3.16 TRANSIT AND PEDESTRIANS

INTRODUCTION

This chapter describes the transit bus, subway station element and pedestrian existing conditions analysis in the study area, conditions that are projected in the future without the proposed action (No-Action) and conditions following implementation of the proposed action (With-Action) along with identification of any associated impacts. Significant adverse impacts from project-generated trips, if any, are identified, and described in detail.

As described in Chapter 2.0, the proposed action includes zoning map and zoning text amendments proposed by the New York City Department of City Planning (DCP). The rezoning area is located in the Mott Haven neighborhood of the Bronx, generally bounded by East 149th Street on the north, East 135th Street on the south, Morris Avenue on the east, and the Harlem River on the west, and is fully contained within Bronx Community District 1. As noted in Chapter 15, CEQR assessments of large area-wide zoning proposals not associated with specific development projects assume a 10-year build period. This is the time frame that can be reasonably predicted into the foreseeable future without engaging in highly speculative projections. Thus, the transit and pedestrian analyses in this document address a development program that could reasonably be constructed by 2018, or the reasonable worst case development scenario (RWCDS), as described in Chapter 3.

In conclusion, the findings of the transit bus, subway station element and pedestrian conditions analysis, as disclosed herein, did not identify any significant impacts resulting from person trips projected to be generated by the proposed action in the 2018 analysis year.

3.16.1 METHODOLOGY

As described in Chapter 3.15 and indicated in Table 3.15-9, person trip travel demand projections were developed by mode to identify the transportation elements likely to be affected by the proposed action. Based on criteria specified in the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, it was determined that a quantified assessment of certain transit station elements, bus route line haul, and pedestrian sidewalk and crosswalk operations was required. Since estimated trips generated by the proposed action would not exceed impact thresholds for subway line-haul, this element was not analyzed.

Subway Station Elements

Subway station operations were assessed according to methods and evaluation criteria presented in the 2001 *CEQR Technical Manual*, which recommends a detailed analysis should screening evaluation impacts cross a threshold of 200 additional peak hour passengers assigned to a specific subway station. To assess subway entrance/exit stairway and turnstile/gate operations, the user volume is compared to the element's design capacity, resulting in the V/SVCD ratio. For stairways, the design capacity

considers the stairway effective width, which accounts for railings or other obstructions, the friction between upward and downward patrons, and the average area required for circulation. Volumes and capacities are presented for 15-minute intervals. The estimated V/SVCD ratio is then compared to New York City Transit (NYCT) criteria to determine the operational level of service (LOS) of a subway element. Table 3.16-1 provides the LOS and corresponding V/SVCD ratios for subway station elements.

Table 3.16-1: Subway Station Elements Level of Service (LOS) Criteria

Level of Service	Volume to Capacity (V/SVCD ratio)	
	Stairways	**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 Higher	Higher than 1.00
Source: CEQR Technical Manual, December 2001		

For stairways operating 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 due to congestion and the passage of slower moving pedestrians. At LOS E and F, walking speed is restricted. There is also insufficient area to bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

The determination of significant impacts for station elements varies based on their type and use. For stairways, impacts are considered significant based on the minimum amount of additional capacity, or width increment threshold (WIT), which would mitigate the location to its future operating condition without the proposed action. For a location with a With-Action LOS D, when a widening of six inches or more is needed to restore future No-Action conditions, it is considered significant; for With-Action LOS E condition, when a widening of three inches or more is required, it is considered significant; and for a With-Action LOS F condition, when a widening of one inch or more is required, it is considered significant. If the analysis indicates that widening of less than one inch is required, it is not considered significant. With respect to turnstiles and gates, any measurable increase in V/SVCD ratio greater than of 1.0 would potentially constitute a significant impact.

New York City Transit Bus Line Haul Operations

Line haul capacities are evaluated when a proposed action is anticipated to generate a perceptible increase in number of passengers on a specific bus route. The 2001 *CEQR Technical Manual* recommends a threshold of 200 additional peak hour bus passengers as

when bus line haul analysis should be considered. The analysis of bus line haul operations encompasses the examination of conditions at the route maximum load point of bus load levels versus physical capacities. NYCT operates two types of buses: standard and articulated. During peak hours, the 2001 *CEQR Technical Manual* specifies a capacity for standard buses of 70 passengers per bus and of 145 passengers per bus for articulated buses. According to NYCT guidelines, an increase in bus load levels to above the maximum capacity at any load point is defined as a significant impact. While subject to operational and fiscal constraints, bus impacts can typically be mitigated by increasing service frequency. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

Street Level Pedestrian Operations

The adequacy of the study area's sidewalks, corner reservoirs, and crosswalks in relation to the demand was assessed using the methodologies presented in the *2000 Highway Capacity Manual* (HCM). Sidewalks were analyzed in terms of pedestrian flow. For sidewalks, conditions are measured in terms of pedestrian flow rate per foot of width per minute (PFM) for that portion of the sidewalk that can be effectively used for pedestrian flow. The sidewalk analyses determine both the average flow rate's level of service as well as the platoon-adjusted level of service, which more accurately estimates the dynamics of walking. "Platooning" is the tendency of pedestrians to move in bunched groups or "platoons" once they cross a street where traffic control devices require them to wait.

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 level of service measurement of square feet per pedestrian (SFP).

Crosswalk level of service 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 level of service measurement of available square feet per pedestrian. Similar to the methodology used for sidewalks with the representation of "platooning," the evaluation of crosswalks also considers the effect of maximum surge conditions. This is the point in which the maximum number of pedestrians is in the crosswalk and usually occurs when the lead pedestrians reach the

opposite corner of the street. The level of service analysis also accounts for vehicular turning movements that traverse the crosswalk.

Table 3.16-2 indicates the level of service standards for sidewalks, corner reservoirs, and crosswalks. The description of these levels of service is similar to those described above for subway station elements. The *CEQR Technical Manual* specifies that a mid-LOS D condition or better is considered reasonable for sidewalks, corner reservoirs, and crosswalks outside of the Manhattan Central Business District (CBD). For crosswalks and corner reservoirs, a mid-LOS D condition requires a minimum of 20 square feet per pedestrian (SFP), while for sidewalks, a mid-LOS D condition requires a maximum of 13 pedestrians per foot minute (PFM).

Table 3.16-2: Street Level Pedestrian Elements Level of Service (LOS) Criteria

Level of Service	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: Transportation Research Board. *Highway Capacity Manual*, 2000.		

The *CEQR Technical Manual* defines a significant impact for sidewalks outside the Manhattan and Brooklyn central business districts as an increase in the pedestrian flow rate of 2 PFM in comparison to the No-Action condition when the No–Action exhibits flow rates of 13 PFM or more (mid-LOS D). For corner reservoirs and crosswalks, impacts may be considered significant for decreases of one SFP when the No-Action condition has occupancies under 20 SFP (mid-LOS D).

3.16.2 EXISTING CONDITIONS

Existing operating conditions were analyzed for the transit, sidewalk and crosswalk pedestrian elements specified below. The periods selected for analysis were dependent upon the person trip generation characteristics of the proposed action, background levels of existing pedestrian and transit passenger volumes, and the current transit service levels provided. For transit analyses, these include the peak weekday commuter hours of 8:00-9:00 AM and 5:00-6:00 PM, plus 12:00-1:00 PM (midday) and the Saturday 2:00-3:00 PM peak hours for sidewalk and crosswalk pedestrian analysis.

Data Collection

Existing subway station, sidewalk and crosswalk pedestrian volume levels are based on field surveys conducted in May, June and September 2008. Bus ridership data collected for specific routes and peak load points based upon surveys conducted by NYCT in 2006 and 2007 were obtained from NYCT.

Transit Study Area

The Lower Concourse rezoning area is served by several subway and bus routes, as shown on Figure 3.16-1. A description of each of these transit modes, followed by a detailed analysis of key subway station elements and local bus routes that would be affected by trips associated with the proposed action is provided below.

Subway Service

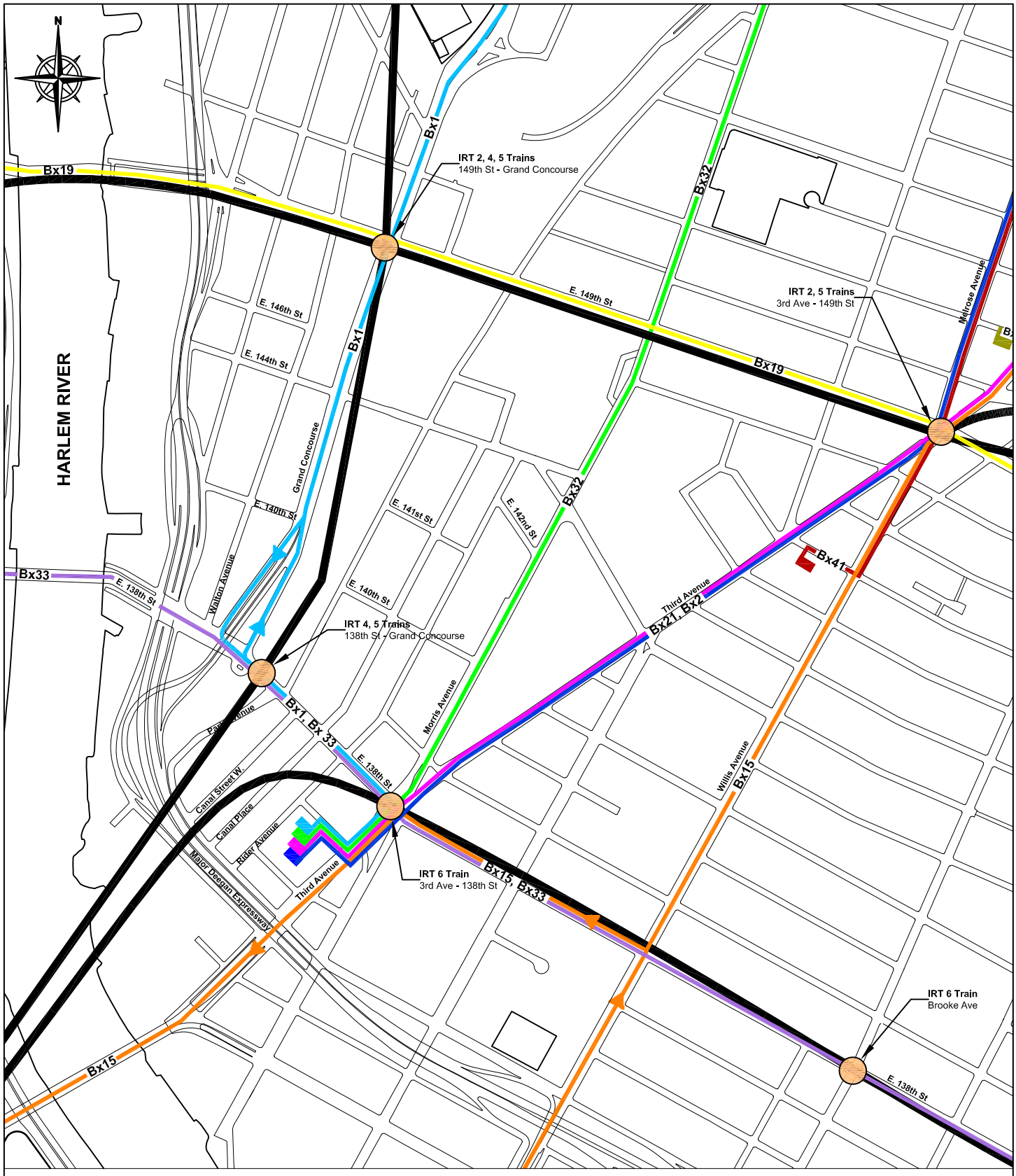
Three subway stations are located within, or on the border of, the proposed rezoning area. The 149th Street/Grand Concourse station is located near the northern border of the rezoning area and provides access to the Lexington Avenue No. 4 and 5 and the Seventh Avenue No. 2 subway lines. The 138th Street/Grand Concourse station is located in the southwest portion of the rezoning area and provides access to the Lexington Avenue No. 4 and 5 subway lines. The 138th Street/Third Avenue station is located on the southeast border of the rezoning area and provides access to the Lexington Avenue No. 6 subway line. Subway service provided is as follows:

- No. 4, 5 Lexington Avenue Express provides service from the Woodlawn and Eastchester areas of the Bronx through Manhattan's east side and Lower Manhattan to Brooklyn;
- No. 6 Lexington Avenue Local provides service from the Pelham Bay area of the Bronx through Manhattan's east side to Lower Manhattan ; and
- No. 2 Seventh Avenue Express provides service from the Wakefield area of the Bronx through Manhattan's west side and Lower Manhattan to Brooklyn.

The No. 4 Lexington Avenue Express bypasses the 138th Street/Grand Concourse station Manhattan bound during the morning peak period and Bronx bound during the evening peak period.

Bus Service

The proposed rezoning area lies near a hub of several local bus routes serving the South Bronx. A total of seven NYCT bus routes would be expected to attract passengers generated by the proposed action: the Bx1, Bx2, Bx15, Bx19, Bx21, Bx32 and Bx33. Generally, these routes provide direct service between the rezoning area and northern areas of the Bronx as well as to and from Harlem/northern Manhattan across the 145th Street, Madison Avenue and Third Avenue Bridges. Several routes (Bx1, Bx2, Bx21 and Bx32) originate and terminate in the rezoning area. Table 3.16-3 provides the service details of the bus routes serving the area with approximate service frequency in minutes. Bus transit service levels in the study area are comparable between the weekday AM and PM peak periods, weekday midday period and Saturday midday period. Since all of the projected development sites are located within walking distance of a subway station, no bus-subway linked trips are expected to be generated as a result of the proposed action.



Legend

- Bus Route
- Subway Route
- Bx15 — Route Name
- Subway Station

180 0 180 360 540 720 Feet

Figure 3.16-1: Subway Stations and Bus Transit Lines

Lower Concourse Rezoning and Related Actions EIS

NYC Department of City Planning

Table 3.16-3: Study Area Bus Routes

Bus Route	Terminus	Terminus	Study Area Routing	Service Frequency (Minutes)			
				AM	MD	PM	Sat
Bx1	Riverdale	Mott Haven	Grand Concourse	18	9	15	17
Bx1 Ltd	Riverdale	Mott Haven	Grand Concourse	20	20	20	17
Bx2	Kingsbridge	Mott Haven	Third Avenue	19	11	15	15
Bx2 Ltd	Kingsbridge	Mott Haven	Third Avenue	20	20	20	20
Bx15	Fordham Pl	Harlem	E 138th St/Third Ave	6	7	7	6
Bx19	NY Botanical Garden	Riverbank St Park	E 149th St	6	7	6	7
Bx21	Westchester Square	Mott Haven	Third Avenue	6	10	8	12
Bx32	Bronx VA MC	Mott Haven	Morris Avenue	12	16	14	20
Bx33	Port Morris	Harlem	East 138th St	12	20	15	20
Source: New York City Transit							

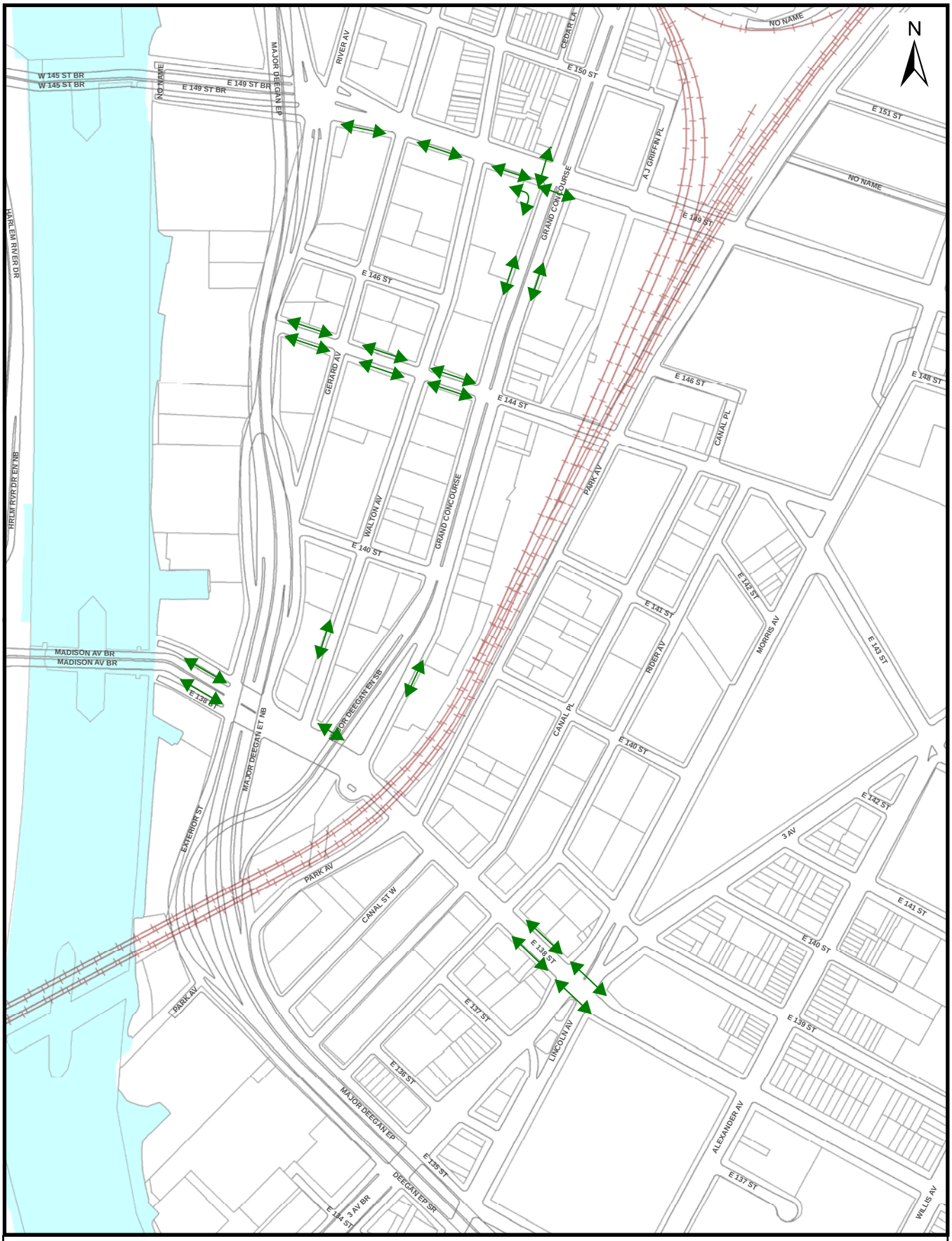
Pedestrian Study Area

The pedestrian study area and identification of the sidewalks, corner reservoirs, and crosswalks that would be most affected by new trips generated by the proposed action were based upon several factors. First, through east-west study area pedestrian pathways are limited to East 149th Street, East 144th Street and East 138th Street due to the barrier created by Metro-North's depressed rail right-of-way, which bisects the study area. Also, since transit trips contain a walking component, a significant portion of walk trips generated by the proposed action would be between projected developments and the subway stations and bus stops in the study area, with a concentration of pedestrians on sidewalks and crosswalks in the vicinity of these stations and bus stops. Lastly, existing background levels of pedestrians in the study area are concentrated around Hostos Community College, along East 149th Street and at the intersection of East 138th Street and Third Avenue.

The sidewalk and crosswalk locations selected for analysis are illustrated on Figure 3.16-2. These analysis locations reflect the likely concentrations of pedestrians that would be generated by the proposed action and consist of analysis of 17 sidewalks, five crosswalks and one street corner focused upon East 149th Street, East 144th Street, East 138th Street and the Grand Concourse.

Existing Conditions Analysis

The findings of the existing conditions analysis for subway station, bus transit and pedestrian operations are presented below.



Legend

Pedestrian Movement

Source: NYC Department of City Planning BYTES of the BIG APPLE 2006

Figure 3.16-2

Sidewalk and Crosswalk Analysis Locations

Lower Concourse Rezoning and Related Actions EIS

NYC Department of City Planning

Subway Station Operations

Initially a screening was performed of the subway passenger volumes projected to be generated by the proposed action that would use the three study area subway stations in order to determine whether a subway station analysis is required. The subway passenger distribution to each station was based upon the proximity of the station to each development site and the distribution of subway trips between the Lexington Avenue and Seventh Avenue subway lines. The screening analysis indicated that the both the 149th Street/Grand Concourse station (2, 4, 5 subway lines) and the 138th Street/Grand Concourse station (4, 5 subway lines) would attract over 200 additional passengers during one or more analysis hours, but that the 138th Street/Third Avenue station (6 subway line) would attract fewer than 50 additional passengers during any analysis hour. Therefore, the analysis of subway station elements was limited to the 138th Street/Grand Concourse and 149th Street/Grand Concourse stations.

The existing conditions analysis of subway station elements at the 138th Street/Grand Concourse and 149th Street/Grand Concourse stations is provided on Table 3.16-4. Three street stairways at the 138th Street/Grand Concourse station lead to the fare control level and three turnstiles. Passenger volumes are light. Less than 200 passengers per hour enter and leave during the AM and PM peak hours. All station elements operate at LOS A during both the AM and PM peak hours.

Table 3.16-4: Existing Subway Station Elements Operations

138th Street - Grand Concourse Subway Station (4-5)			**15-MINUTE PEDESTRIAN VOLUME**				**15-MINUTE SVCD CAP**	**V/SVCD RATIO**		**LEVEL OF SERVICE**	
SUBWAY STATION ELEMENTS			**AM**		**PM**			**AM**	**PM**	**AM**	**PM**
Control Area Booth - A25	**NUMBER**	**ONE- OR TWO-WAY**	**IN**	**OUT**	**IN**	**OUT**					
Turnstile	3	2	69	80	94	84	1296	0.11	0.14	A	A
Street Stairs 138th Street and Grand Concourse	**WIDTH (ft)**	**EFFECTIVE WIDTH (ft)**	**DOWN**	**UP**	**DOWN**	**UP**					
Northwest (S1)	5.5	4.5	30	24	27	23	1021	0.05	0.05	A	A
Northwest (S3)	5.5	4.5	2	2	5	12	1021	0.00	0.02	A	A
Northeast (S2)	4.8	3.8	37	54	62	49	861	0.11	0.13	A	A
149th Street - Grand Concourse Subway Station (2-4-5)			**15-MINUTE PEDESTRIAN VOLUME**				**15-MINUTE SVCD CAP**	**V/SVCD RATIO**		**LEVEL OF SERVICE**	
SUBWAY STATION ELEMENTS			**AM**		**PM**		**AM/PM**	**AM**	**PM**	**AM**	**PM**
Control Area Booth - A25	**NUMBER**	**ONE- OR TWO-WAY**	**IN**	**OUT**	**IN**	**OUT**					
HEET (SW)	3	2	116	256	80	96	810	0.46	0.22	C	B
Turnstile (SE)	3	2	239	354	240	258	1296	0.46	0.38	C	B
Street Stairs 149th Street and Grand Concourse	**WIDTH (ft)**	**EFFECTIVE WIDTH (ft)**	**DOWN**	**UP**	**DOWN**	**UP**					
Southwest (S1)	4.8	3.8	14	58	17	11	872	0.08	0.03	A	A
Southeast (S2) - Grand Concourse	4.9	3.9	19	166	66	114	895	0.21	0.20	A	A
Southwest (S3)	5.3	4.3	102	198	63	85	987	0.30	0.15	A	A
Southeast (S4) - 149th Street	5.5	4.5	220	188	174	144	1033	0.40	0.31	A	A

Note:
1. The Capacity for Stairs = 17 persons per minute per foot
2. The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
3. The Capacity for High Entry/Exit Turnstiles = 20 persons per minute
4. The Capacity for High Revolving Exit Gates = 30 persons per minute

Sources:
New York City Transit, Station Planning and Design Guidelines
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

The 149th Street/Grand Concourse station has a split-fare control level. The two southwest street stairways lead to three high entry/exit turnstiles (HEET). The two southeast stairways lead to three turnstiles and the station booth. Existing passenger volumes are considerably higher at this station with approximately 960 passengers entering and leaving during the AM peak hour and 670 passengers during the PM peak hour. During the AM peak hour, about 60 percent of the in/out flow uses the southeast portion of the station, while during the PM peak hour, this proportion rises to approximately 75 percent. All street stairways operate at LOS A during both the AM and PM peak hours. Both the turnstiles at the southeast portion of the station and the HEET at the southwest portion operate at LOS C during the AM peak hour.

Transit Bus Line Haul Operations

Transit bus line haul capacities were derived for each of the bus routes serving the study area listed in Table 3.16-3 by multiplying the number of buses operating per hour by the passenger capacity per bus (either 70 passengers for a standard 40 seat transit bus or 145 passengers for an articulated bus). The Bx1 and Bx2 were combined as per the NYCT schedule and the maximum load point data provided. NYCT operates articulated buses on the Bx1/2 and Bx19 routes and standard buses on all other routes. As shown on Table 3.16-5 all bus lines serving the study area are operating below their peak capacity at their maximum load point. The Bx21 southbound in the morning and northbound in the afternoon is operating at the highest load levels at approximately 80 percent of capacity.

Street Level Pedestrian Operations

Existing street level pedestrian operations were analyzed at the 17 sidewalks, five crosswalks and one street corner indicated on Figure 3.16-2. As shown in Table 3.16-6, existing sidewalk levels of service are operating at LOS A or B, reflecting the low existing pedestrian volumes in most parts of the study area. As noted above, most of the existing pedestrian activity is found along East 149th Street and specifically at its intersection with the Grand Concourse. The pedestrian operations on the southwest corner of this intersection operate at LOS C during the weekday AM, midday and PM peak hours. Similarly, the crossing of the west crosswalk across East 149th Street operates at LOS C during the weekday AM, midday and PM peak hours and the south crosswalk across the Grand Concourse operates at LOS C during the weekday midday peak hour.

Table 3.16-5: Existing Transit Bus Line Haul Operations

	Peak Hour	Direction	Peak Load Point	Buses per Hour[1]	Hourly Capacity[2]	Hourly Volume[1]	Average Volume per Bus	Hourly Available Capacity
Bx1/Bx2	AM	NB	East Mosholu Parkway @ Jerome Avenue	6	870	487	81	383
		SB	Grand Concourse @ East 170th Street	8	1160	477	60	683
	PM	NB	Grand Concourse @ East 170th Street	8	1160	470	59	690
		SB	Grand Concourse @ East Tremont Avenue	8	1160	542	68	618
Bx1/Bx2 LTD	AM	NB	Grand Concourse @ East Fordham Road	6	870	512	85	358
		SB	Grand Concourse @ East 170th Street	6	870	546	91	324
	PM	NB	Grand Concourse @ East 170th Street	7	1015	482	69	533
		SB	Grand Concourse @ East Fordham Road	6	870	437	73	433
Bx15	AM	NB	West 125th Street @ 12th Avenue	8	560	426	53	134
		SB	Third Avenue @ East 149th Street	10	700	408	41	292
	PM	NB	Third Avenue @ East 149th Street	9	630	382	42	248
		SB	Third Avenue @ East 149th Street	8	560	303	38	257
Bx19	AM	EB	East 149th Street @ Third Avenue	9	1305	617	69	688
		WB	East 149th Street @ Third Avenue	10	1450	779	78	671
	PM	EB	East 149th Street @ Third Avenue	9	1305	619	69	686
		WB	East 149th Street @ Third Avenue	10	1450	556	56	894
Bx21	AM	NB	Morris Park Avenue @ White Plains	10	700	383	38	317
		SB	Boston Road @ East 169th Street	9	630	523	58	107
	PM	NB	Third Avenue @ East 163rd Street	7	490	393	56	97
		SB	Morris Park Avenue @ White Plains	8	560	373	47	187
Bx32	AM	NB	East 175th Street @ Jerome Avenue	4	280	176	44	104
		SB	Morris Avenue @ East 161st Street	5	350	199	40	151
	PM	NB	Morris Avenue @ East 161st Street	5	350	194	39	156
		SB	Morris Avenue @ East 161st Street	5	350	114	23	236
Bx33	AM	EB	East 135th Street @ Madison Avenue	5	350	99	20	251
		WB	East 138th Street @ Third Avenue	5	350	201	40	149
	PM	EB	East 135th Street @ Madison Avenue	4	280	110	28	170
		WB	East 138th Street @ Third Avenue	4	280	97	24	183

Notes:
1. Volumes are based on 2006 and 2007 MTA-New York City Transit ridership surveys and adjusted to reflect 2008 conditions.
2. Capacities are based on a maximum of 70 passengers for a standard 40-seat bus, and 145 passengers for an articulated bus as per CEQR criteria.

Table 3.16-6: Existing Street Level Pedestrian Operations

SIDEWALK ANALYSIS

Blockface	Side of Street	Effective Sidewalk Width[1] (ft)	Peak 15 Minute Volume				Persons per Foot per Minute (PFM)				Average Level of Service				Platoon Conditions Level of Service			
			AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
East 138th Street (west of Exterior Street)	North	6.5	15	26	37	64	0.2	0.3	0.4	0.7	A	A	A	A	A	A	A	B
	South	6.5	15	26	13	19	0.2	0.3	0.1	0.2	A	A	A	A	A	A	A	A
East 138th Street (west of Third Avenue)	North	15.4	42	34	45	50	0.2	0.1	0.2	0.2	A	A	A	A	A	A	A	A
	South	14.5	22	26	39	43	0.1	0.1	0.2	0.2	A	A	A	A	A	A	A	A
East 144th Street (west of Gerard Avenue)	North	9.5	9	2	0	8	0.1	0.0	0.0	0.1	A	A	A	A	A	A	A	A
	South	10.5	10	11	3	4	0.1	0.1	0.0	0.0	A	A	A	A	A	A	A	A
East 144th Street (east of Walton Avenue)	North	8.8	186	11	12	12	1.4	0.1	0.1	0.1	A	A	A	A	B	A	A	A
	South	7	49	28	10	14	0.5	0.3	0.1	0.1	A	A	A	A	A	A	A	A
East 144th Street (west of Walton Avenue)	North	9.3	5	10	8	5	0.0	0.1	0.1	0.0	A	A	A	A	A	A	A	A
	South	9	14	15	11	21	0.1	0.1	0.1	0.2	A	A	A	A	A	A	A	A
East 149th Street (east of Gerard Avenue)	South	12	83	29	29	56	0.5	0.2	0.2	0.3	A	A	A	A	A	A	A	A
East 149th Street (west of Gerard Avenue)	South	12.5	81	23	19	38	0.4	0.1	0.1	0.2	A	A	A	A	A	A	A	A
East 149th Street (west of Grand Concourse)	South	10.8	121	164	106	96	0.7	1.0	0.7	0.6	A	A	A	A	B	B	B	B
Walton Avenue (north of East 138th Street)	West	13.5	41	7	17	9	0.2	0.0	0.1	0.0	A	A	A	A	A	A	A	A
Grand Concourse (north of East 138th Street)	East	15	41	30	29	8	0.2	0.1	0.1	0.0	A	A	A	A	A	A	A	A
Grand Concourse (south of East 149th Street)	East	28	125	522	228	49	0.3	1.2	0.5	0.1	A	A	A	A	A	B	B	A
	West	9.5	142	36	53	46	1.0	0.3	0.4	0.3	A	A	A	A	B	A	A	A

STREET CORNER ANALYSIS

Intersection	Corner	Sidewalk Dimensions. (ft)	Curb Radii (ft)	Average Pedestrian Space (SF/ped)				Level of Service			
				AM	MD	PM	SAT	AM	MD	PM	SAT
East 149th Street (E-W) @ Grand Concourse (N-S)	SW	9.5 x 14.4	10	38	26	38	112	C	C	C	A

CROSSWALK ANALYSIS

Intersection	Crosswalk	Length (ft)	Width (ft)	Maximum Surge Pedestrian Space (SF/ped)				Maximum Surge Level of Service			
				AM	MD	PM	SAT	AM	MD	PM	SAT
East 138th Street (E-W) @ Grand Concourse (N-S)	North	33.3	16	229	288	319	248	A	A	A	A
East 138th Street (E-W) @ Third Avenue (N-S)	North	120.6	17.8	294	480	327	439	A	A	A	A
	South	120.6	13	295	1,079	320	342	A	A	A	A
East 149th Street (E-W) @ Grand Concourse (N-S)	West	70	10	30	24	39	74	C	C	C	A
	South	81.3	15.8	55	36	45	149	B	C	B	A

Note:
1. Total sidewalk width minus the sum of widths and shy distances from obstructions.

3.15.3 FUTURE WITHOUT THE PROPOSED ACTION

Transit and pedestrian conditions in the future without the proposed action were assessed to establish a baseline No-Action condition against which to evaluate the potential impacts of the proposed action. The 2018 No-Action analysis year incorporates general background growth, effects of nearby developments, and transportation improvements that may affect transit service and pedestrian movements in the study area.

Transit and Pedestrian Projections

Future 2018 No-Action peak hour transit and pedestrian levels were based on volume projections developed using a process similar to that described in Chapter 3.15 for traffic volume projections. Basically, the 2018 No-Action transit and pedestrian projections include the application of a 0.50-percent annual background growth rate on existing volumes, as recommended in the *CEQR Technical Manual* for the Bronx, projected over 10 years, plus the pedestrian and transit trips projected to be generated by the No-Action

projects specified in Section 3.15.3, less any trips generated by displaced uses in the rezoning area.

No-Action Conditions Analysis

The following presents the findings of the conditions analysis for subway station, bus transit and pedestrian operations in the future without the proposed action.

Subway Station Operations

The operations of subway station elements at the 138th Street/Grand Concourse and 149th Street/Grand Concourse stations under 2018 No-Action conditions is indicated in Table 3.16-7.

Table 3.16-7: 2018 No-Action Subway Station Elements Operations

138th Street - Grand Concourse Subway Station (4-5)			15-MINUTE PEDESTRIAN VOLUME				15-MINUTE SVCD CAP	V/SVCD RATIO		LEVEL OF SERVICE	
SUBWAY STATION ELEMENTS			AM		PM			AM	PM	AM	PM
Control Area Booth - A25	NUMBER	ONE- OR TWO-WAY	IN	OUT	IN	OUT					
Turnstile	3	2	73	87	101	89	1296	0.12	0.15	A	A
Street Stairs 138th Street and Grand Concourse	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN	UP	DOWN	UP					
Northwest (S1)	5.5	4.5	32	27	30	24	1021	0.06	0.05	A	A
Northwest (S3)	5.5	4.5	2	2	5	13	1021	0.00	0.02	A	A
Northeast (S2)	4.8	3.8	39	58	66	52	861	0.11	0.14	A	A
149th Street - Grand Concourse Subway Station (2-4-5)			**15-MINUTE PEDESTRIAN VOLUME**				**15-MINUTE SVCD CAP**	**V/SVCD RATIO**		**LEVEL OF SERVICE**	
SUBWAY STATION ELEMENTS			**AM**		**PM**			**AM**	**PM**	**AM**	**PM**
Control Area Booth - A25	NUMBER	ONE- OR TWO-WAY	IN	OUT	IN	OUT					
HEET (SW)	3	2	121	370	265	194	810	0.61	0.57	D	C
Turnstile (SE)	3	2	251	549	333	271	1296	0.62	0.47	D	C
Street Stairs 149th Street and Grand Concourse	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN	UP	DOWN	UP					
Southwest (S1)	4.8	3.8	14	132	99	28	872	0.17	0.15	A	A
Southeast (S2) - Grand Concourse	4.9	3.9	20	333	129	120	895	0.39	0.28	A	A
Southwest (S3)	5.3	4.3	107	238	166	166	987	0.35	0.34	A	A
Southeast (S4) - 149th Street	5.5	4.5	231	216	204	151	1033	0.43	0.34	A	A

Note:
1. The Capacity for Stairs = 17 persons per minute per foot
2. The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
3. The Capacity for High Entry/Exit Turnstiles = 20 persons per minute
4. The Capacity for High Revolving Exit Gates = 30 persons per minute

Sources:
New York City Transit, Station Planning and Design Guidelines
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

This analysis incorporates the incremental peak 15 minute passenger volumes projected to utilize the stations in the future without the proposed action. Passenger volumes are expected to increase minimally at the 138th Street/Grand Concourse station and levels of service remain unchanged from existing conditions. However, passenger volumes are expected to increase appreciably at 149th Street/Grand Concourse stations by 2018 due to the additional development projected to occur within this station's service area. Peak 15 minute passenger volumes are projected to increase by approximately 35 percent and

60 percent during the AM and PM peak hours. Levels of service are projected to deteriorate to LOS D and LOS C at the fare control turnstiles during the AM and PM peak hours, respectively. Stairway levels of service are projected to remain at LOS A.

Transit Bus Line Haul Operations

Passenger loads at the peak load points projected for 2018 No Action conditions on the transit bus routes serving the study area are provided in Table 3.16-8. Although passenger volumes are forecast to increase due to background growth and bus trips generated by specific developments, the analysis indicates that all routes will remain under capacity at their peak load point.

Table 3.16-8: 2018 No-Action Transit Bus Line Haul Operations

	Peak Hour	Direction	Peak Load Point	Buses per Hour[1]	Hourly Capacity[2]	Hourly Volume[1]	Average Volume per Bus	Hourly Available Capacity
Bx1/Bx2	AM	NB	East Mosholu Parkway @ Jerome Avenue	6	870	512	85	358
		SB	Grand Concourse @ East 170th Street	8	1160	501	63	659
	PM	NB	Grand Concourse @ East 170th Street	8	1160	505	63	655
		SB	Grand Concourse @ East Tremont Avenue	8	1160	582	73	578
Bx1/Bx2 LTD	AM	NB	Grand Concourse @ East Fordham Road	6	870	538	90	332
		SB	Grand Concourse @ East 170th Street	6	870	574	96	296
	PM	NB	Grand Concourse @ East 170th Street	7	1015	510	73	505
		SB	Grand Concourse @ East Fordham Road	6	870	464	77	406
Bx15	AM	NB	West 125th Street @ 12th Avenue	8	560	448	56	112
		SB	Third Avenue @ East 149th Street	10	700	429	43	271
	PM	NB	Third Avenue @ East 149th Street	9	630	401	45	229
		SB	Third Avenue @ East 149th Street	8	560	318	40	242
Bx19	AM	EB	East 149th Street @ Third Avenue	9	1305	649	72	656
		WB	East 149th Street @ Third Avenue	10	1450	819	82	631
	PM	EB	East 149th Street @ Third Avenue	9	1305	659	73	646
		WB	East 149th Street @ Third Avenue	10	1450	593	59	857
Bx21	AM	NB	Morris Park Avenue @ White Plains	10	700	402	40	298
		SB	Boston Road @ East 169th Street	9	630	549	61	81
	PM	NB	Third Avenue @ East 163rd Street	7	490	413	59	77
		SB	Morris Park Avenue @ White Plains	8	560	392	49	168
Bx32	AM	NB	East 175th Street @ Jerome Avenue	4	280	185	46	95
		SB	Morris Avenue @ East 161st Street	5	350	209	42	141
	PM	NB	Morris Avenue @ East 161st Street	5	350	204	41	146
		SB	Morris Avenue @ East 161st Street	5	350	120	24	230
Bx33	AM	EB	East 135th Street @ Madison Avenue	5	350	104	21	246
		WB	East 138th Street @ Third Avenue	5	350	211	42	139
	PM	EB	East 135th Street @ Madison Avenue	4	280	116	29	164
		WB	East 138th Street @ Third Avenue	4	280	102	25	178

Notes:
1. Volumes are based on 2006 and 2007 MTA-New York City Transit ridership surveys and adjusted to reflect 2018 No Build conditions.
2. Capacities are based on a maximum of 70 passengers for a standard 40-seat bus, and 145 passengers for an articulated bus as per CEQR criteria.

Street Level Pedestrian Operations

Sidewalk, corner and crosswalk analysis for future conditions without the proposed action are presented in Table 3.16-9. All sidewalks will continue to operate at LOS A or LOS B. However, the projected increase in pedestrian activity at the southwest corner of the intersection of East 149th Street with the Grand Concourse, which is largely due to trips to and from the subway station, would cause pedestrian space levels to deteriorate to LOS D during the midday peak hour. Likewise, operations of the west and south crosswalk would also operate at LOS D during the midday peak hour.

Table 3.16-9: 2018 No-Action Street Level Pedestrian Operations

SIDEWALK ANALYSIS

Blockface	Side of Street	Effective Sidewalk Width[1] (ft)	Peak 15 Minute Volume				Persons per Foot per Minute (PFM)				Average Level of Service				Platoon Conditions Level of Service			
			AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
East 138th Street (west of Exterior Street)	North	6.5	17	28	39	67	0.2	0.3	0.4	0.7	A	A	A	A	A	A	A	B
	South	6.5	17	28	14	20	0.2	0.3	0.1	0.2	A	A	A	A	A	A	A	A
East 138th Street (west of Third Avenue)	North	15.4	54	47	58	53	0.2	0.2	0.3	0.2	A	A	A	A	A	A	A	A
	South	14.5	37	43	55	46	0.2	0.2	0.3	0.2	A	A	A	A	A	A	A	A
East 144th Street (west of Gerard Avenue)	North	9.5	10	3	1	9	0.1	0.0	0.0	0.1	A	A	A	A	A	A	A	A
	South	10.5	145	206	180	17	0.9	1.3	1.1	0.1	A	A	A	A	B	B	B	A
East 144th Street (east of Walton Avenue)	North	8.8	288	144	147	43	2.2	1.1	1.1	0.3	A	A	A	A	B	B	B	A
	South	7	133	147	121	27	1.3	1.4	1.1	0.3	A	A	A	A	B	B	B	A
East 144th Street (west of Walton Avenue)	North	9.3	33	51	45	8	0.2	0.4	0.3	0.1	A	A	A	A	A	A	A	A
	South	9	115	160	143	31	0.9	1.2	1.1	0.2	A	A	A	A	B	B	B	A
East 149th Street (east of Gerard Avenue)	South	12	91	34	34	59	0.5	0.2	0.2	0.3	A	A	A	A	A	A	A	A
East 149th Street (west of Gerard Avenue)	South	12.5	86	24	20	40	0.5	0.1	0.1	0.2	A	A	A	A	A	A	A	A
East 149th Street (west of Grand Concourse)	South	10.8	132	177	116	102	0.8	1.1	0.7	0.6	A	A	A	A	B	B	B	B
Walton Avenue (north of East 138th Street)	West	13.5	46	10	21	10	0.2	0.0	0.1	0.0	A	A	A	A	A	A	A	A
Grand Concourse (north of East 138th Street)	East	15	51	40	39	9	0.2	0.2	0.2	0.0	A	A	A	A	A	A	A	A
Grand Concourse (south of East 149th Street)	East	28	246	571	262	56	0.6	1.4	0.6	0.1	A	A	A	A	B	B	B	A
	West	9.5	238	167	182	71	1.7	1.2	1.3	0.5	A	A	A	A	B	B	B	A

STREET CORNER ANALYSIS

Intersection	Corner	Sidewalk Dimen-sions. (ft)	Curb Radii (ft)	Average Pedestrian Space (SF/ped)				Level of Service			
				AM	MD	PM	SAT	AM	MD	PM	SAT
East 149th Street (E-W) @ Grand Concourse (N-S)	SW	9.5 x 14.4	10	34	23	33	102	C	D	C	A

CROSSWALK ANALYSIS

Intersection	Crosswalk	Length (ft)	Width (ft)	Maximum Surge Pedestrian Space (SF/ped)				Maximum Surge Level of Service			
				AM	MD	PM	SAT	AM	MD	PM	SAT
East 138th Street (E-W) @ Grand Concourse (N-S)	North	33.3	16	192	232	253	234	A	A	A	A
East 138th Street (E-W) @ Third Avenue (N-S)	North	120.6	17.8	235	327	248	409	A	A	A	A
	South	120.6	13	232	580	250	319	A	A	A	A
East 149th Street (E-W) @ Grand Concourse (N-S)	West	70	10	28	22	35	69	C	D	C	A
	South	81.3	15.8	49	33	40	135	B	C	C	A

Note:
1. Total sidewalk width minus the sum of widths and shy distances from obstructions.

3.15.4 PROBABLE IMPACTS OF THE PROPOSED ACTION

The future with the proposed action would result in an increase in pedestrian and transit trips as compared to the No Action condition. This section describes the projected travel patterns of the pedestrian and transit trips that would be generated by the proposed action by 2018 and the assessment of their potential impacts on the subway

station elements, bus transit routes and surface street sidewalks, corners and crosswalks analyzed under existing and No-Action conditions as described above.

Projected Development and Trip Generation

As described in Section 3.15.4, it is anticipated that the 31 projected development sites within the rezoning area would be developed as defined in this document, primarily consisting of residential, commercial and community facility space. This development would displace existing or anticipated development (in the absence of implementing the proposed action) primarily consisting of manufacturing, warehouse and office space. The trip generation characteristics of the proposed action are also described in Section 3.15.4. Walk, bus and subway person trips projected to be generated by the proposed action in 2018, relative to the No Action condition, are provided in Table 3.15-9.

Trip Distribution and Assignment

Transit and pedestrian volumes used for With-Action condition analysis were derived as peak 15 minute volumes based upon the trip generation estimates described in Section 3.15.4. These volumes were then assigned to the subway, bus transit route and surface street analysis elements as follows and were cumulatively compiled for each appropriate analysis.

- Assignments to subway stations were derived individually for each development site and were based both on the location of each site relative to the station and the travel patterns of existing subway trips in comparison to the service areas of the Lexington Avenue and Seventh Avenue subways. The transfer capability for trips southbound on the Lexington Avenue No. 4, 5, or 6 lines at the 125th Street station in Manhattan relegated station proximity as the sole basis for assignment of users of the Lexington Avenue line while users of the Seventh Avenue No. 2 line were assigned to the 149th Street/Grand Concourse station from all development sites.

- Assignments to bus transit routes were also based upon proximity of the route to each specific development site and the general distribution of bus transit trips to and from the study area. Bus-to-bus transfers were included, but not bus-to-subway transfers, given the good level of direct subway access in the study area.

- Walk only trips were conservatively assigned as external trips into and out of the study area to and from each development site.

- Pedestrian assignments also included the walk portion of an auto trip assigned to and from a parking garage.

With-Action Conditions Analysis

The following presents the findings of the conditions analysis for subway station, bus transit and pedestrian operations in the future with the proposed action.

Subway Station Operations

The operations of subway station elements at the 138th Street/Grand Concourse and 149th Street/Grand Concourse stations under 2018 With-Action conditions are indicated in Table 3.16-10. Peak 15 minute incremental passenger volumes in 2018 with the

proposed action would increase minimally at the 138th Street/Grand Concourse station, but appreciably in percentage levels given the low usage levels of the station under existing and No-Action conditions. Turnstile operations would decline from LOS A to LOS B and all stairways would continue to operate at LOS A.

Table 3.16-10: 2018 Build Subway Station Elements Operations

138th Street - Grand Concourse Subway Station (4-5)			15-MINUTE PEDESTRIAN VOLUME				15-MINUTE SVCD CAP	V/SVCD RATIO		LEVEL OF SERVICE	
SUBWAY STATION ELEMENTS			AM		PM			AM	PM	AM	PM
Control Area Booth - A25	NUMBER	ONE- OR TWO-WAY	IN	OUT	IN	OUT					
Turnstile	3	2	200	99	136	167	1296	0.23	0.23	B	B
Street Stairs 138th Street and Grand Concourse	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN	UP	DOWN	UP					
Northwest (S1)	5.5	4.5	85	36	55	80	1021	0.12	0.13	A	A
Northwest (S3)	5.5	4.5	2	2	5	13	1021	0.00	0.02	A	A
Northeast (S2)	4.8	3.8	113	61	76	74	861	0.20	0.17	A	A
149th Street - Grand Concourse Subway Station (2-4-5)			**15-MINUTE PEDESTRIAN VOLUME**				**15-MINUTE SVCD CAP**	**V/SVCD RATIO**		**LEVEL OF SERVICE**	
SUBWAY STATION ELEMENTS			**AM**		**PM**		**AM**	**AM**	**PM**	**AM**	**PM**
Control Area Booth - A25	NUMBER	ONE- OR TWO-WAY	IN	OUT	IN	OUT					
HEET (SW)	3	2	336	340	284	417	810	0.83	0.87	E	E
Turnstile (SE)	3	2	292	542	338	313	1296	0.64	0.50	D	C
Street Stairs 149th Street and Grand Concourse	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN	UP	DOWN	UP					
Southwest (S1)	4.8	3.8	155	88	82	174	872	0.28	0.29	A	A
Southeast (S2) - Grand Concourse	4.9	3.9	44	333	137	145	895	0.42	0.32	A	A
Southwest (S3)	5.3	4.3	181	252	202	243	987	0.44	0.45	A	B
Southeast (S4) - 149th Street	5.5	4.5	248	209	201	168	1033	0.44	0.36	A	A

Note:
1. The Capacity for Stairs = 17 persons per minute per foot
2. The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
3. The Capacity for High Entry/Exit Turnstiles = 20 persons per minute
4. The Capacity for High Revolving Exit Gates = 30 persons per minute

Sources:
New York City Transit, Station Planning and Design Guidelines
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Most incremental subway trips generated by the proposed action would use the 149th Street/Grand Concourse station. Peak 15 minute passenger volumes are projected to increase overall at the station approximately 17 percent and 27 percent during the AM and PM peak hours, respectively. However, most new passengers would use the southwest stairways and southwest station fare control area, and enter and exit via the HEET. Operationally, stairway level of service would mostly remain at LOS A except for the southwest stairway (S3), which would decline to LOS B. Operations of the HEET at the southwest station fare control area would deteriorate to LOS E during both the AM and PM peak hours. Although this deterioration in level of service is not considered a significant impact, as per the impact criteria discussed in Section 3.16.1, these turnstiles are projected to be approaching SVCD capacity.

Transit Bus Line Haul Operations

Passenger loads at the peak load points projected for 2018 With-Action conditions on the transit bus routes serving the study area are provided in Table 3.16-11. The project-generated incremental passengers that would be on board at the peak load point of each route would mostly affect the Bx1/2, Bx19 and Bx21 routes. However, all routes would operate below capacity at the peak load point. Passenger volumes on the Bx21 would be at approximately 90 percent of capacity under With-Action conditions.

Table 3.16-11: 2018 With-Action Transit Bus Line Haul Operations

	Peak Hour	Direction	Peak Load Point	Buses per Hour[1]	Hourly Capacity[2]	No Action Volume[1]	Project Generated Volumes	Average Volume per Bus	Build Available Capacity
Bx1/Bx2	AM	NB	East Mosholu Parkway @ Jerome Avenue	6	870	512	81	99	277
		SB	Grand Concourse @ East 170th Street	8	1160	501	-7	62	666
	PM	NB	Grand Concourse @ East 170th Street	8	1160	505	30	67	626
		SB	Grand Concourse @ East Tremont Avenue	8	1160	582	131	89	447
Bx1/Bx2 LTD	AM	NB	Grand Concourse @ East Fordham Road	6	870	538	85	104	246
		SB	Grand Concourse @ East 170th Street	6	870	574	-8	94	303
	PM	NB	Grand Concourse @ East 170th Street	7	1015	510	30	77	474
		SB	Grand Concourse @ East Fordham Road	6	870	464	106	95	300
Bx15	AM	NB	West 125th Street @ 12th Avenue	8	560	448	4	56	108
		SB	Third Avenue @ East 149th Street	10	700	429	-2	43	273
	PM	NB	Third Avenue @ East 149th Street	9	630	401	0	45	229
		SB	Third Avenue @ East 149th Street	8	560	318	6	40	236
Bx19	AM	EB	East 149th Street @ Third Avenue	9	1305	649	57	78	599
		WB	East 149th Street @ Third Avenue	10	1450	819	-11	81	642
	PM	EB	East 149th Street @ Third Avenue	9	1305	659	10	74	636
		WB	East 149th Street @ Third Avenue	10	1450	593	81	67	776
Bx21	AM	NB	Morris Park Avenue @ White Plains	10	700	402	68	47	229
		SB	Boston Road @ East 169th Street	9	630	549	-6	60	87
	PM	NB	Third Avenue @ East 163rd Street	7	490	413	25	63	52
		SB	Morris Park Avenue @ White Plains	8	560	392	97	61	71
Bx32	AM	NB	East 175th Street @ Jerome Avenue	4	280	185	15	50	80
		SB	Morris Avenue @ East 161st Street	5	350	209	-7	40	148
	PM	NB	Morris Avenue @ East 161st Street	5	350	204	2	41	144
		SB	Morris Avenue @ East 161st Street	5	350	120	22	28	208
Bx33	AM	EB	East 135th Street @ Madison Avenue	5	350	104	7	22	239
		WB	East 138th Street @ Third Avenue	5	350	211	1	43	137
	PM	EB	East 135th Street @ Madison Avenue	4	280	116	5	30	159
		WB	East 138th Street @ Third Avenue	4	280	102	10	28	168

Notes:
1. Volumes are based on 2006 and 2007 MTA-New York City Transit ridership surveys and adjusted to reflect 2018 Buildconditions.
2. Capacities are based on a maximum of 70 passengers for a standard 40-seat bus, and 145 passengers for an articulated bus as per CEQR criteria.

Street Level Pedestrian Operations

Sidewalk, corner and crosswalk analysis for future conditions with the proposed action are presented in Table 3.16-12. All sidewalks will continue to operate at LOS A or LOS B. However, the projected increase in pedestrian activity at the southwest corner of the intersection of East 149th Street with the Grand Concourse, which is largely due to trips to and from the subway station, would cause pedestrian space levels to deteriorate from

LOS D in the future without the proposed action to LOS D/E during the midday peak hour and from LOS C to LOS D during the PM peak hour. Likewise, operations of the west and south crosswalk would also operate at LOS D during the midday peak hour. As noted in Section 3.16.1, the *CEQR Technical Manual* specifies that for corner reservoirs and crosswalks, impacts may be considered significant for decreases of one SFP when the No-Action condition has occupancies under 20 SFP (mid-LOS D). The weekday midday occupancy of this corner in the future without the proposed action is projected to be 23 SFP, as shown on Table 3.16.9. Therefore, this deterioration in level of service under With-Action conditions would not be considered a significant impact. Operations on the north crosswalk at the intersection of East 138th Street with the Grand Concourse are projected to decline from LOS A under No-Action conditions to LOS C during the weekday midday, PM and Saturday peak hours and decline from LOS C to LOS D on the south crosswalk at the intersection of East 149th Street with the Grand Concourse during the midday peak hour. However, none of these changes in levels of service represent significant impacts.

Table 3.16-12: 2018 With-Action Street Level Pedestrian Operations

SIDEWALK ANALYSIS

Blockface	Side of Street	Effective Sidewalk Width[1] (ft)	Peak 15 Minute Volume				Persons per Foot per Minute (PFM)				Average Level of Service				Platoon Conditions Level of Service			
			AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
East 138th Street	North	6.5	23	56	55	83	0.2	0.6	0.6	0.9	A	A	A	A	A	B	B	B
(west of Exterior Street)	South	6.5	23	56	14	20	0.2	0.6	0.1	0.2	A	A	A	A	A	B	A	A
East 138th Street	North	15.4	113	310	210	207	0.5	1.3	0.9	0.9	A	A	A	A	A	B	B	B
(west of Third Avenue)	South	14.5	91	308	204	202	0.4	1.4	0.9	0.9	A	A	A	A	A	B	B	B
East 144th Street	North	9.5	83	223	153	153	0.6	1.6	1.1	1.1	A	A	A	A	B	B	B	B
(west of Gerard Avenue)	South	10.5	129	362	270	268	0.8	2.3	1.7	1.7	A	A	A	A	B	B	B	B
East 144th Street	North	8.8	365	275	297	226	2.8	2.1	2.3	1.7	A	A	A	A	B	B	B	B
(east of Walton Avenue)	South	7	158	222	200	181	1.5	2.1	1.9	1.7	A	A	A	A	B	B	B	B
East 144th Street	North	9.3	82	200	159	146	0.6	1.4	1.1	1.0	A	A	A	A	B	B	B	B
(west of Walton Avenue)	South	9	141	106	191	182	1.0	0.8	1.4	1.4	A	A	A	A	B	B	B	B
East 149th Street (east of Gerard Avenue)	South	12	245	344	300	305	1.4	1.9	1.7	1.7	A	A	A	A	B	B	B	B
East 149th Street (west of Gerard Avenue)	South	12.5	233	323	271	265	1.2	1.7	1.4	1.4	A	A	A	A	B	B	B	B
East 149th Street (west of Grand Concourse)	South	10.8	277	437	356	321	1.7	2.7	2.2	2.0	A	A	A	A	B	B	B	B
Walton Avenue (north of East 138th Street)	West	13.5	57	0	29	16	0.3	0.0	0.1	0.1	A	A	A	A	A	A	A	A
Grand Concourse (north of East 138th Street)	East	15	97	155	125	94	0.4	0.7	0.6	0.4	A	A	A	A	A	B	B	A
Grand Concourse	East	28	292	697	357	153	0.7	1.7	0.8	0.4	A	A	A	A	B	B	B	A
(south of East 149th Street)	West	9.5	353	262	359	280	2.5	1.8	2.5	2.0	A	A	A	A	B	B	B	B

STREET CORNER ANALYSIS

Intersection	Corner	Sidewalk Dimen-sions. (ft)	Curb Radii (ft)	Average Pedestrian Space (SF/ped)				Level of Service			
				AM	MD	PM	SAT	AM	MD	PM	SAT
East 149th Street (E-W) @ Grand Concourse (N-S)	SW	9.5 x 14.4	10	25	15	21	44	C	E	D	B

CROSSWALK ANALYSIS

Intersection	Crosswalk	Length (ft)	Width (ft)	Maximum Surge Pedestrian Space (SF/ped)				Maximum Surge Level of Service			
				AM	MD	PM	SAT	AM	MD	PM	SAT
East 138th Street (E-W) @ Grand Concourse (N-S)	North	33.3	16	59	26	36	38	B	C	C	C
East 138th Street (E-W) @	North	120.6	17.8	147	71	95	107	A	A	A	A
Third Avenue (N-S)	South	120.6	13	130	54	75	78	A	B	A	A
East 149th Street (E-W) @	West	70	10	26	18	29	47	C	D	C	B
Grand Concourse (N-S)	South	81.3	15.8	43	24	31	64	B	D	C	A

Note:
1. Total sidewalk width minus the sum of widths and shy distances from obstructions.

Safety

As indicated in Section 3.15.2, accident data for intersections within the study area were obtained from the New York City Department of Transportation (NYCDOT). This information provides the most recent three years of available accident data, from January 1, 2005, to December 31, 2007. Table 3.16-6 lists those intersections where crashes involving vehicles with pedestrians or bicyclists occurred in the study area and indicates the number of such accidents that occurred at each intersection. Overall, 69 vehicular/pedestrian related accidents and 11 vehicular/bicycle related accidents occurred in the study area over the three year period. Two intersections in the traffic study area experienced five pedestrian related accidents in one or more years during the most recent three-year period, the intersections of East 149th Street with Courtlandt Avenue and East 149th Street with Morris Avenue. Courtlandt Avenue extends north of East 146th Street east of the rezoning area and Morris Avenue forms the eastern boundary of the rezoning area to the south of East 149th Street. Pedestrian activity would be expected to increase at both intersections as a result of the proposed action, and more so at Morris Avenue and East 149th Street. However, these intersections are well outside the area where most significant increases in pedestrian levels of activity would be expected to occur under the proposed action, and hence pedestrian exposure to conditions at these two intersections would not be expected to increase significantly. No one intersection experienced more than one vehicle/bicycle related accident during the three year period.

Table 3.16-13: Vehicle/Pedestrian and Vehicle/Bicycle Accident History

		Accidents by Year								
Intersection		Pedestrian			Bicycle			Combined Ped/Bicycle		
Main Street	Cross Street	2005	2006	2007	2005	2006	2007	2005	2006	2007
3rd Avenue	Bruckner Boulevard	0	1	0	0	0	0	0	1	0
3rd Avenue	East 138th Street	0	1	2	0	1	0	0	2	2
East 149th Street	Courtland Avenue	5	5	4	0	0	0	5	5	4
East 149th Street	Gerard Avenue	1	0	0	0	1	0	1	1	0
East 149th Street	Grand Concourse	1	2	3	0	0	1	1	2	4
East 149th Street	Major Deegan Expway	1	0	0	0	0	0	1	0	0
East 149th Street	Melrose Avenue	1	2	0	0	0	1	1	2	1
East 149th Street	Park Avenue	1	0	0	0	0	0	1	0	0
East 149th Street	River Avenue	0	0	1	0	0	0	0	0	1
East 149th Street	Walton Avenue	0	0	1	0	0	0	0	0	1
Grand Concourse	East 144th Street	1	2	1	1	0	0	2	2	1
Morris Avenue	East 139th Street	1	0	1	0	0	0	1	0	1
Morris Avenue	East 140th Street	1	1	0	0	0	0	1	1	0
Morris Avenue	East 142th Street	0	1	0	0	0	0	0	1	0
Morris Avenue	East 144th Street	0	1	0	1	0	0	1	1	0
Morris Avenue	East 149th Street	5	5	4	1	0	0	6	5	4
Morris Avenue	East 148th Street	0	0	3	0	1	0	0	1	3
Morris Avenue	East 143th Street	4	0	2	0	0	0	4	0	2
Park Avenue	East 138th Street	1	1	1	0	1	1	1	2	2
Park Avenue	East 144th Street	0	0	1	1	0	0	1	0	1

As pedestrian levels increase in the future along the commercial areas of East 149th Street, both with and without the proposed action, implementation of pedestrian safety measures by NYCDOT, such as high visibility crosswalks, pedestrian signs, pedestrian lead intervals and exclusive pedestrian phases, may be necessary. Likewise, as pedestrian activity increases significantly under the proposed action along East 138th Street, Exterior Street and other street segments of the rezoning area with very little pedestrian activity today, measures will need to be implemented by NYCDOT to provide for the appropriate level of pedestrian protection and control.