

A. INTRODUCTION

As described in Chapter 1, “Project Description,” the Gateway Center at Bronx Terminal Market is a proposal to redevelop an 18-acre portion of the current Bronx Terminal Market site with retail, parking, and a hotel. The Proposed Project would be completed in two phases: the first phase, consisting of primarily retail uses, would be finished by 2009, whereas the hotel component would be completed by 2014. Potential impacts resulting from the Proposed Project 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, including a quantified bus line haul analysis and identification of the potential for significant adverse impacts that require mitigation.

The project travel demand estimates, which include travel by vehicular, transit, and walk only modes, are presented in Chapter 16, “Traffic and Parking.” The impact studies consider five peak analysis periods: non-game day weekday PM; non-game day Saturday midday; game day weekday PM; pre-game day Saturday midday; and post-game day Saturday midday. These periods were selected to reflect the hours in which the combination of project-generated trips and background volumes would have the greatest potential to result in significant adverse impacts. During other time periods, it is anticipated that either project-generated trips and/or background volumes would be lower.

The analysis results show that new trips associated with the Proposed Project would not result in significant subway or bus impacts, but there would be an impact on crosswalk operations at the intersection of 149th Street and River Avenue. This chapter quantifies this impact while mitigation measures are described in Chapter 23, “Mitigation.”

B. METHODOLOGY

As described in Chapter 16, “Traffic and Parking,” a travel demand projection was developed to identify the transportation elements likely to be affected by the Proposed Project. The off-site public open space that would be developed by the City by the Proposed Project’s 2009 Build year was included in this projection. The trip generation factors and estimates for the Proposed Project described in detail in that chapter are presented here as Tables 17-1 through 17-2. 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. As estimated trips generated by the Proposed Project would not exceed impact thresholds for subway line-haul, this element was not analyzed.

Table 17-1

Trip Generation Factors for Proposed Development Program

| Non-Game Day | | | |
|--|--|-----------------------------|---|
| | Destination Retail (per 1,000 sf) | Hotel (per Room) | Public Open Space (per Acre) |
| Person Trip Rate | | | |
| Weekday Midday Peak Hour | 3.1 per hour | 9.3 per day | 139 per day |
| Weekday PM Peak Hour | 6.8 per hour | 9.3 per day | 139 per day |
| Saturday Midday Peak Hour | 9.2 per hour | 9.3 per day | 158 per day |
| Temporal Distribution (Total (% In / %Out)) | | | |
| Weekday Midday Peak Hour | 100% (51.8% / 48.2%) | 7.1% (69.0% / 31.0%) | 12% (50% / 50%) |
| Weekday PM Peak Hour | 100% (51.8% / 48.2%) | 9.2% (57.6% / 42.4%) | 10% (45% / 55%) |
| Saturday Midday Peak Hour | 100% (50.7% / 49.3%) | 13.3% (54.5% / 45.5%) | 20% (55% / 45%) |
| Modal Split (Weekday / Saturday) | | | |
| Auto | 59.0% / 59.0% | 70% | 12% / 12% |
| Taxi | 3.0% / 5.0% | 15% | 0% / 0% |
| Subway | 15% / 13% | 5% | 5% / 5% |
| Local Bus | 18% / 18% | 5% | 5% / 5% |
| Walking/Other | 5.0% / 5.0% | 5% | 78% / 70% |
| Average Vehicle Occupancy (Weekday / Saturday) | | | |
| Auto | 2.05 / 2.49 | 1.60 / 2.30 | 2.80 / 2.80 |
| Taxi | 2.00 / 2.80 | 1.40 / 2.80 | N/A |
| Delivery Trips | | | |
| Daily Rate | 0.35 per 1,000 sf | 0.10 per hotel room | N/A |
| Weekday Midday Peak Hour | 8.6% | 8.6% | N/A |
| Weekday PM Peak Hour | 5.1% | 5.1% | N/A |
| Saturday Midday Peak Hour | 1.0% | 0.0% | N/A |
| Game Day | | | |
| | Destination Retail (per 1,000 sf) | Hotel (per Room) | Public Open Space (per Acre) |
| Peak Hour Person Trip Rate per 1,000 sf or Hotel Room | | | |
| Weekday Pre-Game Peak Hour | 6.1 per hour | 9.3 per day | 139 per day |
| Saturday Pre-Game Peak Hour | 7.4 per hour | 9.3 per day | 158 per day |
| Saturday Post-Game Peak Hour | 5.5 per hour | 9.3 per day | 158 per day |
| Temporal Distribution (In / Out) | | | |
| Weekday Pre-Game Peak Hour | 100% (51.8% / 48.2%) | 9.2% (57.6% / 42.4%) | 10% (45% / 55%) |
| Saturday Pre-Game Peak Hour | 100% (53.6% / 46.4%) | 13.3% (54.5% / 45.5%) | 20% (55% / 45%) |
| Saturday Post-Game Peak Hour | 100% (47.5% / 52.5%) | 13.3% (54.5% / 45.5%) | 14% (34% / 66%) |
| Modal Split (Weekday / Saturday) | | | |
| Auto | 59.0% / 59.0% | 70.0% / 70.0% | 12% / 12% |
| Taxi | 3.0% / 5.0% | 15.0% / 15.0% | 0% / 0% |
| Subway | 15% / 13% | 5.0% / 5.0% | 5% / 5% |
| Local Bus | 18% / 18% | 5.0% / 5.0% | 5% / 5% |
| Walking/Other | 5.0% / 5.0% | 5.0% / 5.0% | 78% / 70% |
| Average Vehicle Occupancy (Weekday / Saturday) | | | |
| Auto | 2.05 / 2.49 | 1.60 / 2.30 | 2.80 / 2.80 |
| Taxi | 2.00 / 2.80 | 1.40 / 2.80 | N/A |
| Delivery Trips | | | |
| Daily Rate | 0.35 per 1,000 sf | 0.10 per hotel room | N/A |
| Weekday Pre-Game Peak Hour | 5.1% | 5.1% | N/A |
| Saturday Pre-Game Peak Hour | 1.0% | 0.0% | N/A |
| Saturday Post-Game Peak Hour | 1.0% | 0.0% | N/A |
| Sources: (Destination Retail): Surveys conducted by AKRF, Inc. at Queens Place (May 2004); Results of PHA survey in Atlantic Center, Brooklyn (1997); Federal Highway Administration, "Curbside Pickup and Delivery and Arterial Traffic Impacts." Final Report. (February 1981); Wilber Smith Associates, <i>Motor Trucks in the Metropolis</i> , 1969; East River Plaza FEIS (August 1999); Atlantic Center EA (February 1999) (Hotel): Surveys conducted by AKRF, Inc. at the Renaissance Plaza Hotel, Downtown Brooklyn (March 1999); Wilber Smith Associates, <i>Motor Trucks in the Metropolis</i> , 1969; USDOT; Harlem Park Development EAS (May 7, 2004) (Public Open Space): <i>Gateway Estates Final Environmental Impact Statement</i> (April 1996); Institute for Transportation Engineers, <i>Trip Generation 7th Edition</i> (2003). | | | |

Table 17-2
Person Trips Generated by Proposed Development Program in 2009 and 2014

| Use | Auto | | Taxi | | Subway | | Local Bus | | Walk/ Other | | Total | |
|---|------|------|------|-----|--------|-----|-----------|-----|----------------|-----|-------|------|
| | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out |
| Non-Game Day | | | | | | | | | | | | |
| Weekday Non-Game Midday Peak Hour | | | | | | | | | | | | |
| Retail | 910 | 847 | 46 | 43 | 231 | 215 | 278 | 258 | 77 | 72 | 1543 | 1436 |
| Public Open Space | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 13 | 13 | 17 | 17 |
| 2009 Total | 912 | 849 | 46 | 43 | 232 | 216 | 279 | 259 | 90 | 85 | 1560 | 1453 |
| Hotel | 82 | 37 | 17 | 8 | 6 | 3 | 6 | 3 | 6 | 3 | 117 | 52 |
| 2014 Total | 994 | 886 | 63 | 51 | 238 | 219 | 285 | 262 | 96 | 88 | 1677 | 1505 |
| Weekday Non-Game PM Peak Hour | | | | | | | | | | | | |
| Retail | 1974 | 1837 | 100 | 93 | 502 | 467 | 602 | 560 | 167 | 156 | 3346 | 3114 |
| Public Open Space | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 13 | 13 | 17 | 17 |
| 2009 Total | 1976 | 1839 | 100 | 93 | 503 | 468 | 603 | 561 | 180 | 169 | 3363 | 3131 |
| Hotel | 88 | 65 | 19 | 14 | 6 | 5 | 6 | 5 | 6 | 5 | 126 | 93 |
| 2014 Total | 2064 | 1904 | 119 | 107 | 509 | 473 | 609 | 566 | 186 | 174 | 3489 | 3224 |
| Saturday Non-Game Midday Peak Hour | | | | | | | | | | | | |
| Retail | 2614 | 2542 | 222 | 215 | 576 | 560 | 798 | 776 | 222 | 215 | 4431 | 4309 |
| Public Open Space | 4 | 3 | 0 | 0 | 2 | 1 | 2 | 1 | 27 | 23 | 35 | 28 |
| 2009 Total | 2618 | 2545 | 222 | 215 | 578 | 561 | 800 | 777 | 249 | 238 | 4466 | 4337 |
| Hotel | 121 | 101 | 26 | 22 | 9 | 7 | 9 | 7 | 9 | 7 | 173 | 144 |
| 2014 Total | 2739 | 2646 | 248 | 237 | 587 | 568 | 809 | 779 | 258 | 245 | 4639 | 4481 |
| Game Day | | | | | | | | | | | | |
| Weekday Pre-Game PM Peak Hour | | | | | | | | | | | | |
| Retail | 1777 | 1653 | 90 | 84 | 452 | 420 | 542 | 504 | 151 | 140 | 3012 | 2802 |
| Public Open Space | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 9 | 11 | 13 | 15 |
| 2009 Total | 1779 | 1655 | 90 | 84 | 453 | 421 | 543 | 505 | 160 | 151 | 3025 | 2827 |
| Hotel | 88 | 65 | 19 | 14 | 6 | 5 | 6 | 5 | 6 | 5 | 126 | 93 |
| 2014 Total | 1867 | 1920 | 109 | 98 | 459 | 426 | 549 | 510 | 166 | 156 | 3151 | 2920 |
| Saturday Pre-Game Midday Peak Hour | | | | | | | | | | | | |
| Retail | 2214 | 1917 | 188 | 162 | 486 | 422 | 675 | 585 | 188 | 162 | 3752 | 3248 |
| Public Open Space | 4 | 3 | 0 | 0 | 2 | 1 | 2 | 1 | 27 | 23 | 35 | 28 |
| 2009 Total | 2218 | 1920 | 188 | 162 | 488 | 423 | 677 | 586 | 215 | 185 | 3787 | 3276 |
| Hotel | 121 | 101 | 26 | 22 | 9 | 7 | 9 | 7 | 9 | 7 | 173 | 144 |
| 2014 Total | 2339 | 2021 | 214 | 184 | 497 | 430 | 686 | 593 | 224 | 192 | 3960 | 3420 |
| Saturday Post-Game PM Peak Hour | | | | | | | | | | | | |
| Retail | 1477 | 1632 | 125 | 138 | 325 | 360 | 451 | 498 | 125 | 138 | 2503 | 2767 |
| Public Open Space | 2 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 11 | 24 | 15 | 29 |
| 2009 Total | 1479 | 1635 | 126 | 138 | 326 | 361 | 452 | 499 | 136 | 162 | 2518 | 2796 |
| Hotel | 121 | 101 | 26 | 22 | 9 | 7 | 9 | 7 | 9 | 7 | 173 | 144 |
| 2014 Total | 1600 | 1736 | 152 | 160 | 335 | 368 | 461 | 506 | 145 | 169 | 2691 | 2940 |

SUBWAY STATION ELEMENTS

Subway station operations were assessed according to methods and evaluation criteria presented in the *CEQR Technical Manual*.

To assess subway stairway and control area (turnstiles, service gates, etc.) 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. For control area elements, capacity is measured by the number and width of an element and the New York City Transit (NYCT) optimum capacity per

element. For both stairways and control area elements, volumes and capacities are presented for 15-minute intervals.

The estimated v/c ratio is compared to NYCT criteria to determine a level-of-service (LOS) for the operation of an element. Table 17-3 shows the LOS and corresponding v/c ratios for stairways and control area elements.

**Table 17-3
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, *CEQR Technical Manual* (December 2001).

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

The determination of significant impacts for station elements varies based on their type and use. For turnstiles, service gates, and escalators, an increase in volume that results in a v/c of greater than 1.00 may be considered significant, since a value of 1.00 represents the design capacity of the element. For stairways, impacts are considered significant based on the minimum amount of additional capacity, which would mitigate the location to its No Build operating conditions. For a location with a Build LOS D, a widening of six inches or more needed to restore future No Build 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 number of passengers on a particular bus route. Typically, when an abundance of bus routes are available within the transit study area, projected trips would be dispersed and not overburden one or more nearby bus routes. However, if a perceptible amount of bus trips are anticipated for an already heavily-utilized bus route, its peak load point and 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.

The CEQR Technical Manual provides guideline capacities for NYCT buses. The CEQR Technical Manual specifies a guideline capacity of 70 passengers for standard buses and 145 passengers for articulated buses. In a letter dated September 29, 2005, the Metropolitan Transportation Authority (MTA) provided more stringent standards for bus capacities. MTA cited a capacity of 65 passengers for standard buses and 93 passengers for articulated buses. The analysis that follows considers both the CEQR and MTA specified capacities for buses.

According to CEQR guidelines, an increase in bus load levels to above the maximum capacity at any load point is defined as a significant impact. As noted above, this analysis considers both the CEQR and MTA guidelines for bus capacities, and where exceedances of either criteria would occur, these impacts are noted. However, for purposes of describing an impact as significant, which requires the examination of mitigation measures, the analysis considers the thresholds specified in the CEQR Technical Manual.

Although increasing bus service is also subjected to operational and fiscal constraints, its implementation is typically more feasible than increasing the service frequency of a subway route. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

Bus ridership data were provided by NYCT in December 2004. These data are part of NYCT's ongoing program to monitor bus operations and are used to identify service adjustments. To estimate weekend volumes the total weekday and Saturday ridership were compared for each of the routes serving the project site. Then, weekend peak period loading conditions were estimated based on the comparative difference to weekday ridership. It was observed that a very small number of attendees to Yankee Stadium arrive by local bus. Therefore, the ridership for game day and non-game day conditions is considered to be the same.

PEDESTRIAN OPERATIONS

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

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

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

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the width of the street) and the permitted crossing time. This measure is expressed in square feet per minute. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the average crossing time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for vehicular turning movements that traverse the crosswalk. Additionally, in the first seconds of the “walk” cycle, the initial movements of pedestrians queued to cross the street create a surge effect. To account for this effect, the LOS analysis incorporates a “surge” factor to estimate worst-case conditions.

Table 17-4 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.

**Table 17-4
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 25 PFM | 6 to 15 SFP |
| F | More than 25 PFM | Less than 6 SFP |
| Notes: PFM = pedestrians per foot per minute. SFP = square feet per pedestrian. Source: <i>Highway Capacity Manual 2000.</i> | | |

The *CEQR Technical Manual* specifies that a LOS D condition or better is considered reasonable for sidewalks, corner reservoirs, and crosswalks within the Manhattan Central Business District (CBD). For crosswalks and corner reservoirs, a LOS D condition requires a minimum of 15 SFP, while for sidewalks, a LOS D condition requires a maximum of 15 PFM.

For areas akin to the study area, project-related sidewalk impacts are considered significant and require examination of mitigation if there is an increase of 2 PFM over No Build conditions that are characterized by flow rates greater than 13 PFM (mid-LOS D). For corners and crosswalks, a decrease of 1 SFP under the Build condition when the No Build condition has an average occupancy of less than 20 SFP (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 perceivable.

C. EXISTING CONDITIONS

Existing transit and pedestrian levels are based on field surveys conducted on April 28, May 1, May 5, and May 8, 2004. Bus ridership data collected for specific routes and peak load points were obtained from NYCT in December 2004.

Due to the Proposed Project’s retail composition and proximity to Yankee Stadium, five peak periods have been analyzed. Three of these peak periods are game day peaks, which occur

before or after baseball games: game day weekday PM peak, which occurs pre-game and during the traditional PM peak hour; game day Saturday midday peak, which occurs before a weekend game; and a game day Saturday PM peak, which occurs after a weekend game. The non-game day peak periods include the weekday PM peak and a Saturday midday peak period.

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 be affected by trips associated with the Proposed Project, is provided below.

SUBWAY SERVICE

Two NYCT subway stations are in close proximity to the project site, as shown in Figure 17-1. The 2/4/5 149th Street-Grand Concourse Station and the 4/B/D 161st Street-Yankee Stadium Station are located to the southeast and northeast 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 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 five publicly-operated local bus routes serving the study area, since these would be most affected by project related trips. These NYCT bus routes are shown in Figure 17-2 and Table 17-5. The Bx6 and Bx13 routes operate with standard buses. The Bx1 (Local and Limited) and Bx19 routes operate with articulated buses.

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 Project. Since transit trips also contain a walking component, the pedestrian network considers the major routes from subway stations and bus stops. The resultant study area includes intersections along River Avenue and Grand Concourse between 149th and 153rd Streets.

Table 17-5
NYCT Local Bus Routes Serving The Bronx

| Bus Route | Start Point | End Point | Routing | Freq. of Bus Service (Headway in Minutes) | | | |
|-----------|----------------------|---------------------|----------------------------|---|--------|----|----------------------|
| | | | | AM | Midday | PM | Evening/ Saturday |
| Bx1 Lcl | Riverdale | Mott Haven | via Grand Concourse | 12 | 12 | 15 | 15 |
| Bx1 Ltd | Riverdale | Mott Haven | via Grand Concourse | 15 | 30 | 18 | - |
| Bx6 | Riverside Drive | Hunts Point | via 161st & 163rd Sts | 5 | 7 | 6 | 10 |
| Bx13 | GWB Bus Terminal | Yankee Stadium | via Ogden Ave & W 181st St | 7 | 10 | 8 | 10 |
| Bx19 | Riverbank State Park | NY Botanical Garden | via Southern Blvd & 149 St | 6 | 8 | 6 | 9 |

Source: New York City Transit, Bronx and Manhattan Bus Map (2004).

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

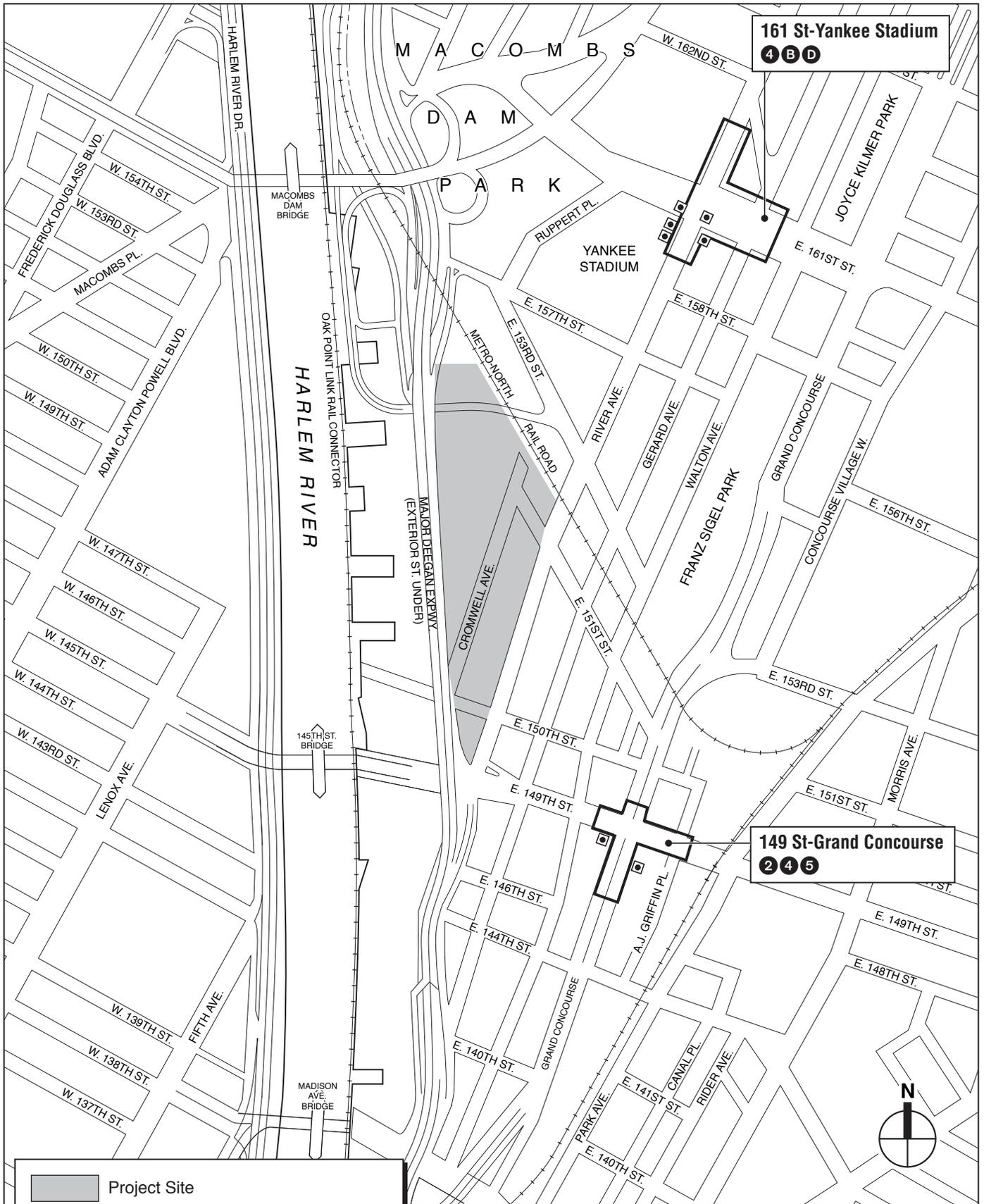
Since all study area subway stations have multiple entrances and central control areas, the quantified analysis was limited to the elements that would be most heavily used by trips to and from the project site. Based on the travel demand estimates detailed in Chapter 16, “Traffic and Parking” and presented above in Tables 17-1 through 17-3, and travel patterns associated with the area’s transit uses, it was determined that quantified analyses would be required for street-level stairway station elements. At the 161st Street–Yankee Stadium Station, operating conditions at the southernmost five of seven available stairways were evaluated. Operating conditions at two street-level stairways (SW and SE corners) were analyzed at the 149th Street–Grand Concourse Station (See Figure 17-1).

Table 17-6 summarizes the game day and non-game day peak period operating levels for each of the station elements described above. This summary table outlines the most constrained operating condition for each stairway and the peak period in which it occurs. Detailed analysis tables are shown in Appendix B. As shown, all stairways currently operate at LOS D or better during all peak analysis periods with the exception of three street-level stairways located at the 161st Street–Yankee Stadium Station during the game day Saturday PM peak period.

NYCT BUS LINE HAUL LEVELS

Among the numerous bus routes operating within or near the study area, five local bus routes are expected to serve the majority of the project-generated trips. Two of these routes are the articulated Bx1 Local and Limited, each of which have stops along Grand Concourse between 149th Street and 151st Street. The Bx6 and Bx13 bus routes provide access just north of the project site along 161st Street near River Avenue. The Bx19 bus route operates along 149th Street.

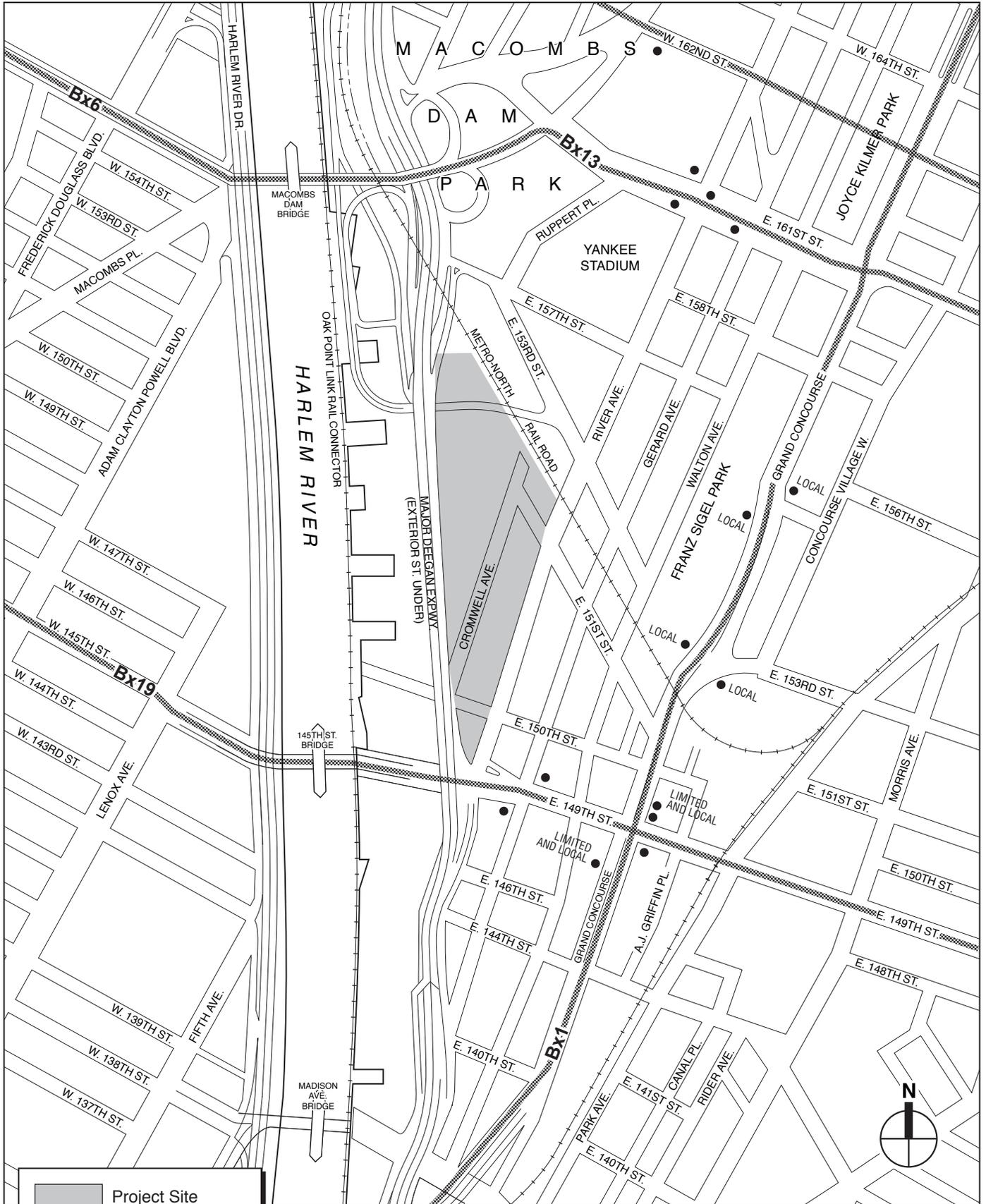
To assess the potential impacts for the routes described above, ridership data was acquired from NYCT in early December 2004. As shown on Table 17-7, each of the five bus routes presently operates within the guideline capacity (145 passengers per articulated bus or 70 passengers per standard bus) at their respective maximum load points.



Legend

- Project Site
- Subway Analysis Location (Stations include additional stairways not assessed in the EIS)





MTA Bus Stop Location and Bus Routes

Figure 17-2

Table 17-6
2004 Existing Conditions: Summary of Subway Station Analysis

| Location/Stairway | | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|---|---|--------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | V/SVCD Ratio | LOS | Saturday MIDDAY | Saturday PM | Weekday PM | Saturday MIDDAY | Weekday PM |
| 149th Street/Grand Concourse Station 2/4/5 | | | | | | | | |
| S1 | 149th Street/Grand Concourse SW corner) | 0.40 | C | | | | | X |
| S2 | 149th Street/Grand Concourse SE corner) | 0.29 | B | | | X | | |
| 161st Street–Yankee Stadium Station 4/B/D | | | | | | | | |
| S1 | 161st Street/River Avenue (SW corner) | 0.72 | D | X | | | | |
| S2 | 161st Street/River Avenue (SW corner) | 1.61 | F | | X | | | |
| S3 | 161st Street/River Avenue (SW corner) | 1.56 | F | | X | | | |
| S4 | 161st Street/River Avenue (SE corner) | 0.59 | C | | X | | | |
| S5 | 161st Street/River Avenue (SE corner) | 1.49 | F | | X | | | |
| 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 2001 <i>CEQR Technical Manual</i> . | | | | | | | | |

Table 17-7
2004 Existing Conditions: Bus Line Haul

| Peak Period | Buses Per Hour | Direction | | Direction | |
|---|----------------|------------------------------|--------------------|------------------------------|--------------------|
| | | Max Load Point | Average Passengers | Max Load Point | Average Passengers |
| Bx1 Bus Route | | | | | |
| | | Northbound | | Southbound | |
| Game Day Saturday MIDDAY | 10 | Grand Concourse / Tremont Av | 11 | Grand Concourse / Tremont Av | 12 |
| Game Day Saturday PM | 8 | Grand Concourse / Tremont Av | 47 | Grand Concourse / Tremont Av | 43 |
| Game Day Weekday PM | 8 | Grand Concourse / Tremont Av | 47 | Grand Concourse / Tremont Av | 43 |
| Non-Game Day Saturday MIDDAY | 10 | Grand Concourse / Tremont Av | 11 | Grand Concourse / Tremont Av | 12 |
| Non-Game Day Weekday PM | 8 | Grand Concourse / Tremont Av | 47 | Grand Concourse / Tremont Av | 43 |
| Bx1 Limited Bus Route | | | | | |
| | | Northbound | | Southbound | |
| Game Day Weekday PM | 6 | Grand Concourse / 170 St | 49 | Grand Concourse / Tremont Av | 64 |
| Non-Game Day Weekday PM | 6 | Grand Concourse / 170 St | 49 | Grand Concourse / Tremont Av | 64 |
| Bx6 Bus Route | | | | | |
| | | Eastbound | | Westbound | |
| Game Day Saturday MIDDAY | 9 | 160 St / Melrose Av | 37 | 160 St / Melrose Av | 31 |
| Game Day Saturday PM | 9 | 161 St / River Av | 46 | 161 St / River Av | 49 |
| Game Day Weekday PM | 9 | 161 St / River Av | 46 | 161 St / River Av | 49 |
| Non-Game Day Saturday MIDDAY | 9 | 160 St / Melrose Av | 37 | 160 St / Melrose Av | 31 |
| Non-Game Day Weekday PM | 9 | 161 St / River Av | 46 | 161 St / River Av | 49 |
| Bx13 Bus Route | | | | | |
| | | Northbound | | Southbound | |
| Game Day Saturday MIDDAY | 6 | 161 St / River Av | 31 | 161 St / River Av | 23 |
| Game Day Saturday PM | 9 | 161 St / River Av | 53 | Ogden Av / University | 27 |
| Game Day Weekday PM | 9 | 161 St / River Av | 53 | Ogden Av / University | 27 |
| Non-Game Day Saturday MIDDAY | 6 | 161 St / River Av | 31 | 161 St / River Av | 23 |
| Non-Game Day Weekday PM | 9 | 161 St / River Av | 53 | Ogden Av / University | 27 |
| Bx19 Bus Route | | | | | |
| | | Eastbound | | Westbound | |
| Game Day Saturday MIDDAY | 10 | 149 St / Third Av | 39 | 149 St / River Av | 33 |
| Game Day Saturday PM | 12 | 149 St / Third Av | 37 | 145 St / Lenox Av | 45 |
| Game Day Weekday PM | 12 | 149 St / Third Av | 37 | 145 St / Lenox Av | 45 |
| Non-Game Day Saturday MIDDAY | 10 | 149 St / Third Av | 39 | 149 St / River Av | 33 |
| Non-Game Day Weekday PM | 12 | 149 St / Third Av | 37 | 145 St / Lenox Av | 45 |
| Note: Ridership data provided by NYCT, December 2004 | | | | | |

STREET-LEVEL PEDESTRIAN OPERATIONS

As described above, the study area sidewalks, corner reservoirs, and crosswalks were assessed for the three game and two non-game day peak periods. Existing peak 15-minute volumes were developed for eight study area intersections: one along Exterior Street, four along River Avenue, and three along Grand Concourse, at their respective intersections with 149th Street, 150th Street, 151st Street, and 153rd Street. Of these eight intersections, only the 150th Street and River Avenue intersection operates without a traffic signal. Vehicular and pedestrian movements at this location are controlled by a two-way stop sign, which allows unrestricted pedestrian flow along each intersection crosswalk. Tables 17-8 through 17-10 show the LOS analyses for the remaining seven intersections and their corresponding connecting sidewalks. These tables outline maximum operating constraints at each pedestrian element, and the peak period in which they occur. Appendix B provides the detailed analysis tables.

Table 17-8

2004 Existing Conditions: Summary Pedestrian LOS Analysis for Sidewalks

| Location | Sidewalk | Maximum Platoon | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|---|----------|-----------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | PFM | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue between 157th St. and 153rd St. | West | 7+ | C | | X | | | |
| | East | 5- | A | X | X | X | | |
| River Avenue between 153rd St. and 151st St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| River Avenue between 151st St. and 150th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 151st St. between Walton Ave. and Grand Concourse | North | 5+ | B | | X | | | |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 151st St. and 150th St. | West | 5+ | B | | X | X | | |
| | East | 5+ | B | | X | X | | |
| 150th St. between Walton Ave. and Grand Concourse | North | 4 | A | X | X | X | X | X |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 150th St. and 149th St. | West | 5+ | B | | | X | | X |
| | East | 5- | A | X | X | X | X | |
| Exterior St. between 150th St. and 149th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| River Avenue between 150th St. and 149th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 149th St. between Walton Ave. and Grand Concourse | North | 5- | A | | | | X | X |
| | South | 5- | A | | | X | | X |

Note: PFM = pedestrians per foot per minute

D. THE FUTURE WITHOUT THE PROPOSED 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. Both the 2009 and 2014 No Build years incorporate 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 conditions peak hour transit and pedestrian levels were based on volume projections developed using the CEQR-recommended 0.50-percent annual background growth

Table 17-9

2004 Existing Conditions: Summary Pedestrian LOS Analysis for Corner Reservoirs

| Location | Corner Reservoir | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|------------------|-------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | Northeast | 116 | A | | X | | | |
| | Southeast | 146 | A | | X | | | |
| | Southwest | 33 | C | | X | | | |
| | Northwest | 32 | C | | X | | | |
| River Avenue and 151st Street | Northeast | 1589 | A | | X | | | |
| | Southeast | 2618 | A | | X | | | |
| | Southwest | 1986 | A | | X | | | |
| | Northwest | 1749 | A | | X | | | |
| Grand Concourse and 151st Street | Southwest | 140 | A | | | X | | |
| | Northwest | 114 | A | | | X | | |
| Grand Concourse and 150th Street | Northeast | 131 | A | | X | | | |
| | Southeast | 75 | A | | X | | | |
| | Southwest | 66 | A | | X | | | |
| | Northwest | 95 | A | | X | | | |
| River Avenue and 149th Street | Northeast | 767 | A | | | | X | |
| | Southeast | 658 | A | | | X | | |
| Grand Concourse and 149th Street | Northeast | 166 | A | X | | | | |
| | Southeast | 359 | A | | | X | | |
| | Southwest | 131 | A | | | | | X |
| | Northwest | 170 | A | | | | | X |

Note: SFP = square feet per pedestrian

Table 17-10

2004 Existing Conditions: Summary Pedestrian LOS Analysis for Crosswalks

| Location | Crosswalk | Maximum Surge LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|-----------|-------------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | North | 171 | A | | X | | | |
| | East | 70 | A | | X | | | |
| | South | 180 | A | | X | | | |
| | West | 22 | D | | X | | | |
| River Avenue and 151st Street | North | 4030 | A | | X | | | |
| | East | 923 | A | | X | | | |
| | South | 412 | A | | | | X | |
| | West | 892 | A | | X | | | |
| Grand Concourse and 151st Street | North | 75 | A | | | X | | |
| | South | 177 | A | | | X | | |
| | West | 53 | B | | | X | | |
| Grand Concourse and 150th Street | North | 108 | A | | X | | | |
| | East | 32 | C | | X | | | |
| | South | 60 | A | | X | | | |
| | West | 38 | C | | X | | | |
| Exterior St. and 149th Street | North | 828 | A | | X | | | |
| River Avenue and 149th Street | North | 110 | A | | X | | | |
| | East | 798 | A | | | X | | |
| | South | 412 | A | | | X | X | |
| Grand Concourse and 149th Street | North | 114 | A | X | | | | |
| | East | 63 | A | | | X | | |
| | South | 74 | A | | | X | | |
| | West | 86 | A | | | | | X |

Note: SFP = square feet per pedestrian

Gateway Center at Bronx Terminal Market FEIS

rate projected over 5 years. As with 2009 No Build conditions, 2014 will use a similar growth rate projected over 10 years. The background growth was added to the 2004 existing conditions network to project transit and pedestrian volumes for both the 2009 and 2014 No Build operational analyses.

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

The same station elements at the 161st Street–Yankee Stadium Station 4/B/D and the 149th Street–Grand Concourse Station 2/4/5 were analyzed with the addition of the projected No Build volumes for both the 2009 and 2014 No Build conditions. Tables 17-11 and 17-12 summarize the maximum operating constraints for each street-level stairway and its corresponding peak period for both No Build conditions. A detailed description of all 2009 and 2014 No Build analyses is found in Appendix B. As shown, all stairways currently operate at LOS D or better during all peak analysis periods with the exception of three street-level stairways located at the 161st Street–Yankee Stadium Station during the game day Saturday midday, game day Saturday PM peak period, and the game day weekday PM peak period.

Table 17-11
2009 No Build Conditions: Summary of Subway Station Analysis

| Location/Stairway | | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|--|--|--------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | V/SVCD Ratio | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| 149th Street–Grand Concourse Station 2/4/5 | | | | | | | | |
| S1 | 149th Street–Grand Concourse (SW corner) | 0.41 | C | | | | | X |
| S2 | 149th Street–Grand Concourse (SE corner) | 0.30 | B | | | X | | |
| 161st Street–Yankee Stadium Station 4/B/D | | | | | | | | |
| S1 | 161st Street–River Avenue (SW corner) | 0.74 | D | X | | | | |
| S2 | 161st Street–River Avenue (SW corner) | 1.65 | F | | X | | | |
| S3 | 161st Street–River Avenue (SW corner) | 1.60 | F | | X | | | |
| S4 | 161st Street–River Avenue (SE corner) | 0.61 | D | | X | | | |
| S5 | 161st Street–River Avenue (SE corner) | 1.53 | F | | X | | | |
| 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 five NYCT local bus routes previously described, a quantified bus line haul and maximum load analysis was conducted. Passenger volume projections for the 2009 No Build condition were developed using a CEQR-recommended background growth rate superimposed onto the average passenger volumes at the existing maximum load points. As shown in Tables 17-13 and 17-14, all routes would continue to operate below both the CEQR and MTA guideline capacities at their maximum load points.

Table 17-12
2014 No Build Conditions: Summary Subway Station Analysis

| Location/Stairway | | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|--|--|--------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | V/SVCD Ratio | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| 149th Street-Grand Concourse Station 2/4/5 | | | | | | | | |
| S1 | 149th Street-Grand Concourse (SW corner) | 0.42 | C | | | | | X |
| S2 | 149th Street-Grand Concourse (SE corner) | 0.30 | B | | | X | | |
| 161st Street-Yankee Stadium Station 4/B/D | | | | | | | | |
| S1 | 161st Street-River Avenue (SW corner) | 0.76 | D | X | | | | |
| S2 | 161st Street-River Avenue (SW corner) | 1.69 | F | | X | | | |
| S3 | 161st Street-River Avenue (SW corner) | 1.64 | F | | X | | | |
| S4 | 161st Street-River Avenue (SE corner) | 0.62 | D | | X | | | |
| S5 | 161st Street-River Avenue (SE corner) | 1.57 | F | | X | | | |
| 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> . | | | | | | | | |

Table 17-13
2009 No Build Conditions: Bus Line Haul

| Peak Period | Buses Per Hour | Maximum Load By Direction | | | Maximum Load By Direction | | |
|---|----------------|---------------------------|----------------|---------------|---------------------------|----------------|---------------|
| | | 2004 Existing | 2009 Increment | 2009 No Build | 2004 Existing | 2009 Increment | 2009 No Build |
| Bx1 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 10 | 11 | 1 | 12 | 12 | 1 | 13 |
| Game Day Saturday PM | 8 | 47 | 2 | 49 | 43 | 2 | 45 |
| Game Day Weekday PM | 8 | 47 | 2 | 49 | 43 | 2 | 45 |
| Non-Game Day Saturday Midday | 10 | 11 | 1 | 12 | 12 | 1 | 13 |
| Non-Game Day Weekday PM | 8 | 47 | 2 | 49 | 43 | 2 | 45 |
| Bx1 Limited Bus Route | | Northbound | | | Southbound | | |
| Game Day Weekday PM | 6 | 49 | 2 | 51 | 64 | 2 | 66 |
| Non-Game Day Weekday PM | 6 | 49 | 2 | 51 | 64 | 2 | 66 |
| Bx6 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 9 | 37 | 2 | 39 | 31 | 2 | 33 |
| Game Day Saturday PM | 9 | 46 | 2 | 48 | 49 | 2 | 51 |
| Game Day Weekday PM | 9 | 46 | 2 | 48 | 49 | 2 | 51 |
| Non-Game Day Saturday Midday | 9 | 37 | 2 | 39 | 31 | 2 | 33 |
| Non-Game Day Weekday PM | 9 | 46 | 2 | 48 | 49 | 2 | 51 |
| Bx13 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 6 | 31 | 2 | 33 | 23 | 2 | 25 |
| Game Day Saturday PM | 9 | 53 | 2 | 55 | 27 | 2 | 29 |
| Game Day Weekday PM | 9 | 53 | 2 | 55 | 27 | 2 | 29 |
| Non-Game Day Saturday Midday | 6 | 31 | 2 | 33 | 23 | 2 | 25 |
| Non-Game Day Weekday PM | 9 | 53 | 2 | 55 | 27 | 2 | 29 |
| Bx19 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 10 | 39 | 2 | 41 | 33 | 2 | 35 |
| Game Day Saturday PM | 12 | 37 | 2 | 39 | 45 | 2 | 47 |
| Game Day Weekday PM | 12 | 37 | 2 | 39 | 45 | 2 | 47 |
| Non-Game Day Saturday Midday | 10 | 39 | 2 | 41 | 33 | 2 | 35 |
| Non-Game Day Weekday PM | 12 | 37 | 2 | 39 | 45 | 2 | 47 |
| Note: Ridership data provided by NYCT, December 2004 | | | | | | | |

Table 17-14
2014 No Build Conditions: Bus Line Haul

| Peak Period | Buses Per Hour | Maximum Load By Direction | | | Maximum Load By Direction | | |
|---|----------------|---------------------------|----------------|---------------|---------------------------|----------------|---------------|
| | | 2004 Existing | 2014 Increment | 2014 No Build | 2004 Existing | 2014 Increment | 2014 No Build |
| Bx1 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 10 | 11 | 1 | 12 | 12 | 1 | 13 |
| Game Day Saturday PM | 8 | 47 | 2 | 49 | 43 | 2 | 45 |
| Game Day Weekday PM | 8 | 47 | 2 | 49 | 43 | 2 | 45 |
| Non-Game Day Saturday Midday | 10 | 11 | 1 | 12 | 12 | 1 | 13 |
| Non-Game Day Weekday PM | 8 | 47 | 2 | 49 | 43 | 2 | 45 |
| Bx1 Limited Bus Route | | Northbound | | | Southbound | | |
| Game Day Weekday PM | 6 | 49 | 3 | 52 | 64 | 3 | 67 |
| Non-Game Day Weekday PM | 6 | 49 | 3 | 52 | 64 | 3 | 67 |
| Bx6 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 9 | 37 | 2 | 39 | 31 | 2 | 33 |
| Game Day Saturday PM | 9 | 46 | 2 | 48 | 49 | 3 | 52 |
| Game Day Weekday PM | 9 | 46 | 2 | 48 | 49 | 3 | 52 |
| Non-Game Day Saturday Midday | 9 | 37 | 2 | 39 | 31 | 2 | 33 |
| Non-Game Day Weekday PM | 9 | 46 | 2 | 48 | 49 | 3 | 52 |
| Bx13 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 6 | 31 | 2 | 33 | 23 | 2 | 25 |
| Game Day Saturday PM | 9 | 53 | 3 | 56 | 27 | 2 | 29 |
| Game Day Weekday PM | 9 | 53 | 3 | 56 | 27 | 2 | 29 |
| Non-Game Day Saturday Midday | 6 | 31 | 2 | 33 | 23 | 2 | 25 |
| Non-Game Day Weekday PM | 9 | 53 | 3 | 56 | 27 | 2 | 29 |
| Bx19 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 10 | 39 | 2 | 41 | 33 | 2 | 35 |
| Game Day Saturday PM | 12 | 37 | 2 | 39 | 45 | 2 | 47 |
| Game Day Weekday PM | 12 | 37 | 2 | 39 | 45 | 2 | 47 |
| Non-Game Day Saturday Midday | 10 | 39 | 2 | 41 | 33 | 2 | 35 |
| Non-Game Day Weekday PM | 12 | 37 | 2 | 39 | 45 | 2 | 47 |
| Note: Ridership data provided by NYCT, December 2004 | | | | | | | |

STREET-LEVEL PEDESTRIAN OPERATIONS

The 2009 and 2014 No Build peak period volume projections were applied to the pedestrian analysis networks described previously. Tables 17-15 through 17-20 show the maximum potential operating constraints at each pedestrian element and the peak period in which said constraints occur. Appendix B presents the detailed results for all of these analysis locations. All sidewalks, crosswalks, and corner reservoir analysis locations would continue to operate at an acceptable LOS D or better.

Table 17-15
2009 No Build Conditions: Summary Pedestrian LOS Analysis for Sidewalks

| Location | Sidewalk | Maximum Platoon | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|---|----------|-----------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | PFM | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue between 157th St. and 153rd St. | West | 8 | C | | X | | | |
| | East | 5- | A | X | X | X | | |
| River Avenue between 153rd St. and 151st St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| River Avenue between 151st St. and 150th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 151st St. between Walton Ave. and Grand Concourse | North | 5± | B | | X | | | |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 151st St. and 150th St. | West | 5± | B | | X | X | | |
| | East | 5± | B | | X | X | | |
| 150th St. between Walton Ave. and Grand Concourse | North | 4 | A | X | X | X | X | X |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 150th St. and 149th St. | West | 5± | B | | | X | | X |
| | East | 5- | A | X | X | X | X | X |
| Exterior St. between 150th St. and 149th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| River Avenue between 150th St. and 149th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 149th St. between Walton Ave. and Grand Concourse | North | 5- | A | | X | X | X | X |
| | South | 5- | A | | X | X | X | X |

Note: PFM = pedestrians per foot per minute

Table 17-16
2014 No Build Conditions: Summary Pedestrian LOS Analysis for Sidewalks

| Location | Sidewalk | Maximum Platoon | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|---|----------|-----------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | PFM | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue between 157th St. and 153rd St. | West | 8 | C | | X | | | |
| | East | 5- | A | X | X | X | | |
| River Avenue between 153rd St. and 151st St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| River Avenue between 151st St. and 150th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 151st St. between Walton Ave. and Grand Concourse | North | 5± | B | | X | | | |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 151st St. and 150th St. | West | 5± | B | | X | X | | |
| | East | 5± | B | | X | X | | |
| 150th St. between Walton Ave. and Grand Concourse | North | 4 | A | X | X | X | X | X |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 150th St. and 149th St. | West | 6 | B | | | X | | X |
| | East | 5- | A | X | X | X | X | X |
| Exterior St. between 150th St. and 149th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| River Avenue between 150th St. and 149th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 149th St. between Walton Ave. and Grand Concourse | North | 5- | A | | X | X | X | X |
| | South | 5- | A | | X | X | X | X |

Note: PFM = pedestrians per foot per minute

Table 17-17

2009 No Build Conditions: Summary Pedestrian LOS Analysis—Corner Reservoirs

| Location | Corner Reservoir | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|------------------|-------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | Northeast | 114 | A | | X | | | |
| | Southeast | 143 | A | | X | | | |
| | Southwest | 32 | C | | X | | | |
| | Northwest | 31 | C | | X | | | |
| River Avenue and 151st Street | Northeast | 1589 | A | | X | | | |
| | Southeast | 2618 | A | | X | | | |
| | Southwest | 1903 | A | | X | | | |
| | Northwest | 1684 | A | | X | | | |
| Grand Concourse and 151st Street | Southwest | 137 | A | | X | | | |
| | Northwest | 111 | A | | | X | | |
| Grand Concourse and 150th Street | Northeast | 128 | A | | X | | | |
| | Southeast | 73 | A | | X | | | |
| | Southwest | 64 | A | | X | | | |
| | Northwest | 93 | A | | X | | | |
| Exterior Street and 149th Street | Southwest | 535 | A | | | X | | |
| | Northwest | 618 | A | | X | | | |
| River Avenue and 149th Street | Northeast | 628 | A | | X | | | |
| | Southeast | 626 | A | | | X | | |
| Grand Concourse and 149th Street | Northeast | 162 | A | X | | | | |
| | Southeast | 348 | A | | | X | | |
| | Southwest | 123 | A | | | | | X |
| | Northwest | 154 | A | | | | | X |

Note: SFP = square feet per pedestrian

Table 17-18

2014 No Build Conditions: Summary Pedestrian LOS Analysis—Corner Reservoirs

| Location | Corner Reservoir | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|------------------|-------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | Northeast | 111 | A | | X | | | |
| | Southeast | 140 | A | | X | | | |
| | Southwest | 31 | C | | X | | | |
| | Northwest | 30 | C | | X | | | |
| River Avenue and 151st Street | Northeast | 1532 | A | | X | | | |
| | Southeast | 2480 | A | | X | | | |
| | Southwest | 1903 | A | | X | | | |
| | Northwest | 1684 | A | | X | | | |
| Grand Concourse and 151st Street | Southwest | 133 | A | | X | | | |
| | Northwest | 109 | A | | | X | | |
| Grand Concourse and 150th Street | Northeast | 124 | A | | X | | | |
| | Southeast | 71 | A | | X | | | |
| | Southwest | 62 | A | | X | | | |
| | Northwest | 90 | A | | X | | | |
| Exterior Street and 149th Street | Southwest | 107 | A | | | X | | |
| | Northwest | 1208 | A | | X | | | |
| River Avenue and 149th Street | Northeast | 535 | A | | | X | | |
| | Southeast | 599 | A | | X | | | |
| Grand Concourse and 149th Street | Northeast | 158 | A | X | | | | |
| | Southeast | 339 | A | | | X | | |
| | Southwest | 119 | A | | | | | X |
| | Northwest | 150 | A | | | | | X |

Note: SFP = square feet per pedestrian

Table 17-19
2009 No Build Conditions: Summary Pedestrian LOS Analysis—Crosswalks

| Location | Corner Reservoir | Maximum Surge LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|------------------|-------------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | North | 168 | A | | X | | | |
| | East | 68 | A | | X | | | |
| | South | 175 | A | | X | | | |
| | West | 21 | D | | X | | | |
| River Avenue and 151st Street | North | 4030 | A | | X | | | |
| | East | 923 | A | | X | | | |
| | South | 175 | A | | X | | | |
| | West | 855 | A | | X | | | |
| Grand Concourse and 151st Street | North | 73 | A | | | X | | |
| | South | 171 | A | | | X | | |
| | West | 52 | B | | | X | | |
| Grand Concourse and 150th Street | North | 105 | A | | X | | | |
| | East | 31 | C | | X | | | |
| | South | 59 | B | | X | | | |
| | West | 37 | C | | X | | | |
| Exterior Street and 149th Street | North | 463 | A | | X | | | |
| | South | 59 | B | | X | | | |
| River Avenue and 149th Street | North | 73 | A | | X | | | |
| | East | 692 | A | | | X | | |
| | South | 412 | A | | | X | X | |
| Grand Concourse and 149th Street | North | 111 | A | X | | | | |
| | East | 61 | A | | | X | | |
| | South | 71 | A | | | X | | |
| | West | 83 | A | | | | | X |

Note: SFP = square feet per pedestrian

Table 17-20
2014 No Build Conditions: Summary Pedestrian LOS Analysis—Crosswalks

| Location | Corner Reservoir | Maximum Surge LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|------------------|-------------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | North | 163 | A | | X | | | |
| | East | 66 | A | | X | | | |
| | South | 172 | A | | X | | | |
| | West | 21 | D | | X | | | |
| River Avenue and 151st Street | North | 4030 | A | | X | | | |
| | East | 865 | A | | X | | | |
| | South | 384 | A | | | | X | |
| | West | 855 | A | | X | | | |
| Grand Concourse and 151st Street | North | 71 | A | | | X | | |
| | South | 169 | A | | | X | | |
| | West | 51 | B | | | X | | |
| Grand Concourse and 150th Street | North | 103 | A | | X | | | |
| | East | 30 | C | | X | | | |
| | South | 57 | A | | X | | | |
| | West | 36 | C | | X | | | |
| Exterior Street and 149th Street | North | 446 | A | | X | | | |
| | South | 57 | B | | X | | | |
| River Avenue and 149th Street | North | 72 | A | | X | | | |
| | East | 692 | A | | | X | | |
| | South | 384 | A | | | X | X | |
| Grand Concourse and 149th Street | North | 108 | A | X | | | | |
| | East | 60 | A | | | X | | |
| | South | 69 | A | | | X | | |
| | West | 80 | A | | | | | X |

Note: SFP = square feet per pedestrian

E. PROBABLE IMPACTS OF THE PROPOSED 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

As described in Chapter 1, “Project Description,” pedestrian access to the Proposed Project would be provided at numerous points along the northeast, east, and southern boundaries of the project site. At the northeast corner of the project site, pedestrian access would be from both sides of 151st Street between River Avenue and Exterior Street. Entrances would also be located on the eastern boundary of the project site from the west sidewalk of River Avenue between 151st Street and 149th Street, which includes access along both sidewalks of 150th Street between River Avenue and Exterior Street. Access to the project site from the south, and to the core retail uses at the center of the project site, would be at the 149th Street and Exterior Street intersection and along Exterior Street between 149th Street and the 153rd Street overpass. The person trips associated with vehicular travel are assumed to use the project’s on-site garages and surface lots and the associated internal pedestrian circulation infrastructure to access the proposed hotel and retail destinations. Therefore, these trips would not appear on the study area’s pedestrian network outside the project site. Taxi person trips would only appear as pedestrian trips on the sidewalk and corner reservoirs adjacent to the project site and would not affect other pedestrian elements within the study area. The following assumptions were used to assign transit and walk-only trips to the building entrances.

- Subway trips would utilize the numerous subway services available in the study area. The assignment of these trips is based on the available routes within the study area and transfer opportunities within the New York City subway system. The volume of project-generated trips occurring during each peak period is described in Chapter 16, “Traffic and Parking” and in Tables 17-2 and 17-3, above. Approximately 50 percent of these subway trips are assumed to arrive via Bronx-bound trains or depart via Manhattan-bound trains. The 2/4/5 subway lines are expected to absorb the majority of the project-generated subway trips (approximately 60 percent of the total) at the 149th Street-Grand Concourse Station. The remaining 40 percent would be distributed to the 4/B/D subway lines at the 161st Street-Yankee Stadium.
- As with the subway person trips, bus person trips would be distributed to the numerous bus services available in the study area. The volume of project generated trips occurring during each peak period is described in Chapter 16, “Traffic and Parking” and in Tables 17-2 and 17-3, above. The Bx1 bus route would absorb 50 percent of all bus trips; during weekday PM commuter peak hours, 20 percent of these trips would be made via the Bx1 Limited or express buses. All other bus person trips would use the remaining local bus routes in the study area and were distributed as follows: 8 percent along the Bx6 route, 19 percent along the Bx13 route, and 23 percent to the Bx19 bus route. The assignment of bus person trips began with designating specific bus stops at which users would access the nearby bus routes, then tracing these trips through logical walking routes to the Proposed Project’s street-level pedestrian access along River Avenue, 151st, 150th, 149th, and Exterior Streets.
- While all trips would require a walking component that connects the origins and destinations with their respective mode of transportation, a portion of the trips are made only by walking.

The volume of project-generated trips occurring during each peak period is described in Chapter 16, “Traffic and Parking” and in Tables 17-2 and 17-3, above. The assignment of these trips, during each of the five peak periods, accounts for the area’s pedestrian network, employment centers, and populated neighborhoods nearby.

The analysis assumed that walk-only trips would be primarily destined to the site from the neighborhoods immediately east of River Avenue; however, the site would have pedestrian access from Manhattan via the 145th Street and Macombs Dam Bridges and could draw some shoppers along those routes. The 145th Street Bridge is easily accessible from Manhattan. It provides a barrier between the walkway and the roadway, and intersections on both the Bronx and Manhattan approaches are signalized with pedestrian crosswalks. The approximate distance from Manhattan to the project site is ½ mile. The Macombs Dam Bridge is a less convenient option for accessing the project site. It is difficult to reach the bridge from its Manhattan approach, there are a number of unsignalized crosswalks where the bridge intersects with the Major Deegan Expressway, and the distance between Manhattan and the project site is approximately one mile. Although these bridges would provide walk access to the site, only a small number of pedestrians are expected to use these facilities since NYCT buses provide frequent service across both bridges, offering faster and more convenient travel options for visitors to the Gateway Center at Bronx Terminal Market.

It is anticipated that the City—with contributions from the project sponsor—would develop an approximately two-acre public open space and waterfront esplanade that would provide passive recreational use on a portion of the Bronx Terminal Market area west of Exterior Street. The City is committed to developing the off-site public open space by the Proposed Project’s 2009 Build year. The programming of this open space and the actions required for its development are yet to be determined. Based on travel demand for active recreational rates presented in the *CEQR Technical Manual*, the open space would generate fewer than 20 pedestrian trips in each of the peak 15-minute analysis periods. These trips would be linked to two sources: 1) area residents, and 2) visitors to the Proposed Project. Local resident trips, retail trips, and hotel trips are already accounted for as part of the 2014 Build conditions networks.

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Future 2009 and 2014 Build condition peak hour transit and pedestrian levels were based on volume projections developed using the above-referenced trip distribution and assignments superimposed onto the No Build transit and pedestrian networks. This combination resulted in the transit and pedestrian volumes used in both the 2009 and 2014 Build operational analyses.

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

Peak 15-minute subway ridership levels were estimated by adding the project increments to No Build levels. Tables 17-21 and 17-22 summarize the maximum operating constraint for each street-level stairway and its corresponding peak period for the analysis of both the 2009 and 2014 Build conditions. Appendix B presents the detailed results for all of these analysis locations. As shown, all stairways would operate at LOS D or better during all peak analysis periods with the exception of the following stairways at the 161st Street–Yankee Stadium Station:

Table 17-21
2009 Build Conditions: Summary Subway Station Analysis

| Location/Stairway | | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|--|--|--------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | V/SVCD Ratio | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| 149th Street-Grand Concourse Station 2/4/5 | | | | | | | | |
| S1 | 149th Street-Grand Concourse (SW corner) | 0.64 | D | | | | | X |
| S2 | 149th Street-Grand Concourse (SE corner) | 0.30 | B | | | X | | |
| 161st Street-Yankee Stadium Station 4/B/D | | | | | | | | |
| S1 | 161st Street-River Avenue (SW corner) | 0.76 | D | X | | | | |
| S2 | 161st Street-River Avenue (SW corner) | 1.67 | F | | X | | | |
| S3 | 161st Street-River Avenue (SW corner) | 1.61 | F | | X | | | |
| S4 | 161st Street-River Avenue (SE corner) | 0.70 | D | | X | | | |
| S5 | 161st Street-River Avenue (SE corner) | 1.54 | F | | X | | | |
| 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> . | | | | | | | | |

Table 17-22
2014 Build Conditions: Summary Subway Station Analysis

| Location/Stairway | | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|--|--|--------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | V/SVCD Ratio | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| 149th Street-Grand Concourse Station 2/4/5 | | | | | | | | |
| S1 | 149th Street-Grand Concourse (SW corner) | 0.65 | B | | | | | X |
| S2 | 149th Street-Grand Concourse (SE corner) | 0.30 | A | | | X | | |
| 161st Street-Yankee Stadium Station 4/B/D | | | | | | | | |
| S1 | 161st Street-River Avenue (SW corner) | 0.78 | D | X | | | | |
| S2 | 161st Street-River Avenue (SW corner) | 1.71 | F | | X | | | |
| S3 | 161st Street-River Avenue (SW corner) | 1.66 | F | | X | | | |
| S4 | 161st Street-River Avenue (SE corner) | 0.68 | D | | X | | | |
| S5 | 161st Street-River Avenue (SE corner) | 1.58 | F | | X | | | |
| 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> . | | | | | | | | |

Game Day Saturday Midday Peak Period

- The S5 stairway (SE corner) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with no increase in the V/SVCD ratio.

Game Day Saturday PM Peak Period

- The S2 stairway (SW corner, closest to intersection) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with only slight increases in the V/SVCD ratio.
- The S3 stairway (SW corner, furthest from intersection) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with only slight increases in the V/SVCD ratio.
- The S5 stairway (SE corner) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with no increase in the V/SVCD ratio.

Game Day Weekday PM Peak Period

- The S5 stairway (SE corner) will continue to operate at LOS E in both the 2009 and 2014 Build conditions with only slight increases in the V/SVCD ratio.

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 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.

The S2, S3, and S5 stairways, operating at a Build LOS F, would require less than an 1-inch widening to return service conditions to their No Build condition. Therefore, based on the criteria above, these widenings are 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 Proposed Project to the maximum load per bus 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 Project would operate above the guideline capacity. As shown in Tables 17-23 and 17-24, all of the five analyzed bus routes would operate below both the CEQR and MTA guideline capacities, therefore, the Proposed Project would not result in significant adverse impacts on bus line haul.

The applicant and NYCT have explored measures to improve direct bus service to the project site. One such measure would extend the Bx13 route from its terminus at 161 Street and River Avenue to the project site. This would substantially improve site access from the north and would likely result in the diversion of project-generated trips from the Bx6. Based on the analyses presented in Tables 17-23 and 17-24, it is anticipated that the Bx13 would have sufficient capacity to support the diversion of Bx6 bus trips if its route were extended to the project site.

Table 17-23
2009 Build Conditions: Bus Line Haul

| Peak Period | Buses Per Hour | Maximum Load By Direction | | | Maximum Load By Direction | | |
|------------------------------|----------------|---------------------------|----------------|------------|---------------------------|----------------|------------|
| | | 2009 No Build | 2009 Increment | 2009 Build | 2009 No Build | 2009 Increment | 2009 Build |
| Bx1 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 10 | 12 | 12 | 24 | 13 | 14 | 27 |
| Game Day Saturday PM | 8 | 49 | 12 | 61 | 45 | 11 | 56 |
| Game Day Weekday PM | 8 | 49 | 10 | 59 | 45 | 11 | 56 |
| Non-Game Day Saturday Midday | 10 | 12 | 16 | 28 | 13 | 16 | 29 |
| Non-Game Day Weekday PM | 8 | 49 | 11 | 60 | 45 | 12 | 57 |
| Bx1 Limited Bus Route | | Northbound | | | Southbound | | |
| Game Day Weekday PM | 6 | 51 | 4 | 55 | 66 | 3 | 67 |
| Non-Game Day Weekday PM | 6 | 51 | 4 | 55 | 66 | 4 | 70 |
| Bx6 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 9 | 39 | 16 | 55 | 33 | 14 | 47 |
| Game Day Saturday PM | 9 | 48 | 10 | 58 | 51 | 11 | 62 |
| Game Day Weekday PM | 9 | 48 | 11 | 59 | 51 | 11 | 62 |
| Non-Game Day Saturday Midday | 9 | 39 | 19 | 58 | 33 | 18 | 51 |
| Non-Game Day Weekday PM | 9 | 48 | 13 | 61 | 51 | 12 | 63 |
| Bx13 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 6 | 33 | 6 | 39 | 25 | 7 | 32 |
| Game Day Saturday PM | 9 | 55 | 4 | 59 | 29 | 4 | 33 |
| Game Day Weekday PM | 9 | 55 | 4 | 59 | 29 | 5 | 34 |
| Non-Game Day Saturday Midday | 6 | 33 | 8 | 41 | 25 | 8 | 33 |
| Non-Game Day Weekday PM | 9 | 55 | 5 | 60 | 29 | 5 | 34 |
| Bx19 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 10 | 41 | 9 | 50 | 35 | 11 | 46 |
| Game Day Saturday PM | 12 | 39 | 7 | 46 | 47 | 8 | 55 |
| Game Day Weekday PM | 12 | 39 | 7 | 46 | 47 | 8 | 55 |
| Non-Game Day Saturday Midday | 10 | 41 | 12 | 53 | 35 | 14 | 49 |
| Non-Game Day Weekday PM | 12 | 39 | 8 | 47 | 47 | 9 | 56 |

Note: * Exceeds CEQR recommended NYCT guideline capacity of passengers per bus.

Table 17-24
2014 Build Conditions: Bus Line Haul

| Peak Period | Buses Per Hour | Maximum Load By Direction | | | Maximum Load By Direction | | |
|------------------------------|----------------|---------------------------|----------------|------------|---------------------------|----------------|------------|
| | | 2014 No Build | 2014 Increment | 2014 Build | 2014 No Build | 2014 Increment | 2014 Build |
| Bx1 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 10 | 12 | 12 | 24 | 13 | 14 | 27 |
| Game Day Saturday PM | 8 | 49 | 13 | 62 | 45 | 12 | 57 |
| Game Day Weekday PM | 8 | 49 | 10 | 59 | 45 | 11 | 56 |
| Non-Game Day Saturday Midday | 10 | 12 | 16 | 28 | 13 | 16 | 29 |
| Non-Game Day Weekday PM | 8 | 49 | 11 | 60 | 45 | 12 | 61 |
| Bx1 Limited Bus Route | | Northbound | | | Southbound | | |
| Game Day Weekday PM | 6 | 51 | 3 | 54 | 66 | 4 | 70 |
| Non-Game Day Weekday PM | 6 | 51 | 4 | 55 | 66 | 4 | 70 |
| Bx6 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 9 | 39 | 16 | 55 | 33 | 14 | 47 |
| Game Day Saturday PM | 9 | 48 | 10 | 58 | 51 | 11 | 62 |
| Game Day Weekday PM | 9 | 48 | 12 | 60 | 51 | 11 | 62 |
| Non-Game Day Saturday Midday | 9 | 39 | 19 | 58 | 33 | 19 | 52 |
| Non-Game Day Weekday PM | 9 | 48 | 13 | 61 | 51 | 12 | 63 |
| Bx13 Bus Route | | Northbound | | | Southbound | | |
| Game Day Saturday Midday | 6 | 33 | 6 | 39 | 25 | 7 | 32 |
| Game Day Saturday PM | 9 | 55 | 4 | 59 | 29 | 4 | 33 |
| Game Day Weekday PM | 9 | 55 | 5 | 60 | 29 | 5 | 34 |
| Non-Game Day Saturday Midday | 6 | 33 | 8 | 41 | 25 | 8 | 33 |
| Non-Game Day Weekday PM | 9 | 55 | 5 | 60 | 29 | 5 | 34 |
| Bx19 Bus Route | | Eastbound | | | Westbound | | |
| Game Day Saturday Midday | 10 | 41 | 10 | 51 | 35 | 11 | 46 |
| Game Day Saturday PM | 12 | 39 | 7 | 46 | 47 | 8 | 55 |
| Game Day Weekday PM | 12 | 39 | 7 | 46 | 47 | 8 | 55 |
| Non-Game Day Saturday Midday | 10 | 41 | 13 | 54 | 35 | 14 | 49 |
| Non-Game Day Weekday PM | 12 | 39 | 8 | 47 | 47 | 9 | 56 |

Note: * Exceeds CEQR recommended NYCT guideline capacity of 70 passengers per bus.

STREET-LEVEL PEDESTRIAN OPERATIONS

Pedestrian trips associated with the Proposed Project would result in increased volumes at the analysis locations. The analysis conducted for both the 2009 and 2014 Build conditions accounts for the distribution of project-generated trips overlaid on the No Build network’s sidewalk, corner reservoir, and crosswalk analysis locations. As shown in Tables 17-25 through 17-30, all of the analysis locations would operate at LOS D or better.

As described previously, impacts to corners and crosswalks are considered significant if the Proposed Project would result in a deterioration from No Build LOS D or better to Build LOS E or F, or when the available circulation space is decreased by 1 SFP or more at a location with a No Build LOS E or F. Based on these criteria, the Proposed Project would not result in significant adverse impacts with the exception of the north crosswalk at 149th Street and River Avenue, as described below.

Table 17-25

2009 Build Conditions: Summary Pedestrian LOS Analysis for Sidewalks

| Location | Sidewalk | Maximum Platoon | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|---|----------|-----------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | PFM | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue between 157th St. and 153rd St. | West | 8 | C | | X | | | |
| | East | 6 | B | | X | | | |
| River Avenue between 153rd St. and 151st St. | West | 5± | A | | | | | X |
| | East | 4 | A | X | X | X | X | X |
| River Avenue between 151st St. and 150th St. | East | 4 | A | X | X | X | X | X |
| River Avenue between 151st St. and Garage Access | West | 4 | A | X | X | X | X | X |
| River Avenue between Garage Access and 150th St. | West | 4 | A | X | X | X | X | X |
| 151st St. between Walton Ave. and Grand Concourse | North | 5± | B | | X | X | | |
| | South | 5± | B | | X | X | | |
| Grand Concourse between 151st St. and 150th St. | West | 5± | B | X | X | X | | |
| | East | 5± | B | X | X | X | | |
| 150th St. between Walton Ave. and Grand Concourse | North | 4 | A | X | X | X | X | X |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 150th St. and 149th St. | West | 6 | B | | X | X | | X |
| | East | 5- | A | X | X | X | X | |
| Exterior St. between 150th St. and 149th St. | West | 5- | A | X | | | X | X |
| | East | 5± | B | X | | | X | X |
| River Avenue between 150th St. and 149th St. | West | 4 | B | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 149th St. between Walton Ave. and Grand Concourse | North | 7- | B | | | | X | |
| | South | 6 | B | | | | | X |

Note: PFM = pedestrians per foot per minute

Table 17-26

2014 Build Conditions: Summary Pedestrian LOS Analysis for Sidewalks

| Location | Sidewalk | Maximum Platoon | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|---|----------|-----------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | PFM | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue between 157th St. and 153rd St. | West | 8 | C | | X | | | |
| | East | 6 | B | | X | | | |
| River Avenue between 153rd St. and 151st St. | West | 5± | B | | | X | | |
| | East | 5- | A | | | | X | |
| River Avenue between 151st St. and 150th St. | East | 4 | A | X | X | X | X | X |
| River Avenue between 151st St. and Garage Access | West | 5- | A | | | | X | |
| River Avenue between Garage Access and 150th St. | West | 5- | A | | | | X | |
| 151st St. between Walton Ave. and Grand Concourse | North | 6 | B | | X | | | |
| | South | 5- | A | | X | X | | |
| Grand Concourse between 151st St. and 150th St. | West | 5± | B | X | X | X | | |
| | East | 5± | B | X | X | X | | |
| 150th St. between Walton Ave. and Grand Concourse | North | 4 | A | X | X | X | X | X |
| | South | 4 | A | X | X | X | X | X |
| Grand Concourse between 150th St. and 149th St. | West | 6 | B | | X | X | | |
| | East | 5- | A | X | X | X | X | |
| Exterior St. between 150th St. and 149th St. | West | 5- | A | X | X | | X | |
| | East | 5± | B | X | | | X | |
| River Avenue between 150th St. and 149th St. | West | 4 | A | X | X | X | X | X |
| | East | 4 | A | X | X | X | X | X |
| 149th St. between Walton Ave. and Grand Concourse | North | 7- | B | | | | X | |
| | South | 6 | B | | | | | X |

Note: PFM = pedestrians per foot per minute

Table 17-27

2009 Build Conditions: Summary Pedestrian LOS Analysis for Corner Reservoirs

| Location | Corner Reservoir | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|------------------|-------------|----------|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | Northeast | <u>98</u> | <u>A</u> | | <u>X</u> | | | |
| | Southeast | <u>123</u> | <u>A</u> | | <u>X</u> | | | |
| | Southwest | <u>27</u> | <u>C</u> | | <u>X</u> | | | |
| | Northwest | <u>26</u> | <u>C</u> | | <u>X</u> | | | |
| River Avenue and 151st Street | Northeast | <u>239</u> | <u>A</u> | | | | | <u>X</u> |
| | Southeast | <u>222</u> | <u>A</u> | | | | | <u>X</u> |
| | Southwest | <u>158</u> | <u>A</u> | | | | | <u>X</u> |
| | Northwest | <u>131</u> | <u>A</u> | | | | | <u>X</u> |
| Grand Concourse and 151st Street | Southwest | <u>118</u> | <u>A</u> | | | <u>X</u> | | |
| | Northwest | <u>98</u> | <u>A</u> | | | <u>X</u> | | |
| Grand Concourse and 150th Street | Northeast | <u>120</u> | <u>A</u> | | <u>X</u> | | | |
| | Southeast | <u>69</u> | <u>A</u> | | <u>X</u> | | | |
| | Southwest | <u>56</u> | <u>B</u> | | <u>X</u> | | | |
| | Northwest | <u>79</u> | <u>A</u> | | <u>X</u> | | | |
| River Avenue and 149th Street | Northeast | <u>51</u> | <u>A</u> | | | | <u>X</u> | |
| | Southeast | <u>111</u> | <u>A</u> | | | | <u>X</u> | |
| Grand Concourse and 149th Street | Northeast | <u>116</u> | <u>A</u> | <u>X</u> | | | | |
| | Southeast | <u>279</u> | <u>A</u> | | | | | <u>X</u> |
| | Southwest | <u>56</u> | <u>B</u> | | | | | <u>X</u> |
| | Northwest | <u>75</u> | <u>A</u> | | | | | <u>X</u> |

Note: SFP = square feet per pedestrian

Table 17-28

2014 Build Conditions: Summary Pedestrian LOS Analysis for Corner Reservoirs

| Location | Corner Reservoir | Maximum LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|------------------|-------------|----------|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | Northeast | <u>96</u> | <u>A</u> | | <u>X</u> | | | |
| | Southeast | <u>120</u> | <u>A</u> | | <u>X</u> | | | |
| | Southwest | <u>27</u> | <u>C</u> | | <u>X</u> | | | |
| | Northwest | <u>25</u> | <u>C</u> | | <u>X</u> | | | |
| River Avenue and 151st Street | Northeast | <u>235</u> | <u>A</u> | | | <u>X</u> | | |
| | Southeast | <u>217</u> | <u>A</u> | | | <u>X</u> | | |
| | Southwest | <u>154</u> | <u>A</u> | | | <u>X</u> | | |
| | Northwest | <u>129</u> | <u>A</u> | | | <u>X</u> | | |
| Grand Concourse and 151st Street | Southwest | <u>115</u> | <u>A</u> | | | <u>X</u> | | |
| | Northwest | <u>96</u> | <u>A</u> | | | <u>X</u> | | |
| Grand Concourse and 150th Street | Northeast | <u>117</u> | <u>A</u> | | <u>X</u> | | | |
| | Southeast | <u>67</u> | <u>A</u> | | <u>X</u> | | | |
| | Southwest | <u>54</u> | <u>A</u> | | <u>X</u> | | | |
| | Northwest | <u>77</u> | <u>A</u> | | <u>X</u> | | | |
| River Avenue and 149th Street | Northeast | <u>50</u> | <u>B</u> | | | | <u>X</u> | |
| | Southeast | <u>108</u> | <u>A</u> | | | | <u>X</u> | |
| Grand Concourse and 149th Street | Northeast | <u>113</u> | <u>A</u> | <u>X</u> | | | | |
| | Southeast | <u>274</u> | <u>A</u> | | | | | <u>X</u> |
| | Southwest | <u>55</u> | <u>B</u> | | | | | <u>X</u> |
| | Northwest | <u>74</u> | <u>A</u> | | | | | <u>X</u> |

Note: SFP = square feet per pedestrian

Table 17-29

2009 Build Conditions: Summary Pedestrian LOS Analysis for Crosswalks

| Location | Crosswalk | Maximum Surge LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|-----------|-------------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | North | 168 | A | | X | | | |
| | East | 56 | B | | X | | | |
| | South | 175 | A | | X | | | |
| | West | 21 | D | | X | | | |
| River Avenue and 151st Street | North | 127 | A | | | | | X |
| | East | 216 | A | | | | | X |
| | South | 94 | A | | | | | X |
| | West | 138 | A | | | | | X |
| River Avenue and Garage Access | West | 61 | A | | X | | | |
| Grand Concourse and 151st Street | North | 62 | A | | | X | | |
| | South | 171 | A | | | X | | |
| | West | 52 | B | | | X | | |
| Grand Concourse and 150th Street | North | 100 | A | | X | | | |
| | East | 29 | C | | X | | | |
| | South | 57 | B | | X | | | |
| | West | 31 | C | | X | | | |
| Exterior Street and 149th Street | North | 69 | A | | | | X | |
| River Avenue and 149th Street * | North | 10 | E | | | | X | |
| | East | 53 | B | | | | X | |
| | South | 412 | A | | | X | X | |
| Grand Concourse and 149th Street | North | 66 | A | X | | | | |
| | East | 52 | B | | | X | | |
| | South | 55 | B | | | X | | |
| | West | 39 | B | | | | | X |

Note: SFP = square feet per pedestrian
 * Significant adverse impact along the north crosswalk in both the Game Day and Non-Game Day Saturday Midday Peak Periods

Table 17-30

2014 Build Conditions: Summary Pedestrian LOS Analysis for Crosswalks

| Location | Crosswalk | Maximum Surge LOS | | Game Day Peak Periods | | | Non-Game Day Peak Periods | |
|----------------------------------|-----------|-------------------|-----|-----------------------|-------------|------------|---------------------------|------------|
| | | SFP | LOS | Saturday Midday | Saturday PM | Weekday PM | Saturday Midday | Weekday PM |
| River Avenue and 153rd Street | North | 163 | A | | X | | | |
| | East | 55 | B | | X | | | |
| | South | 172 | A | | X | | | |
| | West | 21 | D | | X | | | |
| River Avenue and 151st Street | North | 123 | A | | | | | X |
| | East | 207 | A | | | | | X |
| | South | 88 | A | | | | | X |
| | West | 136 | A | | | | | X |
| River Avenue and Garage Access | West | 59 | B | | X | | | |
| Grand Concourse and 151st Street | North | 61 | A | | | X | | |
| | South | 169 | A | | | X | | |
| | West | 51 | B | | | X | | |
| Grand Concourse and 150th Street | North | 98 | A | | X | | | |
| | East | 28 | C | | X | | | |
| | South | 56 | A | | X | | | |
| | West | 30 | C | | X | | | |
| Exterior Street and 149th Street | North | 67 | A | | | | X | |
| River Avenue and 149th Street * | North | 10 | E | | | | X | |
| | East | 53 | B | | | | X | |
| | South | 384 | A | | | | X | |
| Grand Concourse and 149th Street | North | 64 | A | X | | | | |
| | East | 51 | B | | | X | | |
| | South | 54 | B | | | X | | |
| | West | 39 | C | | | | | X |

Note: SFP = square feet per pedestrian
 * Significant adverse impact along the north crosswalk in both the Game Day and Non-Game Day Saturday Midday Peak Periods

Game Day Saturday Midday Peak Period

- The north crosswalk at 149th Street and River Avenue would decrease from a 2009 No Build LOS A with 79 SFP and a 2014 No Build LOS A with 77 SFP, to a Build LOS E with 14 SFP and 13 SFP in the 2009 and 2014 Build conditions, respectively.

Game Day Saturday PM Peak Period

- The north crosswalk at 149th Street and River Avenue would decrease from a 2009 No Build LOS D with 73 SFP and a 2014 No Build LOS D with 72 SFP, to a Build LOS D with 18 SFP in both the 2009 and 2014 Build conditions.

Game Day Weekday PM Peak Period

- The north crosswalk at 149th Street and River Avenue would decrease from a 2009 No Build LOS D with 105 SFP and a 2014 No Build LOS D with 103 SFP, to a Build LOS D with 16 SFP in both the 2009 and 2014 Build conditions.

Non-Game Day Saturday Midday Peak Period

- The north crosswalk at 149th Street and River Avenue would decrease from a 2009 No Build LOS A with 87 SFP and a 2014 No Build LOS A with 85 SFP, to a Build LOS E with 10 SFP in both the 2009 and 2014 Build conditions.

Non-Game Day Saturday PM Peak Period

- The north crosswalk at 149th Street and River Avenue would decrease from a 2009 No Build LOS A with 92 SFP and a 2014 No Build LOS A with 90 SFP, to a Build LOS E with 14 SFP in both the 2009 and 2014 Build conditions.

Mitigation measures for this impact are described in Chapter 23, “Mitigation.”

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