

A. INTRODUCTION

As described in Chapter 1, “Project Description,” the New York City Department of Housing Preservation and Development (HPD) proposes to amend the Melrose Commons Urban Renewal Plan (URP) in order to facilitate future development in the Melrose Commons Urban Renewal Area (URA). The future development would include residential, retail, and community facility uses. Potential impacts resulting from the proposed actions on transit and pedestrian facilities in the vicinity of the project area were evaluated. This chapter includes a description of the existing and future operating conditions of these facilities and identification of the potential for significant adverse impacts that would require mitigation.

The analysis results show that new trips associated with the proposed actions would not result in significant adverse subway or pedestrian impacts. However, there would be the potential for significant adverse impacts on the Bx6 route, which runs along East 161st Street, the Bx2 and Bx41 routes, which run along Melrose Avenue, and the Bx15, Bx21, and Bx55 routes, which run along Third Avenue. Recommended measures to mitigate these impacts are discussed in Chapter 20, “Mitigation.”

B. METHODOLOGY

As described in Chapter 14, “Traffic and Parking,” a travel demand projection was developed to identify the transportation elements likely to be affected by the proposed actions. Based on criteria specified in the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, it was determined that a quantified assessment of transit station operations, bus line haul, and pedestrian circulation was required. Since estimated trips generated by the proposed actions 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*.

To assess subway stairway operations, the user volume is compared 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 area required for circulation. Volumes and capacities are presented for 15-minute intervals.

The estimated v/c ratio is compared to New York City Transit (NYCT) criteria to determine a level-of-service (LOS) for the operation of an element. This v/c ratio is also commonly referred to as V/SVCD, where SVCD is the service volume at LOS C/D. Table 15-1 shows the LOS and corresponding v/c ratios for subway station elements.

Table 15-1

Level of Service Criteria for Subway Station Elements

LOS	V/C 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 Greater	Greater than 1.00
Source: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> (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 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, which would mitigate the location to its No Build or LOS C/D operating conditions. For a location with a Build LOS D, a widening of six inches or more needed to restore future No Build or LOS C/D conditions is considered significant; for a Build LOS E condition, a widening of three inches or more is considered significant; and for a Build LOS F condition, a widening of 1 inch or more is considered significant.

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 particular bus route. Typically, when numerous bus routes are available within the transit study area, projected trips would be dispersed and would not overburden one or more nearby bus routes. However, if a substantial number of bus trips are anticipated for an already heavily-used bus route, its peak load point and its bus stops closest to the project site are evaluated to identify the potential for the buses to exceed their practical capacities. NYCT operates two types of buses: standard and articulated. During peak hours, standard buses operate with up to 65 passengers per bus while articulated buses operate with up to 93 passengers per bus. 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.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, corner reservoirs, and crosswalks in relation to the demand imposed on them was assessed using the methodologies presented in the 2000 *Highway Capacity Manual (HCM)*. 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 the 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.

Table 15-2 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 *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 SFP, while for sidewalks, a mid-LOS D condition requires a maximum of 13 PFM.

Table 15-2
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: Transportation Research Board. <i>Highway Capacity Manual</i> , 2000.		

Project-related sidewalk impacts are considered significant and require the examination of mitigation measures if there is an increase of 2 PFM over a no action condition that is characterized by flow rates greater than 13 PFM (mid-LOS D). For corners and crosswalks, a decrease of 1 SFP under the action condition when the no action condition has an average occupancy of less than 20 SFP (mid-LOS D) is considered significant. However, if there is less than a 200-person increase at a location within the peak hour, any impact is not considered significant since such increases would not typically be perceptible.

C. EXISTING CONDITIONS

Existing transit and pedestrian levels are based on field surveys conducted on September 27, September 28, September 30, and October 11, 2005. Bus ridership data collected for specific routes and peak load points were obtained from NYCT in October 2005.

To determine peak conditions for subway stairways and pedestrian facilities, counts were conducted at 15-minute intervals from 7-10 AM, 12-2 PM, and 4-7 PM. The highest 15-minute volumes were selected for analysis from each of these peak periods. However, since projected and background transit use during the midday peak period is considerably lower than during the AM and PM peak periods, a detailed midday transit analysis was not conducted.

To determine peak conditions for bus line haul, counts were conducted from 7-10 AM and from 4-7 PM. The highest hourly volumes for each route were selected for analysis.

TRANSIT STUDY AREA

The project site is located in an area served by several subway and bus routes. A description of each of these transit modes, followed by a detailed analysis of key subway station elements and local bus routes that would to be affected by trips associated with the proposed actions, is provided below.

SUBWAY SERVICE

Two NYCT subway stations are within walking distance of the project site, as shown in Figure 15-1. The Third Avenue-149th Street Station (2/5) and the 161st Street-Yankee Stadium Station (4/B/D) are located to the south and west of the project site, respectively.

2 Subway Line:

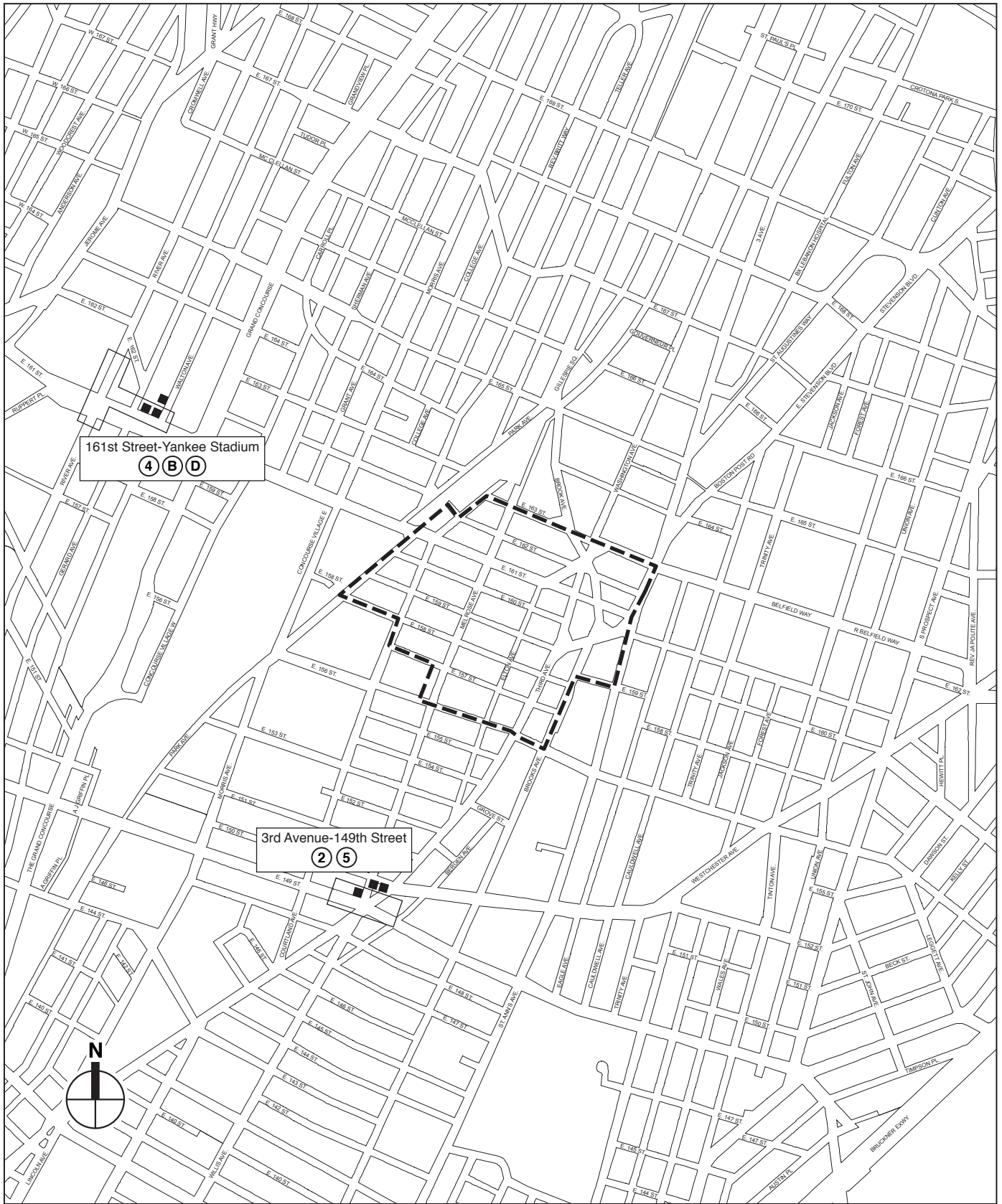
- The 2 train operates express service primarily along Broadway and Seventh Avenue in Manhattan. Its full route is between Wakefield/241st Street in the Bronx and Brooklyn College in Brooklyn.

4/5 Subway Lines:

- The 4/5 trains operate express service primarily along Lexington and Park Avenues in Manhattan. The 4 train's full route is between Woodlawn in the Bronx and Crown Heights in Brooklyn. The 5 train operates between Eastchester Avenue in the Bronx and Brooklyn College in Brooklyn.

B/D Subway Lines:

- The B and D trains primarily operate along Sixth Avenue in Manhattan. The B train provides weekday service between Bedford Park Boulevard in the Bronx and Brighton



--- Melrose Commons Urban Renewal Area

■ Subway Station Analysis Location

0 1000 FEET
SCALE

Beach in Brooklyn. The D train provides service between 205th Street in the Bronx and Stillwell Avenue in Brooklyn.

BUS SERVICE

The quantitative analysis of buses considers the publicly operated local bus routes serving the study area since these would be most affected by project-related trips.

Local bus routes operated by NYCT, which provide regular service to the study area, are shown in Figure 15-2. All local routes use standard buses with a guideline capacity of 65 passengers per bus, with the exception of the Bx2, Bx41, and Bx55, which are articulated buses with a guideline capacity of 93 passengers. Table 15-3 provides a summary of the NYCT local bus routes and their weekday frequencies of operation.

PEDESTRIAN STUDY AREA

The pedestrian study area considers the sidewalks, corner reservoirs, and crosswalks that would be most affected by new trips generated by the proposed actions. Since transit trips also contain a walking component, the pedestrian network considers the major routes from subway stations and bus stops. Based on trip generation estimates detailed in Chapter 14, "Traffic and Parking," a detailed analysis was determined to be required at three intersections. These intersections, which are in the pedestrian study area, are located along East 161st Street, Melrose Avenue, and Third Avenue.

Table 15-3
Existing NYCT Local Bus Routes Serving the Study Area

Bus Route	Start Point	End Point	Routing	Freq. of Bus Service (Headway in Minutes)			
				AM	Midday	PM	Evening/ Saturday
Bx2 Lcl	Riverdale	Mott Haven	via Grand Concourse	13	13	15	12
Bx2 Ltd	Riverdale	Mott Haven	via Grand Concourse	20	20	18	-
Bx6	Washington Heights	Hunts Point	via 161st & 163rd Sts	6	6	6	9
Bx13	Washington Heights	Melrose	via 161st St	7	-	-	-
Bx15	Harlem	Fordham Plaza	via 3rd Ave & 124th St	8	8	8	8
Bx21	Westchester Square	Mott Haven	via Morris Park Blvd & Boston Rd	7	10	8	12
Bx41 Lcl	The Hub	Wakefield	via Webster Ave & White Plains Rd	8	9	9	9
Bx41 Ltd	The Hub	Wakefield	via Webster Ave & White Plains Rd	10	-	10	-
Bx55 Ltd	The Hub	Fordham	via 3rd Ave & Webster Ave	5	8	6	6
Source: New York City Transit, <i>Bronx Bus Map</i> (2005).							

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

Since all study area subway stations have multiple entrances, the quantified analysis was limited to the elements that would be most heavily used by trips to and from the project site. Based on the travel demand estimates detailed in Chapter 14, “Traffic and Parking,” and travel patterns associated with the area’s transit uses, it was determined that quantified analyses would be required for street-level stairways serving trips generated by the proposed actions. At the 161st Street-Yankee Stadium Station, operating conditions at the three eastern-most stairways were evaluated. Operating conditions at the three northern-most stairways were analyzed at the 3rd Avenue-149th Street Station (See Figure 15-1).

As shown in Table 15-4, all stairways currently operate at LOS C or better during both the AM and PM peak hours.

Table 15-4
2005 Existing Conditions: Subway Station Stairway Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS
			Up	Down		SVCD Capacity	V/SVCD Ratio	
AM PEAK								
East 149th Street at Melrose/Third Avenues-The Hub (2/5)								
East 149th Street/Melrose Avenue (NW corner)	5.50	4.50	114	249	0.80	540	0.67	B
East 149th Street/Melrose Avenue (NE corner)	5.50	4.50	26	41	0.90	608	0.11	A
East 149th Street/Third Avenue (NW corner)	5.50	4.50	57	482	0.80	540	1.00	C
East 161st Street at Walton Avenue, Yankee Stadium (4/B/D)								
East 161st Street/Walton Avenue (NW corner on Walton Avenue)	5.83	4.83	50	75	0.90	652	0.19	A
East 161st Street/Walton Avenue (NW corner on 161 Street)	5.83	4.83	18	21	0.90	652	0.06	A
East 161st Street/Walton Avenue (NW corner in median at entrance to underpass)	7.66	6.66	79	152	0.90	899	0.26	A
PM PEAK								
East 149th Street at Melrose/Third Avenues-The Hub (2/5)								
East 149th Street/Melrose Avenue (NW corner)	5.50	4.50	33	210	0.80	540	0.45	A
East 149th Street/Melrose Avenue (NE corner)	5.50	4.50	28	23	0.90	608	0.08	A
East 149th Street/Third Avenue (NW corner)	5.50	4.50	51	215	0.80	540	0.49	B
East 161st Street at Walton Avenue, Yankee Stadium (4/B/D)								
East 161st Street/Walton Avenue (NW corner on Walton Avenue)	5.83	4.83	42	42	0.90	652	0.13	A
East 161st Street/Walton Avenue (NW corner on 161 Street)	5.83	4.83	13	36	0.80	580	0.08	A
East 161st Street/Walton Avenue (NW corner in median at entrance to underpass)	7.66	6.66	123	84	0.90	899	0.23	A
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .								

NYCT BUS LINE HAUL LEVELS

There are seven bus routes serving project-generated trips operating within or near the study area. For purposes of analysis, the articulated Bx2 and Bx41 routes, which both operate a Local and Limited service, are considered each to be only one route. The Bx2 and Bx41 have stops along Melrose Avenue between East 149th Street and East 162nd Street. The Bx15, Bx21, and articulated Bx55 Limited-only bus routes have stops along Third Avenue between East 149th

Street and East 163rd Street. The Bx6 and Bx13 bus routes operate along East 161st and East 163rd Streets, though the Bx13 route only operates within the study area during the AM peak hour.

To assess the potential impacts for the routes described above, the latest (2002-2004) ridership data were acquired from NYCT in October 2005, and field surveys of bus line haul volumes at two locations within the study area, East 161st Street at Melrose Avenue and East 163rd Street at Third Avenue, were conducted in September 2005. The number of passengers per bus was assessed for each route in each direction for the AM and PM peak periods. As shown on Tables 15-5 and 15-6, six of the seven bus routes presently operate within guideline capacities (93 passengers per articulated bus or 65 passengers per standard bus) both at their respective maximum load points and at the selected locations within the study area. The Bx6 route operates above its guideline capacity eastbound at East 161st Street and Melrose Avenue in the AM peak period. It should be noted that in 14 of the 26 line haul assessments conducted, the number of passengers per bus at the study area load points exceeds the NYCT recorded peak load volumes from 2002 to 2004. The rapid growth in areas near the Melrose Commons URA and throughout the South Bronx is the likely cause of this discrepancy.

STREET-LEVEL PEDESTRIAN OPERATIONS

As described above, the study area sidewalks, corner reservoirs, and crosswalks were assessed for the AM, midday, and PM peak periods. Existing peak 15-minute volumes were developed for three study area intersections: East 161st Street and Melrose Avenue, East 163rd Street and Third Avenue, and East 149th Street, Melrose Avenue, and Third Avenue.

As shown in tables 15-7 through 15-13, all analyzed pedestrian elements are currently operating at acceptable levels (20 SFP for crosswalks and corners, 13 PFM for sidewalks) during the AM, midday, and PM peak 15-minute periods.

Table 15-5
2005 Existing Conditions: Bus Line Haul at NYCT Maximum Load Points

Route	Peak Period	Buses Per Hour	Direction		Direction	
			Northbound Max Load Point	AP	Southbound Max Load Point	AP
Bx2 (A)	AM	7	Grand Concourse / East Tremont Ave	60	Grand Concourse / East 170th Street	70
	PM	8	Grand Concourse / East Tremont Ave	65	Grand Concourse / East Fordham Road	58
Bx15	AM	8	Eighth Avenue / West 125th Street	38	Third Avenue / East 149th Street	39
	PM	8	Third Avenue / East 149th Street	46	Third Avenue / East 149th Street	41
Bx21	AM	7	White Plains Road / Morris Park Ave	40	Third Avenue / East 163rd Street	46
	PM	7	Third Avenue / East 163rd Street	41	White Plains Road / Morris Park Ave	30
Bx41 (A)	AM	14	Webster Avenue / Claremont Parkway	53	White Plains Road / East Gun Hill Road	60
	PM	13	Webster Avenue / Bedford Park Blvd	53	Webster Avenue / East 180th Street	45
Bx55 (A)	AM	15	Third Avenue / East 149th Street	27	Third Avenue / East 169th Street	52
	PM	8	Third Avenue / East 169th Street	58	Third Avenue / East 169th Street	55
			Eastbound		Westbound	
Bx6	AM	11	Melrose Avenue / East 161st Street	51	Melrose Avenue / East 161st Street	56
	PM	9	Melrose Avenue / East 161st Street	46	Melrose Avenue / East 161st Street	49
Bx13	AM	6	River Avenue / East 161st Street	47	River Avenue / East 161st Street	29
	PM	-	-	-	-	-
Note: AP = average passengers per bus; maximum load ridership data provided by NYCT, October 2005. (A) = articulated buses; (#) = exceeds NYCT guideline capacity						

Table 15-6

2005 Existing Conditions: Bus Line Haul at Study Area Load Points

Route	Peak Period	Buses Per Hour	Direction Northbound		Direction Southbound	
			Study Area Load Point	AP	Study Area Load Point	AP
Bx2 (A)	AM	7	Melrose Avenue / East 161st Street	36	Melrose Avenue / East 161st Street	85
	PM	8	Melrose Avenue / East 161st Street	60	Melrose Avenue / East 161st Street	48
Bx15	AM	9	Third Avenue / East 163rd Street	31	Third Avenue / East 163rd Street	56
	PM	9	Third Avenue / East 163rd Street	41	Third Avenue / East 163rd Street	35
Bx21	AM	8	Third Avenue / East 163rd Street	34	Third Avenue / East 163rd Street	47
	PM	8	Third Avenue / East 163rd Street	48	Third Avenue / East 163rd Street	38
Bx41 (A)	AM	12	Melrose Avenue / East 161st Street	26	Melrose Avenue / East 161st Street	68
	PM	10	Melrose Avenue / East 161st Street	49	Melrose Avenue / East 161st Street	46
Bx55 (A)	AM	15	Third Avenue / East 163rd Street	37	Third Avenue / East 163rd Street	76
	PM	11	Third Avenue / East 163rd Street	73	Third Avenue / East 163rd Street	58
			Eastbound		Westbound	
Bx6	AM	12	Melrose Avenue / East 161st Street	(68)	Melrose Avenue / East 161st Street	52
	PM	9	Melrose Avenue / East 161st Street	56	Melrose Avenue / East 161st Street	50
Bx13	AM	6	Melrose Avenue / East 161st Street	7	Melrose Avenue / East 161st Street	18
	PM	-	-	-	-	-

Note: AP = average passengers per bus; study area ridership data collected in September 2005.
(A) = articulated buses; **(#)** = exceeds NYCT guideline capacity

Table 15-7

2005 Existing Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Existing AM							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	27	0.2	A	4.2	A
	East	11	69	0.4	A	4.4	A
East 161st Street between Elton Avenue and Melrose Avenue	North	15	50	0.2	A	4.2	A
	South	5	23	0.3	A	4.3	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	70	1.2	A	5.2	B
	East	11.5	38	0.2	A	4.2	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	38	0.2	A	4.2	A
	South	12	61	0.3	A	4.3	A
Third Avenue between East 163rd Street and Boston Road	West	9	68	0.5	A	4.5	A
	East	7	120	1.1	A	5.1	B
East 163rd Street between Third Avenue and Eagle Avenue	North	15	50	0.2	A	4.2	A
	South	10	125	0.8	A	4.8	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	85	0.8	A	4.8	A
	East	9	79	0.6	A	4.6	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	39	0.2	A	4.2	A
	South	13	49	0.3	A	4.3	A
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	301	2.1	A	6.1	B
	East	8	69	0.6	A	4.6	A
3rd Avenue between East 149th Street and Westchester Avenue	West	10	421	2.8	A	6.8	B
	East	11	132	0.8	A	4.8	A
Note: PFM = pedestrians per foot per minute.							

Table 15-8

2005 Existing Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Existing Midday							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	14	0.1	A	4.1	A
	East	11	29	0.2	A	4.2	A
East 161st Street between Elton Avenue and Melrose Avenue	North	15	25	0.1	A	4.1	A
	South	5	29	0.4	A	4.4	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	47	0.8	A	4.8	A
	East	11.5	37	0.2	A	4.2	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	29	0.1	A	4.1	A
	South	12	44	0.2	A	4.2	A
Third Avenue between East 163rd Street and Boston Road	West	9	37	0.3	A	4.3	A
	East	7	51	0.5	A	4.5	A
East 163rd Street between Third Avenue and Eagle Avenue	North	15	35	0.2	A	4.2	A
	South	10	59	0.4	A	4.4	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	31	0.3	A	4.3	A
	East	9	84	0.6	A	4.6	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	25	0.2	A	4.2	A
	South	13	22	0.1	A	4.1	A
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	225	1.6	A	5.6	B
	East	8	68	0.6	A	4.6	A
3rd Avenue between East 149th Street and Westchester Avenue	West	10	329	2.2	A	6.2	B
	East	11	314	1.9	A	5.9	B
Note: PFM = pedestrians per foot per minute.							

Table 15-9

2005 Existing Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Existing PM							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	62	0.6	A	4.6	A
	East	11	51	0.3	A	4.3	A
East 161st Street between Elton Avenue and Melrose Avenue	North	15	57	0.3	A	4.3	A
	South	5	34	0.5	A	4.5	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	90	1.5	A	5.5	B
	East	11.5	45	0.3	A	4.3	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	44	0.2	A	4.2	A
	South	12	59	0.3	A	4.3	A
Third Avenue between East 163rd Street and Boston Road	West	9	62	0.5	A	4.5	A
	East	7	71	0.7	A	4.7	A
East 163rd Street between Third Avenue and Eagle Avenue	North	15	35	0.2	A	4.2	A
	South	10	64	0.4	A	4.4	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	32	0.3	A	4.3	A
	East	9	117	0.9	A	4.9	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	42	0.3	A	4.3	A
	South	13	32	0.2	A	4.2	A
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	244	1.7	A	5.7	B
	East	8	127	1.1	A	5.1	B
3rd Avenue between East 149th Street and Westchester Avenue	West	10	303	2.0	A	6.0	B
	East	11	468	2.8	A	6.8	B
Note: PFM = pedestrians per foot per minute.							

Table 15-10

2005 Existing Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	AM Peak Hour		Midday Peak Hour		PM Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS
East 161st Street at Melrose Avenue	Northeast	562	A	1003	A	604	A
	Southeast	553	A	1200	A	706	A
	Southwest	571	A	984	A	550	A
	Northwest	630	A	1034	A	577	A
East 163rd Street at Third Avenue	Northeast	262	A	545	A	354	A
	Southeast	167	A	271	A	203	A
	Southwest	87	A	194	A	145	A
	Northwest	150	A	366	A	264	A

Note: SFP = square feet per pedestrian.

Table 15-11

2005 Existing Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles					
				AM		Midday		PM	
				SFP	LOS	SFP	LOS	SFP	LOS
East 161st Street at Melrose Avenue	North	50.0	13.0	344.6	A	547.0	A	328.1	A
	East	60.0	12.0	341.6	A	919.4	A	458.8	A
	South	50.0	16.5	456.3	A	724.0	A	499.9	A
	West	60.0	13.0	514.5	A	855.3	A	413.8	A
East 163rd Street at Third Avenue	North	67.0	17.0	124.2	A	327.3	A	182.3	A
	East	60.5	13.0	174.4	A	313.3	A	204.7	A
	South	66.0	17.5	118.6	A	258.5	A	197.5	A
	West	60.0	11.0	112.4	A	253.5	A	223.9	A
East 149th Street at Melrose Avenue/ Third Avenue	North (Melrose)	40.0	16.0	42.0	B	35.9	C	34.0	C
	North (Third)	43.0	13.0	47.2	B	36.0	C	33.3	C
	East	60.0	16.0	163.7	A	95.9	A	99.8	A
	South	58.0	16.0	66.1	A	41.9	B	44.7	B
	West	60.0	19.0	94.0	A	127.3	A	94.8	A

Note: SFP = square feet per pedestrian.

D. THE FUTURE WITHOUT THE PROPOSED AND FUTURE ACTIONS

Transit and pedestrian conditions in the future without the proposed actions were assessed to establish a baseline No Build condition against which to evaluate the potential project impacts. The 2009 No Build 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 VOLUME PROJECTIONS

Future 2009 No Build peak hour transit and pedestrian levels were based on volume projections developed using the CEQR-recommended 0.50-percent annual background growth rate projected over 4 years. The 2009 No Build transit and pedestrian networks were developed by projecting the background growth rate onto the 2005 existing conditions and then adding the volumes generated by projects within and near the study area that could be completed independent of the proposed actions.

As discussed in Chapter 2, "Land Use, Zoning, and Public Policy" and summarized in Table 2-2, several projects, located within the Melrose Commons URA, are expected to be operational by 2009 independent of the proposed actions and would add volumes to study area transit facilities

and pedestrian elements. Of the projects situated just outside of the Melrose Commons URA, as shown in Table 2-3, those numbered 1, 2, 3, 4, 5, 7, 8, 10, 12, 15, and 17 are also expected to add volumes to study area transit facilities and pedestrian elements. Trips generated by these projects were assigned to the transit and pedestrian analysis locations described earlier in this chapter.

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

The station elements previously analyzed at the 161st Street-Yankee Stadium Station (4/B/D) and the Third Avenue-149th Street Station (2/5) were analyzed with the addition of the background growth and projected No Build volumes for the 2009 No Build conditions. Table 15-12 details the operating conditions for each street-level stairway during both the AM and PM peak periods. As shown, all stairways would continue to operate at LOS C or better during both peak analysis periods, with the exception of the stairway at the northwest corner of East 149th Street and Third Avenue, which would deteriorate to LOS D with a 1.12 V/SVCD ratio.

Table 15-12
2009 No Build Condition: Subway Station Stairway Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	SVCD Capacity	V/SVCD Ratio	LOS
			Up	Down				
AM PEAK								
East. 149th Street at Melrose Avenue/Third Avenues-The Hub (2/5)								
East 149th Street/Melrose Avenue (NW corner)	5.50	4.50	123	280	0.80	540	0.75	C
East 149th Street/Melrose Avenue (NE corner)	5.50	4.50	28	46	0.90	608	0.12	A
East 149th Street/Third Avenue (NW corner)	5.50	4.50	61	542	0.80	540	1.12	D
East. 161st Street at Walton Avenue, Yankee Stadium (4/B/D)								
East 161st Street/Walton Avenue (NW corner on Walton Avenue)	5.83	4.83	52	79	0.90	652	0.20	A
East 161st Street/Walton Avenue (NW corner on 161 Street)	5.83	4.83	19	22	0.90	652	0.06	A
East 161st Street/Walton Avenue (NW corner in median at entrance to underpass)	7.66	6.66	82	159	0.90	899	0.27	A
PM PEAK								
East 149th Street at Melrose /Third Avenues-The Hub (2/5)								
East 149th Street/Melrose Avenue (NW corner)	5.50	4.50	39	235	0.80	540	0.51	B
East 149th Street/Melrose Avenue (NE corner)	5.50	4.50	33	26	0.90	608	0.10	A
East 149th Street/Third Avenue (NW corner)	5.50	4.50	61	241	0.80	540	0.56	B
East 161st Street at Walton Avenue, Yankee Stadium (4/B/D)								
East 161st Street/Walton Avenue (NW corner on Walton Avenue)	5.83	4.83	45	44	0.90	652	0.14	A
East 161st Street/Walton Avenue (NW corner on 161 Street)	5.83	4.83	14	38	0.80	580	0.09	A
East 161st Street/Walton Avenue (NW corner in median at entrance to underpass)	7.66	6.66	131	88	0.90	899	0.24	A
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .								

NYCT BUS LINE HAUL LEVELS

To assess the potential impacts to each of the seven NYCT local bus routes previously described, a quantified bus line haul and maximum load analysis was conducted with the addition of the background growth and projected No Build volumes for the 2009 No Build

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conditions. Due to the concentration of growth at locations near and within the Melrose Commons URA, bus line haul analysis was conducted for conditions at the locations surveyed within the study area, rather than at NYCT stated peak load points. As shown in Tables 15-13, four of the seven routes would continue to operate within guideline capacities. The Bx2 and Bx6 routes would operate above guideline capacities in the AM peak period in the southbound and eastbound directions, respectively, and the Bx41 route would operate above guideline capacity northbound in the PM peak period.

Table 15-13

2009 No Build Condition: Bus Line Haul at Study Area Load Points

Route	Peak Period	Buses Per Hour	Direction		Direction	
			Northbound Study Area Load Point	AP	Southbound Study Area Load Point	AP
Bx2 (A)	AM	7	Melrose Avenue / East 161st Street	42	Melrose Avenue / East 161st Street	(111)
	PM	8	Melrose Avenue / East 161st Street	87	Melrose Avenue / East 161st Street	63
Bx15	AM	9	Third Avenue / East 163rd Street	33	Third Avenue / East 163rd Street	62
	PM	9	Third Avenue / East 163rd Street	46	Third Avenue / East 163rd Street	41
Bx21	AM	8	Third Avenue / East 163rd Street	36	Third Avenue / East 163rd Street	54
	PM	8	Third Avenue / East 163rd Street	49	Third Avenue / East 163rd Street	45
Bx41 (A)	AM	12	Melrose Avenue / East 161st Street	44	Melrose Avenue / East 161st Street	89
	PM	10	Melrose Avenue / East 161st Street	(96)	Melrose Avenue / East 161st Street	84
Bx55 (A)	AM	15	Third Avenue / East 163rd Street	42	Third Avenue / East 163rd Street	76
	PM	11	Third Avenue / East 163rd Street	89	Third Avenue / East 163rd Street	84
			Eastbound		Westbound	
Bx6	AM	12	Melrose Avenue / East 161st Street	(69)	Melrose Avenue / East 161st Street	56
	PM	9	Melrose Avenue / East 161st Street	63	Melrose Avenue / East 161st Street	54
Bx13	AM	6	Melrose Avenue / East 161st Street	7	Melrose Avenue / East 161st Street	18
	PM	-	-	-	-	-
Note: AP = average passengers per bus (A) = articulated buses; (#) = exceeds NYCT guideline capacity						

STREET-LEVEL PEDESTRIAN OPERATIONS

The No Build peak period volume projections were applied to the pedestrian analysis networks described previously. As shown in Tables 15-14 through 15-18, all sidewalks, crosswalks, and corner reservoir analysis locations would continue to operate at acceptable levels (20 SFP for crosswalks and corners, 13 PFM for sidewalks) during the AM, midday, and PM peak 15-minute periods.

Table 15-14

2009 No Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
No Build AM							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	27	0.2	A	4.2	A
	East	11	85	0.5	A	4.5	A
East 161st Street between Elton Avenue and Melrose Avenue	North	15	51	0.2	A	4.2	A
	South	5	33	0.4	A	4.4	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	136	2.3	A	6.3	B
	East	11.5	67	0.4	A	4.4	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	47	0.2	A	4.2	A
	South	12	98	0.5	A	4.5	A
Third Avenue between East 163rd Street and Boston Road	West	9	69	0.5	A	4.5	A
	East	7	123	1.2	A	5.2	B
East 163rd Street between Third Avenue and Eagle Avenue	North	15	51	0.2	A	4.2	A
	South	10	128	0.9	A	4.9	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	86	0.8	A	4.8	A
	East	9	81	0.6	A	4.6	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	39	0.2	A	4.2	A
	South	13	50	0.3	A	4.3	A
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	407	2.9	A	6.9	B
	East	8	81	0.7	A	4.7	A
3rd Avenue between East 149th Street and Westchester Avenue	West	10	495	3.3	A	7.3	C
	East	11	145	0.9	A	4.9	A
Note: PFM = pedestrians per foot per minute.							

Table 15-15

2009 No Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
No Build Midday							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	14	0.1	A	4.1	A
	East	11	63	0.4	A	4.4	A
East 161st Street between Elton Avenue and Melrose Avenue	North	15	25	0.1	A	4.1	A
	South	5	56	0.7	A	4.7	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	107	1.8	A	5.8	B
	East	11.5	68	0.4	A	4.4	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	32	0.2	A	4.2	A
	South	12	112	0.6	A	4.6	A
Third Avenue between East 163rd Street and Boston Road	West	9	37	0.3	A	4.3	A
	East	7	52	0.5	A	4.5	A
East 163rd Street between Third Avenue and Eagle Avenue	North	15	35	0.2	A	4.2	A
	South	10	60	0.4	A	4.4	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	31	0.3	A	4.3	A
	East	9	86	0.6	A	4.6	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	25	0.2	A	4.2	A
	South	13	22	0.1	A	4.1	A
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	282	2.0	A	6.0	B
	East	8	87	0.7	A	4.7	A
3rd Avenue between East 149th Street and Westchester Avenue	West	10	398	2.7	A	6.7	B
	East	11	351	2.1	A	6.1	B
Note: PFM = pedestrians per foot per minute.							

Table 15-16

2009 No Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
No Build PM							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	63	0.6	A	4.6	A
	East	11	112	0.7	A	4.7	A
East 161st Street between Elton Avenue and Melrose Avenue	North	15	59	0.3	A	4.3	A
	South	5	60	0.8	A	4.8	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	159	2.7	A	6.7	B
	East	11.5	83	0.5	A	4.5	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	48	0.2	A	4.2	A
	South	12	129	0.7	A	4.7	A
Third Avenue between East 163rd Street and Boston Road	West	9	64	0.5	A	4.5	A
	East	7	73	0.7	A	4.7	A
East 163rd Street between Third Avenue and Eagle Avenue	North	15	35	0.2	A	4.2	A
	South	10	66	0.4	A	4.4	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	32	0.3	A	4.3	A
	East	9	119	0.9	A	4.9	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	42	0.3	A	4.3	A
	South	13	32	0.2	A	4.2	A
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	294	2.1	A	6.1	B
	East	8	152	1.3	A	5.3	B
3rd Avenue between East 149th Street and Westchester Avenue	West	10	363	2.4	A	6.4	B
	East	11	506	3.1	A	7.1	C
Note: PFM = pedestrians per foot per minute.							

Table 15-17

2009 No Build Condition: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	AM Peak Hour		Midday Peak Hour		PM Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS
East 161st Street at Melrose Avenue	Northeast	485.3	A	632.7	A	365.9	A
	Southeast	386.5	A	494.9	A	344.8	A
	Southwest	336.1	A	385.1	A	269.9	A
	Northwest	506.2	A	627.5	A	350.1	A
East 163rd Street at Third Avenue	Northeast	255.7	A	535.4	A	345.3	A
	Southeast	164.3	A	263.7	A	197.5	A
	Southwest	84.9	A	189.8	A	140.4	A
	Northwest	147.2	A	359.3	A	256.3	A
Note: SFP = square feet per pedestrian.							

Table 15-18

2009 No Build Condition: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles					
				AM		Midday		PM	
				SFP	LOS	SFP	LOS	SFP	LOS
East 161st Street at Melrose Avenue	North	50.0	13.0	293.3	A	345.7	A	196.4	A
	East	60.0	12.0	292.8	A	472.8	A	250.3	A
	South	50.0	16.5	266.9	A	296.4	A	235.5	A
	West	60.0	13.0	358.0	A	431.8	A	225.4	A
East 163rd Street at Third Avenue	North	67.0	17.0	119.1	A	317.2	A	170.0	A
	East	60.5	13.0	171.2	A	303.2	A	200.3	A
	South	66.0	17.5	116.3	A	253.2	A	191.3	A
	West	60.0	11.0	110.8	A	245.7	A	217.7	A
East 149th Street at Melrose Avenue/ Third Avenue	North (Melrose)	40.0	16.0	41.0	B	35.0	C	33.2	C
	North (Third)	43.0	13.0	44.6	B	33.8	C	30.8	C
	East	60.0	16.0	146.5	A	82.7	A	85.5	A
	South	58.0	16.0	64.5	A	40.8	B	43.8	B
	West	60.0	19.0	91.8	A	124.4	A	92.6	A

Note: SFP = square feet per pedestrian.

E. THE FUTURE WITH THE PROPOSED AND FUTURE ACTIONS

The future with the proposed actions would result in increased transit and pedestrian trips as compared to the No Build condition. This section describes the projected travel patterns of the site-related trips and assesses their potential impacts on nearby transit and pedestrian facilities.

TRIP DISTRIBUTION AND ASSIGNMENT

Transit and pedestrian volumes in the 2009 Build condition were estimated using peak 15-minute volumes derived from the trip generation estimates presented in Chapter 14, "Traffic and Parking." These volumes were then assigned to the transit and pedestrian analysis locations based on the following assumptions.

- Automobile and taxi person trips are likely to have a negligible effect on the pedestrian network since both would be dispersed throughout the study area, and the associated pedestrians would traverse a limited number of pedestrian elements.
- Subway person trips were assigned to two subway stations as follows: 20 percent to the 161st Street-Yankee Stadium Station (4/B/D) and 80 percent to the Third Avenue-149th Street Station (2/5). The assignments to specific stairways were based on logical patterns of travel to/from the subway stations and the Melrose Commons URA. For a conservative analysis, all subway person trips were assumed to also connect to nearby bus routes.
- Based on existing ridership patterns, bus trips were assigned to bus routes as follows: 20 percent to the Bx6 and 80 percent to the Bx2, Bx15, Bx21, Bx41, and Bx55 routes. The Bx13 provides only part-time service to the study area and was not expected to service a measurable number of project-generated trips. Directional assignments on bus routes were made with logical origins and destinations. However, when subway person trips that were anticipated to connect to local bus routes were added to the total bus person trips, the non-overlapping bus person trips (i.e., trips to/from locations that do not lie between the study area and the subway stations) represented an insignificant volume. Therefore, the bus line haul analysis focused on the portion of routes located between the Melrose Commons URA and nearby subway stations.

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- Walk-only trips were evenly distributed to the surrounding street network.

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Future 2009 Build condition peak hour transit and pedestrian levels were based on volume projections developed using the above trip distribution and assignment patterns, superimposed onto the No Build transit and pedestrian networks.

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

Peak 15-minute subway ridership levels were estimated by adding the project increments to No Build levels. Table 15-19 summarizes the operating conditions for each street-level stairway. As shown, all stairways would continue to operate at LOS C or better during both peak analysis periods, with the exception of the stairway at the northwest corner of East 149th Street and Third Avenue, which would deteriorate from a No Build LOS D with a 1.12 V/SVCD ratio to a Build LOS D with a 1.21 V/SVCD ratio.

Table 15-19
2009 Build Condition: Subway Station Stairway Analysis

Stairways	Effective Width (feet)	Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	SVCD Capacity	V/SVCD Ratio	LOS
			Up	Down				
AM PEAK								
East. 149th Street at Melrose Avenue/Third Avenues-The Hub (2/5)								
East 149th Street/Melrose Avenue (NW corner)	5.50	4.50	132	303	0.80	540	0.81	C
East 149th Street/Melrose Avenue (NE corner)	5.50	4.50	30	50	0.90	608	0.13	A
East 149th Street/Third Avenue (NW corner)	5.50	4.50	65	586	0.80	540	1.21	D
East 161st Street at Walton Avenue, Yankee Stadium (4/B/D)								
East 161st Street/Walton Avenue (NW corner on Walton Avenue)	5.83	4.83	55	85	0.90	652	0.21	A
East 161st Street/Walton Avenue (NW corner on 161 Street)	5.83	4.83	20	24	0.90	652	0.07	A
East 161st Street/Walton Avenue (NW corner in median at entrance to underpass)	7.66	6.66	87	172	0.90	899	0.29	A
PM PEAK								
East 149th Street at Melrose Avenue/Third Avenues-The Hub (2/5)								
East 149th Street/Melrose Avenue (NW corner)	5.50	4.50	44	250	0.80	540	0.54	B
East 149th Street/Melrose Avenue (NE corner)	5.50	4.50	38	28	0.90	608	0.11	A
East 149th Street/Third Avenue (NW corner)	5.50	4.50	69	257	0.80	540	0.60	B
East 161st Street at Walton Avenue, Yankee Stadium (4/B/D)								
East 161st Street/Walton Avenue (NW corner on Walton Avenue)	5.83	4.83	52	47	0.90	652	0.15	A
East 161st Street/Walton Avenue (NW corner on 161 Street)	5.83	4.83	16	41	0.80	580	0.10	A
East 161st Street/Walton Avenue (NW corner in median at entrance to underpass)	7.66	6.66	150	95	0.90	899	0.27	A
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .								

As described in Section B, “Methodology,” of this chapter, station stairway impacts are considered significant when the minimum amount of additional capacity required to mitigate a stairway location to its No Build operating conditions is greater than the minimum widening recommended by the 2001 *CEQR Technical Manual*. These recommendations are as follows: for

a location with a Build LOS D, a widening of six inches or more needed to restore future No Build or LOS C/D conditions is considered significant.

The stairway at the northwest corner of East 149th Street and Third Avenue would require a 4-inch widening to return service conditions to its No Build condition. Therefore, based on the criteria stated in the methodology section of this chapter, this widening is below the CEQR-recommended thresholds and would not constitute a significant adverse subway station impact.

NYCT BUS LINE HAUL LEVELS

Peak hour bus ridership levels were estimated by adding the additional trips associated with the proposed actions to the maximum load per bus estimates detailed in the No Build condition.

As described in Section B, “Methodology,” of this chapter, impacts to bus line haul are considered significant if the proposed actions would result in operating conditions above guideline capacities. As shown in Table 15-20, only one (Bx13) of the seven analyzed bus routes would continue to operate within guideline capacities.

Table 15-20
2009 Build Condition: Bus Line Haul at Study Area Load Points

Route	Peak Period	Buses Per Hour	Direction		Direction	
			Northbound		Southbound	
			Study Area Load Point	AP	Study Area Load Point	AP
Bx2 (A)	AM	7	Melrose Avenue / East 161st Street	47	Melrose Avenue / East 161st Street	(129)
	PM	8	Melrose Avenue / East 161st Street	(106)	Melrose Avenue / East 161st Street	72
Bx15	AM	9	Third Avenue / East 163rd Street	40	Third Avenue / East 163rd Street	(70)
	PM	9	Third Avenue / East 163rd Street	57	Third Avenue / East 163rd Street	49
Bx21	AM	8	Third Avenue / East 163rd Street	43	Third Avenue / East 163rd Street	53
	PM	8	Third Avenue / East 163rd Street	(66)	Third Avenue / East 163rd Street	53
Bx41 (A)	AM	12	Melrose Avenue / East 161st Street	35	Melrose Avenue / East 161st Street	(104)
	PM	10	Melrose Avenue / East 161st Street	92	Melrose Avenue / East 161st Street	74
Bx55 (A)	AM	15	Third Avenue / East 163rd Street	63	Third Avenue / East 163rd Street	(106)
	PM	11	Third Avenue / East 163rd Street	(142)	Third Avenue / East 163rd Street	(113)
			Eastbound		Westbound	
Bx6	AM	12	Melrose Avenue / East 161st Street	(71)	Melrose Avenue / East 161st Street	62
	PM	9	Melrose Avenue / East 161st Street	(72)	Melrose Avenue / East 161st Street	59
Bx13	AM	6	Melrose Avenue / East 161st Street	7	Melrose Avenue / East 161st Street	18
	PM	-	-	-	-	-
Note: AP = average passengers per bus (A) = articulated buses; (#) = exceeds NYCT guideline capacity; denotes significant adverse impact						

According to NYCT guidelines, the following projected increases in bus ridership constitute significant adverse bus line-haul impacts. Mitigation measures recommended for these projected impacts are described in Chapter 20, “Mitigation.”

- Bx2 – northbound route increasing in average passengers per bus from 87 to 106 in the PM peak period; southbound route increasing from 111 to 129 in the AM peak period.
- Bx15 – southbound route increasing in average passengers per bus from 62 to 70 in the AM peak period.
- Bx21 – northbound route increasing in average passengers per bus from 49 to 66 in the PM peak period.

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- Bx41 – southbound route increasing in average passengers per bus from 89 to 104 in the AM peak period.
- Bx55 – northbound route increasing in average passengers per bus from 89 to 142 in the PM peak period; southbound route increasing from 76 to 106 in the AM peak period and from 84 to 113 in the PM peak period.
- Bx6 – northbound route increasing in average passengers per bus from 69 to 71 in the AM peak period and from 63 to 72 in the PM peak period.

STREET-LEVEL PEDESTRIAN OPERATIONS

Pedestrian trips associated with the proposed actions would result in increased volumes at the analysis locations. The analysis conducted for the Build condition accounts for the distribution of project-generated trips overlaid onto the No Build network's sidewalks, corner reservoirs, and crosswalks. Tables 15-20 to 15-24 present the future Build operating conditions for the analysis elements.

As described in Section B, "Methodology," of this chapter, impacts to corners and crosswalks are considered significant if there would be a deterioration in LOS from No Build mid-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 operation of mid-LOS D or worse. Based on these criteria, the proposed actions would not result in any significant adverse impacts to pedestrian elements in the study area.

Table 15-21

2009 Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Build AM							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	82	0.7	A	4.7	A
	East	11	164	1.0	A	5.0	A
East 161st Street between Elton Avenue and Melrose Avenue	North	15	56	0.2	A	4.2	A
	South	5	33	0.4	A	4.4	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	230	3.8	A	7.8	C
	East	11.5	75	0.4	A	4.4	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	74	0.4	A	4.4	A
	South	12	103	0.6	A	4.6	A
Third Avenue between East 163rd Street and Boston Road	West	9	78	0.6	A	4.6	A
	East	7	221	2.1	A	6.1	B
East 163rd Street between Third Avenue and Eagle Avenue	North	15	57	0.3	A	4.3	A
	South	10	137	0.9	A	4.9	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	166	1.5	A	5.5	B
	East	9	87	0.6	A	4.6	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	57	0.3	A	4.3	A
	South	13	313	1.6	A	5.6	B
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	480	3.4	A	7.4	C
	East	8	89	0.7	A	4.7	A
3rd Avenue between East 149th Street and Westchester Avenue	West	10	588	3.9	A	7.9	C
	East	11	145	0.9	A	4.9	A
Note: PFM = pedestrians per foot per minute.							

Table 15-22

2009 Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Build Midday							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	81	0.7	A	4.7	A
	East	11	166	1.0	A	5.0	B
East 161st Street between Elton Avenue and Melrose Avenue	North	15	43	0.2	A	4.2	A
	South	5	56	0.7	A	4.7	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	164	2.7	A	6.7	B
	East	11.5	94	0.5	A	4.5	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	72	0.4	A	4.4	A
	South	12	122	0.7	A	4.7	A
Third Avenue between East 163rd Street and Boston Road	West	9	65	0.5	A	4.5	A
	East	7	123	1.2	A	5.2	B
East 163rd Street between Third Avenue and Eagle Avenue	North	15	53	0.2	A	4.2	A
	South	10	88	0.6	A	4.6	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	110	1.0	A	5.0	A
	East	9	104	0.8	A	4.8	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	38	0.2	A	4.2	A
	South	13	335	1.7	A	5.7	B
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	311	2.2	A	6.2	B
	East	8	97	0.8	A	4.8	A
3rd Avenue between East 149th Street and Westchester Avenue	West	10	453	3.0	A	7.0	C
	East	11	351	2.1	A	6.1	B
Note: PFM = pedestrians per foot per minute.							

Table 15-23

2009 Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Build PM							
Melrose Avenue between East 161st Street and East 162nd Street	West	7.5	133	1.2	A	5.2	B
	East	11	248	1.5	A	5.5	B
East 161st Street between Elton Avenue and Melrose Avenue	North	15	70	0.3	A	4.3	A
	South	5	60	0.8	A	4.8	A
Melrose Avenue between East 161st Street and East 160th Street	West	4	213	3.6	A	7.6	C
	East	11.5	99	0.6	A	4.6	A
East 161st Street between Melrose Avenue and Courtlandt Avenue	North	13.5	97	0.5	A	4.5	A
	South	12	151	0.8	A	4.8	A
Third Avenue between East 163rd Street and Boston Road	West	9	83	0.6	A	4.6	A
	East	7	237	2.3	A	6.3	B
East 163rd Street between Third Avenue and Eagle Avenue	North	15	47	0.2	A	4.2	A
	South	10	85	0.6	A	4.6	A
Third Avenue between East 163rd Street and East 162nd Street	West	7.5	127	1.1	A	5.1	B
	East	9	131	1.0	A	5.0	A
East 163rd Street between Third Avenue and Washington Avenue	North	11	61	0.4	A	4.4	A
	South	13	441	2.3	A	6.3	B
Melrose Avenue between East 149th Street and East 150th Street	West	9.5	321	2.3	A	6.3	B
	East	8	167	1.4	A	5.4	B
3rd Avenue between East 149th Street and Westchester Avenue	West	10	437	2.9	A	6.9	B
	East	11	506	3.1	A	7.1	C
Note: PFM = pedestrians per foot per minute.							

Table 15-24

2009 Build Condition: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	AM Peak Hour		Midday Peak Hour		PM Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS
East 161st Street at Melrose Avenue	Northeast	325.3	A	330.1	A	226.6	A
	Southeast	286.0	A	355.0	A	280.5	A
	Southwest	218.9	A	273.8	A	206.9	A
	Northwest	268.8	A	303.4	A	202.3	A
East 163rd Street at Third Avenue	Northeast	167.2	A	285.7	A	156.4	A
	Southeast	103.5	A	131.6	A	88.3	A
	Southwest	45.3	B	60.2	A	45.4	B
	Northwest	95.3	A	161.4	A	102.4	A

Note: SFP = square feet per pedestrian.

Table 15-25

2009 Build Condition: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with conflicting vehicles					
				AM		Midday		PM	
				SFP	LOS	SFP	LOS	SFP	LOS
East 161st Street at Melrose Avenue	North	50.0	13.0	208.7	A	212.9	A	115.2	A
	East	60.0	12.0	190.1	A	230.3	A	176.2	A
	South	50.0	16.5	206.9	A	259.1	A	208.8	A
	West	60.0	13.0	138.5	A	184.5	A	128.5	A
East 163rd Street at Third Avenue	North	67.0	17.0	74.4	A	130.7	A	67.0	A
	East	60.5	13.0	117.0	A	176.8	A	104.1	A
	South	66.0	17.5	68.3	A	85.7	A	63.1	A
	West	60.0	11.0	68.5	A	103.6	A	74.8	A
East 149th Street at Melrose Avenue/ Third Avenue	North (Melrose)	40.0	16.0	41.0	B	35.0	C	33.2	C
	North (Third)	43.0	13.0	36.3	C	30.9	C	27.1	C
	East	60.0	16.0	125.2	A	78.8	A	79.1	A
	South	58.0	16.0	64.5	A	40.8	B	43.8	B
	West	60.0	19.0	91.8	A	124.4	A	92.6	A

Note: SFP = square feet per pedestrian.

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