Appendix S.4 Transit Analysis

A. INTRODUCTION

This appendix provides the technical memorandum which details the planning assumptions included in the methodology for analysis of subway station elements and on-street pedestrian elements, including sidewalks, corners, and intersection crosswalks. This appendix also includes the following technical backup documentation for the transit analyses:

1. Methodologies
2. Subway Line Haul Analysis (RTFM Results)
3. Subway Station Plans
4. Subway Station Element Analysis

Appendix S.4.1
Transit and Pedestrian Methodologies and Assumptions

1. Pedestrian Assignments

- **Ferry:** It was assumed that the 40th Street pedestrian passageway providing access through the Convention Center was used for the ferry-walk assignments. Ferry-walk trips were assigned from the Ferry Shuttle bus to/from development sites that are located further away from the Ferry Terminal.

- **Bus:** NYCT data were utilized to identify the peak load point of each bus route. Trip distribution was based on the 1990 Census Reverse Journey-to-Work origin-destination data. Bus-walk trips were traced along the intersection elements (sidewalks, corners, and crosswalks) from the bus stops to/from development sites.

- **Subway:** Pedestrian trips at the existing and proposed subway stations were assigned to entrances/exits based on the logical walking paths from the platforms to the proposed stairways, escalators, and elevators at the new stations to the street level and the proposed development sites. Trip generations at the existing and new subway station were calculated using the CEQR methodology. Results of the MTA's Regional Transit Forecasting Model (RTFM) were used to forecast transfer trips to and from the No. 7 line at the Times Square, Fifth Avenue and Grand Central stations. Subway assignments for the weekday evening and Sunday afternoon Special Event peak hours (e.g. assignments during non-traditional commuter hours) at these three transfer stations were forecasted based on the origin/destination data provided by the independent surveys of New York Jets season ticket holders and Convention Center attendees.

- **Auto:** The auto-walk pedestrian assignments were based on the off-street parking analysis. Auto-walk pedestrian trips assigned within the development site were not added to the pedestrian street network. Auto trips assigned to other parking facilities were traced from each development site to/from parking facilities based on the parking distribution/traffic assignment.

- **Taxi:** It was assumed that taxi trips would be dropped off at closest corner of the development sites. Therefore, taxi-walk trips were not added to the pedestrian street network.

- **Walk-Only:** Walk-Only trips were assigned to/from every block within ½ mile of each development site. Walk trips will be assigned to each block where potential trips would originate.

2. Existing Subway Stations

Herald Square - 34th Street Station and Sixth Avenue (B, D, F, N, Q, R, V, W)

For the 2025 proposed action, the majority of the subway trips generated for this station are from Site 45 – the current MSG site. Since this site is located between 31st and 33rd Streets west of the station, most of the trips were assigned to 32nd, 33rd, and 34th Street control areas (A25, N506, and N507) and stairways/escalators (HM300, H&M 307, E221, E222, E223, E224, S5AB/M5AB) west of Sixth Avenue/Broadway.

34th Street Station at Seventh Avenue (1, 2, 3, 9)

- For the 32nd Street access, stairway O14AB/O15AB located at northeast of Seventh Avenue and 32nd Street is the only access to the street level. Connection to Penn Station is provided at the southwest through the sub passage.
- Most of the subway trips generated by development sites 31, 34 and 45 were assigned to stairways P1, P2, and S1 at the 33rd Street access.
- For the 34th Street access, stairways S3/P5AB and S4/P6AB will be rebuilt and widened to 10 feet as part of a separate project. Stairway S3/P5AB would then be most likely used by Hudson Yard trips.

34th Street Station at Eighth Avenue (A, C, E)

It was assumed that riders of the southbound local train and express trains would most likely use street accesses located at the west side of the station. These subway station elements are: S2/P2AB and S4/P3 at the 33rd Street, S6/P5AB and S8/P7AB at 34th Street, and S10/P9 and S12/P11AB at 35th Street. Only riders of northbound local trains were assigned to use elements located on the east side of the station. These street stairs are: S1/P1and S5/P4 at 33rd Street, S7/P6AB and S9/P8AB at 34th Street, S11/P10AB and S14/P12AB at 35th Street.

42nd Street Station at Sixth Avenue (B, D, F, V, 7)

Similar to other stations, the Hudson Yard (HY) trips were assigned to elements that are west of the station: Stairways S4/M4/M5 and O6/O7/M9/M10 at 40th Street and stairways S9/M14/M15AB at 42nd Street.

Time Square Station (N, Q, R, S, W, 1, 2, 3, 7, 9)

HY subway trips were assigned to street stairways O1AB/O2, 12-A/12-B, 14-A/14-B at 40th Street, the new stairways at 41st Street, Stairways M9AB, O3ABC/O4ABC/M11ABC, and 2 stairways and two escalators without coding at 42nd Street.

This station would be a major transfer station for HY passengers transferring from the Broadway Line and Seventh Avenue Line (IRT) to the No. 7 Line. Access to the No. 7 Line train at the Time Square Station is provided by eight stairways (PL2, PL3, PL4, PL5, PL6AB, PL7AB, PL8AB, and PL9) go up to the lower mezzanine level and three escalators (E216, E217, and E218) go up to the upper mezzanine level. Stairway PL9 located at the east end of the platform is currently closed and will be permanently closed due to lightly use and safety reason. Stairways PL4 and PL6 were opened when subway counts were conducted in 2003, but are currently closed. Stairway PL6 will be replaced by an elevator.

Transfer to the Eighth Avenue Line and Port Authority Bus Terminal (PABT) is available via a passageway located west of the lower mezzanine level. HY trip transfer to/from the Eighth Avenue Line and the PABT were assigned to use stairways PL2, PL3, and PL3, which are located closer to the passageway. A majority of the IRT Transfer trips were assigned to stairways PL5, PL7AB, and PL8AB to the lower mezzanine to access stairways ML5 through ML12 access to the IRT platforms. The remaining of the Seventh Avenue Transfer trips and all Broadway Line transfer trips were assigned to the three escalators that go up to the upper mezzanine. From the upper mezzanine, passengers could use the stairways P3 through P10 to access to the IRT platforms.

42nd Street at Eighth Avenue (A, C, E)

The passageway connecting to the Seventh Avenue Line was analyzed in the Time Square Station. It was assumed that the PABT passageway would not be used by HY trips. HY trips were assigned to street stairs O-8/M1AB, S3/M3AB at 40th Street and S8/M9AB at 42nd Street.

Grand Central Station (GCT) (4, 5, 6, 7)

Transfer trips to/from the Lexington Avenue Line were assigned to stairways PL2, PL3, PL5, and PL6 on the No. 7 Line Platform and stairways U1 through U8 on the Lexington Avenue Line Platforms. Transfer to/from Metro-North were assigned to use escalators E207 and E209, which are closer to escalators (E255 and E256) and stairways (M6ABC/M7ABC) accessing to GCT upper concourse. Transfer trips to/from the Second Avenue Subway Line were assigned to stairways and escalators located at the east end of the platform: Stairway PL9AB, stairways (ML1 through ML5) and escalators (E203 and E204).

Fifth Avenue at 42nd Street Station (7)

Access to the No. 7 Line Platform is provided by six stairways located between the platform and mezzanine level: P1/P2, P3, P4, P5, P6, and P7. A passageway is located at the west end of the mezzanine level providing transfer to the Sixth Avenue Line. All projected incremental transfer trips between the Sixth Avenue Line and Flushing Line were added to this passageway. These transfer trips were also distributed mostly to stairways P6 and P7, located near to the passageway.

Penn Station (Major entrances/accesses)

Existing pedestrian volumes were collected at five major street entrances and three subway passageways at Penn Station in 2003. Future No-Action pedestrian volumes were distributed to both the existing Penn Station entrances and new entrances at the Farley Building as part of the Penn Station Redevelopment Project. For the proposed action with MSG relocation, the current MSG site would be rebuilt as Site #45 in 2025 conditions. Current Penn Station accesses at 31st and 33rd Street on Eighth Avenue would be eliminated. Instead, an at-grade east-west walkway in the vicinity of 32nd Street would be provided between Seventh Avenue and Eighth Avenue, and between Eighth and Ninth Avenues. (See below for description for 32nd Street Walkway)

4. New Stations Access

Terminal Station – West 34th Street at Eleventh Avenue (2010 and 2025)

- 34th Street and Blvd Entrance (Main entrance - 2010 & 2025).
- 34th Street and Blvd Entrance (North Entrance - 2010 & 2025).
- Eleventh Ave and 36th Street Entrance (2025 ONLY).
- Upper Mezzanine Connection to Multi-Use Facility.
- Northern Connection to Convention Center.

Intermediate Station – West 41st Street at Tenth Avenue (2025 ONLY)

- 42nd Street Entrance (between Tenth Avenue & Dyer Avenue).
- Boulevard Bridge Entrance (at 40th & 41st Streets).
- Tenth Avenue Entrance (at 41st Street).

5. 32nd Street Walkway between Seventh and Ninth Avenues

- At-grade east-west walkway in the vicinity of 32nd Street between Seventh and Eighth Avenues and a north-south through block connection between 31st and 33rd Streets would be provided. Subway access would be from the existing locations and through the new public space in the center of Site 45.
- A though building east-west walkway on 32nd Street between Eighth and Ninth Avenues and north-south mid-block walkway between 31st and 33rd Street.
- With MGG relocation to the Ninth Avenue Site, there would be no continuous walkway between Ninth and Tenth Avenues. Pedestrians coming out from the Farley Building/Penn Station at Ninth Avenue would need to go around to either 31st Street or 33rd Street continuing their trip to Tenth Avenue.
- Between Tenth and Eleventh Avenues, pedestrians could access through the public space between 30th and 33rd Streets. Connection to the High Line could be accessed through the open public space east of the cultural facility.
- Two at-grade crosswalks on 32nd Street are recommended: one at Eighth Avenue and one at Ninth Avenue.

6. Hudson Yards Building Access

- For development sites along the new Midblock Boulevard, it was assumed that the main building entrances would be located on the Boulevard, with additional entrances on the avenues and/or side streets. The additional entrances on side streets would most likely be on the south side of the building and the truck bays and parking entrances would be on the north side of the building.
- For commercial buildings in the remainder of the project area, the main entrances would typically be located on the avenues.
- For residential buildings in the remainder of the project area, the main entrances would typically be located on the side streets.
- Retail trip assignments were based on the required retail frontages provided by NYCDCP as of August 7, 2003.

7. Multi-Use Facility Access

- Major street entrances for the Multi-Use Facility would be located on the north side (33rd Street) and south side (30th Street) above street level (accessed by ramps, steps, and/or escalators), and an entrance would be located on the east side facing Eleventh Avenue for use by fans with suite or club seats.
- High Line Connection access from 30th Street @ Site 1, Eleventh & 12th Avenues. In 2010, High Line connection is slightly different because Site #1 with open space would not be built yet.
- An underground pedestrian connection would also be provided between the Multi-Use Facility and the Convention Center below West 34th Street.
- Connection between the Multi-Use Facility and the Terminal Station under Eleventh Avenue.

8. Jacob Javits Convention Center Access

- Entrances on Eleventh Avenue, 34th Street, and 42nd Street.
- Through-block pedestrian passageway would be provided at West 40th Street between Eleventh and Twelfth Avenues with access through the Convention Center.
- Subway Connection would be provided below Eleventh Avenue south of 36th Street.

- 2010 subway assignments are slightly different than 2025 because Intermediate Station at West 41st Street and Tenth Avenue would not be built in 2010.

9. Regional Transit Forecasting Model (RTFM)

- RTFM Results were used for subway line haul analyses.
- RTFM Results were used to forecast subway station transfer trips to/from the No. 7 Line at Times Square, Fifth Avenue, and Grand Central stations.

Appendix S.4.2-1
SUBWAY LINE HAUL DATA (BASED ON RTFM RESULTS)
Year 2000 Inbound #7 Train Model Validation, Base Year 2000 RTFM vs. NYCT Metrocard

		AM Peak Hour-Peak Direction Metrocard Estimates				AM Peak Hour-Peak Direction MTA RTFM Base Year 2000 (BZ9Cv15)			
Route	**Station**	**On**	**Off**	**Volume**	**V/C**	**On**	**Off**	**Volume**	**V/C**
#7 Express									
	Main St	10,408	-	10,408	0.66	9,545	-	9,545	0.66
	Willets Point Blvd	262	2	10,668	0.68	52	2	9,595	0.66
	Junction Blvd	3,358	59	13,967	0.89	3,279	109	12,765	0.88
	61 St	2,533	125	16,375	1.04	1,877	227	14,415	0.99
#7 Local									
	Main St	1,538	-	1,538	0.11	1,540	-	1,540	0.11
	Willets Point Blvd	22	6	1,554	0.11	18	1	1,556	0.11
	111 St	1,359	10	2,903	0.20	1,256	17	2,795	0.19
	103 St	2,286	21	5,167	0.36	1,588	3	4,380	0.30
	Junction Blvd	840	742	5,265	0.36	605	507	4,478	0.31
	90 St	2,579	30	7,814	0.54	1,666	-	6,144	0.42
	82 St	2,104	170	9,748	0.67	2,504	37	8,611	0.59
	74 St	2,316	3,736	8,328	0.57	1,101	2,884	6,828	0.47
	69 St	590	79	8,839	0.61	634	75	7,387	0.51
	61 St	170	217	8,792	0.61	249	30	7,606	0.52
	52 St	1,089	67	9,814	0.68	1,493	70	9,029	0.62
	46 St	1,981	266	11,528	0.79	561	146	9,444	0.65
	40 St	1,472	598	12,402	0.85	1,627	-	11,072	0.76
	33 St	146	1,982	10,567	0.73	150	1,154	10,067	0.69
#7 Express+Local									
	Queensboro Plz	1,549	6,368	22,123	0.73	1,025	5,573	19,934	0.69
	45 Rd	205	458	21,870	0.72	275	834	19,375	0.67
	Hunters Point Ave	1,362	150	23,082	0.76	1,611	620	20,365	0.70
	Vernon Blvd-Jackson Ave	1,039	152	23,968	0.79	309	-	20,674	0.71
	Grand Central	1,339	9,929	15,378	0.51	3,711	9,723	14,663	0.50
	5 Ave	585	7,223	8,740	0.29	17	6,260	8,419	0.29
	Times Sq	-	8,740	-	-	-	8,419	-	-

Source: RTFM Results Version 04/08/04 (Exhibit F - #7 Train Extension to Far West Midtown with TransCAD 4.0)

Appendix S.4.2-2
SUBWAY LINE HAUL DATA (BASED ON RTFM RESULTS)
2010 AM Peak Hour Passengers Boarding, Alighting and On-Board the #7 Subway

	2000 Base Model			(BZ9Cv15)		2010 No-Build (Existing HY Distrib.) (N17Xv19)					2010 Build 4A - no 10th Ave. (B4ATv19)				
	PH CAP	Ons	Offs	Aboard	V/C	PH CAP	Ons	Offs	Aboard	V/C	PH CAP	Ons	Offs	Aboard	V/C
Inbound #7 Local															
Main St	14,520	1,540	-	1,540	0.11	15,730	2,431	-	2,431	0.15	15,730	2,452	-	2,452	0.16
Willets Point Blvd	14,520	18	1	1,556	0.11	15,730	22	1	2,451	0.16	15,730	22	1	2,472	0.16
111th St	14,520	1,256	17	2,795	0.19	15,730	1,370	18	3,804	0.24	15,730	1,376	18	3,831	0.24
103rd St	14,520	1,588	3	4,380	0.30	15,730	1,803	7	5,600	0.36	15,730	1,847	7	5,671	0.36
Junction Blvd	14,520	605	507	4,478	0.31	15,730	745	941	5,404	0.34	15,730	756	961	5,466	0.35
90th St	14,520	1,666	-	6,144	0.42	15,730	1,661	-	7,065	0.45	15,730	1,658	-	7,124	0.45
82nd St	14,520	2,504	37	8,611	0.59	15,730	2,820	32	9,853	0.63	15,730	2,901	32	9,993	0.64
74th St	14,520	1,101	2,884	6,828	0.47	15,730	1,516	2,592	8,777	0.56	15,730	1,500	2,576	8,917	0.57
69th St	14,520	634	75	7,387	0.51	15,730	855	76	9,556	0.61	15,730	898	76	9,739	0.62
61st St	14,520	249	30	7,606	0.52	15,730	468	701	9,323	0.59	15,730	541	785	9,496	0.60
52nd St	14,520	1,493	70	9,029	0.62	15,730	1,759	74	11,009	0.70	15,730	1,773	74	11,195	0.71
46th St	14,520	561	146	9,444	0.65	15,730	591	169	11,432	0.73	15,730	601	169	11,627	0.74
40th St	14,520	1,627	-	11,072	0.76	15,730	1,900	-	13,332	0.85	15,730	1,910	-	13,536	0.86
33rd St	14,520	150	1,154	10,067	0.69	15,730	164	1,366	12,130	0.77	15,730	165	1,367	12,335	0.78
Queensboro Plz	14,520	554	1,903	8,718	0.60	15,730	652	2,618	10,164	0.65	15,730	650	2,668	10,318	0.66
45th Rd	14,520	138	223	8,633	0.59	15,730	188	478	9,874	0.63	15,730	187	474	10,030	0.64
Hunterspoint Ave	14,520	1,095	169	9,559	0.66	15,730	2,034	627	11,281	0.72	15,730	2,105	549	11,586	0.74
Vernon Blvd-Jackson	14,520	155	-	9,714	0.67	15,730	127	-	11,408	0.73	15,730	136	-	11,723	0.75
Grand Central	14,520	1,856	4,846	6,723	0.46	15,730	1,175	5,645	6,937	0.44	15,730	2,110	5,572	8,261	0.53
5th Ave	14,520	8	2,954	3,778	0.26	15,730	7	2,407	4,538	0.29	15,730	551	2,345	6,467	0.41
Times Sq	14,520	-	3,778	-	-	15,730	-	4,538	-	-	15,730	1,381	4,069	3,778	0.24
10th Avenue (42nd & 10th Ave)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	-	
10th Avenue (41st & 10th Ave)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	-	
10th Avenue (41st & Boulevard)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	-	
10th Avenue (40th & Boulevard)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	-	
TOTAL 10TH AVENUE	**14,520**	**-**	**-**	**-**	**-**	**15,730**	-	-	-	**-**	**15,730**	**-**	**-**	**-**	**-**
11th Avenue (36th & 11th Ave)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	-	
11th Avenue (34th & Boulevard)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	3,778	-	-
TOTAL 11TH AVENUE	**14,520**	**-**	**-**	**-**	**-**	**15,730**	-	-	-	**-**	**15,730**	**-**	**3,778**	**-**	**-**
Penn Station	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	-	-
Inbound #7 Express							-	-	-						
Main St	14,520	9,545	-	9,545	0.66	16,940	10,556	-	10,556	0.62	16,940	10,613	-	10,613	0.63
Willets Point Blvd	14,520	52	2	9,595	0.66	16,940	67	2	10,621	0.63	16,940	67	2	10,678	0.63
Junction Blvd	14,520	3,279	109	12,765	0.88	16,940	4,362	134	14,849	0.88	16,940	4,409	133	14,954	0.88
61st St	**14,520**	**1,877**	**227**	**14,415**	**0.99**	**16,940**	**2,664**	**423**	**17,090**	**1.01**	**16,940**	**2,662**	**421**	**17,195**	**1.02**
Queensboro Plz	14,520	471	3,669	11,217	0.77	16,940	606	4,358	13,338	0.79	16,940	672	4,258	13,609	0.80
45th Rd	14,520	137	612	10,742	0.74	16,940	200	905	12,633	0.75	16,940	208	902	12,915	0.76
Hunterspoint Ave	14,520	515	452	10,806	0.74	16,940	892	590	12,936	0.76	16,940	902	657	13,160	0.78
Vernon Blvd-Jackson	14,520	155	-	10,960	0.75	16,940	99	-	13,035	0.77	16,940	105	-	13,265	0.78
Grand Central	14,520	1,856	4,876	7,940	0.55	16,940	1,257	6,493	7,798	0.46	16,940	2,257	6,373	9,150	0.54
5th Ave	14,520	8	3,307	4,641	0.32	16,940	7	2,729	5,077	0.30	16,940	589	2,680	7,060	0.42
Times Sq	14,520	-	4,641	-	-	16,940	-	5,077	-	-	16,940	1,477	4,578	3,958	0.23
10th Avenue (42nd & 10th Ave)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	-	-
10th Avenue (41st & 10th Ave)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	-	-
10th Avenue (41st & Boulevard)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	-	-
10th Avenue (40th & Boulevard)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	-	-
TOTAL 10TH AVENUE	14,520	-	-	-	-	16,940	-	-	-	-	16,940	**-**	**-**	**-**	**-**
11th Avenue (36th & 11th Ave)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	-	-
11th Avenue (34th & Boulevard)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	3,958	-	-
TOTAL 11TH AVENUE	14,520	-	-	-	-	16,940	-	-	-	-	**16,940**	**-**	**3,958**	**-**	**-**
Penn Station	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	-	-
Inbound #7 Express + Local															
Main St	29,040	11,085	-	11,085	0.38	32,670	12,988	-	12,988	0.40	32,670	13,065	-	13,065	0.40
Willets Point Blvd	29,040	70	4	11,151	0.38	32,670	89	3	13,073	0.40	32,670	89	3	13,150	0.40
Junction Blvd	29,040	3,884	616	17,243	0.59	32,670	5,107	1,076	20,253	0.62	32,670	5,165	1,094	20,420	0.63
61st St	29,040	2,126	257	22,022	0.76	32,670	3,131	1,123	26,413	0.81	32,670	3,204	1,206	26,690	0.82
Queensboro Plz	29,040	1,025	5,573	19,934	0.69	32,670	1,258	6,976	23,502	0.72	32,670	1,322	6,925	23,927	0.73
45th Rd	29,040	275	834	19,375	0.67	32,670	387	1,382	22,507	0.69	32,670	394	1,376	22,946	0.70
Hunterspoint Ave	29,040	1,611	620	20,365	0.70	32,670	2,926	1,217	24,216	0.74	32,670	3,008	1,207	24,747	0.76
Vernon Blvd-Jackson	29,040	309	-	20,674	0.71	32,670	226	-	24,442	0.75	32,670	241	-	24,988	0.76
Grand Central	29,040	3,711	9,723	14,663	0.50	32,670	2,431	12,138	14,736	0.45	32,670	4,367	11,944	17,411	0.53
5th Ave	29,040	17	6,260	8,419	0.29	32,670	14	5,135	9,615	0.29	32,670	1,140	5,025	13,526	0.41
Times Sq	29,040	-	8,419	-	-	32,670	-	9,615	-	-	32,670	2,857	8,647	7,737	0.24
10th Avenue (42nd & 10th Ave)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	-	
10th Avenue (41st & 10th Ave)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	-	
10th Avenue (41st & Boulevard)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	-	
10th Avenue (40th & Boulevard)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	-	
TOTAL 10TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**32,670**	-	-	-	**-**	**32,670**	**-**	**-**	**-**	**-**
11th Avenue (36th & 11th Ave)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	-	
11th Avenue (34th & Boulevard)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	7,737	-	
TOTAL 11TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**32,670**	-	-	-	**-**	**32,670**	**-**	**7,737**	**-**	**-**
Penn Station	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	-	-
Outbound #7															
Penn Station	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	-	-
11th Avenue (34th & Boulevard)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	198	-	198	
11th Avenue (36th & 11th Ave)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	-	
TOTAL 11TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**29,040**	-	-	-	**-**	**29,040**	**198**	**-**	**-**	**-**
10th Avenue - (40th St/Boulevard)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	-	
10th Avenue - (41st St/Boulevard)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	-	
10th Avenue - (41st St/10th Ave)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	-	
10th Avenue - (42nd St./10th Ave)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	-	
TOTAL 10TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**29,040**	-	-	-	**-**	**29,040**	**-**	**-**	**-**	**-**
Times Sq	29,040	8,055	-	8,055	0.28	29,040	8,506	-	8,506	0.29	29,040	8,449	49	8,599	0.30
5th Ave	29,040	2,104	1,396	8,763	0.30	29,040	859	1,562	7,804	0.27	29,040	865	1,569	7,895	0.27
Grand Central	29,040	565	7,860	1,468	0.05	29,040	337	6,751	1,390	0.05	29,040	335	6,832	1,398	0.05
Vernon Blvd-Jackson	29,040	1	412	1,056	0.04	29,040	1	456	936	0.03	29,040	1	452	948	0.03
Hunterspoint Ave	29,040	49	150	955	0.03	29,040	153	112	977	0.03	29,040	153	114	987	0.03
45th Rd	29,040	13	158	810	0.03	29,040	49	199	827	0.03	29,040	49	201	835	0.03
Queensboro Plz	29,040	807	51	1,566	0.05	29,040	1,240	167	1,899	0.07	29,040	1,239	171	1,903	0.07
33rd St	29,040	42	535	1,073	0.04	29,040	35	571	1,363	0.05	29,040	35	571	1,367	0.05
40th St	29,040	236	-	1,309	0.05	29,040	253	-	1,616	0.06	29,040	253	-	1,620	0.06
46th St	29,040	162	0	1,471	0.05	29,040	181	2	1,795	0.06	29,040	181	2	1,799	0.06
52nd St	29,040	165	6	1,630	0.06	29,040	179	6	1,968	0.07	29,040	179	6	1,971	0.07
61st St	29,040	150	66	1,714	0.06	29,040	140	57	2,051	0.07	29,040	139	57	2,054	0.07
69th St	29,040	207	49	1,873	0.06	29,040	134	64	2,120	0.07	29,040	134	64	2,123	0.07
74th St	29,040	1,610	664	2,818	0.10	29,040	1,543	587	3,076	0.11	29,040	1,543	588	3,078	0.11
82nd St	29,040	165	44	2,939	0.10	29,040	172	84	3,164	0.11	29,040	171	84	3,164	0.11
90th St	29,040	61	-	3,001	0.10	29,040	348	-	3,512	0.12	29,040	361	-	3,525	0.12
Junction Blvd	29,040	97	365	2,733	0.09	29,040	96	639	2,968	0.10	29,040	95	653	2,968	0.10
103rd St	29,040	73	193	2,614	0.09	29,040	72	198	2,843	0.10	29,040	72	197	2,843	0.10
111th St	29,040	24	90	2,548	0.09	29,040	25	96	2,771	0.10	29,040	25	96	2,772	0.10
Willets Point Blvd	29,040	7	41	2,513	0.09	29,040	6	43	2,734	0.09	29,040	6	42	2,735	0.09
Main St	29,040	-	2,513	-	-	29,040	-	2,734	-	-	29,040	-	2,735	-	-

Source: RTFM Results Version 08/18/04 (Exhibit H - Year 2010 #7 Train Extension to Hudson Yards with TransCAD 4.0)

Appendix S.4.2-3
SUBWAY LINE HAUL DATA (BASED ON RTFM RESULTS)
2025 AM Peak Hour Passengers Boarding, Alighting and On-Board the #7 Subway

	2000 Base Model (BZ9Cv15)					2025 No-Build (Existing HY Distrib.) (NB7Xv19)					2025 Build 4A (BU4Av19)				
	PH CAP	Ons	Offs	Aboard	V/C	PH CAP	Ons	Offs	Aboard	V/C	PH CAP	Ons	Offs	Aboard	V/C
Inbound #7 Local															
Main St	14,520	1,540	-	1,540	0.11	15,730	2,587	-	2,587	0.16	15,730	2,631	-	2,631	0.17
Willets Point Blvd	14,520	18	1	1,556	0.11	15,730	23	1	2,608	0.17	15,730	22	1	2,652	0.17
111th St	14,520	1,256	17	2,795	0.19	15,730	1,436	19	4,025	0.26	15,730	1,456	18	4,090	0.26
103rd St	14,520	1,588	3	4,380	0.30	15,730	1,807	9	5,823	0.37	15,730	1,870	9	5,950	0.38
Junction Blvd	14,520	605	507	4,478	0.31	15,730	776	945	5,655	0.36	15,730	783	942	5,791	0.37
90th St	14,520	1,666	-	6,144	0.42	15,730	1,693	-	7,348	0.47	15,730	1,706	-	7,496	0.48
82nd St	14,520	2,504	37	8,611	0.59	15,730	2,840	37	10,151	0.65	15,730	2,861	37	10,320	0.66
74th St	14,520	1,101	2,884	6,828	0.47	15,730	1,379	2,855	8,675	0.55	15,730	1,352	2,931	8,742	0.56
69th St	14,520	634	75	7,387	0.51	15,730	823	81	9,417	0.60	15,730	829	81	9,490	0.60
61st St	14,520	249	30	7,606	0.52	15,730	445	620	9,242	0.59	15,730	436	617	9,308	0.59
52nd St	14,520	1,493	70	9,029	0.62	15,730	1,814	76	10,979	0.70	15,730	1,813	76	11,046	0.70
46th St	14,520	561	146	9,444	0.65	15,730	652	183	11,448	0.73	15,730	612	183	11,475	0.73
40th St	14,520	1,627	-	11,072	0.76	15,730	1,948	-	13,396	0.85	15,730	1,950	-	13,425	0.85
33rd St	14,520	150	1,154	10,067	0.69	15,730	178	1,345	12,229	0.78	15,730	171	1,348	12,248	0.78
Queensboro Plz	14,520	554	1,903	8,718	0.60	15,730	769	2,615	10,382	0.66	15,730	813	2,748	10,314	0.66
45th Rd	14,520	138	223	8,633	0.59	15,730	173	494	10,061	0.64	15,730	155	503	9,966	0.63
Hunterspoint Ave	14,520	1,095	169	9,559	0.66	15,730	1,053	673	10,441	0.66	15,730	1,045	673	10,338	0.66
Vernon Blvd-Jackson	14,520	155	-	9,714	0.67	15,730	130	-	10,570	0.67	15,730	136	-	10,474	0.67
Grand Central	14,520	1,856	4,846	6,723	0.46	15,730	1,052	5,440	6,183	0.39	15,730	3,575	5,072	8,977	0.57
5th Ave	14,520	8	2,954	3,778	0.26	15,730	6	2,182	4,007	0.25	15,730	1,575	1,560	8,992	0.57
Times Sq	14,520	-	3,778	-	-	15,730	-	4,007	-	-	15,730	6,137	2,449	12,681	0.81
10th Avenue (42nd & 10th Ave)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	1,871	10,810	
10th Avenue (41st & 10th Ave)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	2,046	8,764	
10th Avenue (41st & Boulevard)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	8,764	
10th Avenue (40th & Boulevard)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	1,726	7,038	
TOTAL 10TH AVENUE	**14,520**	**-**	**-**	**-**	**-**	**15,730**	-	-	-	**-**	**15,730**	**-**	**5,642**	**7,038**	**0.45**
11th Avenue (36th & 11th Ave)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	1,483	5,555	
11th Avenue (34th & Boulevard)	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	5,555	-	-
TOTAL 11TH AVENUE	**14,520**	**-**	**-**	**-**	**-**	**15,730**	-	-	-	**-**	**15,730**	**-**	**7,038**	**-**	**-**
Penn Station	14,520	-	-	-	-	15,730	-	-	-	-	15,730	-	-	-	-
Inbound #7 Express							-	-	-						
Main St	14,520	9,545	-	9,545	0.66	16,940	10,599	-	10,599	0.63	16,940	10,594	-	10,594	0.63
Willets Point Blvd	14,520	52	2	9,595	0.66	16,940	70	2	10,666	0.63	16,940	67	2	10,658	0.63
Junction Blvd	14,520	3,279	109	12,765	0.88	16,940	4,367	140	14,893	0.88	16,940	4,454	146	14,966	0.88
61st St	**14,520**	**1,877**	**227**	**14,415**	**0.99**	**16,940**	**2,585**	**409**	**17,069**	**1.01**	**16,940**	**2,534**	**411**	**17,089**	**1.01**
Queensboro Plz	14,520	471	3,669	11,217	0.77	16,940	682	4,274	13,477	0.80	16,940	662	4,515	13,236	0.78
45th Rd	14,520	137	612	10,742	0.74	16,940	183	1,051	12,609	0.74	16,940	165	1,061	12,340	0.73
Hunterspoint Ave	14,520	515	452	10,806	0.74	16,940	726	624	12,711	0.75	16,940	718	623	12,435	0.73
Vernon Blvd-Jackson	14,520	155	-	10,960	0.75	16,940	102	-	12,814	0.76	16,940	104	-	12,539	0.74
Grand Central	14,520	1,856	4,876	7,940	0.55	16,940	1,126	6,258	7,682	0.45	16,940	3,824	6,010	10,353	0.61
5th Ave	14,520	8	3,307	4,641	0.32	16,940	7	2,517	5,171	0.31	16,940	1,685	1,814	10,224	0.60
Times Sq	14,520	-	4,641	-	-	16,940	-	5,171	-	-	16,940	6,565	3,221	13,568	0.80
10th Avenue (42nd & 10th Ave)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	2,016	11,552	0.68
10th Avenue (41st & 10th Ave)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	2,194	9,359	0.55
10th Avenue (41st & Boulevard)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	9,359	0.55
10th Avenue (40th & Boulevard)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	1,847	7,512	0.44
TOTAL 10TH AVENUE	14,520	-	-	-	-	16,940	-	-	-	-	16,940	**-**	**6,057**	**7,512**	**0.44**
11th Avenue (36th & 11th Ave)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	1,591	5,921	0.35
11th Avenue (34th & Boulevard)	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	5,921	-	-
TOTAL 11TH AVENUE	14,520	-	-	-	-	16,940	-	-	-	-	**16,940**	**-**	**7,512**	**-**	**-**
Penn Station	14,520	-	-	-	-	16,940	-	-	-	-	16,940	-	-	-	-
Inbound #7 Express + Local															
Main St	29,040	11,085	-	11,085	0.38	32,670	13,186	-	13,186	0.40	32,670	13,225	-	13,225	0.40
Willets Point Blvd	29,040	70	4	11,151	0.38	32,670	92	4	13,275	0.41	32,670	89	4	13,311	0.41
Junction Blvd	29,040	3,884	616	17,243	0.59	32,670	5,143	1,085	20,548	0.63	32,670	5,237	1,089	20,757	0.64
61st St	29,040	2,126	257	22,022	0.76	32,670	3,029	1,029	26,311	0.81	32,670	2,970	1,029	26,398	0.81
Queensboro Plz	29,040	1,025	5,573	19,934	0.69	32,670	1,450	6,889	23,859	0.73	32,670	1,475	7,262	23,550	0.72
45th Rd	29,040	275	834	19,375	0.67	32,670	356	1,545	22,670	0.69	32,670	320	1,564	22,306	0.68
Hunterspoint Ave	29,040	1,611	620	20,365	0.70	32,670	1,779	1,297	23,152	0.71	32,670	1,763	1,296	22,773	0.70
Vernon Blvd-Jackson	29,040	309	-	20,674	0.71	32,670	232	-	23,384	0.72	32,670	240	-	23,013	0.70
Grand Central	29,040	3,711	9,723	14,663	0.50	32,670	2,178	11,698	13,864	0.42	32,670	7,399	11,082	19,330	0.59
5th Ave	29,040	17	6,260	8,419	0.29	32,670	13	4,699	9,178	0.28	32,670	3,260	3,374	19,216	0.59
Times Sq	29,040	-	8,419	-	-	32,670	-	9,178	-	-	32,670	12,702	5,670	26,249	0.80
10th Avenue (42nd & 10th Ave)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	3,887	22,362	
10th Avenue (41st & 10th Ave)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	4,239	18,123	
10th Avenue (41st & Boulevard)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	18,123	
10th Avenue (40th & Boulevard)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	3,573	14,550	
TOTAL 10TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**32,670**	-	-	-	**-**	**32,670**	**-**	**11,699**	**14,550**	**0.45**
11th Avenue (36th & 11th Ave)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	3,074	11,476	
11th Avenue (34th & Boulevard)	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	11,476	-	
TOTAL 11TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**32,670**	-	-	-	**-**	**32,670**	**-**	**14,550**	**-**	**-**
Penn Station	29,040	-	-	-	-	32,670	-	-	-	-	32,670	-	-	-	-
Outbound #7															
Penn Station	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	-	-
11th Avenue (34th & Boulevard)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	305	-	305	
11th Avenue (36th & 11th Ave)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	143	-	448	
TOTAL 11TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**29,040**	-	-	-	**-**	**29,040**	**448**	**-**	**448**	**0.02**
10th Avenue - (40th St/Boulevard)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	53	-	502	
10th Avenue - (41st St/Boulevard)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	-	-	502	
10th Avenue - (41st St/10th Ave)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	487	-	989	
10th Avenue - (42nd St./10th Ave)	29,040	-	-	-	-	29,040	-	-	-	-	29,040	1,155	-	2,144	
TOTAL 10TH AVENUE	**29,040**	**-**	**-**	**-**	**-**	**29,040**	-	-	-	**-**	**29,040**	**1,696**	**-**	**2,144**	**0.07**
Times Sq	29,040	8,055	-	8,055	0.28	29,040	5,446	-	5,446	0.19	29,040	5,048	890	6,302	0.22
5th Ave	29,040	2,104	1,396	8,763	0.30	29,040	585	1,090	4,941	0.17	29,040	552	1,314	5,540	0.19
Grand Central	29,040	565	7,860	1,468	0.05	29,040	466	3,965	1,441	0.05	29,040	477	4,458	1,559	0.05
Vernon Blvd-Jackson	29,040	1	412	1,056	0.04	29,040	2	550	893	0.03	29,040	2	579	981	0.03
Hunterspoint Ave	29,040	49	150	955	0.03	29,040	123	130	886	0.03	29,040	132	132	981	0.03
45th Rd	29,040	13	158	810	0.03	29,040	46	211	721	0.02	29,040	46	239	788	0.03
Queensboro Plz	29,040	807	51	1,566	0.05	29,040	1,167	94	1,794	0.06	29,040	1,172	135	1,825	0.06
33rd St	29,040	42	535	1,073	0.04	29,040	36	529	1,301	0.04	29,040	36	534	1,327	0.05
40th St	29,040	236	-	1,309	0.05	29,040	269	-	1,571	0.05	29,040	269	-	1,596	0.05
46th St	29,040	162	0	1,471	0.05	29,040	196	27	1,740	0.06	29,040	195	26	1,765	0.06
52nd St	29,040	165	6	1,630	0.06	29,040	187	8	1,920	0.07	29,040	187	8	1,944	0.07
61st St	29,040	150	66	1,714	0.06	29,040	155	58	2,017	0.07	29,040	157	58	2,044	0.07
69th St	29,040	207	49	1,873	0.06	29,040	141	60	2,098	0.07	29,040	138	60	2,122	0.07
74th St	29,040	1,610	664	2,818	0.10	29,040	1,758	627	3,229	0.11	29,040	1,751	637	3,236	0.11
82nd St	29,040	165	44	2,939	0.10	29,040	178	88	3,319	0.11	29,040	176	87	3,325	0.11
90th St	29,040	61	-	3,001	0.10	29,040	344	-	3,663	0.13	29,040	354	-	3,679	0.13
Junction Blvd	29,040	97	365	2,733	0.09	29,040	95	645	3,113	0.11	29,040	95	655	3,119	0.11
103rd St	29,040	73	193	2,614	0.09	29,040	75	241	2,948	0.10	29,040	75	237	2,957	0.10
111th St	29,040	24	90	2,548	0.09	29,040	26	101	2,873	0.10	29,040	26	100	2,883	0.10
Willets Point Blvd	29,040	7	41	2,513	0.09	29,040	6	45	2,833	0.10	29,040	6	45	2,844	0.10
Main St	29,040	-	2,513	-	-	29,040	-	2,833	-	-	29,040	-	2,844	-	-

* Addditional Dwell Time Added as Specified by New York City Transit 11/25/03 (0.25 min.)
Source: RTFM Results Version 08/18/04 (Exhibit H - Year 2025 #7 Train Extension to Hudson Yards with TransCAD 4.0)

Appendix S.4.2-4A
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2010 AM Peak Hour (8-9 AM) Transfers at Manhattan Stations

August 18, 2004

From Station	From Route	To Station	To Route	2000 Base Year (BZ9Cv15)	2010 No-Build (N17Xv19)	2010 Build 4A (B4ATv19)
Grand Central						
Modeled Transfer Link Volumes						
Grand Central	7	42nd St/2nd Avenue	T	-	-	-
Grand Central	7	Grand Central	6	2,343	8,330	8,295
Grand Central	7	Grand Central	4/5	4,071	5,529	5,506
Grand Central	7	Grand Central	4/5/6	6,414	13,859	13,801
Grand Central	7	Grand Central Terminal	LIRR/MNR	-	-	-
Grand Central	7	Street Exits		14,475	7,869	7,849
Total #7 Line Offs				**20,889**	**21,728**	**21,650**
42nd St/2nd Avenue	T	Grand Central	7	-	-	-
Grand Central	6	Grand Central	7	1,296	1,990	3,177
Grand Central	4/5	Grand Central	7	1,472	726	1,170
Grand Central	4/5/6	Grand Central	7	1,628	1,420	2,679
Grand Central Terminal	MNR	Grand Central	7	-	-	87
Grand Central Terminal	LIRR/MNR	Grand Central	7	1,140	1,296	1,668
Street Entrances		Grand Central	7	1,185	13	32
Total #7 Line Ons				**3,953**	**2,729**	**4,379**
Total #7 Line Ons + Offs				**24,843**	**24,457**	**26,029**
5th Avenue						
5th Avenue	7	42nd St	F/V	454	1,415	1,393
5th Avenue	7	42nd St	B/D	2,890	1,579	1,559
5th Avenue	7	Street Exits		8,145	9,892	9,768
Total #7 Line Offs				**11,488**	**12,887**	**12,719**
42nd St	F/V	5th Avenue	7	1,393	1,496	2,284
42nd St	B/D	5th Avenue	7	4,823	2,252	2,558
Street Entrances		5th Avenue	7	5	3	16
Total #7 Line Ons				**6,221**	**3,751**	**4,858**
Total #7 Line Ons + Offs				**17,710**	**16,637**	**17,578**
Times Square						
Times Square	7	42nd Street	A/C/E	585	1,609	1,170
Times Square	7	Times Square	N/Q/R/W	-	8	9
Times Square	7	Times Square	1/2/3/9	4,705	5,079	5,015
Times Square	7	Street Exits				
Total #7 Line Offs				**5,290**	**6,696**	**6,195**
42nd Street	A/C/E	Times Square	7	1,690	2,251	2,252
Times Square	N/Q/R/W	Times Square	7	-	1	207
Times Square	1/2/3/9	Times Square	7	9,657	9,674	12,260
Street Entrances		Times Square	7	0	4	3
Total #7 Line Ons				**11,347**	**11,931**	**14,723**
Total #7 Line Ons + Offs				**16,637**	**18,626**	**20,917**

Appendix S.4.2-4B
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2010 AM Peak Hour (8-9 AM) Transfers at Manhattan Stations

August 18, 2004

	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
Grand Central	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
Lex. Ave	1,628	6,414	**8,042**	1,420	13,859	**15,279**	2,679	13,801	**16,480**	(208)	7,445	**7,237**	1,259	(58)	**1,201**
MNR/LIRR	1,140	-	**1,140**	1,296	-	**1,296**	1,668	-	**1,668**	156	-	**156**	372	-	**372**
2nd Ave	-	-	**-**	-	-	**-**	-	-	**-**	-	-	**-**	-	-	**-**
Non-Xfer	1,185	14,475	**15,660**	13	7,869	**7,882**	32	7,849	**7,881**	(1,172)	(6,606)	**(7,778)**	20	(20)	**(1)**
Total-On/Off	**3,953**	**20,889**	**24,843**	**2,729**	**21,728**	**24,457**	**4,379**	**21,650**	**26,029**	**(1,224)**	**839**	**(386)**	**1,650**	**(78)**	**1,572**

Adjusted Data	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
5th Avenue	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
6th Ave	2,115	3,343	**5,459**	1,255	2,994	**4,250**	1,847	2,952	**4,798**	(860)	(349)	**(1,209)**	591	(43)	**548**
Non-Xfer	5	4,313	**4,318**	3	4,475	**4,478**	16	3,737	**3,753**	(2)	162	**160**	13	(739)	**(726)**
Total-On/Off	**2,121**	**7,656**	**9,777**	**1,258**	**7,470**	**8,728**	**1,862**	**6,688**	**8,551**	**(862)**	**(187)**	**(1,049)**	**604**	**(781)**	**(177)**

	Existing			No Build			Build			No Build - Existing			Build - No Build		
Times Square	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
A/C/E	1,690	585	**2,275**	2,251	1,609	**3,860**	2,252	1,170	**3,423**	562	1,024	**1,586**	1	(439)	**(438)**
1/2/3/9	9,657	4,705	**14,362**	9,674	5,079	**14,753**	12,260	5,015	**17,275**	17	374	**391**	2,586	(64)	**2,522**
N/Q/R/W	-	-	**-**	1	8	**8**	207	9	**217**	1	8	**8**	207	2	**208**
Non-Xfer	0	-	**0**	4	-	**4**	3	-	**3**	4	-	**4**	(1)	-	**(1)**
Total-On/Off	**11,347**	**5,290**	**16,637**	**11,931**	**6,696**	**18,626**	**14,723**	**6,195**	**20,917**	**584**	**1,406**	**1,990**	**2,792**	**(501)**	**2,291**

Appendix S.4.2-5A
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2010 PM Peak Hour (5-6 PM) Transfers at Manhattan Stations

August 18, 2004

From Station	From Route	To Station	To Route	2000 Base Year (BZ9Cv15)	2010 No-Build (N17Xv19)	2010 Build 4A (B4ATv19)
Grand Central						
Modeled Transfer Link Volumes						
Grand Central	7	42nd St/2nd Avenue	T	-	-	-
Grand Central	7	Grand Central	6	1,050	1,612	2,574
Grand Central	7	Grand Central	4/5	1,192	588	947
Grand Central	7	Grand Central	4/5/6	1,318	1,150	2,170
Grand Central	7	Grand Central Terminal	LIRR/MNR	924	1,050	1,351
Grand Central	7	Street Exits		960	10	26
Total #7 Line Offs				**3,202**	**2,210**	**3,547**
42nd St/2nd Avenue	T	Grand Central	7	-	-	-
Grand Central	6	Grand Central	7	1,898	6,748	6,719
Grand Central	4/5	Grand Central	7	3,298	4,478	4,460
Grand Central	4/5/6	Grand Central	7	5,195	11,226	11,179
Grand Central Terminal	MNR	Grand Central	7			
Grand Central Terminal	LIRR/MNR	Grand Central	7	-	-	-
Street Entrances		Grand Central	7	11,725	6,374	6,357
Total #7 Line Ons				**16,920**	**17,600**	**17,536**
Total #7 Line Ons + Offs				**20,122**	**19,810**	**21,084**
5th Avenue						
5th Avenue	7	42nd St	F/V	1,128	1,212	1,850
5th Avenue	7	42nd St	B/D	3,907	1,824	2,072
5th Avenue	7	Street Exits		4	2	13
Total #7 Line Offs				**5,039**	**3,038**	**3,935**
42nd St	F/V	5th Avenue	7	367	1,146	1,128
42nd St	B/D	5th Avenue	7	2,341	1,279	1,263
Street Entrances		5th Avenue	7	6,597	8,013	7,912
Total #7 Line Ons				**9,306**	**10,438**	**10,303**
Total #7 Line Ons + Offs				**14,345**	**13,476**	**14,238**
Times Square						
Times Square	7	42nd Street	A/C/E	1,369	1,824	1,824
Times Square	7	Times Square	N/Q/R/W	-	1	168
Times Square	7	Times Square	1/2/3/9	7,822	7,836	9,931
Times Square	7	Street Exits		**0**	**4**	**2**
Total #7 Line Offs				**9,191**	**9,664**	**11,925**
42nd Street	A/C/E	Times Square	7	474	1,303	948
Times Square	N/Q/R/W	Times Square	7	-	6	7
Times Square	1/2/3/9	Times Square	7	3,811	4,114	4,062
Street Entrances		Times Square	7	-	-	-
Total #7 Line Ons				**4,285**	**5,423**	**5,018**
Total #7 Line Ons + Offs				**13,476**	**15,087**	**16,943**

Appendix S.4.2-5B
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2010 PM Peak Hour (5-6 PM) Transfers at Manhattan Stations

August 18, 2004

	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
Grand Central	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
Lex. Ave	5,195	1,318	**6,514**	11,226	1,150	**12,376**	11,179	2,170	**13,349**	6,030	(168)	**5,862**	(47)	1,020	**973**
MNR/LIRR	-	924	**924**	-	1,050	**1,050**	-	1,351	**1,351**	-	126	**126**	-	301	**301**
2nd Ave	-	-	**-**	-	-	**-**	-	-	**-**	-	-	**-**	-	-	**-**
Non-Xfer	11,725	960	**12,685**	6,374	10	**6,384**	6,357	26	**6,384**	(5,351)	(950)	**(6,301)**	(17)	16	**(1)**
Total-On/Off	**16,920**	**3,202**	**20,122**	**17,600**	**2,210**	**19,810**	**17,536**	**3,547**	**21,084**	**680**	**(992)**	**(312)**	**(63)**	**1,337**	**1,274**

Adjusted Data	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
5th Avenue	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
6th Ave	2,708	1,713	**4,422**	2,425	1,017	**3,442**	2,391	1,496	**3,886**	(283)	(697)	**(979)**	(35)	479	**444**
Non-Xfer	3,494	4	**3,498**	3,625	2	**3,627**	3,027	13	**3,040**	132	(2)	**130**	(598)	10	**(588)**
Total-On/Off	**6,202**	**1,718**	**7,919**	**6,050**	**1,019**	**7,070**	**5,418**	**1,509**	**6,926**	**(151)**	**(698)**	**(850)**	**(633)**	**489**	**(144)**

	Existing			No Build			Build			No Build - Existing			Build - No Build		
Times Square	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
A/C/E	474	1,369	**1,843**	1,303	1,824	**3,127**	948	1,824	**2,772**	829	455	**1,284**	(355)	1	**(355)**
1/2/3/9	3,811	7,822	**11,633**	4,114	7,836	**11,950**	4,062	9,931	**13,993**	303	14	**317**	(52)	2,095	**2,043**
N/Q/R/W	-	-	**-**	6	1	**7**	7	168	**175**	6	1	**7**	1	167	**169**
Non-Xfer	-	0	**0**	-	4	**4**	-	2	**2**	-	4	**4**	-	(1)	**(1)**
Total-On/Off	**4,285**	**9,191**	**13,476**	**5,423**	**9,664**	**15,087**	**5,018**	**11,925**	**16,943**	**1,139**	**473**	**1,612**	**(406)**	**2,262**	**1,856**

Appendix S.4.2-6A
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2025 AM Peak Hour (8-9 AM) Transfers at Manhattan Stations

August 18, 2004

From Station	From Route	To Station	To Route	2000 Base (BZ9Cv15)	2025 No-Build (NB7Xv19)	2025 Build 4A (BU4Av19)
Grand Central						
Modeled Transfer Link Volumes						
Grand Central	7	42nd St/2nd Avenue	T	-	3,700	3,466
Grand Central	7	Grand Central	6	2,343	5,150	5,281
Grand Central	7	Grand Central	4/5	4,071	4,956	5,191
Grand Central	7	Grand Central	4/5/6	6,414	10,106	10,472
Grand Central	7	Grand Central Terminal	LIRR/MNR	-	-	-
Grand Central	7	Street Exits		14,475	3,583	3,527
Total #7 Line Offs				**20,889**	**17,390**	**17,465**
42nd St/2nd Avenue	T	Grand Central	7	-	324	750
Grand Central	6	Grand Central	7	1,296	1,566	4,513
Grand Central	4/5	Grand Central	7	1,472	601	1,995
Grand Central	4/5/6	Grand Central	7	1,628	949	3,657
Grand Central Terminal	MNR	Grand Central	7	-	20	19
Grand Central Terminal	LIRR/MNR	Grand Central	7	1,140	1,218	2,851
Street Entrances		Grand Central	7	1,185	-	27
Total #7 Line Ons				**3,953**	**2,490**	**7,285**
Total #7 Line Ons + Offs				**24,843**	**19,880**	**24,750**
5th Avenue						
5th Avenue	7	42nd St	F/V	454	1,457	999
5th Avenue	7	42nd St	B/D	2,890	1,204	975
5th Avenue	7	Street Exits		8,145	8,011	5,102
Total #7 Line Offs				**11,488**	**10,672**	**7,076**
42nd St	F/V	5th Avenue	7	1,393	816	3,255
42nd St	B/D	5th Avenue	7	4,823	1,768	2,532
Street Entrances		5th Avenue	7	5	1	59
Total #7 Line Ons				**6,221**	**2,585**	**5,847**
Total #7 Line Ons + Offs				**17,710**	**13,257**	**12,922**
Times Square						
Times Square	7	42nd Street	A/C/E	585	1,511	623
Times Square	7	Times Square	N/Q/R/W	-	1	232
Times Square	7	Times Square	1/2/3/9	4,705	5,150	5,391
Times Square	7	Street Exits				
Total #7 Line Offs				**5,290**	**6,662**	**6,246**
42nd Street	A/C/E	Times Square	7	1,690	2,210	2,113
Times Square	N/Q/R/W	Times Square	7	-	1	278
Times Square	1/2/3/9	Times Square	7	9,657	5,394	17,408
Street Entrances		Times Square	7	0	-	-
Total #7 Line Ons				**11,347**	**7,605**	**19,799**
Total #7 Line Ons + Offs				**16,637**	**14,267**	**26,046**

Appendix S.4.2-6B
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2025 AM Peak Hour (8-9 AM) Transfers at Manhattan Stations

August 18, 2004

	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
Grand Central	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
Lex. Ave	1,628	6,414	**8,042**	949	10,106	**11,055**	3,657	10,472	**14,128**	(679)	3,692	**3,013**	2,708	366	**3,074**
MNR/LIRR	1,140	-	**1,140**	1,218	-	**1,218**	2,851	-	**2,851**	77	-	**77**	1,633	-	**1,633**
2nd Ave	-	-	**-**	324	3,700	**4,024**	750	3,466	**4,217**	324	3,700	**4,024**	426	(234)	**192**
Non-Xfer	1,185	14,475	**15,660**	-	3,583	**3,583**	27	3,527	**3,554**	(1,185)	(10,892)	**(12,077)**	27	(57)	**(29)**
Total-On/Off	**3,953**	**20,889**	**24,843**	**2,490**	**17,390**	**19,880**	**7,285**	**17,465**	**24,750**	**(1,463)**	**(3,499)**	**(4,962)**	**4,794**	**75**	**4,869**

Adjusted Data	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
5th Avenue	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
6th Ave	2,115	3,343	**5,459**	842	2,661	**3,503**	4,245	1,973	**6,218**	(1,274)	(682)	**(1,956)**	3,403	(688)	**2,716**
Non-Xfer	5	4,313	**4,318**	1	3,617	**3,618**	59	2,841	**2,900**	(4)	(696)	**(700)**	58	(776)	**(718)**
Total-On/Off	**2,121**	**7,656**	**9,777**	**843**	**6,278**	**7,121**	**4,305**	**4,814**	**9,119**	**(1,278)**	**(1,379)**	**(2,656)**	**3,462**	**(1,464)**	**1,998**

	Existing			No Build			Build			No Build - Existing			Build - No Build		
Times Square	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
A/C/E	1,690	585	**2,275**	2,210	1,511	**3,721**	2,113	623	**2,736**	520	926	**1,446**	(97)	(888)	**(985)**
1/2/3/9	9,657	4,705	**14,362**	5,394	5,150	**10,544**	17,408	5,391	**22,799**	(4,262)	445	**(3,818)**	12,014	241	**12,255**
N/Q/R/W	-	-	**-**	1	1	**2**	278	232	**510**	1	1	**2**	277	231	**508**
Non-Xfer	0	-	**0**	-	-	**-**	-	-	**-**	(0)	-	**(0)**	-	-	**-**
Total-On/Off	**11,347**	**5,290**	**16,637**	**7,605**	**6,662**	**14,267**	**19,799**	**6,246**	**26,046**	**(3,742)**	**1,372**	**(2,370)**	**12,194**	**(416)**	**11,779**

Appendix S.4.2-7A
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2025 PM Peak Hour (5-6 PM) Transfers at Manhattan Stations

August 18, 2004

From Station	From Route	To Station	To Route	2000 Base (BZ9Cv15)	2025 No-Build (NB7Xv19)	2025 Build 4A (BU4Av19)
Grand Central						
Modeled Transfer Link Volumes						
Grand Central	7	42nd St/2nd Avenue	T	-	262	608
Grand Central	7	Grand Central	6	1,050	1,268	3,655
Grand Central	7	Grand Central	4/5	1,192	486	1,616
Grand Central	7	Grand Central	4/5/6	1,318	768	2,962
Grand Central	7	Grand Central Terminal	LIRR/MNR	924	986	2,309
Grand Central	7	Street Exits		960	-	22
Total #7 Line Offs				**3,202**	**2,017**	**5,901**
42nd St/2nd Avenue	T	Grand Central	7	-	2,997	2,808
Grand Central	6	Grand Central	7	1,898	4,172	4,278
Grand Central	4/5	Grand Central	7	3,298	4,014	4,205
Grand Central	4/5/6	Grand Central	7	5,195	8,186	8,482
Grand Central Terminal	MNR	Grand Central	7			
Grand Central Terminal	LIRR/MNR	Grand Central	7	-	-	-
Street Entrances		Grand Central	7	11,725	2,903	2,857
Total #7 Line Ons				**16,920**	**14,086**	**14,146**
Total #7 Line Ons + Offs				**20,122**	**16,103**	**20,047**
5th Avenue						
5th Avenue	7	42nd St	F/V	1,128	661	2,637
5th Avenue	7	42nd St	B/D	3,907	1,432	2,051
5th Avenue	7	Street Exits		4	1	48
Total #7 Line Offs				**5,039**	**2,094**	**4,736**
42nd St	F/V	5th Avenue	7	367	1,180	809
42nd St	B/D	5th Avenue	7	2,341	975	789
Street Entrances		5th Avenue	7	6,597	6,489	4,133
Total #7 Line Ons				**9,306**	**8,644**	**5,731**
Total #7 Line Ons + Offs				**14,345**	**10,738**	**10,467**
Times Square						
Times Square	7	42nd Street	A/C/E	1,369	1,790	1,712
Times Square	7	Times Square	N/Q/R/W	-	1	225
Times Square	7	Times Square	1/2/3/9	7,822	4,369	14,101
Times Square	7	Street Exits		**0**	**-**	**-**
Total #7 Line Offs				**9,191**	**6,160**	**16,037**
42nd Street	A/C/E	Times Square	7	474	1,224	505
Times Square	N/Q/R/W	Times Square	7	-	1	188
Times Square	1/2/3/9	Times Square	7	3,811	4,171	4,367
Street Entrances		Times Square	7	-	-	-
Total #7 Line Ons				**4,285**	**5,396**	**5,059**
Total #7 Line Ons + Offs				**13,476**	**11,556**	**21,097**

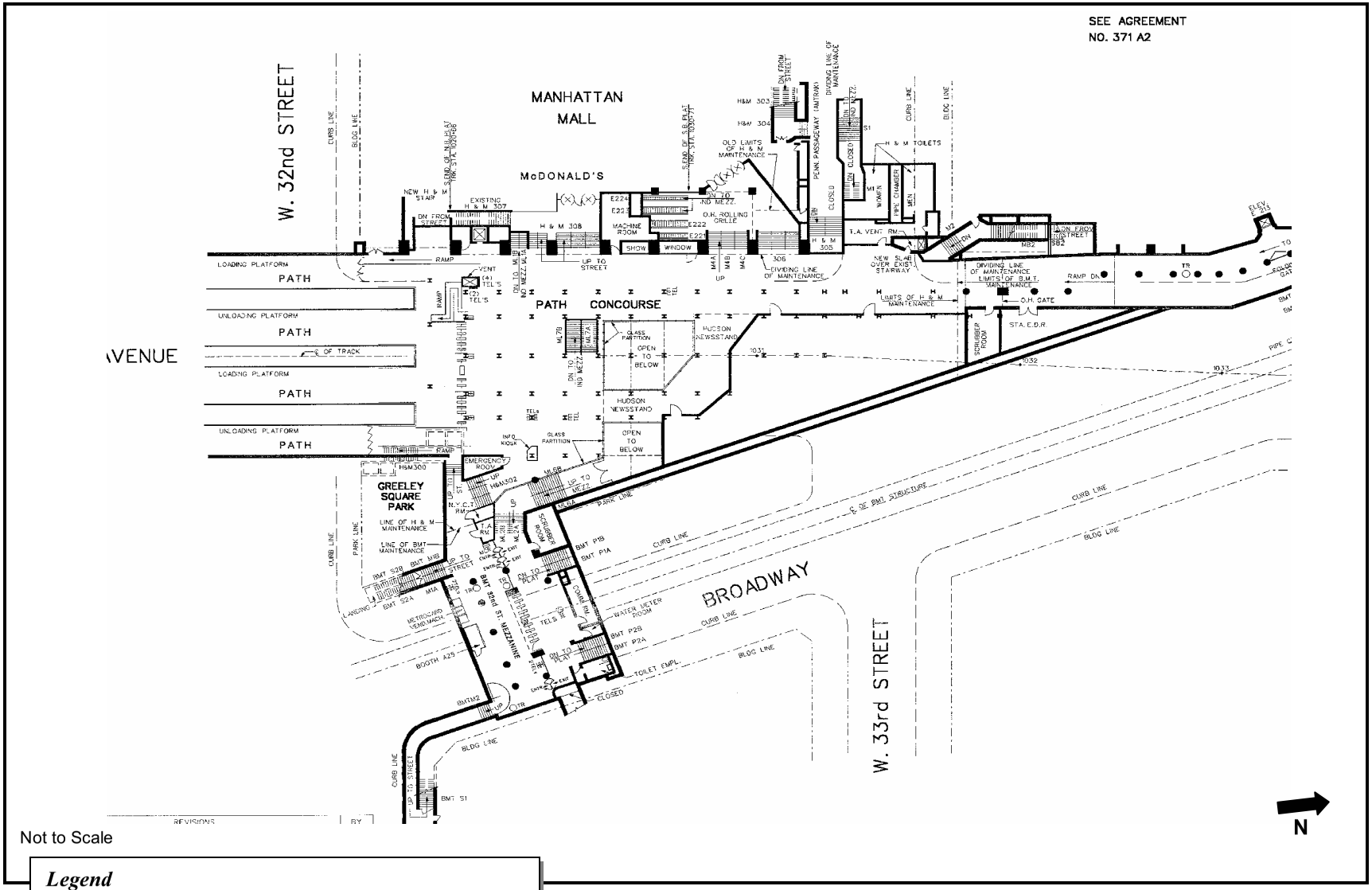
Appendix S.4.2-7B
SUBWAY STATION TRANSFER DATA (BASED ON RTFM RESULTS)
Year 2025 PM Peak Hour (5-6 PM) Transfers at Manhattan Stations

August 18, 2004

	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
Grand Central	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
Lex. Ave	5,195	1,318	**6,514**	8,186	768	**8,954**	8,482	2,962	**11,444**	2,991	(550)	**2,441**	296	2,194	**2,490**
MNR/LIRR	-	924	**924**	-	986	**986**	-	2,309	**2,309**	-	63	**63**	-	1,323	**1,323**
2nd Ave	-	-	**-**	2,997	262	**3,260**	2,808	608	**3,415**	2,997	262	**3,260**	(190)	345	**156**
Non-Xfer	11,725	960	**12,685**	2,903	-	**2,903**	2,857	22	**2,879**	(8,822)	(960)	**(9,782)**	(46)	22	**(24)**
Total-On/Off	**16,920**	**3,202**	**20,122**	**14,086**	**2,017**	**16,103**	**14,146**	**5,901**	**20,047**	**(2,834)**	**(1,185)**	**(4,019)**	**61**	**3,884**	**3,944**

Adjusted Data	Existing			No Build			Build			Difference No Build - Existing			Difference Build - No Build		
5th Avenue	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
6th Ave	2,708	1,713	**4,422**	2,155	682	**2,837**	1,598	3,439	**5,037**	(553)	(1,032)	**(1,584)**	(557)	2,757	**2,200**
Non-Xfer	3,494	4	**3,498**	2,930	1	**2,931**	2,301	48	**2,349**	(564)	(3)	**(567)**	(628)	47	**(581)**
Total-On/Off	**6,202**	**1,718**	**7,919**	**5,085**	**683**	**5,768**	**3,900**	**3,487**	**7,386**	**(1,117)**	**(1,035)**	**(2,152)**	**(1,186)**	**2,804**	**1,618**

	Existing			No Build			Build			No Build - Existing			Build - No Build		
Times Square	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**	On	Off	**Total**
A/C/E	474	1,369	**1,843**	1,224	1,790	**3,014**	505	1,712	**2,217**	750	421	**1,172**	(719)	(78)	**(798)**
1/2/3/9	3,811	7,822	**11,633**	4,171	4,369	**8,541**	4,367	14,101	**18,467**	360	(3,453)	**(3,092)**	196	9,731	**9,927**
N/Q/R/W	-	-	**-**	1	1	**1**	188	225	**413**	1	1	**1**	187	224	**411**
Non-Xfer	-	0	**0**	-	-	**-**	-	-	**-**	-	(0)	**(0)**	-	-	**-**
Total-On/Off	**4,285**	**9,191**	**13,476**	**5,396**	**6,160**	**11,556**	**5,059**	**16,037**	**21,097**	**1,111**	**(3,031)**	**(1,920)**	**(337)**	**9,877**	**9,541**



Not to Scale

Legend

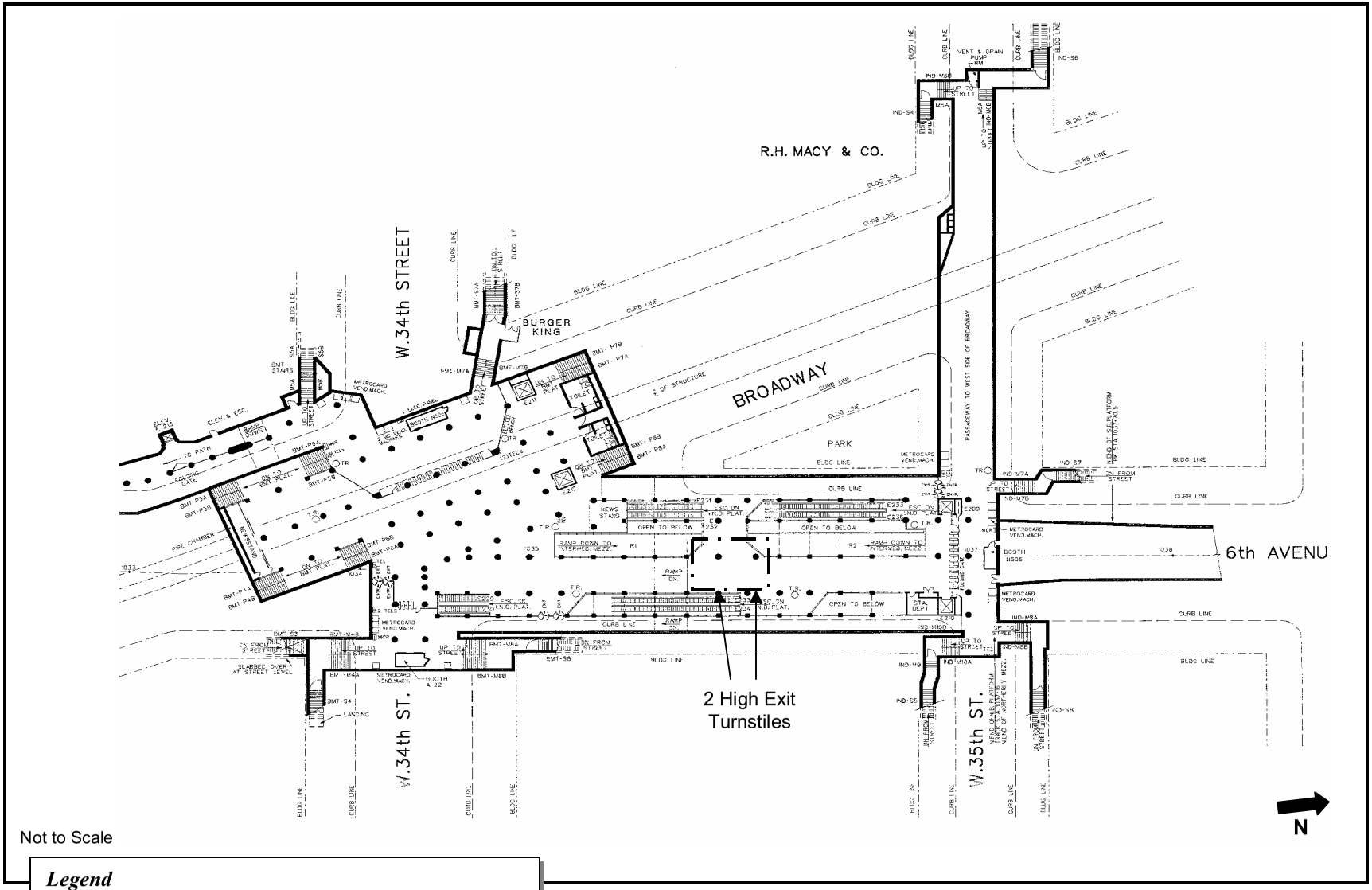
- Existing Station Changes
- Future Station Changes Planned by NYCT

34th Street Station
Upper Mezzanine
6th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.1

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

Existing Station Changes

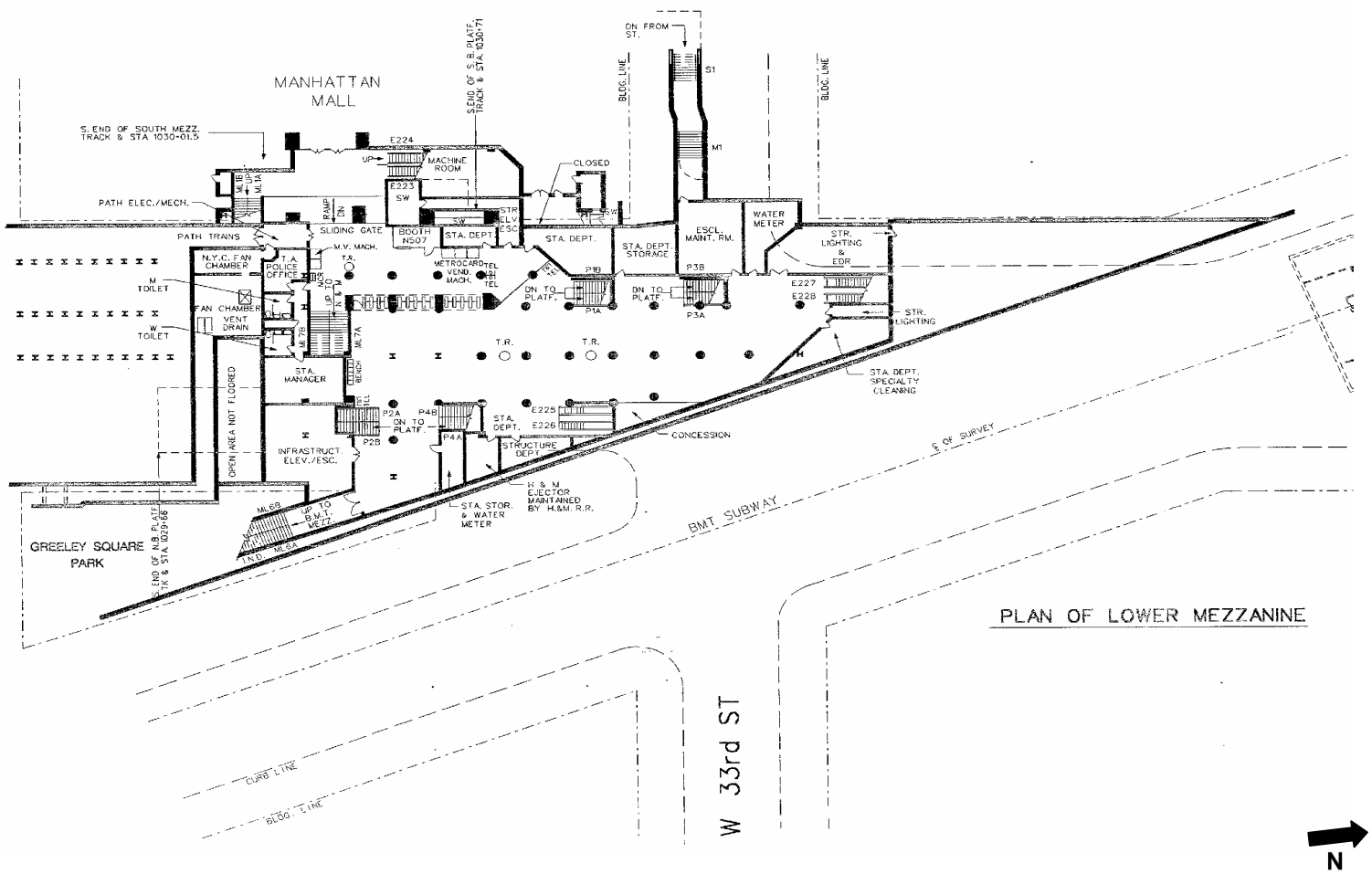
Future Station Changes Planned by NYCT

34th Street Station
Upper Mezzanine
6th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 32

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

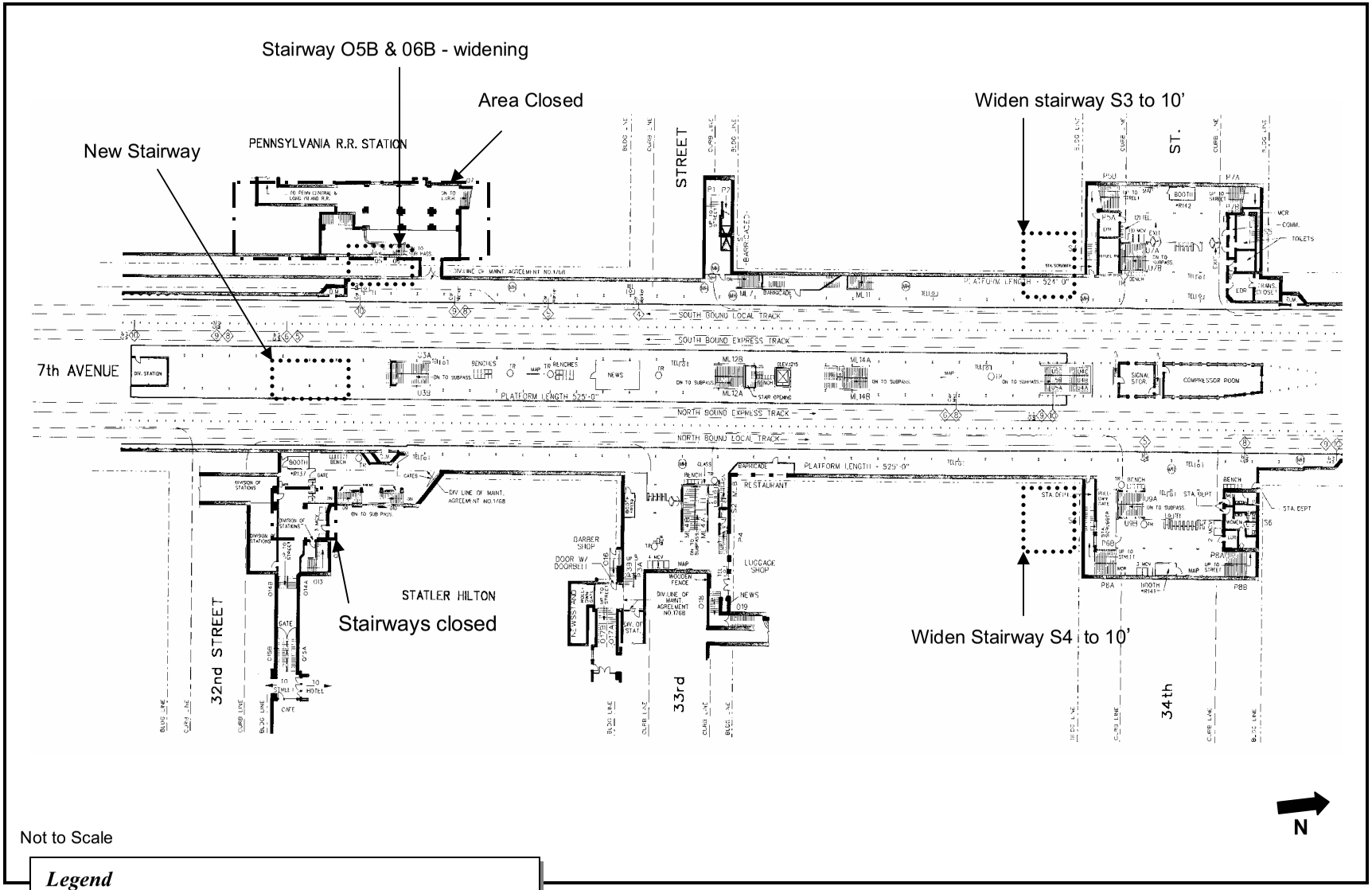
····· Future Station Changes Planned by NYCT

34th Street Station
Lower Mezzanine
6th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.3

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

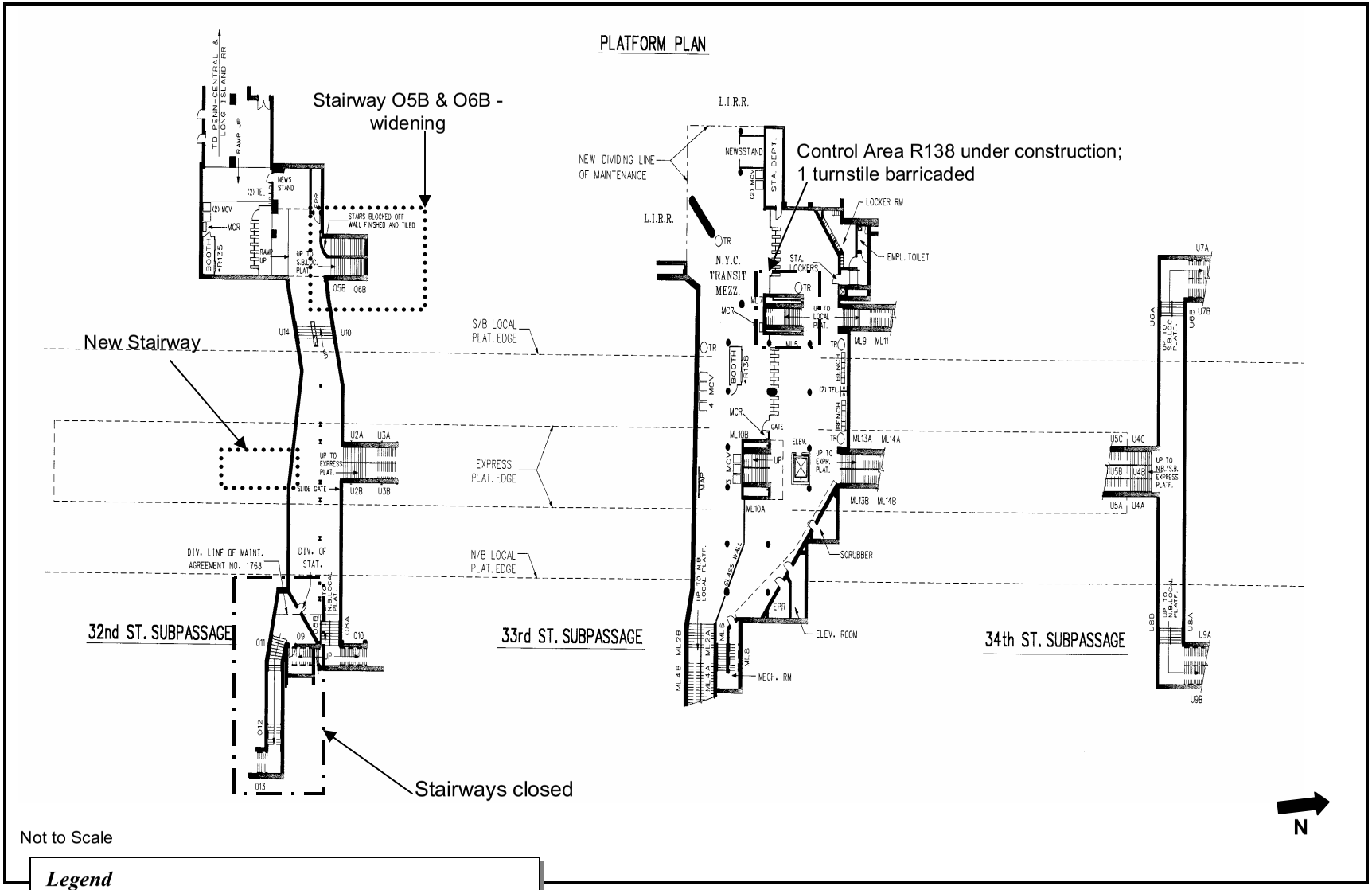
- Existing Station Changes
- Future Station Changes Planned by NYCT

34th Street Station
Station Plan
Broadway/7th Ave. Line – IRD DIVISION

Subway Station Plans

Figure S.4 – 3.4

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

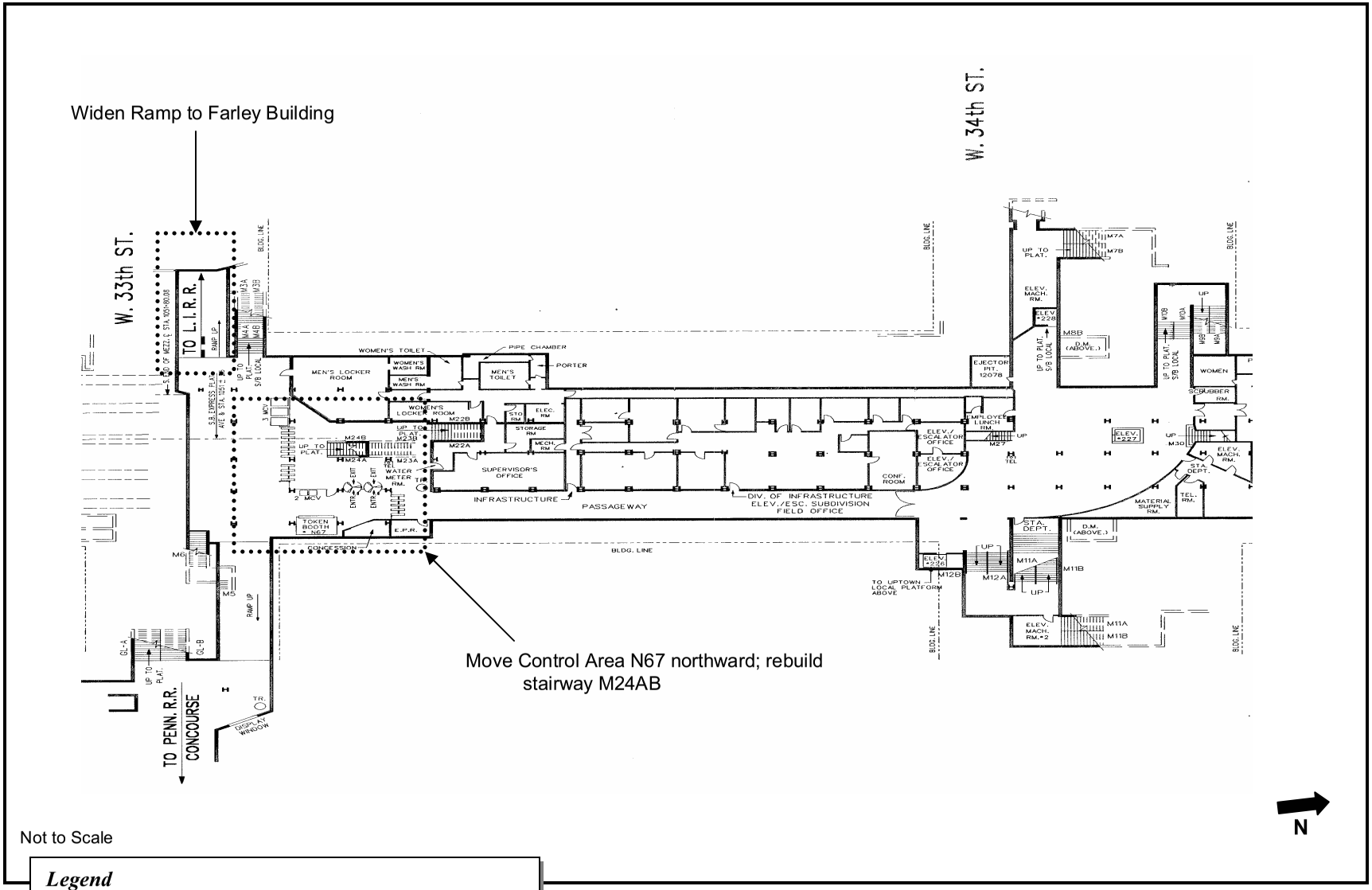
- Existing Station Changes
- Future Station Changes Planned by NYCT

34th Street Station
Station Plan
Broadway/7th Ave. Line – IRD DIVISION

Subway Station Plans

Figure S.4 – 3.5

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

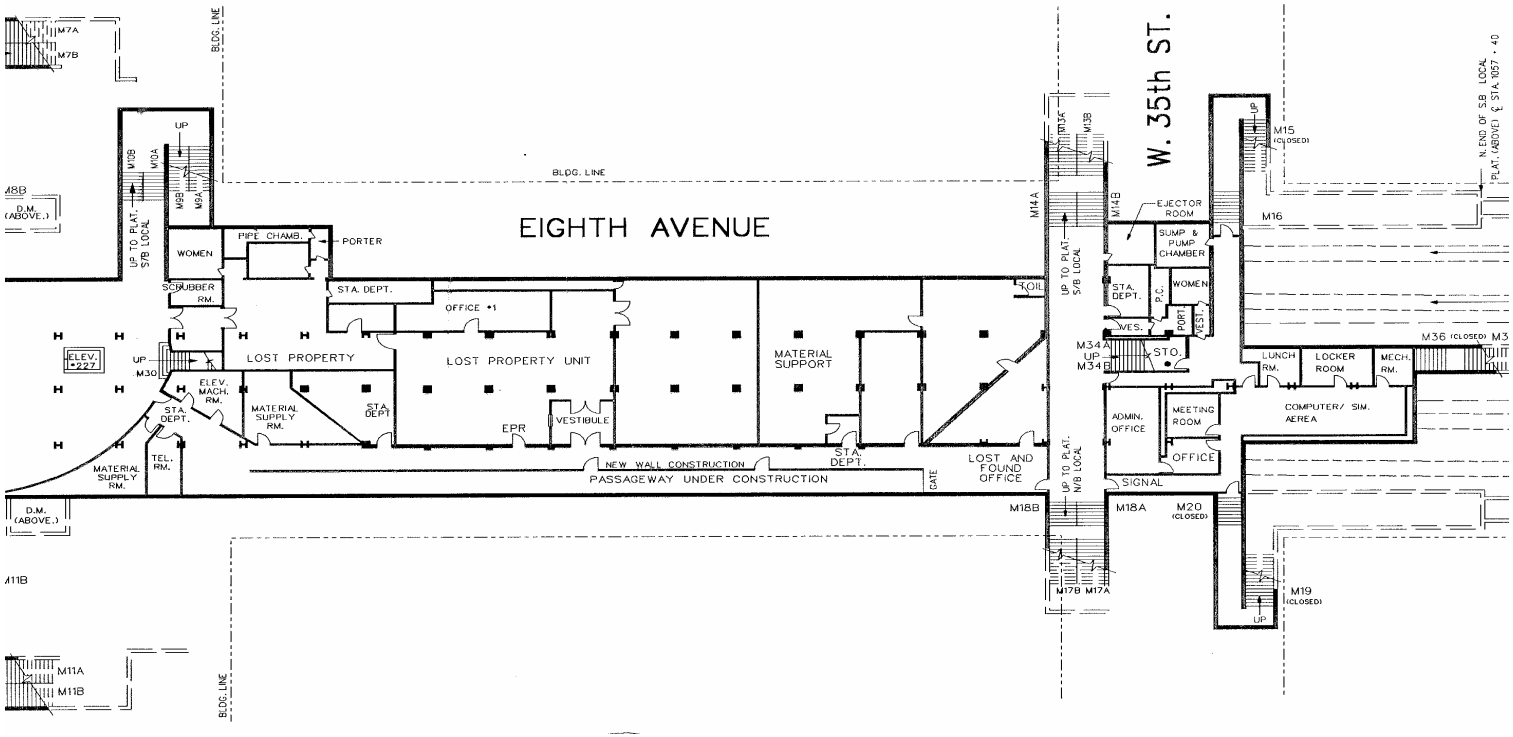
- Existing Station Changes
- Future Station Changes Planned by NYCT

34th Street Station
Mezzanine Level
8th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.6

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

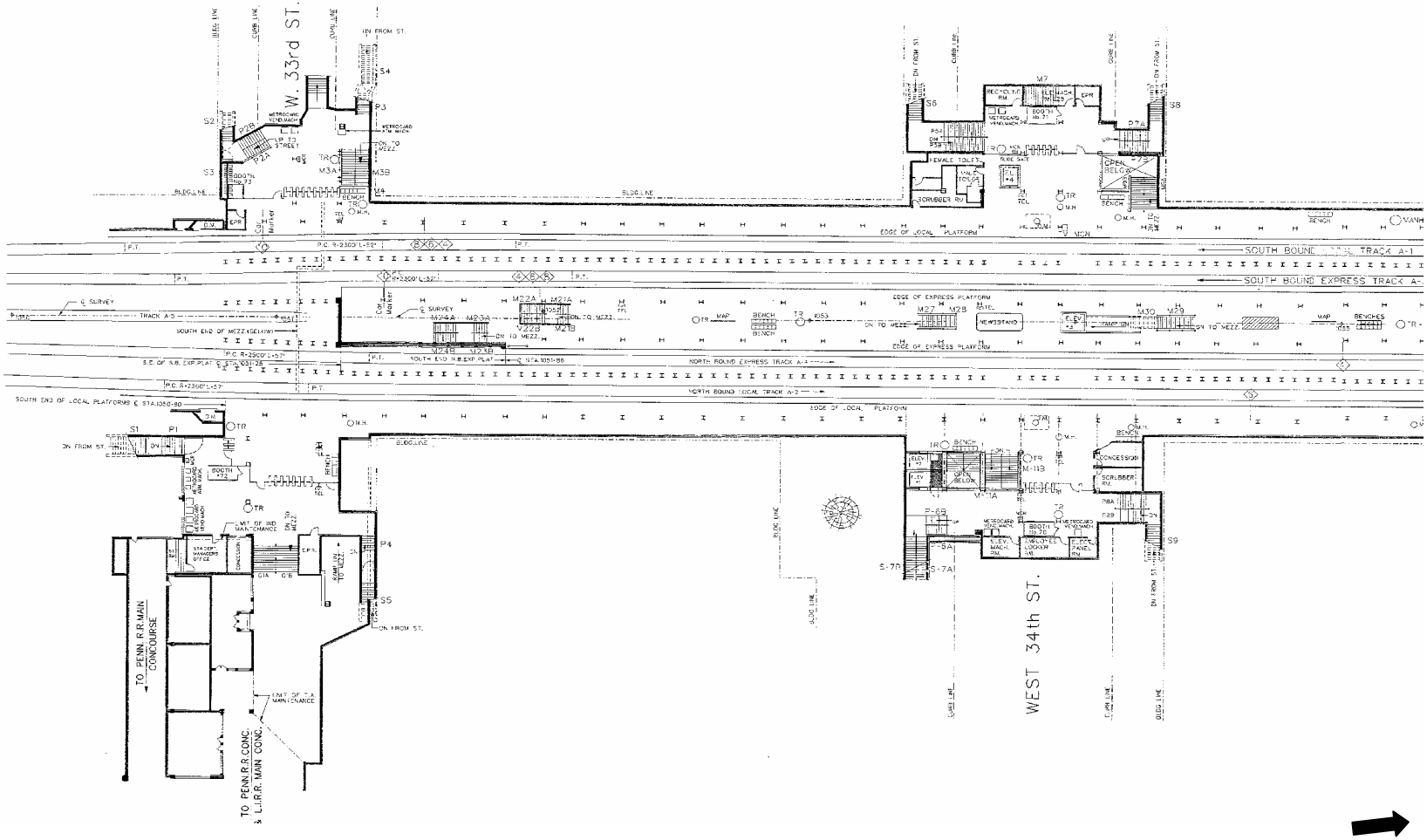
····· Future Station Changes Planned by NYCT

34th Street Station
Mezzanine Level
8th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.7

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

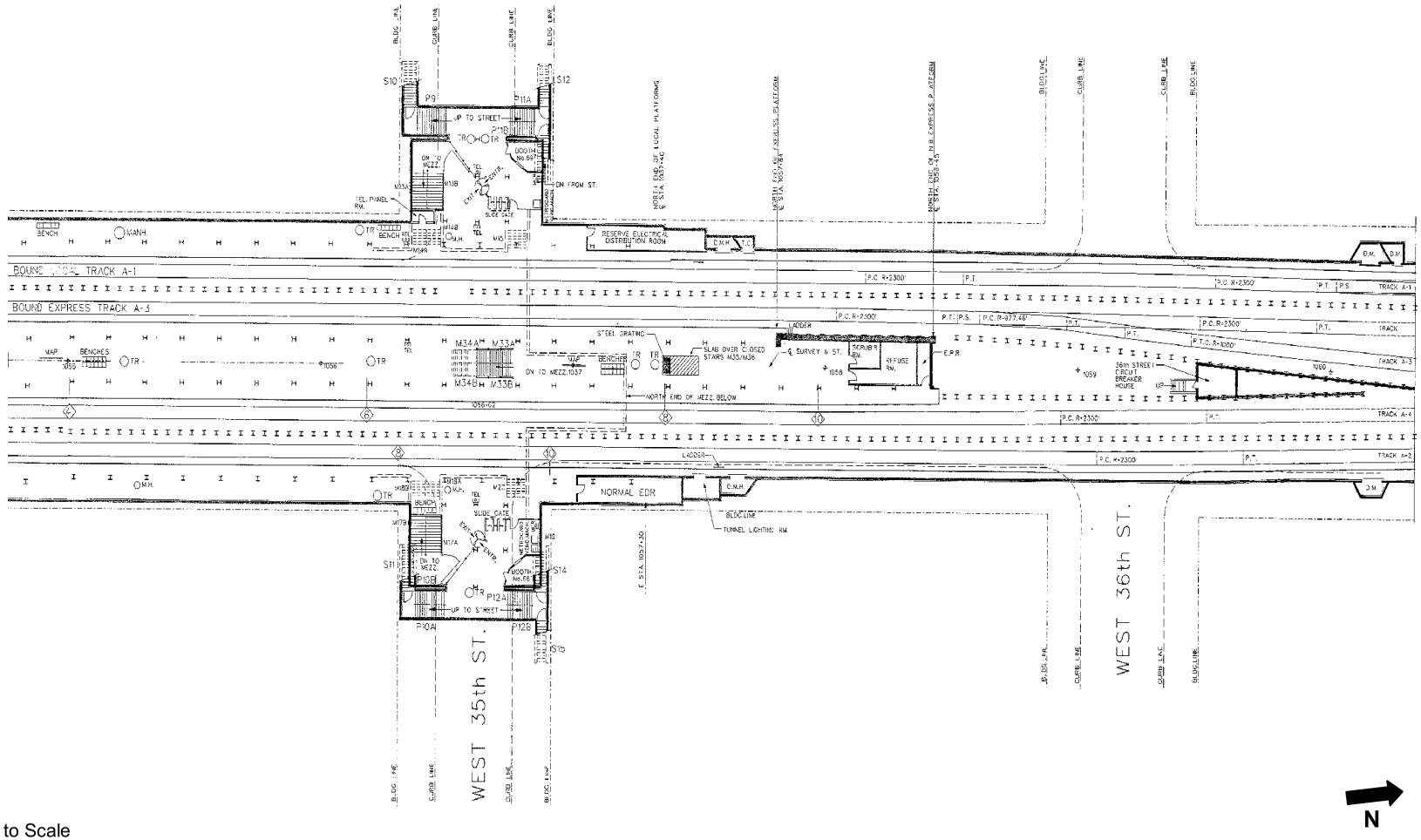
····· Future Station Changes Planned by NYCT

34th Street Station
Platform Level
8th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.8

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

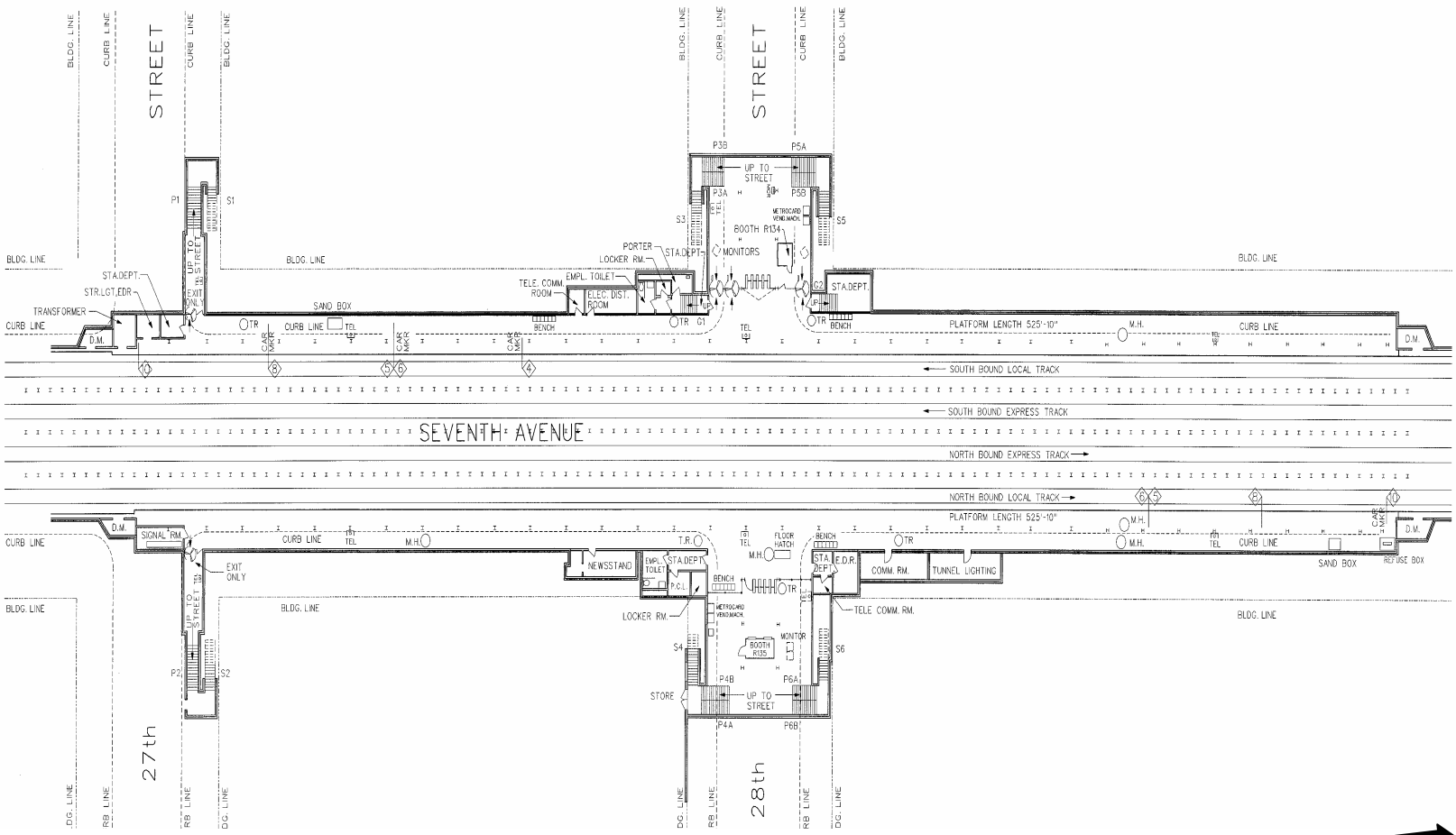
····· Future Station Changes Planned by NYCT

34th Street Station
Platform Level
8th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.9

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

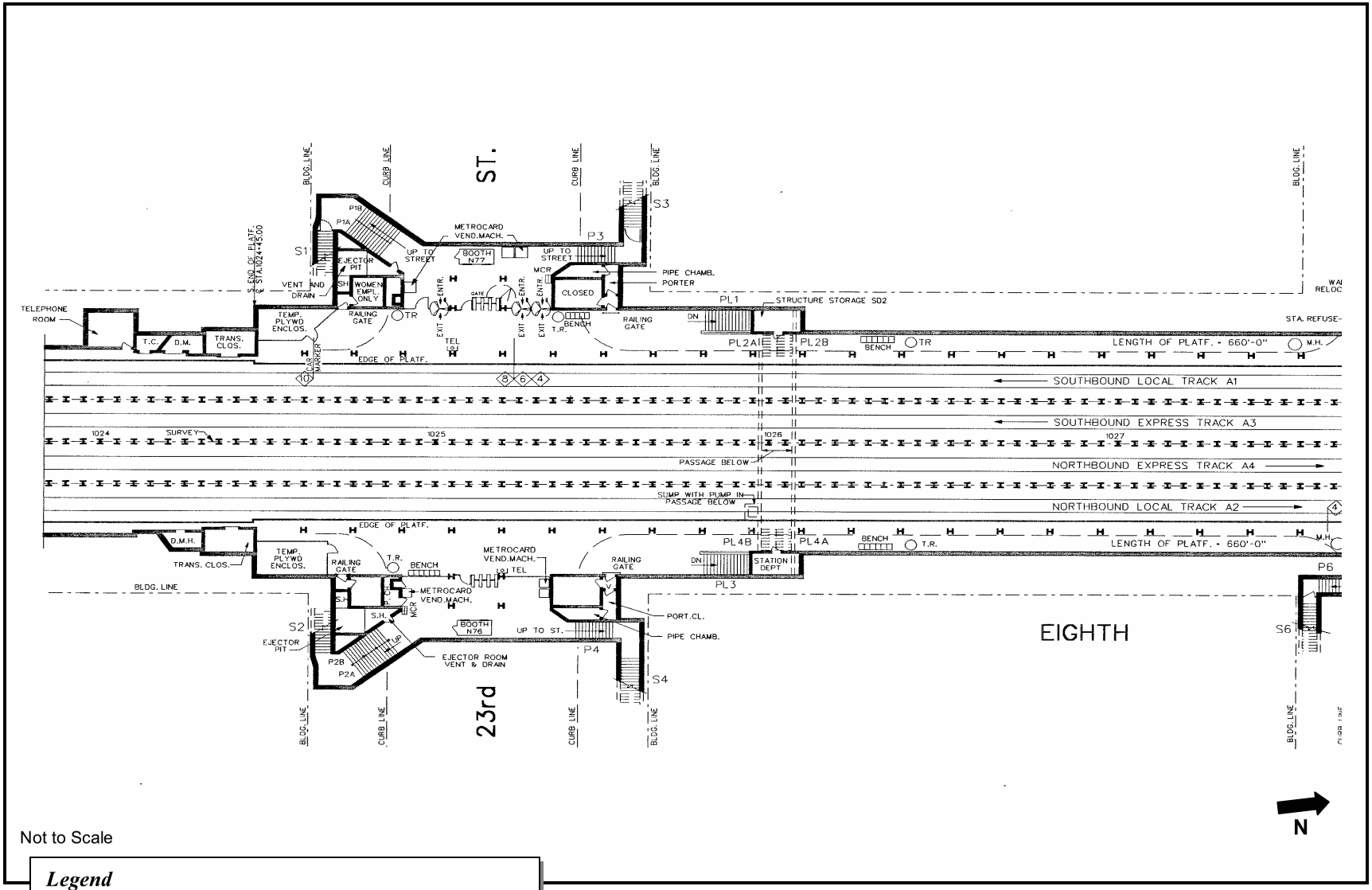
····· Future Station Changes Planned by NYCT

28th Street Station
Station Plan
Broadway/7th Ave Line – IRT DIVISION

Subway Station Plans

Figure S.4 – 3.10

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

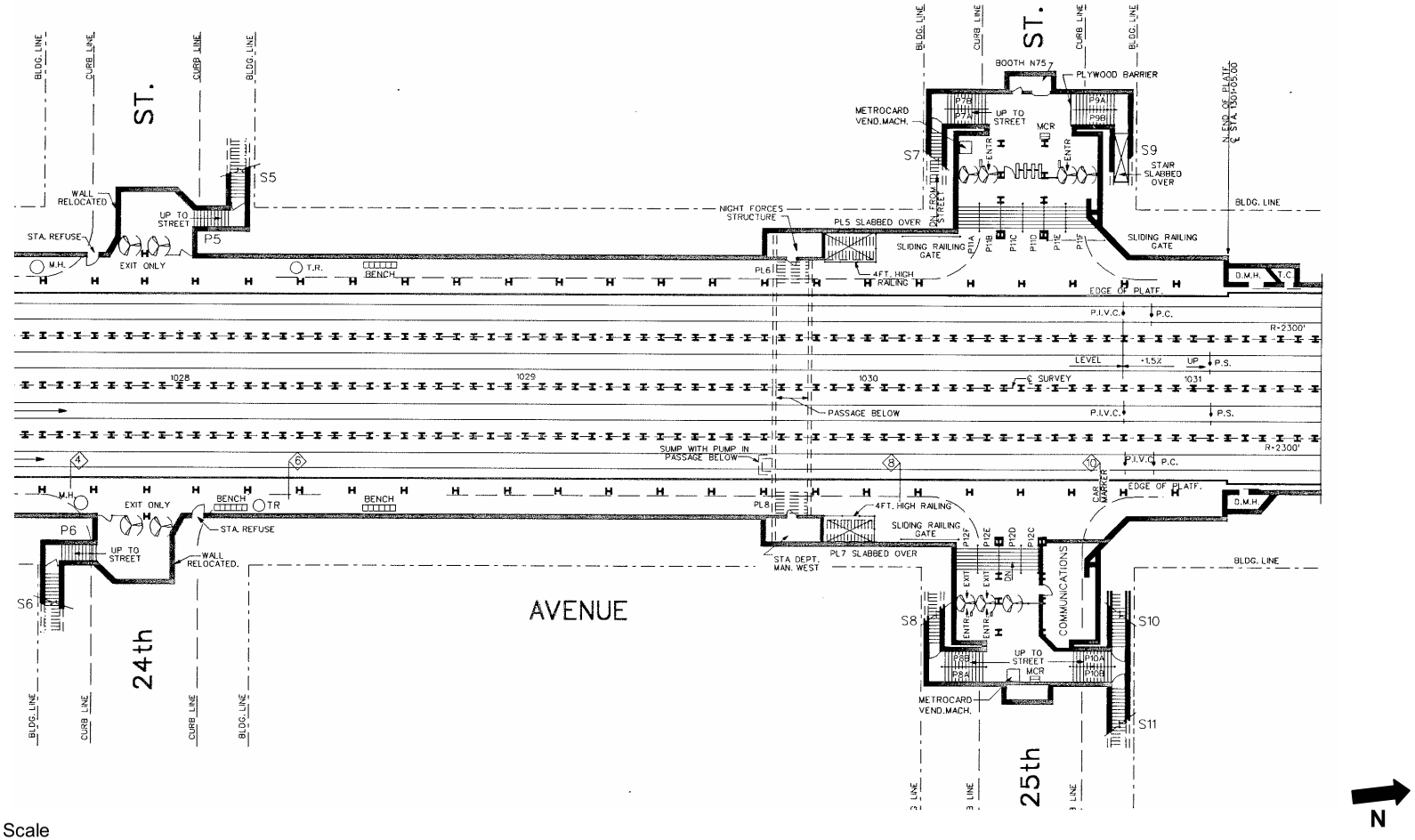
- Existing Station Changes
- Future Station Changes Planned by NYCT

23rd Street Station
Station Plan
8th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.11

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

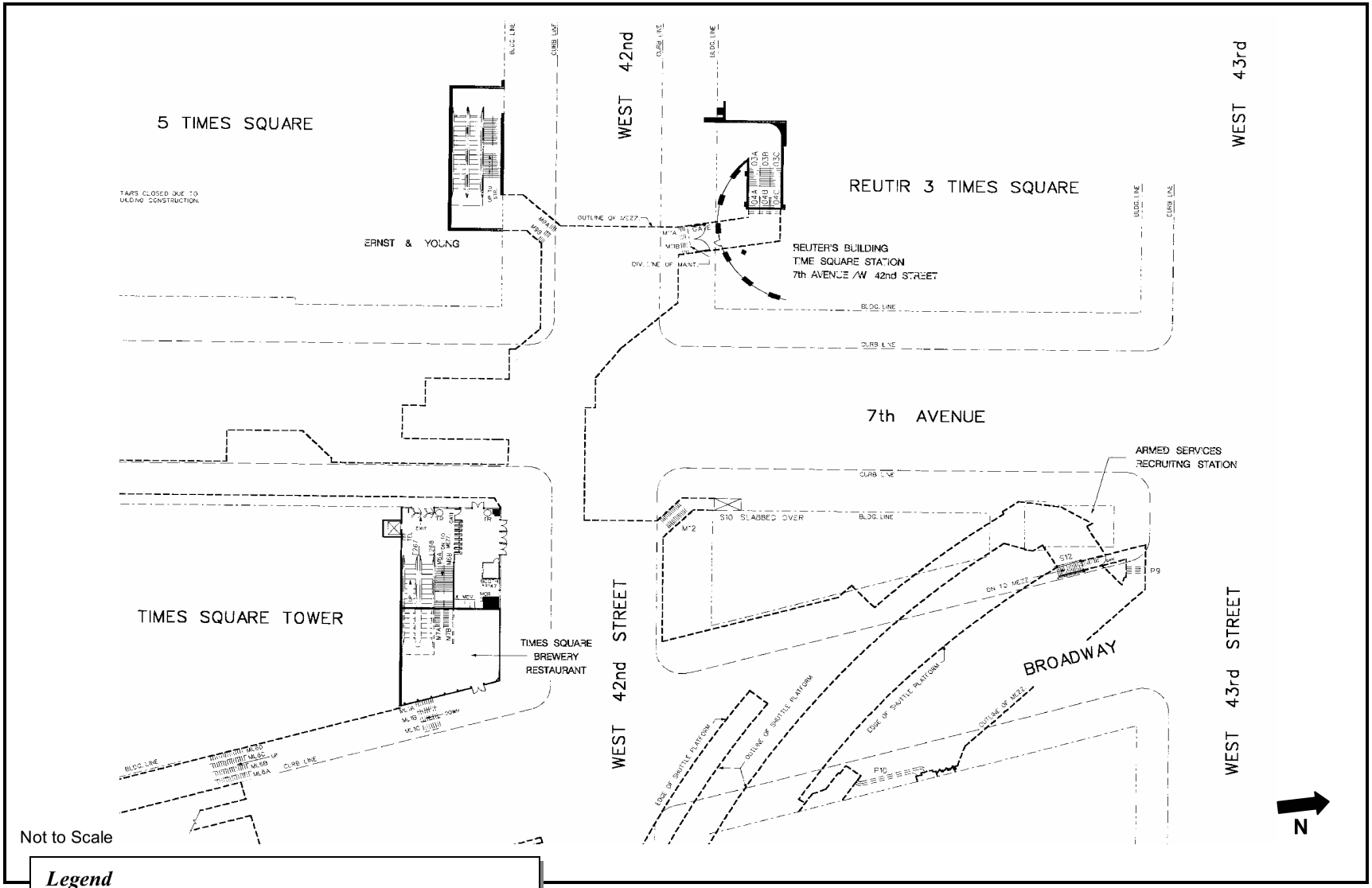
- Existing Station Changes
- Future Station Changes Planned by NYCT

23rd Street Station
Station Plan
8th Avenue Line – IND DIVISION

Subway Station Plans

Figure S.4 – 3.12

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

Existing Station Changes

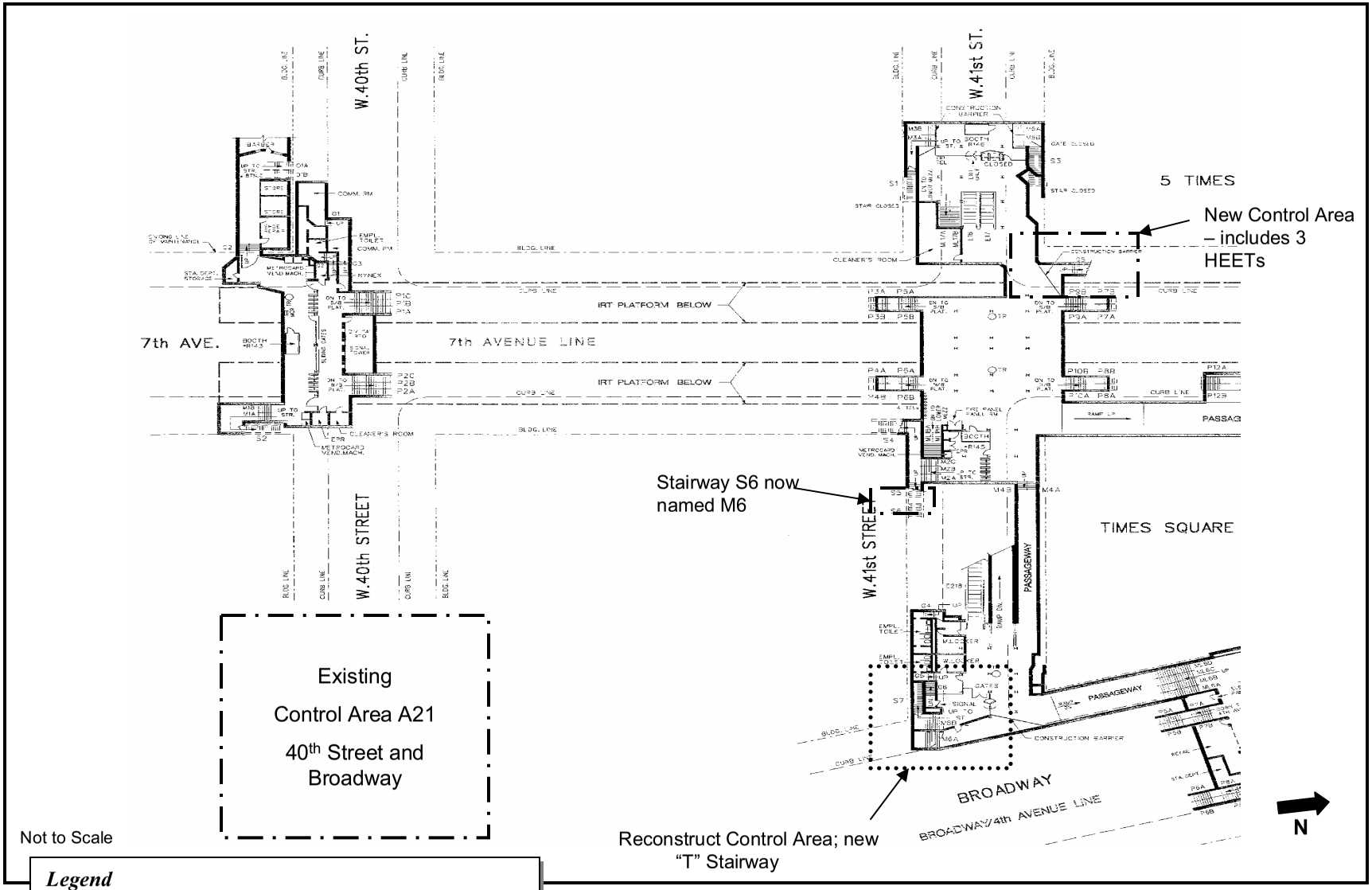
Future Station Changes Planned by NYCT

42nd ST.-Times Square/Shuttle Connection
Street Level
Broadway/7th Avenue Line – IRT Division

Subway Station Plans

Figure S.4 – 3.13

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

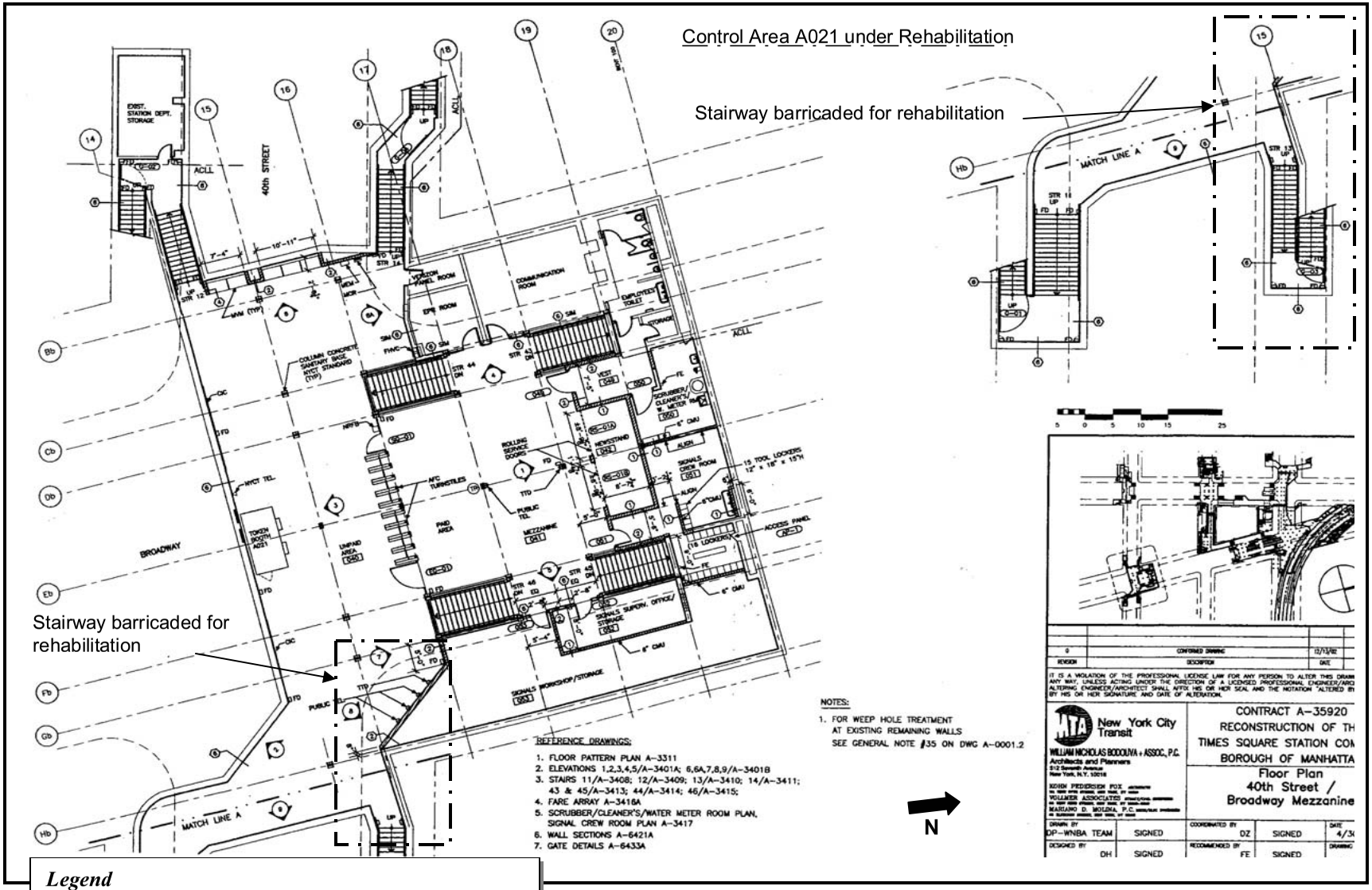
- Existing Station Changes
- Future Station Changes Planned by NYCT

42nd ST.-Times Square/Shuttle Connection
Mezzanine Level & Shuttle Platform
Broadway/7th Avenue Line – IRT Division

Subway Station Plans

Figure S.4 – 3.14

Source: MTA New York City Transit – Department of Subways



Legend

Existing Station Changes

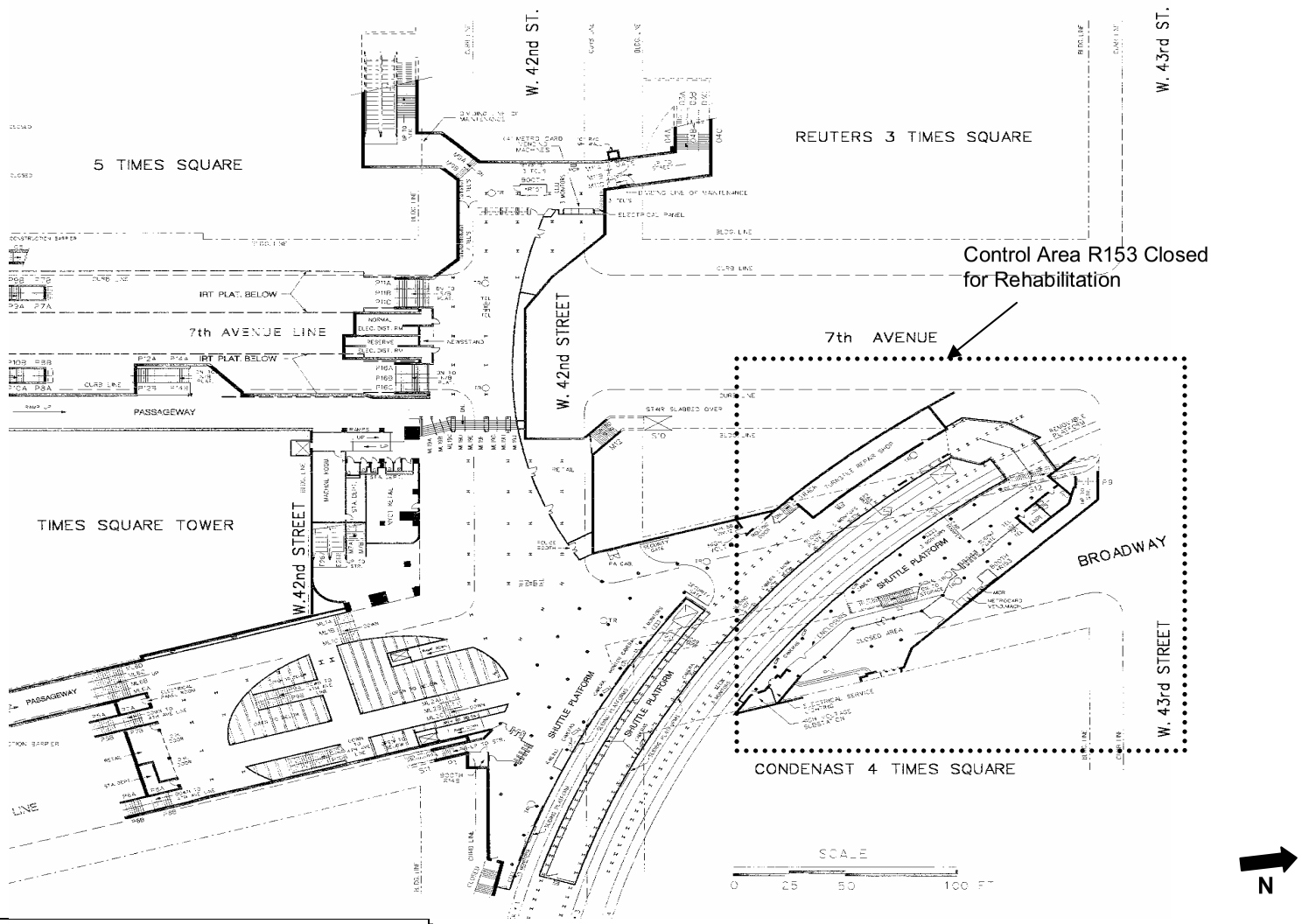
Future Station Changes Planned by NYCT

42nd ST.-Times Square/Shuttle Connection
Floor Plan - 40th Street/Broadway Mezzanine
Broadway/7th Avenue Line – IRT Division

Subway Station Plans

Source: MTA New York City Transit – Department of Subways

Figure S.4 – 3.15



Not to Scale

Legend

— · — · Existing Station Changes

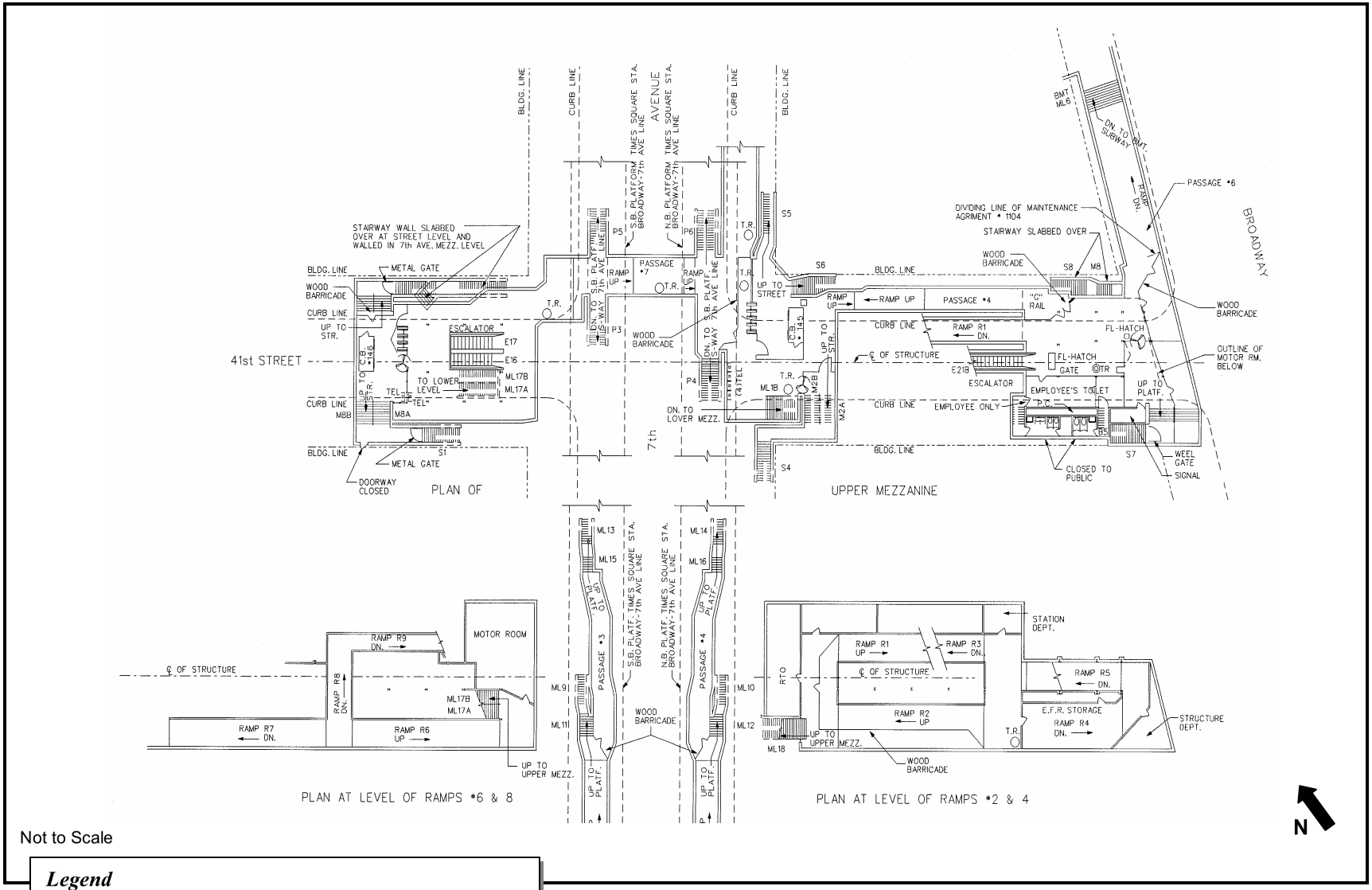
····· Future Station Changes Planned by NYCT

42nd ST.-Times Square/Shuttle Connection
Mezzanine Level & Shuttle Platform
Broadway/7th Avenue Line – IRT Division

Subway Station Plans

Figure S.4 – 3.16

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

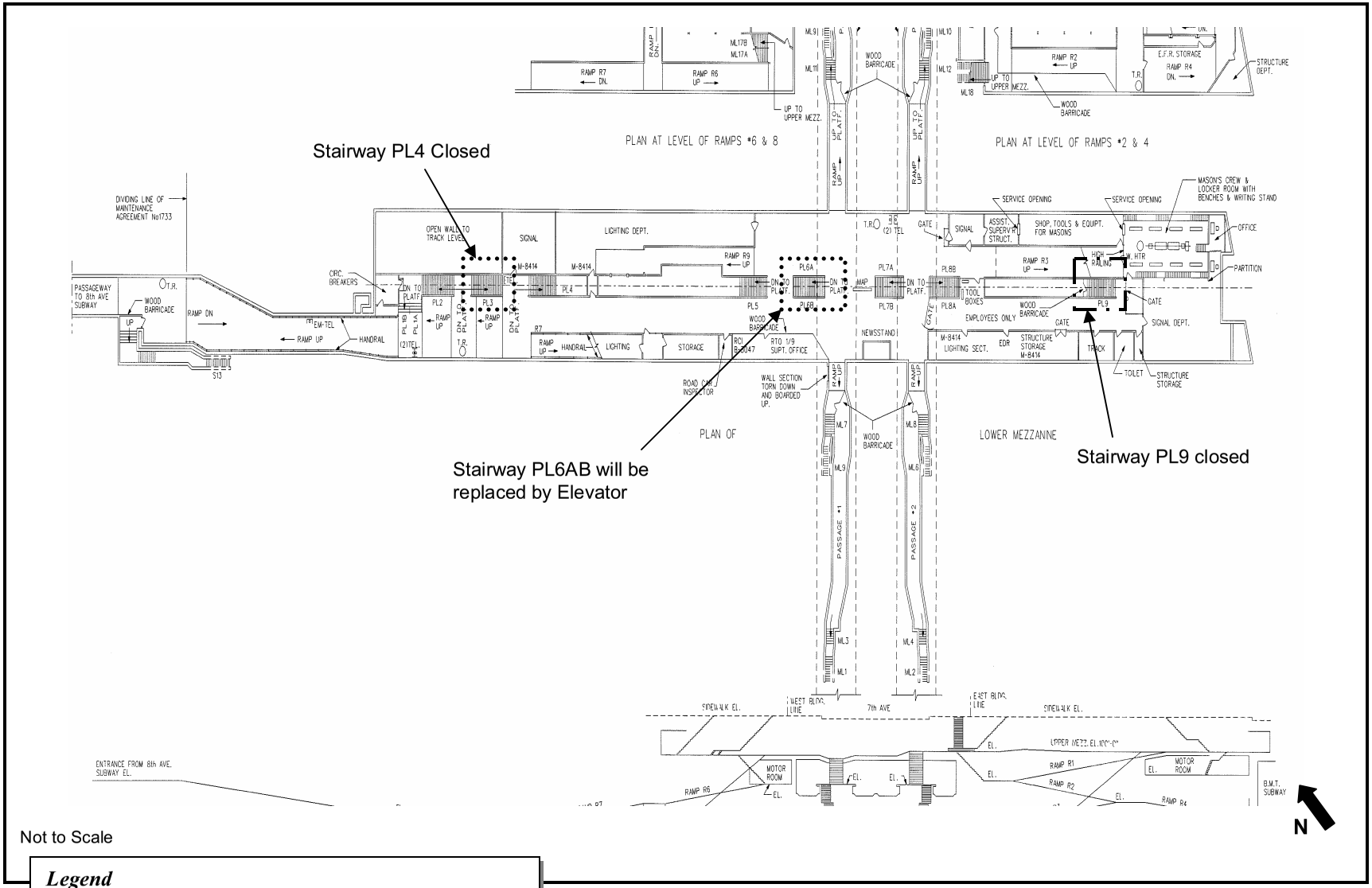
····· Future Station Changes Planned by NYCT

42nd ST. - Times Square
Station Plan
Flushing Line – IRT Division

Subway Station Plans

Figure S.4 – 3.17

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

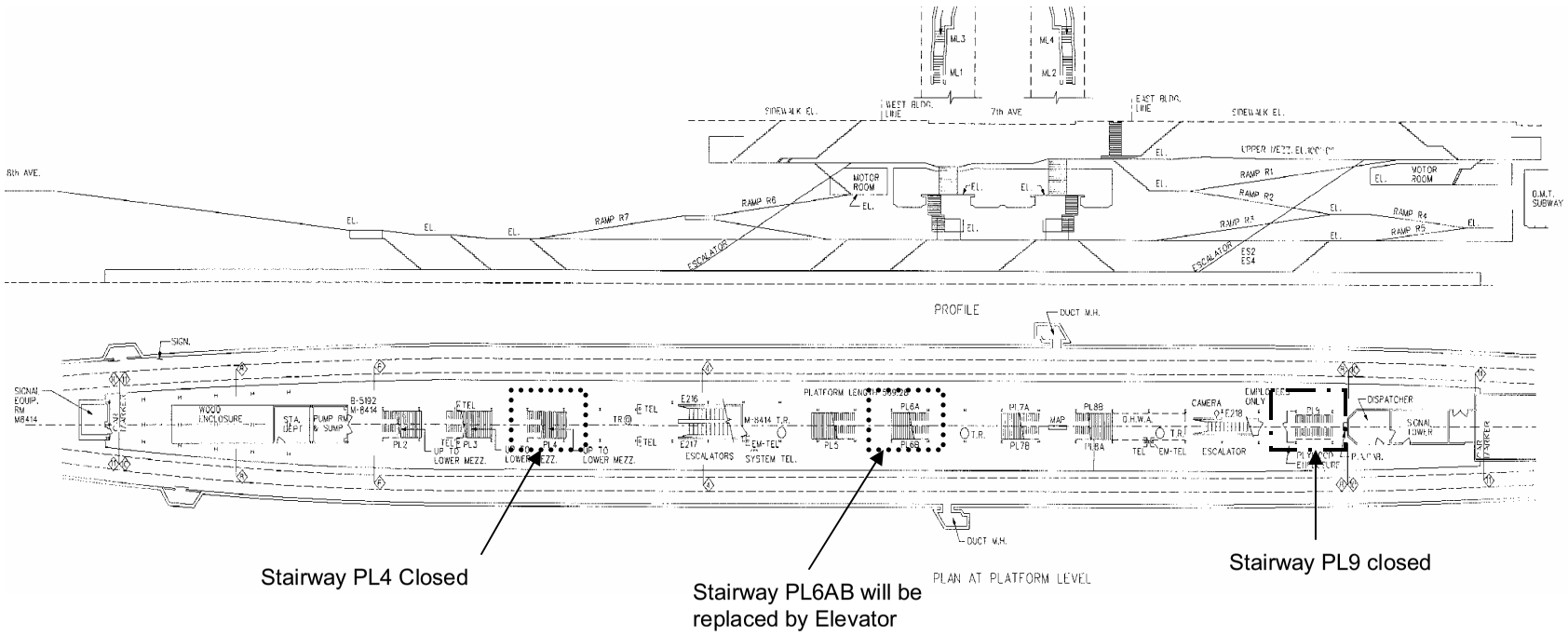
····· Future Station Changes Planned by NYCT

42nd ST. - Times Square
Station Plan
Flushing Line – IRT Division

Subway Station Plans

Figure S.4 – 3.18

Source: MTA New York City Transit – Department of Subways



Not to Scale

N

Legend

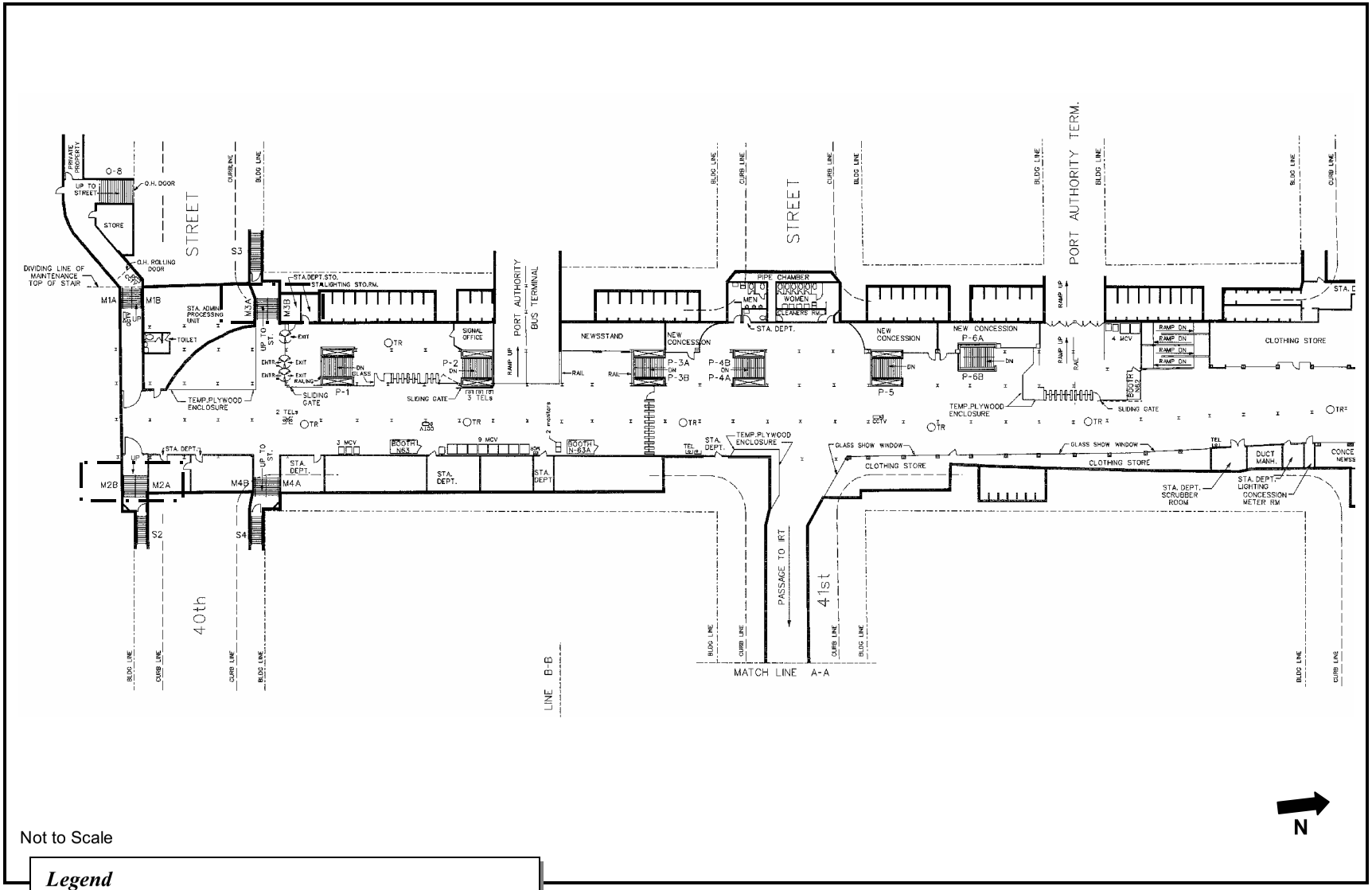
- Existing Station Changes
- Future Station Changes Planned by NYCT

42nd ST. - Times Square
Station Plan
Flushing Line – IRT Division

Subway Station Plans

Figure S.4 – 3.19

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

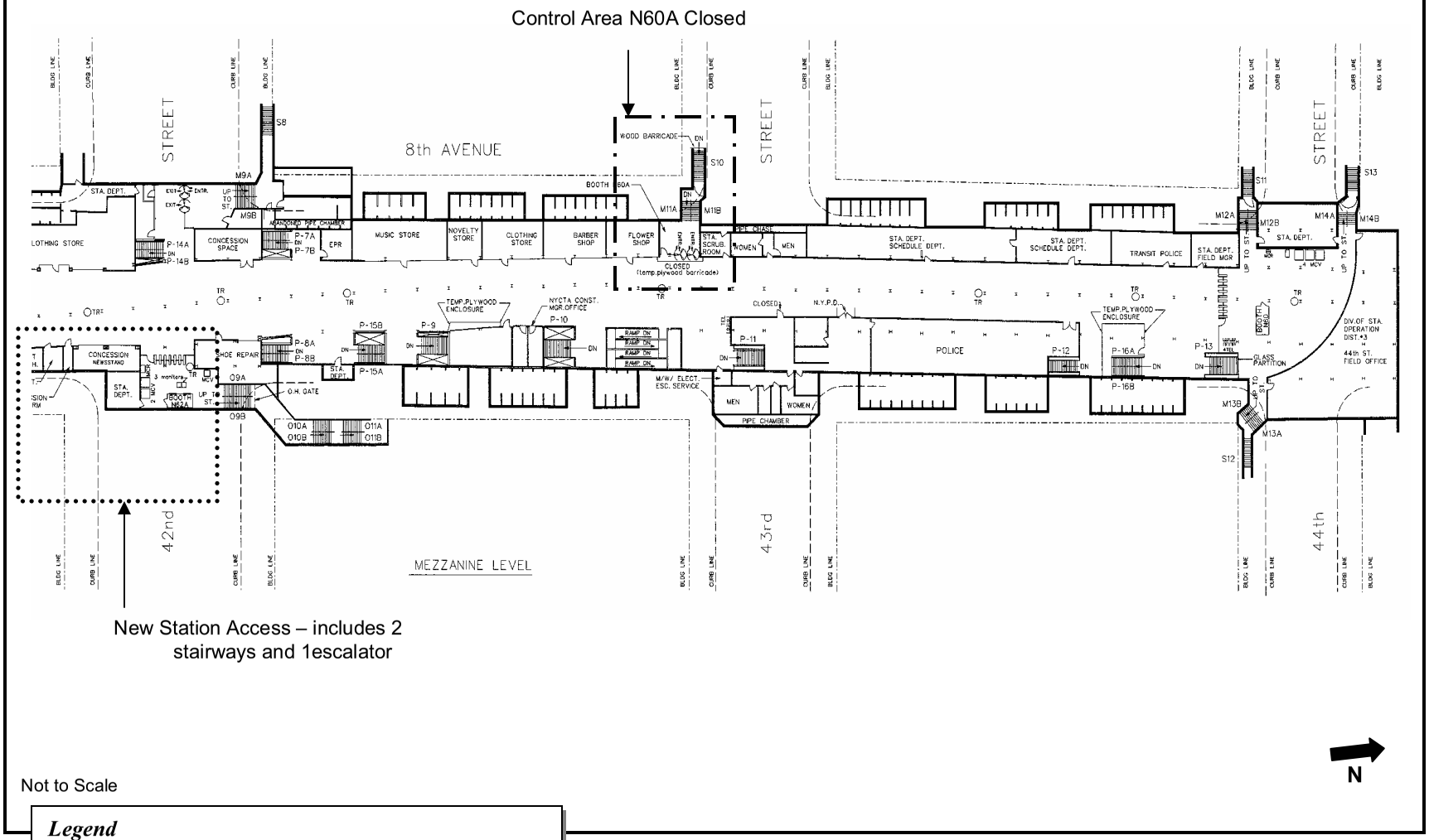
- Existing Station Changes
- Future Station Changes Planned by NYCT

42nd Street Station
Station Plan
8th Avenue Line – IND Division

Subway Station Plans

Figure S.4 – 320

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

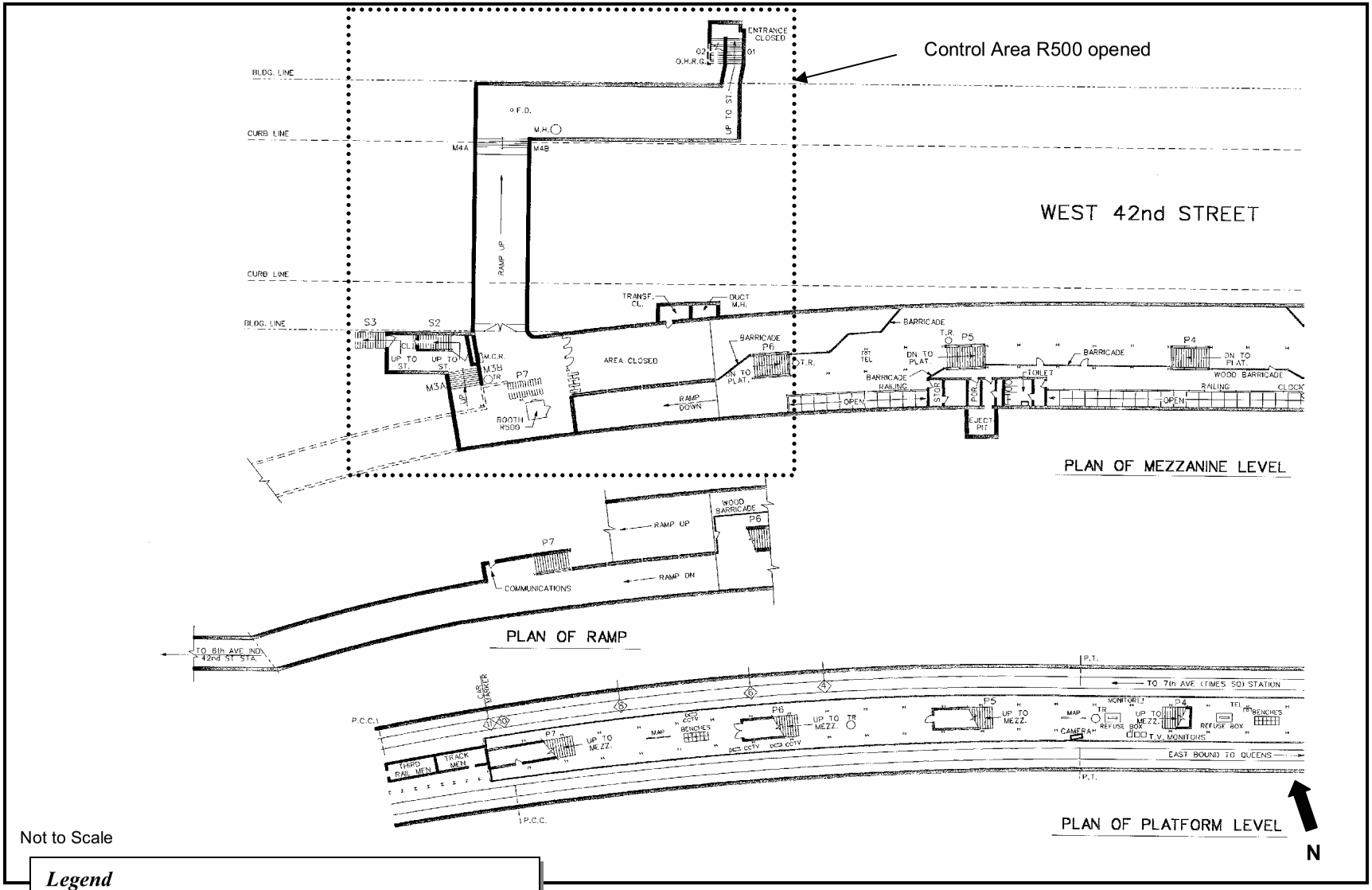
- Existing Station Changes
- Future Station Changes Planned by NYCT

42nd Street Station
Station Plan
8th Avenue Line – IND Division

Subway Station Plans

Figure S.4 – 321

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

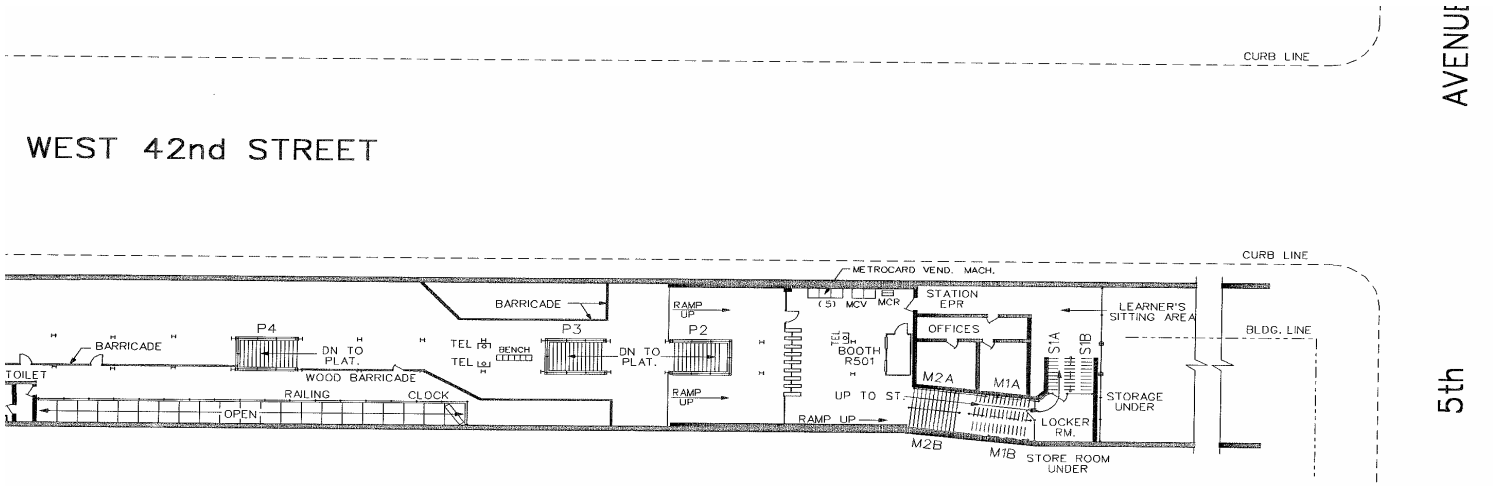
- Existing Station Changes
- Future Station Changes Planned by NYCT

5th Avenue Station
Station Plan
Flushing Line – IRT Division

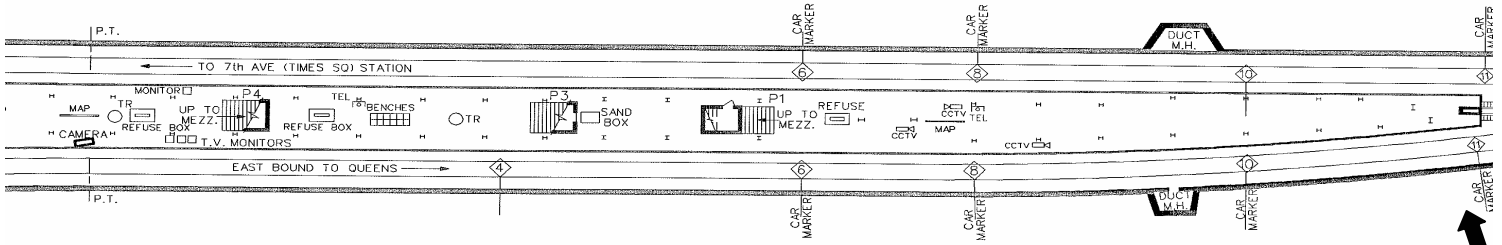
Subway Station Plans

Figure S.4 – 322

Source: MTA New York City Transit – Department of Subways



PLAN OF MEZZANINE LEVEL



PLAN OF PLATFORM LEVEL

Not to Scale

Legend

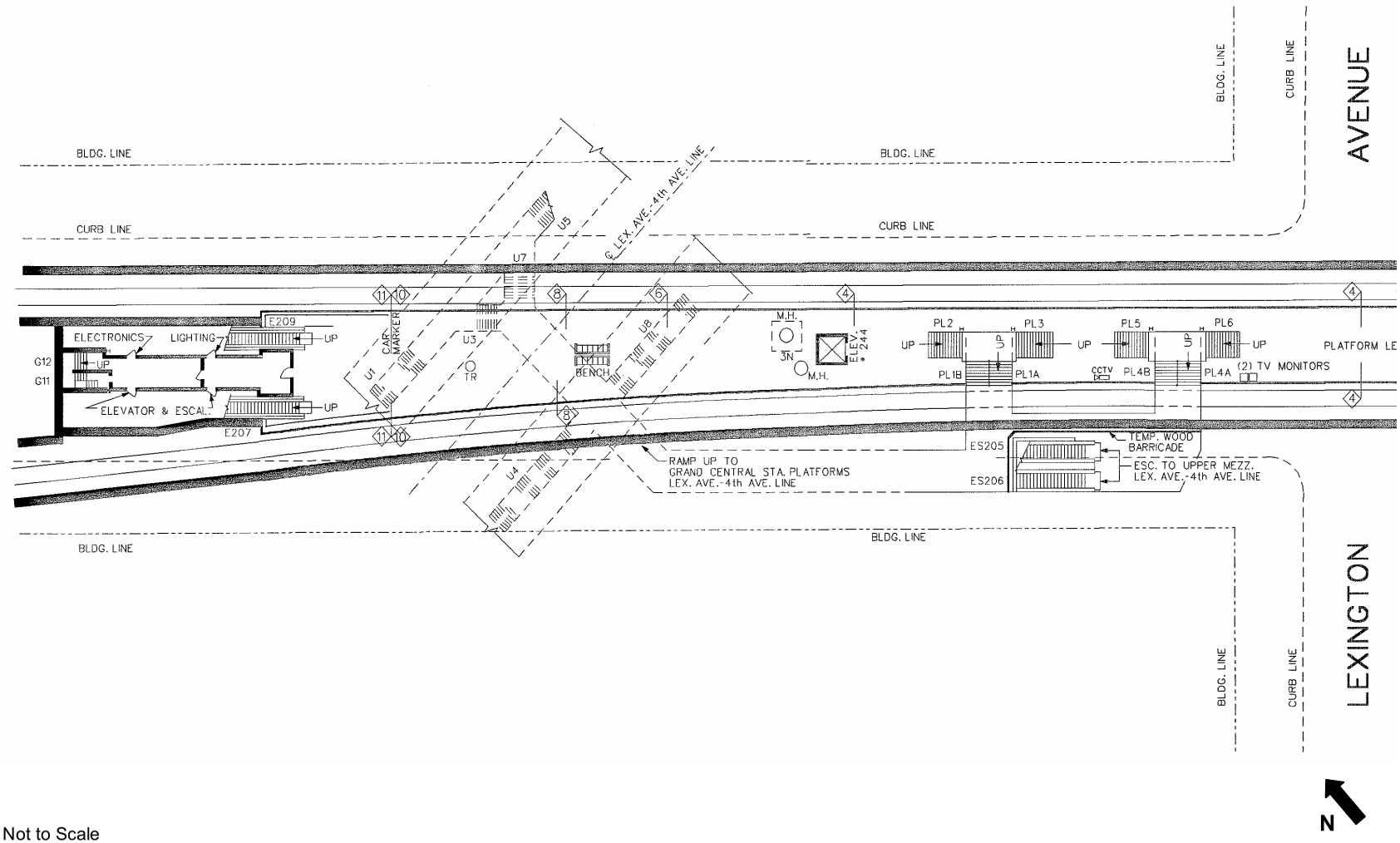
- Existing Station Changes
- Future Station Changes Planned by NYCT

5th Avenue Station
Station Plan
Flushing Line – IRT Division

Subway Station Plans

Figure S.4 – 323

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

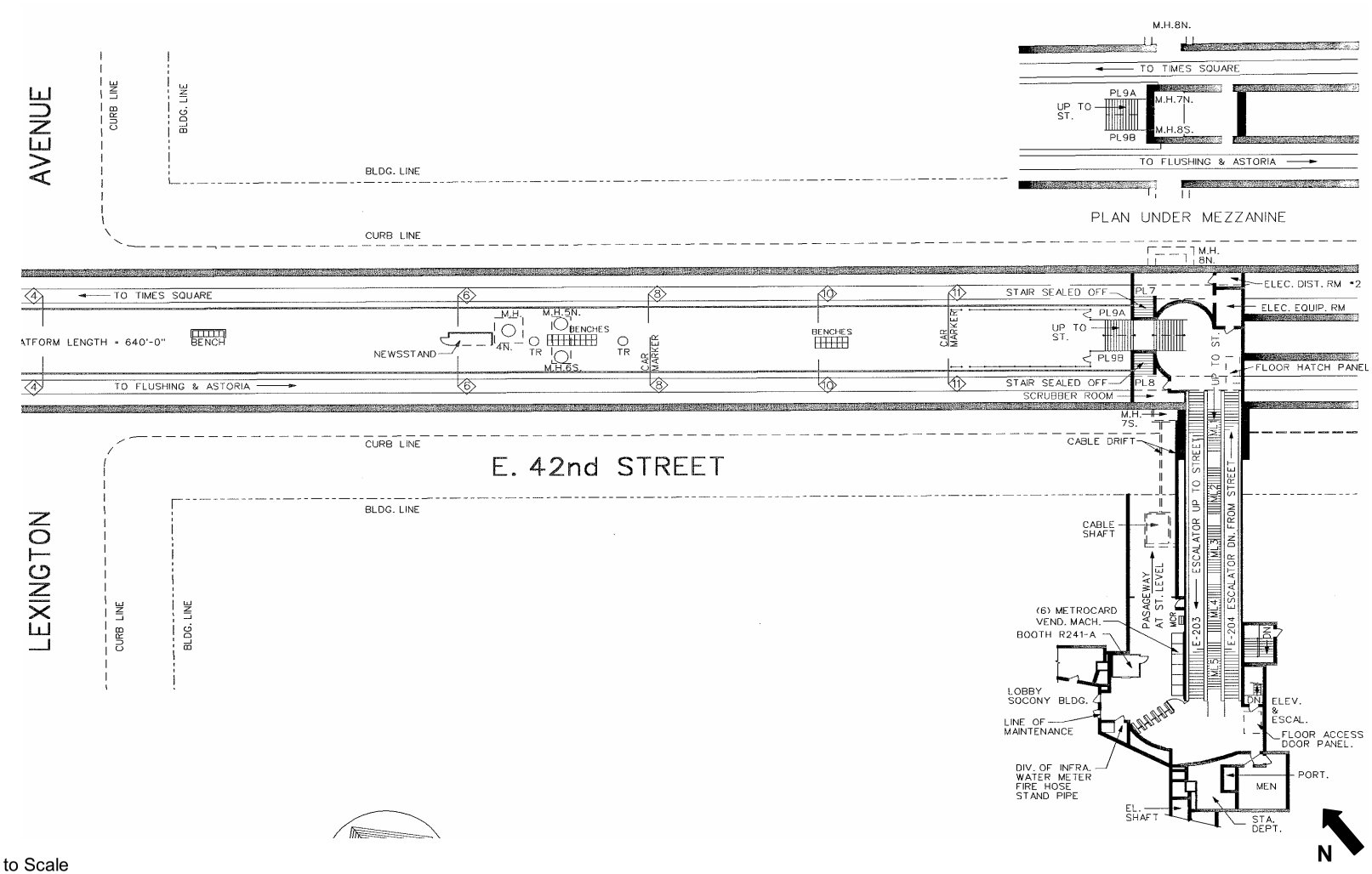
- Existing Station Changes
- Future Station Changes Planned by NYCT

42nd Street – Grand Central Station Plan
Flushing Line – IRT Division

Subway Station Plans

Figure S.4 – 324

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

— · — · Existing Station Changes

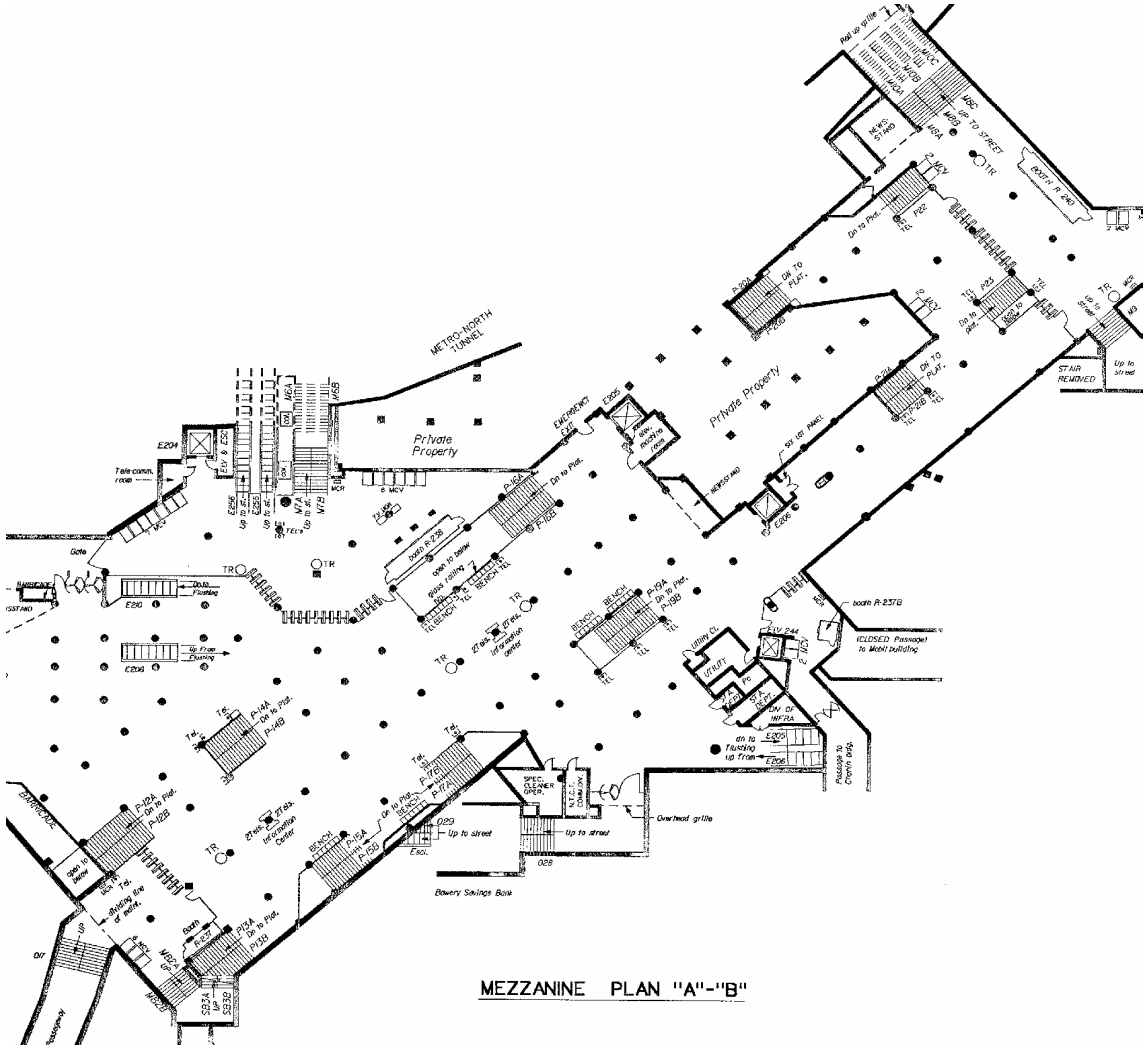
····· Future Station Changes Planned by NYCT

42nd Street – Grand Central Station Plan
Flushing Line – IRT Division

Subway Station Plans

Figure S.4 – 325

Source: MTA New York City Transit – Department of Subways



Not to Scale

N

Legend

— · — · Existing Station Changes

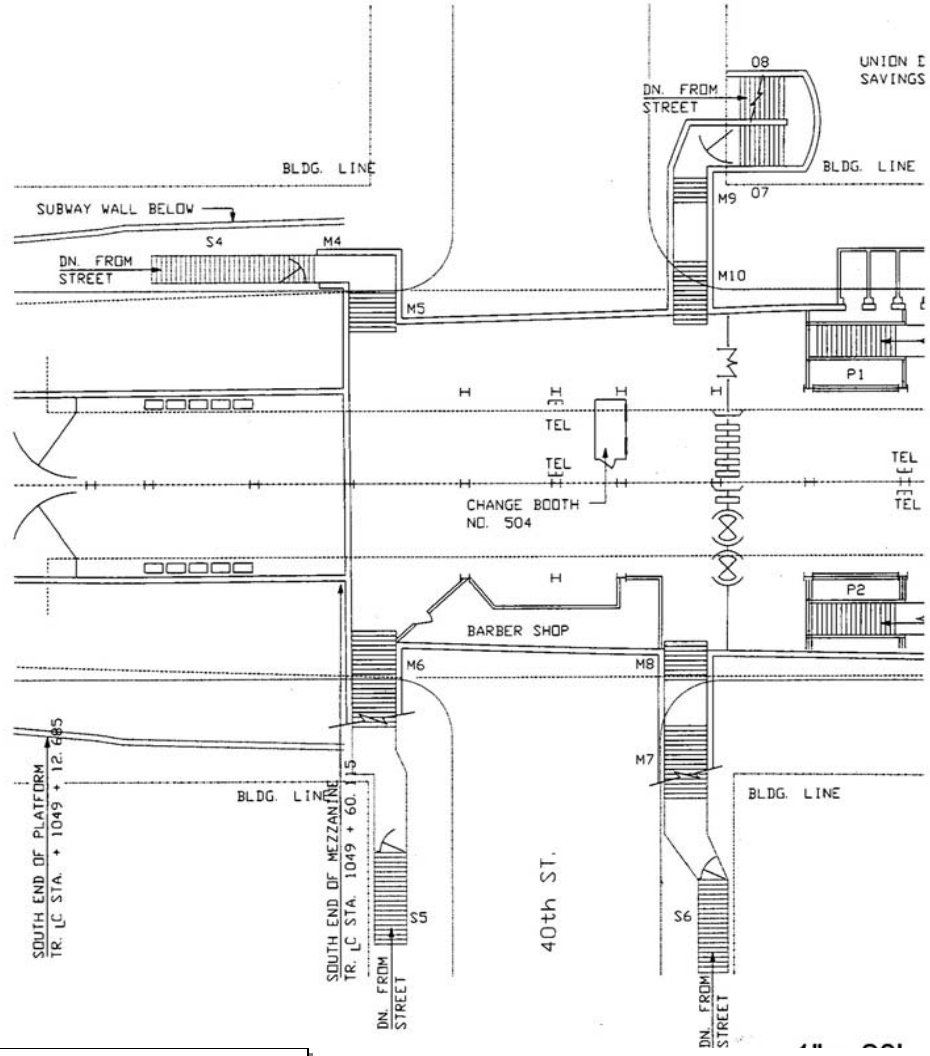
····· Future Station Changes Planned by NYCT

42nd Street – Grand Central
Station Plan
Lexington Avenue Line – IRT Division

Subway Station Plans

Figure S.4 – 326

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

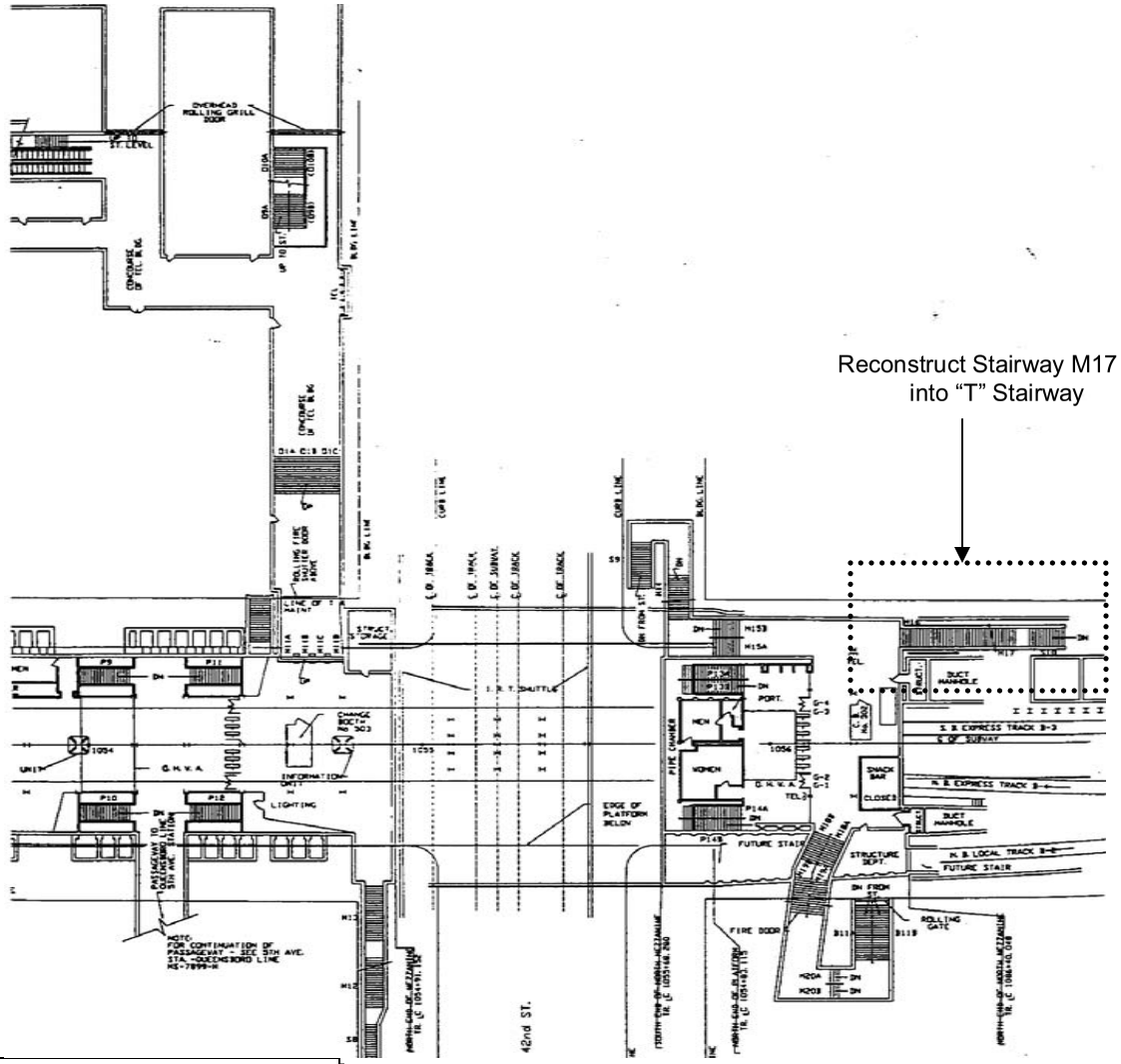
- Existing Station Changes
- Future Station Changes Planned by NYCT

42nd Street Station
Mezzanine Plan
6th Avenue Line – IND Division

Subway Station Plans

Figure S.4 – 3.27

Source: MTA New York City Transit – Department of Subways



Not to Scale

Legend

Existing Station Changes

Future Station Changes Planned by NYCT

42nd Street Station
Mezzanine Plan
6th Avenue Line – IND Division

Subway Station Plans

Figure S.4 – 328

Source: MTA New York City Transit – Department of Subways

Appendix S.4.4.1

2003 Existing Condition (Weekday AM/PM)

(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - A25	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	933	826	3024	3024	0.31	0.27	B	B
Service Gate	1	1	98	180	675	675	0.15	0.27	A	B
High Entrance/Exit Turnstile	3	2	411	435	810	810	0.51	0.54	C	C
Street Stairs		EFFECTIVE								
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NE)	5.4	4.4	101	360	594	594	0.17	0.61	A	B
M2	5.7	4.7	101	360	635	635	0.16	0.57	A	B
S2AB (NW)	7.2	6.2	1112	523	837	837	1.33	0.62	D	B
M1AB	7.2	6.2	1112	523	837	837	1.33	0.62	D	B
H&M 300 (6th Ave)	4.9	3.9	289	366	527	527	0.55	0.70	B	B
H&M 300 (Mezz to Stairs)	8.1	7.1	289	366	959	959	0.30	0.38	A	A
H&M 302ABC (Mezz to Concourse)	23.7	22.7	609	457	3065	3065	0.20	0.15	A	A
Control Area		ONE- OR								
Booth - N506	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	14	2	1233	1868	6048	6048	0.20	0.31	B	B
Service Gate	1	2	198	167	675	675	0.29	0.25	B	B
Street Stairs		EFFECTIVE								
34th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5AB (SW)	9.0	8.0	1517	1147	1080	1080	1.40	1.06	E	D
M5AB	9.0	8.0	1517	1147	1080	1080	1.40	1.06	E	D
S7AB (NW)	8.3	7.3	1163	1259	986	986	1.18	1.28	D	D
M7AB	8.6	7.6	1163	1259	1026	1026	1.13	1.23	D	D
Control Area		ONE- OR								
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	11	2	1954	2056	4752	4752	0.41	0.43	C	C
Service Gate	1	2	41	10	675	675	0.06	0.01	A	A
Street Stair		EFFECTIVE								
32nd to 33rd St and 6th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
H&M 307	5.6	4.6	1071	193	621	621	1.72	0.31	F	A
Escalators										
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
E221	24.0	90.0	137	792	600	600	0.23	1.32	B	F
E222	40.0	90.0	934	914	1170	1170	0.80	0.78	D	D
Concourse to N507		EFFECTIVE								
Internal Stairs	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML7AB	11.6	10.6	548	548	1431	1431	0.38	0.38	A	A
ML1AB	8.6	7.6	700	528	1026	1026	0.68	0.51	B	B
Escalators		EFFECTIVE								
33rd and Broadway	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
E223	24.0		670	665	600	600	1.12	1.11	F	F
E224	24.0		76	426	600	600	0.13	0.71	A	D
Control Area		ONE- OR								
Booth - A22	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	549	816	1296	1296	0.42	0.63	C	D
Service Gate	1	2	0	5	675	675	0.00	0.01	A	A
High Entrance/Exit Turnstile	2	2	273	255	540	540	0.51	0.47	C	C
Hign Exit Turnstile	2	1	21	39	900	450	0.02	0.09	A	A
Street Stairs		EFFECTIVE								
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	6.0	5.0	604	767	675	675	0.89	1.14	C	D
M4AB	11.5	10.5	604	767	1418	1418	0.43	0.54	A	B
S8 (NE)	6.0	5.0	244	370	675	675	0.36	0.55	A	B
M8AB	11.5	10.5	244	370	1418	1418	0.17	0.26	A	A
Control Area		ONE- OR								
Booth - N505	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	1578	1244	4320	4320	0.37	0.29	B	B
High Entrance/Exit Turnstile	2	2	442	401	540	540	0.82	0.74	E	D
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	4.8	3.8	284	183	513	513	0.55	0.36	B	A
M9	4.8	3.8	284	183	513	513	0.55	0.36	B	A
M10AB	9.6	8.6	284	183	1161	1161	0.24	0.16	A	A
S8 (NE)	4.8	3.8	696	630	513	513	1.36	1.23	E	D
M8AB	9.6	8.6	696	630	1161	1161	0.60	0.54	B	B
S7 (NW)	5.8	4.8	416	162	648	648	0.64	0.25	B	A
M7AB	9.7	8.7	416	162	1175	1175	0.35	0.14	A	A
Street Stairs		EFFECTIVE								
35th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SW)	5.1	4.1	15	101	554	554	0.03	0.18	A	A
M5AB	7.6	6.6	15	101	891	891	0.02	0.11	A	A
S6 (NW)	4.9	3.9	609	569	527	527	1.16	1.08	D	D
M6AB	7.9	6.9	609	569	932	932	0.65	0.61	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(iii) Sixth Avenue at 42nd Street Subway Station (B, D, F, and V)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area Booth - 504	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1638	1284	3456	3456	0.47	0.37	C	B
Service Gate	1	2	5	0	675	675	0.01	0.00	A	A
Street Stairs 40th St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	5.0	4.0	692	414	540	540	1.28	0.77	D	C
M6	8.6	7.6	692	414	1026	1026	0.67	0.40	B	A
S6 (NE)	4.7	3.7	72	404	500	500	0.14	0.81	A	C
M7	8.3	7.3	72	404	986	986	0.07	0.41	A	A
M8	8.3	7.3	72	404	986	986	0.07	0.41	A	A
S4 (SW)	4.7	3.7	658	414	500	500	1.32	0.83	D	C
M4	4.7	3.7	658	414	500	500	1.32	0.83	D	C
M5	8.4	7.4	658	414	999	999	0.66	0.41	B	A
O6 (NW)	5.8	4.8	222	52	648	648	0.34	0.08	A	A
O7	5.7	4.7	222	52	635	635	0.35	0.08	A	A
M9	5.7	4.7	222	52	635	635	0.35	0.08	A	A
M10	5.7	4.7	222	52	635	635	0.35	0.08	A	A
Control Area Booth - N503	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	868	888	2592	2592	0.33	0.34	B	B
Service Gate	1	2	36	0	675	675	0.05	0.00	A	A
Street Stairs 42nd St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (SE)	5.9	4.9	670	497	662	662	1.01	0.75	D	C
M12	7.0	6.0	670	497	810	810	0.83	0.61	C	B
M13	7.0	6.0	670	497	810	810	0.83	0.61	C	B
No Code (Bet 6th&7th)	8.0	7.0	233	391	945	945	0.25	0.41	A	A
O1ABC	19.7	18.7	233	391	2525	2525	0.09	0.15	A	A
M11ABCD	18.2	17.2	233	391	2322	2322	0.10	0.17	A	A
Control Area Booth - N502	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1035	1051	2592	2592	0.40	0.41	B	C
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs 42nd St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S11AB (NE)	9.6	8.6	639	599	1161	1161	0.55	0.52	B	B
M20AB	10.0	9.0	639	599	1215	1215	0.53	0.49	B	B
M19AB	10.0	9.0	639	599	1215	1215	0.53	0.49	B	B
M18AB	10.0	9.0	639	599	1215	1215	0.53	0.49	B	B
S9 (NW)	5.6	4.6	96	167	621	621	0.16	0.27	A	A
M14	7.7	6.7	96	167	905	905	0.11	0.19	A	A
M15AB	13.2	12.2	96	167	1647	1647	0.06	0.10	A	A
S10 (Bet 42nd&43rd)	5.7	4.7	299	289	635	635	0.47	0.46	B	B
M17	6.9	5.9	299	289	797	797	0.38	0.36	A	A
M16	6.9	5.9	299	289	797	797	0.38	0.36	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(vi) Seventh Avenue at 34th Street Subway Station (1, 2, 3, and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R137	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	279	350	1296	1296	0.22	0.27	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
32nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O15AB (NE)	10.3	9.3	279	350	1256	1256	0.22	0.28	A	A
O14AB	10.3	9.3	279	350	1256	1256	0.22	0.28	A	A
Control Area		ONE- OR								
Booth - R135	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1219	1655	2592	2592	0.47	0.64	C	D
Service Gate	1	2	102	51	675	675	0.15	0.08	A	A
(32nd Street Sub passage to Penn Station)										
Control Area		ONE- OR								
Booth - R139	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	431	477	1728	1728	0.25	0.28	B	B
High Entrance/Exit Turnstile	1	2	35	152	270	270	0.13	0.56	A	C
Street Stairs		EFFECTIVE								
33rd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O17AB (SE)	10.0	9.0	1081	335	1215	1215	0.89	0.28	C	A
P3AB	10.7	9.7	1081	335	1310	1310	0.83	0.26	C	A
O19 (NE/E)	5.8	4.8	132	187	648	648	0.20	0.29	A	A
O18	5.8	4.8	132	187	648	648	0.20	0.29	A	A
S2 (NE/W)	5.3	4.3	163	295	581	581	0.28	0.51	A	B
P4	7.0	6.0	163	295	810	810	0.20	0.36	A	A
Control Area		ONE- OR								
Booth - R138	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	12	2	2320	1518	5184	5184	0.45	0.29	C	B
Service Gate	1	2	685	858	675	675	1.01	1.27	F	F
(33rd Street Sub passage to Penn Station and Control Area R139)										
Sub passage Stairs		EFFECTIVE								
33rd St Sub passage	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML2AB	13.0	12.0	939	350	1620	1620	0.58	0.22	B	A
ML4AB	13.0	12.0	939	350	1620	1620	0.58	0.22	B	A
		ONE- OR								
Control Area	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstiles	1	2	112	97	270	270	0.41	0.36	C	B
Street Stairs		EFFECTIVE								
33rd and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NW)	4.4	3.4	112	97	459	459	0.24	0.21	A	A
P2	4.8	3.8	112	97	513	513	0.22	0.19	A	A
P1	8.5	7.5	112	97	1013	1013	0.11	0.10	A	A
Control Area		ONE- OR								
Booth - R141	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	340	787	3456	3456	0.10	0.23	A	B
Street Stairs		EFFECTIVE								
34th St and 7th Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	5.4	4.4	280	528	594	594	0.47	0.89	B	C
P6AB	7.9	6.9	280	528	932	932	0.30	0.57	A	B
S6 (NE)	5.1	4.1	61	259	547	547	0.11	0.47	A	B
P8AB	12.3	11.3	61	259	1526	1526	0.04	0.17	A	A
Control Area		ONE- OR								
Booth - R142	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	624	628	1728	1728	0.36	0.36	B	B
High Entrance/Exit Turnstile	2	2	93	33	540	540	0.17	0.06	A	A
Service Gate	1	2	3	8	675	675	0.00	0.01	A	A
Street Stairs		EFFECTIVE								
34th St and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW)	5.6	4.6	290	151	621	621	0.47	0.24	B	A
P5AB	12.1	11.1	290	151	1499	1499	0.19	0.10	A	A
S5 (NW)	5.6	4.6	431	519	621	621	0.69	0.84	B	C
P7AB	12.2	11.2	431	519	1512	1512	0.29	0.34	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(vii-A) 42nd Street/Times Square Subway Station (N, R, S, Q, W, 1, 2, 3, 7 and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R143	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	791	907	3456	3456	0.23	0.26	B	B
Service Gate	3	2	355	12	2025	2025	0.18	0.01	A	A
Street Stairs		EFFECTIVE								
40th St and 7Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S2 (SE)	5.6	4.6	736	578	621	621	1.19	0.93	D	C
M1AB	9.7	8.7	736	578	1175	1175	0.63	0.49	B	B
O1AB (SW)	9.3	8.3	411	340	1121	1121	0.37	0.30	A	A
O2	10.6	9.6	411	340	1296	1296	0.32	0.26	A	A
Control Area		ONE- OR								
Booth - A21	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	766	1512	3456	3456	0.22	0.44	B	C
Service Gate	2	2	201	0	1350	1350	0.15	0.00	A	A
Street Stairs		EFFECTIVE								
40th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
11-A (Control Area Stairway)	5.1	4.1	439	581	554	554	0.79	1.05	C	D
11-B (Street Stairway)	8.3	7.3	439	581	986	986	0.45	0.59	A	B
12-A (Control Area Stairway)	6.5	5.5	340	499	743	743	0.46	0.67	B	B
12-B (Street Stairway)	6.0	5.0	340	499	675	675	0.50	0.74	B	C
13-A (Control Area Stairway)	6.0	5.0	Stairways closed for construction							
13-B (Street Stairway)	6.5	5.5	Stairways closed for construction							
14-A (Control Area Stairway)	6.5	5.5	186	432	743	743	0.25	0.58	A	B
14-B (Street Stairway)	6.5	5.5	186	432	743	743	0.25	0.58	A	B
Control Area (41st and Broadwa	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Revolving Exit	1	1	193	66	450	450	0.43	0.15	C	A
Street Stairs		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S7 (SW)	4.5	3.5	193	66	473	473	0.41	0.14	A	A
M6A			Stairway closed							
M6B	7.6	6.6	193	66	891	891	0.22	0.07	A	A
Control Area		ONE- OR								
Booth - R145	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstiles	5	2	280	195	2160	2160	0.13	0.09	A	A
Service Gate	1	2	43	33	675	675	0.06	0.05	A	A
Street Stairs		EFFECTIVE								
41st St and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M2ABC	13.75	12.75	322	228	1721	1721	0.19	0.13	A	A
S4	6.25	5.25	142	125	709	709	0.20	0.18	A	A
M6	6.25	5.25	180	103	709	709	0.25	0.15	A	A
S6	6.25	5.25	180	103	709	709	0.25	0.15	A	A
Control Area		ONE- OR								
Booth - R146	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	3	2	335	417	810	810	0.41	0.51	C	C
Street Stairs		EFFECTIVE								
41st St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (No Code)	7.7	6.7	335	417	905	905	0.37	0.46	A	B
Stairway (No Code)	7.0	6.0	335	417	810	810	0.41	0.51	A	B
Stairway (No Code)	7.0	6.0	335	417	810	810	0.41	0.51	A	B
Control Area		ONE- OR								
Booth - R148	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	781	761	2592	2592	0.30	0.29	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	5.8	4.8	781	761	648	648	1.21	1.17	D	D
P1	5.8	4.8	781	761	648	648	1.21	1.17	D	D
Control Area		ONE- OR								
Booth - R147	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	614	664	3024	3024	0.20	0.22	B	B
High Revolving Exit	2	1	107	117	810	810	0.13	0.14	A	A
Service Gate	1	2	0	5	675	675	0.00	0.01	A	A
(Street Level Control Area: SE corner of 42nd St and 7th Ave)										
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB	8.3	7.3	78	92	986	986	0.08	0.09	A	A
M7AB	8.3	7.3	78	92	986	986	0.08	0.09	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (E266-Up)	40.0		535	267	1170	1020	0.46	0.23	C	B
Escalator (E267-Down)	40.0		107	427	1170	1020	0.09	0.42	A	C
Control Area		ONE- OR								
Booth - R151	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	862	1097	3888	3888	0.22	0.28	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M9AB	13.8	12.8	183	538	1728	1728	0.11	0.31	A	A
Stairway (No Code)	8.3	7.3	81	136	986	986	0.08	0.14	A	A
Stairway (No Code)	8.3	7.3	81	136	986	986	0.08	0.14	A	A
O4ABC (NW)	14.7	13.7	680	559	1850	1850	0.37	0.30	A	A
O3ABC	14.7	13.7	680	559	1850	1850	0.37	0.30	A	A
M11ABC	14.2	13.2	680	559	1782	1782	0.38	0.31	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (No Code-Up)	40.0		59	241	1170	1020	0.05	0.21	A	B
Escalator (No Code-Down)	40.0		43	161	1170	1020	0.04	0.16	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(ix) Eight Avenue and 34th Street/Penn Station/Madison Square Garden (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - N67	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile [1]	13	2	1599	940	5616	5616	0.28	0.17	B	A
High Entrance/Exit Turnstile [2]	2	2	55	30	540	540	0.10	0.06	A	A
Service Gate	1	2	10	0	675	675	0.01	0.00	A	A
(With Hallways to Penn Station)										
Control Area		ONE- OR								
Booth - N68 [3]	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	383	286	1296	1296	0.30	0.22	B	B
High Entrance/Exit Turnstile	1	2	280	48	270	270	1.04	0.18	F	A
Service Gate	1	2	5	0	675	675	0.01	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 8th Ave (East) [3]	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	4.1	3.1	174	72	419	419	0.42	0.17	A	A
P10AB	9.1	8.1	174	72	1094	1094	0.16	0.07	A	A
S15 (NE/E)	4.1	3.1	115	74	419	419	0.27	0.18	A	A
S14 (NE/W)	4.1	3.1	379	151	419	419	0.91	0.36	C	A
P12AB	9.1	8.1	494	261	1094	1094	0.45	0.24	B	A
Control Area		ONE- OR								
Booth - N69	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	0	365	1296	1296	0.00	0.28	A	B
High Entrance/Exit Turnstile	1	2	467	50	270	270	1.73	0.19	F	A
Service Gate	1	2	86	0	675	675	0.13	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 8th Ave (West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S10 (SW)	4.2	3.2	86	96	432	432	0.20	0.22	A	A
P9	6.1	5.1	86	96	689	689	0.12	0.14	A	A
S13 (NW/E)	4.1	3.1	396	279	419	419	0.95	0.67	C	B
S12 (NW/W)	4.1	3.1	81	41	419	419	0.19	0.10	A	A
P11AB	9.1	8.1	477	320	1094	1094	0.44	0.29	A	A
Control Area		ONE- OR								
Booth - N70 [4]	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	262	481	2160	2160	0.12	0.22	A	B
Service Gate	1	2	3	12	675	675	0.00	0.02	A	A
Street Stairs		EFFECTIVE								
34th St and 8th Ave (East) [4]	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S7	7.0	6.0	153	188	810	810	0.19	0.23	A	A
P6AB	6.7	5.7	153	188	770	770	0.20	0.24	A	A
S9	11.5	10.5	115	292	1418	1418	0.08	0.21	A	A
P8AB	5.5	4.5	115	292	608	608	0.19	0.48	A	B
Control Area		ONE- OR								
Booth - N71 [3]	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	481	595	2160	2160	0.22	0.28	B	B
Service Gate	1	2	516	41	675	675	0.76	0.06	D	A
Street Stairs		EFFECTIVE								
34th St and 8th Ave (West) [3]	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S6 (SW)	5.7	4.7	308	402	635	635	0.49	0.63	B	B
P5AB	11.6	10.6	308	402	1431	1431	0.22	0.28	A	A
S8 (NW)	5.8	4.8	687	233	648	648	1.06	0.36	D	A
P7AB	8.8	7.8	687	233	1053	1053	0.65	0.22	B	A
Control Area		ONE- OR								
Booth - N72 [3]	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1485	1380	3888	3888	0.38	0.35	B	B
Service Gate	3	2	42	264	2025	2025	0.02	0.13	A	A
Street Stairs		EFFECTIVE								
33rd St and 8th Ave [3]	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (SE)	7.4	6.4	145	156	864	864	0.17	0.18	A	A
P1	7.4	6.4	145	156	864	864	0.17	0.18	A	A
S5 (NE)	4.0	3.0	126	133	405	405	0.31	0.33	A	A
P4	4.4	3.4	126	133	459	459	0.27	0.29	A	A
Control Area		ONE- OR								
Booth - N73	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	603	467	3888	3888	0.16	0.12	A	A
Service Gate	1	2	259	538	675	675	0.38	0.80	B	D
Street Stairs		EFFECTIVE								
33rd St and 8th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW/E) [5]	4.3	3.3	269	153	446	446	0.60	0.34	B	A
S2 (SW/W) [5]	4.3	3.3	416	132	446	446	0.93	0.30	C	A
P2AB	7.6	6.6	686	284	891	891	0.77	0.32	C	A
S4 (NW) [6]	4.4	3.4	383	122	459	459	0.83	0.27	C	A
P3 [7]	4.4	3.4	383	122	459	459	0.83	0.27	C	A
Internal Stairs		EFFECTIVE								
33rd St Passage	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
GLAB (To Penn Station)	16.5	15.5	1335	812	2093	2093	0.64	0.39	B	A
M5 (To Sub-Passage)	5.7	4.7	375	163	635	635	0.59	0.26	B	A
M6	5.7	4.7	375	163	635	635	0.59	0.26	B	A
M3AB (To Sub-Passage)	9.2	8.2	558	549	1107	1107	0.50	0.50	B	B
M4	9.2	8.2	558	549	1107	1107	0.50	0.50	B	B
To LIRR Platforms	7.2	6.2	512	436	837	837	0.61	0.52	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - N63	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	686	487	3024	3024	0.23	0.16	B	A
High Entrance/Exit Turnstile	2	2	122	101	540	540	0.23	0.19	B	A
High Exit Turnstile	1	1	30	0	450	450	0.07	0.00	A	A
Service Gate	1	2	0	66	675	675	0.00	0.10	A	A
Control Area		ONE- OR								
Booth - N63A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	1949	1350	4320	4320	0.45	0.31	C	B
Service Gate	1	2	228	213	675	675	0.34	0.32	B	B
Street Stairs		ONE- OR								
40th St and 8th Ave	WIDTH (ft)	TWO-WAY	IN/OUT	IN/OUT						
M1AB	9.6	3.7	143	108	500	500	0.29	0.22	A	A
O8	8.2	8.8	144	108	1188	1188	0.12	0.09	A	A
S2 (SE)	4.7	3.7	573	416	500	500	1.15	0.83	D	C
M2AB	9.8	8.8	573	416	1188	1188	0.48	0.35	B	A
S4 (NE)	4.7	3.7	162	117	500	500	0.32	0.23	A	A
M4AB	9.8	8.8	162	117	1188	1188	0.14	0.10	A	A
S3(NW)	4.7	3.7	330	371	500	500	0.66	0.74	B	C
M3AB	9.8	8.8	330	371	1188	1188	0.28	0.31	A	A
Control Area		ONE- OR								
Booth - N62	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1152	1279	3456	3456	0.33	0.37	B	B
Service Gate	1	2	10	193	675	675	0.01	0.29	A	B
(Hallway to PABT Between 41st and 42nd St.)										
Control Area		ONE- OR								
Booth - N62A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	153	249	2592	2592	0.06	0.10	A	A
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O11AB (NE)	9.6	8.6	153	249	1161	1161	0.13	0.21	A	A
O10AB	9.6	8.6	153	249	1161	1161	0.13	0.21	A	A
O9AB	9.5	8.5	153	249	1148	1148	0.13	0.22	A	A
Stairway (No Code)	10.0	8.5								
Stairway (No Code)	10.0	8.5								
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40				1170					
Escalator (No Code)	40				1170					
Control Area (42nd St and 8 Ave-West)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	2	224	228	540	540	0.41	0.42	C	C
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (NW)	5.9	4.9	224	223	662	662	0.34	0.34	A	A
M9AB	9.6	8.6	224	223	1161	1161	0.19	0.19	A	A
Control Area		ONE- OR								
Booth - N60A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	2	Plywood Barricade							
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S10	5.3	4.3	Plywood Barricade							
M11AB	7.9	6.9	Plywood Barricade							
Control Area		ONE- OR								
Booth - N60	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	548	568	3024	3024	0.18	0.19	A	A
Service Gate	1	2	25	41	675	675	0.04	0.06	A	A
Street Stairs		EFFECTIVE								
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S12 (SE)	4.6	3.6	340	320	486	486	0.70	0.66	B	B
M13AB	9.9	8.9	340	320	1202	1202	0.28	0.27	A	A
S11 (SW)	4.8	3.8	127	142	513	513	0.25	0.28	A	A
M12AB	8.5	7.5	127	142	1013	1013	0.13	0.14	A	A
S13 (NW)	4.6	3.6	107	147	486	486	0.22	0.30	A	A
M14AB	8.5	7.5	107	147	1013	1013	0.11	0.15	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	102	315	648	648	0.16	0.49	A	B
Stairway 2 (No Code)	5.8	4.8	67	106	648	648	0.10	0.16	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		326	132	1170	1170	0.28	0.11	B	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	106	117	648	648	0.16	0.18	A	A
Stairway 2 (No Code)	5.8	4.8	33	91	648	648	0.05	0.14	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		271	274	1170	1170	0.23	0.23	B	B
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	510	1495	594	594	0.86	2.52	C	F
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		85	790	1170	1170	0.07	0.68	A	D
Escalator (34B)	40		995	950	1170	1170	0.85	0.81	E	E
Escalator (34C)	40		1396	564	1170	1170	1.19	0.48	F	C

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Divisior
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broad\	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	855	773	999	999	0.86	0.77	C	C
PL3	8.4	7.4	156	170	999	999	0.16	0.17	A	A
PL4	8.4	7.4	157	309	999	999	0.16	0.31	A	A
PL5	8.4	7.4	154	120	999	999	0.15	0.12	A	A
PL6AB (Replaced by E	8.4	7.4	631	522	999	999	0.63	0.52	B	B
PL7AB	8.4	7.4	397	635	999	999	0.40	0.64	A	B
PL8AB	8.4	7.4	912	928	999	999	0.91	0.93	C	C
Lower Mezzanine to Platform Escalators										
42nd Street and Broad\	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	487	238	1170	1170	0.42	0.20	C	B
Escalator (E217-Down)	40.0	90	181	311	1170	1170	0.15	0.27	A	B
Escalator (E21B-Up)	24.0	90	267	89	600	600	0.45	0.15	C	A
Passageway to/from Lower Mezzanine/		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	1703	1955	2045	2045	0.83	0.96	C	C
7th Avenue Platform Starirs (Northbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML6/ML8	7.5	6.5	807	737	878	878	0.92	0.84	C	C
ML10/ML12	7.5	6.5	765	389	878	878	0.87	0.44	C	A
P4/P6	5.3	4.3	471	644	581	581	0.81	1.11	C	D
P8/P10	5.3	4.3	258	219	581	581	0.44	0.38	A	A
7th Avenue Platform Starirs (Southbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML5/ML7	7.5	6.5	1280	994	878	878	1.46	1.13	E	D
ML9/ML11	7.5	6.5	488	328	878	878	0.56	0.37	B	A
P3/P5	5.3	4.3	718	562	581	581	1.24	0.97	D	C
P7/P9	5.3	4.3	476	272	581	581	0.82	0.47	C	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	659	279	1256	1256	0.52	0.22	B	A
P3	10.3	9.3	246	181	1256	1256	0.20	0.14	A	A
P4	9.7	8.7	57	25	1175	1175	0.05	0.02	A	A
P5	10.1	9.1	121	81	1229	1229	0.10	0.07	A	A
P6	10.0	9.0	147	55	1215	1215	0.12	0.05	A	A
P7	8.6	7.6	605	655	1026	1026	0.59	0.64	B	B
M2AB	12.4	11.4	977	672	1539	1539	0.63	0.44	B	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	1097	999	4286	4286	0.26	0.23	A	A
Sixth Avenue Line Platform		EFFECTIVE								
Northbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P8 6.5	6.0	5.0	211	131	675	675	0.31	0.19	A	A
P10 6.5	6.0	5.0	374	342	675	675	0.55	0.51	B	B
P12 6.5	6.0	5.0	458	295	675	675	0.68	0.44	B	A
Southbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P7 6.25	6.0	5.0	143	96	675	675	0.21	0.14	A	A
P9 6.25	6.0	5.0	452	463	675	675	0.67	0.69	B	B
P11 6.3	6.0	5.0	324	283	675	675	0.48	0.42	B	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Weekday AM/PM)
(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	722	563	851	851	0.85	0.66	C	B
PL3	7.3	6.3	675	688	851	851	0.79	0.81	C	C
PL1AB	15.0	14.0	1397	1251	1890	1890	0.74	0.66	C	B
PL5	7.3	6.3	355	230	851	851	0.42	0.27	A	A
PL6	7.3	6.3	1012	849	851	851	1.19	1.00	D	C
PL4AB	15.0	14.0	1367	1079	1890	1890	0.72	0.57	C	B
PL9AB	15.0	14.0	1417	1117	1890	1890	0.75	0.59	C	B
ML1-ML5	4.0	3.0	131	496	405	405	0.32	1.22	A	D
No. 7 Line Platform to Lower Mezzanine										
Escalators	WIDTH (in)		DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40		605	65	1170	1170	0.52	0.06	C	A
Escalator (E204-Up/Down)	40		681	556	1170	1170	0.58	0.48	C	C
Escalator (E207-Up)	40		753	358	1170	1170	0.64	0.31	D	B
Escalator (E209-Up/Down)	40		782	489	1170	1170	0.67	0.42	D	C
Escalator (E205-Up)	40		792	323	1170	1170	0.68	0.28	D	B
Escalator (E206-Up/Down)	40		792	504	1170	1170	0.68	0.43	D	C
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (ft)								
Passageway	11.5	9.5	1456	1635	1924	1924	0.76	0.85	C	C
Lexington Avenue Line Platform (Southbound I		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P12	10.0	8.5	1718	642	1148	1148	1.50	0.56	E	B
P14	10.0	8.5	2417	2168	1148	1148	2.11	1.89	F	F
P18	10.0	8.5	1052	631	1148	1148	0.92	0.55	C	B
P20	10.0	8.5	780	421	1148	1148	0.68	0.37	B	A
P22	6.5	5.5	1225	678	743	743	1.65	0.91	E	C
U1	6.2	5.2	602	324	698	698	0.86	0.46	C	B
U3	6.2	5.2	602	324	698	698	0.86	0.46	C	B
U5	6.1	5.1	683	248	686	686	1.00	0.36	C	A
U7	5.8	4.8	683	248	653	653	1.05	0.38	D	A
Lexington Avenue Line Platform (Northbound F		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P23	7.0	6.0	1002	984	810	810	1.24	1.21	D	D
P21	10.0	8.5	853	850	1148	1148	0.74	0.74	C	C
P19	10.0	8.5	581	713	1148	1148	0.51	0.62	B	B
P17	10.0	8.5	565	903	1148	1148	0.49	0.79	B	C
P15	10.0	8.5	477	820	1148	1148	0.42	0.71	A	C
P13	10.0	8.5	485	1237	1148	1148	0.42	1.08	A	D
U2	5.9	4.9	231	392	664	664	0.35	0.59	A	B
U4	5.9	4.9	231	392	664	664	0.35	0.59	A	B
U6	5.9	4.9	333	619	664	664	0.50	0.93	B	C
U8	5.9	4.9	333	619	664	664	0.50	0.93	B	C
Connection to Metro North (Control Area 238)		EFFECTIVE								
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB/M7AB	9.5	8.5	1408	1225	1148	1148	1.23	1.07	D	D
Escalator (E255-Up)	40		778	779	1170	1170	0.66	0.67	D	D
Escalator (E-256-Up/Down)	40		778	1,045	1170	1170	0.66	0.89	D	E
Connection to Metro North (Control Area 240)		EFFECTIVE								
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M8ABC/M10ABC	19.0	18.0	2355	1796	2430	2430	0.97	0.74	C	C

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Special Events)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadw	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	318	264	999	999	0.32	0.26	A	A
PL3	8.4	7.4	165	235	999	999	0.17	0.24	A	A
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	166	116	999	999	0.17	0.12	A	A
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	358	170	999	999	0.36	0.17	A	A
PL8AB	8.4	7.4	188	121	999	999	0.19	0.12	A	A
Lower Mezzanine to Platform Escalators										
42nd Street and Broadw	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40	90	73	61	1170	1170	0.06	0.05	A	A
Escalator (E217-Down)	40	90	198	167	1170	1170	0.17	0.14	A	A
Escalator (E21B-Up)	24	90	41	44	600	600	0.07	0.07	A	A
Passageway to Lower Mezzanine		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	781	910	2045	2045	0.38	0.44	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
ML5/ML7 The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Special Events)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	40	21	1256	1256	0.03	0.02	A	A
P3	10.3	9.3	41	16	1256	1256	0.03	0.01	A	A
P4	9.7	8.7	3	8	1175	1175	0.00	0.01	A	A
P5	10.1	9.1	7	10	1229	1229	0.01	0.01	A	A
P6	10.0	9.0	11	23	1215	1215	0.01	0.02	A	A
P7	8.6	7.6	172	75	1026	1026	0.17	0.07	A	A
M2AB	12.4	11.4	168	106	1539	1539	0.11	0.07	A	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	246	178	4286	4286	0.06	0.04	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Condition (Special Events)
(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairwways	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	206	168	851	851	0.24	0.20	A	A
PL3	7.3	6.3	236	170	851	851	0.28	0.20	A	A
PL1AB	15.0	14.0	442	338	1890	1890	0.23	0.18	A	A
PL5	7.3	6.3	57	21	851	851	0.07	0.02	A	A
PL6	7.3	6.3	175	126	851	851	0.21	0.15	A	A
PL4AB	15.0	14.0	232	147	1890	1890	0.12	0.08	A	A
PL9AB	15.0	14.0	135	70	1890	1890	0.07	0.04	A	A
ML1	4.0	3.0	8	2	405	405	0.02	0.00	A	A
Escalators	WIDTH (ft)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40	90	12	38	1170	1170	0.01	0.03	A	A
Escalator (E204-Up/Down)	40	90	115	30	1170	1170	0.10	0.03	A	A
Escalator (E207-Up)	40	90	78	78	1170	1170	0.07	0.07	A	A
Escalator (E209-Up/Down)	40	90	118	39	1170	1170	0.10	0.03	A	A
Escalator (E205-Up)	40	90	46	122	1170	1170	0.04	0.10	A	A
Escalator (E206-Up/Down)	40	90	46	29	1170	1170	0.04	0.02	A	A
Passageway to Lexington Av	WIDTH (ft)	EFFECTIVE WIDTH (ft)								
Passageway	11.5	9.5	356	365	1924	1924	0.19	0.19	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.1
2003 Existing Conditions (Special Events)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	205	127	648	648	0.32	0.20	A	A
Stairway 2 (No Code)	5.8	4.8	48	28	648	648	0.07	0.04	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		0	140	1170	1170	0.00	0.12	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	92	92	648	648	0.14	0.14	A	A
Stairway 2 (No Code)	5.8	4.8	104	98	648	648	0.16	0.15	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		174	216	1170	1170	0.15	0.18	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	87	18	594	594	0.15	0.03	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		299	320	1170	1170	0.26	0.27	B	B
Escalator (34B)	40		446	311	1170	1170	0.38	0.27	B	B
Escalator (34C)	40		217	272	1170	1170	0.19	0.23	A	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend:
SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Divisior
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2

2010 Future without the Proposed Action (Weekday AM/PM)

(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - A25	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	990	879	3024	3024	0.33	0.29	B	B
Service Gate	1	2	101	187	675	675	0.15	0.28	A	B
High Entrance/Exit Turnstile	3	2	432	457	810	810	0.53	0.56	C	C
Street Stairs		EFFECTIVE								
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NE)	5.4	4.4	105	373	594	594	0.18	0.63	A	B
M2	5.7	4.7	105	373	635	635	0.17	0.59	A	B
S2AB (NW)	7.2	6.2	1154	543	837	837	1.38	0.65	E	B
M1AB	7.2	6.2	1154	543	837	837	1.38	0.65	E	B
H&M 300 (6th Ave)	4.9	3.9	329	412	527	527	0.62	0.78	B	C
H&M 300 (Mezz to Stairs)	8.1	7.1	329	412	959	959	0.34	0.43	A	A
H&M 302ABC (Mezz to Concourse)	23.7	22.7	630	473	3065	3065	0.21	0.15	A	A
Control Area		ONE- OR								
Booth - N506	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	14	2	1298	1965	6048	6048	0.21	0.32	B	B
Service Gate	1	2	210	173	675	675	0.31	0.26	B	B
Street Stairs		EFFECTIVE								
34th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5AB (SW)	9.0	8.0	1585	1205	1080	1080	1.47	1.12	E	D
M5AB	9.0	8.0	1585	1205	1080	1080	1.47	1.12	E	D
S7AB (NW)	8.3	7.3	1217	1318	986	986	1.23	1.34	D	E
M7AB	8.6	7.6	1217	1318	1026	1026	1.19	1.28	D	D
Control Area		ONE- OR								
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	11	2	2066	2178	4752	4752	0.43	0.46	C	C
Service Gate	1	2	43	10	675	675	0.06	0.01	A	A
Street Stair		EFFECTIVE								
32nd to 33rd St. and 6th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
H&M 307	5.6	4.6	1133	225	621	621	1.82	0.36	F	A
Escalators										
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
E221	24.0	90.0	147	838	600	600	0.25	1.40	B	F
E222	40.0	90.0	985	953	1170	1170	0.84	0.81	E	E
Concourse to N507		EFFECTIVE								
Internal Stairs	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML7AB	11.6	10.6	567	568	1431	1431	0.40	0.40	A	A
ML1AB	8.6	7.6	725	546	1026	1026	0.71	0.53	C	B
Escalators										
33rd and Broadway	WIDTH (in)	SPEED (fpm)	IN/OUT	IN/OUT						
E223	24.0	90.0	712	696	600	600	1.19	1.16	F	F
E224	24.0	90.0	84	459	600	600	0.14	0.77	A	D
Control Area		ONE- OR								
Booth - A22	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	569	845	1296	1296	0.44	0.65	C	D
Service Gate	1	2	0	5	675	675	0.00	0.01	A	A
High Entrance/Exit Turnstile	2	2	283	264	540	540	0.52	0.49	C	C
Hign Exit Turnstile	2	1	22	40	900	450	0.02	0.09	A	A
Street Stairs		EFFECTIVE								
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	6.0	5.0	625	794	675	675	0.93	1.18	C	D
M4AB	11.5	10.5	625	794	1418	1418	0.44	0.56	A	B
S8 (NE)	6.0	5.0	253	383	675	675	0.37	0.57	A	B
M8AB	11.5	10.5	253	383	1418	1418	0.18	0.27	A	A
Control Area		ONE- OR								
Booth - N505	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	1657	1315	4320	4320	0.38	0.30	B	B
High Entrance/Exit Turnstile	2	2	464	424	540	540	0.86	0.79	E	D
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	4.8	3.8	294	189	513	513	0.57	0.37	B	A
M9	4.8	3.8	294	189	513	513	0.57	0.37	B	A
M10AB	9.6	8.6	294	189	1161	1161	0.25	0.16	A	A
S8 (NE)	4.8	3.8	720	653	513	513	1.40	1.27	E	D
M8AB	9.6	8.6	720	653	1161	1161	0.62	0.56	B	B
S7 (NW)	5.8	4.8	431	168	648	648	0.67	0.26	B	A
M7AB	9.7	8.7	431	168	1175	1175	0.37	0.14	A	A
Street Stairs		EFFECTIVE								
35th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SW)	5.1	4.1	30	123	554	554	0.05	0.22	A	A
M5AB	7.6	6.6	30	123	891	891	0.03	0.14	A	A
S6 (NW)	4.9	3.9	645	608	527	527	1.23	1.15	D	D
M6AB	7.9	6.9	645	608	932	932	0.69	0.65	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Weekday AM/PM)
(iii) Sixth Avenue at 42nd Street Subway Station (B, D, F, and V)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - 504	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1701	1336	3456	3456	0.49	0.39	C	B
Service Gate	1	2	5	0	675	675	0.01	0.00	A	A
Street Stairs		EFFECTIVE								
40th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	5.0	4.0	716	429	540	540	1.33	0.79	D	C
M6	8.6	7.6	716	429	1026	1026	0.70	0.42	B	A
S6 (NE)	4.7	3.7	75	418	500	500	0.15	0.84	A	C
M7	8.3	7.3	75	418	986	986	0.08	0.42	A	A
M8	8.3	7.3	75	418	986	986	0.08	0.42	A	A
S4 (SW)	4.7	3.7	682	431	500	500	1.37	0.86	E	C
M4	4.7	3.7	682	431	500	500	1.37	0.86	E	C
M5	8.4	7.4	682	431	999	999	0.68	0.43	B	A
O6 (NW)	5.8	4.8	235	58	648	648	0.36	0.09	A	A
O7	5.7	4.7	235	58	635	635	0.37	0.09	A	A
M9	5.7	4.7	235	58	635	635	0.37	0.09	A	A
M10	5.7	4.7	235	58	635	635	0.37	0.09	A	A
Control Area		ONE- OR								
Booth - N503	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	899	920	2592	2592	0.35	0.35	B	B
Service Gate	1	2	37	0	675	675	0.05	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (SE)	5.9	4.9	694	515	662	662	1.05	0.78	D	C
M12	7.0	6.0	694	515	810	810	0.86	0.64	C	B
M13	7.0	6.0	694	515	810	810	0.86	0.64	C	B
No Code (Bet 6th&7th)	8.0	7.0	242	404	945	945	0.26	0.43	A	A
O1ABC	19.7	18.7	242	404	2525	2525	0.10	0.16	A	A
M11ABCD	18.2	17.2	242	404	2322	2322	0.10	0.17	A	A
Control Area		ONE- OR								
Booth - N502	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1403	1479	2592	2592	0.54	0.57	C	C
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11AB (NE)	9.6	8.6	662	620	1161	1161	0.57	0.53	B	B
M20AB	10.0	9.0	662	620	1215	1215	0.54	0.51	B	B
M19AB	10.0	9.0	662	620	1215	1215	0.54	0.51	B	B
M18AB	10.0	9.0	662	620	1215	1215	0.54	0.51	B	B
S9 (NW)	5.6	4.6	431	565	621	621	0.69	0.91	B	C
M14	7.7	6.7	431	565	905	905	0.48	0.62	B	B
M15AB	13.2	12.2	431	565	1647	1647	0.26	0.34	A	A
S10 (Bet 42nd&43rd)	5.7	4.7	310	300	635	635	0.49	0.47	B	B
M17	6.9	5.9	310	300	797	797	0.39	0.38	A	A
M16	6.9	5.9	310	300	797	797	0.39	0.38	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future Condition without the Proposed Action (Weekday AM/PM)
(vi) Seventh Avenue at 34th Street Subway Station (1, 2, 3, and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R137	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	311	386	1296	1296	0.24	0.30	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
32nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O15AB (NE)	10.3	9.3	311	386	1256	1256	0.25	0.31	A	A
O14AB	10.3	9.3	311	386	1256	1256	0.25	0.31	A	A
Control Area		ONE- OR								
Booth - R135	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1262	1714	2592	2592	0.49	0.66	C	D
Service Gate	1	2	106	53	675	675	0.16	0.08	A	A
(32nd Street Sub passage to Penn Station)										
Control Area		ONE- OR								
Booth - R139	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	457	511	1728	1728	0.26	0.30	B	B
High Entrance/Exit Turnstile	1	2	42	159	270	270	0.16	0.59	A	C
Street Stairs		EFFECTIVE								
33rd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O17AB (SE)	10.0	9.0	1120	347	1215	1215	0.92	0.29	C	A
P3AB	10.7	9.7	1120	347	1310	1310	0.86	0.26	C	A
O19 (NE/E)	5.8	4.8	137	194	648	648	0.21	0.30	A	A
O18	5.8	4.8	137	194	648	648	0.21	0.30	A	A
S2 (NE/W)	5.3	4.3	206	346	581	581	0.35	0.60	A	B
P4	7.0	6.0	206	346	810	810	0.25	0.43	A	A
Control Area		ONE- OR								
Booth - R138	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile [1]	12	2	2423	1594	5184	5184	0.47	0.31	C	B
Service Gate	1	2	709	888	675	675	1.05	1.32	F	F
(33rd Street Sub passage to Penn Station and Control Area R139)										
Sub passage Stairs		EFFECTIVE								
33rd St Sub passage	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML2AB	13.0	12.0	993	384	1620	1620	0.61	0.24	B	A
ML4AB	13.0	12.0	993	384	1620	1620	0.61	0.24	B	A
		ONE- OR								
Control Area	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	1	2	145	133	270	270	0.54	0.49	C	C
Street Stairs		EFFECTIVE								
33rd and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NW)	4.4	3.4	145	133	459	459	0.32	0.29	A	A
P2	4.8	3.8	145	133	513	513	0.28	0.26	A	A
P1	8.5	7.5	145	133	1013	1013	0.14	0.13	A	A
Control Area		ONE- OR								
Booth - R141	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	358	822	3456	3456	0.10	0.24	A	B
Street Stairs		EFFECTIVE								
34th St and 7th Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	10.0	9.0	293	550	1215	1215	0.24	0.45	A	B
P6AB	7.9	6.9	293	550	932	932	0.31	0.59	A	B
S6 (NE)	5.1	4.1	66	272	547	547	0.12	0.50	A	B
P8AB	12.3	11.3	66	272	1526	1526	0.04	0.18	A	A
Control Area		ONE- OR								
Booth - R142 [3]	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	656	663	1728	1728	0.38	0.38	B	B
High Entrance/Exit Turnstile	2	2	97	34	540	540	0.18	0.06	A	A
Service Gate	1	2	3	8	675	675	0.00	0.01	A	A
Street Stairs		EFFECTIVE								
34th St and 7th Ave (West) [3]	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW)	10.0	9.0	305	164	1215	1215	0.25	0.13	A	A
P5AB	12.1	11.1	305	164	1499	1499	0.20	0.11	A	A
S5 (NW)	5.6	4.6	451	544	621	621	0.73	0.88	C	C
P7AB	12.2	11.2	451	544	1512	1512	0.30	0.36	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual

Appendix S.4.4.2
2010 Future Condition without the Proposed Action (Weekday AM/PM)
(vii-A) 42nd Street/Times Square Subway Station (N, R, S, Q, W, 1, 2, 3, 7 and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R143 (1)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	848	985	3456	3456	0.25	0.29	B	B
Service Gate	3	2	376	12	2025	2025	0.19	0.01	A	A
Street Stairs		EFFECTIVE								
40th St and 7Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S2 (SE)	5.6	4.6	762	598	621	621	1.23	0.96	D	C
M1AB	9.7	8.7	762	598	1175	1175	0.65	0.51	B	B
O1AB (SW)	9.3	8.3	446	377	1121	1121	0.40	0.34	A	A
O2AB	10.6	9.6	446	377	1296	1296	0.34	0.29	A	A
Control Area		ONE- OR								
Booth - A21	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	824	1612	3456	3456	0.24	0.47	B	C
Service Gate	2	2	215	0	1350	1350	0.16	0.00	A	A
Street Stairs		EFFECTIVE								
40th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
11-A (Control Area Stairway)	5.1	4.1	227	301	554	554	0.41	0.54	A	B
11-B (Street Stairway)	8.3	7.3	227	301	986	986	0.23	0.31	A	A
12-A (Control Area Stairway)	6.5	5.5	362	529	743	743	0.49	0.71	B	C
12-B (Street Stairway)	6.0	5.0	362	529	675	675	0.54	0.78	B	C
13-A (Control Area Stairway)	6.0	5.0	227	301	675	675	0.34	0.45	A	A
13-B (Street Stairway)	6.5	5.5	227	301	743	743	0.31	0.41	A	A
14-A (Control Area Stairway)	6.5	5.5	202	459	743	743	0.27	0.62	A	B
14-B (Street Stairway)	6.5	5.5	202	459	743	743	0.27	0.62	A	B
Control Area (41st and Broadwa	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Revolving Exit	1	1	200	68	450	450	0.44	0.15	C	A
Street Stairs		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S7 (SW)	4.5	3.5	100	34	473	473	0.21	0.07	A	A
M6A	7.6	6.6	100	34	891	891	0.11	0.04	A	A
M6B	7.6	6.6	200	68	891	891	0.22	0.08	A	A
Control Area		ONE- OR								
Booth - R145 (2)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstiles	5	2	290	202	2160	2160	0.13	0.09	A	A
Service Gate	1	2	44	34	675	675	0.07	0.05	A	A
Street Stairs		EFFECTIVE								
41st St and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M2ABC	13.75	12.75	333	236	1721	1721	0.19	0.14	A	A
S4	6.25	5.25	147	129	709	709	0.21	0.18	A	A
M6	6.25	5.25	186	107	709	709	0.26	0.15	A	A
S6	6.25	5.25	186	107	709	709	0.26	0.15	A	A
Control Area		ONE- OR								
Booth - R146 (3)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	3	2	561	685	810	810	0.69	0.85	D	E
Street Stairs		EFFECTIVE								
41st St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (No Code) (3)	7.7	6.7	561	685	905	905	0.62	0.76	B	C
Stairway (No Code) (3)	7.0	6.0	561	685	810	810	0.69	0.85	B	C
Stairway (No Code) (3)	7.0	6.0	347	432	810	810	0.69	0.85	B	C
Control Area		ONE- OR								
Booth - R148	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	809	788	2592	2592	0.31	0.30	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	5.8	4.8	809	788	648	648	1.25	1.22	D	D
P1	5.8	4.8	809	788	648	648	1.25	1.22	D	D
Control Area		ONE- OR								
Booth - R147	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	636	688	3024	3024	0.21	0.23	B	B
High Revolving Exit	2	1	111	121	810	810	0.14	0.15	A	A
Service Gate	1	2	0	5	675	675	0.00	0.01	A	A
(Street Level Control Area: SE corner of 42nd St and 7th Ave)										
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB	8.3	7.3	81	96	986	986	0.08	0.10	A	A
M7AB	8.3	7.3	81	96	986	986	0.08	0.10	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (E266-Up)	40.0		554	276	1170	1020	0.47	0.24	C	B
Escalator (E267-Down)	40.0		111	442	1170	1020	0.09	0.43	A	C
Control Area		ONE- OR								
Booth - R151	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1036	1304	3888	3888	0.27	0.34	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M9AB	13.8	12.8	262	642	1728	1728	0.15	0.37	A	A
Stairway (No Code)	8.3	7.3	120	183	986	986	0.12	0.19	A	A
Stairway (No Code)	8.3	7.3	120	183	986	986	0.12	0.19	A	A
O4ABC (NW)	14.7	13.7	777	664	1850	1850	0.42	0.36	A	A
O3ABC	14.7	13.7	777	664	1850	1850	0.42	0.36	A	A
M11ABC	14.2	13.2	777	664	1782	1782	0.44	0.37	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (No Code-Up)	40.0		89	259	1170	1020	0.08	0.22	A	B
Escalator (No Code-Down)	40.0		53	200	1170	1020	0.05	0.20	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Weekday AM/PM)
(ix) Eight Avenue and 34th Street/Penn Station/Madison Square Garden (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area Booth - N67	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	13	2	1686	1008	5616	5616	0.30	0.18	B	A
High Entrance/Exit Turnstile	2	2	58	32	540	540	0.11	0.06	A	A
Service Gate	1	2	10	0	675	675	0.01	0.00	A	A
(With Hallways to Penn Station)										
Control Area Booth - N68	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	400	299	1296	1296	0.31	0.23	B	B
High Entrance/Exit Turnstile	1	2	291	52	270	270	1.08	0.19	F	A
Service Gate	1	2	5	0	675	675	0.01	0.00	A	A
Street Stairs 35th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	4.1	3.1	182	76	419	419	0.43	0.18	A	A
P10AB	9.1	8.1	182	76	1094	1094	0.17	0.07	A	A
S15 (NE/E)	4.1	3.1	119	77	419	419	0.28	0.18	A	A
S14 (NE/W)	4.1	3.1	394	158	419	419	0.94	0.38	C	A
P12AB	9.1	8.1	514	273	1094	1094	0.47	0.25	B	A
Control Area Booth - N69	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	1	382	1296	1296	0.00	0.29	A	B
High Entrance/Exit Turnstile	1	2	485	53	270	270	1.80	0.20	F	A
Service Gate	1	2	90	0	675	675	0.13	0.00	A	A
Street Stairs 35th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S10 (SW)	4.2	3.2	90	101	432	432	0.21	0.23	A	A
P9	6.1	5.1	90	101	689	689	0.13	0.15	A	A
S13 (NW/E)	4.1	3.1	411	290	419	419	0.98	0.69	C	B
S12 (NW/W)	4.1	3.1	85	44	419	419	0.20	0.11	A	A
P11AB	9.1	8.1	497	335	1094	1094	0.45	0.31	B	A
Control Area Booth - N70	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	295	526	2160	2160	0.14	0.24	A	B
Service Gate	1	2	3	13	675	675	0.00	0.02	A	A
Street Stairs 34th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S7	7.0	6.0	179	219	810	810	0.22	0.27	A	A
P6AB	6.7	5.7	179	219	770	770	0.23	0.28	A	A
S9	11.5	10.5	123	308	1418	1418	0.09	0.22	A	A
P8AB	5.5	4.5	123	308	608	608	0.20	0.51	A	B
Control Area Booth - N71	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	509	630	2160	2160	0.24	0.29	B	B
Service Gate	1	2	536	43	675	675	0.79	0.06	D	A
Street Stairs 34th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S6 (SW)	5.7	4.7	325	423	635	635	0.51	0.67	B	B
P5AB	11.6	10.6	325	423	1431	1431	0.23	0.30	A	A
S8 (NW)	5.8	4.8	719	247	648	648	1.11	0.38	D	A
P7AB	8.8	7.8	719	247	1053	1053	0.68	0.23	B	A
Control Area Booth - N72	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1640	1463	3888	3888	0.42	0.38	C	B
Service Gate	3	2	52	276	2025	2025	0.03	0.14	A	A
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (SE)	7.4	6.4	174	189	864	864	0.20	0.22	A	A
P1	7.4	6.4	174	189	864	864	0.20	0.22	A	A
S5 (NE)	4.0	3.0	134	142	405	405	0.33	0.35	A	A
P4	4.4	3.4	134	142	459	459	0.29	0.31	A	A
Control Area Booth - N73	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	628	490	3888	3888	0.16	0.13	A	A
Service Gate	1	2	271	559	675	675	0.40	0.83	C	E
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW/E)	12.0	11.0	279	159	1485	1485	0.19	0.11	A	A
S2 (SW/W)	12.0	11.0	442	149	1485	1485	0.30	0.10	A	A
P2AB	12.0	11.0	723	308	1485	1485	0.49	0.21	B	A
S4 (NW)	4.4	3.4	418	151	459	459	0.91	0.33	C	A
P3	4.4	3.4	418	151	459	459	0.91	0.33	C	A
Internal Stairs 33rd St Passage	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
GLAB (To Penn Station)	16.5	15.5	1387	845	2093	2093	0.66	0.40	B	A
M3AB (To Sub-Passage)	9.2	8.2	579	571	1107	1107	0.52	0.52	B	B
M4	9.2	8.2	579	571	1107	1107	0.52	0.52	B	B
To LIRR Platforms	7.2	6.2	531	452	837	837	0.63	0.54	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - N63	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	731	530	3024	3024	0.24	0.18	B	A
High Entrance/Exit Turnstile	2	2	134	114	540	540	0.25	0.21	B	B
High Exit Turnstile (1)	1	1	33	0	450	450	0.07	0.00	A	A
Service Gate	1	2	0	70	675	675	0.00	0.10	A	A
Control Area		ONE- OR								
Booth - N63A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	2044	1434	4320	4320	0.47	0.33	C	B
Service Gate	1	2	241	222	675	675	0.36	0.33	B	B
Street Stairs		ONE- OR								
40th St and 8th Ave	WIDTH (ft)	TWO-WAY	IN/OUT	IN/OUT						
M1AB (2)	9.6	3.7	153	117	500	500	0.31	0.23	A	A
O8 (2)	8.2	8.8	154	117	1188	1188	0.13	0.10	A	A
S2 (SE)	4.7	3.7	594	433	500	500	1.19	0.87	D	C
M2AB	9.8	8.8	594	433	1188	1188	0.50	0.36	B	A
S4 (NE)	4.7	3.7	168	121	500	500	0.34	0.24	A	A
M4AB	9.8	8.8	168	121	1188	1188	0.14	0.10	A	A
S3(NW)	4.7	3.7	393	446	500	500	0.79	0.89	C	C
M3AB	9.8	8.8	393	446	1188	1188	0.33	0.38	A	A
Control Area		ONE- OR								
Booth - N62	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1195	1329	3456	3456	0.35	0.38	B	B
Service Gate	1	2	10	200	675	675	0.01	0.30	A	B
(Hallway to PABT Between 41st and 42nd St.)										
Control Area		ONE- OR								
Booth - N62A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	158	259	3024	3024	0.05	0.09	A	A
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O11AB (NE)	9.6	8.6	59	92	1161	1161	0.05	0.08	A	A
O10AB	9.6	8.6	158	259	1161	1161	0.14	0.22	A	A
O9AB	9.5	8.5	59	92	1148	1148	0.05	0.08	A	A
Stairway (No Code)	10.0	9.0	59	91	2565	2565	0.05	0.07	A	A
Stairway (No Code)	10.0	9.0	59	91	3915	3915	0.05	0.07	A	A
Street Stairs										
42nd St and 8Ave (East)	WIDTH (in)		DOWN/UP	DOWN/UP						
Escalator (No Code)	40.0		38	57	1170	1020	0.03	0.05	A	A
Escalator (No Code)	40.0		38	57	1170	1020	0.03	0.05	A	A
Control Area (42nd St and 8 Ave-West)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	9	542	602	540	540	1.00	1.11	F	F
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (NW)	5.9	4.9	542	596	662	662	0.82	0.90	C	C
M9AB	9.6	8.6	542	596	1161	1161	0.47	0.51	B	B
Control Area		ONE- OR								
Booth - N60A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	2	Plywood Barricade							
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S10	5.3	4.3	Plywood Barricade							
M11AB	7.9	6.9	Plywood Barricade							
Control Area		ONE- OR								
Booth - N60	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	568	591	3024	3024	0.19	0.20	A	A
Service Gate	1	2	26	42	675	675	0.04	0.06	A	A
Street Stairs		EFFECTIVE								
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S12 (SE)	4.6	3.6	353	333	486	486	0.73	0.69	C	B
M13AB	9.9	8.9	353	333	1202	1202	0.29	0.28	A	A
S11 (SW)	4.8	3.8	132	147	513	513	0.26	0.29	A	A
M12AB	8.5	7.5	132	147	1013	1013	0.13	0.15	A	A
S13 (NW)	4.6	3.6	111	153	486	486	0.23	0.31	A	A
M14AB	8.5	7.5	111	153	1013	1013	0.11	0.15	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Weekday AM/PM)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	211	263	648	648	0.33	0.41	A	A
Stairway 2 (No Code)	5.8	4.8	192	227	648	648	0.30	0.35	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		514	80	1170	1170	0.44	0.07	C	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	59	50	648	648	0.09	0.08	A	A
Stairway 2 (No Code)	5.8	4.8	21	25	648	648	0.03	0.04	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		63	65	1170	1170	0.05	0.06	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	171	943	594	594	0.29	1.59	A	E
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		18	566	1170	1170	0.02	0.48	A	C
Escalator (34B)	40		513	377	1170	1170	0.44	0.32	C	B
Escalator (34C)	40		342	184	1170	1170	0.29	0.16	B	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	1300	1233	7425	7425	0.18	0.17	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	402	703	2025	2025	0.20	0.35	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	101	100	6615	6615	0.02	0.02	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		96	63	1170	1170	0.08	0.05	A	A
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	85	93	2025	2025	0.04	0.05	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Weekday AM/PM)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadv	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	1133	1003	999	999	1.13	1.00	D	D
PL3	8.4	7.4	553	678	999	999	0.55	0.68	B	B
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	541	440	999	999	0.54	0.44	B	A
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	770	957	999	999	0.77	0.96	C	C
PL8AB	8.4	7.4	970	981	999	999	0.97	0.98	C	C
Lower Mezzanine to Platform Escalators										
42nd Street and Broadv	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	534	247	1170	1170	0.46	0.21	C	B
Escalator (E217-Down)	40.0	90	188	347	1170	1170	0.16	0.30	A	B
Escalator (E21B-Up)	24.0	90	278	92	600	600	0.46	0.15	C	A
Passageway to/from Lower Mezzanine/8tl		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	2259	2426	2045	2045	1.10	1.19	D	D
7th Avenue Platform Starirs (Northbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML6/ML8	7.5	6.5	873	792	878	878	0.99	0.90	C	C
ML10/ML12	7.5	6.5	796	406	878	878	0.91	0.46	C	B
P4/P6	5.3	4.3	498	675	581	581	0.86	1.16	C	D
P8/P10	5.3	4.3	273	232	581	581	0.47	0.40	B	A
7th Avenue Platform Starirs (Southbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML5/ML7	7.5	6.5	1354	1053	878	878	1.54	1.20	E	D
ML9/ML11	7.5	6.5	520	351	878	878	0.59	0.40	B	A
P3/P5	5.3	4.3	751	588	581	581	1.29	1.01	D	D
P7/P9	5.3	4.3	499	287	581	581	0.86	0.49	C	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

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Appendix S.4.4.2
2010 Future without the Proposed Action (Weekday AM/PM)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	675	245	1256	1256	0.54	0.20	B	A
P3	10.3	9.3	240	167	1256	1256	0.19	0.13	A	A
P4	9.7	8.7	50	12	1175	1175	0.04	0.01	A	A
P5	10.1	9.1	105	34	1229	1229	0.09	0.03	A	A
P6	10.0	9.0	137	27	1215	1215	0.11	0.02	A	A
P7	8.6	7.6	366	569	1026	1026	0.36	0.55	A	B
M2AB	12.4	11.4	970	596	1539	1539	0.63	0.39	B	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	785	753	4286	4286	0.18	0.18	A	A
Sixth Avenue Line Platform		EFFECTIVE								
Northbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P8 6.5	6.0	5.0	221	136	675	675	0.33	0.20	A	A
P10 6.5	6.0	5.0	297	284	675	675	0.44	0.42	A	A
P12 6.5	6.0	5.0	383	233	675	675	0.57	0.35	B	A
Southbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P7 6.25	6.0	5.0	150	99	675	675	0.22	0.15	A	A
P9 6.25	6.0	5.0	336	401	675	675	0.50	0.59	B	B
P11 6.3	6.0	5.0	286	234	675	675	0.42	0.35	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
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Appendix S.4.4.2

2010 Future without the Proposed Action (Weekday AM/PM)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	639	797	851	851	0.75	0.94	C	C
PL3	7.3	6.3	718	930	851	851	0.84	1.09	C	D
PL1AB	15.0	14	1357	1727	1890	1890	0.72	0.91	C	C
PL5	7.3	6.3	572	751	851	851	0.67	0.88	B	C
PL6	7.3	6.3	1099	734	851	851	1.29	0.86	D	C
PL4AB	15.0	14.0	1671	1485	1890	1890	0.88	0.79	C	C
PL9AB	15.0	14.0	878	596	1890	1890	0.46	0.32	B	A
ML1	4.0	3.0	82	260	405	405	0.20	0.64	A	B
No. 7 Line Platform to Lower Mezzanine										
Escalators	WIDTH (in)		DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40		523	49	1170	1170	0.45	0.04	C	A
Escalator (E204-Up/Down)	40		272	289	1170	1170	0.23	0.25	B	B
Escalator (E207-Up)	40		938	283	1170	1170	0.80	0.24	E	B
Escalator (E209-Up/Down)	40		956	254	1170	1170	0.82	0.22	E	B
Escalator (E205-Up)	40		1,049	233	1170	1170	0.90	0.20	E	A
Escalator (E206-Up/Down)	40		1,049	262	1170	1170	0.90	0.22	E	B
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (ft)								
Passageway	11.5	9.5	1100	2787	1924	1924	0.57	1.45	B	E
Lexington Avenue Line Platform (Southbound I		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P12	10.0	8.5	1741	595	1148	1148	1.52	0.52	E	B
P14	10.0	8.5	2819	2120	1148	1148	2.46	1.85	F	F
P18	10.0	8.5	1662	598	1148	1148	1.45	0.52	E	B
P20	10.0	8.5	773	381	1148	1148	0.67	0.33	B	A
P22	6.5	5.5	1229	616	743	743	1.66	0.83	E	C
U1	6.2	5.2	497	610	698	698	0.71	0.87	C	C
U3	6.2	5.2	497	610	698	698	0.71	0.87	C	C
U5	6.1	5.1	582	532	686	686	0.85	0.78	C	C
U7	5.8	4.8	582	532	653	653	0.89	0.82	C	C
Lexington Avenue Line Platform (Northbound F		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P23	7.0	6.0	986	915	810	810	1.22	1.13	D	D
P21	10.0	8.5	845	825	1148	1148	0.74	0.72	C	C
P19	10.0	8.5	1006	697	1148	1148	0.88	0.61	C	B
P17	10.0	8.5	986	839	1148	1148	0.86	0.73	C	C
P15	10.0	8.5	423	764	1148	1148	0.37	0.67	A	B
P13	10.0	8.5	486	1262	1148	1148	0.42	1.10	A	D
U2	5.9	4.9	161	678	664	664	0.24	1.02	A	D
U4	5.9	4.9	161	678	664	664	0.24	1.02	A	D
U6	5.9	4.9	266	913	664	664	0.40	1.38	A	E
U8	5.9	4.9	266	913	664	664	0.40	1.38	A	E
Connection to Metro North (Control Area 238)		EFFECTIVE								
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB/M7AB	9.5	8.5	1331	1068	1148	1148	1.16	0.93	D	C
Escalator (E255-Up)	40		643	785	1170	1170	0.55	0.67	C	D
Escalator (E-256-Up/Down)	40		643	841	1170	1170	0.55	0.72	C	D
Connection to Metro North (Control Area 240)		EFFECTIVE								
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M8ABC/M10ABC	19.0	18.0	2031	1606	2430	2430	0.84	0.66	C	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

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John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Special Events)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	241	126	648	648	0.37	0.19	A	A
Stairway 2 (No Code)	5.8	4.8	130	63	648	648	0.20	0.10	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		79	49	1170	1170	0.07	0.04	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	77	42	648	648	0.12	0.06	A	A
Stairway 2 (No Code)	5.8	4.8	28	21	648	648	0.04	0.03	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		43	59	1170	1170	0.04	0.05	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	130	195	594	594	0.22	0.33	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		110	117	1170	1170	0.09	0.10	A	A
Escalator (34B)	40		110	78	1170	1170	0.09	0.07	A	A
Escalator (34C)	40		99	120	1170	1170	0.08	0.10	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	321	366	7425	7425	0.04	0.05	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	281	152	2025	2025	0.14	0.08	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	66	84	6615	6615	0.01	0.01	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		115	51	1170	1170	0.10	0.04	A	A
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	55	76	2025	2025	0.03	0.04	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend:
SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Special Events)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadv	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	396	330	999	999	0.40	0.33	A	A
PL3	8.4	7.4	231	294	999	999	0.23	0.29	A	A
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	183	132	999	999	0.18	0.13	A	A
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	376	183	999	999	0.38	0.18	A	A
PL8AB	8.4	7.4	199	130	999	999	0.20	0.13	A	A
Lower Mezzanine to Platform Escalators										
42nd Street and Broadv	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	81	63	1170	1170	0.07	0.05	A	A
Escalator (E217-Down)	40.0	90	205	179	1170	1170	0.18	0.15	A	A
Escalator (E21B-Up)	24.0	90	42	46	600	600	0.07	0.08	A	A
Passageway to/from Lower Mezzanine/8th		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	941	1054	2045	2045	0.46	0.52	B	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
ML5/ML7 The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2
2010 Future without the Proposed Action (Special Event)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	41	24	1256	1256	0.03	0.02	A	A
P3	10.3	9.3	43	17	1256	1256	0.03	0.01	A	A
P4	9.7	8.7	4	10	1175	1175	0.00	0.01	A	A
P5	10.1	9.1	8	15	1229	1229	0.01	0.01	A	A
P6	10.0	9.0	12	27	1215	1215	0.01	0.02	A	A
P7	8.6	7.6	182	86	1026	1026	0.18	0.08	A	A
M2AB	12.4	11.4	177	117	1539	1539	0.12	0.08	A	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	267	207	4286	4286	0.06	0.05	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.2

2010 Future without the Proposed Action (Special Event)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Lower Mezzanine to Platform		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	444	200	851	851	0.52	0.24	B	A
PL3	7.3	6.3	377	187	851	851	0.44	0.22	A	A
PL1AB	15.0	14.0	821	387	1890	1890	0.43	0.20	A	A
PL5	7.3	6.3	151	37	851	851	0.18	0.04	A	A
PL6	7.3	6.3	354	151	851	851	0.42	0.18	A	A
PL4AB	15.0	14.0	505	188	1890	1890	0.27	0.10	A	A
PL9AB	15.0	14.0	91	64	1890	1890	0.05	0.03	A	A
ML1	4.0	3.0	7	2	405	405	0.02	0.00	A	A
Escalators	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40	90	8	34	1170	1170	0.01	0.03	A	A
Escalator (E204-Up/Down)	40	90	71	28	1170	1170	0.06	0.02	A	A
Escalator (E207-Up)	40	90	370	71	1170	1170	0.32	0.06	B	A
Escalator (E209-Up/Down)	40	90	78	93	1170	1170	0.07	0.08	A	A
Escalator (E205-Up)	40	90	296	108	1170	1170	0.25	0.09	B	A
Escalator (E206-Up/Down)	40	90	31	75	1170	1170	0.03	0.06	A	A
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (ft)								
Passageway	11.5	9.5	789	421	1924	1924	0.41	0.22	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend:
SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3

2010 Future with the Proposed Action (Weekday AM/PM)

(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - A25	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	990	880	3024	3024	0.33	0.29	B	B
Service Gate	1	2	101	187	675	675	0.15	0.28	A	B
High Entrance/Exit Turnstile	3	2	432	457	810	810	0.53	0.56	C	C
Street Stairs		EFFECTIVE								
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NE)	5.4	4.4	105	373	594	594	0.18	0.63	A	B
M2	5.7	4.7	105	373	635	635	0.17	0.59	A	B
S2AB (NW)	7.2	6.2	1154	543	837	837	1.38	0.65	E	B
M1AB	7.2	6.2	1154	543	837	837	1.38	0.65	E	B
H&M 300 (6th Ave)	4.9	3.9	329	412	527	527	0.62	0.78	B	C
H&M 300 (Mezz to Stairs)	8.1	7.1	329	412	959	959	0.34	0.43	A	A
H&M 302ABC (Mezz to Concourse)	23.7	22.7	630	473	3065	3065	0.21	0.15	A	A
Control Area		ONE- OR								
Booth - N506	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	14	2	1297	1964	6048	6048	0.21	0.32	B	B
Service Gate	1	2	210	173	675	675	0.31	0.26	B	B
Street Stairs		EFFECTIVE								
34th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5AB (SW)	9.0	8.0	1585	1204	1080	1080	1.47	1.11	E	D
M5AB	9.0	8.0	1585	1204	1080	1080	1.47	1.11	E	D
S7AB (NW)	8.3	7.3	1217	1317	986	986	1.23	1.34	D	E
M7AB	8.6	7.6	1217	1317	1026	1026	1.19	1.28	D	D
Control Area		ONE- OR								
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	11	2	2066	2180	4752	4752	0.43	0.46	C	C
Service Gate	1	2	43	10	675	675	0.06	0.01	A	A
Street Stair		EFFECTIVE								
32nd to 33rd St. and 6th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
H&M 307	5.6	4.6	1133	226	621	621	1.82	0.36	F	A
Escalators										
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
E221	24.0	90.0	147	839	600	600	0.25	1.40	B	F
E222	40.0	90.0	985	953	1170	1170	0.84	0.81	E	E
Concourse to N507		EFFECTIVE								
Internal Stairs	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML7AB	11.6	10.6	567	568	1431	1431	0.40	0.40	A	A
ML1AB	8.6	7.6	725	546	1026	1026	0.71	0.53	C	B
Escalators										
33rd and Broadway	WIDTH (in)	SPEED (fpm)	IN/OUT	IN/OUT						
E223	24.0	90.0	712	696	600	600	1.19	1.16	F	F
E224	24.0	90.0	84	460	600	600	0.14	0.77	A	D
Control Area		ONE- OR								
Booth - A22	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	569	845	1296	1296	0.44	0.65	C	D
Service Gate	1	2	0	5	675	675	0.00	0.01	A	A
High Entrance/Exit Turnstile	2	2	283	264	540	540	0.52	0.49	C	C
Hign Exit Turnstile	2	1	22	40	900	450	0.02	0.09	A	A
Street Stairs		EFFECTIVE								
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	6.0	5.0	625	794	675	675	0.93	1.18	C	D
M4AB	11.5	10.5	625	794	1418	1418	0.44	0.56	A	B
S8 (NE)	6.0	5.0	253	383	675	675	0.37	0.57	A	B
M8AB	11.5	10.5	253	383	1418	1418	0.18	0.27	A	A
Control Area		ONE- OR								
Booth - N505	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	1656	1311	4320	4320	0.38	0.30	B	B
High Entrance/Exit Turnstile	2	2	463	423	540	540	0.86	0.78	E	D
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	4.8	3.8	294	189	513	513	0.57	0.37	B	A
M9	4.8	3.8	294	189	513	513	0.57	0.37	B	A
M10AB	9.6	8.6	294	189	1161	1161	0.25	0.16	A	A
S8 (NE)	4.8	3.8	720	653	513	513	1.40	1.27	E	D
M8AB	9.6	8.6	720	653	1161	1161	0.62	0.56	B	B
S7 (NW)	5.8	4.8	431	168	648	648	0.67	0.26	B	A
M7AB	9.7	8.7	431	168	1175	1175	0.37	0.14	A	A
Street Stairs		EFFECTIVE								
35th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SW)	5.1	4.1	29	121	554	554	0.05	0.22	A	A
M5AB	7.6	6.6	29	121	891	891	0.03	0.14	A	A
S6 (NW)	4.9	3.9	644	606	527	527	1.22	1.15	D	D
M6AB	7.9	6.9	644	606	932	932	0.69	0.65	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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Appendix S.4.4.3
2010 Future with the Proposed Action (Weekday AM/PM)
(iii) Sixth Avenue at 42nd Street Subway Station (B, D, F, and V)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - 504	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1702	1338	3456	3456	0.49	0.39	C	B
Service Gate	1	2	5	0	675	675	0.01	0.00	A	A
Street Stairs		EFFECTIVE								
40th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	5.0	4.0	716	429	540	540	1.33	0.79	D	C
M6	8.6	7.6	716	429	1026	1026	0.70	0.42	B	A
S6 (NE)	4.7	3.7	75	418	500	500	0.15	0.84	A	C
M7	8.3	7.3	75	418	986	986	0.08	0.42	A	A
M8	8.3	7.3	75	418	986	986	0.08	0.42	A	A
S4 (SW)	4.7	3.7	683	431	500	500	1.37	0.86	E	C
M4	4.7	3.7	683	431	500	500	1.37	0.86	E	C
M5	8.4	7.4	683	431	999	999	0.68	0.43	B	A
O6 (NW)	5.8	4.8	235	59	648	648	0.36	0.09	A	A
O7	5.7	4.7	235	59	635	635	0.37	0.09	A	A
M9	5.7	4.7	235	59	635	635	0.37	0.09	A	A
M10	5.7	4.7	235	59	635	635	0.37	0.09	A	A
Control Area		ONE- OR								
Booth - N503	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	899	920	2592	2592	0.35	0.35	B	B
Service Gate	1	2	37	0	675	675	0.05	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (SE)	5.9	4.9	694	515	662	662	1.05	0.78	D	C
M12	7.0	6.0	694	515	810	810	0.86	0.64	C	B
M13	7.0	6.0	694	515	810	810	0.86	0.64	C	B
No Code (Bet 6th&7th)	8.0	7.0	242	404	945	945	0.26	0.43	A	A
O1ABC	19.7	18.7	242	404	2525	2525	0.10	0.16	A	A
M11ABCD	18.2	17.2	242	404	2322	2322	0.10	0.17	A	A
Control Area		ONE- OR								
Booth - N502	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1400	1472	2592	2592	0.54	0.57	C	C
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11AB (NE)	9.6	8.6	662	620	1161	1161	0.57	0.53	B	B
M20AB	10.0	9.0	662	620	1215	1215	0.54	0.51	B	B
M19AB	10.0	9.0	662	620	1215	1215	0.54	0.51	B	B
M18AB	10.0	9.0	662	620	1215	1215	0.54	0.51	B	B
S9 (NW)	5.6	4.6	428	558	621	621	0.69	0.90	B	C
M14	7.7	6.7	428	558	905	905	0.47	0.62	B	B
M15AB	13.2	12.2	428	558	1647	1647	0.26	0.34	A	A
S10 (Bet 42nd&43rd)	5.7	4.7	310	300	635	635	0.49	0.47	B	B
M17	6.9	5.9	310	300	797	797	0.39	0.38	A	A
M16	6.9	5.9	310	300	797	797	0.39	0.38	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future Condition with the Proposed Action (Weekday AM/PM)
(vi) Seventh Avenue at 34th Street Subway Station (1, 2, 3, and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R137	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	312	388	1296	1296	0.24	0.30	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
32nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O15AB (NE)	10.3	9.3	312	388	1256	1256	0.25	0.31	A	A
O14AB	10.3	9.3	312	388	1256	1256	0.25	0.31	A	A
Control Area		ONE- OR								
Booth - R135	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1262	1714	2592	2592	0.49	0.66	C	D
Service Gate	1	2	106	53	675	675	0.16	0.08	A	A
(32nd Street Sub passage to Penn Station)										
Control Area		ONE- OR								
Booth - R139	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	457	512	1728	1728	0.26	0.30	B	B
High Entrance/Exit Turnstile	1	2	42	159	270	270	0.16	0.59	A	C
Street Stairs		EFFECTIVE								
33rd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O17AB (SE)	10.0	9.0	1120	347	1215	1215	0.92	0.29	C	A
P3AB	10.7	9.7	1120	347	1310	1310	0.86	0.26	C	A
O19 (NE/E)	5.8	4.8	137	194	648	648	0.21	0.30	A	A
O18	5.8	4.8	137	194	648	648	0.21	0.30	A	A
S2 (NE/W)	5.3	4.3	207	349	581	581	0.36	0.60	A	B
P4	7.0	6.0	207	349	810	810	0.26	0.43	A	A
Control Area		ONE- OR								
Booth - R138	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile (1)	12	2	2423	1596	5184	5184	0.47	0.31	C	B
Service Gate	1	2	709	888	675	675	1.05	1.32	F	F
(33rd Street Sub passage to Penn Station and Control Area R139)										
Sub passage Stairs		EFFECTIVE								
33rd St Sub passage	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML2AB	13.0	12.0	993	386	1620	1620	0.61	0.24	B	A
ML4AB	13.0	12.0	993	386	1620	1620	0.61	0.24	B	A
		ONE- OR								
Control Area	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	1	2	146	135	270	270	0.54	0.50	C	C
Street Stairs		EFFECTIVE								
33rd and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NW)	4.4	3.4	146	135	459	459	0.32	0.29	A	A
P2	4.8	3.8	146	135	513	513	0.28	0.26	A	A
P1	8.5	7.5	146	135	1013	1013	0.14	0.13	A	A
Control Area		ONE- OR								
Booth - R141	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	372	838	3456	3456	0.11	0.24	A	B
Street Stairs		EFFECTIVE								
34th St and 7th Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	10.0	9.0	301	559	1215	1215	0.25	0.46	A	B
P6AB	7.9	6.9	301	559	932	932	0.32	0.60	A	B
S6 (NE)	5.1	4.1	74	281	547	547	0.14	0.51	A	B
P8AB	12.3	11.3	74	281	1526	1526	0.05	0.18	A	A
Control Area		ONE- OR								
Booth - R142 (3)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	668	678	1728	1728	0.39	0.39	B	B
High Entrance/Exit Turnstile	2	2	99	35	540	540	0.18	0.06	A	A
Service Gate	1	2	3	8	675	675	0.00	0.01	A	A
Street Stairs		EFFECTIVE								
34th St and 7th Ave (West) (3)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW)	10.0	9.0	313	172	1215	1215	0.26	0.14	A	A
P5AB	12.1	11.1	313	172	1499	1499	0.21	0.11	A	A
S5 (NW)	5.6	4.6	459	552	621	621	0.74	0.89	C	C
P7AB	12.2	11.2	459	552	1512	1512	0.30	0.37	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future Condition with the Proposed Action (Weekday AM/PM)
(vii-A) 42nd Street/Times Square Subway Station (N, R, S, Q, W, 1, 2, 3, 7 and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R143 (1)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	854	991	3456	3456	0.25	0.29	B	B
Service Gate	3	2	376	13	2025	2025	0.19	0.01	A	A
Street Stairs		EFFECTIVE								
40th St and 7Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S2 (SE)	5.6	4.6	762	598	621	621	1.23	0.96	D	C
M1AB	9.7	8.7	762	598	1175	1175	0.65	0.51	B	B
O1AB (SW)	9.3	8.3	451	383	1121	1121	0.40	0.34	A	A
O2AB	10.6	9.6	451	383	1296	1296	0.35	0.30	A	A
Control Area		ONE- OR								
Booth - A21	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	829	1618	3456	3456	0.24	0.47	B	C
Service Gate	2	2	215	0	1350	1350	0.16	0.00	A	A
Street Stairs		EFFECTIVE								
40th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
11-A (Control Area Stairway)	5.1	4.1	227	301	554	554	0.41	0.54	A	B
11-B (Street Stairway)	8.3	7.3	227	301	986	986	0.23	0.31	A	A
12-A (Control Area Stairway)	6.5	5.5	364	533	743	743	0.49	0.72	B	C
12-B (Street Stairway)	6.0	5.0	364	533	675	675	0.54	0.79	B	C
13-A (Control Area Stairway)	6.0	5.0	227	301	675	675	0.34	0.45	A	A
13-B (Street Stairway)	6.5	5.5	227	301	743	743	0.31	0.41	A	A
14-A (Control Area Stairway)	6.5	5.5	204	463	743	743	0.27	0.62	A	B
14-B (Street Stairway)	6.5	5.5	204	463	743	743	0.27	0.62	A	B
Control Area (41st and Broadwa	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Revolving Exit	1	1	200	68	450	450	0.44	0.15	C	A
Street Stairs		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S7 (SW)	4.5	3.5	100	34	473	473	0.21	0.07	A	A
M6A	7.6	6.6	100	34	891	891	0.11	0.04	A	A
M6B	7.6	6.6	200	68	891	891	0.22	0.08	A	A
Control Area		ONE- OR								
Booth - R145 (2)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstiles	5	2	290	202	2160	2160	0.13	0.09	A	A
Service Gate	1	2	44	34	675	675	0.07	0.05	A	A
Street Stairs		EFFECTIVE								
41st St and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M2ABC	13.75	12.75	333	236	1721	1721	0.19	0.14	A	A
S4	6.25	5.25	147	129	709	709	0.21	0.18	A	A
M6	6.25	5.25	186	107	709	709	0.26	0.15	A	A
S6	6.25	5.25	186	107	709	709	0.26	0.15	A	A
Control Area		ONE- OR								
Booth - R146 (3)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	3	2	603	723	810	810	0.74	0.89	D	E
Street Stairs		EFFECTIVE								
41st St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (No Code) (3)	7.7	6.7	603	723	905	905	0.67	0.80	B	C
Stairway (No Code) (3)	7.0	6.0	603	723	810	810	0.74	0.89	C	C
Stairway (No Code) (3)	7.0	6.0	347	432	810	810	0.74	0.89	C	C
Control Area		ONE- OR								
Booth - R148	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	809	788	2592	2592	0.31	0.30	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	5.8	4.8	809	788	648	648	1.25	1.22	D	D
P1	5.8	4.8	809	788	648	648	1.25	1.22	D	D
Control Area		ONE- OR								
Booth - R147	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	636	688	3024	3024	0.21	0.23	B	B
High Revolving Exit	2	1	111	121	810	810	0.14	0.15	A	A
Service Gate	1	2	0	5	675	675	0.00	0.01	A	A
(Street Level Control Area: SE corner of 42nd St and 7th Ave)										
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB	8.3	7.3	81	96	986	986	0.08	0.10	A	A
M7AB	8.3	7.3	81	96	986	986	0.08	0.10	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (E266-Up)	40.0		554	276	1020	1020	0.54	0.27	C	B
Escalator (E267-Down)	40.0		111	442	1020	1020	0.11	0.43	A	C
Control Area		ONE- OR								
Booth - R151	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1078	1342	3888	3888	0.28	0.35	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M9AB	13.8	12.8	282	660	1728	1728	0.16	0.38	A	A
Stairway (No Code)	8.3	7.3	131	192	986	986	0.13	0.19	A	A
Stairway (No Code)	8.3	7.3	131	192	986	986	0.13	0.19	A	A
O4ABC (NW)	14.7	13.7	797	682	1850	1850	0.43	0.37	A	A
O3ABC	14.7	13.7	797	682	1850	1850	0.43	0.37	A	A
M11ABC	14.2	13.2	797	682	1782	1782	0.45	0.38	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (No Code-Up)	40.0		96	263	1020	1020	0.09	0.26	A	B
Escalator (No Code-Down)	40.0		57	205	1020	1020	0.06	0.20	A	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future with the Proposed Action (Weekday AM/PM)
(ix) Eight Avenue and 34th Street/Penn Station/Madison Square Garden (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area Booth - N67	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	13	2	1688	1013	5616	5616	0.30	0.18	B	A
High Entrance/Exit Turnstile	2	2	58	32	540	540	0.11	0.06	A	A
Service Gate	1	2	10	0	675	675	0.01	0.00	A	A
(With Hallways to Penn Station)										
Control Area Booth - N68	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	423	342	1296	1296	0.33	0.26	B	B
High Entrance/Exit Turnstile	1	2	291	55	270	270	1.08	0.20	F	B
Service Gate	1	2	22	1	675	675	0.03	0.00	A	A
Street Stairs 35th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	4.1	3.1	215	115	419	419	0.51	0.27	B	A
P10AB	9.1	8.1	215	115	1094	1094	0.20	0.11	A	A
S15 (NE/E)	4.1	3.1	119	77	419	419	0.28	0.18	A	A
S14 (NE/W)	4.1	3.1	403	167	419	419	0.96	0.40	C	A
P12AB	9.1	8.1	522	281	1094	1094	0.48	0.26	B	A
Control Area Booth - N69	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	52	447	1296	1296	0.04	0.34	A	B
High Entrance/Exit Turnstile	1	2	485	60	270	270	1.80	0.22	F	B
Service Gate	1	2	101	0	675	675	0.15	0.00	A	A
Street Stairs 35th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S10 (SW)	4.2	3.2	121	136	432	432	0.28	0.31	A	A
P9	6.1	5.1	121	136	689	689	0.18	0.20	A	A
S13 (NW/E)	4.1	3.1	411	290	419	419	0.98	0.69	C	B
S12 (NW/W)	4.1	3.1	116	79	419	419	0.28	0.19	A	A
P11AB	9.1	8.1	527	370	1094	1094	0.48	0.34	B	A
Control Area Booth - N70	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	348	590	2160	2160	0.16	0.27	A	B
Service Gate	1	2	3	15	675	675	0.00	0.02	A	A
Street Stairs 34th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S7	7.0	6.0	206	253	810	810	0.25	0.31	A	A
P6AB	6.7	5.7	206	253	770	770	0.27	0.33	A	A
S9	11.5	10.5	149	337	1418	1418	0.11	0.24	A	A
P8AB	5.5	4.5	149	337	608	608	0.25	0.55	A	B
Control Area Booth - N71	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	562	690	2160	2160	0.26	0.32	B	B
Service Gate	1	2	536	44	675	675	0.79	0.07	D	A
Street Stairs 34th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S6 (SW)	5.7	4.7	361	465	635	635	0.57	0.73	B	C
P5AB	11.6	10.6	361	465	1431	1431	0.25	0.32	A	A
S8 (NW)	5.8	4.8	733	266	648	648	1.13	0.41	D	A
P7AB	8.8	7.8	733	266	1053	1053	0.70	0.25	B	A
Control Area Booth - N72	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1642	1469	3888	3888	0.42	0.38	C	B
Service Gate	3	2	53	277	2025	2025	0.03	0.14	A	A
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (SE)	7.4	6.4	177	196	864	864	0.20	0.23	A	A
P1	7.4	6.4	177	196	864	864	0.20	0.23	A	A
S5 (NE)	4.0	3.0	134	142	405	405	0.33	0.35	A	A
P4	4.4	3.4	134	142	459	459	0.29	0.31	A	A
Control Area Booth - N73	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	628	491	3888	3888	0.16	0.13	A	A
Service Gate	1	2	272	559	675	675	0.40	0.83	C	E
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW/E)	12.0	11.0	279	159	1485	1485	0.19	0.11	A	A
S2 (SW/W)	12.0	11.0	443	151	1485	1485	0.30	0.10	A	A
P2AB	12.0	11.0	724	309	1485	1485	0.49	0.21	B	A
S4 (NW)	4.4	3.4	420	157	459	459	0.92	0.34	C	A
P3	4.4	3.4	420	157	459	459	0.92	0.34	C	A
Internal Stairs 33rd St Passage	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
GLAB (To Penn Station)	16.5	15.5	1387	845	2093	2093	0.66	0.40	B	A
M5 (To Sub-Passage)	5.7	4.7	389	169	635	635	0.61	0.27	B	A
M6	5.7	4.7	389	169	635	635	0.61	0.27	B	A
M3AB (To Sub-Passage)	9.2	8.2	579	571	1107	1107	0.52	0.52	B	B
M4	9.2	8.2	579	571	1107	1107	0.52	0.52	B	B
To LIRR Platforms	7.2	6.2	531	452	837	837	0.63	0.54	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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Environmental Assessment and Review Division, Department of City Planning
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Appendix S.4.4.3
2010 Future with the Proposed Action (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - N63	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	736	535	3024	3024	0.24	0.18	B	A
High Entrance/Exit Turnstile	2	2	133	114	540	540	0.25	0.21	B	B
High Exit Turnstile (1)	1	1	33	0	450	450	0.07	0.00	A	A
Service Gate	1	2	0	71	675	675	0.00	0.11	A	A
Control Area		ONE- OR								
Booth - N63A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	2048	1439	4320	4320	0.47	0.33	C	B
Service Gate	1	2	241	224	675	675	0.36	0.33	B	B
Street Stairs		ONE- OR								
40th St and 8th Ave	WIDTH (ft)	TWO-WAY	IN/OUT	IN/OUT						
M1AB (2)	9.6	3.7	160	128	500	500	0.32	0.26	A	A
O8 (2)	8.2	8.8	161	128	1188	1188	0.14	0.11	A	A
S2 (SE)	4.7	3.7	594	433	500	500	1.19	0.87	D	C
M2AB	9.8	8.8	594	433	1188	1188	0.50	0.36	B	A
S4 (NE)	4.7	3.7	168	121	500	500	0.34	0.24	A	A
M4AB	9.8	8.8	168	121	1188	1188	0.14	0.10	A	A
S3(NW)	4.7	3.7	395	449	500	500	0.79	0.90	C	C
M3AB	9.8	8.8	395	449	1188	1188	0.33	0.38	A	A
Control Area		ONE- OR								
Booth - N62	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1195	1329	3456	3456	0.35	0.38	B	B
Service Gate	1	2	10	200	675	675	0.01	0.30	A	B
(Hallway to PABT Between 41st and 42nd St.)										
Control Area		ONE- OR								
Booth - N62A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	158	259	3024	3024	0.05	0.09	A	A
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O11AB (NE)	9.6	8.6	59	92	1161	1161	0.05	0.08	A	A
O10AB	9.6	8.6	158	259	1161	1161	0.14	0.22	A	A
O9AB	9.5	8.5	59	92	1148	1148	0.05	0.08	A	A
Stairway (No Code)	10.0	9.0	59	91	2565	2565	0.05	0.07	A	A
Stairway (No Code)	10.0	9.0	59	91	3915	3915	0.05	0.07	A	A
Street Stairs										
42nd St and 8Ave (East)	WIDTH (in)		DOWN/UP	DOWN/UP						
Escalator (No Code)	40.0		38	57	1170	1020	0.03	0.05	A	A
Escalator (No Code)	40.0		38	57	1170	1020	0.03	0.05	A	A
Control Area (42nd St and 8 Ave-West)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	9	610	664	540	540	1.13	1.23	F	F
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (NW)	5.9	4.9	610	658	662	662	0.92	0.99	C	C
M9AB	9.6	8.6	610	658	1161	1161	0.53	0.57	B	B
Control Area		ONE- OR								
Booth - N60A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	2	Plywood Barricade							
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S10	5.3	4.3	Plywood Barricade							
M11AB	7.9	6.9	Plywood Barricade							
Control Area		ONE- OR								
Booth - N60	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	568	591	3024	3024	0.19	0.20	A	A
Service Gate	1	2	26	42	675	675	0.04	0.06	A	A
Street Stairs		EFFECTIVE								
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S12 (SE)	4.6	3.6	353	333	486	486	0.73	0.69	C	B
M13AB	9.9	8.9	353	333	1202	1202	0.29	0.28	A	A
S11 (SW)	4.8	3.8	132	147	513	513	0.26	0.29	A	A
M12AB	8.5	7.5	132	147	1013	1013	0.13	0.15	A	A
S13 (NW)	4.6	3.6	111	153	486	486	0.23	0.31	A	A
M14AB	8.5	7.5	111	153	1013	1013	0.11	0.15	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future with the Proposed Action (Weekday AM/PM)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	212	268	648	648	0.33	0.41	A	A
Stairway 2 (No Code)	5.8	4.8	194	232	648	648	0.30	0.36	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		517	82	1170	1170	0.44	0.07	C	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	59	50	648	648	0.09	0.08	A	A
Stairway 2 (No Code)	5.8	4.8	21	25	648	648	0.03	0.04	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		63	65	1170	1170	0.05	0.06	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	171	943	594	594	0.29	1.59	A	E
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		19	566	1170	1170	0.02	0.48	A	C
Escalator (34B)	40		514	377	1170	1170	0.44	0.32	C	B
Escalator (34C)	40		343	184	1170	1170	0.29	0.16	B	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	1314	1264	7425	7425	0.18	0.17	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	402	703	2025	2025	0.20	0.35	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	107	123	6615	6615	0.02	0.02	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		104	71	1170	1170	0.09	0.06	A	A
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	85	93	2025	2025	0.04	0.05	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3

2010 Future with the Proposed Action (Weekday AM/PM)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadw	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	1083	973	999	999	1.08	0.97	D	C
PL3	8.4	7.4	508	684	999	999	0.51	0.68	B	B
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	763	603	999	999	0.76	0.60	C	B
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	998	1092	999	999	1.00	1.09	C	D
PL8AB	8.4	7.4	1139	1084	999	999	1.14	1.09	D	D
Lower Mezzanine to Platform Escalators										
42nd Street and Broadw	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	537	486	1170	1170	0.46	0.42	C	C
Escalator (E217-Down)	40.0	90	438	371	1170	1170	0.37	0.32	B	B
Escalator (E21B-Up)	24.0	90	288	139	600	600	0.48	0.23	C	B
Passageway to/from Lower Mezzanine/8th		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	2159	2367	2045	2045	1.06	1.16	D	D
7th Avenue Platform Starirs (Northbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML6/ML8	7.5	6.5	1025	900	878	878	1.17	1.03	D	D
ML10/ML12	7.5	6.5	949	515	878	878	1.08	0.59	D	B
P4/P6	5.3	4.3	530	711	581	581	0.91	1.22	C	D
P8/P10	5.3	4.3	344	313	581	581	0.59	0.54	B	B
7th Avenue Platform Starirs (Southbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML5/ML7	7.5	6.5	1506	1161	878	878	1.72	1.32	F	D
ML9/ML11	7.5	6.5	673	460	878	878	0.77	0.52	C	B
P3/P5	5.3	4.3	803	646	581	581	1.38	1.11	E	D
P7/P9	5.3	4.3	550	345	581	581	0.95	0.59	C	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
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Appendix S.4.4.3
2010 Future with the Proposed Action (Weekday AM/PM)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	654	266	1256	1256	0.52	0.21	B	A
P3	10.3	9.3	192	165	1256	1256	0.15	0.13	A	A
P4	9.7	8.7	51	35	1175	1175	0.04	0.03	A	A
P5	10.1	9.1	111	115	1229	1229	0.09	0.09	A	A
P6	10.0	9.0	123	76	1215	1215	0.10	0.06	A	A
P7	8.6	7.6	722	631	1026	1026	0.70	0.62	C	B
M2AB	12.4	11.4	909	636	1539	1539	0.59	0.41	B	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	1194	1078	4286	4286	0.28	0.25	A	A
Sixth Avenue Line Platform		EFFECTIVE								
Northbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P8 6.5	6.0	5.0	206	136	675	675	0.31	0.20	A	A
P10 6.5	6.0	5.0	419	365	675	675	0.62	0.54	B	B
P12 6.5	6.0	5.0	505	325	675	675	0.75	0.48	C	B
Southbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P7 6.25	6.0	5.0	140	98	675	675	0.21	0.15	A	A
P9 6.25	6.0	5.0	526	472	675	675	0.78	0.70	C	B
P11 6.3	6.0	5.0	337	315	675	675	0.50	0.47	B	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
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Appendix S.4.4.3
2010 Future with the Proposed Action (Weekday AM/PM)
(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	761	866	851	851	0.89	1.02	C	D
PL3	7.3	6.3	870	993	851	851	1.02	1.17	D	D
PL1AB	15.0	14	1631	1859	1890	1890	0.86	0.98	C	C
PL5	7.3	6.3	734	815	851	851	0.86	0.96	C	C
PL6	7.3	6.3	1165	807	851	851	1.37	0.95	E	C
PL4AB	15.0	14.0	1899	1622	1890	1890	1.00	0.86	D	C
PL9AB	15.0	14.0	877	595	1890	1890	0.46	0.31	B	A
ML1	4.0	3.0	83	259	405	405	0.20	0.64	A	B
No. 7 Line Platform to Lower	WIDTH (in)		DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40		523	49	1170	1170	0.45	0.04	C	A
Escalator (E204-Up/Down)	40		271	288	1170	1170	0.23	0.25	B	B
Escalator (E207-Up)	40		933	414	1170	1170	0.80	0.35	D	B
Escalator (E209-Up/Down)	40		951	253	1170	1170	0.81	0.22	E	B
Escalator (E205-Up)	40		1,044	360	1170	1170	0.89	0.31	E	B
Escalator (E206-Up/Down)	40		1,044	261	1170	1170	0.89	0.22	E	B
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (in)								
Passageway	11.5	9.5	1612	2930	1924	1924	0.84	1.52	C	E
Lexington Avenue Line Platform (Southbound		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P12	10.0	8.5	1753	615	1148	1148	1.53	0.54	E	B
P14	10.0	8.5	2833	2125	1148	1148	2.47	1.85	F	F
P18	10.0	8.5	1663	633	1148	1148	1.45	0.55	E	B
P20	10.0	8.5	782	380	1148	1148	0.68	0.33	B	A
P22	6.5	5.5	1244	615	743	743	1.68	0.83	F	C
U1	6.2	5.2	605	646	698	698	0.87	0.93	C	C
U3	6.2	5.2	605	646	698	698	0.87	0.93	C	C
U5	6.1	5.1	730	568	686	686	1.06	0.83	D	C
U7	5.8	4.8	730	568	653	653	1.12	0.87	D	C
Lexington Avenue Line Platform (Northbound		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P23	7.0	6.0	1004	915	810	810	1.24	1.13	D	D
P21	10.0	8.5	854	825	1148	1148	0.74	0.72	C	C
P19	10.0	8.5	1005	757	1148	1148	0.88	0.66	C	B
P17	10.0	8.5	996	898	1148	1148	0.87	0.78	C	C
P15	10.0	8.5	436	765	1148	1148	0.38	0.67	A	B
P13	10.0	8.5	489	1262	1148	1148	0.43	1.10	A	D
U2	5.9	4.9	289	704	664	664	0.44	1.06	A	D
U4	5.9	4.9	289	704	664	664	0.44	1.06	A	D
U6	5.9	4.9	394	959	664	664	0.59	1.44	B	E
U8	5.9	4.9	394	959	664	664	0.59	1.44	B	E
Connection to Metro North (Control Area 238)		EFFECTIVE								
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB/M7AB	9.5	8.5	1413	1082	1148	1148	1.23	0.94	D	C
Escalator (E255-Up)	40		642	856	1170	1170	0.55	0.73	C	D
Escalator (E-256-Up/Down)	40		642	841	1170	1170	0.55	0.72	C	D
Connection to Metro North (Control Area 240)		EFFECTIVE								
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M8ABC/M10ABC	19.0	18.0	2066	1616	2430	2430	0.85	0.67	C	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

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Appendix S.4.4.3
2010 Future with the Proposed Action (Weekday AM/PM)
Number 7 Subway Line Extension - 34th Street Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Fare Control Area		ONE- OR								
Booth (34A - 34th Street and Boulevard)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	20	2	825	1382	8640	8640	0.10	0.16	A	A
Service Gate	1	2	41	69	675	675	0.06	0.10	A	A
Street Stairways to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S1 and S2)	10.6	9.6	7	17	2592	2592	0.01	0.01	A	A
Street Escalators to Upper Mezzanine										
34th Street and Boulevard	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E1 and E6 (Down/Up)	40	2	70	147	2340	2340	0.03	0.06	A	A
Escalator E2 through E5 (Up/Down)	40	4	71	166	4680	4680	0.02	0.04	A	A
Street Escalators to Upper Mezzanine										
34th Street and Boulevard (North "A")	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E31 (Down/Up)	40	1	28	36	1170	1170	0.02	0.03	A	A
Escalator E32 through E34 (Up/Down)	40	3	425	488	3510	3510	0.12	0.14	A	A
Upper Mezzanine to Lower Mezzanine										
34th Street and Boulevard	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E7and E14 (Down/Up)	40	2	105	218	2340	2340	0.04	0.09	A	A
Escalator E8 and E10 (Up/Down)	40	3	401	605	3510	3510	0.11	0.17	A	A
Escalator E11 through E14 (Up/Down)	40	3	401	605	3510	3510	0.11	0.17	A	A
Lower Mezzanine to Platform		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S3 and S4)	10.6	8.6	19	34	1161	1161	0.02	0.03	A	A
Stairway (S5 and S6)	10.6	8.6	19	34	1161	1161	0.02	0.03	A	A
Stairway (S7 and S8)	10.6	8.6	19	34	1161	1161	0.02	0.03	A	A
Stairway (S9 and S10)	10.6	8.6	19	34	1161	1161	0.02	0.03	A	A
Stairway (S11 and S12)	10.6	8.6	19	34	1161	1161	0.02	0.03	A	A
Lower Mezzanine to Platform										
34th Street and Boulevard	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E15 through E16 (Down/Up)	40	2	53	109	2340	2340	0.02	0.05	A	A
Escalator E17 through E26 (Up/Down)	40	10	762	1150	11700	11700	0.07	0.10	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 34 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future with the Proposed Action (Special Events)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	247	210	648	648	0.38	0.32	A	A
Stairway 2 (No Code)	5.8	4.8	170	171	648	648	0.26	0.26	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		275	3	1170	1170	0.24	0.00	B	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	83	54	648	648	0.13	0.08	A	A
Stairway 2 (No Code)	5.8	4.8	49	23	648	648	0.08	0.04	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		258	288	1170	1170	0.22	0.25	B	B
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	130	195	594	594	0.22	0.33	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		192	207	1170	1170	0.16	0.18	A	A
Escalator (34B)	40		190	166	1170	1170	0.16	0.14	A	A
Escalator (34C)	40		179	88	1170	1170	0.15	0.08	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	858	785	7425	7425	0.12	0.11	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	281	80	2025	2025	0.14	0.04	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	66	642	6615	6615	0.01	0.10	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		652	588	1170	1170	0.56	0.50	C	C
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	55	44	2025	2025	0.03	0.02	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend:
SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future with the Proposed Action (Special Event)
Number 7 Subway Line Extension - 34th Street Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	AM	PM	EVE	SUN	EVE	SUN
Fare Control Area		ONE- OR								
Booth (34A - 34th Street and Boulevard)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	20	2	3361	4348	8640	8640	0.39	0.50	B	C
Service Gate	1	2	168	217	675	675	0.25	0.32	B	B
Street Stairways to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S1 and S2)	10.6	9.6	37	45	2592	2592	0.03	0.03	A	A
Street Escalators to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E1 and E6 (Down/Up)	40		2	116	2340	2340	0.00	0.05	A	A
Escalator E2 through E5 (Up/Down)	40		704	729	4680	4680	0.15	0.16	A	A
Street Escalators to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard (North "A")	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E31 (Down/Up)	40		11	11	1170	1170	0.01	0.01	A	A
Escalator E32 through E34 (Up/Down)	40		5	29	3510	3510	0.00	0.01	A	A
Upper Mezzanine to Lower Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E7and E14 (Down/Up)	40		24	625	2340	2340	0.01	0.27	A	B
Escalator E8 and E10 (Up/Down)	40		1854	1931	3510	3510	0.53	0.55	C	C
Escalator E11 through E14 (Up/Down)	40		1854	1931	3510	3510	0.53	0.55	C	C
Lower Mezzanine to Platform		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S3 and S4)	10.6	8.6	39	101	1161	1161	0.03	0.09	A	A
Stairway (S5 and S6)	10.6	8.6	39	101	1161	1161	0.03	0.09	A	A
Stairway (S7 and S8)	10.6	8.6	39	101	1161	1161	0.03	0.09	A	A
Stairway (S9 and S10)	10.6	8.6	39	101	1161	1161	0.03	0.09	A	A
Stairway (S11 and S12)	10.6	8.6	39	101	1161	1161	0.03	0.09	A	A
Lower Mezzanine to Platform		EFFECTIVE								
34th Street and Boulevard	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E15 through E16 (Down/Up)	40		12	313	2340	2340	0.01	0.13	A	A
Escalator E17 through E26 (Up/Down)	40		3523	3669	11700	11700	0.30	0.31	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future with the Proposed Action (Special Events)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadv	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	384	413	999	999	0.38	0.41	A	A
PL3	8.4	7.4	221	395	999	999	0.22	0.40	A	A
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	372	292	999	999	0.37	0.29	A	A
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	563	307	999	999	0.56	0.31	B	A
PL8AB	8.4	7.4	337	224	999	999	0.34	0.22	A	A
Lower Mezzanine to Platform Escalators										
42nd Street and Broadv	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	80	271	1170	1170	0.07	0.23	A	B
Escalator (E217-Down)	40.0	90	397	213	1170	1170	0.34	0.18	B	A
Escalator (E21B-Up)	24.0	90	42	162	600	600	0.07	0.27	A	B
Passageway to/from Lower Mezzanine/8th Avenue Subway										
41st St and Broadway	WIDTH (ft)									
Passageway	12.1	10.1	919	1221	2045	2045	0.45	0.60	A	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
ML5/ML7 The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future with the Proposed Action (Special Event)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	45	38	1256	1256	0.04	0.03	A	A
P3	10.3	9.3	50	25	1256	1256	0.04	0.02	A	A
P4	9.7	8.7	5	12	1175	1175	0.00	0.01	A	A
P5	10.1	9.1	11	23	1229	1229	0.01	0.02	A	A
P6	10.0	9.0	16	32	1215	1215	0.01	0.03	A	A
P7	8.6	7.6	200	119	1026	1026	0.19	0.12	A	A
M2AB	12.4	11.4	190	151	1539	1539	0.12	0.10	A	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	293	276	4286	4286	0.07	0.06	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.3
2010 Future with the Proposed Action (Special Event)
(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Lower Mezzanine to Platform		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	821	793	851	851	0.97	0.93	C	C
PL3	7.3	6.3	902	833	851	851	1.06	0.98	D	C
PL1AB	15.0	14.0	1723	1626	1890	1890	0.91	0.86	C	C
PL5	7.3	6.3	836	789	851	851	0.98	0.93	C	C
PL6	7.3	6.3	886	744	851	851	1.04	0.87	D	C
PL4AB	15.0	14.0	1722	1533	1890	1890	0.91	0.81	C	C
PL9AB	15.0	14.0	91	64	1890	1890	0.05	0.03	A	A
ML1	4.0	3.0	7	2	405	405	0.02	0.00	A	A
Escalators	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40	90	8	34	1170	1170	0.01	0.03	A	A
Escalator (E204-Up/Down)	40	90	71	28	1170	1170	0.06	0.02	A	A
Escalator (E207-Up)	40	90	368	1,330	1170	1170	0.31	1.14	B	F
Escalator (E209-Up/Down)	40	90	1,386	93	1170	1170	1.18	0.08	F	A
Escalator (E205-Up)	40	90	294	1,091	1170	1170	0.25	0.93	B	E
Escalator (E206-Up/Down)	40	90	1,046	74	1170	1170	0.89	0.06	E	A
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (ft)								
Passageway	11.5	9.5	1892	2023	1924	1924	0.98	1.05	C	D

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Weekday AM/PM)

(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE							
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED		IMPACT / MITIGATION	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - A25	NUMBERS	TWO-WAY																				
Turnstile	7	2	990	879	0	1	990	880	0.33	0.29	0.33	0.29			B	B	B	B				
Service Gate	1	2	101	187	0	0	101	187	0.15	0.28	0.15	0.28			A	B	A	B				
High Entrance/Exit Turnstile	3	2	432	457	0	0	432	457	0.53	0.56	0.53	0.56			C	C	C	C				
Street Stairs		EFFECTIVE																				
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)																				
S1 (NE)	5.4	4.4	105	373	0	0	105	373	0.18	0.63	0.18	0.63			A	B	A	B				
M2	5.7	4.7	105	373	0	0	105	373	0.17	0.59	0.17	0.59			A	B	A	B				
S2AB (NW)	7.2	6.2	1154	543	0	0	1154	543	1.38	0.65	1.38	0.65			E	B	E	B			0 < 3	
M1AB	7.2	6.2	1154	543	0	0	1154	543	1.38	0.65	1.38	0.65			E	B	E	B			0 < 3	
H&M 300 (6th Ave)	4.9	3.9	329	412	0	0	329	412	0.62	0.78	0.62	0.78			B	C	B	C				
H&M 300 (Mezz to Stairs)	8.1	7.1	329	412	0	0	329	412	0.34	0.43	0.34	0.43			A	A	A	A				
H&M 302ABC (Mezz to Concourse)	23.7	22.7	630	473	0	0	630	473	0.21	0.15	0.21	0.15			A	A	A	A				
Control Area		ONE- OR																				
Booth - N506	NUMBERS	TWO-WAY																				
Turnstile	14	2	1298	1965	-1	-1	1297	1964	0.21	0.32	0.21	0.32			B	B	B	B				
Service Gate	1	2	210	173	0	0	210	173	0.31	0.26	0.31	0.26			B	B	B	B				
Street Stairs		EFFECTIVE																				
34th St and Broadway	WIDTH (ft)	WIDTH (ft)																				
S5AB (SW)	9	8	1585	1205	0	-1	1585	1204	1.47	1.12	1.47	1.11			E	D	E	D			0 < 3	-0.08 < 6
M5AB	9	8	1585	1205	0	-1	1585	1204	1.47	1.12	1.47	1.11			E	D	E	D			0 < 3	-0.08 < 6
S7AB (NW)	8.3	7.3	1217	1318	0	-1	1217	1317	1.23	1.34	1.23	1.34			D	E	D	E			0 < 6	-0.07 < 3
M7AB	8.6	7.6	1217	1318	0	-1	1217	1317	1.19	1.28	1.19	1.28			D	D	D	D			0 < 6	-0.07 < 6
Control Area		ONE- OR																				
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY																				
Turnstile	11	2	2066	2178	0	2	2066	2180	0.43	0.46	0.43	0.46			C	C	C	C				
Service Gate	1	2	43	10	0	0	43	10	0.06	0.01	0.06	0.01			A	A	A	A				
Street Stair		EFFECTIVE																				
32nd to 33rd St. and 6th Avenue	WIDTH (ft)	WIDTH (ft)																				
H&M 307	5.6	4.6	1133	225	0	1	1133	226	1.82	0.36	1.82	0.36			F	A	F	A			0 < 1	
Escalators		0																				
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)																				
E221	24		147	838	0	1	147	839	0.25	1.40	0.25	1.40			B	F	B	F				
E222	40		985	953	0	0	985	953	0.84	0.81	0.84	0.81			E	E	E	E				
Concourse to N507		EFFECTIVE																				
Internal Stairs	WIDTH (ft)	WIDTH (ft)																				
ML7AB	11.6	10.6	567	568	0	0	567	568	0.40	0.40	0.40	0.40			A	A	A	A				
ML1AB	8.6	7.6	725	546	0	0	725	546	0.71	0.53	0.71	0.53			C	B	C	B				
Escalators		0																				
33rd and Broadway	WIDTH (in)	SPEED (fpm)																				
E223	24		712	696	0	0	712	696	1.19	1.16	1.19	1.16			F	F	F	F				
E224	24		84	459	0	1	84	460	0.14	0.77	0.14	0.77			A	D	A	D				
Control Area		ONE- OR																				
Booth - A22	NUMBERS	TWO-WAY																				
Turnstile	3	2	569	845	0	0	569	845	0.44	0.65	0.44	0.65			C	D	C	D				
Service Gate	1	2	0	5	0	0	0	5	0.00	0.01	0.00	0.01			A	A	A	A				
High Entrance/Exit Turnstile	2	2	283	264	0	0	283	264	0.52	0.49	0.52	0.49			C	C	C	C				
Hign Exit Turnstile	2	1	22	40	0	0	22	40	0.02	0.09	0.02	0.09			A	A	A	A				
Street Stairs		EFFECTIVE																				
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S4 (SE)	6	5	625	794	0	0	625	794	0.93	1.18	0.93	1.18			C	D	C	D				0 < 6
M4AB	11.5	10.5	625	794	0	0	625	794	0.44	0.56	0.44	0.56			A	B	A	B				
S8 (NE)	6	5	253	383	0	0	253	383	0.37	0.57	0.37	0.57			A	B	A	B				
M8AB	11.5	10.5	253	383	0	0	253	383	0.18	0.27	0.18	0.27			A	A	A	A				
Control Area		ONE- OR																				
Booth - N505	NUMBERS	TWO-WAY																				
Turnstile	10	2	1657	1315	-1	-4	1656	1311	0.38	0.30	0.38	0.30			B	B	B	B				
High Entrance/Exit Turnstile	2	2	464	424	-1	-1	463	423	0.86	0.79	0.86	0.78			E	D	E	D				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S5 (SE)	4.8	3.8	294	189	0	0	294	189	0.57	0.37	0.57	0.37			B	A	B	A				
M9	4.8	3.8	294	189	0	0	294	189	0.57	0.37	0.57	0.37			B	A	B	A				
M10AB	9.6	8.6	294	189	0	0	294	189	0.25	0.16	0.25	0.16			A	A	A	A				
S8 (NE)	4.8	3.8	720	653	0	0	720	653	1.40	1.27	1.40	1.27			E	D	E	D			0 < 3	0 < 6
M8AB	9.6	8.6	720	653	0	0	720	653	0.62	0.56	0.62	0.56			B	B	B	B				
S7 (NW)	5.8	4.8	431	168	0	0	431	168	0.67	0.26	0.67	0.26			B	A	B	A				
M7AB	9.7	8.7	431	168	0	0	431	168	0.37	0.14	0.37	0.14			A	A	A	A				
Street Stairs		EFFECTIVE																				
35th St and Broadway	WIDTH (ft)	WIDTH (ft)																				
S4 (SW)	5.1	4.1	30	123	-1	-2	29	121	0.05	0.22	0.05	0.22			A	A	A	A				
M5AB	7.6	6.6	30	123	-1	-2	29	121	0.03	0.14	0.03	0.14			A	A	A	A				
S6 (NW)	4.9	3.9	645	608	-1	-2	644	606	1.23	1.15	1.22	1.15			D	D	D	D			-0.07 < 6	-0.15 < 6
M6AB	7.9	6.9	645	608	-1	-2	644	606	0.69	0.65	0.69	0.65			B	B	B	B				

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Weekday AM/PM)

(iii) Sixth Avenue at 42nd Street Subway Station (B, D, F, and V)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - 504	NUMBERS	TWO-WAY																				
Turnstile	8	2	1701	1336	1	2	1702	1338	0.49	0.39	0.49	0.39			C	B	C	B				
Service Gate	1	2	5	0	0	0	5	0	0.01	0.00	0.01	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
40th St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S5 (SE)	5	4	716	429	0	0	716	429	1.33	0.79	1.33	0.79			D	C	D	C			0 < 6	
M6	8.6	7.6	716	429	0	0	716	429	0.70	0.42	0.70	0.42			B	A	B	A				
S6 (NE)	4.7	3.7	75	418	0	0	75	418	0.15	0.84	0.15	0.84			A	C	A	C				
M7	8.3	7.3	75	418	0	0	75	418	0.08	0.42	0.08	0.42			A	A	A	A				
M8	8.3	7.3	75	418	0	0	75	418	0.08	0.42	0.08	0.42			A	A	A	A				
S4 (SW)	4.7	3.7	682	431	1	0	683	431	1.37	0.86	1.37	0.86			E	C	E	C			0.07 < 3	
M4	4.7	3.7	682	431	1	0	683	431	1.37	0.86	1.37	0.86			E	C	E	C			0.07 < 3	
M5	8.4	7.4	682	431	1	0	683	431	0.68	0.43	0.68	0.43			B	A	B	A				
O6 (NW)	5.8	4.8	235	58	0	1	235	59	0.36	0.09	0.36	0.09			A	A	A	A				
O7	5.7	4.7	235	58	0	1	235	59	0.37	0.09	0.37	0.09			A	A	A	A				
M9	5.7	4.7	235	58	0	1	235	59	0.37	0.09	0.37	0.09			A	A	A	A				
M10	5.7	4.7	235	58	0	1	235	59	0.37	0.09	0.37	0.09			A	A	A	A				
Control Area		ONE- OR																				
Booth - N503	NUMBERS	TWO-WAY																				
Turnstile	6	2	899	920	0	0	899	920	0.35	0.35	0.35	0.35			B	B	B	B				
Service Gate	1	2	37	0	0	0	37	0	0.05	0.00	0.05	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S8 (SE)	5.9	4.9	694	515	0	0	694	515	1.05	0.78	1.05	0.78			D	C	D	C			0 < 6	
M12	7	6	694	515	0	0	694	515	0.86	0.64	0.86	0.64			C	B	C	B				
M13	7	6	694	515	0	0	694	515	0.86	0.64	0.86	0.64			C	B	C	B				
No Code (Bet 6th&7th)	8	7	242	404	0	0	242	404	0.26	0.43	0.26	0.43			A	A	A	A				
O1ABC	19.7	18.7	242	404	0	0	242	404	0.10	0.16	0.10	0.16			A	A	A	A				
M11ABCD	18.2	17.2	242	404	0	0	242	404	0.10	0.17	0.10	0.17			A	A	A	A				
Control Area		ONE- OR																				
Booth - N502	NUMBERS	TWO-WAY																				
Turnstile	6	2	1403	1479	-3	-7	1400	1472	0.54	0.57	0.54	0.57			C	C	C	C				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S11AB (NE)	9.6	8.6	662	620	0	0	662	620	0.57	0.53	0.57	0.53			B	B	B	B				
M20AB	10	9	662	620	0	0	662	620	0.54	0.51	0.54	0.51			B	B	B	B				
M19AB	10	9	662	620	0	0	662	620	0.54	0.51	0.54	0.51			B	B	B	B				
M18AB	10	9	662	620	0	0	662	620	0.54	0.51	0.54	0.51			B	B	B	B				
S9 (NW)	5.6	4.6	431	565	-3	-7	428	558	0.69	0.91	0.69	0.90			B	C	B	C				
M14	7.7	6.7	431	565	-3	-7	428	558	0.48	0.62	0.47	0.62			B	B	B	B				
M15AB	13.2	12.2	431	565	-3	-7	428	558	0.26	0.34	0.26	0.34			A	A	A	A				
S10 (Bet 42nd&43rd)	5.7	4.7	310	300	0	0	310	300	0.49	0.47	0.49	0.47			B	B	B	B				
M17	6.9	5.9	310	300	0	0	310	300	0.39	0.38	0.39	0.38			A	A	A	A				
M16	6.9	5.9	310	300	0	0	310	300	0.39	0.38	0.39	0.38			A	A	A	A				

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Weekday AM/PM)

(vi) Seventh Avenue at 34th Street Subway Station (1, 2, 3, and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE							
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED		IMPACT / MITIGA	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - R137	NUMBERS	TWO-WAY																				
Turnstile	3	2	311	386	1	2	312	388	0.24	0.30	0.24	0.30			B	B	B	B				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
32nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
O15AB (NE)	10.3	9.3	311	386	1	2	312	388	0.25	0.31	0.25	0.31			A	A	A	A				
O14AB	10.3	9.3	311	386	1	2	312	388	0.25	0.31	0.25	0.31			A	A	A	A				
Control Area		ONE- OR																				
Booth - R135	NUMBERS	TWO-WAY																				
Turnstile	6	2	1262	1714	0	0	1262	1714	0.49	0.66	0.49	0.66			C	D	C	D				
Service Gate	1	2	106	53	0	0	106	53	0.16	0.08	0.16	0.08			A	A	A	A				
(32nd Street Sub passage to Penn Station)																						
Control Area		ONE- OR																				
Booth - R139	NUMBERS	TWO-WAY																				
Turnstile	4	2	457	511	0	1	457	512	0.26	0.30	0.26	0.30			B	B	B	B				
High Entrance/Exit Turnstile	1	2	42	159	0	0	42	159	0.16	0.59	0.16	0.59			A	C	A	C				
Street Stairs		EFFECTIVE																				
33rd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
O17AB (SE)	10	9	1120	347	0	0	1120	347	0.92	0.29	0.92	0.29			C	A	C	A				
P3AB	10.7	9.7	1120	347	0	0	1120	347	0.86	0.26	0.86	0.26			C	A	C	A				
O19 (NE/E)	5.8	4.8	137	194	0	0	137	194	0.21	0.30	0.21	0.30			A	A	A	A				
O18	5.8	4.8	137	194	0	0	137	194	0.21	0.30	0.21	0.30			A	A	A	A				
S2 (NE/W)	5.3	4.3	206	346	1	3	207	349	0.35	0.60	0.36	0.60			A	B	A	B				
P4	7	6	206	346	1	3	207	349	0.25	0.43	0.26	0.43			A	A	A	A				
Control Area		ONE- OR																				
Booth - R138	NUMBERS	TWO-WAY																				
Turnstile (1)	12	2	2423	1594	0	2	2423	1596	0.47	0.31	0.47	0.31			C	B	C	B				
Service Gate	1	2	709	888	0	0	709	888	1.05	1.32	1.05	1.32			F	F	F	F				
(33rd Street Sub passage to Penn Station and Control Area R139)																						
Sub passage Stairs		EFFECTIVE																				
33rd St Sub passage	WIDTH (ft)	WIDTH (ft)																				
ML2AB	13	12	993	384	0	2	993	386	0.61	0.24	0.61	0.24			B	A	B	A				
ML4AB	13	12	993	384	0	2	993	386	0.61	0.24	0.61	0.24			B	A	B	A				
		ONE- OR																				
Control Area	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	1	2	145	133	1	2	146	135	0.54	0.49	0.54	0.50			C	C	C	C				
Street Stairs		EFFECTIVE																				
33rd and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)																				
S1 (NW)	4.4	3.4	145	133	1	2	146	135	0.32	0.29	0.32	0.29			A	A	A	A				
P2	4.8	3.8	145	133	1	2	146	135	0.28	0.26	0.28	0.26			A	A	A	A				
P1	8.5	7.5	145	133	1	2	146	135	0.14	0.13	0.14	0.13			A	A	A	A				
Control Area		ONE- OR																				
Booth - R141	NUMBERS	TWO-WAY																				
Turnstile	8	2	358	822	14	16	372	838	0.10	0.24	0.11	0.24			A	B	A	B				
Street Stairs		EFFECTIVE																				
34th St and 7th Ave (East)	WIDTH (ft)	WIDTH (ft)																				
S4 (SE)	10	9	293	550	8	9	301	559	0.24	0.45	0.25	0.46			A	B	A	B				
P6AB	7.9	6.9	293	550	8	9	301	559	0.31	0.59	0.32	0.60			A	B	A	B				
S6 (NE)	5.05	4.05	66	272	8	9	74	281	0.12	0.50	0.14	0.51			A	B	A	B				
P8AB	12.3	11.3	66	272	8	9	74	281	0.04	0.18	0.05	0.18			A	A	A	A				
Control Area		ONE- OR																				
Booth - R142 (3)	NUMBERS	TWO-WAY																				
Turnstile	4	2	656	663	12	15	668	678	0.38	0.38	0.39	0.39			B	B	B	B				
High Entrance/Exit Turnstile	2	2	97	34	2	1	99	35	0.18	0.06	0.18	0.06			A	A	A	A				
Service Gate	1	2	3	8	0	0	3	8	0.00	0.01	0.00	0.01			A	A	A	A				
Street Stairs		EFFECTIVE																				
34th St and 7th Ave (West) (3)	WIDTH (ft)	WIDTH (ft)																				
S3 (SW)	10	9	305	164	8	8	313	172	0.25	0.13	0.26	0.14			A	A	A	A				
P5AB	12.1	11.1	305	164	8	8	313	172	0.20	0.11	0.21	0.11			A	A	A	A				
S5 (NW)	5.6	4.6	451	544	8	8	459	552	0.73	0.88	0.74	0.89			C	C	C	C				
P7AB	12.2	11.2	451	544	8	8	459	552	0.30	0.36	0.30	0.37			A	A	A	A				

Appendix S.4.4.4
2010 Build Condition with Mitigation Measures (Weekday AM/PM)
(ix) Eight Avenue and 34th Street/Penn Station/Madison Square Garden (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGA	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - N67	NUMBERS	TWO-WAY																				
Turnstile	13	2	1686	1008	2	5	1688	1013	0.30	0.18	0.30	0.18			B	A	B	A				
High Entrance/Exit Turnstile	2	2	58	32	0	0	58	32	0.11	0.06	0.11	0.06			A	A	A	A				
Service Gate	1	2	10	0	0	0	10	0	0.01	0.00	0.01	0.00			A	A	A	A				
(With Hallways to Penn Station)																						
Control Area		ONE- OR																				
Booth - N68	NUMBERS	TWO-WAY																				
Turnstile	3	2	400	299	23	43	423	342	0.31	0.23	0.33	0.26			B	B	B	B				
High Entrance/Exit Turnstile	1	2	291	52	0	3	291	55	1.08	0.19	1.08	0.20			F	A	F	B				
Service Gate	1	2	5	0	17	1	22	1	0.01	0.00	0.03	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
35th St and 8th Ave (East)	WIDTH (ft)	WIDTH (ft)																				
S11 (SE)	4.1	3.1	182	76	33	39	215	115	0.43	0.18	0.51	0.27			A	A	B	A				
P10AB	9.1	8.1	182	76	33	39	215	115	0.17	0.07	0.20	0.11			A	A	A	A				
S15 (NE/E)	4.1	3.1	119	77	0	0	119	77	0.28	0.18	0.28	0.18			A	A	A	A				
S14 (NE/W)	4.1	3.1	394	158	9	9	403	167	0.94	0.38	0.96	0.40			C	A	C	A				
P12AB	9.1	8.1	514	273	8	8	522	281	0.47	0.25	0.48	0.26			B	A	B	A				
Control Area		ONE- OR																				
Booth - N69	NUMBERS	TWO-WAY																				
Turnstile	3	2	1	382	51	65	52	447	0.00	0.29	0.04	0.34			A	B	A	B				
High Entrance/Exit Turnstile	1	2	485	53	0	7	485	60	1.80	0.20	1.80	0.22			F	A	F	B				
Service Gate	1	2	90	0	11	0	101	0	0.13	0.00	0.15	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
35th St and 8th Ave (West)	WIDTH (ft)	WIDTH (ft)																				
S10 (SW)	4.2	3.2	90	101	31	35	121	136	0.21	0.23	0.28	0.31			A	A	A	A				
P9	6.1	5.1	90	101	31	35	121	136	0.13	0.15	0.18	0.20			A	A	A	A				
S13 (NW/E)	4.1	3.1	411	290	0	0	411	290	0.98	0.69	0.98	0.69			C	B	C	B				
S12 (NW/W)	4.1	3.1	85	44	31	35	116	79	0.20	0.11	0.28	0.19			A	A	A	A				
P11AB	9.1	8.1	497	335	30	35	527	370	0.45	0.31	0.48	0.34			B	A	B	A				
Control Area		ONE- OR																				
Booth - N70	NUMBERS	TWO-WAY																				
Turnstile	5	2	295	526	53	64	348	590	0.14	0.24	0.16	0.27			A	B	A	B				
Service Gate	1	2	3	13	0	2	3	15	0.00	0.02	0.00	0.02			A	A	A	A				
Street Stairs		EFFECTIVE																				
34th St and 8th Ave (East)	WIDTH (ft)	WIDTH (ft)																				
S7	7	6	179	219	27	34	206	253	0.22	0.27	0.25	0.31			A	A	A	A				
P6AB	6.7	5.7	179	219	27	34	206	253	0.23	0.28	0.27	0.33			A	A	A	A				
S9	11.5	10.5	123	308	26	29	149	337	0.09	0.22	0.11	0.24			A	A	A	A				
P8AB	5.5	4.5	123	308	26	29	149	337	0.20	0.51	0.25	0.55			A	B	A	B				
Control Area		ONE- OR																				
Booth - N71	NUMBERS	TWO-WAY																				
Turnstile	5	2	509	630	53	60	562	690	0.24	0.29	0.26	0.32			B	B	B	B				
Service Gate	1	2	536	43	0	1	536	44	0.79	0.06	0.79	0.07			D	A	D	A				
Street Stairs		EFFECTIVE																				
34th St and 8th Ave (West)	WIDTH (ft)	WIDTH (ft)																				
S6 (SW)	5.7	4.7	325	423	36	42	361	465	0.51	0.67	0.57	0.73			B	B	B	C				
P5AB	11.6	10.6	325	423	36	42	361	465	0.23	0.30	0.25	0.32			A	A	A	A				
S8 (NW)	5.8	4.8	719	247	14	19	733	266	1.11	0.38	1.13	0.41			D	A	D	A			1.12 < 6	
P7AB	8.8	7.8	719	247	14	19	733	266	0.68	0.23	0.70	0.25			B	A	B	A				
Control Area		ONE- OR																				
Booth - N72	NUMBERS	TWO-WAY																				
Turnstile	9	2	1640	1463	2	6	1642	1469	0.42	0.38	0.42	0.38			C	B	C	B				
Service Gate	3	2	52	276	1	1	53	277	0.03	0.14	0.03	0.14			A	A	A	A				
Street Stairs		EFFECTIVE																				
33rd St and 8th Ave	WIDTH (ft)	WIDTH (ft)																				
S1 (SE)	7.4	6.4	174	189	3	7	177	196	0.20	0.22	0.20	0.23			A	A	A	A				
P1	7.4	6.4	174	189	3	7	177	196	0.20	0.22	0.20	0.23			A	A	A	A				
S5 (NE)	4	3	134	142	0	0	134	142	0.33	0.35	0.33	0.35			A	A	A	A				
P4	4.4	3.4	134	142	0	0	134	142	0.29	0.31	0.29	0.31			A	A	A	A				
Control Area		ONE- OR																				
Booth - N73	NUMBERS	TWO-WAY																				
Turnstile	9	2	628	490	0	1	628	491	0.16	0.13	0.16	0.13			A	A	A	A				
Service Gate	1	2	271	559	1	0	272	559	0.40	0.83	0.40	0.83			C	E	C	E				
Street Stairs		EFFECTIVE																				
33rd St and 8th Ave	WIDTH (ft)	WIDTH (ft)																				
S3 (SW/E)	12	11	279	159	0	0	279	159	0.19	0.11	0.19	0.11			A	A	A	A				
S2 (SW/W)	12	11	442	149	1	2	443	151	0.30	0.10	0.30	0.10			A	A	A	A				
P2AB	12	11	723	308	1	1	724	309	0.49	0.21	0.49	0.21			B	A	B	A				
S4 (NW)	4.4	3.4	418	151	2	6	420	157	0.91	0.33	0.92	0.34			C	A	C	A				
P3	4.4	3.4	418	151	2	6	420	157	0.91	0.33	0.92	0.34			C	A	C	A				
Internal Stairs		EFFECTIVE																				
33rd St Passage	WIDTH (ft)	WIDTH (ft)																				
GLAB (To Penn Station)	16.5	15.5	1387	845	0	0	1387	845	0.66	0.40	0.66	0.40			B	A	B	A				
M5 (To Sub-Passage)	5.7	4.7	389	169	0	0	389	169	0.61	0.27	0.61	0.27			B	A	B	A				
M6	5.7	4.7	389	169	0	0	389	169	0.61	0.27	0.61	0.27			B	A	B	A				
M3AB (To Sub-Passage)	9.2	8.2	579	571	0	0	579	571	0.52	0.52	0.52	0.52			B	B	B	B				
M4	9.2	8.2	579	571	0	0	579	571	0.52	0.52	0.52	0.52			B	B	B	B				
To LIRR Platforms	7.2	6.2	531	452	0	0	531	452	0.63	0.54	0.63	0.54			B	B	B	B				

Appendix S.4.4.4
2010 Build Condition with Mitigation Measures (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - N63	NUMBERS	TWO-WAY																				
Turnstile	7	2	731	530	5	5	736	535	0.24	0.18	0.24	0.18			B	A	B	A				
High Entrance/Exit Turnstile	2	2	134	114	-1	0	133	114	0.25	0.21	0.25	0.21			B	B	B	B				
High Exit Turnstile (1)	1	1	33	0	0	0	33	0	0.07	0.00	0.07	0.00			A	A	A	A				
Service Gate	1	2	0	70	0	1	0	71	0.00	0.10	0.00	0.11			A	A	A	A				
Control Area		ONE- OR																				
Booth - N63A	NUMBERS	TWO-WAY																				
Turnstile	10	2	2044	1434	4	5	2048	1439	0.47	0.33	0.47	0.33			C	B	C	B				
Service Gate	1	2	241	222	0	2	241	224	0.36	0.33	0.36	0.33			B	B	B	B				
Street Stairs		ONE- OR																				
40th St and 8th Ave	WIDTH (ft)	TWO-WAY																				
M1AB (2)	9.6	3.7	153	117	7	11	160	128	0.31	0.23	0.32	0.26			A	A	A	A				
O8 (2)	8.2	8.8	154	117	7	11	161	128	0.13	0.10	0.14	0.11			A	A	A	A				
S2 (SE)	4.7	3.7	594	433	0	0	594	433	1.19	0.87	1.19	0.87			D	C	D	C			0 < 6	
M2AB	9.8	8.8	594	433	0	0	594	433	0.50	0.36	0.50	0.36			B	A	B	A				
S4 (NE)	4.7	3.7	168	121	0	0	168	121	0.34	0.24	0.34	0.24			A	A	A	A				
M4AB	9.8	8.8	168	121	0	0	168	121	0.14	0.10	0.14	0.10			A	A	A	A				
S3(NW)	4.7	3.7	393	446	2	3	395	449	0.79	0.89	0.79	0.90			C	C	C	C				
M3AB	9.8	8.8	393	446	2	3	395	449	0.33	0.38	0.33	0.38			A	A	A	A				
Control Area		ONE- OR																				
Booth - N62	NUMBERS	TWO-WAY																				
Turnstile	8	2	1195	1329	0	0	1195	1329	0.35	0.38	0.35	0.38			B	B	B	B				
Service Gate	1	2	10	200	0	0	10	200	0.01	0.30	0.01	0.30			A	B	A	B				
(Hallway to PABT Between 41st and 42nd St.)																						
Control Area		ONE- OR																				
Booth - N62A	NUMBERS	TWO-WAY																				
Turnstile	7	2	158	259	0	0	158	259	0.05	0.09	0.05	0.09			A	A	A	A				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)																				
O11AB (NE)	9.6	8.6	59	92	0	0	59	92	0.05	0.08	0.05	0.08			A	A	A	A				
O10AB	9.6	8.6	158	259	0	0	158	259	0.14	0.22	0.14	0.22			A	A	A	A				
O9AB	9.5	8.5	59	92	0	0	59	92	0.05	0.08	0.05	0.08			A	A	A	A				
Stairway (No Code)	10	9	59	91	0	0	59	91	0.05	0.07	0.05	0.07			A	A	A	A				
Stairway (No Code)	10	9	59	91	0	0	59	91	0.05	0.07	0.05	0.07			A	A	A	A				
Street Stairs		0																				
42nd St and 8Ave (East)	WIDTH (in)	0																				
Escalator (No Code)	40		38	57	0	0	38	57	0.03	0.05	0.03	0.05			A	A	A	A				
Escalator (No Code)	40		38	57	0	0	38	57	0.03	0.05	0.03	0.05			A	A	A	A				
Control Area (42nd St and 8 A\	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	2	9	542	602	68	62	610	664	1.00	1.11	1.13	1.23	0.60	0.66	F	F	F	F	D	D	Sig Imp	Sig Imp
Street Stairs		EFFECTIVE																				
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)																				
S8 (NW)	5.9	4.9	542	596	68	62	610	658	0.82	0.90	0.92	0.99			C	C	C	C				
M9AB	9.6	8.6	542	596	68	62	610	658	0.47	0.51	0.53	0.57			B	B	B	B				
Control Area		ONE- OR																				
Booth - N60A	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	2	2	Plywood Barricade																			
Street Stairs		EFFECTIVE																				
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)																				
S10	5.3	4.3	Plywood Barricade																			
M11AB	7.9	6.9	Plywood Barricade																			
Control Area		ONE- OR																				
Booth - N60	NUMBERS	TWO-WAY																				
Turnstile	7	2	568	591	0	0	568	591	0.19	0.20	0.19	0.20			A	A	A	A				
Service Gate	1	2	26	42	0	0	26	42	0.04	0.06	0.04	0.06			A	A	A	A				
Street Stairs		EFFECTIVE																				
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)																				
S12 (SE)	4.6	3.6	353	333	0	0	353	333	0.73	0.69	0.73	0.69			C	B	C	B				
M13AB	9.9	8.9	353	333	0	0	353	333	0.29	0.28	0.29	0.28			A	A	A	A				
S11 (SW)	4.8	3.8	132	147	0	0	132	147	0.26	0.29	0.26	0.29			A	A	A	A				
M12AB	8.5	7.5	132	147	0	0	132	147	0.13	0.15	0.13	0.15			A	A	A	A				
S13 (NW)	4.6	3.6	111	153	0	0	111	153	0.23	0.31	0.23	0.31			A	A	A	A				
M14AB	8.5	7.5	111	153	0	0	111	153	0.11	0.15	0.11	0.15			A	A	A	A				

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Weekday AM/PM)

(vii-A) 42nd Street/Times Square Subway Station (N, R, S, Q, W, 1, 2, 3, 7 and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES NO BUILD AM	NO BUILD PM	INCREMENT AM	INCREMENT PM	BUILD AM	BUILD PM	V/SVCD RATIO NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	MITIGATED AM	MITIGATED PM	LEVEL OF SERVICE NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	MITIGATED AM	MITIGATED PM	IMPACT / MITIGA AM	IMPACT / MITIGA PM
Control Area		ONE- OR																				
Booth - R143 (1)	NUMBERS	TWO-WAY																				
Turnstile	8	2	848	985	6	6	854	991	0.25	0.29	0.25	0.29			B	B	B	B				
Service Gate	3	2	376	12	0	1	376	13	0.19	0.01	0.19	0.01			A	A	A	A				
Street Stairs		EFFECTIVE																				
40th St and 7Ave	WIDTH (ft)	WIDTH (ft)																				
S2 (SE)	5.6	4.6	762	598	0	0	762	598	1.23	0.96	1.23	0.96			D	C	D	C			0 < 6	
M1AB	9.7	8.7	762	598	0	0	762	598	0.65	0.51	0.65	0.51			B	B	B	B				
O1AB (SW)	9.3	8.3	446	377	5	6	451	383	0.40	0.34	0.40	0.34			A	A	A	A				
O2AB	10.6	9.6	446	377	5	6	451	383	0.34	0.29	0.35	0.30			A	A	A	A				
Control Area		ONE- OR																				
Booth - A21	NUMBERS	TWO-WAY																				
Turnstile	8	2	824	1612	5	6	829	1618	0.24	0.47	0.24	0.47			B	C	B	C				
Service Gate	2	2	215	0	0	0	215	0	0.16	0.00	0.16	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
40th St and Broadway	WIDTH (ft)	WIDTH (ft)																				
11-A (Control Area Stairway)	5.1	4.1	227	301	0	0	227	301	0.41	0.54	0.41	0.54			A	B	A	B				
11-B (Street Stairway)	8.3	7.3	227	301	0	0	227	301	0.23	0.31	0.23	0.31			A	A	A	A				
12-A (Control Area Stairway)	6.5	5.5	362	529	2	4	364	533	0.49	0.71	0.49	0.72			B	C	B	C				
12-B (Street Stairway)	6	5	362	529	2	4	364	533	0.54	0.78	0.54	0.79			B	C	B	C				
13-A (Control Area Stairway)	6	5	227	301	0	0	227	301	0.34	0.45	0.34	0.45			A	A	A	A				
13-B (Street Stairway)	6.5	5.5	227	301	0	0	227	301	0.31	0.41	0.31	0.41			A	A	A	A				
14-A (Control Area Stairway)	6.5	5.5	202	459	2	4	204	463	0.27	0.62	0.27	0.62			A	B	A	B				
14-B (Street Stairway)	6.5	5.5	202	459	2	4	204	463	0.27	0.62	0.27	0.62			A	B	A	B				
Control Area (41st and Broadway)	NUMBERS	TWO-WAY																				
High Revolving Exit	1	1	200	68	0	0	200	68	0.44	0.15	0.44	0.15			C	A	C	A				
Street Stairs		EFFECTIVE																				
41st St and Broadway	WIDTH (ft)	WIDTH (ft)																				
S7 (SW)	4.5	3.5	100	34	0	0	100	34	0.21	0.07	0.21	0.07			A	A	A	A				
M6A	7.6	6.6	100	34	0	0	100	34	0.11	0.04	0.11	0.04			A	A	A	A				
M6B	7.6	6.6	200	68	0	0	200	68	0.22	0.08	0.22	0.08			A	A	A	A				
Control Area		ONE- OR																				
Booth - R145 (2)	NUMBERS	TWO-WAY																				
Turnstiles	5	2	290	202	0	0	290	202	0.13	0.09	0.13	0.09			A	A	A	A				
Service Gate	1	2	44	34	0	0	44	34	0.07	0.05	0.07	0.05			A	A	A	A				
Street Stairs		EFFECTIVE																				
41st St and 7th Avenue	WIDTH (ft)	WIDTH (ft)																				
M2ABC	13.75	12.75	333	236	0	0	333	236	0.19	0.14	0.19	0.14			A	A	A	A				
S4	6.25	5.25	147	129	0	0	147	129	0.21	0.18	0.21	0.18			A	A	A	A				
M6	6.25	5.25	186	107	0	0	186	107	0.26	0.15	0.26	0.15			A	A	A	A				
S6	6.25	5.25	186	107	0	0	186	107	0.26	0.15	0.26	0.15			A	A	A	A				
Control Area		ONE- OR																				
Booth - R146 (3)	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	3	2	561	685	42	38	603	723	0.69	0.85	0.74	0.89			D	E	D	E				
Street Stairs		EFFECTIVE																				
41st St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
Stairway (No Code) (3)	7.7	6.7	561	685	42	38	603	723	0.62	0.76	0.67	0.80			B	C	B	C				
Stairway (No Code) (3)	7	6	561	685	42	38	603	723	0.69	0.85	0.74	0.89			B	C	C	C				
Stairway (No Code) (3)	7	6	347	432	0	0	347	432	0.69	0.85	0.74	0.89			B	C	C	C				
Control Area		ONE- OR																				
Booth - R148	NUMBERS	TWO-WAY																				
Turnstile	6	2	809	788	0	0	809	788	0.31	0.30	0.31	0.30			B	B	B	B				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and Broadway	WIDTH (ft)	WIDTH (ft)																				
S11 (SE)	5.8	4.8	809	788	0	0	809	788	1.25	1.22	1.25	1.22			D	D	D	D			0 < 6	0 < 6
P1	5.8	4.8	809	788	0	0	809	788	1.25	1.22	1.25	1.22			D	D	D	D			0 < 6	0 < 6
Control Area		ONE- OR																				
Booth - R147	NUMBERS	TWO-WAY																				
Turnstile	7	2	636	688	0	0	636	688	0.21	0.23	0.21	0.23			B	B	B	B				
High Revolving Exit	2	1	111	121	0	0	111	121	0.14	0.15	0.14	0.15			A	A	A	A				
Service Gate	1	2	0	5	0	0	0	5	0.00	0.01	0.00	0.01			A	A	A	A				
(Street Level Control Area: SE corner of 42nd St and 7th Ave)																						
Street Stairs		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
M6AB	8.3	7.3	81	96	0	0	81	96	0.08	0.10	0.08	0.10			A	A	A	A				
M7AB	8.3	7.3	81	96	0	0	81	96	0.08	0.10	0.08	0.10			A	A	A	A				
Escalators		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)																				
Escalator (E266-Up)	40		554	276	0	0	554	276	0.47	0.24	0.54	0.27			C	B	C	B				
Escalator (E267-Down)	40		111	442	0	0	111	442	0.09	0.43	0.11	0.43			A	C	A	C				
Control Area		ONE- OR																				
Booth - R151	NUMBERS	TWO-WAY																				
Turnstile	9	2	1036	1304	42	38	1078	1342	0.27	0.34	0.28	0.35			B	B	B	B				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
M9AB	13.8	12.8	262	642	20	18	282	660	0.15	0.37	0.16	0.38			A	A	A	A				
Stairway (No Code)	8.3	7.3	120	183	11	9	131	192	0.12	0.19	0.13	0.19			A	A	A	A				
Stairway (No Code)	8.3	7.3	120	183	11	9	131	192	0.12	0.19	0.13	0.19			A	A	A	A				
O4ABC (NW)	14.7	13.7	777	664	20	18	797	682	0.42	0.36	0.43	0.37			A	A	A	A				
O3ABC	14.7	13.7	777	664	20	18	797	682	0.42	0.36	0.43	0.37			A	A	A	A				
M11ABC	14.2	13.2	777	664	20	18	797	682	0.44	0.37	0.45	0.38			A	A	A	A				
Escalators		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)																				
Escalator (No Code-Up)	40		89	259	7	4	96	263	0.08	0.22	0.09	0.26			A	B	A	B				
Escalator (No Code-Down)	40		53	200	4	5	57	205	0.05	0.20	0.06	0.20			A	A	A	B				

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Weekday AM/PM)

(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway 1 (No Code)	5.8	4.8	211	263	1	5	212	268	0.33	0.41	0.33	0.41			A	A	A	A				
Stairway 2 (No Code)	5.8	4.8	192	227	2	5	194	232	0.30	0.35	0.30	0.36			A	A	A	A				
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator (No Code)	40		514	80	3	2	517	82	0.44	0.07	0.44	0.07			C	A	C	A				
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway 1 (No Code)	5.8	4.8	59	50	0	0	59	50	0.09	0.08	0.09	0.08			A	A	A	A				
Stairway 2 (No Code)	5.8	4.8	21	25	0	0	21	25	0.03	0.04	0.03	0.04			A	A	A	A				
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator (No Code)	40		63	65	0	0	63	65	0.05	0.06	0.05	0.06			A	A	A	A				
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway (S34)	5.4	4.4	171	943	0	0	171	943	0.29	1.59	0.29	1.59			A	E	A	E				0 < 3
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator (34A)	40		18	566	1	0	19	566	0.02	0.48	0.02	0.48			A	C	A	C				
Escalator (34B)	40		513	377	1	0	514	377	0.44	0.32	0.44	0.32			C	B	C	B				
Escalator (34C)	40		342	184	1	0	343	184	0.29	0.16	0.29	0.16			B	A	B	A				
Street Stairs to Intermodal Hall (33rd Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	56	55	1300	1233	14	31	1314	1264	0.18	0.17	0.18	0.17			A	A	A	A				
Street Stairs to Train Hall (33rd Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	16	15	402	703	0	0	402	703	0.20	0.35	0.20	0.35			A	A	A	A				
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	56	49	101	100	6	23	107	123	0.02	0.02	0.02	0.02			A	A	A	A				
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator	40		96	63	8	8	104	71	0.08	0.05	0.09	0.06			A	A	A	A				
Street Stairs to Train Hall (31st Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	16	15	85	93	0	0	85	93	0.04	0.05	0.04	0.05			A	A	A	A				

Appendix S.4.4.4
2010 Build Condition with Mitigation Measures (Weekday AM/PM)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS	MITIGATED AM	MITIGATED PM	15-MINUTE PEDESTRIAN VOLUMES NO BUILD AM	NO BUILD PM	INCREMENT AM	INCREMENT PM	BUILD AM	BUILD PM	MITIGATED AM	MITIGATED PM	V/SVCD RATIO NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	MITIGATED AM	MITIGATED PM	LEVEL OF SERVICE NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	MITIGATED AM	MITIGATED PM	IMPACT / MITIGATION AM	IMPACT / MITIGATION PM	STILL IMPACTED? AM	STILL IMPACTED? PM
Lower Mezzanine to Platform Stairs		EFFECTIVE																								
42nd Street and Broadway	WIDTH (ft)	WIDTH (ft)																								
PL2	8.4	7.4	1133	1003	-50	-30	1083	973	**1083**	**973**	1.13	1.00	1.08	0.97	**1.08**	**0.97**	D	D	D	C	**D**	**C**	-3.92 < 6			
PL3	8.4	7.4	553	678	-45	6	508	684	**508**	**684**	0.55	0.68	0.51	0.68	**0.51**	**0.68**	B	B	B	B	**B**	**B**				
PL4																										
PL5	8.4	7.4	541	440	222	163	763	603	**763**	**603**	0.54	0.44	0.76	0.60	**0.76**	**0.60**	B	A	C	B	**C**	**B**				
PL6AB (Replaced by Elevators)																										
PL7AB	**8.4**	**7.4**	770	957	228	135	998	1092	**772**	**839**	0.77	0.96	1.00	1.09	**0.77**	**0.84**	C	C	C	D	**C**	**C**		9.25≥ 6 *		**No**
PL8AB (3 ft Widening)	**11.4**	**10.4**	970	981	169	103	1139	1084	**1365**	**1337**	0.97	0.98	1.14	1.09	**0.97**	**0.95**	C	C	D	D	**C**	**C**	13.47≥ 6 *	8.53≥ 6 *	**No**	**No**
Lower Mezzanine to Platform Escalators																										
42nd Street and Broadway	WIDTH (in)	SPEED (fpm)																								
Escalator (E216-Up)	40	90	534	247	3	239	537	486	**451**	**546**	0.46	0.21	0.46	0.42	**0.39**	**0.47**	C	B	C	C	**B**	**C**				
Escalator (E217-Down)	40	90	188	347	250	24	438	371	**327**	**452**	0.16	0.30	0.37	0.32	**0.28**	**0.39**	A	B	B	B	**B**	**B**				
Escalator (E21B-Up)	24	90	278	92	10	47	288	139	**288**	**139**	0.46	0.15	0.48	0.23	**0.48**	**0.23**	C	A	C	B	**C**	**B**				
Passageway to/from Lower Mezzanine	0	EFFECTIVE																								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)																								
Passageway	12.1	10.1	2259	2426	-100	-59	2159	2367	**2159**	**2367**	1.10	1.19	1.06	1.16	**1.06**	**1.16**	D	D	D	D	**D**	**D**	-5.37 <12	-2.95 <12		
7th Avenue Platform Starirs (Northbou	0	EFFECTIVE																								
Stairways	WIDTH (ft)	WIDTH (ft)																								
ML6/ML8	7.5	6.5	873	792	152	108	1025	900	**691**	**495**	0.99	0.90	1.17	1.03	**0.79**	**0.56**	C	C	D	D	**C**	**B**	14.03≥ 6 *	2.81<6	**No**	**No**
ML10/ML12	7.5	6.5	796	406	153	109	949	515	**691**	**495**	0.91	0.46	1.08	0.59	**0.79**	**0.56**	C	B	D	B	**C**	**B**	7.21≥ 6 *		**No**	
ML14/ML16 (NEW)	7.5	6.5							**592**	**424**					**0.67**	**0.48**					**B**	**B**				
P4/P6	5.3	4.3	498	675	32	36	530	711	**530**	**711**	0.86	1.16	0.91	1.22	**0.91**	**1.22**	C	D	C	D	**C**	**D**		2.75 < 6		
P8/P10	5.3	4.3	273	232	71	81	344	313	**344**	**313**	0.47	0.40	0.59	0.54	**0.59**	**0.54**	B	A	B	B	**B**	**B**				
7th Avenue Platform Starirs (Southbou	0	EFFECTIVE																								
Stairways	WIDTH (ft)	WIDTH (ft)																								
ML5/ML7	7.5	6.5	1354	1053	152	108	1506	1161	**941**	**511**	1.54	1.20	1.72	1.32	**1.07**	**0.58**	E	D	F	D	**D**	**B**	8.76 ≥ 1 *	8 ≥ 6 *	**No**	**No**
ML9/ML11	7.5	6.5	520	351	153	109	673	460	**781**	**483**	0.59	0.40	0.77	0.52	**0.89**	**0.55**	B	A	C	B	**C**	**B**				
ML13/ML15 (NEW)	7.5	6.5							**653**	**486**					**0.74**	**0.55**					**C**	**B**				
P3/P5	5.3	4.3	751	588	52	58	803	646	**606**	**787**	1.29	1.01	1.38	1.11	**1.04**	**1.36**	D	D	E	D	**D**	**E**	3.57 ≥ 3 *	5.09 < 6	**No**	
P7/P9	5.3	4.3	499	287	51	58	550	345	**550**	**345**	0.86	0.49	0.95	0.59	**0.95**	**0.59**	C	B	C	B	**C**	**B**				

Appendix S.4.4.4

2010 Future with the Proposed Action (Weekday AM/PM)

(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadw	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	1083	973	999	999	1.08	0.97	D	C
PL3	8.4	7.4	508	684	999	999	0.51	0.68	B	B
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	763	603	999	999	0.76	0.60	C	B
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	**8.4**	**7.4**	772	839	999	999	0.77	0.84	C	C
PL8AB (3 ft Widening)	**11.4**	**10.4**	1365	1337	1404	1404	0.97	0.95	C	C
Lower Mezzanine to Platform Escalators										
42nd Street and Broadw	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	451	546	1170	1170	0.39	0.47	B	C
Escalator (E217-Down)	40.0	90	327	452	1170	1170	0.28	0.39	B	B
Escalator (E21B-Up)	24.0	90	288	139	600	600	0.48	0.23	C	B
Passageway to/from Lower Mezzanine/8th		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	2159	2367	2045	2045	1.06	1.16	D	D
7th Avenue Platform Starirs (Northbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML6/ML8	7.5	6.5	691	495	878	878	0.79	0.56	C	B
ML10/ML12	7.5	6.5	691	495	878	878	0.79	0.56	C	B
ML14/ML16 (NEW)	7.5	6.5	592	424	878	878	0.67	0.48	B	B
P4/P6	5.3	4.3	530	711	581	581	0.91	1.22	C	D
P8/P10	5.3	4.3	344	313	581	581	0.59	0.54	B	B
7th Avenue Platform Starirs (Southbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML5/ML7	7.5	6.5	941	511	878	878	1.07	0.58	D	B
ML9/ML11	7.5	6.5	781	483	878	878	0.89	0.55	C	B
ML13/ML15 (NEW)	7.5	6.5	653	486	878	878	0.74	0.55	C	B
P3/P5	5.3	4.3	606	787	581	581	1.04	1.36	D	E
P7/P9	5.3	4.3	550	345	581	581	0.95	0.59	C	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.4
2010 Build Condition with Mitigation Measures (Weekday AM/PM)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
P1	10.3	9.3	675	245	-21	21	654	266	0.54	0.20	0.52	0.21			B	A	B	A				
P3	10.3	9.3	240	167	-48	-2	192	165	0.19	0.13	0.15	0.13			A	A	A	A				
P4	9.7	8.7	50	12	1	23	51	35	0.04	0.01	0.04	0.03			A	A	A	A				
P5	10.1	9.1	105	34	6	81	111	115	0.09	0.03	0.09	0.09			A	A	A	A				
P6	10	9	137	27	-14	49	123	76	0.11	0.02	0.10	0.06			A	A	A	A				
P7	8.6	7.6	366	569	356	62	722	631	0.36	0.55	0.70	0.62			A	B	C	B				
M2AB	12.4	11.4	970	596	-61	40	909	636	0.63	0.39	0.59	0.41			B	A	B	A				
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
Passageway	14.7	12.7	785	753	409	325	1194	1078	0.18	0.18	0.28	0.25			A	A	A	A				
Sixth Avenue Line Platform		EFFECTIVE																				
Northbound Platform	WIDTH (ft)	WIDTH (ft)																				
P8	6.0	5.0	221	136	-15	0	206	136	0.33	0.20	0.31	0.20			A	A	A	A				
P10	6.0	5.0	297	284	122	81	419	365	0.44	0.42	0.62	0.54			A	A	B	B				
P12	6.0	5.0	383	233	122	92	505	325	0.57	0.35	0.75	0.48			B	A	C	B				
Southbound Platform	WIDTH (ft)	WIDTH (ft)																				
P7	6.0	5.0	150	99	-10	-1	140	98	0.22	0.15	0.21	0.15			A	A	A	A				
P9	6.0	5.0	336	401	190	71	526	472	0.50	0.59	0.78	0.70			B	B	C	B				
P11	6.0	5.0	286	234	51	81	337	315	0.42	0.35	0.50	0.47			A	A	B	B				

Appendix S.4.4.4
2010 Build Condition with Mitigation Measures (Weekday AM/PM)
(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS					15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGA	
					NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		**MITIGATED**		NO BUILD		BUILD		**MITIGATED**			
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	**AM**	**PM**	AM	PM	AM	PM	**AM**	**PM**	AM	PM
Lower Mezzanine to Platform		EFFECTIVE	0	'FECTIVE																				
Stairwways	WIDTH (ft)	WIDTH (ft)	WIDTH (/IDTH (ft)																					
PL2	7.3	6.3	7.3	6.3	639	797	122	69	761	866	0.75	0.94	0.89	1.02			C	C	C	D				2.16 < 6
PL3	7.3	6.3	7.3	6.3	718	930	152	63	870	993	0.84	1.09	1.02	1.17			C	D	D	D			2.51 < 6	5.12 < 6
PL1AB	15	14	15	14	1357	1727	274	132	1631	1859	0.72	0.91	0.86	0.98			C	C	C	C				
			0	0																				
PL5	7.3	6.3	7.3	6.3	572	751	162	64	734	815	0.67	0.88	0.86	0.96			B	C	C	C				
PL6	7.3	6.3	7.3	6.3	1099	734	66	73	1165	807	1.29	0.86	1.37	0.95	**1.37**	**0.95**	D	C	E	C	**E**	**C**	4.54 ≥ 3 *	
PL4AB	15	14	15	14	1671	1485	228	137	1899	1622	0.88	0.79	1.00	0.86			C	C	D	C			2.51 < 6	
			0	0																				
PL9AB	15	14	15	14	878	596	-1	-1	877	595	0.46	0.32	0.46	0.31			B	A	B	A				
ML1	4	3	4	3	82	260	1	-1	83	259	0.20	0.64	0.20	0.64			A	B	A	B				
			0	0																				
			0	'FECTIVE																				
Escalators	WIDTH (in)		WIDTH (iIDTH (in)																					
Escalator (E203-Up)	40		40	0	523	49	0	0	523	49	0.45	0.04	0.45	0.04			C	A	C	A				
Escalator (E204-Up/Down)	40		40	0	272	289	-1	-1	271	288	0.23	0.25	0.23	0.25			B	B	B	B				
Escalator (E207-Up)	40		40	0	938	283	-5	131	933	414	0.80	0.24	0.80	0.35			E	B	D	B				
Escalator (E209-Up/Down)	40		40	0	956	254	-5	-1	951	253	0.82	0.22	0.81	0.22			E	B	E	B				
			0	0																				
Escalator (E205-Up)	40		40	0	1,049	233	-5	127	1,044	360	0.90	0.20	0.89	0.31			E	A	E	B				
Escalator (E206-Up/Down)	40		40	0	1,049	262	-5	-1	1,044	261	0.90	0.22	0.89	0.22			E	B	E	B				
		EFFECTIVE																						
Passageway to Lexington Ave Line	WIDTH (ft)	WIDTH (ft)	WIDTH (ft)																					
Passageway	11.5	9.5	11.5	9.5	1100	2787	512	143	1612	2930	0.57	1.45	0.84	1.52			B	E	C	E				5.85 < 6
Lexington Avenue Line Platform (Southbour		EFFECTIVE		EFFECTIVE																				
Stairwways	WIDTH (ft)	WIDTH (ft)	WIDTH	WIDTH (ft)																				
P12	10	8.5	10	9	1741	595	12	20	1753	615	1.52	0.52	1.53	0.54			E	B	E	B			0.7 < 3	
P14	10	8.5	9	8	2819	2120	14	5	2833	2125	2.46	1.85	2.47	1.85			F	F	F	F			0.51 < 1	0.24 < 1
P18	10	8.5	10	9	1662	598	1	35	1663	633	1.45	0.52	1.45	0.55			E	B	E	B			0.06 < 3	
P20	10	8.5	10	9	773	381	9	-1	782	380	0.67	0.33	0.68	0.33			B	A	B	A				
P22	6.5	5.5	6	5	1229	616	15	-1	1244	615	1.66	0.83	1.68	0.83			E	C	F	C			0.81 < 1	
U1	6.2	5.2	6.2	5.2	497	610	108	36	605	646	0.71	0.87	0.87	0.93			C	C	C	C				
U3	6.2	5.2	6.2	5.2	497	610	108	36	605	646	0.71	0.87	0.87	0.93			C	C	C	C				
U5 (2 ft widening)	**6.1**	**5.1**	**8.1**	**7.1**	582	532	148	36	730	568	0.85	0.78	1.06	0.83	**0.76**	**0.59**	C	C	D	C	**C**	**B**	4.54 < 6	
U7 (2 ft widening)	**5.8**	**4.8**	**7.8**	**6.8**	582	532	148	36	730	568	0.89	0.82	1.12	0.87	**0.79**	**0.62**	C	C	D	C	**C**	**B**	7.54 ≥ 6*	
Lexington Avenue Line Platform (Northboun	EFFECTIVE		EFFECTIVE																					
Stairwways	WIDTH (ft)	WIDTH (ft)	WIDTH (/IDTH (ft)																					
P23	7	6	7	6	986	915	18	0	1004	915	1.22	1.13	1.24	1.13			D	D	D	D			1.31 < 6	0 < 6
P21	10	8.5	10	9	845	825	9	0	854	825	0.74	0.72	0.74	0.72			C	C	C	C				
P19	10	8.5	9	8	1006	697	-1	60	1005	757	0.88	0.61	0.88	0.66			C	B	C	B				
P17	10	8.5	9	8	986	839	10	59	996	898	0.86	0.73	0.87	0.78			C	C	C	C				
P15	10	8.5	8	7	423	764	13	1	436	765	0.37	0.67	0.38	0.67			A	B	A	B				
P13	10	8.5	9	8	486	1262	3	0	489	1262	0.42	1.10	0.43	1.10			A	D	A	D				0 < 6
U2	5.9	4.9	5.9	4.9	161	678	128	26	289	704	0.24	1.02	0.44	1.06			A	D	A	D				2.26 < 6
U4	5.9	4.9	5.9	4.9	161	678	128	26	289	704	0.24	1.02	0.44	1.06			A	D	A	D				2.26 < 6
U6	5.9	4.9	5.9	4.9	266	913	128	46	394	959	0.40	1.38	0.59	1.44			A	E	B	E				2.97 < 3
U8	5.9	4.9	5.9	4.9	266	913	128	46	394	959	0.40	1.38	0.59	1.44			A	E	B	E				2.97 < 3
Connection to Metro North (Control Area 23	EFFECTIVE		EFFECTIVE																					
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	WIDTH (/IDTH (ft)																					
M6AB/M7AB (Reduce 5ft)	9.5	8.5	**4.5**	**3.5**	1331	1068	82	14	1413	1082	1.16	0.93	1.23	0.94	**0.60**	**0.80**	D	C	D	C	**B**	**C**	6.28 ≥ 6 *	
Escalator (E255-Up)	40		40	0	643	785	-1	71	642	856	0.55	0.67	0.55	0.73	**0.65**	**0.73**	C	D	C	D	**D**	**D**		
Escalator (E-256-Up/Down)	40		40	0	643	841	-1	0	642	841	0.55	0.72	0.55	0.72	**0.65**	**0.26**	C	D	C	D	**D**	**B**		
Escalator (new)	**0**		**40**	**0**											**0.63**	**0.87**					**D**	**E**		
Connection to Metro North (Control Area 24	EFFECTIVE		EFFECTIVE																					
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	WIDTH (/IDTH (ft)																					
M8ABC/M10ABC	19	18	19	18	2031	1606	35	10	2066	1616	0.84	0.66	0.85	0.67			C	B	C	B				

Appendix S.4.4.4
2010 Build Condition with Mitigation Measures (Weekday AM/PM)
(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	761	866	851	851	0.89	1.02	C	D
PL3	7.3	6.3	870	993	851	851	1.02	1.17	D	D
PL1AB	15.0	14	1631	1859	1890	1890	0.86	0.98	C	C
PL5	7.3	6.3	734	815	851	851	0.86	0.96	C	C
PL6	7.3	6.3	1165	807	851	851	1.37	0.95	E	C
PL4AB	15.0	14.0	1899	1622	1890	1890	1.00	0.86	D	C
PL9AB	15.0	14.0	877	595	1890	1890	0.46	0.31	B	A
ML1	4.0	3.0	83	259	405	405	0.20	0.64	A	B
		EFFECTIVE								
Escalators	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40		523	49	1170	1170	0.45	0.04	C	A
Escalator (E204-Up/Down)	40		271	288	1170	1170	0.23	0.25	B	B
Escalator (E207-Up)	40		933	414	1170	1170	0.80	0.35	D	B
Escalator (E209-Up/Down)	40		951	253	1170	1170	0.81	0.22	E	B
Escalator (E205-Up)	40		1,044	360	1170	1170	0.89	0.31	E	B
Escalator (E206-Up/Down)	40		1,044	261	1170	1170	0.89	0.22	E	B
Passageway to Lexington Av	WIDTH (ft)									
Passageway	11.5	9.5	1612	2930	1924	1924	0.84	1.52	C	E
Lexington Avenue Line Platform (Southbound I		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P12	10.0	9.0	1753	615	1215	1215	1.44	0.51	E	B
P14	9.0	8.0	2833	2125	1080	1080	2.62	1.97	F	F
P18	10.0	9.0	1663	633	1215	1215	1.37	0.52	E	B
P20	10.0	9.0	782	380	1215	1215	0.64	0.31	B	A
P22	6.0	5.0	1244	615	675	675	1.84	0.91	F	C
U1	6.2	5.2	605	646	698	698	0.87	0.93	C	C
U3	6.2	5.2	605	646	698	698	0.87	0.93	C	C
U5 (2 ft widening)	**8.1**	7.1	730	568	956	956	0.76	0.59	C	B
U7 (2 ft widening)	**7.8**	6.8	730	568	923	923	0.79	0.62	C	B
Lexington Avenue Line Platform (Northbound F		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P23	7.0	6.0	1004	915	810	810	1.24	1.13	D	D
P21	10.0	9.0	854	825	1215	1215	0.70	0.68	C	B
P19	9.0	8.0	1005	757	1080	1080	0.93	0.70	C	C
P17	9.0	8.0	996	898	1080	1080	0.92	0.83	C	C
P15	8.0	7.0	436	765	945	945	0.46	0.81	B	C
P13	9.0	8.0	489	1262	1080	1080	0.45	1.17	B	D
U2	5.9	4.9	289	704	664	664	0.44	1.06	A	D
U4	5.9	4.9	289	704	664	664	0.44	1.06	A	D
U6	5.9	4.9	394	959	664	664	0.59	1.44	B	E
U8	5.9	4.9	394	959	664	664	0.59	1.44	B	E
Connection to Metro North (Control Area 238)		EFFECTIVE								
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB/M7AB (Reduce 5ft)	**4.5**	3.5	282.6	378.7	473	473	0.60	0.80	B	C
Escalator (E255-Up)	40		758	856	1170	1170	0.65	0.73	D	D
Escalator (E-256-Up/Down)	40		758	306	1170	1170	0.65	0.26	D	B
Escalator (new)	**40**		899	1,239	**1425**	**1425**	0.63	0.87	D	E
Connection to Metro North (Control Area 240)		EFFECTIVE								
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M8ABC/M10ABC	19.0	18.0	2066	1616	2430	2430	1.28	1.00	D	C

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Special Event)

(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO					LEVEL OF SERVICE					IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED	NO BUILD		BUILD		MITIGATED		
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE-SUN	SE-EVE	SE-SUN
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway 1 (No Code)	5.8	4.8	241	126	6	84	247	210	0.37	0.19	0.38	0.32		A	A	A	A			
Stairway 2 (No Code)	5.8	4.8	130	63	40	108	170	171	0.20	0.10	0.26	0.26		A	A	A	A			
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator (No Code)	40		79	49	196	-46	275	3	0.07	0.04	0.24	0.00		A	A	B	A			
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway 1 (No Code)	5.8	4.8	77	42	6	12	83	54	0.12	0.06	0.13	0.08		A	A	A	A			
Stairway 2 (No Code)	5.8	4.8	28	21	21	2	49	23	0.04	0.03	0.08	0.04		A	A	A	A			
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator (No Code)	40		43	59	215	229	258	288	0.04	0.05	0.22	0.25		A	A	B	B			
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway (S34)	5.4	4.4	130	195	0	0	130	195	0.22	0.33	0.22	0.33		A	A	A	A			
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator (34A)	40		110	117	82	90	192	207	0.09	0.10	0.16	0.18		A	A	A	A			
Escalator (34B)	40		110	78	80	88	190	166	0.09	0.07	0.16	0.14		A	A	A	A			
Escalator (34C)	40		99	120	80	-32	179	88	0.08	0.10	0.15	0.08		A	A	A	A			
Street Stairs to Intermodal Hall (33rd Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	56	55	321	366	537	419	858	785	0.04	0.05	0.12	0.11		A	A	A	A			
Street Stairs to Train Hall (33rd Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	16	15	281	152	0	-72	281	80	0.14	0.08	0.14	0.04		A	A	A	A			
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	56	49	66	84	0	558	66	642	0.01	0.01	0.01	0.10		A	A	A	A			
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator	40		115	51	537	537	652	588	0.10	0.04	0.56	0.50		A	A	C	C			
Street Stairs to Train Hall (31st Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	16	15	55	76	0	-32	55	44	0.03	0.04	0.03	0.02		A	A	A	A			

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Special Events)

(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairs		EFFECTIVE																				
42nd Street and Broadway	WIDTH (ft)	WIDTH (ft)																				
PL2	8.4	7.4	396	330	-12	83	384	413	0.40	0.33	0.38	0.41			A	A	A	A				
PL3	8.4	7.4	231	294	-10	101	221	395	0.23	0.29	0.22	0.40			A	A	A	A				
PL4	8.4	7.4	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
PL5	8.4	7.4	183	132	189	160	372	292	0.18	0.13	0.37	0.29			A	A	A	A				
PL6AB (Replaced by Elevators)	8.4	7.4	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
PL7AB	8.4	7.4	376	183	187	124	563	307	0.38	0.18	0.56	0.31			A	A	B	A				
PL8AB	8.4	7.4	199	130	138	94	337	224	0.20	0.13	0.34	0.22			A	A	A	A				
Lower Mezzanine to Platform Escalators																						
42nd Street and Broadway	WIDTH (in)	SPEED (fpm)																				
Escalator (E216-Up)	40	90	81	63	-1	208	80	271	0.07	0.05	0.07	0.23			A	A	A	B				
Escalator (E217-Down)	40	90	205	179	192	34	397	213	0.18	0.15	0.34	0.18			A	A	B	A				
Escalator (E21B-Up)	24	90	42	46	0	116	42	162	0.07	0.08	0.07	0.27			A	A	A	B				
Passageway to/from Lower Mezzanine/8th Avenue St		EFFECTIVE																				
41st St and Broadway	WIDTH (ft)	WIDTH (ft)																				
Passageway	12.1	10.1	941	1054	-22	167	919	1221	0.46	0.52	0.45	0.60			B	B	A	B				

Appendix S.4.4.4
2010 Build Condition with Mitigation Measures (Special Event)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE					
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED		IMPACT / MITIGATION	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
P1	10.3	9.3	41	24	4	14	45	38	0.03	0.02	0.04	0.03			A	A	A	A				
P3	10.3	9.3	43	17	7	8	50	25	0.03	0.01	0.04	0.02			A	A	A	A				
P4	9.7	8.7	4	10	1	2	5	12	0.00	0.01	0.00	0.01			A	A	A	A				
P5	10.1	9.1	8	15	3	8	11	23	0.01	0.01	0.01	0.02			A	A	A	A				
P6	10	9	12	27	4	5	16	32	0.01	0.02	0.01	0.03			A	A	A	A				
P7	8.6	7.6	182	86	18	33	200	119	0.18	0.08	0.19	0.12			A	A	A	A				
M2AB	12.4	11.4	177	117	13	34	190	151	0.12	0.08	0.12	0.10			A	A	A	A				
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
Passageway	14.7	12.7	267	207	26	69	293	276	0.06	0.05	0.07	0.06			A	A	A	A				

Appendix S.4.4.4

2010 Build Condition with Mitigation Measures (Special Event)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGA	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		**MITIGATED**		NO BUILD		BUILD		**MITIGATED**			
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	**SE-EVE**	**SE-SUN**	SE-EVE	SE-SUN	SE-EVE	SE-SUN	**SE-EVE**	**SE-SUN**	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairwways	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
PL2	7.3	6.3	444	200	377	593	821	793	0.52	0.24	0.97	0.93			B	A	C	C				
PL3	7.3	6.3	377	187	525	646	902	833	0.44	0.22	1.06	0.98			A	A	D	C			5.39<6	
PL1AB	15	14	821	387	902	1239	1723	1626	0.43	0.20	0.91	0.86			A	A	C	C				
PL5	7.3	6.3	151	37	685	752	836	789	0.18	0.04	0.98	0.93			A	A	C	C				
PL6	7.3	6.3	354	151	532	593	886	744	0.42	0.18	1.04	0.87			A	A	D	C			3.95<6	
PL4AB	15	14	505	188	1217	1345	1722	1533	0.27	0.10	0.91	0.81			A	A	C	C				
PL9AB	15	14	91	64	0	0	91	64	0.05	0.03	0.05	0.03			A	A	A	A				
ML1	4	3	7	2	0	0	7	2	0.02	0.00	0.02	0.00			A	A	A	A				
Escalators	WIDTH (in)	SPEED (fpm)																				
Escalator (E203-Up)	40	90	8	34	0	0	8	34	0.01	0.03	0.01	0.03			A	A	A	A				
Escalator (E204-Up/Down)	40	90	71	28	0	0	71	28	0.06	0.02	0.06	0.02			A	A	A	A				
Escalator (E207-Up)	40	90	370	71	-2	1259	368	1,330	0.32	0.06	0.31	1.14	**0.26**	**0.93**	B	A	B	F	**B**	**E**		Sig Imp
Escalator (E209-Up/Down)	40	90	78	93	1308	0	1,386	93	0.07	0.08	1.18	0.08	**0.97**	**0.07**	A	A	F	A	**E**	**A**	Sig Imp	
Escalator (E205-Up)	40	90	296	108	-2	983	294	1,091	0.25	0.09	0.25	0.93			B	A	B	E				
Escalator (E206-Up/Down)	40	90	31	75	1015	-1	1,046	74	0.03	0.06	0.89	0.06			A	A	E	A				
(Connection to Lexington Ave Line)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Passageway	11.5	9.5	789	421	1103	1602	1892	2023	0.41	0.22	0.98	1.05			A	A	C	D				7.09<12

Appendix S.4.4.5

2025 Future without the Proposed Action (Weekday AM/PM)

(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - A25	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	1102	995	3024	3024	0.36	0.33	B	B
Service Gate	1	2	110	203	675	675	0.16	0.30	A	B
High Entrance/Exit Turnstile	3	2	478	503	810	810	0.59	0.62	C	D
Street Stairs		EFFECTIVE								
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NE)	5.4	4.4	113	404	594	594	0.19	0.68	A	B
M2	5.7	4.7	113	404	635	635	0.18	0.64	A	B
S2AB (NW)	7.2	6.2	1246	585	837	837	1.49	0.70	E	B
M1AB	7.2	6.2	1246	585	837	837	1.49	0.70	E	B
H&M 300 (6th Ave)	4.9	3.9	404	501	527	527	0.77	0.95	C	C
H&M 300 (Mezz to Stairs)	8.1	7.1	404	501	959	959	0.42	0.52	A	B
H&M 302ABC (Mezz to Concourse)	23.7	22.7	680	510	3065	3065	0.22	0.17	A	A
Control Area		ONE- OR								
Booth - N506	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	14	2	1401	2121	6048	6048	0.23	0.35	B	B
Service Gate	1	2	228	188	675	675	0.34	0.28	B	B
Street Stairs		EFFECTIVE								
34th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5AB (SW)	9.0	8.0	1713	1304	1080	1080	1.59	1.21	E	D
M5AB	9.0	8.0	1713	1304	1080	1080	1.59	1.21	E	D
S7AB (NW)	8.3	7.3	1310	1419	986	986	1.33	1.44	D	E
M7AB	8.6	7.6	1310	1419	1026	1026	1.28	1.38	D	E
Control Area		ONE- OR								
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	11	2	2278	2411	4752	4752	0.48	0.51	C	C
Service Gate	1	2	49	13	675	675	0.07	0.02	A	A
Street Stair		EFFECTIVE								
32nd to 33rd St. and 6th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
H&M 307	5.6	4.6	1246	274	621	621	2.01	0.44	F	A
Escalators										
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
E221	24.0	90.0	159	933	600	600	0.27	1.56	B	F
E222	40.0	90.0	1087	1029	1170	1170	0.93	0.88	E	E
Concourse to N507		EFFECTIVE								
Internal Stairs	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML7AB	11.6	10.6	611	611	1431	1431	0.43	0.43	A	A
ML1AB	8.6	7.6	781	589	1026	1026	0.76	0.57	C	B
Escalators										
33rd and Broadway	WIDTH (in)	SPEED (fpm)	IN/OUT	IN/OUT						
E223	24.0	90.0	793	751	600	600	1.32	1.25	F	F
E224	24.0	90.0	91	524	600	600	0.15	0.87	A	E
Control Area		ONE- OR								
Booth - A22	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	613	911	1296	1296	0.47	0.70	C	D
Service Gate	1	2	0	6	675	675	0.00	0.01	A	A
High Entrance/Exit Turnstile	2	2	304	284	540	540	0.56	0.53	C	C
Hign Exit Turnstile	2	1	23	44	900	450	0.03	0.10	A	A
Street Stairs		EFFECTIVE								
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	6.0	5.0	674	856	675	675	1.00	1.27	C	D
M4AB	11.5	10.5	674	856	1418	1418	0.48	0.60	B	B
S8 (NE)	6.0	5.0	272	413	675	675	0.40	0.61	A	B
M8AB	11.5	10.5	272	413	1418	1418	0.19	0.29	A	A
Control Area		ONE- OR								
Booth - N505	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	1790	1421	4320	4320	0.41	0.33	C	B
High Entrance/Exit Turnstile	2	2	499	458	540	540	0.92	0.85	E	E
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	4.8	3.8	317	204	513	513	0.62	0.40	B	A
M9	4.8	3.8	317	204	513	513	0.62	0.40	B	A
M10AB	9.6	8.6	317	204	1161	1161	0.27	0.18	A	A
S8 (NE)	4.8	3.8	777	703	513	513	1.51	1.37	E	E
M8AB	9.6	8.6	777	703	1161	1161	0.67	0.61	B	B
S7 (NW)	5.8	4.8	465	180	648	648	0.72	0.28	C	A
M7AB	9.7	8.7	465	180	1175	1175	0.40	0.15	A	A
Street Stairs		EFFECTIVE								
35th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SW)	5.1	4.1	35	133	554	554	0.06	0.24	A	A
M5AB	7.6	6.6	35	133	891	891	0.04	0.15	A	A
S6 (NW)	4.9	3.9	697	656	527	527	1.32	1.25	D	D
M6AB	7.9	6.9	697	656	932	932	0.75	0.70	C	C

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Weekday AM/PM)
(iii) Sixth Avenue at 42nd Street Subway Station (B, D, F, and V)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area Booth - 504	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1833	1439	3456	3456	0.53	0.42	C	C
Service Gate	1	2	6	0	675	675	0.01	0.00	A	A
Street Stairs 40th St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	5.0	4.0	772	462	540	540	1.43	0.86	E	C
M6	8.6	7.6	772	462	1026	1026	0.75	0.45	C	B
S6 (NE)	4.7	3.7	80	451	500	500	0.16	0.90	A	C
M7	8.3	7.3	80	451	986	986	0.08	0.46	A	B
M8	8.3	7.3	80	451	986	986	0.08	0.46	A	B
S4 (SW)	4.7	3.7	735	464	500	500	1.47	0.93	E	C
M4	4.7	3.7	735	464	500	500	1.47	0.93	E	C
M5	8.4	7.4	735	464	999	999	0.74	0.46	C	B
O6 (NW)	5.8	4.8	252	63	648	648	0.39	0.10	A	A
O7	5.7	4.7	252	63	635	635	0.40	0.10	A	A
M9	5.7	4.7	252	63	635	635	0.40	0.10	A	A
M10	5.7	4.7	252	63	635	635	0.40	0.10	A	A
Control Area Booth - N503	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	969	992	2592	2592	0.37	0.38	B	B
Service Gate	1	2	40	0	675	675	0.06	0.00	A	A
Street Stairs 42nd St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (SE)	5.9	4.9	748	555	662	662	1.13	0.84	D	C
M12	7.0	6.0	748	555	810	810	0.92	0.69	C	B
M13	7.0	6.0	748	555	810	810	0.92	0.69	C	B
No Code (Bet 6th&7th)	8.0	7.0	261	436	945	945	0.28	0.46	A	B
O1ABC	19.7	18.7	261	436	2525	2525	0.10	0.17	A	A
M11ABCD	18.2	17.2	261	436	2322	2322	0.11	0.19	A	A
Control Area Booth - N502	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1497	1580	2592	2592	0.58	0.61	C	D
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs 42nd St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S11AB (NE)	9.6	8.6	713	669	1161	1161	0.61	0.58	B	B
M20AB	10.0	9.0	713	669	1215	1215	0.59	0.55	B	B
M19AB	10.0	9.0	713	669	1215	1215	0.59	0.55	B	B
M18AB	10.0	9.0	713	669	1215	1215	0.59	0.55	B	B
S9 (NW)	5.6	4.6	450	594	621	621	0.72	0.96	C	C
M14	7.7	6.7	450	594	905	905	0.50	0.66	B	B
M15AB	13.2	12.2	450	594	1647	1647	0.27	0.36	A	A
S10 (Bet 42nd&43rd)	5.7	4.7	335	323	635	635	0.53	0.51	B	B
M17	6.9	5.9	335	323	797	797	0.42	0.41	A	A
M16	6.9	5.9	335	323	797	797	0.42	0.41	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future Condition without the Proposed Action (Weekday AM/PM)
(vi) Seventh Avenue at 34th Street Subway Station (1, 2, 3, and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R137	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	373	461	1296	1296	0.29	0.36	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
32nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O15AB (NE)	10.3	9.3	373	461	1256	1256	0.30	0.37	A	A
O14AB	10.3	9.3	373	461	1256	1256	0.30	0.37	A	A
Control Area		ONE- OR								
Booth - R135	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1361	1847	2592	2592	0.53	0.71	C	D
Service Gate	1	2	114	57	675	675	0.17	0.08	A	A
(32nd Street Sub passage to Penn Station)										
Control Area		ONE- OR								
Booth - R139	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	510	580	1728	1728	0.30	0.34	B	B
High Entrance/Exit Turnstile	1	2	54	173	270	270	0.20	0.64	A	D
Street Stairs		EFFECTIVE								
33rd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O17AB (SE)	10.0	9.0	1206	374	1215	1215	0.99	0.31	C	A
P3AB	10.7	9.7	1206	374	1310	1310	0.92	0.29	C	A
O19 (NE/E)	5.8	4.8	148	208	648	648	0.23	0.32	A	A
O18	5.8	4.8	148	208	648	648	0.23	0.32	A	A
S2 (NE/W)	5.3	4.3	271	432	581	581	0.47	0.74	B	C
P4	7.0	6.0	271	432	810	810	0.33	0.53	A	B
Control Area		ONE- OR								
Booth - R138	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile [1]	12	2	2635	1747	5184	5184	0.51	0.34	C	B
Service Gate	1	2	765	958	675	675	1.13	1.42	F	F
(33rd Street Sub passage to Penn Station and Control Area R139)										
Sub passage Stairs		EFFECTIVE								
33rd St Sub passage	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML2AB	13.0	12.0	1094	444	1620	1620	0.68	0.27	B	A
ML4AB	13.0	12.0	1094	444	1620	1620	0.68	0.27	B	A
		ONE- OR								
Control Area	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	1	2	194	188	270	270	0.72	0.70	D	D
Street Stairs		EFFECTIVE								
33rd and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NW)	4.4	3.4	194	188	459	459	0.42	0.41	A	A
P2	4.8	3.8	194	188	513	513	0.38	0.37	A	A
P1	8.5	7.5	194	188	1013	1013	0.19	0.19	A	A
Control Area		ONE- OR								
Booth - R141	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	408	914	3456	3456	0.12	0.26	A	B
Street Stairs		EFFECTIVE								
34th St and 7th Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	10.0	9.0	327	606	1215	1215	0.27	0.50	A	B
P6AB	7.9	6.9	327	606	932	932	0.35	0.65	A	B
S6 (NE)	5.1	4.1	83	306	547	547	0.15	0.56	A	B
P8AB	12.3	11.3	83	306	1526	1526	0.05	0.20	A	A
Control Area		ONE- OR								
Booth - R142 [3]	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	725	740	1728	1728	0.42	0.43	C	C
High Entrance/Exit Turnstile	2	2	108	39	540	540	0.20	0.07	A	A
Service Gate	1	2	3	9	675	675	0.00	0.01	A	A
Street Stairs		EFFECTIVE								
34th St and 7th Ave (West) [3]	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW)	10.0	9.0	340	190	1215	1215	0.28	0.16	A	A
P5AB	12.1	11.1	340	190	1499	1499	0.23	0.13	A	A
S5 (NW)	5.6	4.6	498	600	621	621	0.80	0.97	C	C
P7AB	12.2	11.2	498	600	1512	1512	0.33	0.40	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual

Appendix S.4.4.5
2025 Future Condition without the Proposed Action (Weekday AM/PM)
(vii-A) 42nd Street/Times Square Subway Station (N, R, S, Q, W, 1, 2, 3, 7 and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R143 (1)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	911	1058	3456	3456	0.26	0.31	B	B
Service Gate	3	2	404	14	2025	2025	0.20	0.01	A	A
Street Stairs		EFFECTIVE								
40th St and 7Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S2 (SE)	5.6	4.6	821	645	621	621	1.32	1.04	D	D
M1AB	9.7	8.7	821	645	1175	1175	0.70	0.55	B	B
O1AB (SW)	9.3	8.3	478	404	1121	1121	0.43	0.36	A	A
O2AB	10.6	9.6	478	404	1296	1296	0.37	0.31	A	A
Control Area		ONE- OR								
Booth - A21	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	886	1733	3456	3456	0.26	0.50	B	C
Service Gate	2	2	231	0	1350	1350	0.17	0.00	A	A
Street Stairs		EFFECTIVE								
40th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
11-A (Control Area Stairway)	5.1	4.1	245	325	554	554	0.44	0.59	A	B
11-B (Street Stairway)	8.3	7.3	245	325	986	986	0.25	0.33	A	A
12-A (Control Area Stairway)	6.5	5.5	390	569	743	743	0.53	0.77	B	C
12-B (Street Stairway)	6.0	5.0	390	569	675	675	0.58	0.84	B	C
13-A (Control Area Stairway)	6.0	5.0	245	325	675	675	0.36	0.48	A	B
13-B (Street Stairway)	6.5	5.5	245	325	743	743	0.33	0.44	A	A
14-A (Control Area Stairway)	6.5	5.5	217	494	743	743	0.29	0.67	A	B
14-B (Street Stairway)	6.5	5.5	217	494	743	743	0.29	0.67	A	B
Control Area (41st and Broadwa	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Revolving Exit	1	1	215	74	450	450	0.48	0.16	C	A
Street Stairs		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S7 (SW)	4.5	3.5	108	37	473	473	0.23	0.08	A	A
M6A	7.6	6.6	108	37	891	891	0.12	0.04	A	A
M6B	7.6	6.6	215	74	891	891	0.24	0.08	A	A
Control Area		ONE- OR								
Booth - R145 (2)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstiles	5	2	312	217	2160	2160	0.14	0.10	A	A
Service Gate	1	2	48	36	675	675	0.07	0.05	A	A
Street Stairs		EFFECTIVE								
41st St and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M2ABC	13.75	12.75	359	255	1721	1721	0.21	0.15	A	A
S4	6.25	5.25	159	140	709	709	0.22	0.20	A	A
M6	6.25	5.25	201	115	709	709	0.28	0.16	A	A
S6	6.25	5.25	201	115	709	709	0.28	0.16	A	A
Control Area		ONE- OR								
Booth - R146 (3)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	3	2	594	728	810	810	0.73	0.90	D	E
Street Stairs		EFFECTIVE								
41st St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (No Code) (3)	7.7	6.7	594	728	905	905	0.66	0.80	B	C
Stairway (No Code) (3)	7.0	6.0	594	728	810	810	0.73	0.90	C	C
Stairway (No Code) (3)	7.0	6.0	374	465	810	810	0.73	0.90	C	C
Control Area		ONE- OR								
Booth - R148	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	872	849	2592	2592	0.34	0.33	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	5.8	4.8	872	849	648	648	1.35	1.31	E	D
P1	5.8	4.8	872	849	648	648	1.35	1.31	E	D
Control Area		ONE- OR								
Booth - R147	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	685	741	3024	3024	0.23	0.25	B	B
High Revolving Exit	2	1	119	131	810	810	0.15	0.16	A	A
Service Gate	1	2	0	6	675	675	0.00	0.01	A	A
(Street Level Control Area: SE corner of 42nd St and 7th Ave)										
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB	8.3	7.3	87	103	986	986	0.09	0.10	A	A
M7AB	8.3	7.3	87	103	986	986	0.09	0.10	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (E266-Up)	40.0		597	298	1170	1020	0.51	0.25	C	B
Escalator (E267-Down)	40.0		119	477	1170	1020	0.10	0.47	A	C
Control Area		ONE- OR								
Booth - R151	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1111	1401	3888	3888	0.29	0.36	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M9AB	13.8	12.8	279	690	1728	1728	0.16	0.40	A	A
Stairway (No Code)	8.3	7.3	129	196	986	986	0.13	0.20	A	A
Stairway (No Code)	8.3	7.3	129	196	986	986	0.13	0.20	A	A
O4ABC (NW)	14.7	13.7	833	713	1850	1850	0.45	0.39	B	A
O3ABC	14.7	13.7	833	713	1850	1850	0.45	0.39	B	A
M11ABC	14.2	13.2	833	713	1782	1782	0.47	0.40	B	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (No Code-Up)	40.0		95	279	1170	1020	0.08	0.24	A	B
Escalator (No Code-Down)	40.0		57	214	1170	1020	0.05	0.21	A	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Weekday AM/PM)
(ix) Eight Avenue and 34th Street/Penn Station/Madison Square Garden (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area Booth - N67	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	13	2	1852	1128	5616	5616	0.33	0.20	B	B
High Entrance/Exit Turnstile	2	2	65	35	540	540	0.12	0.06	A	A
Service Gate	1	2	12	0	675	675	0.02	0.00	A	A
(With Hallways to Penn Station)										
Control Area Booth - N68	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	437	333	1296	1296	0.34	0.26	B	B
High Entrance/Exit Turnstile	1	2	313	57	270	270	1.16	0.21	F	B
Service Gate	1	2	9	0	675	675	0.01	0.00	A	A
Street Stairs 35th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	4.1	3.1	204	92	419	419	0.49	0.22	B	A
P10AB	9.1	8.1	204	92	1094	1094	0.19	0.08	A	A
S15 (NE/E)	4.1	3.1	128	83	419	419	0.31	0.20	A	A
S14 (NE/W)	4.1	3.1	426	173	419	419	1.02	0.41	D	A
P12AB	9.1	8.1	556	296	1094	1094	0.51	0.27	B	A
Control Area Booth - N69	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	13	427	1296	1296	0.01	0.33	A	B
High Entrance/Exit Turnstile	1	2	523	59	270	270	1.94	0.22	F	B
Service Gate	1	2	101	0	675	675	0.15	0.00	A	A
Street Stairs 35th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S10 (SW)	4.2	3.2	104	118	432	432	0.24	0.27	A	A
P9	6.1	5.1	104	118	689	689	0.15	0.17	A	A
S13 (NW/E)	4.1	3.1	443	313	419	419	1.06	0.75	D	C
S12 (NW/W)	4.1	3.1	99	56	419	419	0.24	0.13	A	A
P11AB	9.1	8.1	542	369	1094	1094	0.50	0.34	B	A
Control Area Booth - N70	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	361	617	2160	2160	0.17	0.29	A	B
Service Gate	1	2	4	15	675	675	0.01	0.02	A	A
Street Stairs 34th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S7	7.0	6.0	230	279	810	810	0.28	0.34	A	A
P6AB	6.7	5.7	230	279	770	770	0.30	0.36	A	A
S9	11.5	10.5	139	339	1418	1418	0.10	0.24	A	A
P8AB	5.5	4.5	139	339	608	608	0.23	0.56	A	B
Control Area Booth - N71	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	573	706	2160	2160	0.27	0.33	B	B
Service Gate	1	2	578	47	675	675	0.86	0.07	E	A
Street Stairs 34th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S6 (SW)	5.7	4.7	364	472	635	635	0.57	0.74	B	C
P5AB	11.6	10.6	364	472	1431	1431	0.25	0.33	A	A
S8 (NW)	5.8	4.8	783	277	648	648	1.21	0.43	D	A
P7AB	8.8	7.8	783	277	1053	1053	0.74	0.26	C	A
Control Area Booth - N72	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1792	1619	3888	3888	0.46	0.42	C	C
Service Gate	3	2	69	299	2025	2025	0.03	0.15	A	A
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (SE)	7.4	6.4	226	249	864	864	0.26	0.29	A	A
P1	7.4	6.4	226	249	864	864	0.26	0.29	A	A
S5 (NE)	4.0	3.0	144	152	405	405	0.36	0.38	A	A
P4	4.4	3.4	144	152	459	459	0.31	0.33	A	A
Control Area Booth - N73	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	679	535	3888	3888	0.17	0.14	A	A
Service Gate	1	2	296	602	675	675	0.44	0.89	C	E
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW/E)	12.0	11.0	301	172	1485	1485	0.20	0.12	A	A
S2 (SW/W)	12.0	11.0	487	173	1485	1485	0.33	0.12	A	A
P2AB	12.0	11.0	789	344	1485	1485	0.53	0.23	B	A
S4 (NW)	4.4	3.4	485	201	459	459	1.06	0.44	D	A
P3	4.4	3.4	485	201	459	459	1.06	0.44	D	A
Internal Stairs 33rd St Passage	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
GLAB (To Penn Station)	16.5	15.5	1493	910	2093	2093	0.71	0.43	C	A
M5 (To Sub-Passage)	5.7	4.7	419	183	635	635	0.66	0.29	B	A
M6	5.7	4.7	419	183	635	635	0.66	0.29	B	A
M3AB (To Sub-Passage)	9.2	8.2	624	616	1107	1107	0.56	0.56	B	B
M4	9.2	8.2	624	616	1107	1107	0.56	0.56	B	B
To LIRR Platforms	7.2	6.2	572	488	837	837	0.68	0.58	B	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - N63	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	785	568	3024	3024	0.26	0.19	B	A
High Entrance/Exit Turnstile	2	2	143	122	540	540	0.26	0.23	B	B
High Exit Turnstile (1)	1	1	35	0	450	450	0.08	0.00	A	A
Service Gate	1	2	0	76	675	675	0.00	0.11	A	A
Control Area		ONE- OR								
Booth - N63A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	2201	1543	4320	4320	0.51	0.36	C	B
Service Gate	1	2	260	240	675	675	0.39	0.36	B	B
Street Stairs		ONE- OR								
40th St and 8th Ave	WIDTH (ft)	TWO-WAY	IN/OUT	IN/OUT						
M1AB (2)	9.6	3.7	164	127	500	500	0.33	0.25	A	A
O8 (2)	8.2	8.8	165	127	1188	1188	0.14	0.11	A	A
S2 (SE)	4.7	3.7	641	466	500	500	1.28	0.93	D	C
M2AB	9.8	8.8	641	466	1188	1188	0.54	0.39	B	A
S4 (NE)	4.7	3.7	181	130	500	500	0.36	0.26	A	A
M4AB	9.8	8.8	181	130	1188	1188	0.15	0.11	A	A
S3(NW)	4.7	3.7	419	476	500	500	0.84	0.95	C	C
M3AB	9.8	8.8	419	476	1188	1188	0.35	0.40	A	A
Control Area		ONE- OR								
Booth - N62	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1288	1431	3456	3456	0.37	0.41	B	C
Service Gate	1	2	12	215	675	675	0.02	0.32	A	B
(Hallway to PABT Between 41st and 42nd St.)										
Control Area		ONE- OR								
Booth - N62A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	171	279	3024	3024	0.06	0.09	A	A
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O11AB (NE)	9.6	8.6	64	99	1161	1161	0.06	0.09	A	A
O10AB	9.6	8.6	171	279	1161	1161	0.15	0.24	A	A
O9AB	9.5	8.5	64	99	1148	1148	0.06	0.09	A	A
Stairway (No Code)	10.0	9.0	64	98	2565	2565	0.05	0.08	A	A
Stairway (No Code)	10.0	9.0	64	98	3915	3915	0.05	0.08	A	A
Street Stairs										
42nd St and 8Ave (East)	WIDTH (in)		DOWN/UP	DOWN/UP						
Escalator (No Code)	40.0		41	61	1170	1020	0.04	0.05	A	A
Escalator (No Code)	40.0		41	61	1170	1020	0.04	0.05	A	A
Control Area (42nd St and 8 Ave-West)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	9	566	628	540	540	1.05	1.16	F	F
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (NW)	5.9	4.9	566	623	662	662	0.86	0.94	C	C
M9AB	9.6	8.6	566	623	1161	1161	0.49	0.54	B	B
Control Area		ONE- OR								
Booth - N60A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	2	Plywood Barricade							
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S10	5.3	4.3	Plywood Barricade							
M11AB	7.9	6.9	Plywood Barricade							
Control Area		ONE- OR								
Booth - N60	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	613	636	3024	3024	0.20	0.21	B	B
Service Gate	1	2	28	46	675	675	0.04	0.07	A	A
Street Stairs		EFFECTIVE								
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S12 (SE)	4.6	3.6	380	358	486	486	0.78	0.74	C	C
M13AB	9.9	8.9	380	358	1202	1202	0.32	0.30	A	A
S11 (SW)	4.8	3.8	141	159	513	513	0.27	0.31	A	A
M12AB	8.5	7.5	141	159	1013	1013	0.14	0.16	A	A
S13 (NW)	4.6	3.6	119	165	486	486	0.24	0.34	A	A
M14AB	8.5	7.5	119	165	1013	1013	0.12	0.16	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Weekday AM/PM)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	225	288	648	648	0.35	0.44	A	A
Stairway 2 (No Code)	5.8	4.8	207	249	648	648	0.32	0.38	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		562	81	1170	1170	0.48	0.07	C	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	63	54	648	648	0.10	0.08	A	A
Stairway 2 (No Code)	5.8	4.8	23	26	648	648	0.04	0.04	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		71	74	1170	1170	0.06	0.06	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	184	1016	594	594	0.31	1.71	A	F
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		20	610	1170	1170	0.02	0.52	A	C
Escalator (34B)	40		553	406	1170	1170	0.47	0.35	C	B
Escalator (34C)	40		369	198	1170	1170	0.32	0.17	B	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	1412	1343	7425	7425	0.19	0.18	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	441	767	2025	2025	0.22	0.38	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	111	109	6615	6615	0.02	0.02	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		104	69	1170	1170	0.09	0.06	A	A
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	94	102	2025	2025	0.05	0.05	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Weekday AM/PM)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadw	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	1181	937	999	999	1.18	0.94	D	C
PL3	8.4	7.4	560	539	999	999	0.56	0.54	B	B
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	341	310	999	999	0.34	0.31	A	A
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	337	872	999	999	0.34	0.87	A	C
PL8AB	8.4	7.4	580	789	999	999	0.58	0.79	B	C
Lower Mezzanine to Platform Escalators										
42nd Street and Broadw	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	578	104	1170	1170	0.49	0.09	C	A
Escalator (E217-Down)	40.0	90	69	375	1170	1170	0.06	0.32	A	B
Escalator (E21B-Up)	24.0	90	298	45	600	600	0.50	0.08	C	A
Passageway to/from Lower Mezzanine/8th		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	2352	2548	2045	2045	1.15	1.25	D	D
7th Avenue Platform Starirs (Northbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML6/ML8	7.5	6.5	464	597	878	878	0.53	0.68	B	B
ML10/ML12	7.5	6.5	798	352	878	878	0.91	0.40	C	A
P4/P6	5.3	4.3	491	672	581	581	0.85	1.16	C	D
P8/P10	5.3	4.3	268	219	581	581	0.46	0.38	B	A
7th Avenue Platform Starirs (Southbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML5/ML7	7.5	6.5	1099	660	878	878	1.25	0.75	D	C
ML9/ML11	7.5	6.5	380	336	878	878	0.43	0.38	A	A
P3/P5	5.3	4.3	777	594	581	581	1.34	1.02	E	D
P7/P9	5.3	4.3	511	277	581	581	0.88	0.48	C	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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Appendix S.4.4.5
2025 Future without the Proposed Action (Weekday AM/PM)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	679	179	1256	1256	0.54	0.14	B	A
P3	10.3	9.3	161	124	1256	1256	0.13	0.10	A	A
P4	9.7	8.7	37	4	1175	1175	0.03	0.00	A	A
P5	10.1	9.1	69	15	1229	1229	0.06	0.01	A	A
P6	10.0	9.0	92	14	1215	1215	0.08	0.01	A	A
P7	8.6	7.6	191	415	1026	1026	0.19	0.40	A	A
M2AB	12.4	11.4	861	436	1539	1539	0.56	0.28	B	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	503	516	4286	4286	0.12	0.12	A	A
Sixth Avenue Line Platform		EFFECTIVE								
Northbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P8 6.5	6.0	5.0	223	146	675	675	0.33	0.22	A	A
P10 6.5	6.0	5.0	253	231	675	675	0.37	0.34	A	A
P12 6.5	6.0	5.0	346	187	675	675	0.51	0.28	B	A
Southbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P7 6.25	6.0	5.0	151	106	675	675	0.22	0.16	A	A
P9 6.25	6.0	5.0	280	324	675	675	0.41	0.48	A	B
P11 6.3	6.0	5.0	254	202	675	675	0.38	0.30	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
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Appendix S.4.4.5

2025 Future without the Proposed Action (Weekday AM/PM)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	371	446	851	851	0.44	0.52	A	B
PL3	7.3	6.3	416	468	851	851	0.49	0.55	B	B
PL1AB	15.0	14	787	914	1890	1890	0.42	0.48	A	B
PL5	7.3	6.3	330	377	851	851	0.39	0.44	A	A
PL6	7.3	6.3	678	485	851	851	0.80	0.57	C	B
PL4AB	15.0	14.0	1008	862	1890	1890	0.53	0.46	B	B
PL9AB	15.0	14.0	1893	1355	1890	1890	1.00	0.72	D	C
ML1	4.0	3.0	185	696	405	405	0.46	1.72	B	F
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Escalators	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40		1,084	136	1170	1170	0.93	0.12	E	A
Escalator (E204-Up/Down)	40		624	522	1170	1170	0.53	0.45	C	C
Escalator (E207-Up)	40		563	273	1170	1170	0.48	0.23	C	B
Escalator (E209-Up/Down)	40		577	130	1170	1170	0.49	0.11	C	A
Escalator (E205-Up)	40		624	214	1170	1170	0.53	0.18	C	A
Escalator (E206-Up/Down)	40		624	134	1170	1170	0.53	0.11	C	A
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (ft)								
Passageway	11.5	9.5	671	1467	1924	1924	0.35	0.76	A	C
Lexington Avenue Line Platform (Southbound I		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P12	10.0	8.5	1872	602	1148	1148	1.63	0.52	E	B
P14	10.0	8.5	2738	2219	1148	1148	2.39	1.93	F	F
P18	10.0	8.5	1369	613	1148	1148	1.19	0.53	D	B
P20	10.0	8.5	825	382	1148	1148	0.72	0.33	C	A
P22	6.5	5.5	1320	615	743	743	1.78	0.83	F	C
U1	6.2	5.2	422	280	698	698	0.61	0.40	B	A
U3	6.2	5.2	422	280	698	698	0.61	0.40	B	A
U5	6.1	5.1	512	195	686	686	0.75	0.28	C	A
U7	5.8	4.8	512	195	653	653	0.78	0.30	C	A
Lexington Avenue Line Platform (Northbound F		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P23	7.0	6.0	1056	928	810	810	1.30	1.15	D	D
P21	10.0	8.5	900	861	1148	1148	0.78	0.75	C	C
P19	10.0	8.5	775	722	1148	1148	0.68	0.63	B	B
P17	10.0	8.5	764	841	1148	1148	0.67	0.73	B	C
P15	10.0	8.5	432	779	1148	1148	0.38	0.68	A	B
P13	10.0	8.5	519	1351	1148	1148	0.45	1.18	B	D
U2	5.9	4.9	32	343	664	664	0.05	0.52	A	B
U4	5.9	4.9	32	343	664	664	0.05	0.52	A	B
U6	5.9	4.9	144	595	664	664	0.22	0.90	A	C
U8	5.9	4.9	144	595	664	664	0.22	0.90	A	C
Connection to Metro North (Control Area 238)		EFFECTIVE								
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB/M7AB	9.5	8.5	1379	1050	1148	1148	1.20	0.92	D	C
Escalator (E255-Up)	40		600	831	1170	1170	0.51	0.71	C	D
Escalator (E-256-Up/Down)	40		600	769	1170	1170	0.51	0.66	C	D
Connection to Metro North (Control Area 240)		EFFECTIVE								
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M8ABC/M10ABC	19.0	18.0	1971	1621	2430	2430	0.81	0.67	C	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Special Events)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, EVEtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	259	137	648	648	0.40	0.21	A	A
Stairway 2 (No Code)	5.8	4.8	140	69	648	648	0.22	0.11	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		85	53	1170	1170	0.07	0.05	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	82	46	648	648	0.13	0.07	A	A
Stairway 2 (No Code)	5.8	4.8	30	23	648	648	0.05	0.04	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		46	63	1170	1170	0.04	0.05	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	140	210	594	594	0.24	0.35	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		119	126	1170	1170	0.10	0.11	A	A
Escalator (34B)	40		119	84	1170	1170	0.10	0.07	A	A
Escalator (34C)	40		107	129	1170	1170	0.09	0.11	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	347	395	7425	7425	0.05	0.05	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	303	166	2025	2025	0.15	0.08	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	71	90	6615	6615	0.01	0.01	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		124	55	1170	1170	0.11	0.05	A	A
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	59	82	2025	2025	0.03	0.04	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend:
SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Special Events)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadw	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	422	312	999	999	0.42	0.31	A	A
PL3	8.4	7.4	246	261	999	999	0.25	0.26	A	A
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	118	98	999	999	0.12	0.10	A	A
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	238	157	999	999	0.24	0.16	A	A
PL8AB	8.4	7.4	56	71	999	999	0.06	0.07	A	A
Lower Mezzanine to Platform Escalators										
42nd Street and Broadw	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	90	27	1170	1170	0.08	0.02	A	A
Escalator (E217-Down)	40.0	90	175	193	1170	1170	0.15	0.16	A	A
Escalator (E21B-Up)	24.0	90	46	35	1170	1170	0.04	0.03	A	A
Passageway to/from Lower Mezzanine/8th		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	1006	1104	2045	2045	0.49	0.54	B	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
ML5/ML7 The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5
2025 Future without the Proposed Action (Special Event)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	52	28	1256	1256	0.04	0.02	A	A
P3	10.3	9.3	62	20	1256	1256	0.05	0.02	A	A
P4	9.7	8.7	7	11	1175	1175	0.01	0.01	A	A
P5	10.1	9.1	15	18	1229	1229	0.01	0.01	A	A
P6	10.0	9.0	21	30	1215	1215	0.02	0.02	A	A
P7	8.6	7.6	212	96	1026	1026	0.21	0.09	A	A
M2AB	12.4	11.4	218	129	1539	1539	0.14	0.08	A	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	324	230	4286	4286	0.08	0.05	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.5

2025 Future without the Proposed Action (Special Event)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Lower Mezzanine to Platform Stairwways	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	309	174	851	851	0.36	0.20	A	A
PL3	7.3	6.3	304	171	851	851	0.36	0.20	A	A
PL1AB	15.0	14.0	613	345	1890	1890	0.32	0.18	A	A
PL5	7.3	6.3	94	25	851	851	0.11	0.03	A	A
PL6	7.3	6.3	240	132	851	851	0.28	0.16	A	A
PL4AB	15.0	14.0	334	157	1890	1890	0.18	0.08	A	A
PL9AB	15.0	14.0	633	189	1890	1890	0.33	0.10	A	A
ML1	4.0	3.0	7	2	405	405	0.02	0.00	A	A
Escalators	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40	90	556	64	1170	1170	0.48	0.05	C	A
Escalator (E204-Up/Down)	40	90	62	123	1170	1170	0.05	0.11	A	A
Escalator (E207-Up)	40	90	201	63	1170	1170	0.17	0.05	A	A
Escalator (E209-Up/Down)	40	90	56	66	1170	1170	0.05	0.06	A	A
Escalator (E205-Up)	40	90	159	107	1170	1170	0.14	0.09	A	A
Escalator (E206-Up/Down)	40	90	21	51	1170	1170	0.02	0.04	A	A
Passageway to Lexington Av	WIDTH (ft)	EFFECTIVE WIDTH (ft)								
Passageway	11.5	9.5	540	372	1924	1924	0.28	0.19	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Propsed Action (Weekday AM/PM)
(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - A25	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	1294	1228	3024	3024	0.43	0.41	C	C
Service Gate	1	2	112	207	675	675	0.17	0.31	A	B
High Entrance/Exit Turnstile	3	2	544	557	810	810	0.67	0.69	D	D
Street Stairs		EFFECTIVE								
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NE)	5.4	4.4	115	410	594	594	0.19	0.69	A	B
M2	5.7	4.7	115	410	635	635	0.18	0.65	A	B
S2AB (NW)	7.2	6.2	1264	594	837	837	1.51	0.71	E	C
M1AB	7.2	6.2	1264	594	837	837	1.51	0.71	E	C
H&M 300 (6th Ave)	4.9	3.9	664	792	527	527	1.26	1.50	D	E
H&M 300 (Mezz to Stairs)	8.1	7.1	664	792	959	959	0.69	0.83	B	C
H&M 302ABC (Mezz to Concourse)	23.7	22.7	680	510	3065	3065	0.22	0.17	A	A
									A	
Control Area		ONE- OR								
Booth - N506	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	14	2	1418	2141	6048	6048	0.23	0.35	B	B
Service Gate	1	2	231	189	675	675	0.34	0.28	B	B
Street Stairs		EFFECTIVE								
34th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5AB (SW)	9.0	8.0	1737	1329	1080	1080	1.61	1.23	E	D
M5AB	9.0	8.0	1737	1329	1080	1080	1.61	1.23	E	D
S7AB (NW)	8.3	7.3	1305	1412	986	986	1.32	1.43	D	E
M7AB	8.6	7.6	1305	1412	1026	1026	1.27	1.38	D	E
Control Area		ONE- OR								
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	11	2	2557	2732	4752	4752	0.54	0.57	C	C
Service Gate	1	2	60	16	675	675	0.09	0.02	A	A
Street Stair		EFFECTIVE								
32nd to 33rd St. and 6th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
H&M 307	5.6	4.6	1391	437	621	621	2.24	0.70	F	C
Escalators										
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
E221	24.0	90.0	170	1077	600	600	0.28	1.80	B	F
E222	40.0	90.0	1221	1048	1170	1170	1.04	0.90	F	E
Concourse to N507		EFFECTIVE								
Internal Stairs	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML7AB	11.6	10.6	611	611	1431	1431	0.43	0.43	A	A
ML1AB	8.6	7.6	781	589	1026	1026	0.76	0.57	C	B
Escalators										
33rd and Broadway	WIDTH (in)	SPEED (fpm)	IN/OUT	IN/OUT						
E223	24.0	90.0	927	770	600	600	1.55	1.28	F	F
E224	24.0	90.0	102	668	600	600	0.17	1.11	A	F
Control Area		ONE- OR								
Booth - A22	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	613	911	1296	1296	0.47	0.70	C	D
Service Gate	1	2	0	6	675	675	0.00	0.01	A	A
High Entrance/Exit Turnstile	2	2	304	284	540	540	0.56	0.53	C	C
Hign Exit Turnstile	2	1	23	44	900	450	0.03	0.10	A	A
Street Stairs		EFFECTIVE								
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	6.0	5.0	674	856	675	675	1.00	1.27	C	D
M4AB	11.5	10.5	674	856	1418	1418	0.48	0.60	B	B
S8 (NE)	6.0	5.0	272	413	675	675	0.40	0.61	A	B
M8AB	11.5	10.5	272	413	1418	1418	0.19	0.29	A	A
Control Area		ONE- OR								
Booth - N505	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	1774	1397	4320	4320	0.41	0.32	C	B
High Entrance/Exit Turnstile	2	2	494	451	540	540	0.91	0.84	E	E
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	4.8	3.8	317	204	513	513	0.62	0.40	B	A
M9	4.8	3.8	317	204	513	513	0.62	0.40	B	A
M10AB	9.6	8.6	317	204	1161	1161	0.27	0.18	A	A
S8 (NE)	4.8	3.8	777	703	513	513	1.51	1.37	E	E
M8AB	9.6	8.6	777	703	1161	1161	0.67	0.61	B	B
S7 (NW)	5.8	4.8	465	180	648	648	0.72	0.28	C	A
M7AB	9.7	8.7	465	180	1175	1175	0.40	0.15	A	A
Street Stairs		EFFECTIVE								
35th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SW)	5.1	4.1	24	119	554	554	0.04	0.21	A	A
M5AB	7.6	6.6	24	119	891	891	0.03	0.13	A	A
S6 (NW)	4.9	3.9	686	642	527	527	1.30	1.22	D	D
M6AB	7.9	6.9	686	642	932	932	0.74	0.69	C	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
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Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(iii) Sixth Avenue at 42nd Street Subway Station (B, D, F, and V)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area Booth - 504	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1891	1503	3456	3456	0.55	0.43	C	C
Service Gate	1	2	6	0	675	675	0.01	0.00	A	A
Street Stairs 40th St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	5.0	4.0	772	462	540	540	1.43	0.86	E	C
M6	8.6	7.6	772	462	1026	1026	0.75	0.45	C	B
S6 (NE)	4.7	3.7	80	451	500	500	0.16	0.90	A	C
M7	8.3	7.3	80	451	986	986	0.08	0.46	A	B
M8	8.3	7.3	80	451	986	986	0.08	0.46	A	B
S4 (SW)	4.7	3.7	750	480	500	500	1.50	0.96	E	C
M4	4.7	3.7	750	480	500	500	1.50	0.96	E	C
M5	8.4	7.4	750	480	999	999	0.75	0.48	C	B
O6 (NW)	5.8	4.8	296	111	648	648	0.46	0.17	B	A
O7	5.7	4.7	296	111	635	635	0.47	0.17	B	A
M9	5.7	4.7	296	111	635	635	0.47	0.17	B	A
M10	5.7	4.7	296	111	635	635	0.47	0.17	B	A
Control Area Booth - N503	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	969	992	2592	2592	0.37	0.38	B	B
Service Gate	1	2	40	0	675	675	0.06	0.00	A	A
Street Stairs 42nd St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (SE)	5.9	4.9	748	555	662	662	1.13	0.84	D	C
M12	7.0	6.0	748	555	810	810	0.92	0.69	C	B
M13	7.0	6.0	748	555	810	810	0.92	0.69	C	B
No Code (Bet 6th&7th)	8.0	7.0	261	436	945	945	0.28	0.46	A	B
O1ABC	19.7	18.7	261	436	2525	2525	0.10	0.17	A	A
M11ABCD	18.2	17.2	261	436	2322	2322	0.11	0.19	A	A
Control Area Booth - N502	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1512	1579	2592	2592	0.58	0.61	C	D
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs 42nd St and 6th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S11AB (NE)	9.6	8.6	713	669	1161	1161	0.61	0.58	B	B
M20AB	10.0	9.0	713	669	1215	1215	0.59	0.55	B	B
M19AB	10.0	9.0	713	669	1215	1215	0.59	0.55	B	B
M18AB	10.0	9.0	713	669	1215	1215	0.59	0.55	B	B
S9 (NW)	5.6	4.6	465	593	621	621	0.75	0.95	C	C
M14	7.7	6.7	465	593	905	905	0.51	0.66	B	B
M15AB	13.2	12.2	465	593	1647	1647	0.28	0.36	A	A
S10 (Bet 42nd&43rd)	5.7	4.7	335	323	635	635	0.53	0.51	B	B
M17	6.9	5.9	335	323	797	797	0.42	0.41	A	A
M16	6.9	5.9	335	323	797	797	0.42	0.41	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future Condition with the Proposed Action (Weekday AM/PM)
(vi) Seventh Avenue at 34th Street Subway Station (1, 2, 3, and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R137	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	373	462	1296	1296	0.29	0.36	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
32nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O15AB (NE)	10.3	9.3	373	462	1256	1256	0.30	0.37	A	A
O14AB	10.3	9.3	373	462	1256	1256	0.30	0.37	A	A
Control Area		ONE- OR								
Booth - R135	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	1493	2069	2592	2592	0.58	0.80	C	D
Service Gate	1	2	186	65	675	675	0.28	0.10	B	A
(32nd Street Sub passage to Penn Station)										
Control Area		ONE- OR								
Booth - R139	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	603	736	1728	1728	0.35	0.43	B	C
High Entrance/Exit Turnstile	1	2	105	179	270	270	0.39	0.66	B	D
Street Stairs		EFFECTIVE								
33rd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O17AB (SE)	10.0	9.0	1206	374	1215	1215	0.99	0.31	C	A
P3AB	10.7	9.7	1206	374	1310	1310	0.92	0.29	C	A
O19 (NE/E)	5.8	4.8	148	208	648	648	0.23	0.32	A	A
O18	5.8	4.8	148	208	648	648	0.23	0.32	A	A
S2 (NE/W)	5.3	4.3	296	461	581	581	0.51	0.79	B	C
P4	7.0	6.0	296	461	810	810	0.37	0.57	A	B
Control Area		ONE- OR								
Booth - R138	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile (1)	12	2	2991	2148	5184	5184	0.58	0.41	C	C
Service Gate	1	2	765	958	675	675	1.13	1.42	F	F
(33rd Street Sub passage to Penn Station and Control Area R139)										
Sub passage Stairs		EFFECTIVE								
33rd St Sub passage	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML2AB	13.0	12.0	1450	845	1620	1620	0.90	0.52	C	B
ML4AB	13.0	12.0	1450	845	1620	1620	0.90	0.52	C	B
		ONE- OR								
Control Area	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	1	2	220	216	270	270	0.81	0.80	E	D
Street Stairs		EFFECTIVE								
33rd and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NW)	4.4	3.4	220	216	459	459	0.48	0.47	B	B
P2	4.8	3.8	220	216	513	513	0.43	0.42	A	A
P1	8.5	7.5	220	216	1013	1013	0.22	0.21	A	A
Control Area		ONE- OR								
Booth - R141	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	443	953	3456	3456	0.13	0.28	A	B
Street Stairs		EFFECTIVE								
34th St and 7th Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	10.0	9.0	344	626	1215	1215	0.28	0.52	A	B
P6AB	7.9	6.9	344	626	932	932	0.37	0.67	A	B
S6 (NE)	5.1	4.1	100	326	547	547	0.18	0.60	A	B
P8AB	12.3	11.3	100	326	1526	1526	0.07	0.21	A	A
Control Area		ONE- OR								
Booth - R142 (3)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	770	794	1728	1728	0.45	0.46	C	C
High Entrance/Exit Turnstile	2	2	115	41	540	540	0.21	0.08	B	A
Service Gate	1	2	4	10	675	675	0.01	0.01	A	A
Street Stairs		EFFECTIVE								
34th St and 7th Ave (West) (3)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW)	10.0	9.0	366	217	1215	1215	0.30	0.18	A	A
P5AB	12.1	11.1	366	217	1499	1499	0.24	0.14	A	A
S5 (NW)	5.6	4.6	524	627	621	621	0.84	1.01	C	D
P7AB	12.2	11.2	524	627	1512	1512	0.35	0.41	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(vii-A) 42nd Street/Times Square Subway Station (N, R, S, Q, W, 1, 2, 3, 7 and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - R143 (1)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	960	1124	3456	3456	0.28	0.33	B	B
Service Gate	3	2	417	16	2025	2025	0.21	0.01	B	A
Street Stairs		EFFECTIVE								
40th St and 7Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S2 (SE)	5.6	4.6	821	645	621	621	1.32	1.04	D	D
M1AB	9.7	8.7	821	645	1175	1175	0.70	0.55	B	B
O1AB (SW)	9.3	8.3	540	472	1121	1121	0.48	0.42	B	A
O2AB	10.6	9.6	540	472	1296	1296	0.42	0.36	A	A
Control Area		ONE- OR								
Booth - A21	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	937	1801	3456	3456	0.27	0.52	B	C
Service Gate	2	2	241	0	1350	1350	0.18	0.00	A	A
Street Stairs		EFFECTIVE								
40th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
11-A (Control Area Stairway)	5.1	4.1	245	325	554	554	0.44	0.59	A	B
11-B (Street Stairway)	8.3	7.3	245	325	986	986	0.25	0.33	A	A
12-A (Control Area Stairway)	6.5	5.5	421	603	743	743	0.57	0.81	B	C
12-B (Street Stairway)	6.0	5.0	421	603	675	675	0.62	0.89	B	C
13-A (Control Area Stairway)	6.0	5.0	245	325	675	675	0.36	0.48	A	B
13-B (Street Stairway)	6.5	5.5	245	325	743	743	0.33	0.44	A	A
14-A (Control Area Stairway)	6.5	5.5	248	528	743	743	0.33	0.71	A	C
14-B (Street Stairway)	6.5	5.5	248	528	743	743	0.33	0.71	A	C
Control Area (41st and Broadwa	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Revolving Exit	1	1	215	74	450	450	0.48	0.16	C	A
Street Stairs		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S7 (SW)	4.5	3.5	108	37	473	473	0.23	0.08	A	A
M6A	7.6	6.6	108	37	891	891	0.12	0.04	A	A
M6B	7.6	6.6	215	74	891	891	0.24	0.08	A	A
Control Area		ONE- OR								
Booth - R145 (2)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstiles	5	2	312	217	2160	2160	0.14	0.10	A	A
Service Gate	1	2	48	36	675	675	0.07	0.05	A	A
Street Stairs		EFFECTIVE								
41st St and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M2ABC	13.75	12.75	359	255	1721	1721	0.21	0.15	A	A
S4	6.25	5.25	159	140	709	709	0.22	0.20	A	A
M6	6.25	5.25	201	115	709	709	0.28	0.16	A	A
S6	6.25	5.25	201	115	709	709	0.28	0.16	A	A
Control Area		ONE- OR								
Booth - R146 (3)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	3	2	611	752	810	810	0.75	0.93	D	E
Street Stairs		EFFECTIVE								
41st St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (No Code) (3)	7.7	6.7	611	752	905	905	0.68	0.83	B	C
Stairway (No Code) (3)	7.0	6.0	611	752	810	810	0.75	0.93	C	C
Stairway (No Code) (3)	7.0	6.0	374	465	810	810	0.75	0.93	C	C
Control Area		ONE- OR								
Booth - R148	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	6	2	872	849	2592	2592	0.34	0.33	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	5.8	4.8	872	849	648	648	1.35	1.31	E	D
P1	5.8	4.8	872	849	648	648	1.35	1.31	E	D
Control Area		ONE- OR								
Booth - R147	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	685	741	3024	3024	0.23	0.25	B	B
High Revolving Exit	2	1	119	131	810	810	0.15	0.16	A	A
Service Gate	1	2	0	6	675	675	0.00	0.01	A	A
(Street Level Control Area: SE corner of 42nd St and 7th Ave)										
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB	8.3	7.3	87	103	986	986	0.09	0.10	A	A
M7AB	8.3	7.3	87	103	986	986	0.09	0.10	A	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (E266-Up)	40.0		597	298	1170	1020	0.51	0.25	C	B
Escalator (E267-Down)	40.0		119	477	1170	1020	0.10	0.47	A	C
Control Area		ONE- OR								
Booth - R151	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1129	1427	3888	3888	0.29	0.37	B	B
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M9AB	13.8	12.8	287	702	1728	1728	0.17	0.41	A	A
Stairway (No Code)	8.3	7.3	133	203	986	986	0.13	0.21	A	A
Stairway (No Code)	8.3	7.3	133	203	986	986	0.13	0.21	A	A
O4ABC (NW)	14.7	13.7	841	725	1850	1850	0.45	0.39	B	A
O3ABC	14.7	13.7	841	725	1850	1850	0.45	0.39	B	A
M11ABC	14.2	13.2	841	725	1782	1782	0.47	0.41	B	A
Escalators		EFFECTIVE								
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator (No Code-Up)	40.0		97	281	1170	1020	0.08	0.24	A	B
Escalator (No Code-Down)	40.0		59	219	1170	1020	0.05	0.21	A	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(ix) Eight Avenue and 34th Street/Penn Station/Madison Square Garden (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area Booth - N67	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	13	2	2664	2072	5616	5616	0.47	0.37	C	B
High Entrance/Exit Turnstile	2	2	112	48	540	540	0.21	0.09	B	A
Service Gate	1	2	12	0	675	675	0.02	0.00	A	A
(With Hallways to Penn Station)										
Control Area Booth - N68	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	534	480	1296	1296	0.41	0.37	C	B
High Entrance/Exit Turnstile	1	2	313	75	270	270	1.16	0.28	F	B
Service Gate	1	2	73	2	675	675	0.11	0.00	A	A
Street Stairs 35th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S11 (SE)	4.1	3.1	325	218	419	419	0.78	0.52	C	B
P10AB	9.1	8.1	325	218	1094	1094	0.30	0.20	A	A
S15 (NE/E)	4.1	3.1	128	83	419	419	0.31	0.20	A	A
S14 (NE/W)	4.1	3.1	467	215	419	419	1.12	0.51	D	B
P12AB	9.1	8.1	595	337	1094	1094	0.54	0.31	B	A
Control Area Booth - N69	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	188	627	1296	1296	0.15	0.48	A	C
High Entrance/Exit Turnstile	1	2	523	82	270	270	1.94	0.30	F	B
Service Gate	1	2	139	0	675	675	0.21	0.00	B	A
Street Stairs 35th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S10 (SW)	4.2	3.2	211	229	432	432	0.49	0.53	B	B
P9	6.1	5.1	211	229	689	689	0.31	0.33	A	A
S13 (NW/E)	4.1	3.1	443	313	419	419	1.06	0.75	D	C
S12 (NW/W)	4.1	3.1	206	168	419	419	0.49	0.40	B	A
P11AB	9.1	8.1	649	482	1094	1094	0.59	0.44	B	A
Control Area Booth - N70	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	545	812	2160	2160	0.25	0.38	B	B
Service Gate	1	2	4	18	675	675	0.01	0.03	A	A
Street Stairs 34th St and 8th Ave (East)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S7	7.0	6.0	315	372	810	810	0.39	0.46	A	B
P6AB	6.7	5.7	315	372	770	770	0.41	0.48	A	B
S9	11.5	10.5	237	444	1418	1418	0.17	0.31	A	A
P8AB	5.5	4.5	237	444	608	608	0.39	0.73	A	C
Control Area Booth - N71	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	5	2	817	971	2160	2160	0.38	0.45	B	C
Service Gate	1	2	578	49	675	675	0.86	0.07	E	A
Street Stairs 34th St and 8th Ave (West)	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S6 (SW)	5.7	4.7	535	660	635	635	0.84	1.04	C	D
P5AB	11.6	10.6	535	660	1431	1431	0.37	0.46	A	B
S8 (NW)	5.8	4.8	857	358	648	648	1.32	0.55	D	B
P7AB	8.8	7.8	857	358	1053	1053	0.81	0.34	C	A
Control Area Booth - N72	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	1998	1956	3888	3888	0.51	0.50	C	C
Service Gate	3	2	178	311	2025	2025	0.09	0.15	A	A
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (SE)	7.4	6.4	269	297	864	864	0.31	0.34	A	A
P1	7.4	6.4	269	297	864	864	0.31	0.34	A	A
S5 (NE)	4.0	3.0	187	200	405	405	0.46	0.49	B	B
P4	4.4	3.4	187	200	459	459	0.41	0.44	A	A
Control Area Booth - N73	NUMBERS	ONE- OR TWO-WAY	IN/OUT	IN/OUT						
Turnstile	9	2	807	862	3888	3888	0.21	0.22	B	B
Service Gate	1	2	461	602	675	675	0.68	0.89	D	E
Street Stairs 33rd St and 8th Ave	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
S3 (SW/E)	12.0	11.0	301	172	1485	1485	0.20	0.12	A	A
S2 (SW/W)	12.0	11.0	545	237	1485	1485	0.37	0.16	A	A
P2AB	12.0	11.0	847	408	1485	1485	0.57	0.27	B	A
S4 (NW)	4.4	3.4	543	266	459	459	1.18	0.58	D	B
P3	4.4	3.4	543	266	459	459	1.18	0.58	D	B
Internal Stairs 33rd St Passage	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
GLAB (To Penn Station)	16.5	15.5	1766	1212	2093	2093	0.84	0.58	C	B
M5 (To Sub-Passage)	5.7	4.7	419	183	635	635	0.66	0.29	B	A
M6	5.7	4.7	419	183	635	635	0.66	0.29	B	A
M3AB (To Sub-Passage)	9.2	8.2	860	878	1107	1107	0.78	0.79	C	C
M4	9.2	8.2	860	878	1107	1107	0.78	0.79	C	C
To LIRR Platforms	7.2	6.2	808	749	837	837	0.97	0.89	C	C

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - N63	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	851	636	3024	3024	0.28	0.21	B	B
High Entrance/Exit Turnstile	2	2	162	142	540	540	0.30	0.26	B	B
High Exit Turnstile (1)	1	1	40	0	450	450	0.09	0.00	A	A
Service Gate	1	2	0	82	675	675	0.00	0.12	A	A
Control Area		ONE- OR								
Booth - N63A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	2278	1631	4320	4320	0.53	0.38	C	B
Service Gate	1	2	273	247	675	675	0.40	0.37	C	B
Street Stairs		ONE- OR								
40th St and 8th Ave	WIDTH (ft)	TWO-WAY	IN/OUT	IN/OUT						
M1AB (2)	9.6	3.7	261	235	500	500	0.52	0.47	B	B
O8 (2)	8.2	8.8	262	235	1188	1188	0.22	0.20	A	A
S2 (SE)	4.7	3.7	641	466	500	500	1.28	0.93	D	C
M2AB	9.8	8.8	641	466	1188	1188	0.54	0.39	B	A
S4 (NE)	4.7	3.7	181	130	500	500	0.36	0.26	A	A
M4AB	9.8	8.8	181	130	1188	1188	0.15	0.11	A	A
S3(NW)	4.7	3.7	503	558	500	500	1.01	1.12	D	D
M3AB	9.8	8.8	503	558	1188	1188	0.42	0.47	A	B
Control Area		ONE- OR								
Booth - N62	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1288	1431	3456	3456	0.37	0.41	B	C
Service Gate	1	2	12	215	675	675	0.02	0.32	A	B
(Hallway to PABT Between 41st and 42nd St.)										
Control Area		ONE- OR								
Booth - N62A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	171	279	3024	3024	0.06	0.09	A	A
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O11AB (NE)	9.6	8.6	64	99	1161	1161	0.06	0.09	A	A
O10AB	9.6	8.6	171	279	1161	1161	0.15	0.24	A	A
O9AB	9.5	8.5	64	99	1148	1148	0.06	0.09	A	A
Stairway (No Code)	10.0	9.0	64	98	2565	2565	0.05	0.08	A	A
Stairway (No Code)	10.0	9.0	64	98	3915	3915	0.05	0.08	A	A
Street Stairs										
42nd St and 8Ave (East)	WIDTH (in)		DOWN/UP	DOWN/UP						
Escalator (No Code)	40.0		41	61	1170	1020	0.04	0.05	A	A
Escalator (No Code)	40.0		41	61	1170	1020	0.04	0.05	A	A
Control Area (42nd St and 8 Ave-West)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	9	651	692	540	540	1.21	1.28	F	F
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (NW)	5.9	4.9	651	687	662	662	0.98	1.04	C	D
M9AB	9.6	8.6	651	687	1161	1161	0.56	0.59	B	B
Control Area		ONE- OR								
Booth - N60A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	2	Plywood Barricade							
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S10	5.3	4.3	Plywood Barricade							
M11AB	7.9	6.9	Plywood Barricade							
Control Area		ONE- OR								
Booth - N60	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	613	636	3024	3024	0.20	0.21	B	B
Service Gate	1	2	28	46	675	675	0.04	0.07	A	A
Street Stairs		EFFECTIVE								
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S12 (SE)	4.6	3.6	380	358	486	486	0.78	0.74	C	C
M13AB	9.9	8.9	380	358	1202	1202	0.32	0.30	A	A
S11 (SW)	4.8	3.8	141	159	513	513	0.27	0.31	A	A
M12AB	8.5	7.5	141	159	1013	1013	0.14	0.16	A	A
S13 (NW)	4.6	3.6	119	165	486	486	0.24	0.34	A	A
M14AB	8.5	7.5	119	165	1013	1013	0.12	0.16	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Stairway 2 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		0	0	1170	1170	0.00	0.00	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Stairway 2 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		0	0	1170	1170	0.00	0.00	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	184	1016	594	594	0.31	1.71	A	F
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		61	740	1170	1170	0.05	0.63	A	D
Escalator (34B)	40		593	532	1170	1170	0.51	0.45	C	C
Escalator (34C)	40		409	324	1170	1170	0.35	0.28	B	B
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	1490	1523	7425	7425	0.20	0.21	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	441	767	2025	2025	0.22	0.38	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	115	283	6615	6615	0.02	0.04	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		178	143	1170	1170	0.15	0.12	A	A
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	94	102	2025	2025	0.05	0.05	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadw	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	1045	838	999	999	1.05	0.84	D	C
PL3	8.4	7.4	444	602	999	999	0.44	0.60	A	B
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	1404	1086	999	999	1.41	1.09	E	D
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	1383	1506	999	999	1.38	1.51	E	E
PL8AB	8.4	7.4	1354	1271	999	999	1.36	1.27	E	D
Lower Mezzanine to Platform Escalators										
42nd Street and Broadw	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	625	1,181	1170	1170	0.53	1.01	C	F
Escalator (E217-Down)	40.0	90	1,072	468	1170	1170	0.92	0.40	E	B
Escalator (E21B-Up)	24.0	90	370	107	600	600	0.62	0.18	D	A
Passageway to/from Lower Mezzanine/8th		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	2082	2350	2045	2045	1.02	1.15	D	D
7th Avenue Platform Starirs (Northbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML6/ML8	7.5	6.5	1184	1107	878	878	1.35	1.26	E	D
ML10/ML12	7.5	6.5	1519	863	878	878	1.73	0.98	F	C
P4/P6	5.3	4.3	638	835	581	581	1.10	1.44	D	E
P8/P10	5.3	4.3	609	599	581	581	1.05	1.03	D	D
7th Avenue Platform Starirs (Southbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML5/ML7	7.5	6.5	1820	1171	878	878	2.07	1.33	F	E
ML9/ML11	7.5	6.5	1100	846	878	878	1.25	0.96	D	C
P3/P5	5.3	4.3	1020	866	581	581	1.76	1.49	F	E
P7/P9	5.3	4.3	755	548	581	581	1.30	0.94	D	C

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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Environmental Assessment and Review Division, Department of City Planning
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John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	649	221	1256	1256	0.52	0.18	B	A
P3	10.3	9.3	72	115	1256	1256	0.06	0.09	A	A
P4	9.7	8.7	18	60	1175	1175	0.02	0.05	A	A
P5	10.1	9.1	72	203	1229	1229	0.06	0.17	A	A
P6	10.0	9.0	56	126	1215	1215	0.05	0.10	A	A
P7	8.6	7.6	994	542	1026	1026	0.97	0.53	C	B
M2AB	12.4	11.4	729	513	1539	1539	0.47	0.33	B	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	1246	1112	4286	4286	0.29	0.26	A	A
Sixth Avenue Line Platform		EFFECTIVE								
Northbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P8 6.5	6.0	5.0	211	147	675	675	0.31	0.22	A	A
P10 6.5	6.0	5.0	456	380	675	675	0.68	0.56	B	B
P12 6.5	6.0	5.0	549	345	675	675	0.81	0.51	C	B
Southbound Platform	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P7 6.25	6.0	5.0	142	106	675	675	0.21	0.16	A	A
P9 6.25	6.0	5.0	642	428	675	675	0.95	0.63	C	B
P11 6.3	6.0	5.0	293	387	675	675	0.43	0.57	A	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	698	648	851	851	0.82	0.76	C	C
PL3	7.3	6.3	843	651	851	851	0.99	0.77	C	C
PL1AB	15.0	14	1541	1299	1890	1890	0.82	0.69	C	B
PL5	7.3	6.3	779	565	851	851	0.92	0.66	C	B
PL6	7.3	6.3	901	674	851	851	1.06	0.79	D	C
PL4AB	15.0	14.0	1680	1239	1890	1890	0.89	0.66	C	B
PL9AB	15.0	14.0	1950	1399	1890	1890	1.03	0.74	D	C
ML1	4.0	3.0	319	658	405	405	0.79	1.62	C	E
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Escalators	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40		1,046	245	1170	1170	0.89	0.21	E	B
Escalator (E204-Up/Down)	40		584	496	1170	1170	0.50	0.42	C	C
Escalator (E207-Up)	40		584	702	1170	1170	0.50	0.60	C	C
Escalator (E209-Up/Down)	40		597	128	1170	1170	0.51	0.11	C	A
Escalator (E205-Up)	40		649	528	1170	1170	0.55	0.45	C	C
Escalator (E206-Up/Down)	40		649	131	1170	1170	0.55	0.11	C	A
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (in)								
Passageway	11.5	9.5	2047	1917	1924	1924	1.06	1.00	D	C
Lexington Avenue Line Platform (Southbound I		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P12	10.0	8.5	1924	602	1148	1148	1.68	0.52	F	B
P14	10.0	8.5	2836	2275	1148	1148	2.47	1.98	F	F
P18	10.0	8.5	1427	691	1148	1148	1.24	0.60	D	B
P20	10.0	8.5	864	382	1148	1148	0.75	0.33	C	A
P22	6.5	5.5	1385	614	743	743	1.87	0.83	F	C
U1	6.2	5.2	722	392	698	698	1.04	0.56	D	B
U3	6.2	5.2	722	392	698	698	1.04	0.56	D	B
U5	6.1	5.1	897	307	686	686	1.31	0.45	D	A
U7	5.8	4.8	897	307	653	653	1.37	0.47	E	B
Lexington Avenue Line Platform (Northbound F		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P23	7.0	6.0	1134	928	810	810	1.40	1.15	E	D
P21	10.0	8.5	939	862	1148	1148	0.82	0.75	C	C
P19	10.0	8.5	811	854	1148	1148	0.71	0.74	C	C
P17	10.0	8.5	846	969	1148	1148	0.74	0.84	C	C
P15	10.0	8.5	491	783	1148	1148	0.43	0.68	A	B
P13	10.0	8.5	532	1352	1148	1148	0.46	1.18	B	D
U2	5.9	4.9	377	455	664	664	0.57	0.69	B	B
U4	5.9	4.9	377	455	664	664	0.57	0.69	B	B
U6	5.9	4.9	490	707	664	664	0.74	1.07	C	D
U8	5.9	4.9	490	707	664	664	0.74	1.07	C	D
Connection to Metro North (Control Area 238)		EFFECTIVE								
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB/M7AB	9.5	8.5	1738	1111	1148	1148	1.51	0.97	E	C
Escalator (E255-Up)	40	90	599	1,142	1170	1170	0.51	0.98	C	E
Escalator (E-256-Up/Down)	40	60	599	767	1170	1170	0.51	0.66	C	D
Connection to Metro North (Control Area 240)		EFFECTIVE								
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M8ABC/M10ABC	19.0	18.0	2122	1662	2430	2430	0.87	0.68	C	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
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Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
Number 7 Subway Line Extension - 34th Street Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Fare Control Area		ONE- OR								
Booth (34A - 34th Street and Boulevard)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	20	2	3788	5027	8640	8640	0.44	0.58	C	C
Service Gate	1	2	189	251	675	675	0.28	0.37	B	B
Street Stairways to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S1 and S2)	10.6	9.6	124	153	2592	2592	0.10	0.12	A	A
Street Escalators to Upper Mezzanine										
34th Street and Boulevard	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E1 and E6 (Down/Up)	40	2	235	374	2340	2340	0.10	0.16	A	A
Escalator E2 through E5 (Up/Down)	40	4	2121	2538	4680	4680	0.45	0.54	C	C
Street Escalators to Upper Mezzanine										
34th Street and Boulevard (North "A")	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E31 (Down/Up)	40	1	46	9	1170	1170	0.04	0.01	A	A
Escalator E32 through E34 (Up/Down)	40	3	1504	1804	3510	3510	0.43	0.51	C	C
Upper Mezzanine to Lower Mezzanine										
34th Street and Boulevard	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E7and E14 (Down/Up)	40	2	296	415	2340	2340	0.13	0.18	A	A
Escalator E8 and E10 (Up/Down)	40	3	1943	2374	3510	3510	0.55	0.68	C	D
Escalator E11 through E14 (Up/Down)	40	3	1943	2374	3510	3510	0.55	0.68	C	D
Lower Mezzanine to Platform		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S3 and S4)	10.6	8.6	93	120	1161	1161	0.08	0.10	A	A
Stairway (S5 and S6)	10.6	8.6	93	120	1161	1161	0.08	0.10	A	A
Stairway (S7 and S8)	10.6	8.6	93	120	1161	1161	0.08	0.10	A	A
Stairway (S9 and S10)	10.6	8.6	93	120	1161	1161	0.08	0.10	A	A
Stairway (S11 and S12)	10.6	8.6	93	120	1161	1161	0.08	0.10	A	A
Lower Mezzanine to Platform										
34th Street and Boulevard	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E15 through E16 (Down/Up)	40	2	220	297	2340	2340	0.09	0.13	A	A
Escalator E17 through E26 (Up/Down)	40	10	4631	5738	11700	11700	0.40	0.49	B	C
Fare Control Area		ONE- OR								
Booth (34B - 36th Street and 11th Avenue)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	1019	1323	1728	1728	0.59	0.77	C	D
High Entrance/Exit Turnstile	1	2	113	147	270	270	0.42	0.54	C	C
Street Escalators to Upper Mezzanine										
36th Street and 11th Avenue	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E23	40	1	144	179	1170	1170	0.12	0.15	A	A
Escalator E24 through 26	40	3	989	1291	3510	3510	0.28	0.37	B	B
Upper Mezzanine to Lower Mezzanine										
36th Street and 11th Avenue	WIDTH (in)	NUMBERS	DOWN/UP	DOWN/UP						
Escalator E27 (Up/Down)	40	1	144	179	1170	1170	0.12	0.15	A	A
Escalator E28 through E30 (Up/Down)	40	3	989	1291	3510	3510	0.28	0.37	B	B

Note:

Source:

Appendix S.4.4.6
2025 Future with the Proposed Action (Weekday AM/PM)
Number 7 Subway Line Extension - Tenth Avenue Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Fare Control Area		ONE- OR								
Booth (10A - 42nd Street and 10th Avenue)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	12	2	483	675	5184	5184	0.09	0.13	A	A
Service Gate	1	2	24	34	675	675	0.04	0.05	A	A
Street Escalators to Mezzanine		EFFECTIVE								
42nd Street and 10th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E1 (Up/Down)	40		146	171	1170	1170	0.12	0.15	A	A
Escalator E2 through E4 (Up/Down)	40		363	539	3510	3510	0.10	0.15	A	A
Street Escalators to Mezzanine		EFFECTIVE								
42nd Street and 10th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S1 and S2)	10.6	8.6	210	413	1161	1161	0.18	0.36	A	A
Mezzanine to Platform		EFFECTIVE								
42nd Street and 10th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E16 (Up/Down)	40		269	406	2340	2340	0.11	0.17	A	A
Escalator E17 through 23 (Up/Down)	40		1283	1864	7020	7020	0.18	0.27	A	B
Fare Control Area		ONE- OR								
Booth (10B - 41st Street and Boulevard)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1095	1444	3456	3456	0.32	0.42	B	C
High Entrance/Exit Turnstile	5	2	55	72	1350	1350	0.04	0.05	A	A
Service Gate	1	2	3	4	675	675	0.00	0.01	A	A
Street Escalators to Mezzanine		EFFECTIVE								
(41st Street and Boulevard)	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator E8 (Up/Down)	40		195	260	1170	1170	0.17	0.22	A	B
Escalator E9 through E11 (Up/Down)	40		1226	1614	3510	3510	0.35	0.46	B	C
Mezzanine to Platform		EFFECTIVE								
(41st Street and Boulevard)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E12 (Up/Down)	40		195	260	1170	1170	0.17	0.22	A	B
Escalator E13 through E15 (Up/Down)	40		1226	1614	3510	3510	0.35	0.46	B	C
Fare Control Area		ONE- OR								
Booth (10C - 41st Street and 10th Avenue)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	877	1092	1296	1296	0.68	0.84	D	E
High Entrance/Exit Turnstile	2	2	376	468	540	540	0.70	0.87	D	E
Street Escalators to Upper Mezzanine		EFFECTIVE								
36th Street and 11th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator 5 (Up/Down)	40		190	235	1170	1170	0.16	0.20	A	B
Escalator 6 and 7 (Up/Down)	40		1063	1325	2340	2340	0.45	0.57	C	C

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Entrance/Exit Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Special Events)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Stairway 2 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Street Stairs to Main Level		EFFECTIVE								
33rd Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		0	0	1170	1170	0.00	0.00	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway 1 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Stairway 2 (No Code)	5.8	4.8	0	0	648	648	0.00	0.00	A	A
Street Stairs to Main Level		EFFECTIVE								
31st Street and 8th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40		0	0	1170	1170	0.00	0.00	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S34)	5.4	4.4	140	210	594	594	0.24	0.35	A	A
Street Stairs to Mezzanine Level		EFFECTIVE								
34th Street and 7th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (34A)	40		121	130	1170	1170	0.10	0.11	A	A
Escalator (34B)	40		121	88	1170	1170	0.10	0.08	A	A
Escalator (34C)	40		109	133	1170	1170	0.09	0.11	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(33rd Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	55.0	747	824	7425	7425	0.10	0.11	A	A
Street Stairs to Train Hall										
(33rd Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	303	166	2025	2025	0.15	0.08	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	56.0	49.0	73	514	6615	6615	0.01	0.08	A	A
Street Stairs to Intermodal Hall		EFFECTIVE								
(31st Street - Farley Building)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator	40		523	454	1170	1170	0.45	0.39	C	B
Street Stairs to Train Hall										
(31st Street and 8th Avenue -		EFFECTIVE								
Farley Building)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway	16.0	15.0	59	82	2025	2025	0.03	0.04	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend:
SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Special Events)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadv	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	393	378	999	999	0.39	0.38	A	A
PL3	8.4	7.4	219	389	999	999	0.22	0.39	A	A
PL4	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL5	8.4	7.4	676	475	999	999	0.68	0.48	B	B
PL6AB (Replaced by El	8.4	7.4	0	0	999	999	0.00	0.00	A	A
PL7AB	8.4	7.4	799	454	999	999	0.80	0.45	C	B
PL8AB	8.4	7.4	469	298	999	999	0.47	0.30	B	A
Lower Mezzanine to Platform Escalators										
42nd Street and Broadv	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	40.0	90	97	532	1170	1170	0.08	0.45	A	C
Escalator (E217-Down)	40.0	90	775	242	1170	1170	0.66	0.21	D	B
Escalator (E21B-Up)	24.0	90	56	157	600	600	0.09	0.26	A	B
Passageway to/from Lower Mezzanine/8th		EFFECTIVE								
41st St and Broadway	WIDTH (ft)	WIDTH (ft)								
Passageway	12.1	10.1	946	1235	2045	2045	0.46	0.60	B	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
ML5/ML7 The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Special Event)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
No. 7 Line Platform		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P1	10.3	9.3	59	39	1256	1256	0.05	0.03	A	A
P3	10.3	9.3	79	28	1256	1256	0.06	0.02	A	A
P4	9.7	8.7	11	11	1175	1175	0.01	0.01	A	A
P5	10.1	9.1	23	20	1229	1229	0.02	0.02	A	A
P6	10.0	9.0	31	32	1215	1215	0.03	0.03	A	A
P7	8.6	7.6	198	121	1026	1026	0.19	0.12	A	A
M2AB	12.4	11.4	249	155	1539	1539	0.16	0.10	A	A
Mezzanine to Platform Level		EFFECTIVE								
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)								
Passageway	14.7	12.7	338	271	4286	4286	0.08	0.06	A	A

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6

2025 Future with the Proposed Action (Special Event)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Lower Mezzanine to Platform Stairwways	WIDTH (ft)	EFFECTIVE WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	717	809	851	851	0.84	0.95	C	C
PL3	7.3	6.3	860	855	851	851	1.01	1.01	D	D
PL1AB	15.0	14.0	1577	1664	1890	1890	0.83	0.88	C	C
PL5	7.3	6.3	817	818	851	851	0.96	0.96	C	C
PL6	7.3	6.3	807	768	851	851	0.95	0.90	C	C
PL4AB	15.0	14.0	1624	1586	1890	1890	0.86	0.84	C	C
PL9AB	15.0	14.0	619	219	1890	1890	0.33	0.12	A	A
ML1	4.0	3.0	7	2	405	405	0.02	0.00	A	A
Escalators	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40	90	521	100	1170	1170	0.45	0.09	C	A
Escalator (E204-Up/Down)	40	90	82	117	1170	1170	0.07	0.10	A	A
Escalator (E207-Up)	40	90	217	1,392	1170	1170	0.19	1.19	A	F
Escalator (E209-Up/Down)	40	90	1,404	69	1170	1170	1.20	0.06	F	A
Escalator (E205-Up)	40	90	173	1,148	1170	1170	0.15	0.98	A	E
Escalator (E206-Up/Down)	40	90	1,075	54	1170	1170	0.92	0.05	E	A
Passageway to Lexington Av	WIDTH (ft)	EFFECTIVE WIDTH (ft)								
Passageway	11.5	9.5	1723	2075	1924	1924	0.90	1.08	C	D

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend: SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Special Event)
Number 7 Subway Line Extension - 34th Street Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	AM	PM	EVE	SUN	EVE	SUN
Fare Control Area		ONE- OR								
Booth (34A - 34th Street and Boulevard)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	20	2	4802	6873	8640	8640	0.56	0.80	C	D
Service Gate	1	2	240	344	675	675	0.36	0.51	B	C
Street Stairways to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S1 and S2)	10.6	9.6	58	76	2592	2592	0.04	0.06	A	A
Street Escalators to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E1 and E6 (Down/Up)	40		82	220	2340	2340	0.04	0.09	A	A
Escalator E2 through E5 (Up/Down)	40		1017	1223	4680	4680	0.22	0.26	B	B
Street Escalators to Upper Mezzanine		EFFECTIVE								
34th Street and Boulevard (North "A")	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E31 (Down/Up)	40		53	369	1170	1170	0.05	0.32	A	B
Escalator E32 through E34 (Up/Down)	40		34	351	3510	3510	0.01	0.10	A	A
Upper Mezzanine to Lower Mezzanine		EFFECTIVE								
34th Street and Boulevard	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E7and E14 (Down/Up)	40		149	1,090	2340	2340	0.06	0.47	A	C
Escalator E8 and E10 (Up/Down)	40		2587	3006	3510	3510	0.74	0.86	D	E
Escalator E11 through E14 (Up/Down)	40		2587	3006	3510	3510	0.74	0.86	D	E
Lower Mezzanine to Platform		EFFECTIVE								
34th Street and Boulevard	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S3 and S4)	10.6	8.6	72	212	1161	1161	0.06	0.18	A	A
Stairway (S5 and S6)	10.6	8.6	72	212	1161	1161	0.06	0.18	A	A
Stairway (S7 and S8)	10.6	8.6	72	212	1161	1161	0.06	0.18	A	A
Stairway (S9 and S10)	10.6	8.6	72	212	1161	1161	0.06	0.18	A	A
Stairway (S11 and S12)	10.6	8.6	72	212	1161	1161	0.06	0.18	A	A
				1,060						
Lower Mezzanine to Platform		EFFECTIVE								
34th Street and Boulevard	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E15 through 18, E23, E24	40		97	744	2340	2340	0.04	0.32	A	B
Escalator E19 through 22, E25, E26	40		4954	6034	11700	11700	0.42	0.52	C	C
Fare Control Area		ONE- OR								
Booth (34B - 36th Street and 11th Avenue)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	4	2	78	664	1728	1728	0.05	0.38	A	B
High Entrance/Exit Turnstile	1	2	9	74	270	270	0.03	0.27	A	B
Street Escalators to Upper Mezzanine		EFFECTIVE								
36th Street and 11th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E23	40		45	399	1170	1170	0.04	0.34	A	B
Escalator E24 through 26	40		41	339	3510	3510	0.01	0.10	A	A
Upper Mezzanine to Lower Mezzanine		EFFECTIVE								
36th Street and 11th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E27 (Up/Down)	40		45	399	1170	1170	0.04	0.34	A	B
Escalator E28 through E30 (Up/Down)	40		41	339	3510	3510	0.01	0.10	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.6
2025 Future with the Proposed Action (Special Event)
Number 7 Subway Line Extension - Tenth Avenue Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			EVE	SUN	EVE	SUN	EVE	SUN	EVE	SUN
Fare Control Area		ONE- OR								
Booth (10A - 42nd Street and 10th Avenue)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	12	2	100	564	5184	5184	0.02	0.11	A	A
Service Gate	1	2	5	28	675	675	0.01	0.04	A	A
Street Escalators to Mezzanine		EFFECTIVE								
42nd Street and 10th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E1 (Up/Down)	40		50	338	1170	1170	0.04	0.29	A	B
Escalator E2 through E4 (Up/Down)	40		55	256	3510	3510	0.02	0.07	A	A
Street Escalators to Mezzanine		EFFECTIVE								
42nd Street and 10th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Stairway (S1/S2)	10.6	8.6	34	166	1161	1161	0.03	0.14	A	A
Mezzanine to Platform		EFFECTIVE								
42nd Street and 10th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E16 (Up/Down)	40		89	630	2340	2340	0.04	0.27	A	B
Escalator E17 through 23 (Up/Down)	40		104	514	7020	7020	0.01	0.07	A	A
Fare Control Area		ONE- OR								
Booth (10B - 41st Street and Boulevard)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	110	824	3456	3456	0.03	0.24	A	B
High Entrance/Exit Turnstile	5	2	5	41	1350	1350	0.00	0.03	A	A
Service Gate	1	2	0	2	675	675	0.00	0.00	A	A
Street Escalators to Mezzanine		EFFECTIVE								
(41st Street and Boulevard)	WIDTH (in)	WIDTH (ft)	DOWN/UP	DOWN/UP						
Escalator E8 (Up/Down)	40		69	538	1170	1170	0.06	0.46	A	C
Escalator E9 through E11 (Up/Down)	40		64	454	3510	3510	0.02	0.13	A	A
Mezzanine to Platform		EFFECTIVE								
(41st Street and Boulevard)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator E12 (Up/Down)	40		69	538	1170	1170	0.06	0.46	A	C
Escalator E13 through E15 (Up/Down)	40		64	454	3510	3510	0.02	0.13	A	A
Fare Control Area		ONE- OR								
Booth (10C - 41st Street and 10th Avenue)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	85	385	1296	1296	0.07	0.30	A	B
High Entrance/Exit Turnstile	2	2	36	165	540	540	0.07	0.31	A	B
Street Escalators to Upper Mezzanine		EFFECTIVE								
36th Street and 11th Avenue	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator 5 (Up/Down)	40		61	293	1170	1170	0.05	0.25	A	B
Escalator 6 and 7 (Up/Down)	40		60	258	2340	2340	0.03	0.11	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Legend:
SE-EVE: Special Events Weekday Evening
SE-SUN: Special Events Sunday Afternoon

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - A25	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	1294	1228	3024	3024	0.43	0.41	C	C
Service Gate	1	2	112	207	675	675	0.17	0.31	A	B
High Entrance/Exit Turnstile	3	2	544	557	810	810	0.67	0.69	D	D
Street Stairs		EFFECTIVE								
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S1 (NE)	5.4	4.4	115	410	594	594	0.19	0.69	A	B
M2	5.7	4.7	115	410	635	635	0.18	0.65	A	B
S2AB (NW)	7.2	6.2	1264	594	837	837	1.51	0.71	E	C
M1AB	7.2	6.2	1264	594	837	837	1.51	0.71	E	C
H&M 300 (6th Ave)	**6.9**	**5.9**	664	792	797	797	0.83	0.99	C	C
H&M 300 (Mezz to Stairs)	8.1	7.1	664	792	959	959	0.69	0.83	B	C
H&M 302ABC (Mezz to Concourse)	23.7	22.7	680	510	3065	3065	0.22	0.17	A	A
									A	
Control Area		ONE- OR								
Booth - N506	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	14	2	1418	2141	6048	6048	0.23	0.35	B	B
Service Gate	1	2	231	189	675	675	0.34	0.28	B	B
Street Stairs		EFFECTIVE								
34th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5AB (SW)	9.0	8.0	1737	1329	1080	1080	1.61	1.23	E	D
M5AB	9.0	8.0	1737	1329	1080	1080	1.61	1.23	E	D
S7AB (NW)	8.3	7.3	1305	1412	986	986	1.32	1.43	D	E
M7AB	8.6	7.6	1305	1412	1026	1026	1.27	1.38	D	E
Control Area		ONE- OR								
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	11	2	2557	2732	4752	4752	0.54	0.57	C	C
Service Gate	1	2	60	16	675	675	0.09	0.02	A	A
Street Stair		EFFECTIVE								
32nd to 33rd St. and 6th Avenue	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
H&M 307	**5.6**	**4.6**	1183	372	621	621	1.90	0.60	F	B
Escalators										
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
E221	**24.0**	**90**	145	915	600	600	0.24	1.53	B	F
E222	**40.0**	**90**	1038	891	**1170**	**1170**	0.89	0.76	E	D
Concourse to N507		EFFECTIVE								
Internal Stairs	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML7AB	11.6	10.6	611	611	1431	1431	0.43	0.43	A	A
ML1AB	8.6	7.6	781	589	1026	1026	0.76	0.57	C	B
New Stair 33rd St	**5.7**	**4.7**	**572**	**600**	**630**	**630**	**0.91**	**0.95**	**C**	**C**
Escalators										
33rd and Broadway	WIDTH (in)	SPEED (fpm)	IN/OUT	IN/OUT						
E223	**24.0**	**90**	788	655	600	600	1.31	1.09	F	F
E224	**24.0**	**90**	87	568	**600**	**600**	0.15	0.95	A	E
Control Area		ONE- OR								
Booth - A22	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	3	2	613	911	1296	1296	0.47	0.70	C	D
Service Gate	1	2	0	6	675	675	0.00	0.01	A	A
High Entrance/Exit Turnstile	2	2	304	284	540	540	0.56	0.53	C	C
Hign Exit Turnstile	2	1	23	44	900	450	0.03	0.10	A	A
Street Stairs		EFFECTIVE								
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SE)	6.0	5.0	674	856	675	675	1.00	1.27	C	D
M4AB	11.5	10.5	674	856	1418	1418	0.48	0.60	B	B
S8 (NE)	6.0	5.0	272	413	675	675	0.40	0.61	A	B
M8AB	11.5	10.5	272	413	1418	1418	0.19	0.29	A	A
Control Area		ONE- OR								
Booth - N505	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	1774	1397	4320	4320	0.41	0.32	C	B
High Entrance/Exit Turnstile	2	2	494	451	540	540	0.91	0.84	E	E
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S5 (SE)	4.8	3.8	317	204	513	513	0.62	0.40	B	A
M9	4.8	3.8	317	204	513	513	0.62	0.40	B	A
M10AB	9.6	8.6	317	204	1161	1161	0.27	0.18	A	A
S8 (NE)	4.8	3.8	777	703	513	513	1.51	1.37	E	E
M8AB	9.6	8.6	777	703	1161	1161	0.67	0.61	B	B
S7 (NW)	5.8	4.8	465	180	648	648	0.72	0.28	C	A
M7AB	9.7	8.7	465	180	1175	1175	0.40	0.15	A	A
Street Stairs		EFFECTIVE								
35th St and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S4 (SW)	5.1	4.1	24	119	554	554	0.04	0.21	A	A
M5AB	7.6	6.6	24	119	891	891	0.03	0.13	A	A
S6 (NW)	4.9	3.9	686	642	527	527	1.30	1.22	D	D
M6AB	7.9	6.9	686	642	932	932	0.74	0.69	C	B

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator: Speed 90 feet per minute = 40 persons per minute; Speed**120** feet per minute = **50** persons per minute
The Capacity for 40" Escalator: Speed 90 feet per minute = 78 persons per minute; Speed**120** feet per minute = **95** persons per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.7
2025 Build Condition with Mitigation Measures (Weekday AM/PM)
(ii) Sixth Avenue at 34th Street Subway Station (B, D,F,N,Q, R, V, and W)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES NO BUILD AM	NO BUILD PM	INCREMENT AM	INCREMENT PM	BUILD AM	BUILD PM	**MITIGATED AM**	**MITIGATED PM**	V/SVCD RATIO NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	**MITIGATED AM**	**MITIGATED PM**	LEVEL OF SERVICE NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	**MITIGATED AM**	**MITIGATED PM**	IMPACT / MITIGATION AM	IMPACT / MITIGATION PM	**STILL IMPACTED? AM**	**STILL IMPACTED? PM**
Control Area		ONE- OR																								
Booth - A25	NUMBERS	TWO-WAY																								
Turnstile	7	2	1102	995	192	233	1294	1228	1294	1228	0.36	0.33	0.43	0.41	**0.43**	**0.41**	B	B	C	C	**C**	**C**				
Service Gate	1	2	110	203	2	4	112	207	112	207	0.16	0.30	0.17	0.31	**0.17**	**0.31**	A	B	A	B	**A**	**B**				
High Entrance/Exit Turnstile	3	2	478	503	66	54	544	557	544	557	0.59	0.62	0.67	0.69	**0.67**	**0.69**	C	D	D	D	**D**	**D**				
Street Stairs		EFFECTIVE																								
32nd St and Broadway	WIDTH (ft)	WIDTH (ft)																								
S1 (NE)	5.4	4.4	113	404	2	6	115	410	115	410	0.19	0.68	0.19	0.69	**0.19**	**0.69**	A	B	A	B	**A**	**B**				
M2	5.7	4.7	113	404	2	6	115	410	115	410	0.18	0.64	0.18	0.65	**0.18**	**0.65**	A	B	A	B	**A**	**B**				
S2AB (NW)	7.2	6.2	1246	585	18	9	1264	594	1264	594	1.49	0.70	1.51	0.71	**1.51**	**0.71**	E	B	E	C	**E**	**C**	1.07 < 3			
M1AB	7.2	6.2	1246	585	18	9	1264	594	1264	594	1.49	0.70	1.51	0.71	**1.51**	**0.71**	E	B	E	C	**E**	**C**	1.07 < 3			
H&M 300 (6th Ave)	4.9	3.9	404	501	260	291	664	792	664	792	0.77	0.95	1.26	1.50	**0.83**	**0.99**	C	C	D	E	**C**	**C**	12.82 ≥ 6 *	24.31 ≥ 6 *	**No**	**No**
H&M 300 (Mezz to Stairs)	8.1	7.1	404	501	260	291	664	792	664	792	0.42	0.52	0.69	0.83	**0.69**	**0.83**	A	B	B	C	**B**	**C**				
H&M 302ABC (Mezz to Concourse)	23.7	22.7	680	510	0	0	680	510	680	510	0.22	0.17	0.22	0.17	**0.22**	**0.17**	A	A	A	A	**A**	**A**				
Control Area		ONE- OR				4	8	35			38.37															
Booth - N506	NUMBERS	TWO-WAY																								
Turnstile	14	2	1401	2121	17	20	1418	2141	1418	2141	0.23	0.35	0.23	0.35	**0.23**	**0.35**	B	B	B	B	**B**	**B**				
Service Gate	1	2	228	188	3	1	231	189	231	189	0.34	0.28	0.34	0.28	**0.34**	**0.28**	B	B	B	B	**B**	**B**				
Street Stairs		EFFECTIVE																								
34th St and Broadway	WIDTH (ft)	WIDTH (ft)																								
S5AB (SW)	9	8	1713	1304	24	25	1737	1329	1737	1329	1.59	1.21	1.61	1.23	**1.61**	**1.23**	E	D	E	D	**E**	**D**	1.35 < 3	1.84 < 6		
M5AB	9	8	1713	1304	24	25	1737	1329	1737	1329	1.59	1.21	1.61	1.23	**1.61**	**1.23**	E	D	E	D	**E**	**D**	1.35 < 3	1.84 < 6		
S7AB (NW)	8.3	7.3	1310	1419	-5	-7	1305	1412	1305	1412	1.33	1.44	1.32	1.43	**1.32**	**1.43**	D	E	D	E	**D**	**E**	-0.33 < 6	-0.43 < 3		
M7AB	8.6	7.6	1310	1419	-5	-7	1305	1412	1305	1412	1.28	1.38	1.27	1.38	**1.27**	**1.38**	D	E	D	E	**D**	**E**	-0.35 < 6	-0.45 < 3		
Control Area		ONE- OR																								
Booth - N507 (Lower Mezz.)	NUMBERS	TWO-WAY																								
Turnstile	11	2	2278	2411	279	321	2557	2732	2557	2732	0.48	0.51	0.54	0.57	**0.54**	**0.57**	C	C	C	C	**C**	**C**				
Service Gate	1	2	49	13	11	3	60	16	60	16	0.07	0.02	0.09	0.02	**0.09**	**0.02**	A	A	A	A	**A**	**A**				
Street Stair		EFFECTIVE																								
32nd to 33rd St. and 6th Avenue	WIDTH (ft)	WIDTH (ft)																								
H&M 307	5.6	4.6	1246	274	145	163	1391	437	1183	372	2.01	0.44	2.24	0.70	**1.90**	**0.60**	F	A	F	C	**F**	**B**	6.42 ≥ 1 *		**No**	
Escalators		0																								
32nd to 33rd St and 6th Avenue	WIDTH (in)	SPEED (fpm)																								
E221	24		159	933	11	144	170	1077	145	915	0.27	1.56	0.28	1.80	**0.24**	**1.53**	B	F	B	F	**B**	**F**		Sig Imp		**No**
E222	40		1087	1029	134	19	1221	1048	1038	891	0.93	0.88	1.04	0.90	**0.89**	**0.76**	E	E	F	E	**E**	**D**	Sig Imp		**No**	
Concourse to N507		EFFECTIVE																								
Internal Stairs	WIDTH (ft)	WIDTH (ft)																								
ML7AB	11.6	10.6	611	611	0	0	611	611	611	611	0.43	0.43	0.43	0.43	**0.43**	**0.43**	A	A	A	A	**A**	**A**				
ML1AB	8.6	7.6	781	589	0	0	781	589	781	589	0.76	0.57	0.76	0.57	**0.76**	**0.57**	C	B	C	B	**C**	**B**				
New Stair 33rd St	**0**								**572**	**600**					**0.91**	**0.95**					**C**	**C**			**No**	**No**
Escalators		0																								
33rd and Broadway	WIDTH (in)	SPEED (fpm)																								
E223	24		793	751	134	19	927	770	788	655	1.32	1.25	1.55	1.28	**1.31**	**1.09**	F	F	F	F	**F**	**F**	Sig Imp	Sig Imp	**No**	**No**
E224	24		91	524	11	144	102	668	87	568	0.15	0.87	0.17	1.11	**0.15**	**0.95**	A	E	A	F	**A**	**E**		Sig Imp		**No**
Control Area		ONE- OR																								
Booth - A22	NUMBERS	TWO-WAY																								
Turnstile	3	2	613	911	0	0	613	911	613	911	0.47	0.70	0.47	0.70	**0.47**	**0.70**	C	D	C	D	**C**	**D**				
Service Gate	1	2	0	6	0	0	0	6	0	6	0.00	0.01	0.00	0.01	**0.00**	**0.01**	A	A	A	A	**A**	**A**				
High Entrance/Exit Turnstile	2	2	304	284	0	0	304	284	304	284	0.56	0.53	0.56	0.53	**0.56**	**0.53**	C	C	C	C	**C**	**C**				
Hign Exit Turnstile	2	1	23	44	0	0	23	44	23	44	0.03	0.10	0.03	0.10	**0.03**	**0.10**	A	A	A	A	**A**	**A**				
Street Stairs		EFFECTIVE																								
34th St and 6th Ave	WIDTH (ft)	WIDTH (ft)																								
S4 (SE)	6	5	674	856	0	0	674	856	674	856	1.00	1.27	1.00	1.27	**1.00**	**1.27**	C	D	C	D	**C**	**D**		0 < 6		
M4AB	11.5	10.5	674	856	0	0	674	856	674	856	0.48	0.60	0.48	0.60	**0.48**	**0.60**	B	B	B	B	**B**	**B**				
S8 (NE)	6	5	272	413	0	0	272	413	272	413	0.40	0.61	0.40	0.61	**0.40**	**0.61**	A	B	A	B	**A**	**B**				
M8AB	11.5	10.5	272	413	0	0	272	413	272	413	0.19	0.29	0.19	0.29	**0.19**	**0.29**	A	A	A	A	**A**	**A**				
Control Area		ONE- OR																								
Booth - N505	NUMBERS	TWO-WAY																								
Turnstile	10	2	1790	1421	-16	-24	1774	1397	1774	1397	0.41	0.33	0.41	0.32	**0.41**	**0.32**	C	B	C	B	**C**	**B**				
High Entrance/Exit Turnstile	2	2	499	458	-5	-7	494	451	494	451	0.92	0.85	0.91	0.84	**0.91**	**0.84**	E	E	E	E	**E**	**E**				
Service Gate	1	2	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	**0.00**	**0.00**	A	A	A	A	**A**	**A**				
	0																									
Street Stairs		EFFECTIVE																								
35th St and 6th Ave	WIDTH (ft)	WIDTH (ft)																								
S5 (SE)	4.8	3.8	317	204	0	0	317	204	317	204	0.62	0.40	0.62	0.40	**0.62**	**0.40**	B	A	B	A	**B**	**A**				
M9	4.8	3.8	317	204	0	0	317	204	317	204	0.62	0.40	0.62	0.40	**0.62**	**0.40**	B	A	B	A	**B**	**A**				
M10AB	9.6	8.6	317	204	0	0	317	204	317	204	0.27	0.18	0.27	0.18	**0.27**	**0.18**	A	A	A	A	**A**	**A**				
S8 (NE)	4.8	3.8	777	703	0	0	777	703	777	703	1.51	1.37	1.51	1.37	**1.51**	**1.37**	E	E	E	E	**E**	**E**	0 < 3	0 < 3		
M8AB	9.6	8.6	777	703	0	0	777	703	777	703	0.67	0.61	0.67	0.61	**0.67**	**0.61**	B	B	B	B	**B**	**B**				
S7 (NW)	5.8	4.8	465	180	0	0	465	180	465	180	0.72	0.28	0.72	0.28	**0.72**	**0.28**	C	A	C	A	**C**	**A**				
M7AB	9.7	8.7	465	180	0	0	465	180	465	180	0.40	0.15	0.40	0.15	**0.40**	**0.15**	A	A	A	A	**A**	**A**				
Street Stairs		EFFECTIVE																								
35th St and Broadway	WIDTH (ft)	WIDTH (ft)																								
S4 (SW)	5.1	4.1	35	133	-11	-14	24	119	24	119	0.06	0.24	0.04	0.21	**0.04**	**0.21**	A	A	A	A	**A**	**A**				
M5AB	7.6	6.6	35	133	-11	-14	24	119	24	119	0.04	0.15	0.03	0.13	**0.03**	**0.13**	A	A	A	A	**A**	**A**				
S6 (NW)	4.9	3.9	697	656	-11	-14	686	642	686	642	1.32	1.25	1.30	1.22	**1.30**	**1.22**	D	D	D	D	**D**	**D**	-0.74 < 6	-1 < 6		
M6AB	7.9	6.9	697	656	-11	-14	686	642	686	642	0.75	0.70	0.74	0.69	**0.74**	**0.69**	C	C	C	B	**C**	**B**				

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(iii) Sixth Avenue at 42nd Street Subway Station (B, D, F, and V)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - 504	NUMBERS	TWO-WAY																				
Turnstile	8	2	1833	1439	58	64	1891	1503	0.53	0.42	0.55	0.43			C	C	C	C				
Service Gate	1	2	6	0	0	0	6	0	0.01	0.00	0.01	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
40th St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S5 (SE)	5	4	772	462	0	0	772	462	1.43	0.86	1.43	0.86			E	C	E	C			0 < 3	
M6	8.6	7.6	772	462	0	0	772	462	0.75	0.45	0.75	0.45			C	B	C	B				
S6 (NE)	4.7	3.7	80	451	0	0	80	451	0.16	0.90	0.16	0.90			A	C	A	C				
M7	8.3	7.3	80	451	0	0	80	451	0.08	0.46	0.08	0.46			A	B	A	B				
M8	8.3	7.3	80	451	0	0	80	451	0.08	0.46	0.08	0.46			A	B	A	B				
S4 (SW)	4.7	3.7	735	464	15	16	750	480	1.47	0.93	1.50	0.96			E	C	E	C			0.91 < 3	
M4	4.7	3.7	735	464	15	16	750	480	1.47	0.93	1.50	0.96			E	C	E	C			0.91 < 3	
M5	8.4	7.4	735	464	15	16	750	480	0.74	0.46	0.75	0.48			C	B	C	B				
O6 (NW)	5.8	4.8	252	63	44	48	296	111	0.39	0.10	0.46	0.17			A	A	B	A				
O7	5.7	4.7	252	63	44	48	296	111	0.40	0.10	0.47	0.17			A	A	B	A				
M9	5.7	4.7	252	63	44	48	296	111	0.40	0.10	0.47	0.17			A	A	B	A				
M10	5.7	4.7	252	63	44	48	296	111	0.40	0.10	0.47	0.17			A	A	B	A				
Control Area		ONE- OR																				
Booth - N503	NUMBERS	TWO-WAY																				
Turnstile	6	2	969	992	0	0	969	992	0.37	0.38	0.37	0.38			B	B	B	B				
Service Gate	1	2	40	0	0	0	40	0	0.06	0.00	0.06	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S8 (SE)	5.9	4.9	748	555	0	0	748	555	1.13	0.84	1.13	0.84			D	C	D	C			0 < 6	
M12	7	6	748	555	0	0	748	555	0.92	0.69	0.92	0.69			C	B	C	B				
M13	7	6	748	555	0	0	748	555	0.92	0.69	0.92	0.69			C	B	C	B				
No Code (Bet 6th&7th)	8	7	261	436	0	0	261	436	0.28	0.46	0.28	0.46			A	B	A	B				
O1ABC	19.7	18.7	261	436	0	0	261	436	0.10	0.17	0.10	0.17			A	A	A	A				
M11ABCD	18.2	17.2	261	436	0	0	261	436	0.11	0.19	0.11	0.19			A	A	A	A				
Control Area		ONE- OR																				
Booth - N502	NUMBERS	TWO-WAY																				
Turnstile	6	2	1497	1580	15	-1	1512	1579	0.58	0.61	0.58	0.61			C	D	C	D				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 6th Ave	WIDTH (ft)	WIDTH (ft)																				
S11AB (NE)	9.6	8.6	713	669	0	0	713	669	0.61	0.58	0.61	0.58			B	B	B	B				
M20AB	10	9	713	669	0	0	713	669	0.59	0.55	0.59	0.55			B	B	B	B				
M19AB	10	9	713	669	0	0	713	669	0.59	0.55	0.59	0.55			B	B	B	B				
M18AB	10	9	713	669	0	0	713	669	0.59	0.55	0.59	0.55			B	B	B	B				
S9 (NW)	5.6	4.6	450	594	15	-1	465	593	0.72	0.96	0.75	0.95			C	C	C	C				
M14	7.7	6.7	450	594	15	-1	465	593	0.50	0.66	0.51	0.66			B	B	B	B				
M15AB	13.2	12.2	450	594	15	-1	465	593	0.27	0.36	0.28	0.36			A	A	A	A				
S10 (Bet 42nd&43rd)	5.7	4.7	335	323	0	0	335	323	0.53	0.51	0.53	0.51			B	B	B	B				
M17	6.9	5.9	335	323	0	0	335	323	0.42	0.41	0.42	0.41			A	A	A	A				
M16	6.9	5.9	335	323	0	0	335	323	0.42	0.41	0.42	0.41			A	A	A	A				

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(vi) Seventh Avenue at 34th Street Subway Station (1, 2, 3, and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE							
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED		IMPACT / MITIGA	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - R137	NUMBERS	TWO-WAY																				
Turnstile	3	2	373	461	0	1	373	462	0.29	0.36	0.29	0.36			B	B	B	B				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
32nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
O15AB (NE)	10.3	9.3	373	461	0	1	373	462	0.30	0.37	0.30	0.37			A	A	A	A				
O14AB	10.3	9.3	373	461	0	1	373	462	0.30	0.37	0.30	0.37			A	A	A	A				
Control Area		ONE- OR																				
Booth - R135	NUMBERS	TWO-WAY																				
Turnstile	6	2	1361	1847	132	222	1493	2069	0.53	0.71	0.58	0.80			C	D	C	D				
Service Gate	1	2	114	57	72	8	186	65	0.17	0.08	0.28	0.10			A	A	B	A				
(32nd Street Sub passage to Penn Station)																						
Control Area		ONE- OR																				
Booth - R139	NUMBERS	TWO-WAY																				
Turnstile	4	2	510	580	93	156	603	736	0.30	0.34	0.35	0.43			B	B	B	C				
High Entrance/Exit Turnstile	1	2	54	173	51	6	105	179	0.20	0.64	0.39	0.66			A	D	B	D				
Street Stairs		EFFECTIVE																				
33rd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
O17AB (SE)	10	9	1206	374	0	0	1206	374	0.99	0.31	0.99	0.31			C	A	C	A				
P3AB	10.7	9.7	1206	374	0	0	1206	374	0.92	0.29	0.92	0.29			C	A	C	A				
O19 (NE/E)	5.8	4.8	148	208	0	0	148	208	0.23	0.32	0.23	0.32			A	A	A	A				
O18	5.8	4.8	148	208	0	0	148	208	0.23	0.32	0.23	0.32			A	A	A	A				
S2 (NE/W)	5.3	4.3	271	432	25	29	296	461	0.47	0.74	0.51	0.79			B	C	B	C				
P4	7	6	271	432	25	29	296	461	0.33	0.53	0.37	0.57			A	B	A	B				
Control Area		ONE- OR																				
Booth - R138	NUMBERS	TWO-WAY																				
Turnstile (1)	12	2	2635	1747	356	401	2991	2148	0.51	0.34	0.58	0.41			C	B	C	C				
Service Gate	1	2	765	958	0	0	765	958	1.13	1.42	1.13	1.42			F	F	F	F				
(33rd Street Sub passage to Penn Station and Control Area R139)																						
Sub passage Stairs		EFFECTIVE																				
33rd St Sub passage	WIDTH (ft)	WIDTH (ft)																				
ML2AB	13	12	1094	444	356	401	1450	845	0.68	0.27	0.90	0.52			B	A	C	B				
ML4AB	13	12	1094	444	356	401	1450	845	0.68	0.27	0.90	0.52			B	A	C	B				
		ONE- OR																				
Control Area	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	1	2	194	188	26	28	220	216	0.72	0.70	0.81	0.80			D	D	E	D				
Street Stairs		EFFECTIVE																				
33rd and 7th Ave (West)	WIDTH (ft)	WIDTH (ft)																				
S1 (NW)	4.4	3.4	194	188	26	28	220	216	0.42	0.41	0.48	0.47			A	A	B	B				
P2	4.8	3.8	194	188	26	28	220	216	0.38	0.37	0.43	0.42			A	A	A	A				
P1	8.5	7.5	194	188	26	28	220	216	0.19	0.19	0.22	0.21			A	A	A	A				
Control Area		ONE- OR																				
Booth - R141	NUMBERS	TWO-WAY																				
Turnstile	8	2	408	914	35	39	443	953	0.12	0.26	0.13	0.28			A	B	A	B				
Street Stairs		EFFECTIVE																				
34th St and 7th Ave (East)	WIDTH (ft)	WIDTH (ft)																				
S4 (SE)	10	9	327	606	17	20	344	626	0.27	0.50	0.28	0.52			A	B	A	B				
P6AB	7.9	6.9	327	606	17	20	344	626	0.35	0.65	0.37	0.67			A	B	A	B				
S6 (NE)	5.05	4.05	83	306	17	20	100	326	0.15	0.56	0.18	0.60			A	B	A	B				
P8AB	12.3	11.3	83	306	17	20	100	326	0.05	0.20	0.07	0.21			A	A	A	A				
Control Area		ONE- OR																				
Booth - R142 (3)	NUMBERS	TWO-WAY																				
Turnstile	4	2	725	740	45	54	770	794	0.42	0.43	0.45	0.46			C	C	C	C				
High Entrance/Exit Turnstile	2	2	108	39	7	2	115	41	0.20	0.07	0.21	0.08			A	A	B	A				
Service Gate	1	2	3	9	1	1	4	10	0.00	0.01	0.01	0.01			A	A	A	A				
Street Stairs		EFFECTIVE																				
34th St and 7th Ave (West) (3)	WIDTH (ft)	WIDTH (ft)																				
S3 (SW)	10	9	340	190	26	27	366	217	0.28	0.16	0.30	0.18			A	A	A	A				
P5AB	12.1	11.1	340	190	26	27	366	217	0.23	0.13	0.24	0.14			A	A	A	A				
S5 (NW)	5.6	4.6	498	600	26	27	524	627	0.80	0.97	0.84	1.01			C	C	C	D				1.1<6
P7AB	12.2	11.2	498	600	26	27	524	627	0.33	0.40	0.35	0.41			A	A	A	A				

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(vii-A) 42nd Street/Times Square Subway Station (N, R, S, Q, W, 1, 2, 3, 7 and 9)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES NO BUILD AM	NO BUILD PM	INCREMENT AM	INCREMENT PM	BUILD AM	BUILD PM	V/SVCD RATIO NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	MITIGATED AM	MITIGATED PM	LEVEL OF SERVICE NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	MITIGATED AM	MITIGATED PM	IMPACT / MITIGA AM	IMPACT / MITIGA PM
Control Area		ONE- OR																				
Booth - R143 (1)	NUMBERS	TWO-WAY																				
Turnstile	8	2	911	1058	49	66	960	1124	0.26	0.31	0.28	0.33			B	B	B	B				
Service Gate	3	2	404	14	13	2	417	16	0.20	0.01	0.21	0.01			A	A	B	A				
Street Stairs		EFFECTIVE																				
40th St and 7Ave	WIDTH (ft)	WIDTH (ft)																				
S2 (SE)	5.6	4.6	821	645	0	0	821	645	1.32	1.04	1.32	1.04			D	D	D	D			0 < 6	0 < 6
M1AB	9.7	8.7	821	645	0	0	821	645	0.70	0.55	0.70	0.55			B	B	B	B				
O1AB (SW)	9.3	8.3	478	404	62	68	540	472	0.43	0.36	0.48	0.42			A	A	B	A				
O2AB	10.6	9.6	478	404	62	68	540	472	0.37	0.31	0.42	0.36			A	A	A	A				
Control Area		ONE- OR																				
Booth - A21	NUMBERS	TWO-WAY																				
Turnstile	8	2	886	1733	51	68	937	1801	0.26	0.50	0.27	0.52			B	C	B	C				
Service Gate	2	2	231	0	10	0	241	0	0.17	0.00	0.18	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
40th St and Broadway	WIDTH (ft)	WIDTH (ft)																				
11-A (Control Area Stairway)	5.1	4.1	245	325	0	0	245	325	0.44	0.59	0.44	0.59			A	B	A	B				
11-B (Street Stairway)	8.3	7.3	245	325	0	0	245	325	0.25	0.33	0.25	0.33			A	A	A	A				
12-A (Control Area Stairway)	6.5	5.5	390	569	31	34	421	603	0.53	0.77	0.57	0.81			B	C	B	C				
12-B (Street Stairway)	6	5	390	569	31	34	421	603	0.58	0.84	0.62	0.89			B	C	B	C				
13-A (Control Area Stairway)	6	5	245	325	0	0	245	325	0.36	0.48	0.36	0.48			A	B	A	B				
13-B (Street Stairway)	6.5	5.5	245	325	0	0	245	325	0.33	0.44	0.33	0.44			A	A	A	A				
14-A (Control Area Stairway)	6.5	5.5	217	494	31	34	248	528	0.29	0.67	0.33	0.71			A	B	A	C				
14-B (Street Stairway)	6.5	5.5	217	494	31	34	248	528	0.29	0.67	0.33	0.71			A	B	A	C				
Control Area (41st and Broadway)	NUMBERS	TWO-WAY																				
High Revolving Exit	1	1	215	74	0	0	215	74	0.48	0.16	0.48	0.16			C	A	C	A				
Street Stairs		EFFECTIVE																				
41st St and Broadway	WIDTH (ft)	WIDTH (ft)																				
S7 (SW)	4.5	3.5	108	37	0	0	108	37	0.23	0.08	0.23	0.08			A	A	A	A				
M6A	7.6	6.6	108	37	0	0	108	37	0.12	0.04	0.12	0.04			A	A	A	A				
M6B	7.6	6.6	215	74	0	0	215	74	0.24	0.08	0.24	0.08			A	A	A	A				
Control Area		ONE- OR																				
Booth - R145 (2)	NUMBERS	TWO-WAY																				
Turnstiles	5	2	312	217	0	0	312	217	0.14	0.10	0.14	0.10			A	A	A	A				
Service Gate	1	2	48	36	0	0	48	36	0.07	0.05	0.07	0.05			A	A	A	A				
Street Stairs		EFFECTIVE																				
41st St and 7th Avenue	WIDTH (ft)	WIDTH (ft)																				
M2ABC	13.75	12.75	359	255	0	0	359	255	0.21	0.15	0.21	0.15			A	A	A	A				
S4	6.25	5.25	159	140	0	0	159	140	0.22	0.20	0.22	0.20			A	A	A	A				
M6	6.25	5.25	201	115	0	0	201	115	0.28	0.16	0.28	0.16			A	A	A	A				
S6	6.25	5.25	201	115	0	0	201	115	0.28	0.16	0.28	0.16			A	A	A	A				
Control Area		ONE- OR																				
Booth - R146 (3)	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	3	2	594	728	17	24	611	752	0.73	0.90	0.75	0.93			D	E	D	E				
Street Stairs		EFFECTIVE																				
41st St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
Stairway (No Code) (3)	7.7	6.7	594	728	17	24	611	752	0.66	0.80	0.68	0.83			B	C	B	C				
Stairway (No Code) (3)	7	6	594	728	17	24	611	752	0.73	0.90	0.75	0.93			C	C	C	C				
Stairway (No Code) (3)	7	6	374	465	0	0	374	465	0.73	0.90	0.75	0.93			C	C	C	C				
Control Area		ONE- OR																				
Booth - R148	NUMBERS	TWO-WAY																				
Turnstile	6	2	872	849	0	0	872	849	0.34	0.33	0.34	0.33			B	B	B	B				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and Broadway	WIDTH (ft)	WIDTH (ft)																				
S11 (SE)	5.8	4.8	872	849	0	0	872	849	1.35	1.31	1.35	1.31			E	D	E	D			0 < 3	0 < 6
P1	5.8	4.8	872	849	0	0	872	849	1.35	1.31	1.35	1.31			E	D	E	D			0 < 3	0 < 6
Control Area		ONE- OR																				
Booth - R147	NUMBERS	TWO-WAY																				
Turnstile	7	2	685	741	0	0	685	741	0.23	0.25	0.23	0.25			B	B	B	B				
High Revolving Exit	2	1	119	131	0	0	119	131	0.15	0.16	0.15	0.16			A	A	A	A				
Service Gate	1	2	0	6	0	0	0	6	0.00	0.01	0.00	0.01			A	A	A	A				
(Street Level Control Area: SE corner of 42nd St and 7th Ave)																						
Street Stairs		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
M6AB	8.3	7.3	87	103	0	0	87	103	0.09	0.10	0.09	0.10			A	A	A	A				
M7AB	8.3	7.3	87	103	0	0	87	103	0.09	0.10	0.09	0.10			A	A	A	A				
Escalators		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)																				
Escalator (E266-Up)	40		597	298	0	0	597	298	0.51	0.25	0.51	0.25			C	B	C	B				
Escalator (E267-Down)	40		119	477	0	0	119	477	0.10	0.47	0.10	0.47			A	C	A	C				
Control Area		ONE- OR																				
Booth - R151	NUMBERS	TWO-WAY																				
Turnstile	9	2	1111	1401	18	26	1129	1427	0.29	0.36	0.29	0.37			B	B	B	B				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (ft)	WIDTH (ft)																				
M9AB	13.8	12.8	279	690	8	12	287	702	0.16	0.40	0.17	0.41			A	A	A	A				
Stairway (No Code)	8.3	7.3	129	196	4	7	133	203	0.13	0.20	0.13	0.21			A	A	A	A				
Stairway (No Code)	8.3	7.3	129	196	4	7	133	203	0.13	0.20	0.13	0.21			A	A	A	A				
O4ABC (NW)	14.7	13.7	833	713	8	12	841	725	0.45	0.39	0.45	0.39			B	A	B	A				
O3ABC	14.7	13.7	833	713	8	12	841	725	0.45	0.39	0.45	0.39			B	A	B	A				
M11ABC	14.2	13.2	833	713	8	12	841	725	0.47	0.40	0.47	0.41			B	A	B	A				
Escalators		EFFECTIVE																				
42nd St and 7th Ave	WIDTH (in)	WIDTH (ft)																				
Escalator (No Code-Up)	40		95	279	2	2	97	281	0.08	0.24	0.08	0.24			A	B	A	B				
Escalator (No Code-Down)	40		57	214	2	5	59	219	0.05	0.21	0.05	0.21			A	B	A	B				

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(ix) Eight Avenue and 34th Street/Penn Station/Madison Square Garden (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGA	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - N67	NUMBERS	TWO-WAY																				
Turnstile	13	2	1852	1128	812	944	2664	2072	0.33	0.20	0.47	0.37			B	B	C	B				
High Entrance/Exit Turnstile	2	2	65	35	47	13	112	48	0.12	0.06	0.21	0.09			A	A	B	A				
Service Gate	1	2	12	0	0	0	12	0	0.02	0.00	0.02	0.00			A	A	A	A				
(With Hallways to Penn Station)																						
Control Area		ONE- OR																				
Booth - N68	NUMBERS	TWO-WAY																				
Turnstile	3	2	437	333	97	147	534	480	0.34	0.26	0.41	0.37			B	B	C	B				
High Entrance/Exit Turnstile	1	2	313	57	0	18	313	75	1.16	0.21	1.16	0.28			F	B	F	B				
Service Gate	1	2	9	0	64	2	73	2	0.01	0.00	0.11	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
35th St and 8th Ave (East)	WIDTH (ft)	WIDTH (ft)																				
S11 (SE)	4.1	3.1	204	92	121	126	325	218	0.49	0.22	0.78	0.52			B	A	C	B				
P10AB	9.1	8.1	204	92	121	126	325	218	0.19	0.08	0.30	0.20			A	A	A	A				
S15 (NE/E)	4.1	3.1	128	83	0	0	128	83	0.31	0.20	0.31	0.20			A	A	A	A				
S14 (NE/W)	4.1	3.1	426	173	41	42	467	215	1.02	0.41	1.12	0.51			D	A	D	B			3.58 < 6	
P12AB	9.1	8.1	556	296	39	41	595	337	0.51	0.27	0.54	0.31			B	A	B	A				
Control Area		ONE- OR																				
Booth - N69	NUMBERS	TWO-WAY																				
Turnstile	3	2	13	427	175	200	188	627	0.01	0.33	0.15	0.48			A	B	A	C				
High Entrance/Exit Turnstile	1	2	523	59	0	23	523	82	1.94	0.22	1.94	0.30			F	B	F	B				
Service Gate	1	2	101	0	38	0	139	0	0.15	0.00	0.21	0.00			A	A	B	A				
Street Stairs		EFFECTIVE																				
35th St and 8th Ave (West)	WIDTH (ft)	WIDTH (ft)																				
S10 (SW)	4.2	3.2	104	118	107	111	211	229	0.24	0.27	0.49	0.53			A	A	B	B				
P9	6.1	5.1	104	118	107	111	211	229	0.15	0.17	0.31	0.33			A	A	A	A				
S13 (NW/E)	4.1	3.1	443	313	0	0	443	313	1.06	0.75	1.06	0.75			D	C	D	C			0 < 6	
S12 (NW/W)	4.1	3.1	99	56	107	112	206	168	0.24	0.13	0.49	0.40			A	A	B	A				
P11AB	9.1	8.1	542	369	107	113	649	482	0.50	0.34	0.59	0.44			B	A	B	A				
Control Area		ONE- OR																				
Booth - N70	NUMBERS	TWO-WAY																				
Turnstile	5	2	361	617	184	195	545	812	0.17	0.29	0.25	0.38			A	B	B	B				
Service Gate	1	2	4	15	0	3	4	18	0.01	0.02	0.01	0.03			A	A	A	A				
Street Stairs		EFFECTIVE																				
34th St and 8th Ave (East)	WIDTH (ft)	WIDTH (ft)																				
S7	7	6	230	279	85	93	315	372	0.28	0.34	0.39	0.46			A	A	A	B				
P6AB	6.7	5.7	230	279	85	93	315	372	0.30	0.36	0.41	0.48			A	A	A	B				
S9	11.5	10.5	139	339	98	105	237	444	0.10	0.24	0.17	0.31			A	A	A	A				
P8AB	5.5	4.5	139	339	98	105	237	444	0.23	0.56	0.39	0.73			A	B	A	C				
Control Area		ONE- OR																				
Booth - N71	NUMBERS	TWO-WAY																				
Turnstile	5	2	573	706	244	265	817	971	0.27	0.33	0.38	0.45			B	B	B	C				
Service Gate	1	2	578	47	0	2	578	49	0.86	0.07	0.86	0.07			E	A	E	A				
Street Stairs		EFFECTIVE																				
34th St and 8th Ave (West)	WIDTH (ft)	WIDTH (ft)																				
S6 (SW)	5.7	4.7	364	472	171	188	535	660	0.57	0.74	0.84	1.04			B	C	C	D				2.86<6
P5AB	11.6	10.6	364	472	171	188	535	660	0.25	0.33	0.37	0.46			A	A	A	B				
S8 (NW)	5.8	4.8	783	277	74	81	857	358	1.21	0.43	1.32	0.55	0.60	0.25	D	A	D	B	B	A	5.44 < 6	
P7AB	8.8	7.8	783	277	74	81	857	358	0.74	0.26	0.81	0.34			C	A	C	A				
Control Area		ONE- OR																				
Booth - N72	NUMBERS	TWO-WAY																				
Turnstile	9	2	1792	1619	206	337	1998	1956	0.46	0.42	0.51	0.50			C	C	C	C				
Service Gate	3	2	69	299	109	12	178	311	0.03	0.15	0.09	0.15			A	A	A	A				
Street Stairs		EFFECTIVE																				
33rd St and 8th Ave	WIDTH (ft)	WIDTH (ft)																				
S1 (SE)	7.4	6.4	226	249	43	48	269	297	0.26	0.29	0.31	0.34			A	A	A	A				
P1	7.4	6.4	226	249	43	48	269	297	0.26	0.29	0.31	0.34			A	A	A	A				
S5 (NE)	4	3	144	152	43	48	187	200	0.36	0.38	0.46	0.49			A	A	B	B				
P4	4.4	3.4	144	152	43	48	187	200	0.31	0.33	0.41	0.44			A	A	A	A				
Control Area		ONE- OR																				
Booth - N73	NUMBERS	TWO-WAY																				
Turnstile	9	2	679	535	128	327	807	862	0.17	0.14	0.21	0.22			A	A	B	B				
Service Gate	1	2	296	602	165	0	461	602	0.44	0.89	0.68	0.89			C	E	D	E				
Street Stairs		EFFECTIVE																				
33rd St and 8th Ave	WIDTH (ft)	WIDTH (ft)																				
S3 (SW/E)	12	11	301	172	0	0	301	172	0.20	0.12	0.20	0.12			A	A	A	A				
S2 (SW/W)	12	11	487	173	58	64	545	237	0.33	0.12	0.37	0.16			A	A	A	A				
P2AB	12	11	789	344	58	64	847	408	0.53	0.23	0.57	0.27			B	A	B	A				
S4 (NW)	4.4	3.4	485	201	58	65	543	266	1.06	0.44	1.18	0.58	0.74	0.36	D	A	D	B	C	A	4.88 < 6	
P3	4.4	3.4	485	201	58	65	543	266	1.06	0.44	1.18	0.58	0.74	0.36	D	A	D	B	C	A	4.88 < 6	
Internal Stairs		EFFECTIVE																				
33rd St Passage	WIDTH (ft)	WIDTH (ft)																				
GLAB (To Penn Station)	16.5	15.5	1493	910	273	302	1766	1212	0.71	0.43	0.84	0.58			C	A	C	B				
M5 (To Sub-Passage)	5.7	4.7	419	183	0	0	419	183	0.66	0.29	0.66	0.29			B	A	B	A				
M6	5.7	4.7	419	183	0	0	419	183	0.66	0.29	0.66	0.29			B	A	B	A				
M3AB (To Sub-Passage)	9.2	8.2	624	616	236	262	860	878	0.56	0.56	0.78	0.79			B	B	C	C				
M4	9.2	8.2	624	616	236	262	860	878	0.56	0.56	0.78	0.79			B	B	C	C				
To LIRR Platforms	7.2	6.2	572	488	236	261	808	749	0.68	0.58	0.97	0.89			B	B	C	C				

Appendix S.4.4.7
2025 Build Condition with Mitigation Measures (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR																				
Booth - N63	NUMBERS	TWO-WAY																				
Turnstile	7	2	785	568	66	68	851	636	0.26	0.19	0.28	0.21			B	A	B	B				
High Entrance/Exit Turnstile	2	2	143	122	19	20	162	142	0.26	0.23	0.30	0.26			B	B	B	B				
High Exit Turnstile (1)	1	1	35	0	5	0	40	0	0.08	0.00	0.09	0.00			A	A	A	A				
Service Gate	1	2	0	76	0	6	0	82	0.00	0.11	0.00	0.12			A	A	A	A				
Control Area		ONE- OR																				
Booth - N63A	NUMBERS	TWO-WAY																				
Turnstile	10	2	2201	1543	77	88	2278	1631	0.51	0.36	0.53	0.38			C	B	C	B				
Service Gate	1	2	260	240	13	7	273	247	0.39	0.36	0.40	0.37			B	B	C	B				
Street Stairs		ONE- OR																				
40th St and 8th Ave	WIDTH (ft)	TWO-WAY																				
M1AB (2)	9.6	3.7	164	127	97	108	261	235	0.33	0.25	0.52	0.47			A	A	B	B				
O8 (2)	8.2	8.8	165	127	97	108	262	235	0.14	0.11	0.22	0.20			A	A	A	A				
S2 (SE)	4.7	3.7	641	466	0	0	641	466	1.28	0.93	1.28	0.93			D	C	D	C			0 < 6	
M2AB	9.8	8.8	641	466	0	0	641	466	0.54	0.39	0.54	0.39			B	A	B	A				
S4 (NE)	4.7	3.7	181	130	0	0	181	130	0.36	0.26	0.36	0.26			A	A	A	A				
M4AB	9.8	8.8	181	130	0	0	181	130	0.15	0.11	0.15	0.11			A	A	A	A				
S3(NW)	4.7	3.7	419	476	84	82	503	558	0.84	0.95	1.01	1.12			C	C	D	D			0.76<6	5.7<6
M3AB	9.8	8.8	419	476	84	82	503	558	0.35	0.40	0.42	0.47			A	A	A	B				
Control Area		ONE- OR																				
Booth - N62	NUMBERS	TWO-WAY																				
Turnstile	8	2	1288	1431	0	0	1288	1431	0.37	0.41	0.37	0.41			B	C	B	C				
Service Gate	1	2	12	215	0	0	12	215	0.02	0.32	0.02	0.32			A	B	A	B				
(Hallway to PABT Between 41st and 42nd St.)																						
Control Area		ONE- OR																				
Booth - N62A	NUMBERS	TWO-WAY																				
Turnstile	7	2	171	279	0	0	171	279	0.06	0.09	0.06	0.09			A	A	A	A				
Service Gate	1	2	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
Street Stairs		EFFECTIVE																				
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)																				
O11AB (NE)	9.6	8.6	64	99	0	0	64	99	0.06	0.09	0.06	0.09			A	A	A	A				
O10AB	9.6	8.6	171	279	0	0	171	279	0.15	0.24	0.15	0.24			A	A	A	A				
O9AB	9.5	8.5	64	99	0	0	64	99	0.06	0.09	0.06	0.09			A	A	A	A				
Stairway (No Code)	10	9	64	98	0	0	64	98	0.05	0.08	0.05	0.08			A	A	A	A				
Stairway (No Code)	10	9	64	98	0	0	64	98	0.05	0.08	0.05	0.08			A	A	A	A				
Street Stairs		0																				
42nd St and 8Ave (East)	WIDTH (in)	0																				
Escalator (No Code)	40		41	61	0	0	41	61	0.04	0.05	0.04	0.05			A	A	A	A				
Escalator (No Code)	40		41	61	0	0	41	61	0.04	0.05	0.04	0.05			A	A	A	A				
Control Area (42nd St and 8 A	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	2	9	566	628	85	64	651	692	1.05	1.16	1.21	1.28	0.64	0.68	F	F	F	F	D	D	Sig Imp	Sig Imp
Street Stairs		EFFECTIVE																				
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)																				
S8 (NW)	5.9	4.9	566	623	85	64	651	687	0.86	0.94	0.98	1.04			C	C	C	D				2.88<6
M9AB	9.6	8.6	566	623	85	64	651	687	0.49	0.54	0.56	0.59			B	B	B	B				
Control Area		ONE- OR																				
Booth - N60A	NUMBERS	TWO-WAY																				
High Entrance/Exit Turnstile	2	2	Plywood Barricade																			
Street Stairs		EFFECTIVE																				
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)																				
S10	5.3	4.3	Plywood Barricade																			
M11AB	7.9	6.9	Plywood Barricade																			
Control Area		ONE- OR																				
Booth - N60	NUMBERS	TWO-WAY																				
Turnstile	7	2	613	636	0	0	613	636	0.20	0.21	0.20	0.21			B	B	B	B				
Service Gate	1	2	28	46	0	0	28	46	0.04	0.07	0.04	0.07			A	A	A	A				
Street Stairs		EFFECTIVE																				
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)																				
S12 (SE)	4.6	3.6	380	358	0	0	380	358	0.78	0.74	0.78	0.74			C	C	C	C				
M13AB	9.9	8.9	380	358	0	0	380	358	0.32	0.30	0.32	0.30			A	A	A	A				
S11 (SW)	4.8	3.8	141	159	0	0	141	159	0.27	0.31	0.27	0.31			A	A	A	A				
M12AB	8.5	7.5	141	159	0	0	141	159	0.14	0.16	0.14	0.16			A	A	A	A				
S13 (NW)	4.6	3.6	119	165	0	0	119	165	0.24	0.34	0.24	0.34			A	A	A	A				
M14AB	8.5	7.5	119	165	0	0	119	165	0.12	0.16	0.12	0.16			A	A	A	A				

Appendix S.4.4.7
2025 Build Condition (Weekday AM/PM)
(x) Eighth Avenue at 42nd Street (A, C, and E)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Control Area		ONE- OR								
Booth - N63	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	851	636	3024	3024	0.28	0.21	B	B
High Entrance/Exit Turnstile	2	2	162	142	675	675	0.24	0.21	B	B
High Exit Turnstile[1]	1	1	40	0	450	450	0.09	0.00	A	A
Service Gate	1	2	0	82	675	675	0.00	0.12	A	A
Control Area		ONE- OR								
Booth - N63A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	10	2	2278	1631	4320	4320	0.53	0.38	C	B
Service Gate	1	2	273	247	675	675	0.40	0.37	C	B
Street Stairs		ONE- OR								
40th St and 8th Ave	WIDTH (ft)	TWO-WAY	IN/OUT	IN/OUT						
M1AB [2]	9.6	3.7	261	235	500	500	0.52	0.47	B	B
O8 [2]	8.2	8.8	262	235	1188	1188	0.22	0.20	A	A
S2 (SE)	4.7	3.7	641	466	500	500	1.28	0.93	D	C
M2AB	9.8	8.8	641	466	1188	1188	0.54	0.39	B	A
S4 (NE)	4.7	3.7	181	130	500	500	0.36	0.26	A	A
M4AB	9.8	8.8	181	130	1188	1188	0.15	0.11	A	A
S3(NW)	4.7	3.7	503	558	500	500	1.01	1.12	D	D
M3AB	9.8	8.8	503	558	1188	1188	0.42	0.47	A	B
Control Area		ONE- OR								
Booth - N62	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	8	2	1288	1431	3456	3456	0.37	0.41	B	C
Service Gate	1	2	12	215	675	675	0.02	0.32	A	B
(Hallway to PABT Between 41st and 42nd St.										
Control Area		ONE- OR								
Booth - N62A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	171	279	3024	3024	0.06	0.09	A	A
Service Gate	1	2	0	0	675	675	0.00	0.00	A	A
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
O11AB (NE)	9.6	8.6	64	99	1161	1161	0.06	0.09	A	A
O10AB	9.6	8.6	171	279	1161	1161	0.15	0.24	A	A
O9AB	9.5	8.5	64	99	1148	1148	0.06	0.09	A	A
Stairway (No Code)	10.0	9.0	64	98	2565	2565	0.05	0.08	A	A
Stairway (No Code)	10.0	9.0	64	98	3915	3915	0.05	0.08	A	A
Street Stairs		EFFECTIVE								
42nd St and 8Ave (East)	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (No Code)	40.0		41	61	1170	1020	0.04	0.05	A	A
Escalator (No Code)	41.0		41	61	1170	1020	0.04	0.05	A	A
Control Area (42nd St and 8 Ave-West)	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	3	9	651	692	1013	1013	0.64	0.68	D	D
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S8 (NW)	5.9	4.9	651	687	662	662	0.98	1.04	C	D
M9AB	9.6	8.6	651	687	1161	1161	0.56	0.59	B	B
Control Area		ONE- OR								
Booth - N60A	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
High Entrance/Exit Turnstile	2	2	Plywood Barricade							
Street Stairs		EFFECTIVE								
(42nd St and 8 Ave-West)	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S10	5.3	4.3	Plywood Barricade							
M11AB	7.9	6.9	Plywood Barricade							
Control Area		ONE- OR								
Booth - N60	NUMBERS	TWO-WAY	IN/OUT	IN/OUT						
Turnstile	7	2	613	636	3024	3024	0.20	0.21	B	B
Service Gate	1	2	28	46	675	675	0.04	0.07	A	A
Street Stairs		EFFECTIVE								
44th St and 8th Ave	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
S12 (SE)	4.6	3.6	380	358	486	486	0.78	0.74	C	C
M13AB	9.9	8.9	380	358	1202	1202	0.32	0.30	A	A
S11 (SW)	4.8	3.8	141	159	513	513	0.27	0.31	A	A
M12AB	8.5	7.5	141	159	1013	1013	0.14	0.16	A	A
S13 (NW)	4.6	3.6	119	165	486	486	0.24	0.34	A	A
M14AB	8.5	7.5	119	165	1013	1013	0.12	0.16	A	A

Note:
The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute

Source:
New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.7
2025 Build Condition with Mitigation Measures (Weekday AM/PM)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway 1 (No Code)	5.8	4.8	225	288	-225	-288	0	0	0.35	0.44	0.00	0.00			A	A	A	A				
Stairway 2 (No Code)	5.8	4.8	207	249	-207	-249	0	0	0.32	0.38	0.00	0.00			A	A	A	A				
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator (No Code)	40		562	81	-562	-81	0	0	0.48	0.07	0.00	0.00			C	A	A	A				
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway 1 (No Code)	5.8	4.8	63	54	-63	-54	0	0	0.10	0.08	0.00	0.00			A	A	A	A				
Stairway 2 (No Code)	5.8	4.8	23	26	-23	-26	0	0	0.04	0.04	0.00	0.00			A	A	A	A				
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator (No Code)	40		71	74	-71	-74	0	0	0.06	0.06	0.00	0.00			A	A	A	A				
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway (S34)	5.4	4.4	184	1016	0	0	184	1016	0.31	1.71	0.31	1.71			A	F	A	F				0 < 1
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator (34A)	40		20	610	41	130	61	740	0.02	0.52	0.05	0.63			A	C	A	D				
Escalator (34B)	40		553	406	40	126	593	532	0.47	0.35	0.51	0.45			C	B	C	C				
Escalator (34C)	40		369	198	40	126	409	324	0.32	0.17	0.35	0.28			B	A	B	B				
Street Stairs to Intermodal Hall (33rd Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	56	55	1412	1343	78	180	1490	1523	0.19	0.18	0.20	0.21			A	A	A	A				
Street Stairs to Train Hall (33rd Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	16	15	441	767	0	0	441	767	0.22	0.38	0.22	0.38			A	A	A	A				
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	56	49	111	109	4	174	115	283	0.02	0.02	0.02	0.04			A	A	A	A				
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (in)	EFFECTIVE WIDTH (in)																				
Escalator	40		104	69	74	74	178	143	0.09	0.06	0.15	0.12			A	A	A	A				
Street Stairs to Train Hall (31st Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																				
Stairway	16	15	94	102	0	0	94	102	0.05	0.05	0.05	0.05			A	A	A	A				

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS	MITIGATE		15-MINUTE PEDESTRIAN VOLUMES NO BUILD AM	NO BUILD PM	INCREMENT AM	INCREMENT PM	BUILD AM	BUILD PM	**MITIGATED AM**	**MITIGATED PM**	V/SVCD RATIO NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	**MITIGATED AM**	**MITIGATED PM**	LEVEL OF SERVICE NO BUILD AM	NO BUILD PM	BUILD AM	BUILD PM	**MITIGATED AM**	**MITIGATED PM**	IMPACT / MITIGATION AM	IMPACT / MITIGATION PM	**STILL IMPACTED? AM**	**STILL IMPACTED? PM**
Lower Mezzanine to Platform Stairs	0	EFFECTIVE																								
42nd Street and Broadway	WIDTH (ft)	WIDTH (ft)																								
PL2	8.4	7.4	1181	937	-136	-99	1045	838	**1045**	**838**	1.18	0.94	1.05	0.84	**1.05**	**0.84**	D	C	D	C	**D**	**C**	-10.23 < 6			
PL3	8.4	7.4	560	539	-116	63	444	602	**444**	**602**	0.56	0.54	0.44	0.60	**0.44**	**0.60**	B	B	A	B	**A**	**B**				
PL4									**552**	**883**					**0.55**	**0.88**					**B**	**C**				
PL5 (3 ft widening)	**11.4**	**10.4**	341	310	1063	776	1404	1086	**1261**	**721**	0.34	0.31	1.41	1.09	**0.90**	**0.51**	A	A	E	D	**C**	**B**	37.26≥ 6 *	8.71≥ 6 *	**No**	**No**
PL6AB (Replaced by Elevators)																										
PL7AB	**8.4**	**7.4**	337	872	1046	634	1383	1506	**973**	**989**	0.34	0.87	1.38	1.51	**0.97**	**0.99**	A	C	E	E	**C**	**C**	35.38≥ 6 *	46.42≥ 6 *	**No**	**No**
PL8AB (3 ft widening)	**11.4**	**10.4**	580	789	774	482	1354	1271	**1354**	**1271**	0.58	0.79	1.36	1.27	**0.96**	**0.91**	B	C	E	D	**C**	**C**	32.77≥ 6 *	25.32≥ 6 *	**No**	**No**
Lower Mezzanine to Platform Escalators																										
42nd Street and Broadway	WIDTH (in)	SPEED (fpm)																								
Escalator (E216-Up)	**40**	**120**	578	104	47	1077	625	1181	**722**	**1287**	0.49	0.09	0.53	1.01	**0.51**	**0.90**	C	A	C	F	**C**	**E**		Sig Imp		**No**
Escalator (E217-Down)	**40**	**120**	69	375	1003	93	1072	468	**1246**	**559**	0.06	0.32	0.92	0.40	**0.87**	**0.39**	A	B	E	B	**E**	**B**				
Escalator (E21B-Up)	24	90	298	45	72	62	370	107	**370**	**107**	0.50	0.08	0.62	0.18	**0.62**	**0.18**	C	A	D	A	**D**	**A**				
Passageway to/from Lower Mezzanine/8th Avenue Subway																										
41st St and Broadway	WIDTH (ft)																									
Passageway	12.1	10.1	2352	2548	-270	-198	2082	2350	**2082**	**2350**	1.15	1.25	1.02	1.15	**1.02**	**1.15**	D	D	D	D	**D**	**D**	-13.91 <12	-9.42 <12		
7th Avenue Platform Starirs (Northbou	0	EFFECTIVE																								
Stairways	WIDTH (ft)	WIDTH (ft)																								
ML6/ML8	**7.5**	**6.5**	464	597	720	510	1184	1107	**852**	**621**	0.53	0.68	1.35	1.26	**0.97**	**0.71**	B	B	E	D	**C**	**C**	28.31≥ 6 *	21.39≥ 6 *	**No**	**No**
ML10/ML12	**7.5**	**6.5**	798	352	721	511	1519	863	**852**	**621**	0.91	0.40	1.73	0.98	**0.97**	**0.71**	C	A	F	C	**C**	**C**	58.39≥ 6 *		**No**	
ML14/ML16 (NEW)	**7.5**	**6.5**							**811**	**591**					**0.92**	**0.67**	0	0	0	0	**C**	**B**				
P4/P6	5.3	4.3	491	672	147	163	638	835	**499**	**574**	0.85	1.16	1.10	1.44	**0.86**	**0.99**	C	D	D	E	**C**	**C**	5.68 < 6	12.52 ≥ 3 *	**No**	**No**
P8/P10	5.3	4.3	268	219	341	380	609	599	**499**	**574**	0.46	0.38	1.05	1.03	**0.86**	**0.99**	B	A	D	D	**C**	**C**	3.08<6	2.18<6	**No**	**No**
P12/P14 (NEW)	**5.3**	**4.3**							**438**	**424**					**0.75**	**0.73**	C	D	D	E	**C**	**C**				
7th Avenue Platform Starirs (Southbound)		EFFECTIVE																								
Stairways	WIDTH (ft)	WIDTH (ft)																								
ML5/ML7	**7.5**	**6.5**	1099	660	721	511	1820	1171	**1090**	**682**	1.25	0.75	2.07	1.33	**1.24**	**0.78**	D	C	F	E	**D**	**C**	51.17 ≥ 1 *	27.14≥ 6 *	**No**	**No**
ML9/ML11	**7.5**	**6.5**	380	336	720	510	1100	846	**873**	**670**	0.43	0.38	1.25	0.96	**0.99**	**0.76**	A	A	D	C	**C**	**C**	20.77≥ 6 *		**No**	
ML13/ML15 (NEW)	**7.5**	**6.5**							**876**	**606**					**1.00**	**0.69**	0	0	0	0	**C**	**B**				
P3/P5	5.3	4.3	777	594	243	272	1020	866	**752**	**554**	1.34	1.02	1.76	1.49	**1.30**	**0.95**	E	D	F	E	**D**	**C**	16.14 ≥ 1 *	23.63 ≥ 3 *	**No**	**No**
P7/P9	5.3	4.3	511	277	244	271	755	548	**571**	**495**	0.88	0.48	1.30	0.94	**0.98**	**0.85**	C	B	D	C	**C**	**C**	16.19≥ 6 *		**No**	
P13/P15 (NEW)	**5.3**	**4.3**							**533**	**424**					**0.92**	**0.73**	E	D	F	E	**C**	**C**				

Appendix S.4.4.7
2025 Build Condition with Mitigation Measures (Weekday AM/PM)
(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
Lower Mezzanine to Platform Stairs		EFFECTIVE								
42nd Street and Broadway	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	8.4	7.4	1045	838	999	999	1.05	0.84	D	C
PL3	8.4	7.4	444	602	999	999	0.44	0.60	A	B
PL4	**8.4**	**7.4**	552	883	999	999	0.55	0.88	B	C
PL5 (3 ft widening)	**11.4**	**10.4**	1261	721	1404	1404	0.90	0.51	C	B
PL6AB (Replaced by Elevators)										
PL7AB	**8.4**	**7.4**	973	989	999	999	0.97	0.99	C	C
PL8AB (3 ft widening)	**11.4**	**10.4**	1354	1271	1404	1404	0.96	0.91	C	C
Lower Mezzanine to Platform Escalators										
42nd Street and Broadway	WIDTH (in)	SPEED (fpm)	DOWN/UP	DOWN/UP						
Escalator (E216-Up)	**40.0**	**120**	722	1,287	**1425**	**1425**	0.51	0.90	C	E
Escalator (E217-Down)	**40.0**	**120**	1,246	559	**1425**	**1425**	0.87	0.39	E	B
Escalator (E21B-Up)	24.0	90	370	107	600	600	0.62	0.18	D	A
Passageway to/from Lower Mezzanine/8th Avenue Subway										
41st St and Broadway	WIDTH (ft)									
Passageway	12.1	10.1	2082	2350	2045	2045	1.02	1.15	D	D
7th Avenue Platform Starirs (Northbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML6/ML8	**7.5**	**6.5**	852	621	878	878	0.97	0.71	C	C
ML10/ML12	**7.5**	**6.5**	852	621	878	878	0.97	0.71	C	C
ML14/ML16 (NEW)	**7.5**	**6.5**	811	591	878	878	0.92	0.67	C	B
P4/P6	5.3	4.3	499	574	581	581	0.86	0.99	C	C
P8/P10	5.3	4.3	499	574	581	581	0.86	0.99	C	C
P12/P14 (NEW)	**5.3**	**4.3**	438	424	581	581	0.75	0.73	C	C
7th Avenue Platform Starirs (Southbound)		EFFECTIVE								
Stairways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
ML5/ML7	**7.5**	**6.5**	1090	682	878	878	1.24	0.78	D	C
ML9/ML11	**7.5**	**6.5**	873	670	878	878	0.99	0.76	C	C
ML13/ML15 (NEW)	**7.5**	**6.5**	876	606	878	878	1.00	0.69	C	B
P3/P5	5.3	4.3	752	554	581	581	1.30	0.95	D	C
P7/P9	5.3	4.3	571	495	581	581	0.98	0.85	C	C
P13/P15 (NEW)	**5.3**	**4.3**	533	424	581	581	0.92	0.73	C	C

Appendix S.4.4.7
2025 Build Condition with Mitigation Measures (Weekday AM/PM)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
P1	10.3	9.3	679	179	-30	42	649	221	0.54	0.14	0.52	0.18			B	A	B	A				
P3	10.3	9.3	161	124	-89	-9	72	115	0.13	0.10	0.06	0.09			A	A	A	A				
P4	9.7	8.7	37	4	-19	56	18	60	0.03	0.00	0.02	0.05			A	A	A	A				
P5	10.1	9.1	69	15	3	188	72	203	0.06	0.01	0.06	0.17			A	A	A	A				
P6	10	9	92	14	-36	112	56	126	0.08	0.01	0.05	0.10			A	A	A	A				
P7	8.6	7.6	191	415	803	127	994	542	0.19	0.40	0.97	0.53			A	A	C	B				
M2AB	12.4	11.4	861	436	-132	77	729	513	0.56	0.28	0.47	0.33			B	A	B	A				
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
Passageway	14.7	12.7	503	516	743	596	1246	1112	0.12	0.12	0.29	0.26			A	A	A	A				
Sixth Avenue Line Platform		EFFECTIVE																				
Northbound Platform	WIDTH (ft)	WIDTH (ft)																				
P8	6.0	5.0	223	146	-12	1	211	147	0.33	0.22	0.31	0.22			A	A	A	A				
P10	6.0	5.0	253	231	203	149	456	380	0.37	0.34	0.68	0.56			A	A	B	B				
P12	6.0	5.0	346	187	203	158	549	345	0.51	0.28	0.81	0.51			B	A	C	B				
Southbound Platform	WIDTH (ft)	WIDTH (ft)																				
P7	6.0	5.0	151	106	-9	0	142	106	0.22	0.16	0.21	0.16			A	A	A	A				
P9	6.0	5.0	280	324	362	104	642	428	0.41	0.48	0.95	0.63			A	B	C	B				
P11	6.0	5.0	254	202	39	185	293	387	0.38	0.30	0.43	0.57			A	A	A	B				

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUME		15-MINUTE SVCD CAPACITY		V/SVCD RATIO		LEVEL OF SERVICE	
			AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
PL2	7.3	6.3	698	648	851	851	0.82	0.76	C	C
PL3	7.3	6.3	843	651	851	851	0.99	0.77	C	C
PL1AB	15.0	14	1541	1299	1890	1890	0.82	0.69	C	B
PL5	7.3	6.3	779	531	851	851	0.92	0.62	C	B
PL6	7.3	6.3	901	674	851	851	1.06	0.79	D	C
PL4AB	15.0	14.0	1680	1205	1890	1890	0.89	0.64	C	B
PL9AB	15.0	14.0	1950	1399	1890	1890	1.03	0.74	D	C
ML1	4.0	3.0	319	658	405	405	0.79	1.62	C	E
No. 7 Line Platform to Lower Mezzanine		EFFECTIVE								
Escalators	WIDTH (in)	WIDTH (in)	DOWN/UP	DOWN/UP						
Escalator (E203-Up)	40		1,046	245	1170	1170	0.89	0.21	E	B
Escalator (E204-Up/Down)	40		584	496	1170	1170	0.50	0.42	C	C
Escalator (E207-Up)	40		584	737	1170	1170	0.50	0.63	C	D
Escalator (E209-Up/Down)	40		597	128	1170	1170	0.51	0.11	C	A
Escalator (E205-Up)	40		649	511	1170	1170	0.55	0.44	C	C
Escalator (E206-Up/Down)	40		649	131	1170	1170	0.55	0.11	C	A
		EFFECTIVE								
Passageway to Lexington Av	WIDTH (ft)	WIDTH (in)								
Passageway	11.5	9.5	2047	1900	1924	1924	1.06	0.99	D	C
Lexington Avenue Line Platform (Southbound I		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P12	10.0	8.5	1444	422	1148	1148	1.26	0.37	D	A
P14	10.0	8.5	2164	1677	1148	1148	1.89	1.46	F	E
P16 (NEW)	10.0	8.5	1154	784	1148	1148	1.01	0.68	D	B
P18	10.0	8.5	1429	703	1148	1148	1.25	0.61	D	B
P20	10.0	8.5	864	382	1148	1148	0.75	0.33	C	A
P22 (3 ft widening)	9.5	8.5	831	368.4	1148	1148	0.72	0.32	C	A
P24 (NEW)	6.5	5.5	554	245.6	743	743	0.75	0.33	C	A
U1	6.2	5.2	722	384	698	698	1.04	0.55	D	B
U3	6.2	5.2	722	384	698	698	1.04	0.55	D	B
U5 (2 ft widening)	**8.1**	**7.1**	897	299	956	956	0.94	0.31	C	A
U7 (2 ft widening)	**7.8**	**6.8**	897	299	923	923	0.97	0.32	C	A
Lexington Avenue Line Platform (Northbound F		EFFECTIVE								
Stairwways	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
P23 (1 ft widening)	**8.0**	**7.0**	681	557	945	945	0.72	0.59	C	B
P21	10.0	8.5	939	862	1148	1148	0.82	0.75	C	C
P19	10.0	8.5	808	852	1148	1148	0.70	0.74	C	C
P17	10.0	8.5	844	967	1148	1148	0.74	0.84	C	C
P15	10.0	8.5	491	785	1148	1148	0.43	0.68	A	B
P13	10.0	8.5	532	1352	1148	1148	0.46	1.18	B	D
P25 (NEW)	6.5	5.5	453	371	743	743	0.61	0.50	B	B
U2	5.9	4.9	377	454	664	664	0.57	0.68	B	B
U4	5.9	4.9	377	454	664	664	0.57	0.68	B	B
U6	5.9	4.9	490	706	664	664	0.74	1.06	C	D
U8	5.9	4.9	490	706	664	664	0.74	1.06	C	D
Connection to Metro North (Control Area 238)		EFFECTIVE								
Stairwway & Escalators	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M6AB/M7AB (Reduce 5ft)	**4.5**	**3.5**	348	389	473	473	0.74	0.82	C	C
Escalator (E255-Up)	**40**	**90**	707	1,142	1170	1170	0.60	0.98	D	E
Escalator (E-256-Up/Down)	**40**	**90**	707	359	1170	1170	0.60	0.31	D	B
Escalator (Down) (new)	**40**	**90**	1,174	1,130	1425	1425	0.82	0.79	E	D
Connection to Metro North (Control Area 240)		EFFECTIVE								
Stairways to Metro North	WIDTH (ft)	WIDTH (ft)	DOWN/UP	DOWN/UP						
M8ABC/M10ABC	19.0	18.0	2122	1662	2430	2430	0.87	0.68	C	B

Note: The Capacity for Stairs = 10 persons per minute per foot
The Capacity for Turnstiles = 30 persons per minute for entry
The Capacity for Turnstiles = 40 persons per minute for exit
The Capacity for Turnstiles = 32 persons per minute for combined entering and exiting flows
The Capacity for Service Gates = 50 persons per minute
The Capacity for High Entrance Turnstiles = 20 persons per minute
The Capacity for High Revolving Exit Gates = 30 persons per minute
The Capacity for 24" Escalator = 40 persons per minute
The Capacity for 40" Escalator = 78 persons per minute
The Capacity for Passageways = 15 persons per foot of width per minute

Source: New York City Transit, Stations Operations Planning Division
Environmental Assessment and Review Division, Department of City Planning
City Environmental Quality Review Technical Manual
John J. Fruin, Pedestrian Planning and Design, Revised Edition 1987

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Weekday AM/PM)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS	BUILD		MITIGATE		15-MINUTE PEDESTRIAN VOLUMES								V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION		STILL IMPACTED?	
					NO BUILD		INCREMENT		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED					
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
No. 7 Line Platform to Lower Mezzanine Stairwways	WIDTH (ft)	EFFECTIVE WIDTH (ft)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																								
PL2	7.3	6.3	7.3	6.3	371	446	327	202	698	648	698	648	0.44	0.52	0.82	0.76	**0.82**	**0.76**	A	B	C	C	**C**	**C**				
PL3	7.3	6.3	7.3	6.3	416	468	427	183	843	651	843	651	0.49	0.55	0.99	0.77	**0.99**	**0.77**	B	B	C	C	**C**	**C**				
PL1AB	15.0	14.0	15.0	14.0	787	914	754	385	1541	1299	1541	1299	0.42	0.48	0.82	0.69	**0.82**	**0.69**	A	B	C	B	**C**	**B**				
PL5	7.3	6.3	7.3	6.3	330	377	449	188	779	565	779	531	0.39	0.44	0.92	0.66	**0.92**	**0.62**	A	A	C	B	**C**	**B**				
PL6	7.3	6.3	7.3	6.3	678	485	223	189	901	674	901	674	0.80	0.57	1.06	0.79	**1.06**	**0.79**	C	B	D	C	**D**	**C**	5.3 < 6			
PL4AB	15.0	14.0	15.0	14.0	1008	862	672	377	1680	1239	1680	1205	0.53	0.46	0.89	0.66	**0.89**	**0.64**	B	B	C	B	**C**	**B**				
	0.0	0.0	0.0	0.0																								
PL9AB	15.0	14.0	15.0	14.0	1893	1355	57	44	1950	1399	1950	1399	1.00	0.72	1.03	0.74	**1.03**	**0.74**	D	C	D	C	**D**	**C**	5.06 < 6			
ML1	4.0	3.0	4.0	3.0	185	696	134	-38	319	658	319	658	0.46	1.72	0.79	1.62	**0.79**	**1.62**	B	F	C	E	**C**	**E**		-1.97 < 3		
No. 7 Line Platform to Lower Mezzanine Escalators	WIDTH (in)	EFFECTIVE WIDTH (in)	WIDTH (in)	EFFECTIVE WIDTH (in)																								
Escalator (E203-Up)	40		40		1084	136	-38	109	1,046	245	1046	245	0.93	0.12	0.89	0.21	**0.89**	**0.21**	E	A	E	B	**E**	**B**				
Escalator (E204-Up/Down)	40		40		624	522	-40	-26	584	496	584	496	0.53	0.45	0.50	0.42	**0.50**	**0.42**	C	C	C	C	**C**	**C**				
Escalator (E207-Up)	40		40		563	273	21	429	584	702	584	737	0.48	0.23	0.50	0.60	**0.50**	**0.63**	C	B	C	C	**C**	**D**				
Escalator (E209-Up/Down)	40		40		577	130	20	-2	597	128	597	128	0.49	0.11	0.51	0.11	**0.51**	**0.11**	C	A	C	A	**C**	**A**				
															0.00	0.00	**0.00**	**0.00**										
Escalator (E205-Up)	40		40		624	214	25	314	649	528	649	511	0.53	0.18	0.55	0.45	**0.55**	**0.44**	C	A	C	C	**C**	**C**				
Escalator (E206-Up/Down)	40		40		624	134	25	-3	649	131	649	131	0.53	0.11	0.55	0.11	**0.55**	**0.11**	C	A	C	A	**C**	**A**				
Passageway to Lexington Ave Line	WIDTH (ft)	EFFECTIVE WIDTH (in)	WIDTH (ft)	EFFECTIVE WIDTH (in)																								
Passageway	11.5	9.5	11.5	9.5	671	1467	1376	450	2047	1917	2047	1900	0.35	0.76	1.06	1.00	**1.06**	**0.99**	A	C	D	C	**D**	**C**	8.53 < 12			
Lexington Avenue Line Platform (Southbound Plat Stairwways	WIDTH (ft)	EFFECTIVE WIDTH (ft)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																								
P12	10.0	8.5	10.0	8.5	1872	602	52	0	1924	602	1444	422	1.63	0.52	1.68	0.52	**1.26**	**0.37**	E	B	F	B	**D**	**A**	2.83 ≥ 1 *		**No**	**No**
P14	10.0	8.5	10.0	8.5	2738	2219	98	56	2836	2275	2164	1677	2.39	1.93	2.47	1.98	**1.89**	**1.46**	F	F	F	F	**F**	**E**	3.65 ≥ 1 *	2.57 ≥ 1 *	**No**	**No**
P16 (NEW)			**10.0**	**8.5**							1154	784					**1.01**	**0.68**					**D**	**B**				
P18	10.0	8.5	10.0	8.5	1369	613	58	78	1427	691	1429	703	1.19	0.53	1.24	0.60	**1.25**	**0.61**	D	B	D	B	**D**	**B**	4.32 < 6			
P20	10.0	8.5	10.0	8.5	825	382	39	0	864	382	864	382	0.72	0.33	0.75	0.33	**0.75**	**0.33**	C	A	C	A	**C**	**A**				
P22 (3 ft widening)	**6.5**	**5.5**	**9.5**	**8.5**	1320	615	65	-1	1385	614	831	368.4	1.78	0.83	1.87	0.83	**0.72**	**0.32**	F	C	F	C	**C**	**A**	3.25 ≥ 1 *		**No**	**No**
P24 (NEW)			**6.5**	**5.5**							554	245.6					**0.75**	**0.33**					**C**	**A**				
U1	6.2	5.2	6.2	5.2	422	280	300	112	722	392	722	384	0.61	0.40	1.04	0.56	**1.04**	**0.55**	B	A	D	B	**D**	**B**	2.83 < 6			
U3	6.2	5.2	6.2	5.2	422	280	300	112	722	392	722	384	0.61	0.40	1.04	0.56	**1.04**	**0.55**	B	A	D	B	**D**	**B**	2.83 < 6			
U5 (2 ft widening)	**6.1**	**5.1**	**8.1**	**7.1**	512	195	385	112	897	307	897	299	0.75	0.28	1.31	0.45	**0.94**	**0.31**	C	A	D	A	**C**	**A**	19.54 > 6*		**No**	**No**
U7 (2 ft widening)	**5.8**	**4.8**	**7.8**	**6.8**	512	195	385	112	897	307	897	299	0.78	0.30	1.37	0.47	**0.97**	**0.32**	C	A	E	B	**C**	**A**	22.54 > 6*		**No**	**No**
Lexington Avenue Line Platform (Nor Stairwways	0.0 WIDTH (ft)	EFFECTIVE WIDTH (ft)	0.0 WIDTH (ft)	EFFECTIVE WIDTH (ft)																								
P23 (1 ft widening)	**7.0**	**6.0**	**8.0**	**7.0**	1056	928	78	0	1134	928	681	557	1.30	1.15	1.40	1.15	**0.72**	**0.59**	D	D	E	D	**C**	**B**	5.32 ≥ 3 *	0 < 6	**No**	
P21	10.0	8.5	10.0	8.5	900	861	39	1	939	862	939	862	0.78	0.75	0.82	0.75	**0.82**	**0.75**	C	C	C	C	**C**	**C**				
P19	10.0	8.5	10.0	8.5	775	722	36	132	811	854	808	852	0.68	0.63	0.71	0.74	**0.70**	**0.74**	B	B	C	C	**C**	**C**				
P17	10.0	8.5	10.0	8.5	764	841	82	128	846	969	844	967	0.67	0.73	0.74	0.84	**0.74**	**0.84**	B	C	C	C	**C**	**C**				
P15	10.0	8.5	10.0	8.5	432	779	59	4	491	783	491	785	0.38	0.68	0.43	0.68	**0.43**	**0.68**	A	B	A	B	**A**	**B**				
P13	10.0	8.5	10.0	8.5	519	1351	13	1	532	1352	532	1352	0.45	1.18	0.46	1.18	**0.46**	**1.18**	B	D	B	D	**B**	**D**		0.08 < 6		
P25 (NEW)			**6.5**	**5.5**							453	371					**0.61**	**0.50**					**B**	**B**				
U2	5.9	4.9	5.9	4.9	32	343	345	112	377	455	377	454	0.05	0.52	0.57	0.69	**0.57**	**0.68**	A	B	B	B	**B**	**B**				
U4	5.9	4.9	5.9	4.9	32	343	345	112	377	455	377	454	0.05	0.52	0.57	0.69	**0.57**	**0.68**	A	B	B	B	**B**	**B**				
U6	5.9	4.9	5.9	4.9	144	595	346	112	490	707	490	706	0.22	0.90	0.74	1.07	**0.74**	**1.06**	A	C	C	D	**C**	**D**		4.48 < 6		
U8	5.9	4.9	5.9	4.9	144	595	346	112	490	707	490	706	0.22	0.90	0.74	1.07	**0.74**	**1.06**	A	C	C	D	**C**	**D**		4.48 < 6		
Connection to Metro North (Control Area 238) Stairwway & Escalators	WIDTH (ft)	EFFECTIVE WIDTH (ft)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																								
M6AB/M7AB (Reduce 5ft)	**9.5**	**8.5**	**4.5**	**3.5**	1379	1050	359	61	1738	1111	348	389	1.20	0.92	1.51	0.97	**0.74**	**0.82**	D	C	E	C	**C**	**C**	26.55 ≥ 3 *		**No**	**No**
Escalator (E255-Up)	**40**	**0**	**40**	**90**	600	831	-1	311	599	1142	707	1142	0.51	0.71	0.51	0.98	**0.60**	**0.98**	C	D	C	E	**D**	**E**			**No**	**No**
Escalator (E-256-Up/Down)	**40**	**0**	**40**	**90**	600	769	-1	-2	599	767	707	359	0.51	0.66	0.51	0.66	**0.60**	**0.31**	C	D	C	D	**D**	**B**			**No**	**No**
Escalator (Down) (new)			**40**	**90**							1174	1130					**0.82**	**0.79**					**E**	**D**			**No**	**No**
Connection to Metro North (Control Area 240) Stairways to Metro North	WIDTH (ft)	EFFECTIVE WIDTH (ft)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																								
M8ABC/M10ABC	19.0	18.0	19.0	18.0	1971	1621	151	41	2122	1662	2122	1662	0.81	0.67	0.87	0.68	**0.87**	**0.68**	C	B	C	B	**C**	**B**				

Appendix S.4.4.7
2025 Build Condition with Mitigation Measures (Special Event)
(xiv) Pennsylvania Station (1, 2, 3, 9, A, C, E, Amtrak, NJ Transit, LIRR)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO					LEVEL OF SERVICE					IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED	NO BUILD		BUILD		MITIGATED		
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE-SUN	SE-EVE	SE-SUN
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway 1 (No Code)	5.8	4.8	259	137	-259	-137	0	0	0.40	0.21	0.00	0.00		A	A	A	A			
Stairway 2 (No Code)	5.8	4.8	140	69	-140	-69	0	0	0.22	0.11	0.00	0.00		A	A	A	A			
Street Stairs to Main Level 33rd Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator (No Code)	40		85	53	-85	-53	0	0	0.07	0.05	0.00	0.00		A	A	A	A			
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway 1 (No Code)	5.8	4.8	82	46	-82	-46	0	0	0.13	0.07	0.00	0.00		A	A	A	A			
Stairway 2 (No Code)	5.8	4.8	30	23	-30	-23	0	0	0.05	0.04	0.00	0.00		A	A	A	A			
Street Stairs to Main Level 31st Street and 8th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator (No Code)	40		46	63	-46	-63	0	0	0.04	0.05	0.00	0.00		A	A	A	A			
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway (S34)	5.4	4.4	140	210	0	0	140	210	0.24	0.35	0.24	0.35		A	A	A	A			
Street Stairs to Mezzanine Level 34th Street and 7th Avenue	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator (34A)	40		119	126	2	4	121	130	0.10	0.11	0.10	0.11		A	A	A	A			
Escalator (34B)	40		119	84	2	4	121	88	0.10	0.07	0.10	0.08		A	A	A	A			
Escalator (34C)	40		107	129	2	4	109	133	0.09	0.11	0.09	0.11		A	A	A	A			
Street Stairs to Intermodal Hall (33rd Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	56	55	347	395	400	429	747	824	0.05	0.05	0.10	0.11		A	A	A	A			
Street Stairs to Train Hall (33rd Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	16	15	303	166	0	0	303	166	0.15	0.08	0.15	0.08		A	A	A	A			
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	56	49	71	90	2	424	73	514	0.01	0.01	0.01	0.08		A	A	A	A			
Street Stairs to Intermodal Hall (31st Street - Farley Building)	WIDTH (in)	EFFECTIVE WIDTH (in)																		
Escalator	40		124	55	399	399	523	454	0.11	0.05	0.45	0.39		A	A	C	B			
Street Stairs to Train Hall (31st Street and 8th Avenue - Farley Building)	WIDTH (ft)	EFFECTIVE WIDTH (ft)																		
Stairway	16	15	59	82	0	0	59	82	0.03	0.04	0.03	0.04		A	A	A	A			

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Special Events)

(vii-B) 42nd Street and Broadway (Times Square Station)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION	
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED			
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Lower Mezzanine to Platform Stairs		EFFECTIVE																				
42nd Street and Broadway	WIDTH (ft)	WIDTH (ft)																				
PL2	8.4	7.4	422	312	-29	66	393	378	0.42	0.31	0.39	0.38			A	A	A	A				
PL3	8.4	7.4	246	261	-27	128	219	389	0.25	0.26	0.22	0.39			A	A	A	A				
PL4	8.4	7.4	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
PL5	8.4	7.4	118	98	558	377	676	475	0.12	0.10	0.68	0.48			A	A	B	B				
PL6AB (Replaced by Elevators)	8.4	7.4	0	0	0	0	0	0	0.00	0.00	0.00	0.00			A	A	A	A				
PL7AB	8.4	7.4	238	157	561	297	799	454	0.24	0.16	0.80	0.45			A	A	C	B				
PL8AB	8.4	7.4	56	71	413	227	469	298	0.06	0.07	0.47	0.30			A	A	B	A				
Lower Mezzanine to Platform Escalators																						
42nd Street and Broadway	WIDTH (in)	SPEED (fpm)																				
Escalator (E216-Up)	40	90	90	27	7	505	97	532	0.08	0.02	0.08	0.45			A	A	A	C				
Escalator (E217-Down)	40	90	175	193	600	49	775	242	0.15	0.16	0.66	0.21			A	A	D	B				
Escalator (E21B-Up)	24	90	46	35	10	122	56	157	0.04	0.03	0.09	0.26			A	A	A	B				
Passageway to/from Lower Mezzanine/8th Avenue St		EFFECTIVE																				
41st St and Broadway	WIDTH (ft)	WIDTH (ft)																				
Passageway	12.1	10.1	1006	1104	-60	131	946	1235	0.49	0.54	0.46	0.60			B	B	B	B				

Appendix S.4.4.7
2025 Build Condition with Mitigation Measures (Special Event)
(xi) Fifth Avenue Subway Station (7)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE					
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		MITIGATED		NO BUILD		BUILD		MITIGATED		IMPACT / MITIGATION	
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
P1	10.3	9.3	52	28	7	11	59	39	0.04	0.02	0.05	0.03			A	A	A	A				
P3	10.3	9.3	62	20	17	8	79	28	0.05	0.02	0.06	0.02			A	A	A	A				
P4	9.7	8.7	7	11	4	0	11	11	0.01	0.01	0.01	0.01			A	A	A	A				
P5	10.1	9.1	15	18	8	2	23	20	0.01	0.01	0.02	0.02			A	A	A	A				
P6	10	9	21	30	10	2	31	32	0.02	0.02	0.03	0.03			A	A	A	A				
P7	8.6	7.6	212	96	-14	25	198	121	0.21	0.09	0.19	0.12			A	A	A	A				
M2AB	12.4	11.4	218	129	31	26	249	155	0.14	0.08	0.16	0.10			A	A	A	A				
Mezzanine to Platform Level		EFFECTIVE																				
42nd St and 5th Ave	WIDTH (ft)	WIDTH (ft)																				
Passageway	14.7	12.7	324	230	14	41	338	271	0.08	0.05	0.08	0.06			A	A	A	A				

Appendix S.4.4.7

2025 Build Condition with Mitigation Measures (Special Event)

(xiii) Grand Central Subway Station (4, 5, 6, 7, and 42nd Street Shuttle)

SUBWAY STATION ELEMENTS			15-MINUTE PEDESTRIAN VOLUMES						V/SVCD RATIO						LEVEL OF SERVICE						IMPACT / MITIGATION		
			NO BUILD		INCREMENT		BUILD		NO BUILD		BUILD		**MITIGATED**		NO BUILD		BUILD		**MITIGATED**				
			SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	SE-EVE	SE-SUN	**SE-EVE**	**SE-SUN**	SE-EVE	SE-SUN	SE-EVE	SE-SUN	**SE-EVE**	**SE-SUN**	SE-EVE	SE-SUN	FORMULA
Lower Mezzanine to Platform		EFFECTIVE																					
Stairwways	WIDTH (ft)	WIDTH (ft)																					
PL2	7.3	6.3	309	174	408	635	717	809	0.36	0.20	0.84	0.95			A	A	C	C					stair
PL3	7.3	6.3	304	171	556	684	860	855	0.36	0.20	1.01	1.01			A	A	D	D			1.62<6	1.17<6	stair
PL1AB	15	14	613	345	964	1319	1577	1664	0.32	0.18	0.83	0.88			A	A	C	C					stair
PL5	7.3	6.3	94	25	723	793	817	818	0.11	0.03	0.96	0.96			A	A	C	C					stair
PL6	7.3	6.3	240	132	567	636	807	768	0.28	0.16	0.95	0.90			A	A	C	C					stair
PL4AB	15	14	334	157	1290	1429	1624	1586	0.18	0.08	0.86	0.84			A	A	C	C					stair
PL9AB	15	14	633	189	-14	30	619	219	0.33	0.10	0.33	0.12			A	A	A	A					stair
ML1	4	3	7	2	0	0	7	2	0.02	0.00	0.02	0.00			A	A	A	A					stair
Escalators	WIDTH (in)	SPEED (fpm)																					
Escalator (E203-Up)	40	90	556	64	-35	36	521	100	0.48	0.05	0.45	0.09			C	A	C	A					turnstile
Escalator (E204-Up/Down)	40	90	62	123	20	-6	82	117	0.05	0.11	0.07	0.10			A	A	A	A					turnstile
Escalator (E207-Up)	40	90	201	63	16	1329	217	1,392	0.17	0.05	0.19	1.19	**0.15**	**0.98**	A	A	A	F	**A**	**E**		Sig Imp	turnstile
Escalator (E209-Up/Down)	40	90	56	66	1348	3	1,404	69	0.05	0.06	1.20	0.06	**0.99**	**0.05**	A	A	F	A	**E**	**A**	Sig Imp		turnstile
Escalator (E205-Up)	40	90	159	107	14	1041	173	1,148	0.14	0.09	0.15	0.98			A	A	A	E					turnstile
Escalator (E206-Up/Down)	40	90	21	51	1054	3	1,075	54	0.02	0.04	0.92	0.05			A	A	E	A					turnstile
		EFFECTIVE																					
(Connection to Lexington Ave Line)	WIDTH (ft)	WIDTH (ft)																					
Passageway	11.5	9.5	540	372	1183	1703	1723	2075	0.28	0.19	0.90	1.08			A	A	C	D				10.21<12	corridor