# A. INTRODUCTION

This chapter assesses the Proposed Project's potential impact on transit and pedestrian facilities in the vicinity of the project site. The Proposed Project, a complex of five mixed-use buildings, would generate new demand on public transit services and would create new pedestrian demand.

Trip generation analyses were performed to determine which of the Reasonable Worst Case Development Scenarios (RWCDS) maximizes the potential for transit and pedestrian impacts. That analysis showed that the maximum retail/office scenarios maximized the potential for transit and pedestrian impacts. The weekday midday, PM, and Saturday midday analyses were based upon RWCDS 3b (see Chapter 1, "Project Description"), which assumes 2,100 residential units, 1,012 hotel rooms, 151,598 gross square feet (gsf) of community facility (a 1,332-seat public school), 325,022 gsf of retail, 52,209 gsf of office and 276,011 gsf of auto showroom. The weekday AM analyses were based on RWCDS 3d, which is a slight variation on that program. In RWCDS 3d, the gross square feet of retail space is reduced to 165,938 gsf and the office space is increased to 211,293 gsf, with all other components of the project remaining constant.

In May 2010, shortly prior to the completion of the Draft SEIS, a substantive update to the 2001 *CEQR Technical Manual* was released. Prior to the public hearing for the Proposed Project, a Technical Memorandum was prepared (published on DCP's website in September 2010) that considered whether one or more analyses contained in the Draft SEIS should be revised in the Final SEIS in light of the updated guidance set forth in the 2010 *CEQR Technical Manual.* This chapter reflects updated 2010 *CEQR Technical Manual* guidance with respect to transit and pedestrian analyses.

**PRINCIPAL CONCLUSIONS**

*SUBWAY SERVICE*

The Proposed Project would generate a total of approximately 937 and 1,299 new subway trips (in and out, combined) during the weekday AM and PM peak hours, respectively. All of these trips are expected to utilize A, B, C, D, and No. 1 train services at the 59th Street-Columbus Circle subway station located approximately ½ mile to the east of the project site. Approximately 20 percent of these subway trips are expected to utilize M57 local buses to travel between the subway station and the project site. However, the majority of project-generated subway trips are expected to walk to and from the station via the West 60th Street corridor. These trips would utilize entrance stairs at the northwest corner of West 60th Street and Broadway, on the Broadway median at West 60th Street, and on the east side of Broadway adjacent to the Trump International Hotel and Tower. The analysis of 2018 conditions with the Proposed Project at the 59th Street-Columbus Circle subway station indicates that all of these stairs would continue to operate at acceptable levels of service during both the weekday AM and PM peak hours, and adjacent fare arrays (turnstiles and exit gates) would continue to operate

with available capacity in these peak hours. The Proposed Project would therefore not result in significant adverse subway station impacts in 2018 based on *City Environmental Quality Review (CEQR) Technical Manual* criteria.

In 2018 with the Proposed Project, all subway routes serving the 59th Street-Columbus Circle subway station would continue to operate within available peak direction capacity at their maximum load points during both the weekday AM and PM peak hours, and the Proposed Project would be expected to add no more than one additional peak direction passenger per car to any of these routes in either period. No significant adverse impacts to peak direction subway line haul service would be expected to result from the Proposed Project based on *CEQR Technical Manual* criteria.

*BUS SERVICE*

The Proposed Project would generate a total of approximately 254 new inbound trips and 286 new outbound trips on the M11, M31 and M57 local bus routes during the weekday AM peak hour and 500 inbound and 416 outbound during the weekday PM peak hour. These trips include the approximately 20 percent of project-generated subway trips that are expected to travel by bus to and from the 59th Street-Columbus Circle subway station. With this added demand, eastbound M31 and M57 buses would experience capacity shortfalls equivalent to 11 passengers and 143 passengers, respectively, during the weekday AM peak hour. During the weekday PM peak hour, northbound M11 and westbound M31 and M57 buses would experience capacity shortfalls equivalent to 36, 95, and 207 passengers, respectively. Based on current New York City Transit (NYCT) guidelines, the Proposed Project would therefore result in significant adverse impacts to eastbound M31 and M57 service during the weekday AM peak hour, and northbound M11 and westbound M31 and M57 service during the weekday PM peak hour. As standard practice, NYCT routinely conducts ridership counts and adjusts bus service frequency to meet its service criteria, within fiscal and operational constraints. Mitigation measures to alleviate these significant impacts are discussed in Chapter 22, "Mitigation."

*PEDESTRIANS*

New pedestrian demand generated by the Proposed Project would include trips made solely by walking, as well as pedestrian trips en route to and from subway station entrances and bus stops. In total, the Proposed Project would add approximately 3,268 pedestrian trips (in and out combined) to study area sidewalks, corner areas and crosswalks during the weekday AM peak hour, 3,137 during the midday, 3,682 during the PM, and 3,817 during the Saturday midday peak hour. This new pedestrian demand is expected to be most concentrated on sidewalks and crosswalks immediately adjacent to the Proposed Project's entrances on West End Avenue and West 59th Street, and along West 60th Street, which would serve as the most direct route between the project site and the 59th Street-Columbus Circle subway station.

In 2018 with the Proposed Project, no analyzed sidewalks or corner areas would be significantly adversely impacted by project-generated pedestrian traffic based upon *CEQR Technical Manual* criteria. However, five crosswalks would be significantly adversely impacted in one or more peak hours. At the intersection of West 60th Street and Amsterdam Avenue, the north crosswalk would be significantly impacted during the AM and PM peak hours and the south crosswalk would be impacted during the AM, PM, and Saturday midday peak hours. The north and south crosswalks on Columbus Avenue at West 60th Street would be significantly impacted during the AM, PM, and Saturday midday peak hours, with the south crosswalk also being impacted during the weekday midday. At the intersection of West 59th Street and West End Avenue, the north

crosswalk would be significantly impacted during the AM, PM, and Saturday midday peak hours. Mitigation measures to alleviate these significant impacts are discussed in Chapter 22, "Mitigation."

## B. SUMMARY OF 1992 FEIS FINDINGS

### SUBWAY STATIONS

The subway station analysis in the 1992 Final Environmental Impact Statement (FEIS) examined the potential for impacts at three subway stations: 59th Street-Columbus Circle (1, A, B, C, D), 66th Street (1) and 72nd Street (1, 2, 3). It is anticipated that of these subway stations, only 59th Street-Columbus Circle would be utilized by demand from the current Proposed Project. The 1992 FEIS analysis of future Build conditions at this subway station assumed the implementation of mitigation measures associated with the then proposed Columbus Center development. These measures included the construction of two new street stairs, one at the northwest corner of Central Park West and Columbus Circle and the second near the southwest corner of West 60th Street and Broadway. The analysis also assumed the reconfiguration of the fare array near West 58th Street at the base of the escalators to the IND mezzanine.

While improvements were subsequently made to the IND mezzanine fare array at West 58th Street, and the entrance on the north side of Columbus Circle between Broadway and Central Park West was extensively reconstructed and expanded in conjunction with the adjacent Trump International Hotel and Tower development, a new entrance stair on the west side of Broadway south of West 60th Street was not constructed. (As described below, two new entrance stairs to the southbound IRT platform have recently been completed along the west side of Broadway north of West 60th Street.)

Based on the projected subway demand generated by full build-out of the Riverside South project and the station improvements then planned as mitigation for the Columbus Center development, the 1992 FEIS analysis determined that the existing entrance stair on the north side of Columbus Circle between Broadway and Central Park West would be significantly adversely impacted in the both the weekday AM and PM peak hours. No project-sponsored mitigation was proposed to address this impact, as the affected stair is privately owned. As previously mentioned, subsequent to the 1992 FEIS, this entrance was extensively reconstructed and expanded.

### SUBWAY LINE HAUL

The analysis of 2002 Build subway line haul conditions in the 1992 FEIS identified a significant adverse AM peak hour impact to southbound IRT local service (then provided by the Nos. 1 and 9 trains and currently provided by the No. 1 train). As systemwide changes to subway service are under the jurisdiction of the MTA, no project-sponsored mitigation was proposed to address this impact.

### LOCAL BUS

The analysis of 2002 Build local bus conditions in the 1992 FEIS identified significant adverse impacts on a total of five NYCT local bus routes—the M5 in the AM peak hour and the M11, M57, M66 and M104 in both the weekday AM and PM peak hours. To improve bus transit access to the project site, adjustments to the M66 and M72 bus services were proposed that would provide direct access to the Proposed Project by relocating the turn-around points for these routes to within the project site itself. At present, M66 buses continue to terminate their

runs on West 66th Street at West End Avenue on the eastern periphery of the Riverside South development. M72 buses, however, now loop through the north end of the development on Riverside Boulevard, West 68th Street and Freedom Place.

Of the significantly impacted routes identified in the 1992 FEIS, it was anticipated that only the M11 and M57 would experience demand from the currently proposed Riverside Center project. As standard practice, NYCT routinely conducts ridership counts and adjusts bus service frequency, within fiscal and operating constraints, to meet its service criteria. Therefore, no project-sponsored mitigation was proposed in the 1992 FEIS to address these impacts to local bus service.

**PEDESTRIANS**

The analysis of 2002 Build pedestrian conditions in the 1992 FEIS identified a significant adverse impact to the south crosswalk on Broadway at West 60th Street in the weekday PM peak hour. To mitigate this potential impact, it was proposed to re-stripe the crosswalk to a width of 15 feet. The crosswalk was subsequently re-striped to this width.

## C. METHODOLOGY

Existing conditions at the transit and pedestrian facilities that are expected to be used by project-generated demand are described in detail below. The transit analysis focuses on the weekday AM (8-9 AM) and PM (5-6 PM) peak commuter hours, as it is during these periods that peak demand from the project site would coincide with peak demand on the subway and local bus systems. The pedestrian analysis focuses on the weekday AM, midday (12-1 PM) and PM peak hours as well as the Saturday midday (1-2 PM) peak hour. The future condition without the Proposed Project (the No Build condition) has been determined based on additional transit and pedestrian demand from anticipated developments and general background growth, along with any changes to transit facilities or services expected by 2018. Increases in travel demand resulting from the Proposed Project are then projected and added to the base No Build condition to develop the 2018 Future With the Proposed Project (the Build condition). Any significant adverse impacts from the Proposed Project are then identified.

Two future baseline conditions will be examined under the "Future Without the Proposed Project":

- No Build Scenario 1—Assumes that in the 2018 Future Without the Proposed Project, the original program for Parcels L/M/N that was approved in the FEIS would be completed.
- No Build Scenario 2—Assumes that in the 2018 Future Without the Proposed Project, the original FEIS approved program for Parcels L and M would be completed, but Parcel N would remain in its current parking use.

The second No Build scenario is being considered because, subsequent to the completion of the Riverside South FEIS, the City Council modified the project approvals to provide that future development on Parcel N would require the submission of revised plans and supplementary environmental analysis. Development on Parcels L and M would not require any additional approvals. Since Parcel N would require additional review and approvals before it could be developed as proposed in the FEIS, the second No Build scenario accounts for a condition in which Parcels L and M are developed as proposed in the original FEIS, and Parcel N is not redeveloped but instead continues in its existing condition. Detailed quantified transit and pedestrian analysis have been prepared for the No Build scenario that would result in the largest increment for the Proposed Project—No Build Scenario 2.

## SUBWAY

The Proposed Project is located approximately ½ mile to the west of the 59th Street-Columbus Circle subway station's entrance stairways at West 60th Street and Broadway. This station provides access to most of the subway routes connecting the West Side to midtown and lower Manhattan (A, B, C, D, and 1 trains), and is a major transfer point between them. As discussed below, the Proposed Project would generate 937 incremental subway trips in the weekday AM peak hour and 1,299 subway trips in the weekday PM peak hour, all of which would likely utilize the 59th Street-Columbus Circle subway station given its proximity to the project site, and the distance from the site of the nearest express station at West 72nd Street. According to the *CEQR Technical Manual*, projects that generate fewer than 200 subway trips at a station are not likely to have any significant impacts and can be screened out of any detailed analysis. Since the 59th Street-Columbus Circle station is expected to experience more than 200 project-generated subway trips, an analysis of conditions at this station in the weekday AM and PM peak hours is provided. The following analysis assumes that approximately 20 percent of project-generated subway trips would use the M57 bus route adjacent to the project site to access the 59th Street-Columbus Circle subway station. The remaining 80 percent would walk along West 60th Street and access the station using the entrances located on the northwest corner of West 60th Street and Broadway, on the Broadway median, and on the east side of Broadway near the Trump International Hotel and Tower. The southern-most of the two new stairs on the northwest corner of Broadway and West 60th Street (the closest stair to the project site) was conservatively assumed to be utilized by all outbound trips traveling on A, B, C and D trains and southbound No. 1 trains, as this would be the first stair they would come to when approaching the station from the project site. Fifty percent of the inbound trips on southbound No.1 trains were also assigned to this stair, while the remaining 50 percent were assigned to the northern-most stair on the Broadway median. All inbound and outbound trips traveling on northbound No. 1 trains were assigned to the entrance on the east side of Broadway adjacent to the Trump International Hotel and Tower as were all inbound subway trips traveling on A, B, C and D trains.

The analysis of subway station conditions examines key station elements under peak 15-minute flow conditions, focusing on fare arrays (e.g., turnstiles, exit gates, etc.) and street-level entrance stairs. A subway line haul analysis assessing conditions on the trains at their maximum load points is also provided. This analysis examines conditions in the peak southbound direction in the AM peak hour and the peak northbound direction in the PM peak hour for each of the five subway routes serving the 59th Street-Columbus Circle subway station (the A, B, C, and D and No. 1 trains).

### *ANALYSIS METHODOLOGY*

The analysis of subway station conditions uses the design capacities for stairs, escalators, turnstiles, high entry/exit turnstiles (HEETs) and high revolving exits specified in *NYCT Station Planning and Design Guidelines*, as well as procedures set forth in *Pedestrian Planning and Design* by John J. Fruin. All analyses reflect peak 15-minute conditions in each peak hour. The stairway analyses were conducted using the Fruin pedestrian level of service (LOS) methodology, which equates pedestrian flow per foot of effective stairway or corridor width per minute (PFM) with qualitative measures of pedestrian comfort. Based on the calculated values of pedestrian volumes per foot width of stairway or corridor per minute, six levels of service are defined with letters A through F, as shown in **Table 17-1**. LOS A is representative of free flow conditions without pedestrian conflicts and LOS F depicts significant capacity limitations and

inconvenience. NYCT's minimum standard for pedestrian conditions has traditionally been established as the threshold between LOS C and LOS D, at a volume-to-capacity (v/c) ratio of 1.00. Absolute capacity for a stair is typically considered to be about 15 PFM.

**Table 17-1**
**Stairway Level of Service Definitions**

| Level of Service | Stairway PFM | Description |
|---|---|---|
| A | Up to 5 | Free-flow conditions. |
| B | 5 - 7 | Minor reverse flow will cause minor conflicts. |
| C | 7 - 10 | Slight restrictions in speed and difficulties in reverse flows. |
| D | 10 - 13 | Significant restriction in speed and difficulties in reverse flows. |
| E | 13 - 17 | Reductions of speeds, serious reverse flow conflicts, and intermittent stoppages. |
| F | More than 17 | Complete breakdown in traffic flow. |
| **Note:** PFM—persons per foot of effective width per minute. | | |

Practical capacities are calculated for each stairway analyzed by multiplying the effective stair width in feet by 10 PFM (the LOS C/D threshold), and by an adjustment factor to account for two-directional friction (where applicable). Peak 15-minute volumes are then compared with the capacities to obtain a v/c ratio for each peak hour. Using this methodology, LOS A corresponds to a v/c ratio of up to 0.5, LOS B corresponds to 0.51 to 0.70 and LOS C corresponds to 0.71 to 1.00 (capacity). LOS D, E, and F represent demand levels that exceed capacity, with v/c ratios of 1.01 to 1.30, 1.31 to 1.70, and 1.71 or greater, respectively. Operating conditions for escalators, turnstiles, HEETs, and high revolving exit gates are also described in terms of LOS and volume-to-capacity ratios, with LOS A corresponding to a v/c ratio of less than 0.45, LOS B corresponding to 0.45 to 0.7, LOS C corresponding to 0.7 to 1.0, LOS D corresponding to 1.0 to 1.33, LOS E corresponding to 1.33 to 1.67, and LOS F corresponding to a v/c ratio of greater than 1.67. Any volume-to-capacity ratio greater than 1.67 signifies volumes beyond capacity and extended queuing.

*IMPACT CRITERIA*

The *CEQR Technical Manual* identifies a significant impact for stairways in terms of the minimum width increment threshold (WIT) for stairway widening that would be necessary to restore conditions to their No Build state. Stairways that are substantially degraded in level of service or which experience the formation of extensive queues are classified as significantly impacted. Significant stairway impacts are typically considered to have occurred once the following thresholds are reached; for a Build LOS D condition, a WIT of six inches or more is considered significant; for a Build LOS E condition, three inches is considered significant; and for Build LOS F, a WIT of one inch is considered significant. For stairways operating at LOS A, B or C in the No Build condition, a refined methodology that was used for the *Hudson Yards Rezoning & Development Program GEIS* (June 2004) is employed. This methodology is based on bringing these stairways to an acceptable LOS (v/c ratio of less than 1.00), not to the LOS projected for the No Build condition.

For turnstiles, escalators, and high-wheel exit gates, the *CEQR Technical Manual* defines a significant impact as an increase from a No Build volume-to-capacity ratio of below 1.00 to a

v/c ratio of 1.00 or greater. Where a facility is already at a v/c ratio of 1.00 or greater, a 0.01 change in v/c ratio is also considered significant.

For subway line haul conditions, any increases in load levels that remain within practical capacity limits are generally not considered significant impacts under *CEQR Technical Manual* criteria. (Guideline capacities established by NYCT are used for the analyses. These are 110 passengers/car for a 51-foot subway car, 145 passengers/car for a 60-foot car, and 175 passengers/car for a 75-foot car.) Projected increases from a No Build condition to a Build condition that exceed practical capacity may be considered significant impacts if the proposed project generates an average of five or more additional passengers per car.

## BUS SERVICE

It is anticipated that project-generated bus trips would be concentrated on a total of three NYCT bus routes most closely serving the project site, the M11, M31, and M57. As discussed later in this chapter, the Proposed Project would generate approximately 174 inbound and 179 outbound bus-only trips in the AM peak hour and 348 inbound and 308 outbound bus-only trips in the PM peak hour. In addition, it is expected that up to approximately 20 percent of subway trips en route to and from the 59th Street-Columbus Circle subway station would include a bus connection (via the M57 bus route) between the project site and the station. The local bus analysis focuses on conditions in the peak direction at the maximum load point for each route during the weekday 8-9 AM and 5-6 PM peak commuter hours when overall demand on the bus system is typically greatest. It is anticipated that bus-only trips would be evenly distributed among the three routes and that bus-subway trips would be concentrated on the M57 bus route. Identification of impacts is based on current NYCT guidelines under which increases in bus load levels to above their maximum capacity at any load point is considered a significant adverse impact as it would necessitate the addition of more bus service along that route.

## PEDESTRIANS

### *STUDY AREA*

At present, pedestrian activity is relatively light at the sidewalks, crosswalks, and street corners immediately adjacent to the project site. This reflects the site's location near the western edge of the Manhattan street grid and the absence of major pedestrian traffic generators such as a subway station or a school in the immediate vicinity. Pedestrian volumes are generally higher along sidewalks on streets to the east that are closer to Midtown and Columbus Circle. New pedestrian trips generated by the Proposed Project are expected to be most concentrated along West 60th Street, which would be the most direct route between the project site and the 59th Street-Columbus Circle subway station. The analysis of pedestrian conditions therefore focuses on sidewalks, crosswalks and corner areas along this corridor from West End Avenue to Broadway. Sidewalks adjacent to project entrances located on West End Avenue and West 59th Street are also analyzed.

### *ANALYSIS METHODOLOGY*

Peak 15-minute pedestrian flow conditions during the weekday AM, midday, and PM and Saturday midday peak hours are analyzed using the *2000 Highway Capacity Manual* methodology. Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, which define a

qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a "time-space" analysis methodology is employed which takes into consideration the traffic light cycle at intersections.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. **Table 17-2** defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, as based on the *Highway Capacity Manual* methodology.

**Table 17-2**
**Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions***

| Levels of Service | | Crosswalk/Corner Area Criteria (sq. ft./ped.) | Non-Platoon Sidewalk Criteria (ped./min./ft.) | Platoon Sidewalk Criteria (ped./min./ft.) |
|---|---|---|---|---|
| A | (Unrestricted) | ≥ 60 | ≤ 5 | ≤ 0.5 |
| B | (Slightly Restricted) | ≥ 40 | ≤ 7 | ≤ 3 |
| C | (Restricted but fluid) | ≥ 24 | ≤ 10 | ≤ 6 |
| D | (Restricted, necessary to continuously alter walking stride and direction) | ≥ 15 | ≤ 15 | ≤ 11 |
| E | (Severely restricted) | ≥ 8 | ≤ 23 | ≤ 18 |
| F | (Forward progress only by shuffling; no reverse movement possible) | < 8 | > 23 | > 18 |

**Note:** *Based on average conditions for 15 minutes.
**Source:** *Highway Capacity Manual*.

The analysis of sidewalk conditions includes a "platoon" factor in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. "Platooning" is the tendency of pedestrians to move in bunched groups or "platoons" once they cross a street where cross traffic required them to wait. Platooning generally results in a level of service one level poorer than that determined for average flow rates.

*IMPACT CRITERIA*

For areas of Manhattan in the Central Business District, the *2010 CEQR Technical Manual* criteria define a significant adverse sidewalk impact to have occurred if the average pedestrian flow rate under the No-Action condition is less than 6.3 pedestrians/min/foot (PMF) and the average flow rate under the With-Action condition is greater than 8.5 PMF (mid-LOS D or worse). If the average flow rate under the With-Action condition is less than or equal to 8.5 PMF (better than mid-LOS D), the impact should not be considered significant. If the No-Action pedestrian flow rate is between 6.3 and 19.0 PMF, an increase in average flow rate under the With Action condition should be considered significant using **Table 17-3**, which shows the sliding-scale that identifies what increase is considered a significant impact for a given flow rate. If the increase in average pedestrian flow rate is less than the value from **Table 17-3**, the impact should not be considered significant. If the average pedestrian flow rate under the No-Action

condition is greater than 19.0 PMF, then an increase in pedestrian flow rate greater than or equal to 0.6 PMF should be considered significant. For areas of Manhattan in the Central Business District, *CEQR Technical Manual* criteria define a significant adverse impact to have occurred if the average pedestrian space under the No-Action condition is greater than 21.6 square feet/pedestrian and, under the With-Action condition, the average pedestrian space decreases to 19.5 square feet/pedestrian or less (mid-LOS D or worse). If the pedestrian space under the With-Action condition is greater than 19.5 square feet/pedestrian (better than mid-LOS D), the impact should not be considered significant. If the average pedestrian space under the No-Action condition is between 5.1 and 19.5 square feet/pedestrian, a decrease in pedestrian space under the With-Action condition should be considered significant using **Table 17-3**. If the decrease in pedestrian space is less than the value calculated from the formula, or **Table 17-3**, the impact should not be considered significant. If the average pedestrian space under the No-Action condition is less than 5.1 square feet/pedestrian, then a decrease in pedestrian space greater than or equal to 0.2 square feet/pedestrian should be considered significant.

# D. EXISTING CONDITIONS

## DATA COLLECTION

Counts at analyzed stairways and fare arrays at the 59th Street-Columbus Circle subway station were conducted during the weekday AM and PM peak periods in November 2008. During this period, construction of the new stairs at the northwest corner of West 60th Street (S6 and S7) had been completed and the stairs were open. The stairway on the Broadway median at West 60th Street (stair S3) was closed because of construction when the counts took place as was the entrance on the east side of Central Park West (stair M13). Because these entrances were closed, the other subway entrances in the immediate area serviced these displaced trips. NYCT has provided information that reflects the percentages of the trips that would divert from each of the opened stairways to the stairways that were closed during the counts once they reopen. Based on information from NYCT, it is estimated that approximately 16 percent of the demand counted at stair O18 at the entrance adjacent to the Trump International Hotel and Tower represents trips diverted from stair M13. This diverted demand is expected to relocate back to stair M13 once construction at this stair is completed.

Peak period pedestrian counts were conducted for the weekday AM, midday and PM and Saturday midday peak periods. The majority of the pedestrian data was collected in March 2006, which includes all pedestrian data along the West 60th Street Corridor between West End Avenue and Broadway. Supplementary counts were conducted at requested locations closer to the project area along West End Avenue in November 2008 and December 2008.

Weekday AM and PM peak hour maximum load point data for analyzed subway and local bus routes were obtained from NYCT.

**Table 17-3**

**Significant Pedestrian Impact Criteria in CBD District**

| Sidewalks (Platooned Flow) | |
|---|---|
| **No-Action Condition Pedestrian Flow (ped/min/ft)** | **With-Action Condition Pedestrian Flow Increment to be Considered a Significant Impact (ped/min/ft)** |
| < 6.3 | With Action Condition > 8.5 |
| 6.3 to 7.0 | Increment ≥ 2.2 |
| 7.1 to 7.8 | Increment ≥ 2.1 |
| 7.9 to 8.6 | Increment ≥ 2.0 |
| 8.7 to 9.4 | Increment ≥ 1.9 |
| 9.5 to 10.2 | Increment ≥ 1.8 |
| 10.3 to 11.0 | Increment ≥ 1.7 |
| 11.1 to 11.8 | Increment ≥ 1.6 |
| 11.9 to 12.6 | Increment ≥ 1.5 |
| 12.7 to 13.4 | Increment ≥ 1.4 |
| 13.5 to 14.2 | Increment ≥ 1.3 |
| 14.3 to 15.0 | Increment ≥ 1.2 |
| 15.1 to 15.8 | Increment ≥ 1.1 |
| 15.9 to 16.6 | Increment ≥ 1.0 |
| 16.7 to 17.4 | Increment ≥ 0.9 |
| 17.5 to 18.2 | Increment ≥ 0.8 |
| 18.3 to 19.0 | Increment ≥ 0.7 |
| > 19.0 | Increment ≥ 0.6 |

| Corners and Crosswalks | |
|---|---|
| **No-Action Condition Pedestrian Space (square feet/ped)** | **With-Action Condition Pedestrian Space Reduction to be Considered a Significant Impact (square feet/ped)** |
| >21.6 | With Action Condition ≤ 19.5 |
| 21.3 to 21.6 | Reduction ≥ 2.1 |
| 20.4 to 21.2 | Reduction ≥ 2.0 |
| 19.5 to 20.3 | Reduction ≥ 1.9 |
| 18.6 to 19.4 | Reduction ≥ 1.8 |
| 17.7 to 18.5 | Reduction ≥ 1.7 |
| 16.8 to 17.6 | Reduction ≥ 1.6 |
| 15.9 to 16.7 | Reduction ≥ 1.5 |
| 15.0 to 15.8 | Reduction ≥ 1.4 |
| 14.1 to 14.9 | Reduction ≥ 1.3 |
| 13.2 to 14.0 | Reduction ≥ 1.2 |
| 12.3 to 13.1 | Reduction ≥ 1.1 |
| 11.4 to 12.2 | Reduction ≥ 1.0 |
| 10.5 to 11.3 | Reduction ≥ 0.9 |
| 9.6 to 10.4 | Reduction ≥ 0.8 |
| 8.7 to 9.5 | Reduction ≥ 0.7 |
| 7.8 to 8.6 | Reduction ≥ 0.6 |
| 6.9 to 7.7 | Reduction ≥ 0.5 |
| 6.0 to 6.8 | Reduction ≥ 0.4 |
| 5.1 to 5.9 | Reduction ≥ 0.3 |
| <5.1 | Reduction ≥ 0.2 |

Source: *2010 CEQR Technical Manual*

*SUBWAY STATIONS*

The 59th Street-Columbus Circle subway station is served by subway trains operating on the IND A, B, C and D routes and IRT No. 1 route. As shown in **Figure 17-1**, a large mezzanine with two fare control areas (N-51 and N-49) is located beneath Central Park West, directly above three island platforms served by IND trains (the center one of which is no longer used by passengers). Two side platforms served by IRT No. 1 trains bisect the mezzanine and are oriented diagonally to the IND platforms below. In addition to the two fare control areas on the IND mezzanine, there are two additional fare control areas (R-158 and R-158X) located at the north end of the southbound IRT platform serving the entrances in the median of Broadway at West 60th Street and on the northwest corner of West 60th Street and Broadway, respectively. Access between the northbound and southbound IRT platforms can be achieved via the IND platforms.

The station's main access points are along Eighth Avenue at West 57th and West 58th Streets, and at West 60th Street adjacent to the Trump International Hotel and Tower. Access to and from the southbound IRT platform is provided by a stairway in the Broadway median at West 60th Street and by two new stairs (S6 and S7) at the northwest corner of West 60th Street and Broadway. (Access to these latter stairs is controlled by new fare array R-158X with three high entry/exit turnstiles.) As the Proposed Project is located along West End Avenue between West 59th and West 61st Streets, it is anticipated that the primary access/egress for project-generated subway trips would be via stairs S6 and S7 on the northwest corner of Broadway and West 60th street, north-facing stair S3 on the Broadway median at West 60th Street, and the entrance adjacent to the Trump International Hotel and Tower (O18). (A second, south-facing stair currently under construction on the Broadway median at West 60th Street is not expected to be used by project-generated demand since it is not in a direct path of travel from the project site, unlike the entrances mentioned above.) As noted above, it is estimated that approximately 20 percent of subway demand would utilize M57 buses to access the station. These trips would be distributed among the entrance stairs at the West 57th Street/Eighth Avenue intersection.

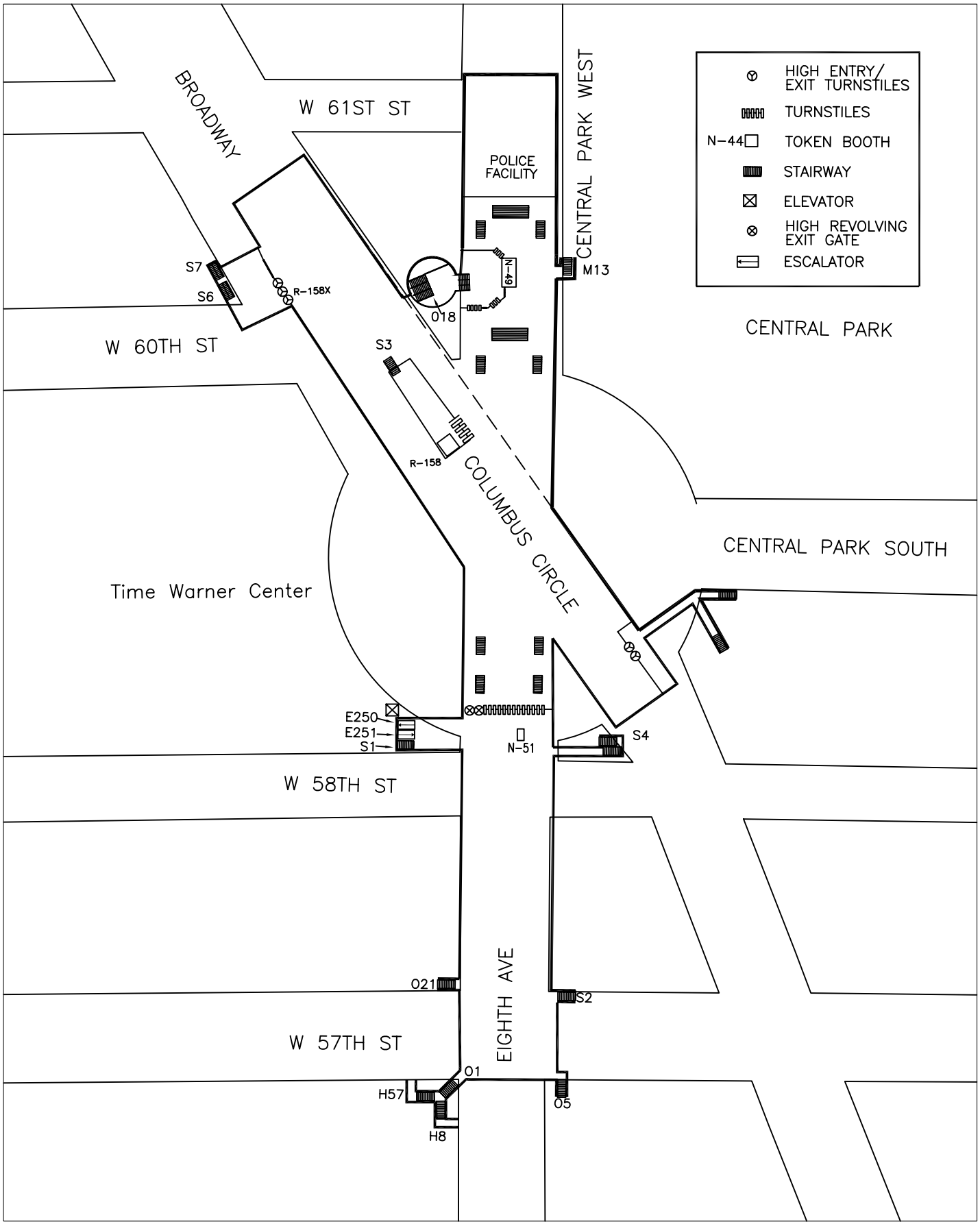
**Table 17-4** shows the average weekday entering turnstile counts at the 59th Street-Columbus Circle subway station for the years 2006 through 2008, as well as the 2008 ranking of the station based on the average weekday ridership relative to all 422 stations system-wide. Overall, the 59th Street-Columbus Circle subway station has experienced an increase in ridership, with approximately 6.8 percent growth from 2006 to 2008. In 2008, this was the seventh busiest subway station complex in the NYCT system.

**Table 17-4**
**Average Weekday Entering Turnstile Counts**

| Subway Station | 2008 Rank (1) | 2006 (1) | 2007 (1) | 2008 (1) | Percent Change 2006-2008 |
|---|---|---|---|---|---|
| 59th Street-Columbus Circle IND (A, B, C, D) and IRT (1) Station | 7 | 62,700 | 65,507 | 66,969 | 6.8% |
| **Note:** Ranking out of 422 subway stations by 2008 annual ridership.<br>**Source:** NYCT Subway Ridership Reports | | | | | |

**Figure 17-1** shows the locations of fare arrays, street stairways, elevators and escalators at the 59th Street-Columbus Circle subway station. The analysis of potential subway station impacts focuses on those processors that would be used by concentrations of project-generated trips.

## 59th Street-Columbus Circle Subway Station



These include stairs S6 and S7 and fare array R-158X at the northwest corner of West 60th Street and Broadway, Stair S3 and fare array R-158 accessed from the Broadway median, and stair O18 and fare array N-49 on the east side of Broadway adjacent to the Trump International Hotel and Tower. **Table 17-5** shows the results of the analysis of 2008 existing AM and PM peak hour conditions at analyzed street stairs and fare arrays. As shown in **Table 17-5**, stair O18 on the east side of Broadway currently operates at an acceptable LOS C in both peak hours, and stairs S6 and S7 on the west side of Broadway currently operate at LOS A in both peak hours. Fare arrays R-158X and N-49 currently operate at LOS C or better in both peak hours.

As noted previously, Stair S3 and adjacent fare array R-158, which are accessed from the Broadway median, were both closed for construction starting in 2008. Much, if not all of the users that would otherwise use these facilities were instead diverted to stairs S6 and S7 and fare array R-158X on the west side of Broadway. In addition, it should be noted that stair M13 on the east side of Central Park West (see **Figure 17-1**) was also closed for construction in 2008. Based on information from NYCT, it is estimated that approximately 16 percent of the demand counted at stair O18 at the entrance adjacent to the Trump International Hotel and Tower represents trips diverted from stair M13. This diverted demand is expected to relocate back to stair M13 once construction at this stair is completed.

*SUBWAY LINE HAUL*

Line haul is the volume of transit riders passing a defined point on a given transit route. For subway routes in New York City to and from midtown Manhattan, line haul is typically measured either at the 60th Street cordon (the northern boundary of Manhattan's central business district [CBD]), or at the actual maximum load point on each subway route (the point where the trains carry the greatest number of passengers during the peak hour). The peak direction of travel for subway routes crossing the 60th Street cordon is typically southbound in the AM peak period and northbound in the PM. **Table 17-6** shows existing line haul conditions at the maximum load points in the peak direction on each subway route (A, B, C, D, and 1) serving the 59th Street-Columbus Circle Station during the 8-9 AM and 5-6 PM peak hours.

As shown in **Table 17-6**, during the AM peak hour, the maximum load points are typically south of the last station stop prior to crossing the 60th Street cordon. For example, the maximum load point on southbound A and D trains is south of the West 125th Street station, while for B and C trains it is south of West 72nd Street. Both of these stations are the last southbound stops for these trains before they cross the 60th Street cordon. No. 1 trains are an exception, as the maximum load point for these trains is south of the West 103rd Street station, which is well north of the 60th Street cordon. This reflects the fact that many No. 1 train riders transfer to the Nos. 2 and 3 express trains at the West 96th and West 72nd Street stations for a faster ride to midtown and lower Manhattan.

During the PM peak hour, the maximum load points for the 1, A, B, C, and D trains in the peak northbound direction are all north of the 59th Street-Columbus Circle subway station, just to the south of the 60th Street cordon.

The results of the analysis of existing subway line haul conditions are shown in **Table 17-6**. Conditions for each subway route in the peak southbound direction in the AM and the peak northbound direction in the PM are reported in terms of a volume-to-capacity (v/c), which is determined by dividing the number of peak hour passengers traveling through the maximum load point by the line haul capacity provided. Line haul capacity is based on the practical capacity per subway car multiplied by the number of subway cars crossing the maximum load point in the peak hour. (Guideline capacities established by NYCT were used for the analyses.)

**Table17-5**

## Existing Conditions at the 59th Street-Columbus Circle Subway Station

### Stairways and Escalators

| No. | Station Element/Location | Peak Period | Effective Width in Feet (1) | Maximum 15 Minute Inbound Capacity (2) | Maximum 15 Minute Outbound Capacity (2) | Peak 15 Minute Inbound Volume (3) | Peak 15 Minute Outbound Volume (3) | V/C (5) | LOS |
|---|---|---|---|---|---|---|---|---|---|
| O18 | Stairway @ Columbus Circle | 8-9 AM | 15.50 | 2,093 | 1,883 | 201 | 1,297 | 0.78 | C |
| | Between Broadway & Central Park West | 5-6 PM | 15.50 | 2,093 | 1,883 | 768 | 778 | 0.78 | C |
| S3 | Stairway @ Broadway Median/ | 8-9 AM | - | - | - | - | - | - | - |
| | W. 60th Street (currently closed) | 5-6 PM | - | - | - | - | - | - | - |
| S6 | South Stairway @ NW Corner | 8-9 AM | 6.00 | 810 | 608 | 78 | 173 | 0.38 | A |
| | Broadway/W. 60th Street | 5-6 PM | 6.00 | 810 | 608 | 157 | 109 | 0.37 | A |
| S7 | North Stairway @ NW Corner | 8-9 AM | 6.00 | 810 | 608 | 34 | 22 | 0.08 | A |
| | Broadway/W. 60th Street | 5-6 PM | 6.00 | 810 | 608 | 117 | 24 | 0.18 | A |

### Fare Arrays and Exit Gates

| No. | Station Element/Location | Peak Period | Maximum 15 Minute Inbound Capacity (4) | Maximum 15 Minute Outbound Capacity (4) | Peak 15 Minute Inbound Volume (3) | Peak 15 Minute Outbound Volume (3) | V/C | LOS |
|---|---|---|---|---|---|---|---|---|
| R158-X | Broadway/W. 60th St Fare Array | 8-9 AM | 689 | 1,094 | 112 | 195 | 0.34 | A |
| | 3 high entry/exit turnstiles | 5-6 PM | 689 | 1,094 | 274 | 133 | 0.52 | B |
| R-158 | Broadway/W. 60th St Fare Array | 8-9 AM | - | - | - | - | - | - |
| | (Currently Closed) | 5-6 PM | - | - | - | - | - | - |
| N-49 | Central Park West/ W. 60th Street | 8-9 AM | 3,780 | 5,225 | 201 | 1,297 | 0.30 | A |
| | 10 entry/exit turnstiles | 5-6 PM | 3,780 | 5,225 | 768 | 778 | 0.20 | A |

**Notes:**

(1) Effective width measured as stairwell width less one foot to account for side handrails. It is further reduced by three inches for each intermediate handrail, if present. by 10 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM). Additionally, capacity is reduced by a friction factor and a surge factor (if applicable).

| Friction Factor | |
|---|---|
| Flow in one direction ≥ 95 percent | 0.95 |
| Flow in one direction < than 95 percent | 0.90 |

| Surge Factor | | |
|---|---|---|
| Location of Circulation Element | One or Two Tracks Served | Three or More Tracks Served |
| Platform Level | 0.75 | N/A |
| One floor above or below the platform | 0.8 | 0.9 |
| Two floors above or below the platform | 0.9 | 0.95 |

(3) Source: PHA November 2008 field counts.

(4) Fare array capacity based on NYCT guidelines.

| Fare Array Capacities (15 minute) | | | |
|---|---|---|---|
| | Turnstile | High Entry/Exit Turnstile | High Exit Turnstile |
| Entries | 420 | 255 | N/A |
| Exits | 645 | 540 | 555 |

(5) Stairway LOS - v/c ratio relationship:

| LOS | V/C Ratio |
|---|---|
| A | 0.00-0.50 |
| B | 0.51-0.70 |
| C | 0.71-1.00 |
| D | 1.01-1.30 |
| E | 1.31-1.70 |
| F | >1.71 |

*This table has been revised for the FSEIS.*

# Table 17-6
# Existing Subway Line Haul Conditions

| Peak Hour | Route | Peak Direction | Maximum Load Point (Leaving Station) | Trains Per Hour (1) | Cars Per Hour (1) | Passengers per Hour (1) | Peak Hour Capacity (2) | V/C Ratio (3) |
|---|---|---|---|---|---|---|---|---|
| AM | 1 | Southbound | 103rd St - Broadway | 19 | 190 | 17,318 | 20,900 | 0.83 |
| | A | Southbound | 125th St - St. Nicolas Avenue | 10 | 80 | 12,322 | 14,000 | 0.88 |
| | B | Southbound | 72nd St - Central Park West | 7 | 70 | 6,702 | 10,150 | 0.66 |
| | C | Southbound | 72nd St - Central Park West | 6 | 48 | 5,717 | 6,960 | 0.82 |
| | D | Southbound | 125th St - St. Nicolas Avenue | 9 | 72 | 9,296 | 12,600 | 0.74 |
| | | | Total | 61 | 540 | 61,785 | 78,610 | 0.79 |
| PM | 1 | Northbound | 59th St - Columbus Circle | 16 | 160 | 15,107 | 17,600 | 0.86 |
| | A | Northbound | 59th St - Columbus Circle | 10 | 80 | 9,032 | 14,000 | 0.65 |
| | B | Northbound | 59th St - Columbus Circle | 7 | 70 | 5,396 | 10,150 | 0.53 |
| | C | Northbound | 59th St - Columbus Circle | 6 | 48 | 2,993 | 6,960 | 0.43 |
| | D | Northbound | 59th St - Columbus Circle | 8 | 64 | 7,848 | 11,200 | 0.70 |
| | | | Total | 57 | 502 | 49,741 | 73,910 | 0.67 |

Notes:

(1) Based on 2007 schedule and ridership data provided by NYC Transit.

(2) Capacity based on a NYC Transit guideline capacity of 110 passengers/car for 51' cars (IRT), 145 passengers/car for 60' cars and 175 passengers/car for 75' cars. Guideline capacity for each route is based on the capacity associated with the predominant car type on each route.

(3) Volume-to-capacity ratio.

*This table has been revised for the FSEIS.*

In the AM hour, southbound 1, A, B, C, and D trains are operating with v/c ratios of 0.83, 0.88, 0.66, 0.82 and 0.74 respectively. Peak direction v/c ratios are typically lower in the PM peak hour as subway demand in the AM tends to be more concentrated than in the PM. As shown in **Table 17-6**, in the PM peak hour, all analyzed subway routes operate below capacity in the peak northbound direction. The most crowded route is the No. 1 train, which operates with a v/c ratio of 0.86. All other analyzed routes operate with a v/c ratio of 0.70 or less in the peak northbound direction in the PM hour.

*BUSES*

The project site is served by three bus routes—the M11, M31, and M57. As shown in **Figure 17-2**, all three bus routes operate within ¼ mile of the project site. The results of the analysis of existing conditions along each of these three routes are shown in **Table 17-7**. The analysis examines conditions at the maximum load point in the peak direction in the weekday 8-9 AM and 5-6 PM peak hours. The analysis shows the average passengers per bus and the available peak hour directional capacity on each route based on a maximum of 54 passengers per bus for standard buses.

The following provides a brief description of each route. As shown in **Figure 17-2**, in the vicinity of the project site, two of these routes are cross-town services while the third, the M11, operates an uptown-downtown service. It is expected that, in addition to serving project-generated local bus trips, some project-generated subway trips also would use the M57 bus service for travel to and from nearby subway stations.

*M11*

The M11 bus provides local service between Bethune/Hudson Streets (Abingdon Square) and West 145th Street and Riverbank State Park in West Harlem. In the vicinity of the project site, the M11 bus operates northbound on Amsterdam Avenue and southbound on Columbus Avenue. The route has a frequency of service of 7-10 minutes southbound and 8-10 minutes northbound in the AM peak hour. In the PM peak hour, its frequency of service is 10-13 minutes southbound and 7-10 minutes northbound.

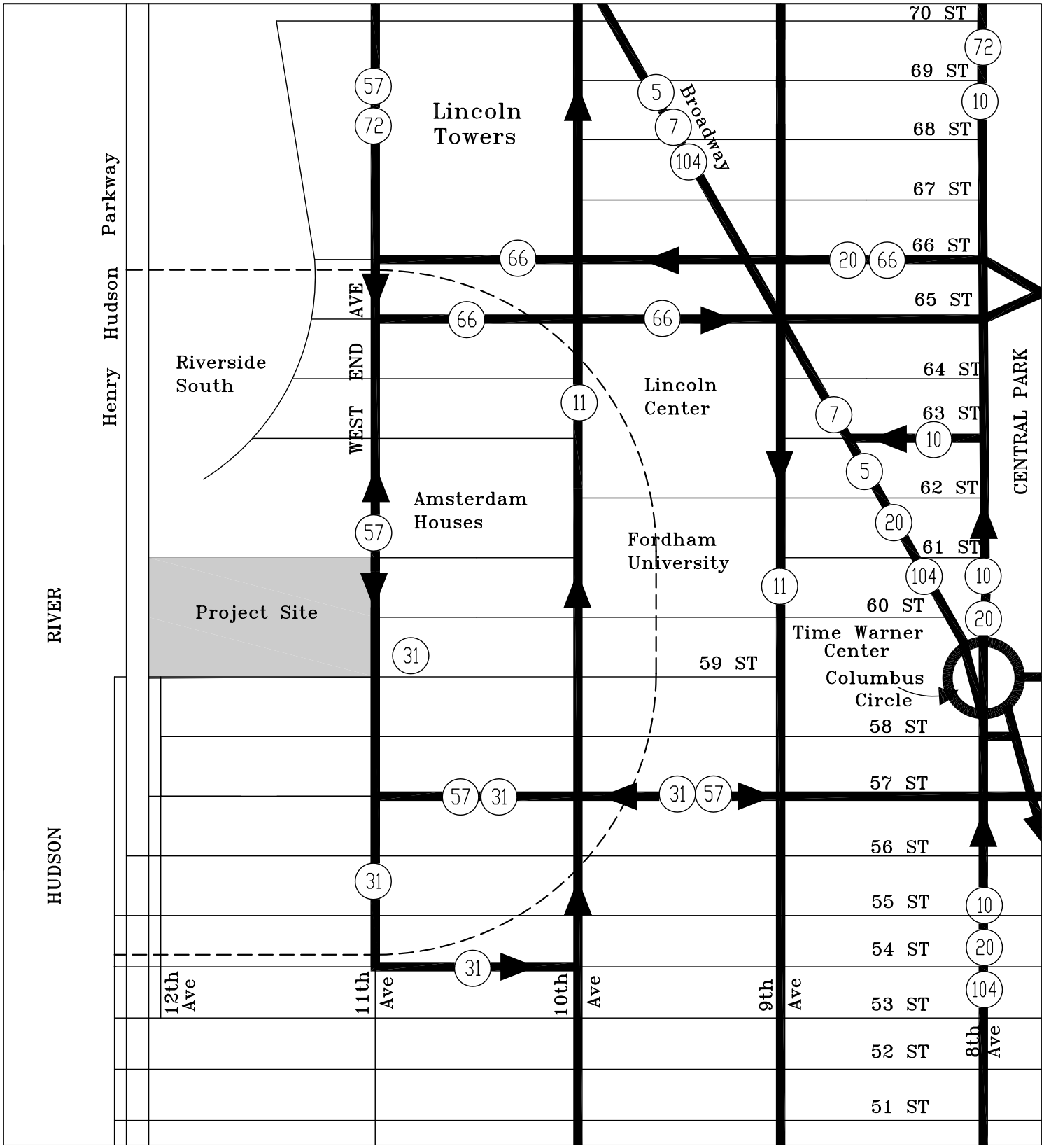
As shown in **Table 17-7**, for 2008 existing conditions, M11 buses operate with available capacity in the peak direction in both the AM and PM peak hours. In the AM, buses in the peak southbound direction operate with the capacity for an additional 88 passengers, while in the PM, buses in the peak northbound direction operate with the capacity for an additional 56 passengers.

*M31*

The M31 bus provides local service between York Avenue and East 92nd Street in Yorkville and West 54th Street between Tenth and Eleventh Avenues. The major streets of operation are York Avenue and 57th Street. In the AM peak hour the route has a frequency of service of 3-7 minutes westbound and 8-9 minutes eastbound. Its frequency of service in the PM peak hour is 6-8 minutes westbound and 7-8 minutes eastbound. During the AM peak period, some westbound M31 bus runs turn back short of the West 54th Street terminus.

As shown in **Table 17-7**, for 2008 existing conditions, M31 buses operate with available capacity in the peak direction in both the AM and PM peak hours. In the AM, buses in the peak eastbound direction operate with the capacity for an additional 80 passengers, while in the PM, buses in the peak westbound direction operate with the capacity for an additional 16 passengers.

Figure 17-2
Local Bus Routes



# Table 17-7
# Existing Local Bus Conditions

| Peak Hour (1) | Route | Peak Direction | Maximum Load Point | Peak Hour Buses (2) | Peak Hour Passengers (2) | Average Passangers Per Bus | Available Capacity (3) |
|---|---|---|---|---|---|---|---|
| AM | M11 | SB | Columbus Ave & W. 96th Street | 8 | 344 | 43 | 88 |
| | M31 | EB | W.57th Street & Broadway | 7 | 298 | 43 | 80 |
| | M57 | EB | W.57th Street & 9th Ave | 6 | 281 | 47 | 43 |
| PM | M11 | NB | Amsterdam Ave & W. 77th Street | 6 | 268 | 45 | 56 |
| | M31 | WB | W.57th Street & Broadway | 7 | 362 | 52 | 16 |
| | M57 | WB | W.57th Street & Broadway | 7 | 338 | 48 | 40 |

**Notes:**
(1) Peak hours: weekday 8-9 AM and 5-6 PM.
(2) Based on most currently available NYC Transit ridership summaries.
(3) Available capacity based on NYC Transit loading guidelines of 54 passengers per standard bus.

*This table has been revised for the FSEIS.*

*M57*

The M57 bus provides local service between York Avenue and East 60th Street on the East Side and Broadway and West 72nd Street on the Upper West Side. The major cross streets of operation are 57th Street, West End Avenue and West 72nd Street. Between Tenth Avenue and First Avenue, the route functions with the M31 bus as a cross-town route serving the northern portion of Midtown. In the AM peak hour, the M57 route has a frequency of service of 10-11 minutes westbound and 8-12 minutes eastbound. Its frequency of service in the PM peak hour is 6-8 minutes both eastbound and westbound.

As shown in **Table 17-7**, for 2008 existing conditions, M57 buses operate with available capacity in the peak direction in both the AM and PM peak hours. In the AM, buses in the peak eastbound direction operate with the capacity for an additional 43 passengers, while in the PM, buses in the peak westbound direction operate with the capacity for an additional 40 passengers.

**PEDESTRIANS**

The analysis of pedestrian conditions focuses on pedestrian elements—sidewalks, crosswalks and corner areas—where substantial numbers of new trips would be generated by the Proposed Project. **Figure 17-3** shows the pedestrian analysis study area and the pedestrian elements selected for analysis. As shown in **Figure 17-3**, these elements are primarily located along the West 60th Street Corridor from West End Avenue to Broadway. It is along this corridor that much of the anticipated pedestrian demand from the Proposed Project would travel en route to and from area transit facilities, and retail, commercial, and residential nodes. Select locations immediately adjacent to the project site are also analyzed.

The Proposed Project would have street frontages on West 59th Street, West 61st Street, Riverside Boulevard and West End Avenue. The West End Avenue frontage would include pedestrian access for the proposed local retail component, and secondary entrances for the hotel and the residential building on the southeast corner of the site and the West 60th Street extension. The southern frontage along West 59th Street would include pedestrian access to the hotel restaurant and stair access to the central plaza and residential buildings on the southwestern corner of the site. The northern frontage of the site along West 61st Street would include pedestrian access to the two residential buildings on the northern section of the site as well as the school on the northeastern section of the site. West 60th Street would extend into the site as a public access easement and would have pedestrian entrances to retail and restaurants on the ground floor as well as the main pedestrian entrance to the cinema. The western frontage of the site would be along Riverside Boulevard and would include pedestrian access into the site. It would function as the main access point for pedestrians going to and from Riverside Park South.

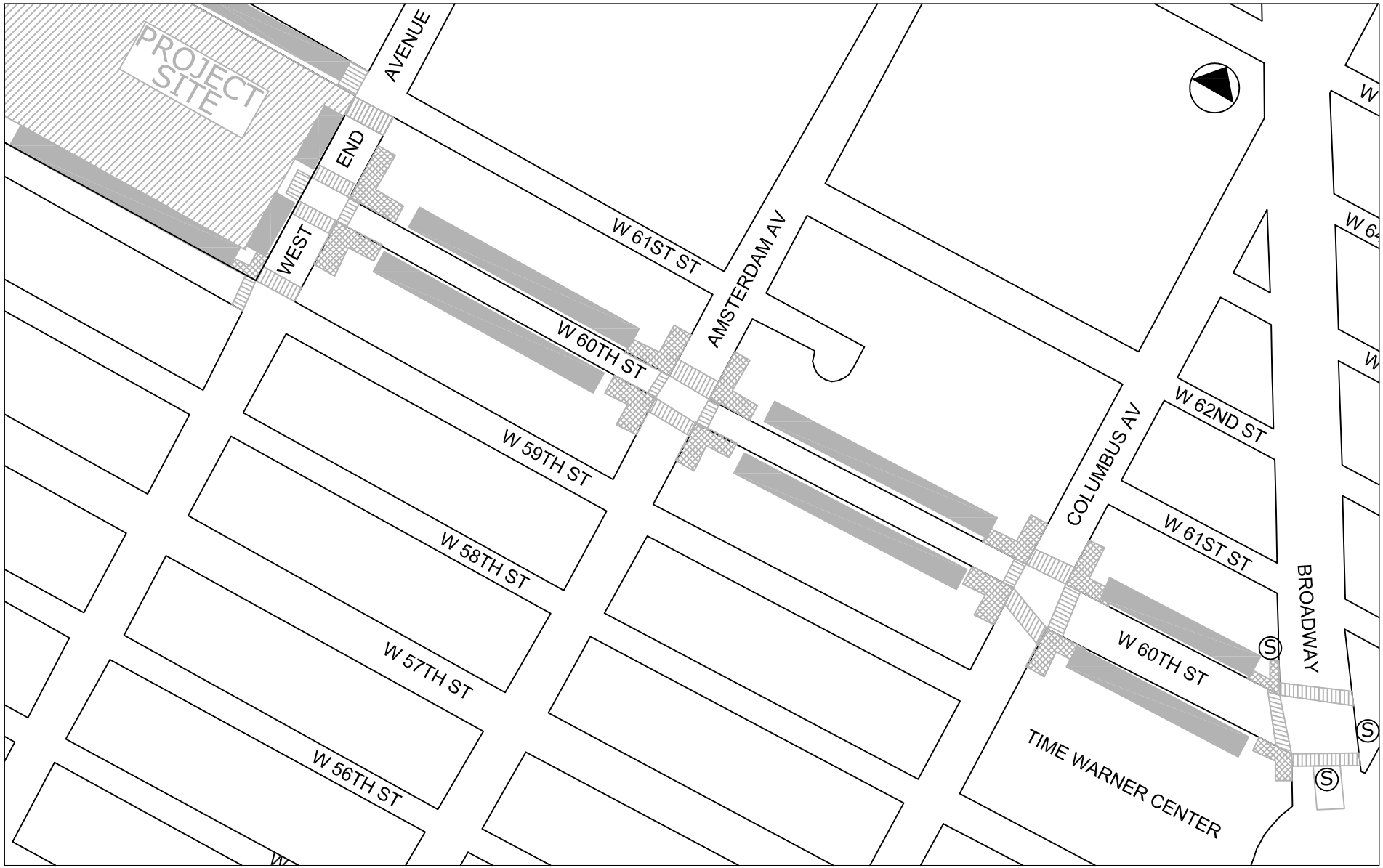
As shown in **Figure 17-3**, the pedestrian facilities selected for analysis include:

*SIDEWALKS*

- North sidewalk of West 59th Street between West End Avenue and Riverside Boulevard
- West sidewalk of West End Avenue between West 59th and West 60th Streets
- West sidewalk of West End Avenue between West 60th and West 61st Streets
- North sidewalk of West 60th Street between West End and Amsterdam Avenues
- South sidewalk of West 60th Street between West End and Amsterdam Avenues
- North sidewalk of West 60th Street between Amsterdam and Columbus Avenues

Figure 17-3

## Pedestrian Analysis Locations



- South sidewalk of W 60th Street between Amsterdam and Columbus Avenues
- North sidewalk of W 60th Street between Columbus Avenue and Broadway
- South sidewalk of W 60th Street between Columbus Avenue and Broadway

*STREET CORNERS*

- Northwest corner of West 59th Street and West End Avenue
- Northeast corner of West 60th Street and West End Avenue
- Southeast corner of West 60th Street and West End Avenue
- Northwest corner of West 60th Street and Amsterdam Avenue
- Southwest corner of West 60th Street and Amsterdam Avenue
- Northeast corner of West 60th Street and Amsterdam Avenue
- Southeast corner of West 60th Street and Amsterdam Avenue
- Northwest corner of West 60th Street and Columbus Avenue
- Southwest corner of West 60th Street and Columbus Avenue
- Northeast corner of West 60th Street and Columbus Avenue
- Southeast corner of West 60th Street and Columbus Avenue
- Northwest corner of West 60th Street and Broadway
- Southwest corner of West 60th Street and Broadway

*CROSSWALKS*

- North and west crosswalks at West 59th Street and West End Avenue
- West and south crosswalk at West 61st Street and West End Avenue
- All crosswalks at West 60th Street and West End Avenue
- All crosswalks at West 60th Street and Amsterdam Avenue
- All crosswalks at W 60th Street and Columbus Avenue
- North, south and west crosswalks at West 60th Street and Broadway

Generally, existing pedestrian volumes west of Columbus Avenue are light, with higher volumes found closer to Broadway. As an example, the south sidewalk on West 60th Street between Amsterdam and Columbus Avenues carries 215 and 126 pedestrians during the weekday AM and PM peak hours, respectively. Between Columbus Avenue and Broadway the corresponding pedestrian volumes are 660 and 762 persons per hour. Compared to weekday pedestrian volumes, Saturday volumes immediately adjacent to the project site remain relatively constant while there is a noticeable increase in pedestrian volumes along West 60th Street between Amsterdam and Columbus Avenues, and a noticeable decrease along West 60th Street between Columbus Avenue and Broadway.

**Tables 17-8 through 17-10** show the results of the analyses of existing sidewalk, crosswalk and corner area conditions for the weekday AM, midday and PM peak hours and Saturday midday peak hour. As shown in **Table 17-8**, all analyzed sidewalks currently operate at an acceptable LOS C or better in all peak hours. As shown in **Table 17-9**, all crosswalks also operate at LOS C or better during all peak hours with the exception of the west and south crosswalks at West 60th Street and Broadway and the south crosswalk at Columbus Avenue and West 60th Street. At the

intersection of Broadway and West 60th Street, the west crosswalk operates at LOS E during the weekday PM peak hour and LOS D during the MD and Sat MD peak hours. The south crosswalk at this location operates at LOS D during the weekday AM and PM peak hours. At West 60th Street and Columbus Avenue, the south crosswalk operates at LOS D during the weekday AM peak hour. Lastly, as shown in **Table 17-10**, all analyzed corner areas currently operate at LOS C or better during all peak hours.

Immediately adjacent to the project site, the west sidewalks along West End Avenue between West 59th and West 61st Streets both operate at LOS A during all peak hours, as does the north sidewalk along West 59th Street between West End Avenue and the future Riverside Boulevard. The crosswalks at the intersection of West 60th Street and West End Avenue all operate at LOS A during all peak hours, as do the northeast and southeast corner areas. These good levels of service reflect the relatively low pedestrian volumes currently found in the immediate vicinity of the project site. For example, the highest peak 15-minute volume on the north sidewalk along West 59th Street west of West End Avenue is 19 pedestrians during the weekday PM peak hour. (For the remaining three analyzed peak periods, the peak 15-minute volume does not exceed 10 pedestrians.)

As discussed above, for 2008 existing conditions, the south crosswalk at West 60th Street and Broadway operates at LOS D during the weekday AM, MD and PM peak hours. It should be noted, however, that the new subway entrance at the northwest corner of West 60th Street and Broadway had not yet opened at the time of the weekday pedestrian counts at this location, and high volumes of pedestrians continued to use the south crosswalk on Broadway to reach the subway entrance in the Broadway median. The subsequent completion of the new station entrance is likely to have reduced weekday peak hour volumes on this crosswalk.

## Table 17-8
## Existing Sidewalk Conditions

| Intersection | Location | Effective Width (ft) | Peak 15-Minute Volumes | | | | Flow Rate (per/min/ft) | | | | Platoon Flow Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD |
| West End Avenue<br>btw West 60th Street & West 61st Street | West | 11.0 | 40 | 35 | 35 | 45 | 0.2 | 0.2 | 0.2 | 0.3 | A | A | A | A |
| West End Avenue<br>btw West 59th Street & West 60th Street | West | 11.8 | 31 | 45 | 40 | 38 | 0.2 | 0.3 | 0.2 | 0.2 | A | A | A | A |
| West 60th Street<br>btw West End Ave. & Amsterdam Ave. | North | 11.0 | 12 | 18 | 17 | 21 | 0.1 | 0.1 | 0.1 | 0.1 | A | A | A | A |
| | South | 9.8 | 22 | 27 | 21 | 43 | 0.1 | 0.2 | 0.1 | 0.3 | A | A | A | A |
| West 60th Street<br>btw Amsterdam Ave. & Columbus Ave. | North | 9.0 | 34 | 30 | 41 | 150 | 0.3 | 0.2 | 0.3 | 1.1 | A | A | A | B |
| | South | 4.1 | 212 | 93 | 125 | 113 | 3.4 | 1.5 | 2.0 | 1.8 | C | B | B | B |
| West 60th Street<br>btw Columbus Ave. & Broadway | North | 7.6 | 146 | 223 | 321 | 152 | 1.3 | 2.0 | 2.8 | 1.3 | B | B | B | B |
| | South | 9.5 | 658 | 591 | 758 | 214 | 4.6 | 4.1 | 5.3 | 1.5 | C | C | C | B |
| West 59th Street<br>btw Riverside Blvd. & West End Ave. | North | 9.5 | 8 | 9 | 19 | 9 | 0.1 | 0.1 | 0.1 | 0.1 | A | A | A | A |

Notes:

Effective width calculated by deducting 1.5 ft for wall avoidance, 1.5 ft for curbside obstructions and an additional 0.5 ft for other sidewalk obstacles from measured width.

Persons per minute per foot of effective width.

*This table has been revised for the FSEIS.*

**Table 17-9**
**Existing Crosswalk Conditions**

| Location | | Existing Peak 15-Minute Volumes | | | | Average Pedestrian Space (sq-ft/ped) | | | | Existing Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD |
| West 60th Street and West End Ave. | North | 9 | 7 | 3 | 11 | 632.2 | 813.7 | 1,902.7 | 373.0 | A | A | A | A |
| | West | 39 | 54 | 43 | 38 | 353.9 | 254.1 | 349.2 | 326.2 | A | A | A | A |
| | South | 4 | 1 | 4 | 7 | 1,406.4 | 5,626.3 | 1,409.7 | 575.9 | A | A | A | A |
| | East | 13 | 12 | 18 | 21 | 1,203.5 | 1,344.9 | 892.6 | 686.0 | A | A | A | A |
| West 60th Street and Amsterdam Ave. | North | 60 | 15 | 76 | 6 | 138.8 | 568.7 | 353.7 | 1,153.2 | A | A | A | A |
| | West | 187 | 212 | 63 | 141 | 77.0 | 67.1 | 87.6 | 92.8 | A | A | A | A |
| | South | 101 | 92 | 106 | 108 | 75.4 | 83.2 | 71.7 | 56.4 | A | A | A | B |
| | East | 157 | 66 | 75 | 40 | 84.3 | 213.5 | 178.9 | 313.5 | A | A | A | A |
| West 60th Street and Columbus Ave. | North | 201 | 230 | 317 | 142 | 69.6 | 60.3 | 42.6 | 86.6 | A | A | B | A |
| | West | 230 | 256 | 359 | 205 | 49.4 | 43.9 | 29.9 | 48.2 | B | B | C | B |
| | South | 421 | 106 | 372 | 139 | 21.7 | 35.6 | 24.6 | 63.9 | D | C | C | A |
| | East | 144 | 75 | 168 | 144 | 49.4 | 43.9 | 166.2 | 177.2 | B | B | A | A |
| West 60th Street and Broadway | North | 253 | 126 | 148 | 292 | 37.9 | 77.5 | 65.8 | 32.6 | C | A | A | C |
| | West | 232 | 426 | 512 | 454 | 33.5 | 16.7 | 13.4 | 19.7 | C | D | E | D |
| | South | 605 | 523 | 699 | 96 | 21.8 | 25.5 | 18.6 | 149.0 | D | C | D | A |
| West 59th Street and West End Avenue | North | 11 | 14 | 13 | 9 | 437.7 | 332.9 | 361.5 | 390.0 | A | A | A | A |
| | West | 28 | 40 | 29 | 35 | 499.3 | 366.4 | 501.3 | 381.1 | A | A | A | A |
| West 61st Street and West End Avenue | West | 38 | 65 | 39 | 44 | 403.4 | 414.6 | 386.7 | 314.4 | A | A | A | A |
| | South | 36 | 59 | 44 | 3 | 164.9 | 95.1 | 142.0 | 1,540.1 | A | A | A | A |

*This table has been revised for the FSEIS.*

## Table 17-10
## Existing Corner Area Conditions

| Intersection | Corner | Curb Radii (feet) | Existing Peak 15-Minute Volumes | | | | Average Pedestrian Space (sq-ft/ped) | | | | Existing Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD |
| West 59th Street and West End Ave. | NW | 12 | 3 | 5 | 1 | 4 | 823.9 | 586.4 | 805.7 | 720.6 | A | A | A | A |
| West 60th Street and West End Ave. | NE | 12 | 10 | 16 | 10 | 5 | 1,221.2 | 1,116.5 | 1,251.0 | 1,054.8 | A | A | A | A |
| | SE | 12 | 2 | 2 | 0 | 4 | 1,938.3 | 2,458.9 | 1,673.4 | 1,148.5 | A | A | A | A |
| West 60th Street and Amsterdam Ave. | NW | 12 | 5 | 4 | 6 | 7 | 152.0 | 166.8 | 195.1 | 249.9 | A | A | A | A |
| | SW | 12 | 17 | 21 | 14 | 26 | 81.8 | 76.1 | 86.8 | 90.7 | A | A | A | A |
| | NE | 12 | 7 | 4 | 6 | 13 | 169.2 | 457.1 | 369.1 | 662.1 | A | A | A | A |
| | SE | 12 | 14 | 18 | 14 | 13 | 193.2 | 302.8 | 274.1 | 333.1 | A | A | A | A |
| West 60th Street and Columbus Ave. | NW | 12 | 29 | 21 | 19 | 17 | 135.5 | 119.7 | 86.3 | 169.6 | A | A | A | A |
| | SW | 12 | 27 | 29 | 26 | 26 | 62.3 | 75.4 | 53.8 | 117.3 | A | A | B | A |
| | NE | 12 | 27 | 41 | 36 | 22 | 220.5 | 194.4 | 156.8 | 269.2 | A | A | A | A |
| | SE | 12 | 288 | 231 | 238 | 64 | 84.3 | 111.8 | 94.7 | 215.5 | A | A | A | A |
| W 60th Street and Broadway | NW | 12 | 30 | 41 | 16 | 33 | 121.5 | 93.0 | 81.2 | 73.9 | A | A | A | A |
| | SW | 12 | 72 | 152 | 217 | 7 | 105.7 | 89.0 | 61.5 | 165.9 | A | A | A | A |

*This bale has been revised for the FSEIS.*

## E. THE FUTURE WITHOUT THE PROPOSED PROJECT

Between 2008 and 2018, it is expected that transit and pedestrian demand in the vicinity of the project site will increase due to background growth as well as due to specific developments that are expected to occur in the area. In order to forecast future conditions without the Proposed Project, developments listed in Table 2-3 in Chapter 2 were considered, in addition to an annual background growth rate of 0.25 percent growth per year for the first five years and then 0.125 percent growth per year from year six and beyond applied to existing travel demand for the 2008 to 2018 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Manhattan, has been applied to account for smaller projects and general increases in travel demand not attributable to specific developments.

Also, as described above under "Methodology," two No Build scenarios were considered for analysis. However, since it was determined that No Build Scenario 2 would result in the largest increment for the Proposed Project, a detailed quantified transit and pedestrian analysis was prepared for this scenario. That is, it has been assumed that the original FEIS approved program for Parcels L and M would be completed, but Parcel N would remain in its current parking use.

The following sections describe how the growth in travel demand in the vicinity of the project site is expected to affect transit and pedestrian facilities in the Future Without the Proposed Project.

### SUBWAY

*SUBWAY STATIONS*

For No Build conditions, overall passenger volumes at analyzed stairways and fare arrays at the 59th Street-Columbus Circle subway station are generally expected to increase as a result of background growth and ridership from new development. Renovation work at the 59th Street-Columbus Circle subway station will have been completed by 2018. The station entrance located on the Broadway median at West 60th Street will have reopened and will include a new stair to the south of the existing six-foot-wide stair. (Given its location and south-facing orientation, this new stair is not expected to be utilized by appreciable numbers of project-generated trips and is therefore not included in the analysis.) The entrance to the 59th Street-Columbus Circle subway station located on the east side of Central Park West (stair M13) will also have reopened by 2018. Based on data from NYCT, it is anticipated that the expanded station entrance on the Broadway median will attract approximately 28 percent of existing demand at stairs S6 and S7 on the west side of Broadway. In addition, the reopening of stair M13 is expected to attract approximately 16 percent of the existing demand at stair O18. As a consequence, in some peak hours demand at stairs S6, S7 and O18 will decrease in the No Build condition relative to existing levels.

**Table 17-11** shows the results of the analysis of weekday AM and PM peak hour 2018 No Build conditions at analyzed stairways and fare arrays at the 59th Street-Columbus Circle subway station. As shown in **Table 17-11**, in the Future Without the Proposed Project, all analyzed stairways and fare arrays would continue to operate at an acceptable LOS C or better during both the weekday AM and PM peak hours.

It should be noted that the new south-facing stair in the Broadway median may potentially attract some new demand to this entrance en route to and from points south, and that any new demand would also utilize analyzed fare array R-158. Although the potential number of new trips

attracted by this new stair is not currently known, as shown in **Table 17-11**, fare array R-158 is projected to operate at a free-flow LOS A during both the weekday AM and PM peak hours for 2018 No Build conditions. It is therefore anticipated that this fare array would have sufficient capacity to accommodate any potential increase in demand from the new south-facing stair at an acceptable level of service in the Future Without the Proposed Project.

**SUBWAY LINE HAUL**

**Table 17-12** shows the anticipated subway line haul conditions at the maximum load points on subway routes serving the project site in the Future Without the Proposed Project. As shown in **Table 17-12**, during the weekday AM peak hour all subway routes would continue to operate below capacity in the peak direction. V/c ratios would remain at 0.9 or less During the weekday PM peak hour, all subway routes would continue to operate with a v/c ratio of less than 0.8 in the peak direction with the exception of the No. 1 train which would operate with a v/c ratio of 0.89 during the 2018 No Build conditions compared to 0.86 during existing conditions.

**BUSES**

During the 2008 through 2018 period, it is anticipated that local bus demand would grow as a result of general background growth and new development in the vicinity of the project site. **Table 17-13** shows the estimated peak hour, peak direction ridership at the maximum load point of each local bus route serving the project site during 2018 Future Without the Proposed Project conditions. As shown in **Table 17-13**, the M11 bus route would continue to operate with available capacity in the peak direction during the weekday AM peak hour. However, the M11 would operate over capacity in the peak direction during the PM peak hour and both M31 and M57 buses would operate over capacity in the peak direction during both peak periods. The M11 would be over capacity by 47 passengers in the peak northbound direction during the weekday PM peak hour. The M31 would be over capacity by 119 passengers in the peak eastbound direction during the weekday AM peak hour and 261 passengers in the peak westbound direction during the weekday PM peak hour. The M57 would be over capacity by 155 passengers in the peak eastbound direction during the weekday AM peak hour and 236 passengers in the peak westbound direction during the weekday PM peak hour.

As standard practice, NYCT routinely conducts periodic ridership counts and increases service where operationally warranted and fiscally feasible. It is therefore anticipated that in the 2018 Future Without the Proposed Project, NYCT would increase frequency on the M31 and M57 routes to address their capacity shortfalls. As shown in **Table 17-13**, to fully accommodate projected demand, the M11 route would require the addition of one northbound bus during the weekday PM peak hour, the M31 route would require the addition of three eastbound buses during the weekday AM peak hour and five westbound buses during the weekday PM peak hour, and the M57 route would require three additional eastbound buses during the weekday AM peak hour and five additional westbound buses during the weekday PM peak hour.

**PEDESTRIANS**

Pedestrian flow conditions at analyzed sidewalks, corner areas and crosswalks were analyzed for 2018 Future Without the Proposed Project conditions, incorporating anticipated demand from new developments and a background growth rate of 0.25 percent growth per year for the first five years and then 0.125 percent growth per year from year six and beyond for the 2008 through 2018 period. **Tables 17-14 through 17-16** show the results of the analyses of sidewalk, crosswalk and corner area conditions for the weekday AM, midday and PM and Saturday midday peak hours for 2018 Future Without the Proposed Project conditions.

**Table 17-11**

## 2018 No Build Conditions at the 59th Street-Columbus Circle Subway Station

### Stairways and Escalators

| No. | Station Element/Location | Peak Period | Effective Width in Feet (1) | Maximum 15 Minute Inbound Capacity (2) | Maximum 15 Minute Outbound Capacity (2) | Peak 15 Minute Inbound Volume (3) | Peak 15 Minute Outbound Volume (3) | V/C (5) | LOS |
|---|---|---|---|---|---|---|---|---|---|
| O18 | Stairway @ Columbus Circle | 8-9 AM | 15.50 | 2,093 | 1,883 | 225 | 1,130 | 0.71 | C |
| | Between Broadway & Central Park West | 5-6 PM | 15.50 | 2,093 | 1,883 | 829 | 693 | 0.76 | C |
| S3 | Stairway @ Broadway Median/ | 8-9 AM | 4.00 | 540 | 405 | 32 | 56 | 0.20 | A |
| | W. 60th Street (currently closed) | 5-6 PM | 4.00 | 540 | 405 | 78 | 38 | 0.24 | A |
| S6 | South Stairway @ NW Corner | 8-9 AM | 6.00 | 810 | 608 | 70 | 227 | 0.46 | B |
| | Broadway/W. 60th Street | 5-6 PM | 6.00 | 810 | 608 | 156 | 107 | 0.37 | A |
| S7 | North Stairway @ NW Corner | 8-9 AM | 6.00 | 810 | 608 | 25 | 16 | 0.06 | A |
| | Broadway/W. 60th Street | 5-6 PM | 6.00 | 810 | 608 | 86 | 18 | 0.13 | A |

### Fare Arrays and Exit Gates

| No. | Station Element/Location | Peak Period | Maximum 15 Minute Inbound Capacity (4) | Maximum 15 Minute Outbound Capacity (4) | Peak 15 Minute Inbound Volume (3) | Peak 15 Minute Outbound Volume (3) | V/C | LOS |
|---|---|---|---|---|---|---|---|---|
| R158-X | Broadway/W. 60th St Fare Array | 8-9 AM | 689 | 1,094 | 95 | 243 | 0.36 | A |
| | 3 high entry/exit turnstiles | 5-6 PM | 689 | 1,094 | 242 | 125 | 0.47 | B |
| R-158 | Broadway/W. 60th St Fare Array | 8-9 AM | 1,890 | 1,418 | 32 | 56 | 0.06 | A |
| | 5 entry/exit turnstiles | 5-6 PM | 1,890 | 1,418 | 78 | 38 | 0.04 | A |
| N-49 | Central Park West/ W. 60th Street | 8-9 AM | 3,780 | 5,225 | 225 | 1,130 | 0.28 | A |
| | 10 entry/exit turnstiles | 5-6 PM | 3,780 | 5,225 | 829 | 693 | 0.22 | A |

**Notes:**

(1) Effective width measured as stairwell width less one foot to account for side handrails. It is further reduced by three inches for each intermediate handrail, if present. by 10 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM). Additionally, capacity is reduced by a friction factor and a surge factor (if applicable).

| Friction Factor | |
|---|---|
| Flow in one direction ≥ 95 percent | 0.95 |
| Flow in one direction < than 95 percent | 0.90 |

| Surge Factor | | |
|---|---|---|
| Location of Circulation Element | One or Two Tracks Served | Three or More Tracks Served |
| Platform Level | 0.75 | N/A |
| One floor above or below the platform | 0.8 | 0.9 |
| Two floors above or below the platform | 0.9 | 0.95 |

(3) Source: PHA November 2008 field counts.

(4) Fare array capacity based on NYCT guidelines.

| Fare Array Capacities (15 minute) | | | |
|---|---|---|---|
| | Turnstile | High Entry/Exit Turnstile | High Exit Turnstile |
| Entries | 420 | 255 | N/A |
| Exits | 645 | 540 | 555 |

(5) Stairway LOS - v/c ratio relationship:

| LOS | V/C Ratio |
|---|---|
| A | 0.00-0.50 |
| B | 0.51-0.70 |
| C | 0.71-1.00 |
| D | 1.01-1.30 |
| E | 1.31-1.70 |
| F | >1.71 |

*This table has been revised for the FSEIS.*

## Table 17-12
## 2018 No Build Subway Line Haul Conditions

| Peak Hour | Route | Peak Direction | Maximum Load Point (Leaving Station) | Trains per Hour (1) | Cars per Hour (1) | Passengers per Hour (2) | Peak Hour Capacity (3) | V/C Ratio (4) |
|---|---|---|---|---|---|---|---|---|
| AM | 1 | Southbound | 103rd St - Broadway | 19 | 190 | 17,781 | 20,900 | 0.85 |
| | A | Southbound | 125th St - St. Nicolas Avenue | 10 | 80 | 12,651 | 14,000 | 0.90 |
| | B | Southbound | 72nd St - Central Park West | 7 | 70 | 6,905 | 10,150 | 0.68 |
| | C | Southbound | 72nd St - Central Park West | 6 | 48 | 5,889 | 6,960 | 0.85 |
| | D | Southbound | 125th St - St. Nicolas Avenue | 9 | 72 | 9,544 | 12,600 | 0.76 |
| | | | Total | 61 | 540 | 63,490 | 78,610 | 0.81 |
| PM | 1 | Northbound | 59th St - Columbus Circle | 16 | 160 | 15,702 | 17,600 | 0.89 |
| | A | Northbound | 59th St - Columbus Circle | 10 | 80 | 9,351 | 14,000 | 0.67 |
| | B | Northbound | 59th St - Columbus Circle | 7 | 70 | 5,594 | 10,150 | 0.55 |
| | C | Northbound | 59th St - Columbus Circle | 6 | 48 | 3,104 | 6,960 | 0.45 |
| | D | Northbound | 59th St - Columbus Circle | 8 | 64 | 8,122 | 11,200 | 0.73 |
| | | | Total | 57 | 502 | 51,479 | 73,910 | 0.70 |

**Notes:**

(1) Based on 2007 schedule and ridership data provided by NYC Transit.

(2) Assumes 0.025 percent/year background growth for the 2008 - 2013 period and 0.0125 percent/year background growth for 2013-2018 period plus demand from No Build development sites.

(3) Capacity based on a NYC Transit guideline capacity of 110 passengers/car for 51' cars (IRT), 145 passengers/car for 60' cars and 175 passengers/car for 75' cars. Guideline capacity for each route is based on the capacity associated with the predominant car type on each route.

(4) Volume-to-capacity ratio.

*This table has been revised for the FSEIS.*

# Table 17-13
# 2018 No Build Local Bus Conditions

| Peak Hour (1) | Route | Peak Direction | Maximum Load Point | Peak Hour Passengers (2) | No Build Conditions with Current Service Levels | | | No Build Conditions with Potential Service Adjustments | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Peak Hour Buses (3) | Average Passengers per Bus | Available Capacity (4) | Peak Hour Buses (5) | Average Passengers per Bus | Available Capacity (4) |
| AM | M11 | SB | Columbus Ave & W. 96th Street | 380 | 8 | 47 | 52 | 8 | 47 | 52 |
| | M31 | EB | W.57th Street & Broadway | 497 | 7 | 71 | -119 | 10 | 50 | 43 |
| | M57 | EB | W.57th Street & 9th Ave | 479 | 6 | 80 | -155 | 9 | 53 | 7 |
| PM | M11 | NB | Amsterdam Ave & W. 77th Street | 371 | 6 | 62 | -47 | 7 | 53 | 7 |
| | M31 | WB | W.57th Street & Broadway | 639 | 7 | 91 | -261 | 12 | 53 | 9 |
| | M57 | WB | W.57th Street & Broadway | 614 | 7 | 88 | -236 | 12 | 51 | 34 |

**Notes:**

(1) Peak hours: weekday 8-9 AM and 5-6 PM.

(2) Assumes 0.025 percent per year background growth for 2008-2013 and 0.0125 percent per year background growth for 2013-2018 plus demand from No Build sites developed by 2018.

(3) Based on most currently available NYC Transit ridership summaries.

(3) Available capacity based on NYC Transit loading guidelines of 54 passengers per standard bus.

(5) Assumes service levels adjusted to address capacity shortfalls during the 2008 through 2018 period.

*This table has been revised for the FSEIS.*

## Table 17-14
## 2018 No Build Sidewalk Conditions

| Intersection | Location | Effective Width (ft) | Peak 15-Minute Volumes | | | | Flow Rate (per/min/ft) | | | | Platoon Flow Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD |
| West End Avenue btw West 60th Street & West 61st Street | West | 11.0 | 172 | 234 | 221 | 241 | 1.0 | 1.4 | 1.3 | 1.5 | B | B | B | B |
| West End Avenue btw West 59th Street & West 60th Street | West | 11.8 | 120 | 138 | 201 | 249 | 0.7 | 0.8 | 1.1 | 1.4 | B | B | B | B |
| West 60th Street btw West End Ave. & Amsterdam Ave. | North | 11.0 | 186 | 210 | 229 | 97 | 1.1 | 1.3 | 1.4 | 0.6 | B | B | B | B |
| | South | 9.8 | 84 | 64 | 122 | 91 | 0.6 | 0.4 | 0.8 | 0.6 | B | A | B | B |
| West 60th Street btw Amsterdam Ave. & Columbus Ave. | North | 9.0 | 353 | 206 | 314 | 284 | 2.6 | 1.5 | 2.3 | 2.1 | B | B | B | B |
| | South | 4.1 | 264 | 157 | 268 | 146 | 4.3 | 2.6 | 4.4 | 2.4 | C | B | C | B |
| West 60th Street btw Columbus Ave. & Broadway | North | 7.6 | 576 | 449 | 859 | 289 | 5.1 | 3.9 | 7.5 | 2.5 | C | C | D | B |
| | South | 9.5 | 725 | 656 | 875 | 265 | 5.1 | 4.6 | 6.1 | 1.9 | C | C | D | B |
| West 59th Street btw Riverside Blvd. & West End Ave. | North | 9.5 | 57 | 27 | 71 | 33 | 0.4 | 0.2 | 0.5 | 0.2 | A | A | A | A |

Notes:

Effective width calculated by deducting 1.5 ft for wall avoidance, 1.5 ft for curbside obstructions and an additional 0.5 ft for other sidewalk obstacles from measured width.

Persons per minute per foot of effective width.

*This table has been revised for the FSEIS.*

**Table 17-15**
**2018 No Build Crosswalk Conditions**

| Location | | No Build Peak15-min. Volumes AM | MD | PM | Sat MD | Average Pedestrian Space (sq-ft/ped) AM | MD | PM | Sat MD | No Build Level of Service AM | MD | PM | Sat MD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| West 60th Street and West End Ave. | North | 53 | 36 | 91 | 31 | 140.2 | 208.0 | 80.2 | 242.2 | A | A | A | A |
| | West | 132 | 149 | 196 | 228 | 87.0 | 76.7 | 62.3 | 47.5 | A | A | A | B |
| | South | 30 | 14 | 42 | 35 | 246.4 | 530.6 | 174.3 | 209.9 | A | A | A | A |
| | East | 115 | 197 | 243 | 238 | 110.2 | 64.4 | 50.1 | 52.0 | A | A | B | B |
| West 60th Street and Amsterdam Ave. | North | 243 | 150 | 254 | 88 | 28.8 | 50.5 | 27.6 | 87.1 | C | B | C | A |
| | West | 315 | 295 | 284 | 240 | 43.1 | 45.3 | 48.4 | 58.5 | B | B | B | B |
| | South | 190 | 131 | 209 | 139 | 38.2 | 59.5 | 34.4 | 53.7 | C | B | C | B |
| | East | 264 | 197 | 249 | 138 | 47.3 | 65.2 | 49.1 | 149.6 | B | B | B | A |
| West 60th Street and Columbus Ave. | North | 564 | 461 | 734 | 279 | 16.5 | 20.9 | 12.0 | 36.7 | **D** | D | **E** | C |
| | West | 314 | 381 | 476 | 304 | 38.5 | 30.9 | 23.9 | 40.1 | C | C | **D** | B |
| | South | 492 | 324 | 462 | 188 | 12.7 | 20.8 | 13.4 | 47.5 | **E** | D | **E** | B |
| | East | 178 | 205 | 286 | 216 | 111.6 | 96.2 | 67.3 | 91.0 | A | A | A | A |
| West 60th Street and Broadway | North | 312 | 168 | 257 | 345 | 30.5 | 57.8 | 37.3 | 27.4 | C | B | C | C |
| | West | 260 | 442 | 555 | 462 | 29.5 | 16.0 | 12.1 | 15.2 | C | **D** | **E** | **D** |
| | South | 434 | 493 | 498 | 141 | 31.2 | 27.2 | 26.9 | 100.7 | C | C | C | A |
| West 59th Street and West End Avenue | North | 33 | 32 | 44 | 51 | 101.5 | 152.9 | 102.2 | 93.5 | A | A | A | A |
| | West | 110 | 116 | 214 | 258 | 184.8 | 267.7 | 63.7 | 52.2 | A | A | A | B |
| West 61st Street and West End Avenue | West | 90 | 128 | 111 | 99 | 146.4 | 100.6 | 117.2 | 132.4 | A | A | A | A |
| | South | 88 | 122 | 116 | 58 | 92.3 | 65.8 | 69.4 | 142.4 | A | A | A | A |

*This table has been revised for the FSEIS.*

## Table 17-16
## 2018 No Build Corner Conditions

| Intersection | Corner | Curb Radii (feet) | No Build Peak 15-Minute Volumes | | | | Average Pedestrian Space (sq-ft/ped) | | | | No Build Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD |
| West 59th Street and West End Ave. | NW | 12 | 21 | 14 | 14 | 11 | 206.7 | 337.0 | 124.4 | 104.5 | A | A | A | A |
| West 60th Street and West End Ave. | NE | 12 | 60 | 103 | 118 | 43 | 168.5 | 112.5 | 80.2 | 120.4 | A | A | A | A |
| | SE | 12 | 15 | 10 | 26 | 12 | 225.6 | 162.9 | 114.6 | 124.5 | A | A | A | A |
| West 60th Street and Amsterdam Ave. | NW | 12 | 10 | 16 | 13 | 10 | 62.8 | 80.2 | 65.5 | 110.0 | A | A | A | A |
| | SW | 12 | 19 | 22 | 19 | 27 | 44.6 | 53.1 | 46.6 | 59.6 | B | B | B | B |
| | NE | 12 | 89 | 41 | 59 | 66 | 60.3 | 94.8 | 62.3 | 153.8 | A | A | A | A |
| | SE | 12 | 29 | 18 | 34 | 13 | 105.8 | 151.5 | 103.5 | 218.4 | A | A | A | A |
| West 60th Street and Columbus Ave. | NW | 12 | 45 | 35 | 33 | 22 | 63.5 | 65.6 | 44.5 | 98.7 | A | A | B | A |
| | SW | 12 | 31 | 32 | 27 | 29 | 49.1 | 55.6 | 40.4 | 81.8 | B | B | B | A |
| | NE | 12 | 49 | 65 | 77 | 22 | 98.2 | 108.0 | 55.0 | 156.0 | A | A | B | A |
| | SE | 12 | 296 | 238 | 256 | 65 | 70.7 | 93.9 | 70.5 | 156.2 | A | A | A | A |
| West 60th Street and Broadway | NW | 12 | 391 | 224 | 437 | 125 | 61.8 | 65.8 | 42.7 | 54.1 | A | A | B | B |
| | SW | 12 | 76 | 157 | 226 | 12 | 126.7 | 90.6 | 65.8 | 144.0 | A | A | A | A |

*This table has been revised for the FSEIS.*

As shown in **Tables 17-14** all analyzed sidewalks would continue to operate at LOS C or better under platoon conditions with the exception of the north and south sidewalks on West 60th Street between Broadway and Columbus Avenue which would operate at a marginal LOS D during the weekday PM peak hour.

As shown in **Table 17-15**, conditions on the north crosswalk on Columbus Avenue at West 60th Street would deteriorate from LOS A to LOS D during the weekday AM and midday peak hours and from LOS B to LOS E during the PM peak hour, and conditions on the south crosswalk would deteriorate from LOS D to LOS E during the weekday AM peak hour, from LOS C to LOS D during the weekday midday peak hour and from LOS C to LOS E during the PM peak hour. Conditions on the west crosswalk on Columbus Avenue at West 60th Street would deteriorate from LOS C to D during the PM peak hour. (This will be due, in part, to demand from the development of new residential and academic space as part of the nearby Fordham University Lincoln Center Expansion project by 2018.) At Broadway and West 60th Street, the west crosswalk would continue to operate at LOS D during the weekday midday and Saturday midday peak hours and LOS E weekday PM peak hour. By contrast, conditions on the south crosswalk on Broadway would improve from LOS D to LOS C during the weekday AM and PM peak hours due to the diversion of subway trips from the 59th Street-Columbus Circle subway station entrance on the Broadway median to the new entrance stairs at the northwest corner of Broadway and West 60th Street. (As previously noted, these new entrance stairs were not yet open at the time of the pedestrian count program at this location.) All other analyzed crosswalks would continue to operate at an acceptable LOS C or better during all peak hours for 2018 Future Without the Proposed Project conditions. As shown in **Table 17-16**, during the analysis time periods, all analyzed corner areas would continue to operate at an acceptable LOS C.

## F. THE FUTURE WITH THE PROPOSED PROJECT

This section provides an analysis of transit and pedestrian conditions in the Future With the Proposed Project (the "Build" condition). As discussed earlier, trip generation analyses that were performed showed that the maximum retail/office scenarios maximized the potential for transit and pedestrian impacts. Consequently, weekday midday, PM, and Saturday midday analyses were based upon RWCDS 3b, (which assumes 2,100 residential units, 1,012 hotel rooms, 151,598 gsf of community facility (a 1,332-seat public school), 325,022 gsf of retail, 52,209 gsf of office, 276,011 gsf of auto showroom, and 1800 parking spaces) and weekday AM analyses were based on RWCDS 3d, which is a slight variation on that program. In RWCDS 3d, the gross square feet of retail space is reduced to 165,938 gsf and the office space is increased to 211,293 gsf, with all other components of the project remaining constant. The analyses in this section focus on the potential for significant adverse impacts to the subway, local bus and pedestrian modes from the new trips related to the Proposed Project.

**Tables 16-10 and 16-12** in Chapter 16, "Traffic and Parking," presents the transportation planning factors utilized in the travel demand forecast for the Proposed Project, which were used to generate the estimated total of subway, bus and walk-only trips that would result from the Proposed Project during each of the peak hours. **Table 17-17** shows the total estimated weekday AM and PM peak hour project generated subway and local bus trips. As shown, a total net increment of 937 and 1,299 person trips by subway (in and out combined) would be generated by the Proposed Project during the weekday AM and PM peak hours, respectively. New person trips by local bus would total 353 and 656 during the weekday AM and PM peak hours, respectively. **Table 17-18** shows the total estimated number of walk-only trips that would result from the Proposed Project during the weekday and Saturday peak hours. New walk-only trips

would total 1,978, 1,777, 1,727 and 1,805 during the weekday AM, midday and PM and Saturday midday peak hours, respectively.

**Table 17-17**
**Transit Net Travel Demand Forecast for the Proposed Project**
**(Person Trips)**

| | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total |
| Subway | 402 | 535 | 937 | 759 | 540 | 1,299 |
| Local Bus | 174 | 179 | 353 | 348 | 308 | 656 |

**Table 17-18**
**Pedestrian Net Travel Demand Forecast for the Proposed Project**
**(Person Trips)**

| | AM Peak Hour | | | Midday Peak Hour | | | PM Peak Hour | | | Saturday Midday Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total |
| Walk | 1,461 | 517 | 1,978 | 956 | 821 | 1,777 | 957 | 770 | 1,727 | 991 | 814 | 1,805 |

**SUBWAY**

As shown in **Table 17-17**, the Proposed Project would generate a net total of 937 and 1,299 new subway trips (in and out combined) during the weekday AM and PM peak hours, respectively. All of these project-generated subway trips would be expected to utilize the 59th Street-Columbus Circle subway station. As previously discussed, the majority of these trips (an estimated 80 percent) would be expected to walk to and from the station along the West 60th Street corridor. These subway trips were assigned to the entrance stairs and fare arrays at West 60th Street and Broadway based upon subway route and direction of travel. The southern-most of the two new stairs on the northwest corner of Broadway and West 60th Street (the closest stair to the project site) was conservatively assumed to be utilized by all outbound trips traveling on A, B, C and D trains and southbound No. 1 trains, since this would be the first stair they would come to when approaching the station from the project site. Fifty percent of the inbound trips on southbound No.1 trains were also assigned to this stair, while the remaining 50 percent were assigned to the northern-most staircase on the Broadway median. All inbound and outbound trips traveling on northbound No. 1 trains were assigned to the entrance on the east side of Broadway adjacent to the Trump International Hotel and Tower as were all inbound subway trips traveling on A, B, C and D trains.

The results of the analysis of the Future With the Proposed Project at the 59th Street-Columbus Circle subway station are shown in **Table 17-19**. As shown in **Table 17-19**, all analyzed stairways would continue to operate at an acceptable LOS C or better during both the weekday AM and PM peak hours in the Future With the Proposed Project. Fare arrays R-158 (the Broadway median entrance) and N-49 (adjacent to stair O18) would also continue to operate at an acceptable LOS C or better during both peak hours, while fare array R-158X (the new entrance at the northwest corner of West 60th Street and Broadway) would operate at a marginal LOS D during both the weekday AM and the PM peak hours, but would continue to have available capacity during these periods. As all analyzed stairways and fare arrays would continue to operate with available capacity during both peak hours for 2018 Build conditions, no significant adverse subway station impacts would be expected to result from the Proposed Project based on *CEQR Technical Manual* criteria.

**Table 17 - 19**

**2018 Build Conditions at the 59th Street-Columbus Circle Subway Station**

**Stairways**

| No. | Station Element/Location | Peak Period | Effective Width in Feet (1) | Maximum 15 Minute Inbound Capacity (2) | Maximum 15 Minute Outbound Capacity (2) | No Build Pk 15 Min Inbound Volume | No Build Pk 15 Min Outbound Volume | Build Pk 15 Min Inbound Increment | Build Pk 15 Min Outbound Increment | Build Pk 15 Min Inbound Volume | Build Pk 15 Min Outbound Volume | 2018 No Build V/C (4) | 2018 No Build LOS | 2018 Build V/C (4) | 2018 Build LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O18 | Stairway @ Columbus Circle | 8-9 AM | 15.50 | 2,093 | 1,883 | 225 | 1,130 | 80 | 12 | 305 | 1,142 | 0.71 | C | 0.75 | C |
| | Between Broadway & Central Park West | 5-6 PM | 15.50 | 2,093 | 1,883 | 829 | 693 | 151 | 29 | 980 | 722 | 0.76 | C | 0.85 | C |
| S3 | Stairway @ Broadway Median/ | 8-9 AM | 4.00 | 540 | 405 | 32 | 56 | 10 | 0 | 42 | 56 | 0.20 | A | 0.22 | A |
| | W. 60th Street | 5-6 PM | 4.00 | 540 | 405 | 78 | 38 | 19 | 0 | 97 | 38 | 0.24 | A | 0.27 | A |
| S6 | South Stairway @ NW Corner | 8-9 AM | 6.00 | 810 | 608 | 70 | 227 | 10 | 121 | 80 | 348 | 0.46 | B | 0.67 | B |
| | Broadway/W. 60th Street | 5-6 PM | 6.00 | 810 | 608 | 156 | 107 | 19 | 106 | 175 | 213 | 0.37 | A | 0.57 | B |
| S7 | North Stairway @ NW Corner | 8-9 AM | 6.00 | 810 | 608 | 25 | 16 | 0 | 0 | 25 | 16 | 0.06 | A | 0.06 | A |
| | Broadway/W. 60th Street | 5-6 PM | 6.00 | 810 | 608 | 86 | 18 | 0 | 0 | 86 | 18 | 0.13 | A | 0.13 | A |

**Fare Arrays and Exit Gates**

| No. | Station Element/Location | Peak Period | Maximum 15 Minute Inbound Capacity (2) | Maximum 15 Minute Outbound Capacity (2) | No Build Pk 15 Min Inbound Volume | No Build Pk 15 Min Outbound Volume | Build Pk 15 Min Inbound Increment | Build Pk 15 Min Outbound Increment | Build Pk 15 Min Inbound Volume | Build Pk 15 Min Outbound Volume | 2018 No Build V/C | 2018 No Build LOS | 2018 Build V/C | 2018 Build LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R158-X | Broadway/W. 60th St Fare Array | 8-9 AM | 689 | 1,094 | 95 | 243 | 10 | 121 | 105 | 364 | 0.36 | A | 0.49 | B |
| | 3 high entry/exit turnstiles | 5-6 PM | 689 | 1,094 | 242 | 125 | 19 | 106 | 261 | 231 | 0.47 | B | 0.59 | B |
| R-158 | Broadway/W. 60th St Fare Array | 8-9 AM | 1,890 | 1,418 | 32 | 56 | 10 | 0 | 42 | 56 | 0.06 | A | 0.06 | A |
| | 5 entry/exit turnstiles | 5-6 PM | 1,890 | 1,418 | 78 | 38 | 19 | 0 | 97 | 38 | 0.04 | A | 0.08 | A |
| N-49 | Central Park West/ W. 60th Street | 8-9 AM | 3,780 | 5,225 | 225 | 1,130 | 80 | 12 | 305 | 1,142 | 0.28 | A | 0.30 | A |
| | 10 entry/exit turnstiles | 5-6 PM | 3,780 | 5,225 | 829 | 693 | 151 | 29 | 980 | 722 | 0.22 | A | 0.40 | A |

**Notes:**

(1) Effective width measured as stairwell width less one foot to account for side handrails. It is further reduced by three inches for each intermediate handrail, if present.
by 10 percent to account for friction where there are two-way flows.
a friction factor and a surge factor (if applicable).

| Friction Factor | |
|---|---|
| Flow in one direction≥ 95 percent | 0.95 |
| Flow in one direction < than 95 percent | 0.90 |

| Surge Factor | | |
|---|---|---|
| Location of Circulation Element | One or Two Tracks Served | Three or More Tracks Served |
| Platform Level | 0.75 | N/A |
| One floor above or below the platform | 0.8 | 0.9 |
| Two floors above or below the platform | 0.9 | 0.95 |

(3) Source: PHA November 2008 field counts.

(4) Fare array capacity based on NYCT guidelines.

| Fare Array Capacities (15 minute) | | | |
|---|---|---|---|
| | Turnstile | High Entry/Exit Turnstile | High Exit Turnstile |
| Entries | 420 | 255 | N/A |
| Exits | 645 | 540 | 555 |

(5) Stairway LOS - v/c ratio relationship:

| LOS | V/C Ratio |
|---|---|
| A | 0.00-0.50 |
| B | 0.51-0.70 |
| C | 0.71-1.00 |
| D | 1.01-1.30 |
| E | 1.31-1.70 |
| F | >1.71 |

* Denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

*This table has been revised for the FSEIS.*

As noted previously in the discussion of No Build conditions, the new south-facing stair on the Broadway median may potentially attract some new demand en route to and from points south, and any new demand would also utilize analyzed fare array R-158. Although the potential number of new trips attracted by this new stair is not currently known, as shown in **Table 17-19**, fare array R-158 is projected to operate at a free-flow LOS A during both the AM and PM peak hours for Build conditions. It is not expected that this new-south facing stair would be used by project-generated demand since it is not in a direct path of travel from the project site. It is therefore anticipated that this fare array would have sufficient capacity to accommodate any potential increase in demand from the new south-facing stair at an acceptable level of service in the Future With the Proposed Project.

**SUBWAY LINE HAUL**

As shown in **Table 17-17**, in 2018 the Proposed Project would generate a net total of approximately 402 subway trips inbound to the project site and 535 outbound trips during the weekday AM peak hour, and 759 inbound and 540 outbound trips by subway during the weekday PM peak hour. These trips were assigned to each of the five subway routes serving the 59th Street-Columbus Circle subway station (1, A, B, C, and D) based on existing ridership patterns, and **Table 17-20** shows the results of the analysis of subway line haul conditions at the maximum load point on each of these routes for 2018 Future With the Proposed Project conditions. As shown in **Table 17-20**, during both the weekday AM and PM peak hours all routes would continue to operate with available peak direction capacity at their maximum load points. The highest volume-to-capacity ratios would continue to occur on southbound A trains during the weekday AM peak hour (0.94, unchanged from the No Build condition) and northbound No. 1 trains during the weekday PM peak hour (0.93 compared to 0.92 in the No Build). All other analyzed subway routes would continue to operate with v/c ratios of 0.88 or below in the peak direction during both the weekday AM and PM peak hours. As demonstrated by the analysis shown in **Table 17-20**, the Proposed Project would be expected to add no more than 1.0 additional peak direction passengers per car to any of the subway routes serving the Proposed Project during either the weekday AM or PM peak hours. This is below the *CEQR Technical Manual* impact threshold of five passengers per car, and consequently no significant adverse impacts to peak direction subway line haul service would be expected to result from the Proposed Project in 2018.

**BUSES**

As shown in **Table 17-17**, the Proposed Project would generate approximately 174 new inbound trips and 179 new outbound trips by local bus during the weekday AM peak hour and 348 inbound and 308 outbound during the weekday PM peak hour. In addition to these bus-only trips, as discussed previously, an estimated 20 percent of the subway trips generated by the Proposed Project would be expected to use M57 buses to and from the 59th Street-Columbus Circle subway station. These combination subway-bus trips would total 80 inbound and 107 outbound during the weekday AM peak hour and 152 inbound and 108 outbound during the weekday PM peak hour. The total number of project-generated bus trips would therefore be 241 inbound and 298 outbound trips during the weekday AM peak hour and 500 inbound and 416 outbound during the weekday PM peak hour. **Table 17-21** shows peak hour conditions in the peak direction at the maximum load points on the M11, M31 and M57 local bus routes for 2018 Future With the Proposed Project conditions.

## Table 17-20
## 2018 Build Subway Line Haul Conditions

| | | | | | | | No Build | | Build | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Peak Hour | Route | Peak Direction | Maximum Load Point (Leaving Station) | Trains per Hour (1) | Cars per Hour (1) | Peak Hour Capacity (3) | Passengers per Hour (2) | V/C Ratio (4) | Passengers per Hour | V/C Ratio (4) | Avg. Added Passengers per Car |
| AM | 1 | Southbound | 103rd St - Broadway | 19 | 190 | 20,900 | 17,781 | 0.85 | 17,861 | 0.85 | 0.4 |
| | A | Southbound | 125th St - St. Nicolas Avenue | 10 | 80 | 14,000 | 12,651 | 0.90 | 12,732 | 0.91 | 1.0 |
| | B | Southbound | 72nd St - Central Park West | 7 | 70 | 10,150 | 6,905 | 0.68 | 6,954 | 0.69 | 0.7 |
| | C | Southbound | 72nd St - Central Park West | 6 | 48 | 6,960 | 5,889 | 0.85 | 5,931 | 0.85 | 0.9 |
| | D | Southbound | 125th St - St. Nicolas Avenue | 9 | 72 | 12,600 | 9,544 | 0.76 | 9,606 | 0.76 | 0.9 |
| PM | 1 | Northbound | 59th St - Columbus Circle | 16 | 160 | 17,600 | 15,702 | 0.89 | 15,819 | 0.90 | 0.7 |
| | A | Northbound | 59th St - Columbus Circle | 10 | 80 | 14,000 | 9,351 | 0.67 | 9,425 | 0.67 | 0.9 |
| | B | Northbound | 59th St - Columbus Circle | 7 | 70 | 10,150 | 5,594 | 0.55 | 5,634 | 0.56 | 0.6 |
| | C | Northbound | 59th St - Columbus Circle | 6 | 48 | 6,960 | 3,104 | 0.45 | 3,127 | 0.45 | 0.5 |
| | D | Northbound | 59th St - Columbus Circle | 8 | 64 | 11,200 | 8,122 | 0.73 | 8,185 | 0.73 | 1.0 |

**Notes:**

(1) Based on 2007 schedule and ridership data provided by NYC Transit.

(2) Assumes 0.025 percent/year background growth for the 2008 - 2013 period and 0.0125 percent/year background growth for 2013-2018 period plus demand from No Build development sites.

(3) Capacity based on a NYC Transit guideline capacity of 110 passengers/car for 51' cars (IRT), 145 passengers/car for 60' cars and 175 passengers/car for 75' cars. Guideline capacity for each route is based on the capacity associated with the predominant car type on each route.

(4) Volume-to-capacity ratio.

*This table has been revised for the FSEIS.*

As shown in **Table 17-21**, the greatest increases in demand as a result of the Proposed Project would occur on the M57, which would experience 150 new peak direction passengers during the weekday AM peak hour and 241 during the weekday PM peak hour. The M31 would experience 54 new peak direction passengers during the weekday AM peak hour and 104 new peak direction passenger trips during the weekday PM peak hour. Peak direction M11 buses would experience 20 new trips during the weekday AM peak hour and 43 during the weekday PM peak hour as a result of the Proposed Project.

As shown in **Table 17-21**, with this added demand, all three analyzed bus routes would be significantly adversely impacted in one or both peak hours as a result of the Proposed Project. During the weekday AM peak hour, eastbound M31 and M57 buses would experience capacity shortfalls equivalent to 11 passengers and 143 passengers, respectively. During the weekday PM peak hour, northbound M11 and westbound M31 and M57 buses would experience capacity shortfalls equivalent to 36, 95, 207 passengers, respectively.

According to current NYCT guidelines, increases in bus load levels to above their maximum capacity at any load point is considered a significant adverse impact as it would necessitate the addition of more bus service along that route. Based on this standard, eastbound M31 and M57 service would be significantly adversely impacted by project-generated demand during the weekday AM peak hour in 2018. During the weekday PM peak hour, northbound M11 and westbound M31 and M57 service would be significantly impacted by project-generated demand. Mitigation measures to alleviate these significant impacts are discussed in Chapter 22, "Mitigation."

**PEDESTRIANS**

The Proposed Project would generate new pedestrian demand on analyzed sidewalks, corner areas and crosswalks by 2018. This new demand would include trips made solely by walking, as well as pedestrian trips en route to and from subway station entrances and bus stops. As shown in **Table 17-18**, the Proposed Project would be expected to generate a net total of 1,978 walk-only trips (in and out combined) during the weekday AM peak hour, 1,777 walk-only trips during the weekday midday peak hour, 1,727 walk-only trips during the weekday PM peak hour and 1,805 during the Saturday midday peak hour. Trips en route to and from area subway stations and bus stops would account for an additional 1,290, 1,360, 1,955, and 2,012 new pedestrian trips during these peak hours, respectively.

As previously discussed, project-generated pedestrian trips are expected to be most concentrated on sidewalks and crosswalks immediately adjacent to the Proposed Project's entrances on West End Avenue and West 59th Street, and along the West 60th Street corridor which would serve as the most direct route between the project site and the 59th Street-Columbus Circle subway station. **Tables 17-22 through 17-24** show the project-generated peak 15-minute pedestrian volumes on analyzed sidewalks, crosswalks and corner areas, respectively.

# Table 17-21
# 2018 Build Local Bus Conditions

| Peak Hour (1) | Route | Peak Direction | Maximum Load Point | Build Conditions with Current Service Levels | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Peak Hour Buses (2) | No Build Available Capacity (3) | Project Increment | Build Available Capacity (3) | |
| AM | M11 | SB | Columbus Ave & W. 96th Street | 8 | 52 | 20 | 32 | |
| | M31 | EB | W.57th Street & Broadway | 10 | 43 | 54 | -11 | * |
| | M57 | EB | W.57th Street & 9th Ave | 9 | 7 | 150 | -143 | * |
| PM | M11 | NB | Amsterdam Ave & W. 77th Street | 7 | 7 | 43 | -36 | * |
| | M31 | WB | W.57th Street & Broadway | 12 | 9 | 104 | -95 | * |
| | M57 | WB | W.57th Street & Broadway | 12 | 34 | 241 | -207 | * |

**Notes:**
(1) Peak hours: weekday 8-9 AM and 5-6 PM.
(2) Assumes service levels adjusted to address capacity shortfalls in the No Build condition.
(3) Available capacity based on NYC Transit loading guidelines of 54 passengers per standard bus.
* Denotes a significant adverse impact based on current NYC Transit guidelines.

*This table has been revised for the FSEIS.*

**Table 17-22**
**2018 Build Sidewalk Conditions**

| Intersection | Location | Effective Width (ft) | Project Increment Peak 15-Minute Volumes | | | | Build Peak 15-Minute Volumes | | | | Flow Rate (per/min/ft) | | | | Platoon Flow Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD |
| West End Avenue<br>btw West 60th Street & West 61st Street | West | 11.0 | 192 | 188 | 204 | 217 | 364 | 422 | 425 | 458 | 2.2 | 2.6 | 2.6 | 2.8 | B | B | B | B |
| West End Avenue<br>btw West 59th Street & West 60th Street | West | 11.8 | 463 | 463 | 533 | 553 | 583 | 601 | 734 | 802 | 3.3 | 3.4 | 4.2 | 4.6 | C | C | C | C |
| West 60th Street<br>btw West End Ave. & Amsterdam Ave. | North | 11.0 | 233 | 215 | 272 | 264 | 419 | 425 | 501 | 361 | 2.5 | 2.6 | 3.0 | 2.2 | B | B | C | B |
| | South | 9.8 | 246 | 234 | 313 | 301 | 330 | 298 | 435 | 392 | 2.2 | 2.0 | 3.0 | 2.7 | B | B | B | B |
| West 60th Street<br>btw Amsterdam Ave. & Columbus Ave. | North | 9.0 | 223 | 186 | 255 | 246 | 576 | 392 | 569 | 530 | 4.3 | 2.9 | 4.2 | 3.9 | C | B | C | C |
| | South | 4.1 | 176 | 178 | 254 | 232 | 440 | 335 | 522 | 378 | 7.2 | 5.4 | 8.5 | 6.1 | D | C | D | D |
| West 60th Street<br>btw Columbus Ave. & Broadway | North | 7.6 | 197 | 159 | 236 | 217 | 773 | 608 | 1095 | 506 | 6.8 | 5.3 | 9.6 | 4.4 | D | C | D | C |
| | South | 9.5 | 103 | 119 | 188 | 165 | 828 | 775 | 1063 | 430 | 5.8 | 5.4 | 7.5 | 3.0 | C | C | D | C |
| West 59th Street<br>btw Riverside Blvd. & West End Ave. | North | 9.5 | 334 | 322 | 375 | 390 | 391 | 349 | 446 | 423 | 2.7 | 2.4 | 3.1 | 3.0 | B | B | C | B |

Notes:
Effective width calculated by deducting 1.5 ft for wall avoidance, 1.5 ft for curbside obstructions and an additional 0.5 ft for other sidewalk obstacles from measured width.
Persons per minute per foot of effective width.

*This table has been revised for the FSEIS.*

**Table 17-23**
**2018 Build Crosswalk Conditions**

| Location | | Project Increment Peak15-min. Volumes | | | | Build Peak15-min. Volumes | | | | Average Pedestrian Space (sq-ft/ped) | | | | Build Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD | AM | MD | PM | Sat MD |
| West 60th Street and West End Ave. | North | 229 | 209 | 239 | 243 | 282 | 245 | 330 | 274 | 23.7 | 38.9 | 19.9 | 23.1 | D | C | D | D |
| | West | 60 | 78 | 115 | 118 | 192 | 227 | 311 | 346 | 58.5 | 60.4 | 37.1 | 29.8 | B | A | C | C |
| | South | 216 | 208 | 273 | 264 | 246 | 222 | 315 | 299 | 27.0 | 42.3 | 20.4 | 21.6 | C | B | D | D |
| | East | 9 | 15 | 17 | 22 | 124 | 212 | 260 | 260 | 101.7 | 74.2 | 46.5 | 47.0 | A | A | B | B |
| West 60th Street and Amsterdam Ave. | North | 220 | 201 | 268 | 258 | 463 | 351 | 522 | 346 | 13.7 | 19.7 | 11.9 | 19.6 | **E** * | D | **E** * | D |
| | West | 25 | 26 | 39 | 37 | 340 | 321 | 323 | 277 | 39.4 | 41.1 | 41.8 | 49.8 | B | B | B | B |
| | South | 219 | 213 | 292 | 277 | 409 | 344 | 501 | 416 | 15.9 | 20.4 | 12.5 | 15.6 | **D** * | D | **E** * | **D** * |
| | East | 56 | 49 | 62 | 63 | 320 | 246 | 311 | 201 | 38.1 | 51.0 | 38.2 | 64.9 | C | B | C | A |
| West 60th Street and Columbus Ave. | North | 203 | 157 | 227 | 210 | 767 | 618 | 961 | 489 | 11.4 | 19.7 | 8.6 | 19.5 | **E** * | D | **E** * | **D** * |
| | West | 57 | 53 | 68 | 65 | 371 | 434 | 544 | 369 | 31.9 | 34.0 | 20.4 | 32.2 | C | C | D | C |
| | South | 141 | 149 | 223 | 200 | 633 | 473 | 685 | 388 | 9.2 | 18.1 | 8.1 | 17.1 | **E** * | **D** * | **E** * | **D** * |
| | East | 64 | 69 | 94 | 86 | 242 | 274 | 380 | 302 | 80.6 | 91.5 | 49.4 | 63.5 | C | C | B | A |
| West 60th Street and Broadway | North | 25 | 41 | 66 | 58 | 337 | 209 | 323 | 403 | 20.8 | 46.2 | 29.4 | 23.3 | D | B | C | D |
| | West | 17 | 12 | 17 | 17 | 277 | 454 | 572 | 479 | 27.5 | 15.5 | 11.7 | 14.5 | C | D | E | E |
| | South | 91 | 96 | 161 | 137 | 525 | 589 | 659 | 278 | 25.4 | 22.5 | 19.9 | 49.9 | C | D | D | B |
| West 59th Street and West End Avenue | North | 181 | 161 | 187 | 191 | 214 | 193 | 231 | 242 | 19.4 | 33.5 | 17.2 | 17.4 | **D** * | C | **D** * | **D** * |
| | West | 81 | 80 | 91 | 107 | 191 | 196 | 305 | 365 | 73.4 | 162.5 | 45.1 | 37.0 | A | A | B | C |
| West 61st Street and West End Avenue | West | 92 | 91 | 93 | 103 | 182 | 219 | 204 | 202 | 64.0 | 52.8 | 56.9 | 57.0 | A | B | B | B |
| | South | 211 | 192 | 224 | 223 | 299 | 314 | 340 | 281 | 24.8 | 23.6 | 21.6 | 26.8 | C | D | D | C |

Note:
* Denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

*This table has been revised for the FSEIS.*

## Table 17-24
## 2018 Build Corner Conditions

| Intersection | Corner | Curb Radii (feet) | Project Increment Peak 15-Minute Volumes | | | | Build Peak 15-Minute Volumes | | | | Average Pedestrian Space (sq-ft/ped) | | | | Build Level of Service | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD |
| West 59th Street and West End Ave. | NW | 12 | 167 | 160 | 183 | 186 | 188 | 174 | 197 | 197 | 51.2 | 65.1 | 46.2 | 37.3 | B | A | B | C |
| West 60th Street and West End Ave. | NE | 12 | 44 | 44 | 68 | 62 | 104 | 147 | 186 | 105 | 72.3 | 59.0 | 38.7 | 54.8 | A | B | C | B |
| | SE | 12 | 31 | 29 | 45 | 41 | 46 | 39 | 71 | 53 | 81.9 | 70.6 | 49.5 | 52.4 | A | A | B | B |
| West 60th Street and Amsterdam Ave. | NW | 12 | 43 | 39 | 38 | 39 | 53 | 55 | 51 | 49 | 38.2 | 47.9 | 37.1 | 51.1 | C | B | C | B |
| | SW | 12 | 25 | 22 | 22 | 23 | 44 | 44 | 41 | 50 | 26.4 | 31.0 | 24.9 | 29.4 | C | C | C | C |
| | NE | 12 | 8 | 6 | 8 | 8 | 97 | 47 | 67 | 74 | 39.0 | 53.9 | 32.2 | 56.5 | C | B | C | B |
| | SE | 12 | 8 | 6 | 8 | 8 | 37 | 24 | 42 | 21 | 63.5 | 80.9 | 54.8 | 76.9 | A | A | B | A |
| West 60th Street and Columbus Ave. | NW | 12 | 29 | 31 | 33 | 39 | 74 | 66 | 66 | 61 | 46.2 | 49.9 | 33.7 | 62.5 | B | B | C | A |
| | SW | 12 | 12 | 11 | 11 | 11 | 43 | 43 | 38 | 40 | 37.9 | 41.7 | 29.4 | 50.9 | C | B | C | B |
| | NE | 12 | 0 | 0 | 0 | 0 | 49 | 65 | 77 | 22 | 72.3 | 81.0 | 52.3 | 96.9 | A | A | B | A |
| | SE | 12 | 0 | 0 | 0 | 0 | 296 | 238 | 256 | 65 | 56.7 | 71.0 | 51.0 | 93.0 | B | A | B | A |
| West 60th Street and Broadway | NW | 12 | 172 | 132 | 189 | 178 | 563 | 356 | 626 | 303 | 50.5 | 53.5 | 34.7 | 42.1 | B | B | C | B |
| | SW | 12 | 12 | 11 | 11 | 11 | 88 | 168 | 237 | 23 | 105.7 | 79.2 | 56.7 | 111.3 | A | A | B | A |

*This table has been revised for the FSEIS.*

As shown in **Table 17-22**, the greatest increases in peak period pedestrian demand would generally occur on the west sidewalk on West End Avenue between West 59th and West 60th Streets where peak 15-minute volumes would increase by 463 to 553 trips during the peak periods, and the north sidewalk on West 59th Street between West End Avenue and the future Riverside Boulevard where peak 15-minute volumes would increase by 322 to 390 trips during the peak periods. Both of these sidewalks would be located adjacent to entrances to the Proposed Project. As shown in **Table 17-23**, the greatest increases in peak 15-minute crosswalk volumes would generally occur at the crossings of West End Avenue along West 59th, West 60th and West 61st Streets immediately adjacent to the project site, and on Amsterdam and Columbus Avenues along West 60th Street. Increases in peak 15-minute pedestrian volumes along these crosswalks would range from 141 to 292 during each analyzed peak hour. By contrast, peak 15-minute pedestrian volumes on crosswalks on Broadway at West 60th Street would increase by 12 to 161 during each peak period.

As shown in **Table 17-22**, for Future With the Proposed Project conditions, all analyzed sidewalks would continue to operate at an acceptable LOS C or better during all peak periods under platoon conditions with the exception of the north and south sidewalks on West 60th Street between Columbus Avenue and Broadway where the north sidewalk would operate at LOS D during the weekday AM and PM peak hours and the south sidewalk would operate at LOS D during the weekday PM peak hour, and the south sidewalk between Amsterdam Avenue and Columbus Avenue, which would operate at LOS D during the weekday AM and PM and Saturday midday peak hours. However, since the peak flow rates on the north sidewalk along West 60th Street between Columbus Avenue and Broadway (6.8 and 9.6 persons per foot-width per minute during the weekday AM and PM peak hours, respectively), on the south sidewalk on West 60th Street between Columbus Avenue and Broadway (7.5 persons per foot-width per minute during the weekday PM peak hour), and on the south sidewalk on West 60th Street between Amsterdam and Columbus Avenues (7.2, 8.5 and 6.1 persons per foot width per minute, during the weekday AM, PM and Saturday midday, respectively) would operate at mid-LOS D or better, these sidewalks would not be significantly adversely impacted by project-generated traffic based upon *CEQR Technical Manual* criteria.

As shown in **Table 17-23**, of the 19 analyzed crosswalks in the Future With the Proposed Project, 11 would operate at LOS D or E in one or more peak hours, compared to four in the No Build condition. Of these eleven crosswalks that would operate at LOS D or E, four crosswalks would be significantly adversely impacted during one or more peak hours.

As shown in **Table 17-23**, based on *CEQR Technical Manual* criteria, the north crosswalk on Amsterdam Avenue at West 60th Street would be significantly impacted during the weekday AM and PM peak hours and the south crosswalk at this intersection would be significantly impacted during the weekday AM and PM peak hours and the Saturday midday peak hour. During the weekday AM peak hour, the north crosswalk would operate at LOS E with 13.7 square feet/pedestrian and the south crosswalk would operate at LOS D with 15.9 square feet/pedestrian compared with LOS C with 28.8 and 38.2 square feet/pedestrian, respectively, for 2018 No Build conditions. During the weekday PM peak hour, the north and south crosswalks at this location would both operate at LOS E with 11.9 and 12.5 square feet/pedestrian, respectively, compared to LOS C with 27.6 and 34.4 square feet/pedestrian, respectively, during 2018 No Build conditions. During the Saturday midday peak hour, the south crosswalk would operate at LOS D with 15.6 square feet/pedestrian compared with LOS B with 53.7 square feet/pedestrian during 2018 No Build conditions.

The north crosswalk on Columbus Avenue at West 60th Street would also be significantly impacted during the weekday AM and PM peak hours and the Saturday midday peak hour and the south crosswalk at this intersection would be significantly impacted during the weekday AM, midday and PM peak hours and Saturday midday peak hour. During the AM peak hour, both the north and south crosswalks would operate at LOS E with 11.4 and 9.2 square feet/pedestrian, respectively, compared with LOS D with 16.5 square feet/pedestrian for the north crosswalk and LOS E with 12.7 square feet/pedestrian for the south crosswalk for 2018 No Build conditions. During the weekday midday peak hour, the south crosswalk would operate at LOS D with 18.1 square feet/pedestrian compared with LOS D with 20.8 square feet/pedestrian during 2018 No Build conditions. During the PM peak hour, the north and south crosswalks would operate at LOS E with 8.6 and 8.1 square feet/pedestrian, respectively, compared to LOS E with 12.0 and 13.4 square feet/pedestrian, respectively, for 2018 No Build conditions. During the Saturday midday peak hour, the north crosswalk would operate at LOS D with 19.5 square feet/pedestrian compared with LOS C 36.7 square feet/pedestrian during 2018 No Build conditions and the south crosswalk would operate at LOS D with 17.1 square feet/pedestrian compared with 47.5 square feet/pedestrian during 2018 No Build conditions.

The north crosswalk on West End Avenue at West 59th Street would also be significantly impacted during the weekday AM, PM and Saturday midday peak hours. During the AM peak hour, the north crosswalk would operate at LOS D with 19.4 square feet/pedestrian, compared with LOS A with 101.5 square feet/pedestrian for 2018 No Build conditions. During the PM peak hour, the north crosswalk would operate at LOS D with 17.2 square feet/pedestrian, respectively, compared to LOS A with 101.2 square feet/pedestrian for 2018 No Build conditions. During the Saturday midday peak hour, the north crosswalk would operate at LOS D with 17.4 square feet/pedestrian compared to LOS A with 93.5 square feet/pedestrian during 2018 No Build conditions. Potential mitigation for these significant adverse crosswalk impacts is presented in Chapter 22, "Mitigation."

As shown in **Table 17-24**, in the Future With the Proposed Project, all analyzed corner areas would continue to operate at an acceptable LOS C or better in all peak periods. As all analyzed corner areas would continue to operate with an average of greater than 19.5 square feet per pedestrian, none would be significantly adversely impacted by project-generated demand during any peak hour for 2018 Future With the Proposed Project conditions.

## G. FUTURE CONDITIONS WITH THE MILLER HIGHWAY RELOCATION

As described in Chapter 1, "Project Description," for certain environmental issues—including traffic and parking—the 1992 FEIS analyzed an additional scenario in which the elevated portion of the Miller Highway (also known as Route 9A) between 59th Street and 72nd Street would be relocated to an inbound, below-grade location by 2002, the anticipated completion year for the Riverside South project.

At this time the Miller Highway has not been relocated, and there is no funding allocated toward advancing the project. However, since the highway may, in the future, be relocated, this section considers an additional future condition in which the highway relocation takes place by the Proposed Project's Build year of 2018, in a manner similar to that described in the 1992 FEIS, and as analyzed in greater detail as part of the Preferred Alternative scenario in the *October 2000 Miller Highway Project FEIS.*

The potential relocation of the Miller Highway would not result in any changes which would affect transit services for 2018 Build conditions. That is, with the relocated highway the Proposed Project would not have significant adverse impacts with regard to subway station elements, or subway line haul service. Both with and without the relocated Miller Highway the Proposed Project would result in significant adverse impacts to eastbound M31 and M57 service during the weekday AM peak hour, and northbound M11 and westbound M31 and M57 service during the weekday PM peak hour. As standard practice, NYCT routinely conducts ridership counts and adjusts bus service frequency to meet its service criteria, within fiscal and operational constraints.

South of West 61st Street, the new alignment of the relocated highway would cause the severing of the West 59th Street underpass that connects the southern edge of the project site with the park. However, this would not be expected to significant adversely impact pedestrian conditions. The relocated Miller Highway would have no effect on pedestrian conditions east of the project site, both with and without the relocated Miller Highway, no analyzed sidewalks or corner areas would be significantly adversely impacted by project-generated pedestrian traffic. However, both with and without the relocated Miller Highway, four crosswalks would be significantly adversely impacted in one or more peak hours. ✷