⁵	PM ⁵
Auto	5.2%	5.2%	5.2%	6.2%	6.2%	6.2%	5.0%	5.0%	5.0%	2.0%	2.0%	2.0%
Taxi	8.3%	8.3%	8.3%	1.7%	1.7%	1.7%	5.0%	5.0%	5.0%	3.0%	3.0%	3.0%
Subway	28.0%	28.0%	28.0%	0.0%	0.0%	0.0%	50.0%	50.0%	50.0%	6.0%	6.0%	6.0%
Bus/School Bus	16.1%	16.1%	16.1%	3.9%	3.9%	3.9%	25.0%	25.0%	25.0%	6.0%	6.0%	6.0%
Walk Only	42.4%	42.4%	42.4%	88.2%	88.2%	88.2%	15.0%	15.0%	15.0%	83.0%	83.0%	83.0%
Vehicle Occ.	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
Auto	1.08 ³	1.08 ³	1.08 ³	1.72 ²	1.72 ²	1.72 ²	1.20 ²	1.20 ²	1.20 ²	1.65 ⁵	1.65 ⁵	1.65 ⁵
Taxi	1.40 ²	1.40 ²	1.40 ²	1.22 ²	1.22 ²	1.22 ²	1.40 ²	1.40 ²	1.40 ²	1.40 ⁵	1.40 ⁵	1.40 ⁵
Temporal	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
Distribution	9.1% ¹	4.7% ¹	10.7% ¹	50.0% ²	50.0% ²	0.0% ²	50.0% ²	50.0% ²	0.0% ²	1.0% ¹	21.6% ¹	9.6% ¹
In	15.0% ²	50.0% ²	70.0% ²	100% ²	0.0% ²	50.0% ²	100% ²	0.0% ²	50.0% ²	50.0% ⁵	50.0% ⁵	50.0% ⁵
Out	85.0%	50.0%	30.0%	0.0%	100.0%	50.0%	0.0%	100%	50.0%	50.0%	50.0%	50.0%
Delivery Trips												
Daily Trip Rate	0.06 / DU ⁴			0.0 / 1,000 SF ²			0.70 / 1,000 SF ⁷			0.70 / 1,000 SF ⁵		
Temporal	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
Distribution	12.2% ⁴	8.7% ⁴	1.0% ⁴	0.0% ²	0.0% ²	0.0% ²	9.6% ³	11.0% ³	1.0% ³	7.7% ⁵	11.0% ⁵	1.0% ⁵
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Sources: (1) New York City Mayor's Office of Environmental Coordination, <i>City Environmental Quality Review Technical Manual</i> (2001) (2) <i>250 East 57th Street Redevelopment FEIS</i> (2008) (3) U.S. Census 2000 (4) <i>Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement</i> (1997) (5) <i>No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS</i> (2004)												

RESIDENTIAL USE

The daily rate of 8.075 trips per dwelling unit (2001 *CEQR Technical Manual*) was used to estimate the total trips generated from the Proposed Actions' residential components. Modal split and vehicle occupancy rates from the *250 East 57th Street Redevelopment FEIS* (2008) were used. These rates yield 992, 510, and 1,166 person trips, and 58, 32, and 57 vehicle trips (autos and deliveries) during the AM, midday, and PM peak hours, respectively (see **Tables 15-8 and 15-9**).

GROUND-FLOOR RETAIL USE

Travel demand assumptions for the retail were obtained from the 2001 *CEQR Technical Manual* and from the *No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS* (2004). A trip generation rate of 205 person trips per 1,000 square feet was used with a 25 percent linked trip rate, resulting in 26, 580, and 260 person trips, and 0, 10, and 4 vehicle

(auto and delivery) trips during the AM, midday, and PM peak hours, respectively. Summaries of these trip generation estimates are shown in **Tables 15-8** and **15-9**.

**Table 15-8
Proposed Project Person Trips by Mode**

Use	Auto		Taxi		Subway		Bus/School Bus		Walk Only		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY AM PEAK HOUR													
Residential	8	44	12	70	42	236	24	136	63	357	149	843	992
School – Students	22	0	6	0	0	0	14	0	312	0	354	0	354
School – Teachers	2	0	2	0	16	0	8	0	5	0	33	0	33
Local Retail	0	0	0	0	1	1	1	1	11	11	13	13	26
Total	32	44	20	70	59	237	39	137	391	368	549	856	1,405
WEEKDAY MIDDAY PEAK HOUR													
Residential	13	13	21	21	72	72	41	41	108	108	255	255	510
School – Students	0	22	0	6	0	0	0	14	0	312	0	354	354
School – Teachers	0	2	0	2	0	16	0	8	0	5	0	33	33
Local Retail	6	6	9	9	17	17	17	17	241	241	290	290	580
Total	19	43	30	38	89	105	58	72	349	666	545	932	1,477
WEEKDAY PM PEAK HOUR													
Residential	43	18	67	29	229	98	132	56	346	148	817	349	1,166
School – Students	0	0	0	0	0	0	0	0	0	0	0	0	0
School – Teachers	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Retail	3	3	4	4	8	8	8	8	107	107	130	130	260
Total	46	21	71	33	237	106	140	64	453	255	947	479	1,426

Note: Student Auto Trips are Auto Drop-off/Pick-up trips and Student bus trips are school bus trips.

**Table 15-9
Proposed Project Vehicle Trips by Type**

Use	Auto		Taxi		Delivery/School Bus		Total		
	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY AM PEAK HOUR									
Residential	7	41			5	5	12	46	58
School – Students	13	13			1	1	14	14	28
School – Teachers	1	0			1	1	2	1	3
Local Retail	0	0			0	0	0	0	0
Total	21	54	57	57	7	7	85	118	203
WEEKDAY MIDDAY PEAK HOUR									
Residential	12	12			4	4	16	16	32
School – Students	13	13			1	1	14	14	28
School – Teachers	0	1			1	1	1	2	3
Local Retail	4	4			1	1	5	5	10
Total	29	30	38	38	7	7	74	75	149
WEEKDAY PM PEAK HOUR									
Residential	40	17			0	0	40	17	57
School – Students	0	0			0	0	0	0	0
School – Teachers	0	0			0	0	0	0	0
Local Retail	2	2			0	0	2	2	4
Total	42	19	51	51	0	0	93	70	163

Note: 1. This table presents inbound and outbound taxi trips for the project as a whole rather than by a particular land use. Taxi trips are not assigned to a particular land use because taxi trips are assumed to be shared among all the land uses in the Project Site. Taxi trips are balanced to account for some arriving empty and leaving full, some arriving full and leaving empty, and some arriving and leaving full.
2. School student auto trips are drop-off/pick-up trips.

SCHOOL USE

The Project Site is currently occupied by a 238-seat Primary School serving grades kindergarten through 5. In the future with the Proposed Actions a new, expanded school building would be built on the site and would serve a total of 630 students in grades kindergarten through 8th grade. The resulting increment of 354 students was analyzed for trip generation purposes. The additional 354 elementary school students were estimated to require an additional 32 teachers and administrative staff, using an established student to faculty ratio of 11 to 1. The trip generation estimates were developed based on rates presented in the *250 East 57th Street Redevelopment FEIS* (2008).

Auto trips associated with the school were divided into two categories. Travel by teachers and administrative staff was assumed to be similar to other journey-to-work type trips, with vehicles assigned to the on-site parking garage. Students who travel via auto, however, were assumed to be dropped off or picked up. These trips have similar characteristics as some taxi trips that arrive full and depart empty, or vice versa, in that each one-way trip would be considered two auto trips. As shown in **Tables 15-8** and **15-9**, the faculty/staff were estimated to generate 33, 33, and 0 person trips, and 3, 3, and 0 vehicle trips during the AM, midday, and PM peak hours, respectively. The 354 students would yield 354, 354, and 0 person trips, and 38, 38, and 0 vehicle trips during the same time periods, respectively.

The vehicle trips described above do not include taxi trips as inbound and outbound taxi trips were calculated for the project as a whole rather than by a particular land use. Taxi trips are not assigned to a particular land use because taxi trips are assumed to be shared among all the land uses in the Project Site. Taxi trips are balanced to account for some arriving empty and leaving full, some arriving full and leaving empty, and some arriving and leaving full.

Overall, including balanced taxi trips, the Proposed Project would yield net increments of 1,405, 1,477, and 1,426 person trips, and 203, 149, and 163 vehicle trips during the AM, midday, and PM peak hours, respectively.

TRIP DISTRIBUTION

Origin and destination patterns for project-generated vehicular trips were developed based on journey-to-work travel patterns from the *2000 U.S. Census*. Based on this information, approximately 40 percent of the projected trips were distributed to points east within Manhattan and towards Queens and Long Island, 32 percent to points north of the Project Site within Manhattan and in northern New York State, New Jersey and the Bronx. The remaining 28 percent was distributed to points south of the Project Site including the southern tip of Manhattan, southern New Jersey and Brooklyn. This travel pattern was used to distribute project-generated vehicular trips throughout the study area street network.

VEHICLE TRIP ASSIGNMENT

Based on the results of the trip distribution, auto trips were assigned to the study area intersections based on logical routes of travel. These associated vehicle trips were assigned to the on-site parking garage. This garage, with a capacity of 204 spaces, would adequately accommodate the entire project-generated demand in the AM, midday, and PM peak hours and would accommodate most of the project-generated demand in the overnight. Taxi and school drop-off and pick-up trips were assigned to the site's block faces, and delivery vehicles were routed to and from the Project Site via NYCDOT designated truck routes. It should be noted that the trips associated with the existing

parking lot on the Project Site were not removed from the traffic study area street network or reassigned to other locations for a more conservative impact analysis.

The existing school pick-ups and drop-offs are mainly facilitated on West 45th Street at its existing entrance. The Proposed Project would relocate this entrance to West 44th Street. There are currently No Standing 7 AM to 4 PM school day regulations on both blocks in front of the school (for approximately 85 feet on West 45th Street and 120 feet on West 44th Street). These regulations would continue to facilitate future pick-up and drop off activities on the two streets.

TRAFFIC VOLUMES AND LEVEL OF SERVICE

Figures 15-10, 15-11, and 15-12 present the project-generated traffic volumes for the weekday AM, midday, and PM peak analysis hours, respectively. Within the study area, peak hour traffic volumes would experience increases along the primary access and egress routes to the Project Site, with the Eleventh Avenue intersections at West 44th and West 45th Streets incurring the highest incremental increases in traffic volume. The 2013 Build AM, midday, and PM peak hour traffic volumes are shown in **Figures 15-13, 15-14, and 15-15**, respectively.

Capacity and level-of-service analyses were performed for the study area intersections using the future build peak hour traffic volumes. **Table 15-10** compares the No Build and Build service levels for these intersections.

IMPACT CRITERIA

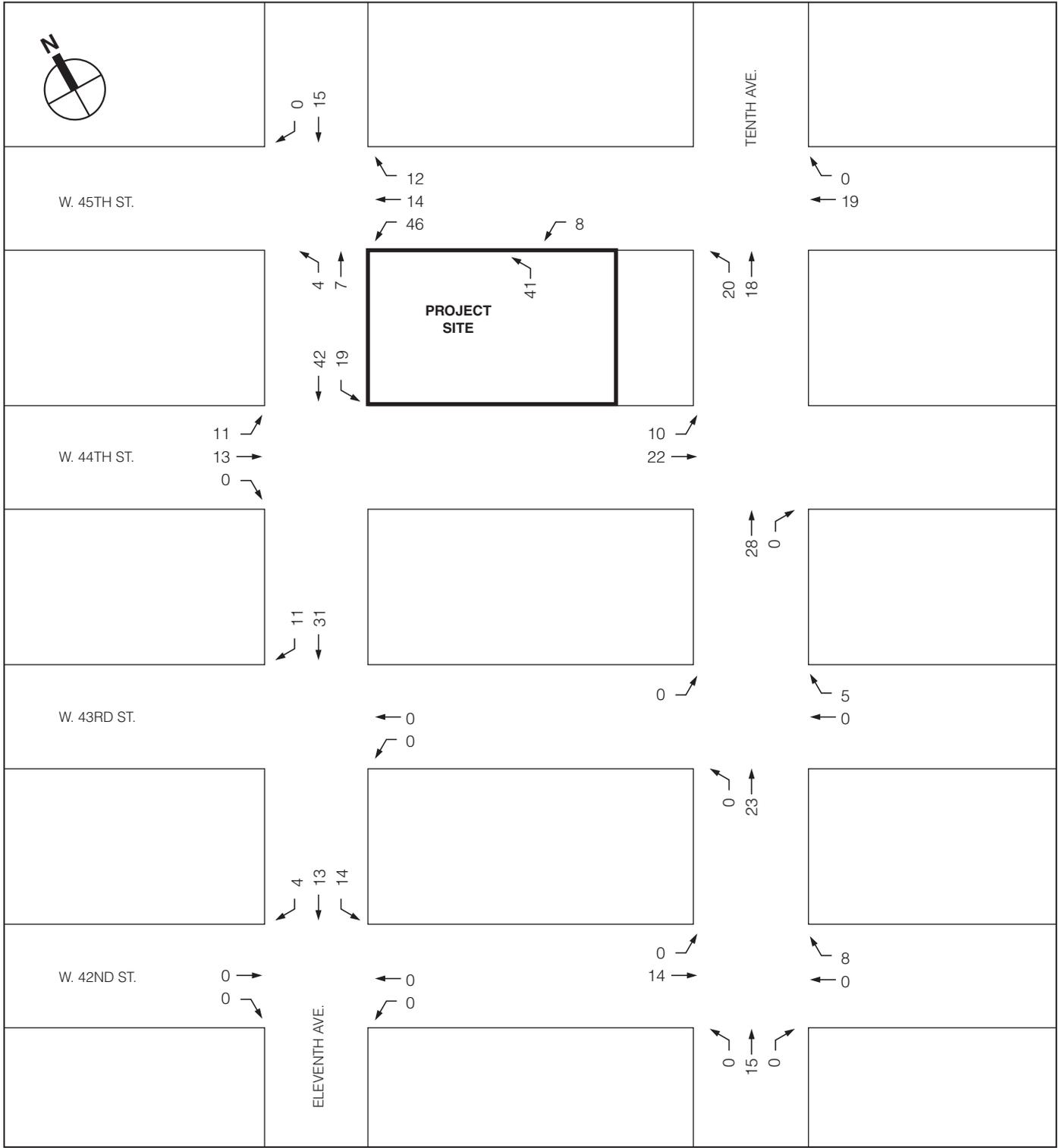
According to the criteria presented in the *CEQR Technical Manual*, impacts are considered significant (identified by the “+” symbol in the analysis summary table) and require examination of mitigation if they result in an increase of 5 or more seconds of delay in a lane group over No Build levels beyond mid-LOS D. For No Build LOS E, a 4-second increase in delay is considered significant. For No Build LOS F, a 3-second increase in delay is considered significant. Also, if the No Build LOS F condition already corresponds with a delay in excess of 120 seconds, an increase of 1.0 or more seconds of delay is considered significant, unless the Proposed Project generates fewer than five vehicle trips through that intersection in the peak hour. In addition, impacts are considered significant if levels of service deteriorate from acceptable LOS A, B, or C in the No Build condition to marginally unacceptable LOS D (a delay in excess of 45 seconds, the midpoint of the LOS D range of delay), or unacceptable LOS E or F in the future Build condition. The above sliding scale is applicable only if the Proposed Actions are projected to generate five or more vehicle trips throughout the affected approach movement or lane group at the analysis intersections in the peak hour.

SIGNIFICANT IMPACTS

Based on CEQR criteria, significantly impacted locations were identified and summarized by peak analysis period, as follows. During the AM and midday peak hours, the Proposed Actions would result in five significantly impacted lane groups at four intersections. During the PM peak hour, there would be four significantly impacted lane groups at four intersections. (The parenthetical numbers in the following sections indicate the increase in delay as compared to the No Build condition.)

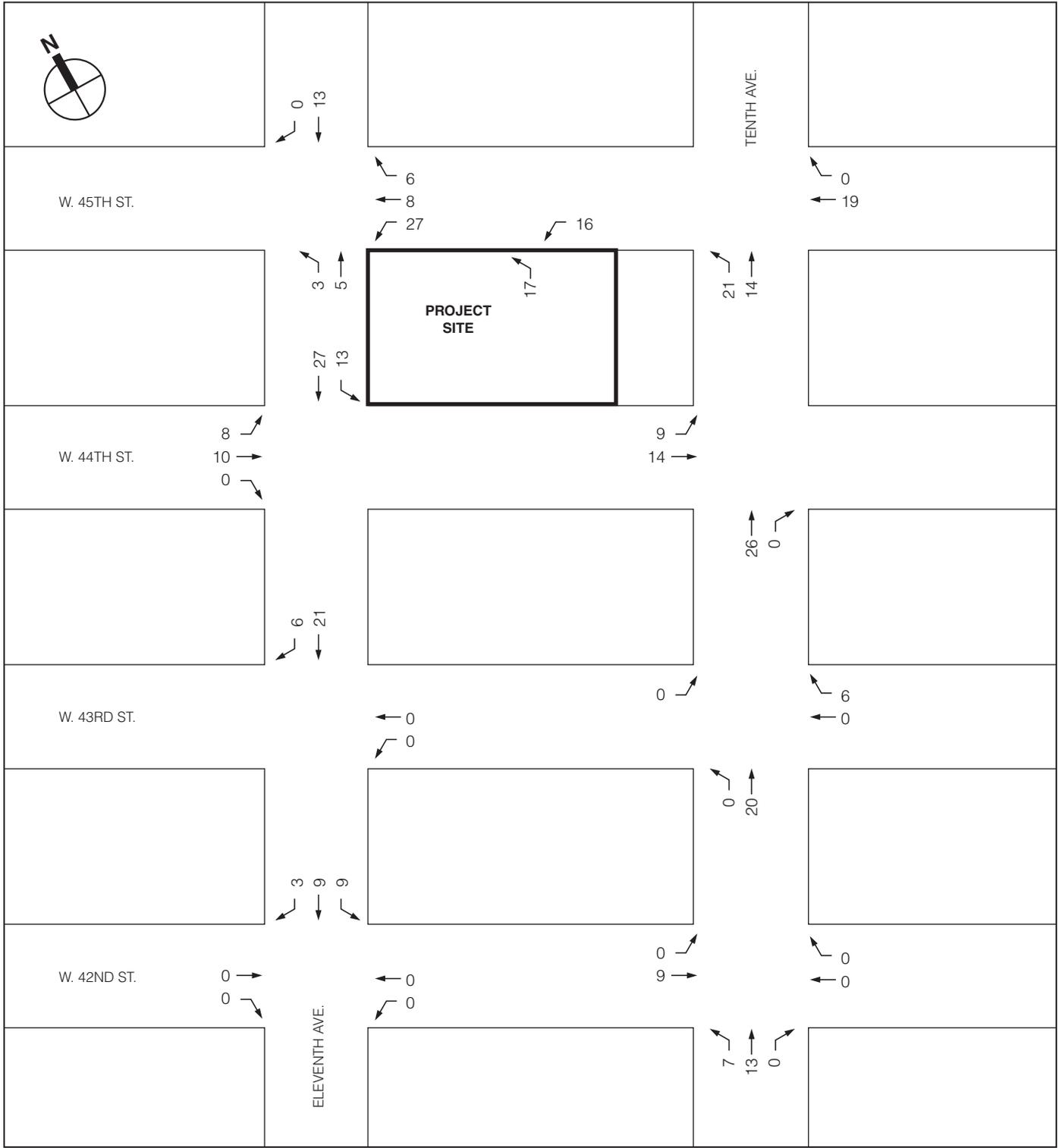
AM Peak Hour

- *Tenth Avenue and West 42nd Street*: The eastbound approach would worsen within LOS F and increase in average delay from 341.2 to 359.7 (18.5) spv. The westbound right turn movement would worsen within LOS F and increase in average delay from 129.4 to 137.2 (7.8) spv.



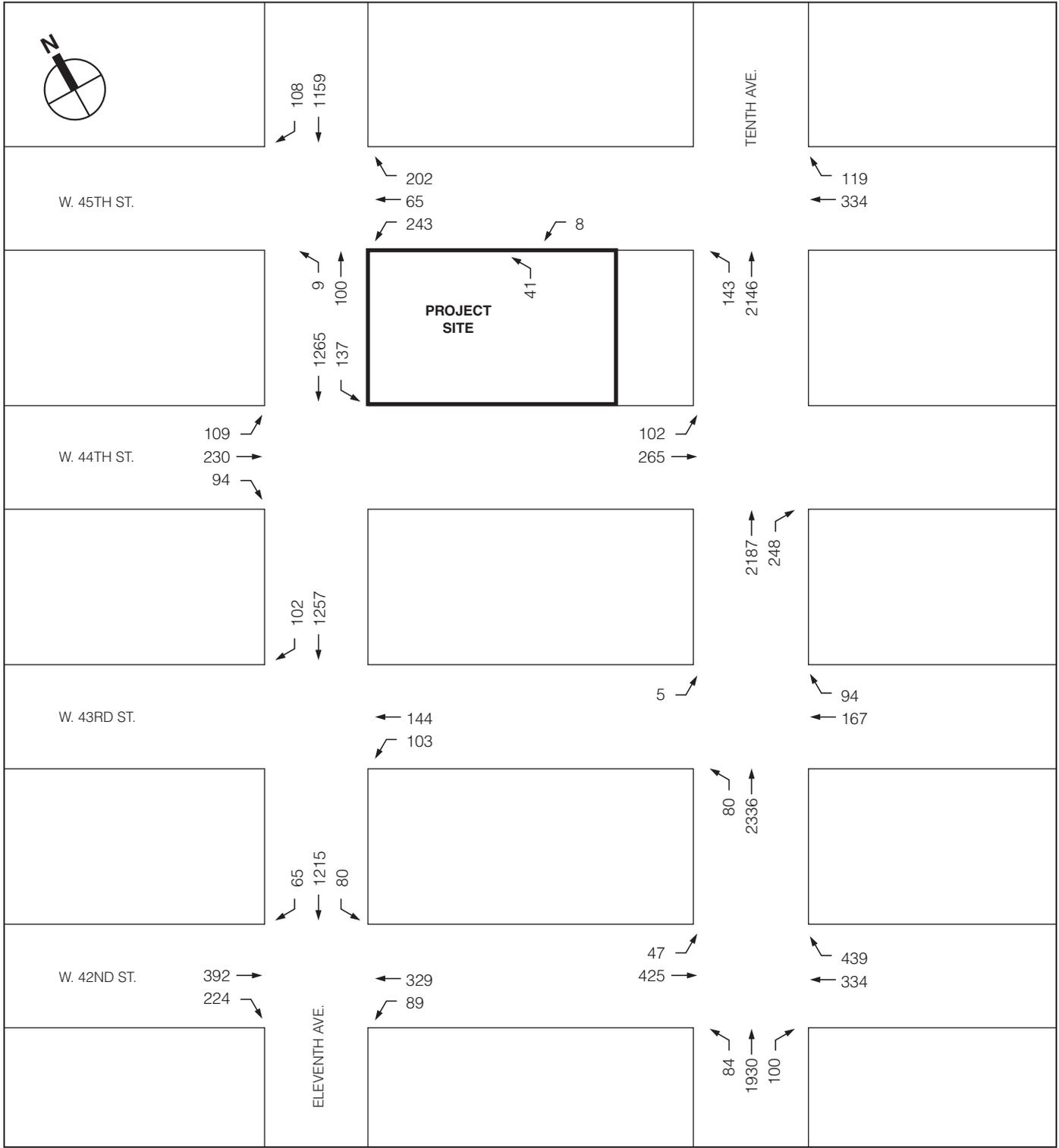
NOT TO SCALE

2013 Project Generated Traffic Volumes Weekday AM Peak Hour



NOT TO SCALE

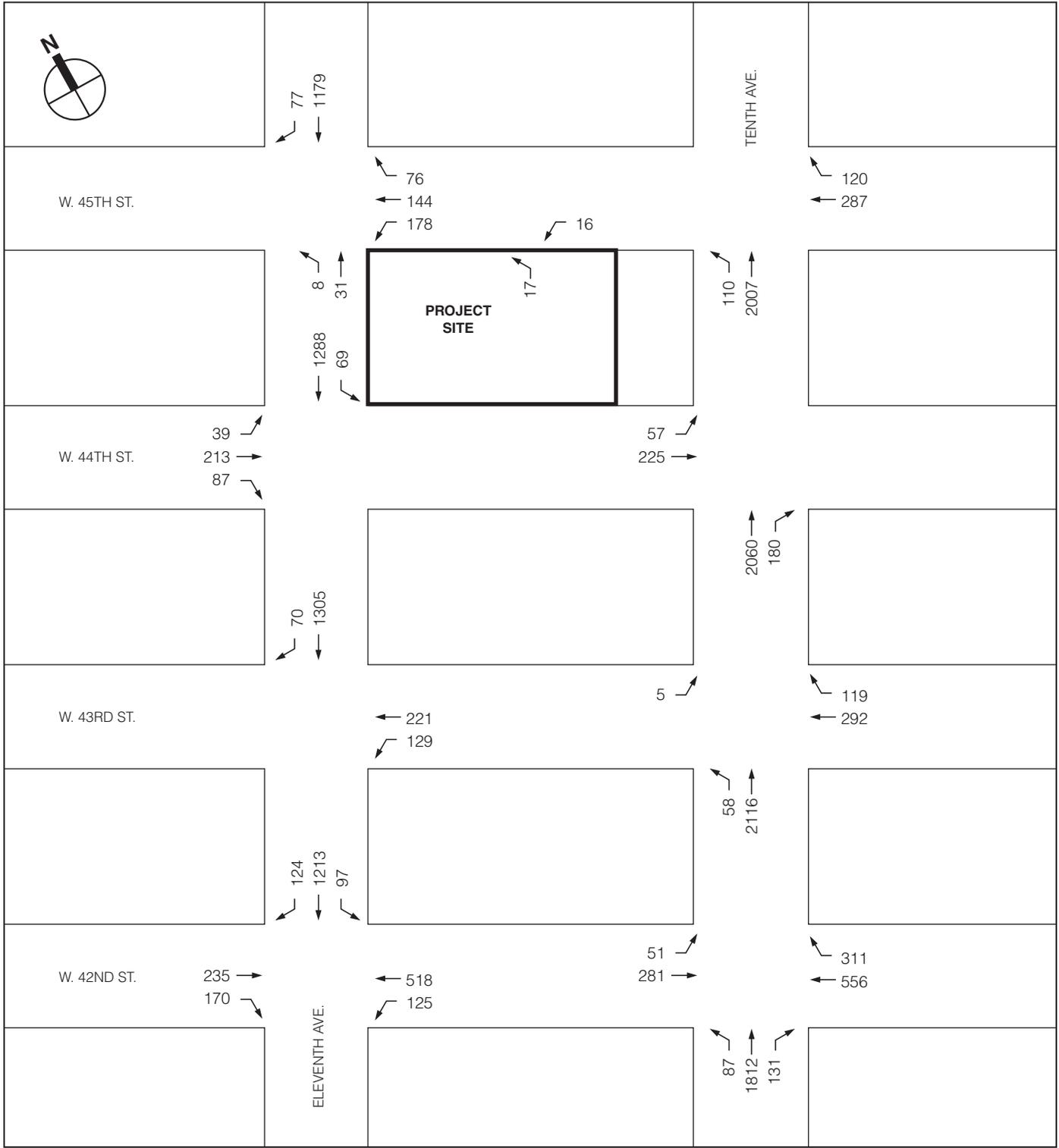
2013 Project Generated Traffic Volumes Weekday Midday Peak Hour



NOT TO SCALE

2013 Build Traffic Volumes Weekday AM Peak Hour

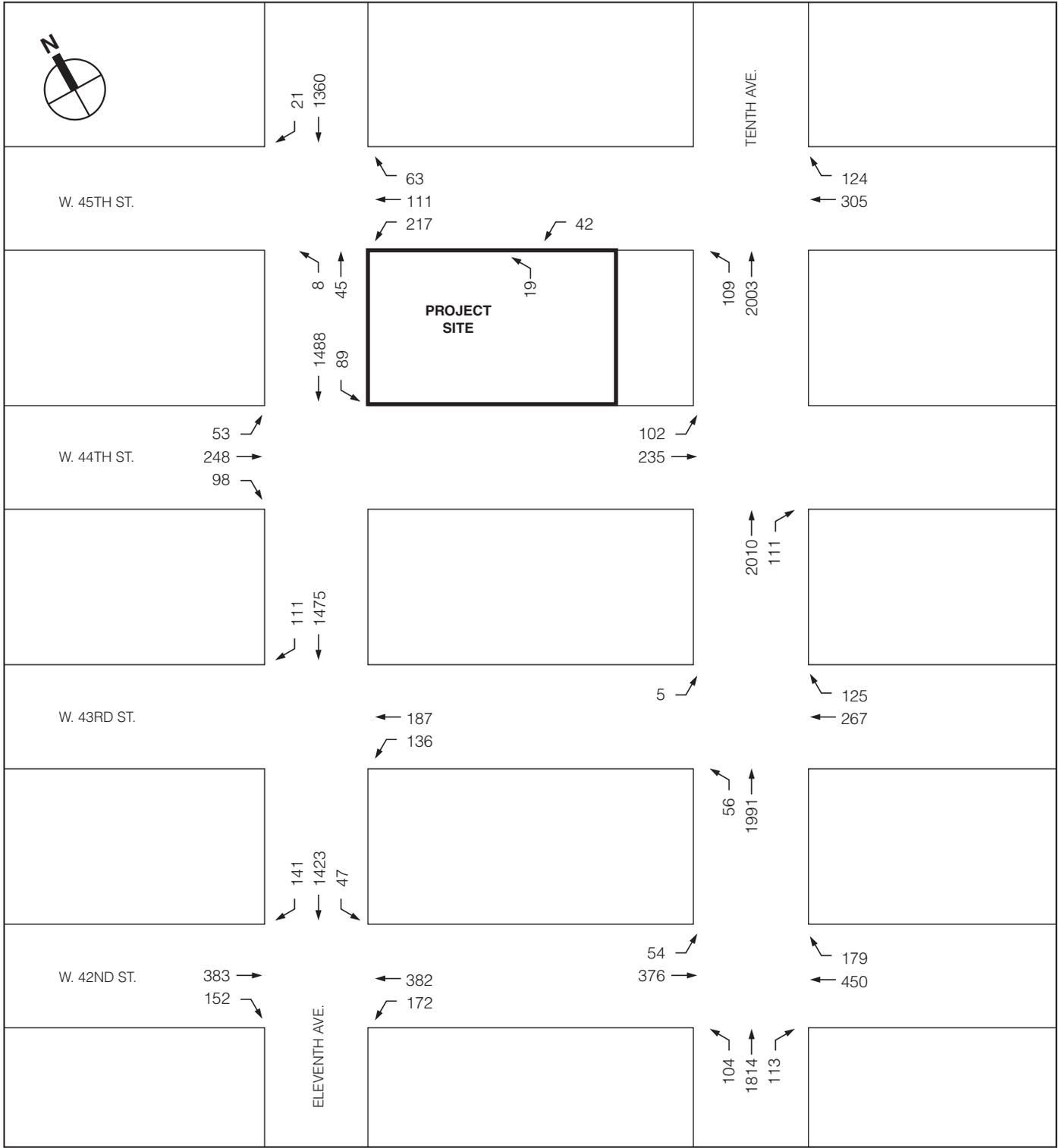
Figure 15-13



NOT TO SCALE

2013 Build Traffic Volumes Weekday Midday Peak Hour

Figure 15-14



NOT TO SCALE

2013 Build Traffic Volumes Weekday PM Peak Hour

Figure 15-15

West 44th Street and Eleventh Avenue Rezoning

Table 15-10
2013 No Build and 2013 Build Conditions LOS Summary

Int / App	AM Peak Hour								Midday Peak Hour								PM Peak Hour										
	2013 No Build				2013 Build				2013 No Build				2013 Build				2013 No Build				2013 Build						
	Ln	Grp	V/C	(SPV)	LOS	Ln	Grp	V/C	(SPV)	LOS	Ln	Grp	V/C	(SPV)	LOS	Ln	Grp	V/C	(SPV)	LOS	Ln	Grp	V/C	(SPV)	LOS		
Tenth Avenue and West 42nd Street																											
EB	LT	1.66	341.2	F	LT	1.70	359.7	F	+	LT	2.06	529.5	F	LT	2.14	562.7	F	+	LT	1.79	400.6	F	LT	1.82	415.1	F	+
WB	T	0.41	26.0	C	T	0.41	26.0	C		TR	1.23	145.8	F	TR	1.24	151.2	F	+	T	0.53	27.7	C	T	0.53	27.7	C	
	R	1.16	129.4	F	R	1.18	137.2	F	+					R	0.60	35.1	D		R	0.63	36.3	D	R	0.63	36.3	D	
NB	LT	0.82	17.7	B	LT	0.83	18.0	B		LTR	0.79	16.7	B	LTR	0.80	17.0	B		L	0.18	10.1	B	L	0.20	10.5	B	
	R	0.35	13.7	B	R	0.35	13.7	B						T	0.66	14.0	B		T	0.66	14.1	B	R	0.35	13.4	B	
INT			77.5	E			82.2	F				102.4	F			108.4	F				70.2	E			73.1	E	
Tenth Avenue and West 43rd Street																											
EB	L	0.02	17.0	B	L	0.02	17.0	B		L	0.02	17.1	B	L	0.02	17.1	B		L	0.02	17.1	B	L	0.02	17.1	B	
WB	TR	0.28	19.5	B	TR	0.28	19.6	B		TR	0.44	21.7	C	TR	0.45	21.9	C		TR	0.39	20.9	C	TR	0.40	21.0	C	
NB	LT	1.00	36.0	D	LT	1.02	41.0	D		LT	0.96	27.2	C	LT	0.97	29.5	C		L	0.11	9.5	A	L	0.14	10.0	B	
																				T	0.75	15.6	B	T	0.76	15.8	B
INT			34.3	C			38.9	D				26.4	C			28.3	C				16.3	B			16.5	B	
Tenth Avenue and West 44th Street																											
EB	LT	0.48	26.1	C	LT	0.56	27.9	C		LT	0.30	23.1	C	LT	0.35	23.7	C		LT	0.43	25.2	C	LT	0.50	26.4	C	
NB	T	0.85	14.9	B	T	0.86	15.4	B		TR	0.96	23.9	C	TR	0.97	25.6	C		TR	0.77	12.5	B	TR	0.78	12.8	B	
	R	0.58	14.2	B	R	0.58	14.2	B																			
INT			16.2	B			16.9	B				23.8	C			25.4	C				14.1	B			14.6	B	
Tenth Avenue and West 45th Street																											
WB	TR	0.96	60.4	E	TR	1.01	73.6	E	+	TR	0.89	50.0	D	TR	0.94	58.7	E	+	TR	1.12	113.4	F	TR	1.22	151.2	F	+
NB	LT	0.89	17.4	B	LT	0.92	19.5	B		LT	0.90	18.5	B	LT	0.93	21.0	C		L	0.16	7.7	A	L	0.31	9.9	A	
																				T	0.73	12.4	B	T	0.73	12.5	B
INT			24.4	C			28.4	C				23.5	C			27.0	C				28.7	C			35.8	C	
Eleventh Avenue and West 42nd Street																											
EB	TR	0.69	28.2	C	TR	0.69	28.2	C		TR	0.54	25.1	C	TR	0.54	25.1	C		TR	0.63	26.8	C	TR	0.63	26.8	C	
WB	L	0.38	17.7	B	L	0.38	17.7	B		L	0.42	17.1	B	L	0.42	17.1	B		L	0.59	22.6	C	L	0.59	22.6	C	
	LT	0.36	14.7	B	LT	0.36	14.7	B		LT	0.49	16.5	B	LT	0.49	16.5	B		LT	0.39	15.0	B	LT	0.39	15.0	B	
SB	LT	0.72	23.5	C	LT	0.74	24.0	C		LT	0.73	23.7	C	LT	0.74	24.2	C		LT	0.61	21.0	C	LT	0.61	21.1	C	
	R	0.10	16.2	B	R	0.11	16.2	B		R	0.27	18.4	B	R	0.28	18.5	B		R	0.30	18.7	B	R	0.30	18.8	B	
INT			23.1	C			23.4	C				21.8	C			22.0	C				21.2	C			21.3	C	
Eleventh Avenue and West 43rd Street																											
WB	LT	0.30	22.5	C	LT	0.30	22.5	C		LT	0.62	35.1	D	LT	0.62	35.1	D		LT	0.55	33.3	C	LT	0.55	33.3	C	
SB	T	0.38	8.5	A	T	0.39	8.5	A		TR	0.36	3.6	A	TR	0.37	3.7	A		TR	0.41	3.8	A	TR	0.41	3.9	A	
	R	0.19	8.1	A	R	0.21	8.3	A																			
INT			10.7	B			10.7	B				10.1	B			10.0	B				8.9	A			8.8	A	
Eleventh Avenue and West 44th Street																											
EB	LTR	0.98	67.3	E	LTR	1.04	84.3	F	+	LTR	0.90	60.1	E	LTR	0.95	68.7	E	+	LTR	1.10	110.0	F	LTR	1.17	135.0	F	+
SB	L	0.16	7.5	A	L	0.18	7.7	A		L	0.06	6.1	A	L	0.08	6.1	A		L	0.08	6.2	A	L	0.10	6.3	A	
	T	0.85	18.1	B	T	0.88	19.9	B		T	0.74	13.6	B	T	0.76	14.1	B		T	0.84	17.0	B	T	0.85	17.6	B	
INT			28.9	C			34.2	C				22.5	C			24.7	C				34.8	C			40.8	D	
Eleventh Avenue and West 45th Street																											
WB	LTR	1.02	76.3	E	LTR	1.19	134.6	F	+	LTR	1.16	133.6	F	LTR	1.29	185.4	F	+	LTR	1.22	157.9	F	LTR	1.35	212.6	F	+
NB	L	0.06	12.9	B	L	0.11	14.6	B		L	0.03	6.2	A	L	0.05	6.5	A		L	0.04	6.4	A	L	0.06	6.8	A	
	T	0.07	11.7	B	T	0.07	11.8	B		T	0.01	5.7	A	T	0.01	5.7	A		T	0.02	5.8	A	T	0.02	5.8	A	
SB	T	0.88	23.7	C	T	0.89	24.6	C		TR	0.77	14.7	B	TR	0.78	15.0	B		T	0.78	15.0	B	T	0.79	15.2	B	
	R	0.20	10.4	B	R	0.20	10.4	B												R	0.03	5.9	A	R	0.03	5.9	A
INT			35.1	D			52.8	D				40.6	D			54.8	D				43.1	D			57.1	E	

Notes:

EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; INT = Intersection.

L = Left-Turn; T = Through; R = Right-Turn.

V/C = Volume to Capacity; SPV = Seconds per Vehicle; LOS = Level of Service.

+ Indicates a significant adverse impact

- *Tenth Avenue and West 45th Street:* The westbound approach would worsen within LOS E and increase in average delay from 60.4 to 73.6 (13.2) spv.
- *Eleventh Avenue and West 44th Street:* The eastbound approach would deteriorate from LOS E to LOS F and increase in average delay from 67.3 to 84.3 (17.0) spv.
- *Eleventh Avenue and West 45th Street:* The westbound approach would deteriorate from LOS E to LOS F and increase in average delay from 76.3 to 134.6 (58.3) spv.

Midday Peak Hour

- *Tenth Avenue and West 42nd Street:* The eastbound approach would worsen within LOS F and increase in average delay from 529.5 to 562.7 (33.2) spv. The westbound approach would worsen within LOS F and increase in average delay from 145.8 to 151.2 (5.4) spv.
- *Tenth Avenue and West 45th Street:* The westbound approach would deteriorate from LOS D to LOS E and increase in average delay from 50.0 to 58.7 (8.7) spv.
- *Eleventh Avenue and West 44th Street:* The eastbound approach would worsen within LOS E and increase in average delay from 60.1 to 68.7 (8.6) spv.
- *Eleventh Avenue and West 45th Street:* The westbound approach would worsen within LOS F and increase in average delay from 133.6 to 185.4 (51.8) spv.

PM Peak Hour

- *Tenth Avenue and West 42nd Street:* The eastbound approach would worsen within LOS F and increase in average delay from 400.6 to 415.1 (14.5) spv.
- *Tenth Avenue and West 45th Street:* The westbound approach would worsen within LOS F and increase in average delay from 113.4 to 151.2 (37.8) spv.
- *Eleventh Avenue and West 44th Street:* The eastbound approach would worsen within LOS F and increase in average delay from 110.0 to 135.0 (25.0) spv.
- *Eleventh Avenue and West 45th Street:* The westbound approach would worsen within LOS F and increase in average delay from 157.9 to 212.6 (54.7) spv.

Mitigation measures for these impacts are presented in Chapter 21, “Mitigation.”

PARKING SUPPLY AND UTILIZATION

As discussed earlier, parking demand from the Proposed Project would be accommodated primarily at the proposed on-site parking garage. A parking accumulation analysis, shown in **Table 15-11**, was performed to estimate hourly demand and identify the Proposed Project’s peak vehicle accumulation.

Based on the *2000 U.S. Census*, the residential use would generate the majority of the parking demand from the Proposed Project—approximately 211 spaces overnight, and result in a 7-space parking shortfall during the overnight peak hour over the proposed 204-space on-site accessory parking garage. However, all project-generated auto trips (except pick-ups and drop-offs) were assigned to the site’s proposed driveway location for a more conservative analysis. The 7 vehicle overflow during the overnight peak parking period would be accommodated at off-street public parking facilities in the vicinity of the Project Site.

**Table 15-11
Proposed Plan Weekday Parking Accumulation**

Time Begin	Residential			Local Retail			School - Staff			Total
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Mid.	5	4	211	0	0	0	0	0	0	211
1 AM	2	2	211	0	0	0	0	0	0	211
2 AM	1	1	211	0	0	0	0	0	0	211
3 AM	1	1	211	0	0	0	0	0	0	211
4 AM	1	1	211	0	0	0	0	0	0	211
5 AM	1	1	211	0	0	0	0	0	0	211
6 AM	2	1	212	0	0	0	0	0	0	212
7 AM	2	19	195	0	0	0	0	0	0	195
8 AM	7	41	161	0	0	0	1	0	0	162
9 AM	6	29	138	0	0	0	0	0	0	139
10 AM	7	20	125	0	0	0	0	0	0	126
11 AM	9	13	121	1	0	1	0	0	0	123
Noon	12	12	121	4	4	1	0	0	0	123
1 PM	12	12	121	3	3	1	0	0	0	123
2 PM	11	11	121	2	2	1	0	0	0	123
3 PM	14	14	121	2	1	2	0	0	0	124
4 PM	23	15	129	1	1	2	0	0	0	132
5 PM	40	17	152	2	2	2	0	1	0	154
6 PM	32	18	166	1	2	1	0	0	0	167
7 PM	31	13	184	1	1	1	0	0	0	185
8 PM	13	6	191	1	1	1	0	0	0	192
9 PM	11	4	198	0	1	0	0	0	0	198
10 PM	12	5	205	0	0	0	0	0	0	205
11 PM	9	4	210	0	0	0	0	0	0	210

Note: Acc. = Accumulation
Source: Based on travel demand estimates

In the future Build condition, the Proposed Project would displace the 300 public parking spaces currently on the Project Site as well as 50 spaces used by the traffic enforcement unit of the New York City Police Department (NYPD). In the future with the Proposed Actions, the displacement of 300 public parking spaces from the Project Site would result in an overall increase in utilization rates in study area parking facilities. As shown in **Table 15-12**, the overall utilization rates of the off-street parking facilities in the study area would increase to approximately 93, 104, 79, and 49 percent (with 207, 0, 635 and 1,513 available spaces) during the AM, midday, PM, and overnight hours, respectively. As in the No Build condition, on-street parking in the area is expected to be at or near capacity during most of the day under the future without the Proposed Actions.

**Table 15-12
Build Parking Condition**

	No Build Condition				Build Condition						
	Total Capacity	Estimated Demand	Spaces Available	Utilization	Public Spaces Displaced	New Public Spaces Provided	Total Capacity	Build Increment Demand	Total Estimated Demand	Spaces Available	Utilization
Weekday AM	3,292	2,785	507	85%	300	0	2,992	0	2,785	207	93%
Weekday Midday	3,292	3,101	191	94%	300	0	2,992	0	3,101	-109	104%
Weekday PM	3,292	2,357	935	72%	300	0	2,992	0	2,357	635	79%
Weekday Overnight	3,292	1,472	1,820	45%	300	0	2,992	7	1,479	1,513	49%

According to the *CEQR Technical Manual*, for Proposed Actions within the Manhattan Central Business District (CBD) (the area south of 61st Street), the inability of the Proposed Project or the surrounding area to accommodate projected future parking demands would generally be considered a parking shortfall, but is not deemed to be a significant impact. The unsatisfied demand for parking spaces in the study area in the midday peak hour would result in vehicles parking outside the immediate area and motorists walking extended distances to their destination or taking mass transit. Thus, due to the Project Site’s location within the Manhattan CBD, the 109-space shortfall in the midday peak hour in the future with the Proposed Actions would not be considered a significant parking impact.

TRAFFIC SAFETY

Accident data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between January 1, 2005 and June 30, 2008. The data obtained quantify the total number of reportable accidents (involving fatality, injury, or more than \$1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related accidents at each location. According to the *CEQR Technical Manual*, a high pedestrian accident location is one where there were five or more pedestrian-related accidents in any year of the most recent three-year period for which data are available.

During this period, a total of 227 reportable accidents, one (1) fatality, 160 injuries, and 37 pedestrian-related accidents occurred at the study area intersections. A rolling 12 month total of accident data identifies one study area intersection as a high pedestrian accident location in the 2005 to 2008 period: West 42nd Street at Tenth Avenue. **Table 15-13** shows total accident characteristics by intersection during the study period, as well as a breakdown of pedestrian and bicycle accidents by year and location.

**Table 15-13
Accident Data**

Intersection		Study Period			Accidents by Year							
North-South Roadway	East-West Roadway	Reportable Accidents	Total Fatalities	Total Injuries	Pedestrian				Bicycle			
					2005	2006	2007	2008	2005	2006	2007	2008
Tenth Avenue	W. 42nd Street	46	0	28	1	1	4	1	0	0	0	2
Eleventh Avenue	W. 42th Street	36	0	27	1	2	0	0	0	3	0	0
Tenth Avenue	W. 43rd Street	17	0	11	1	1	2	0	0	0	0	0
Eleventh Avenue	W. 43rd Street	21	0	13	1	1	1	0	0	0	0	0
Eighth Avenue	W. 44th Street	17	0	16	0	2	1	0	0	2	0	0
Ninth Avenue	W. 44th Street	17	0	15	2	3	1	0	2	0	0	0
Tenth Avenue	W. 44th Street	9	0	4	0	0	2	0	2	0	0	0
Eleventh Avenue	W. 44th Street	21	0	8	0	0	0	0	0	0	0	0
Ninth Avenue	W. 45th Street	17	1	14	1	2	1	0	0	1	2	0
Tenth Avenue	W. 45th Street	12	0	13	0	3	0	0	0	0	0	0
Eleventh Avenue	W. 45th Street	14	0	11	0	2	0	0	0	0	1	0

Source: NYSDOT January 1, 2005 to June 30, 2008 accident data.

A review of the accident history at Tenth Avenue and West 42nd Street indicates that 5 of 7 pedestrian-related accidents were caused by drivers failing to yield the right of way during turning movements. In all but one accident, the pedestrian was lawfully crossing with the signal. Tenth Avenue and West 42nd Street is striped with regular crosswalks on all approaches and

West 44th Street and Eleventh Avenue Rezoning

there are no signs warning either pedestrians to wait for a walk phase or automobiles to yield to pedestrians. Field observations of conditions at this intersection were conducted to identify specific geometric and operational issues and to determine whether measures could be recommended to improve pedestrian safety. It is expected that the installation of high-visibility crosswalks on all four approaches and signs warning turning vehicles to yield to pedestrians on the westbound and northbound approaches could further enhance pedestrian safety at this location. Furthermore, there were five total accidents involving pedestrians (2) or bicycles (3) at Eleventh Avenue and West 42nd Street in 2006. These occurrences, however, appear to be outliers since there were only one pedestrian-related accident in 2005 and no pedestrian or bicycle-related accidents in both 2007 and 2008. This intersection is also painted with high-visibility crosswalks on its east, west, and north crossings, which further accommodate the safety of pedestrian flow.

To accommodate walk trips to the school on the project site, school crosswalks are present at the Tenth Avenue and West 44th Street, Tenth Avenue and West 45th Street, and Eleventh Avenue and West 45th Street intersections. There are also school crossing pavement markings on Tenth Avenue, Eleventh Avenue, and West 44th Street. With the main school entrance proposed to be relocated to West 44th Street, it is recommended that similar school crosswalks be added to the Eleventh Avenue and West 44th Street intersection. *