Chapter 16: Transit and Pedestrians

A. INTRODUCTION

The Proposed Actions would generate new trips that would use commuter rail services, subways, and buses as well as the sidewalks, corners, and crosswalks in the vicinity of the development parcels. This chapter assesses the potential impacts of these trips to determine whether the Proposed Actions would result in significant adverse impacts on transit and pedestrian facilities that would require mitigation.

The Proposed Actions would result in significant adverse impacts on the PL9 stairway at Grand Central Station; on the M16/M34 and M42 bus routes; and at three pedestrian locations. The impacts to the PL9 stairway, the M42 bus route, and the three pedestrian locations were also identified with the development programs presented in the Final Generic Environmental Impact Statement (FGEIS) completed in January 2004. However, the Proposed Actions' impact on the M16/M34 bus routes was not previously identified. This impact occurs because there would be a substantial number of new trips from the Hudson Yards Development on this route in the future without the Proposed Actions (No Build condition).

With the inclusion of the United Nations Development Corporations (UNDC) project in the future baseline condition, there would be an additional subway stairway impact at Grand Central Station and impacts at five additional pedestrian locations. The impacts on bus line-haul would be the same with or without UNDC as a background project.

B. SUMMARY OF FGEIS FINDINGS

The assessment of transit and pedestrian conditions in the FGEIS examined commuter rail, subway line-haul and station operations, bus line-haul, and pedestrian conditions for four development alternatives on the development parcels. The analysis concluded that none of the illustrative development programs would result in significant adverse impacts on commuter rail operations or subway line-haul. However, the FGEIS identified a varying degree of significant impacts to subway station operations, bus line-haul, and pedestrian circulation based on the number of trips generated by each of the illustrative development programs.

- Subways: Trips associated with each of the Rezoning Scenario's illustrative development programs were predicted to result in significant adverse impacts to the PL9 stairway leading from the east end of the Flushing (7) Line subway platform to the R241A control area at Grand Central Station. This impact could be fully mitigated with a widening of the PL9 stairway.
- Buses: Each of the illustrative development scenarios was predicted to result in significant adverse impacts on the M42 bus route. There would also be overcrowding on the M104 route under the Rezoning Scenario's illustrative development programs. These impacts could be mitigated with increased service and/or the replacement of existing buses with articulated vehicles.

- Pedestrian Circulation: Each of the FGEIS illustrative development programs was predicted to result in significant impacts to crosswalks and corner reservoirs in the study area but not mid-block sidewalks. Two intersections; 42nd Street at Third Avenue, and 40th Street at First Avenue would be impacted under the as-of-right scenario. For the illustrative rezoning scenarios, under the Residential Development Program, there would be an impact only at 42nd Street and Third Avenue. The Mixed-Use Development Program was predicted to result in four pedestrian impacts: 40th Street and First Avenue, 42nd Street and Third Avenue, 42nd Street and First Avenue, and 39th Street and the Queens-Midtown Tunnel (QMT) Entrance. The Mixed-Use Development Program with Office on 708 First Avenue was predicted to result in five impacts: 42nd Street and Third Avenue, 42nd Street and First Avenue, 40th Street and First Avenue, 39th Street and First Avenue, and 39th Street and Marginal Road. These impacts could be mitigated by widening the crosswalks, removing corner obstructions, and/or adjusting the signal timing.

C. METHODOLOGY

As described in Chapter 15, "Traffic and Parking," a travel demand analysis was developed to identify the transportation elements likely to be affected by the Proposed Actions. Consistent with the FGEIS and based on the results of this analysis and criteria specified in the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, it was determined that quantified assessments of commuter rail, commuter buses, subway line-haul, and ferries would not be necessary. However, quantified assessments are required for subway station operations, bus line-haul, and pedestrian circulation using the methodologies described below.

Chapter 15, "Traffic and Parking," included an assessment of Saturday conditions. However, existing transit and pedestrian volumes in the study area are substantially reduced on a Saturday as compared to the weekday commuter peak hours, and the project generates fewer pedestrian trips on a Saturday. As will be described later in this chapter, the project's weekday subway, bus, and pedestrian impacts relate to the incremental increase in project-generated office trips. The office component would generate very few Saturday trips, and the background volumes would be much lower. Therefore, Saturday impacts would not be expected, and a quantified analysis was not considered necessary.

STUDY AREA

The transit study area includes quantified assessment of two subway stations and five local bus routes, which is consistent with the analysis presented in the FGEIS (see Figure 16-1). The study area also includes 24 intersections and their adjoining mid-block sidewalks along the likely routes of pedestrian travel to and from the development parcels (see Figure 16-2).

SUBWAY STATION ELEMENTS

Subway station operations were assessed according to methods and evaluation criteria presented in the 2001 *CEQR Technical Manual*. The methodology for assessing subway stairway, escalator, and control area (turnstiles, service gates, etc.) operations compares the user volume to the element's design capacity, resulting in a volume-to-capacity (v/c) ratio. For stairways, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction between upward and downward patrons, and the average required area for circulation. For escalators, processing capacity is determined by the speed and the available pedestrian lane(s), the latter of which depends on the width of the escalator tread. For control

Transit Service in the Study Area

Figure 16-1

Development Parcels

Corner and Crosswalk Analysis Location

Midblock Sidewalk Analysis Location

Pedestrian Analysis Locations

Figure 16-2

area elements, capacity is measured by the number and width of an element and the New York City Transit (NYCT) optimum capacity per element. For these analysis elements, volumes and capacities are presented for 15-minute intervals.

The analysis of escalators compares the passenger volume to the estimated capacity, which is based on an average pedestrian processing rate. The *CEQR Technical Manua*l describes passenger processing rates for two types of escalators—24-inch tread (single-lane) and 40-inch tread (double-lane). The E203 and E204 escalators at Grand Central Station have 32-inch treads; therefore, the pedestrian processing rate for these escalators was assumed as approximately the midpoint between a 24-inch and a 40-inch escalator, resulting in a capacity of 765 passengers for a 15-minute period.

The estimated v/c ratio is compared to NYCT criteria to determine a level-of-service (LOS) for the operation of an element. Table 16-1 shows the LOS and corresponding v/c ratios for stairways, escalators, and control area elements.

Table 16-1
Level of Service Criteria for Subway Station Elements

LOS	V/C Ratio	
	Stairways	Escalators & Turnstiles/Gates
A	0.00 to 0.45	0.00 to 0.20
B	0.45 to 0.70	0.20 to 0.40
C	0.70 to 1.00	0.40 to 0.60
D	1.00 to 1.33	0.60 to 0.80
E	1.33 to 1.67	0.80 to 1.00
F	1.67 or Greater	Greater than 1.00

Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (December 2001).

For stairways, at LOS A and B, 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, 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, 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 and F, walking speed is restricted, there is insufficient area to bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

The determination of significant impacts for station elements varies based on their type and use. For turnstiles, service gates, and escalators, an increase in volume that results in a v/c ratio of greater than 1.00 (the breakpoint between LOS E and LOS F) may be considered significant, since a value of 1.00 represents the design capacity of the element. For stairways, impacts are considered significant based on the minimum amount of additional capacity that would be needed to bring the location to its no action condition or to an operating condition that would be acceptable to NYCT, based on criteria set forth in the *CEQR Technical Manual*. For a location with a Build LOS D, a widening of 6 inches or more is considered significant; for a Build LOS E condition, a widening of 3 inches or more is considered significant; and for a Build LOS F condition, a widening of 1 inch or more is considered significant.

BUS LINE-HAUL CAPACITIES

Bus line-haul capacities are evaluated when a proposed action is anticipated to generate a perceptible number of passengers that may overcrowd local bus routes. The analysis of bus line-haul examines the peak load point of a route to identify the potential for the route's buses to exceed their practical capacities. NYCT operates two types of buses—standard and articulated. Standard buses operate with a maximum of 65 passengers per bus, while articulated buses operate with 93 passengers per bus. According to NYCT guidelines, an increase in bus load levels to above capacity at any load point is defined as a significant impact.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, crosswalks, and corner reservoir capacities in relation to the demand imposed on them was assessed using the methodologies presented in the 2000 *Highway Capacity Manual* (Transportation Research Board, 2000). Sidewalks were analyzed in terms of pedestrian flow. The calculation of the average pedestrians per foot per minute (PFM) of effective walkway width is the basis for LOS analysis. However, due to the tendency of pedestrians to move in congregated groups, a platoon factor (+4 PFM) is applied in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. This procedure generally results in a LOS one level poorer than the average flow.

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 in 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 is the net area of the corner (in square feet) multiplied by the cycle length and expressed in square feet per minute. The analysis then determines the total circulation time for all pedestrian movements at the corner (expressed as pedestrians per minute). The ratio of net time-space divided by pedestrian circulation time 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 per minute. 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 average crossing time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for vehicular turning movements that traverse the crosswalk. Additionally, in the first seconds of the "walk" cycle, the initial movements of pedestrians queued to cross the street create a surge effect. To account for this effect, the LOS analysis incorporates a "surge" factor to estimate worst-case conditions.

The HCM methodology applies the effective width of the converging sidewalks to calculate the queuing capacity of a corner, and this methodology was used for the majority of the analysis locations. However, unique conditions at the analysis locations along the Queens Midtown Tunnel approach roads required an adjustment to the HCM methodology. The Queens Midtown Tunnel approach roads have unusually narrow sidewalk (2 to 4 feet). Where these sidewalks intersect with crosstown streets, the HCM methodology does not accurately reflect available

circulation space. Therefore, for intersections along the Queens Midtown Tunnel approach roads, the crosswalk dimensions were used to calculate circulation space for corner reservoir areas which more accurately reflect field-observed conditions.

Table 16-2 shows the LOS standards for sidewalks, corner reservoirs, and crosswalks. The description of these LOS is similar to those described above for subway station elements. The 2001 *CEQR Technical Manual* specifies that a LOS D condition or better is considered reasonable for sidewalks, corner reservoirs, and crosswalks within the Manhattan Central Business District (CBD), which includes the study area for this SEIS. For crosswalks and corner reservoirs, this requires a minimum of 15 SFP, while for sidewalks it requires a maximum of 15 PFM.

Table 16-2
Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks	Corner Reservoirs and Crosswalks
A	5 PFM or less	60 SFP or More
B	5 to 7 PFM	40 to 60 SFP
C	7 to 10 PFM	24 to 40 SFP
D	10 to 15 PFM	15 to 24 SFP
E	15 to 23 PFM	8 to 15 SFP
F	More than 23 PFM	Less than 8 SFP

Notes: PFM = pedestrians per foot per minute; SFP = square feet per pedestrian
Source: New York City Mayor's Office of Environmental Coordination, *City Environmental Quality Review Technical Manual* (December 2001).

Project-related sidewalk impacts are considered significant and require examination of mitigation if there is an increase of 2 PFM over a no action condition that is characterized by flow rates greater than 15 PFM (LOS D/E). For corners and crosswalks, a decrease of 1 SFP under the build condition when the no build condition has an average occupancy of less than 15 SFP (LOS D/E) is considered significant. However, if there is less than a 30-person increase at a location within the peak 15-minute time period, any impact is not considered significant since such increases would not typically be perceptible.

D. EXISTING CONDITIONS

TRANSIT SERVICE IN THE STUDY AREA

The development parcels are in close proximity to commuter rail, subway, express and local bus, and ferry service as described below.

COMMUTER RAIL

Metro-North Commuter Railroad provides rail service between New York City's Grand Central Terminal and Bronx, Westchester, Putnam, and Duchess Counties in New York and Fairfield and New Haven Counties in Connecticut. New York City's other commuter railroads—Long Island Rail Road (LIRR) and New Jersey Transit—operate from Penn Station, but as described below, the completion of the East Side Access project will result in new Long Island Rail Road service to Grand Central Terminal.

SUBWAY

Five NYCT subway routes have station stops in proximity to the development parcels. The Lexington Avenue Line (4, 5, and 6 trains) provides local (6) and express (4 and 5) service along Manhattan's East Side. The 4 and 5 trains originate in the Bronx, travel through Manhattan via Lexington Avenue, Park Avenue, Lafayette Street, and Broadway, and then cross through the Joralemon Street Tunnel to Brooklyn. The 6 train originates in the Bronx and travels through Manhattan via Lexington Avenue, Park Avenue, and Lafayette Streets to its terminus at Brooklyn Bridge-City Hall. The 4 and 6 trains operate at all times while 5 trains operate on either a truncated route or as a Bronx-only shuttle during off-peak periods. In the vicinity of the development parcels, 4 and 5 trains stop at 42nd Street-Grand Central Station and the 6 train stops at both 42nd Street-Grand Central Station and 33rd Street.

The Flushing Line (7 train) provides 24-hour service between Flushing, Queens and Times Square. During peak periods the Flushing Line operates with local and express service, but express service is in the peak direction only (inbound to Manhattan in the AM and outbound from Manhattan in the PM). The Flushing Line is local during other weekday hours and on weekends. In the vicinity of the development parcels, the Flushing Line stops at 42nd Street-Grand Central Station.

The 42nd Street Shuttle (S train) provides cross-town service between 42nd Street-Grand Central Station and 42nd Street-Times Square Station. The Shuttle is not operational between 12 AM and 6 AM, but the Flushing Line can be used for service between the Grand Central and Times Square Stations during these times.

EXPRESS BUS

The Metropolitan Transportation Authority (MTA) Bus Company was created in September 2004 to assume the operations of seven bus companies that operated under franchises granted by the New York City Department of Transportation. MTA Bus is responsible for the operations of the seven companies, consolidating their operations, maintaining current buses, purchasing new buses to replace the fleet currently in service, and adjusting schedules and route paths to better match travel demand. The following MTA Bus routes have stops in the vicinity of the development parcels:

- BxM1 Riverdale
- BM5 Spring Creek
- QM2 Bay Terrace
- QM2A Bay Terrace/Clearview
- QM3 Little Neck
- QM4 Electchester
- QM10 Lefrak City
- QM12 Forest Hills
- QM16 Neponsit
- QM17 Far Rockaway
- QM18 South Ozone Park
- QM22 Jackson Heights

- QM23 Brooklyn Manor
- QM24 Glendale

NYCT also operates express bus routes with stops in near the development parcels. The X25 route provides service between Grand Central Terminal and the World Financial Center during weekday peak periods. Other routes serve Queens and Staten Island. The following NYCT express buses provide service within the transit study area:

- X2 Hylan Boulevard
- X3 Hylan Boulevard
- X5 Hylan Boulevard
- X22 Tottenville
- X25 Grand Central Terminal to World Financial Center.
- X31 Travis Avenue/Forest Hill Road.
- X68 Floral Park
- X51 Flushing
- X63 Rosedale
- X64 Cambria Heights

The Hampton Jitney provides bus service between Midtown via Third and Lexington Avenues and the North and South Forks of Long Island. The Hampton Jitney operates 7 days per week, year-round. However, service is more frequent during summer months to accommodate the peak tourist season for east end towns.

LOCAL BUS

A number of local and limited stops bus routes serve Manhattan's east side in the vicinity of the development parcels as shown in Table 16-3.

Table 16-3
Local Bus Service within the Study Area

Route No.	Name	Terminals	Weekday Hours of Operation
M15 Local	First and Second Avenues	Second Avenue and East 126th Street to/from South Ferry	All times
M15 Limited	First and Second Avenues	Second Avenue and East 126th Street to/from South Ferry or Park Row/City Hall	Downtown: 5:43AM to 8:01PM Uptown: 6:43AM to 9:37PM
M16	34th Street Cross-town	West 43rd Street/Ninth Avenue to/from FDR Drive/Waterside Plaza	All times
M34	34th Street Cross-town	Jacob Javits Convention Center to/from East 34th Street and FDR Drive	Eastbound: 5:27AM to 12:39AM Westbound: 5:32AM to 1:01AM
M42	42nd Street Cross-town	Twelfth Avenue and West 42nd Street or Jacob Javits Convention Center to/from East 42nd Street and First Avenue	All times
M104	Broadway/42nd Street	West 129th Street and Amsterdam Avenue to/form East 42nd Street and First Avenue	All times

Source: New York City Transit (www.mta.info).

The principal north-south bus route in this area is the M15, which operates along First and Second Avenues between East 126th Street and South Ferry. The M15 has both limited and local stops service. Limited stops buses allow for boarding and alighting only at the major cross-town streets while local buses have stops approximately every two to three blocks. In the vicinity of the development parcels, the M15 Local stops at East 34th, East 36th, East 39th, and East 42nd Streets. The M15 Limited stops at East 34th and East 42nd Streets.

East-west bus service is provided along East 34th and East 42nd Streets. The M16 operates along East 34th Street between the Port Authority Bus Terminal and Waterside Plaza (FDR Drive and 23rd Street). The M34 operates between the Jacob Javits Convention Center (Eleventh Avenue between West 34th and West 42nd Streets) and First Avenue. The M42 provides east-west service along 42nd Street between the Jacob Javits Convention Center and the United Nations (First Avenue and East 42nd Street). The M104 operates along Broadway and 42nd Street between West 129th Street/Amsterdam Avenue and the United Nations. All of the routes have stops at First Avenue in close proximity to the development parcels.

At present, the M15 Local and M15 Limited operate with articulated vehicles, which provide for a capacity of 93 passengers per bus. The M16, M34, M42, and M104 buses operate with standard vehicles that have a capacity of 65 passengers.

FERRY

The East 34th Street ferry terminal is located on East 34th Street at the Franklin Delano Roosevelt (FDR) Drive. Three ferry operators provide commuter and special event ferry service at this Terminal. Table 16-4 summarizes the ferry service available at East 34th Street.

Table 16-4
Ferry Service within the Study Area

Operator	Route
New York Waterway	Port Imperial--West 38th Street--South St. Seaport—East 34th Street--Yankee Stadium.
New York Water Taxi	Hunter's Point—East 34th Street—Schaefer Landing—Fulton Ferry Landing—South Street Seaport—Red Hook—Battery Park—World Financial Center—Pier 45—West 23rd Street—West 44th Street
	Brooklyn Army Terminal—South Street Seaport—East 34th Street—Shea Stadium
Seastreak	Atlantic Highlands, NJ—Pier 11—East 34th Street
	Highlands—Pier 11—East 34th Street

Source: New York City Department of Transportation (www.nyc.gov/html/dot)

CAPACITY AND LOS ANALYSIS

SUBWAY STATION OPERATIONS

It is anticipated that the majority of trips associated with the Proposed Actions would use either Grand Central Station or 33rd Street Station, and that they would tend to use entrances and control areas closest to the development parcels. At 33rd Street, these include stairways and associated control areas at the intersection of Park Avenue and East 33rd Street. At Grand Central Station, these include the stairways and associated control areas along the south side of East 42nd Street, including the separate Flushing Line entrance between Lexington and Third Avenues, entrances from Park Avenue and the Chanin Building, and the entrance on the northwest corner of East 42nd Street and Lexington Avenue. An assessment of the existing

operation of these stairways and control area elements was prepared based on counts conducted in May and June 2004. The analysis was prepared for the AM (7:30 AM to 9:30 AM) and PM (4:30 PM to 6:30 PM) peak commuter periods, when subway ridership is highest.

Table 16-5 summarizes the results for subway stairways analyzed in the existing condition. As shown, the analyzed stairways operate at LOS C or better in the AM and PM peak periods, except as follows.

- The S5 stairway, which leads from the southwest corner of Park Avenue and East 33rd Street to the R232 control area at the 33rd Street Station, operates at LOS D in the AM peak period;
- The S2/P9 stairway, which leads from the northwest corner of Lexington Avenue and East 42nd Street to the R240 control area at Grand Central Station, operates at LOS D in the AM and PM peak periods;
- The P12 stairway, which leads from the mezzanine to the downtown Lexington Avenue Line platform at Grand Central Station, operates at LOS D in the AM peak period;
- The P14 stairway, which leads from the mezzanine to the downtown Lexington Avenue Line platform at Grand Central Station, operates at LOS E in the AM peak period and at LOS D in the PM peak period;
- The P17 stairway, which leads from the mezzanine to the uptown Lexington Avenue Line platform at Grand Central Station, operates at LOS D in the PM peak period;
- The P22 stairway, which leads from the mezzanine to the downtown Lexington Avenue Line platform at Grand Central Station, operates at LOS D in the AM and PM peak periods;
- The P23 stairway, which leads from the mezzanine to the uptown Lexington Avenue Line platform at Grand Central Station, operates at LOS E in the AM peak period and LOS F in the PM peak period;
- The PL9 stairway, which leads from the platform to the escalator bank at the eastern end of the Flushing Line Platform at Grand Central Station, operates at LOS D in the AM and PM peak periods;
- The E204 escalator, which leads from the R241A control area to the PL9 stairway at Grand Central Station, operates at LOS E in the PM peak period.

Table 16-6 shows the existing operation of control area elements (turnstiles and services gates). As shown, control area elements operate at LOS D or better in the AM and PM peak periods.

BUS LINE-HAUL

The assessment of bus line-haul considers the north-south and east-west best routes in closest proximity to the development parcels. These include the M42 and M104, which operate along 42nd Street; the M16 and M34, which operate along 34th Street; and the M15, which operates along First and Second Avenues. Passenger counts and field observations were undertaken at the bus stops closest to the development parcels to evaluate the existing use of these bus routes. Peak hour passenger numbers, bus runs, and critical load values were obtained from NYCT.

Table 16-7 presents the line-haul of local buses within the study area. As shown, these routes currently operate below their guideline capacities in both the AM and PM peak hours.

Table 16-5
Existing Conditions—Subway Stairway Level of Service

Stairway		Actual Width (ft.)	Effective Width (ft.)	AM Peak Period						PM Peak Period					
				15-Minute Volumes		Friction Factor	Capacity	v/c Ratio	LOS	15-Minute Volumes		Friction Factor	Capacity	v/c Ratio	LOS
				Up	Down					Up	Down				
33rd Street Station (6)															
S5	Park Ave./33rd St. (SW corner)	5.25	4.25	482	98	0.80	510	1.14	D	71	221	0.80	510	0.57	B
S6	Park Ave./33rd St. (SE corner)	5.20	4.20	140	28	0.80	504	0.33	A	45	214	0.80	504	0.51	B
S7	Park Ave./33rd St. (SE corner)	5.20	4.20	125	66	0.90	567	0.34	A	65	100	0.90	567	0.29	A
S8	Park Ave./33rd St. (NW corner)	5.00	4.00	332	137	0.80	480	0.98	C	120	144	0.90	540	0.49	B
S9	Park Ave./33rd St. (NE corner)	6.50	6.00	143	82	0.90	810	0.28	A	44	217	0.80	540	0.48	B
Grand Central Station (4/5/6/7/S)															
S2 (P9)	Lexington Ave. Entrance Stairs	8.00	7.00	885	105	0.80	840	1.18	D	291	675	0.80	840	1.15	D
SB2-SB4	42nd St. Entrance Stairs	10.00	9.00	147	30	0.80	1080	0.16	A	21	143	0.80	1080	0.15	A
O27	Chrysler Entrance Stairs	12.00	10.00	60	731	0.80	1200	0.66	B	672	20	0.80	1200	0.58	B
O29	42nd St. Entrance Stairs	6.00	5.00	3	0	1.00	750	0.00	A	1	22	0.80	600	0.04	A
EO29	42nd St. Entrance Escalator	2.70	2.70	84	0	1.00	528	0.16	A	29	0	1.00	405	0.07	A
M8/M10	Mezzanine Stairs to Grand Central Concourse	19.30	16.30	1,064	769	0.90	2201	0.83	C	846	930	0.90	2201	0.81	C
O12/O15	Park Ave. (North stairway)	4.90	3.90	64	6	0.80	468	0.15	A	52	141	0.80	468	0.41	A
O13/O16	Park Ave. (South stairway)	4.90	3.90	142	41	0.80	468	0.39	A	18	419	0.80	468	0.93	C
CP	Passageway to Chanin Building	10.00	9.00	589	22	0.80	1080	0.57	B	60	427	0.80	1080	0.45	B
P12	Downtown 4/5/6 Platform Stairs	10.00	9.00	708	693	0.90	1215	1.15	D	326	458	0.90	1215	0.64	B
P13	Uptown 4/5/6 Platform Stairs	10.00	9.00	468	95	0.80	1080	0.52	B	357	509	0.90	1215	0.71	C
P14	Downtown 4/5/6 Platform Stairs	10.00	9.00	411	1,082	0.80	1080	1.38	E	162	1,031	0.80	1080	1.10	D
P15	Uptown 4/5/6 Platform Stairs	10.00	9.00	362	170	0.80	1080	0.49	B	318	566	0.90	1215	0.73	C
P17	Uptown 4/5/6 Platform Stairs	10.00	9.00	353	310	0.90	1215	0.55	B	502	778	0.90	1215	1.05	D
P18	Downtown 4/5/6 Platform Stairs	10.00	9.00	615	566	0.90	1215	0.97	C	326	335	0.90	1215	0.54	B
P19	Uptown 4/5/6 Platform Stairs	10.00	9.00	279	177	0.90	1215	0.38	A	299	318	0.90	1215	0.51	B
P20	Downtown 4/5/6 Platform Stairs	10.00	9.00	527	285	0.90	1215	0.67	B	141	375	0.80	1080	0.48	B
P21	Uptown 4/5/6 Platform Stairs	10.00	9.00	710	48	0.80	1080	0.70	C	477	335	0.90	1215	0.67	B
P22	Downtown 4/5/6 Platform Stairs	6.50	5.50	500	338	0.90	743	1.13	D	98	596	0.80	660	1.05	D
P23	Uptown 4/5/6 Platform Stairs	6.50	5.50	872	84	0.80	660	1.45	E	698	642	0.90	743	1.80	F
PL9	Flushing Platform Stairs	10.00	8.00	1,086	55	0.80	960	1.19	D	46	999	0.80	960	1.09	D
E203	Flushing Platform Escalator	2.70	2.70	591	0	1.00	765	0.77	D	46	0	1.00	765	0.06	A
E204	Flushing Platform Escalator	2.70	2.70	462	0	1.00	765	0.60	D	0	626	1.00	765	0.82	E
ML1-ML5	Flushing Platform Stairs	6.00	5.00	33	55	0.90	675	0.13	A	0	373	1.00	750	0.50	B

Table 16-6
Existing Conditions—Subway Control Area Level of Service

Station Element	Quantity	AM Peak Period					PM Peak Period				
		15-Minute Volume		Capacity	v/c Ratio	LOS	15-Minute Volume		Capacity	v/c Ratio	LOS
		In	Out				In	Out			
33rd Street Station (6)											
R231 Control Area											
Two-Way Turnstiles	6	176	408	2880	0.20	B	531	154	2880	0.24	B
R232 Control Area											
Two-Way Turnstiles	7	235	814	3360	0.31	B	365	191	3360	0.17	A
Grand Central Station (4567S)											
R237 Control Area											
Two-Way Turnstiles	7	93	223	3360	0.09	A	703	63	3360	0.23	B
Exit Gate	1	0	112	450	0.25	B	0	30	450	0.07	A
R237B Control Area											
Two-Way Turnstiles	4	22	589	1920	0.32	B	427	60	1920	0.25	B
R240 Control Area											
Two-Way Turnstiles	11	1,605	2,009	5280	0.68	D	1,605	1,809	5280	0.65	D
R241A Control Area											
Two-Way Turnstiles	5	0	3	2400	0.00	A	22	1	2400	0.01	A

Table 16-7
Existing Conditions—AM and PM Peak Hour Bus Line-Haul

Route		Type of Route	AM Peak Hour				PM Peak Hour			
			Buses per Hour	Hourly Capacity	Hourly Peak Load Volume	Average Riders per Bus	Buses per Hour	Hourly Capacity	Hourly Peak Load Volume	Average Riders per Bus
M15	NB	Articulated	26	2418	1885	73	19	1767	1055	56
	SB	Articulated	26	2418	1456	56	18	1674	1135	63
M16/M34	EB	Standard	17	1105	933	55	12	780	554	46
	WB	Standard	15	975	725	48	12	780	602	50
M42	EB	Standard	29	1885	1297	45	15	975	376	25
	WB	Standard	11	715	315	29	14	910	535	38
M104	EB	Standard	7	455	291	42	10	650	307	31
	WB	Standard	6	390	125	21	12	780	447	37

Source: New York City Transit.

PEDESTRIAN CIRCULATION

A pedestrian study area was developed that includes the sidewalks and intersections along First Avenue as well as those along cross-town streets that would be used to access the development parcels from Grand Central Terminal, nearby subway stations, and bus stops. This study area includes a total of 19 intersections and the adjoining mid-block sidewalk locations. Pedestrian counts were conducted in May and June 2004 at the analysis locations and were reviewed to determine the peak 15-minute AM, midday, and PM peak period volumes.

Figures 16-3 through 16-5 summarize the existing LOS analysis results for the study area's sidewalks, corner reservoirs, and crosswalks. Summary tables are presented in Appendix D, "Transit and Pedestrians." As shown, all of the analysis locations operate at LOS D or better in

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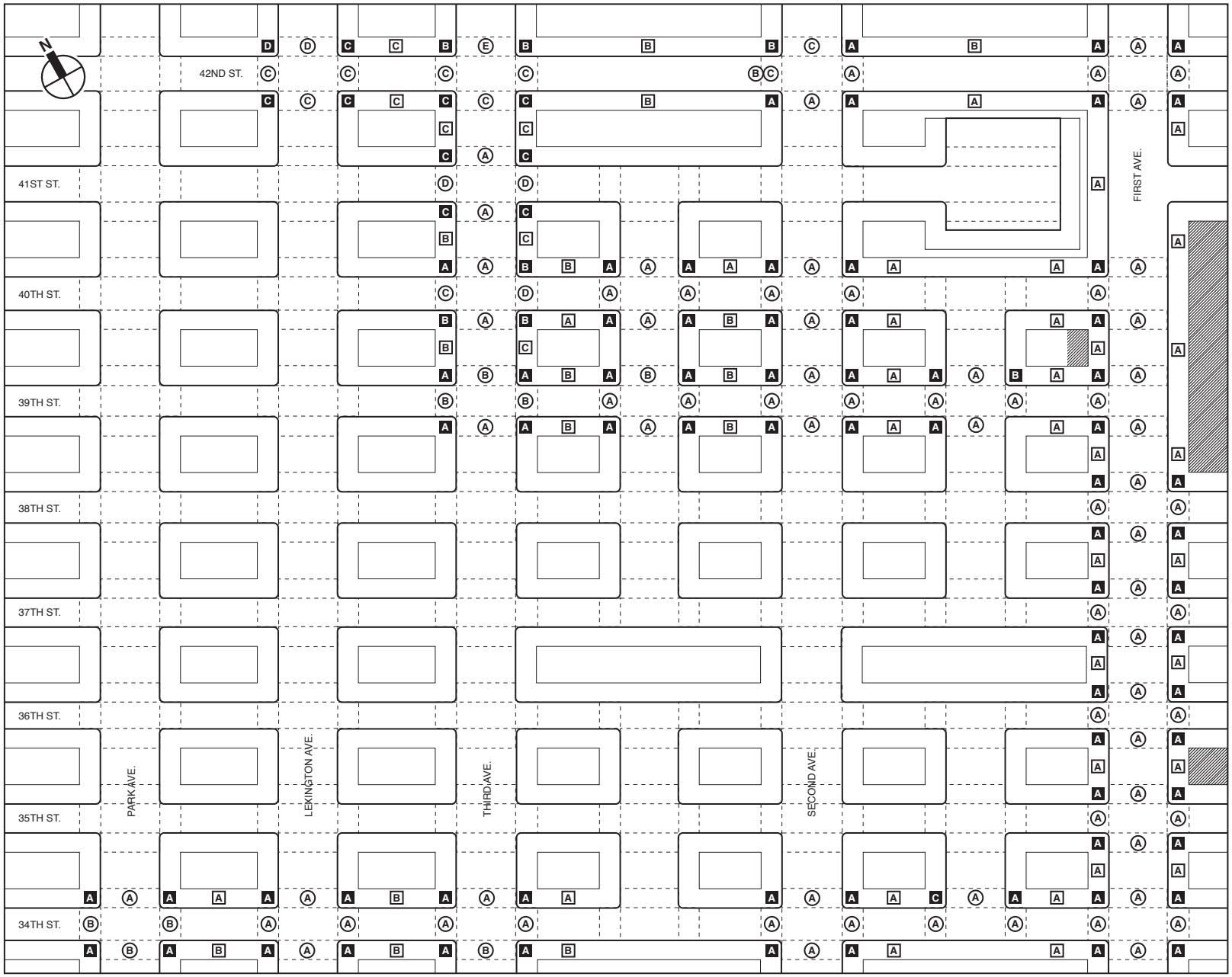
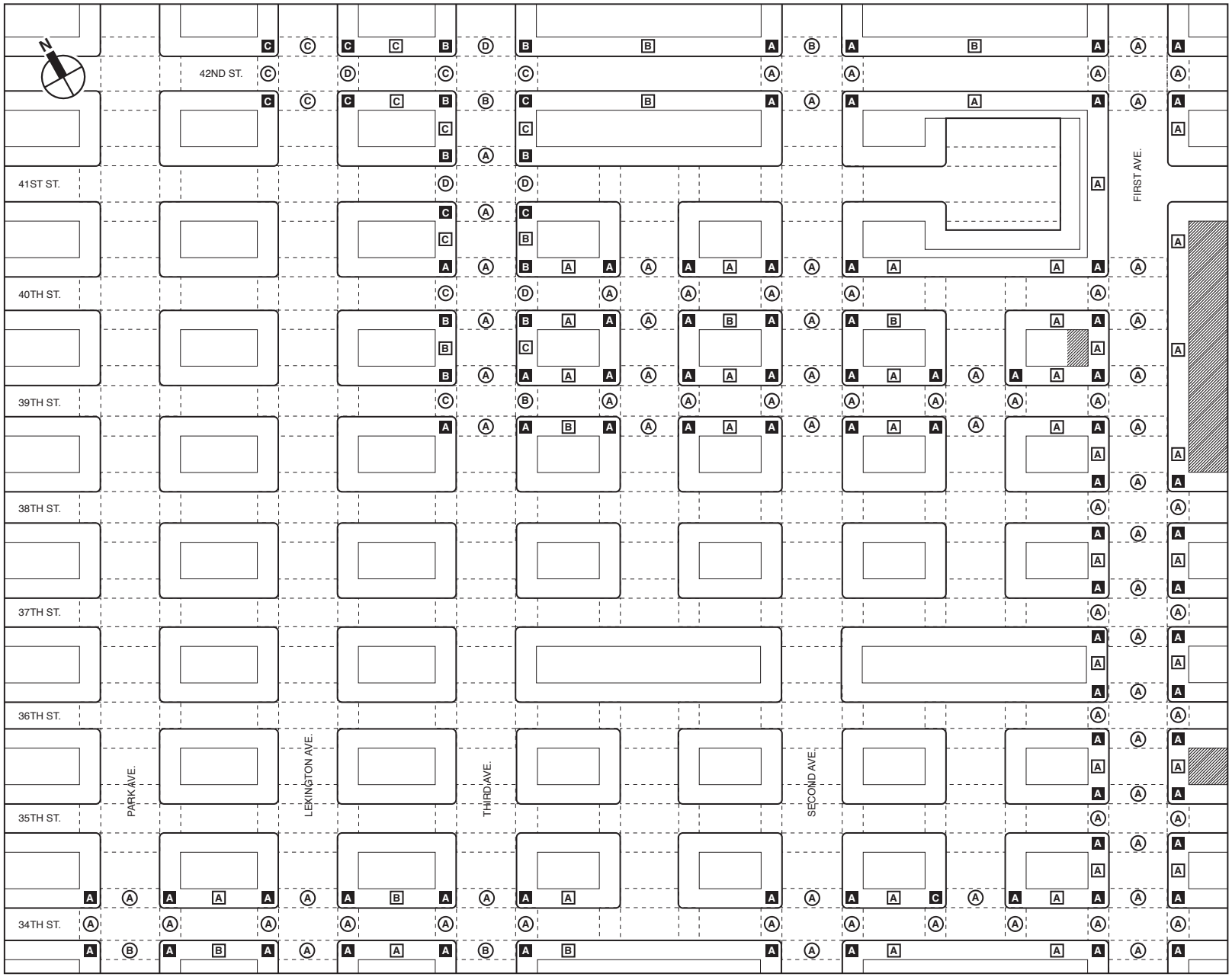


NOT TO SCALE

Existing AM Pedestrian LOS

Figure 16-3

1.14.08



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Existing Midday Pedestrian LOS

Figure 16-4

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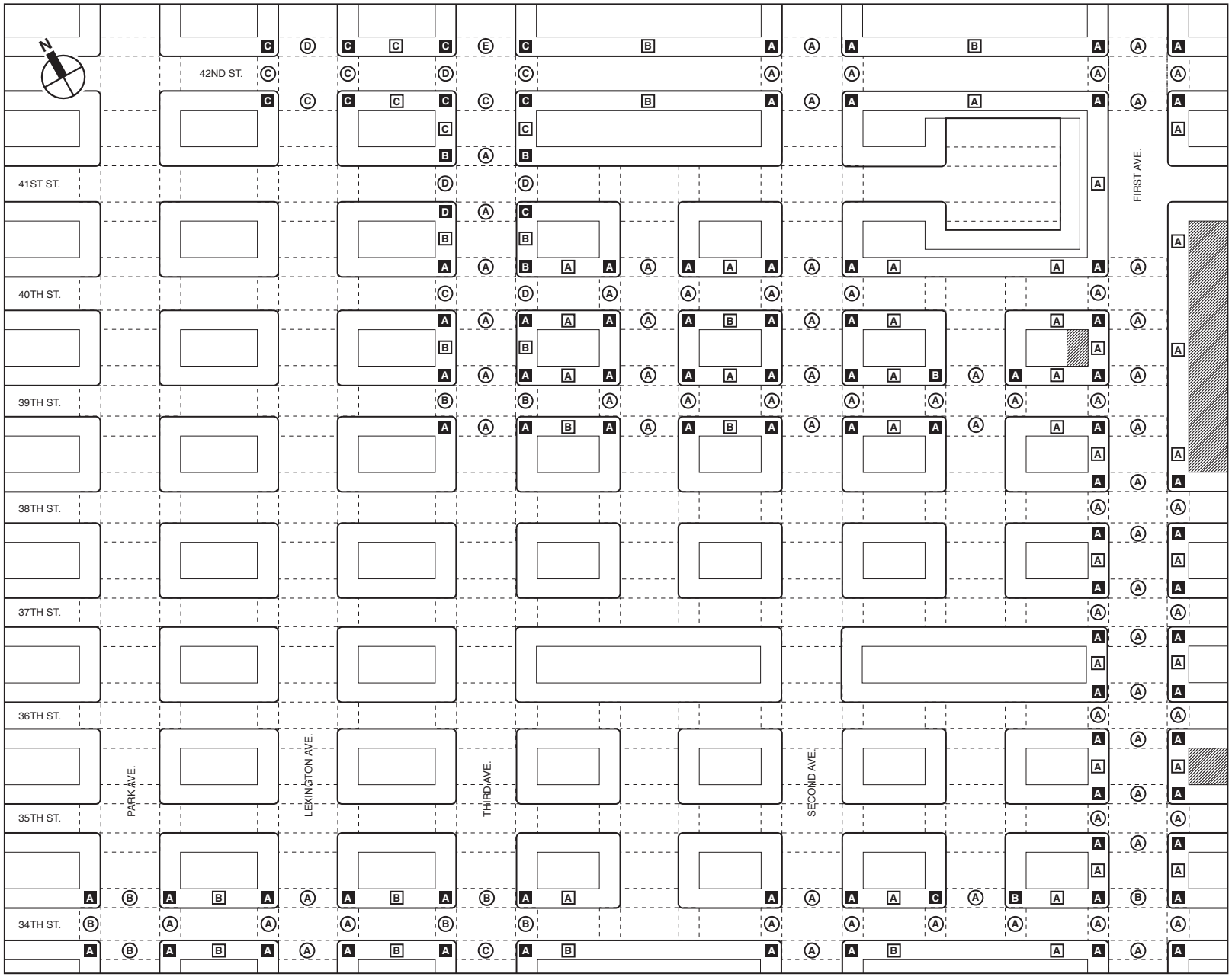

NOT TO SCALE

Existing PM Pedestrian LOS

Figure 16-5

FIRST AVENUE PROPERTIES REZONING

the existing condition except for the north crosswalk at East 42nd Street and Third Avenue, which operates at LOS E in the AM and PM peak periods.

E. FUTURE WITHOUT THE PROPOSED ACTIONS

Transit and pedestrian conditions in 2014 without the Proposed Actions were assessed to establish a baseline ("No Build") condition against which the potential project impacts were evaluated. This analysis incorporates general background growth and the effects of nearby developments that may affect transit service and pedestrian movements in the study area.

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Transit and pedestrian volumes in the future without the Proposed Actions were estimated by first applying a background growth of 0.5 percent per year (as recommended by the 2001 *CEQR Technical Manual*). The future without the Proposed Actions condition also accounts for transit and pedestrian trips associated with planned projects in the vicinity of the development sites (detailed in Chapter 2, "Land Use, Zoning, and Public Policy") that would use the same transit and pedestrian facilities which would be used by the future occupants and visitors of the development parcels. Trips generated by these No Build projects were assigned to the transit and pedestrian analysis locations described earlier.

TRANSIT IMPROVEMENTS

Four projects will result in the enhancement of transit service for the study area—East Side Access, full-length Second Avenue Subway, Flushing Line Extension, and East 34th Street Ferry Terminal. The East Side Access, Flushing Line Extension, and East 34th Street Ferry Terminal projects are expected to be implemented within the analysis timeframe for this SEIS and have been assumed as part of the No Build condition. The Second Avenue Subway will not be completed until after 2014; however, once operational, it will substantially improve transit access to the development parcels and ease the demand on some existing facilities.

EAST SIDE ACCESS

MTA Capital Construction is currently constructing various elements of the East Side Access project, with completion anticipated in 2013. East Side Access will provide direct LIRR service to Grand Central Terminal via the 63rd Street Tunnel. In addition to providing for LIRR commuter rail service to Grand Central Terminal, the East Side Access project will implement capacity enhancements at the 42nd Street-Grand Central Subway Station to support projected ridership growth. These improvements will include:

- Construction of a new turnstile bank west of the existing R238 control area to attract passengers from the free passageway area into the mezzanine far zone to relieve crowding of the M6ABC/M7ABC stairways and associated escalators;
- Construction of a new P10 staircase to provide access between the mezzanine level and the downtown Lexington Avenue Line platform;
- Restoration of the P16 staircase to increase access between the mezzanine level and the downtown Lexington Avenue Line platform; and
- Enlargement of the R238 control area.

These improvements were assumed as part of the No Build conditions assessment for this SEIS.

The East Side Access project also committed to pedestrian mitigation at the intersection of East 42nd Street and Lexington Avenue. However, based on a review of the existing conditions assessment for this SEIS, it appears that the recommended pedestrian mitigation measures have already been implemented at this location.

SECOND AVENUE SUBWAY

The full-length Second Avenue Subway will be an 8.5 mile route operating along Second Avenue and Water Street between East 125th Street and Hanover Square. The new full-length subway line will allow for two new train routes. One route will travel the full length of the Second Avenue Subway, and the second route will travel along Second Avenue from East 125th Street to East 63rd Street, west along 63rd Street using existing tracks to Seventh Avenue, and then south to provide express service along the Broadway Line.

MTA plans to open the Second Avenue Subway in segments. The first segment will be constructed between East 96th Street and East 63rd Street and will allow for the extension of Broadway Line express service (Q trains) to the Upper East Side. MTA will then construct segments of the subway north of East 96th Street and south of East 63rd Street and would have phased openings.

In the vicinity of the development parcels, there will be new subway stations at Second Avenue and East 42nd Street and Second Avenue and East 34th Street. However, based on the current construction schedule, stations in the vicinity of the project site will not be constructed until after 2014. Therefore, they have not been assumed in the No Build conditions analysis for this SEIS.

It should be noted that MTA's design team has received information regarding the proposed buildings on the development parcels. The designers are considering the transit demand that will be generated by this project and are incorporating these potential riders into their planning for the new subway stations on Second Avenue.

FLUSHING (7) LINE EXTENSION

MTA Capital Construction is in the design phase for the proposed extension of the Flushing Line from Times Square to the Jacob Javits Convention Center on Manhattan's West Side. The proposed route extends west from Times Square across West 41st Street with a station at Tenth Avenue and West 41st Street. The alignment continues west and turns south on Eleventh Avenue with a station at Eleventh Avenue and West 34th Street. The project's FGEIS identified 2010 as the expected year of completion for the Flushing Line Extension.

In addition to the construction of the Flushing Line Extension, MTA will implement capacity enhancements at existing subway stations to support anticipated ridership growth on the 7 train. At 42nd Street-Grand Central Station, these enhancements will result in a number of changes that will affect the stairways and escalators analyzed in this SEIS as follows:

- Restoration of the P16 staircase, to provides access between the mezzanine level and the downtown Lexington Avenue Line platform, which is also a commitment of the East Side Access project;

The extension of the Flushing Line is being done in conjunction with a rezoning of the Hudson Yards, which will result in substantial new residential and commercial development west of Ninth Avenue. New service will be required on existing bus routes to accommodate trips

associated with these residential and commercial buildings. Therefore, the M16, M34, and M42 bus routes are expected to operate with increased peak hour service. Increased service will also be provided on the M42 bus route.

The planned bus service adjustments have been reflected in the 2014 No Build conditions analysis for this SEIS. The above-described improvements at Grand Central Station are part of the 2025 mitigation commitments of the *No. 7 Subway Extension—Hudson Yards Rezoning and Development Program FGEIS*; therefore, the new P24 and P25 stairways were not assumed in this analysis. Because the reopening of the P16 stairway is also a commitment of the East Side Access project with a planned implementation before 2014, it was assumed to be in place for the No Build conditions analysis that follows.

EAST 34TH STREET FERRY TERMINAL

The Federal Transit Administration has provided funds to upgrade the East 34th Street ferry terminal. These upgrades would enhance the capacity of the terminal, which would allow for expanded service on existing routes as well as new service to New Jersey and LaGuardia Airport. The improvements and resultant increase in service at the East 34th Street ferry terminal will generate new bus and walk trips in the study area. This increase in riders and pedestrians has been accounted for in the No Build condition for this SEIS.

CAPACITY AND LOS ANALYSIS

SUBWAY STATION OPERATIONS

As described above, the East Side Access and Flushing (7) Line Extension projects will provide for additional capacity within Grand Central Station. Combined, these projects will result in four new stairways between the platform and mezzanine levels (P10, P16, P24, and P25). These new stairways are reflected in the following analysis of Grand Central Station based on the dimensions presented in the environmental documents for East Side Access and the Hudson Yards Rezoning and Development Project.

Table 16-8 summarizes the results for subway stairways in the 2014 No Build condition. As shown, there will be some improvement in conditions within Grand Central Station since new stairways will provide for additional capacity. Analysis locations are expected to operate at LOS C or better in the AM and PM peak periods, except as follows:

- The S5 stairway, which leads from the southwest corner of Park Avenue and East 33rd Street to the R232 control area at the 33rd Street Station, will operate at LOS D in the AM peak period;
- The S8 stairway, which leads from the southwest corner of Park Avenue and East 33rd Street to the R232 control area at the 33rd Street Station, will operate at LOS D in the AM peak period;
- The S2/P9 stairway, which leads from the northwest corner of Lexington Avenue and East 42nd Street to the R240 control area at Grand Central Station, will operate at LOS D in the AM and PM peak periods;
- The P17 stairway, which leads from the mezzanine to the uptown Lexington Avenue Line platform at Grand Central Station, will operate at LOS D in the PM peak period;

Table 16-8
2014 No Build Conditions—Subway Stairway Level of Service

Stairway		Actual Width (ft.)	Effective Width (ft.)	AM Peak Period						PM Peak Period					
				15-Minute Volumes		Friction Factor	Capacity	v/c Ratio	LOS	15-Minute Volumes		Friction Factor	Capacity	v/c Ratio	LOS
				Up	Down					Up	Down				
33rd Street Station (6)															
S5	Park Ave./33rd St. (SW corner)	5.25	4.25	512	103	0.80	510	1.21	D	75	237	0.80	510	0.61	B
S6	Park Ave./33rd St. (SE corner)	5.20	4.20	149	30	0.80	504	0.35	A	48	227	0.80	504	0.54	B
S7	Park Ave./33rd St. (SE corner)	5.20	4.20	135	69	0.90	567	0.36	A	69	108	0.90	567	0.31	A
S8	Park Ave./33rd St. (NW corner)	5.00	4.00	407	155	0.80	480	1.17	D	140	207	0.90	540	0.64	B
S9	Park Ave./33rd St. (NE corner)	6.50	6.00	209	97	0.80	720	0.42	A	60	284	0.80	720	0.48	B
Grand Central Station (4/5/6/7/S)															
S2 (P9)	Lexington Ave. Entrance Stairs	8.00	7.00	941	113	0.80	840	1.25	D	310	721	0.80	840	1.23	D
SB2-SB4	42nd St. Entrance Stairs	10.00	9.00	157	34	0.80	1080	0.18	A	25	153	0.80	1080	0.16	A
O27	Chrysler Entrance Stairs	12.00	10.00	81	769	0.80	1200	0.71	C	709	39	0.80	1200	0.62	B
O29	42nd St. Entrance Stairs	6.00	5.00	11	3	0.80	600	0.02	A	3	32	0.80	600	0.06	A
EO29	42nd St. Entrance Escalator	2.70	2.70	89	0	1.00	405	0.22	B	32	0	1.00	405	0.08	A
M8/M10	Mezzanine Stairs to Grand Central Concourse	19.30	16.30	1,128	951	0.90	2201	0.95	C	969	980	0.90	2201	0.89	C
O12/O15	Park Ave. (North stairway)	4.90	3.90	67	6	0.80	468	0.16	A	55	148	0.80	468	0.43	A
O13/O16	Park Ave. (South stairway)	4.90	3.90	149	43	0.80	468	0.41	A	19	440	0.80	468	0.98	C
CP	Passageway to Chanin Building	10.00	9.00	619	26	0.80	1080	0.60	B	65	450	0.80	1080	0.48	B
P10	Downtown 4/5/6 Platform Stairs	10.00	9.00	370	443	0.90	1215	0.67	B	197	232	0.90	1215	0.35	A
P12	Downtown 4/5/6 Platform Stairs	10.00	9.00	379	456	0.90	1215	0.69	B	218	253	0.90	1215	0.39	A
P13	Uptown 4/5/6 Platform Stairs	10.00	9.00	494	126	0.80	1080	0.57	B	511	536	0.90	1215	0.86	C
P14	Downtown 4/5/6 Platform Stairs	10.00	9.00	432	740	0.90	1215	0.96	C	247	482	0.90	1215	0.60	B
P15	Uptown 4/5/6 Platform Stairs	10.00	9.00	384	273	0.90	1215	0.54	B	457	594	0.90	1215	0.87	C
P16	Downtown 4/5/6 Platform Stairs	10.00	9.00	223	740	0.80	1080	0.89	C	237	482	0.90	1215	0.59	B
P17	Uptown 4/5/6 Platform Stairs	10.00	9.00	376	443	0.90	1215	0.67	B	760	831	0.90	1215	1.31	D
P18	Downtown 4/5/6 Platform Stairs	10.00	9.00	432	740	0.90	1215	0.96	C	247	482	0.90	1215	0.60	B
P19	Uptown 4/5/6 Platform Stairs	10.00	9.00	294	266	0.90	1215	0.46	B	497	349	0.90	1215	0.70	B
P20	Downtown 4/5/6 Platform Stairs	10.00	9.00	563	354	0.90	1215	0.75	C	163	401	0.80	1080	0.52	B
P21	Uptown 4/5/6 Platform Stairs	10.00	9.00	755	80	0.80	1080	0.77	C	527	358	0.90	1215	0.73	C
P22	Downtown 4/5/6 Platform Stairs	6.50	5.50	537	408	0.90	743	1.27	D	114	633	0.80	660	1.13	D
P23	Uptown 4/5/6 Platform Stairs	6.50	5.50	928	143	0.80	660	1.62	E	760	682	0.90	743	1.94	F
PL9	Flushing Platform Stairs	10.00	8.00	1,150	77	0.80	960	1.28	D	64	1,059	0.80	960	1.17	D
E203	Flushing Platform Escalator	2.70	2.70	623	0	1.00	765	0.81	E	81	0	1.00	765	0.11	A
E204	Flushing Platform Escalator	2.70	2.70	485	0	1.00	765	0.63	D	0	661	1.00	765	0.86	E
ML1-ML5	Flushing Platform Stairs	6.00	5.00	43	99	0.80	600	0.24	A	0	394	1.00	750	0.53	B

- The P22 stairway, which leads from the mezzanine to the uptown Lexington Avenue Line platform at Grand Central Station, will operate at LOS D in the AM and PM peak periods;
- The P23 stairway, which leads from the mezzanine to the uptown Lexington Avenue Line platform at Grand Central Station, will operate at LOS E in the AM peak period and LOS F in the PM peak period;
- The PL9 stairway, which leads from the platform to the escalator bank at the eastern end of the Flushing Line Platform at Grand Central Station, will operate at LOS D in the AM and PM peak periods;
- The E203 escalator, which leads from the R241A control area to the PL9 stairway at Grand Central Station, will operate at LOS E in the AM peak period; and
- The E204 escalator, leading from the R241A control area to the PL9 stairway at Grand Central Station, will operate at LOS D and E in the AM and PM peak periods, respectively.

Table 16-9 shows the 2014 No Build operation of control area elements. As shown, these elements will operate at LOS D or better during the AM and PM peak periods.

Table 16-9
2014 No Build Conditions—Subway Control Area Level of Service

Station Element	Quantity	AM Peak Period					PM Peak Period				
		15-Minute Volume		Capacity	v/c Ratio	LOS	15-Minute Volume		Capacity	v/c Ratio	LOS
		In	Out				In	Out			
33rd Street Station (6)											
R231 Control Area											
Two-Way Turnstiles	6	208	522	2880	0.25	B	657	188	2880	0.29	B
R232 Control Area											
Two-Way Turnstiles	7	275	977	3360	0.37	B	471	229	3360	0.21	B
Grand Central Station (4567S)											
R237 Control Area											
Two-Way Turnstiles	7	107	252	3360	0.11	A	792	73	3360	0.26	B
Exit Gate	1	0	126	450	0.28	B	0	34	450	0.08	A
R237B Control Area											
Two-Way Turnstiles	4	27	662	1920	0.36	B	480	70	1920	0.29	B
R240 Control Area											
Two-Way Turnstiles	11	1,805	2,283	5280	0.77	D	1,831	2,037	5280	0.73	D
R241A Control Area											
Two-Way Turnstiles	5	3	67	2400	0.03	A	84	5	2400	0.04	A

BUS LINE-HAUL

It is anticipated that ridership will increase on express buses by 2014. MTA Bus and NYCT will continue to monitor express bus service and will adjust the number of runs to meet demand.

As described above, the trips associated with the Hudson Yards Rezoning and Development Project will increase demand for the M16/M34 and M42 bus routes. The FGEIS for that project recommended that additional runs occur during peak hours. As shown in Table 16-10, the provision of additional service on these routes as well as existing capacity on M15 buses will ensure that buses will operate at or below guideline capacities in the 2014 No Build condition.

Table 16-10
2014 No Build Conditions—AM and PM Peak Hour Bus Line-Haul

Route		Type of Route	AM Peak Hour				PM Peak Hour			
			Buses per Hour	Hourly Capacity	Hourly Peak Load Volume	Average Riders per Bus	Buses per Hour	Hourly Capacity	Hourly Peak Load Volume	Average Riders per Bus
M15	NB	Articulated	26	2418	2020	78	19	1767	1166	61
	SB	Articulated	26	2418	1570	60	18	1674	1250	69
M16/M34	EB	Standard	18 (+1)	1170	1121	62	23 (+11)	1495	1493	65
	WB	Standard	26 (+11)	1690	1680	65	13 (+1)	845	816	63
M42	EB	Standard	29	1885	1531	53	17 (+2)	1105	1060	62
	WB	Standard	14 (+3)	910	907	65	14	910	746	53
M104	EB	Standard	7	455	382	55	10	650	556	56
	WB	Standard	6	390	247	41	12	780	539	45

Note: Numbers in parentheses indicate the additional runs required to meet 2014 No Build demand.
Source: New York City Transit.

PEDESTRIAN CIRCULATION

Figures 16-6 through 16-8 show the 2014 No Build conditions analysis results for the study area's sidewalks, corner reservoirs, and crosswalks. All of the pedestrian analysis locations will continue to operate at LOS D or better in the 2014 No Build condition except for the following:

- The north crosswalk at East 42nd Street and Lexington Avenue will operate at LOS E in the AM peak period, and
- The north crosswalk at East 42nd Street and Third Avenue will operate at LOS E in the midday peak period and at LOS F in the AM and PM peak periods.

F. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The analysis of potential transit and pedestrian impacts associated with the Proposed Actions begins with and builds on the No Build condition described in the preceding section.

TRIP GENERATION AND ASSIGNMENT

Chapter 15, "Traffic and Parking," describes the trip generation analysis used for this study. Table 16-11 shows the estimated number of new transit and pedestrian trips that would result from the Proposed Actions.

Based on the analysis developed for the FGEIS, it was assumed that the majority of commuter rail passengers would use Metro-North or LIRR to Grand Central Terminal. The remainder would use NJ Transit to Penn Station and transfer to a subway or bus to reach the development parcels.

Subway trips were assigned to the two analysis stations according to the location of each of the development parcels. All of the trips for 685 First Avenue, 700 First Avenue, and 708 First Avenue were assigned to Grand Central Station and were distributed to its various entrances and control areas according to existing travel patterns. Trips to 616 First Avenue were divided such that 75 percent would use 33rd Street and 25 percent would use Grand Central. Their assignment to the various control areas and stairways was based on the location of these elements relative to the likely routes of travel to and from the development parcels.

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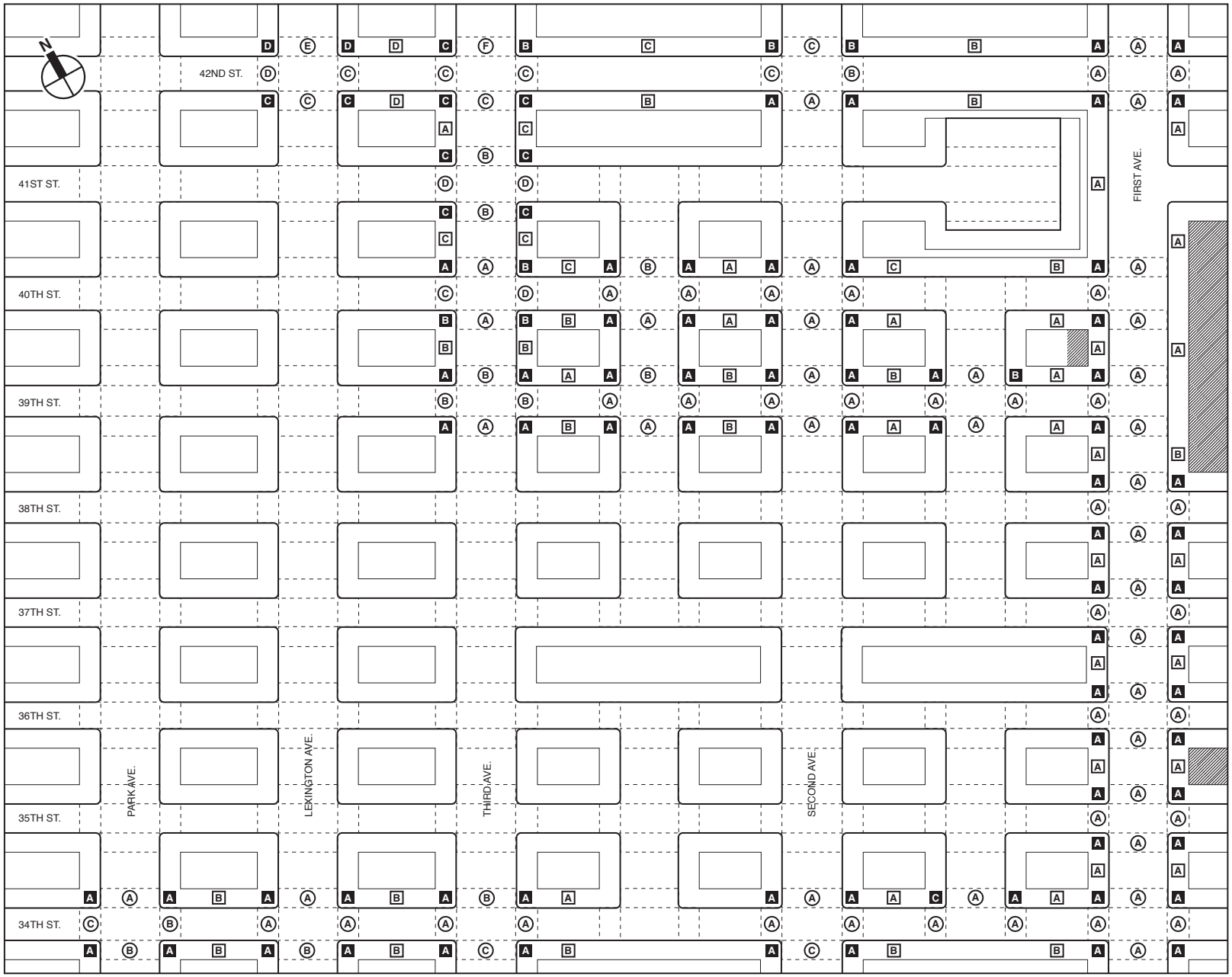

NOT TO SCALE

No Build AM Pedestrian LOS

Figure 16-6

FIRST AVENUE PROPERTIES REZONING

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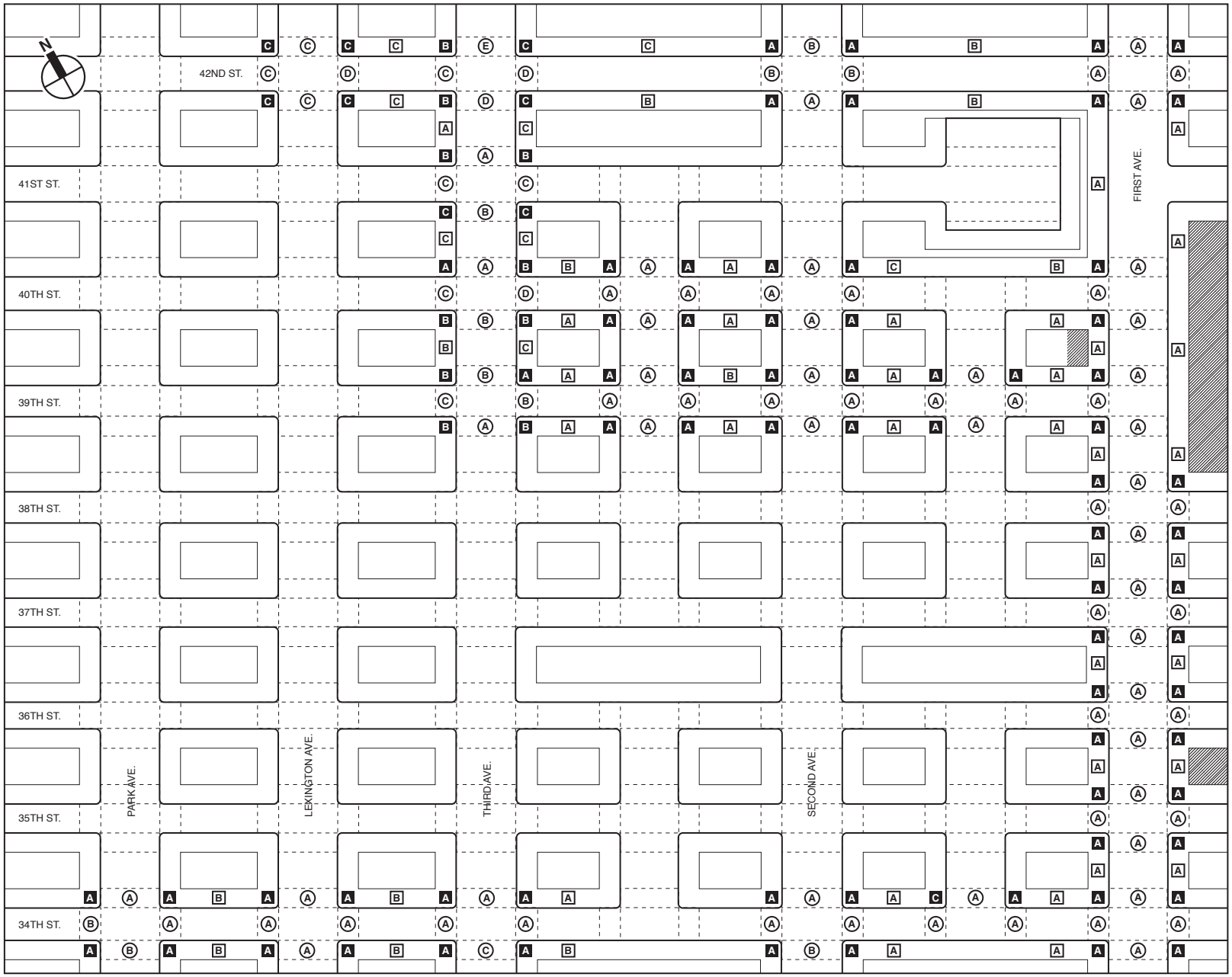

NOT TO SCALE

No Build Midday Pedestrian LOS

Figure 16-7

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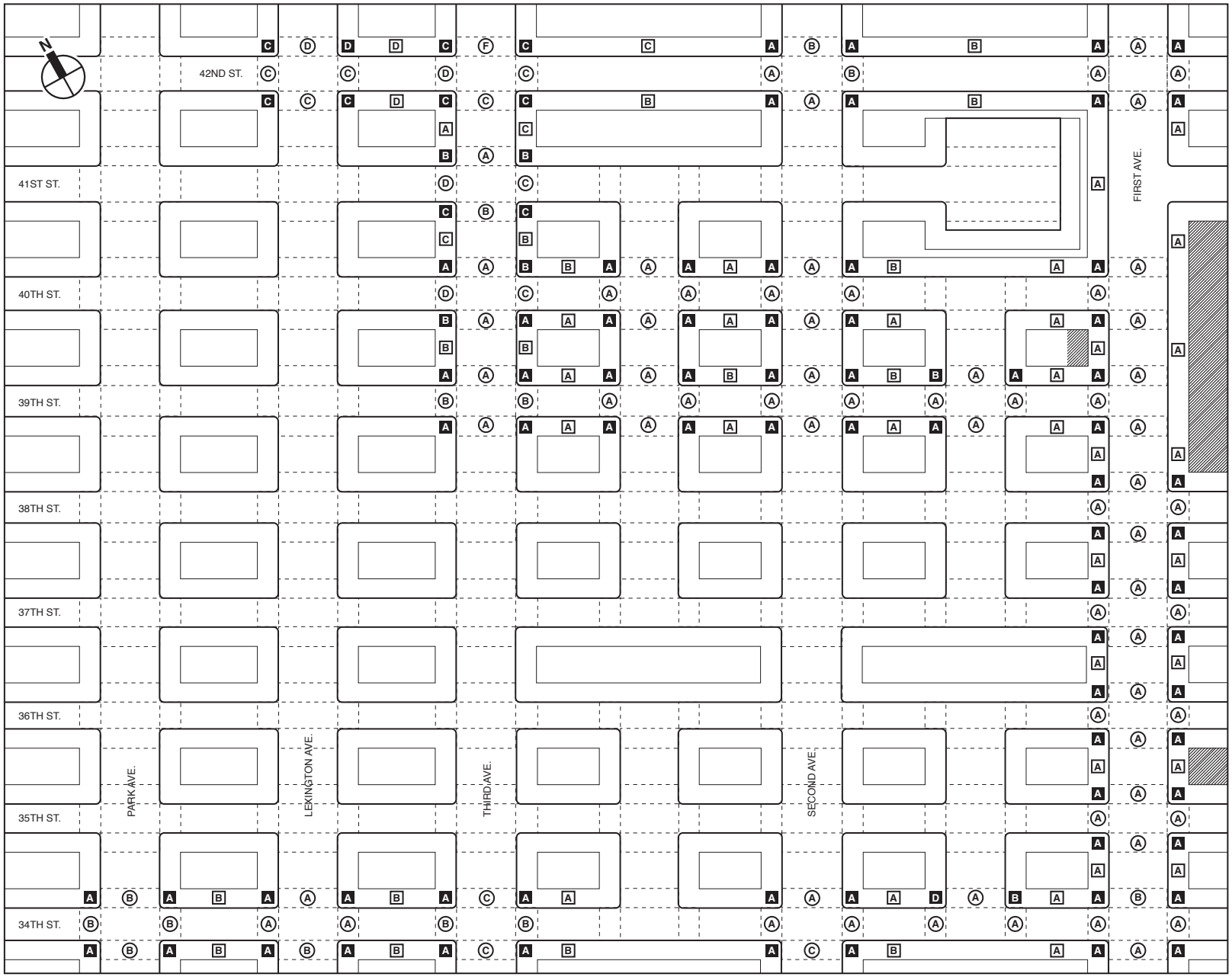


NOT TO SCALE

No Build PM Pedestrian LOS

Figure 16-8

Table 16-11
Project-Generated Weekday Peak Hour Transit and Pedestrian Person Trips

Site	Subway		Bus		Rail		Walk Only	
	In	Out	In	Out	In	Out	In	Out
AM PEAK HOUR								
616 First Avenue	381	216	137	99	62	14	190	289
685 First Avenue	23	132	13	73	2	13	58	319
700 First Avenue	50	281	27	154	5	28	119	674
708 First Avenue	1314	56	438	18	344	14	566	26
Open Space	0	0	0	0	0	0	24	24
Total	1768	685	615	344	413	69	957	1332
MIDDAY PEAK HOUR								
616 First Avenue	79	100	35	43	3	3	139	146
685 First Avenue	45	45	23	23	4	4	124	124
700 First Avenue	157	144	76	71	9	9	416	377
708 First Avenue	130	140	121	131	0	0	1710	1848
Open Space	0	0	0	0	0	0	57	57
Total	411	429	255	268	16	16	2446	2552
PM PEAK HOUR								
616 First Avenue	150	298	71	111	19	58	272	220
685 First Avenue	130	57	70	30	13	5	319	145
700 First Avenue	337	186	175	92	27	12	843	487
708 First Avenue	84	1513	27	504	21	395	62	674
Open Space	0	0	0	0	0	0	47	47
Total	701	2054	343	737	80	470	1543	1573

The assignment of bus trips was based on the location of individual development parcels and their proximity to the analysis routes. For 685 First Avenue, 700 First Avenue, and 708 First Avenue, bus trips were divided amongst the M15, M42, and M104 routes. Trips to 616 First Avenue were assigned to the M15 and M16/M34 routes. Riders were also assigned to express bus routes.

The assignment of pedestrian trips between the transit terminals and the development parcels was based on logical patterns of travel. It was assumed that pedestrians would favor the major cross-streets and avenues since they offer a greater number of services en route. Walk only trips were assigned such that 50 percent would enter and exit parcels from the west with the remaining 50 percent evenly distributed between the north and south travel directions.

CAPACITY AND LOS ANALYSIS

SUBWAY STATION OPERATIONS

Table 16-12 summarizes the analysis results for subway stairways in the 2014 Build condition. As shown, all of the analysis locations are projected to operate at LOS C or better in the AM and PM peak periods, except as follows:

- The S5 stairway, which leads from the southwest corner of Park Avenue and East 33rd Street to the R232 control area at the 33rd Street Station, would operate at LOS D in the AM peak period;

Table 16-12
2014 Build Conditions—Subway Stairway Level of Service

Stairway		Actual Width (ft.)	Effective Width (ft.)	AM Peak Period						PM Peak Period					
				15-Minute Volumes		Friction Factor	Capacity	v/c Ratio	LOS	15-Minute Volumes		Friction Factor	Capacity	v/c Ratio	LOS
				Up	Down					Up	Down				
33rd Street Station (6)															
S5	Park Ave./33rd St. (SW corner)	5.25	4.25	542	109	0.80	510	1.28	D	87	245	0.80	510	0.65	B
S6	Park Ave./33rd St. (SE corner)	5.20	4.20	179	35	0.80	504	0.42	A	59	234	0.80	504	0.58	B
S7	Park Ave./33rd St. (SE corner)	5.20	4.20	164	75	0.80	504	0.47	B	80	116	0.90	567	0.35	A
S8	Park Ave./33rd St. (NW corner)	5.00	4.00	417	172	0.80	480	1.23	D	144	231	0.90	540	0.70	B
S9	Park Ave./33rd St. (NE corner)	6.50	6.00	218	114	0.90	810	0.41	A	64	307	0.80	720	0.52	B
Grand Central Station (4/5/6/7/S)															
S2 (P9)	Lexington Ave. Entrance Stairs	8.00	7.00	982	128	0.80	840	1.32	D	326	772	0.80	840	1.31	D
SB2-SB4	42nd St. Entrance Stairs	10.00	9.00	173	43	0.80	1080	0.20	A	35	175	0.80	1080	0.19	A
O27	Chrysler Entrance Stairs	12.00	10.00	115	783	0.80	1200	0.75	C	725	82	0.80	1200	0.67	B
O29	42nd St. Entrance Stairs	6.00	5.00	25	44	0.90	675	0.10	A	9	157	0.80	600	0.28	A
EO29	42nd St. Entrance Escalator	2.70	2.70	180	0	1.00	405	0.45	C	68	0	1.00	405	0.17	A
M8/M10	Mezzanine Stairs to Grand Central Concourse	19.30	16.30	1,136	952	0.90	2201	0.95	C	970	988	0.90	2201	0.89	C
O12/O15	Park Ave. (North stairway)	4.90	3.90	75	7	0.80	468	0.17	A	55	156	0.80	468	0.45	B
O13/O16	Park Ave. (South stairway)	4.90	3.90	155	43	0.80	468	0.42	A	19	446	0.80	468	0.99	C
CP	Passageway to Chanin Building	10.00	9.00	812	91	0.80	1080	0.84	C	142	694	0.80	1080	0.77	C
P10	Downtown 4/5/6 Platform Stairs	10.00	9.00	378	445	0.90	1215	0.68	B	200	242	0.90	1215	0.36	A
P12	Downtown 4/5/6 Platform Stairs	10.00	9.00	386	458	0.90	1215	0.70	B	221	262	0.90	1215	0.40	A
P13	Uptown 4/5/6 Platform Stairs	10.00	9.00	501	129	0.80	1080	0.58	B	514	545	0.90	1215	0.87	C
P14	Downtown 4/5/6 Platform Stairs	10.00	9.00	432	740	0.90	1215	0.96	C	247	482	0.90	1215	0.60	B
P15	Uptown 4/5/6 Platform Stairs	10.00	9.00	407	281	0.90	1215	0.57	B	466	624	0.90	1215	0.90	C
P16	Downtown 4/5/6 Platform Stairs	10.00	9.00	280	754	0.80	1080	0.96	C	253	531	0.80	1080	0.73	C
P17	Uptown 4/5/6 Platform Stairs	10.00	9.00	395	449	0.90	1215	0.69	B	764	843	0.90	1215	1.32	D
P18	Downtown 4/5/6 Platform Stairs	10.00	9.00	452	752	0.90	1215	0.99	C	262	531	0.90	1215	0.65	B
P19	Uptown 4/5/6 Platform Stairs	10.00	9.00	314	278	0.90	1215	0.49	B	515	389	0.90	1215	0.74	C
P20	Downtown 4/5/6 Platform Stairs	10.00	9.00	603	368	0.90	1215	0.80	C	179	496	0.80	1080	0.63	B
P21	Uptown 4/5/6 Platform Stairs	10.00	9.00	814	95	0.80	1080	0.84	C	550	483	0.90	1215	0.85	C
P22	Downtown 4/5/6 Platform Stairs	6.50	5.50	557	415	0.90	743	1.31	D	122	678	0.80	660	1.21	D
P23	Uptown 4/5/6 Platform Stairs	6.50	5.50	948	150	0.80	660	1.66	E	762	692	0.90	743	1.96	F
PL9	Flushing Platform Stairs	10.00	8.00	1,257	117	0.80	960	1.43	E	106	1,185	0.80	960	1.34	E
E203	Flushing Platform Escalator	2.70	2.70	671	0	1.00	765	0.88	E	124	0	1.00	765	0.16	A
E204	Flushing Platform Escalator	2.70	2.70	525	0	1.00	765	0.69	D	0	737	1.00	765	0.96	E
ML1-ML5	Flushing Platform Stairs	6.00	5.00	61	140	0.80	600	0.33	A	0	439	0.80	600	0.73	C

- The S8 stairway, which leads from the southwest corner of Park Avenue and East 33rd Street to the R232 control area at the 33rd Street Station, would operate at LOS D in the AM peak period;
- The S2/P9 stairway, which leads from the northwest corner of Lexington Avenue and East 42nd Street to the R240 control area at Grand Central Station, would operate at LOS D in the AM and PM peak periods;
- The P17 stairway, which leads from the mezzanine to the uptown Lexington Avenue Line platform at Grand Central Station, would operate at LOS D in the PM peak period;
- The P22 stairway, which leads from the mezzanine to the downtown Lexington Avenue Line platform at Grand Central Station, would operate at LOS D in the AM and PM peak periods;
- The P23 stairway, which leads from the mezzanine to the uptown Lexington Avenue Line platform at Grand Central Station, would operate at LOS E in the AM peak period and at LOS F in the PM peak period;
- The PL9 stairway, which leads from the platform to the escalator bank at the eastern end of the Flushing Line Platform at Grand Central Station, would operate at LOS E in the AM and PM peak periods.
- The E203 escalator, which leads from the R241A control area to the PL9 stairway at Grand Central Station, would operate at LOS E in the AM peak period; and
- The E204 escalator, which leads from the R241A control area to the PL9 stairway at Grand Central Station, would operate at LOS D and at LOS E in the AM and PM peak periods, respectively.

Analysis was prepared to determine whether, based on NYCT's impact criteria, the Proposed Actions would result in significant adverse impacts for subway stairways. As shown in Table 16-13, the Proposed Actions would not result in significant adverse impacts on the S5 and S8 stairways at the 33rd Street Station or the S2/P9, P17, P22, and P23 stairways at Grand Central Station. However, the project would result in a significant adverse impact for the PL9 stairway in the AM and PM peak periods. It is anticipated that the impact on the PL9 stairway would occur in 2010 with the completion of the office building on 708 First Avenue.

The Proposed Actions would increase volumes on the E203 and E204 escalators at Grand Central Station. However, both escalators would operate at LOS E or better during peak periods with a v/c ratio of less than 1.00. Based on CEQR criteria, the Proposed Actions would not result in significant adverse impacts on the operation of these escalators.

Table 16-14 shows the 2014 Build operation of control area elements (turnstiles and services gates). As shown, these elements would operate at LOS D or better during the AM and PM peak periods.

BUS LINE-HAUL

The Proposed Actions would generate new demand for the express buses that serve the study area. As shown in Table 16-15, new riders from Queens and Staten Island would be dispersed over several routes, but since the study area is served by only one route each from the Bronx and Brooklyn, ridership demand would be much greater for the BM5 and BxM1 buses. NYCT and MTA Bus

Table 16-13
Analysis of Significant Adverse Subway Stairway Impacts

Stairway		Peak Period	Effective Width (ft.)	15-Minute Capacity	Peak 15-Minute Volume			Build LOS	Required Widening (Inches)
					No Build	Build	Net Change		
33rd Street Station (6)									
S5	Park Avenue/33rd St. (SW corner)	AM	4.25	510	615	651	36	D	3.0
S8	Park Avenue/33rd St. (NW corner)	AM	4.00	480	562	588	27	D	2.3
Grand Central Station (4/5/6/7/S)									
S2/P9	Lexington Avenue Entrance Stairs	AM	7.00	840	1054	1110	57	D	4.5
		PM	7.00	840	1030	1098	68	D	5.5
P17	Uptown 4/5/6 Platform Stairs	PM	9.00	1215	1591	1607	16	D	1.1
P22	Downtown 4/5/6 Platform Stairs	AM	5.50	743	945	972	27	D	1.9
		PM	5.50	660	747	800	53	D	4.7
P23	Uptown 4/5/6 Platform Stairs	AM	5.50	660	1071	1098	27	E	1.7
		PM	5.50	743	1442	1454	12	F	0.5
PL9	Flushing (7) Platform Stairs	AM	8.00	960	1227	1374	148	E	11.6♦
		PM	8.00	960	1123	1291	168	E	14.4♦

Note: ♦ = Significant Adverse Impact

Table 16-14
2014 Build Conditions—Subway Control Area Level of Service

Station Element	Quantity	AM Peak Period					PM Peak Period				
		15-Minute Volume		Capacity	v/c Ratio	LOS	15-Minute Volume		Capacity	v/c Ratio	LOS
		In	Out				In	Out			
33rd Street Station (6)											
R231 Control Area											
Two-Way Turnstiles	6	231	561	2880	0.27	B	688	203	2880	0.31	B
R232 Control Area											
Two-Way Turnstiles	7	297	1,017	3360	0.39	B	502	245	3360	0.22	B
Grand Central Station (4567S)											
R237 Control Area											
Two-Way Turnstiles	7	117	271	3360	0.12	A	829	80	3360	0.27	B
Exit Gate	1	0	136	450	0.30	B	0	38	450	0.08	A
R237B Control Area											
Two-Way Turnstiles	4	93	854	1920	0.49	C	724	146	1920	0.45	C
R240 Control Area											
Two-Way Turnstiles	11	1,835	2,366	5280	0.80	D	1,933	2,070	5280	0.76	D
R241A Control Area											
Two-Way Turnstiles	5	44	174	2400	0.09	A	210	47	2400	0.11	A

routinely evaluate their express bus service plans and adjust schedules to meet ridership demand. It is anticipated that both NYCT and MTA Bus could accommodate project-generated express bus trips as part of their ongoing service adjustments.

Table 16-16 shows the bus line-haul in the 2014 Build condition. The analysis of 2014 Build conditions includes the proposed mitigation measures for the M16/M34 and M42 routes that were identified as part of the 2010 analysis for the Hudson Yards Rezoning and Development Project.

Table 16-15
Project-Generated Express Bus Ridership by Route

Borough	Route	AM Peak Hour	PM Peak Hour
Brooklyn	BM5	43	44
Bronx	BxM1	155	157
Queens	QM2	38	39
	QM2A	24	25
	QM3	3	3
	QM4	20	20
	QM10	11	12
	QM12	11	11
	QM16	3	4
	QM17	6	5
	QM18	4	5
	QM22	1	1
	QM23	0	0
	QM24	35	35
	X68	18	18
	X51	13	13
	X63	21	20
	X64	12	13
Staten Island	X2	10	10
	X3	4	4
	X5	12	13
	X22	10	10
	X31	7	7

Table 16-16
2014 Build Conditions—AM and PM Peak Hour Bus Line-Haul

Route		Type of Route	AM Peak Hour				PM Peak Hour			
			Buses per Hour	Hourly Capacity	Hourly Peak Load Volume	Average Riders per Bus	Buses per Hour	Hourly Capacity	Hourly Peak Load Volume	Average Riders per Bus
M15	NB	Articulated	26	2418	2044	79	19	1767	1198	63
	SB	Articulated	26	2418	1592	61	18	1674	1286	71
M16/M34	EB	Standard	18	1674	1358	75♦	23	2139	1579	69♦
	WB	Standard	26	2418	1730	67♦	13	1209	1034	80♦
M42	EB	Standard	29	1885	2359	81♦	17	1105	1515	89♦
	WB	Standard	14	910	1376	98♦	14	910	1833	131♦
M104	EB	Standard	7	455	400	57	10	650	588	59
	WB	Standard	6	390	276	46	12	780	570	48

Note: ♦ = Significant Adverse Impact
Source: New York City Transit.

NYCT defines a significant adverse impact for bus line-haul if project-generated trips would result in demand that would exceed capacity at the route's peak load point. Based on these criteria, the Proposed Actions would result in significant adverse impacts for the following bus routes:

- The M16/M34 westbound in the AM and PM peak hours;
- The M16/M34 eastbound in the AM and PM peak hours;
- The M42 eastbound in the AM and PM peak hours; and
- The M42 westbound in the AM and PM peak hours.

The impact on the M16/M34 bus route would occur in 2010 with completion of the building at 616 First Avenue. The impacts on the M42 bus route would also begin in 2010 with completion of 708 First Avenue; however, the crowding on this route would not reach the levels predicted in Table 16-5 until development of 685 and 700 First Avenue is complete. Measures to mitigate the project's impacts on bus line-haul are presented in Chapter 23, "Mitigation."

In addition to new local bus trips, the Proposed Actions would generate approximately 500 new express bus trips in each the AM and PM peak hours. It is anticipated that these riders would be dispersed among the 23 bus routes that serve the study area from the Bronx, Brooklyn, Queens, and Staten Island such that the incremental increase in ridership on a given route would not be substantial. While additional service may be needed on certain express bus routes to accommodate new demand, such increases in express bus service do not constitute a significant adverse impact to bus operations. NYCT and MTA Bus routinely evaluate service conditions and adjust bus schedules as necessary to accommodate demand.

PEDESTRIAN CIRCULATION

Figures 16-9 through 16-11 summarize the 2014 Build conditions analysis results for the study area's sidewalks, corner reservoirs, and crosswalks. The Build conditions analysis accounts for the widening of sidewalks along First Avenue in front of the development parcels, which would be implemented as part of the Proposed Actions. As shown, all of the analysis locations operate at LOS D or better in the 2014 Build condition except as follows:

- The north crosswalk at East 42nd Street and Lexington Avenue would operate at LOS E in the AM peak period; and
- The north crosswalk at East 42nd Street and Third Avenue would operate at LOS F in the AM and PM peak periods and at LOS E in the midday peak period.

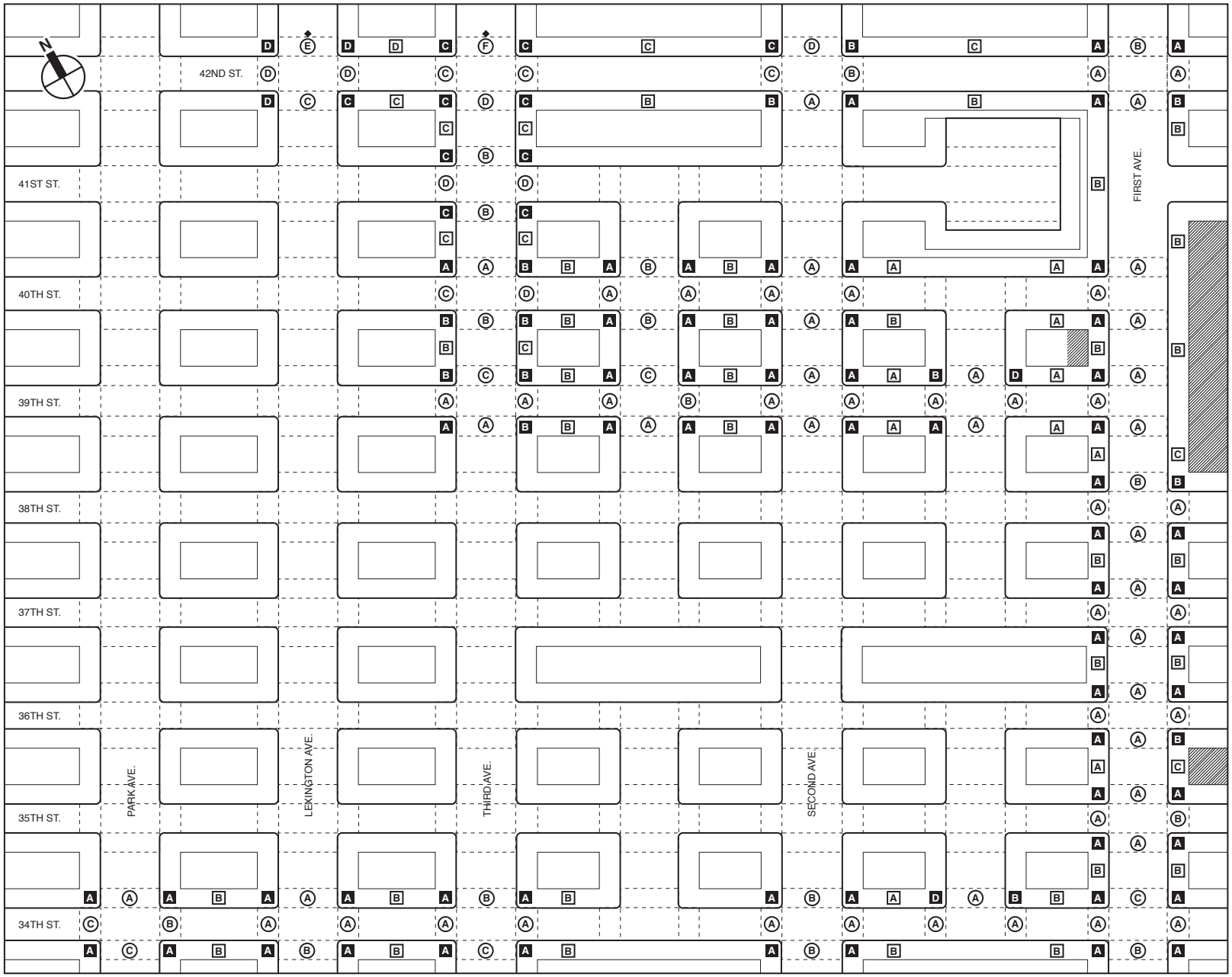
As described in Section C, "Methodology," impacts to sidewalks are considered significant if the proposed project would result in a deterioration in level-of-service from No Build LOS D or better to Build LOS E or F, or when the pedestrian flow is increased by 2 PFM or more at a location with a No Build LOS E or F. Based on these criteria, the Proposed Actions would not result in significant adverse sidewalk impacts.

Impacts to corners and crosswalks are considered significant if the proposed project would result in a deterioration in level-of-service from No Build LOS D or better to Build LOS E or F, or when the available circulation space is decreased by 1 SFP or more at a location with a No Build LOS E or F. Based on these criteria, the proposed project would result in significant adverse impacts at a total of two crosswalk locations as follows:

- The north crosswalk at East 42nd Street and Lexington Avenue in the AM peak period; and
- The north crosswalk at East 42nd Street and Third Avenue in the AM peak period.

Chapter 23, "Mitigation," describes measures to alleviate the impacts of the Proposed Actions on pedestrian circulation.

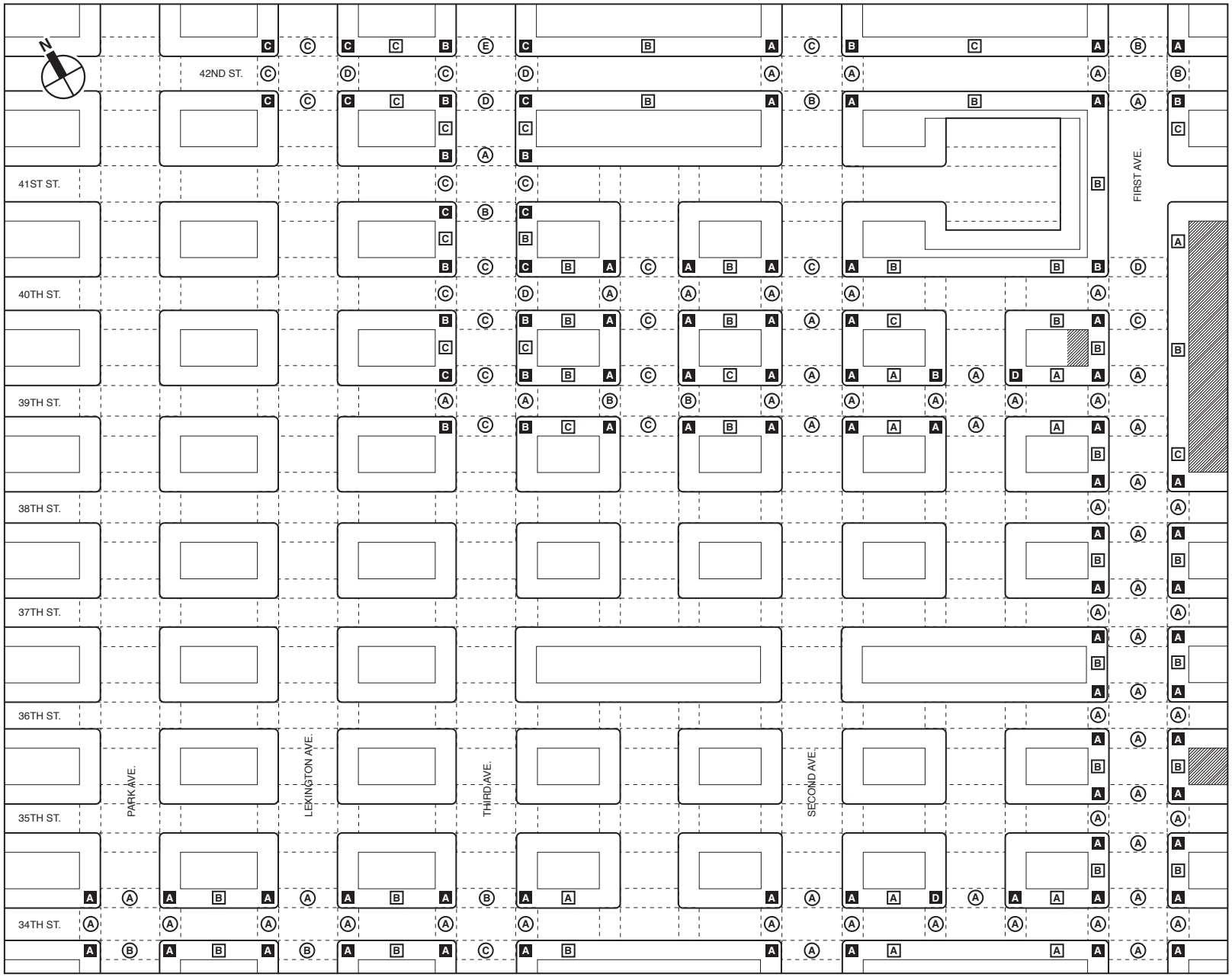
1.14.08



NOT TO SCALE

Build AM
Pedestrian LOS
Figure 16-9

1.14.08

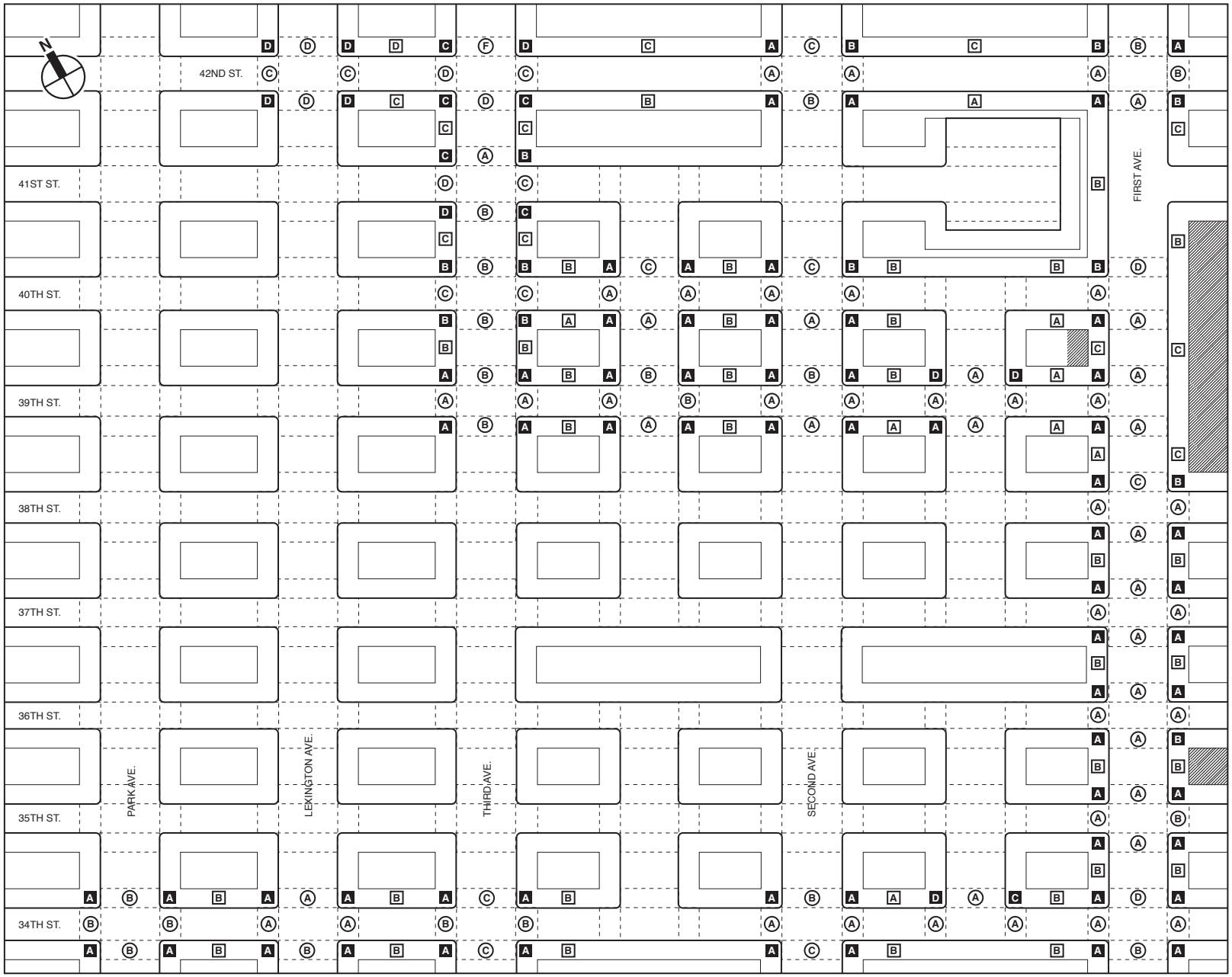


NOT TO SCALE

Build Midday Pedestrian LOS

Figure 16-10

1.14.08



NOT TO SCALE

Development Parcels

Corner LOS

Sidewalk LOS

Crosswalk LOS

Significant Adverse Impact

Build PM
Pedestrian LOS
Figure 16-11

PEDESTRIAN SAFETY

The *CEQR Technical Manual* considers a location to be a high-pedestrian-accident location if five or more pedestrian-related accidents occurred within a 12-month period in the most recent three years. Data on traffic accidents for the intersections in the vicinity of the proposed project were compiled from New York State Department of Transportation (NYSDOT) records for the period of September 2003 through September 2006. Based on this information, three intersections in the study area are considered high vehicle/pedestrian accident locations: East 42nd Street and Third Avenue, East 34th Street and Third Avenue, and East 34th Street and Second Avenue (see Table 16-17). Furthermore, there was one fatality at the intersection of East 38th Street and First Avenue, but this intersection is not considered a high-accident location based on the CEQR criteria.

Table 16-17
Summary of Accidents within the Pedestrian Study Area

Intersection		Study Period (September 2003 to September 2006)			Accidents by Year							
North-South Roadway	East-West Roadway	Reportable Accidents	Total Fatalities	Total Injuries	Pedestrian				Bicycle			
					2003	2004	2005	2006	2003	2004	2005	2006
Lexington Avenue	E. 42nd Street	11		14		3				1		
Third Avenue *	E. 42nd Street	33		36	3	6		3		3	2	
Second Avenue	E. 42nd Street	30		23		1	1	4			1	
First Avenue	E. 42nd Street	8		10								
Third Avenue	E. 41st Street	13		11		1		1		1		
First Avenue	E. 41st Street	2		2				1				
First Avenue	E. 40th Street	4		2	1			2				
First Avenue	E. 39th Street	7		7	1			4				
First Avenue	E. 38th Street	10	1	10	1	1		1	1			
First Avenue	E. 37th Street	13		18	1	1	1					
First Avenue	E. 36th Street	4		2	1						1	
First Avenue	E. 35th Street	14		10	1							
Park Avenue	E. 34th Street	13		16	1		1	2				
Lexington Avenue	E. 34th Street	14		14		1		2				
Third Avenue*	E. 34th Street	32		27		1		5		2		
Second Avenue *	E. 34th Street	27		23	3	3		1			1	2
First Avenue	E. 34th Street	17		14		1		3				

Note: * Indicates a high vehicular-pedestrian accident location
Source: New York State Department of Transportation accident data from September 30, 2003 through September 30, 2006.

The analysis focused on pedestrian safety along the major routes of pedestrian travel for project-generated trips, which includes intersections along 34th Street, 42nd Street, and First Avenue. Although there are high-accident locations within the larger traffic study area, the project-generated increase in vehicular and pedestrian trips would not be expected to substantially alter safety characteristics at these more distant locations.

With the proposed project, these intersections would experience increases in vehicular and pedestrian traffic. However, neither location is located within close proximity of the proposed project, so the majority of project-related trips would be distributed throughout the vehicular and pedestrian networks and would not be concentrated at either of the high-accident locations. Also, many of the accidents noted in Table 16-18 occurred in off-peak hours. Since the highest concentration of project-generated trips will occur during peak hours, it is unlikely that project generated trips will increase pedestrian exposure to accidents during off-peak hours. The

intersections noted above already feature clearly painted crosswalks and are signalized intersections that already experience high volumes of pedestrians and vehicles. The project-generated pedestrian trips are not expected to contain a high percentage of children or the elderly, who might be at greater risk for pedestrian-vehicular accidents.

Table 16-18
Detailed Accident Data for High Accident Locations

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left/Right Turns	Pedestrian Error/ Confusion	Driver In-attention	Other
Third Avenue @ East 42nd Street	2003	10/28	7:55A	X		L turn-north	Crossing with signal	X			Failure to yield ROW
		10/28	8:49P	X		L turn-north	Crossing with signal	X			
		11/14	6:00P	X		L turn-north	Crossing with signal	X		X	Failure to yield ROW
	2004	1/2	5:45P	X		Unknown	Crossing with signal				Unknown
		4/20	4:50P	X		Going straight ahead	Crossing with signal				
		4/23	5:35A	X		L turn-north	Crossing with signal	X	X	X	
		5/27	1:16A	X		L turn-east	Crossing against signal	X			View obstructed
		6/13	10:40P	X		L turn-east	Crossing against signal	X			
Second Avenue @ East 34th Street	2003	11/24	11:40P	X		L turn-east	Crossing with signal	X			Failure to yield ROW
		11/30	10:20P	X		L turn-south	Crossing with signal	X			Failure to yield ROW
		12/8	1:17P	X		L turn-south	Crossing with signal	X			
	2004	5/17	?	X		L turn-south	Crossing with signal	X			
		8/4	7:50A	X		R turn-south	Unknown	X		X	Failure to yield ROW
		8/17	10:26P	X		L turn-east	Crossing with signal	X	X		
Third Avenue @ East 34th Street	2006	2/4	7:30P	X		L turn-north	Crossing with signal	X			
		5/18	8:00A	X		L turn-north	Crossing against signal				
		6/26	1:10P	X							Unknown
		7/5	8:20P	X		L turn-north	Crossing with signal	X			
		9/27	1:30P	X		L turn-west	Crossing with signal	X			Failure to yield ROW

The incidence of accidents within the study area is not atypical of Midtown Manhattan and is more a function of traffic and pedestrian volumes than of unsafe roadway conditions or pedestrian geometry. Nevertheless, measures could be implemented that may improve pedestrian safety at the intersections of East 42nd Street and Third Avenue, East 34th Street and Third Avenue, and East 34th Street and Second Avenue such as high visibility crosswalks and caution signs on vehicle approaches. In addition, faded stop bars at the intersection of East 34th Street and Third Avenue could be repainted.

CONDITIONS WITH A SPECIAL UNITED NATIONS EVENT

The United Nations hosts special events during the year that result in restricted access in the vicinity of the United Nations headquarters. The largest of these events is the annual meeting of the General Assembly, which occurs in September. Observations were conducted in September 2006 to evaluate any changes in or restrictions on access to the development parcels during the annual General Assembly meeting. While subway access at the Grand Central Station and 33rd Street Stations is not affected by the United Nations operations, there are changes in bus service and restrictions on pedestrian access.

The General Assembly meeting results in intermittent street closures and traffic diversions in the vicinity of the United Nations headquarters. As a result, M15, M42, and M104 buses are diverted or their routes are truncated. Furthermore, traffic diversions result in vehicular congestion on surrounding roadways that hinders the movement of buses through the study area. During special United Nations events, it is likely that project-generated bus riders would use stops further from the development parcels, which would require that they walk further distances, and it is also anticipated that the travel time of bus riders would be longer.

The sidewalks, corners, and crosswalks within the study area remain open during the General Assembly meeting, but barricades do restrict pedestrian circulation areas at certain intersections, most notably First Avenue and 42nd Street. Moreover, traffic officers direct vehicular movement at many intersections; therefore, crosswalk operations could differ as compared to other times depending upon this manual traffic control. It is anticipated that based on current observations, future pedestrian access to the development parcels would be maintained during special United Nations events.

G. FUTURE CONDITIONS WITH THE UNDC PROJECT

In the FGEIS, the proposed UNDC project at East 41st Street and First Avenue was considered as part of the baseline conditions in the Future Without the Proposed Actions section. However, because the UNDC project is complex and requires approvals from the New York State Legislature, the New York City Economic Development Corporation, and possibly other public agencies, including its own environmental review, it is uncertain whether the project will be completed by 2014 or, in fact, ever built. Therefore, the Future without the Proposed Actions section in this SEIS does not include the UNDC project, but a separate analysis was prepared to determine the effects of the Proposed Actions and the UNDC project.

The UNDC project would generate demand for subway and bus service at the stations and on the routes that would be used by residents, employees, and visitors of the development parcels. These projects would also have the potential to increase pedestrian congestion on sidewalks, corner reservoirs, and crosswalks near the development parcels. The following sections describe the potential impacts of the Proposed Actions if the UNDC project is constructed by 2014.

In the 2014 Build with UNDC condition, project-generated trips would result in significant adverse impacts for the S2/P9 and PL9 stairways. The Proposed Actions' impact on the PL9 stairway is predicted to occur whether or not the UNDC project is implemented, but the impact to the S2/P9 stairway in the AM peak period would only occur with the cumulative increase in trips from the UNDC project and the Proposed Actions.

There would be a substantial increase in bus riders in the 2014 Build with UNDC project condition. As a result, the Proposed Actions with UNDC as a background project would result in significant adverse impacts on the following bus routes:

- The M16/M34 westbound in the AM and PM peak hours;
- The M16/M34 eastbound in the AM and PM peak hours;
- The M42 eastbound in the AM and PM peak hours; and
- The M42 westbound in the AM and PM peak hours.

These bus line-haul impacts were also predicted for the Build conditions analysis without UNDC as a background project.

The combined increase in trips from the Proposed Actions and the UNDC project would substantially increase pedestrian trips in the vicinity of the development parcels. Based on analysis presented in the Draft SEIS, the Proposed Actions with UNDC as a background project is anticipated to generate significant adverse impacts at 7 pedestrian locations as follows:

- The north crosswalk at East 42nd Street and Lexington Avenue in the AM peak period;
- The north crosswalk at East 42nd Street and Third Avenue in the AM, midday, and PM peak periods;
- The southwest corner of East 42nd Street and Lexington Avenue in the AM peak period;
- The northeast corner of East 42nd Street and Lexington Avenue in the PM peak period;
- The northwest corner of East 42nd Street and Lexington Avenue in the AM peak period;
- The south crosswalk at East 42nd Street and Lexington Avenue in the PM peak period; and
- The north crosswalk at East 40th Street and First Avenue in the midday and PM peak periods.

Impacts would occur at East 42nd Street and Lexington Avenue and East 42nd Street and Third Avenue irrespective of trips associated with the UNDC project. However, the remaining impacts would result only with the cumulative increase in trips from the Proposed Actions and the UNDC Development. ✷