Chapter 17: Transit and Pedestrians

A. INTRODUCTION

This chapter provides a discussion of potential impacts that new transit and pedestrian trips generated by the proposed project will have on the operating conditions of transit and pedestrian facilities in the vicinity of the project site. It also identifies potential significant adverse impacts associated with the proposed project that would require mitigation. The proposed project's potential impacts to the study area's traffic network and parking facilities are described in Chapter 16, "Traffic and Parking."

This chapter describes the existing transit and pedestrian characteristics of the study area, conditions that are projected in the future without the proposed project (the "No Action" condition), conditions following implementation of the proposed project, and identification of any associated significant adverse impacts. As described in Chapter 1, "Project Description," the proposed project will include development based on one of two scenarios, a Single-Tenant Office Scenario and a Multi-Tenant Office Scenario.

The analysis contained in this chapter describes existing (2008) conditions of transit elements (subway station pedestrian circulation elements) and street level pedestrian elements (sidewalks, corner reservoirs, and crosswalks) in the transit and pedestrian study areas. This is followed by a presentation of the analysis of the anticipated conditions under the No Action (2014) condition, the expected year of completion of the proposed project. The No Action condition includes demand generated by planned development within the study area, demand generated by background growth, and any changes to transit and pedestrian facilities and services expected by 2014. This is followed by a presentation of the analysis of the anticipated conditions under each of the two scenarios in the Future with the proposed project (2014) condition. Each scenario of the Future with the proposed project includes demand generated by the proposed project, and changes to transit and pedestrian facilities and services, including the re-opening of passageway under the south side of West 33rd Street, between Sixth and Seventh Avenues, connecting the 34th Street-Penn Station and 34th Street-Herald Square subway stations. The chapter concludes with a summary of the significant transit and pedestrian impacts identified as a result of the Proposed Actions under each of the two scenarios.

PRINCIPAL CONCLUSIONS

Analyses of transit elements included subway stations (turnstile arrays, High Entrance/Exit Turnstile arrays [HEETs], service gates, stairways, and escalators) and analyses of pedestrian elements included street-level elements (sidewalks, crosswalks, and corners). The proposed project would not cause any significant adverse impacts to transit elements under either scenario. The proposed project would cause significant adverse impacts to six pedestrian elements under the Single-Tenant Office scenario, and ten pedestrian elements under the Multi-Tenant Office scenario. Under both scenarios, most of these impacts could be mitigated through implementation of the measures described in Chapter 22, "Mitigation."

TRANSIT

Subway Stations

Under existing conditions, a total of 123 subway elements (72 stairways, 2 escalators, 20 turnstile arrays, 10 HEET arrays and 19 service gates) were analyzed for the AM and PM peak hours. Congested operating conditions occur at 10 stairways, 1 turnstile array, 2 HEET arrays, and 1 service gate during the weekday AM peak period and at 13 stairways, 2 HEET arrays, and 1 service gate during the weekday PM peak period.

For the 2014 No Action condition, a total of 123 subway elements (72 stairways, 2 escalators, 20 turnstile arrays, 10 HEET arrays, and 19 service gates) were analyzed for the AM and PM peak hours. Congested operating conditions occur at 15 stairways, 1 turnstile array, 3 HEET arrays and 1 service gate during the weekday AM peak period and at 16 stairways, 2 HEET arrays, and 1 service gate during the weekday PM peak period.

Both scenarios of the proposed project include a Subway Improvement Package designed to improve levels of service at both the 34th Street-Penn Station and 34th Street-Herald Square subway stations, as well as along the major east-west corridors between Penn Station and Herald Square. The revitalization of an abandoned passageway beneath West 33rd Street between Sixth and Seventh Avenues will significantly increase east-west capacity and provide a direct underground connection between commuter rail lines at Penn Station, the 34th Street-Penn Station subway station, the 34th Street-Herald Square subway station, and the 33rd Street PATH station. Under both scenarios of the proposed project, with all subway improvements in place, a total of 127 subway elements (73 stairways, 1 corridor, 4 escalators, 20 turnstile arrays, 10 HEET arrays and 19 service gates) were analyzed for the AM and PM peak hours.

As a result of the Subway Improvement Package, both the Single-Tenant Office Scenario and the Multi-Tenant Office Scenario would not result in any significant adverse impacts at the station elements analyzed.

Subway Line Haul Analysis

Due to the number of available transit lines in the study area, no single subway line is used by more than 40 percent of the proposed project's generated trips. Forty percent of the subway trips are assigned to the Seventh Avenue Line (1/2/3), with a maximum total of 591 persons during the AM peak hour under the Single-Tenant Office Scenario. Given the frequency of service and access to both the local and express lines at the 34th Street-Seventh Avenue Station, the proposed project would add well below one person per car. Therefore, a detailed subway line haul analysis was not undertaken as part of this study.

Bus Routes

Ten bus routes (M4, M5, M6, M7, M10, M11, M16, M20, M34, and Q32) currently provide service within a ½-mile radius of the redevelopment area. The proposed project would add fewer than 200 new riders each to all of these routes; therefore, in accordance with City Environmental Quality Review (CEQR) methodology, a detailed analysis of these routes is not required.

PEDESTRIANS

Under existing conditions, a total of 167 pedestrian elements (78 sidewalks, 47 crosswalks, and 42 corners) were analyzed for the AM, weekday midday (MD), PM, and Saturday midday peak hours. Congested operating conditions (LOS D or worse) occur at 6 sidewalks during the AM

peak period, 9 sidewalks during the weekday midday peak period, 22 sidewalks during the PM peak period, and 5 sidewalks during the Saturday midday peak period. Congested operating conditions occur at 16 corners during the AM peak period, 18 corners during the weekday midday peak period, 27 corners during the PM peak period, and 17 corners during the Saturday midday peak period. Congested operating conditions occur at 24 crosswalks during the AM peak period, 24 crosswalks during the weekday midday peak period, 29 crosswalks during the PM peak period, and 21 crosswalks during the Saturday midday peak period.

For the 2014 No Action condition, a total of 167 pedestrian elements (78 sidewalks, 47 crosswalks, and 42 corners) were analyzed for the AM, weekday midday (MD), PM, and Saturday midday peak hours. Congested operating conditions (LOS D or worse) occur at eight sidewalks during the AM peak period, 15 sidewalks during the weekday midday peak period, 30 sidewalks during the PM peak period, and five sidewalks during the Saturday midday peak period. Congested operating conditions occur at 15 corners during the AM peak period, 19 corners during the weekday midday peak period, 26 corners during the PM peak period, and 17 corners during the Saturday midday peak period. Congested operating conditions occur at 20 crosswalks during the AM peak period, 20 crosswalks during the weekday midday peak period, 27 crosswalks during the PM peak period, and 19 crosswalks during the Saturday midday peak period.

For the 2014 with the proposed project, Single-Tenant Office Scenario, a total of 167 pedestrian elements (78 sidewalks, 47 crosswalks, and 42 corners) were analyzed for the AM, weekday midday (MD), PM, and Saturday midday peak hours. Congested operating conditions (LOS D or worse) would occur at seven sidewalks during the AM peak period, 10 sidewalks during the weekday midday peak period, 25 sidewalks during the PM peak period, and six sidewalks during the Saturday midday peak period. Congested operating conditions occur at 15 corners during the AM peak period, 19 corners during the weekday midday peak period, 25 corners during the PM peak period, and 15 corners during the Saturday midday peak period. Congested operating conditions occur at 22 crosswalks during the AM peak period, 18 crosswalks during the weekday midday peak period, 26 crosswalks during the PM peak period, and 19 crosswalks during the Saturday midday peak period.

The 2014 Single-Tenant Office Scenario would result in a total of seven significant adverse impacts on crosswalks and/or corner locations within the pedestrian study area. These impacts include two corner locations during the AM peak hour, one corner location during the midday peak hour, and two crosswalk and two corner locations during the PM peak hour. See Chapter 22, "Mitigation," for a description of mitigation for these impacts.

For the 2014 future with the proposed project Multi-Tenant Office Scenario, congested operating conditions (LOS D or worse) would occur at six sidewalks during the AM peak period, 15 sidewalks during the weekday midday peak period, 28 sidewalks during the PM peak period, and eight sidewalks during the Saturday midday peak period. Congested operating conditions would occur at 15 corners during the AM peak period, 19 corners during the weekday midday peak period, 25 corners during the PM peak period, and 15 corners during the Saturday midday peak period. Congested operating conditions would occur at 22 crosswalks during the AM peak period, 20 crosswalks during the weekday midday peak period, 28 crosswalks during the PM peak period, and 19 crosswalks during the Saturday midday peak period.

The 2014 Multi-Tenant Office Scenario would result in a total of 14 significant adverse impacts on crosswalks and/or corner locations within the pedestrian study area. These impacts include two corner locations during the AM peak hour, two crosswalks and two corner locations during

the midday peak hour, two crosswalks and two corner locations during the PM peak hour, and two crosswalks and two corner locations during the Saturday peak hour. See Chapter 22, "Mitigation," for a description of mitigation for these impacts.

B. METHODOLOGY

OVERVIEW

As described in Chapter 16, "Traffic and Parking," travel demand projections were developed to identify the transportation elements likely to be affected by the proposed project. Based on criteria specified in the *City Environmental Quality Review (CEQR) Technical Manual*, it was determined that quantified assessments of transit station operations and street-level pedestrian circulation would be required. A detailed discussion of the trip-making characteristics of the various components of the proposed project can be found in Chapter 16, "Traffic and Parking."

For both transit stations and street-level pedestrian circulation, detailed analyses were conducted for the weekday AM and weekday PM peak periods, when demand generated by the proposed project would be greatest. For street-level pedestrian elements, the weekday midday (12:00 PM to 1:00 PM) and Saturday midday (1:00 PM to 2:00 PM) peak hours were also included to account for the large amount of walk-only trips generated by the proposed project during lunchtime hours and on weekends.

The following sections summarize the various aspects of the transit and pedestrian analyses, including the study areas, analysis methodologies, and future trip projections, and set the framework for the existing and future analyses.

For the development site, it is expected that if the proposed actions are not approved, the project sponsor will develop the 15 Penn Plaza site under existing C6-6 and C6-4.5 zoning (an as-of-right or No Action building). This as-of-right building will consist of approximately 1.6 million gross square feet (gsf) (1.15 million zoning square feet [zsf]) of which approximately 1.3 million gsf will be office use, 40,600 gsf will be retail use, 202,000 gsf will be mechanical space, and 35,438 gsf will be lobby area and amenity space (see **Table 17-1**). Accessory parking for up to 100 vehicles would be located below grade.

Table 17-1
No Action Building Program

Project Components	As-of-Right Zoning	
	zsf	gsf
Commercial Office	1,078,867	1,319,914
Retail	37,587	40,600
Mechanical Space		202,000
Lobby Area, Amenity Space, Service and Loading Areas	32,546	35,438
Total Building Square Footage	1,149,000	1,597,952

Note: The No Action building program would include up to 100 accessory parking spaces in place of a portion of the below-grade service area.
Source: Pelli Clarke Pelli Architects.

For purposes of the transit and pedestrian analyses, the 2014 No Action condition incorporates the demolition of the existing 1,700-room Hotel Pennsylvania and the construction of the above as-of-right office building. In addition to the hotel uses within the Hotel Pennsylvania, the development site contains additional commercial uses, including approximately 46,400 gsf of ground-floor retail space with frontage on Seventh Avenue and on West 32nd and West 33rd Streets.

Trips generated by the existing hotel were removed from the transportation network, and trips generated by the as-of-right office building were added.

The future with the proposed project traffic and parking analyses represent the incremental impact of the project compared with the as-of-right office building discussed above. Where the proposed project would result in significant adverse transportation-related impacts, as defined by the *CEQR Technical Manual*, mitigation measures are explored to alleviate those impacts (see Chapter 22, "Mitigation").

TRANSIT STUDY AREA

The transit study area includes three Metropolitan Transportation Authority-New York City Transit (NYCT) subway stations within its boundaries:

- 34th Street-Herald Square (Broadway Line [N,Q,R,W], Sixth Avenue Line [B,D,F,V])
- 34th Street-Penn Station (Seventh Avenue Line [1,2,3])
- 34th Street-Penn Station (Eighth Avenue Line [A,C,E])

Additionally, the Port Authority's 33rd Street PATH station falls without the boundaries of the transit study area.

For the 2008 Existing and 2014 No Action analyses, a total of 123 subway station elements were studied in the above four stations during the AM and PM peak hours, including 72 stairways, 2 escalators, 20 turnstile arrays, 10 high entry/exit turnstile (HEET) arrays, and 19 service gates. Under both scenarios of the proposed project, significant mass transit improvements are planned, including the renovation and re-opening of the passageway under the south side of West 33rd Street. In addition, both scenarios would improve several subway stairways and control areas serving the 34th Street-Penn Station (Seventh Avenue) subway station, the 34th Street-Herald Square subway station, and the 33rd Street PATH station. Under both scenarios of the 2014 proposed project analyses, a total of 127 subway station elements were studied in the above four stations during the AM and PM peak hours, including 73 stairways, 1 corridor, 4 escalators, 20 turnstile arrays, 10 HEET arrays, and 19 service gates.

Figures 17-1 and 17-2 show the subway and bus services available within the study area. Additionally, commuter rail service is available at Penn Station and the 33rd Street PATH station. All subway, bus, and commuter rail services in the transit study area are described in further detail in section C, existing conditions.

PEDESTRIAN STUDY AREA

The pedestrian study area includes numerous sidewalks, corner reservoirs, and crosswalks in the area surrounding the project site. These pedestrian facilities, extending primarily from West 31st Street to West 34th Street and from Sixth Avenue to Eighth Avenue, represent locations where the most project-generated trips are anticipated.

The pedestrian study area is comprised of 13 intersections. A total of 167 pedestrian elements were analyzed during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours including 78 sidewalks, 42 corner reservoirs, and 47 crosswalks.

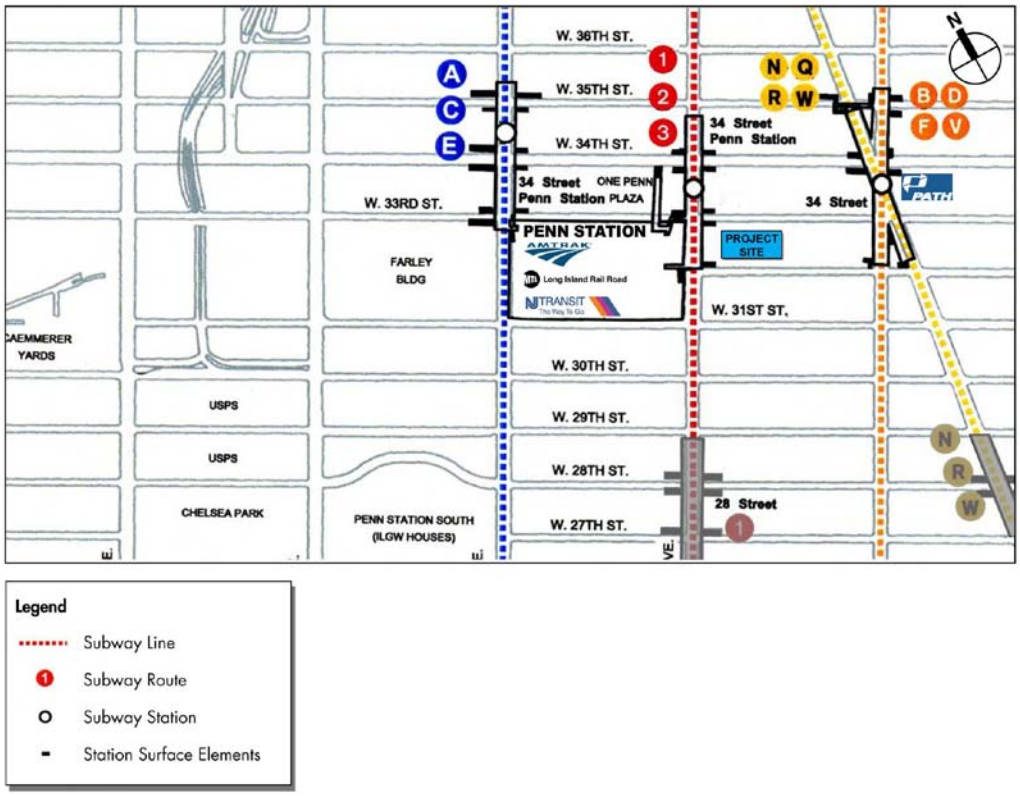


Figure 17-1
Transit Study Area
Subway Lines, Routes, and Stations

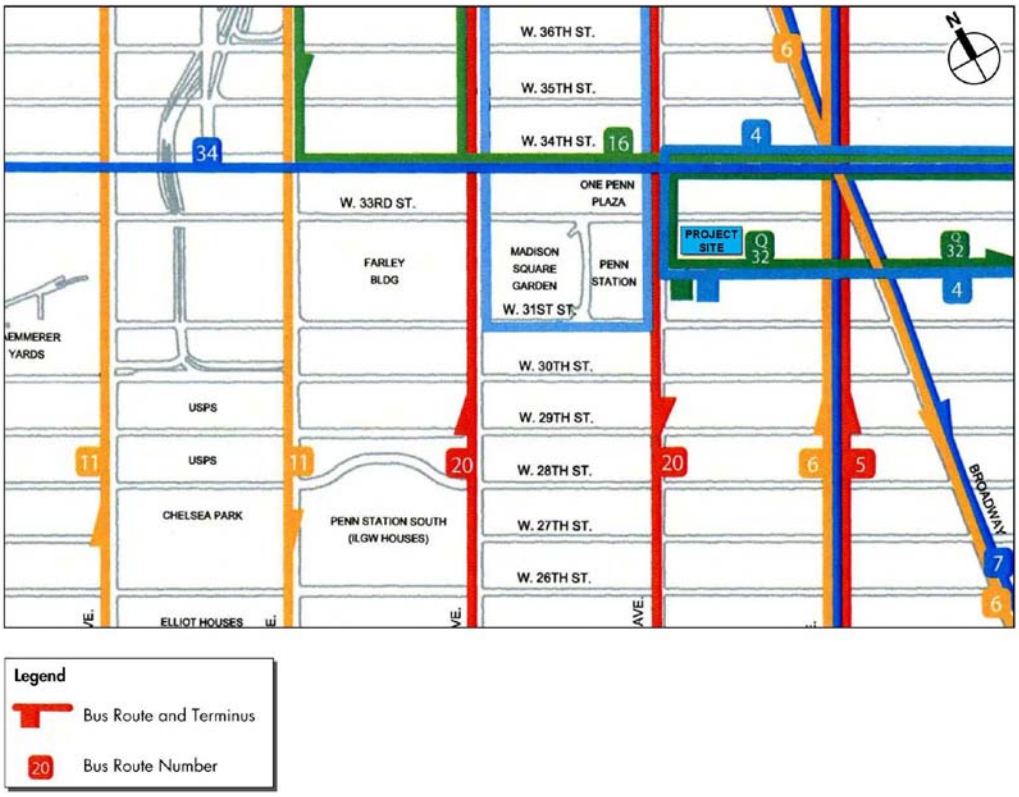


Figure 17-2
Transit Study Area
Bus Routes and Terminus

ANALYSIS HOURS

The peak hours analyzed for pedestrian circulation at street level are:

- Weekday AM (8:00 AM to 9:00 AM)
- Weekday Midday (12:00 PM to 1:00 PM)
- Weekday PM (5:00 PM to 6:00 PM)
- Saturday Midday (1:00 PM to 2:00 PM)

Transit analyses were conducted for the following peak hours:

- Weekday AM (8:00 AM to 9:00 AM)
- Weekday PM (5:00 PM to 6:00 PM)

Both the pedestrian and the transit analyses reflect peak 15-minute conditions within each peak hour.

OPERATIONAL ANALYSIS METHODOLOGY

TRANSIT OPERATIONS

Subway station operations were assessed according to methods and evaluation criteria presented in the *CEQR Technical Manual*. The methodology for assessing subway stairway, escalator, and control area (turnstile arrays, high entry/exit turnstile arrays, service gates, etc.) operations compares the demand volume to the element's design capacity, resulting in a volume-to-capacity (v/c) ratio. For stairways, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction between upward and downward moving patrons, and the average required area for circulation. For escalators, processing capacity is determined by the speed and the available pedestrian lane(s), the latter of which depends on the width of the escalator tread. For control area elements, capacity is measured by the number and width of an element and the NYCT optimum capacity per element. For stairways, escalators and control area elements, volumes and capacities are presented for peak 15-minute intervals.

The estimated v/c ratio is compared to NYCT criteria to determine a level-of-service (LOS) for the operation of an element. **Table 17-2** shows the LOS and corresponding v/c ratios for stairways, escalators, and control area elements.

Table 17-2
Level of Service Criteria for Subway Station Elements

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

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

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

NYCT's minimum standard for pedestrian conditions has traditionally been established as the breakpoint between LOS C and LOS D (v/c of 1.00). A v/c ratio of 1.00 is used to determine the design capacity of station elements during peak travel periods.

The determination of significant impacts for station elements varies based on their type and use. For turnstiles, service gates, and escalators, for elements with a No Action v/c ratio less than 1.00, an increase in volume that results in a v/c of greater than 1.00 is considered significant, since a value of 1.00 represents the design capacity of the element. For elements with a No Action v/c ratio greater than 1.00, an increase in volume that results in an increase in v/c ratio of greater than 0.01 is considered significant. For stairways, impacts are considered significant based on the minimum amount of additional capacity required to return the location to its No Action condition or to acceptable operating conditions, also called the width increment. For a location with a future with the proposed project LOS D, a width increment threshold (WIT) of 6 inches or more is considered significant; for a future with the proposed project LOS E, a WIT of 3 inches or more is considered significant; and for a future with the proposed project LOS F, a WIT of 1 inch or more is considered significant.

PEDESTRIAN ELEMENTS

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

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of pedestrian queuing caused by traffic signals. Street corners must be able to provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the perpendicular street or moving around the corner). The HCM methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians. The net total "time-space" available for these activities is the effective area of the corner (in square feet) multiplied by the cycle length and expressed in square foot minutes. The analysis then determines the total circulation time for all pedestrian movements at the corner (expressed as pedestrian minutes). The net time-space divided by total circulation time provides the LOS measurement of square feet per pedestrian (SFP).

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the crosswalk length) and the permitted crossing time. This measure is expressed in square feet per minute. The time-space calculation for crosswalks, however, is slightly different. The available area of the crosswalk is multiplied by result of the total green time minus the crosswalk length divided by two times the crossing speed. The ratio of time-space available in the crosswalk to the total crosswalk occupancy time (based on the effective green time needed to clear an intersection crossing) is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for conflicting vehicular turning movements that traverse the crosswalk and impede pedestrian crossing.

Table 17-3 shows the LOS standards for sidewalks, corner reservoirs, and crosswalks. The descriptions of these LOS are similar to those described above for subway station elements.

Table 17-3
Level of Service Critieria for Pedestrian Elements

LOS	Sidewalks Average LOS	Sidewalks Platoon LOS	Corner Reservoirs and Crosswalks
A	5 PFM or less	0.5 PFM or less	60 SFP or more
B	5 to 7 PFM	0.5 to 3 PFM	40 to 60 SFP
C	7 to 10 PFM	3 to 6 PFM	24 to 40 SFP
D	10 to 15 PFM	6 to 11 PFM	15 to 24 SFP
E	10 to 15 PFM	11 to 18 PFM	8 to 15 SFP
F	Greater than 23 PFM	Greater than 18 PFM	Less than 8 SFP

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

The CEQR Technical Manual specifies that an LOS D condition or better is considered reasonable for sidewalks, corner reservoirs, and crosswalks within the Manhattan Central Business District (CBD). For sidewalks, an average LOS D condition requires a maximum of 15 PFM and a platoon LOS D condition requires a maximum of 11 PFM. For crosswalks and corner reservoirs, an LOS D condition requires a minimum of 15 SFP.

For areas within the Manhattan CBD, project-related sidewalk impacts are considered significant and require examination of mitigation measures when an increase in volume results in an increase of greater than 2 PFM over a No Action condition characterized by flow rates of 15 PFM or greater. For corners and crosswalks, an increase in volume that results in a decrease of 1 SFP below a No Action condition with area occupancy less than 15 SFP (the breakpoint between LOS D and LOS E).

TRIP GENERATION

In order to analyze the potential impact of the proposed project on transit and pedestrian conditions, it was necessary to identify the number of additional person trips that would be generated by the proposed project. A combination of standard references, observed data collected specifically for this project, and other planning assumptions were used to forecast travel demand. The proposed project's trip generation analysis is described in detail in Chapter 16, "Traffic and Parking". This section highlights the assumptions used to develop the estimates of future transit and pedestrian trips.

The total number of daily person-trips to and from the project site was calculated by multiplying the daily trip generation rate of each project component by its size. This result was then split into peak hour trips by applying the percent of the daily total occurring in individual hours of the day, a step referred to as temporal distribution. Next, peak hour trips were divided based on directional distributions, producing the number of peak hour person trips to and from the proposed project for each analysis period. Finally, person trips for each land use type were further split by mode of transportation (auto, taxi, bus, subway, commuter railroad, walk-only, and other modes), a step referred to as modal split. A series of detailed technical memoranda detailing the process used to select trip generation rates for each land use analyzed in the study area is included in Appendix C, "Transportation Technical Memos and Analyses," and is discussed in Chapter 16, "Traffic and Parking."

Trip generation was projected for the proposed project for both the Single-Tenant Office Scenario and the Multi-Tenant Office Scenario. The total person trips projected for each of these scenarios is presented in **Tables 17-4 and 17-5**. A comparison of person trip levels was made between the two scenarios and it was determined that the Single-Tenant Office Scenario would generate more person trips during the weekday AM peak period, while the Multi-Tenant Office Scenario would generate more person trips during the weekday midday, weekday PM, and Saturday midday peak periods. For transit and pedestrian facilities, both the Single-Tenant Office Scenario and the Multi-Tenant Office Scenario were analyzed.

The volumes shown in **Tables 17-4 and 17-5**, above, are for the peak hours; however, the analysis of subway and pedestrian conditions reflects the peak 15-minute period within the peak hour. Using collected pedestrian data, it was determined that the peak 15-minute period comprised 27% of the peak hour volume. Therefore, a peak hour factor of 0.93 was applied to the hourly volumes to estimate the peak 15-minute volume in project-generated trips at the subway and pedestrian analysis locations.

TRANSIT

Transit trips were assigned to various transit facilities and routes including bus routes, subway stations and routes, and commuter rail routes in the study area. The incremental subway, railroad, and bus line assignments for the proposed project are presented in **Table 17-6** for the Single-Tenant Office Scenario and **Table 17-7** for the Multi-Tenant Office Scenario. Transit trip distributions were formulated in consultation with New York City Transit. Residential transit trips were assigned based on 2000 Census Journey-to-Work origin-destination data while trips for office and other land uses were assigned based on 2000 Census Reverse Journey-to-Work origin-destination data. Detailed assumptions for each of the transit facilities are provided in Appendix C, "Transportation Technical Memos and Analyses."

Table 17-4
Future with the Proposed Project, Single-Tenant Office Scenario
Incremental Peak Hour Person Trips Generated By Mode

LAND USE		AM Peak Hour								MD Peak Hour							
		Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total	Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total
Office	In	45	4	56	207	110	14	1	437	4	8	14	17	4	231	0	278
	Out	2	1	2	9	5	1	0	20	5	9	15	18	5	250	0	302
	Total	47	5	58	216	115	15	1	457	9	17	29	35	9	481	0	580
Trading Floor	In	275	27	347	1,274	676	86	8	2,693	0	0	0	0	0	0	0	0
	Out	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	275	27	347	1,274	676	86	8	2,693	0	0	0	0	0	0	0	0
Local Retail	In	-1	-2	-3	-3	0	-44	0	-53	-7	-10	-20	-20	0	-271	0	-328
	Out	-1	-2	-3	-3	0	-44	0	-53	-7	-10	-20	-20	0	-271	0	-328
	Total	-2	-4	-6	-6	0	-88	0	-106	-14	-20	-40	-40	0	-542	0	-656
Destination Retail	In																
	Out																
	Total																
Total Trips	In	**319**	**29**	**400**	**1,478**	**786**	**56**	**9**	**3,077**	-3	-2	-6	-3	4	-40	0	-50
	Out	**1**	**-1**	**-1**	**6**	**5**	**-43**	**0**	**-33**	-2	-1	-5	-2	5	-21	0	-26
	Total	**320**	**28**	**399**	**1,484**	**791**	**13**	**9**	**3,044**	-5	-3	-11	-5	9	-61	0	-76

LAND USE		PM Peak Hour								SAT Peak Hour							
		Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total	Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total
Office	In	3	0	3	13	7	1	0	27	7	1	9	32	17	2	0	68
	Out	51	5	65	238	126	16	2	503	6	1	7	27	14	2	0	57
	Total	54	5	68	251	133	17	2	530	13	2	16	59	31	4	0	125
Trading Floor	In	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Out	254	25	322	1,180	626	80	7	2,494	0	0	0	0	0	0	0	0
	Total	254	25	322	1,180	626	80	7	2,494	0	0	0	0	0	0	0	0
Local Retail	In	-3	-5	-10	-10	0	-137	0	-165	-4	-6	-11	-11	0	-158	0	-190
	Out	-3	-5	-10	-10	0	-137	0	-165	-4	-6	-11	-11	0	-158	0	-190
	Total	-6	-10	-20	-20	0	-274	0	-330	-8	-12	-22	-22	0	-316	0	-380
Destination Retail	In																
	Out																
	Total																
Total Trips	In	0	-5	-7	3	7	-136	0	-138	3	-5	-2	21	17	-156	0	-122
	Out	302	25	377	1,408	752	-41	9	2,832	2	-5	-4	16	14	-156	0	-133
	Total	302	20	370	1,411	759	-177	9	2,694	5	-10	-6	37	31	-312	0	-255

Table 17-5
Future with the Proposed Project, Multi-Tenant Office Scenario
Incremental Peak Hour Person Trips Generated By Mode

LAND USE		AM Peak Hour								MD Peak Hour							
		Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total	Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total
Office	In	119	12	151	554	294	37	3	1,170	11	22	37	45	11	617	0	744
	Out	5	0	6	23	12	2	0	49	12	24	40	48	12	669	0	806
	Total	124	12	157	577	306	39	3	1,218	23	46	77	93	23	1,286	0	1,550
Trading Floor	In																
	Out																
	Total																
Local Retail	In	-2	-3	-6	-6	0	-80	0	-97	-12	-18	-36	-36	0	-493	0	-594
	Out	-2	-3	-6	-6	0	-80	0	-97	-12	-18	-36	-36	0	-493	0	-594
	Total	-4	-6	-12	-12	0	-161	0	-194	-24	-36	-71	-71	0	-986	0	-1,188
Destination Retail	In	0	0	0	0	0	0	0	0	201	89	179	447	0	1,317	0	2,233
	Out	0	0	0	0	0	0	0	0	167	74	149	371	0	1,095	0	1,857
	Total	0	0	0	0	0	0	0	0	368	164	327	818	0	2,413	0	4,089
Total Trips	In	117	9	145	548	294	-43	3	1,073	**200**	**94**	**180**	**456**	**11**	**1,442**	**0**	**2,382**
	Out	3	-2	0	17	12	-79	0	-48	**167**	**81**	**153**	**384**	**12**	**1,271**	**0**	**2,068**
	Total	120	7	145	565	306	-122	3	1,025	**367**	**175**	**333**	**840**	**23**	**2,713**	**0**	**4,450**

LAND USE		PM Peak Hour								SAT Peak Hour							
		Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total	Auto	Taxi	Bus	Subway	Railroad	Walk	Other	Total
Office	In	7	1	9	33	18	2	0	71	18	2	23	85	45	6	1	180
	Out	137	13	173	636	337	43	3	1,343	16	2	20	72	38	5	1	154
	Total	144	14	183	669	355	45	3	1,414	34	3	43	158	84	11	2	334
Trading Floor	In																
	Out																
	Total																
Local Retail	In	-6	-9	-18	-18	0	-249	0	-300	-7	-10	-21	-21	0	-288	0	-347
	Out	-6	-9	-18	-18	0	-249	0	-300	-7	-10	-21	-21	0	-288	0	-347
	Total	-12	-18	-36	-36	0	-498	0	-600	-14	-21	-42	-42	0	-576	0	-694
Destination Retail	In	177	79	157	521	39	994	0	1,967	245	109	217	543	0	1,603	0	2,717
	Out	203	90	180	596	45	1,137	0	2,251	203	90	181	452	0	1,334	0	2,261
	Total	380	169	337	1,117	84	2,131	0	4,218	448	199	398	996	0	2,937	0	4,978
Total Trips	In	**178**	**70**	**148**	**537**	**57**	**747**	**0**	**1,737**	**256**	**100**	**220**	**608**	**45**	**1,321**	**1**	**2,550**
	Out	**334**	**94**	**336**	**1,214**	**382**	**931**	**3**	**3,295**	**212**	**82**	**180**	**504**	**38**	**1,050**	**1**	**2,067**
	Total	**512**	**164**	**484**	**1,751**	**439**	**1,678**	**3**	**5,032**	**468**	**182**	**400**	**1,112**	**83**	**2,371**	**2**	**4,617**

Table 17-6
Proposed Project, Single-Tenant Office Scenario
Incremental Peak Hour Person Trips Generated By Route

PEAK HOUR		Single-Tenant Office Scenario Person Trips										
		Rail				Subway						
		LIRR	PATH	NJT	Amtrak	ACE	123	BDFV	NQRW	456	7	S
Weekday AM Peak Hour	In	299	39	409	39	222	591	332	332	0	0	0
	Out	2	0	2	0	1	2	1	1	0	0	0
	Total	**301**	**39**	**411**	**39**	**223**	**593**	**333**	**333**	**0**	**0**	**0**
Weekday MD Peak Hour	In	2	0	2	0	0	-1	-1	-1	0	0	0
	Out	2	0	2	0	0	-1	0	0	0	0	0
	Total	**4**	**0**	**4**	**0**	**0**	**-2**	**-1**	**-1**	**0**	**0**	**0**
Weekday PM Peak Hour	In	3	0	3	0	0	1	1	1	0	0	0
	Out	286	38	391	38	211	563	317	317	0	0	0
	Total	**289**	**38**	**394**	**38**	**211**	**564**	**318**	**318**	**0**	**0**	**0**
Saturday MD Peak Hour	In	6	1	9	1	3	8	5	5	0	0	0
	Out	5	1	7	1	2	6	4	4	0	0	0
	Total	**11**	**2**	**16**	**2**	**5**	**14**	**9**	**9**	**0**	**0**	**0**

PEAK HOUR		Single-Tenant Office Scenario Person Trips									
		Bus									
		M4	M5	M6	M7	M10	M11	M16	M20	M34	Q32
Weekday AM Peak Hour	In	80	20	40	40	30	0	40	30	60	60
	Out	0	0	0	0	0	0	0	0	0	0
	Total	**80**	**20**	**40**	**40**	**30**	**0**	**40**	**30**	**60**	**60**
Weekday MD Peak Hour	In	-1	0	-1	-1	0	0	-1	0	-1	-1
	Out	-1	0	0	0	0	0	0	0	-1	-1
	Total	**-2**	**0**	**-1**	**-1**	**0**	**0**	**-1**	**0**	**-2**	**-2**
Weekday PM Peak Hour	In	-1	0	-1	-1	0	0	-1	0	-1	-1
	Out	75	19	38	38	28	0	38	28	56	56
	Total	**74**	**19**	**37**	**37**	**28**	**0**	**37**	**28**	**55**	**55**
Saturday MD Peak Hour	In	-1	0	0	0	0	0	0	0	0	0
	Out	-1	0	0	0	0	0	0	0	-1	-1
	Total	**-2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-1**	**-1**

Table 17-7
Future with the Proposed Project, Multi-Tenant Office Scenario
Incremental Peak Hour Person Trips Generated By Route

PEAK HOUR		Multi-Tenant Office Scenario Person Trips										
		Rail				Subway						
		LIRR	PATH	NJT	Amtrak	ACE	123	BDFV	NQRW	456	7	S
Weekday AM Peak Hour	In	112	15	153	15	82	219	123	123	0	0	0
	Out	5	1	6	1	3	7	4	4	0	0	0
	Total	**116**	**15**	**159**	**15**	**85**	**226**	**127**	**127**	**0**	**0**	**0**
Weekday MD Peak Hour	In	4	1	6	1	68	182	102	102	0	0	0
	Out	5	1	6	1	58	154	86	86	0	0	0
	Total	**9**	**1**	**12**	**1**	**126**	**336**	**189**	**189**	**0**	**0**	**0**
Weekday PM Peak Hour	In	22	3	30	3	80	215	121	121	0	0	0
	Out	145	19	199	19	182	486	273	273	0	0	0
	Total	**167**	**22**	**228**	**22**	**263**	**700**	**394**	**394**	**0**	**0**	**0**
Saturday MD Peak Hour	In	17	2	23	2	91	243	137	137	0	0	0
	Out	15	2	20	2	76	202	113	113	0	0	0
	Total	**32**	**4**	**43**	**4**	**167**	**445**	**250**	**250**	**0**	**0**	**0**

PEAK HOUR		Multi-Tenant Office Scenario Person Trips									
		Bus									
		M4	M5	M6	M7	M10	M11	M16	M20	M34	Q32
Weekday AM Peak Hour	In	29	7	15	15	11	0	15	11	22	22
	Out	0	0	0	0	0	0	0	0	0	0
	Total	**29**	**7**	**15**	**15**	**11**	**0**	**15**	**11**	**22**	**22**
Weekday MD Peak Hour	In	36	9	18	18	14	0	18	14	27	27
	Out	31	8	15	15	11	0	15	11	23	23
	Total	**67**	**17**	**33**	**33**	**25**	**0**	**33**	**25**	**50**	**50**
Weekday PM Peak Hour	In	30	7	15	15	11	0	15	11	22	22
	Out	67	17	34	34	25	0	34	25	50	50
	Total	**97**	**24**	**48**	**48**	**36**	**0**	**48**	**36**	**73**	**73**
Saturday MD Peak Hour	In	44	11	22	22	16	0	22	16	33	33
	Out	36	9	18	18	13	0	18	13	27	27
	Total	**80**	**20**	**40**	**40**	**30**	**0**	**40**	**30**	**60**	**60**

C. EXISTING CONDITIONS

TRANSIT SERVICE

COMMUTER RAILROAD SERVICE

Penn Station is a major terminal for Amtrak, LIRR and NJT commuter rail operators, located on the west side of Seventh Avenue between West 31st and West 33rd Streets. Penn Station is a major driver of pedestrian volume within the study area, and the proposed project is projected to generate a significant number of commuter railroad trips to and from Penn Station.

The Port Authority Trans-Hudson (PATH) commuter rail service runs under Sixth Avenue and terminates just north of West 32nd Street at Sixth Avenue. The station's platforms are located between 30th and 32nd Streets. These platforms can be accessed directly from street level on Sixth Avenue between West 30th and West 31st Streets, at Sixth Avenue and West 32nd Street, and indirectly through the 34th Street-Herald Square subway station.

SUBWAY SERVICE

The three subway stations within the transit study area serve four New York City Transit (NYCT) subway lines, and fourteen different New York City Transit (NYCT) subway routes.

Table 17-8 provides a summary of these lines and routes, and the paragraphs that follow describe the characteristics of these services within the study area.

Table 17-8
Study Area Subway Service

Line	Train	Operating Hours	Route
Broadway Line	N (Express)	All Times	Ditmars Boulevard, Queens to Stillwell Avenue, Brooklyn
	Q (Express)	All Times	57th Street-Seventh Avenue, Manhattan to Stillwell Avenue, Brooklyn
	R* (Local)	All Times	Forest Hills-71st Avenue, Queens to 95th Street-Bay Ridge, Brooklyn
	W (Local)	Weekdays 7AM to 9PM	Ditmars Boulevard, Queens to Whitehall Street, Manhattan
Sixth Avenue Line	B (Express)	Weekdays 6AM to 10PM	Bedford Park Boulevard, Bronx or 145th Street, Manhattan to Brighton Beach, Brooklyn
	D (Express)	All Times	205th Street, Bronx to Stillwell Avenue, Brooklyn
	F (Local)	All Times	Jamaica-179th Street, Queens to Stillwell Avenue, Brooklyn
	V (Local)	Weekdays 5:30AM to 12AM	Forest Hills-75th Avenue, Queens to Lower East Side-2nd Avenue, Manhattan
Seventh Avenue Line	1 (Local)	All Times	Van Cortlandt Park-242nd Street, Bronx to South Ferry, Manhattan
	2 (Express)	All Times	Wakefield-241st Street, Bronx to Flatbush Avenue-Brooklyn College, Brooklyn
	3 (Express)	6AM to 11:30PM	148th Street-Lenox Terminal, Manhattan to New Lots Avenue, Brooklyn
Eighth Avenue Line	A (Express)	All Times	207th Street, Manhattan to Lefferts Boulevard or Far Rockaway, Queens
	C (Local)	5:30AM to 11PM	Washington Heights-168th Street, Manhattan to Euclid Avenue, Brooklyn
	E (Local)	All Times	Jamaica Center, Queens to World Trade Center, Manhattan
Notes:	*During late night hours, the R train operates as a shuttle between 36th Street and 95th Street-Bay Ridge in Brooklyn		
Source:	Metropolitan Transit Authority / New York City Transit - April 2008		

Eighth Avenue Line (A, C, and E Trains)

The Eighth Avenue line provides service between the study area and Upper and Lower Manhattan, Queens, and Brooklyn, and provides access via the A and E routes to John F. Kennedy International Airport. Within the study area, the A train runs express while the C and E trains run local, with all three routes stopping at 34th Street-Penn Station. Located at Eighth Avenue between West 33rd and West 36th Streets, this station has multiple access points and control areas. At West 33rd Street, there are direct, underground connections with Penn Station. The station has separate platforms for local and express service, and serves more than 76,000 passengers on the average weekday.

Seventh Avenue Line (1, 2, and 3 Trains)

The Seventh Avenue line provides service between the study area and the Bronx, the Upper West Side of Manhattan, Lower Manhattan, and Brooklyn. Within the study area, the 2 and 3 trains run express, while the 1 train runs local, with all three routes stopping at 34th Street-Penn Station. Located at Seventh Avenue between West 32nd and West 34th Streets, this station has multiple access points and control areas. At West 32nd and West 33rd Streets, there are direct, underground connections with Penn Station. The station has separate platforms for local and express service, and serves more than 87,000 passengers on an average weekday.

Sixth Avenue Line (B, D, F, and V Trains)

The Sixth Avenue line provides service between the study area and the Bronx, the Upper West Side of Manhattan, downtown Manhattan, Queens, and Brooklyn. Within the study area, the B and D trains run express, while the F and V trains run local, with all four routes stopping at 34th Street-Herald Square. Located at Sixth Avenue between West 32nd and West 35th Streets, this station has multiple access points and control areas. At West 32nd Street, there are direct, underground connections with Port Authority's PATH commuter rail service. The station has separate platforms for uptown and downtown service on both the Sixth Avenue and Broadway Lines (below), and serves more than 115,000 passengers on an average weekday.

Broadway Line (N, Q, R, and W Trains)

The Broadway line provides service between the study area and Brooklyn, downtown Manhattan, and Queens. Within the study area, the N and Q trains run express, while the R and W trains run local, with all four routes stopping at 34th Street-Herald Square. This station is shared with the Sixth Avenue Line, with direct transfer available between the Sixth Avenue and Broadway Lines, and its characteristics are described above.

BUS SERVICE

New York City Transit (NYCT) operates ten local bus routes with stops in the vicinity of the proposed project. **Table 17-9** shows these routes, their weekday hours of operation, and the terminals of their routes.

In addition to the local routes identified above, the study area is served by a number of express buses serving points in the outer boroughs as well as the three major airports. The majority of these routes are operated by private companies under license with the New York City Department of Transportation and have stops nearby, but not adjacent to the site.

M4

The M4 route operates daily between Penn Station (West 32nd Street at Seventh Avenue) and Cloisters/Fort Tryon Park in Washington Heights. The major streets of operation in the vicinity of the proposed project are West 32nd Street, West 34th Street, Madison Avenue, Fifth Avenue, and Seventh Avenue. A limited-stop service is operated in the downtown direction during the weekday morning rush hours and in the uptown direction during the weekday evening rush hours. The frequency of the limited-stop service is ten minutes in the downtown direction during the AM peak hour and ten minutes in the uptown direction during the PM peak hour. The frequency of the regular service in the uptown direction is between three and five minutes during the AM peak hour and eight minutes during the PM peak hour. The frequency in the downtown direction is ten minutes during the AM peak hour and between five and eleven minutes during the PM peak hour.

Table 17-9
Study Area Bus Service

Route	Weekday Operating Hours	Terminals
M4 Fifth and Madison Avenues / Broadway	Northbound: All Times Southbound: All Times	Fort Tryon Park to/from Penn Station (Seventh Avenue and W.32nd Street)
M5 Fifth Avenue / Avenue of the Americas / Riverside Drive	Northbound: 5:30AM to 12:30AM Southbound: 4:55AM to 2:00AM	Washington Heights to/from Greenwich Village
M6 Seventh Avenue / Broadway / Avenue of the Americas	Northbound: 5:40AM to 1:20AM Southbound: 5:00AM to 12:35AM	South Ferry to/from Midtown, Manhattan
M7 Columbus / Amsterdam / Lenox / Sixth Avenue / Seventh Avenue / Broadway	Northbound: 1:40AM to 1:00AM Southbound: 12:40AM to 12:00AM	Harlem to/from Union Square
M10 Central Park West / Frederick Douglass Boulevard	Northbound: 5:40AM to 2:15AM Southbound: 4:50AM to 1:25AM	Frederick Douglass Boulevard / W.159th Street to/from Penn Station (Seventh Avenue and W.31st Street)
M11 Ninth-Columbus / Tenth-Amsterdam Avenues	Northbound: 4:00AM to 12:30AM Southbound: 4:45AM to 1:00AM	Bethune / Hudson Streets to/from Broadway / W.135th Street or Riverbank State Park
M16 34th Street Crosstown	Eastbound: All Times Westbound: All Times	Ninth Avenue / W.43rd Street to/from FDR Drive / Waterside Plaza
M20 Seventh and Eighth Avenues / Hudson Street	Northbound: 5:38AM to 1:04AM Southbound: 5:45AM to 12:35AM	Battery Park City to/from Lincoln Center
M34 34th Street Crosstown	Eastbound: 5:27AM to 12:39AM Westbound: 5:23AM to 1:01AM	Eleventh Avenue / W.39th Street to/from FDR Drive / Waterside Plaza
Q32 Penn Station-Jackson Heights	Eastbound: 4:46AM to 1:00AM Westbound: 5:38AM to 1:05AM	Seventh Avenue / W.32nd Street (Penn Station) to/from Northern Boulevard / 81st Street, Queens

Source: Metropolitan Transit Authority / New York City Transit - April 2008

M5

The M5 route operates daily between Houston Street at West Broadway in Greenwich Village and 178th Street at Broadway in Washington Heights. The major streets of operation in the vicinity of the proposed project are Broadway and Avenue of the Americans (Sixth Avenue). A limited-stop service is provided on weekdays between 157th and 135th Streets at Broadway and

south of 72nd Street. During the AM peak hour, limited-stop service operates every ten minutes in both the uptown direction and downtown direction. During the PM peak hour, limited-stop service operates every ten minutes in the uptown direction and every twelve minutes in the downtown direction.

M6

The M6 operates daily between Central Park South (59th Street) at Avenue of the Americas (Sixth Avenue) and South Ferry Terminal. The major streets of operation in the vicinity of the proposed project are Broadway and Avenue of the Americas (Sixth Avenue). The route has a frequency of service of twelve to fifteen minutes in both directions during the AM peak hour, and a frequency of service of twelve minutes in both directions during the PM peak hour.

M7

The M7 operates daily between Union Square and West 147th Street at Adam Clayton Powell Boulevard (Seventh Avenue). The major streets of operation in the vicinity of the proposed project are Broadway and Avenue of the Americas (Sixth Avenue). During the AM peak hour, the bus operates with a frequency of service of every fifteen minutes in the uptown direction and every ten minutes in the downtown direction. During the PM peak hour, the bus operates with a frequency of service of every seven to eight minutes in the uptown direction and every eight to ten minutes in the downtown direction.

M10

The M10 operates daily between West 31st Street at Seventh Avenue (Penn Station) and West 155th Street at Frederick Douglass Boulevard (Eighth Avenue). The major streets of operation in the vicinity of the proposed project are West 31st Street, Seventh Avenue and Eighth Avenue. During the AM peak hour, the bus operates every eight to twelve minutes in the uptown direction and every seven to twelve minutes in the downtown direction. During the PM peak hour, the bus operates every ten minutes in both directions.

M11

The M11 operates daily between Bethune/Hudson Streets (Abingdon Square) and West 135th Street at Broadway from approximately 5 AM until midnight. Daily service is extended to Riverbank State Park at West 145th Street/Riverside Drive from 8 AM to 9 PM. The major streets of operation in the vicinity of the proposed project are Ninth Avenue and Tenth Avenue. During the AM peak hour, the bus operates with a frequency of service of twelve minutes in the uptown direction and ten minutes in the downtown direction. During the PM peak hour, the bus operates with a frequency of service of ten minutes in the uptown direction and ten to twelve minutes in the downtown direction.

M20

The M20 operates daily between Battery Park City and West 63rd Street at Broadway (Lincoln Center). The major streets of operation in the vicinity of the proposed project are Seventh Avenue and Eighth Avenue. Frequency of service is every twenty minutes in both directions during the AM peak hour. Frequency of service during the PM peak hour is every twelve minutes in the uptown direction and every twelve to fifteen minutes in the downtown direction.

M34 / M16

M34 via 34th Street Cross-town

The M34 provides cross-town service between the Jacob Javits Convention Center (Eleventh Avenue between West 34th and West 39th Streets) and East 34th Street at FDR Drive daily. The major street of operation for this service is 34th Street. Customers going cross-town on 34th Street westbound between FDR Drive and Eighth Avenue and eastbound between Ninth and Second Avenues can reduce their wait time by taking either the M16 or M34 bus. During the AM peak hour, frequency of service is every six to ten minutes in the westbound direction and six to nine minutes in the eastbound direction. During the PM peak hour, frequency of service is every ten minutes in both directions.

M16 via 34th Street Cross-town

The M16 provides cross-town service between West 43rd Street at Ninth Avenue (Port Authority Bus Terminal) and FDR Drive/Waterside Plaza via 34th Street daily. The major street of operation for this service is 34th Street. Customers going cross-town on 34th Street westbound between FDR Drive and Eighth Avenue and eastbound between Ninth and Second Avenues can reduce their wait time by taking either the M16 or M34 bus. During the AM peak hour, frequency of service is every six to nine minutes in both directions. During the PM peak hour, frequency of service is every ten minutes in both directions.

Q32

The Q32 operates between West 32nd Street at Seventh Avenue (Penn Station) in Manhattan and 81st Street at Northern Boulevard in Queens. The major streets of operation in the vicinity of the proposed project are 32nd Street, 34th Street, Madison Avenue, Fifth Avenue. During the AM peak hour, frequency of service is six to ten minutes in the westbound direction and eight to ten minutes in the eastbound direction. During the PM peak hour, frequency of service is eight to nine minutes in the westbound direction and seven to nine minutes in the eastbound direction.

34TH STREET BUS LANES

In 2008, bus lanes were installed along 34th Street between First and Eleventh Avenues in Manhattan, and 34th Street was re-striped from six lanes to five with the two curbside lanes striped wide enough to accommodate buses. In addition, overhead gantry signs were installed over the bus lanes, clearly marking the lanes painted bright terra cotta for exclusive bus use. A turn-signal priority system was installed at the West 34th Street and Seventh Avenue intersection giving the M4 and Q32 buses priority to turn left onto southbound Seventh Avenue.

STUDY AREA SUBWAY STATION ACCESS & CIRCULATION

An analysis of stairway and control area operations was conducted for the 34th Street-Penn Station subway stations on the Seventh and Eighth Avenue lines, the 34th Street-Herald Square subway station on the Sixth Avenue and Broadway lines, and the Port Authority's 33rd Street PATH Station.

34TH STREET-PENN STATION (EIGHTH AVENUE)

For the 34th Street-Penn Station complex on the Eighth Avenue line, a quantified analysis was conducted for the street-level stairways at the intersections of West 33rd, West 34th and West 35th Streets at Eighth Avenue and the corresponding N67, N68, N69, N70, N71, N72, and N73 control areas. At West 33rd Street, express and local trains have separate control areas at this

station. The N72 and N73 control areas provide access to the uptown and downtown local (C and E) trains, respectively, while the N67 control area provides access to both the uptown and downtown express (A) trains. All of these areas can be accessed from the street-level stairways at West 33rd Street and Eighth Avenue as well as from the tunnel connections to Penn Station. The N70 and N71 control areas are located at West 34th Street and Eighth Avenue and provide access the uptown and downtown local trains, respectively, as well as both the uptown and downtown express trains via an underpass. The N72 and N73 control areas are located at West 35th Street and Eighth Avenue and provide access the uptown and downtown local trains, respectively, as well as both the uptown and downtown express trains via an underpass.

34TH STREET-PENN STATION (SEVENTH AVENUE)

The 34th Street-Penn Station complex on the Seventh Avenue line has station entrances at West 32nd, West 33rd and West 34th Streets and below ground tunnel connections to Penn Station at West 32nd and West 33rd Streets. The station complex has seven control areas serving three platforms. Outer uptown and downtown platforms provide access to the local (1) train, while a center shared uptown/downtown platform serves express (2,3) trains. The R137K and R135 control areas are located at West 32nd Street and Seventh Avenue and provide direct access the uptown and downtown local platforms, respectively, as well as the other platforms via an underpass. While control area R137K is accessible from the street, control area R135 is only accessible via an underground corridor extending from the Seventh Avenue Concourse in Penn Station. The R138, R139, and R139X control areas are located at West 33nd Street and Seventh Avenue. The R138 control area is only accessible via an underground corridor extending from the Long Island Railroad Concourse in Penn Station, and includes an underground mezzanine which provides access to all three platforms. The R139 and R139X control areas provide direct access to the uptown and downtown local platforms, respectively, as well as the other platforms via the underground mezzanine. The R141 and R142 control areas are located at West 34th Street and Seventh Avenue and provide direct access the uptown and downtown local platforms, respectively, as well as the other platforms via an underpass.

34TH STREET-HERALD SQUARE

The 34th Street-Herald Square station complex at Sixth Avenue and Broadway provides access to four subway platforms. On the Sixth Avenue line, local (F,V) trains and express (B,D) trains share an uptown platform as well as a downtown platform. The Broadway line is arranged similarly, with local (R,W) trains and express (N,Q) trains sharing an uptown platform as well as a downtown platform. A mezzanine under Sixth Avenue and Broadway between West 32nd and West 33rd Streets is accessible from the street at Sixth Avenue and West 32nd Street, Broadway and West 32nd Street, Sixth Avenue/Broadway and West 33rd Street. A mezzanine under Sixth Avenue and Broadway between 34th and 35th Streets is accessible from the street at Sixth Avenue and 34th Street, Broadway and West 34th Street, Sixth Avenue and Wes 35th Street and Broadway and 35th Street. Both mezzanines provide access to all four subway platforms and are connected by a corridor beneath Broadway between West 33rd and West 34th Streets. The station complex has five control areas. The N507 control area is accessible from the mezzanine between West 32nd and West 33rd Streets as well as through the interior of the Manhattan Mall, and provides direct access to both platforms serving the Sixth Avenue line. The A25K control area is accessible from West 32nd street and Broadway as well as the mezzanine between West 32nd and West 33rd Streets, and provides direct access to both platforms serving the Broadway line. The N506 and A22 control areas are accessible from the street at West 34th Street and Sixth

Avenue, and West 34th Street and Broadway, respectively. The N505 control area is accessible from the street at both West 35th Street and Broadway and West 35th Street and Sixth Avenue. These three control areas (N505, N506 and A22) provide access to the mezzanine between West 34th and West 35th Streets, which provides extensive access to all four platforms served by the station complex.

33RD STREET PATH (PORT AUTHORITY TRANS-HUDSON)

The Port Authority's 33rd Street PATH Station at Sixth Avenue and 32nd Street is at the southern end of the 34th Street-Herald Square station complex, and is accessible from the mezzanine between 32nd and 33rd Streets, from the street at Sixth Avenue and 32nd Street, and from the street on either side of Sixth Avenue between West 30th and West 31st Streets. The station has its main control area beneath Sixth Avenue and West 32nd Street, and a second control area beneath 6th Avenue between West 30th and West 31st Streets.

Existing transit and pedestrian volumes were developed from data collected for the Moynihan Station FEIS and significantly supplemented with field counts, observations, and measurements undertaken between the fall of 2006 and the fall of 2007.

TRANSIT ELEMENTS

Pedestrian counts were collected for the stairways and fare arrays for the 34th Street-Penn Station subway station at Eighth Avenue during the weekday AM (7:00 to 9:30) and PM (4:00 to 6:30) peak periods in 2007. For the 34th Street-Penn Station subway station at Seventh Avenue, pedestrian volumes were based on data collected as part of the *Expanded Moynihan/Penn Station Redevelopment Project Supplemental Environmental Impact Statement (SEIS)* in 2007. These counts were summarized into 15-minute intervals during each peak period. Turnstile registration data for these two stations were provided by NYCT for 2007 and 2008 and were used to adjust the 2007 station element count data to 2008 conditions. Measurements were taken of all of these elements and the effective widths of stairways were calculated based upon the reduction of six inches on either side of any obstructions (walls, handrails, etc.).

SUBWAY STATION OPERATIONS

- **Table 17-10** shows the existing operating conditions of subway control area elements operating near or above capacity during the weekday AM and PM peak hours. These elements include 1 turnstile array, 3 HEET arrays, and 2 service gates.

Table 17-10
2008 Existing Conditions
Subway Control Area Elements Operating Near or Above Capacity

Control Area	Station Elements		Quantity	One- or Two-Way	AM Peak 15-Minute				PM Peak 15-Minute			
					Volume	Capacity	V/SVCD Ratio	LOS	Volume	Capacity	V/SVCD Ratio	LOS
7th Avenue & 34th Street - Penn Station (1/2/3 Routes)												
R138	SG1	Two-Way Service Gate	1	2	-	-	-	-	622	600	1.04	F
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)												
N505	SG1	Two-Way Service Gate	1	2	517	600	0.86	E	-	-	-	-
	HT1	Two-Way HEET	2	2	-	-	-	-	415	480	0.86	E
A22	HT1	Two-Way HEET	2	2	620	480	1.29	F	-	-	-	-
A25K	HT1	Two-Way HEET	3	2	843	720	1.17	F	673	810	0.83	E
PATH	TS2	One-Way Turnstile (Exit)	3	1	1860	1800	1.03	F	-	-	-	-

- **Table 17-11** shows the subway station stairways operating at LOS D or worse during the weekday AM and PM peak hours. These elements include 10 stairways during the AM peak hour and 13 stairways during the PM peak hour.

Table 17-11
2008 Existing Conditions
Subway Station Stairways at LOS D, E, or F

Control Area	Stairway Number and Location		Actual Width (ft)	Effective Width (ft)	AM Peak 15-Minute				PM Peak 15-Minute			
					Volume	Capacity[1]	V/SVCD Ratio	LOS	Volume	Capacity[1]	V/SVCD Ratio	LOS
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)												
N505	S8	6th & 35th, NE	4.8	3.8	622	456	1.36	E	525	456	1.15	D
	S6	B'way & 35th, NW	4.9	3.9	594	468	1.27	D	499	468	1.07	D
A22	S4	6th & 34th, SE	5.4	4.4	700	528	1.33	D	674	528	1.28	D
	M4	6th & 34th, SE	5.4	4.4	700	528	1.33	D	674	528	1.28	D
N506	S5	B'way & 34th, SW	9.2	8.2	1193	1107	1.08	D	1333	1107	1.20	D
	M5	B'way & 34th, SW	9.2	8.2	1193	1107	1.08	D	1333	1107	1.20	D
	S7	B'way & 34th, NW	8.4	7.4	-	-	-	-	1040	888	1.17	D
	M7	B'way & 34th, NW	8.4	7.4	-	-	-	-	1040	888	1.17	D
A25K	300	6th & 32nd, NE	5.0	4.0	-	-	-	-	561	540	1.04	D
	S1	B'way & 32nd, NE	6.2	5.2	740	624	1.19	D	676	624	1.08	D
	M2	B'way & 32nd, NE	5.8	4.8	740	576	1.28	D	676	576	1.17	D
	S2	B'way & 32nd, NW	7.5	6.5	980	780	1.26	D	943	780	1.21	D
	M1	B'way & 32nd, NW	7.5	6.5	980	780	1.26	D	943	780	1.21	D

[1] Capacity is calculated as (150 * effective width * friction factor) where the friction factor is 0.8 or 0.9 depending on counterflow volume

PEDESTRIAN ELEMENTS

Pedestrian (sidewalk, corner reservoir, and crosswalk) counts for the weekday AM (7:00 to 9:30), weekday midday (11:00 to 2:00), and weekday PM (4:00 to 6:30), and Saturday midday (12:00 to 5:00) peak periods were collected in 2008. These pedestrian counts included principal sidewalks, crosswalks, and corner areas providing access to the proposed project. These counts were collected after restriping of traffic lanes on 34th Street to allow implementation by NYCT of a bus priority corridor. These counts were summarized into 15-minute intervals during each peak period.

A physical inventory of each analyzed intersection was collected. Field measurements were taken at each intersection to establish the existing physical characteristics, including sidewalk width, corner geometry, crosswalk geometry, and any obstructions affecting the effective size of these measurements. The official signal timing data current as of 2008 were obtained from the New York City Department of Transportation (NYC).

PEDESTRIAN OPERATIONS

The existing operating conditions of the 78 sidewalks, 42 corner reservoirs, and 47 crosswalks in the pedestrian study area were analyzed for the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak periods. The area surrounding Penn Station, which is directly across Seventh Avenue from the proposed project, is one of the most active in New York City in terms of pedestrians, with hourly pedestrian volumes of 2,000 or more at many crosswalks and sidewalks. Pedestrian elements in the area are typically sized generously and provide substantial capacity.

Under existing conditions, congested operating conditions (LOS D or worse) occur at 6 sidewalks during the AM peak period, 9 sidewalks during the weekday midday peak period, 22 sidewalks during the PM peak period, and 5 sidewalks during the Saturday midday peak period. Congested operating conditions occur at 16 corners during the AM peak period, 18 corners during the weekday midday peak period, 27 corners during the PM peak period, and 17 corners

during the Saturday midday peak period. Congested operating conditions occur at 24 crosswalks during the AM peak period, 24 crosswalks during the weekday midday peak period, 29 crosswalks during the PM peak period, and 21 crosswalks during the Saturday midday peak period.

- **Table 17-12** summarizes the existing operating conditions of the sidewalks, corner reservoirs, and crosswalks analyzed during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours.

Table 17-12
2008 Existing Conditions
Summary of Pedestrian Element LOS

Sidewalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	4	3	3	3	**13**
B	31	33	19	44	**127**
C	37	33	34	26	**130**
D	4	9	21	4	**38**
E	2	0	1	1	**4**
F	0	0	0	0	**0**
Total	**78**	**78**	**78**	**78**	**312**

Corners					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	6	7	2	6	**21**
B	5	3	8	11	**27**
C	15	14	5	8	**42**
D	5	7	12	7	**31**
E	6	8	4	8	**26**
F	5	3	11	2	**21**
Total	**42**	**42**	**42**	**42**	**168**

Crosswalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	6	9	6	11	**32**
B	6	4	4	6	**20**
C	11	10	8	9	**38**
D	15	18	13	14	**60**
E	8	4	11	3	**26**
F	1	2	5	4	**12**
Total	**47**	**47**	**47**	**47**	**188**

The analysis indicates that under existing conditions, 270 of the 312 total analyzed sidewalk movements in the pedestrian study area operate at LOS C or better, the minimum standard for acceptable operating conditions. The analysis also indicates that 90 of the 168 total analyzed corner reservoirs and 90 of the 188 total analyzed crosswalk movements operate at LOS C or better, respectively. **Figures 17-3 through 17-6** present existing levels of service at all sidewalks, corner reservoirs, and crosswalks within the pedestrian study area during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours. **Table 17-13** presents the existing conditions for all pedestrian elements operating at LOS D or worse. Detailed intersection analysis worksheets are provided in Appendix C, "Transportation Technical Memos and Analyses."

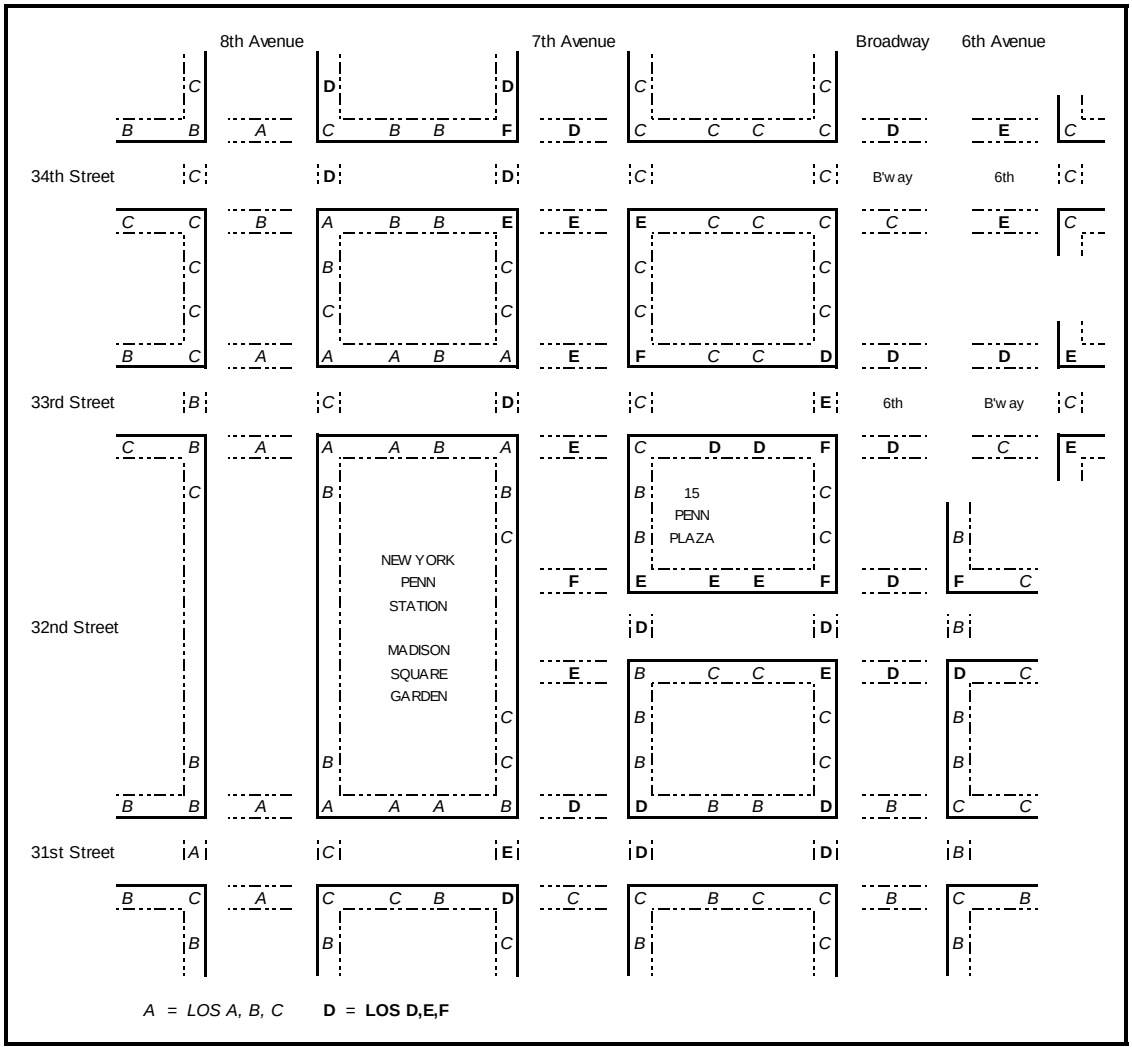


Figure 17-3
2008 Existing Conditions
Weekday AM Peak Hour - Pedestrian LOS

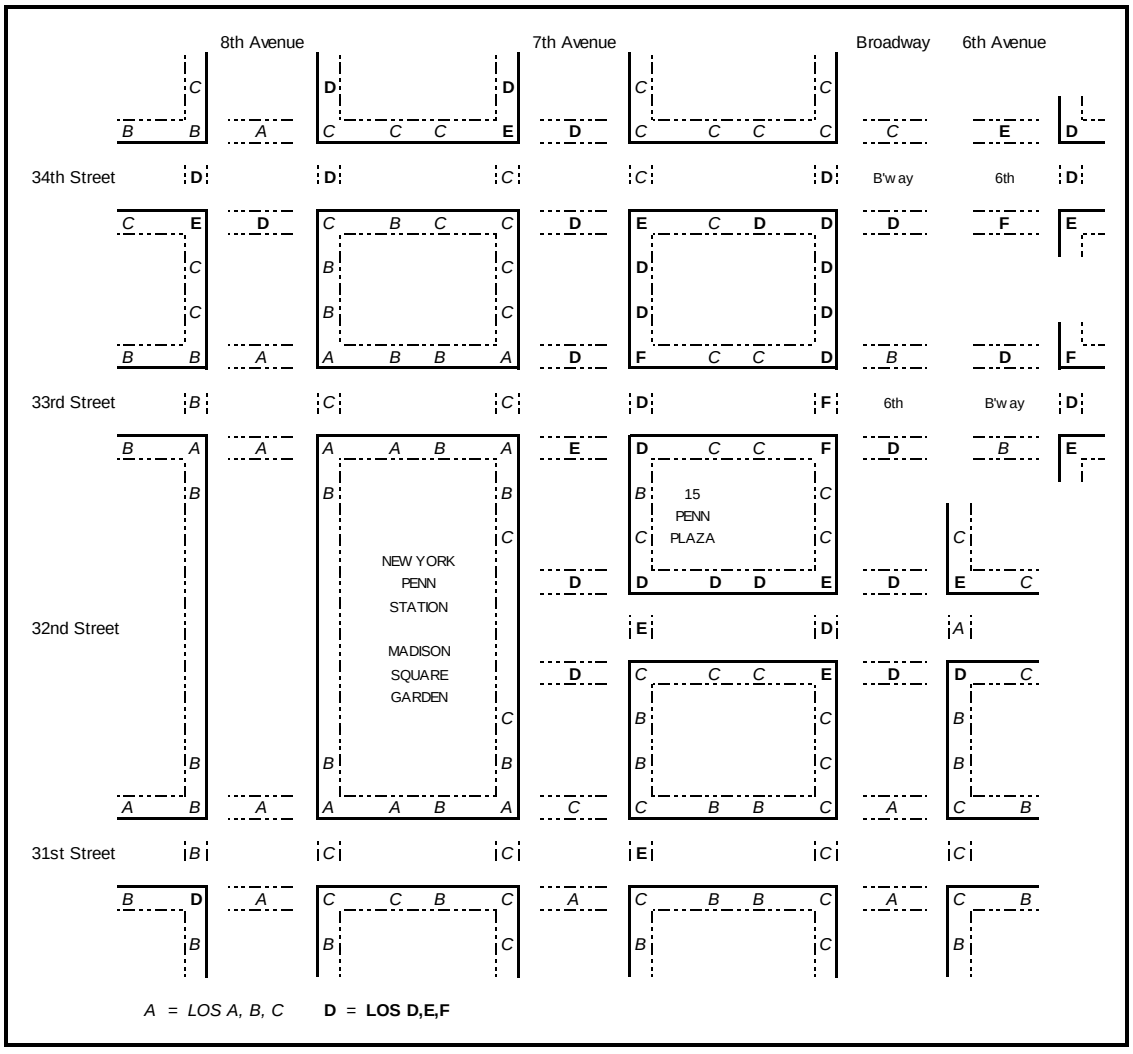


Figure 17-4
2008 Existing Conditions
Weekday MD Peak Hour - Pedestrian LOS

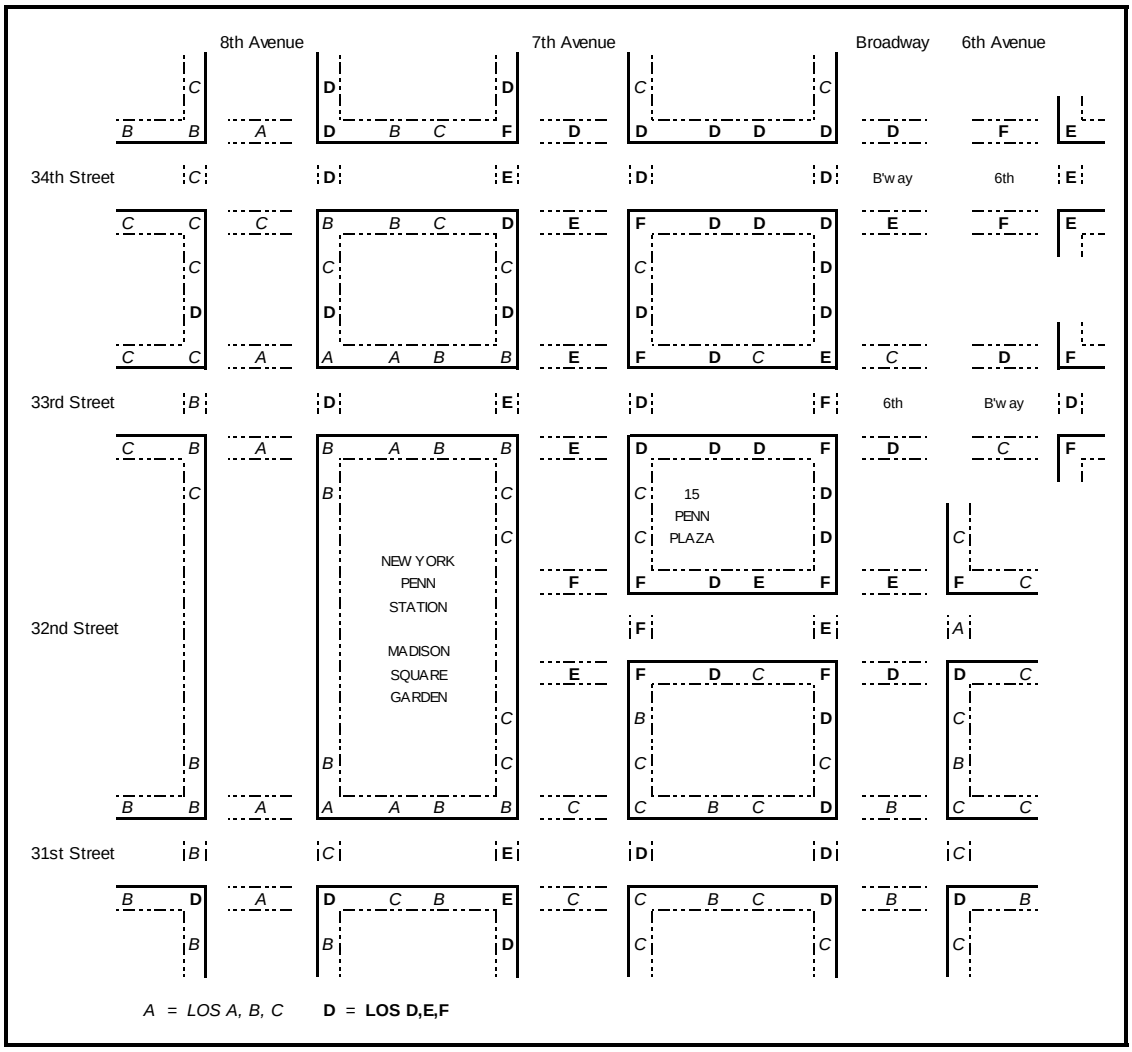


Figure 17-5
2008 Existing Conditions
Weekday PM Peak Hour - Pedestrian LOS

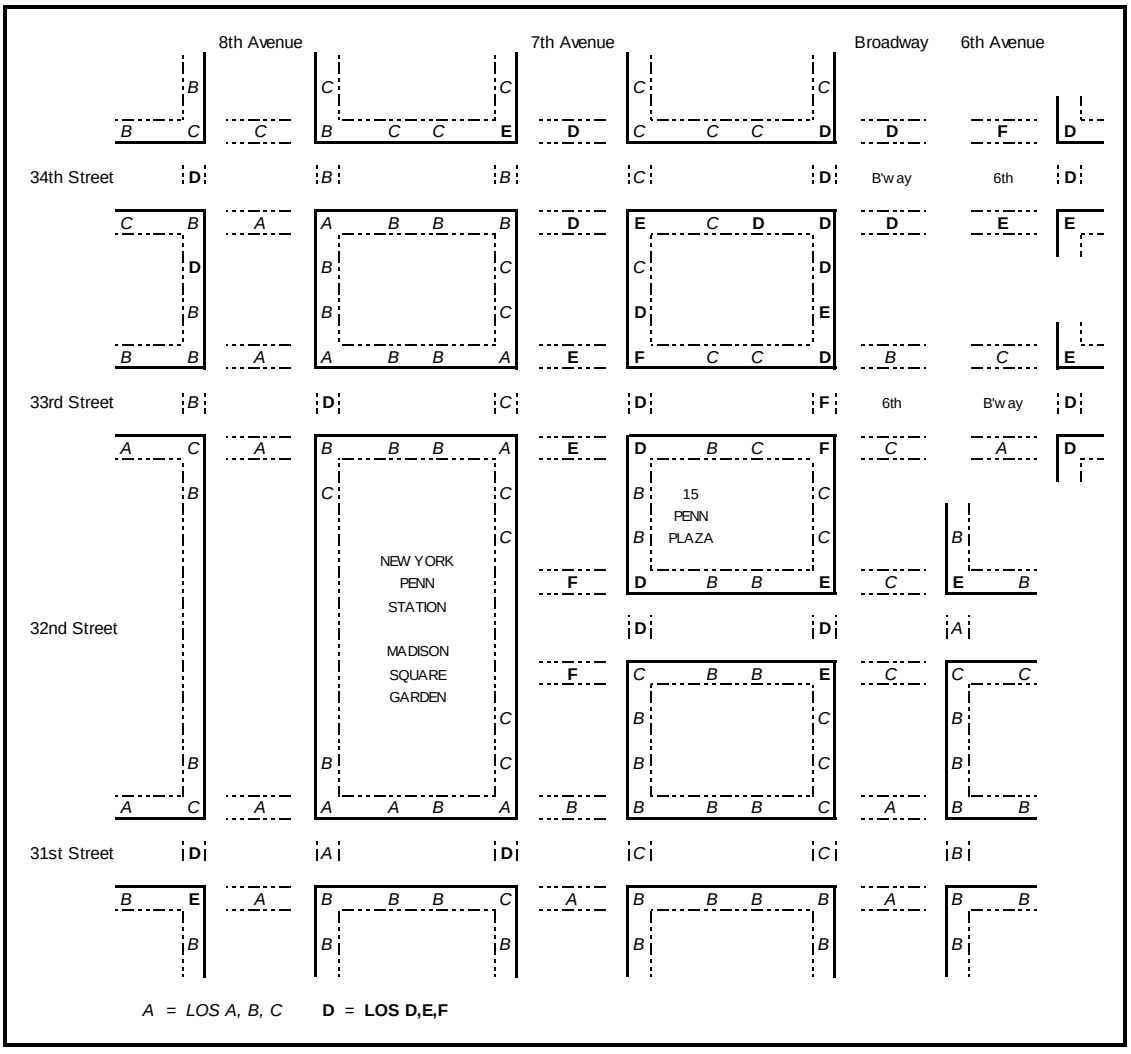


Figure 17-6
2008 Existing Conditions
Saturday MD Peak Hour - Pedestrian LOS

Table 17-13
2008 Existing Conditions
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
8th Avenue & 31st Street	Corner	Southeast		-	-	-	-	-	-	684	17.4	D	-	-	-
		Southwest		-	-	-	426	21.0	D	431	20.2	D	567	10.7	E
	Crosswalk	West		-	-	-	-	-	-	-	-	-	434	20.9	D
8th Avenue & 33rd Street	Sidewalk	North	West	-	-	-	-	-	-	570	7.0	D	-	-	-
			East	-	-	-	-	-	-	978	6.2	D	-	-	-
	Crosswalk	East		-	-	-	-	-	-	729	16.9	D	606	18.6	D
8th Avenue & 34th Street	Sidewalk	North	East	781	7.3	D	708	6.6	D	814	7.6	D	-	-	-
		South	West	-	-	-	-	-	-	-	-	-	617	7.5	D
	Corner	Northeast		-	-	-	-	-	-	1451	23.7	D	-	-	-
		Southwest		-	-	-	1873	13.4	E	-	-	-	-	-	-
	Crosswalk	West		-	-	-	469	22.2	D	-	-	-	469	21.2	D
		East		565	23.8	D	665	20.3	D	794	17.4	D	-	-	-
		South		-	-	-	1347	17.0	D	-	-	-	-	-	-
7th Avenue & 31st Street	Sidewalk	South	West	-	-	-	-	-	-	1057	6.0	D	-	-	-
	Corner	Northeast		1488	20.2	D	-	-	-	-	-	-	-	-	-
		Southwest		1220	18.5	D	-	-	-	1402	8.5	E	-	-	-
	Crosswalk	West		812	14.7	E	-	-	-	1094	11.8	E	603	22.1	D
		North		607	17.4	D	-	-	-	-	-	-	-	-	-
		East		718	20.2	D	822	14.8	E	681	17.2	D	-	-	-
7th Avenue & 32nd Street	Sidewalk	East	North	1291	11.8	E	663	6.1	D	1181	10.8	D	-	-	-
			South	-	-	-	-	-	-	672	6.6	D	-	-	-
	Corner	Northeast		1535	14.8	E	1208	16.5	D	2160	3.7	F	1372	15.5	D
		Southeast		-	-	-	-	-	-	1829	5.0	F	-	-	-
	Crosswalk	North		1087	5.1	F	384	19.6	D	932	7.8	F	941	6.5	F
		East		381	20.5	D	684	9.0	E	1019	4.6	F	323	23.2	D
		South		725	11.1	E	370	20.8	D	754	8.8	E	941	7.5	F
7th Avenue & 33rd Street	Sidewalk	North	West	-	-	-	-	-	-	1413	6.0	D	-	-	-
			East	-	-	-	1297	6.7	D	1269	6.5	D	1227	6.3	D
		East	North	-	-	-	-	-	-	595	6.3	D	-	-	-
			South	953	6.1	D	-	-	-	945	6.1	D	-	-	-
	Corner	Northeast		1202	0.8	F	1611	0.0	F	1746	0.0	F	1721	1.6	F
		Southeast		-	-	-	1641	20.1	D	1918	15.9	D	1830	18.6	D
	Crosswalk	West		1064	22.6	D	-	-	-	1371	12.3	E	-	-	-
		North		391	13.7	E	330	17.1	D	407	13.6	E	420	12.1	E
		East		-	-	-	1091	18.1	D	1105	19.6	D	1132	16.4	D
		South		486	11.5	E	396	13.8	E	636	8.4	E	577	10.4	E
7th Avenue & 34th Street	Sidewalk	North	West	1669	7.8	D	1322	6.2	D	2282	10.6	D	-	-	-
		East	North	-	-	-	-	-	-	1351	6.8	D	-	-	-
			South	-	-	-	-	-	-	2097	8.1	D	-	-	-
		South	East	-	-	-	1297	6.0	D	-	-	-	-	-	-
	Corner	Northwest		3599	6.0	F	2545	8.4	E	4478	1.1	F	1775	12.2	E
		Northeast		-	-	-	-	-	-	2406	22.9	D	-	-	-
		Southeast		2679	10.6	E	2126	11.6	E	2920	5.8	F	2589	11.3	E
		Southwest		3885	13.7	E	-	-	-	4094	21.6	D	-	-	-
	Crosswalk	West		2066	18.0	D	-	-	-	2352	11.3	E	-	-	-
		North		1068	16.8	D	956	20.5	D	1034	18.9	D	922	20.4	D
		East		-	-	-	-	-	-	1173	18.7	D	-	-	-
		South		1738	10.8	E	1119	15.5	D	1593	9.7	E	797	22.8	D

Table 17-13 (cont'd)
2008 Existing Conditions
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
6th Avenue & 31st Street	Corner	Northwest		752	21.2	D	-	-	-	953	20.2	D	-	-	-
		Southeast		-	-	-	-	-	-	631	19.2	D	-	-	-
		Southwest		-	-	-	-	-	-	918	18.2	D	-	-	-
	Crosswalk	West		425	23.7	D	-	-	-	624	17.9	D	-	-	-
6th Avenue & 32nd Street	Sidewalk	West	North	1291	12.3	E	663	6.3	D	1181	11.2	E	-	-	-
		North	West	-	-	-	-	-	-	1040	6.3	D	-	-	-
		South	West	-	-	-	-	-	-	798	6.0	D	-	-	-
	Corner	Northwest		1386	5.3	F	1210	11.1	E	2189	6.5	F	1247	12.1	E
		Northeast		995	8.0	F	713	13.3	E	1318	0.1	F	683	13.6	E
		Southeast		863	23.4	D	825	21.8	D	827	18.2	D	-	-	-
		Southwest		1150	11.8	E	1190	11.2	E	1576	4.7	F	1102	12.4	E
	Crosswalk	West		577	21.2	D	621	20.9	D	925	15.0	E	672	19.4	D
		North		707	15.1	D	530	22.0	D	1093	10.2	E	-	-	-
		South		533	20.8	D	475	22.5	D	589	16.7	D	-	-	-
6th Avenue & 33rd Street	Sidewalk	West	South	953	9.1	D	-	-	-	945	9.0	D	-	-	-
		North	West	-	-	-	1541	9.7	D	1724	10.9	D	1786	11.3	E
		South	West	-	-	-	-	-	-	1040	6.3	D	-	-	-
	Corner	Northwest		1387	20.2	D	1643	16.7	D	2034	10.8	E	1620	17.6	D
		Southwest		1397	0.3	F	1793	0.2	F	2115	0.0	F	1600	2.0	F
	Crosswalk	West		754	10.7	E	1212	5.5	F	1457	4.0	F	1210	5.7	F
		North		524	23.1	D	-	-	-	-	-	-	-	-	-
		South		569	21.2	D	533	21.2	D	586	18.8	D	-	-	-
Broadway & 34th Street	Sidewalk	West	South	-	-	-	1378	6.7	D	2097	10.2	D	1483	7.2	D
			North	-	-	-	-	-	-	1351	6.8	D	-	-	-
		South	West	-	-	-	1541	7.9	D	1724	8.8	D	1786	9.2	D
	Corner	Northwest		-	-	-	-	-	-	3021	18.5	D	2744	20.7	D
		Southwest		-	-	-	2783	21.1	D	3277	18.0	D	2753	21.2	D
	Crosswalk	West		-	-	-	1218	19.3	D	1352	16.2	D	1272	18.0	D
		North		1232	18.2	D	-	-	-	1409	18.3	D	1268	19.8	D
		South		-	-	-	1030	22.2	D	1408	14.8	E	1064	21.8	D
Broadway & 33rd Street	Corner	Northeast		1136	14.5	E	1320	7.9	F	1346	6.2	F	1031	13.3	E
		Southeast		1139	12.3	E	1160	8.9	E	1280	4.9	F	795	16.2	D
	Crosswalk	North		563	16.3	D	512	20.7	D	647	16.9	D	-	-	-
		East		-	-	-	701	18.6	D	587	22.6	D	562	24.0	D
6th Avenue & 34th Street	Corner	Northeast		-	-	-	2143	16.5	D	2593	11.6	E	2226	15.2	D
		Southeast		-	-	-	2268	13.2	E	2582	8.8	E	2263	13.8	E
	Crosswalk	North		621	13.4	E	874	10.3	E	1101	7.9	F	1082	8.0	F
		East		-	-	-	1029	16.1	D	1120	14.9	E	1066	15.4	D
		South		723	13.5	E	1047	7.6	F	1287	5.4	F	1031	8.0	E

BICYCLE FACILITIES

Several types of bicycle facilities provide access throughout the study area including multi-use trails, bicycle lanes, and bicycle routes and are defined as follows:

- Multi-Use Trails (Class I): Multi-use trails are separated from the vehicular roadway, are typically two-way, and are constructed of asphalt. Trail users include cyclists, in-line skaters, joggers, and walkers;
- Bicycle Lanes (Class II): Bicycle lanes are located within vehicular roadways, are separated from the travel lanes by the delineation of pavement markings, and can be accompanied by a striped buffer zone. Bicycle lanes are typically one-way and located adjacent to the curb or parking lane; and
- Bicycle Routes (Class III): Bicycle routes are located along a roadway without designated physical space. Bicycle routes are delineated through the use of guide signage along the route.

Bicycle Lanes

Hudson Street/Eighth Avenue: The Hudson Street/Eighth Avenue one-way northbound bicycle lane is 2.29 miles long between Dominick Street and West 39th Street. During 2005, an average of 672 daily bicyclists was recorded using the Hudson Street portion of the Hudson Street/Eight Avenue bicycle lane.

Sixth Avenue: The Sixth Avenue one-way northbound bicycle lane is 1.65 miles long between West 8th Street and West 40th Street. During 2005, an average of 1,179 daily bicyclists was recorded using the Sixth Avenue bicycle lane.

Broadway: The Broadway one-way southbound bicycle lane is 2.60 miles long between Central Park South and East 17th Street. During 2005, an average of 1,617 daily bicyclists was recorded using the Broadway bicycle lane.

Bicycle Routes

In 1997, DCP and NYCDOT released The New York City Bicycle Master Plan and the New York City Cycling Map which identify existing and future bicycle facilities throughout the City. The New York City Cycling Map is updated every year. According to the 2008 New York City Cycling Map, the following bicycle routes travel within or through the study area. The direction and limits of each route are provided below.

- West 30th Street (eastbound direction between Route 9A and First Avenue)
- West 31st Street (westbound direction between First Avenue and Tenth Avenue)
- West 33rd Street (westbound direction between Tenth Avenue and Eleventh Avenue)

D. 2014 NO ACTION

CONDITIONS FOR ANALYSIS

The demand for transit and pedestrian circulation within the respective study areas is anticipated to increase in the future due to both background growth and anticipated development in the area surrounding the proposed project. In order to accurately analyze projected operating conditions of transit and pedestrian elements in the future, it is also necessary to account for all access and

circulation changes to the pedestrian and transit network anticipated between the existing and future year that are independent of the proposed project.

To forecast transit and pedestrian demand for the No Action condition, an annual background growth of rate of 0.5% per year was applied to existing demand. Additionally, the demand generated by the development projects listed in Chapter 2, "Framework for Analysis," was incorporated to establish No Action transit and pedestrian demand.

Between the existing and No Action conditions, there is one change to the pedestrian access and circulation network within the study area. In 2009, NJ Transit opened a second street entrance to the Seventh Avenue Concourse in Penn Station at the Northwest corner of West 31st Street at Seventh Avenue. This entrance is anticipated to alleviate some demand for the main street entrance to the Seventh Avenue Concourse on the west side of the intersection of West 32nd Street and Seventh Avenue. This change provides increased accessibility to pedestrians travelling to Penn Station from the south. Field observations showed only minimal diversion to the new entrance, and it was determined that any diversion of existing demand to the new entrance under the No Action condition was unwarranted. This entrance was considered when assigning demand generated by anticipated development projects to street level pedestrian elements.

GREEN LIGHT FOR MIDTOWN / BROADWAY CLOSURE

After the certification of the DEIS, New York City Mayor Michael Bloomberg announced the Green Light for Midtown project would be the new permanent configuration for Broadway. The project includes the complete closure of Broadway to through traffic at Times Square and Herald Square, as well as other geometric changes on Broadway between Columbus Circle and West 26th Street. The 2014 No Action and future with the proposed project conditions were updated to address these geometric changes along Broadway. In addition, NYCDOT published a report regarding traffic circulation changes caused by the closure of Broadway. These changes in traffic circulation patterns were incorporated into the 2014 No Action and future with the proposed project traffic networks, and analyses were updated to reflect a changed condition of Broadway.

34TH STREET BUS RAPID TRANSITWAY (BRT)

Since the DEIS was completed, NYCDOT announced a proposal for the construction of a new right-of-way for crosstown bus service along 34th Street. The 34th Street Transitway (Transitway) proposal envisions a physically separate right-of-way for buses on 34th Street, as well as passenger boarding islands, a prepayment fare system, and other bus operations improvements. The Transitway would feature a select bus service route between the Javits Convention Center (West 34th Street between Eleventh and Twelfth Avenues) and the East 34th Street ferry landing, along 34th Street. The Transitway would be used by existing and expanded express bus routes from Brooklyn, Queens, Staten Island, and New Jersey, buses connecting to the Pier 79/West 39th Street ferry terminal, and other local buses. The Transitway would also create a new pedestrian plaza in the middle of Manhattan and other pedestrian mobility, safety, and comfort enhancements along the corridor.

As currently proposed, the Transitway would consist of a two-lane, bi-directional bus lane aligned against one curb of the street. The remainder of the street would be used for one-way traffic, running outbound from midtown: westbound from Sixth Avenue, and eastbound from Fifth Avenue. Between Fifth and Sixth Avenues, buses would be the only through traffic allowed, with

the remainder of the space devoted to new pedestrian spaces. Loading zones and parking would be available along at least one side of each block of the Transitway at all times.

The Transitway is proposed to be completed by late 2013 or early 2014. It requires various City and state approvals, and full implementation of the project as currently proposed will require funding from the Federal Transit Administration. The Transitway also must undergo environmental review pursuant to the State Environmental Quality Review Act and the National Environmental Policy Act.

While the general goals and outlines of the Transitway have been identified, many of the specifics of the Transitway have yet to be finalized. For example, NYCDOT has not designated preferred traffic diversion routes or truck circulation routes. Signal timing changes have yet to be identified. Curbside regulations and turn restrictions associated with the Transitway also have not been finalized. These as yet undetermined conditions will have a substantial effect on how traffic will move through the study area. Moreover, the public review processes and environmental review required for the Transitway could result in modifications to the project as currently envisioned. Accordingly, it is not possible at this time to conduct a quantitative analysis that would accurately reflect traffic conditions in the study area with the proposed project if the Transitway is implemented.

In general, if intersections where the proposed project would result in additional trips take on increased traffic volumes due to the Transitway project, it is possible that implementation of the Transitway would result in the proposed project having additional or different traffic impacts at these intersections. At the same time, since the Transitway project will remove traffic from 34th Street, it is possible that significant adverse impacts at intersections along 34th Street caused by the proposed project will no longer exist. Therefore, at this time it is not possible to judge whether the total number of significant adverse impacts will increase or decrease as a result of the Transitway project.

If the Transitway is implemented, the applicant will undertake an additional traffic study to determine whether the mitigation identified in the FEIS for the proposed project would need to be adjusted due to a changed condition along 34th Street. This traffic study will utilize all recently collected data in the 34th Street corridor for the environmental review of the Transitway and will supplement these data with additional traffic counts and levels of service analysis, as necessary. The applicant's obligation to undertake an additional traffic study in the event that the Transitway is implemented will be set forth in the Restrictive Declaration.

FIRST AVENUE/SECOND AVENUE SELECT BUS SERVICE (SBS) CORRIDORS

After the certification of the DEIS, NYCDOT announced plans to implement Select Bus Service Corridors along First and Second Avenues, connecting South Ferry in Lower Manhattan to 125th Street. This SBS program, scheduled to be completed in 2011, is designed to enhance transit service while increasing bicycle access and improving pedestrian safety. The potential design alternatives each include a dedicated bus lane with a shared/protected bike lane. Intersection geometry at the intersections of 34th Street and First and Second Avenues were updated to reflect the preferred design alternative supplied by NYCDOT, however, the plans for the SBS have yet to be finalized. To the extent that the geometry or signal timing/phasing on 34th Street intersections at First and Second Avenues and at the FDR Drive differ from that which is analyzed in this FEIS, and these geometric changes could cause project generated trips to create significant adverse traffic impacts not disclosed in the FEIS, such changes will be taken into account in the additional traffic study discussed above.

SEVENTH AVENUE ROADWAY MODIFICATIONS

NYCDOT is planning to implement pedestrian safety improvements on Seventh Avenue from West 31st to West 34th Streets, consisting of corner bulb-outs to increase pedestrian circulation space on street corners and curbline relocations to widen sidewalks. As part of this plan, the southeast corner of Seventh Avenue at West 33rd Street and the northeast corner of Seventh Avenue at West 32nd Street will be bulbed out, increasing the area of pedestrian refuge at these street corners.

SUBWAY STATION OPERATIONS

This section presents the results of the subway station analysis for the No Action condition during the weekday AM and weekday PM peak periods.

- Transit trip distributions were formulated in consultation with New York City Transit and vary based on proximity to each subway line. Table 17-14 summarizes the total trips assigned to each line and the overall percentage.

Table 17-14
2014 No Action Condition
Trips Assigned by Subway Line

Peak Hour	Direction	Subway Trips by Line			
		ACE	123	BDFV	NQRW
Weekday AM Peak Hour	In	249	543	307	312
	Out	254	181	81	99
	Total	503	724	388	411
Percentage		25%	36%	19%	20%
Weekday PM Peak Hour	In	280	190	79	101
	Out	353	673	373	386
	Total	632	862	453	487
Percentage		26%	35%	19%	20%

- **Table 17-15** shows the No Action operating conditions of subway control area elements operating near or above capacity during the weekday AM and PM peak hours. These elements include 1 turnstile array, 4 HEET arrays, and 2 service gates.

Table 17-15
2014 No Action Condition
Subway Control Area Elements Operating Above Capacity

Control Area	Station Elements		Quantity	One- or Two-Way	AM Peak 15-Minute				PM Peak 15-Minute			
					Volume	Capacity	V/SVCD Ratio	LOS	Volume	Capacity	V/SVCD Ratio	LOS
8th Avenue & 34th Street - Penn Station (A/C/E Routes)												
N68	HT1	Two-Way HEET	2	2	386	480	0.80	E	-	-	-	-
7th Avenue & 34th Street - Penn Station (1/2/3 Routes)												
R138	SG1	Two-Way Service Gate	1	2	-	-	-	-	641	600	1.07	F
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)												
N505	SG1	Two-Way Service Gate	1	2	533	600	0.89	E	-	-	-	-
	HT1	Two-Way HEET	2	2	-	-	-	-	430	480	0.90	E
A22	HT1	Two-Way HEET	2	2	639	480	1.33	F	-	-	-	-
A25K	HT1	Two-Way HEET	3	2	877	720	1.22	F	717	810	0.89	E
PATH	TS2	One-Way Turnstile (Exit)	3	1	1929	1800	1.07	F	-	-	-	-

- **Table 17-16** shows the subway station stairways operating at LOS D or worse during the weekday AM and PM peak hours. These elements include 15 stairways during the AM peak hour and 16 stairways during the PM peak hour.

Table 17-16
2014 No Action Condition
Subway Station Stairways at LOS D, E, or F

Control Area	Stairway Number and Location		Actual Width (ft)	Effective Width (ft)	AM Peak 15-Minute				PM Peak 15-Minute			
					Volume	Capacity[1]	V/SVCD Ratio	LOS	Volume	Capacity[1]	V/SVCD Ratio	LOS
8th Avenue & 34th Street - Penn Station (A/C/E Routes)												
N73	S2	8th & 33rd, SW, W	4.3	3.3	399	396	1.01	D	463	446	1.04	D
7th Avenue & 34th Street - Penn Station (1/2/3 Routes)												
R141	S6	7th & 34th, NE	5.1	4.1	-	-	-	-	498	492	1.01	D
R142	S5	7th & 34th, NW	5.6	4.6	575	552	1.04	D	-	-	-	-
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)												
N505	S8	6th & 35th, NE	4.8	3.8	642	456	1.41	E	543	456	1.19	D
	S6	B'way & 35th, NW	4.9	3.9	614	468	1.31	D	517	468	1.10	D
A22	S4	6th & 34th, SE	5.4	4.4	722	528	1.37	E	694	528	1.31	D
	M4	6th & 34th, SE	5.4	4.4	722	528	1.37	E	694	528	1.31	D
N506	S5	B'way & 34th, SW	9.2	8.2	1250	1107	1.13	D	1397	1107	1.26	D
	M5	B'way & 34th, SW	9.2	8.2	1250	1107	1.13	D	1397	1107	1.26	D
	S7	B'way & 34th, NW	8.4	7.4	943	888	1.06	D	1075	888	1.21	D
	M7	B'way & 34th, NW	8.4	7.4	943	888	1.06	D	1075	888	1.21	D
N507	307	6th & 32nd, NW	5.7	4.7	644	564	1.14	D	641	635	1.01	D
A25K	300	6th & 32nd, NE	5.0	4.0	-	-	-	-	624	540	1.16	D
	S1	B'way & 32nd, NE	6.2	5.2	763	624	1.22	D	696	624	1.12	D
	M2	B'way & 32nd, NE	5.8	4.8	763	576	1.32	D	696	576	1.21	D
	S2	B'way & 32nd, NW	7.5	6.5	1025	780	1.31	D	989	780	1.27	D
	M1	B'way & 32nd, NW	7.5	6.5	1025	780	1.31	D	989	780	1.27	D

[1] Capacity is calculated as (150 * effective width * friction factor) where the friction factor is 0.8 or 0.9 depending on counterflow volume

PEDESTRIAN OPERATIONS

The No Action operating conditions of the 78 sidewalks, 42 corner reservoirs, and 47 crosswalks in the pedestrian study area were analyzed for the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak periods.

- **Table 17-17** summarizes the existing operating conditions of the sidewalks, corner reservoirs, and crosswalks analyzed during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours.

Table 17-17
2014 No Action Condition
Summary of Pedestrian Element LOS

Sidewalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	3	2	1	0	**6**
B	29	29	18	46	**122**
C	38	32	29	27	**126**
D	6	15	26	4	**51**
E	2	0	4	1	**7**
F	0	0	0	0	**0**
Total	**78**	**78**	**78**	**78**	**312**

Corners					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	6	7	2	7	**22**
B	8	4	7	8	**27**
C	13	12	7	10	**42**
D	8	11	11	10	**40**
E	3	5	9	7	**24**
F	4	3	6	0	**13**
Total	**42**	**42**	**42**	**42**	**168**

Crosswalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	5	8	5	10	**28**
B	8	6	3	11	**28**
C	14	13	12	7	**46**
D	12	12	7	12	**43**
E	7	8	17	6	**38**
F	1	0	3	1	**5**
Total	**47**	**47**	**47**	**47**	**188**

The analysis indicates that in the No Action condition, 254 of the 312 total analyzed sidewalk movements in the pedestrian study area operate at LOS C or better, the minimum standard for acceptable operating conditions. The analysis also indicates that 91 of the 168 total analyzed corner reservoirs and 102 of the 188 total analyzed crosswalk movements operate at LOS C or better, respectively. **Figures 17-7 through 17-10** present 2014 No Action levels of service at all sidewalks, corner reservoirs, and crosswalks within the pedestrian study area during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours. **Table 17-18** presents the 2014 No Action conditions for all pedestrian elements operating at LOS D or worse. Detailed intersection analysis worksheets are provided in Appendix C, "Transportation Technical Memos and Analyses."

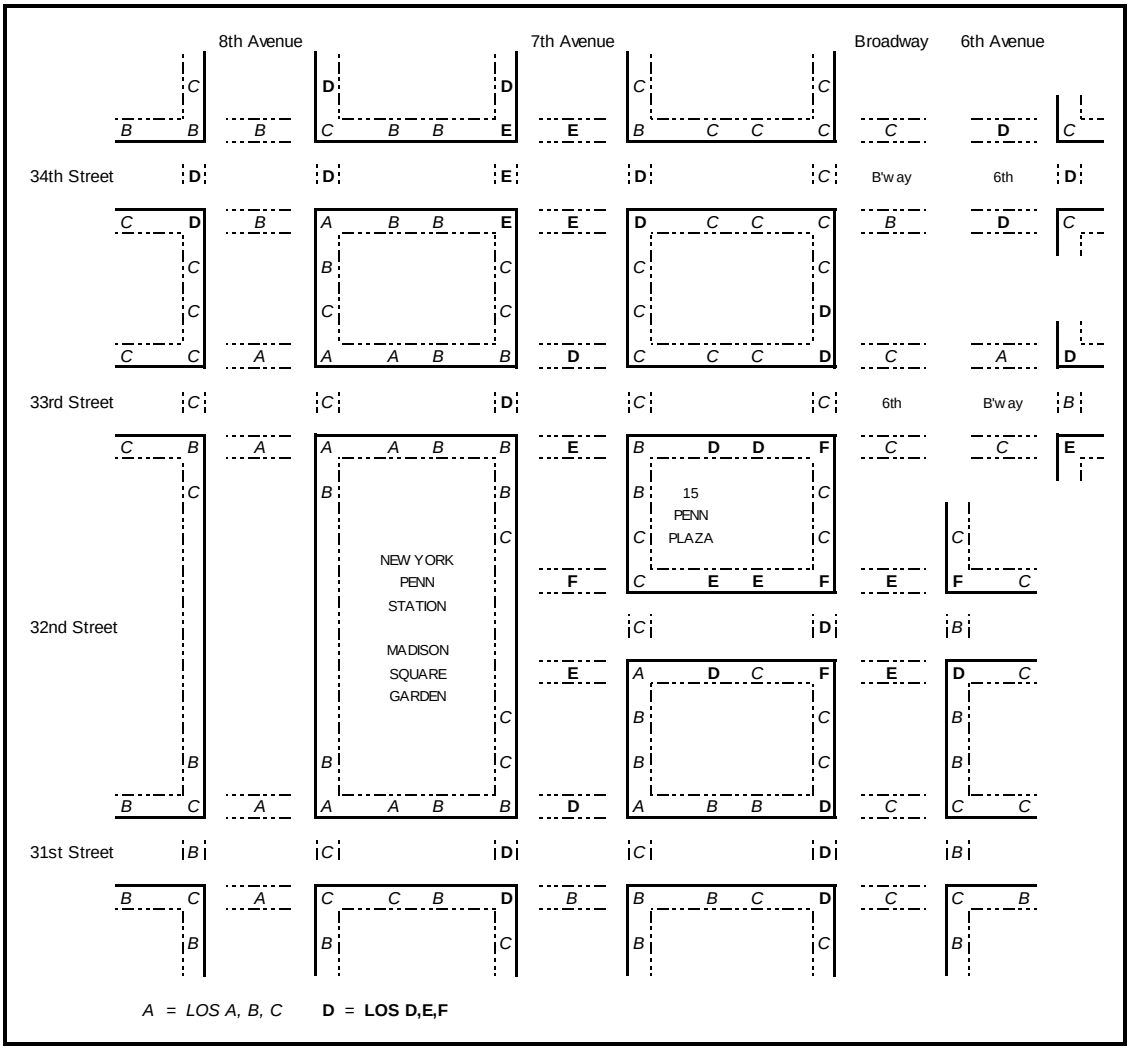


Figure 17-7
2014 No Action Condition
Weekday AM Peak Hour - Pedestrian LOS

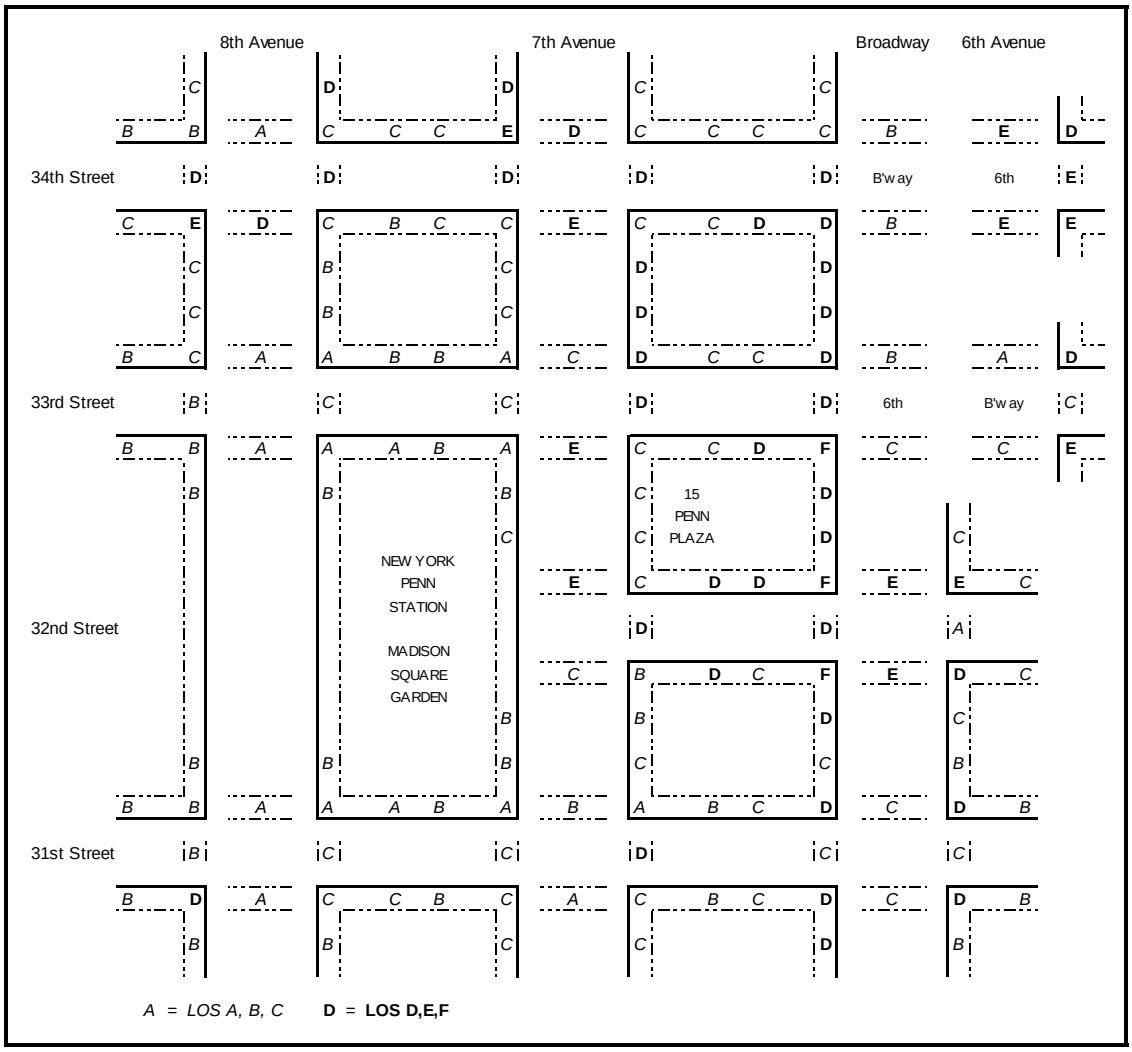


Figure 17-8
2014 No Action Condition
Weekday MD Peak Hour - Pedestrian LOS

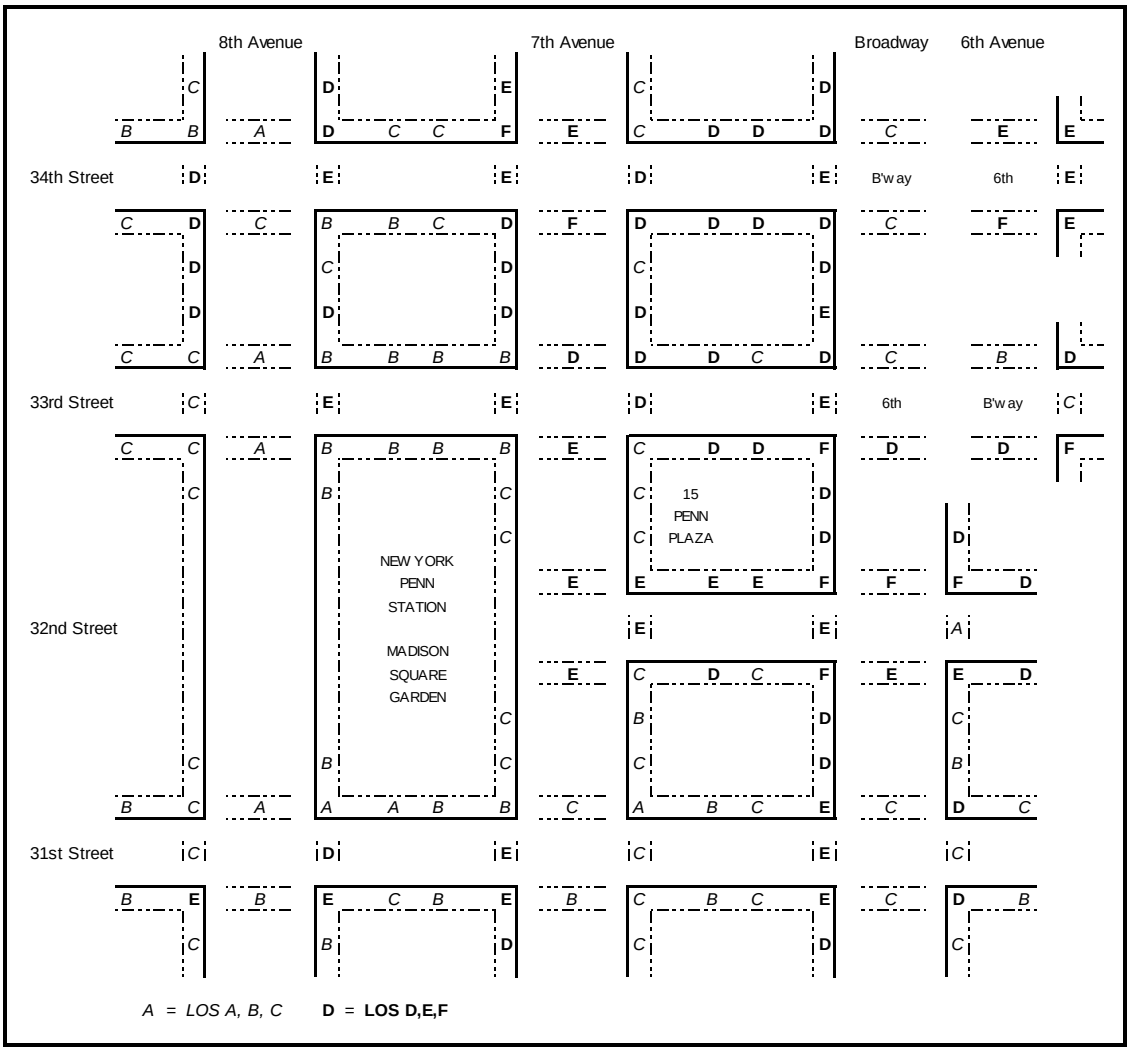


Figure 17-9
2014 No Action Condition
Weekday PM Peak Hour - Pedestrian LOS

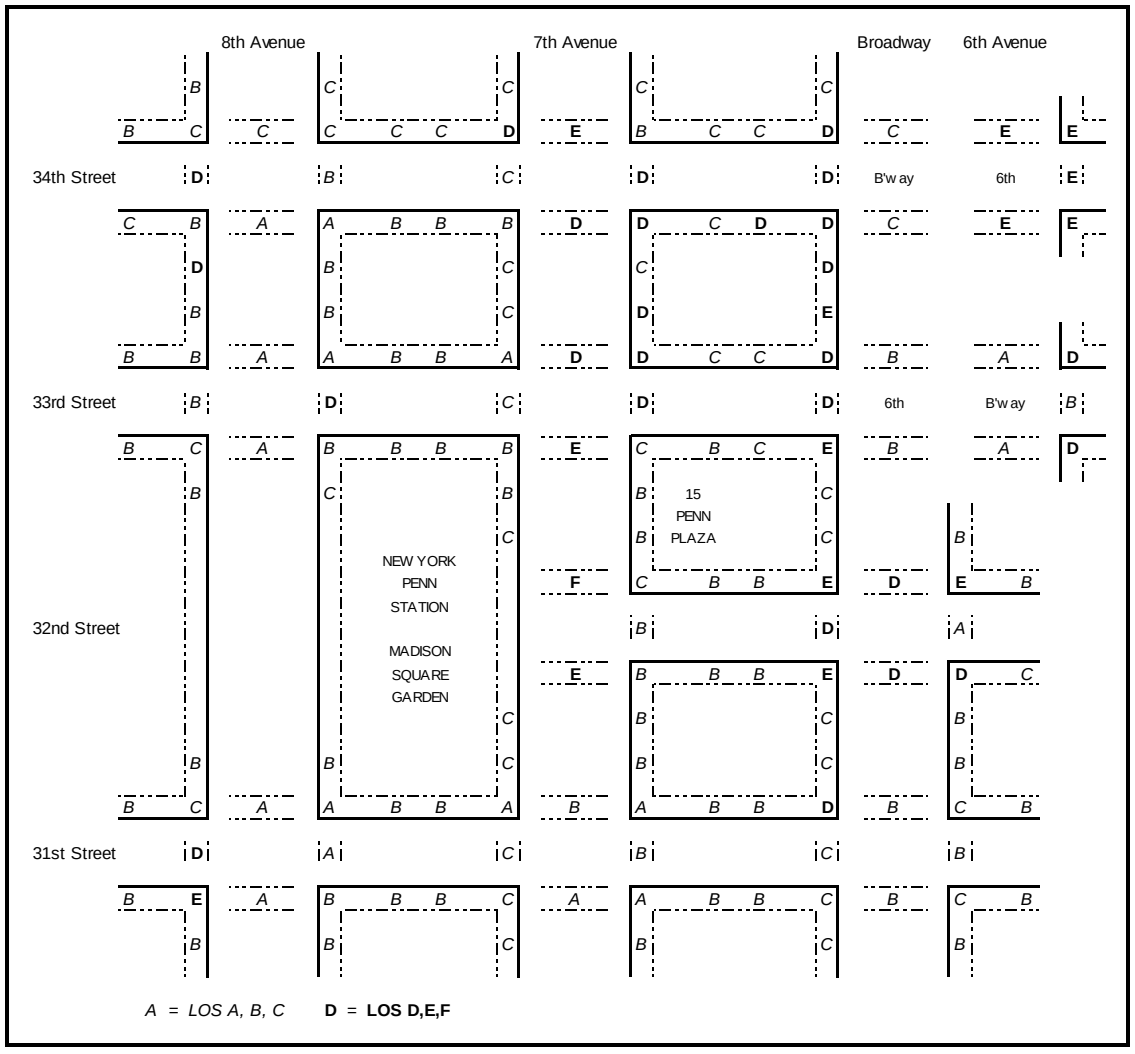


Figure 17-10
2014 No Action Condition
Saturday MD Peak Hour - Pedestrian LOS

Table 17-18
2014 No Action Condition
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
8th Avenue & 31st Street	Corner	Southeast		-	-	-	-	-	-	825	12.9	E	-	-	-
		Southwest		-	-	-	468	18.5	D	573	13.2	E	617	9.0	E
	Crosswalk	West		-	-	-	-	-	-	-	-	-	463	19.4	D
		East		-	-	-	-	-	-	571	20.8	D	-	-	-
8th Avenue & 33rd Street	Sidewalk	North	West	-	-	-	-	-	-	683	8.4	D	-	-	-
			East	-	-	-	-	-	-	1089	6.9	D	-	-	-
	Crosswalk	East		-	-	-	-	-	-	843	14.2	E	630	17.8	D
8th Avenue & 34th Street	Sidewalk	North	East	860	8.1	D	738	6.9	D	935	8.8	D	-	-	-
		South	West	-	-	-	-	-	-	560	6.8	D	650	7.9	D
	Corner	Northeast		-	-	-	-	-	-	1619	20.1	D	-	-	-
		Southwest		1231	21.8	D	1960	12.6	E	1268	23.7	D	-	-	-
	Crosswalk	West		515	20.5	D	486	21.3	D	430	23.3	D	486	19.7	D
		East		639	19.9	D	690	19.5	D	915	14.8	E	-	-	-
		South		-	-	-	1393	16.3	D	-	-	-	-	-	-
7th Avenue & 31st Street	Sidewalk	South	West	-	-	-	-	-	-	1104	6.3	D	-	-	-
	Corner	Southwest		1296	21.3	D	-	-	-	1505	11.3	E	-	-	-
	Crosswalk	West		855	17.7	D	-	-	-	1157	13.9	E	-	-	-
		North		657	19.5	D	-	-	-	-	-	-	-	-	-
		East		-	-	-	855	23.7	D	-	-	-	-	-	-
7th Avenue & 32nd Street	Sidewalk	East	North	1516	13.8	E	954	8.7	D	1413	12.9	E	-	-	-
			South	676	6.6	D	640	6.3	D	773	7.6	D	-	-	-
	Corner	Northeast		-	-	-	-	-	-	2669	12.4	E	-	-	-
	Crosswalk	North		1305	4.9	F	655	14.3	E	1176	8.2	E	976	8.0	F
		East		-	-	-	725	22.5	D	1119	12.4	E	-	-	-
		South		773	14.0	E	-	-	-	811	10.4	E	978	9.5	E
7th Avenue & 33rd Street	Sidewalk	North	West	-	-	-	-	-	-	1494	6.4	D	-	-	-
			East	-	-	-	1344	6.9	D	1278	6.6	D	1266	6.5	D
		East	North	-	-	-	-	-	-	632	6.7	D	-	-	-
			South	1058	6.8	D	-	-	-	1038	6.7	D	-	-	-
	Corner	Northeast		-	-	-	1667	23.7	D	1831	19.3	D	1776	23.9	D
	Crosswalk	West		1135	18.4	D	-	-	-	1447	10.5	E	-	-	-
		North		438	17.4	D	-	-	-	453	17.7	D	434	17.0	D
		East		-	-	-	1130	20.7	D	1136	22.2	D	1168	18.9	D
		South		583	12.4	E	656	9.9	E	730	8.8	E	596	12.9	E
7th Avenue & 34th Street	Sidewalk	North	West	1731	8.1	D	1368	6.4	D	2366	11.0	E	-	-	-
		East	North	-	-	-	-	-	-	1408	7.1	D	-	-	-
			South	-	-	-	-	-	-	2179	8.4	D	-	-	-
		South	East	-	-	-	1344	6.3	D	-	-	-	-	-	-
			West	-	-	-	-	-	-	1472	6.2	D	-	-	-
	Corner	Northwest		3739	9.0	E	2636	12.6	E	4653	2.5	F	1837	18.3	D
		Southeast		2759	21.8	D	-	-	-	2987	15.2	D	2671	23.0	D
		Southwest		4030	9.0	E	-	-	-	4250	19.3	D	-	-	-
	Crosswalk	West		2147	14.5	E	1245	22.1	D	2445	8.7	E	-	-	-
		North		1111	12.0	E	993	15.1	D	1080	13.8	E	956	14.9	E
		East		789	21.6	D	902	20.1	D	1166	15.5	D	835	21.9	D
		South		1798	8.0	E	1156	11.3	E	1649	6.9	F	823	16.8	D

Table 17-18 (cont'd)
2014 No Action Condition
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
6th Avenue & 31st Street	Sidewalk	North	West	-	-	-	-	-	-	1107	7.3	D	-	-	-
		South	West	-	-	-	779	6.5	D	900	7.5	D	-	-	-
	Corner	Northwest		934	17.2	D	928	19.9	D	1293	13.7	E	788	23.0	D
		Northeast		-	-	-	791	19.6	D	714	22.1	D	-	-	-
		Southeast		-	-	-	737	18.0	D	693	17.4	D	-	-	-
		Southwest		1013	18.0	D	1004	17.7	D	1265	13.0	E	-	-	-
	Crosswalk	West		585	21.0	D	-	-	-	933	13.4	E	-	-	-
6th Avenue & 32nd Street	Sidewalk	West	North	1463	13.9	E	949	9.0	D	1355	12.9	E	-	-	-
		North	West	-	-	-	1027	6.2	D	1441	8.7	D	-	-	-
			East	-	-	-	-	-	-	162	7.2	D	-	-	-
		East	North	-	-	-	-	-	-	788	6.1	D	-	-	-
			South	-	-	-	-	-	-	679	6.4	D	-	-	-
		South	West	-	-	-	936	7.1	D	1236	9.3	D	-	-	-
	Corner	Northwest		1706	3.2	F	1580	7.9	F	2675	3.8	F	1365	10.9	E
		Northeast		1076	6.3	F	759	10.4	E	1409	0.0	F	724	11.1	E
		Southeast		949	19.8	D	1000	15.5	D	952	12.8	E	748	22.2	D
		Southwest		1391	7.0	F	1524	7.2	F	2003	3.3	F	1356	9.2	E
	Crosswalk	West		753	20.0	D	717	22.3	D	1253	12.5	E	766	21.0	D
		North		762	9.7	E	557	14.6	E	1153	6.5	F	447	19.1	D
		South		586	13.6	E	607	12.3	E	670	10.3	E	461	16.7	D
6th Avenue & 33rd Street	Sidewalk	West	South	1007	9.6	D	780	7.4	D	984	9.4	D	-	-	-
		North	West	1033	6.5	D	1604	10.1	D	2008	12.6	E	1850	11.7	E
		South	West	-	-	-	998	6.1	D	1313	8.0	D	-	-	-
	Corner	Northwest		1550	22.3	D	1715	23.1	D	2342	16.0	D	1684	23.6	D
		Southwest		1562	7.5	F	2114	7.2	F	2406	6.2	F	1665	11.2	E
	Crosswalk	West		-	-	-	1267	16.0	D	1728	10.6	E	1259	16.5	D
		South		-	-	-	-	-	-	581	23.2	D	-	-	-
Broadway & 34th Street	Sidewalk	West	South	-	-	-	1423	6.9	D	2167	10.5	D	1530	7.4	D
			North	-	-	-	-	-	-	1408	7.1	D	-	-	-
		North	West	-	-	-	-	-	-	1252	6.1	D	-	-	-
		South	West	-	-	-	1604	8.2	D	2008	10.3	D	1850	9.5	D
	Corner	Northwest		-	-	-	-	-	-	3323	16.8	D	2835	20.9	D
		Southwest		-	-	-	2883	21.0	D	3607	16.9	D	2847	21.3	D
	Crosswalk	West		-	-	-	1266	16.6	D	1602	11.7	E	1318	15.5	D
Broadway & 33rd Street	Corner	Northeast		1182	20.2	D	1367	16.8	D	1406	16.8	D	1068	22.1	D
		Southeast		1170	14.0	E	1201	11.3	E	1300	6.8	F	824	19.2	D
	Crosswalk	South		-	-	-	-	-	-	546	21.5	D	-	-	-
6th Avenue & 34th Street	Corner	Northeast		-	-	-	2209	16.1	D	2676	11.3	E	2294	14.9	E
		Southeast		-	-	-	2348	12.6	E	2673	8.7	E	2341	13.2	E
	Crosswalk	North		640	15.8	D	901	12.1	E	1135	9.3	E	1115	9.3	E
		East		683	22.5	D	1061	13.9	E	1158	12.8	E	1098	13.3	E
		South		747	15.5	D	1085	8.8	E	1330	6.3	F	1066	9.3	E

E. 2014 FUTURE WITH THE PROPOSED PROJECT

CONDITIONS FOR ANALYSIS

MASS TRANSIT IMPROVEMENTS

Both scenarios of the proposed project include a Subway Improvement Package designed to ease circulation bottlenecks and improve levels of service at both the 34th Street-Penn Station and 34th Street-Herald Square subway stations, as well as along the major east-west corridors between Penn Station and Herald Square. Along with significant subway access improvements along West 32nd and West 33rd Streets, the revitalization of an abandoned passageway beneath the south side of West 33rd Street between Sixth and Seventh Avenues (39)[1] will significantly

[1] The numbers in parentheses in this section correspond to Figures 17-13, 17-14, and 17-15.

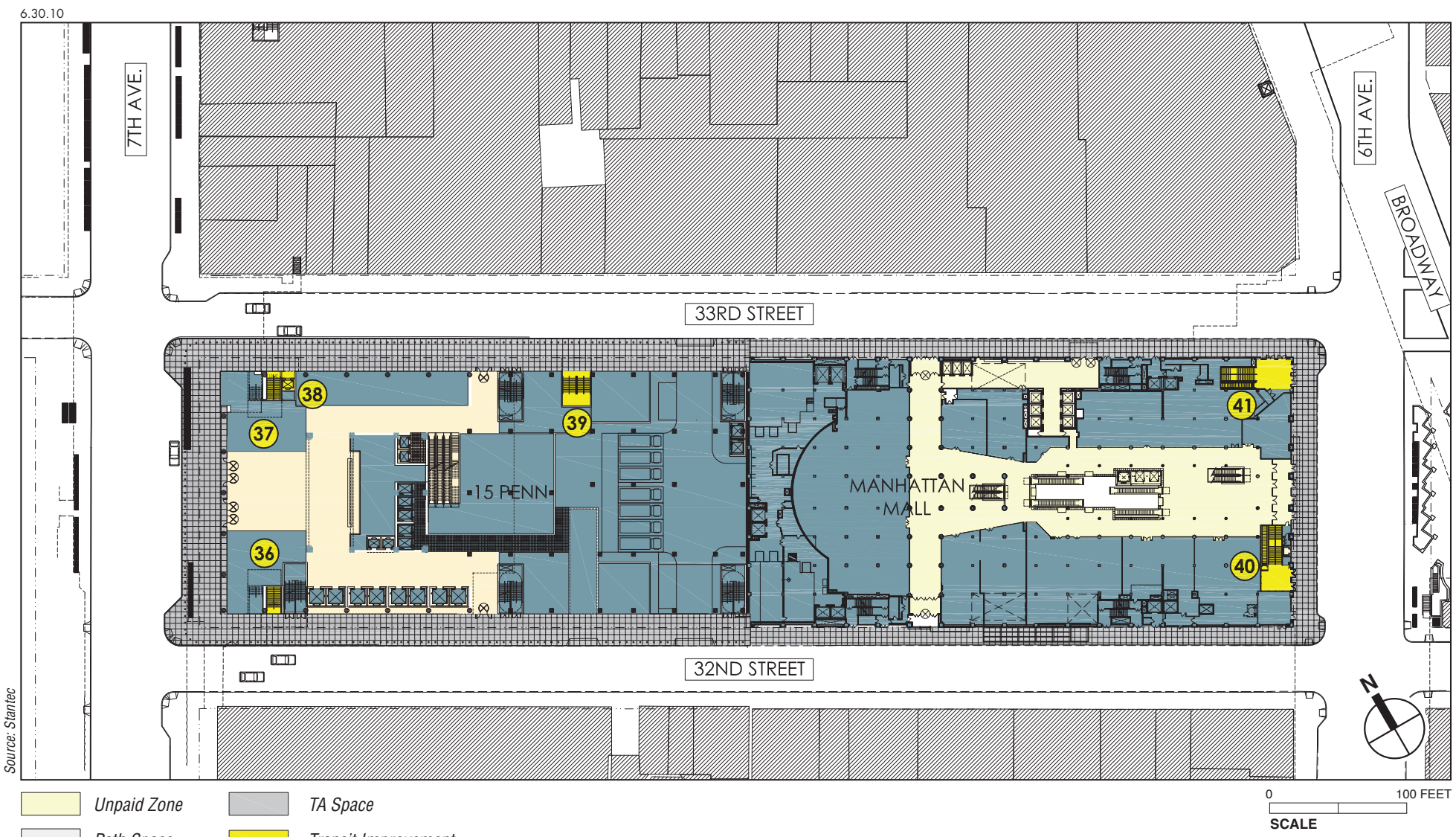
increase east-west capacity and help alleviate over-crowded street-level pedestrian elements in the area between Penn Station and Herald Square. Providing a direct underground connection between commuter rail lines at Penn Station, the 34th Street-Penn Station subway station, the 34th Street-Herald Square subway station, and the 33rd Street PATH station, the passageway is expected to significantly alter access and circulation patterns within the study area.

In addition, both scenarios would improve several subway stairways and control areas serving the Seventh Avenue line, the Sixth Avenue line, the Broadway line, and PATH. As detailed in **Figures 17-11 through 17-13**, these transit improvements would include:

- Widening the stair from the Seventh Avenue southbound local platform to the 32nd Street underpass (21);
- Building a new stairway to the center platform from the 32nd Street/Seventh Avenue underpass (25);
- Widening the Seventh Avenue northbound local platform between West 32nd and West 33rd Streets by six feet (26);
- Building new subway entrances at Seventh Avenue and West 32nd Street and Seventh Avenue and West 33rd Street, each of which would include a 10-foot-wide set of stairs through the proposed building (36 and 37);
- Constructing a new street elevator at the Seventh Avenue and West 33rd Street entrance (38);
- Widening the Sixth Avenue and West 32nd Street PATH entrance stairs by 10 feet, and adding one escalator (40);
- Constructing one escalator at the Sixth Avenue and West 33rd Street subway entrance (41);
- Constructing a 10-foot staircase from the PATH to the B, D, F, and V platform near West 32nd Street (44);
- Constructing a 15-foot staircase from the PATH to the B, D, F, and V platform near West 33rd Street (45); and
- Reconfiguring the fare control area to accommodate new stairs (44 and 45) from the PATH to the B, D, F, and V platforms (51a).

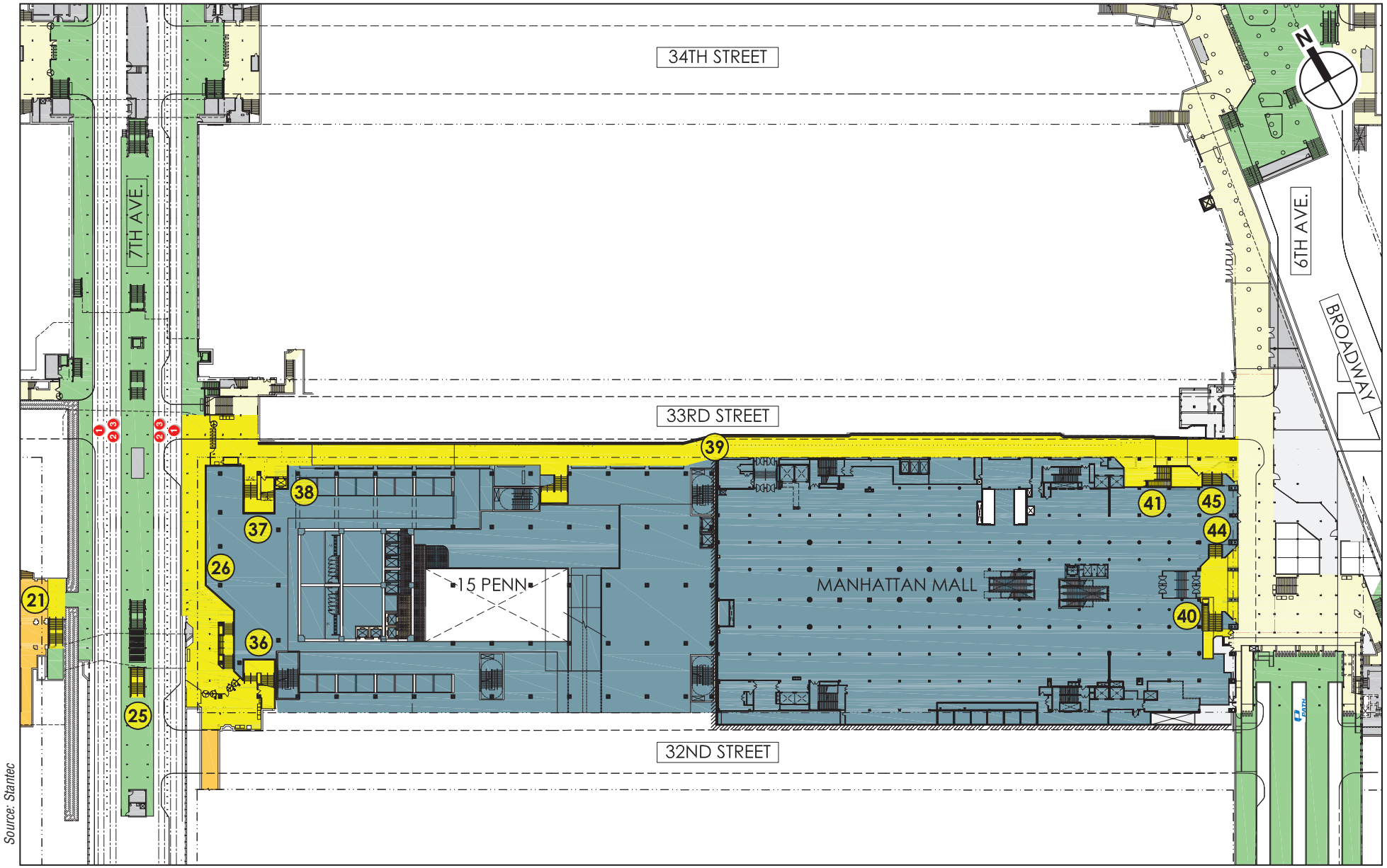
As shown in **Figure 17-11**, all of the street-level improvements are constructed within existing building lines. No reduction to existing sidewalks or corner refuge areas will results from these improvements.

In order to estimate the 2014 future with the proposed project pedestrian and transit volumes, existing pedestrian circulation patterns were modified to account for the subway improvements and the re-opened passageway under 33rd Street. In consultation with New York City Transit, the number of pedestrians that would alter their route and utilize the re-opened passageway was estimated and a percentage of the 2014 No Action volume on each east-west route within the study area was reassigned from their current circulation patterns to the passageway and appropriate subway elements. Project-generated trips were then assigned to the pedestrian and transit network, including the re-opened passageway, to calculate the overall 2014 future with the proposed project pedestrian and transit volumes. Detailed re-assignment patterns are presented in Appendix C, "Transportation Technical Memos and Analyses."



Proposed Mass Transit Improvements
Street Level
Figure 17-11

6.30.10



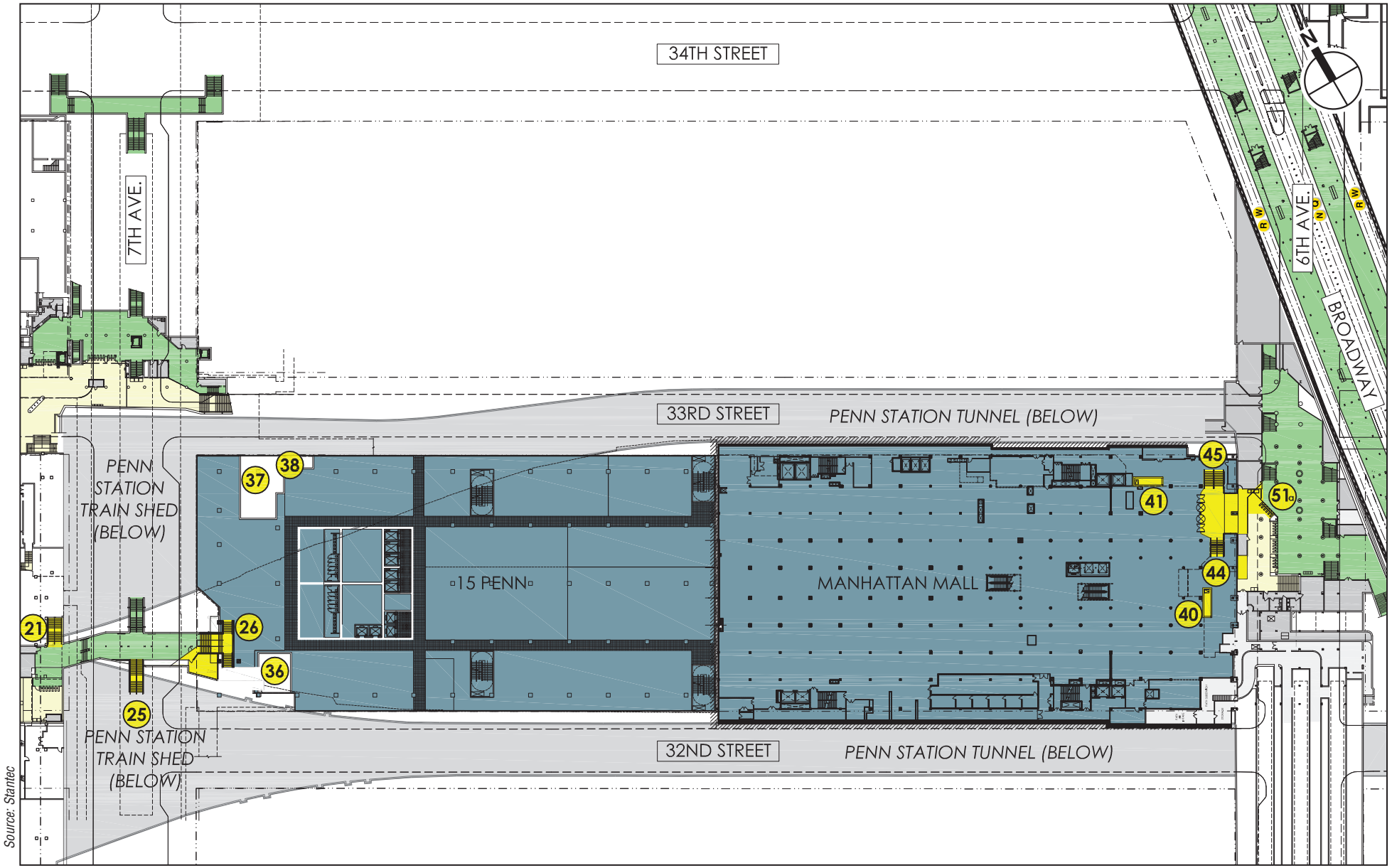
Source: Stantec

Unpaid Zone
Path Space
Paid Zone
Building Space
TA Space
Transit Improvement Area of Work
Transit Improvement Scope Item Number

0 100 FEET
SCALE

Proposed Mass Transit Improvements
Lower Level 1
Figure 17-12

6.30.10



Source: Stantec

Unpaid Zone
Path Space
Paid Zone
Building Space
TA Space
Transit Improvement Area of Work
Transit Improvement Scope Item Number

0 100 FEET
SCALE

Proposed Mass Transit Improvements
Lower Level 2
Figure 17-13

STREET LEVEL IMPROVEMENTS

For both scenarios, the building would be set back 15 feet from the property line along Seventh Avenue. This set back increases the sidewalk width by 5 feet on the eastern side of Seventh Avenue between 32nd and 33rd Streets for the 2014 future with the proposed project, improving pedestrian operations along this sidewalk. In addition, the southeast corner of Seventh Avenue at 33rd Street and the northeast corner of Seventh Avenue at 32nd Street have been bulbed out, increasing pedestrian refuge area at these street corners. While the set back of the building has also increased the sidewalk width on the south side of 33rd Street and the north side of 32nd Street, the width narrows at the mid-block between Sixth and Seventh Avenues. Therefore, this additional width has not been accounted for in the pedestrian analyses.

The existing 16-foot loading zone in front of the Hotel Pennsylvania may also be reduced to an 8-foot parking lane to conform to the proposed NYCDOT Seventh Avenue design. This narrowing of the adjacent lane would result in a widening of the sidewalk and improvement to the corner refuge areas. The pedestrian analyses presented in this FEIS do not include this widening, and therefore represent a conservative analysis of these pedestrian elements.

SINGLE-TENANT OFFICE SCENARIO

SUBWAY STATION OPERATIONS

This section presents the results of the subway station analysis for the future with the proposed project condition under the Single-Tenant Office Scenario during the weekday AM and weekday PM peak periods.

- Transit trip distributions for the Proposed Project were formulated in consultation with New York City Transit. **Table 17-19** summarizes the total trips assigned to each line and the percentage of total trips by line.

Table 17-19
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Trips Assigned by Subway Line

Peak Hour	Direction	Subway Trips by Line			
		ACE	123	BDFV	NQRW
Weekday AM Peak Hour	In	222	591	332	332
	Out	1	2	1	1
	Total	223	593	333	333
Percentage		15%	40%	23%	23%
Weekday PM Peak Hour	In	0	1	1	1
	Out	211	563	317	317
	Total	211	564	318	318
Percentage		15%	40%	23%	23%

- **Table 17-20** shows the future with the proposed project – Single-Tenant Office Scenario operating conditions of subway control area elements operating near or above capacity during the weekday AM and PM peak periods. These elements include 1 turnstile array, 3 HEET arrays, and 1 service gates during the AM peak periods and 2 HEET arrays and 1 service gate during the PM peak period.

Table 17-20
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Subway Control Area Elements Near or Above Capacity

Control Area	Station Elements		Quantity	One- or Two-Way	2014 Future without the Proposed Project				2014 Future with the Proposed Project				Significant Impact?
					Volume	Capacity	V/SVCD Ratio	LOS	Volume	Capacity	V/SVCD Ratio	LOS	
AM PEAK PERIOD													
8th Avenue & 34th Street - Penn Station (A/C/E Routes)													
N68	HT1	Two-Way HEET	2	2	386	480	0.80	E	386	480	0.80	E	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)													
N505	SG1	Two-Way Service Gate	1	2	533	600	0.89	E	533	600	0.89	E	No
A22	HT1	Two-Way HEET	2	2	639	480	1.33	F	639	480	1.33	F	No
A25K	HT1	Two-Way HEET	3	2	877	720	1.22	F	878	720	1.22	F	No
PATH	TS2	One-Way Turnstile (Exit)	3	1	1929	1800	1.07	F	1933	1800	1.07	F	No
PM PEAK PERIOD													
7th Avenue & 34th Street - Penn Station (1/2/3 Routes)													
R138	SG1	Two-Way Service Gate	1	2	641	600	1.07	F	641	600	1.07	F	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)													
N505	HT1	Two-Way HEET	2	2	430	480	0.90	E	430	480	0.90	E	No
A25K	HT1	Two-Way HEET	3	2	717	810	0.89	E	729	810	0.90	E	No

- **Table 17-21** shows the affected subway station stairways for the future with the proposed project Single-Tenant Office Scenario operating at LOS D or worse during the weekday AM and PM peak periods. These elements include 5 stairways during the AM peak hour and 7 stairways during the PM peak hour.

Table 17-21
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Affected Subway Station Stairways

Control Area	Stairway Number and Location		Actual Width (ft)	Effective Width (ft)	2014 Future without the Proposed Project				2014 Future with the Proposed Project				Width Increment Threshold	Significant Impact?
					Volume	Capacity[1]	V/SVCD Ratio	LOS	Volume	Capacity[1]	V/SVCD Ratio	LOS		
AM PEAK PERIOD														
8th Avenue & 34th Street - Penn Station (A/C/E Routes)														
N73	S2	8th & 33rd, SW, W	4.3	3.3	399	396	1.01	D	402	396	1.02	D	0.30	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)														
N506	S5	B'way & 34th, SW	9.2	8.2	1250	1107	1.13	D	1299	1107	1.17	D	3.86	No
	M5	B'way & 34th, SW	9.2	8.2	1250	1107	1.13	D	1299	1107	1.17	D	3.86	No
A25K	S2	B'way & 32nd, NW	7.5	6.5	1025	780	1.31	D	1030	780	1.32	D	0.38	No
	M1	B'way & 32nd, NW	7.5	6.5	1025	780	1.31	D	1030	780	1.32	D	0.38	No
PM PEAK PERIOD														
8th Avenue & 34th Street - Penn Station (A/C/E Routes)														
N73	S2	8th & 33rd, SW, W	4.3	3.3	463	446	1.04	D	466	446	1.04	D	0.26	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)														
N506	S5	B'way & 34th, SW	9.2	8.2	1397	1107	1.26	D	1416	1107	1.28	D	1.34	No
	M5	B'way & 34th, SW	9.2	8.2	1397	1107	1.26	D	1416	1107	1.28	D	1.34	No
	S7	B'way & 34th, NW	8.4	7.4	1075	888	1.21	D	1090	888	1.23	D	1.24	No
	M7	B'way & 34th, NW	8.4	7.4	1075	888	1.21	D	1090	888	1.23	D	1.24	No
A25K	S2	B'way & 32nd, NW	7.5	6.5	989	780	1.27	D	993	780	1.27	D	0.32	No
	M1	B'way & 32nd, NW	7.5	6.5	989	780	1.27	D	993	780	1.27	D	0.32	No

[1] Capacity is calculated as (150 * effective width * friction factor) where the friction factor is 0.8 or 0.9 depending on counterflow volume

Both scenarios of the proposed project include a Subway Improvement Package designed to improve levels of service at both the 34th Street-Penn Station and 34th Street-Herald Square subway stations, as well as along the major east-west corridors between Penn Station and Herald Square. Due to this Subway Improvement Package, the future with the proposed project Single-Tenant Office Scenario would not result in any significant adverse impacts at the station elements analyzed.

PEDESTRIAN OPERATIONS

The future with the proposed project under the Single-Tenant Office Scenario operating conditions of the 78 sidewalks, 42 corner reservoirs, and 47 crosswalks in the pedestrian study area were analyzed for the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak periods.

- **Table 17-22** summarizes the future with the proposed project under the Single-Tenant Office Scenario operating conditions of the sidewalks, corner reservoirs, and crosswalks analyzed during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours.

Table 17-22
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Summary of Pedestrian Element LOS

Sidewalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	2	2	1	0	**5**
B	30	31	19	46	**126**
C	39	35	33	26	**133**
D	5	10	21	5	**41**
E	2	0	4	1	**7**
F	0	0	0	0	**0**
Total	**78**	**78**	**78**	**78**	**312**

Corners					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	10	10	4	10	**34**
B	3	4	7	7	**21**
C	14	9	6	10	**39**
D	8	12	11	8	**39**
E	4	6	8	7	**25**
F	3	1	6	0	**10**
Total	**42**	**42**	**42**	**42**	**168**

Crosswalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	5	9	5	10	**29**
B	10	6	3	9	**28**
C	10	14	13	9	**46**
D	16	12	6	14	**48**
E	5	6	17	5	**33**
F	1	0	3	0	**4**
Total	**47**	**47**	**47**	**47**	**188**

The analysis indicates that in the 2014 future with the proposed project – Single-Tenant Office Scenario, 264 of the 312 total analyzed sidewalk movements in the pedestrian study area operate at LOS C or better, the minimum standard for acceptable operating conditions. The analysis also indicates that 94 of the 168 total analyzed corner reservoirs and 103 of the 188 total analyzed crosswalk movements operate at LOS C or better, respectively. **Figures 17-14 through 17-17** present 2014 future with the proposed project levels of service under the Single-Tenant Office Scenario at all sidewalks, corner reservoirs, and crosswalks within the pedestrian study area during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours.

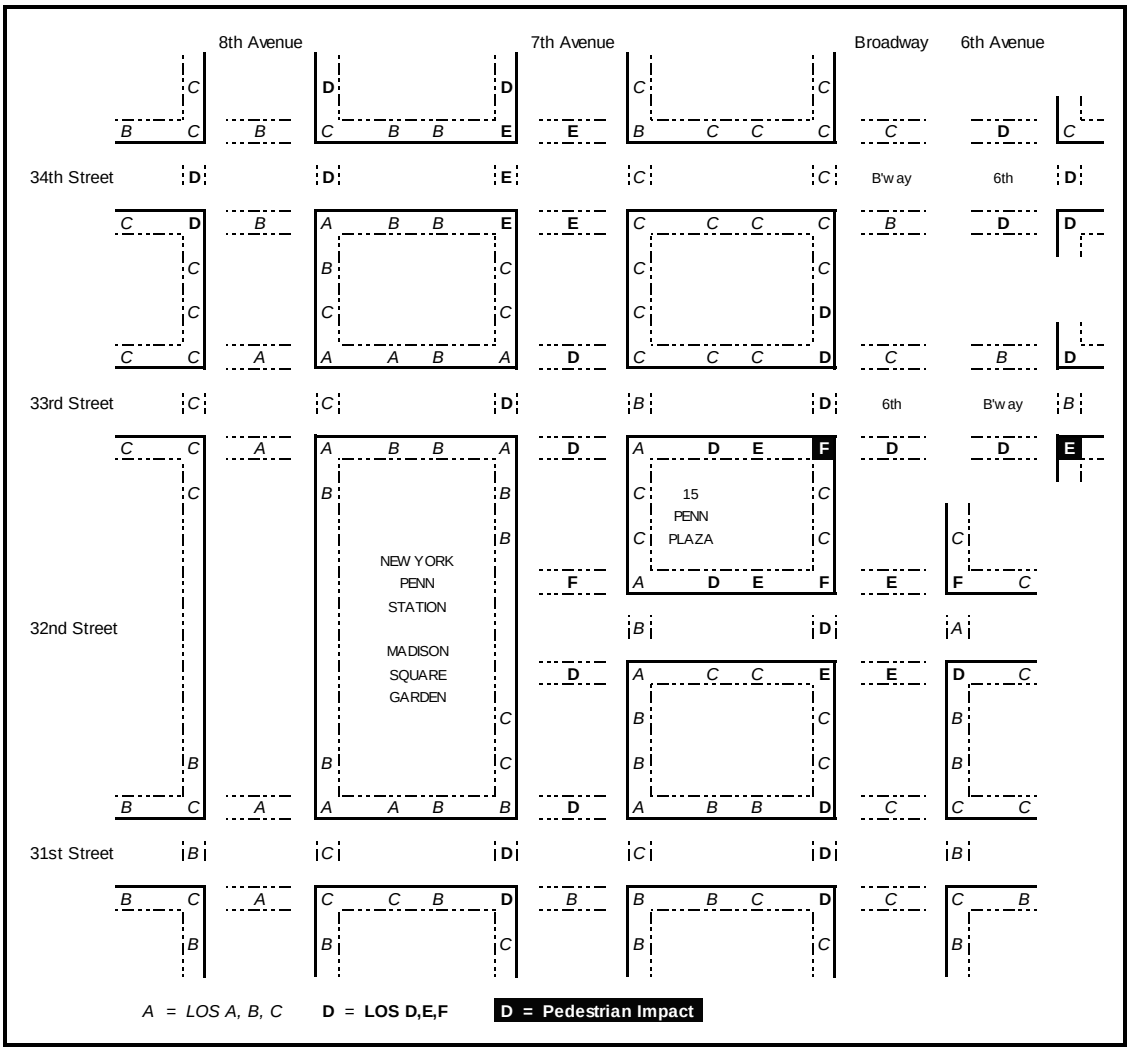


Figure 17-14
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Weekday AM Peak Hour - Pedestrian LOS

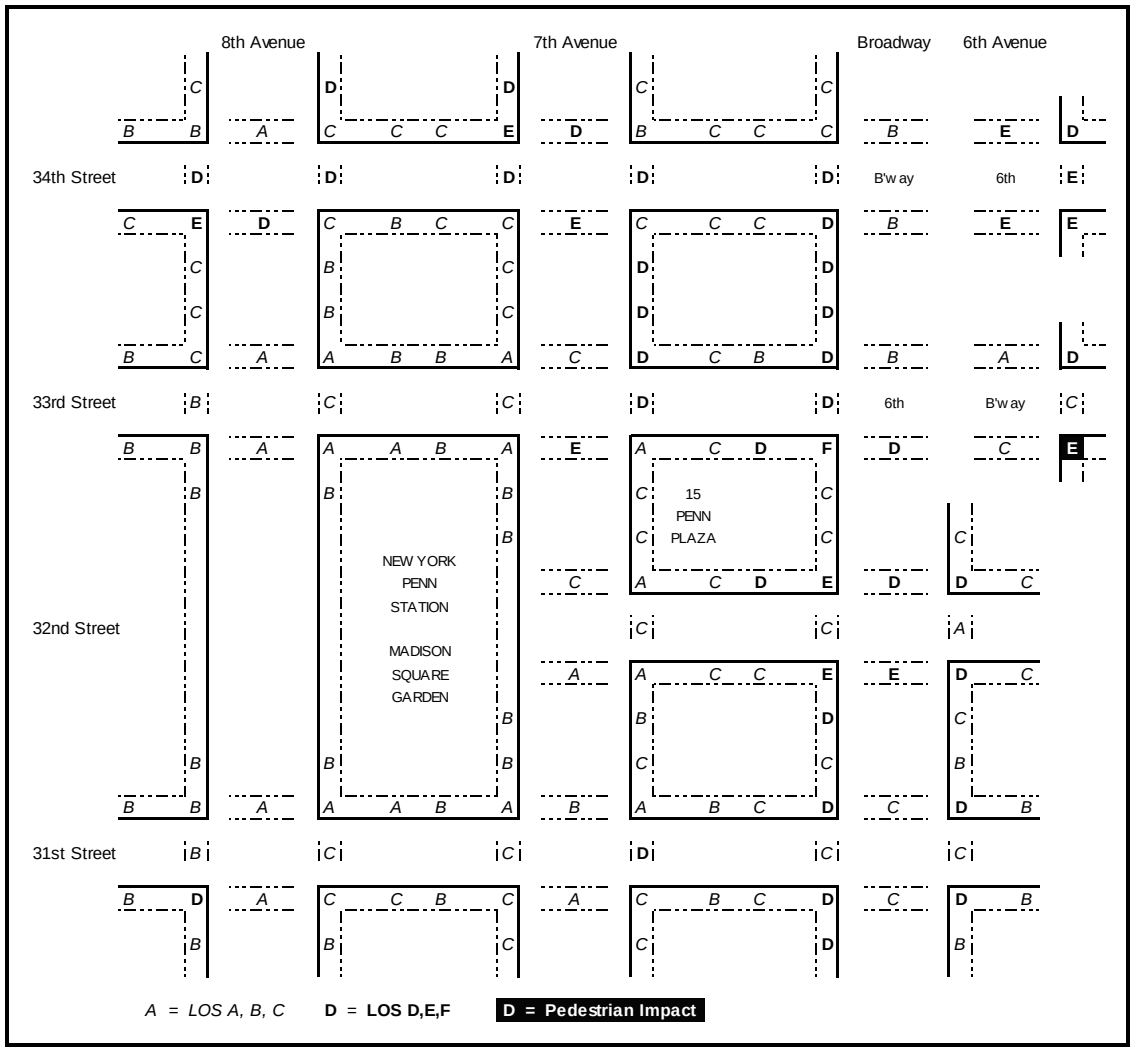


Figure 17-15
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Weekday MD Peak Hour - Pedestrian LOS

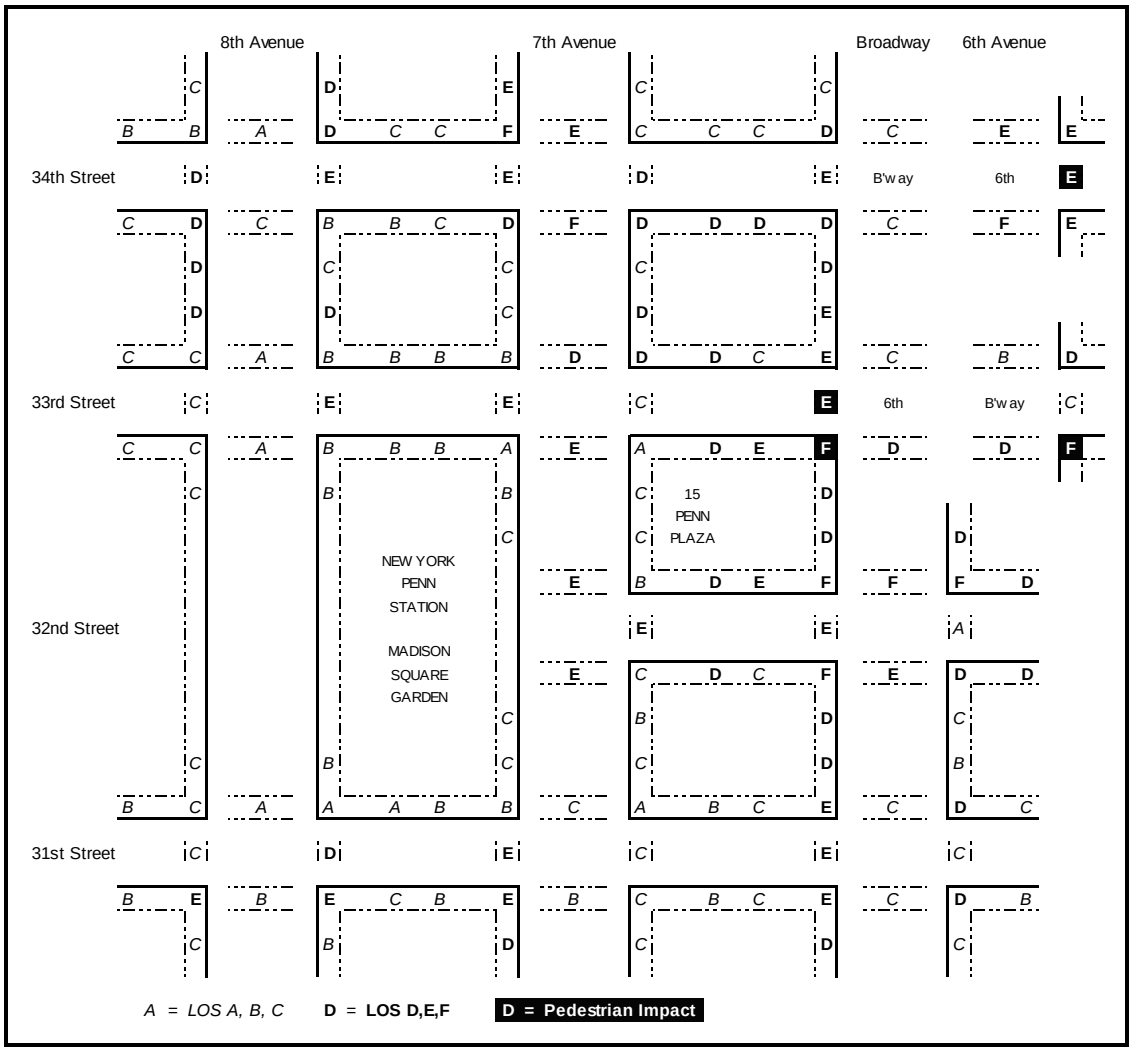


Figure 17-16
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Weekday PM Peak Hour - Pedestrian LOS

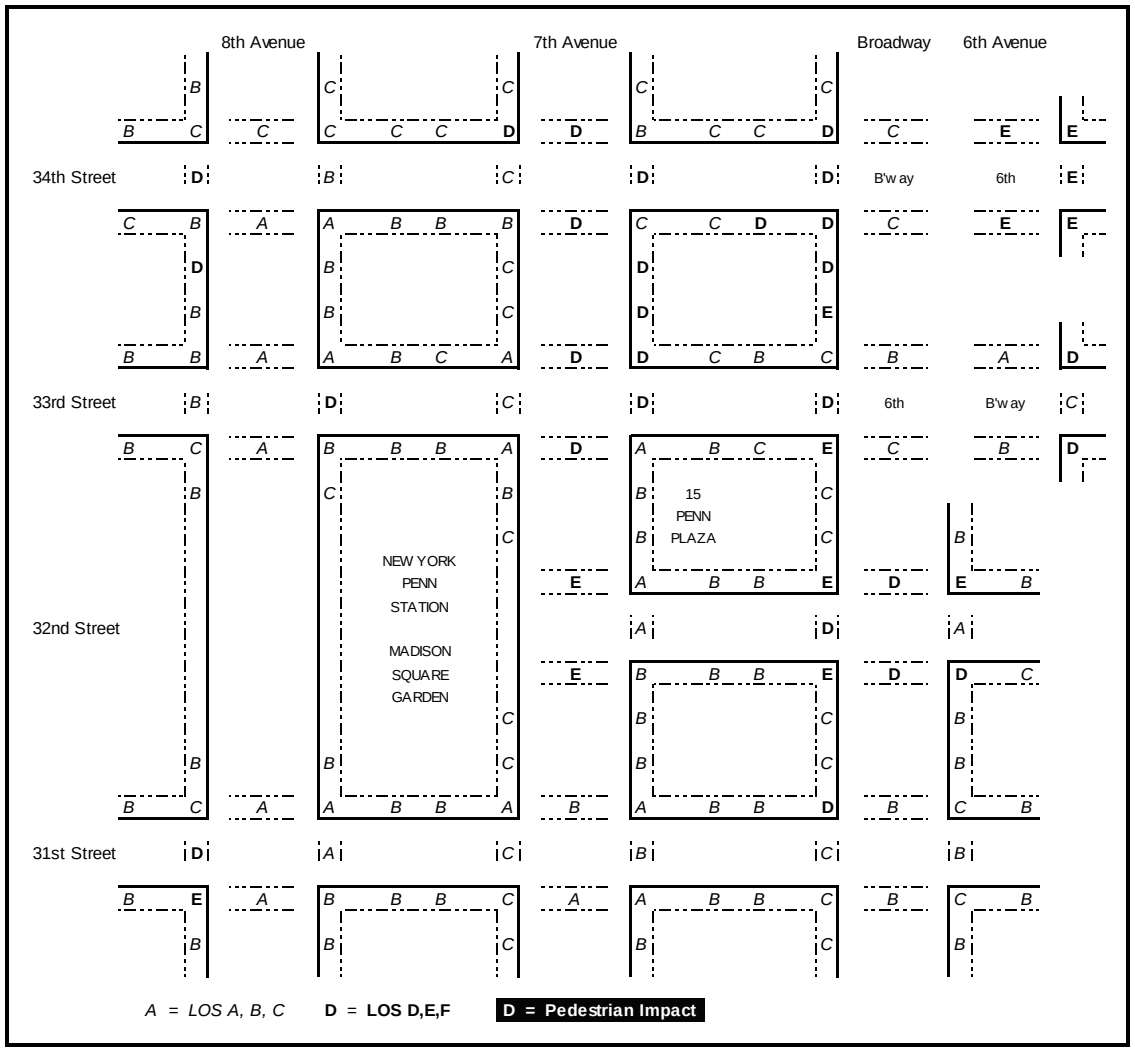


Figure 17-17
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Saturday MD Peak Hour - Pedestrian LOS

For the 2014 future with the proposed project Single-Tenant Office Scenario, a total of 167 pedestrian elements (78 sidewalks, 47 crosswalks, and 42 corners) were analyzed for the AM, weekday midday (MD), PM, and Saturday midday peak hours. Congested operating conditions (LOS D or worse) would occur at seven sidewalks during the AM peak period, 10 sidewalks during the weekday midday peak period, 25 sidewalks during the PM peak period, and six sidewalks during the Saturday midday peak period. Congested operating conditions occur at 15 corners during the AM peak period, 19 corners during the weekday midday peak period, 25 corners during the PM peak period, and 15 corners during the Saturday midday peak period. Congested operating conditions occur at 22 crosswalks during the AM peak period, 18 crosswalks during the weekday midday peak period, 26 crosswalks during the PM peak period, and 19 crosswalks during the Saturday midday peak period.

Table 17-23 below presents pedestrian elements operating at LOS D or worse for the 2014 future with the proposed project Single-Tenant Office Scenario.

Table 17-23
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
8th Avenue & 31st Street	Corner	Southeast		-	-	-	-	-	-	832	12.7	E	-	-	-
		Southwest		-	-	-	469	18.4	D	574	13.1	E	618	9.0	E
	Crosswalk	West		-	-	-	-	-	-	-	-	-	463	19.3	D
		East		-	-	-	-	-	-	575	20.6	D	-	-	-
8th Avenue & 33rd Street	Sidewalk	North	West	-	-	-	-	-	-	688	8.5	D	-	-	-
			East	-	-	-	-	-	-	1104	7.0	D	-	-	-
	Crosswalk	East		-	-	-	-	-	-	846	14.1	E	636	17.6	D
8th Avenue & 34th Street	Sidewalk	North	East	869	8.2	D	753	7.1	D	955	9.0	D	-	-	-
		South	West	-	-	-	-	-	-	565	6.8	D	655	7.9	D
	Corner	Northeast		-	-	-	-	-	-	1660	19.4	D	-	-	-
		Southwest		1241	21.6	D	1973	12.4	E	1288	23.2	D	-	-	-
	Crosswalk	West		521	20.2	D	494	20.9	D	440	22.7	D	497	19.2	D
		East		651	19.5	D	708	18.9	D	938	14.3	E	-	-	-
		South		-	-	-	1399	16.2	D	-	-	-	-	-	-
7th Avenue & 31st Street	Sidewalk	South	West	-	-	-	-	-	-	1105	6.3	D	-	-	-
	Corner	Southwest		1300	21.2	D	-	-	-	1509	11.2	E	-	-	-
	Crosswalk	West		860	17.6	D	-	-	-	1162	13.9	E	-	-	-
		North		668	19.1	D	-	-	-	-	-	-	-	-	-
		East		-	-	-	857	23.6	D	-	-	-	-	-	-
7th Avenue & 32nd Street	Sidewalk	East	North	1184	10.8	D	-	-	-	1104	10.1	D	-	-	-
			South	-	-	-	-	-	-	666	6.5	D	-	-	-
	Crosswalk	North		1072	6.3	F	-	-	-	1038	10.1	E	816	9.9	E
		East		-	-	-	-	-	-	1045	13.5	E	-	-	-
		South		525	20.6	D	-	-	-	558	15.0	E	889	10.4	E
7th Avenue & 33rd Street	Sidewalk	North	East	-	-	-	1393	7.1	D	1201	6.2	D	1305	6.7	D
		East	North	-	-	-	-	-	-	683	7.2	D	-	-	-
			South	1034	6.6	D	-	-	-	1125	7.2	D	-	-	-
	Corner	Northeast		-	-	-	1737	22.8	D	1794	20.0	D	1857	22.6	D
	Crosswalk	West		939	22.4	D	-	-	-	1210	13.1	E	-	-	-
		North		384	20.7	D	-	-	-	424	19.5	D	435	17.1	D
		East		-	-	-	1068	22.2	D	-	-	-	1153	19.3	D
		South		437	17.0	D	534	12.6	E	616	10.5	E	526	15.0	D
7th Avenue & 34th Street	Sidewalk	North	West	1751	8.2	D	1403	6.5	D	2398	11.2	E	-	-	-
		East	South	-	-	-	-	-	-	1761	6.8	D	-	-	-
		South	East	-	-	-	1393	6.5	D	-	-	-	1305	6.1	D
	Corner	Northwest		3680	9.4	E	2624	12.8	E	4600	2.7	F	1832	18.5	D
		Southeast		-	-	-	-	-	-	2604	18.3	D	-	-	-
		Southwest		3958	9.6	E	-	-	-	4165	20.0	D	-	-	-
	Crosswalk	West		2137	14.5	E	1271	21.6	D	2456	8.7	E	-	-	-
		North		1061	12.8	E	955	15.9	D	1017	14.9	E	919	15.6	D
		East		-	-	-	869	21.0	D	1042	17.7	D	795	23.1	D
		South		1734	8.3	E	1108	11.9	E	1544	7.5	F	766	18.2	D

Table 17-23 (continued)
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
6th Avenue & 31st Street	Sidewalk	North	West	-	-	-	-	-	-	1107	7.3	D	-	-	-
		South	West	-	-	-	779	6.5	D	900	7.5	D	-	-	-
	Corner	Northwest		934	17.2	D	928	19.9	D	1293	13.7	E	788	23.0	D
		Northeast		-	-	-	791	19.6	D	714	22.1	D	-	-	-
		Southeast		-	-	-	737	18.0	D	693	17.4	D	-	-	-
		Southwest		1013	18.0	D	1004	17.7	D	1265	13.0	E	-	-	-
	Crosswalk	West		585	21.0	D	-	-	-	933	13.4	E	-	-	-
6th Avenue & 32nd Street	Sidewalk	West	North	1418	13.5	E	848	8.1	D	1312	12.5	E	-	-	-
		North	West	-	-	-	-	-	-	1109	6.7	D	-	-	-
			East	-	-	-	-	-	-	185	8.2	D	-	-	-
		East	North	-	-	-	-	-	-	790	6.1	D	-	-	-
			South	-	-	-	-	-	-	687	6.5	D	-	-	-
		South	West	-	-	-	936	7.1	D	1236	9.3	D	-	-	-
	Corner	Northwest		1551	5.0	F	1360	10.5	E	2497	4.2	F	1252	12.4	E
		Northeast		956	7.0	F	611	15.1	D	1270	0.0	F	665	12.9	E
		Southeast		870	22.0	D	910	17.8	D	861	15.4	D	709	23.8	D
		Southwest		1280	8.8	E	1403	8.6	E	1875	3.9	F	1303	9.9	E
	Crosswalk	West		677	22.4	D	-	-	-	1167	13.8	E	731	22.2	D
		North		686	11.0	E	455	17.9	D	1063	7.1	F	408	21.1	D
		South		550	14.5	E	563	13.4	E	628	11.2	E	443	17.5	D
6th Avenue & 33rd Street	Sidewalk	West	South	1426	13.6	E	991	9.4	D	1463	13.9	E	-	-	-
		North	West	1084	6.8	D	1558	9.8	D	2044	12.9	E	1805	11.4	E
		South	West	-	-	-	-	-	-	1057	6.4	D	-	-	-
	Corner	Northwest		1658	20.5	D	1659	23.7	D	2420	14.9	E	-	-	-
		Southwest		1832	4.9	F	2118	6.7	F	2633	5.0	F	1677	10.4	E
	Crosswalk	West		1049	21.3	D	1246	16.5	D	1845	9.5	E	1240	17.0	D
		South		691	20.9	D	633	21.4	D	713	18.5	D	-	-	-
Broadway & 34th Street	Sidewalk	West	South	-	-	-	-	-	-	1945	9.4	D	1322	6.4	D
		South	West	-	-	-	1558	8.0	D	2044	10.5	D	1805	9.3	D
	Corner	Northwest		-	-	-	-	-	-	3109	18.1	D	2684	22.3	D
		Southwest		-	-	-	2722	22.4	D	3459	17.8	D	2680	22.9	D
	Crosswalk	West		-	-	-	1175	18.1	D	1514	12.5	E	1228	16.8	D
Broadway & 33rd Street	Corner	Northeast		1289	18.5	D	1440	15.9	D	1543	15.1	D	1141	20.6	D
		Southeast		1353	11.2	E	1327	9.4	E	1517	4.7	F	952	15.5	D
	Crosswalk	South		632	21.7	D	-	-	-	679	16.8	D	-	-	-
6th Avenue & 34th Street	Corner	Northeast		-	-	-	2230	16.0	D	2711	11.2	E	2317	14.8	E
		Southeast		1711	22.0	D	2407	12.1	E	2784	8.1	E	2396	12.7	E
	Crosswalk	North		579	17.9	D	864	12.7	E	1061	10.1	E	1081	9.7	E
		East		776	19.2	D	1118	13.0	E	1266	11.4	E	1155	12.4	E
		South		757	15.3	D	1086	8.8	E	1333	6.3	F	1065	9.3	E

The 2014 Single-Tenant Office Scenario would result in a total of 7 significant adverse impacts on crosswalks and/or corner locations within the pedestrian study area. These impacts include 2 corner locations during the AM peak hour, 1 corner location during the midday peak hour, and 2 crosswalk and 2 corner locations during the PM peak hour and are presented in **Table 17-24.**

Table 17-24
2014 Future with the Proposed Project – Single-Tenant Scenario
Number of Significantly Impacted Pedestrian Elements

Pedestrian Elements	Analysis Hour			
	AM	Weekday Midday	PM	Saturday Midday
Sidewalks	0	0	0	0
Corners	2	1	2	0
Crosswalks	0	0	2	0

Table 17-25 below presents pedestrian elements that are expected to have significant adverse impacts for the 2014 future with the proposed project Single-Tenant Office Scenario. See Chapter 22, "Mitigation," for a description of mitigation for these impacts.

Table 17-25
2014 Future with the Proposed Project – Single-Tenant Office Scenario
Pedestrian Elements with Significant Adverse Impacts

Location			2014 Future without the Proposed Project			2014 Proposed Project Single Tenant Office Scenario		
			Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
AM Peak Hour								
6th Avenue & 33rd Street	Corner	Southwest	1562	7.5	F	1832	4.9	F
Broadway & 33rd Street	Corner	Southeast	1170	14.0	E	1353	11.2	E
Midday Peak Hour								
Broadway & 33rd Street	Corner	Southeast	1201	11.3	E	1327	9.4	E
PM Peak Hour								
6th Avenue & 33rd Street	Corner	Southwest	2406	6.2	F	2633	5.0	F
	Crosswalk	West	1728	10.6	E	1845	9.5	E
Broadway & 33rd Street	Corner	Southeast	1300	6.8	F	1517	4.7	F
6th Avenue & 34th Street	Crosswalk	East	1158	12.8	E	1266	11.4	E

MULTI-TENANT OFFICE SCENARIO

SUBWAY STATION OPERATIONS

This section presents the results of the subway station analysis for the future with the proposed project condition under the Multi-Tenant Office Scenario during the weekday AM and weekday PM peak periods.

- Transit trip distributions for the Proposed Project were formulated in consultation with New York City Transit. **Table 17-26** summarizes the total trips assigned to each line and the percentage of total trips by line.
- **Table 17-27** shows the future with the proposed project Multi-Tenant Office Scenario operating conditions of subway control area elements operating near or above capacity during the weekday AM and PM peak periods. These elements include 1 turnstile array, 3 HEET arrays, and 1 service gates during the AM peak periods and 2 HEET arrays and 1 service gate during the PM peak period.

Table 17-26
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Trips Assigned by Subway Line

Peak Hour	Direction	Subway Trips by Line			
		ACE	123	BDFV	NQRW
Weekday AM Peak Hour	In	82	219	123	123
	Out	3	7	4	4
	Total	85	226	127	127
Percentage		15%	40%	23%	23%
Weekday PM Peak Hour	In	80	215	121	121
	Out	182	486	273	273
	Total	262	701	394	394
Percentage		15%	40%	23%	23%

Table 17-27
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Subway Control Area Elements Near or Above Capacity

Control Area	Station Elements		Quantity	One- or Two-Way	2014 Future without the Proposed Project				2014 Future with the Proposed Project				Significant Impact?
					Volume	Capacity	V/SVCD Ratio	LOS	Volume	Capacity	V/SVCD Ratio	LOS	
AM PEAK PERIOD													
8th Avenue & 34th Street - Penn Station (A/C/E Routes)													
N68	HT1	Two-Way HEET	2	2	386	480	0.80	E	386	480	0.80	E	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)													
N505	SG1	Two-Way Service Gate	1	2	533	600	0.89	E	533	600	0.89	E	No
A22	HT1	Two-Way HEET	2	2	639	480	1.33	F	639	480	1.33	F	No
A25K	HT1	Two-Way HEET	3	2	877	720	1.22	F	878	720	1.22	F	No
PATH	TS2	One-Way Turnstile (Exit)	3	1	1929	1800	1.07	F	1930	1800	1.07	F	No
PM PEAK PERIOD													
7th Avenue & 34th Street - Penn Station (1/2/3 Routes)													
R138	SG1	Two-Way Service Gate	1	2	641	600	1.07	F	641	600	1.07	F	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)													
N505	HT1	Two-Way HEET	2	2	430	480	0.90	E	430	480	0.90	E	No
A25K	HT1	Two-Way HEET	3	2	717	810	0.89	E	717	810	0.89	E	No

- **Table 17-28** shows the affected subway station stairways for the future with the proposed project Multi-Tenant Office Scenario operating at LOS D or worse during the weekday AM and PM peak periods. These elements include 5 stairways during the AM peak hour and 7 stairways during the PM peak hour.

Both scenarios of the proposed project include a Subway Improvement Package designed to improve levels of service at both the 34th Street-Penn Station and 34th Street-Herald Square subway stations, as well as along the major east-west corridors between Penn Station and Herald Square. Due to this Subway Improvement Package, the future with the proposed project Multi-

Tenant Office Scenario would not result in any significant adverse impacts at the station elements analyzed.

Table 17-28
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Affected Subway Station Stairways

Control Area	Stairway Number and Location		Actual Width (ft)	Effective Width (ft)	2014 Future without the Proposed Project				2014 Future with the Proposed Project				Width Increment Threshold	Significant Impact?
					Volume	Capacity[1]	V/SVCD Ratio	LOS	Volume	Capacity[1]	V/SVCD Ratio	LOS		
AM PEAK PERIOD														
8th Avenue & 34th Street - Penn Station (A/C/E Routes)														
N73	S2	8th & 33rd, SW, W	4.3	3.3	399	396	1.01	D	400	396	1.01	D	0.10	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)														
N506	S5	B'way & 34th, SW	9.2	8.2	1250	1107	1.13	D	1288	1107	1.16	D	2.99	No
	M5	B'way & 34th, SW	9.2	8.2	1250	1107	1.13	D	1288	1107	1.16	D	2.99	No
A25K	S2	B'way & 32nd, NW	7.5	6.5	1025	780	1.31	D	1027	780	1.32	D	0.15	No
	M1	B'way & 32nd, NW	7.5	6.5	1025	780	1.31	D	1027	780	1.32	D	0.15	No
PM PEAK PERIOD														
8th Avenue & 34th Street - Penn Station (A/C/E Routes)														
N73	S2	8th & 33rd, SW, W	4.3	3.3	463	446	1.04	D	467	446	1.05	D	0.34	No
34th Street - Herald Square Station (B/D/F/V/N/Q/R/W and PATH Routes)														
N506	S5	B'way & 34th, SW	9.2	8.2	1397	1107	1.26	D	1421	1107	1.28	D	1.69	No
	M5	B'way & 34th, SW	9.2	8.2	1397	1107	1.26	D	1421	1107	1.28	D	1.69	No
	S7	B'way & 34th, NW	8.4	7.4	1075	888	1.21	D	1090	888	1.23	D	1.24	No
	M7	B'way & 34th, NW	8.4	7.4	1075	888	1.21	D	1090	888	1.23	D	1.24	No
A25K	S2	B'way & 32nd, NW	7.5	6.5	989	780	1.27	D	995	780	1.28	D	0.47	No
	M1	B'way & 32nd, NW	7.5	6.5	989	780	1.27	D	995	780	1.28	D	0.47	No

[1] Capacity is calculated as (150 * effective width * friction factor) where the friction factor is 0.8 or 0.9 depending on counterflow volume

PEDESTRIAN OPERATIONS

The future with the proposed project under the Multi-Tenant Office Scenario operating conditions of the 78 sidewalks, 42 corner reservoirs, and 47 crosswalks in the pedestrian study area were analyzed for the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak periods.

- **Table 17-29** summarizes the future with the proposed project under the Multi-Tenant Office Scenario operating conditions of the sidewalks, corner reservoirs, and crosswalks analyzed during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours.

Table 17-29
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Summary of Pedestrian Element LOS

Sidewalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	3	2	1	0	**6**
B	31	30	19	40	**120**
C	38	31	30	30	**129**
D	4	13	23	7	**47**
E	2	2	5	1	**10**
F	0	0	0	0	**0**
Total	**78**	**78**	**78**	**78**	**312**

Corners					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	10	8	3	8	**29**
B	3	6	8	9	**26**
C	14	9	6	10	**39**
D	8	11	11	8	**38**
E	4	6	8	7	**25**
F	3	2	6	0	**11**
Total	**42**	**42**	**42**	**42**	**168**

Crosswalks					
LOS	**AM**	**MD**	**PM**	**SAT**	**Total**
A	5	9	5	9	**28**
B	10	6	3	10	**29**
C	10	12	11	9	**42**
D	16	13	8	13	**50**
E	5	6	17	4	**32**
F	1	1	3	2	**7**
Total	**47**	**47**	**47**	**47**	**188**

The analysis indicates that in the 2014 future with the proposed project – Multi-Tenant Office Scenario, 255 of the 312 total analyzed sidewalk movements in the pedestrian study area operate at LOS C or better, the minimum standard for acceptable operating conditions. The analysis also indicates that 94 of the 168 total analyzed corner reservoirs and 99 of the 188 total analyzed crosswalk movements operate at LOS C or better, respectively. **Figures 17-18 through 17-21** present 2014 proposed project levels of service under the Multi-Tenant Office Scenario at all sidewalks, corner reservoirs, and crosswalks within the pedestrian study area during the weekday AM, weekday midday (MD), weekday PM, and Saturday midday (SAT) peak hours.

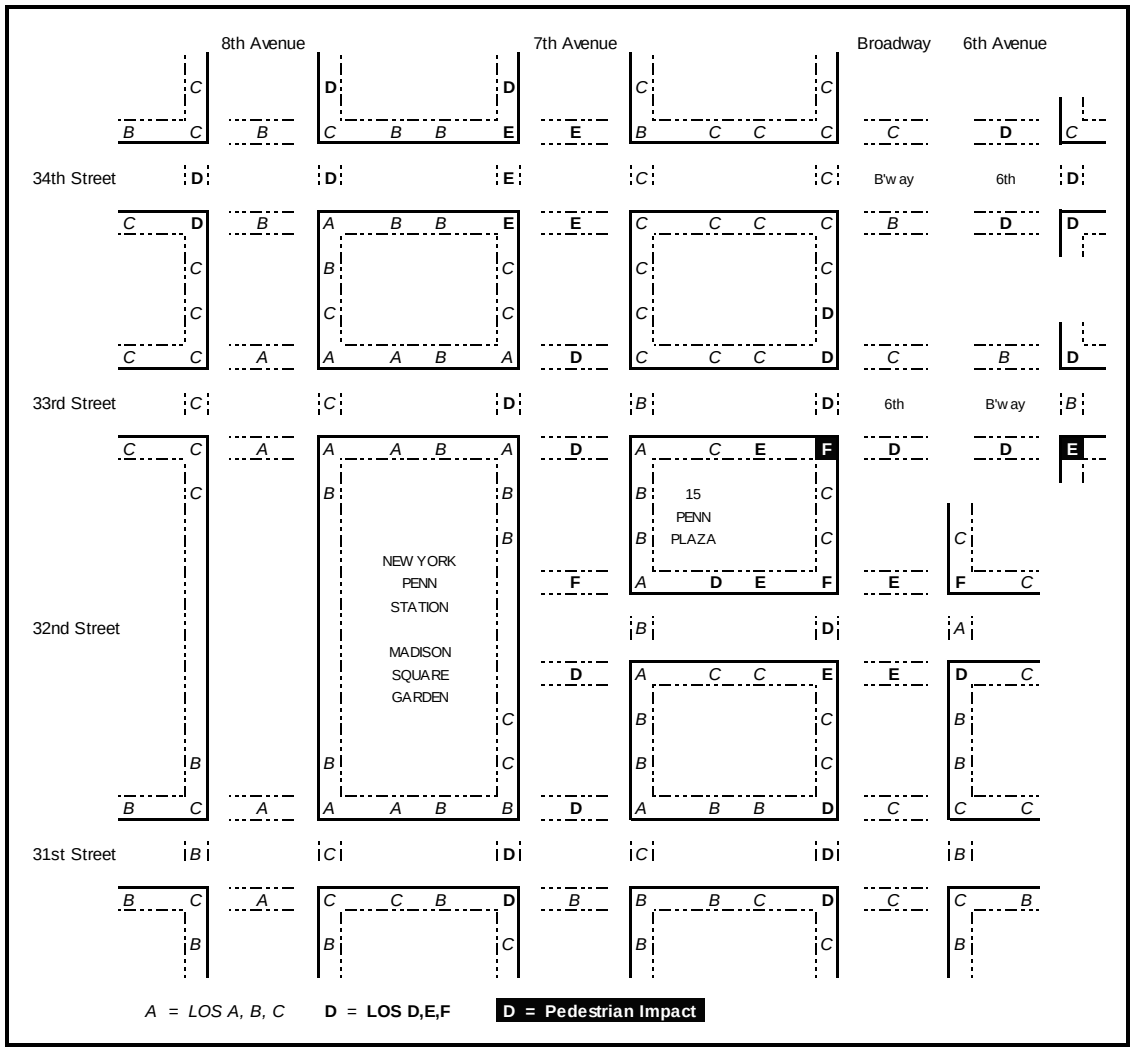


Figure 17-18
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Weekday AM Peak Hour - Pedestrian LOS

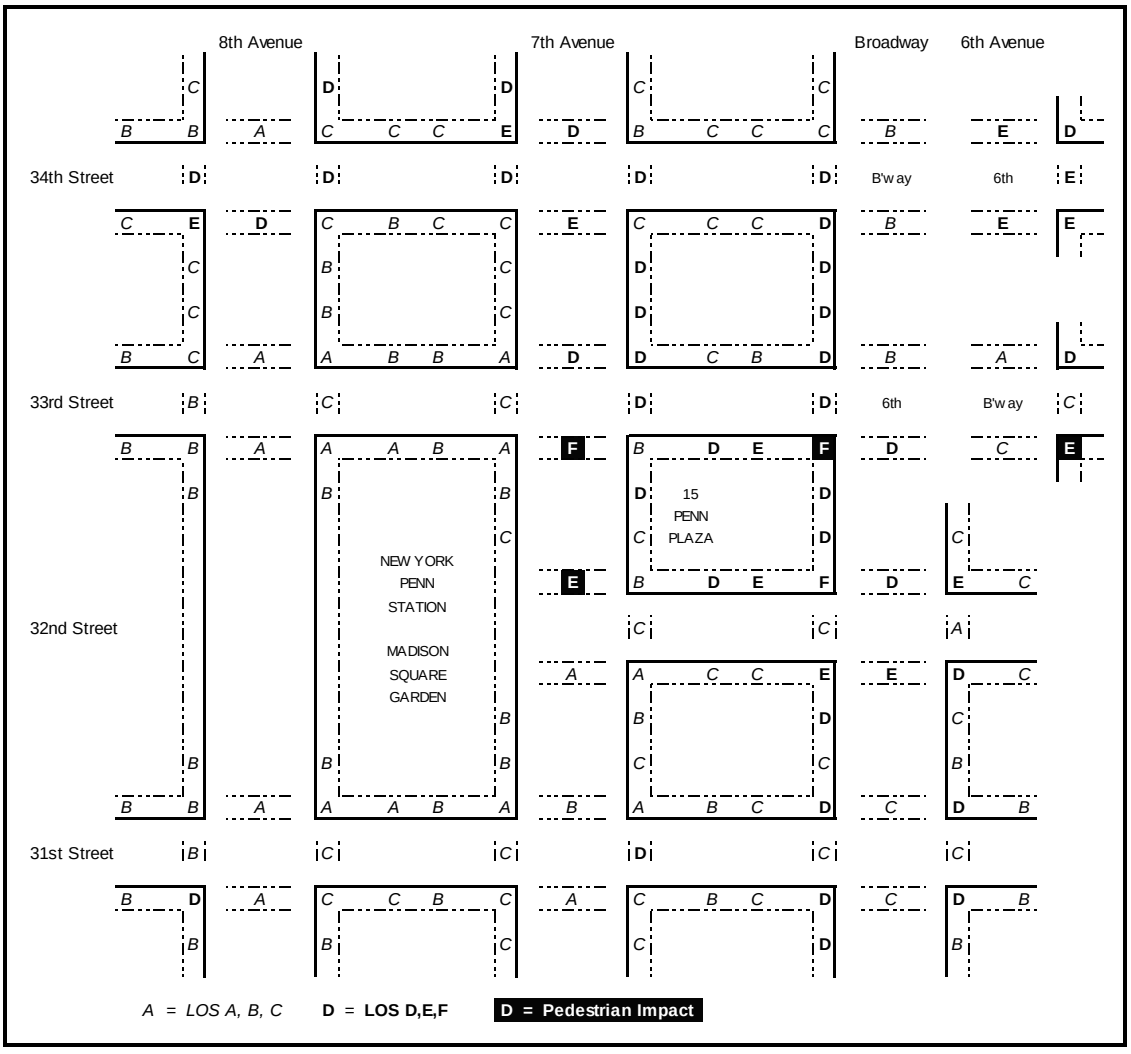


Figure 17-19
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Weekday MD Peak Hour - Pedestrian LOS

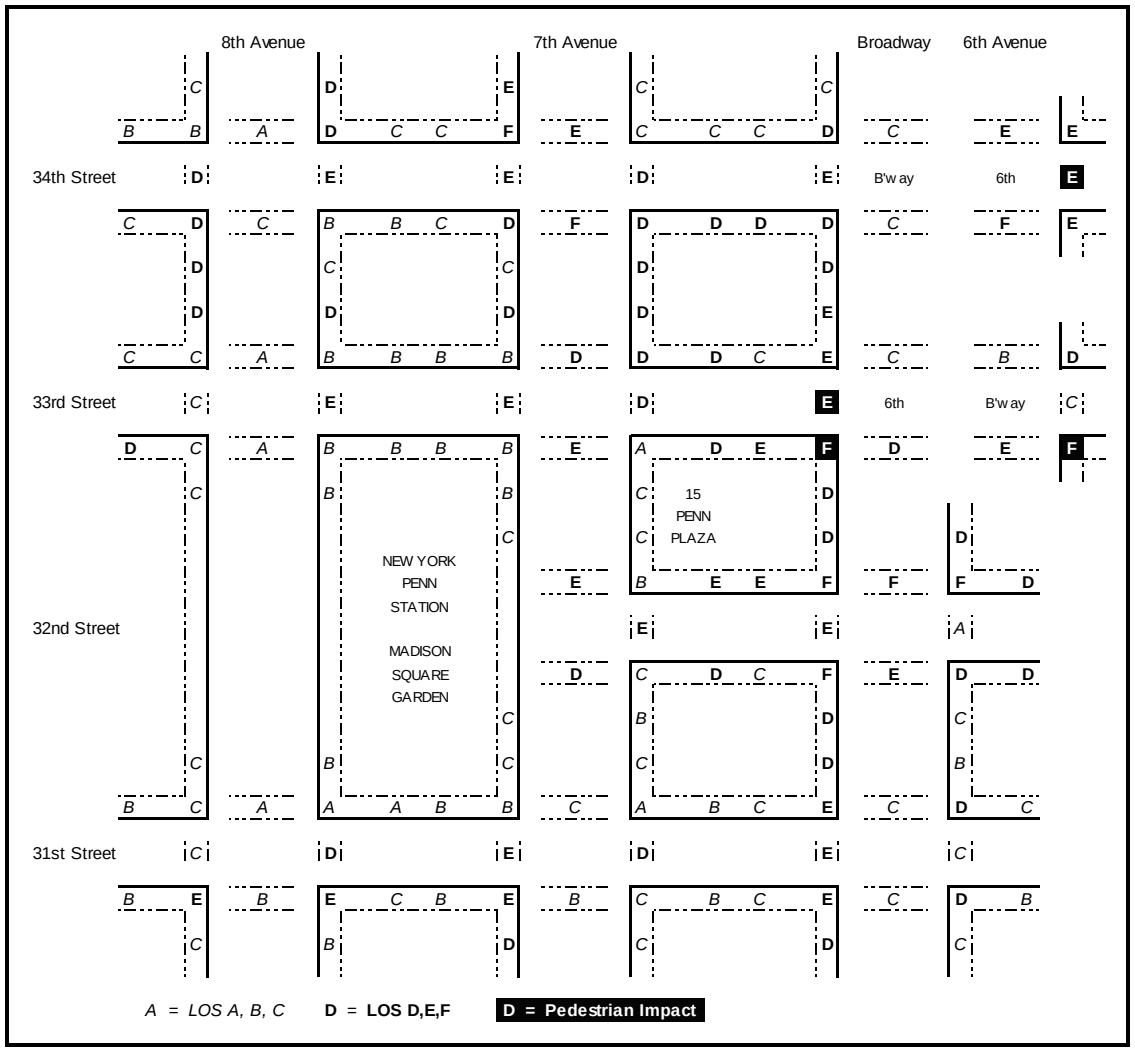


Figure 17-20
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Weekday PM Peak Hour - Pedestrian LOS

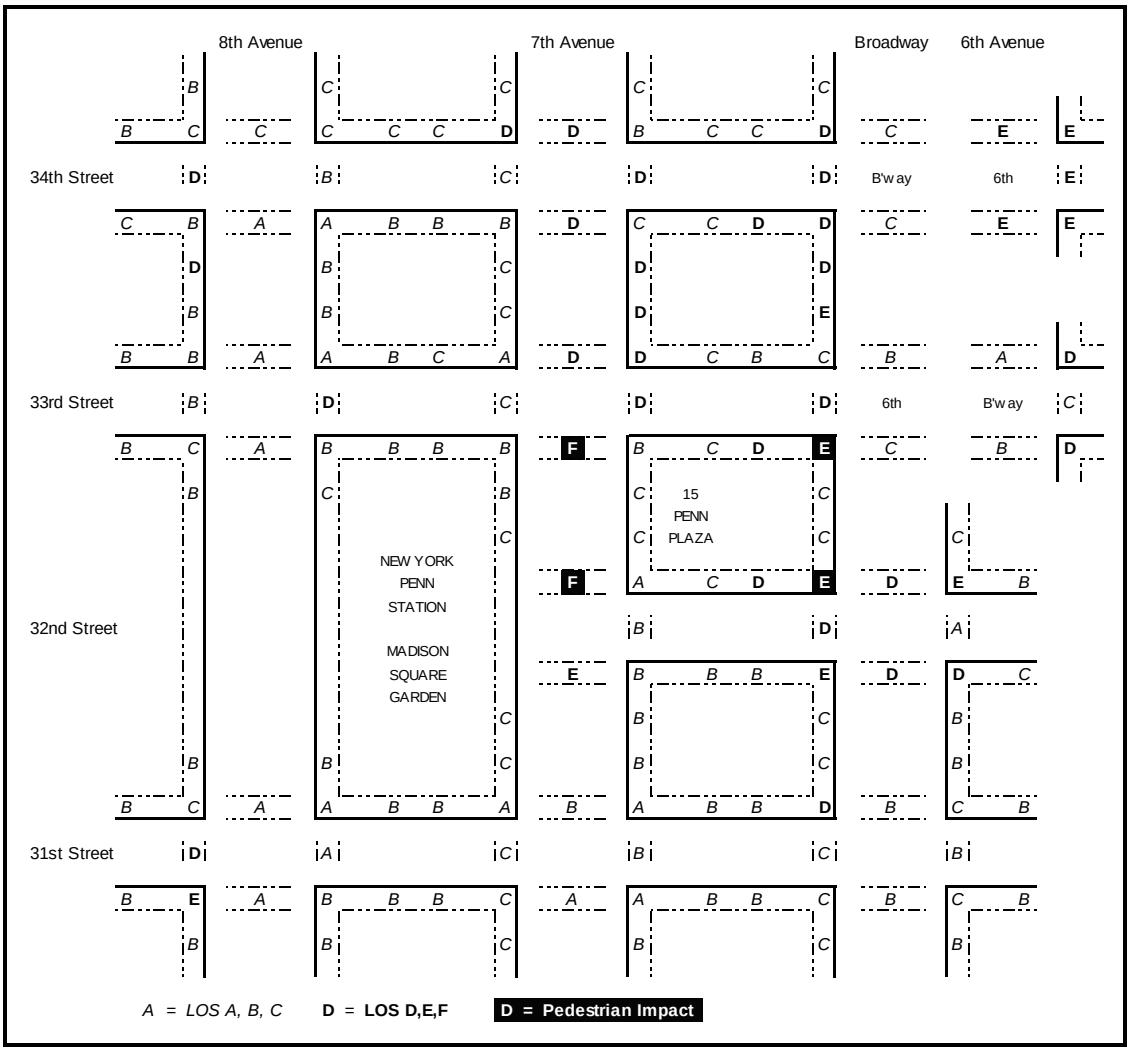


Figure 17-21
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Saturday MD Peak Hour - Pedestrian LOS

For the 2014 future with the proposed project Multi-Tenant Office Scenario, congested operating conditions (LOS D or worse) would occur at six sidewalks during the AM peak period, 15 sidewalks during the weekday midday peak period, 28 sidewalks during the PM peak period, and eight sidewalks during the Saturday midday peak period. Congested operating conditions would occur at 15 corners during the AM peak period, 19 corners during the weekday midday peak period, 25 corners during the PM peak period, and 15 corners during the Saturday midday peak period. Congested operating conditions would occur at 22 crosswalks during the AM peak period, 20 crosswalks during the weekday midday peak period, 28 crosswalks during the PM peak period, and 19 crosswalks during the Saturday midday peak period.

Table 17-30 below presents pedestrian elements operating at LOS D or worse for the 2014 future with the proposed project Multi-Tenant Office Scenario.

Table 17-30
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
8th Avenue & 31st Street	Corner	Southeast		-	-	-	-	-	-	833	12.7	E	-	-	-
		Southwest		-	-	-	469	18.4	D	574	13.1	E	618	9.0	E
	Crosswalk	West		-	-	-	-	-	-	-	-	-	463	19.3	D
		East		-	-	-	-	-	-	576	20.6	D	-	-	-
8th Avenue & 33rd Street	Sidewalk	West	South	-	-	-	-	-	-	470	6.0	D	-	-	-
		North	West	-	-	-	-	-	-	688	8.5	D	-	-	-
			East	-	-	-	-	-	-	1104	7.0	D	-	-	-
	Crosswalk	East		-	-	-	-	-	-	846	14.1	E	636	17.6	D
8th Avenue & 34th Street	Sidewalk	North	East	869	8.2	D	753	7.1	D	955	9.0	D	-	-	-
		South	West	-	-	-	-	-	-	565	6.8	D	655	7.9	D
	Corner	Northeast		-	-	-	-	-	-	1660	19.4	D	-	-	-
		Southwest		1241	21.6	D	1973	12.4	E	1288	23.2	D	-	-	-
	Crosswalk	West		521	20.2	D	494	20.9	D	440	22.7	D	497	19.2	D
		East		651	19.5	D	708	18.9	D	938	14.3	E	-	-	-
		South		-	-	-	1399	16.2	D	-	-	-	-	-	-
7th Avenue & 31st Street	Sidewalk	South	West	-	-	-	-	-	-	1105	6.3	D	-	-	-
	Corner	Southwest		1299	21.3	D	-	-	-	1509	11.2	E	-	-	-
	Crosswalk	West		859	17.6	D	-	-	-	1162	13.9	E	-	-	-
		North		660	19.4	D	-	-	-	-	-	-	-	-	-
		East		-	-	-	858	23.6	D	815	24.0	D	-	-	-
7th Avenue & 32nd Street	Sidewalk	East	North	1089	9.9	D	1048	9.6	D	1210	11.0	E	-	-	-
			South	-	-	-	-	-	-	678	6.6	D	-	-	-
		North		946	7.5	F	790	11.6	E	983	10.5	E	1231	6.0	F
	Crosswalk	East		-	-	-	-	-	-	1199	11.4	E	-	-	-
		South		517	20.9	D	-	-	-	553	15.1	D	890	10.4	E
7th Avenue & 33rd Street	Sidewalk	North	West	-	-	-	-	-	-	1411	6.0	D	-	-	-
			East	-	-	-	1411	7.2	D	1357	7.0	D	1325	6.8	D
		East	North	-	-	-	-	-	-	685	7.2	D	-	-	-
			South	-	-	-	1217	7.8	D	1238	7.9	D	-	-	-
		South	East	-	-	-	2375	6.1	D	-	-	-	-	-	-
	Corner	Northeast		-	-	-	1785	22.0	D	1960	18.0	D	1912	21.8	D
	Crosswalk	West		929	22.7	D	-	-	-	1214	13.0	E	-	-	-
		North		375	21.3	D	349	23.5	D	429	19.2	D	449	16.5	D
		East		-	-	-	1103	21.4	D	1164	21.2	D	1193	18.5	D
		South		381	19.6	D	950	6.3	F	673	9.5	E	958	7.2	F
7th Avenue & 34th Street	Sidewalk	North	West	1751	8.2	D	1403	6.5	D	2398	11.2	E	-	-	-
		East	South	-	-	-	-	-	-	1765	6.8	D	-	-	-
		South	East	-	-	-	1411	6.6	D	1357	6.3	D	1325	6.2	D
	Corner	Northwest		3671	9.4	E	2636	12.7	E	4604	2.7	F	1845	18.3	D
		Southeast		-	-	-	-	-	-	2760	16.7	D	-	-	-
		Southwest		3951	9.6	E	-	-	-	4169	20.0	D	-	-	-
	Crosswalk	West		2131	14.6	E	1279	21.5	D	2459	8.7	E	-	-	-
		North		1058	12.8	E	958	15.8	D	1018	14.9	E	923	15.6	D
		East		-	-	-	873	20.9	D	1193	15.0	D	799	23.0	D
		South		1733	8.3	E	1110	11.9	E	1545	7.5	F	768	18.1	D

Table 17-30 (cont'd)
2014 Future with the Proposed Project – Multi-Tenant Office Scenario
Pedestrian Elements at LOS D, E, or F

Location				AM			MD			PM			SAT		
				Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
6th Avenue & 31st Street	Sidewalk	North	West	-	-	-	-	-	-	1107	7.3	D	-	-	-
		South	West	-	-	-	779	6.5	D	900	7.5	D	-	-	-
	Corner	Northwest		934	17.2	D	928	19.9	D	1293	13.7	E	788	23.0	D
		Northeast		-	-	-	791	19.6	D	714	22.1	D	-	-	-
		Southeast		-	-	-	737	18.0	D	693	17.4	D	-	-	-
		Southwest		1013	18.0	D	1004	17.7	D	1265	13.0	E	-	-	-
	Crosswalk	West		585	21.0	D	-	-	-	933	13.4	E	-	-	-
6th Avenue & 32nd Street	Sidewalk	West	North	1363	13.0	E	1267	12.1	E	1402	13.4	E	682	6.5	D
		North	West	-	-	-	1074	6.5	D	1120	6.8	D	-	-	-
			East	-	-	-	-	-	-	190	8.4	D	-	-	-
		East	North	-	-	-	-	-	-	866	6.7	D	-	-	-
			South	-	-	-	-	-	-	687	6.5	D	-	-	-
		South	West	-	-	-	936	7.1	D	1236	9.3	D	-	-	-
	Corner	Northwest		1496	5.2	F	1779	7.9	F	2587	3.8	F	1688	9.0	E
		Northeast		927	7.9	F	635	14.1	E	1353	0.0	F	693	11.9	E
		Southeast		862	22.4	D	922	17.4	D	864	15.2	D	723	23.2	D
		Southwest		1271	8.9	E	1415	8.4	E	1878	3.9	F	1317	9.7	E
	Crosswalk	West		675	22.5	D	-	-	-	1168	13.8	E	735	22.0	D
		North		659	11.4	E	475	17.0	D	1145	6.5	F	432	19.8	D
		South		544	14.7	E	571	13.1	E	630	11.1	E	452	17.1	D
6th Avenue & 33rd Street	Sidewalk	West	South	1390	13.2	E	1393	13.3	E	1548	14.7	E	995	9.5	D
		North	West	1073	6.8	D	1568	9.9	D	2049	12.9	E	1817	11.5	E
		South	West	-	-	-	1120	6.8	D	1061	6.4	D	-	-	-
	Corner	Northwest		1646	20.6	D	1669	23.6	D	2424	14.9	E	-	-	-
		Southwest		1809	5.0	F	2508	5.7	F	2714	4.5	F	2080	8.3	E
	Crosswalk	West		1043	21.5	D	1251	16.4	D	1848	9.5	E	1246	16.9	D
		South		685	21.1	D	633	21.4	D	788	16.5	D	-	-	-
Broadway & 34th Street	Sidewalk	West	South	-	-	-	-	-	-	1945	9.4	D	1322	6.4	D
		South	West	-	-	-	1568	8.0	D	2049	10.5	D	1817	9.3	D
	Corner	Northwest		-	-	-	-	-	-	3109	18.1	D	2684	22.3	D
		Southwest		-	-	-	2732	22.3	D	3463	17.7	D	2692	22.8	D
	Crosswalk	West		-	-	-	1175	18.1	D	1514	12.5	E	1228	16.8	D
Broadway & 33rd Street	Corner	Northeast		1289	18.5	D	1440	15.9	D	1543	15.1	D	1141	20.6	D
		Southeast		1347	11.3	E	1328	9.4	E	1593	3.9	F	953	15.5	D
	Crosswalk	South		626	22.0	D	-	-	-	754	14.8	E	-	-	-
6th Avenue & 34th Street	Corner	Northeast		-	-	-	2230	16.0	D	2711	11.2	E	2317	14.8	E
		Southeast		1711	22.0	D	2407	12.1	E	2784	8.1	E	2396	12.7	E
	Crosswalk	North		579	17.9	D	864	12.7	E	1061	10.1	E	1081	9.7	E
		East		776	19.2	D	1118	13.0	E	1266	11.4	E	1155	12.4	E
		South		757	15.3	D	1086	8.8	E	1333	6.3	F	1065	9.3	E

The 2014 Multi-Tenant Office Scenario would result in a total of 14 significant adverse impacts on crosswalks and/or corner locations within the pedestrian study area. These impacts include 2 corner locations during the AM peak hour, 2 crosswalk and 2 corner locations during the midday peak hour, 2 crosswalk and 2 corner locations during the PM peak hour, and 2 crosswalk and 2 corner locations during the Saturday peak hour and are presented in **Table 17-31**.

Table 17-31
2014 Future with the Proposed Project – Multi-Tenant Scenario
Number of Significantly Impacted Pedestrian Elements

Pedestrian Elements	Analysis Hour			
	AM	Weekday Midday	PM	Saturday Midday
Sidewalks	0	0	0	0
Corners	2	2	2	2
Crosswalks	0	2	2	2

Table 17-32 below presents pedestrian elements that are expected to have significant adverse impacts for the 2014 future with the proposed project Multi-Tenant Office Scenario. See Chapter 22, "Mitigation," for a description of mitigation for these impacts.

Table 17-32
2014 Future with the Proposed Project - Multi-Tenant Office Scenario
Pedestrian Elements with Significant Adverse Impacts

Location			2014 Future without the Proposed Project			2014 Proposed Project Multi-Tenant Office Scenario		
			Peak 15 Volume	PFM / SFP	LOS	Peak 15 Volume	PFM / SFP	LOS
AM Peak Hour								
6th Avenue & 33rd Street	Corner	Southwest	1562	7.5	F	1809	5.0	F
Broadway & 33rd Street	Corner	Southeast	1170	14.0	E	1347	11.3	E
Midday Peak Hour								
7th Avenue & 32nd Street	Crosswalk	North	655	14.3	E	790	11.6	E
7th Avenue & 33rd Street	Crosswalk	South	656	9.9	E	950	6.3	F
6th Avenue & 33rd Street	Corner	Southwest	2114	7.2	F	2508	5.7	F
Broadway & 33rd Street	Corner	Southeast	1201	11.3	E	1328	9.4	E
PM Peak Hour								
6th Avenue & 33rd Street	Corner	Southwest	2406	6.2	F	2714	4.5	F
	Crosswalk	West	1728	10.6	E	1848	9.5	E
Broadway & 33rd Street	Corner	Southeast	1300	6.8	F	1593	3.9	F
6th Avenue & 34th Street	Crosswalk	East	1158	12.8	E	1266	11.4	E
Saturday Midday Peak Hour								
7th Avenue & 32nd Street	Crosswalk	North	976	8.0	F	1231	6.0	F
7th Avenue & 33rd Street	Crosswalk	South	596	12.9	E	958	7.2	F
6th Avenue & 32nd Street	Corner	Northwest	1365	10.9	E	1688	9.0	E
6th Avenue & 33rd Street	Corner	Southwest	1665	11.2	E	2080	8.3	E

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