

A. INTRODUCTION

This chapter describes the transit and pedestrian travel characteristics and potential adverse impacts associated with the proposed Special West Chelsea District Rezoning and High Line Open Space. The proposed action area encompasses approximately 13 whole blocks and two partial blocks, bounded by Tenth Avenue, Eleventh Avenue, W. 16th Street and W. 30th Street, and also includes the east side of Tenth Avenue between W. 16th Street and W. 18th Street to a point approximately 400 feet east of the avenue (see Figure 1-2 in Chapter 1, “Project Description”). As described in detail in earlier chapters of this EIS, the proposed action would enable new residential development in West Chelsea, along with some retail and community facility uses. The proposed action is expected to displace a number of land uses that would be present in the future without the proposed action (the “No-Action”), including office space, storage/manufacturing activities and hotel uses. The proposed action also includes site selection and acquisition of the High Line for its use as a publicly-accessible open space. The City proposes to convert the disused elevated rail line into an approximately ~~6.7~~ 5.9-acre open space, to be used for passive recreation activities. It is expected to include a promenade, seating, and amenities for park users.

The transportation analyses in this document address the projected development program expected to be implemented by 2013, including the creation of the High Line open space. Potential significant adverse impacts that would occur in the absence of the creation of the High Line open space and the associated transfer of development rights (the Base FAR Scenario) are also assessed. The analyses in this chapter focus on the subway and local bus travel modes, as well as pedestrian trips related to the proposed action’s projected development sites. Qualitative discussions of commuter rail and ferry services are also included. The locations of these projected development sites are shown in Figure 1-6, and their anticipated uses are listed in Table 1-4 (see Chapter 1, “Project Description”).

In this chapter, the existing conditions at the transit and pedestrian facilities expected to be used by the majority of new demand from projected development sites are described in detail. The analyses concentrate on the weekday AM (8AM-9AM) and PM (5PM-6PM) peak hours, as demand from these predominantly residential development sites would be heaviest during these periods, and it is also during these periods that the transit system is generally most heavily utilized. The pedestrian analyses also include weekday midday (12-1PM) conditions as pedestrian facilities in Manhattan are often intensively used during the midday. Future 2013 Without the Proposed Action (No-Action) conditions are then evaluated, including additional transit and pedestrian demand and any changes in transit facilities by 2013. The planned Flushing Line subway extension, anticipated to be operational in 2009, would terminate at a station located directly north of the proposed action area, at approximately Eleventh Avenue and W. 34th Street. Therefore, the analyses of conditions with and without the proposed action contemplate extension of the Flushing Line as well as other aspects of the Hudson Yards plan that would be developed by 2013. Increases in travel demand resulting

from the proposed action and the High Line open space, minus the travel demand eliminated due to displaced No-Action uses, is then projected and added to the base No-Action condition to develop the 2013 Future With the Proposed Action (With-Action) condition. Any significant adverse impacts from the proposed action are then identified. Conditions without the Flushing Line subway extension are also examined.

For the subway analysis, existing subway stations within ½ mile of the proposed action area were studied. A threshold of 200 peak hour trips entering or exiting a subway station has been established under *CEQR Technical Manual* criteria to determine whether new subway demand from a proposed action warrants a detailed analysis at a particular station. Based on the travel demand forecast for the proposed action and the assignment of new subway and bus trips, presented later in this chapter, it is expected that two of the area's subway stations would experience a peak hour demand in excess of 200 persons per hour. These are the W. 23rd Street/Eighth Avenue IND station and the W. 18th Street/Seventh Avenue IRT station. Therefore, conditions at key elements at these stations are analyzed in detail.

Based on the travel demand forecast, the proposed action would generate a total of approximately 130 bus trips during the AM peak hour and 449 trips during the PM peak hour. In addition, it is anticipated that new bus trips would also be generated by some users of the subway system who would utilize cross-town bus lines for access between the proposed action area and nearby subway stations. All of these trips would be distributed among the seven bus routes serving the proposed action area. Given this level of anticipated demand, a detailed analysis of bus operations during the weekday AM and PM peak hours would be warranted under *CEQR Technical Manual* criteria and is therefore included in the analyses.

The analyses of pedestrian conditions focus on the key sidewalks, corner areas and crosswalks where new pedestrian demand is expected to be most concentrated. These facilities are located primarily along corridors providing access to and from area subway stations. Facilities that would be utilized by pedestrians en route to and from potential High Line access points are also evaluated.

As discussed in earlier chapters of this EIS, subsequent to the publication of the DEIS additional projects were identified that are likely to be developed in the 2013 No-Action. Principal among these are the Pennsylvania Station Redevelopment Project, a 250,000 square-foot hotel at 438-450 W.13th Street, and a new 48,000 sf commercial development that will include 24,000 sf of art gallery/retail space at 520 W.27th Street. These three projects are expected to add trips to analyzed transit and pedestrian facilities serving the proposed action area by 2013. The No-Action and With-Action transit and pedestrian analyses have therefore been revised from the DEIS to reflect this increase in No-Action demand.

As also discussed in earlier chapters of this EIS, subsequent to the publication of the DEIS it was determined that a number of projected development sites are more intensively used for retail purposes under existing conditions than was previously assumed. Development of these sites under the proposed action would therefore displace a greater number of transit and pedestrian trips than credit was taken for in the travel demand forecast in the DEIS. The subway, bus and pedestrian

impact analyses in the FEIS have therefore been revised to reflect the higher number of displaced transit and pedestrian trips that would result from the proposed action.

B. DATA COLLECTION

Counts at selected subway station stairways and fare arrays were conducted during the weekday AM and PM peak periods in January 2004 at the W. 23rd Street/Eighth Avenue station and at the W. 18th Street/Seventh Avenue station. NYC Transit provided data on peak hour ridership at the maximum load points on each of the seven routes serving the action area. In addition, pedestrian counts were conducted during the weekday AM, midday and PM peak periods along the W. 18th Street, W. 23rd Street and Tenth Avenue corridors and at locations in the vicinity of potential High Line access points in May and October 2004.

C. EXISTING CONDITIONS

Subway Service

West Chelsea is primarily served by the Eighth Avenue Line IND and the Seventh Avenue Line IRT. On the Eighth Avenue Line, express service is provided by A trains, and local service by C and E trains. On the Seventh Avenue Line, Nos. 2 and 3 trains provide express service and Nos. 1 and 9 trains provide local service. The Canarsie/14th Street Line BMT (L trains) also serves the southern portion of the proposed action area. As shown in Figure 17-1, existing stations serving the proposed action area are located at 14th Street, 23rd Street and 34th Street-Penn Station on the Eighth Avenue Line, and 14th Street, 18th Street, 23rd Street, 28th Street and 34th Street-Penn Station on the Seventh Avenue Line. The 14th Street/Eighth Avenue station complex includes the Eighth Avenue station on the Canarsie/14th Street Line, with free transfers available between L trains and A, C and E trains. Both local and express service are provided at the stations along 14th and 34th Streets, with only local service provided at intermediate stations.

Subway trips to and from the proposed action's projected development sites are expected to be distributed among these eight existing subway stations or station complexes. In addition, it is anticipated that an extension of Flushing Line IRT service west on West 41st Street and south on Eleventh Avenue would be completed by 2009 allowing No. 7 trains to operate to West 34th Street. As shown in Figure 17-1, a proposed station at West 34th Street and Eleventh Avenue would provide access to and from the northern end of the proposed action area.

Table 17-1 shows the average weekday entering turnstile counts at existing subway stations serving the proposed action area for the years 2000 through 2002, as well as the 2002 ranking of each station based on average weekday ridership relative to all 424 stations system-wide. Note that 2001 data reflect the events of September 11, 2001, which resulted in significant service disruptions and changes in passenger travel patterns.

Table 17-1, Average Weekday Entering Turnstile Counts

Station	Rank*	2000	2001	2002	Percent Change	
					2000-2002	2001-2002
W. 14th Street/ Eighth Avenue (A,C,E,L)	33	25,254	26,662	27,618	9.4%	3.6%
W. 14th Street/ Seventh Avenue (1,2,3,9,F,L,V)	15	41,528	42,048	43,308	4.3%	3.0%
W. 18th Street/ Seventh Avenue (1,9)	150	8,862	8,586	8,748	-1.3%	1.9%
W. 23rd Street/ Eighth Avenue (C,E)	63	17,895	18,024	17,386	-2.8%	-3.5%
W. 23rd Street/ Seventh Avenue (1,9)	82	13,800	14,591	14,604	5.8%	0.1%
W. 28th Street/ Seventh Avenue (1,9)	102	11,833	12,237	12,482	5.5%	2.0%
Penn Station - W. 34th Street/ Eighth Avenue (A,C,E)	6	75,862	76,651	79,746	5.1%	4.0%
Penn Station - W. 34th Street/ Seventh Avenue (1,2,3,9)	5	87,886	86,727	80,731	-8.6%	-7.3%
TOTALS		282,920	285,526	284,623	0.6%	-0.32%

Notes:

*Rank out of 424 stations system-wide in 2002.

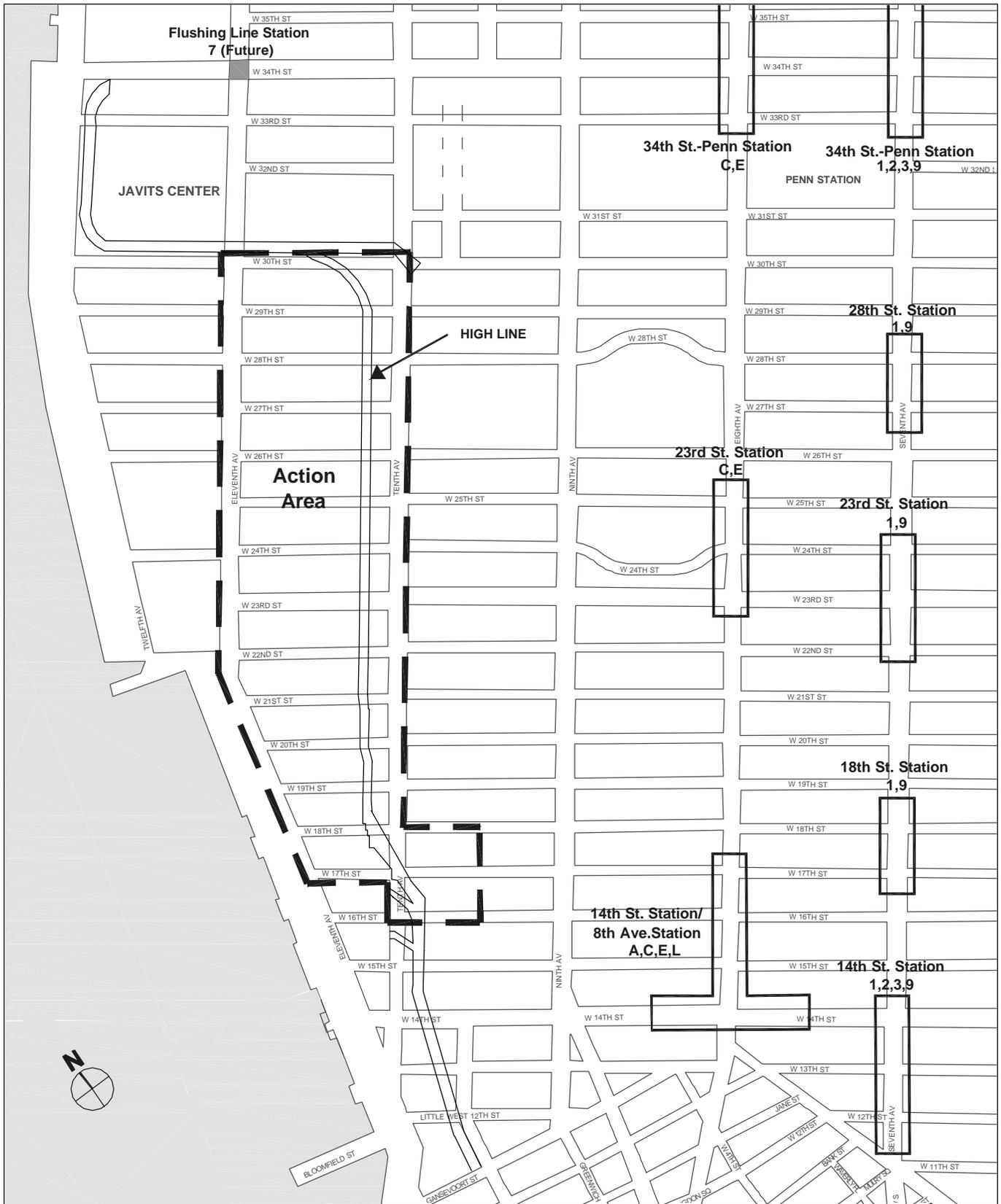
2001 data include 9/11-related changed in ridership and service patterns.

Source: New York City Transit 2002 Subway and Bus Ridership Report.

As shown in Table 17-1, there is wide variation in the utilization rates at the subway stations at which action-generated trips would occur. The stations along W. 34th Street at Seventh and Eighth Avenues (Penn Station) are the most heavily utilized, ranking fifth and sixth, respectively, out of 424 stations in 2002. The 34th Street/Seventh Avenue station experienced an average of 80,731 persons entering on a typical 2002 weekday, representing a 7.3 percent decrease in demand compared to 2001, and an 8.6 percent decrease compared to 2000. The 34th Street/Eighth Avenue station experienced an average of 79,746 persons entering per weekday, representing an increase in demand of 5.1 percent compared to 2000, and of 4.0 percent compared to 2001. The 18th Street/Seventh Avenue station is most lightly used of the stations serving the proposed action area, with a rank of 150 out of 424, and an average of 8,748 persons entering per weekday. Demand at this station decreased by 1.3 percent compared to 2000, but increased by 1.9 percent compared to 2001.

As discussed in more detail later in this chapter, subway demand generated by the proposed action is expect to be most concentrated at two stations, the 23rd Street station on the Eighth Avenue Line and the 18th Street station on the Seventh Avenue Line. As shown in Table 17-1, the 23rd Street/Eighth Avenue station, served by C and E trains, ranks 63 out of the 424 stations in the

Figure 17-1
Area Subway Facilities



Legend:

— — — — — Action Area Boundary

Not to Scale

subway system based on an average of 17,386 persons entering on a typical weekday. Demand at this station decreased by 2.8 percent since 2000 and by 3.5 percent since 2001. As discussed above, the 18th Street/Seventh Avenue station, served by Nos. 1 and 9 trains, experiences the lowest level of weekday demand of area subway stations, based on 2002 data. However, this station is expected to attract nearly one in five action-generated subway trips.

Following are descriptions of the physical characteristics and the subway services provided at each of the existing subway stations in the vicinity of the proposed action area.

New subway trips generated by the proposed action would occur at a total of eight existing stations or station complexes serving the proposed action area. Two of these stations are located along W. 34th Street and are part of the Penn Station complex served by Amtrak intercity trains, and Long Island Rail Road and New Jersey Transit commuter rail service. The **34th Street-Penn Station/Eighth Avenue subway station** has a single island platform served by A express trains, and two side-platforms served by C and E local trains. As shown later in this chapter, the proposed action would generate a total of ~~44~~ 47-trips in the AM peak hour and ~~69~~ 81-trips in the PM peak hour at this station. Most of these new trips would utilize stairways at the southwest and southeast corners of W. 33rd Street and Eighth Avenue.

One block to the east is the **34th Street-Penn Station/Seventh Avenue subway station**. Like its counterpart at Eighth Avenue, this station is comprised of a single island platform served by express trains (Nos. 2 and 3) and two side platforms with local service (Nos. 1 and 9 trains). Trips generated by the proposed action at this station are expected to total ~~26~~ 28-in the AM peak hour and ~~42~~ 48-in the PM. While some of these trips would likely use stairs located at W. 33rd Street and Seventh Avenue, it is anticipated that many would make their way through the Penn Station complex to and from entrances along Eighth Avenue. Although both are part of the Penn Station complex, there is no free transfer between the subway stations at Seventh Avenue and at Eighth Avenue.

To the south, the **23rd Street/Eighth Avenue station** is located beneath Eighth Avenue between W. 23rd Street and W. 25th Street. It is served by the IND C and E local trains, and has two side platforms. The west (downtown-bound) and east (uptown-bound) platforms each have a single token booth at W. 23rd Street with three fare control areas, at W. 23rd Street (entrance/exit), W. 24th Street (exit only) and W. 25th Street (entrance/exit). As shown in Figure 17-2, access to the downtown-bound fare array at W. 23rd Street (three turnstiles, three high entrance/exit turnstiles) is provided by stairs S1 and S3 and access to the uptown-bound fare array (three turnstiles) by stairs S2 and S4. At West 24th Street, stairs S5 and S6 provide egress from the downtown-bound and uptown-bound platforms, respectively. Each of these exits is controlled by two high revolving exit gates located at platform level. At W. 25th Street, the west (downtown-bound) fare array (two high entrance turnstiles and two high revolving exit gates) is reached via stairs S7 and S9, and the east (uptown-bound) fare array (also with two high entrance turnstiles and two high revolving exit gates) is reached via three stairs S8, S10, and S11. As shown later in this chapter, new trips generated by the proposed action at the 23rd Street/Eighth Avenue station would total ~~264~~ 284-in the AM peak hour and ~~415~~ 483-in the PM.

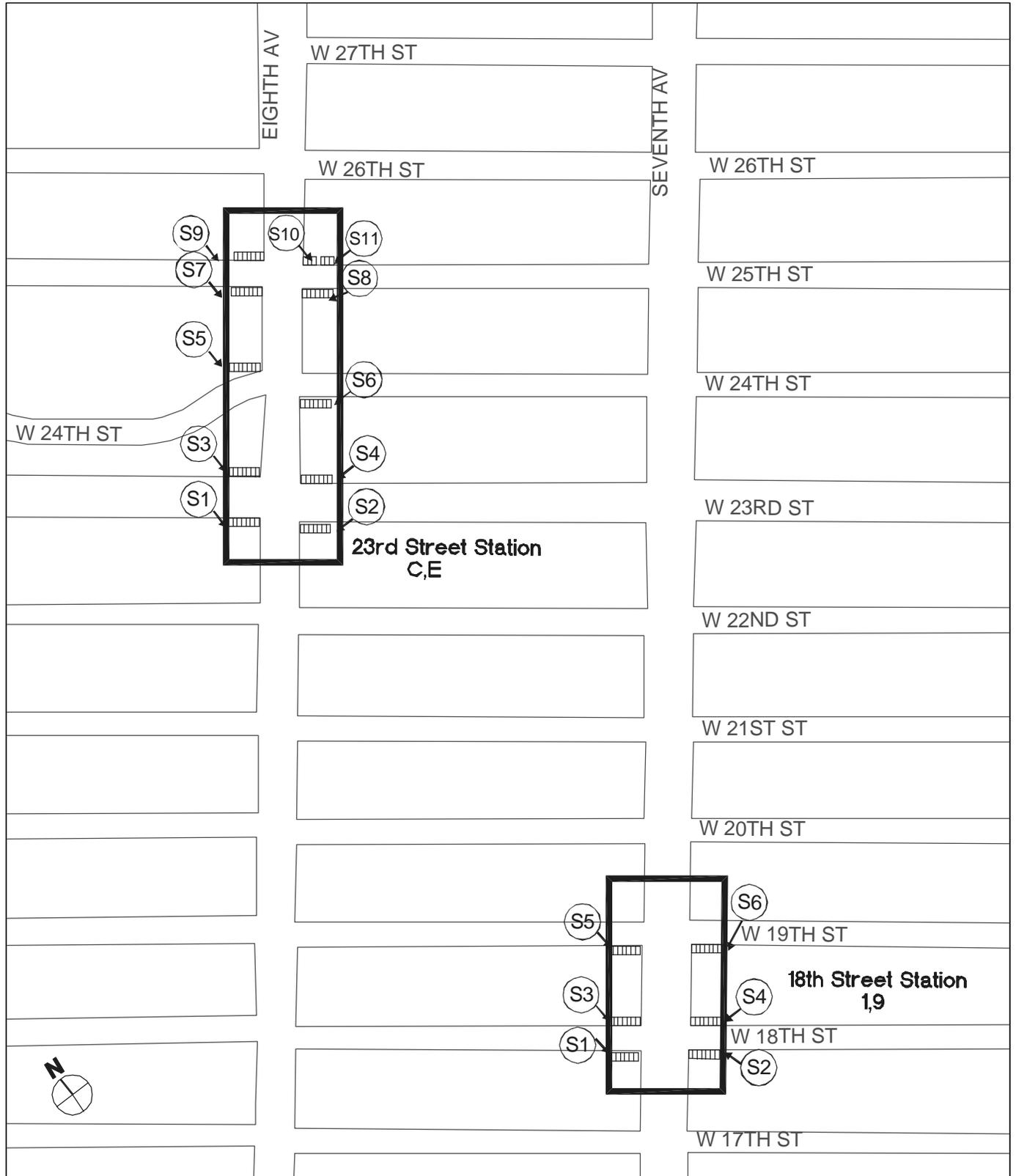
In addition to the express station at W. 34th Street, three local stations on the Seventh Avenue Line would be used by new subway trips en route to and from the proposed action area. The **23rd Street/Seventh Avenue** and **28th Street/Seventh Avenue stations** both have two side platforms and are served by Nos. 1 and 9 trains. Access to the 23rd Street station is provided by four stairways, one on each corner of the 23rd Street/Seventh Avenue intersection. The two stairs on the west side of the intersection serve downtown-bound trains, while the two stairs on the east side of the intersection serve uptown bound trains. The 28th Street station has a similar configuration, except that there is an additional exit-only stair controlled by a high revolving exit gate at the south (W. 27th Street) end of each platform. As shown later in this chapter, the proposed action would generate an estimated 79 ~~85~~ new subway trips at the 23rd Street station in the AM peak hour and 125 ~~145~~ in the PM peak hour. New trips at the 28th Street station would total 70 ~~76~~ in the AM peak hour and 111 ~~129~~ in the PM.

The **18th Street/Seventh Avenue station** is located beneath Seventh Avenue between W. 18th Street and W. 19th Street. It is served by the IRT Nos. 1 and 9 local trains. The station consists of two side-platforms, each with two fare control areas. Manned fare arrays serving each platform are located at W. 18th Street where stairs S1 and S3 provide access to the three turnstiles, two high entrance/exit turnstiles and two high revolving exit gates serving the west (downtown-bound) platform, and stairs S2 and S4 provide access to the three turnstiles serving the east (uptown-bound) platform. At West 19th Street, stairs S5 and S6 provide egress from the downtown-bound and uptown-bound platforms, respectively. Each of these exits is controlled by a single high revolving exit gate located at platform level. New trips generated by the proposed action at this station are expected to total 158 ~~170~~ in the AM peak hour and 249 ~~290~~ in the PM.

Some subway trips generated by projected developments at the southern portion of the proposed action area are expected to utilize stations located along W. 14th Street. These include the **14th Street/Eighth Avenue station** (A express, and C and E local trains), and the adjoining **Eighth Avenue station** on Canarsie/14th Street Line (L trains). Entrances to this station complex are located along Eighth Avenue at W. 14th, 15th and 16th Streets. The 14th Street/Eighth Avenue station is comprised of two island platforms, one for uptown-bound local and express trains and the second for downtown-bound trains, located below an expansive mezzanine level. Below this is the Eighth Avenue station, which serves as the western terminus of the Canarsie/14th Street Line and is comprised of a single island platform. As shown later in this chapter, the proposed action is expected to generate a total of approximately 106 ~~114~~ new trips at this station complex in the weekday AM peak hour and 166 ~~193~~ in the PM.

A smaller number of new subway trips are expected to occur at the **14th Street/Seventh Avenue station**, which is served by Nos. 2 and 3 express trains and Nos. 1 and 9 local trains. This station is comprised of two island platforms located below a mezzanine level, with one platform serving uptown-bound local and express trains and the second for downtown-bound trains. A passageway to the 14th Street/Sixth Avenue station provides free transfers to F and V trains. The proposed action is expected to generate approximately 44 ~~47~~ new trips at the 14th Street/Seventh Avenue station in the AM peak hour and 69 ~~81~~ in the PM, with most, if not all of these trips using stairways located at W. 14th Street. Additional station entrance stairs are located at W. 13th and W. 12th Streets.

Figure 17-2
Analyzed Subway Stations



LEGEND

— Subway Station

(S1) Subway Station Stair

Not to Scale

A threshold of 200 peak hour trips entering or exiting a station has been established under *CEQR* criteria to determine whether new subway demand from a proposed action warrants a detailed analysis at a particular station. As shown above, and discussed later in this chapter, both with and without the proposed Flushing Line extension, new demand from the proposed action would exceed this threshold at only two subway stations – the 23rd Street station on the Eighth Avenue Line and the 18th Street station on the Seventh Avenue Line. As new demand would remain below the *CEQR* threshold at the remaining stations serving the proposed action area, these stations are not analyzed quantitatively in this EIS. As demand at the proposed Flushing Line station at West 34th Street and Eleventh Avenue is also not expected to exceed the 200-trip *CEQR* analysis threshold, this station is also not assessed quantitatively in this EIS.

Analyses of subway station conditions focus on the elements with the potential to be affected in the future with the proposed action (i.e., street stairways and fare arrays). These analyses were prepared using the design capacities for stairs, escalators, turnstiles, and high-wheel exits specified in the *CEQR Technical Manual, NYCTA Station Planning and Design Guidelines* and procedures found in *Pedestrian Planning and Design*, by John J. Fruin. Peak 15-minute conditions during the AM and PM peak hours are reflected. Stairway analyses were conducted using the Fruin pedestrian level of service (LOS) methodology, which equates pedestrian flow per minute per foot stairway width with qualitative measures of pedestrian comfort. Fruin defines six levels of service based on the calculated values of pedestrian volumes per foot width of stairway per minute, as shown in Table 17-2. Level of service (LOS) A represents free flow conditions without pedestrian conflicts, and LOS F indicates significant capacity limitations and inconvenience.

Table 17-2, Stairway Level of Service Definitions

Level of Service	Pedestrians/Foot/Minute (PFM)	Comments
A	≤ 5	Free flow conditions.
B	5 - 7	Minor reverse flow will cause minor conflicts.
C	7 - 10	Slight restrictions in speed and difficulties in reverse flows.
D	10 - 13	Significant restrictions in speed and difficulties in reverse flows.
E	13 - 17	Reductions in speeds, serious reverse traffic conflicts, and intermittent stoppages.
F	≥ 17	Complete breakdown in traffic flow.

Practical capacities were calculated for each analyzed stairway by multiplying service volumes at LOS C/D (10 persons per foot-width per minute, or PFM) by the effective stair width and an adjustment factor to account for two-directional friction, where applicable. Peak 15-minute volumes were compared with these capacities to obtain a volume-to-capacity (v/c) ratio for each peak hour. Using this methodology, LOS A, B and C correspond to volume-to-capacity ratios of less than 1.0, while LOS D, E and F indicate demand that exceeds capacity, and therefore the v/c ratios are greater than 1.0. Levels of service for turnstiles and high revolving exit gates are also described in terms

of volume-to-capacity ratios, where LOS A is less than 0.2, LOS B between 0.2 to 0.4, LOS C between 0.4 to 0.6, LOS D between 0.6 to 0.8, LOS E between 0.8 to 1.0 and LOS F greater than 1.0. A v/c ratio greater than 1.0 indicates volumes beyond capacity and extended queues.

Table 17-3 shows the results of the analyses of 2004 existing AM and PM peak hour conditions for the analyzed station elements at the 23rd Street/Eighth Avenue and 18th Street/Seventh Avenue subway stations. As shown in Table 17-3, all analyzed stairways and fare arrays currently operate at LOS B or better in both the AM and PM peak periods.

Bus Service

A total of six New York City Transit (NYC Transit) local bus routes operate within the vicinity of the proposed action area and High Line, connecting West Chelsea with the West Village, Clinton/west midtown, midtown and the east side of Manhattan. These routes include the M11, M14A/M14D, M16, M20, M23 and M34. As shown in Figure 17-3, north-south bus routes typically operate along Seventh through Tenth Avenues, and cross-town routes operate on W. 14th, W. 18th, W. 23rd and W. 34th streets. Penn Station, to the northeast of the proposed action area at Eighth Avenue and W. 31st to W. 34th Streets, serves the area as a major intermodal hub with access to bus service, subway service and commuter rail.

A summary of peak hour, peak direction ridership at the maximum load point of each NYC Transit bus route servicing the proposed action area is shown in Table 17-4. A brief overview of the service provided by each route is also provided below.

M11: The M11 bus operates between Bethune Street/Hudson Street (Abington Square) and W. 135th Street/Broadway, generally from 5 AM to midnight. Extended service to Riverbank State Park at W. 145th Street/Riverside Drive is offered between 8 AM and 9 PM. In the vicinity of the proposed action area, this route travels north on Tenth Avenue and south on Ninth Avenue. During the AM peak hour, the maximum load point in the peak southbound direction occurs at Columbus Avenue and W. 96th Street, with an average of 51 passengers per bus. During the PM peak hour, the maximum load point in the peak northbound direction occurs at Amsterdam Avenue/W. 77th Street, with an average of 45 passengers per bus.

M14A/D: The M14 route which is operated with articulated buses, provides 24-hour cross-town service along the 14th Street corridor between the Lower East Side and either W. 18th Street/West Street (Chelsea Piers) or Bethune/Hudson Streets (Abington Square).

Between Ninth Avenue and West Street, buses en route to Chelsea Piers traverse W. 15th Street (westbound) and W. 18th Street (eastbound). At the east end of the route, M14A service operates to Grand Street and the FDR Drive via Avenue A and Essex Street, while M14D service operates to Delancey and Columbia Streets via Avenue D. During the AM peak hour, the maximum load point in the peak westbound direction occurs at E. 14th Street and Avenue A, with an average of 56 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction also occurs at E. 14th Street and Avenue A, and also with an average of 56 passengers per bus.

Table 17-3
2004 Existing Subway Station Analysis
Stairway Analysis

Station Element	Peak Period (1)	Effective Width in Feet (2)	Maximum 15 Minute Capacity (3)	Peak 15 Minute Volume (4)	PFM (5)	Volume to Capacity Ratio	LOS (6)
<i>W. 23rd Street/8th Avenue Subway Station - C,E Trains</i>							
Stairway at SW Corner of	AM	4.0	600	52	0.87	0.09	A
W. 23rd Street-8th Avenue (S1)	PM	4.0	600	61	1.02	0.10	A
Stairway at SE Corner of	AM	3.8	564	196	3.48	0.35	A
W. 23rd Street-8th Avenue (S2)	PM	3.8	564	178	3.16	0.32	A
Stairway at NW Corner of	AM	3.7	552	188	3.41	0.34	A
W. 23rd Street-8th Avenue (S3)	PM	3.7	552	118	2.14	0.21	A
Stairway at NE Corner of	AM	3.8	564	119	2.11	0.21	A
W. 23rd Street-8th Avenue (S4)	PM	3.8	564	144	2.55	0.26	A
Stairway at NW corner of	AM	3.4	510	103	2.02	0.20	A
W. 24th Street-8th Avenue (S5)	PM	3.4	510	39	0.76	0.08	A
Stairway at SE Corner of	AM	3.4	510	68	1.33	0.13	A
W. 24th Street-8th Avenue (S6)	PM	3.4	510	30	0.59	0.06	A
Stairway at SE Corner of	AM	2.6	396	125	3.16	0.32	A
W. 25th Street-8th Avenue (S7)	PM	2.6	396	139	3.51	0.35	A
Stairway at SW Corner of	AM	2.7	408	48	1.18	0.12	A
W. 25th Street-8th Avenue (S8)	PM	2.7	408	48	1.18	0.12	A
Stairway at NE Corner of	AM	2.5	372	203	5.46	0.55	B
W. 25th Street-8th Avenue (S9)	PM	2.5	372	191	5.13	0.51	B
Stairway at NW Corner of	AM	2.6	307	65	1.68	0.21	A
W. 25th Street-8th Avenue (S10)	PM	2.6	307	68	1.77	0.22	A
Stairway at NW Corner of	AM	2.6	384	65	1.68	0.17	A
W. 25th Street-8th Avenue (S11)	PM	2.6	384	68	1.77	0.18	A
<i>W. 18th Street/7th Avenue Subway Station - 1,9 Trains</i>							
Stairway at SW Corner of	AM	2.72	408	171	4.19	0.42	A
W. 18th Street-7th Avenue (S1)	PM	2.72	408	87	2.13	0.21	A
Stairway at SE Corner of	AM	2.72	408	68	1.67	0.17	A
W. 18th Street-7th Avenue (S2)	PM	2.72	408	153	3.75	0.37	A
Stairway at NW Corner of	AM	2.72	408	193	4.73	0.47	A
W. 18th Street-7th Avenue (S3)	PM	2.72	408	109	2.67	0.27	A
Stairway at NE Corner of	AM	2.80	420	92	2.19	0.22	A
W. 18th Street-7th Avenue (S4)	PM	2.80	420	212	5.05	0.50	B
Stairway at NW Corner of	AM	2.88	432	33	0.76	0.08	A
W. 19th Street-7th Avenue (S5)	PM	2.88	432	40	0.93	0.09	A
Stairway at NE Corner of	AM	3.40	510	33	0.65	0.06	A
W. 19th Street-7th Avenue (S6)	PM	3.40	510	53	1.04	0.10	A

Notes:

- (1) Peak hours: 8-9 AM and 5-6 PM.
- (2) Effective width measured as stairwell width less one foot to account for handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.
- (3) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 PFM (see Note 5).
- (4) Source: PHA field counts conducted in January 2004
- (5) PFM = Persons per foot width of stairway per minute.
- (6) Refer to Table 17-2, Stairway Level of Service Definitions.

Table 17-3 (continued)
2004 Existing Subway Station Analysis
Fare Array Analysis

Station Element	Array Configuration	Peak Period (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	Volume to Capacity Ratio	LOS (4)
W. 23rd Street/8th Avenue Subway Station - C,E Trains						
Fare Array at 23rd Street	3 Turnstiles	AM	2,340	240	0.10	A
Downtown-Bound	3 High Entrance/Exit Turnstiles	PM	2,340	179	0.08	A
Fare Array at 23rd Street	3 Turnstiles	AM	1,440	315	0.22	B
Uptown-Bound		PM	1,440	322	0.22	B
Fare Array at 24th Street	2 High Revolving Exit Gates	AM	900	68	0.08	A
Downtown-Bound		PM	900	30	0.03	A
Fare Array at 24th Street	2 High Revolving Exit Gates	AM	900	103	0.11	A
Uptown-Bound		PM	900	39	0.04	A
Fare Array at 25th Street	2 High Revolving Entrance/Exit	AM	1,500	328	0.22	B
Downtown-Bound	2 High Revolving Exit Gates	PM	1,500	330	0.22	B
Fare Array at 25th Street	3 High Entrance/Exit Turnstiles	AM	900	177	0.20	A
Uptown-Bound		PM	900	184	0.20	B
W. 18th Street/7th Avenue Subway Station - 1,9 Trains						
Fare Array at 18th Street	3 Turnstiles	AM	2,940	364	0.12	A
Downtown-Bound	2 High Entrance/Exit Turnstiles 2 High Revolving Exit Gate	PM	2,940	196	0.07	A
Fare Array at 18th Street	3 Turnstiles	AM	1,440	160	0.11	A
Uptown-Bound		PM	1,440	365	0.25	B
Fare Array at 19th Street	1 High Revolving Exit Gate	AM	450	33	0.07	A
Downtown-Bound		PM	450	53	0.12	A
Fare Array at 19th Street	1 High Revolving Exit Gate	AM	450	33	0.07	A
Uptown-Bound		PM	450	40	0.09	A

Notes:

- (1) Peak hours: 8-9 AM and 5-6 PM.
- (2) Analysis assumes capacities of 32 persons per minute for turnstiles, 20 persons per minute for high entrance/exit turnstiles, 30 persons per minute for high revolving exit gates. Exit gate capacities were conservatively not included. Capacities are dynamic due to two-way turnstiles.
- (3) Source: PHA field counts conducted in January 2004.
- (4) Levels of service for turnstiles and exit gates: LOS A: v/c < 0.2; LOS B: v/c = 0.2 to 0.4; LOS C: v/c = 0.4 to 0.6; LOS D: v/c = 0.6 to 0.8; LOS E: v/c = 0.8 to 1.0; LOS F: v/c > 1.0.

Table 17-4, 2004 Existing Local Bus Conditions

Route	Peak Hour ⁽¹⁾	Peak Direction	Maximum Load Point	Peak Hour Buses ⁽²⁾	Peak Hour Capacity ⁽³⁾	Peak Hour Riders ⁽²⁾	Average Riders per Bus	Available Capacity ⁽³⁾
M11	AM	SB	Columbus Ave/ W96th St	8	520	408	51	112
	PM	NB	Amsterdam Ave/ W77th St	6	390	269	45	121
M14A/ M14D ^(4,5)	AM	WB	E14th St/ Avenue A	40	3,720	2,248	56	1,472
	PM	EB	E14th St/ Ave A	24	2,232	1,352	56	880
M16/ M34 ⁽⁴⁾	AM	EB	W34th St/ 7th Ave	15	975	778	52	197
		WB	W34th St/ 5th Ave	15	975	784	52	191
	PM	EB	W34th St/ 5th Ave	12	780	586	49	194
		WB	W34th St/ 5th Ave	12	780	516	43	264
M20	AM	NB	8th Ave/ W23rd St	4	260	115	29	145
	PM	SB	7th Ave/ W23rd St	6	390	225	38	165
M23 ⁽⁵⁾	AM	EB	E23rd St/ Park Ave S	9	837	610	68	227
	PM	WB	W23rd St/ 6th Ave	11	1,023	700	64	323

Notes:

- (1) Peak Hours: weekday 8-9 AM and 5-6 PM.
- (2) Based on most currently available NYC Transit ridership summaries.
- (3) Available capacity based on MTA NYCT loading guidelines of 65 riders per standard bus and 93 riders per articulated bus.
- (4) Peak load data combined.
- (5) Service operated with articulated buses.

M16/M34: The M16 and M34 routes provide cross-town service along the 34th Street corridor. The M16 route operates 24-hours daily from W. 43rd Street/Ninth Avenue (Port Authority Bus Terminal) to Waterside Plaza/FDR Drive via 34th Street. Between W. 34th and W. 43rd Streets, M16 buses utilize Eighth Avenue northbound and Ninth Avenue southbound. M34 buses provide service from approximately 5 AM to 1 AM along 34th Street between the Jacob Javits Convention Center

(Eleventh Avenue between W. 34th and 39th Streets) and E. 34th Street/ FDR Drive. NYC Transit maximum load point data for the combined M16/M34 routes indicates that demand is relatively equally balanced in the eastbound and westbound directions in both the AM and PM peak hours. Therefore, Table 17-4 shows conditions on these routes in both directions during these periods. As shown in Table 17-4, during the AM peak hour, the maximum load point is located on West 34th Street at Seventh Avenue in the eastbound direction, and at Fifth Avenue in the westbound direction. Demand averages 52 passengers per bus in each direction in the AM. During the PM peak hour, the maximum load point in both the eastbound and westbound directions occurs along 34th Street at Fifth Avenue. Demand at this location averages 49 passengers per bus eastbound and 43 passengers per bus westbound.

M20: This route operates along Seventh and Eighth Avenues, between Albany Street/South End Avenue in Battery Park City and W. 63rd Street/Broadway at Lincoln Center generally from 5 AM to 1 AM. During the AM peak hour, the maximum load point in the peak northbound direction occurs at Eighth Avenue and W. 23rd Street, with an average of 29 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction occurs at Seventh Avenue and W. 34th Street, with an average of 38 passengers per bus.

M23: Twenty-four hour M23 cross-town service is operated with articulated buses along the 23rd Street corridor between W. 23rd Street/Twelfth Avenue (Chelsea Piers) and East 20th Street/Avenue C (Peter Cooper Village). During the AM peak hour, the maximum load point in the peak eastbound direction occurs at East 23rd Street and Park Avenue South, with an average of 68 passengers per bus. During the PM peak hour, the maximum load point in the peak westbound direction occurs at W. 23rd Street and Sixth Avenue, with an average of 64 passengers per bus.

~~**M34:** This bus route operates on W. 34th Street, between the Jacob Javits Convention Center (Eleventh Avenue between W. 34th and 39th Streets) and East 34th Street/ FDR Drive. Service is generally provided between 5 AM and 1 AM, daily. During the AM peak hour, the maximum load point in the peak eastbound direction occurs at 34th Street and 7th Avenue, with an average of 52 passengers per bus. During the PM peak hour, the maximum load point in the peak westbound direction occurs at 34th Street and Fifth Avenue, with an average of 40 passengers per bus.~~

Ferry Services

Since the events of September 11, 2001, the Port Authority of New York and New Jersey (PANYNJ) and the City of New York, together with private ferry operators, have expanded the regional ferry transportation system serving downtown and midtown Manhattan. As a result a number of ferry services operate along Manhattan's West Side in the vicinity of the rezoning area. The ferry terminal at Pier 78, at W. 38th Street and the Hudson River (now being expanded) is served by ferries from New Jersey locations, providing weekday commuter and weekend services. Demand for the ferry service at Pier 78, averaged approximately 17,159 on a typical weekday in 2002. Ferries operated by NY Waterway travel between Pier 78 and Belford (Monmouth County); Colgate, Harborside and Newport in Jersey City; Hoboken; and Lincoln Harbor and Port Imperial in Weehawken. Connecting shuttle bus service is available in both Manhattan and New Jersey.

New York Water Taxi initiated service in September of 2002 and currently operates weekday AM and PM peak period commuter services oriented on Lower Manhattan and the East Side, and a weekday midday and weekend tourist-oriented service that includes stops on the West Side. West Side stops (served 10 AM to 4 PM on weekdays, and on weekends) include Pier 84 at W. 44th Street, Pier 63 at W. 23rd Street, and the World Financial Center. The average ridership on New York Water Taxi is about 700 on a typical weekday (5,000 per week).

The proposed action is not likely to substantially increase demand for ferry operation to the extent that significant adverse impacts would be observed on the existing services. In the future, however, with a potential market for new ferry riders to Lower Manhattan, new water taxi-type services could evolve to attract demand away from other modes, mainly subway. This EIS, however, does not account for such a condition, but conservatively places a maximum demand on the area's subway stations and other transportation systems.

Pedestrians

Analyses of pedestrian conditions focus on elements where substantial numbers of new trips would be generated by the proposed action and High Line open space. These elements, including sidewalks, corner areas and crosswalks are located throughout the proposed action area. New pedestrian demand is expected to be well distributed due to the dispersed locations of the projected development sites, with the greatest concentrations of pedestrian demand occurring on elements located along those corridors that serve subway stations. It is anticipated that the High Line open space would attract primarily local walk trips. Therefore, as shown in Figure 17-4, the analyses of pedestrian conditions focus on pedestrian elements along the W. 18th Street and W. 23rd Street corridors between the proposed action area and the 18th Street/Seventh Avenue and 23rd Street/Eighth Avenue subway stations. Representative sidewalks along Tenth Avenue are also analyzed. In addition to the intersections of W. 18th Street and W. 23rd Street with Tenth Avenue which would potentially serve as access points for the High Line open space, pedestrian elements at a further five locations that are potential High Line access points are also examined. These include sidewalks on W. 28th, W. 26th, W. 21st and W. 14th streets, and the northwest corner area and adjacent crosswalks at the intersection of Gansevoort and Washington streets.

Sidewalk widths in the vicinity of the proposed action area vary considerably, with wider sidewalks typically provided along avenues and major crosstown corridors such as W. 23rd Street. Sidewalks along Seventh and Tenth Avenues are typically around 20 feet in width, while those along Eighth and Ninth Avenues are typically 14 to 15 feet in width. Sidewalks along W. 23rd Street are a relatively wide 23 feet in width, while analyzed sidewalks along W. 18th Street and other crosstown streets typically range from 10 to 15 feet in width. While the sidewalks along W. 14th Street in the vicinity of Tenth Avenue and the High Line were found to be 20 feet in width, many sidewalks in the Gansevoort Market area (the current southern terminus of the High Line) are considerably narrower, with four to five-foot-wide sidewalks found on Washington and Gansevoort Streets. Analyzed crosswalks at intersections along W. 18th Street and W. 23rd Street range from 12 feet to 18 feet in width. Because of the relatively low existing pedestrian volumes in the study area, the dispersed nature of action generated trips, and the adequacy of existing sidewalk dimensions, it is

expected that residentially generated demand from the proposed action would not have the potential for significant adverse impacts except along the key corridors accessing subway stations.

Existing peak 15-minute pedestrian flow conditions during the weekday AM, midday, and PM peak hours were analyzed using the *Highway Capacity Manual* methodology. This methodology determines the congestion level of pedestrian facilities by considering pedestrian volumes, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity and developing a ratio of existing volume flow to capacity. This ratio is then compared to level of service standards for pedestrian flow which define a qualitative relationship at a given pedestrian traffic concentration level. Evaluation of street crosswalks and corners is more complex, as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. In order to effectively evaluate these facilities, a “time-space” analysis methodology is employed which considers the traffic light cycle at intersections, and the effects of conflicts with turning vehicles.

Level of service standards are based on the average area available per pedestrian during the analysis period, which is typically 15 minutes. Level of service (LOS) grades from A to F are assigned, with LOS A representing free flow conditions without pedestrian conflicts, and LOS F representing significant capacity limitations and inconvenience. Table 17-5 defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, according to the *Highway Capacity Manual*. The analysis of sidewalk conditions includes a “platoon” factor in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. “Platooning” is the tendency of pedestrians to move in bunched groups or “ platoons” once they cross a street where cross traffic required them to wait. Platooning generally results in a level of service one level poorer than that determined for average flow rates.

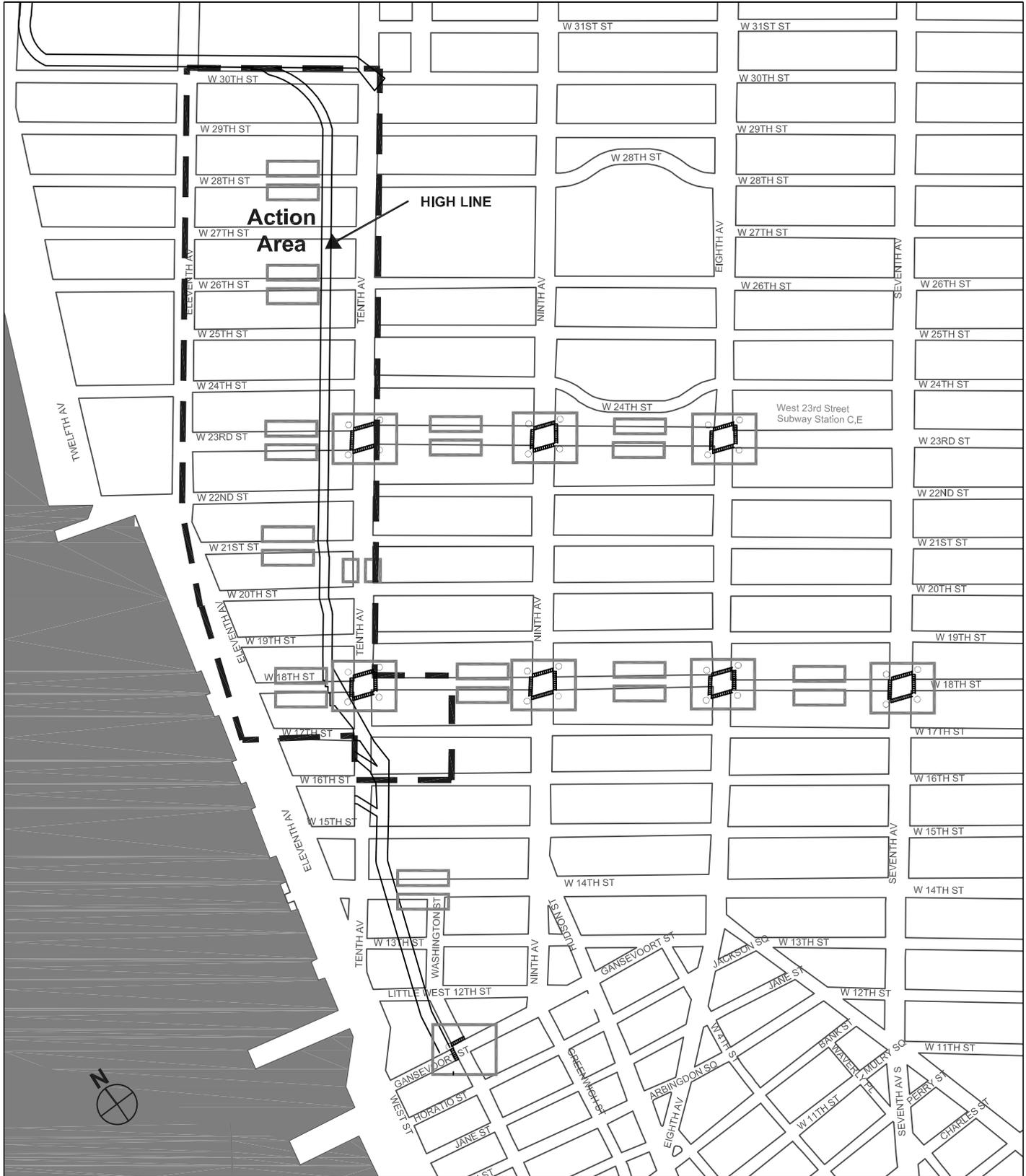
Table 17-5, Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions*

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

Note:

*Based on average conditions for 15 minutes.
 (sq. ft./ped.) - square feet per pedestrian.
 (ped./min./ft.) - pedestrian per minute per foot-width.
 Source: *Highway Capacity Manual*.

Figure 17-4
Pedestrian Facility Locations



LEGEND

----- Rezoning Area

▭ Analyzed Pedestrian Facility

○ Analyzed Corner

▨ Analyzed Crosswalk

Scale 1":500'

Tables 17-6 through 17-8 show the results of the analyses of existing sidewalk, corner area and crosswalk conditions for the AM, midday and PM peak hours. As shown in Table 17-6, all analyzed sidewalks currently operate at LOS B or better under platoon conditions in all peak periods with the exception of the north and south sidewalks on W. 18th Street between Eighth and Ninth Avenues. These sidewalks operate at LOS C in the AM peak hour reflecting the increased pedestrian demand generated by the presence of an intermediate school and a high school along this block. Although the south sidewalk on W. 14th Street east of Tenth Avenue was found to operate at LOS A in all periods due to low volumes (five to 19 trips in the peak 15 minutes) and a generous 20-foot width, it should be noted that truck loading/unloading activity associated with adjacent meat market businesses often occupies much of the available sidewalk space, primarily during the AM peak period.

As shown in Tables 17-7 and 17-8, all analyzed corner areas and crosswalks currently operate at LOS B or better in all peak hours with the exception of the east crosswalk at the intersection of W. 18th Street and Eighth Avenue, and the south crosswalk at the intersection of W. 23rd Street and Ninth Avenue, both of which operate at LOS C in the PM peak hour. It should be noted that a time-space analysis was not performed for the northwest corner at Gansevoort and Washington Streets, adjacent to the southern terminus of the High Line, as this intersection is unsignalized and there is no crosswalk striped on the north leg of the intersection. Existing pedestrian volumes at this location are negligible, typically numbering less than one trip per minute.

Overall, the acceptable LOS C or better peak hour conditions at pedestrian facilities in the vicinity of the proposed action area reflect the existing low pedestrian densities found west of Eighth Avenue, as well as the adequacy of sidewalk widths on the avenues and cross streets in the study area.

D. FUTURE WITHOUT THE PROPOSED ACTION

Between 2004 and 2013, it is expected that demand at analyzed transit and pedestrian facilities would increase due to development projects in the area as well as background growth. In order to forecast those future demands without the proposed action (the No-Action condition), the principal development projects were considered, in addition to an annual background growth rate of 0.5 percent per year applied to existing transit and pedestrian demand for the 2004 through 2013 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Manhattan, is applied to account for smaller projects and general increases in travel demand not attributable to specific development projects.

During the 2004 through 2013 period, one of the largest projects is the redevelopment of the Hudson Yards located just north of the proposed action area. That project would generate new commercial and residential space, and a substantial amount of new open space by 2013. As part of this action, transportation characteristics of the area would change with the extension of No. 7 subway service which is expected to be operational in 2009, the expansion and modernization of the Jacob K. Javits Convention Center, and the construction of a new multi-use sports, exhibition, and entertainment facility.

**Table 17-6
2004 Existing Sidewalk Conditions**

Map No.	Blockface	Side of Street	Effective Sidewalk Width (feet)	Peak 15 Min. Volumes			Average Walkway						Platoon Walkway					
							Persons per Foot per Min. (PFM)			Level of Service			Persons per Foot per Min. (PFM)			Level of Service		
							AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
1	W. 14th Street Washington Street to Tenth Ave	North South	16.7	29	72	75	0.1	0.3	0.3	A	A	A	4.1	4.3	4.3	A	A	A
			16.8	5	5	19	0.0	0.0	0.1	A	A	A	4.0	4.0	4.1	A	A	A
2	W. 18th Street Seventh Ave to Eighth Ave	North South	7.5	153	88	94	1.4	0.8	0.8	A	A	A	5.4	4.8	4.8	B	A	A
			7.5	73	65	104	0.7	0.6	0.9	A	A	A	4.7	4.6	4.9	A	A	A
3	W. 18th Street Eighth Ave to Ninth Ave	North South	4.5	332	45	57	4.9	0.7	0.8	A	A	A	8.9	4.7	4.8	C	A	A
			3.5	162	40	83	3.1	0.8	1.6	A	A	A	7.1	4.8	5.6	C	A	B
4	W. 18th Street Ninth Ave to Tenth Ave	North South	7.8	13	20	16	0.1	0.2	0.1	A	A	A	4.1	4.2	4.1	A	A	A
			8.0	18	20	21	0.2	0.2	0.2	A	A	A	4.2	4.2	4.2	A	A	A
5	Tenth Avenue W. 20th Street to W. 21st Street	East West	15.6	42	68	66	0.2	0.3	0.3	A	A	A	4.2	4.3	4.3	A	A	A
			16.0	25	45	55	0.1	0.2	0.2	A	A	A	4.1	4.2	4.2	A	A	A
6	W. 21st Street Tenth Ave to Eleventh Ave	North South	11.8	13	20	44	0.1	0.1	0.3	A	A	A	4.1	4.1	4.3	A	A	A
			11.8	5	10	17	0.0	0.1	0.1	A	A	A	4.0	4.1	4.1	A	A	A
7	W. 23rd Street Eighth Ave to Ninth Ave	North South	19.4	204	176	287	0.7	0.6	1.0	A	A	A	4.7	4.6	5.0	A	A	A
			19.3	169	231	285	0.6	0.8	1.0	A	A	A	4.6	4.8	5.0	A	A	A
8	W. 23rd Street Ninth Ave to Tenth Ave	North South	11.5	93	84	116	0.5	0.5	0.7	A	A	A	4.5	4.5	4.7	A	A	A
			7.6	66	65	93	0.6	0.6	0.8	A	A	A	4.6	4.6	4.8	A	A	A
9	W. 23rd Street Tenth Ave to Eleventh Ave	North South	16.8	58	92	114	0.2	0.4	0.5	A	A	A	4.2	4.4	4.5	A	A	A
			21.8	48	47	59	0.2	0.1	0.2	A	A	A	4.2	4.1	4.2	A	A	A
10	W. 26th Street Tenth Ave to Eleventh Ave	North South	9.0	55	42	74	0.4	0.3	0.6	A	A	A	4.4	4.3	4.6	A	A	A
			9.0	36	88	83	0.3	0.7	0.6	A	A	A	4.3	4.7	4.6	A	A	A
11	W. 28th Street Tenth Ave to Eleventh Ave	North South	7.5	16	20	37	0.1	0.2	0.3	A	A	A	4.1	4.2	4.3	A	A	A
			11.8	22	36	36	0.1	0.2	0.2	A	A	A	4.1	4.2	4.2	A	A	A

**Table 17-7
2004 Existing Corner Conditions**

Map No.	Intersection	Corner	Curb Radii (feet)	Peak 15 Min. Volumes			Average Pedestrian Space (Sq. Ft./Ped)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM
11	Gansevoort Street & Washington Street	Northwest	12	2	2	1	(See Note 1)			(See Note 1)		
12	W. 18th Street & Seventh Avenue	Northeast	12	29	37	44	189.4	158.2	133.4	A	A	A
		Northwest	12	160	72	70	106.0	121.4	114.4	A	A	A
		Southeast	12	47	54	83	171.4	139.2	105.2	A	A	A
		Southwest	12	92	63	73	127.3	118.9	101.6	A	A	A
13	W. 18th Street & Eighth Avenue	Northeast	12	27	27	47	79.9	78.7	64.8	A	A	A
		Northwest	12	41	6	12	49.6	100.1	80.9	B	A	A
		Southeast	12	41	34	57	114.5	94.0	75.1	A	A	A
		Southwest	12	182	11	20	91.6	189.1	142.4	A	A	A
14	W. 18th Street & Ninth Avenue	Northeast	12	63	7	51	101.3	109.3	49.3	A	A	B
		Northwest	12	20	6	9	188.6	209.9	144.9	A	A	A
		Southeast	12	61	20	21	207.6	190.5	126.7	A	A	A
		Southwest	12	13	14	18	171.6	187.7	221.1	A	A	A
15	W. 18th Street & Tenth Avenue	Northeast	12	7	6	11	1256.1	580.7	606.1	A	A	A
		Northwest	12	1	1	1	3749.2	2111.7	1735.5	A	A	A
		Southeast	12	3	9	4	980.7	475.9	616.4	A	A	A
		Southwest	12	1	1	7	2706.0	1550.9	1348.3	A	A	A
16	W. 23rd Street & Eighth Avenue	Northeast	12	70	64	131	156.2	140.4	84.3	A	A	A
		Northwest	12	36	26	49	289.4	295.3	188.0	A	A	A
		Southeast	12	140	75	111	123.0	137.0	85.9	A	A	A
		Southwest	12	114	61	114	124.1	153.5	93.3	A	A	A
17	W. 23rd Street & Ninth Avenue	Northeast	12	23	26	29	256.4	275.8	223.7	A	A	A
		Northwest	12	19	37	28	255.5	244.8	200.9	A	A	A
		Southeast	12	31	32	25	73.2	83.3	63.2	A	A	A
		Southwest	12	16	14	27	275.3	300.9	207.2	A	A	A
18	W. 23rd Street & Tenth Avenue	Northeast	12	33	37	45	234.1	114.4	118.6	A	A	A
		Northwest	12	10	19	34	579.6	259.2	218.5	A	A	A
		Southeast	12	16	3	10	108.8	77.3	90.0	A	A	A
		Southwest	12	0	1	1	903.2	674.3	606.7	A	A	A

Notes:

(1) Unsignalized intersection with no crosswalk on north leg.

**Table 17-8
2004 Existing Crosswalk Conditions**

Map No.	Intersection	Crosswalk	Curb to Curb Street Width (feet)	Crosswalk Width (feet)	Peak 15 Min. Volumes			With Vehicles					
					Average Pedestrian Space (Sq. Ft./Ped)			Level of Service					
					AM	MD	PM	AM	MD	PM	AM	MD	PM
11	Gansevoort Street & Washington Street	North West	39.0	N/A	2	6	4	(See Note 1)			(See Note 1)		
			31.7	13.0	4	11	11						
12	W. 18th Street & Seventh Avenue	North	60.0	12.0	146	128	132	54.4	62.9	60.8	B	A	A
		South	60.0	12.0	125	122	152	56.2	61.6	45.4	B	A	B
		East	33.5	17.0	105	162	207	201.7	126.6	96.7	A	A	A
		West	33.0	17.0	152	209	232	135.2	95.3	84.8	A	A	A
13	W. 18th Street & Eighth Avenue	North	70.0	13.0	146	72	67	66.8	141.6	152.6	A	A	A
		South	70.0	14.0	79	50	51	138.9	223.0	218.5	A	A	A
		East	33.0	13.0	150	246	300	85.4	48.3	37.1	A	B	C
		West	29.7	14.0	229	128	176	61.7	119.1	83.5	A	A	A
14	W. 18th Street & Ninth Avenue	North	69.0	12.0	30	32	112	348.9	326.7	88.7	A	A	A
		South	69.0	14.0	29	49	51	390.0	239.5	219.6	A	A	A
		East	29.0	14.0	112	149	242	128.0	93.3	53.4	A	A	B
		West	37.5	14.0	100	97	69	156.3	161.5	231.7	A	A	A
15	W. 18th Street & Tenth Avenue	North	59.3	12.0	4	9	10	2277.6	1008.2	906.7	A	A	A
		South	59.3	13.0	7	19	14	1404.5	512.9	698.6	A	A	A
		East	37.5	16.0	22	56	47	865.3	332.9	389.8	A	A	A
		West	33.3	15.0	8	13	17	2403.3	1473.8	1123.8	A	A	A
16	W. 23rd Street & Eighth Avenue	North	70.0	19.0	221	206	354	79.4	86.0	48.2	A	A	B
		South	69.7	17.0	255	221	344	69.6	95.2	50.0	A	A	B
		East	52.7	17.0	155	221	308	82.0	57.4	51.7	A	B	B
		West	52.1	16.0	156	174	228	91.6	81.3	60.2	A	A	A
17	W. 23rd Street & Ninth Avenue	North	69.5	17.0	148	129	189	116.4	134.5	89.7	A	A	A
		South	69.3	14.0	133	101	179	49.8	69.3	34.2	B	A	C
		East	52.7	14.0	114	111	108	121.0	124.5	128.2	A	A	A
		West	52.5	14.0	106	120	128	122.1	110.3	102.9	A	A	A
18	W. 23rd Street & Tenth Avenue	North	66.5	18.0	56	159	181	210.6	70.4	56.1	A	A	B
		South	56.5	14.0	52	65	73	195.0	154.5	136.8	A	A	A
		East	53.9	16.0	66	116	78	303.1	169.4	256.8	A	A	A
		West	50.5	15.0	47	66	72	412.8	291.1	226.0	A	A	A

Notes:

(1) Unsignalized intersection with no crosswalk on north leg.

Also located just north of the proposed action area is the Pennsylvania Station Redevelopment Project which will see the reuse of the General Post Office (Farley Building) with an expanded Pennsylvania Station and commercial space. The recent rezoning of a portion of the Ladies' Mile Historic District generally bounded by W. 17th Street on the north and W. 22nd Street on the south, between Fifth and Sixth avenues, is expected to yield yielding new residential and commercial uses. Also, the Sixth Avenue rezoning, between W. 24th and W. 26th streets along Sixth Avenue, is expected to continue to result in new residential developments. Additional residential development projects near the study area include 231 Tenth Avenue (Block 695) with 337 dwelling units.

Chapter 2, "Land Use, Zoning, and Public Policy," identifies and describes the No-Action developments in the area. No substantive changes to existing analyzed transit or pedestrian facilities are expected during the 2004 through 2013 period. The following sections describe how new developments, and the growth in travel demand in this area of Manhattan, are expected to affect transit and pedestrian facilities in the future without the proposed action.

Subway Service

Under 2013 No-Action conditions, subway demand would grow as a result of background growth and development projects, including redevelopment of the Hudson Yards and the extension of No. 7 subway service. No physical or operational changes are anticipated at either of the analyzed subway stations. Table 17-9 shows the results of the analyses of 2013 No-Action AM and PM peak hour conditions for the analyzed station elements at both stations, W. 23rd Street (C,E) and W. 18th Street (1,9). As shown in Table 17-9, in the future without the proposed action, all analyzed stairways and fare arrays would continue to operate at LOS B or better in both the AM and PM peak hours.

Bus Service

During the 2004 through 2013 period, demand on NYC Transit local bus routes serving West Chelsea area is expected to increase as a result of new developments and general background growth. In addition to demand from discrete development projects, a background growth rate of 0.5 percent per year was applied to account for general demand increases in the area. Among new developments, the Hudson Yards Rezoning and Pennsylvania Station Redevelopment projects are Project is expected to generate a substantial numbers of bus trips that would affect the future capacity of the M11, and M20 and M16/M34 bus routes.

Table 17-10 shows the estimated peak hour, peak direction ridership at the maximum load point of each of the NYC Transit local bus routes serving the rezoning area in the 2013 future without the proposed action. As shown in Table 17-10, all analyzed local bus routes are expected to operate with available capacity in the peak direction at their maximum load points in both peak periods in the future without the proposed action, with the exception of the M11 route in the AM and PM peak periods, and the combined M16/M34 routes in the AM and PM, only. Based on current service levels, the M11 route would experience capacity shortfalls of 247 166 in the peak southbound direction in the AM peak hour and 408 222 in the northbound direction in the PM peak hour.

Table 17-9
2013 No Action Subway Station Analysis
Stairway Analysis

Station Element	Peak Period (1)	Effective Width in Feet (2)	Maximum 15 Minute Capacity (3)	Peak 15 Minute Volume (4)	PFM (5)	Volume to Capacity Ratio	LOS (6)
23th Street/8th Avenue Subway Station - C,E Trains							
Stairway at SW Corner of W. 23rd Street-8th Avenue (S1)	AM	4.00	600	70	1.17	0.12	A
	PM	4.00	600	74	1.23	0.12	A
Stairway at SE Corner of W. 23rd Street-8th Avenue (S2)	AM	3.76	564	221	3.92	0.39	A
	PM	3.76	564	196	3.48	0.35	A
Stairway at NW Corner of W. 23rd Street-8th Avenue (S3)	AM	3.68	552	213	3.86	0.39	A
	PM	3.68	552	133	2.41	0.24	A
Stairway at NE Corner of W. 23rd Street-8th Avenue (S4)	AM	3.76	564	140	2.48	0.25	A
	PM	3.76	564	161	2.85	0.29	A
Stairway at NW Corner of W. 24th Street-8th Avenue (S5)	AM	3.40	510	114	2.24	0.22	A
	PM	3.40	510	49	0.96	0.10	A
Stairway at SE Corner of W. 24th Street-8th Avenue (S6)	AM	3.40	510	77	1.51	0.15	A
	PM	3.40	510	39	0.76	0.08	A
Stairway at SE Corner of W. 25th Street-8th Avenue (S7)	AM	2.64	396	147	3.71	0.37	A
	PM	2.64	396	155	3.91	0.39	A
Stairway at SW Corner of W. 25th Street-8th Avenue (S8)	AM	2.72	408	66	1.62	0.16	A
	PM	2.72	408	60	1.47	0.15	A
Stairway at NE Corner of W. 25th Street-8th Avenue (S9)	AM	2.48	372	230	6.18	0.62	B
	PM	2.48	372	230	6.18	0.62	B
Stairway at NW Corner of W. 25th Street-8th Avenue (S10)	AM	2.56	307	85	2.21	0.28	A
	PM	2.56	307	101	2.63	0.33	A
Stairway at NW Corner of W. 25th Street-8th Avenue (S11)	AM	2.56	384	83	2.16	0.22	A
	PM	2.56	384	81	2.11	0.21	A
W. 18th Street/7th Avenue Subway Station - 1,9 Trains							
Stairway at SW Corner of W. 18th Street-7th Avenue (S1)	AM	2.72	408	197	4.83	0.48	A
	PM	2.72	408	105	2.57	0.26	A
Stairway at SE Corner of W. 18th Street-7th Avenue (S2)	AM	2.72	408	89	2.18	0.22	A
	PM	2.72	408	174	4.26	0.43	A
Stairway at NW Corner of W. 18th Street-7th Avenue (S3)	AM	2.72	408	220	5.39	0.54	B
	PM	2.72	408	128	3.14	0.31	A
Stairway at NE Corner of W. 18th Street-7th Avenue (S4)	AM	2.80	420	114	2.71	0.27	A
	PM	2.80	420	236	5.62	0.56	B
Stairway at NW Corner of W. 19th Street-7th Avenue (S5)	AM	2.88	432	41	0.95	0.09	A
	PM	2.88	432	52	1.20	0.12	A
Stairway at NE Corner of W. 19th Street-7th Avenue (S6)	AM	3.40	510	41	0.80	0.08	A
	PM	3.40	510	65	1.27	0.13	A

Notes:

- (1) Peak hours: 8-9 AM and 5-6 PM.
- (2) Effective width measured as stairwell width less one foot to account for handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.
- (3) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 PFM (see Note 4).
- (4) Assumes 0.5 percent per year background growth for 2004 through 2013 period.
- (5) PFM = Persons per foot width of stairway per minute.
- (6) Refer to Table 17-2, Stairway Level of Service Definitions.

Table 17-9 (continued)
2013 No Action Subway Station Analysis
Fare Array Analysis

Station Element	Array Configuration	Peak Period (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume	Volume to Capacity Ratio	LOS (4)
W. 23rd Street/8th Avenue Subway Station - C,E Trains						
Fare Array at 23rd Street	3 Turnstiles	AM	2,340	283	0.12	A
Downtown-Bound	3 High Entrance/Exit Turnstiles	PM	2,340	207	0.09	A
Fare Array at 23rd Street	3 Turnstiles	AM	1,440	361	0.25	B
Uptown-Bound		PM	1,440	357	0.25	B
Fare Array at 24th Street	2 High Revolving Exit Gates	AM	900	77	0.09	A
Downtown-Bound		PM	900	39	0.04	A
Fare Array at 24th Street	2 High Revolving Exit Gates	AM	900	114	0.13	A
Uptown-Bound		PM	900	49	0.05	A
Fare Array at 25th Street	2 High Revolving Entrance/Exit	AM	1,500	377	0.25	B
Downtown-Bound	2 High Revolving Exit Gates	PM	1,500	385	0.26	B
Fare Array at 25th Street	3 High Entrance/Exit Turnstiles	AM	900	236	0.26	B
Uptown-Bound		PM	900	262	0.29	B
W. 18th Street/7th Avenue Subway Station - 1,9 Trains						
Fare Array at 18th Street	3 Turnstiles	AM	2,940	417	0.14	A
Downtown-Bound	2 High Entrance/Exit Turnstiles 2 High Revolving Exit Gate	PM	2,940	233	0.08	A
Fare Array at 18th Street	3 Turnstiles	AM	1,440	203	0.14	A
Uptown-Bound		PM	1,440	410	0.28	B
Fare Array at 19th Street	1 High Revolving Exit Gate	AM	450	41	0.09	A
Downtown-Bound		PM	450	65	0.14	A
Fare Array at 19th Street	1 High Revolving Exit Gate	AM	450	41	0.09	A
Uptown-Bound		PM	450	52	0.12	A

Notes:

- (1) Peak hours: 8-9 AM and 5-6 PM.
- (2) Analysis assumes capacities of 32 persons per minute for turnstiles, 20 persons per minute for high entrance/exit turnstiles, 30 persons per minute for high revolving exit gates. Exit gate capacities were conservatively not included. Capacities are dynamic due to two-way turnstiles.
- (3) PFM = Persons per foot width of stairway per minute.
- (4) Levels of service for turnstiles and exit gates: LOS A: v/c < 0.2; LOS B: v/c = 0.2 to 0.4; LOS C: v/c = 0.4 to 0.6; LOS D: v/c = 0.6 to 0.8; LOS E: v/c = 0.8 to 1.0; LOS F: v/c > 1.0.

Table 17-10, 2013 No-Action Local Bus Conditions

Route	Peak Hour ⁽¹⁾	Peak Direction	Maximum Load Point	No Action Peak Hour Riders	No-Action Conditions with Current Service Levels			No-Action Conditions with Potential Service Adjustments		
					Peak Hour Buses	Avg. Riders per Bus	Available Capacity ⁽²⁾	Peak Hour Buses	Avg. Riders per Bus	Available Capacity ⁽²⁾
M11	AM	SB	Columbus Ave/W 96th St	767	8	96	(247)	12	64	13
	PM	NB	Amsterdam Ave/W 77th St	798	6	133	(408)	13	61	47
M14A/ M14D ^(3,4)	AM	WB	E 14th St/ Ave A	2,356	40	59	1,364	40	59	1,364
	PM	EB	E 14th St/ Ave A	1,422	24	59	810	24	59	810
M16/ M34 ^(3,4)	AM	EB	W 34th St/ 7th Ave	877	15	58	98	15	58	98
	AM	WB	W 34th St/ 5th Ave	1,186	15	79	(211)	19	62	49
	PM	EB	W 34th St/ 5th Ave	1,116	12	93	(336)	18	62	54
	PM	WB	W 34th St/ 5th Ave	797	12	66	(17)	13	61	48
M20	AM	NB	8th Ave/ W 23rd St	145	4	36	115	4	36	115
	PM	SB	7th Ave/ W 34th St	294	6	49	96	6	49	96
M23	AM	EB	E 23rd St/ Park Ave S	647	9	72	190	9	72	190
	PM	WB	W 23rd St/ 6th Ave	769	11	70	254	11	70	254

Notes:

- (1) Peak Hours: weekday 8-9 AM and 5-6 PM.
- (2) Available capacity based on MTA NYCT loading guidelines of 65 riders per standard bus and 93 riders per articulated bus.
- (3) Peak load data combined.
- (4) Service operated with articulated buses.

Westbound M16/M34 buses would experience a capacity shortfall of 211 ~~51~~ in the AM peak hour. In the PM peak hour, M16/M34 buses would experience a capacity shortfall of 336 in the eastbound direction and 17 in the westbound direction.

As standard practice, NYC Transit routinely conducts periodic ridership counts and increases service where operationally warranted and fiscally feasible. It is therefore anticipated that under 2013 No-Action conditions, NYC Transit would increase frequency (or convert service to articulated buses) on the M11 and M16/M34 routes to address these capacity shortfalls. As shown in Table 17-10, the

addition of ~~four~~ three southbound buses in the AM peak hour and ~~seven~~ four northbound buses in the PM would fully address the capacity shortfalls on the in the M11. The addition of four westbound M16/M34 buses in the AM peak hour, and six eastbound buses and one westbound bus in the PM peak hour ~~a single westbound bus in the AM peak hour~~ would similarly address the capacity shortfall on the M16/M34.

Pedestrians

Under 2013 No-Action conditions, pedestrian volumes are anticipated to grow due to background growth and additional developments in the vicinity of the proposed action area. Tables 17-11 through 17-13 show the results of the analyses of AM, midday and PM peak hour sidewalk, corner area and crosswalk conditions in the 2013 future without the proposed action. As shown in Tables 17-11 through 17-13, in the future without the proposed action, all analyzed sidewalks, corner areas and crosswalks are expected to operate at an acceptable LOS A, B or C in all peak hours with the exception of the south crosswalk on Ninth Avenue at W. 23rd Street. This crosswalk would operate at LOS D in the PM peak hour in the future without the proposed action compared to LOS C under Existing conditions.

E. FUTURE WITH THE PROPOSED ACTION

This section provides an analysis of transit and pedestrian conditions in the future with the proposed action. As discussed in Chapter 1, “Project Description,” the proposed action is projected to stimulate the development of new residential, commercial, and community facility space. These new developments, located on 25 sites within the proposed action area, would displace existing storage and manufacturing uses on these sites. In addition, the proposed action would facilitate the conversion of the High Line to a publicly accessible open space that would attract primarily local trips from new and existing residents and from workers at local businesses. The analyses in this section evaluate future subway, local bus and pedestrian conditions in the year 2013 with the full build out of this projected development scenario. Also discussed is a ~~As presented in Chapter 16, “Traffic and Parking,”~~ the development scenario without the High Line (the Base FAR Scenario) which would reduce travel demand among all modes by approximately 13 to 47 ~~18.7 percent in each peak hour~~. As such, it is expected that under this lower density scenario, peak hour transit and pedestrian demand would be reduced.

Table 16-~~6~~ 7 in Chapter 16, “Traffic and Parking,” presents the transportation planning assumptions utilized in the travel-demand analysis, and Table 16-~~7~~ 8 shows the weekday peak hour person-trip and vehicle-trip forecasts for the proposed action. As shown in Table 16-~~7~~ 8, a total net increment of ~~880, 1,387, and 1,384~~ 946, 672, and 1,611 persons trips by subway would be generated by the proposed action in the AM, midday, and PM peak hours, respectively. Net new person-trips by local bus would total ~~130, 641 and 449~~ 203, 690, and 714 in the AM, midday, and PM peak hours, respectively, while walk-only trips would total ~~1,551, 3,789 and 3,570~~ 1,811, 6,801, and 4,418, respectively. For the purposes of the transit and pedestrian analyses, commuter rail trips have been included in the totals for subway trips. The higher number of walk-only trips in the midday reflects local trip-making associated with retail on the ground floor of the projected development sites, while

**Table 17-11
2013 No Action Sidewalk Conditions**

Map No.	Blockface	Side of Street	Effective Sidewalk Width (feet)	Peak 15 Min. Volumes			Average Walkway						Platoon Walkway					
							Persons per Foot per Min. (PFM)			Level of Service			Persons per Foot per Min. (PFM)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
1	W. 14th Street Washington Street to Tenth Ave	North South	16.7	43	95	97	0.2	0.4	0.4	A	A	A	4.2	4.4	4.4	A	A	A
			16.8	45	77	85	0.2	0.3	0.3	A	A	A	4.2	4.3	4.3	A	A	A
2	W. 18th Street Seventh Ave to Eighth Ave	North South	7.5	171	106	115	1.5	0.9	1.0	A	A	A	5.5	4.9	5.0	B	A	B
			7.5	87	82	126	0.8	0.7	1.1	A	A	A	4.8	4.7	5.1	A	A	B
3	W. 18th Street Eighth Ave to Ninth Ave	North South	4.5	358	61	76	5.3	0.9	1.1	B	A	A	9.3	4.9	5.1	C	A	B
			3.5	181	56	104	3.5	1.1	2.0	A	A	A	7.5	5.1	6.0	C	B	B
4	W. 18th Street Ninth Ave to Tenth Ave	North South	7.8	24	35	34	0.2	0.3	0.3	A	A	A	4.2	4.3	4.3	A	A	A
			8.0	30	34	39	0.3	0.3	0.3	A	A	A	4.3	4.3	4.3	A	A	A
5	Tenth Avenue W. 20th Street to W. 21st Street	East West	15.6	90	237	173	0.4	1.0	0.7	A	A	A	4.4	5.0	4.7	A	B	A
			16.0	71	209	156	0.3	0.9	0.7	A	A	A	4.3	4.9	4.7	A	A	A
6	W. 21st Street Tenth Ave to Eleventh Ave	North South	11.8	63	322	198	0.4	1.8	1.1	A	A	A	4.4	5.8	5.1	A	B	B
			11.8	55	312	170	0.3	1.8	1.0	A	A	A	4.3	5.8	5.0	A	B	A
7	W. 23rd Street Eighth Ave to Ninth Ave	North South	19.4	257	246	362	0.9	0.9	1.2	A	A	A	4.9	4.9	5.2	A	A	B
			19.3	220	303	359	0.8	1.1	1.2	A	A	A	4.8	5.1	5.2	A	B	B
8	W. 23rd Street Ninth Ave to Tenth Ave	North South	11.5	145	206	231	0.8	1.2	1.3	A	A	A	4.8	5.2	5.3	A	B	B
			7.6	114	130	161	1.0	1.1	1.4	A	A	A	5.0	5.1	5.4	B	B	B
9	W. 23rd Street Tenth Ave to Eleventh Ave	North South	16.8	61	96	119	0.2	0.4	0.5	A	A	A	4.2	4.4	4.5	A	A	A
			21.8	50	49	62	0.2	0.2	0.2	A	A	A	4.2	4.2	4.2	A	A	A
10	W. 26th Street Tenth Ave to Eleventh Ave	North South	9.0	95	249	182	0.7	1.8	1.4	A	A	A	4.7	5.8	5.4	A	B	B
			9.0	75	297	191	0.6	2.2	1.4	A	A	A	4.6	6.2	5.4	A	B	B
11	W. 28th Street Tenth Ave to Eleventh Ave	North South	7.5	16	21	39	0.1	0.2	0.4	A	A	A	4.1	4.2	4.4	A	A	A
			11.8	23	38	38	0.1	0.2	0.2	A	A	A	4.1	4.2	4.2	A	A	A

**Table 17-12
2013 No Action Corner Conditions**

Map No.	Intersection	Corner	Curb Radii (Feet)	Peak 15 Min. Volumes			Average Pedestrian Space (Sq. Ft./Ped)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM
11	Gansevoort Street & Washington Street	Northwest	12	2	2	1	(See Note 1)			(See Note 1)		
12	W. 18th Street & Seventh Avenue	Northeast	12	30	39	46	178.0	146.7	124.4	A	A	A
		Northwest	12	167	75	73	100.1	113.4	106.6	A	A	A
		Southeast	12	49	56	87	161.0	129.4	98.3	A	A	A
		Southwest	12	96	66	21	120.0	110.7	126.1	A	A	A
13	W. 18th Street & Eighth Avenue	Northeast	12	28	28	49	73.1	71.7	59.3	A	A	B
		Northwest	12	43	6	13	46.1	88.6	71.5	B	A	A
		Southeast	12	87	36	60	90.6	85.7	68.5	A	A	A
		Southwest	12	75	12	21	84.9	167.6	126.1	A	A	A
14	W. 18th Street & Ninth Avenue	Northeast	12	66	7	53	90.8	96.3	45.0	A	A	B
		Northwest	12	21	6	9	167.9	180.4	126.5	A	A	A
		Southeast	12	63	21	22	187.8	170.7	114.6	A	A	A
		Southwest	12	50	15	19	154.5	163.9	187.7	A	A	A
15	W. 18th Street & Tenth Avenue	Northeast	12	12	13	20	843.4	441.8	410.6	A	A	A
		Northwest	12	1	1	1	2117.5	1346.5	987.3	A	A	A
		Southeast	12	13	9	4	755.9	394.4	437.8	A	A	A
		Southwest	12	4	1	7	1770.5	1020.2	822.9	A	A	A
16	W. 23rd Street & Eighth Avenue	Northeast	12	73	67	137	140.9	124.8	77.0	A	A	A
		Northwest	12	38	27	51	260.2	259.7	170.3	A	A	A
		Southeast	12	146	78	116	112.0	124.3	78.3	A	A	A
		Southwest	12	119	64	119	112.7	134.7	84.6	A	A	A
17	W. 23rd Street & Ninth Avenue	Northeast	12	24	27	30	210.2	183.0	161.8	A	A	A
		Northwest	12	22	40	31	207.5	166.0	145.3	A	A	A
		Southeast	12	32	33	68	58.5	61.4	44.0	B	A	B
		Southwest	12	18	16	30	222.8	226.5	165.2	A	A	A
18	W. 23rd Street & Tenth Avenue	Northeast	12	47	56	62	155.5	72.8	77.6	A	A	A
		Northwest	12	10	20	36	366.5	154.7	139.1	A	A	A
		Southeast	12	26	11	22	72.1	51.4	56.8	A	B	B
		Southwest	12	1	7	4	566.9	392.3	371.9	A	A	A

Notes:

(1) Unsignalized intersection with no crosswalk on north leg.

**Table 17-13
2013 No Action Crosswalk Conditions**

Map No.	Intersection	Crosswalk	Curb to Curb Street Width (Feet)	Crosswalk Width (Feet)	Peak 15 Min. Volumes			With Vehicles					
								Average Pedestrian Space (Sq. Ft./Ped)			Level of Service		
					AM	MD	PM	AM	MD	PM	AM	MD	PM
11	Gansevoort Street & Washington Street	North West	39.0	(See Note 1) 13.0	2	6	4	(See Note 1)			(See Note 1)		
			31.7		4	11	11						
12	W. 18th Street & Seventh Avenue	North	60.0	12.0	157	142	147	50.2	56.1	54.0	B	B	B
		South	60.0	12.0	135	136	168	51.1	54.3	40.0	B	B	C
		East	33.5	17.0	110	170	216	192.0	120.1	92.2	A	A	A
		West	33.0	17.0	159	219	243	128.7	90.4	80.4	A	A	A
13	W. 18th Street & Eighth Avenue	North	70.0	13.0	163	90	87	59.3	112.0	116.1	B	A	A
		South	70.0	14.0	94	66	71	115.7	167.4	155.2	A	A	A
		East	33.0	13.0	157	257	313	80.5	45.6	35.0	A	B	C
		West	29.7	14.0	239	134	184	58.7	113.3	79.4	B	A	A
14	W. 18th Street & Ninth Avenue	North	69.0	12.0	43	48	134	241.4	215.5	73.1	A	A	A
		South	69.0	14.0	42	65	70	265.6	178.0	156.6	A	A	A
		East	29.0	14.0	117	156	253	122.1	88.6	50.6	A	A	B
		West	37.5	14.0	104	102	72	149.9	153.0	221.5	A	A	A
15	W. 18th Street & Tenth Avenue	North	59.3	12.0	9	16	19	1,008.2	563.9	473.8	A	A	A
		South	59.3	13.0	12	28	26	816.2	345.7	372.8	A	A	A
		East	37.5	16.0	28	64	61	674.4	288.6	296.3	A	A	A
		West	33.3	15.0	13	19	29	1,473.8	1,004.1	653.3	A	A	A
16	W. 23rd Street & Eighth Avenue	North	70.0	19.0	257	251	404	66.8	268.0	41.2	A	A	B
		South	69.7	17.0	293	236	393	59.8	75.8	43.0	B	A	B
		East	52.7	17.0	162	231	322	77.3	252.0	39.4	A	B	C
		West	52.1	16.0	163	251	238	87.3	77.4	57.4	A	A	B
17	W. 23rd Street & Ninth Avenue	North	69.5	17.0	201	251	303	83.9	65.9	53.6	A	A	B
		South	69.3	14.0	183	167	248	34.8	40.0	23.5	C	B	D
		East	52.7	14.0	120	116	113	114.5	118.8	122.2	A	A	A
		West	52.5	14.0	111	125	134	115.9	105.3	97.7	A	A	A
18	W. 23rd Street & Tenth Avenue	North	66.5	18.0	89	263	278	125.9	39.7	34.2	A	C	C
		South	56.5	14.0	78	101	109	127.6	96.9	89.3	A	A	A
		East	53.9	16.0	93	152	113	211.2	127.1	172.8	A	A	A
		West	50.5	15.0	78	117	123	244.8	160.0	151.8	A	A	A

Notes:

(1) Unsignalized intersection with no crosswalk on north leg.

the higher number of transit trips in the PM compared to the AM ~~PM transit travel~~ also reflects expected retail-oriented trips in the area.

Subway Service

As noted above, the proposed action would generate a net total of 880,946 and 1,384,161 person trips by subway in the AM and PM peak hours, respectively. The travel demand forecast and subway trip assignment estimates were based on the proximity of projected development sites to individual stations as well as on data from census journey-to-work surveys which were utilized to estimate the modal distribution of trips generated by residents and employees in the area.

Table 17-14 summarizes the assignment of peak hour action-generated subway trips to the area's subway stations in the 2013 analysis year. The table shows the assignment both with and without the proposed Flushing Line (No. 7 train) station at West 34th Street and Eleventh Avenue. A threshold of 200 peak hour trips entering or exiting a station has been established under *CEQR* criteria to determine whether new subway demand from a proposed action warrants a detailed analysis at a particular station. As shown in Table 17-14, both with and without the proposed Flushing Line extension, new demand from the proposed action would exceed this threshold at only two subway stations – the 23rd Street station on the Eighth Avenue Line and the 18th Street station on the Seventh Avenue Line. Demand at other existing stations serving the proposed action area would remain below the *CEQR* analysis threshold of 200 peak hour trips, and these stations are therefore not analyzed quantitatively in this EIS. Project generated demand at the proposed Flushing Line station at West 34th Street and Eleventh Avenue is also not expected to exceed the 200-trip *CEQR* analysis threshold (there would be an estimated 88,95 trips in the AM peak hour and 138,161 trips in the PM), and this station is also not assessed quantitatively in this EIS.

In the event that the extension of Flushing Line No. 7 service to a new station at W. 34th Street and Eleventh Avenue is not approved and in operation by 2013, project generated subway trips that are forecast to use this station en route to and from the northern end of the proposed action area would instead use other stations in the vicinity or switch to alternative modes of travel. As shown in Table 17-14, without the extension of No. 7 service, a greater percentage of new trips are expected to use the W. 34th Street/Eighth Avenue station (nine percent versus five percent), the W. 34th Street/Seventh Avenue station (five percent versus three percent), and the W. 28th Street/Seventh Avenue station (11 percent versus eight percent). Demand from the proposed action at the W. 23rd Street/Seventh Avenue station would also increase by an estimated one percent without the Flushing Line extension. As demonstrated by the numbers in Table 17-14, without the Flushing Line extension, new demand at the W. 23rd Street/Eighth Avenue and W. 18th Street/Seventh Avenue stations would continue to exceed the 200-trip *CEQR* analysis threshold, while the numbers of new trips at the remaining stations serving the action area would continue to remain below this threshold.

The *CEQR Technical Manual* identifies a significant adverse impact for stairways in terms of the width increment threshold (WIT) needed to restore conditions to their No-Action state based on the location of the stair within the station. Stairways that are substantially degraded in level of service or which experience the formation of extensive queues are classified as significantly adversely impacted. Significant stairway impacts are typically considered to have occurred once the following

Table 17-14, Project Generated Subway Trip Distribution

Subway Station	Peak Period	With No. 7 Extension		Without No. 7 Extension	
		Trip Distribution	Number of Trips	Trip Distribution	Number of Trips
W. 34th Street/8th Avenue (Penn Station) A,C,E	AM	5%	44	9%	72
	PM		69		115
W. 34th Street/7th Avenue (Penn Station) 1,2,3,9	AM	3%	26	5%	40
	PM		42		64
W. 28th Street/7th Avenue 1,9	AM	8%	70	11%	88
	PM		111		141
W. 23rd Street/8th Avenue C,E	AM	30%	264 *	30%	239 *
	PM		415 *		384 *
W. 23rd Street/7th Avenue 1,9	AM	9%	79	10%	80
	PM		125		128
W. 18th Street/7th Avenue 1,9	AM	18%	158	18%	143
	PM		249 *		231 *
W. 14th Street/8th Avenue A,C,E,L	AM	12%	106	12%	96
	PM		166		154
W. 14th Street/7th Avenue 1,2,3,9,F,L,V ⁽¹⁾	AM	5%	44	5%	40
	PM		69		64
W. 34th Street/11th Avenue 7	AM	10%	88	0%	0
	PM		138		0
TOTAL	AM	100%	880	100%	797
	PM		1,384		1,281

Notes:

(1) F and V trains at 14th Street/Sixth Avenue accessible via free transfer from the 14th Street/Seventh Avenue station.

* Denotes that the number of trips exceeds the *CEQR* analysis threshold of 200 subway trips.

thresholds are reached; for a Future Action LOS D condition, a WIT of six inches or more is considered significant; for a Future Action LOS E condition, three to six inches is considered significant; and for Future Action LOS F, a WIT of one- to three-inches is considered significant.

For stairways operating at LOS A, B or C in the No-Action condition, a refined methodology that was utilized for the *Hudson Yards Rezoning & Development Program FGEIS* (November 2004) is employed. This methodology is based on bringing these stairways to an acceptable level of service (v/c ratio of less than 1.00), not to the LOS projected for the No-Action condition. For turnstiles, escalators and high-wheel exit gates, the *CEQR Technical Manual* defines a significant adverse impact as an increase from a No Build volume-to-capacity ratio of below 1.00 to a v/c ratio of 1.00 or greater. Where a facility is already at a v/c ratio of 1.00 or greater, a 0.01 change in v/c ratio also is considered significant.

Table 17-15 shows the distribution of action-generated trips among the various station elements at the two analyzed subway stations, and the results of the level of service analyses in the 2013 future with the proposed action. Applying the above significant adverse impact criteria, the table shows that no significant adverse impacts would occur at any analyzed stairway or fare array due to the proposed action, and that all analyzed facilities at the W. 23rd Street and W. 18th Street stations would continue to operate at LOS B or better in the future with the proposed action.

Table 17-15
2013 Future With The Proposed Action Subway Station Analysis
Stairway Analysis

Station Element	Peak Period (1)	Effective Width in Feet (2)	Maximum 15 Minute Capacity (3)	w/Action Pk 15 Min Increment	w/Action Pk 15 Min Volume	2013 No Action			2013 With Action			
						PFM (4)	V/C Ratio	LOS (5)	PFM (4)	V/C Ratio	LOS	
<i>W. 23rd Street/8th Avenue Subway Station - C,E Trains</i>												
Stairway at SW Corner of W. 23rd Street-8th Avenue (S1)	AM	4.00	600	7	77	1.17	0.12	A	1.28	0.13	A	
	PM	4.00	600	17	91	1.23	0.12	A	1.52	0.15	A	
Stairway at SE Corner of W. 23rd Street-8th Avenue (S2)	AM	3.76	564	16	237	3.92	0.39	A	4.20	0.42	A	
	PM	3.76	564	8	204	3.48	0.35	A	3.62	0.36	A	
Stairway at NW Corner of W. 23rd Street-8th Avenue (S3)	AM	3.68	552	7	220	3.86	0.39	A	3.99	0.40	A	
	PM	3.68	552	17	150	2.41	0.24	A	2.72	0.27	A	
Stairway at NE Corner of W. 23rd Street-8th Avenue (S4)	AM	3.76	564	16	156	2.48	0.25	A	2.77	0.28	A	
	PM	3.76	564	8	169	2.85	0.29	A	3.00	0.30	A	
Stairway at NW Corner of W. 24th Street-8th Avenue (S5)	AM	3.40	510	-6	108	2.24	0.22	A	2.12	0.21	A	
	PM	3.40	510	18	67	0.96	0.10	A	1.31	0.13	A	
Stairway at SE Corner of W. 24th Street-8th Avenue (S6)	AM	3.40	510	-5	72	1.51	0.15	A	1.41	0.14	A	
	PM	3.40	510	10	49	0.76	0.08	A	0.96	0.10	A	
Stairway at SE Corner of W. 25th Street-8th Avenue (S7)	AM	2.64	396	7	154	3.71	0.37	A	3.89	0.39	A	
	PM	2.64	396	17	172	3.91	0.39	A	4.34	0.43	A	
Stairway at SW Corner of W. 25th Street-8th Avenue (S8)	AM	2.72	408	16	82	1.62	0.16	A	2.01	0.20	A	
	PM	2.72	408	8	68	1.47	0.15	A	1.67	0.17	A	
Stairway at NE Corner of W. 25th Street-8th Avenue (S9)	AM	2.48	372	7	237	6.18	0.62	B	6.37	0.64	B	
	PM	2.48	372	17	247	6.18	0.62	B	6.64	0.66	B	
Stairway at NW Corner of W. 25th Street-8th Avenue (S10)	AM	2.56	307	16	101	2.21	0.28	A	2.63	0.33	A	
	PM	2.56	307	8	109	2.63	0.33	A	2.84	0.35	A	
Stairway at NW Corner of W. 25th Street-8th Avenue (S11)	AM	2.56	384	0	83	2.16	0.22	A	2.16	0.22	A	
	PM	2.56	384	0	81	2.11	0.21	A	2.11	0.21	A	
<i>18th Street/7th Avenue Subway Station - 1,9 Trains</i>												
Stairway at SW Corner of W. 18th Street-7th Avenue (S1)	AM	2.72	408	-2	195	4.83	0.48	A	4.78	0.48	A	
	PM	2.72	408	23	128	2.57	0.26	A	3.14	0.31	A	
Stairway at SE Corner of W. 18th Street-7th Avenue (S2)	AM	2.72	408	33	122	2.18	0.22	A	2.99	0.30	A	
	PM	2.72	408	1	175	4.26	0.43	A	4.29	0.43	A	
Stairway at NW Corner of W. 18th Street-7th Avenue (S3)	AM	2.72	408	-2	218	5.39	0.54	B	5.34	0.53	B	
	PM	2.72	408	23	151	3.14	0.31	A	3.70	0.37	A	
Stairway at NE Corner of W. 18th Street-7th Avenue (S4)	AM	2.80	420	33	147	2.71	0.27	A	3.50	0.35	A	
	PM	2.80	420	1	237	5.62	0.56	B	5.64	0.56	B	
Stairway at NW Corner of W. 19th Street-7th Avenue (S5)	AM	2.88	432	-8	33	0.95	0.09	A	0.76	0.08	A	
	PM	2.88	432	24	76	1.20	0.12	A	1.76	0.18	A	
Stairway at NE Corner of W. 19th Street-7th Avenue (S6)	AM	3.40	510	-2	39	0.80	0.08	A	0.76	0.08	A	
	PM	3.40	510	4	69	1.27	0.13	A	1.35	0.14	A	

Notes:

- (1) Peak hours: 8-9 AM and 5-6 PM.
- (2) Effective width measured as stairwell width less one foot to account for handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.
- (3) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 PFM (see Note 4).
- (4) PFM = Persons per foot width of stairway per minute.
- (5) Refer to Table 17-2, Stairway Level of Service Definitions.

Table 17-15 (continued)
2013 Future With The Proposed Action Subway Station Analysis
Fare Array Analysis

Station Element	Array Configuration	Peak Period (1)	Maximum 15 Min Capacity (2)	No Action			With Action			
				Pk 15 Min Volume (3)	V/C Ratio	LOS (4)	Pk 15 Min Increment	Pk 15 Min Volume (3)	V/C Ratio	LOS (4)
W. 23rd Street/8th Avenue Subway Station - C,E Trains										
Fare Array at 23rd Street	3 Turnstiles	AM	2,340	283	0.12	A	14	297	0.13	A
Downtown-Bound	3 High Entrance/Exit Turnstiles	PM	2,340	207	0.09	A	34	241	0.10	A
Fare Array at 23rd Street	3 Turnstiles	AM	1,440	361	0.25	B	32	393	0.27	B
Uptown-Bound		PM	1,440	357	0.25	B	16	373	0.26	B
Fare Array at 24th Street	2 High Revolving Exit Gates	AM	900	77	0.09	A	-5	72	0.08	A
Downtown-Bound		PM	900	39	0.04	A	10	49	0.05	A
Fare Array at 24th Street	2 High Revolving Exit Gates	AM	900	114	0.13	A	-6	108	0.12	A
Uptown-Bound		PM	900	49	0.05	A	18	67	0.07	A
Fare Array at 25th Street	2 High Revolving Entrance/Exit	AM	1,500	377	0.25	B	14	391	0.26	B
Downtown-Bound	2 High Revolving Exit Gates	PM	1,500	385	0.26	B	34	419	0.28	B
Fare Array at 25th Street	3 High Entrance/Exit Turnstiles	AM	900	236	0.26	B	32	183	0.20	B
Uptown-Bound		PM	900	262	0.29	B	16	177	0.20	A
W. 18th Street/7th Avenue Subway Station - 1,9 Trains										
Fare Array at 18th Street	3 Turnstiles	AM	2,940	417	0.14	A	-4	413	0.14	A
Downtown-Bound	2 High Entrance/Exit Turnstiles 2 High Revolving Exit Gate	PM	2,940	233	0.08	A	46	279	0.09	A
Fare Array at 18th Street	3 Turnstiles	AM	1,440	203	0.14	A	66	269	0.19	A
Uptown-Bound		PM	1,440	410	0.28	B	2	412	0.29	B
Fare Array at 19th Street	1 High Revolving Exit Gate	AM	450	41	0.09	A	-2	39	0.09	A
Downtown-Bound		PM	450	65	0.14	A	4	69	0.15	A
Fare Array at 19th Street	1 High Revolving Exit Gate	AM	450	41	0.09	A	-8	33	0.07	A
Uptown-Bound		PM	450	52	0.12	A	24	76	0.17	A

Notes:

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

(2) Analysis assumes capacities of 32 persons per minute for turnstiles, 20 persons per minute for high entrance/exit turnstiles, 30 persons per minute for high revolving exit gates. Exit gate capacities were conservatively not included. Capacities are dynamic due to two-way turnstiles.

(3) Source: PHA field counts conducted in January 2004.

(4) Level of Service for turnstiles and exit gates: LOS A: v/c < 0.2; LOS B: v/c = 0.2 to 0.4; LOS C: v/c = 0.4 to 0.6; LOS D: v/c = 0.6 to 0.8; LOS E: v/c = 0.8 to 1.0; LOS F: v/c > 1.0.

Bus Service

As shown in Table 16-7, the proposed action along with the High Line open space is expected to generate a total of approximately 130 ~~199~~ bus trips during the AM peak hour and 449 ~~713~~ trips during the PM peak hour. In addition, it is anticipated that new bus trips would also be generated by some users of the subway system who would utilize cross-town bus lines for access between the proposed action area and nearby subway stations. All of these trips would be distributed among the seven bus routes serving the proposed action area.

The assignment of project generated bus trips to individual routes was based on the proximity of each route to projected development sites and on journey-to-work origin/destination data from the 2000 Census. Table 17-16 shows the percentage and total number of trips assigned to each bus route in the AM and PM peak hours. In addition to project generated bus trips, Table 17-16 also shows the estimated numbers of subway trips that are expected to transfer to and from crosstown bus routes (the M14, M16/M34 and M23) for travel between subway stations and projected development sites. As previously discussed, the bus impact analysis focuses on AM and PM peak hour conditions at the maximum load point on each route, typically in the peak direction (the M16/M34 route is analyzed in both directions as eastbound and westbound demand is relatively balanced). It should therefore

Table 17-16, Distribution of Project Increment Bus Trips

Bus Route	Trip Distribution	Peak Hour	Bus-Only Trips	Subway-Bus Transfers	Total Bus Trips
M11	21%	AM	27	0	27
		PM	95	0	95
M14A/ M14D	20%	AM	26	0	26
		PM	90	0	90
M16/M34	16%	AM	21	14	35
		PM	72	22	94
M20	21%	AM	27	0	27
		PM	95	0	95
M23	22%	AM	29	69	98
		PM	97	108	205
Total All Routes	100%	AM	130	83	213
		PM	449	130	579

be noted that not all project generated bus trips would be in the peak direction on each route, nor would necessarily pass through the maximum load point as these points are in some cases located a substantial distance from the proposed action area. As an example, the AM peak hour maximum load point on the M11 route in the peak southbound direction is at Columbus Avenue and W. 96th

Street. Consequently, the numbers of new peak direction bus trips assumed in the impact analysis to occur at the maximum load point on a particular route is typically less than the total numbers of new trips assigned to that route. In addition, on some routes the number of No-Action peak direction bus trips displaced by projected development would exceed the number of new peak direction bus trips generated by the proposed action. In these cases, the result is a net incremental decrease in bus demand on that route.

The net incremental increase in peak direction bus demand at the maximum load point on each route is shown in Table 17-17. As shown in Table 17-17, the route with the greatest number of new peak direction bus trips through its maximum load points would be the M23 with ~~44~~ 122 new eastbound trips in the AM peak hour and ~~90~~ 239 new westbound trips in the PM. By contrast, the southbound M11, the westbound M14A/D, and the westbound M16/M34 ~~and the northbound M20~~ routes would all experience fewer trips through their maximum load points in the future with the proposed action when compared to the No-Action condition.

According to current NYCT guidelines, increases in bus load levels to above their capacities at any load point is defined as a significant adverse impact, necessitating the addition of more bus service along the route. As shown in Table 17-17, in the 2013 future with the proposed action, only the combined M16/M34 route would experience load levels exceeding its capacity at its maximum load. As shown in the table, in the PM peak hour ~~westbound eastbound~~ buses would experience a deficit of ~~ten~~ two spaces. All other analyzed bus routes would continue to operate with available peak direction capacity at their maximum load points in both peak hours in the future with the proposed action.

It should be noted that the distribution of project generated bus trips, specifically those associated with transfers to and from subway stations, assumes implementation of the extension of No. 7 subway service on the Flushing Line to a new station at W. 34th Street. As demonstrated in Table 17-14, in the absence of the Flushing Line extension, a greater number of new project generated subway trips would occur at existing subway stations, primarily those along W. 34th Street. Consequently, the number of new bus trips on routes operating along W. 34th Street (the M16/M34) would be somewhat higher were the Flushing Line extension not built. The number of additional trips on the combined M16/M34 route would total approximately ~~40~~ 25 eastbound in the AM peak hour and 42 westbound in the PM, with few passing through the peak load points which are located at 7th Avenue eastbound in the AM and 5th Avenue westbound in the PM. not all of which would pass through the maximum load points. (The numbers of additional westbound trips in the AM and eastbound trips in the PM are expected to be negligible.) As shown in Table 17-17, it is anticipated that sufficient capacity would be available on M16/M34 buses to accommodate these additional trips in the AM peak hour. In the PM peak hour, the additional westbound trips both peak hours, and no additional local bus impacts are therefore expected to occur in the absence of the Flushing Line extension would worsen the proposed action's impact to M16/M34 buses.

As standard practice, NYC Transit monitors bus ridership and increases service where operationally warranted and fiscally feasible. As such, the capacity shortfall on the M16/M34 crosstown route would be addressed by NYC Transit, and no action-initiated mitigation is required for the proposed action.

Table 17-17, 2013 Future With The Proposed Action: Local Bus Conditions

Route	Peak Hour (1)	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	No-Action Peak Hour Riders	Project Increment (5)	With Action Peak Hour Riders	With Action Average Riders per Bus	With Action Available Capacity (2,3)
M11	AM	SB	Columbus Ave/ W 96th St	12	767	-2	765	64	15
	PM	NB	Amsterdam Ave/ W 77th St	13	798	0	798	61	47
M14A/ M14D (4)	AM	WB	E 14th St/Ave A	40	2,356	-16	2,340	58	1,380
	PM	EB	E 14th St/Ave A	24	1,422	0	1,422	59	810
M16/ M34 (4)	AM	EB	W 34th St/7th Ave	15	877	42	919	61	56
	AM	WB	W 34th St/5th Ave	19	1,186	-26	1,160	61	75
	PM	EB	W 34th St/5th Ave	18	1,116	-1	1,115	62	55
	PM	WB	W 34th St/5th Ave	13	797	58	855	66	-10*
M20	AM	NB	8th Ave/W 23rd St	4	145	7	152	38	108
	PM	SB	7th Ave/W 34th St	6	294	48	342	57	48
M23	AM	EB	E 23rd St/Park Ave S	9	647	44	691	77	146
	PM	WB	W 23rd St/6th Ave	11	769	90	859	78	164

Notes:

- (1) Peak Hours: weekday 8-9 AM and 5-6 PM.
- (2) Assumes service levels adjusted to address capacity shortfalls in the No-Action condition.
- (3) Available capacity based on MTA NYCT loading guidelines of 65 riders per standard bus and 93 riders per articulated bus.
- (4) Peak load data combined
- (5) Reflects action increment at peak load point.

* Significant adverse impact based on CEQR criteria.

Pedestrians

The proposed action would generate new pedestrian demand on sidewalks, corner areas and crosswalks throughout the proposed action area. This new demand would be comprised of trips made solely by walking, as well as pedestrian trips en route to and from subway station entrances and bus stops. Demand generated by the proposed High Line open space is expected to be comprised primarily of local walk trips. As shown in Table 16-7, the proposed action is expected to generate a total of 1,551 ~~1,811~~ walk-only trips in the AM peak hour, 3,789 ~~5,236~~ in the midday and 3,570 ~~4,419~~ in the PM peak hour. Trips en route to and from area subway stations and bus stops would account for an additional 1,010, 2,028 and 1,833 ~~1,146~~, ~~2,598~~ and ~~2,322~~ trips during these peak hours, respectively.

Although pedestrian trips generated by the proposed action are expected to be well distributed due to the dispersed locations of the projected development sites, the greatest concentrations are likely to occur along the W. 18th Street and W. 23rd Street corridors which would link projected

development sites with the 18th Street/Seventh Avenue and 23rd Street/Eighth Avenue subway stations. Future With the Proposed Action conditions at analyzed pedestrian elements along these corridors, as well as at other analyzed locations including potential access points to the High Line open space, are shown in Tables 17-18, 17-19 and 17-20.

According to the *CEQR Technical Manual*, for sidewalk and mid-block locations, a significant adverse impact occurs when the pedestrian flow rate increases by two or more pedestrians per foot per minute (PFM) over No-Action conditions with flow rates over 15 PFM or more (the threshold of LOS D and E). Platoon flow rates are used for assessing impacts. As shown in Table 17-18, all analyzed sidewalks would operate at an acceptable LOS C or better with less than 10 PFM under platoon conditions in all weekday peak periods in the future with the proposed action. Therefore, the proposed action would not result in significant adverse sidewalk impacts.

According to the *CEQR Technical Manual*, for corners and crosswalks located within Manhattan, significant adverse impacts may be considered for decreases in pedestrian space of one or more square feet per pedestrian when the No-Action condition has average occupancies under 15 square feet per pedestrian (the threshold of LOS D and E). A deterioration from LOS C or better to LOS E or F would also be considered a significant impact. As shown in Table 17-19, all analyzed corner areas would continue to operate at LOS C or better with 27 square feet per pedestrian or more in all three peak hours. Therefore, under *CEQR* criteria, the proposed action would not result in any significant adverse corner area impacts.

As shown in Table 17-20, all analyzed crosswalks would continue to operate at LOS C or better in all peak hours under the proposed action, with the exception of the south crosswalk on Ninth Avenue at W. 23rd Street. This 13-foot-wide crosswalk would operate at LOS D in the ~~midday and PM~~ peak hours (LOS C in the AM and midday), with an average of 16.4 square feet per pedestrian. ~~during these periods, respectively. This~~ These LOS D conditions ~~are~~ is due in part to a protected westbound left-turn signal phase which reduces the amount of green time available for pedestrians on the south crosswalk. However, as the average space per pedestrian on the south crosswalk, and on all analyzed crosswalks, would continue to be 16 square feet or more in all peak periods, no significant adverse crosswalk impacts would result from the proposed action under *CEQR* criteria.

As noted in Chapter 1, “Project Description,” it is anticipated that by 2013, the High Line would be converted into an approximately ~~6.7~~ 5.9-acre active open space. Figure 17-5 shows 13 potential High Line access locations as identified by the Department of City Planning. Of these, seven likely access points were selected for analysis in this EIS. As previously discussed, these include W. 28th, W. 26th, W. 23rd, W. 21st, W. 18th, W. 14th, and Gansevoort Streets. As shown in Table 16-7 in Chapter 16, “Traffic and Parking,” the total weekday demand by all modes generated by the by the High Line open space is expected to be 103, 251 and 206 ~~102, 250, and 208~~ trips in the AM, midday and PM peak hours, respectively. All of these trips would access the High Line on foot and would be distributed among the various access points. Demand would be more concentrated at locations nearest to subway stations and crosstown bus corridors (i.e., at W. 14th and W. 23rd Streets), as well as at Gansevoort Street which would be the access point for all trips en route to and from the south.

Figure 17-5
Projected High Line Access Locations



Source: Department of City Planning

-  stair | elevator access point
-  public right-of-way access
-  private property access
-  proposed special west Chelsea district boundary

**Table 17-18
2013 With Action Sidewalk Conditions**

Map No.	Blockface	Side of Street	Effective Sidewalk Width (feet)	Peak 15 Min. Volumes			Average Walkway						Platoon Walkway					
							Persons per Foot per Min. (PFM)			Level of Service			Persons per Foot per Min. (PFM)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
1	W. 14th Street Washington Street to Tenth Ave	North South	16.7	72	154	152	0.3	0.6	0.6	A	A	A	4.3	4.6	4.6	A	A	A
			16.8	74	136	140	0.3	0.5	0.6	A	A	A	4.3	4.5	4.6	A	A	A
2	W. 18th Street Seventh Ave to Eighth Ave	North South	7.5	195	141	151	1.7	1.3	1.3	A	A	A	5.7	5.3	5.3	B	B	B
			7.5	111	117	162	1.0	1.0	1.4	A	A	A	5.0	5.0	5.4	A	B	B
3	W. 18th Street Eighth Ave to Ninth Ave	North South	4.5	382	96	112	5.7	1.4	1.7	B	A	A	9.7	5.4	5.7	C	B	B
			3.5	205	91	140	3.9	1.7	2.7	A	A	A	7.9	5.7	6.7	C	B	B
4	W. 18th Street Ninth Ave to Tenth Ave	North South	7.8	54	91	92	0.5	0.8	0.8	A	A	A	4.5	4.8	4.8	A	A	A
			8.0	60	90	97	0.5	0.8	0.8	A	A	A	4.5	4.8	4.8	A	A	A
5	Tenth Avenue W. 20th Street to W. 21st Street	East West	15.6	156	367	307	0.7	1.6	1.3	A	A	A	4.7	5.6	5.3	A	B	B
			16.0	137	339	290	0.6	1.4	1.2	A	A	A	4.6	5.4	5.2	A	B	B
6	W. 21st Street Tenth Ave to Eleventh Ave	North South	11.8	44	162	147	0.3	0.9	0.8	A	A	A	4.3	4.9	4.8	A	A	A
			11.8	36	152	119	0.2	0.9	0.7	A	A	A	4.2	4.9	4.7	A	A	A
7	W. 23rd Street Eighth Ave to Ninth Ave	North South	19.4	320	351	472	1.1	1.2	1.6	A	A	A	5.1	5.2	5.6	B	B	B
			19.3	283	408	469	1.0	1.4	1.6	A	A	A	5.0	5.4	5.6	A	B	B
8	W. 23rd Street Ninth Ave to Tenth Ave	North South	11.5	214	348	371	1.2	2.0	2.2	A	A	A	5.2	6.0	6.2	B	B	B
			7.6	183	272	301	1.6	2.4	2.6	A	A	A	5.6	6.4	6.6	B	B	B
9	W. 23rd Street Tenth Ave to Eleventh Ave	North South	16.8	63	99	123	0.3	0.4	0.5	A	A	A	4.3	4.4	4.5	A	A	A
			21.8	52	53	66	0.2	0.2	0.2	A	A	A	4.2	4.2	4.2	A	A	A
10	W. 26th Street Tenth Ave to Eleventh Ave	North South	9.0	113	454	294	0.8	3.4	2.2	A	A	A	4.8	7.4	6.2	A	C	B
			9.0	93	502	303	0.7	3.7	2.2	A	A	A	4.7	7.7	6.2	A	C	B
11	W. 28th Street Tenth Ave to Eleventh Ave	North South	7.5	120	331	251	1.1	2.9	2.2	A	A	A	5.1	6.9	6.2	B	B	B
			11.8	127	348	248	0.7	2.0	1.4	A	A	A	4.7	6.0	5.4	A	B	B

* Denotes a significant adverse impact.

**Table 17-19
2013 With Action Corner Conditions**

Map No.	Intersection	Corner	Curb Radii (Feet)	Peak 15 Min. Volumes			Average Pedestrian Space (Sq. Ft./Ped)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM
11	Gansevoort Street & Washington Street	Northwest	12	2	2	1	(See Note 1)			(See Note 1)		
12	W. 18th Street & Seventh Avenue	Northeast	12	30	39	46	172.2	139.4	118.1	A	A	A
		Northwest	12	167	75	73	97.0	108.7	102.6	A	A	A
		Southeast	12	49	56	87	155.8	123.0	93.8	A	A	A
		Southwest	12	96	66	76	115.6	105.9	91.4	A	A	A
13	W. 18th Street & Eighth Avenue	Northeast	12	28	28	49	69.2	64.6	53.1	A	A	B
		Northwest	12	43	6	13	42.0	75.4	60.6	B	A	A
		Southeast	12	87	36	60	85.4	77.0	62.2	A	A	A
		Southwest	12	75	12	21	78.2	143.3	111.6	A	A	A
14	W. 18th Street & Ninth Avenue	Northeast	12	69	16	63	82.8	78.9	39.5	A	A	C
		Northwest	12	27	22	25	137.0	126.5	96.2	A	A	A
		Southeast	12	66	30	32	170.3	144.2	100.0	A	A	A
		Southwest	12	56	31	35	129.3	120.0	132.3	A	A	A
15	W. 18th Street & Tenth Avenue	Northeast	12	27	42	50	454.3	224.1	210.1	A	A	A
		Northwest	12	2	3	3	944.8	484.3	424.8	A	A	A
		Southeast	12	28	38	34	421.8	208.0	213.7	A	A	A
		Southwest	12	5	3	9	891.7	455.0	401.9	A	A	A
16	W. 23rd Street & Eighth Avenue	Northeast	12	73	67	137	132.5	113.1	71.4	A	A	A
		Northwest	12	44	43	67	235.2	219.0	150.9	A	A	A
		Southeast	12	146	78	116	107.7	112.6	72.4	A	A	A
		Southwest	12	125	80	135	103.1	114.0	75.5	A	A	A
17	W. 23rd Street & Ninth Avenue	Northeast	12	37	45	50	178.4	143.3	127.4	A	A	A
		Northwest	12	28	56	47	171.9	124.5	111.7	A	A	A
		Southeast	12	45	51	88	50.5	43.3	31.2	B	B	C
		Southwest	12	24	32	46	180.8	154.6	123.0	A	A	A
18	W. 23rd Street & Tenth Avenue	Northeast	12	68	107	113	116.3	50.5	52.5	A	B	B
		Northwest	12	10	20	36	284.8	118.8	108.4	A	A	A
		Southeast	12	54	74	85	50.4	27.2	27.8	B	C	C
		Southwest	12	1	7	4	428.8	258.9	247.5	A	A	A

Notes:

(1) Unsignalized intersection with no crosswalk on north leg.

* Denotes a significant adverse impact.

**Table 17-20
2013 With Action Crosswalk Conditions**

Map No.	Intersection	Crosswalk	Curb to Curb Street Width (Feet)	Crosswalk Width (Feet)	Peak 15 Min. Volumes			With Vehicles					
					AM	MD	PM	Average Pedestrian Space (Sq. Ft./Ped)			Level of Service		
								AM	MD	PM	AM	MD	PM
11	Gansevoort Street & Washington Street	North West	39.0	N/A	4	10	8	(See Note 1)			(See Note 1)		
			31.7	13.0	6	15	15						
12	W. 18th Street & Seventh Avenue	North	60.0	12.0	168	159	165	46.5	49.5	47.5	B	B	B
		South	60.0	12.0	146	153	186	46.1	46.9	35.1	B	B	C
		East	33.5	17.0	110	170	216	192.0	120.1	92.2	A	A	A
		West	33.0	17.0	159	219	243	128.7	90.4	80.4	A	A	A
13	W. 18th Street & Eighth Avenue	North	70.0	13.0	187	125	123	51.0	79.0	80.4	B	A	A
		South	70.0	14.0	118	101	107	91.0	107.3	100.9	A	A	A
		East	33.0	13.0	157	257	313	79.7	45.9	34.8	A	B	C
		West	29.7	14.0	239	134	184	58.7	113.3	79.4	B	A	A
14	W. 18th Street & Ninth Avenue	North	69.0	12.0	64	81	168	160.0	125.0	57.1	A	A	B
		South	69.0	14.0	63	98	104	172.9	114.7	102.4	A	A	A
		East	29.0	14.0	117	156	253	122.1	88.6	50.6	A	A	B
		West	37.5	14.0	110	116	88	141.1	133.2	179.2	A	A	A
15	W. 18th Street & Tenth Avenue	North	59.3	12.0	24	43	49	373.6	205.4	179.4	A	A	A
		South	59.3	13.0	27	55	56	358.8	172.6	169.4	A	A	A
		East	37.5	16.0	40	96	93	465.1	189.8	189.7	A	A	A
		West	33.3	15.0	25	53	61	759.9	351.6	303.8	A	A	A
16	W. 23rd Street & Eighth Avenue	North	70.0	19.0	290	304	460	58.6	56.0	35.6	B	B	C
		South	69.7	17.0	326	289	449	53.1	60.7	36.9	B	A	C
		East	52.7	17.0	162	231	322	77.2	57.0	39.4	A	B	C
		West	52.1	16.0	169	196	254	83.9	71.3	53.3	A	A	B
17	W. 23rd Street & Ninth Avenue	North	69.5	17.0	251	337	393	65.9	47.5	39.9	A	B	C
		South	69.3	14.0	233	253	338	26.5	25.1	16.4	C	C	D
		East	52.7	14.0	120	116	113	114.5	118.8	122.2	A	A	A
		West	52.5	14.0	117	157	164	109.6	82.2	78.4	A	A	A
18	W. 23rd Street & Tenth Avenue	North	66.5	18.0	117	325	341	95.4	30.3	26.1	A	C	C
		South	56.5	14.0	106	163	172	92.0	57.6	54.2	A	B	B
		East	53.9	16.0	121	220	187	158.8	84.2	99.9	A	A	A
		West	50.5	15.0	98	167	176	192.9	109.4	103.3	A	A	A

Notes:

(1) Unsignalized intersection with no crosswalk on north leg.

* Denotes a significant adverse impact.

The numbers of trips at these three access points during the weekday peak hours are expected to range from 20 to 50 at each location. Other analyzed access points would likely experience demand ranging from 10 to 25 in each peak hour. As shown in Tables 17-18 through 17-20, these new trips, when combined with the demand generated by projected development sites, are not expected to result in significant adverse impacts to any sidewalk, corner area or crosswalk adjacent to one of the seven analyzed access points. All of these facilities would operate at LOS D or better in all peak hours in the future with the proposed action.

At the southern terminus of the proposed High Line open space at the northwest corner of the intersection of Gansevoort and Washington Streets, weekday pedestrian volumes in the With-Action condition are expected to remain relatively low, with from six to 15 trips on the west crosswalk in any peak 15-minute period. Trips crossing the north leg of the intersection, where no crosswalk is presently provided, are expected to range from four to twelve in any peak 15-minute period. Given these low volumes, no adverse pedestrian impacts are anticipated at this location.

Although the specific configurations of the stairways and elevators at each access point are yet to be finalized, it is not anticipated that the projected level of demand would adversely impact any of these future stairs. For example, the 50 weekday midday peak hour trips projected to utilize the access points at W. 23rd, W. 14th, and Gansevoort Streets would equate to an average of approximately 16 trips in the peak 15 minutes, or fewer than two persons per minute. Even assuming, as a worst case condition, the provision of a single, narrow five-foot-wide stair with four feet of effective width at each of these locations, these stairways would be operating at LOS A (0.3 PFM) during the weekday midday peak hour. While weekend demand would be higher than on weekdays, even a four-fold increase of peak weekday demand (to 200 trips per hour) would still result in LOS A operation (1.3 PFM) under this worst case scenario. As planning for the proposed High Line open space advances, stairways at each of the access points would be designed to accommodate projected demand levels.

F. BASE FAR SCENARIO

As discussed in Chapter 1, “Project Description,” although considered unlikely, it is possible that following the adoption of the proposed action, the proposed High Line open space would not be created. Under this scenario (the “Base FAR Scenario”), the maximum floor area ratio (FAR) for the projected and potential development sites would be lower than compared to the proposed action with the High Line open space, as only the proposed base FAR would govern development on each site. Table 17-21 compares the travel demand under this scenario with the travel demand that would be generated by the proposed action. As shown in Table 17-21, compared to the proposed action, the Base FAR Scenario would generate 603 fewer subway trips in the AM peak hour and 711 ~~709~~ in the PM. The number of trips occurring at the 23rd Street/Eighth Avenue station would total approximately 83 and 202 ~~103 and 270~~ in the AM and PM peak hours, respectively, compared to 264 and 415 ~~284 and 483~~, respectively with the proposed action, while the number of trips occurring at the 18th Street/Seventh Avenue station would total 50 and 121 ~~62 and 162~~ in the AM and PM peak hours, respectively, compared to 158 and 249 ~~170 and 290~~, respectively with the proposed action.

**Table 17-21, Base FAR Scenario Travel Demand
(Person Trips)**

Peak Hour	Mode	Proposed Action	Base FAR Scenario	Net Difference
AM	Auto	12	(91)	(103)
	Taxi	254	167	(87)
	Subway	880	277	(603)
	Bus	130	3	(127)
	Walk	1,551	1,143	(408)
	Total	2,827	1,499	(1,328)
MD	Auto	586	524	(62)
	Taxi	380	334	(46)
	Subway	1,387	1,069	(318)
	Bus	641	567	(74)
	Walk	3,789	3,407	(382)
	Total	6,783	5,901	(882)
PM	Auto	351	225	(126)
	Taxi	470	367	(103)
	Subway	1,384	673	(711)
	Bus	449	296	(153)
	Walk	3,570	3,015	(555)
	Total	6,224	4,576	(1,648)

As no significant adverse impacts to analyzed subway station elements are anticipated with the higher numbers of new transit trips generated by the proposed action, the Base FAR Scenario is also not expected to result in subway station impacts.

Compared to the proposed action, there would be 127 ~~122~~ fewer bus trips during the AM peak hour and 153 ~~147~~ fewer in the PM under the Base FAR Scenario. As a result, when bus-subway transfers are included, project generated demand on westbound ~~eastbound~~ M16/M34 buses in the PM would be reduced from 58 ~~16~~ trips per hour with the proposed action to 45 ~~10~~ trips under the Base FAR Scenario. With this lower level of demand, consequently, loading on the M16/M34 this route would remain below capacity under the Base FAR Scenario, with a surplus of three spaces westbound ~~four spaces available eastbound~~ in the PM. The proposed action's PM peak hour impact to westbound M16/M34 buses would therefore not occur under the Base FAR Scenario. ~~the proposed action's~~

~~significant adverse impact to the combined M16/M34 route in the eastbound direction in the PM peak hour would therefore not occur under the Base FAR Scenario.~~

Lastly, as shown in Table 17-21, in addition to fewer transit trips, the Base FAR Scenario would generate 408 ~~409~~ fewer walk-only trips in the AM peak hour, 382 ~~383~~ in the midday, and 555 ~~556~~ in the PM peak hour. As no significant adverse impacts to pedestrian facilities are anticipated with the higher pedestrian volumes projected with the proposed action, the Base FAR Scenario is also not expected to result in pedestrian impacts.

G. CONCLUSION

This chapter analyzes the effects of added travel demand from projected development sites and the proposed High Line open space on subway stations, local bus services and pedestrian facilities in the vicinity of the proposed action area. The results of the analyses show that this new demand would not result in any significant adverse impacts to analyzed stairways or fare arrays at the 18th Street/Seventh Avenue and 23rd Street/Eighth Avenue subway stations. Significant adverse pedestrian impacts are also not expected to occur at sidewalks, corner areas and crosswalks along the principal pedestrian access corridors serving the proposed action area. However, in the 2013 future with the proposed action, the combined M16/M34 local bus route would be significantly adversely impacted in the westbound ~~eastbound~~ direction in the PM peak hour. As standard practice, NYC Transit monitors bus ridership and increases service where operationally warranted and fiscally feasible. As such, the capacity shortfall on the M16/M34 crosstown route would be addressed by NYC Transit, and no action-initiated mitigation is required for the proposed action.

Lastly, the Base FAR Scenario, would generate fewer subway, bus and walk-only trips than the proposed action. Consequently, there would be no additional significant adverse impacts to analyzed subway and pedestrian facilities under the Base FAR Scenario. ~~In addition,~~ The proposed action's impacts to the combined M16/M34 local bus route in the westbound ~~eastbound~~ direction in the PM peak hour would not occur under this scenario.