CENTRAL BUSINESS DISTRICT (CBD) TOLLING PROGRAM

Appendix 4C, Transportation: Supporting Documentation for Transit Analyses

August 2022

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4C.1 OPERATOR SERVICE MAPS

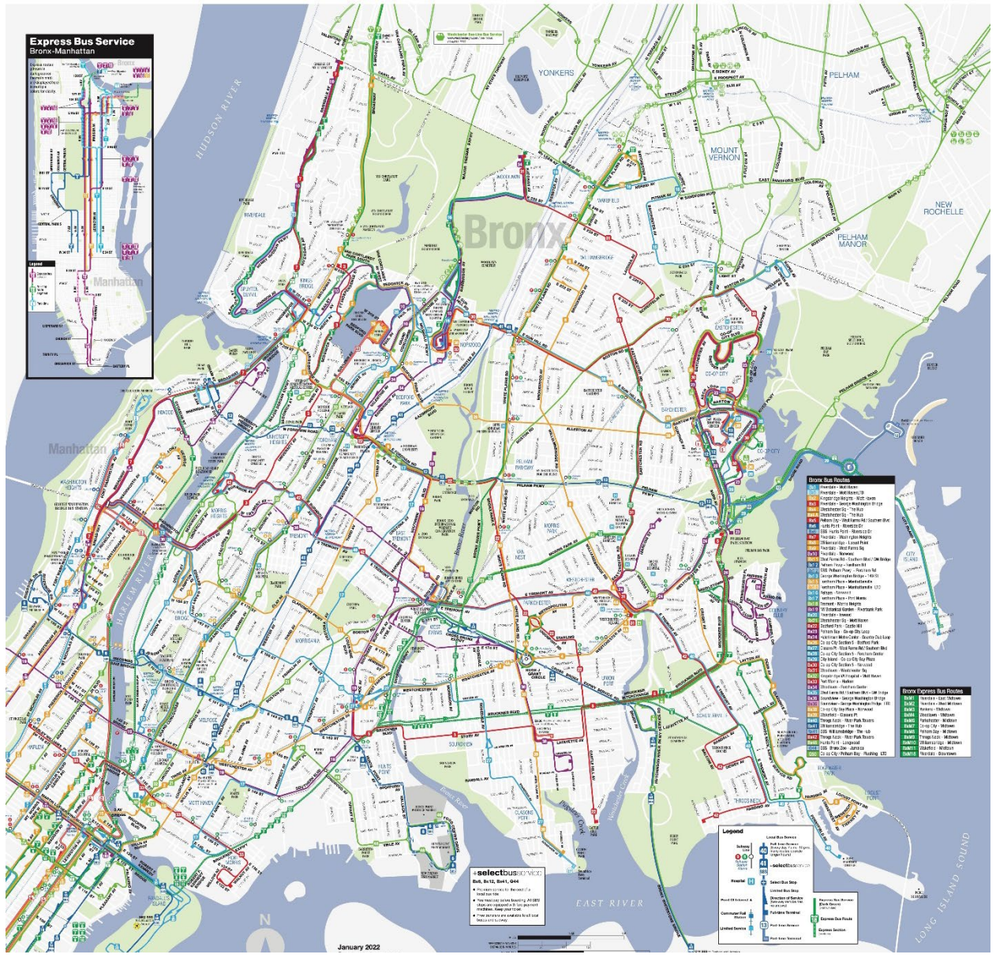
Figure 4C-1. New York City Subway Map (with Railroad and Airport Connections)

Source: MTA
Note: As of May 2022

Figure 4C-2. Manhattan Bus Map

Source: MTA, 2022 System Map

Figure 4C-3. Bronx Bus Map



Source: MTA, 2022 System Map

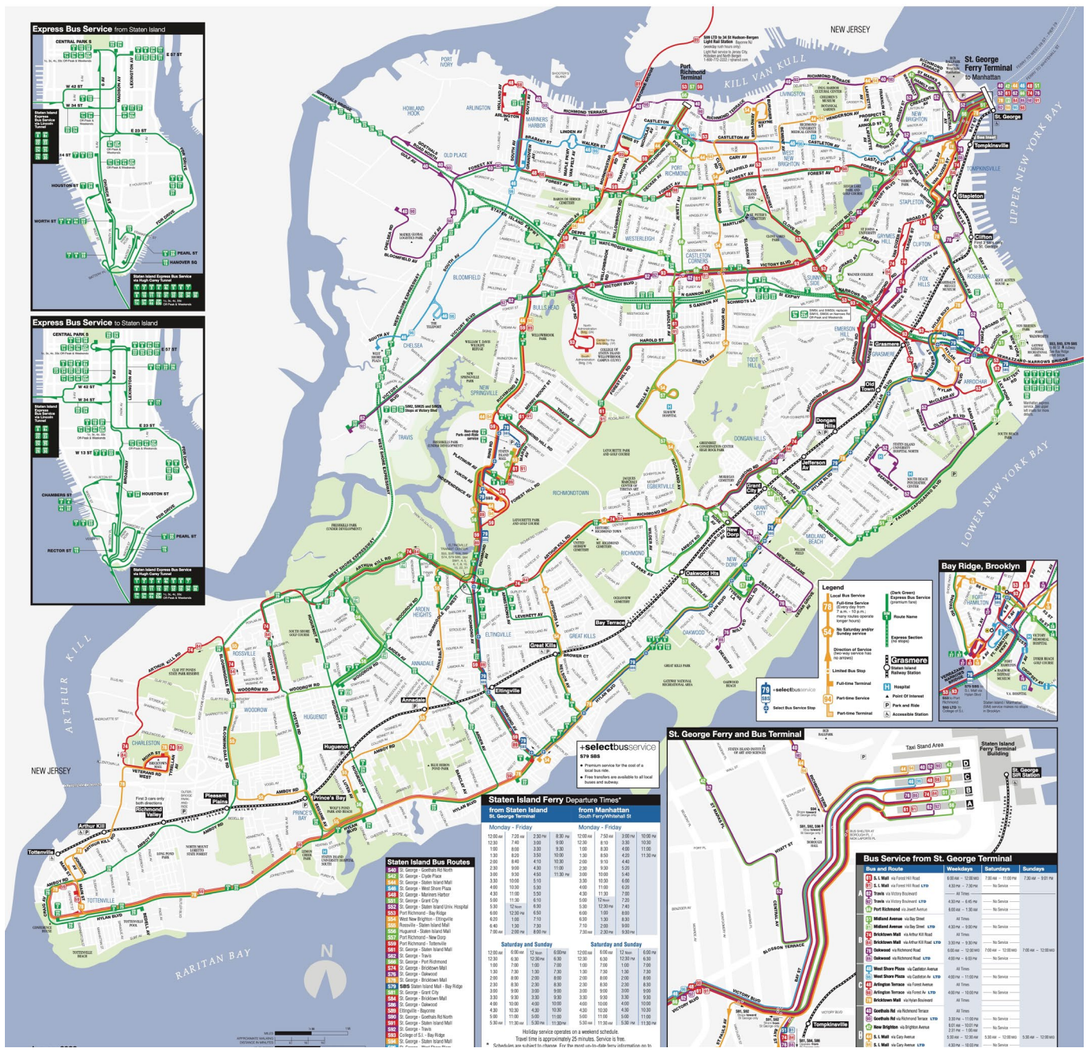
Figure 4C-4. Queens Bus Map

Source: MTA 2021 System Map

Figure 4C-5. Brooklyn Bus Map

Source: MTA 2022 System Map

Figure 4C-6. Staten Island Bus Map



Source: MTA, 2021 System Map

Figure 4C-7. Long Island Rail Road and Metro-North Railroad Commuter Rail Service Maps

Source: MTA

Figure 4C-8. PATH Service Map (Weekdays)

Source: PANYNJ

Figure 4C-9. NJ TRANSIT Rail Service Map (includes Light Rail, PATH, and PATCO Services)

Source: NJ TRANSIT
Note: PATCO (Port Authority Transit Corporation) runs between Philadelphia, Pennsylvania, and Camden County, New Jersey

4C.2 DETAILS OF METHODOLOGY AND ASSUMPTIONS

4C.2.1 Application of the New York City Environmental Quality Review for Assessment of Transit Effects

USE OF CITY ENVIRONMENTAL QUALITY REVIEW THRESHOLDS TO TARGET TRANSIT ANALYSES

Based on operating experience from various New York City agencies and the results of extensive numbers of impact assessments conducted on transit facilities, City Environmental Quality Review (CEQR) guidance establishes assessment thresholds whereby detailed analyses are recommended for locations or transit lines where incremental trip generation thresholds are exceeded; if the applicable threshold is not exceeded, no adverse effects are anticipated. The historical basis for the transit assessment as conducted in this subchapter dates to the first edition of the *CEQR Technical Manual* in 1993 and has been affirmed and refined by updates to the manual. Justifications for the use of these methodologies in this EA are provided below.

METHODOLOGY FOR SUBWAYS AND COMMUTER RAIL

The New York City subway system includes 25 train services, with 10 trunk lines and 3 shuttle services, and offers both express and local operations. Subway services operate regularly with headways between 3 and 10 minutes during peak periods. The subway operates 24 hours per day, 7 days a week, with subway cars accommodating guideline capacities of 110 to 175 passengers during peak periods. The 2020 *CEQR Technical Manual* stipulates that an increase in ridership on a single subway line that is fewer than 200 new passengers at the maximum load point in the peak hour in a single direction of travel does not have the potential to result in adverse effects (line-haul capacity analysis).

Because of the complexity of the New York City subway system and circulation within its stations, there is no single measure of station capacity. Instead, the projected ridership increases from a project are analyzed in relation to the level of capacity and existing passenger throughput at specific station elements, including stairs escalators, fare control

areas (FCA), and platforms.[1] To standardize this process, the *CEQR Technical Manual* establishes that an increase in ridership at a subway station or station complex that is fewer than 200 new passengers in the peak hour does not have the potential to result in adverse effects.

Port Authority Trans-Hudson (PATH) has been in operation since 1962 as a primary link between Manhattan and neighboring New Jersey urban communities and the commuter railroads. The system operates 24 hours a day, 7 days a week, with trains every 4 minutes to 7 minutes during peak periods. It operates with eight to ten cars per train and is designed for standing capacity. Due to operating characteristics similar to the subway and for consistency, capacity and stations were both evaluated using CEQR criteria.

Suburban commuter rail options in the greater New York City area are extensive. Metro-North and Long Island Rail Road (LIRR) have seated capacity of 100 passengers per car or more. These routes cover extensive geographies, with 13 commuter rail routes serving New York suburban counties and an additional 9 serving New Jersey. Train schedules operate at regular intervals, with most routes operating at least half-hour headways during peak periods (many routes operate more frequently). Increases in ridership due to the Project would be incremental and distributed across the region, such that noteworthy increases are not projected in any local geography. In coordination with Metro-North and LIRR, CEQR methodologies were used to assess ridership of commuter rail lines and stations. This analysis recognizes that five additional passengers within a train car in its most crowded point would be noticeable. Similarly, analyses of stations for the New Jersey Transit Corporation (NJ TRANSIT) and PATH were performed using CEQR guidelines for consistency and because NJ TRANSIT and the Port Authority of New York and New Jersey (PANYNJ) do not have an alternative guideline.

METHODOLOGY FOR BUSES

MTA monitors bus ridership and adjusts operating headways to accommodate increased or decreased demand as necessary to satisfy service guidelines. During daytime peak periods, MTA typically operates anywhere between 4 and 12 buses per route per hour (to achieve 5- to 15-minute headways), with each bus accommodating guideline capacities of 54 to 85 passengers, for standard and articulated buses, respectively.

Based on the system operating characteristics, the *CEQR Technical Manual* stipulates that an increase in bus ridership that is fewer than 50 passengers per hour in a single direction of travel for a bus route does not have the potential to result in adverse effects because such an increase would not be considered perceptible with the level of bus service provided (line-haul capacity analysis). (See Conclusions for Buses in **Section 4C.4.2.4** for more explanation.)

The NJ TRANSIT bus system similarly is regularly monitored and adjusted, with similar peak-period headways and guideline capacities. Therefore, the CEQR analysis guidelines were also evaluated for this system and other suburban buses that enter the Manhattan CBD.

4C.2.2 Analysis of Line-Haul Capacity

The analysis of the Project's potential effects on line-haul capacity considered the effects on inbound transit service toward the Manhattan CBD during the morning peak hour because the morning peak hour has more concentrated ridership than the evening peak hour. The AM peak hour for commuter rail operators is defined as follows.[2]

- LIRR: 7:45 a.m. to 8:45 a.m.
- Metro-North: 8:15 a.m. to 9:15 a.m.
- NJ TRANSIT: 8:00 a.m. to 9:00 a.m.

The first step in the CEQR tiered analysis is to determine whether a project could result in incremental passengers exceeding the following thresholds:

- For bus routes, a threshold of 50 new passengers at the maximum load point in the AM peak hour
- For subways and commuter rail, a threshold of 200 new riders at the maximum load point in the AM peak hour

Accordingly, a quantitative analysis of effects on line-haul capacity was performed for any transit services for which the Best Practice Model (BPM) results indicated that the CBD Tolling Alternative would add more new passengers than those thresholds.

The next step in the *CEQR Technical Manual* tiered approach for line-haul capacity analysis for subways or commuter rail lines is to evaluate the number of incremental passengers per train and per train car. If a line remains under its guideline capacity in the future with the CBD Tolling Alternative implemented, the corresponding CBD Tolling Alternative-induced ridership increases would not be considered an adverse effect. However, if a line is forecasted to operate above guideline capacity and the CBD Tolling Alternative is expected to yield five or more incremental passengers per car, then the ridership increase would constitute an adverse effect. Similarly, for bus routes, the analysis evaluated the number of incremental passengers per trip and the volume-to-capacity (v/c) ratio for that bus route. A v/c ratio under 1.00 would not be considered an adverse effect. For commuter rail, the number of transit service trips per hour was identified using 2019 ridership data and schedule information for the AM peak period, including from the 2015 Continuous Bus Survey conducted by the PANYNJ.

4C.2.3 Analysis of Transit Stations

For transit stations (subway, PATH, or commuter rail stations), the *CEQR Technical Manual* recommends an initial analysis to determine if detailed analyses of station elements are warranted. If a project would result in the addition of 200 or more new passengers at a station in the peak hour (excluding cross-platform transfers), then further analyses could be warranted to assess the potential for adverse effects on station elements such as stairs, escalators, fare collection areas, etc. If a station would experience an increase of fewer than 200 peak-hour passengers, further analysis is typically not warranted.

CONVERSION FACTORS

Since the BPM only provides forecast trip increments for the four-hour AM peak period, the incremental AM and PM peak-hour trips were estimated, in coordination with New York City Transit (NYCT), by applying reasonable factors to

[1] MTA does not maintain a list of the most crowded stations or station elements in all 472 subway stations.

[2] LIRR, Metro-North, and NJ TRANSIT were consulted to define peak-hour periods.

the BPM results.[3] The factors take into account relative baseline ridership levels between the AM and PM peak periods and auto commute patterns, which would be the most affected by the tolling program. For the PM peak period, the directionality patterns were assumed to be generally the reverse of the AM peak period, with respect to station entries/exits, circulation within stations, and transfers among lines.

QUALITATIVE ASSESSMENTS

For any station exceeding the 200-passenger increment threshold, an additional assessment of station characteristics was undertaken to determine if a qualitative assessment would suffice to conclude that the CBD Tolling Alternative would not have potential adverse effects or if more quantitative analyses were warranted. For example, certain stations have substantial upgrades to improve flow and circulation that have been recently completed or are in progress. In these instances, the purpose of these station upgrades includes meeting existing demand and accommodating future growth in ridership, which in most cases would be accommodating growth that is substantially higher than the incremental increases forecast for the Project. For some stations, the expansiveness and abundance of access and circulation space in relation to the forecasted incremental passenger increases would result in imperceptible incremental demand at individual station elements. Similarly, some stations are known to be uncongested and can readily accommodate the projected ridership increment increases. These factors were taken into consideration when selecting a subset of the stations to be assessed qualitatively that are anticipated to incur Project increments exceeding the *CEQR Technical Manual* analysis thresholds, but for one or more of these reasons are not expected to experience an adverse effect as a result. **Section 4C.4.2.5** provides the description of specific locations where the qualitative assessment was performed.

QUANTITATIVE STATION ANALYSES

For stations warranting further analysis based on the estimated increase in demand from the Project, trip assignments were developed, taking into account street-level access, baseline vertical circulation and control area volumes, and modeled results from the BPM. For stations in New York City, travel patterns were derived from the NYCT MetroCard model.[4] An analysis of existing AM and PM peak-hour service levels at selected station elements in New York, as determined in consultation with NYCT, was prepared to understand station operating conditions and identify elements within each station that are already operating near capacity or at congested levels.

Regarding the selected station elements for quantitative analysis, NYCT was consulted on the appropriate application of factors used for transit passenger analyses as passengers walk through a station (such as friction factors and surge factors) and on reasonable assignment of incremental pedestrian trips to station FCAs and vertical circulation elements (VCE). The pedestrian analyses were prepared in accordance with methodologies provided in the 2020 *CEQR Technical Manual*.

An assessment of station operations typically involves the analysis of its FCAs, which comprise regular turnstiles, high entry/exit turnstiles, and high exit turnstiles; and VCEs, which include stairs, escalators, and elevators. The operating capacities for each of these station elements, as determined by NYCT, account for design features, such as stairway effective widths, railings and other obstructions, and escalator speeds; and behavioral conditions, such as friction or counter-flow between upward and downward pedestrians and surges in flow from passengers alighting from arriving trains or traversing other station locations.

The measure of effectiveness from relating analysis volumes and specific element capacities is the v/c ratio, which corresponds to a level of service (LOS) scale ranging from A to F, whereby LOS A, B, and C are considered acceptable operations, and LOS D, E, and F are considered unacceptable operations. A forecasted change between the no action and with action conditions within LOS A, B, and C would not be deemed an adverse effect. For projected conditions at LOS D, E, and F, the determination of if there would be a potential for an adverse effect is based on the extent of the incremental changes. **Appendix 4C.5, "Transportation: Detailed Analysis of Transit Operations,"** provides further details on the v/c ratio pertaining to each LOS.

For escalators and control area elements, an adverse effect could result if a proposed project causes the v/c ratio to increase from below 1.00 (LOS C/D) to 1.00 or greater, provided that the increase is greater than 0.01, or if such an increase is projected to materialize when the no action condition v/c ratio is already 1.00 or greater. For stairs and passageways, potential adverse effects are determined in terms of the width incremental threshold, subject to a sliding scale that corresponds to "with action" v/c ratios, based on the minimum amount of additional capacity that would be required either to improve the "with action" LOS to the LOS under the no action levels, or to bring it to a v/c ratio of 1.00, whichever is greater. **Appendix 4C.6, "Adverse Effect Criteria,"** provides further details on the adverse effect guidance for stairways.

4C.2.4 Assumptions and Data Organization

SECTOR DELINEATION

The *Hub Bound Travel Data Report 2019* organizes data according to entry and exit points across a delineated "cordon line" that is approximate with the boundary of the Manhattan CBD as defined by the MTA Reform and Traffic Mobility Act. The boundary of the Manhattan CBD consists of 60th Street (including at the Franklin D. Roosevelt [FDR] Drive and West Side Highway/Route 9A), the East and Hudson Rivers, and New York Harbor. This boundary generally matches the boundaries defined for the Manhattan CBD, except that the Manhattan CBD does not include the FDR Drive and the West Side Highway/Route 9A. The *Hub Bound Travel Data Report 2019* organizes data according to five distinct geographic "sectors," or origin points of trips crossing the cordon line: trips crossing the cordon line from Manhattan at 60th Street, Queens (including Roosevelt Island[5]), Brooklyn, Staten Island, and New Jersey/west of Hudson. Express buses that originate in Staten Island and terminate in the Manhattan CBD were considered to be from the New Jersey or Brooklyn sectors, depending on their entrance point into the Manhattan CBD, based on categorization in the *Hub Bound Travel Data Report 2019*.

There are some specific items to note about the way that this EA handles the sector delineation. It is noted that while the Ed Koch Queensboro Bridge ramps were considered as within the 60th Street sector (for autos/trucks/taxi trips), bus trips over the bridge as analyzed in this subchapter were considered within the Queens sector. Similarly, the

[3] These considerations resulted in the application of a 26 percent peak-hour factor onto the AM peak-period increments to arrive at the AM peak-hour increments. For the PM peak hour, a 28 percent peak-hour factor was applied to arrive at the PM peak hour increments.

[4] NYCT provided data from the MetroCard model that provided insights about patterns of passenger movements, direction of travel, and transfer between lines.

[5] Though technically part of Manhattan, Roosevelt Island was classified as part of the Queens sector because it is not physically connected to Manhattan, so that travelers must travel by vehicle (via Queens) or by transit. This classification provided consistency for all modes because the vehicular access point from Roosevelt Island to the Manhattan CBD is through Queens.

F subway line entering from Roosevelt Island/Queens was categorized as coming from the Queens sector, although the subway tunnel actually crosses the 60th Street Manhattan CBD boundary. For assessment of the incremental change and line-haul analysis under future conditions, results in **Section 4C.4** do note specific Staten Island numbers to more accurately reflect the origin and destination of the trip.

BUS DATA

The New York Metropolitan Transportation Council's (NYMTC) *Hub Bound Travel Data Report 2019* describes transit according to the operator of the service. The report does not define individual operators of bus trips for New Jersey, which include NJ TRANSIT, MTA, and private operators.[6] (New Jersey bus schedules and occupancy counts were determined based on PANYNJ bus traffic counts and on the schedule and occupancy rates from PANYNJ 2015 Continuous Bus Survey.) In the BPM, bus trips are measured by ridership of buses as they leave the last stop before crossing into or out of the Manhattan CBD and are grouped according to their link to the Manhattan CBD. The BPM includes MTA/NYCT buses, NJ TRANSIT buses, and private carriers[7] in its trip assignment calculations. Buses are grouped by street, bridge, or tunnel because the BPM has been calibrated for regional trip patterns, rather than operational planning of individual routes. These BPM results provide an understanding of systemwide demand and line-haul capacity and are the basis for determining incremental change by sector. However, the *Hub Bound Travel Data Report 2019* and MTA-NYCT bus ridership data was used to best define ridership on a route-by-route basis, and this data is reflected in line-haul capacity analysis. Although there could be some variation in bus nomenclature (such as the previous names of bus routes) shown in BPM model outputs, variations in the exact routes of specific bus lines are unlikely to have an effect on regional assessment of the transportation system.

MONITORING AND BUS NETWORK REDESIGNS

MTA (the operating agency) in collaboration with New York City Department of Transportation (NYCDOT) have committed to redesigning each borough's bus network to better match service to population and employment centers and better serve customer needs. Staten Island's redesign of the express bus network was implemented in 2018, and in 2021 the MTA Board approved the Bronx Local Bus Network Redesign Final Plan. The draft of the Queens bus route redesign plan was just completed, and MTA-NYCT is currently conducting the outreach process necessary to finalize the proposed changes. Redesign efforts for Brooklyn and Manhattan are also either underway or planned for the near future. Additionally, Westchester County Bee-Line is conducting a network redesign.

These redesign efforts will better account for current and future ridership patterns because they are designed to provide better coverage across the boroughs and county and better access to employment destinations. Because the effects of these efforts could vary among boroughs/counties and specific neighborhoods, their likely benefits of better serving bus riders at-large were not assumed in the above assessment of potential adverse effects associated with the Project.

TRANSIT STATION DATA

For the transit station analysis, the incremental new passengers predicted in the BPM results were considered for groups of stations in most cases. Station "groupings" were used to summarize changes in boardings and alightings at "collections" of commuter rail and subway stations because the BPM results for corridors of transportation lines (at an aggregated larger geographic scale) are relatively more reliable than for results at specific individual stations with relatively smaller numbers.

For the subway, stations were grouped first by corridor (e.g., Flushing Line, Queens Boulevard Line) and then by New York City Community Boards, which are commonly used to define neighborhoods for planning purposes. For example, 9th Avenue, Fort Hamilton Parkway, 50th Street, and 55th Street Stations on the D line in Brooklyn were summarized together as the Brooklyn 3 Community Board – West End Line. For the purposes of this analysis, subway station complexes with more than 20,000 daily riders[8] and categorized as major stations were not included in any subway grouping.

For commuter rail, groups of stations were organized first by line and then into collections of stations generally within close proximity to group stations with similar travel choices available. For example, all the stations on the Danbury Branch of the New Haven Line were grouped together. In higher ridership or more geographically dispersed areas of the commuter rail system, station groups could include a smaller collection like the grouping of Baldwin, Freeport, and Rockville Centre Stations on the LIRR Babylon Branch. Major rail hubs like Penn Station New York, Grand Central Terminal, and Jamaica Station were considered major stations, and they were not included in any groupings of commuter rail stations. Grouping the stations in a corridor at a larger aggregated level provides more reliable and reasonable results from BPM than for individual commuter stations.

4C.3 EXISTING VOLUMES ENTERING THE MANHATTAN CBD PER SECTOR (2019)

4C.3.1 Manhattan – 60th Street

In total, 20 transit routes cross the 60th Street Manhattan CBD boundary. This sector is the busiest of all sector crossings, accounting for 742,262 person-trips (all modes) during the morning commute into and out of the Manhattan CBD every day, or approximately 33 percent of all entries and exits out of the Manhattan CBD.

SUBWAY

NYCT operates 11 subway routes that cross the 60th Street Manhattan CBD boundary:[9]

- Broadway/Seventh Avenue local and express (the Nos. 1/2/3 subway lines)
- Eighth Avenue local and express (the A/B/C/D subway lines)
- Lexington Avenue local and express (the Nos. 4/5/6 subway lines)
- Second Avenue (the Q subway line)

6 The New Jersey trips in the *Hub Bound Travel Data Report 2019* could include short-distance/commuter trips on private carriers via the Continuous Bus Survey but not long-distance bus carriers such as Greyhound or BoltBus.

7 Private jitneys, whose ridership is a small portion of West of Hudson transit trips, are not included in the BPM. Changes to jitney ridership are likely to be commensurate with geographically consistent NJ TRANSIT routes.

8 This defines "stations not grouped" as generally any station that includes transfers or major destination hubs in Lower Manhattan or Midtown.

9 The *NYMTC Hub Bound Travel Data Report* categorizes the F subway line within Queens trips, as noted in **Section 4C.3.4.**

In this sector, the subway accounts for approximately 314,000 person-trips (more than two-thirds of the total) into the Manhattan CBD in the AM peak period. The Broadway, Eighth Avenue, and Lexington Avenue subway lines each carry almost 100,000 passengers into the 60th Street tolling zone during the AM peak period. The Second Avenue subway line carries over 30,000 AM peak-period inbound passengers across the 60th Street Manhattan CBD boundary.[10] **Table 4C-1** provides a breakdown of inbound person-trips by transit during AM peak period.

Table 4C-1. Transit Ridership by Routes Crossing into the Manhattan CBD at 60th Street (Existing AM Peak Period, Inbound) (2019)

MODE	RIDERSHIP	PERCENTAGE OF TOTAL
Subway	**314,619**	**77.3%**
Lexington Avenue (Nos. 4/5/6)	99,992	24.6%
Eighth Avenue (A/B/C/D)	86,698	21.3%
Broadway/Seventh Avenue (Nos. 1/2/3)	97,641	24.0%
Second Avenue (Q)	30,288	7.4%
Commuter and Intercity Rail	**79,721**	**19.6%**
Metro-North Railroad	79,154	19.5%
Amtrak	567	0.1%
Buses	**12,510**	**3.1%**
MTA buses	12,350	3.0%
Westchester County Bee-Line	160	0.1%
Ferries	**0**	**0.0%**
TOTAL	**406,850**	**100%**

Source: NYMTC *Hub Bound Travel Data Report 2019*

COMMUTER AND INTERCITY RAIL

Passengers using Metro-North enter the Manhattan CBD at Grand Central Terminal, with 79,154 passengers during average morning peak period. The overwhelming majority of commuter and intercity rail trips across the cordon are made on Metro-North.[11] Reverse commuters via Metro-North (i.e., those commuting from Manhattan in the morning) comprise 6,428 passengers during the AM peak period, about 8 percent of the total Metro-North AM peak-period ridership.

Amtrak's Empire Line provides service between Penn Station New York and Albany, with service continuing to the north and west, and the line carries about 12 percent of total Amtrak trips to the Manhattan CBD in the AM peak period. With 567 inbound person-trips during the AM peak period, this represents less than 1 percent of all trips crossing the 60th Street cordon line.

BUSES

Weekday MTA buses crossing the cordon line serve 65,541 daily person-trips on almost 1,000 scheduled vehicle-trips via 16 routes. Bus trips are heaviest on Madison and Fifth Avenues, with smaller percentages also using Third Avenue, Lexington Avenue, Broadway, and other north–south avenues. Select Bus Service, NYCT's bus rapid transit service, operates on the East Side via Second Avenue (downtown service) and First Avenue (uptown service) with 2- to 4-minute headways during the peak period. During the AM peak period, 660 MTA buses cross the 60th Street cordon line carrying 12,350 person-trips. On Fifth Avenue—the crossing with the highest proportion of bus trips—scheduled buses cross the cordon line at a frequency of every 30 seconds. The Westchester County Bee-Line service accounts for less than 1 percent (160) of all trips crossing the cordon line at 60th Street, with slightly more inbound than outbound trips. Each day, 11 Westchester County Bee-Line buses use Fifth Avenue traveling inbound and Madison Avenue for outbound service.

4C.3.2 Queens/Roosevelt Island

SUBWAY

Several subway lines enter the Manhattan CBD from this sector, including the E/M, N/R/W, F, and No. 7 lines (**Table 4C-2**). The F subway line accounts for the lowest person-trips into the Manhattan CBD compared to other subway corridors from Queens (41,511 riders or 12.1 percent). Of all AM peak-period trips in this sector, 86 percent comprise inbound travel. Subway ridership represents a smaller share of the transit trips from this sector (71 percent), as compared to the other New York City sectors due to transit trips from eastern Queens and Long Island.

Table 4C-2. Transit Ridership by Routes Crossing into the Manhattan CBD from Queens/Roosevelt Island (Existing AM Peak Period, Inbound) (2019)

MODE	RIDERSHIP	PERCENTAGE OF TOTAL
Subway	**246,172**	**71.7%**
53rd Street Tunnel (E/M)	72,342	21.1%
60th Street Tunnel (N/R/W)	67,047	19.5%
63rd Street Tunnel (F)	41,511	12.1%
Steinway Street Tunnel (No. 7)	65,272	19.0%
Commuter and Intercity Rail	**85,218**	**24.8%**
LIRR	84,580	24.6%
Amtrak	638	0.2%
Buses	**9,377**	**2.7%**
Ferries/Tramway	**2,612**	**0.8%**
TOTAL	**343,379**	**100%**

Source: NYMTC *Hub Bound Travel Data Report 2019*

COMMUTER AND INTERCITY RAIL

According to the *Hub Bound Travel Data Report 2019*, LIRR accounts for 84,580 person-trips during the morning commute. Commuter patterns on LIRR are notably more concentrated in the morning as compared to the evening, with 33,350 person-trips from 8:00 a.m. to 9:00 a.m. In some neighborhoods of Queens, LIRR could be the fastest or closest transit service to provide access to the Manhattan CBD. The number of passengers who board LIRR trains in Queens is highest on the Port Washington, Hempstead, and Far Rockaway branches. In addition to LIRR, Amtrak trains on the Northeast Corridor to and from points north enter and exit the Manhattan CBD via Queens with 638 person-trips crossing the cordon line at this sector during the morning commute (only 0.2 percent of all transit trips from this sector). Roughly half of these are inbound trips.

[10] NYMTC *Hub Bound Travel Report 2019* data collection occurs in October of each year—in this case after Second Avenue Subway ridership had stabilized.

[11] After the Metro-North Penn Station Access Project is completed, some Metro-North volumes would enter the Manhattan CBD via Queens, which is consistent with BPM 2045 results.

BUSES

MTA operates 20 bus routes that cross the cordon line to and from Queens using either the Ed Koch Queensboro Bridge or the Queens-Midtown Tunnel and 9,377 passengers on these buses in the AM peak period constitute about 3 percent of the transit ridership from this sector. Most person-trips (8,600 daily) are via the Queens-Midtown Tunnel. The peak hour for bus trips is 7:00 a.m. to 8:00 a.m., when 3,894 passengers use buses; this hour is 150 percent busier than the busiest evening hour (5:00 p.m. to 6:00 p.m.).

FERRY AND TRAMWAY

About 5 percent (1,753) of daily person-trips made by ferry enter the Manhattan CBD from docks at Astoria, Long Island City, Roosevelt Island, and Hunters Point, which is double the number of trips from Brooklyn. The busiest hour of service is between 9:00 a.m. and 10:00 a.m., with 690 inbound person-trips and 119 outbound trips. The Roosevelt Island Tramway carries 1,087 people in and out of the Manhattan CBD during the AM peak period, representing only 0.2 percent of trips crossing the cordon line from this sector. The East River ferry line has been expanded since this data was collected, and ridership has increased. Ferry and tram inbound trips comprise 2,612 total riders during the AM peak period.

4C.3.3 Brooklyn

SUBWAY

Person-trips by subway account for a larger percentage of transit trips between the Manhattan CBD and Brooklyn, compared to other sectors. NYCT operates 16 subway routes that cross the cordon line from Brooklyn via six tunnels and two bridges (**Table 4C-3**). In total, 1,545,463 person-trips are made by subway between Brooklyn and the Manhattan CBD on an average weekday. During the AM peak period, 401,874 of the 488,437 (82 percent) total person-trips are made inbound to the Manhattan CBD by subway, with notably high numbers on routes using the Manhattan Bridge 14th Street Tunnel, and Cranberry Tunnel.

Table 4C-3. Transit Ridership by Routes Crossing into the Manhattan CBD from Brooklyn (Existing AM Peak Period, Inbound) (2019)

MODE	RIDERSHIP	PERCENTAGE OF TOTAL
Subway	**401,874**	**96.2%**
14th Street Tunnel (L)	66,760	16.0%
Clark Street Tunnel (Nos. 2/3)	38,148	9.1%
Cranberry Street Tunnel (A/C)	62,937	15.1%
Joralemon Street Tunnel (Nos. 4/5)	43,101	10.3%
Manhattan Bridge (B/D/N/Q)	109,958	26.3%
Montague Street Tunnel (R)	14,222	3.4%
Rutgers Street Tunnel (F)	26,748	6.4%
Williamsburg Bridge (J/M/Z)	40,000	9.6%
Commuter and Intercity Rail	**0**	**0.0%**
Buses	**14,774**	**3.6%**
Ferries	**741**	**0.2%**
TOTAL	**417,389**	**100%**

Source: NYMTC *Hub Bound Travel Data Report 2019*

BUSES

Person-trips made by bus constitute 3.6 percent (14,774 total trips) of the total person-trips from the Brooklyn sector into the Manhattan CBD in the AM peak period. These trips are made on 16 bus routes (with 482 buses), almost all of which cross the cordon line using the Hugh L. Carey Tunnel carrying an estimate of 5,031 bus riders into the Manhattan CBD between 7:00 a.m. and 8:00 a.m., the busiest hour of the day. This is over 1,000 more trips than cross the cordon line in the opposite direction during the busiest evening hour (5:00 p.m. to 6:00 p.m.). As noted previously, express buses with origins in Brooklyn and Staten Island are counted in this tally.

FERRY

As of 2019, 741 AM peak-period person-trips made by ferry into the Manhattan CBD originated from Brooklyn (via stops on the East River, Astoria, and South Brooklyn routes, the latter two of which launched in 2017 when data was first collected). Ferry service runs between 6:00 a.m. and 10:00 p.m., and the busiest hour of the day is 5:00 p.m. to 6:00 p.m. (including bi-directional trips). A high proportion of inbound ferry trips occur during midday hours, which could reflect recreational trips.

4C.3.4 Staten Island

BUSES

Many Staten Island commuters use express buses to travel to the Manhattan CBD, although these trips are not classified within this sector by the *Hub Bound Travel Data Report 2019*. Instead, the 17 bus routes that enter the Manhattan CBD via the Hugh L. Carey Tunnel are tallied within the Brooklyn sector and the 7 bus routes from Staten Island that enter the Manhattan CBD via New Jersey and the Lincoln Tunnel are tallied with the New Jersey sector.

FERRIES

The only direct access point from Staten Island to the Manhattan CBD is via the Staten Island Ferry (**Table 4C-4**), which runs regular service throughout the day, and serves 16,881 inbound passengers in the AM peak period. Of these trips, 6,216 occur during the busiest hour from 8:00 a.m. to 9:00 a.m.

Table 4C-4. Transit Ridership by Routes Crossing into the Manhattan CBD from Staten Island (Existing AM Peak Period, Inbound) (2019)

MODE	RIDERSHIP	PERCENTAGE OF TOTAL
Subway	0	0%
Commuter and Intercity Rail	0	0%
Buses	0	0%
Ferries	16,881	100%
TOTAL	**16,881**	**100%**

Source: NYMTC *Hub Bound Travel Data Report 2019*
Note: Person-trips on the Staten Island Ferry include bicyclists, because bicycles from Staten Island are also traveling to the Manhattan CBD via the ferry. Buses serving Staten Island that enter the Manhattan CBD via the Hugh L. Carey Tunnel or Lincoln Tunnel are captured within Brooklyn or New Jersey data as noted in **Section 4C.3.4**.

4C.3.5 New Jersey West of Hudson

SUBWAY

PATH routes carry 273,447 inbound and outbound person-trips over an average weekday. Trips made on PATH account for about 26 percent of the 383,467 AM peak-period inbound and outbound person-trips in this sector (30.4 percent of inbound transit trips; see **Table 4C-5**). Over half of all inbound AM peak-period PATH trips (45,470) are destined for Lower Manhattan. Most passengers cross the cordon line into the Manhattan CBD during the AM peak period and return to New Jersey during the PM peak period.

Table 4C-5. Transit Ridership by Routes Crossing into the Manhattan CBD from New Jersey/West of Hudson (Existing AM Peak Period, Inbound) (2019)

MODE	RIDERSHIP	PERCENTAGE OF TOTAL
Subway (PATH)	**84,317**	**30.4%**
Commuter and Intercity Rail	**62,451**	**22.6%**
NJ TRANSIT	60,295	21.8%
Amtrak	2,156	0.8%
Buses	**116,186**	**41.9%**
Holland Tunnel	6,431	2.3%
Lincoln Tunnel	109,755	39.6%
Ferries	**14,077**	**5.1%**
TOTAL	**277,031**	**100%**

Source: NYMTC *Hub Bound Travel Data Report 2019*

COMMUTER AND INTERCITY RAIL

Trips made by rail account for 62,451 (approximately 22.6 percent) of all person-trips crossing into the Manhattan CBD from New Jersey in the AM peak period, with NJ TRANSIT accounting for 60,295 (96 percent) of rail trips and Amtrak's Northeast Corridor accounting for the rest. Within this period, 45 percent of NJ TRANSIT trips occur between 8:00 a.m. and 9:00 a.m. (27,710). About one-third of all NJ TRANSIT trips are on the Morris & Essex and Montclair-Boonton Lines and the remainder are on the Northeast Corridor and North Jersey Coast Line. (Off peak, the Raritan Valley Line also provides direct service to Penn Station New York.) Some NJ TRANSIT passengers transfer to PATH service at Newark Penn Station or Hoboken Terminal and therefore are tallied as PATH passengers. Ridership on Metro-North west-of-Hudson routes are also included in these NJ TRANSIT ridership counts. Passengers traveling on Amtrak to and from stops south of New York City (including the metropolitan areas of Philadelphia, Wilmington, Baltimore, and Washington, D.C.) also travel through the New Jersey cordon, and represent only 1 percent of AM peak-period trips through the cordon.

BUSES

Of all person-trips entering the Manhattan CBD from New Jersey, 80 percent travel via transit, with most on buses (see **Table 4C-17**). Nearly 42 percent of all person-trips that cross the cordon from New Jersey in the AM peak period are made by bus. Moreover, the majority of person-trips made by bus into the Manhattan CBD are entering from New Jersey. The peak hour for bus ridership from New Jersey is between 8:00 a.m. and 9:00 a.m. Approximately 5,500 buses cross the cordon line from and to New Jersey every day on one of the 64 routes that enter the Manhattan CBD. All but one of NJ TRANSIT's bus routes serving the Manhattan CBD use the Lincoln Tunnel. In addition, MTA buses and private carriers also use this route to access the Manhattan CBD.

FERRY

Approximately 15,000 person-trips occur via ferry between the Manhattan CBD and New Jersey in the AM peak period, with the vast majority (93 percent) in the inbound direction. (This is comparable to the number of inbound AM peak person-trips on the Staten Island Ferry.) These New Jersey-to-Manhattan routes are all operated by private carriers, with service from multiple locations in northern and central New Jersey, including Hoboken Terminal. The busiest hour of the day is 8:00 a.m. to 9:00 a.m.

4C.4 SCREENING CRITERIA

The City of New York's 2020 *CEQR Technical Manual* recommends screening procedures to determine if quantified analyses of transit facilities are warranted. If a project would result in 200 or more peak hour transit trips (200 or more peak hour transit riders at any given subway station or 50 or more peak-hour bus trips on a particular route in one direction), a detailed trip assignment (Level 2 screening analysis) is undertaken. For the Level 2 screening analysis, project-generated trips would be assigned to specific transit routes and stations. If the results of this analysis show that the proposed project would generate 50 or more peak-hour bus riders on a bus route in a single direction or 200 or more peak-hour subway passengers at any given station, further quantified analyses may be warranted to evaluate the potential for adverse effects on transit.

4C.5 DETAILED ANALYSIS OF TRANSIT OPERATIONS

The methodology for assessing station circulation (stairs, escalators, and passageways) and fare control (regular turnstiles, high entry/exit turnstiles [HEETs], and high exit turnstiles) elements compares the user volume with the analyzed element's design capacity, resulting in a v/c ratio. For stairs, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction or counter-flow between upward and downward pedestrians (up to 10 percent capacity reduction is applied to account for counter-flow friction), surging of entering and exiting pedestrians (up to 25 percent capacity reduction is applied to account for surged flows off platforms and onto platforms), and the average area required for circulation. For passageways, similar considerations are made. For escalators and turnstiles, capacities are measured by the number and width of an element and the New York City Transit optimum capacity per element, and also account for the potential for surging of entering and exiting pedestrians. In the analysis for each of these elements, volumes and capacities are presented for 15-minute intervals. The estimated v/c ratio is compared with New York City Transit criteria to determine a level of service (LOS) for the operation of an element, as summarized in **Table 4C-6**.

Table 4C-6. Level of Service Criteria for Subway Station Elements

LEVEL OF SERVICE	VOLUME-TO-CAPACITY RATIO
A	0.00 to 0.45
B	0.45 to 0.70
C	0.70 to 1.00
D	1.00 to 1.33
E	1.33 to 1.67
F	Above 1.67

Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual.*

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

4C.6 ADVERSE EFFECT CRITERIA

The determination of adverse effects for station elements varies based on their type and use. For stairs and passageways, adverse effects are defined in terms of width increment threshold based on the minimum amount of additional capacity that would be required either to mitigate the location to its service conditions (LOS) under No Action Alternative condition levels, or to bring it to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Adverse effects are typically considered to occur once the width increment thresholds in **Table 4C-7** are reached or exceeded.

Table 4C-7. Adverse Effect Guidance for Stairways

WITH ACTION VOLUME-TO-CAPACITY RATIO	WIDTH INCREMENT THRESHOLD ADVERSE EFFECT (Stairways)
1.00 to 1.09	8.0
1.10 to 1.19	7.0
1.20 to 1.29	6.0
1.30 to 1.39	5.0
1.40 to 1.49	4.0
1.50 to 1.59	3.0
1.60 and up	2.0

Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual*.

For escalators and control area elements, effects are adverse if a proposed project causes a v/c ratio to increase from below 1.00 to 1.00 or greater. Where a facility is already at or above its capacity (a v/c ratio of 1.00 or greater) in a No Action condition, a 0.01 increase in v/c ratio is also an adverse effect.

4C.7 LEVEL OF SERVICE TABLES – NEW YORK CITY

NOTE: Tables are arranged in alphabetical order by station.

Table 4C-8. Existing Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
N510 M16	Street stair at southeast corner of Sixth Avenue and West 16th Street	7.50	6.50	177	340	55	106	90%	100%	80%	0.21	A
N510 S9	Street stair at southeast corner of Sixth Avenue and West 16th Street	5.00	4.00	177	340	55	106	90%	100%	80%	0.35	A
N510 M18	Street stair at northeast corner of Sixth Avenue and West 16th Street	7.50	6.50	191	752	60	235	90%	100%	80%	0.40	A
N510 S11	Street stair at northeast corner of Sixth Avenue and West 16th Street	5.00	4.00	191	752	60	235	90%	100%	80%	0.66	B
N511 M15	Street stair at southwest corner of Sixth Avenue and West 16th Street	7.00	6.00	31	151	10	47	90%	100%	80%	0.08	A
N511 S8	Street stair at southwest corner of Sixth Avenue and West 16th Street	5.50	4.50	31	151	10	47	90%	100%	80%	0.11	A
N511 M17	Street stair at northwest corner of Sixth Avenue and West 16th Street	7.00	6.00	53	558	17	174	90%	100%	80%	0.29	A
N511 S10	Street stair at northwest corner of Sixth Avenue and West 16th Street	5.00	4.00	53	558	17	174	90%	100%	80%	0.43	A
N512 M11	Street stair at northwest corner of Sixth Avenue and West 14th Street	9.00	7.75	57	43	18	13	90%	100%	90%	0.03	A
N512 S5	Street stair at northwest corner of Sixth Avenue and West 14th Street	5.00	4.00	57	43	18	13	90%	100%	90%	0.06	A
N512 M13	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.50	5.50	120	433	38	135	90%	100%	90%	0.25	A
N512 S7	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.00	5.00	120	433	38	135	90%	100%	90%	0.28	A
N512 M9	Street stair at southwest corner of Sixth Avenue and West 14th Street	9.00	7.75	36	3	11	1	90%	100%	90%	0.01	A
N512 S4	Street stair at southwest corner of Sixth Avenue and West 14th Street	6.00	5.00	36	3	11	1	90%	100%	90%	0.02	A
W44-W45	Street stair at southwest corner of Sixth Avenue and West 14th Street	7.00	6.00	227	153	71	48	90%	100%	90%	0.15	A
N513 M3	Street stair at southeast corner of Sixth Avenue and West 14th Street	11.00	9.75	435	329	136	103	90%	100%	90%	0.19	A
N513 M6	Street stair at northeast corner of Sixth Avenue and West 14th Street	16.00	14.75	287	787	90	246	90%	100%	90%	0.18	A
N513 S1	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	144	394	45	123	90%	100%	90%	0.34	A
N513 S3	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	144	394	45	123	90%	100%	90%	0.34	A
R127/A M8	Street stair at northeast corner of Seventh Avenue and West 14th Street	12.50	11.25	427	325	133	102	90%	100%	80%	0.17	A
R127/A S8	Street stair at northeast corner of Seventh Avenue and West 14th Street	5.00	4.00	427	325	133	102	90%	100%	80%	0.48	B
R127/A M6	Street stair at southeast corner of Seventh Avenue and West 14th Street	12.00	10.75	156	327	49	102	90%	100%	80%	0.12	A
R127/A S6	Street stair at southeast corner of Seventh Avenue and West 14th Street	5.00	4.00	156	327	49	102	90%	100%	80%	0.33	A
R127/A M7	Street stair at northwest corner of Seventh Avenue and West 14th Street	12.50	11.25	268	261	84	82	90%	100%	80%	0.12	A
R127/A S7	Street stair at northwest corner of Seventh Avenue and West 14th Street	5.00	4.00	268	261	84	82	90%	100%	80%	0.35	A
R127/A M5	Street stair at southwest corner of Seventh Avenue and West 14th Street	12.00	10.75	191	498	60	156	90%	100%	80%	0.18	A
R127/A S5	Street stair at southwest corner of Seventh Avenue and West 14th Street	5.00	4.00	191	498	60	156	90%	100%	80%	0.47	B
R128A/B M3	Street stair at northwest corner of Seventh Avenue and West 12th Street	13.00	11.75	1	315	0	98	100%	100%	80%	0.07	A
R128A/B S3	Street stair at northwest corner of Seventh Avenue and West 12th Street	4.00	3.00	1	315	0	98	100%	100%	80%	0.27	A
R128A/B M4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	3	296	1	93	100%	100%	80%	0.20	A
R128A/B S4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	3	296	1	93	100%	100%	80%	0.20	A
R128 M2	Street stair at northeast corner of Seventh Avenue and West 12th Street	10.00	8.75	305	367	95	115	90%	100%	80%	0.20	A
R128 S2	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	305	367	95	115	90%	100%	80%	0.44	A
R128 M1	Street stair at northwest corner of Seventh Avenue and West 12th Street	10.00	8.75	545	267	170	83	90%	100%	80%	0.23	A
R128 S1	Street stair at northwest corner of Seventh Avenue and West 12th Street	5.00	4.00	545	267	170	83	90%	100%	80%	0.51	B
H003 ML1	Connecting stair between upper mezzanine and east platform	13.00	11.75	289	544	90	170	90%	80%	75%	0.21	A
H003 P4	Connecting stair between upper mezzanine and east platform	3.00	2.00	172	221	54	69	90%	80%	75%	0.59	B
H003 P5	Connecting stair between upper mezzanine and east platform	5.00	4.00	8	109	3	34	90%	80%	75%	0.09	A

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
H003 P6	Canarsie line Platform stair at Canarsie line under H003	5.00	4.00	137	225	43	70	90%	80%	75%	0.27	A
H003 P8	Platform stair at Canarsie line under N512	5.00	4.00	387	1466	121	458	90%	80%	75%	1.41	E
H003 P9	Platform stair at Canarsie line under N512	6.00	5.00	367	721	115	225	90%	80%	75%	0.66	B
H003 PL4	Connecting stair between West 14th Street Canarsie line and east platform	6.00	5.00	407	2391	127	747	90%	80%	75%	1.71	F
H003 PL6	Connecting stair between West 14th Street Canarsie line and east platform	8.00	7.00	407	2391	127	747	90%	80%	75%	1.22	D
N510 P13-P14	Connecting stair between upper mezzanine and east platform	8.00	7.00	248	640	78	200	90%	75%	75%	0.39	A
N510 P15-P16	Connecting stair between upper mezzanine and east platform	8.00	7.00	123	294	38	92	90%	75%	75%	0.18	A
N510 P8	Connecting stair between upper mezzanine and east platform	7.00	6.00	4	240	1	75	100%	75%	75%	0.11	A
N511 P11-P12	Connecting stair between upper mezzanine and west platform	8.00	7.00	48	180	15	56	90%	75%	75%	0.10	A
N511 P7	Connecting stair between upper mezzanine and west platform	8.00	7.00	4	129	1	40	100%	75%	75%	0.05	A
N511 P9-P10	Connecting stair between upper mezzanine and west platform	8.00	7.00	42	265	13	83	90%	75%	75%	0.14	A
N512 P1	Connecting stair between upper mezzanine and west platform	6.00	5.00	117	703	37	220	90%	75%	75%	0.51	B
N512 P3	Connecting stair between upper mezzanine and west platform	6.00	5.00	83	251	26	78	90%	75%	75%	0.21	A
N512 P5	Connecting stair between upper mezzanine and west platform	6.00	5.00	1	149	0	47	100%	75%	75%	0.08	A
N513 P2	Connecting stair between upper mezzanine and east platform	6.00	5.00	147	256	46	80	90%	75%	75%	0.25	A
N513 P4	Connecting stair between upper mezzanine and east platform	7.00	6.00	297	253	93	79	90%	75%	75%	0.28	A
N513 P6	Connecting stair between upper mezzanine and east platform	6.00	5.00	7	122	2	38	100%	75%	75%	0.07	A
R127/A P8	Connecting stair between Control Area R127 and east platform	8.50	7.25	1807	459	565	143	90%	75%	75%	0.96	C
R127/A P7	Connecting stair between Control Area R127 and west platform	8.50	7.25	1253	1866	392	583	90%	75%	75%	1.33	D
R128A/B P5	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	20	160	6	50	90%	75%	75%	0.09	A
R128A/B P3	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	15	350	5	109	100%	75%	75%	0.17	A
R128A/B P4	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	39	142	12	44	90%	75%	75%	0.09	A
R128A/B P6	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	57	79	18	25	90%	75%	75%	0.07	A
R128 (12 St) P1	Connecting stair between Control Area R128 and west platform	8.50	7.25	296	500	93	156	90%	75%	75%	0.34	A
R128 (12 St) P2	Connecting stair between Control Area R128 and east platform	8.50	7.25	675	186	211	58	90%	75%	75%	0.37	A

Table 4C-9. Existing Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and West 16th Street – east side (N510)											
Two-Way Turnstiles	3	1,260	1,935	262	592	82	185	90%	90%	0.19	A
HEET	2	510	1,080	106	330	33	103	90%	90%	0.19	A
High Exit Only Turnstile	1	0	555	0	170	0	53	100%	90%	0.11	A
Sixth Avenue and West 16th Street – west side (N511)											
Two-Way Turnstiles	3	1,260	1,935	70	453	22	141	90%	90%	0.11	A
HEET	1	255	540	14	126	4	39	90%	90%	0.11	A
High Exit Only Turnstile	1	0	555	0	130	0	41	100%	90%	0.08	A
Sixth Avenue and West 14th Street – northwest corner (N512)											
Two-Way Turnstiles	4	1,680	2,580	440	632	138	198	90%	90%	0.19	A
Sixth Avenue and West 14th Street – northeast corner (N513)											
Two-Way Turnstiles	3	1,260	1,935	1,173	1,747	367	546	90%	90%	0.67	B
Sixth Avenue and West 14th Street – east side (H003)											
Two-Way Turnstiles	3	1,260	1,935	968	2,109	303	659	90%	90%	0.69	B
HEET	2	510	1,080	392	1,177	122	368	90%	90%	0.69	B
Seventh Avenue and West 14th Street – south side (R127)											
Two-Way Turnstiles	7	2,940	4,515	3,775	3,007	1,180	940	90%	90%	0.70	C
HEET	1	255	540	327	360	102	112	90%	90%	0.70	C
High Exit Only Turnstile	1	0	555	0	370	0	116	100%	90%	0.23	A
Seventh Avenue and West 12th Street – north side (R128A/B)											
High Exit Only Turnstile	2	0	1,110	0	1,342	0	419	100%	90%	0.42	A
Seventh Avenue and West 12th Street – north side (R128)											
Two-Way Turnstiles	6	2,520	3,870	1,155	1,026	361	321	90%	90%	0.26	A
High Exit Only Turnstile	2	0	1,110	0	294	0	92	100%	90%	0.09	A

Table 4C-10. Existing Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
N510 M16	Street stair at southeast corner of Sixth Avenue and West 16th Street	7.50	6.50	153	163	48	51	90%	100%	80%	0.13	A
N510 S9	Street stair at southeast corner of Sixth Avenue and West 16th Street	5.00	4.00	153	163	48	51	90%	100%	80%	0.21	A
N510 M18	Street stair at northeast corner of Sixth Avenue and West 16th Street	7.50	6.50	452	213	141	67	90%	100%	80%	0.26	A
N510 S11	Street stair at northeast corner of Sixth Avenue and West 16th Street	5.00	4.00	452	213	141	67	90%	100%	80%	0.42	A
N511 M15	Street stair at southwest corner of Sixth Avenue and West 16th Street	7.00	6.00	158	208	49	65	90%	100%	80%	0.16	A
N511 S8	Street stair at southwest corner of Sixth Avenue and West 16th Street	5.50	4.50	158	208	49	65	90%	100%	80%	0.21	A
N511 M17	Street stair at northwest corner of Sixth Avenue and West 16th Street	7.00	6.00	753	301	235	94	90%	100%	80%	0.44	A
N511 S10	Street stair at northwest corner of Sixth Avenue and West 16th Street	5.00	4.00	753	301	235	94	90%	100%	80%	0.65	B
N512 M11	Street stair at northwest corner of Sixth Avenue and West 14th Street	9.00	7.75	189	101	59	32	90%	100%	90%	0.09	A
N512 S5	Street stair at northwest corner of Sixth Avenue and West 14th Street	5.00	4.00	189	101	59	32	90%	100%	90%	0.18	A
N512 M13	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.50	5.50	982	573	307	179	90%	100%	90%	0.68	B
N512 S7	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.00	5.00	982	573	307	179	90%	100%	90%	0.75	C
N512 M9	Street stair at southwest corner of Sixth Avenue and West 14th Street	9.00	7.75	113	13	35	4	90%	100%	90%	0.04	A
N512 S4	Street stair at southwest corner of Sixth Avenue and West 14th Street	6.00	5.00	113	13	35	4	90%	100%	90%	0.06	A
W44-W45	Street stair at southwest corner of Sixth Avenue and West 14th Street	7.00	6.00	849	83	265	26	90%	100%	90%	0.36	A
N513 M3	Street stair at southeast corner of Sixth Avenue and West 14th Street	11.00	9.75	762	122	238	38	90%	100%	90%	0.21	A
N513 M6	Street stair at northeast corner of Sixth Avenue and West 14th Street	16.00	14.75	478	402	149	126	90%	100%	90%	0.15	A
N513 S1	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	239	201	75	63	90%	100%	90%	0.27	A
N513 S3	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	239	201	75	63	90%	100%	90%	0.27	A
R127/A M8	Street stair at northeast corner of Seventh Avenue and West 14th Street	12.50	11.25	746	252	233	79	90%	100%	80%	0.22	A
R127/A S8	Street stair at northeast corner of Seventh Avenue and West 14th Street	5.00	4.00	746	252	233	79	90%	100%	80%	0.61	B
R127/A M6	Street stair at southeast corner of Seventh Avenue and West 14th Street	12.00	10.75	427	269	133	84	90%	100%	80%	0.16	A
R127/A S6	Street stair at southeast corner of Seventh Avenue and West 14th Street	5.00	4.00	427	269	133	84	90%	100%	80%	0.44	A
R127/A M7	Street stair at northwest corner of Seventh Avenue and West 14th Street	12.50	11.25	476	132	149	41	90%	100%	80%	0.13	A
R127/A S7	Street stair at northwest corner of Seventh Avenue and West 14th Street	5.00	4.00	476	132	149	41	90%	100%	80%	0.37	A
R127/A M5	Street stair at southwest corner of Seventh Avenue and West 14th Street	12.00	10.75	434	421	136	132	90%	100%	80%	0.21	A
R127/A S5	Street stair at southwest corner of Seventh Avenue and West 14th Street	5.00	4.00	434	421	136	132	90%	100%	80%	0.56	B
R128A/B M3	Street stair at northwest corner of Seventh Avenue and West 12th Street	13.00	11.75	1	353	0	110	100%	100%	80%	0.08	A
R128A/B S3	Street stair at northwest corner of Seventh Avenue and West 12th Street	4.00	3.00	1	353	0	110	100%	100%	80%	0.31	A
R128A/B M4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	2	373	1	117	100%	100%	80%	0.25	A
R128A/B S4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	2	373	1	117	100%	100%	80%	0.25	A
R128 M2	Street stair at northeast corner of Seventh Avenue and West 12th Street	10.00	8.75	417	387	130	121	90%	100%	80%	0.24	A
R128 S2	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	417	387	130	121	90%	100%	80%	0.52	B
R128 M1	Street stair at northwest corner of Seventh Avenue and West 12th Street	10.00	8.75	328	469	103	147	90%	100%	80%	0.24	A
R128 S1	Street stair at northwest corner of Seventh Avenue and West 12th Street	5.00	4.00	328	469	103	147	90%	100%	80%	0.53	B
H003 ML1	Connecting stair between upper mezzanine and east platform	13.00	11.75	791	155	247	48	90%	80%	75%	0.23	A
H003 P4	Connecting stair between upper mezzanine and east platform	3.00	2.00	527	87	165	27	90%	80%	75%	0.90	C
H003 P5	Connecting stair between upper mezzanine and east platform	5.00	4.00	6	50	2	16	90%	80%	75%	0.04	A
H003 P6	Platform stair at Canarsie line under H003	5.00	4.00	271	56	85	18	90%	80%	75%	0.24	A
H003 P8	Platform stair at Canarsie line under N512	5.00	4.00	760	692	238	216	90%	80%	75%	1.08	D
H003 P9	Platform stair at Canarsie line under N512	6.00	5.00	1157	415	362	130	90%	80%	75%	0.93	C
H003 PL4	Connecting stair between West 14th Street Canarsie line and east platform	6.00	5.00	805	755	252	236	90%	80%	75%	0.93	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
H003 PL6	Connecting stair between West 14th Street Canarsie line and east platform	8.00	7.00	805	755	252	236	90%	80%	75%	0.67	B
N510 P13-P14	Connecting stair between upper mezzanine and east platform	8.00	7.00	435	152	136	48	90%	75%	75%	0.26	A
N510 P15-P16	Connecting stair between upper mezzanine and east platform	8.00	7.00	186	185	58	58	90%	75%	75%	0.16	A
N510 P8	Connecting stair between upper mezzanine and east platform	7.00	6.00	11	86	3	27	90%	75%	75%	0.05	A
N511 P11-P12	Connecting stair between upper mezzanine and west platform	8.00	7.00	283	166	88	52	90%	75%	75%	0.20	A
N511 P7	Connecting stair between upper mezzanine and west platform	8.00	7.00	15	150	5	47	90%	75%	75%	0.07	A
N511 P9-P10	Connecting stair between upper mezzanine and west platform	8.00	7.00	499	259	156	81	90%	75%	75%	0.33	A
N512 P1	Connecting stair between upper mezzanine and west platform	6.00	5.00	500	407	156	127	90%	75%	75%	0.56	B
N512 P3	Connecting stair between upper mezzanine and west platform	6.00	5.00	304	235	95	73	90%	75%	75%	0.33	A
N512 P5	Connecting stair between upper mezzanine and west platform	6.00	5.00	10	287	3	90	100%	75%	75%	0.17	A
N513 P2	Connecting stair between upper mezzanine and east platform	6.00	5.00	245	156	77	49	90%	75%	75%	0.25	A
N513 P4	Connecting stair between upper mezzanine and east platform	7.00	6.00	303	130	95	41	90%	75%	75%	0.22	A
N513 P6	Connecting stair between upper mezzanine and east platform	6.00	5.00	6	90	2	28	90%	75%	75%	0.06	A
R127/A P8	Connecting stair between Control Area R127 and east platform	8.50	7.25	2035	1049	636	328	90%	75%	75%	1.31	D
R127/A P7	Connecting stair between Control Area R127 and west platform	8.50	7.25	825	1817	258	568	90%	75%	75%	1.13	D
R128A/B P5	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	50	252	16	79	90%	75%	75%	0.16	A
R128A/B P3	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	23	313	7	98	90%	75%	75%	0.17	A
R128A/B P4	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	33	251	10	78	90%	75%	75%	0.14	A
R128A/B P6	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	56	151	18	47	90%	75%	75%	0.11	A
R128 (12 St) P1	Connecting stair between Control Area R128 and west platform	8.50	7.25	208	617	65	193	90%	75%	75%	0.35	A
R128 (12 St) P2	Connecting stair between Control Area R128 and east platform	8.50	7.25	696	472	218	148	90%	75%	75%	0.50	B

Table 4C-11. Existing Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and West 16th Street – east side (N510)											
Two-Way Turnstiles	3	1,260	1,935	431	204	135	64	90%	90%	0.16	A
HEET	2	510	1,080	174	114	54	36	90%	90%	0.16	A
High Exit Only Turnstile	1	0	555	0	58	0	18	100%	90%	0.04	A
Sixth Avenue and West 16th Street – west side (N511)											
Two-Way Turnstiles	3	1,260	1,935	758	325	237	102	90%	90%	0.27	A
HEET	1	255	540	153	91	48	28	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	93	0	29	100%	90%	0.06	A
Sixth Avenue and West 14th Street – northwest corner (N512)											
Two-Way Turnstiles	4	1,680	2,580	2,133	770	667	241	90%	90%	0.56	B
Sixth Avenue and West 14th Street – northeast corner (N513)											
Two-Way Turnstiles	3	1,260	1,935	1,794	900	561	281	90%	90%	0.67	B
Sixth Avenue and West 14th Street – east side (H003)											
Two-Way Turnstiles	3	1,260	1,935	2,500	934	781	292	90%	90%	0.88	C
HEET	2	510	1,080	1,012	521	316	163	90%	90%	0.87	C
Seventh Avenue and West 14th Street – south side (R127)											
Two-Way Turnstiles	7	2,940	4,515	4,548	3,171	1,421	991	90%	90%	0.81	C
HEET	1	255	540	395	379	123	119	90%	90%	0.81	C
High Exit Only Turnstile	1	0	555	0	390	0	122	100%	90%	0.24	A
Seventh Avenue and West 12th Street – north side (R128A/B)											
High Exit Only Turnstile	2	0	1,110	0	1,693	0	529	100%	90%	0.53	B
Seventh Avenue and West 12th Street – north side (R128)											
Two-Way Turnstiles	6	2,520	3,870	1,162	1,511	363	472	90%	90%	0.31	A
High Exit Only Turnstile	2	0	1,110	0	434	0	135	100%	90%	0.14	A

Table 4C-12. No Action Alternative Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
N510 M16	Street stair at southeast corner of Sixth Avenue and West 16th Street	7.50	6.50	177	340	55	106	90%	100%	80%	0.21	A
N510 S9	Street stair at southeast corner of Sixth Avenue and West 16th Street	5.00	4.00	177	340	55	106	90%	100%	80%	0.35	A
N510 M18	Street stair at northeast corner of Sixth Avenue and West 16th Street	7.50	6.50	191	752	60	235	90%	100%	80%	0.40	A
N510 S11	Street stair at northeast corner of Sixth Avenue and West 16th Street	5.00	4.00	191	752	60	235	90%	100%	80%	0.66	B
N511 M15	Street stair at southwest corner of Sixth Avenue and West 16th Street	7.00	6.00	31	151	10	47	90%	100%	80%	0.08	A
N511 S8	Street stair at southwest corner of Sixth Avenue and West 16th Street	5.50	4.50	31	151	10	47	90%	100%	80%	0.11	A
N511 M17	Street stair at northwest corner of Sixth Avenue and West 16th Street	7.00	6.00	53	558	17	174	90%	100%	80%	0.29	A
N511 S10	Street stair at northwest corner of Sixth Avenue and West 16th Street	5.00	4.00	53	558	17	174	90%	100%	80%	0.43	A
N512 M11	Street stair at northwest corner of Sixth Avenue and West 14th Street	9.00	7.75	57	43	18	13	90%	100%	90%	0.03	A
N512 S5	Street stair at northwest corner of Sixth Avenue and West 14th Street	5.00	4.00	57	43	18	13	90%	100%	90%	0.06	A
N512 M13	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.50	5.50	120	433	38	135	90%	100%	90%	0.25	A
N512 S7	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.00	5.00	120	433	38	135	90%	100%	90%	0.28	A
N512 M9	Street stair at southwest corner of Sixth Avenue and West 14th Street	9.00	7.75	36	3	11	1	90%	100%	90%	0.01	A
N512 S4	Street stair at southwest corner of Sixth Avenue and West 14th Street	6.00	5.00	36	3	11	1	90%	100%	90%	0.02	A
W44-W45	Street stair at southwest corner of Sixth Avenue and West 14th Street	7.00	6.00	227	153	71	48	90%	100%	90%	0.15	A
N513 M3	Street stair at southeast corner of Sixth Avenue and West 14th Street	11.00	9.75	435	329	136	103	90%	100%	90%	0.19	A
N513 M6	Street stair at northeast corner of Sixth Avenue and West 14th Street	16.00	14.75	287	787	90	246	90%	100%	90%	0.18	A
N513 S1	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	144	394	45	123	90%	100%	90%	0.34	A
N513 S3	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	144	394	45	123	90%	100%	90%	0.34	A
R127/A M8	Street stair at northeast corner of Seventh Avenue and West 14th Street	12.50	11.25	427	325	133	102	90%	100%	80%	0.17	A
R127/A S8	Street stair at northeast corner of Seventh Avenue and West 14th Street	5.00	4.00	427	325	133	102	90%	100%	80%	0.48	B
R127/A M6	Street stair at southeast corner of Seventh Avenue and West 14th Street	12.00	10.75	156	327	49	102	90%	100%	80%	0.12	A
R127/A S6	Street stair at southeast corner of Seventh Avenue and West 14th Street	5.00	4.00	156	327	49	102	90%	100%	80%	0.33	A
R127/A M7	Street stair at northwest corner of Seventh Avenue and West 14th Street	12.50	11.25	268	261	84	82	90%	100%	80%	0.12	A
R127/A S7	Street stair at northwest corner of Seventh Avenue and West 14th Street	5.00	4.00	268	261	84	82	90%	100%	80%	0.35	A
R127/A M5	Street stair at southwest corner of Seventh Avenue and West 14th Street	12.00	10.75	191	498	60	156	90%	100%	80%	0.18	A
R127/A S5	Street stair at southwest corner of Seventh Avenue and West 14th Street	5.00	4.00	191	498	60	156	90%	100%	80%	0.47	B
R128A/B M3	Street stair at northwest corner of Seventh Avenue and West 12th Street	13.00	11.75	1	315	0	98	100%	100%	80%	0.07	A
R128A/B S3	Street stair at northwest corner of Seventh Avenue and West 12th Street	4.00	3.00	1	315	0	98	100%	100%	80%	0.27	A
R128A/B M4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	3	296	1	93	100%	100%	80%	0.20	A
R128A/B S4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	3	296	1	93	100%	100%	80%	0.20	A
R128 M2	Street stair at northeast corner of Seventh Avenue and West 12th Street	10.00	8.75	305	367	95	115	90%	100%	80%	0.20	A
R128 S2	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	305	367	95	115	90%	100%	80%	0.44	A
R128 M1	Street stair at northwest corner of Seventh Avenue and West 12th Street	10.00	8.75	545	267	170	83	90%	100%	80%	0.23	A
R128 S1	Street stair at northwest corner of Seventh Avenue and West 12th Street	5.00	4.00	545	267	170	83	90%	100%	80%	0.51	B
H003 ML1	Connecting stair between upper mezzanine and east platform	13.00	11.75	289	544	90	170	90%	80%	75%	0.21	A
H003 P4	Connecting stair between upper mezzanine and east platform	3.00	2.00	172	221	54	69	90%	80%	75%	0.59	B
H003 P5	Connecting stair between upper mezzanine and east platform	5.00	4.00	8	109	3	34	90%	80%	75%	0.09	A
H003 P6	Platform stair at Canarsie line under H003	5.00	4.00	137	225	43	70	90%	80%	75%	0.27	A
H003 P8	Platform stair at Canarsie line under N512	5.00	4.00	387	1466	121	458	90%	80%	75%	1.41	E
H003 P9	Platform stair at Canarsie line under N512	6.00	5.00	367	721	115	225	90%	80%	75%	0.66	B
H003 PL4	Connecting stair between West 14th Street Canarsie line and east platform	6.00	5.00	407	2391	127	747	90%	80%	75%	1.71	F

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
H003 PL6	Connecting stair between West 14th Street Canarsie line and east platform	8.00	7.00	407	2391	127	747	90%	80%	75%	1.22	D
N510 P13-P14	Connecting stair between upper mezzanine and east platform	8.00	7.00	248	640	78	200	90%	75%	75%	0.39	A
N510 P15-P16	Connecting stair between upper mezzanine and east platform	8.00	7.00	123	294	38	92	90%	75%	75%	0.18	A
N510 P8	Connecting stair between upper mezzanine and east platform	7.00	6.00	4	240	1	75	100%	75%	75%	0.11	A
N511 P11-P12	Connecting stair between upper mezzanine and west platform	8.00	7.00	48	180	15	56	90%	75%	75%	0.10	A
N511 P7	Connecting stair between upper mezzanine and west platform	8.00	7.00	4	129	1	40	100%	75%	75%	0.05	A
N511 P9-P10	Connecting stair between upper mezzanine and west platform	8.00	7.00	42	265	13	83	90%	75%	75%	0.14	A
N512 P1	Connecting stair between upper mezzanine and west platform	6.00	5.00	117	703	37	220	90%	75%	75%	0.51	B
N512 P3	Connecting stair between upper mezzanine and west platform	6.00	5.00	83	251	26	78	90%	75%	75%	0.21	A
N512 P5	Connecting stair between upper mezzanine and west platform	6.00	5.00	1	149	0	47	100%	75%	75%	0.08	A
N513 P2	Connecting stair between upper mezzanine and east platform	6.00	5.00	147	256	46	80	90%	75%	75%	0.25	A
N513 P4	Connecting stair between upper mezzanine and east platform	7.00	6.00	297	253	93	79	90%	75%	75%	0.28	A
N513 P6	Connecting stair between upper mezzanine and east platform	6.00	5.00	7	122	2	38	100%	75%	75%	0.07	A
R127/A P8	Connecting stair between Control Area R127 and east platform	8.50	7.25	1807	459	565	143	90%	75%	75%	0.96	C
R127/A P7	Connecting stair between Control Area R127 and west platform	8.50	7.25	1253	1866	392	583	90%	75%	75%	1.33	D
R128A/B P5	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	20	160	6	50	90%	75%	75%	0.09	A
R128A/B P3	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	15	350	5	109	100%	75%	75%	0.17	A
R128A/B P4	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	39	142	12	44	90%	75%	75%	0.09	A
R128A/B P6	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	57	79	18	25	90%	75%	75%	0.07	A
R128 (12 St) P1	Connecting stair between Control Area R128 and west platform	8.50	7.25	296	500	93	156	90%	75%	75%	0.34	A
R128 (12 St) P2	Connecting stair between Control Area R128 and east platform	8.50	7.25	675	186	211	58	90%	75%	75%	0.37	A

Table 4C-13. No Action Alternative Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and West 16th Street – east side (N510)											
Two-Way Turnstiles	3	1,260	1,935	262	592	82	185	90%	90%	0.19	A
HEET	2	510	1,080	106	330	33	103	90%	90%	0.19	A
High Exit Only Turnstile	1	0	555	0	170	0	53	100%	90%	0.11	A
Sixth Avenue and West 16th Street – west side (N511)											
Two-Way Turnstiles	3	1,260	1,935	70	453	22	141	90%	90%	0.11	A
HEET	1	255	540	14	126	4	39	90%	90%	0.11	A
High Exit Only Turnstile	1	0	555	0	130	0	41	100%	90%	0.08	A
Sixth Avenue and West 14th Street – northwest corner (N512)											
Two-Way Turnstiles	4	1,680	2,580	440	632	138	198	90%	90%	0.19	A
Sixth Avenue and West 14th Street – northeast corner (N513)											
Two-Way Turnstiles	3	1,260	1,935	1,173	1,747	367	546	90%	90%	0.67	B
Sixth Avenue and West 14th Street – east side (H003)											
Two-Way Turnstiles	3	1,260	1,935	968	2,109	303	659	90%	90%	0.69	B
HEET	2	510	1,080	392	1,177	122	368	90%	90%	0.69	B
Seventh Avenue and West 14th Street – south side (R127)											
Two-Way Turnstiles	7	2,940	4,515	3,775	3,007	1,180	940	90%	90%	0.70	C
HEET	1	255	540	327	360	102	112	90%	90%	0.70	C
High Exit Only Turnstile	1	0	555	0	370	0	116	100%	90%	0.23	A
Seventh Avenue and West 12th Street – north side (R128A/B)											
High Exit Only Turnstile	2	0	1,110	0	1,342	0	419	100%	90%	0.42	A
Seventh Avenue and West 12th Street – north side (R128)											
Two-Way Turnstiles	6	2,520	3,870	1,155	1,026	361	321	90%	90%	0.26	A
High Exit Only Turnstile	2	0	1,110	0	294	0	92	100%	90%	0.09	A

Table 4C-14. No Action Alternative Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
N510 M16	Street stair at southeast corner of Sixth Avenue and West 16th Street	7.50	6.50	153	163	48	51	90%	100%	80%	0.13	A
N510 S9	Street stair at southeast corner of Sixth Avenue and West 16th Street	5.00	4.00	153	163	48	51	90%	100%	80%	0.21	A
N510 M18	Street stair at northeast corner of Sixth Avenue and West 16th Street	7.50	6.50	452	213	141	67	90%	100%	80%	0.26	A
N510 S11	Street stair at northeast corner of Sixth Avenue and West 16th Street	5.00	4.00	452	213	141	67	90%	100%	80%	0.42	A
N511 M15	Street stair at southwest corner of Sixth Avenue and West 16th Street	7.00	6.00	158	208	49	65	90%	100%	80%	0.16	A
N511 S8	Street stair at southwest corner of Sixth Avenue and West 16th Street	5.50	4.50	158	208	49	65	90%	100%	80%	0.21	A
N511 M17	Street stair at northwest corner of Sixth Avenue and West 16th Street	7.00	6.00	753	301	235	94	90%	100%	80%	0.44	A
N511 S10	Street stair at northwest corner of Sixth Avenue and West 16th Street	5.00	4.00	753	301	235	94	90%	100%	80%	0.65	B
N512 M11	Street stair at northwest corner of Sixth Avenue and West 14th Street	9.00	7.75	189	101	59	32	90%	100%	90%	0.09	A
N512 S5	Street stair at northwest corner of Sixth Avenue and West 14th Street	5.00	4.00	189	101	59	32	90%	100%	90%	0.18	A
N512 M13	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.50	5.50	982	573	307	179	90%	100%	90%	0.68	B
N512 S7	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.00	5.00	982	573	307	179	90%	100%	90%	0.75	C
N512 M9	Street stair at southwest corner of Sixth Avenue and West 14th Street	9.00	7.75	113	13	35	4	90%	100%	90%	0.04	A
N512 S4	Street stair at southwest corner of Sixth Avenue and West 14th Street	6.00	5.00	113	13	35	4	90%	100%	90%	0.06	A
W44-W45	Street stair at southwest corner of Sixth Avenue and West 14th Street	7.00	6.00	849	83	265	26	90%	100%	90%	0.36	A
N513 M3	Street stair at southeast corner of Sixth Avenue and West 14th Street	11.00	9.75	762	122	238	38	90%	100%	90%	0.21	A
N513 M6	Street stair at northeast corner of Sixth Avenue and West 14th Street	16.00	14.75	478	402	149	126	90%	100%	90%	0.15	A
N513 S1	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	239	201	75	63	90%	100%	90%	0.27	A
N513 S3	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	239	201	75	63	90%	100%	90%	0.27	A
R127/A M8	Street stair at northeast corner of Seventh Avenue and West 14th Street	12.50	11.25	746	252	233	79	90%	100%	80%	0.22	A
R127/A S8	Street stair at northeast corner of Seventh Avenue and West 14th Street	5.00	4.00	746	252	233	79	90%	100%	80%	0.61	B
R127/A M6	Street stair at southeast corner of Seventh Avenue and West 14th Street	12.00	10.75	427	269	133	84	90%	100%	80%	0.16	A
R127/A S6	Street stair at southeast corner of Seventh Avenue and West 14th Street	5.00	4.00	427	269	133	84	90%	100%	80%	0.44	A
R127/A M7	Street stair at northwest corner of Seventh Avenue and West 14th Street	12.50	11.25	476	132	149	41	90%	100%	80%	0.13	A
R127/A S7	Street stair at northwest corner of Seventh Avenue and West 14th Street	5.00	4.00	476	132	149	41	90%	100%	80%	0.37	A
R127/A M5	Street stair at southwest corner of Seventh Avenue and West 14th Street	12.00	10.75	434	421	136	132	90%	100%	80%	0.21	A
R127/A S5	Street stair at southwest corner of Seventh Avenue and West 14th Street	5.00	4.00	434	421	136	132	90%	100%	80%	0.56	B
R128A/B M3	Street stair at northwest corner of Seventh Avenue and West 12th Street	13.00	11.75	1	353	0	110	100%	100%	80%	0.08	A
R128A/B S3	Street stair at northwest corner of Seventh Avenue and West 12th Street	4.00	3.00	1	353	0	110	100%	100%	80%	0.31	A
R128A/B M4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	2	373	1	117	100%	100%	80%	0.25	A
R128A/B S4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	2	373	1	117	100%	100%	80%	0.25	A
R128 M2	Street stair at northeast corner of Seventh Avenue and West 12th Street	10.00	8.75	417	387	130	121	90%	100%	80%	0.24	A
R128 S2	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	417	387	130	121	90%	100%	80%	0.52	B
R128 M1	Street stair at northwest corner of Seventh Avenue and West 12th Street	10.00	8.75	328	469	103	147	90%	100%	80%	0.24	A
R128 S1	Street stair at northwest corner of Seventh Avenue and West 12th Street	5.00	4.00	328	469	103	147	90%	100%	80%	0.53	B
H003 ML1	Connecting stair between upper mezzanine and east platform	13.00	11.75	791	155	247	48	90%	80%	75%	0.23	A
H003 P4	Connecting stair between upper mezzanine and east platform	3.00	2.00	527	87	165	27	90%	80%	75%	0.90	C
H003 P5	Connecting stair between upper mezzanine and east platform	5.00	4.00	6	50	2	16	90%	80%	75%	0.04	A
H003 P6	Platform stair at Canarsie line under H003	5.00	4.00	271	56	85	18	90%	80%	75%	0.24	A
H003 P8	Platform stair at Canarsie line under N512	5.00	4.00	760	692	238	216	90%	80%	75%	1.08	D
H003 PL5	Connecting stair between West 14th Street Canarsie line and west platform	6.00	5.00	1157	415	362	130	90%	80%	75%	0.93	C
H003 PL4	Connecting stair between West 14th Street Canarsie line and east platform	6.00	5.00	805	755	252	236	90%	80%	75%	0.93	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
H003 PL6	Connecting stair between West 14th Street Canarsie line and east platform	8.00	7.00	805	755	252	236	90%	80%	75%	0.67	B
N510 P13-P14	Connecting stair between upper mezzanine and east platform	8.00	7.00	435	152	136	48	90%	75%	75%	0.26	A
N510 P15-P16	Connecting stair between upper mezzanine and east platform	8.00	7.00	186	185	58	58	90%	75%	75%	0.16	A
N510 P8	Connecting stair between upper mezzanine and east platform	7.00	6.00	11	86	3	27	90%	75%	75%	0.05	A
N511 P11-P12	Connecting stair between upper mezzanine and west platform	8.00	7.00	283	166	88	52	90%	75%	75%	0.20	A
N511 P7	Connecting stair between upper mezzanine and west platform	8.00	7.00	15	150	5	47	90%	75%	75%	0.07	A
N511 P9-P10	Connecting stair between upper mezzanine and west platform	8.00	7.00	499	259	156	81	90%	75%	75%	0.33	A
N512 P1	Connecting stair between upper mezzanine and west platform	6.00	5.00	500	407	156	127	90%	75%	75%	0.56	B
N512 P3	Connecting stair between upper mezzanine and west platform	6.00	5.00	304	235	95	73	90%	75%	75%	0.33	A
N512 P5	Connecting stair between upper mezzanine and west platform	6.00	5.00	10	287	3	90	100%	75%	75%	0.17	A
N513 P2	Connecting stair between upper mezzanine and east platform	6.00	5.00	245	156	77	49	90%	75%	75%	0.25	A
N513 P4	Connecting stair between upper mezzanine and east platform	7.00	6.00	303	130	95	41	90%	75%	75%	0.22	A
N513 P6	Connecting stair between upper mezzanine and east platform	6.00	5.00	6	90	2	28	90%	75%	75%	0.06	A
R127/A P8	Connecting stair between Control Area R127 and east platform	8.50	7.25	2035	1049	636	328	90%	75%	75%	1.31	D
R127/A P7	Connecting stair between Control Area R127 and west platform	8.50	7.25	825	1817	258	568	90%	75%	75%	1.13	D
R128A/B P5	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	50	252	16	79	90%	75%	75%	0.16	A
R128A/B P3	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	23	313	7	98	90%	75%	75%	0.17	A
R128A/B P4	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	33	251	10	78	90%	75%	75%	0.14	A
R128A/B P6	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	56	151	18	47	90%	75%	75%	0.11	A
R128 (12 St) P1	Connecting stair between Control Area R128 and west platform	8.50	7.25	208	617	65	193	90%	75%	75%	0.35	A
R128 (12 St) P2	Connecting stair between Control Area R128 and east platform	8.50	7.25	696	472	218	148	90%	75%	75%	0.50	B

Table 4C-15. No Action Alternative Level of Service Summary: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and West 16th Street – east side (N510)											
Two-Way Turnstiles	3	1,260	1,935	431	204	135	64	90%	90%	0.16	A
HEET	2	510	1,080	174	114	54	36	90%	90%	0.16	A
High Exit Only Turnstile	1	0	555	0	58	0	18	100%	90%	0.04	A
Sixth Avenue and West 16th Street – west side (N511)											
Two-Way Turnstiles	3	1,260	1,935	758	325	237	102	90%	90%	0.27	A
HEET	1	255	540	153	91	48	28	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	93	0	29	100%	90%	0.06	A
Sixth Avenue and West 14th Street – northwest corner (N512)											
Two-Way Turnstiles	4	1,680	2,580	2,133	770	667	241	90%	90%	0.56	B
Sixth Avenue and West 14th Street – northeast corner (N513)											
Two-Way Turnstiles	3	1,260	1,935	1,794	900	561	281	90%	90%	0.67	B
Sixth Avenue and West 14th Street – east side (H003)											
Two-Way Turnstiles	3	1,260	1,935	2,500	934	781	292	90%	90%	0.88	C
HEET	2	510	1,080	1,012	521	316	163	90%	90%	0.87	C
Seventh Avenue and West 14th Street – south side (R127)											
Two-Way Turnstiles	7	2,940	4,515	4,548	3,171	1,421	991	90%	90%	0.81	C
HEET	1	255	540	395	379	123	119	90%	90%	0.81	C
High Exit Only Turnstile	1	0	555	0	390	0	122	100%	90%	0.24	A
Seventh Avenue and West 12th Street – north side (R128A/B)											
High Exit Only Turnstile	2	0	1,110	0	1,693	0	529	100%	90%	0.53	B
Seventh Avenue and West 12th Street – north side (R128)											
Two-Way Turnstiles	6	2,520	3,870	1,162	1,511	363	472	90%	90%	0.31	A
High Exit Only Turnstile	2	0	1,110	0	434	0	135	100%	90%	0.14	A

Table 4C-16. CBD Tolling Alternative: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
N510 M16	Street stair at southeast corner of Sixth Avenue and West 16th Street	7.50	6.50	180	347	56	108	90%	100%	80%	0.22	A
N510 S9	Street stair at southeast corner of Sixth Avenue and West 16th Street	5.00	4.00	180	347	56	108	90%	100%	80%	0.35	A
N510 M18	Street stair at northeast corner of Sixth Avenue and West 16th Street	7.50	6.50	194	768	61	240	90%	100%	80%	0.41	A
N510 S11	Street stair at northeast corner of Sixth Avenue and West 16th Street	5.00	4.00	194	768	61	240	90%	100%	80%	0.67	B
N511 M15	Street stair at southwest corner of Sixth Avenue and West 16th Street	7.00	6.00	31	154	10	48	90%	100%	80%	0.09	A
N511 S8	Street stair at southwest corner of Sixth Avenue and West 16th Street	5.50	4.50	31	154	10	48	90%	100%	80%	0.12	A
N511 M17	Street stair at northwest corner of Sixth Avenue and West 16th Street	7.00	6.00	54	570	17	178	90%	100%	80%	0.30	A
N511 S10	Street stair at northwest corner of Sixth Avenue and West 16th Street	5.00	4.00	54	570	17	178	90%	100%	80%	0.44	A
N512 M11	Street stair at northwest corner of Sixth Avenue and West 14th Street	9.00	7.75	58	44	18	14	90%	100%	90%	0.03	A
N512 S5	Street stair at northwest corner of Sixth Avenue and West 14th Street	5.00	4.00	58	44	18	14	90%	100%	90%	0.06	A
N512 M13	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.50	5.50	122	442	38	138	90%	100%	90%	0.26	A
N512 S7	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.00	5.00	122	442	38	138	90%	100%	90%	0.28	A
N512 M9	Street stair at southwest corner of Sixth Avenue and West 14th Street	9.00	7.75	37	3	12	1	90%	100%	90%	0.01	A
N512 S4	Street stair at southwest corner of Sixth Avenue and West 14th Street	6.00	5.00	37	3	12	1	90%	100%	90%	0.02	A
W44-W45	Street stair at southwest corner of Sixth Avenue and West 14th Street	7.00	6.00	231	156	72	49	90%	100%	90%	0.16	A
N513 M3	Street stair at southeast corner of Sixth Avenue and West 14th Street	11.00	9.75	442	336	138	105	90%	100%	90%	0.19	A
N513 M6	Street stair at northeast corner of Sixth Avenue and West 14th Street	16.00	14.75	292	804	91	251	90%	100%	90%	0.19	A
N513 S1	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	146	402	45	125	90%	100%	90%	0.34	A
N513 S3	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	146	402	45	125	90%	100%	90%	0.34	A
R127/A M8	Street stair at northeast corner of Seventh Avenue and West 14th Street	12.50	11.25	434	332	136	104	90%	100%	80%	0.18	A
R127/A S8	Street stair at northeast corner of Seventh Avenue and West 14th Street	5.00	4.00	434	332	136	104	90%	100%	80%	0.49	B
R127/A M6	Street stair at southeast corner of Seventh Avenue and West 14th Street	12.00	10.75	158	334	49	104	90%	100%	80%	0.12	A
R127/A S6	Street stair at southeast corner of Seventh Avenue and West 14th Street	5.00	4.00	158	334	49	104	90%	100%	80%	0.33	A
R127/A M7	Street stair at northwest corner of Seventh Avenue and West 14th Street	12.50	11.25	272	267	85	83	90%	100%	80%	0.12	A
R127/A S7	Street stair at northwest corner of Seventh Avenue and West 14th Street	5.00	4.00	272	267	85	83	90%	100%	80%	0.35	A
R127/A M5	Street stair at southwest corner of Seventh Avenue and West 14th Street	12.00	10.75	194	509	61	159	90%	100%	80%	0.18	A
R127/A S5	Street stair at southwest corner of Seventh Avenue and West 14th Street	5.00	4.00	194	509	61	159	90%	100%	80%	0.48	B
R128A/B M3	Street stair at northwest corner of Seventh Avenue and West 12th Street	13.00	11.75	1	322	0	101	100%	100%	80%	0.07	A
R128A/B S3	Street stair at northwest corner of Seventh Avenue and West 12th Street	4.00	3.00	1	322	0	101	100%	100%	80%	0.28	A
R128A/B M4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	3	302	1	94	100%	100%	80%	0.20	A
R128A/B S4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	3	302	1	94	100%	100%	80%	0.20	A
R128 M2	Street stair at northeast corner of Seventh Avenue and West 12th Street	10.00	8.75	310	375	97	117	90%	100%	80%	0.21	A
R128 S2	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	310	375	97	117	90%	100%	80%	0.45	B
R128 M1	Street stair at northwest corner of Seventh Avenue and West 12th Street	10.00	8.75	554	273	173	85	90%	100%	80%	0.24	A
R128 S1	Street stair at northwest corner of Seventh Avenue and West 12th Street	5.00	4.00	554	273	173	85	90%	100%	80%	0.52	B
H003 ML1	Connecting stair between upper mezzanine and east platform	13.00	11.75	293	552	92	173	90%	80%	75%	0.22	A
H003 P4	Connecting stair between upper mezzanine and east platform	3.00	2.00	173	224	54	70	90%	80%	75%	0.60	B
H003 P5	Connecting stair between upper mezzanine and east platform	5.00	4.00	8	111	3	35	90%	80%	75%	0.09	A
H003 P6	Platform stair at Canarsie line under H003	5.00	4.00	140	233	44	73	90%	80%	75%	0.28	A
H003 P8	Platform stair at Canarsie line under N512	5.00	4.00	406	1497	127	468	90%	80%	75%	1.45	E
H003 P9	Platform stair at Canarsie line under N512	6.00	5.00	377	725	118	227	90%	80%	75%	0.67	B
H003 PL4	Connecting stair between West 14th Street Canarsie line and east platform	6.00	5.00	416	2439	130	762	90%	80%	75%	1.75	F

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
H003 PL6	Connecting stair between West 14th Street Canarsie line and east platform	8.00	7.00	416	2438	130	762	90%	80%	75%	1.25	D
N510 P13-P14	Connecting stair between upper mezzanine and east platform	8.00	7.00	250	648	78	203	90%	75%	75%	0.40	A
N510 P15-P16	Connecting stair between upper mezzanine and east platform	8.00	7.00	125	298	39	93	90%	75%	75%	0.19	A
N510 P8	Connecting stair between upper mezzanine and east platform	7.00	6.00	4	244	1	76	100%	75%	75%	0.11	A
N511 P11-P12	Connecting stair between upper mezzanine and west platform	8.00	7.00	49	182	15	57	90%	75%	75%	0.10	A
N511 P7	Connecting stair between upper mezzanine and west platform	8.00	7.00	5	131	2	41	100%	75%	75%	0.05	A
N511 P9-P10	Connecting stair between upper mezzanine and west platform	8.00	7.00	43	269	13	84	90%	75%	75%	0.14	A
N512 P1	Connecting stair between upper mezzanine and west platform	6.00	5.00	118	708	37	221	90%	75%	75%	0.51	B
N512 P3	Connecting stair between upper mezzanine and west platform	6.00	5.00	84	253	26	79	90%	75%	75%	0.21	A
N512 P5	Connecting stair between upper mezzanine and west platform	6.00	5.00	2	151	1	47	100%	75%	75%	0.09	A
N513 P2	Connecting stair between upper mezzanine and east platform	6.00	5.00	153	263	48	82	90%	75%	75%	0.26	A
N513 P4	Connecting stair between upper mezzanine and east platform	7.00	6.00	299	260	93	81	90%	75%	75%	0.29	A
N513 P6	Connecting stair between upper mezzanine and east platform	6.00	5.00	7	126	2	39	100%	75%	75%	0.07	A
R127/A P8	Connecting stair between Control Area R127 and east platform	8.50	7.25	1828	471	571	147	90%	75%	75%	0.98	C
R127/A P7	Connecting stair between Control Area R127 and west platform	8.50	7.25	1273	1891	398	591	90%	75%	75%	1.35	E
R128A/B P5	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	20	160	6	50	90%	75%	75%	0.09	A
R128A/B P3	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	15	350	5	109	100%	75%	75%	0.17	A
R128A/B P4	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	39	144	12	45	90%	75%	75%	0.09	A
R128A/B P6	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	57	80	18	25	90%	75%	75%	0.07	A
R128 (12 St) P1	Connecting stair between Control Area R128 and west platform	8.50	7.25	302	510	94	159	90%	75%	75%	0.34	A
R128 (12 St) P2	Connecting stair between Control Area R128 and east platform	8.50	7.25	683	190	213	59	90%	75%	75%	0.37	A

Table 4C-17. CBD Tolling Alternative: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and West 16th Street – east side (N510)											
Two-Way Turnstiles	3	1,260	1,935	266	605	83	189	90%	90%	0.19	A
HEET	2	510	1,080	108	338	34	106	90%	90%	0.20	A
High Exit Only Turnstile	1	0	555	0	173	0	54	100%	90%	0.11	A
Sixth Avenue and West 16th Street – west side (N511)											
Two-Way Turnstiles	3	1,260	1,935	71	462	22	144	90%	90%	0.11	A
HEET	1	255	540	14	129	4	40	90%	90%	0.11	A
High Exit Only Turnstile	1	0	555	0	133	0	41	100%	90%	0.08	A
Sixth Avenue and West 14th Street – northwest corner (N512)											
Two-Way Turnstiles	4	1,680	2,580	447	646	140	202	90%	90%	0.19	A
Sixth Avenue and West 14th Street – northeast corner (N513)											
Two-Way Turnstiles	3	1,260	1,935	1,181	1,763	369	551	90%	90%	0.68	B
Sixth Avenue and West 14th Street – east side (H003)											
Two-Way Turnstiles	3	1,260	1,935	971	2,114	303	661	90%	90%	0.69	B
HEET	2	510	1,080	393	1,180	123	369	90%	90%	0.69	B
Seventh Avenue and West 14th Street – south side (R127)											
Two-Way Turnstiles	7	2,940	4,515	3,790	3,031	1,184	947	90%	90%	0.71	C
HEET	1	255	540	329	363	103	113	90%	90%	0.71	C
High Exit Only Turnstile	1	0	555	0	373	0	116	100%	90%	0.23	A
Seventh Avenue and West 12th Street – north side (R128A/B)											
High Exit Only Turnstile	2	0	1,110	0	1,355	0	423	100%	90%	0.42	A
Seventh Avenue and West 12th Street – north side (R128)											
Two-Way Turnstiles	6	2,520	3,870	1,169	1,037	365	324	90%	90%	0.26	A
High Exit Only Turnstile	2	0	1,110	0	297	0	93	100%	90%	0.09	A

Table 4C-18. CBD Tolling Alternative: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
N510 M16	Street stair at southeast corner of Sixth Avenue and West 16th Street	7.50	6.50	160	166	50	52	90%	100%	80%	0.13	A
N510 S9	Street stair at southeast corner of Sixth Avenue and West 16th Street	5.00	4.00	160	166	50	52	90%	100%	80%	0.21	A
N510 M18	Street stair at northeast corner of Sixth Avenue and West 16th Street	7.50	6.50	460	220	144	69	90%	100%	80%	0.26	A
N510 S11	Street stair at northeast corner of Sixth Avenue and West 16th Street	5.00	4.00	460	220	144	69	90%	100%	80%	0.43	A
N511 M15	Street stair at southwest corner of Sixth Avenue and West 16th Street	7.00	6.00	159	209	50	65	90%	100%	80%	0.16	A
N511 S8	Street stair at southwest corner of Sixth Avenue and West 16th Street	5.50	4.50	159	209	50	65	90%	100%	80%	0.22	A
N511 M17	Street stair at northwest corner of Sixth Avenue and West 16th Street	7.00	6.00	755	306	236	96	90%	100%	80%	0.44	A
N511 S10	Street stair at northwest corner of Sixth Avenue and West 16th Street	5.00	4.00	755	306	236	96	90%	100%	80%	0.66	B
N512 M11	Street stair at northwest corner of Sixth Avenue and West 14th Street	9.00	7.75	191	101	60	32	90%	100%	90%	0.09	A
N512 S5	Street stair at northwest corner of Sixth Avenue and West 14th Street	5.00	4.00	191	101	60	32	90%	100%	90%	0.18	A
N512 M13	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.50	5.50	987	577	308	180	90%	100%	90%	0.68	B
N512 S7	Street stair at northwest corner of Sixth Avenue and West 14th Street	6.00	5.00	987	577	308	180	90%	100%	90%	0.75	C
N512 M9	Street stair at southwest corner of Sixth Avenue and West 14th Street	9.00	7.75	114	13	36	4	90%	100%	90%	0.04	A
N512 S4	Street stair at southwest corner of Sixth Avenue and West 14th Street	6.00	5.00	114	13	36	4	90%	100%	90%	0.06	A
W44-W45	Street stair at southwest corner of Sixth Avenue and West 14th Street	7.00	6.00	858	84	268	26	90%	100%	90%	0.37	A
N513 M3	Street stair at southeast corner of Sixth Avenue and West 14th Street	11.00	9.75	780	125	244	39	90%	100%	90%	0.22	A
N513 M6	Street stair at northeast corner of Sixth Avenue and West 14th Street	16.00	14.75	490	410	153	128	90%	100%	90%	0.15	A
N513 S1	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	245	205	77	64	90%	100%	90%	0.27	A
N513 S3	Street stair at northeast corner of Sixth Avenue and West 14th Street	5.00	4.00	245	205	77	64	90%	100%	90%	0.27	A
R127/A M8	Street stair at northeast corner of Seventh Avenue and West 14th Street	12.50	11.25	764	255	239	80	90%	100%	80%	0.22	A
R127/A S8	Street stair at northeast corner of Seventh Avenue and West 14th Street	5.00	4.00	764	255	239	80	90%	100%	80%	0.63	B
R127/A M6	Street stair at southeast corner of Seventh Avenue and West 14th Street	12.00	10.75	433	272	135	85	90%	100%	80%	0.17	A
R127/A S6	Street stair at southeast corner of Seventh Avenue and West 14th Street	5.00	4.00	433	272	135	85	90%	100%	80%	0.45	A
R127/A M7	Street stair at northwest corner of Seventh Avenue and West 14th Street	12.50	11.25	487	135	152	42	90%	100%	80%	0.13	A
R127/A S7	Street stair at northwest corner of Seventh Avenue and West 14th Street	5.00	4.00	487	135	152	42	90%	100%	80%	0.38	A
R127/A M5	Street stair at southwest corner of Seventh Avenue and West 14th Street	12.00	10.75	442	426	138	133	90%	100%	80%	0.21	A
R127/A S5	Street stair at southwest corner of Seventh Avenue and West 14th Street	5.00	4.00	442	426	138	133	90%	100%	80%	0.56	B
R128A/B M3	Street stair at northwest corner of Seventh Avenue and West 12th Street	13.00	11.75	1	356	0	111	100%	100%	80%	0.08	A
R128A/B S3	Street stair at northwest corner of Seventh Avenue and West 12th Street	4.00	3.00	1	356	0	111	100%	100%	80%	0.31	A
R128A/B M4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	2	376	1	118	100%	100%	80%	0.25	A
R128A/B S4	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	2	376	1	118	100%	100%	80%	0.25	A
R128 M2	Street stair at northeast corner of Seventh Avenue and West 12th Street	10.00	8.75	430	391	134	122	90%	100%	80%	0.24	A
R128 S2	Street stair at northeast corner of Seventh Avenue and West 12th Street	5.00	4.00	430	391	134	122	90%	100%	80%	0.53	B
R128 M1	Street stair at northwest corner of Seventh Avenue and West 12th Street	10.00	8.75	350	472	109	148	90%	100%	80%	0.25	A
R128 S1	Street stair at northwest corner of Seventh Avenue and West 12th Street	5.00	4.00	350	472	109	148	90%	100%	80%	0.54	B
H003 ML1	Connecting stair between upper mezzanine and east platform	13.00	11.75	801	159	250	50	90%	80%	75%	0.24	A
H003 P4	Connecting stair between upper mezzanine and east platform	3.00	2.00	529	88	165	28	90%	80%	75%	0.90	C
H003 P5	Connecting stair between upper mezzanine and east platform	5.00	4.00	7	51	2	16	90%	80%	75%	0.04	A
H003 P6	Platform stair at Canarsie line under H003	5.00	4.00	278	59	87	18	90%	80%	75%	0.25	A
H003 P8	Platform stair at Canarsie line under N512	5.00	4.00	795	709	248	222	90%	80%	75%	1.12	D
H003 P9	Platform stair at Canarsie line under N512	6.00	5.00	1168	418	365	131	90%	80%	75%	0.93	C
H003 PL4	Connecting stair between West 14th Street Canarsie line and east platform	6.00	5.00	823	797	257	249	90%	80%	75%	0.97	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
H003 PL6	Connecting stair between West 14th Street Canarsie line and east platform	8.00	7.00	823	796	257	249	90%	80%	75%	0.69	B
N510 P13-P14	Connecting stair between upper mezzanine and east platform	8.00	7.00	440	156	138	49	90%	75%	75%	0.26	A
N510 P15-P16	Connecting stair between upper mezzanine and east platform	8.00	7.00	191	187	60	58	90%	75%	75%	0.17	A
N510 P8	Connecting stair between upper mezzanine and east platform	7.00	6.00	11	88	3	28	90%	75%	75%	0.05	A
N511 P11-P12	Connecting stair between upper mezzanine and west platform	8.00	7.00	285	167	89	52	90%	75%	75%	0.20	A
N511 P7	Connecting stair between upper mezzanine and west platform	8.00	7.00	17	151	5	47	90%	75%	75%	0.07	A
N511 P9-P10	Connecting stair between upper mezzanine and west platform	8.00	7.00	501	261	157	82	90%	75%	75%	0.34	A
N512 P1	Connecting stair between upper mezzanine and west platform	6.00	5.00	502	409	157	128	90%	75%	75%	0.56	B
N512 P3	Connecting stair between upper mezzanine and west platform	6.00	5.00	306	236	96	74	90%	75%	75%	0.34	A
N512 P5	Connecting stair between upper mezzanine and west platform	6.00	5.00	12	288	4	90	100%	75%	75%	0.17	A
N513 P2	Connecting stair between upper mezzanine and east platform	6.00	5.00	261	159	82	50	90%	75%	75%	0.26	A
N513 P4	Connecting stair between upper mezzanine and east platform	7.00	6.00	309	133	97	42	90%	75%	75%	0.23	A
N513 P6	Connecting stair between upper mezzanine and east platform	6.00	5.00	6	92	2	29	90%	75%	75%	0.06	A
R127/A P8	Connecting stair between Control Area R127 and east platform	8.50	7.25	2073	1056	648	330	90%	75%	75%	1.33	E
R127/A P7	Connecting stair between Control Area R127 and west platform	8.50	7.25	856	1831	268	572	90%	75%	75%	1.14	D
R128A/B P5	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	50	252	16	79	90%	75%	75%	0.16	A
R128A/B P3	Connecting stair between Control Area R128A/B and west platform	7.00	6.00	23	313	7	98	90%	75%	75%	0.17	A
R128A/B P4	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	33	252	10	79	90%	75%	75%	0.15	A
R128A/B P6	Connecting stair between Control Area R128A/B and east platform	7.00	6.00	56	152	18	48	90%	75%	75%	0.11	A
R128 (12 St) P1	Connecting stair between Control Area R128 and west platform	8.50	7.25	223	621	70	194	90%	75%	75%	0.36	A
R128 (12 St) P2	Connecting stair between Control Area R128 and east platform	8.50	7.25	716	475	224	148	90%	75%	75%	0.51	B

Table 4C-19. CBD Tolling Alternative: 14th Street Sixth/Seventh Avenue Station (Nos. 1, 2, 3, and F, M, L lines)– Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and West 16th Street – east side (N510)											
Two-Way Turnstiles	3	1,260	1,935	441	210	138	66	90%	90%	0.16	A
HEET	2	510	1,080	179	117	56	37	90%	90%	0.16	A
High Exit Only Turnstile	1	0	555	0	60	0	19	100%	90%	0.04	A
Sixth Avenue and West 16th Street – west side (N511)											
Two-Way Turnstiles	3	1,260	1,935	760	330	238	103	90%	90%	0.28	A
HEET	1	255	540	154	92	48	29	90%	90%	0.28	A
High Exit Only Turnstile	1	0	555	0	95	0	30	100%	90%	0.06	A
Sixth Avenue and West 14th Street – northwest corner (N512)											
Two-Way Turnstiles	4	1,680	2,580	2,151	776	672	243	90%	90%	0.56	B
Sixth Avenue and West 14th Street – northeast corner (N513)											
Two-Way Turnstiles	3	1,260	1,935	1,814	907	567	283	90%	90%	0.68	B
Sixth Avenue and West 14th Street – east side (H003)											
Two-Way Turnstiles	3	1,260	1,935	2,507	936	783	293	90%	90%	0.88	C
HEET	2	510	1,080	1,015	523	317	163	90%	90%	0.88	C
Seventh Avenue and West 14th Street – south side (R127)											
Two-Way Turnstiles	7	2,940	4,515	4,588	3,182	1,434	994	90%	90%	0.81	C
HEET	1	255	540	398	381	124	119	90%	90%	0.81	C
High Exit Only Turnstile	1	0	555	0	391	0	122	100%	90%	0.24	A
Seventh Avenue and West 12th Street – north side (R128A/B)											
High Exit Only Turnstile	2	0	1,110	0	1,699	0	531	100%	90%	0.53	B
Seventh Avenue and West 12th Street – north side (R128)											
Two-Way Turnstiles	6	2,520	3,870	1,197	1,516	374	474	90%	90%	0.32	A
High Exit Only Turnstile	2	0	1,110	0	435	0	136	100%	90%	0.14	A

Table 4C-20. Existing Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
BMT S3	Street stair at southeast corner of Union Square West and East 16th Street	10.00	8.75	192	1,367	60	427	90%	100%	95%	0.43	A
BMT S4	Street stair at northeast corner of Union Square West and East 16th Street	10.00	8.75	615	3,219	192	1,006	90%	100%	95%	1.06	D
M1/M4/S1	Street stair at northwest corner of Broadway and East 14th Street	5.00	4.00	187	568	58	178	90%	100%	95%	0.45	B
M2/M3/S2	Street stair at northeast corner of University Place and East 14th Street	5.00	4.00	321	762	100	238	90%	100%	95%	0.65	B
IRT O1/O2	Street stair at southeast corner of Union Square East and East 15th Street	10.00	8.75	1,054	1,604	329	501	90%	100%	95%	0.72	C
IRT O3/O4	Street stair at Northeast Corner of Fourth Ave and East 14th Street	7.00	5.75	543	233	170	73	90%	100%	95%	0.32	A
BMT S5	Street stair at northeast corner of Union Square West and East 14th Street	10.00	8.75	682	2,489	213	778	90%	100%	95%	0.87	C
BMT S6	Street stair at southwest corner of Union Square East and East 15th Street	19.00	17.25	278	794	87	248	90%	100%	95%	0.15	A
IRT S1	Street stair at northeast corner of Broadway and East 14th Street	5.00	4.00	144	668	45	209	90%	100%	80%	0.57	B
IRT S2	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	562	407	176	127	90%	100%	80%	0.55	B
IRT S3	Street stair at northwest corner of Fourth Avenue and East 14th Street	5.00	4.00	155	308	48	96	90%	100%	80%	0.31	A
IRT S4	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	642	289	201	90	90%	100%	80%	0.52	B
BMT P1	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	287	2,007	90	627	90%	90%	75%	0.84	C
BMT P2	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	958	758	299	237	90%	90%	75%	0.58	B
BMT P3	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	1,049	687	328	215	90%	90%	75%	0.58	B
BMT P4	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,633	832	823	260	90%	90%	75%	1.13	D
BMT P5	Connecting stair between A34 paid zone and downtown BMT platform	5.50	4.50	185	1,049	58	328	90%	90%	75%	0.83	C
BMT P6	Connecting stair between A34 paid zone and uptown BMT platform	5.50	4.50	366	1,212	114	379	90%	90%	75%	1.04	D
BMT P11	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	29	892	9	279	100%	90%	75%	0.29	A
BMT P12	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	106	1,011	33	316	90%	90%	75%	0.39	A
BMT P13	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	152	1,764	48	551	90%	90%	75%	0.67	B
BMT P14	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	505	965	158	302	90%	90%	75%	0.49	B
IRT ML2	Connecting stair at IRT mezzanine in A35 paid zone	13.50	12.00	1,545	2,522	483	788	90%	90%	75%	0.98	C
CAN ML4	Connecting stair between A37 paid zone and west landing	12.00	10.75	162	4,035	51	1,261	100%	90%	75%	1.08	D
CAN ML5	Connecting stair between R221A paid zone and lower east landing	17.50	15.00	1,251	3,356	391	1,049	90%	90%	75%	0.91	C
ML6	Connecting stair between R221A paid zone and lower east landing	12.50	11.00	1,251	3,356	391	1,049	90%	90%	75%	1.23	D
IRT P1	Connecting stair between R221 paid zone and uptown IRT platform	6.50	5.50	2,000	1,604	625	501	90%	90%	75%	1.83	F
IRT P5	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	641	509	200	159	90%	90%	75%	0.64	B
IRT P6	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	2,101	500	657	156	90%	90%	75%	1.54	E
IRT P8	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	1,769	1,479	553	462	90%	90%	75%	1.82	F
IRT P9	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	1,506	287	471	90	90%	90%	75%	1.06	D
IRT P10	Connecting stair between R221 paid zone and downtown IRT platform	5.00	4.00	50	1,131	16	353	100%	90%	75%	0.81	C
IRT P11	Connecting stair between A35 paid zone and uptown IRT platform	4.00	3.00	1,142	326	357	102	90%	90%	75%	1.32	D
IRT P12	Connecting stair between A35 paid zone and uptown IRT platform	5.50	4.50	3,931	345	1,228	108	90%	90%	75%	2.48	F
IRT P12ABC	Connecting stair between A35 paid zone and downtown IRT platform	12.00	10.50	1,536	1,453	480	454	90%	90%	75%	0.80	C
IRT P15	Connecting stair between A35 paid zone and downtown IRT platform	6.00	5.00	9	1,069	3	334	100%	90%	75%	0.60	B
CAN P2	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	314	2,236	98	699	90%	90%	75%	1.14	D
CAN P3	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	937	1,120	293	350	90%	90%	75%	0.87	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
CAN P5/P6	Connecting stair between uptown BMT platform and Canarsie line platform	5.00	4.00	1,054	2,754	329	861	90%	80%	75%	2.89	F
CAN P7/P8	Connecting stair between downtown BMT platform and Canarsie line platform	5.00	4.00	736	2,198	230	687	90%	80%	75%	2.23	F
CAN P11	Connecting stair between west landing and Canarsie line platform	4.50	3.50	54	2,066	17	646	100%	90%	75%	1.68	F
CAN P12	Connecting stair between west landing and Canarsie line platform	4.50	3.50	108	1,969	34	615	100%	90%	75%	1.63	E

Table 4C-21. Existing Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E257X	Street escalator connecting R221 free zone to street	1	40	95%	0	1,700	0	531	945	0.59	B
E219	Connecting escalator between R221A paid zone and Canarsie line platform	1	32	75%	0	2,496	0	780	825	1.26	D

Table 4C-22. Existing Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Union Square West and East 16th Street - southeast corner (A34-East)											
Two-Way Turnstiles	3	1,260	1,935	341	1,245	107	389	90%	90%	0.34	A
Union Square West and East 16th Street - southeast corner (A34-South)											
Two-Way Turnstiles	3	1,260	1,935	341	1,245	107	389	90%	90%	0.34	A
Union Square East and East 15th Street - southeast corner (A35)											
Two-Way Turnstiles	5	2,100	3,225	1,054	1,604	329	501	90%	90%	0.37	A
Union Square East and East 15th Street - southwest corner (A36)											
Two-Way Turnstiles	4	1,680	2,580	278	794	87	248	90%	90%	0.18	A
Broadway and East 14th Street - northwest corner (A37)											
Two-Way Turnstiles	4	1,680	2,580	299	803	93	251	90%	90%	0.18	A
High Exit Only Turnstile	1	0	555	0	173	0	54	100%	90%	0.11	A
Fourth Avenue and East 14th Street - northwest corner (R221A-North)											
Two-Way Turnstiles	3	1,260	1,935	150	488	47	153	90%	90%	0.14	A
Fourth Avenue and East 14th Street - northwest corner (R221A-East)											
Two-Way Turnstiles	2	840	1,290	150	488	47	153	90%	90%	0.21	A
Fourth Avenue and East 14th Street - northeast corner (R221)											
Two-Way Turnstiles	7	2,940	4,515	2,571	2,629	803	822	90%	90%	0.53	B
Union Square West and East 16th Street - southeast corner (A33)											
Two-Way Turnstiles	6	2,520	3,870	671	2,929	210	915	90%	90%	0.38	A
HEET	2	510	1,080	136	817	43	255	90%	90%	0.39	A
High Exit Only Turnstile	2	0	1,110	0	840	0	263	100%	90%	0.26	A

Table 4C-23. Existing Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
BMT S3	Street stair at southeast corner of Union Square West and East 16th Street	10.00	8.75	722	1,006	226	314	90%	100%	95%	0.47	B
BMT S4	Street stair at northeast corner of Union Square West and East 16th Street	10.00	8.75	3,425	1,777	1,070	555	90%	100%	95%	1.40	E
M1/M4/S1	Street stair at northwest corner of Broadway and East 14th Street	5.00	4.00	856	357	268	112	90%	100%	95%	0.71	C
M2/M3/S2	Street stair at northeast corner of University Place and East 14th Street	5.00	4.00	1,268	442	396	138	90%	100%	95%	1.00	D
IRT O1/O2	Street stair at southeast corner of Union Square East and East 15th Street	10.00	8.75	1,344	975	420	305	90%	100%	95%	0.63	B
IRT O3/O4	Street stair at Northeast Corner of Fourth Ave and East 14th Street	7.00	5.75	233	543	73	170	90%	100%	95%	0.32	A
BMT S5	Street stair at northeast corner of Union Square West and East 14th Street	10.00	8.75	2,580	2,265	806	708	90%	100%	95%	1.31	D
BMT S6	Street stair at southwest corner of Union Square East and East 15th Street	19.00	17.25	944	550	295	172	90%	100%	95%	0.20	A
IRT S1	Street stair at northeast corner of Broadway and East 14th Street	5.00	4.00	517	664	162	208	90%	100%	80%	0.78	C
IRT S2	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	494	708	154	221	90%	100%	80%	0.71	C
IRT S3	Street stair at northwest corner of Fourth Avenue and East 14th Street	5.00	4.00	361	434	113	136	90%	100%	80%	0.52	B
IRT S4	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	475	509	148	159	90%	100%	80%	0.57	B
BMT P1	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	1,698	856	531	268	90%	90%	75%	0.85	C
BMT P2	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,202	398	688	124	90%	90%	75%	0.83	C
BMT P3	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	2,010	521	628	163	90%	90%	75%	0.82	C
BMT P4	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,047	277	640	87	90%	90%	75%	0.74	C
BMT P5	Connecting stair between A34 paid zone and downtown BMT platform	5.50	4.50	643	1,292	201	404	90%	90%	75%	1.25	D
BMT P6	Connecting stair between A34 paid zone and uptown BMT platform	5.50	4.50	369	741	115	232	90%	90%	75%	0.72	C
BMT P11	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	190	698	59	218	90%	90%	75%	0.30	A
BMT P12	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	206	452	64	141	90%	90%	75%	0.22	A
BMT P13	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	1,754	1,790	548	559	90%	90%	75%	1.15	D
BMT P14	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	2,197	373	687	117	90%	90%	75%	0.78	C
IRT ML2	Connecting stair at IRT mezzanine in A35 paid zone	13.50	12.00	1,535	3,628	480	1,134	90%	90%	75%	1.26	D
CAN ML4	Connecting stair between A37 paid zone and west landing	12.00	10.75	1,166	1,548	364	484	90%	90%	75%	0.72	C
CAN ML5	Connecting stair between R221A paid zone and lower east landing	17.50	15.00	4,638	844	1,449	264	90%	90%	75%	0.97	C
ML6	Connecting stair between R221A paid zone and lower east landing	12.50	11.00	4,638	844	1,449	264	90%	90%	75%	1.32	D
IRT P1	Connecting stair between R221 paid zone and uptown IRT platform	6.50	5.50	1,224	2,276	383	711	90%	90%	75%	1.85	F
IRT P5	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	627	882	196	276	90%	90%	75%	0.87	C
IRT P6	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	743	668	232	209	90%	90%	75%	0.88	C
IRT P8	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	334	2,706	104	846	90%	90%	75%	1.84	F
IRT P9	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	844	326	264	102	90%	90%	75%	0.71	C
IRT P10	Connecting stair between R221 paid zone and downtown IRT platform	5.00	4.00	53	1,994	17	623	100%	90%	75%	1.42	E
IRT P11	Connecting stair between A35 paid zone and uptown IRT platform	4.00	3.00	517	242	162	76	90%	90%	75%	0.69	B
IRT P12	Connecting stair between A35 paid zone and uptown IRT platform	5.50	4.50	2,593	205	810	64	90%	90%	75%	1.62	E
IRT P12ABC	Connecting stair between A35 paid zone and downtown IRT platform	12.00	10.50	1,517	2,070	474	647	90%	90%	75%	0.98	C
IRT P15	Connecting stair between A35 paid zone and downtown IRT platform	6.00	5.00	18	1,558	6	487	100%	90%	75%	0.87	C
CAN P2	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	2,155	551	673	172	90%	90%	75%	1.07	D
CAN P3	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	2,483	294	776	92	90%	90%	75%	1.08	D

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
CAN P5/P6	Connecting stair between uptown BMT platform and Canarsie line platform	5.00	4.00	2,873	829	898	259	90%	80%	75%	2.72	F
CAN P7/P8	Connecting stair between downtown BMT platform and Canarsie line platform	5.00	4.00	2,977	733	930	229	90%	80%	75%	2.72	F
CAN P11	Connecting stair between west landing and Canarsie line platform	4.50	3.50	460	825	144	258	90%	90%	75%	1.07	D
CAN P12	Connecting stair between west landing and Canarsie line platform	4.50	3.50	706	723	221	226	90%	90%	75%	1.16	D

Table 4C-24. Existing Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E257X	Street escalator connecting R221 free zone to street	1	40	95%	0	1,118	0	349	945	0.39	A
E219	Connecting escalator between R221A paid zone and Canarsie line platform	1	32	75%	0	815	0	255	825	0.41	A

Table 4C-25. Existing Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Union Square West and East 16th Street - southeast corner (A34-East)											
Two-Way Turnstiles	3	1,260	1,935	1,290	1,133	403	354	90%	90%	0.58	B
Union Square West and East 16th Street - southeast corner (A34-South)											
Two-Way Turnstiles	3	1,260	1,935	1,290	1,132	403	354	90%	90%	0.58	B
Union Square East and East 15th Street - southeast corner (A35)											
Two-Way Turnstiles	5	2,100	3,225	1,344	975	420	305	90%	90%	0.34	A
Union Square East and East 15th Street - southwest corner (A36)											
Two-Way Turnstiles	4	1,680	2,580	944	550	295	172	90%	90%	0.28	A
Broadway and East 14th Street - northwest corner (A37)											
Two-Way Turnstiles	4	1,680	2,580	878	904	274	283	90%	90%	0.32	A
High Exit Only Turnstile	1	0	555	0	194	0	61	100%	90%	0.12	A
Fourth Avenue and East 14th Street - northwest corner (R221A-North)											
Two-Way Turnstiles	3	1,260	1,935	439	549	137	172	90%	90%	0.23	A
Fourth Avenue and East 14th Street - northwest corner (R221A-East)											
Two-Way Turnstiles	2	840	1,290	439	549	137	172	90%	90%	0.35	A
Fourth Avenue and East 14th Street - northeast corner (R221)											
Two-Way Turnstiles	7	2,940	4,515	1,202	2,878	376	899	90%	90%	0.39	A
Union Square West and East 16th Street - southeast corner (A33)											
Two-Way Turnstiles	6	2,520	3,870	3,449	1,777	1,078	555	90%	90%	0.65	B
HEET	2	510	1,080	698	496	218	155	90%	90%	0.65	B
High Exit Only Turnstile	2	0	1,110	0	510	0	159	100%	90%	0.16	A

Table 4C-26. No Action Alternative Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
BMT S3	Street stair at southeast corner of Union Square West and East 16th Street	10.00	8.75	192	1,367	60	427	90%	100%	95%	0.43	A
BMT S4	Street stair at northeast corner of Union Square West and East 16th Street	10.00	8.75	615	3,219	192	1,006	90%	100%	95%	1.06	D
M1/M4/S1	Street stair at northwest corner of Broadway and East 14th Street	5.00	4.00	187	568	58	178	90%	100%	95%	0.45	B
M2/M3/S2	Street stair at northeast corner of University Place and East 14th Street	5.00	4.00	321	762	100	238	90%	100%	95%	0.65	B
IRT O1/O2	Street stair at southeast corner of Union Square East and East 15th Street	10.00	8.75	1,054	1,604	329	501	90%	100%	95%	0.72	C
IRT O3/O4	Street stair at Northeast Corner of Fourth Ave and East 14th Street	7.00	5.75	543	233	170	73	90%	100%	95%	0.32	A
BMT S5	Street stair at northeast corner of Union Square West and East 14th Street	10.00	8.75	682	2,489	213	778	90%	100%	95%	0.87	C
BMT S6	Street stair at southwest corner of Union Square East and East 15th Street	19.00	17.25	278	794	87	248	90%	100%	95%	0.15	A
IRT S1	Street stair at northeast corner of Broadway and East 14th Street	5.00	4.00	144	668	45	209	90%	100%	80%	0.57	B
IRT S2	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	562	407	176	127	90%	100%	80%	0.55	B
IRT S3	Street stair at northwest corner of Fourth Avenue and East 14th Street	5.00	4.00	155	308	48	96	90%	100%	80%	0.31	A
IRT S4	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	642	289	201	90	90%	100%	80%	0.52	B
BMT P1	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	287	2,007	90	627	90%	90%	75%	0.84	C
BMT P2	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	958	758	299	237	90%	90%	75%	0.58	B
BMT P3	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	1,049	687	328	215	90%	90%	75%	0.58	B
BMT P4	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,633	832	823	260	90%	90%	75%	1.13	D
BMT P5	Connecting stair between A34 paid zone and downtown BMT platform	5.50	4.50	185	1,049	58	328	90%	90%	75%	0.83	C
BMT P6	Connecting stair between A34 paid zone and uptown BMT platform	5.50	4.50	366	1,212	114	379	90%	90%	75%	1.04	D
BMT P11	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	29	892	9	279	100%	90%	75%	0.29	A
BMT P12	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	106	1,011	33	316	90%	90%	75%	0.39	A
BMT P13	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	152	1,764	48	551	90%	90%	75%	0.67	B
BMT P14	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	505	965	158	302	90%	90%	75%	0.49	B
IRT ML2	Connecting stair at IRT mezzanine in A35 paid zone	13.50	12.00	1,545	2,522	483	788	90%	90%	75%	0.98	C
CAN ML4	Connecting stair between A37 paid zone and west landing	12.00	10.75	162	4,035	51	1,261	100%	90%	75%	1.08	D
CAN ML5	Connecting stair between R221A paid zone and lower east landing	17.50	15.00	1,251	3,356	391	1,049	90%	90%	75%	0.91	C
ML6	Connecting stair between R221A paid zone and lower east landing	12.50	11.00	1,251	3,356	391	1,049	90%	90%	75%	1.23	D
IRT P1	Connecting stair between R221 paid zone and uptown IRT platform	6.50	5.50	2,000	1,604	625	501	90%	90%	75%	1.83	F
IRT P5	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	641	509	200	159	90%	90%	75%	0.64	B
IRT P6	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	2,101	500	657	156	90%	90%	75%	1.54	E
IRT P8	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	1,769	1,479	553	462	90%	90%	75%	1.82	F
IRT P9	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	1,506	287	471	90	90%	90%	75%	1.06	D
IRT P10	Connecting stair between R221 paid zone and downtown IRT platform	5.00	4.00	50	1,131	16	353	100%	90%	75%	0.81	C
IRT P11	Connecting stair between A35 paid zone and uptown IRT platform	4.00	3.00	1,142	326	357	102	90%	90%	75%	1.32	D
IRT P12	Connecting stair between A35 paid zone and uptown IRT platform	5.50	4.50	3,931	345	1,228	108	90%	90%	75%	2.48	F
IRT P12ABC	Connecting stair between A35 paid zone and downtown IRT platform	12.00	10.50	1,536	1,453	480	454	90%	90%	75%	0.80	C
IRT P15	Connecting stair between A35 paid zone and downtown IRT platform	6.00	5.00	9	1,069	3	334	100%	90%	75%	0.60	B
CAN P2	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	314	2,236	98	699	90%	90%	75%	1.14	D
CAN P3	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	937	1,120	293	350	90%	90%	75%	0.87	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
CAN P5/P6	Connecting stair between uptown BMT platform and Canarsie line platform	5.00	4.00	1,054	2,754	329	861	90%	80%	75%	2.89	F
CAN P7/P8	Connecting stair between downtown BMT platform and Canarsie line platform	5.00	4.00	736	2,198	230	687	90%	80%	75%	2.23	F
CAN P11	Connecting stair between west landing and Canarsie line platform	4.50	3.50	54	2,066	17	646	100%	90%	75%	1.68	F
CAN P12	Connecting stair between west landing and Canarsie line platform	4.50	3.50	108	1,969	34	615	100%	90%	75%	1.63	E

Table 4C-27. No Action Alternative Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E257X	Street escalator connecting R221 free zone to street	1	40	95%	0	1,700	0	531	945	0.59	B
E219	Connecting escalator between R221A paid zone and Canarsie line platform	1	32	75%	0	2,496	0	780	825	1.26	D

Table 4C-28. No Action Alternative Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Union Square West and East 16th Street - southeast corner (A34-East)											
Two-Way Turnstiles	3	1,260	1,935	341	1,245	107	389	90%	90%	0.34	A
Union Square West and East 16th Street - southeast corner (A34-South)											
Two-Way Turnstiles	3	1,260	1,935	341	1,245	107	389	90%	90%	0.34	A
Union Square East and East 15th Street - southeast corner (A35)											
Two-Way Turnstiles	5	2,100	3,225	1,054	1,604	329	501	90%	90%	0.37	A
Union Square East and East 15th Street - southwest corner (A36)											
Two-Way Turnstiles	4	1,680	2,580	278	794	87	248	90%	90%	0.18	A
Broadway and East 14th Street - northwest corner (A37)											
Two-Way Turnstiles	4	1,680	2,580	299	803	93	251	90%	90%	0.18	A
High Exit Only Turnstile	1	0	555	0	173	0	54	100%	90%	0.11	A
Fourth Avenue and East 14th Street - northwest corner (R221A-North)											
Two-Way Turnstiles	3	1,260	1,935	150	488	47	153	90%	90%	0.14	A
Fourth Avenue and East 14th Street - northwest corner (R221A-East)											
Two-Way Turnstiles	2	840	1,290	150	488	47	153	90%	90%	0.21	A
Fourth Avenue and East 14th Street - northeast corner (R221)											
Two-Way Turnstiles	7	2,940	4,515	2,571	2,629	803	822	90%	90%	0.53	B
Union Square West and East 16th Street - southeast corner (A33)											
Two-Way Turnstiles	6	2,520	3,870	671	2,929	210	915	90%	90%	0.38	A
HEET	2	510	1,080	136	817	43	255	90%	90%	0.39	A
High Exit Only Turnstile	2	0	1,110	0	840	0	263	100%	90%	0.26	A

Table 4C-29. No Action Alternative Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
BMT S3	Street stair at southeast corner of Union Square West and East 16th Street	10.00	8.75	722	1,006	226	314	90%	100%	95%	0.47	B
BMT S4	Street stair at northeast corner of Union Square West and East 16th Street	10.00	8.75	3,425	1,777	1,070	555	90%	100%	95%	1.40	E
M1/M4/S1	Street stair at northwest corner of Broadway and East 14th Street	5.00	4.00	856	357	268	112	90%	100%	95%	0.71	C
M2/M3/S2	Street stair at northeast corner of University Place and East 14th Street	5.00	4.00	1,268	442	396	138	90%	100%	95%	1.00	D
IRT O1/O2	Street stair at southeast corner of Union Square East and East 15th Street	10.00	8.75	1,344	975	420	305	90%	100%	95%	0.63	B
IRT O3/O4	Street stair at Northeast Corner of Fourth Ave and East 14th Street	7.00	5.75	233	543	73	170	90%	100%	95%	0.32	A
BMT S5	Street stair at northeast corner of Union Square West and East 14th Street	10.00	8.75	2,580	2,265	806	708	90%	100%	95%	1.31	D
BMT S6	Street stair at southwest corner of Union Square East and East 15th Street	19.00	17.25	944	550	295	172	90%	100%	95%	0.20	A
IRT S1	Street stair at northeast corner of Broadway and East 14th Street	5.00	4.00	517	664	162	208	90%	100%	80%	0.78	C
IRT S2	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	494	708	154	221	90%	100%	80%	0.71	C
IRT S3	Street stair at northwest corner of Fourth Avenue and East 14th Street	5.00	4.00	361	434	113	136	90%	100%	80%	0.52	B
IRT S4	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	475	509	148	159	90%	100%	80%	0.57	B
BMT P1	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	1,698	856	531	268	90%	90%	75%	0.85	C
BMT P2	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,202	398	688	124	90%	90%	75%	0.83	C
BMT P3	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	2,010	521	628	163	90%	90%	75%	0.82	C
BMT P4	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,047	277	640	87	90%	90%	75%	0.74	C
BMT P5	Connecting stair between A34 paid zone and downtown BMT platform	5.50	4.50	643	1,292	201	404	90%	90%	75%	1.25	D
BMT P6	Connecting stair between A34 paid zone and uptown BMT platform	5.50	4.50	369	741	115	232	90%	90%	75%	0.72	C
BMT P11	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	190	698	59	218	90%	90%	75%	0.30	A
BMT P12	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	206	452	64	141	90%	90%	75%	0.22	A
BMT P13	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	1,754	1,790	548	559	90%	90%	75%	1.15	D
BMT P14	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	2,197	373	687	117	90%	90%	75%	0.78	C
IRT ML2	Connecting stair at IRT mezzanine in A35 paid zone	13.50	12.00	1,535	3,628	480	1,134	90%	90%	75%	1.26	D
CAN ML4	Connecting stair between A37 paid zone and west landing	12.00	10.75	1,166	1,548	364	484	90%	90%	75%	0.72	C
CAN ML5	Connecting stair between R221A paid zone and lower east landing	17.50	15.00	4,638	844	1,449	264	90%	90%	75%	0.97	C
ML6	Connecting stair between R221A paid zone and lower east landing	12.50	11.00	4,638	844	1,449	264	90%	90%	75%	1.32	D
IRT P1	Connecting stair between R221 paid zone and uptown IRT platform	6.50	5.50	1,224	2,276	383	711	90%	90%	75%	1.85	F
IRT P5	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	627	882	196	276	90%	90%	75%	0.87	C
IRT P6	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	743	668	232	209	90%	90%	75%	0.88	C
IRT P8	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	334	2,706	104	846	90%	90%	75%	1.84	F
IRT P9	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	844	326	264	102	90%	90%	75%	0.71	C
IRT P10	Connecting stair between R221 paid zone and downtown IRT platform	5.00	4.00	53	1,994	17	623	100%	90%	75%	1.42	E
IRT P11	Connecting stair between A35 paid zone and uptown IRT platform	4.00	3.00	517	242	162	76	90%	90%	75%	0.69	B
IRT P12	Connecting stair between A35 paid zone and uptown IRT platform	5.50	4.50	2,593	205	810	64	90%	90%	75%	1.62	E
IRT P12ABC	Connecting stair between A35 paid zone and downtown IRT platform	12.00	10.50	1,517	2,070	474	647	90%	90%	75%	0.98	C
IRT P15	Connecting stair between A35 paid zone and downtown IRT platform	6.00	5.00	18	1,558	6	487	100%	90%	75%	0.87	C
CAN P2	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	2,155	551	673	172	90%	90%	75%	1.07	D
CAN P3	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	2,483	294	776	92	90%	90%	75%	1.08	D

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
CAN P5/P6	Connecting stair between uptown BMT platform and Canarsie line platform	5.00	4.00	2,873	829	898	259	90%	80%	75%	2.72	F
CAN P7/P8	Connecting stair between downtown BMT platform and Canarsie line platform	5.00	4.00	2,977	733	930	229	90%	80%	75%	2.72	F
CAN P11	Connecting stair between west landing and Canarsie line platform	4.50	3.50	460	825	144	258	90%	90%	75%	1.07	D
CAN P12	Connecting stair between west landing and Canarsie line platform	4.50	3.50	706	723	221	226	90%	90%	75%	1.16	D

Table 4C-30. No Action Alternative Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E257X	Street escalator connecting R221 free zone to street	1	40	95%	0	1,118	0	349	945	0.39	A
E219	Connecting escalator between R221A paid zone and Canarsie line platform	1	32	75%	0	815	0	255	825	0.41	A

Table 4C-31. No Action Alternative Level of Service Summary: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Union Square West and East 16th Street - southeast corner (A34-East)											
Two-Way Turnstiles	3	1,260	1,935	1,290	1,133	403	354	90%	90%	0.58	B
Union Square West and East 16th Street - southeast corner (A34-South)											
Two-Way Turnstiles	3	1,260	1,935	1,290	1,132	403	354	90%	90%	0.58	B
Union Square East and East 15th Street - southeast corner (A35)											
Two-Way Turnstiles	5	2,100	3,225	1,344	975	420	305	90%	90%	0.34	A
Union Square East and East 15th Street - southwest corner (A36)											
Two-Way Turnstiles	4	1,680	2,580	944	550	295	172	90%	90%	0.28	A
Broadway and East 14th Street - northwest corner (A37)											
Two-Way Turnstiles	4	1,680	2,580	878	904	274	283	90%	90%	0.32	A
High Exit Only Turnstile	1	0	555	0	194	0	61	100%	90%	0.12	A
Fourth Avenue and East 14th Street - northwest corner (R221A-North)											
Two-Way Turnstiles	3	1,260	1,935	439	549	137	172	90%	90%	0.23	A
Fourth Avenue and East 14th Street - northwest corner (R221A-East)											
Two-Way Turnstiles	2	840	1,290	439	549	137	172	90%	90%	0.35	A
Fourth Avenue and East 14th Street - northeast corner (R221)											
Two-Way Turnstiles	7	2,940	4,515	1,202	2,878	376	899	90%	90%	0.39	A
Union Square West and East 16th Street - southeast corner (A33)											
Two-Way Turnstiles	6	2,520	3,870	3,449	1,777	1,078	555	90%	90%	0.65	B
HEET	2	510	1,080	698	496	218	155	90%	90%	0.65	B
High Exit Only Turnstile	2	0	1,110	0	510	0	159	100%	90%	0.16	A

Table 4C-32. CBD Tolling Alternative: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
BMT S3	Street stair at southeast corner of Union Square West and East 16th Street	10.00	8.75	195	1,386	61	433	90%	100%	95%	0.44	A
BMT S4	Street stair at northeast corner of Union Square West and East 16th Street	10.00	8.75	627	3,254	196	1,017	90%	100%	95%	1.07	D
M1/M4/S1	Street stair at northwest corner of Broadway and East 14th Street	5.00	4.00	190	581	59	182	90%	100%	95%	0.46	B
M2/M3/S2	Street stair at northeast corner of University Place and East 14th Street	5.00	4.00	341	834	107	261	90%	100%	95%	0.71	C
IRT O1/O2	Street stair at southeast corner of Union Square East and East 15th Street	10.00	8.75	1,071	1,661	335	519	90%	100%	95%	0.75	C
IRT O3/O4	Street stair at Northeast Corner of Fourth Ave and East 14th Street	7.00	5.75	544	233	170	73	90%	100%	95%	0.32	A
BMT S5	Street stair at northeast corner of Union Square West and East 14th Street	10.00	8.75	690	2,517	216	787	90%	100%	95%	0.88	C
BMT S6	Street stair at southwest corner of Union Square East and East 15th Street	19.00	17.25	281	800	88	250	90%	100%	95%	0.15	A
IRT S1	Street stair at northeast corner of Broadway and East 14th Street	5.00	4.00	148	681	46	213	90%	100%	80%	0.58	B
IRT S2	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	570	438	178	137	90%	100%	80%	0.57	B
IRT S3	Street stair at northwest corner of Fourth Avenue and East 14th Street	5.00	4.00	158	317	49	99	90%	100%	80%	0.32	A
IRT S4	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	649	314	203	98	90%	100%	80%	0.54	B
BMT P1	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	290	2,053	91	642	90%	90%	75%	0.86	C
BMT P2	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	971	794	303	248	90%	90%	75%	0.60	B
BMT P3	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	1,056	709	330	222	90%	90%	75%	0.59	B
BMT P4	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,648	861	828	269	90%	90%	75%	1.15	D
BMT P5	Connecting stair between A34 paid zone and downtown BMT platform	5.50	4.50	191	1,084	60	339	90%	90%	75%	0.85	C
BMT P6	Connecting stair between A34 paid zone and uptown BMT platform	5.50	4.50	375	1,256	117	393	90%	90%	75%	1.08	D
BMT P11	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	29	900	9	281	100%	90%	75%	0.29	A
BMT P12	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	107	1,020	33	319	90%	90%	75%	0.39	A
BMT P13	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	153	1,775	48	555	90%	90%	75%	0.67	B
BMT P14	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	510	972	159	304	90%	90%	75%	0.49	B
IRT ML2	Connecting stair at IRT mezzanine in A35 paid zone	13.50	12.00	1,575	2,586	492	808	90%	90%	75%	1.00	D
CAN ML4	Connecting stair between A37 paid zone and west landing	12.00	10.75	166	4,047	52	1,265	100%	90%	75%	1.08	D
CAN ML5	Connecting stair between R221A paid zone and lower east landing	17.50	15.00	1,274	3,388	398	1,059	90%	90%	75%	0.92	C
ML6	Connecting stair between R221A paid zone and lower east landing	12.50	11.00	1,274	3,388	398	1,059	90%	90%	75%	1.25	D
IRT P1	Connecting stair between R221 paid zone and uptown IRT platform	6.50	5.50	2,003	1,612	626	504	90%	90%	75%	1.84	F
IRT P5	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	650	521	203	163	90%	90%	75%	0.66	B
IRT P6	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	2,125	506	664	158	90%	90%	75%	1.56	E
IRT P8	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	1,781	1,497	557	468	90%	90%	75%	1.84	F
IRT P9	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	1,529	292	478	91	90%	90%	75%	1.07	D
IRT P10	Connecting stair between R221 paid zone and downtown IRT platform	5.00	4.00	51	1,140	16	356	100%	90%	75%	0.82	C
IRT P11	Connecting stair between A35 paid zone and uptown IRT platform	4.00	3.00	1,168	344	365	108	90%	90%	75%	1.36	E
IRT P12	Connecting stair between A35 paid zone and uptown IRT platform	5.50	4.50	3,968	364	1,240	114	90%	90%	75%	2.52	F
IRT P12ABC	Connecting stair between A35 paid zone and downtown IRT platform	12.00	10.50	1,559	1,490	487	466	90%	90%	75%	0.82	C
IRT P15	Connecting stair between A35 paid zone and downtown IRT platform	6.00	5.00	17	1,096	5	343	100%	90%	75%	0.62	B
CAN P2	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	320	2,257	100	705	90%	90%	75%	1.15	D
CAN P3	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	954	1,130	298	353	90%	90%	75%	0.88	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
CAN P5/P6	Connecting stair between uptown BMT platform and Canarsie line platform	5.00	4.00	1,069	2,771	334	866	90%	80%	75%	2.91	F
CAN P7/P8	Connecting stair between downtown BMT platform and Canarsie line platform	5.00	4.00	755	2,202	236	688	90%	80%	75%	2.25	F
CAN P11	Connecting stair between west landing and Canarsie line platform	4.50	3.50	55	2,072	17	648	100%	90%	75%	1.68	F
CAN P12	Connecting stair between west landing and Canarsie line platform	4.50	3.50	110	1,975	34	617	100%	90%	75%	1.64	E

Table 4C-33. CBD Tolling Alternative: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E257X	Street escalator connecting R221 free zone to street	1	40	95%	0	1,706	0	533	945	0.59	B
E219	Connecting escalator between R221A paid zone and Canarsie line platform	1	32	75%	0	2,519	0	787	825	1.27	D+

+ denotes a significant adverse effect

Table 4C-34. CBD Tolling Alternative: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Union Square West and East 16th Street - southeast corner (A34-East)											
Two-Way Turnstiles	3	1,260	1,935	345	1,259	108	393	90%	90%	0.35	A
Union Square West and East 16th Street - southeast corner (A34-South)											
Two-Way Turnstiles	3	1,260	1,935	345	1,258	108	393	90%	90%	0.35	A
Union Square East and East 15th Street - southeast corner (A35)											
Two-Way Turnstiles	5	2,100	3,225	1,071	1,661	335	519	90%	90%	0.38	A
Union Square East and East 15th Street - southwest corner (A36)											
Two-Way Turnstiles	4	1,680	2,580	281	800	88	250	90%	90%	0.18	A
Broadway and East 14th Street - northwest corner (A37)											
Two-Way Turnstiles	4	1,680	2,580	322	873	101	273	90%	90%	0.20	A
High Exit Only Turnstile	1	0	555	0	188	0	59	100%	90%	0.12	A
Fourth Avenue and East 14th Street - northwest corner (R221A-North)											
Two-Way Turnstiles	3	1,260	1,935	153	499	48	156	90%	90%	0.14	A
Fourth Avenue and East 14th Street - northwest corner (R221A-East)											
Two-Way Turnstiles	2	840	1,290	153	499	48	156	90%	90%	0.21	A
Fourth Avenue and East 14th Street - northeast corner (R221)											
Two-Way Turnstiles	7	2,940	4,515	2,588	2,692	809	841	90%	90%	0.54	B
Union Square West and East 16th Street - southeast corner (A33)											
Two-Way Turnstiles	6	2,520	3,870	684	2,963	214	926	90%	90%	0.39	A
Two-Way Turnstiles	2	510	1,080	138	827	43	258	90%	90%	0.39	A
Two-Way Turnstiles	2	0	1,110	0	850	0	266	100%	90%	0.27	A

Table 4C-35. CBD Tolling Alternative: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
BMT S3	Street stair at southeast corner of Union Square West and East 16th Street	10.00	8.75	732	1,012	229	316	90%	100%	95%	0.48	B
BMT S4	Street stair at northeast corner of Union Square West and East 16th Street	10.00	8.75	3,472	1,787	1,085	558	90%	100%	95%	1.42	E
M1/M4/S1	Street stair at northwest corner of Broadway and East 14th Street	5.00	4.00	866	361	271	113	90%	100%	95%	0.72	C
M2/M3/S2	Street stair at northeast corner of University Place and East 14th Street	5.00	4.00	1,346	464	421	145	90%	100%	95%	1.06	D
IRT O1/O2	Street stair at southeast corner of Union Square East and East 15th Street	10.00	8.75	1,408	992	440	310	90%	100%	95%	0.65	B
IRT O3/O4	Street stair at Northeast Corner of Fourth Ave and East 14th Street	7.00	5.75	236	543	74	170	90%	100%	95%	0.33	A
BMT S5	Street stair at northeast corner of Union Square West and East 14th Street	10.00	8.75	2,610	2,274	816	711	90%	100%	95%	1.32	D
BMT S6	Street stair at southwest corner of Union Square East and East 15th Street	19.00	17.25	954	552	298	173	90%	100%	95%	0.21	A
IRT S1	Street stair at northeast corner of Broadway and East 14th Street	5.00	4.00	531	668	166	209	90%	100%	80%	0.79	C
IRT S2	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	524	718	164	224	90%	100%	80%	0.73	C
IRT S3	Street stair at northwest corner of Fourth Avenue and East 14th Street	5.00	4.00	371	437	116	137	90%	100%	80%	0.53	B
IRT S4	Street stair at southeast corner of Fourth Avenue and East 14th Street	5.50	4.50	502	517	157	162	90%	100%	80%	0.59	B
BMT P1	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	1,727	864	540	270	90%	90%	75%	0.86	C
BMT P2	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,267	407	708	127	90%	90%	75%	0.86	C
BMT P3	Connecting stair between A34 paid zone and downtown BMT platform	9.50	8.25	2,047	529	640	165	90%	90%	75%	0.84	C
BMT P4	Connecting stair between A34 paid zone and uptown BMT platform	9.50	8.25	2,097	281	655	88	90%	90%	75%	0.76	C
BMT P5	Connecting stair between A34 paid zone and downtown BMT platform	5.50	4.50	668	1,307	209	408	90%	90%	75%	1.28	D
BMT P6	Connecting stair between A34 paid zone and uptown BMT platform	5.50	4.50	387	749	121	234	90%	90%	75%	0.73	C
BMT P11	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	192	700	60	219	90%	90%	75%	0.30	A
BMT P12	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	208	453	65	142	90%	90%	75%	0.22	A
BMT P13	Connecting stair between A33 paid zone and downtown BMT platform	10.00	8.75	1,766	1,794	552	561	90%	90%	75%	1.15	D
BMT P14	Connecting stair between A33 paid zone and uptown BMT platform	10.00	8.75	2,218	374	693	117	90%	90%	75%	0.78	C
IRT ML2	Connecting stair at IRT mezzanine in A35 paid zone	13.50	12.00	1,574	3,690	492	1,153	90%	90%	75%	1.29	D
CAN ML4	Connecting stair between A37 paid zone and west landing	12.00	10.75	1,166	1,548	364	484	90%	90%	75%	0.72	C
CAN ML5	Connecting stair between R221A paid zone and lower east landing	17.50	15.00	4,697	855	1,468	267	90%	90%	75%	0.98	C
ML6	Connecting stair between R221A paid zone and lower east landing	12.50	11.00	4,697	855	1,468	267	90%	90%	75%	1.34	E
IRT P1	Connecting stair between R221 paid zone and uptown IRT platform	6.50	5.50	1,232	2,280	385	713	90%	90%	75%	1.86	F
IRT P5	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	637	904	199	283	90%	90%	75%	0.89	C
IRT P6	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	759	679	237	212	90%	90%	75%	0.90	C
IRT P8	Connecting stair between R221 paid zone and downtown IRT platform	6.00	5.00	341	2,732	107	854	90%	90%	75%	1.86	F
IRT P9	Connecting stair between R221 paid zone and uptown IRT platform	5.50	4.50	860	337	269	105	90%	90%	75%	0.72	C
IRT P10	Connecting stair between R221 paid zone and downtown IRT platform	5.00	4.00	53	2,001	17	625	100%	90%	75%	1.42	E
IRT P11	Connecting stair between A35 paid zone and uptown IRT platform	4.00	3.00	536	259	168	81	90%	90%	75%	0.73	C
IRT P12	Connecting stair between A35 paid zone and uptown IRT platform	5.50	4.50	2,649	221	828	69	90%	90%	75%	1.67	E
IRT P12ABC	Connecting stair between A35 paid zone and downtown IRT platform	12.00	10.50	1,554	2,105	486	658	90%	90%	75%	1.00	C
IRT P15	Connecting stair between A35 paid zone and downtown IRT platform	6.00	5.00	21	1,586	7	496	100%	90%	75%	0.89	C
CAN P2	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	2,182	558	682	174	90%	90%	75%	1.09	D
CAN P3	Connecting stair between lower east landing and Canarsie line platform	8.00	6.75	2,514	298	786	93	90%	90%	75%	1.09	D
CAN P5/P6	Connecting stair between uptown BMT platform and Canarsie line platform	5.00	4.00	2,893	845	904	264	90%	80%	75%	2.74	F
CAN P7/P8	Connecting stair between downtown BMT platform and Canarsie line platform	5.00	4.00	3,021	744	944	233	90%	80%	75%	2.76	F
CAN P11	Connecting stair between west landing and Canarsie line platform	4.50	3.50	465	827	145	258	90%	90%	75%	1.07	D
CAN P12	Connecting stair between west landing and Canarsie line platform	4.50	3.50	714	725	223	227	90%	90%	75%	1.16	D

Table 4C-36. CBD Tolling Alternative: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E257X	Street escalator connecting R221 free zone to street	1	40	95%	0	1,120	0	350	945	0.39	A
E219	Connecting escalator between R221A paid zone and Canarsie line platform	1	32	75%	0	826	0	258	825	0.42	A

Table 4C-37. CBD Tolling Alternative: 14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Union Square West and East 16th Street - southeast corner (A34-East)											
Two-Way Turnstiles	3	1,260	1,935	1,305	1,137	408	355	90%	90%	0.59	B
Union Square West and East 16th Street - southeast corner (A34-South)											
Two-Way Turnstiles	3	1,260	1,935	1,305	1,136	408	355	90%	90%	0.59	B
Union Square East and East 15th Street - southeast corner (A35)											
Two-Way Turnstiles	5	2,100	3,225	1,408	992	440	310	90%	90%	0.35	A
Union Square East and East 15th Street - southwest corner (A36)											
Two-Way Turnstiles	4	1,680	2,580	954	552	298	173	90%	90%	0.28	A
Broadway and East 14th Street - northwest corner (A37)											
Two-Way Turnstiles	4	1,680	2,580	966	925	302	289	90%	90%	0.34	A
High Exit Only Turnstile	1	0	555	0	199	0	62	100%	90%	0.12	A
Fourth Avenue and East 14th Street - northwest corner (R221A-North)											
Two-Way Turnstiles	3	1,260	1,935	451	552	141	173	90%	90%	0.23	A
Fourth Avenue and East 14th Street - northwest corner (R221A-East)											
Two-Way Turnstiles	2	840	1,290	451	552	141	173	90%	90%	0.35	A
Fourth Avenue and East 14th Street - northeast corner (R221)											
Two-Way Turnstiles	7	2,940	4,515	1,266	2,897	396	905	90%	90%	0.40	A
Union Square West and East 16th Street - southeast corner (A33)											
Two-Way Turnstiles	6	2,520	3,870	3,496	1,787	1,093	558	90%	90%	0.66	B
HEET	2	510	1,080	708	499	221	156	90%	90%	0.66	B
High Exit Only Turnstile	2	0	1,110	0	513	0	160	100%	90%	0.16	A

Table 4C-38. Existing Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M18-M19-M20-SB11	N502: northeast corner of Sixth Avenue and West 42nd Street	10.00	8.75	88	2360	28	738	100%	100%	90%	0.65	B
O11-O13	N502: northwest corner of Sixth Avenue and West 42nd Street	7.00	6.00	74	551	23	172	90%	100%	90%	0.26	A
O12-O14	N502: west side of Sixth Ave north of West 42nd Street	7.00	6.00	38	624	12	195	90%	100%	90%	0.28	A
N503 M13-M12	N503: southeast corner of Sixth Avenue and West 42nd Street	5.00	4.00	153	2073	48	648	90%	100%	90%	1.42	E
N503 S8	N503: southeast corner of Sixth Avenue and West 42nd Street	3.00	2.00	153	2073	48	648	90%	100%	90%	2.84	F
O9-O10	N503: southwest corner of Sixth Avenue and West 42nd Street	8.50	7.25	88	930	28	291	90%	100%	90%	0.36	A
N504 M6	N504: southeast corner of Sixth Avenue and West 40th Street	8.00	7.00	231	1052	72	329	90%	100%	90%	0.46	B
N504 S5	N504: southeast corner of Sixth Avenue and West 40th Street	6.00	5.00	231	1052	72	329	90%	100%	90%	0.65	B
N504 M7-M8	N504: northeast corner of Sixth Avenue and West 40th Street	7.00	6.00	81	1154	25	361	90%	100%	90%	0.53	B
N504 S6	N504: northeast corner of Sixth Avenue and West 40th Street	5.00	4.00	81	1154	25	361	90%	100%	90%	0.79	C
N504 M9-M10	N504: northwest corner of Sixth Avenue and West 40th Street	6.00	5.00	86	1636	27	511	100%	100%	90%	0.79	C
N504 O7-O8	N504: northwest corner of Sixth Avenue and West 40th Street	7.00	6.00	86	1636	27	511	100%	100%	90%	0.66	B
O16-O17	N504: northwest corner of Sixth Avenue and West 39th Street	10.00	8.75	107	2306	33	721	100%	100%	90%	0.64	B
R500 S2	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	29	403	9	126	90%	100%	90%	0.28	A
R500 S3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	21	310	7	97	90%	100%	90%	0.21	A
R500 M3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	12.00	10.75	21	310	7	97	90%	100%	90%	0.08	A
R501 M2-M1-S1	R501: southwest corner of West 42nd St and Fifth Ave	5.00	4.00	123	2431	38	760	100%	100%	90%	1.47	E
P13	IND mezzanine west near N502 to southbound platform	9.00	7.75	135	1179	42	368	90%	90%	75%	0.51	B
P14	IND mezzanine east near N502 to northbound platform	9.00	7.75	96	2049	30	640	100%	90%	75%	0.76	C
P10	IND mezzanine east near N503 to northbound platform	5.50	4.50	365	1257	114	393	90%	90%	75%	1.07	D
P11	IND mezzanine west near N503 to southbound platform	5.50	4.50	346	702	108	219	90%	90%	75%	0.68	B
P12	IND mezzanine east near N503 to northbound platform	5.50	4.50	551	1051	172	328	90%	90%	75%	1.03	D
P7	IND mezzanine west near N503 to southbound platform	5.50	4.50	18	546	6	171	100%	90%	75%	0.35	A
P8	IND mezzanine east near N503 to northbound platform	5.50	4.50	7	814	2	254	100%	90%	75%	0.51	B
P9	IND mezzanine west near N503 to southbound platform	5.50	4.50	888	773	278	242	90%	90%	75%	1.04	D
P1	IND mezzanine west near N504 to southbound platform	5.50	4.50	51	799	16	250	90%	90%	75%	0.58	B
P2	IND mezzanine east near N504 to northbound platform	5.50	4.50	59	916	18	286	90%	90%	75%	0.66	B
P3	IND mezzanine west near N504 to southbound platform	5.50	4.50	77	989	24	309	90%	90%	75%	0.72	C
P4	IND mezzanine east near N504 to northbound platform	5.50	4.50	132	1523	41	476	90%	90%	75%	1.12	D
P5	IND mezzanine west near N504 to southbound platform	5.50	4.50	8	680	3	213	100%	90%	75%	0.43	A
P6	IND mezzanine east near N504 to northbound platform	5.50	4.50	13	658	4	206	100%	90%	75%	0.41	A
R500 P5	IRT mezzanine near R500 to IRT platform	9.00	7.75	35	490	11	153	90%	90%	75%	0.21	A
R500 P6	IRT mezzanine near R500 to IRT platform	9.00	7.75	78	1087	24	340	90%	90%	75%	0.46	B
R500 P7	IRT mezzanine near R500 to IRT platform	9.00	7.75	2721	1185	850	370	90%	90%	75%	1.37	E
R501 P1-P2	IRT mezzanine near R501 to IRT platform	9.00	7.75	32	1123	10	351	100%	90%	75%	0.41	A
R501 P3	IRT mezzanine near R501 to IRT platform	9.00	7.75	40	511	13	160	90%	90%	75%	0.22	A
R501 P4	IRT mezzanine near R501 to IRT platform	9.00	7.75	9	274	3	86	100%	90%	75%	0.10	A

Table 4C-39. Existing Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
North side of West 42nd Street at Sixth Avenue (N502)											
Two-Way Turnstiles	5	2,100	3,225	178	2,339	56	731	90%	80%	0.34	A
HEET	1	255	540	22	392	7	122	90%	80%	0.34	A
High Exit Only Turnstile	2	0	1,110	0	805	0	252	100%	80%	0.28	A
South side of West 42nd Street at Sixth Avenue (N503)											
Two-Way Turnstiles	6	2,520	3,870	241	3,003	75	938	90%	80%	0.37	A
North side of West 40th Street at Sixth Avenue (N504)											
Two-Way Turnstiles	6	2,520	3,870	210	3,592	66	1,123	90%	80%	0.43	A
HEET	3	765	1,620	64	1,504	20	470	100%	80%	0.39	A
South side of West 42nd Street between Fifth and Sixth Avenues (R500)											
HEET	2	510	1,080	50	471	16	147	90%	80%	0.22	A
High Exit Only Turnstile	1	0	555	0	242	0	76	100%	80%	0.17	A
South side of West 42nd Street at Fifth Avenue (R501)											
Two-Way Turnstiles	8	3,360	5,160	123	2,431	38	760	100%	80%	0.20	A

Table 4C-40. Existing Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M18-M19-M20-SB11	N502: northeast corner of Sixth Avenue and West 42nd Street	10.00	8.75	1528	337	478	105	90%	100%	90%	0.50	B
O11-O13	N502: northwest corner of Sixth Avenue and West 42nd Street	7.00	6.00	888	99	278	31	90%	100%	90%	0.39	A
O12-O14	N502: west side of Sixth Ave north of West 42nd Street	7.00	6.00	772	94	241	29	90%	100%	90%	0.34	A
N503 M13-M12	N503: southeast corner of Sixth Avenue and West 42nd Street	5.00	4.00	1071	946	335	296	90%	100%	90%	1.23	D
N503 S8	N503: southeast corner of Sixth Avenue and West 42nd Street	3.00	2.00	1071	946	335	296	90%	100%	90%	2.46	F
O9-O10	N503: southwest corner of Sixth Avenue and West 42nd Street	8.50	7.25	617	385	193	120	90%	100%	90%	0.33	A
N504 M6	N504: southeast corner of Sixth Avenue and West 40th Street	8.00	7.00	1052	231	329	72	90%	100%	90%	0.43	A
N504 S5	N504: southeast corner of Sixth Avenue and West 40th Street	6.00	5.00	1052	231	329	72	90%	100%	90%	0.61	B
N504 M7-M8	N504: northeast corner of Sixth Avenue and West 40th Street	7.00	6.00	1033	276	323	86	90%	100%	90%	0.52	B
N504 S6	N504: northeast corner of Sixth Avenue and West 40th Street	5.00	4.00	1033	276	323	86	90%	100%	90%	0.78	C
N504 M9-M10	N504: northwest corner of Sixth Avenue and West 40th Street	6.00	5.00	1067	355	333	111	90%	100%	90%	0.68	B
N504 O7-O8	N504: northwest corner of Sixth Avenue and West 40th Street	7.00	6.00	1067	355	333	111	90%	100%	90%	0.56	B
O16-O17	N504: northwest corner of Sixth Avenue and West 39th Street	10.00	8.75	1172	217	366	68	90%	100%	90%	0.37	A
R500 S2	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	301	173	94	54	90%	100%	90%	0.29	A
R500 S3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	250	73	78	23	90%	100%	90%	0.19	A
R500 M3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	12.00	10.75	250	73	78	23	90%	100%	90%	0.07	A
R501 M2-M1-S1	R501: southwest corner of West 42nd St and Fifth Ave	5.00	4.00	2494	750	779	234	90%	100%	90%	1.92	F
P13	IND mezzanine west near N502 to southbound platform	9.00	7.75	2273	255	710	80	90%	90%	75%	0.86	C
P14	IND mezzanine east near N502 to northbound platform	9.00	7.75	1151	348	360	109	90%	90%	75%	0.52	B
P10	IND mezzanine east near N503 to northbound platform	5.50	4.50	991	787	310	246	90%	90%	75%	1.11	D
P11	IND mezzanine west near N503 to southbound platform	5.50	4.50	809	585	253	183	90%	90%	75%	0.86	C
P12	IND mezzanine east near N503 to northbound platform	5.50	4.50	767	640	240	200	90%	90%	75%	0.88	C
P7	IND mezzanine west near N503 to southbound platform	5.50	4.50	38	367	12	115	90%	90%	75%	0.27	A
P8	IND mezzanine east near N503 to northbound platform	5.50	4.50	36	500	11	156	90%	90%	75%	0.36	A
P9	IND mezzanine west near N503 to southbound platform	5.50	4.50	1687	461	527	144	90%	90%	75%	1.28	D
P1	IND mezzanine west near N504 to southbound platform	5.50	4.50	913	345	285	108	90%	90%	75%	0.76	C
P2	IND mezzanine east near N504 to northbound platform	5.50	4.50	554	205	173	64	90%	90%	75%	0.46	B
P3	IND mezzanine west near N504 to southbound platform	5.50	4.50	1260	343	394	107	90%	90%	75%	0.96	C
P4	IND mezzanine east near N504 to northbound platform	5.50	4.50	1280	268	400	84	90%	90%	75%	0.92	C
P5	IND mezzanine west near N504 to southbound platform	5.50	4.50	36	276	11	86	90%	90%	75%	0.21	A
P6	IND mezzanine east near N504 to northbound platform	5.50	4.50	50	243	16	76	90%	90%	75%	0.20	A
R500 P5	IRT mezzanine near R500 to IRT platform	9.00	7.75	61	369	19	115	90%	90%	75%	0.17	A
R500 P6	IRT mezzanine near R500 to IRT platform	9.00	7.75	442	474	138	148	90%	90%	75%	0.34	A
R500 P7	IRT mezzanine near R500 to IRT platform	9.00	7.75	2634	571	823	178	90%	90%	75%	1.10	D
R501 P1-P2	IRT mezzanine near R501 to IRT platform	9.00	7.75	702	413	219	129	90%	90%	75%	0.40	A
R501 P3	IRT mezzanine near R501 to IRT platform	9.00	7.75	744	149	233	47	90%	90%	75%	0.31	A
R501 P4	IRT mezzanine near R501 to IRT platform	9.00	7.75	42	159	13	50	90%	90%	75%	0.08	A

Table 4C-41. Existing Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
North side of West 42nd Street at Sixth Avenue (N502)											
Two-Way Turnstiles	5	2,100	3,225	2,843	351	888	110	90%	80%	0.52	B
HEET	1	255	540	345	59	108	18	90%	80%	0.52	B
High Exit Only Turnstile	2	0	1,110	0	121	0	38	100%	80%	0.04	A
South side of West 42nd Street at Sixth Avenue (N503)											
Two-Way Turnstiles	6	2,520	3,870	1,688	1,331	528	416	90%	80%	0.38	A
North side of West 40th Street at Sixth Avenue (N504)											
Two-Way Turnstiles	6	2,520	3,870	3,317	761	1,037	238	90%	80%	0.54	B
HEET	3	765	1,620	1,007	318	315	99	90%	80%	0.54	B
South side of West 42nd Street between Fifth and Sixth Avenues (R500)											
HEET	2	510	1,080	551	162	172	51	90%	80%	0.44	A
High Exit Only Turnstile	1	0	555	0	84	0	26	100%	80%	0.06	A
South side of West 42nd Street at Fifth Avenue (R501)											
Two-Way Turnstiles	8	3,360	5,160	2,494	750	779	234	90%	80%	0.32	A

Table 4C-42. No Action Alternative Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M18-M19-M20-SB11	N502: northeast corner of Sixth Avenue and West 42nd Street	10.00	8.75	88	2360	28	738	100%	100%	90%	0.65	B
O11-O13	N502: northwest corner of Sixth Avenue and West 42nd Street	7.00	6.00	74	551	23	172	90%	100%	90%	0.26	A
O12-O14	N502: west side of Sixth Ave north of West 42nd Street	7.00	6.00	38	624	12	195	90%	100%	90%	0.28	A
N503 M13-M12	N503: southeast corner of Sixth Avenue and West 42nd Street	5.00	4.00	153	2073	48	648	90%	100%	90%	1.42	E
N503 S8	N503: southeast corner of Sixth Avenue and West 42nd Street	3.00	2.00	153	2073	48	648	90%	100%	90%	2.84	F
O9-O10	N503: southwest corner of Sixth Avenue and West 42nd Street	8.50	7.25	88	930	28	291	90%	100%	90%	0.36	A
N504 M6	N504: southeast corner of Sixth Avenue and West 40th Street	8.00	7.00	231	1052	72	329	90%	100%	90%	0.46	B
N504 S5	N504: southeast corner of Sixth Avenue and West 40th Street	6.00	5.00	231	1052	72	329	90%	100%	90%	0.65	B
N504 M7-M8	N504: northeast corner of Sixth Avenue and West 40th Street	7.00	6.00	81	1154	25	361	90%	100%	90%	0.53	B
N504 S6	N504: northeast corner of Sixth Avenue and West 40th Street	5.00	4.00	81	1154	25	361	90%	100%	90%	0.79	C
N504 M9-M10	N504: northwest corner of Sixth Avenue and West 40th Street	6.00	5.00	86	1636	27	511	100%	100%	90%	0.79	C
N504 O7-O8	N504: northwest corner of Sixth Avenue and West 40th Street	7.00	6.00	86	1636	27	511	100%	100%	90%	0.66	B
O16-O17	N504: northwest corner of Sixth Avenue and West 39th Street	10.00	8.75	107	2306	33	721	100%	100%	90%	0.64	B
R500 S2	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	29	403	9	126	90%	100%	90%	0.28	A
R500 S3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	21	310	7	97	90%	100%	90%	0.21	A
R500 M3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	12.00	10.75	21	310	7	97	90%	100%	90%	0.08	A
R501 M2-M1-S1	R501: southwest corner of West 42nd St and Fifth Ave	5.00	4.00	123	2431	38	760	100%	100%	90%	1.47	E
P13	IND mezzanine west near N502 to southbound platform	9.00	7.75	135	1179	42	368	90%	90%	75%	0.51	B
P14	IND mezzanine east near N502 to northbound platform	9.00	7.75	96	2049	30	640	100%	90%	75%	0.76	C
P10	IND mezzanine east near N503 to northbound platform	5.50	4.50	365	1257	114	393	90%	90%	75%	1.07	D
P11	IND mezzanine west near N503 to southbound platform	5.50	4.50	346	702	108	219	90%	90%	75%	0.68	B
P12	IND mezzanine east near N503 to northbound platform	5.50	4.50	551	1051	172	328	90%	90%	75%	1.03	D
P7	IND mezzanine west near N503 to southbound platform	5.50	4.50	18	546	6	171	100%	90%	75%	0.35	A
P8	IND mezzanine east near N503 to northbound platform	5.50	4.50	7	814	2	254	100%	90%	75%	0.51	B
P9	IND mezzanine west near N503 to southbound platform	5.50	4.50	888	773	278	242	90%	90%	75%	1.04	D
P1	IND mezzanine west near N504 to southbound platform	5.50	4.50	51	799	16	250	90%	90%	75%	0.58	B
P2	IND mezzanine east near N504 to northbound platform	5.50	4.50	59	916	18	286	90%	90%	75%	0.66	B
P3	IND mezzanine west near N504 to southbound platform	5.50	4.50	77	989	24	309	90%	90%	75%	0.72	C
P4	IND mezzanine east near N504 to northbound platform	5.50	4.50	132	1523	41	476	90%	90%	75%	1.12	D
P5	IND mezzanine west near N504 to southbound platform	5.50	4.50	8	680	3	213	100%	90%	75%	0.43	A
P6	IND mezzanine east near N504 to northbound platform	5.50	4.50	13	658	4	206	100%	90%	75%	0.41	A
R500 P5	IRT mezzanine near R500 to IRT platform	9.00	7.75	35	490	11	153	90%	90%	75%	0.21	A
R500 P6	IRT mezzanine near R500 to IRT platform	9.00	7.75	78	1087	24	340	90%	90%	75%	0.46	B
R500 P7	IRT mezzanine near R500 to IRT platform	9.00	7.75	2721	1185	850	370	90%	90%	75%	1.37	E
R501 P1-P2	IRT mezzanine near R501 to IRT platform	9.00	7.75	32	1123	10	351	100%	90%	75%	0.41	A
R501 P3	IRT mezzanine near R501 to IRT platform	9.00	7.75	40	511	13	160	90%	90%	75%	0.22	A
R501 P4	IRT mezzanine near R501 to IRT platform	9.00	7.75	9	274	3	86	100%	90%	75%	0.10	A

Table 4C-43. No Action Alternative Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
North side of West 42nd Street at Sixth Avenue (N502)											
Two-Way Turnstiles	5	2,100	3,225	178	2,339	56	731	90%	80%	0.34	A
HEET	1	255	540	22	392	7	122	90%	80%	0.34	A
High Exit Only Turnstile	2	0	1,110	0	805	0	252	100%	80%	0.28	A
South side of West 42nd Street at Sixth Avenue (N503)											
Two-Way Turnstiles	6	2,520	3,870	241	3,003	75	938	90%	80%	0.37	A
North side of West 40th Street at Sixth Avenue (N504)											
Two-Way Turnstiles	6	2,520	3,870	210	3,592	66	1,123	90%	80%	0.43	A
HEET	3	765	1,620	64	1,504	20	470	100%	80%	0.39	A
South side of West 42nd Street between Fifth and Sixth Avenues (R500)											
HEET	2	510	1,080	50	471	16	147	90%	80%	0.22	A
High Exit Only Turnstile	1	0	555	0	242	0	76	100%	80%	0.17	A
South side of West 42nd Street at Fifth Avenue (R501)											
Two-Way Turnstiles	8	3,360	5,160	123	2,431	38	760	100%	80%	0.20	A

Table 4C-44. No Action Alternative Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M18-M19-M20-SB11	N502: northeast corner of Sixth Avenue and West 42nd Street	10.00	8.75	1528	337	478	105	90%	100%	90%	0.50	B
O11-O13	N502: northwest corner of Sixth Avenue and West 42nd Street	7.00	6.00	888	99	278	31	90%	100%	90%	0.39	A
O12-O14	N502: west side of Sixth Ave north of West 42nd Street	7.00	6.00	772	94	241	29	90%	100%	90%	0.34	A
N503 M13-M12	N503: southeast corner of Sixth Avenue and West 42nd Street	5.00	4.00	1071	946	335	296	90%	100%	90%	1.23	D
N503 S8	N503: southeast corner of Sixth Avenue and West 42nd Street	3.00	2.00	1071	946	335	296	90%	100%	90%	2.46	F
O9-O10	N503: southwest corner of Sixth Avenue and West 42nd Street	8.50	7.25	617	385	193	120	90%	100%	90%	0.33	A
N504 M6	N504: southeast corner of Sixth Avenue and West 40th Street	8.00	7.00	1052	231	329	72	90%	100%	90%	0.43	A
N504 S5	N504: southeast corner of Sixth Avenue and West 40th Street	6.00	5.00	1052	231	329	72	90%	100%	90%	0.61	B
N504 M7-M8	N504: northeast corner of Sixth Avenue and West 40th Street	7.00	6.00	1033	276	323	86	90%	100%	90%	0.52	B
N504 S6	N504: northeast corner of Sixth Avenue and West 40th Street	5.00	4.00	1033	276	323	86	90%	100%	90%	0.78	C
N504 M9-M10	N504: northwest corner of Sixth Avenue and West 40th Street	6.00	5.00	1067	355	333	111	90%	100%	90%	0.68	B
N504 O7-O8	N504: northwest corner of Sixth Avenue and West 40th Street	7.00	6.00	1067	355	333	111	90%	100%	90%	0.56	B
O16-O17	N504: northwest corner of Sixth Avenue and West 39th Street	10.00	8.75	1172	217	366	68	90%	100%	90%	0.37	A
R500 S2	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	301	173	94	54	90%	100%	90%	0.29	A
R500 S3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	250	73	78	23	90%	100%	90%	0.19	A
R500 M3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	12.00	10.75	250	73	78	23	90%	100%	90%	0.07	A
R501 M2-M1-S1	R501: southwest corner of West 42nd St and Fifth Ave	5.00	4.00	2494	750	779	234	90%	100%	90%	1.92	F
P13	IND mezzanine west near N502 to southbound platform	9.00	7.75	2273	255	710	80	90%	90%	75%	0.86	C
P14	IND mezzanine east near N502 to northbound platform	9.00	7.75	1151	348	360	109	90%	90%	75%	0.52	B
P10	IND mezzanine east near N503 to northbound platform	5.50	4.50	991	787	310	246	90%	90%	75%	1.11	D
P11	IND mezzanine west near N503 to southbound platform	5.50	4.50	809	585	253	183	90%	90%	75%	0.86	C
P12	IND mezzanine east near N503 to northbound platform	5.50	4.50	767	640	240	200	90%	90%	75%	0.88	C
P7	IND mezzanine west near N503 to southbound platform	5.50	4.50	38	367	12	115	90%	90%	75%	0.27	A
P8	IND mezzanine east near N503 to northbound platform	5.50	4.50	36	500	11	156	90%	90%	75%	0.36	A
P9	IND mezzanine west near N503 to southbound platform	5.50	4.50	1687	461	527	144	90%	90%	75%	1.28	D
P1	IND mezzanine west near N504 to southbound platform	5.50	4.50	922	348	288	109	90%	90%	75%	0.77	C
P2	IND mezzanine east near N504 to northbound platform	5.50	4.50	554	205	173	64	90%	90%	75%	0.46	B
P3	IND mezzanine west near N504 to southbound platform	5.50	4.50	1260	343	394	107	90%	90%	75%	0.96	C
P4	IND mezzanine east near N504 to northbound platform	5.50	4.50	1293	271	404	85	90%	90%	75%	0.93	C
P5	IND mezzanine west near N504 to southbound platform	5.50	4.50	36	276	11	86	90%	90%	75%	0.21	A
P6	IND mezzanine east near N504 to northbound platform	5.50	4.50	50	243	16	76	90%	90%	75%	0.20	A
R500 P5	IRT mezzanine near R500 to IRT platform	9.00	7.75	61	369	19	115	90%	90%	75%	0.17	A
R500 P6	IRT mezzanine near R500 to IRT platform	9.00	7.75	442	474	138	148	90%	90%	75%	0.34	A
R500 P7	IRT mezzanine near R500 to IRT platform	9.00	7.75	2660	577	831	180	90%	90%	75%	1.11	D
R501 P1-P2	IRT mezzanine near R501 to IRT platform	9.00	7.75	702	413	219	129	90%	90%	75%	0.40	A
R501 P3	IRT mezzanine near R501 to IRT platform	9.00	7.75	744	149	233	47	90%	90%	75%	0.31	A
R501 P4	IRT mezzanine near R501 to IRT platform	9.00	7.75	42	159	13	50	90%	90%	75%	0.08	A

Table 4C-45. No Action Alternative Level of Service Summary: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
North side of West 42nd Street at Sixth Avenue (N502)											
Two-Way Turnstiles	5	2,100	3,225	2,843	351	888	110	90%	80%	0.52	B
HEET	1	255	540	345	59	108	18	90%	80%	0.52	B
High Exit Only Turnstile	2	0	1,110	0	121	0	38	100%	80%	0.04	A
South side of West 42nd Street at Sixth Avenue (N503)											
Two-Way Turnstiles	6	2,520	3,870	1,688	1,331	528	416	90%	80%	0.38	A
North side of West 40th Street at Sixth Avenue (N504)											
Two-Way Turnstiles	6	2,520	3,870	3,317	761	1,037	238	90%	80%	0.54	B
HEET	3	765	1,620	1,007	318	315	99	90%	80%	0.54	B
South side of West 42nd Street between Fifth and Sixth Avenues (R500)											
HEET	2	510	1,080	551	162	172	51	90%	80%	0.44	A
High Exit Only Turnstile	1	0	555	0	84	0	26	100%	80%	0.06	A
South side of West 42nd Street at Fifth Avenue (R501)											
Two-Way Turnstiles	8	3,360	5,160	2,494	750	779	234	90%	80%	0.32	A

Table 4C-46. CBD Tolling Alternative: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M18-M19-M20-SB11	N502: northeast corner of Sixth Avenue and West 42nd Street	10.00	8.75	91	2385	28	745	100%	100%	90%	0.65	B
O11-O13	N502: northwest corner of Sixth Avenue and West 42nd Street	7.00	6.00	76	557	24	174	90%	100%	90%	0.27	A
O12-O14	N502: west side of Sixth Ave north of West 42nd Street	7.00	6.00	39	631	12	197	90%	100%	90%	0.29	A
N503 M13-M12	N503: southeast corner of Sixth Avenue and West 42nd Street	5.00	4.00	158	2095	49	655	90%	100%	90%	1.44	E
N503 S8	N503: southeast corner of Sixth Avenue and West 42nd Street	3.00	2.00	158	2095	49	655	90%	100%	90%	2.88	F
O9-O10	N503: southwest corner of Sixth Avenue and West 42nd Street	8.50	7.25	91	940	28	294	90%	100%	90%	0.36	A
N504 M6	N504: southeast corner of Sixth Avenue and West 40th Street	8.00	7.00	238	1063	74	332	90%	100%	90%	0.47	B
N504 S5	N504: southeast corner of Sixth Avenue and West 40th Street	6.00	5.00	238	1063	74	332	90%	100%	90%	0.66	B
N504 M7-M8	N504: northeast corner of Sixth Avenue and West 40th Street	7.00	6.00	83	1166	26	364	90%	100%	90%	0.53	B
N504 S6	N504: northeast corner of Sixth Avenue and West 40th Street	5.00	4.00	83	1166	26	364	90%	100%	90%	0.80	C
N504 M9-M10	N504: northwest corner of Sixth Avenue and West 40th Street	6.00	5.00	89	1654	28	517	100%	100%	90%	0.80	C
N504 O7-O8	N504: northwest corner of Sixth Avenue and West 40th Street	7.00	6.00	89	1654	28	517	100%	100%	90%	0.67	B
O16-O17	N504: northwest corner of Sixth Avenue and West 39th Street	10.00	8.75	110	2331	34	728	100%	100%	90%	0.64	B
R500 S2	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	30	407	9	127	90%	100%	90%	0.28	A
R500 S3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	22	313	7	98	90%	100%	90%	0.21	A
R500 M3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	12.00	10.75	22	313	7	98	90%	100%	90%	0.08	A
R501 M2-M1-S1	R501: southwest corner of West 42nd St and Fifth Ave	5.00	4.00	127	2457	40	768	100%	100%	90%	1.49	E
P13	IND mezzanine west near N502 to southbound platform	9.00	7.75	138	1196	43	374	90%	90%	75%	0.52	B
P14	IND mezzanine east near N502 to northbound platform	9.00	7.75	98	2070	31	647	100%	90%	75%	0.77	C
P10	IND mezzanine east near N503 to northbound platform	5.50	4.50	379	1263	118	395	90%	90%	75%	1.08	D
P11	IND mezzanine west near N503 to southbound platform	5.50	4.50	373	708	117	221	90%	90%	75%	0.70	B
P12	IND mezzanine east near N503 to northbound platform	5.50	4.50	572	1059	179	331	90%	90%	75%	1.05	D
P7	IND mezzanine west near N503 to southbound platform	5.50	4.50	19	550	6	172	100%	90%	75%	0.35	A
P8	IND mezzanine east near N503 to northbound platform	5.50	4.50	7	819	2	256	100%	90%	75%	0.51	B
P9	IND mezzanine west near N503 to southbound platform	5.50	4.50	958	780	299	244	90%	90%	75%	1.08	D
P1	IND mezzanine west near N504 to southbound platform	5.50	4.50	56	807	18	252	90%	90%	75%	0.59	B
P2	IND mezzanine east near N504 to northbound platform	5.50	4.50	60	928	19	290	90%	90%	75%	0.67	B
P3	IND mezzanine west near N504 to southbound platform	5.50	4.50	82	999	26	312	90%	90%	75%	0.73	C
P4	IND mezzanine east near N504 to northbound platform	5.50	4.50	135	1542	42	482	90%	90%	75%	1.13	D
P5	IND mezzanine west near N504 to southbound platform	5.50	4.50	9	687	3	215	100%	90%	75%	0.43	A
P6	IND mezzanine east near N504 to northbound platform	5.50	4.50	13	666	4	208	100%	90%	75%	0.42	A
R500 P5	IRT mezzanine near R500 to IRT platform	9.00	7.75	35	517	11	162	90%	90%	75%	0.22	A
R500 P6	IRT mezzanine near R500 to IRT platform	9.00	7.75	79	1128	25	353	90%	90%	75%	0.48	B
R500 P7	IRT mezzanine near R500 to IRT platform	9.00	7.75	2753	1252	860	391	90%	90%	75%	1.41	E
R501 P1-P2	IRT mezzanine near R501 to IRT platform	9.00	7.75	45	1126	14	352	100%	90%	75%	0.42	A
R501 P3	IRT mezzanine near R501 to IRT platform	9.00	7.75	56	514	18	161	90%	90%	75%	0.22	A
R501 P4	IRT mezzanine near R501 to IRT platform	9.00	7.75	13	276	4	86	100%	90%	75%	0.10	A

Table 4C-47. CBD Tolling Alternative: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
North side of West 42nd Street at Sixth Avenue (N502)											
Two-Way Turnstiles	5	2,100	3,225	184	2,364	57	739	90%	80%	0.35	A
HEET	1	255	540	22	396	7	124	90%	80%	0.35	A
High Exit Only Turnstile	2	0	1,110	0	814	0	254	100%	80%	0.29	A
South side of West 42nd Street at Sixth Avenue (N503)											
Two-Way Turnstiles	6	2,520	3,870	248	3,035	78	948	90%	80%	0.37	A
North side of West 40th Street at Sixth Avenue (N504)											
Two-Way Turnstiles	6	2,520	3,870	222	3,639	69	1,137	90%	80%	0.44	A
HEET	3	765	1,620	67	1,523	21	476	100%	80%	0.39	A
South side of West 42nd Street between Fifth and Sixth Avenues (R500)											
HEET	2	510	1,080	51	476	16	149	90%	80%	0.23	A
High Exit Only Turnstile	1	0	555	0	245	0	76	100%	80%	0.17	A
South side of West 42nd Street at Fifth Avenue (R501)											
Two-Way Turnstiles	8	3,360	5,160	127	2,457	40	768	100%	80%	0.20	A

Table 4C-48. CBD Tolling Alternative: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M18-M19-M20-SB11	N502: northeast corner of Sixth Avenue and West 42nd Street	10.00	8.75	1,551	340	485	106	90%	100%	90%	0.51	B
O11-O13	N502: northwest corner of Sixth Avenue and West 42nd Street	7.00	6.00	901	100	282	31	90%	100%	90%	0.39	A
O12-O14	N502: west side of Sixth Ave north of West 42nd Street	7.00	6.00	784	95	245	30	90%	100%	90%	0.34	A
N503 M13-M12	N503: southeast corner of Sixth Avenue and West 42nd Street	5.00	4.00	1,087	955	340	298	90%	100%	90%	1.24	D
N503 S8	N503: southeast corner of Sixth Avenue and West 42nd Street	3.00	2.00	1,087	955	340	298	90%	100%	90%	2.49	F
O9-O10	N503: southwest corner of Sixth Avenue and West 42nd Street	8.50	7.25	626	389	196	122	90%	100%	90%	0.34	A
N504 M6	N504: southeast corner of Sixth Avenue and West 40th Street	8.00	7.00	1,068	233	334	73	90%	100%	90%	0.44	A
N504 S5	N504: southeast corner of Sixth Avenue and West 40th Street	6.00	5.00	1,068	233	334	73	90%	100%	90%	0.61	B
N504 M7-M8	N504: northeast corner of Sixth Avenue and West 40th Street	7.00	6.00	1,049	279	328	87	90%	100%	90%	0.52	B
N504 S6	N504: northeast corner of Sixth Avenue and West 40th Street	5.00	4.00	1,049	279	328	87	90%	100%	90%	0.79	C
N504 M9-M10	N504: northwest corner of Sixth Avenue and West 40th Street	6.00	5.00	1,083	358	338	112	90%	100%	90%	0.69	B
N504 O7-O8	N504: northwest corner of Sixth Avenue and West 40th Street	7.00	6.00	1,083	358	338	112	90%	100%	90%	0.57	B
O16-O17	N504: northwest corner of Sixth Avenue and West 39th Street	10.00	8.75	1,190	219	372	68	90%	100%	90%	0.38	A
R500 S2	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	306	175	96	55	90%	100%	90%	0.29	A
R500 S3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	5.00	4.00	254	74	79	23	90%	100%	90%	0.19	A
R500 M3	R500: south side of West 42nd Street between Fifth and Sixth Avenues	12.00	10.75	254	74	79	23	90%	100%	90%	0.07	A
R501 M2-M1-S1	R501: southwest corner of West 42nd St and Fifth Ave	5.00	4.00	2,531	757	791	237	90%	100%	90%	1.95	F
P13	IND mezzanine west near N502 to southbound platform	9.00	7.75	2,296	257	718	80	90%	90%	75%	0.86	C
P14	IND mezzanine east near N502 to northbound platform	9.00	7.75	1,176	351	368	110	90%	90%	75%	0.53	B
P10	IND mezzanine east near N503 to northbound platform	5.50	4.50	998	823	312	257	90%	90%	75%	1.13	D
P11	IND mezzanine west near N503 to southbound platform	5.50	4.50	824	600	258	188	90%	90%	75%	0.88	C
P12	IND mezzanine east near N503 to northbound platform	5.50	4.50	773	670	242	209	90%	90%	75%	0.90	C
P7	IND mezzanine west near N503 to southbound platform	5.50	4.50	38	376	12	118	90%	90%	75%	0.28	A
P8	IND mezzanine east near N503 to northbound platform	5.50	4.50	36	524	11	164	90%	90%	75%	0.38	A
P9	IND mezzanine west near N503 to southbound platform	5.50	4.50	1,718	474	537	148	90%	90%	75%	1.31	D
P1	IND mezzanine west near N504 to southbound platform	5.50	4.50	925	356	289	111	90%	90%	75%	0.77	C
P2	IND mezzanine east near N504 to northbound platform	5.50	4.50	561	214	175	67	90%	90%	75%	0.47	B
P3	IND mezzanine west near N504 to southbound platform	5.50	4.50	1,277	354	399	111	90%	90%	75%	0.97	C
P4	IND mezzanine east near N504 to northbound platform	5.50	4.50	1,296	280	405	88	90%	90%	75%	0.93	C
P5	IND mezzanine west near N504 to southbound platform	5.50	4.50	36	285	11	89	90%	90%	75%	0.22	A
P6	IND mezzanine east near N504 to northbound platform	5.50	4.50	51	253	16	79	90%	90%	75%	0.20	A
R500 P5	IRT mezzanine near R500 to IRT platform	9.00	7.75	62	375	19	117	90%	90%	75%	0.17	A
R500 P6	IRT mezzanine near R500 to IRT platform	9.00	7.75	449	481	140	150	90%	90%	75%	0.34	A
R500 P7	IRT mezzanine near R500 to IRT platform	9.00	7.75	2,679	580	837	181	90%	90%	75%	1.12	D
R501 P1-P2	IRT mezzanine near R501 to IRT platform	9.00	7.75	720	420	225	131	90%	90%	75%	0.41	A
R501 P3	IRT mezzanine near R501 to IRT platform	9.00	7.75	763	153	238	48	90%	90%	75%	0.31	A
R501 P4	IRT mezzanine near R501 to IRT platform	9.00	7.75	43	163	13	51	90%	90%	75%	0.08	A

Table 4C-49. CBD Tolling Alternative: 42nd Street Bryant Park Station (B, D, F, M, and No. 7 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
North side of West 42nd Street at Sixth Avenue (N502)											
Two-Way Turnstiles	5	2,100	3,225	2,886	354	902	111	90%	80%	0.53	B
HEET	1	255	540	350	59	109	19	90%	80%	0.52	B
High Exit Only Turnstile	2	0	1,110	0	122	0	38	100%	80%	0.04	A
South side of West 42nd Street at Sixth Avenue (N503)											
Two-Way Turnstiles	6	2,520	3,870	1,713	1,343	535	420	90%	80%	0.39	A
North side of West 40th Street at Sixth Avenue (N504)											
Two-Way Turnstiles	6	2,520	3,870	3,367	768	1,052	240	90%	80%	0.55	B
HEET	3	765	1,620	1,022	321	319	100	90%	80%	0.55	B
South side of West 42nd Street between Fifth and Sixth Avenues (R500)											
HEET	2	510	1,080	559	164	175	51	90%	80%	0.45	A
High Exit Only Turnstile	1	0	555	0	84	0	26	100%	80%	0.06	A
South side of West 42nd Street at Fifth Avenue (R501)											
Two-Way Turnstiles	8	3,360	5,160	2,531	757	791	237	90%	80%	0.33	A

Table 4C-50. Existing Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7/S14	R147 FCA: Street stair at southeast corner of Seventh Avenue and West 42nd Street	8.00	6.75	166	533	52	167	90%	100%	90%	0.26	A
M10/S11	R148 FCA: Street stair at southeast corner of Broadway and West 42nd Street	4.00	3.00	147	1,322	46	413	90%	100%	90%	1.25	D
O9/O10/O11	N62A FCA: Street stair at northeast corner of Eighth Avenue and West 42nd Street	10.00	8.75	113	145	35	45	90%	100%	90%	0.07	A
S2/M2	N63 FCA: Street stair at southeast corner of Eighth Avenue and West 40th Street	4.00	3.00	212	1,445	66	452	90%	100%	90%	1.40	E
S8/M9	N62B FCA: Street stair at northwest corner of Eighth Avenue and West 42nd Street	5.00	4.00	387	349	121	109	90%	100%	90%	0.45	A
S10/M11	N61 FCA: Street stair at southwest corner of Eighth Avenue and West 43rd Street	5.00	4.00	371	528	116	165	90%	100%	90%	0.55	B
O11/M12	N60 FCA: Street stair at southwest corner of Eighth Avenue and West 44th Street	7.50	6.25	123	351	38	110	90%	100%	90%	0.19	A
S13/M14	N60 FCA: Street stair at northwest corner of Eighth Avenue and West 44th Street	4.50	3.50	415	589	130	184	90%	100%	90%	0.71	C
S12/M13	N60 FCA: Street stair at southeast corner of Eighth Avenue and West 44th Street	3.50	2.50	77	448	24	140	90%	100%	90%	0.53	B
O3/O4	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	15.50	14.00	389	1,465	122	458	90%	100%	90%	0.33	A
M9	R151 FCA: Street stair at southwest corner of Seventh Avenue and West 42nd Street	13.00	11.75	805	709	252	222	90%	100%	90%	0.31	A
M11	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	14.50	13.00	389	1,465	122	458	90%	100%	90%	0.36	A
O1/O2	R143 FCA: Street stair at southwest corner of Seventh Avenue and West 40th Street	9.50	8.25	445	1,216	139	380	90%	100%	90%	0.50	B
M1/S2	R143 FCA: Street stair at southeast corner of Seventh Avenue and West 40th Street	4.00	3.00	152	1,960	48	613	90%	100%	90%	1.80	F
M2/S2	A21 FCA: Street stair at southwest corner of Broadway and West 40th Street	4.00	3.00	175	1,416	55	443	90%	100%	90%	1.35	E
M4/S4	A21 FCA: Street stair at northwest corner of Broadway and West 40th Street	4.00	3.00	429	758	134	237	90%	100%	90%	0.98	C
M1/S1	A21 FCA: Street stair at southeast corner of Broadway and West 40th Street	4.50	3.50	43	1,364	13	426	100%	100%	90%	0.93	C
M3/S3	A21 FCA: Street stair at northeast corner of Broadway and West 40th Street	4.00	3.00	28	802	9	251	100%	100%	90%	0.64	B
IND P1	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	762	725	238	227	90%	100%	75%	0.53	B
IND P2	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	1,589	626	497	196	90%	100%	75%	0.75	C
IND P3	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	194	787	61	246	90%	80%	75%	0.40	A
IND P4	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	407	376	127	118	90%	80%	75%	0.31	A
IND P5	Connecting stair between N62 paid zone and downtown A/C/E platform	8.50	7.50	153	338	48	106	90%	80%	75%	0.20	A
IND P6	Connecting stair between N62 paid zone and downtown A/C/E platform	9.00	7.75	619	651	193	203	90%	80%	75%	0.49	B
IND P7	Connecting stair between N62B paid zone and downtown A/C/E platform	7.50	6.50	575	449	180	140	90%	80%	75%	0.47	B
IND P8	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,169	512	365	160	90%	80%	75%	0.76	C
IND P9	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,496	975	468	305	90%	80%	75%	1.13	D
IND P10	Connecting stair between N61 paid zone and uptown A/C/E platform	7.50	6.50	33	282	10	88	90%	80%	75%	0.15	A
IND P11	Connecting stair between N61 paid zone and uptown A/C/E platform	6.00	5.00	448	384	140	120	90%	80%	75%	0.50	B
IND P12	Connecting stair between N60 paid zone and uptown A/C/E platform	5.00	4.00	8	312	3	98	100%	80%	75%	0.22	A
IND P13	Connecting stair between N60 paid zone and uptown A/C/E platform	7.50	6.50	139	445	43	139	90%	80%	75%	0.27	A
IND P14	Connecting stair between N62B paid zone and downtown A/C/E platform	6.00	4.75	396	731	124	228	90%	80%	75%	0.72	C
IND P15	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.25	2,745	520	858	163	90%	80%	75%	1.53	E
IND P16	Connecting stair between N60 paid zone and uptown A/C/E platform	8.00	6.75	61	227	19	71	90%	80%	75%	0.13	A
FLU PL1/PL2	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	2,378	672	743	210	90%	80%	75%	1.43	E
FLU PL3	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	733	675	229	211	90%	80%	75%	0.67	B
FLU PL5	Connecting stair between lower mezzanine and No. 7 platform	8.75	7.50	2,301	1,436	719	449	90%	80%	75%	1.48	E
FLU PL7	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	1,295	799	405	250	90%	80%	75%	0.92	C
FLU PL8	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,150	1,143	672	357	90%	80%	75%	1.44	E
IRT P1	Connecting stair between R143 paid zone and uptown 1/2/3 platform	11.50	10.00	284	1,388	89	434	90%	100%	75%	0.49	B
IRT P2	Connecting stair between R143 paid zone and downtown 1/2/3 platform	11.50	10.00	398	2,155	124	673	90%	100%	75%	0.76	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
IRT P3/P5	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	397	2,981	124	932	90%	80%	75%	1.66	E
IRT P4/P6	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	470	1,904	147	595	90%	80%	75%	1.16	D
IRT P7/P9	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	1,348	1,444	421	451	90%	80%	75%	1.34	E
IRT P8/P10	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	848	490	265	153	90%	80%	75%	0.63	B
IRT ML5	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.75	6.50	1,749	1,964	547	614	90%	80%	75%	1.71	F
IRT ML6	Connecting stair between lower mezzanine and uptown 1/2/3 platform	8.00	6.75	2,074	938	648	293	90%	80%	75%	1.32	D
IRT ML9	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.00	5.75	1,017	939	318	293	90%	80%	75%	1.02	D
IRT ML10	Connecting stair between lower mezzanine and uptown 1/2/3 platform	7.00	5.75	456	650	143	203	90%	80%	75%	0.58	B
IRT P11	Connecting stair between R151 paid zone and downtown 1/2/3 platform	15.00	13.50	3,127	3,096	977	968	90%	80%	75%	1.38	E
IRT P12	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.00	5.75	91	1,144	28	358	90%	80%	75%	0.66	B
IRT P16	Connecting stair between R151 paid zone and uptown 1/2/3 platform	15.00	13.50	2,094	2,755	654	861	90%	80%	75%	1.08	D
ML13/ML14/ML15/ML16	Connecting stair between lower and upper mezzanine	8.00	6.75	365	1,256	114	393	90%	80%	80%	0.70	B
ML20/ML21/ML22/ML23	Connecting stair between lower and upper mezzanine	6.50	5.25	269	64	84	20	90%	80%	80%	0.18	A
BMT P1	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	216	1,349	68	422	90%	100%	75%	0.93	C
BMT P2	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	123	1,286	38	402	90%	100%	75%	0.77	C
BMT P3	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	285	929	89	290	90%	100%	75%	0.70	C
BMT P4	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	256	828	80	259	90%	100%	75%	0.57	B
BMT P5/P7	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	7.50	6.25	1,372	1,999	429	625	90%	80%	75%	1.62	E
BMT P6/P8	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.50	6.25	152	1,383	48	432	90%	80%	75%	0.75	C
BMT P9	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	8.50	7.25	1,284	692	401	216	90%	80%	75%	0.81	C
BMT P10	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.75	6.50	1,405	780	439	244	90%	80%	75%	1.00	C
BMT P11	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	1,817	1,158	568	362	90%	80%	75%	1.96	F
BMT P13	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	1,548	793	484	248	90%	80%	75%	1.54	E
BMT P15/P17	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	8.00	6.75	3,365	1,951	1,052	610	90%	80%	75%	2.34	F

Table 4C-51. Existing Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E216	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	0	2,098	0	656	945	0.93	C
E217	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	486	0	152	0	945	0.21	A
E218	Connecting escalator between upper mezzanine and No. 7 platform	1	32	75%	0	1,088	0	340	750	0.60	B
E261	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	100%	227	0	71	0	945	0.08	A
E262	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	90%	0	539	0	168	945	0.20	A
E267	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	100%	453	0	142	0	945	0.15	A
E268	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	90%	0	1,468	0	459	945	0.54	B

Table 4C-52. Existing Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Eighth Avenue and West 44th Street - southwest corner (N60)											
Two-Way Turnstiles	8	3,360	5,160	615	1,388	192	434	90%	90%	0.17	A
Eighth Avenue and West 43rd Street - southwest corner (N61)											
HEET	2	510	1,080	371	528	116	165	90%	90%	0.44	A
Eighth Avenue and West 42nd Street - southeast corner (N62A)											
Two-Way Turnstiles	6	2,520	3,870	802	28	251	9	100%	90%	0.10	A
Eighth Avenue and West 41st Street - northwest corner (N62)											
Two-Way Turnstiles	8	3,360	5,160	3,148	909	984	284	90%	90%	0.39	A
High Exit Only Turnstile	1	0	555	0	98	0	31	100%	90%	0.06	A
Eighth Avenue and West 42nd Street - northwest corner (N62B)											
Two-Way Turnstiles	2	510	1,080	387	349	121	109	90%	90%	0.39	A
Eighth Avenue and West 40th Street - northwest corner (N63)											
Two-Way Turnstiles	7	2,940	4,515	2,117	1,180	662	369	90%	90%	0.35	A
HEET	2	510	1,080	367	282	115	88	90%	90%	0.35	A
High Exit Only Turnstile	1	0	555	0	145	0	45	100%	90%	0.09	A
Eighth Avenue and West 41st Street (N63A)											
Two-Way Turnstiles	10	4,200	6,450	6,111	2,486	1,910	777	90%	90%	0.65	B
Broadway and West 40th Street (A21)											
Two-Way Turnstiles	8	3,360	5,160	675	3,919	211	1,225	90%	90%	0.36	A
High Exit Only Turnstile	1	0	555	0	421	0	132	100%	90%	0.26	A
Seventh Avenue and West 40th Street (R143)											
Two-Way Turnstiles	8	3,360	5,160	597	3,176	187	993	90%	90%	0.30	A
Seventh Avenue and West 42nd Street - southeast corner (R147)											
Two-Way Turnstiles	7	2,940	4,515	619	2,001	193	625	90%	90%	0.24	A
Broadway and West 42nd Street - southeast corner (R148-West)											
Two-Way Turnstiles	2	840	1,290	74	661	23	207	90%	90%	0.23	A
Broadway and West 42nd Street - southeast corner (R148-East)											
Two-Way Turnstiles	3	1,260	1,935	74	661	23	207	90%	90%	0.15	A
Seventh Avenue and West 42nd Street - southwest corner (R151)											
Two-Way Turnstiles	9	3,780	5,805	1,194	2,174	373	679	90%	90%	0.25	A

Table 4C-53. Existing Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7/S14	R147 FCA: Street stair at southeast corner of Seventh Avenue and West 42nd Street	8.00	6.75	1557	139	487	43	90%	100%	90%	0.59	B
M10/S11	R148 FCA: Street stair at southeast corner of Broadway and West 42nd Street	4.00	3.00	1,656	370	518	116	90%	100%	90%	1.60	E
O9/O10/O11	N62A FCA: Street stair at northeast corner of Eighth Avenue and West 42nd Street	10.00	8.75	405	132	127	41	90%	100%	90%	0.15	A
S2/M2	N63 FCA: Street stair at southeast corner of Eighth Avenue and West 40th Street	4.00	3.00	1,249	241	390	75	90%	100%	90%	1.17	D
S8/M9	N62B FCA: Street stair at northwest corner of Eighth Avenue and West 42nd Street	5.00	4.00	423	710	132	222	90%	100%	90%	0.70	C
S10/M11	N61 FCA: Street stair at southwest corner of Eighth Avenue and West 43rd Street	5.00	4.00	502	498	157	156	90%	100%	90%	0.61	B
O11/M12	N60 FCA: Street stair at southwest corner of Eighth Avenue and West 44th Street	7.50	6.25	220	193	69	60	90%	100%	90%	0.16	A
S13/M14	N60 FCA: Street stair at northwest corner of Eighth Avenue and West 44th Street	4.50	3.50	712	658	223	206	90%	100%	90%	0.96	C
S12/M13	N60 FCA: Street stair at southeast corner of Eighth Avenue and West 44th Street	3.50	2.50	568	401	178	125	90%	100%	90%	0.94	C
O3/O4	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	15.50	14.00	1,749	1,065	547	333	90%	100%	90%	0.49	B
M9	R151 FCA: Street stair at southwest corner of Seventh Avenue and West 42nd Street	13.00	11.75	763	798	238	249	90%	100%	90%	0.32	A
M11	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	14.50	13.00	1,749	1,065	547	333	90%	100%	90%	0.52	B
O1/O2	R143 FCA: Street stair at southwest corner of Seventh Avenue and West 40th Street	9.50	8.25	954	645	298	202	90%	100%	90%	0.47	B
M1/S2	R143 FCA: Street stair at southeast corner of Seventh Avenue and West 40th Street	4.00	3.00	2,143	328	670	103	90%	100%	90%	1.94	F
M2/S2	A21 FCA: Street stair at southwest corner of Broadway and West 40th Street	4.00	3.00	1,536	471	480	147	90%	100%	90%	1.59	E
M4/S4	A21 FCA: Street stair at northwest corner of Broadway and West 40th Street	4.00	3.00	377	660	118	206	90%	100%	90%	0.86	C
M1/S1	A21 FCA: Street stair at southeast corner of Broadway and West 40th Street	4.50	3.50	1,157	289	362	90	90%	100%	90%	0.98	C
M3/S3	A21 FCA: Street stair at northeast corner of Broadway and West 40th Street	4.00	3.00	518	272	162	85	90%	100%	90%	0.63	B
IND P1	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	825	946	258	296	90%	100%	75%	0.64	B
IND P2	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	551	677	172	212	90%	100%	75%	0.45	A
IND P3	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	167	68	52	21	90%	80%	75%	0.09	A
IND P4	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	384	699	120	218	90%	80%	75%	0.44	A
IND P5	Connecting stair between N62 paid zone and downtown A/C/E platform	8.50	7.50	280	453	88	142	90%	80%	75%	0.30	A
IND P6	Connecting stair between N62 paid zone and downtown A/C/E platform	9.00	7.75	227	1,102	71	344	90%	80%	75%	0.52	B
IND P7	Connecting stair between N62B paid zone and downtown A/C/E platform	7.50	6.50	1,016	397	318	124	90%	80%	75%	0.64	B
IND P8	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,065	1,168	333	365	90%	80%	75%	1.03	D
IND P9	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	467	1,738	146	543	90%	80%	75%	1.03	D
IND P10	Connecting stair between N61 paid zone and uptown A/C/E platform	7.50	6.50	53	567	17	177	90%	80%	75%	0.29	A
IND P11	Connecting stair between N61 paid zone and uptown A/C/E platform	6.00	5.00	238	691	74	216	90%	80%	75%	0.56	B
IND P12	Connecting stair between N60 paid zone and uptown A/C/E platform	5.00	4.00	16	371	5	116	100%	80%	75%	0.27	A
IND P13	Connecting stair between N60 paid zone and uptown A/C/E platform	7.50	6.50	280	649	88	203	90%	80%	75%	0.43	A
IND P14	Connecting stair between N62B paid zone and downtown A/C/E platform	6.00	4.75	660	836	206	261	90%	80%	75%	0.94	C
IND P15	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.25	1,831	896	572	280	90%	80%	75%	1.29	D
IND P16	Connecting stair between N60 paid zone and uptown A/C/E platform	8.00	6.75	244	307	76	96	90%	80%	75%	0.24	A
FLU PL1/PL2	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	1,479	1,339	462	418	90%	80%	75%	1.34	E
FLU PL3	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	237	1,407	74	440	90%	80%	75%	0.80	C
FLU PL5	Connecting stair between lower mezzanine and No. 7 platform	8.75	7.50	1,731	846	541	264	90%	80%	75%	1.02	D
FLU PL7	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,818	870	881	272	90%	80%	75%	1.61	E
FLU PL8	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,270	914	709	286	90%	80%	75%	1.39	E
IRT P1	Connecting stair between R143 paid zone and uptown 1/2/3 platform	11.50	10.00	2,311	585	722	183	90%	100%	75%	0.72	C
IRT P2	Connecting stair between R143 paid zone and downtown 1/2/3 platform	11.50	10.00	1,129	601	353	188	90%	100%	75%	0.45	A

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
IRT P3/P5	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	690	1,690	216	528	90%	80%	75%	1.15	D
IRT P4/P6	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	1,055	1,370	330	428	90%	80%	75%	1.17	D
IRT P7/P9	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	1,027	727	321	227	90%	80%	75%	0.83	C
IRT P8/P10	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	1,162	453	363	142	90%	80%	75%	0.76	C
IRT ML5	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.75	6.50	1,624	1,533	508	479	90%	80%	75%	1.45	E
IRT ML6	Connecting stair between lower mezzanine and uptown 1/2/3 platform	8.00	6.75	1,286	2,394	402	748	90%	80%	75%	1.65	E
IRT ML9	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.00	5.75	968	435	303	136	90%	80%	75%	0.72	C
IRT ML10	Connecting stair between lower mezzanine and uptown 1/2/3 platform	7.00	5.75	961	549	300	172	90%	80%	75%	0.78	C
IRT P11	Connecting stair between R151 paid zone and downtown 1/2/3 platform	15.00	13.50	5,078	1,204	1,587	376	90%	80%	75%	1.36	E
IRT P12	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.00	5.75	441	784	138	245	90%	80%	75%	0.64	B
IRT P16	Connecting stair between R151 paid zone and uptown 1/2/3 platform	15.00	13.50	4,647	1,429	1,452	447	90%	80%	75%	1.32	D
ML13/ML14/ML15/ML16	Connecting stair between lower and upper mezzanine	8.00	6.75	1,551	887	485	277	90%	80%	80%	1.05	D
ML20/ML21/ML22/ML23	Connecting stair between lower and upper mezzanine	6.50	5.25	1,124	61	351	19	100%	80%	80%	0.59	B
BMT P1	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	1,019	510	318	159	90%	100%	75%	0.79	C
BMT P2	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	641	780	200	244	90%	100%	75%	0.71	C
BMT P3	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	1,076	224	336	70	90%	100%	75%	0.64	B
BMT P4	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	1,048	449	328	140	90%	100%	75%	0.69	B
BMT P5/P7	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	7.50	6.25	1,084	3,493	339	1,092	90%	80%	75%	2.23	F
BMT P6/P8	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.50	6.25	392	926	123	289	90%	80%	75%	0.64	B
BMT P9	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	8.50	7.25	2,155	507	673	158	90%	80%	75%	1.07	D
BMT P10	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.75	6.50	2,848	1,132	890	354	90%	80%	75%	1.81	F
BMT P11	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	954	1,075	298	336	90%	80%	75%	1.35	E
BMT P13	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	373	811	117	253	90%	80%	75%	0.80	C
BMT P15/P17	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	8.00	6.75	1,327	1,886	415	589	90%	80%	75%	1.43	E

Table 4C-54. Existing Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E216	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	0	1,530	0	478	945	0.67	B
E217	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	1,316	0	411	0	945	0.58	B
E218	Connecting escalator between upper mezzanine and No. 7 platform	1	32	75%	0	437	0	137	750	0.24	A
E261	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	100%	357	0	112	0	945	0.12	A
E262	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	90%	0	687	0	215	945	0.25	A
E267	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	100%	1,053	0	329	0	945	0.35	A
E268	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	90%	0	1,321	0	413	945	0.49	B

Table 4C-55. Existing Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Eighth Avenue and West 44th Street - southwest corner (N60)											
Two-Way Turnstiles	8	3,360	5,160	1,500	1,252	469	391	90%	90%	0.25	A
Eighth Avenue and West 43rd Street - southwest corner (N61)											
HEET	2	510	1,080	502	498	157	156	90%	90%	0.52	B
Eighth Avenue and West 42nd Street - southeast corner (N62A)											
Two-Way Turnstiles	6	2,520	3,870	649	341	203	107	90%	90%	0.12	A
Eighth Avenue and West 41st Street - northwest corner (N62)											
Two-Way Turnstiles	8	3,360	5,160	856	2,416	268	755	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	260	0	81	100%	90%	0.16	A
Eighth Avenue and West 42nd Street - northwest corner (N62B)											
Two-Way Turnstiles	2	510	1,080	423	710	132	222	90%	90%	0.54	B
Eighth Avenue and West 40th Street - northwest corner (N63)											
Two-Way Turnstiles	7	2,940	4,515	1,164	1,550	364	484	90%	90%	0.27	A
HEET	2	510	1,080	202	371	63	116	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	191	0	60	100%	90%	0.12	A
Eighth Avenue and West 41st Street (N63A)											
Two-Way Turnstiles	10	4,200	6,450	2,113	5,194	660	1,623	90%	90%	0.49	B
Broadway and West 40th Street (A21)											
Two-Way Turnstiles	8	3,360	5,160	3,588	1,528	1,121	478	90%	90%	0.49	B
High Exit Only Turnstile	1	0	555	0	164	0	51	100%	90%	0.10	A
Seventh Avenue and West 40th Street (R143)											
Two-Way Turnstiles	8	3,360	5,160	3,097	973	968	304	90%	90%	0.39	A
Seventh Avenue and West 42nd Street - southeast corner (R147)											
Two-Way Turnstiles	7	2,940	4,515	2,610	1,460	816	456	90%	90%	0.43	A
Broadway and West 42nd Street - southeast corner (R148-West)											
Two-Way Turnstiles	2	840	1,290	828	185	259	58	90%	90%	0.40	A
Broadway and West 42nd Street - southeast corner (R148-East)											
Two-Way Turnstiles	3	1,260	1,935	828	185	259	58	90%	90%	0.27	A
Seventh Avenue and West 42nd Street - southwest corner (R151)											
Two-Way Turnstiles	9	3,780	5,805	2,512	1,863	785	582	90%	90%	0.35	A

Table 4C-56. No Action Alternative Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7/S14	R147 FCA: Street stair at southeast corner of Seventh Avenue and West 42nd Street	8.00	6.75	166	533	52	167	90%	100%	90%	0.26	A
M10/S11	R148 FCA: Street stair at southeast corner of Broadway and West 42nd Street	4.00	3.00	147	1,322	46	413	90%	100%	90%	1.25	D
O9/O10/O11	N62A FCA: Street stair at northeast corner of Eighth Avenue and West 42nd Street	10.00	8.75	113	145	35	45	90%	100%	90%	0.07	A
S2/M2	N63 FCA: Street stair at southeast corner of Eighth Avenue and West 40th Street	4.00	3.00	212	1,445	66	452	90%	100%	90%	1.40	E
S8/M9	N62B FCA: Street stair at northwest corner of Eighth Avenue and West 42nd Street	5.00	4.00	387	349	121	109	90%	100%	90%	0.45	A
S10/M11	N61 FCA: Street stair at southwest corner of Eighth Avenue and West 43rd Street	5.00	4.00	371	528	116	165	90%	100%	90%	0.55	B
O11/M12	N60 FCA: Street stair at southwest corner of Eighth Avenue and West 44th Street	7.50	6.25	123	351	38	110	90%	100%	90%	0.19	A
S13/M14	N60 FCA: Street stair at northwest corner of Eighth Avenue and West 44th Street	4.50	3.50	415	589	130	184	90%	100%	90%	0.71	C
S12/M13	N60 FCA: Street stair at southeast corner of Eighth Avenue and West 44th Street	3.50	2.50	77	448	24	140	90%	100%	90%	0.53	B
O3/O4	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	15.50	14.00	389	1,465	122	458	90%	100%	90%	0.33	A
M9	R151 FCA: Street stair at southwest corner of Seventh Avenue and West 42nd Street	13.00	11.75	805	709	252	222	90%	100%	90%	0.31	A
M11	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	14.50	13.00	389	1,465	122	458	90%	100%	90%	0.36	A
O1/O2	R143 FCA: Street stair at southwest corner of Seventh Avenue and West 40th Street	9.50	8.25	445	1,216	139	380	90%	100%	90%	0.50	B
M1/S2	R143 FCA: Street stair at southeast corner of Seventh Avenue and West 40th Street	4.00	3.00	152	1,960	48	613	90%	100%	90%	1.80	F
M2/S2	A21 FCA: Street stair at southwest corner of Broadway and West 40th Street	4.00	3.00	175	1,416	55	443	90%	100%	90%	1.35	E
M4/S4	A21 FCA: Street stair at northwest corner of Broadway and West 40th Street	4.00	3.00	429	758	134	237	90%	100%	90%	0.98	C
M1/S1	A21 FCA: Street stair at southeast corner of Broadway and West 40th Street	4.50	3.50	43	1,364	13	426	100%	100%	90%	0.93	C
M3/S3	A21 FCA: Street stair at northeast corner of Broadway and West 40th Street	4.00	3.00	28	802	9	251	100%	100%	90%	0.64	B
IND P1	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	762	725	238	227	90%	100%	75%	0.53	B
IND P2	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	1,589	626	497	196	90%	100%	75%	0.75	C
IND P3	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	194	787	61	246	90%	80%	75%	0.40	A
IND P4	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	407	376	127	118	90%	80%	75%	0.31	A
IND P5	Connecting stair between N62 paid zone and downtown A/C/E platform	8.50	7.50	153	338	48	106	90%	80%	75%	0.20	A
IND P6	Connecting stair between N62 paid zone and downtown A/C/E platform	9.00	7.75	619	651	193	203	90%	80%	75%	0.49	B
IND P7	Connecting stair between N62B paid zone and downtown A/C/E platform	7.50	6.50	575	449	180	140	90%	80%	75%	0.47	B
IND P8	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,169	512	365	160	90%	80%	75%	0.76	C
IND P9	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,496	975	468	305	90%	80%	75%	1.13	D
IND P10	Connecting stair between N61 paid zone and uptown A/C/E platform	7.50	6.50	33	282	10	88	90%	80%	75%	0.15	A
IND P11	Connecting stair between N61 paid zone and uptown A/C/E platform	6.00	5.00	448	384	140	120	90%	80%	75%	0.50	B
IND P12	Connecting stair between N60 paid zone and uptown A/C/E platform	5.00	4.00	8	312	3	98	100%	80%	75%	0.22	A
IND P13	Connecting stair between N60 paid zone and uptown A/C/E platform	7.50	6.50	139	445	43	139	90%	80%	75%	0.27	A
IND P14	Connecting stair between N62B paid zone and downtown A/C/E platform	6.00	4.75	396	731	124	228	90%	80%	75%	0.72	C
IND P15	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.25	2,745	520	858	163	90%	80%	75%	1.53	E
IND P16	Connecting stair between N60 paid zone and uptown A/C/E platform	8.00	6.75	61	227	19	71	90%	80%	75%	0.13	A
FLU PL1/PL2	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	2,378	672	743	210	90%	80%	75%	1.43	E
FLU PL3	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	733	675	229	211	90%	80%	75%	0.67	B
FLU PL5	Connecting stair between lower mezzanine and No. 7 platform	8.75	7.50	2,301	1,436	719	449	90%	80%	75%	1.48	E
FLU PL7	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	1,295	799	405	250	90%	80%	75%	0.92	C
FLU PL8	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,150	1,143	672	357	90%	80%	75%	1.44	E
IRT P1	Connecting stair between R143 paid zone and uptown 1/2/3 platform	11.50	10.00	284	1,388	89	434	90%	100%	75%	0.49	B
IRT P2	Connecting stair between R143 paid zone and downtown 1/2/3 platform	11.50	10.00	398	2,155	124	673	90%	100%	75%	0.76	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
IRT P3/P5	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	397	2,981	124	932	90%	80%	75%	1.66	E
IRT P4/P6	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	470	1,904	147	595	90%	80%	75%	1.16	D
IRT P7/P9	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	1,348	1,444	421	451	90%	80%	75%	1.34	E
IRT P8/P10	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	848	490	265	153	90%	80%	75%	0.63	B
IRT ML5	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.75	6.50	1,749	1,964	547	614	90%	80%	75%	1.71	F
IRT ML6	Connecting stair between lower mezzanine and uptown 1/2/3 platform	8.00	6.75	2,074	938	648	293	90%	80%	75%	1.32	D
IRT ML9	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.00	5.75	1,017	939	318	293	90%	80%	75%	1.02	D
IRT ML10	Connecting stair between lower mezzanine and uptown 1/2/3 platform	7.00	5.75	456	650	143	203	90%	80%	75%	0.58	B
IRT P11	Connecting stair between R151 paid zone and downtown 1/2/3 platform	15.00	13.50	3,127	3,096	977	968	90%	80%	75%	1.38	E
IRT P12	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.00	5.75	91	1,144	28	358	90%	80%	75%	0.66	B
IRT P16	Connecting stair between R151 paid zone and uptown 1/2/3 platform	15.00	13.50	2,094	2,755	654	861	90%	80%	75%	1.08	D
ML13/ML14/ML15/ML16	Connecting stair between lower and upper mezzanine	8.00	6.75	365	1,256	114	393	90%	80%	80%	0.70	B
ML20/ML21/ML22/ML23	Connecting stair between lower and upper mezzanine	6.50	5.25	269	64	84	20	90%	80%	80%	0.18	A
BMT P1	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	216	1,349	68	422	90%	100%	75%	0.93	C
BMT P2	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	123	1,286	38	402	90%	100%	75%	0.77	C
BMT P3	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	285	929	89	290	90%	100%	75%	0.70	C
BMT P4	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	256	828	80	259	90%	100%	75%	0.57	B
BMT P5/P7	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	7.50	6.25	1,372	1,999	429	625	90%	80%	75%	1.62	E
BMT P6/P8	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.50	6.25	152	1,383	48	432	90%	80%	75%	0.75	C
BMT P9	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	8.50	7.25	1,284	692	401	216	90%	80%	75%	0.81	C
BMT P10	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.75	6.50	1,405	780	439	244	90%	80%	75%	1.00	C
BMT P11	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	1,817	1,158	568	362	90%	80%	75%	1.96	F
BMT P13	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	1,548	793	484	248	90%	80%	75%	1.54	E
BMT P15/P17	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	8.00	6.75	3,365	1,951	1,052	610	90%	80%	75%	2.34	F

Table 4C-57. No Action Alternative Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E216	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	0	2,098	0	656	945	0.93	C
E217	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	486	0	152	0	945	0.21	A
E218	Connecting escalator between upper mezzanine and No. 7 platform	1	32	75%	0	1,088	0	340	750	0.60	B
E261	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	100%	227	0	71	0	945	0.08	A
E262	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	90%	0	539	0	168	945	0.20	A
E267	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	100%	453	0	142	0	945	0.15	A
E268	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	90%	0	1,468	0	459	945	0.54	B

Table 4C-58. No Action Alternative Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Eighth Avenue and West 44th Street - southwest corner (N60)											
Two-Way Turnstiles	8	3,360	5,160	615	1,388	192	434	90%	90%	0.17	A
Eighth Avenue and West 43rd Street - southwest corner (N61)											
HEET	2	510	1,080	371	528	116	165	90%	90%	0.44	A
Eighth Avenue and West 42nd Street - southeast corner (N62A)											
Two-Way Turnstiles	6	2,520	3,870	802	28	251	9	100%	90%	0.10	A
Eighth Avenue and West 41st Street - northwest corner (N62)											
Two-Way Turnstiles	8	3,360	5,160	3,148	909	984	284	90%	90%	0.39	A
High Exit Only Turnstile	1	0	555	0	98	0	31	100%	90%	0.06	A
Eighth Avenue and West 42nd Street - northwest corner (N62B)											
Two-Way Turnstiles	2	510	1,080	387	349	121	109	90%	90%	0.39	A
Eighth Avenue and West 40th Street - northwest corner (N63)											
Two-Way Turnstiles	7	2,940	4,515	2,117	1,180	662	369	90%	90%	0.35	A
HEET	2	510	1,080	367	282	115	88	90%	90%	0.35	A
High Exit Only Turnstile	1	0	555	0	145	0	45	100%	90%	0.09	A
Eighth Avenue and West 41st Street (N63A)											
Two-Way Turnstiles	10	4,200	6,450	6,111	2,486	1,910	777	90%	90%	0.65	B
Broadway and West 40th Street (A21)											
Two-Way Turnstiles	8	3,360	5,160	675	3,919	211	1,225	90%	90%	0.36	A
High Exit Only Turnstile	1	0	555	0	421	0	132	100%	90%	0.26	A
Seventh Avenue and West 40th Street (R143)											
Two-Way Turnstiles	8	3,360	5,160	597	3,176	187	993	90%	90%	0.30	A
Seventh Avenue and West 42nd Street - southeast corner (R147)											
Two-Way Turnstiles	7	2,940	4,515	619	2,001	193	625	90%	90%	0.24	A
Broadway and West 42nd Street - southeast corner (R148)											
Two-Way Turnstiles	5	2,100	3,225	1,322	148	413	46	90%	90%	0.24	A
Seventh Avenue and West 42nd Street - southwest corner (R151)											
Two-Way Turnstiles	9	3,780	5,805	1,194	2,174	373	679	90%	90%	0.25	A

Table 4C-59. No Action Alternative Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7/S14	R147 FCA: Street stair at southeast corner of Seventh Ave and 42nd St	8.00	6.75	1,557	139	487	43	90%	100%	90%	0.59	B
M10/S11	R148 FCA: Street stair at southeast corner of Broadway and 42nd St	4.00	3.00	1,656	370	518	116	90%	100%	90%	1.60	E
O9/O10/O11	N62A FCA: Street stair at northeast corner of Eighth Ave and 42nd St	10.00	8.75	405	132	127	41	90%	100%	90%	0.15	A
S2/M2	N63 FCA: Street stair at southeast corner of Eighth Ave and 40th St	4.00	3.00	1,249	241	390	75	90%	100%	90%	1.17	D
S8/M9	N62B FCA: Street stair at northwest corner of Eighth Ave and 42nd St	5.00	4.00	423	710	132	222	90%	100%	90%	0.70	C
S10/M11	N61 FCA: Street stair at southwest corner of Eighth Ave and 43rd St	5.00	4.00	502	498	157	156	90%	100%	90%	0.61	B
O11/M12	N60 FCA: Street stair at southwest corner of Eighth Ave and 44th St	7.50	6.25	220	193	69	60	90%	100%	90%	0.16	A
S13/M14	N60 FCA: Street stair at northwest corner of Eighth Ave and 44th St	4.50	3.50	712	658	223	206	90%	100%	90%	0.96	C
S12/M13	N60 FCA: Street stair at southeast corner of Eighth Ave and 44th St	3.50	2.50	568	401	178	125	90%	100%	90%	0.94	C
O3/O4	R151 FCA: Street stair at northwest corner of Seventh Ave and 42nd St	15.50	14.00	1,749	1,065	547	333	90%	100%	90%	0.49	B
M9	R151 FCA: Street stair at southwest corner of Seventh Ave and 42nd St	13.00	11.75	763	798	238	249	90%	100%	90%	0.32	A
M11	R151 FCA: Street stair at northwest corner of Seventh Ave and 42nd St	14.50	13.00	1,749	1,065	547	333	90%	100%	90%	0.52	B
O1/O2	R143 FCA: Street stair at southwest corner of Seventh Ave and 40th St	9.50	8.25	954	645	298	202	90%	100%	90%	0.47	B
M1/S2	R143 FCA: Street stair at southeast corner of Seventh Ave and 40th St	4.00	3.00	2,143	328	670	103	90%	100%	90%	1.94	F
M2/S2	A21 FCA: Street stair at southwest corner of Broadway and 40th St	4.00	3.00	1,536	471	480	147	90%	100%	90%	1.59	E
M4/S4	A21 FCA: Street stair at northwest corner of Broadway and 40th St	4.00	3.00	377	660	118	206	90%	100%	90%	0.86	C
M1/S1	A21 FCA: Street stair at southeast corner of Broadway and 40th St	4.50	3.50	1,157	289	362	90	90%	100%	90%	0.98	C
M3/S3	A21 FCA: Street stair at northeast corner of Broadway and 40th St	4.00	3.00	518	272	162	85	90%	100%	90%	0.63	B
IND P1	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	825	946	258	296	90%	100%	75%	0.64	B
IND P2	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	551	677	172	212	90%	100%	75%	0.45	A
IND P3	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	167	68	52	21	90%	80%	75%	0.09	A
IND P4	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	384	699	120	218	90%	80%	75%	0.44	A
IND P5	Connecting stair between N62 paid zone and downtown A/C/E platform	8.50	7.50	280	453	88	142	90%	80%	75%	0.30	A
IND P6	Connecting stair between N62 paid zone and downtown A/C/E platform	9.00	7.75	227	1,102	71	344	90%	80%	75%	0.52	B
IND P7	Connecting stair between N62B paid zone and downtown A/C/E platform	7.50	6.50	1,016	397	318	124	90%	80%	75%	0.64	B
IND P8	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,065	1,168	333	365	90%	80%	75%	1.03	D
IND P9	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	467	1,738	146	543	90%	80%	75%	1.03	D
IND P10	Connecting stair between N61 paid zone and uptown A/C/E platform	7.50	6.50	53	567	17	177	90%	80%	75%	0.29	A
IND P11	Connecting stair between N61 paid zone and uptown A/C/E platform	6.00	5.00	238	691	74	216	90%	80%	75%	0.56	B
IND P12	Connecting stair between N60 paid zone and uptown A/C/E platform	5.00	4.00	16	371	5	116	100%	80%	75%	0.27	A
IND P13	Connecting stair between N60 paid zone and uptown A/C/E platform	7.50	6.50	280	649	88	203	90%	80%	75%	0.43	A
IND P14	Connecting stair between N62B paid zone and downtown A/C/E platform	6.00	4.75	660	836	206	261	90%	80%	75%	0.94	C
IND P15	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.25	1,831	896	572	280	90%	80%	75%	1.29	D
IND P16	Connecting stair between N60 paid zone and uptown A/C/E platform	8.00	6.75	244	307	76	96	90%	80%	75%	0.24	A
FLU PL1/PL2	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	1,479	1,339	462	418	90%	80%	75%	1.34	E
FLU PL3	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	237	1,407	74	440	90%	80%	75%	0.80	C
FLU PL5	Connecting stair between lower mezzanine and No. 7 platform	8.75	7.50	1,731	846	541	264	90%	80%	75%	1.02	D
FLU PL7	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,818	870	881	272	90%	80%	75%	1.61	E
FLU PL8	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,270	914	709	286	90%	80%	75%	1.39	E
IRT P1	Connecting stair between R143 paid zone and uptown 1/2/3 platform	11.50	10.00	2,311	585	722	183	90%	100%	75%	0.72	C
IRT P2	Connecting stair between R143 paid zone and downtown 1/2/3 platform	11.50	10.00	1,129	601	353	188	90%	100%	75%	0.45	A

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
IRT P3/P5	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	690	1,690	216	528	90%	80%	75%	1.15	D
IRT P4/P6	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	1,055	1,370	330	428	90%	80%	75%	1.17	D
IRT P7/P9	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	1,027	727	321	227	90%	80%	75%	0.83	C
IRT P8/P10	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	1,162	453	363	142	90%	80%	75%	0.76	C
IRT ML5	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.75	6.50	1,533	1,624	479	508	90%	80%	75%	1.45	E
IRT ML6	Connecting stair between lower mezzanine and uptown 1/2/3 platform	8.00	6.75	1,286	2,394	402	748	90%	80%	75%	1.65	E
IRT ML9	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.00	5.75	968	435	303	136	90%	80%	75%	0.72	C
IRT ML10	Connecting stair between lower mezzanine and uptown 1/2/3 platform	7.00	5.75	961	549	300	172	90%	80%	75%	0.78	C
IRT P11	Connecting stair between R151 paid zone and downtown 1/2/3 platform	15.00	13.50	5,078	1,204	1,587	376	90%	80%	75%	1.36	E
IRT P12	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.00	5.75	441	784	138	245	90%	80%	75%	0.64	B
IRT P16	Connecting stair between R151 paid zone and uptown 1/2/3 platform	15.00	13.50	4,647	1,429	1,452	447	90%	80%	75%	1.32	D
ML13/ML14/ML15/ML16	Connecting stair between lower and upper mezzanine	8.00	6.75	1,551	887	485	277	90%	80%	80%	1.05	D
ML20/ML21/ML22/ML23	Connecting stair between lower and upper mezzanine	6.50	5.25	1,124	61	351	19	100%	80%	80%	0.59	B
BMT P1	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	1,019	510	318	159	90%	100%	75%	0.79	C
BMT P2	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	641	780	200	244	90%	100%	75%	0.71	C
BMT P3	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	1,076	224	336	70	90%	100%	75%	0.64	B
BMT P4	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	1,048	449	328	140	90%	100%	75%	0.69	B
BMT P5/P7	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	7.50	6.25	1,084	3,493	339	1,092	90%	80%	75%	2.23	F
BMT P6/P8	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.50	6.25	392	926	123	289	90%	80%	75%	0.64	B
BMT P9	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	8.50	7.25	2,155	507	673	158	90%	80%	75%	1.07	D
BMT P10	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.75	6.50	2,848	1,132	890	354	90%	80%	75%	1.81	F
BMT P11	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	954	1,075	298	336	90%	80%	75%	1.35	E
BMT P13	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	373	811	117	253	90%	80%	75%	0.80	C
BMT P15/P17	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	8.00	6.75	1,327	1,886	415	589	90%	80%	75%	1.43	E

Table 4C-60. No Action Alternative Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E216	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	0	1,530	0	478	945	0.67	B
E217	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	1,316	0	411	0	945	0.58	B
E218	Connecting escalator between upper mezzanine and No. 7 platform	1	32	75%	0	437	0	137	750	0.24	A
E261	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	100%	357	0	112	0	945	0.12	A
E262	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	90%	0	687	0	215	945	0.25	A
E267	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	100%	1,053	0	329	0	945	0.35	A
E268	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	90%	0	1,321	0	413	945	0.49	B

Table 4C-61. No Action Alternative Level of Service Summary: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Eighth Avenue and West 44th Street - southwest corner (N60)											
Two-Way Turnstiles	8	3,360	5,160	1,500	1,252	469	391	90%	90%	0.25	A
Eighth Avenue and West 43rd Street - southwest corner (N61)											
HEET	2	510	1,080	502	498	157	156	90%	90%	0.52	B
Eighth Avenue and West 42nd Street - southeast corner (N62A)											
Two-Way Turnstiles	6	2,520	3,870	272	518	85	162	0.90	0.90	0.09	A
Eighth Avenue and West 41st Street - northwest corner (N62)											
Two-Way Turnstiles	8	3,360	5,160	856	2,416	268	755	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	260	0	81	100%	90%	0.16	A
Eighth Avenue and West 42nd Street - northwest corner (N62B)											
Two-Way Turnstiles	2	510	1,080	423	710	132	222	90%	90%	0.54	B
Eighth Avenue and West 40th Street - northwest corner (N63)											
Two-Way Turnstiles	7	2,940	4,515	1,164	1,550	364	484	90%	90%	0.27	A
HEET	2	510	1,080	202	371	63	116	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	191	0	60	100%	90%	0.12	A
Eighth Avenue and West 41st Street (N63A)											
Two-Way Turnstiles	10	4,200	6,450	2,113	5,194	660	1,623	90%	90%	0.49	B
Broadway and West 40th Street (A21)											
Two-Way Turnstiles	8	3,360	5,160	3,588	1,528	1,121	478	90%	90%	0.49	B
High Exit Only Turnstile	1	0	555	0	164	0	51	100%	90%	0.10	A
Seventh Avenue and West 40th Street (R143)											
Two-Way Turnstiles	8	3,360	5,160	3,097	973	968	304	90%	90%	0.39	A
Seventh Avenue and West 42nd Street - southeast corner (R147)											
Two-Way Turnstiles	7	2,940	4,515	2,610	1,460	816	456	90%	90%	0.43	A
Broadway and West 42nd Street - southeast corner (R148)											
Two-Way Turnstiles	5	2,100	3,225	370	1,656	116	518	90%	90%	0.26	A
Seventh Avenue and West 42nd Street - southwest corner (R151)											
Two-Way Turnstiles	9	3,780	5,805	2,512	1,863	785	582	90%	90%	0.35	A

Table 4C-62. CBD Tolling Alternative: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7/S14	R147 FCA: Street stair at southeast corner of Seventh Avenue and West 42nd Street	8.00	6.75	166	534	52	167	90%	100%	90%	0.26	A
M10/S11	R148 FCA: Street stair at southeast corner of Broadway and West 42nd Street	4.00	3.00	162	1,335	51	417	90%	100%	90%	1.27	D
O9/O10/O11	N62A FCA: Street stair at northeast corner of Eighth Avenue and West 42nd Street	10.00	8.75	115	145	36	45	90%	100%	90%	0.07	A
S2/M2	N63 FCA: Street stair at southeast corner of Eighth Avenue and West 40th Street	4.00	3.00	220	1,450	69	453	90%	100%	90%	1.41	E
S8/M9	N62B FCA: Street stair at northwest corner of Eighth Avenue and West 42nd Street	5.00	4.00	389	356	122	111	90%	100%	90%	0.45	B
S10/M11	N61 FCA: Street stair at southwest corner of Eighth Avenue and West 43rd Street	5.00	4.00	372	533	116	167	90%	100%	90%	0.56	B
O11/M12	N60 FCA: Street stair at southwest corner of Eighth Avenue and West 44th Street	7.50	6.25	124	363	39	113	90%	100%	90%	0.20	A
S13/M14	N60 FCA: Street stair at northwest corner of Eighth Avenue and West 44th Street	4.50	3.50	419	606	131	189	90%	100%	90%	0.72	C
S12/M13	N60 FCA: Street stair at southeast corner of Eighth Avenue and West 44th Street	3.50	2.50	80	460	25	144	90%	100%	90%	0.55	B
O3/O4	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	15.50	14.00	389	1,465	122	458	90%	100%	90%	0.33	A
M9	R151 FCA: Street stair at southwest corner of Seventh Avenue and West 42nd Street	13.00	11.75	805	709	252	222	90%	100%	90%	0.31	A
M11	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	14.50	13.00	395	1,487	123	465	90%	100%	90%	0.36	A
O1/O2	R143 FCA: Street stair at southwest corner of Seventh Avenue and West 40th Street	9.50	8.25	447	1,221	140	382	90%	100%	90%	0.51	B
M1/S2	R143 FCA: Street stair at southeast corner of Seventh Avenue and West 40th Street	4.00	3.00	153	1,965	48	614	90%	100%	90%	1.80	F
M2/S2	A21 FCA: Street stair at southwest corner of Broadway and West 40th Street	4.00	3.00	177	1,423	55	445	90%	100%	90%	1.36	E
M4/S4	A21 FCA: Street stair at northwest corner of Broadway and West 40th Street	4.00	3.00	429	758	134	237	90%	100%	90%	0.98	C
M1/S1	A21 FCA: Street stair at southeast corner of Broadway and West 40th Street	4.50	3.50	52	1,396	16	436	100%	100%	90%	0.95	C
M3/S3	A21 FCA: Street stair at northeast corner of Broadway and West 40th Street	4.00	3.00	29	826	9	258	100%	100%	90%	0.66	B
IND P1	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	763	735	238	230	90%	100%	75%	0.54	B
IND P2	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	1,592	635	498	198	90%	100%	75%	0.75	C
IND P3	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	196	790	61	247	90%	80%	75%	0.40	A
IND P4	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	412	377	129	118	90%	80%	75%	0.31	A
IND P5	Connecting stair between N62 paid zone and downtown A/C/E platform	8.50	7.50	155	338	48	106	90%	80%	75%	0.20	A
IND P6	Connecting stair between N62 paid zone and downtown A/C/E platform	9.00	7.75	626	655	196	205	90%	80%	75%	0.50	B
IND P7	Connecting stair between N62B paid zone and downtown A/C/E platform	7.50	6.50	583	458	182	143	90%	80%	75%	0.48	B
IND P8	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,170	515	366	161	90%	80%	75%	0.77	C
IND P9	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,498	980	468	306	90%	80%	75%	1.13	D
IND P10	Connecting stair between N61 paid zone and uptown A/C/E platform	7.50	6.50	33	283	10	88	90%	80%	75%	0.15	A
IND P11	Connecting stair between N61 paid zone and uptown A/C/E platform	6.00	5.00	448	385	140	120	90%	80%	75%	0.50	B
IND P12	Connecting stair between N60 paid zone and uptown A/C/E platform	5.00	4.00	8	317	3	99	100%	80%	75%	0.23	A
IND P13	Connecting stair between N60 paid zone and uptown A/C/E platform	7.50	6.50	141	452	44	141	90%	80%	75%	0.28	A
IND P14	Connecting stair between N62B paid zone and downtown A/C/E platform	6.00	4.75	400	732	125	229	90%	80%	75%	0.72	C
IND P15	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.25	2,748	523	859	163	90%	80%	75%	1.53	E
IND P16	Connecting stair between N60 paid zone and uptown A/C/E platform	8.00	6.75	62	231	19	72	90%	80%	75%	0.13	A
FLU PL1/PL2	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	2,377	688	743	215	90%	80%	75%	1.44	E
FLU PL3	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	733	691	229	216	90%	80%	75%	0.68	B
FLU PL5	Connecting stair between lower mezzanine and No. 7 platform	8.75	7.50	2,324	1,484	726	464	90%	80%	75%	1.51	E
FLU PL7	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	1,322	815	413	255	90%	80%	75%	0.94	C
FLU PL8	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,194	1,165	686	364	90%	80%	75%	1.47	E
IRT P1	Connecting stair between R143 paid zone and uptown 1/2/3 platform	11.50	10.00	285	1,392	89	435	90%	100%	75%	0.50	B
IRT P2	Connecting stair between R143 paid zone and downtown 1/2/3 platform	11.50	10.00	400	2,161	125	675	90%	100%	75%	0.76	C

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
IRT P3/P5	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	397	3,020	124	944	90%	80%	75%	1.68	F
IRT P4/P6	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	470	1,923	147	601	90%	80%	75%	1.17	D
IRT P7/P9	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	1,348	1,463	421	457	90%	80%	75%	1.35	E
IRT P8/P10	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	848	495	265	155	90%	80%	75%	0.64	B
IRT ML5	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.75	6.50	1,773	2,021	554	632	90%	80%	75%	1.75	F
IRT ML6	Connecting stair between lower mezzanine and uptown 1/2/3 platform	8.00	6.75	2,098	985	656	308	90%	80%	75%	1.35	E
IRT ML9	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.00	5.75	1,031	967	322	302	90%	80%	75%	1.04	D
IRT ML10	Connecting stair between lower mezzanine and uptown 1/2/3 platform	7.00	5.75	462	684	144	214	90%	80%	75%	0.60	B
IRT P11	Connecting stair between R151 paid zone and downtown 1/2/3 platform	15.00	13.50	3,145	3,168	983	990	90%	80%	75%	1.40	E
IRT P12	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.00	5.75	91	1,160	28	363	90%	80%	75%	0.67	B
IRT P16	Connecting stair between R151 paid zone and uptown 1/2/3 platform	15.00	13.50	2,102	2,755	657	861	90%	80%	75%	1.08	D
ML13/ML14/ML15/ML16	Connecting stair between lower and upper mezzanine	8.00	6.75	427	1,279	133	400	90%	80%	80%	0.73	C
ML20/ML21/ML22/ML23	Connecting stair between lower and upper mezzanine	6.50	5.25	269	64	84	20	90%	80%	80%	0.18	A
BMT P1	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	218	1,363	68	426	90%	100%	75%	0.94	C
BMT P2	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	125	1,299	39	406	90%	100%	75%	0.78	C
BMT P3	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	290	961	91	300	90%	100%	75%	0.73	C
BMT P4	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	259	837	81	262	90%	100%	75%	0.58	B
BMT P5/P7	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	7.50	6.25	1,412	2,037	441	637	90%	80%	75%	1.66	E
BMT P6/P8	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.50	6.25	155	1,407	48	440	90%	80%	75%	0.77	C
BMT P9	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	8.50	7.25	1,311	712	410	223	90%	80%	75%	0.83	C
BMT P10	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.75	6.50	1,444	804	451	251	90%	80%	75%	1.02	D
BMT P11	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	1,857	1,199	580	375	90%	80%	75%	2.02	F
BMT P13	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	1,582	821	494	257	90%	80%	75%	1.58	E
BMT P15/P17	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	8.00	6.75	3,440	2,007	1,075	627	90%	80%	75%	2.39	F

Table 4C-63. CBD Tolling Alternative: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E216	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	0	2,098	0	656	945	0.93	C
E217	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	486	0	152	0	945	0.21	A
E218	Connecting escalator between upper mezzanine and No. 7 platform	1	32	75%	0	1,101	0	344	750	0.61	B
E261	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	100%	227	0	71	0	945	0.08	A
E262	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	90%	0	539	0	168	945	0.20	A
E267	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	100%	454	0	142	0	945	0.15	A
E268	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	90%	0	1,477	0	462	945	0.54	B

Table 4C-64. CBD Tolling Alternative: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Eighth Avenue and West 44th Street - southwest corner (N60)											
Two-Way Turnstiles	8	3,360	5,160	623	1,429	195	447	90%	90%	0.17	A
Eighth Avenue and West 43rd Street - southwest corner (N61)											
HEET	2	510	1,080	372	533	116	167	90%	90%	0.44	A
Eighth Avenue and West 42nd Street - southeast corner (N62A)											
Two-Way Turnstiles	6	2,520	3,870	826	29	258	9	100%	90%	0.10	A
Eighth Avenue and West 41st Street - northwest corner (N62)											
Two-Way Turnstiles	8	3,360	5,160	3,152	926	985	290	90%	90%	0.40	A
High Exit Only Turnstile	1	0	555	0	100	0	31	100%	90%	0.06	A
Eighth Avenue and West 42nd Street - northwest corner (N62B)											
Two-Way Turnstiles	2	510	1,080	389	356	122	111	90%	90%	0.39	A
Eighth Avenue and West 40th Street - northwest corner (N63)											
Two-Way Turnstiles	7	2,940	4,515	2,120	1,194	663	373	90%	90%	0.35	A
HEET	2	510	1,080	368	286	115	89	90%	90%	0.35	A
High Exit Only Turnstile	1	0	555	0	147	0	46	100%	90%	0.09	A
Eighth Avenue and West 41st Street (N63A)											
Two-Way Turnstiles	10	4,200	6,450	6,122	2,516	1,913	786	90%	90%	0.66	B
Broadway and West 40th Street (A21)											
Two-Way Turnstiles	8	3,360	5,160	688	3,975	215	1,242	90%	90%	0.37	A
High Exit Only Turnstile	1	0	555	0	428	0	134	100%	90%	0.27	A
Seventh Avenue and West 40th Street (R143)											
Two-Way Turnstiles	8	3,360	5,160	601	3,186	188	996	90%	90%	0.30	A
Seventh Avenue and West 42nd Street - southeast corner (R147)											
Two-Way Turnstiles	7	2,940	4,515	620	2,013	194	629	90%	90%	0.25	A
Broadway and West 42nd Street - southeast corner (R148)											
Two-Way Turnstiles	5	2,100	3,225	1,336	162	418	51	90%	90%	0.24	A
Seventh Avenue and West 42nd Street - southwest corner (R151)											
Two-Way Turnstiles	9	3,780	5,805	1,200	2,196	375	686	90%	90%	0.26	A

Table 4C-65. CBD Tolling Alternative: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7/S14	R147 FCA: Street stair at southeast corner of Seventh Avenue and West 42nd Street	8.00	6.75	1560	139	488	43	90%	100%	90%	0.59	B
M10/S11	R148 FCA: Street stair at southeast corner of Broadway and West 42nd Street	4.00	3.00	1,661	420	519	131	90%	100%	90%	1.64	E
O9/O10/O11	N62A FCA: Street stair at northeast corner of Eighth Avenue and West 42nd Street	10.00	8.75	413	132	129	41	90%	100%	90%	0.15	A
S2/M2	N63 FCA: Street stair at southeast corner of Eighth Avenue and West 40th Street	4.00	3.00	1,280	243	400	76	90%	100%	90%	1.20	D
S8/M9	N62B FCA: Street stair at northwest corner of Eighth Avenue and West 42nd Street	5.00	4.00	431	712	135	223	90%	100%	90%	0.71	C
S10/M11	N61 FCA: Street stair at southwest corner of Eighth Avenue and West 43rd Street	5.00	4.00	507	500	158	156	90%	100%	90%	0.61	B
O11/M12	N60 FCA: Street stair at southwest corner of Eighth Avenue and West 44th Street	7.50	6.25	225	197	70	62	90%	100%	90%	0.16	A
S13/M14	N60 FCA: Street stair at northwest corner of Eighth Avenue and West 44th Street	4.50	3.50	728	663	228	207	90%	100%	90%	0.97	C
S12/M13	N60 FCA: Street stair at southeast corner of Eighth Avenue and West 44th Street	3.50	2.50	578	405	181	127	90%	100%	90%	0.95	C
O3/O4	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	15.50	14.00	1,749	1,065	547	333	90%	100%	90%	0.49	B
M9	R151 FCA: Street stair at southwest corner of Seventh Avenue and West 42nd Street	13.00	11.75	763	798	238	249	90%	100%	90%	0.32	A
M11	R151 FCA: Street stair at northwest corner of Seventh Avenue and West 42nd Street	14.50	13.00	1,773	1,072	554	335	90%	100%	90%	0.53	B
O1/O2	R143 FCA: Street stair at southwest corner of Seventh Avenue and West 40th Street	9.50	8.25	962	647	301	202	90%	100%	90%	0.47	B
M1/S2	R143 FCA: Street stair at southeast corner of Seventh Avenue and West 40th Street	4.00	3.00	2,148	330	671	103	90%	100%	90%	1.94	F
M2/S2	A21 FCA: Street stair at southwest corner of Broadway and West 40th Street	4.00	3.00	1,544	473	483	148	90%	100%	90%	1.60	E
M4/S4	A21 FCA: Street stair at northwest corner of Broadway and West 40th Street	4.00	3.00	377	660	118	206	90%	100%	90%	0.86	C
M1/S1	A21 FCA: Street stair at southeast corner of Broadway and West 40th Street	4.50	3.50	1,191	299	372	93	90%	100%	90%	1.01	D
M3/S3	A21 FCA: Street stair at northeast corner of Broadway and West 40th Street	4.00	3.00	523	280	163	88	90%	100%	90%	0.64	B
IND P1	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	832	948	260	296	90%	100%	75%	0.65	B
IND P2	Connecting stair between N63 paid zone and downtown A/C/E platform	8.50	7.50	566	679	177	212	90%	100%	75%	0.45	B
IND P3	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	170	68	53	21	90%	80%	75%	0.09	A
IND P4	Connecting stair between N63A paid zone and downtown A/C/E platform	8.50	7.50	390	699	122	218	90%	80%	75%	0.44	A
IND P5	Connecting stair between N62 paid zone and downtown A/C/E platform	8.50	7.50	281	453	88	142	90%	80%	75%	0.30	A
IND P6	Connecting stair between N62 paid zone and downtown A/C/E platform	9.00	7.75	233	1,103	73	345	90%	80%	75%	0.53	B
IND P7	Connecting stair between N62B paid zone and downtown A/C/E platform	7.50	6.50	1,028	398	321	124	90%	80%	75%	0.65	B
IND P8	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	1,071	1,168	335	365	90%	80%	75%	1.03	D
IND P9	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.50	474	1,738	148	543	90%	80%	75%	1.04	D
IND P10	Connecting stair between N61 paid zone and uptown A/C/E platform	7.50	6.50	53	567	17	177	90%	80%	75%	0.29	A
IND P11	Connecting stair between N61 paid zone and uptown A/C/E platform	6.00	5.00	240	691	75	216	90%	80%	75%	0.57	B
IND P12	Connecting stair between N60 paid zone and uptown A/C/E platform	5.00	4.00	17	372	5	116	100%	80%	75%	0.27	A
IND P13	Connecting stair between N60 paid zone and uptown A/C/E platform	7.50	6.50	291	651	91	203	90%	80%	75%	0.44	A
IND P14	Connecting stair between N62B paid zone and downtown A/C/E platform	6.00	4.75	663	835	207	261	90%	80%	75%	0.95	C
IND P15	Connecting stair between N62A paid zone and uptown A/C/E platform	7.50	6.25	1,845	896	577	280	90%	80%	75%	1.30	D
IND P16	Connecting stair between N60 paid zone and uptown A/C/E platform	8.00	6.75	249	308	78	96	90%	80%	75%	0.25	A
FLU PL1/PL2	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	1,479	1,353	462	423	90%	80%	75%	1.35	E
FLU PL3	Connecting stair between lower mezzanine and No. 7 platform	7.50	6.25	237	1,421	74	444	90%	80%	75%	0.81	C
FLU PL5	Connecting stair between lower mezzanine and No. 7 platform	8.75	7.50	1,760	871	550	272	90%	80%	75%	1.04	D
FLU PL7	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,847	889	890	278	90%	80%	75%	1.63	E
FLU PL8	Connecting stair between lower mezzanine and No. 7 platform	8.00	6.75	2,318	941	724	294	90%	80%	75%	1.42	E
IRT P1	Connecting stair between R143 paid zone and uptown 1/2/3 platform	11.50	10.00	2,319	587	725	183	90%	100%	75%	0.72	C
IRT P2	Connecting stair between R143 paid zone and downtown 1/2/3 platform	11.50	10.00	1,134	602	354	188	90%	100%	75%	0.45	A

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
IRT P3/P5	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	690	1,718	216	537	90%	80%	75%	1.17	D
IRT P4/P6	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	1,055	1,393	330	435	90%	80%	75%	1.18	D
IRT P7/P9	Connecting stair between R145 paid zone and downtown 1/2/3 platform	7.50	6.25	1,027	740	321	231	90%	80%	75%	0.84	C
IRT P8/P10	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.50	6.25	1,162	459	363	143	90%	80%	75%	0.76	C
IRT ML5	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.75	6.50	1,554	1,683	486	526	90%	80%	75%	1.49	E
IRT ML6	Connecting stair between lower mezzanine and uptown 1/2/3 platform	8.00	6.75	1,329	2,473	415	773	90%	80%	75%	1.70	F+
IRT ML9	Connecting stair between lower mezzanine and downtown 1/2/3 platform	7.00	5.75	980	464	306	145	90%	80%	75%	0.74	C
IRT ML10	Connecting stair between lower mezzanine and uptown 1/2/3 platform	7.00	5.75	970	604	303	189	90%	80%	75%	0.81	C
IRT P11	Connecting stair between R151 paid zone and downtown 1/2/3 platform	15.00	13.50	5,105	1,240	1,595	388	90%	80%	75%	1.38	E
IRT P12	Connecting stair between R145 paid zone and uptown 1/2/3 platform	7.00	5.75	441	801	138	250	90%	80%	75%	0.65	B
IRT P16	Connecting stair between R151 paid zone and uptown 1/2/3 platform	15.00	13.50	4,676	1,472	1,461	460	90%	80%	75%	1.34	E
ML13/ML14/ML15/ML16	Connecting stair between lower and upper mezzanine	8.00	6.75	1,587	902	496	282	90%	80%	80%	1.07	D
ML20/ML21/ML22/ML23	Connecting stair between lower and upper mezzanine	6.50	5.25	1,124	61	351	19	100%	80%	80%	0.59	B
BMT P1	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	1,028	513	321	160	90%	100%	75%	0.79	C
BMT P2	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	646	786	202	246	90%	100%	75%	0.71	C
BMT P3	Connecting stair between A21 mezzanine and downtown N/Q/R/W platform	6.00	5.00	1,099	232	343	73	90%	100%	75%	0.65	B
BMT P4	Connecting stair between A21 mezzanine and uptown N/Q/R/W platform	6.50	5.50	1,059	453	331	142	90%	100%	75%	0.70	C
BMT P5/P7	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	7.50	6.25	1,148	3,543	359	1,107	90%	80%	75%	2.28	F
BMT P6/P8	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.50	6.25	394	946	123	296	90%	80%	75%	0.65	B
BMT P9	Connecting stair between BMT mezzanine and downtown N/Q/R/W platform	8.50	7.25	2,184	525	683	164	90%	80%	75%	1.10	D
BMT P10	Connecting stair between BMT mezzanine and uptown N/Q/R/W platform	7.75	6.50	2,897	1,159	905	362	90%	80%	75%	1.84	F
BMT P11	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	1,001	1,098	313	343	90%	80%	75%	1.40	E
BMT P13	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	5.50	4.50	413	826	129	258	90%	80%	75%	0.83	C
BMT P15/P17	Connecting stair between upper mezzanine and downtown N/Q/R/W platform	8.00	6.75	1,415	1,923	442	601	90%	80%	75%	1.49	E
NOTE: + denotes a significant adverse effect												

Table 4C-66. CBD Tolling Alternative: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E216	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	0	1,530	0	478	945	0.67	B
E217	Connecting escalator between upper mezzanine and No. 7 platform	1	40	75%	1,317	0	412	0	945	0.58	B
E218	Connecting escalator between upper mezzanine and No. 7 platform	1	32	75%	0	470	0	147	750	0.26	A
E261	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	100%	357	0	112	0	945	0.12	A
E262	R151 FCA: Street escalator at southwest corner of Seventh Avenue and West 42nd Street	1	40	90%	0	687	0	215	945	0.25	A
E267	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	100%	1,055	0	330	0	945	0.35	A
E268	R147 FCA: Street escalator at southeast corner of Seventh Avenue and West 42nd Street	1	40	90%	0	1,324	0	414	945	0.49	B

Table 4C-67. CBD Tolling Alternative: 42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Eighth Avenue and West 44th Street - southwest corner (N60)											
Two-Way Turnstiles	8	3,360	5,160	1,531	1,265	478	395	90%	90%	0.25	A
Eighth Avenue and West 43rd Street - southwest corner (N61)											
HEET	2	510	1,080	507	500	158	156	90%	90%	0.52	B
Eighth Avenue and West 42nd Street - southeast corner (N62A)											
Two-Way Turnstiles	6	2,520	3,870	280	523	88	163	90%	90%	0.09	A
Eighth Avenue and West 41st Street - northwest corner (N62)											
Two-Way Turnstiles	8	3,360	5,160	869	2,421	272	757	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	260	0	81	100%	90%	0.16	A
Eighth Avenue and West 42nd Street - northwest corner (N62B)											
Two-Way Turnstiles	2	510	1,080	431	712	135	223	90%	90%	0.55	B
Eighth Avenue and West 40th Street - northwest corner (N63)											
Two-Way Turnstiles	7	2,940	4,515	1,184	1,553	370	485	90%	90%	0.27	A
HEET	2	510	1,080	205	371	64	116	90%	90%	0.27	A
High Exit Only Turnstile	1	0	555	0	191	0	60	100%	90%	0.12	A
Eighth Avenue and West 41st Street (N63A)											
Two-Way Turnstiles	10	4,200	6,450	2,148	5,205	671	1,627	90%	90%	0.49	B
Broadway and West 40th Street (A21)											
Two-Way Turnstiles	8	3,360	5,160	3,635	1,546	1,136	483	90%	90%	0.49	B
High Exit Only Turnstile	1	0	555	0	166	0	52	100%	90%	0.10	A
Seventh Avenue and West 40th Street (R143)											
Two-Way Turnstiles	8	3,360	5,160	3,110	976	972	305	90%	90%	0.39	A
Seventh Avenue and West 42nd Street - southeast corner (R147)											
Two-Way Turnstiles	7	2,940	4,515	2,615	1,464	817	458	90%	90%	0.43	A
Broadway and West 42nd Street - southeast corner (R148)											
Two-Way Turnstiles	5	2,100	3,225	374	1,706	117	533	90%	90%	0.27	A
Seventh Avenue and West 42nd Street - southwest corner (R151)											
Two-Way Turnstiles	9	3,780	5,805	2,536	1,870	793	584	90%	90%	0.36	A

Table 4C-68. Existing Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7	Connecting stair between O7/O8/O9/O10 stairs and Turnstyle Underground Market	11.50	10.00	322	736	101	230	90%	100%	80%	0.29	A
O5/O6	Street stair at southeast corner of West 57th Street and Eighth Avenue	7.00	5.75	111	1025	35	320	90%	100%	80%	0.56	B
O20/O21	Street stair at northwest corner of West 57th Street and Eighth Avenue	8.50	7.25	126	158	39	49	90%	100%	80%	0.10	A
S2	Street stair at northeast corner of West 57th Street and Eighth Avenue	4.50	3.50	41	238	13	74	90%	100%	80%	0.22	A
S4/M11	Street stair at northeast corner of West 58th Street and Eighth Avenue	3.50	2.50	106	427	33	133	90%	100%	80%	0.59	B
O1/O2/O3	Street stair by Time Warner Center	10.00	8.75	334	518	104	162	90%	100%	80%	0.26	A
S4	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	3.00	103	342	32	107	90%	100%	80%	0.41	A
S5	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	6.75	79	113	25	35	90%	100%	80%	0.08	A
O18/M14	Street stair by Trump Hotel	17.50	16.00	3618	633	1,131	198	90%	100%	80%	0.64	B
M7/S7	Street stair at northwest corner of West 60th Street and Broadway	7.00	5.75	166	59	52	18	90%	100%	80%	0.10	A
S2/P2	Street level stair at West 60th Street and Broadway median	6.00	5.00	45	418	14	131	90%	100%	80%	0.26	A
S3/P3	Street level stair at West 60th Street and Broadway median	6.00	5.00	324	533	101	167	90%	100%	80%	0.46	B
P1	Connecting stair between N051 paid zone and IND southbound platform	12.00	10.75	1533	872	479	273	90%	80%	75%	0.66	B
P3	Connecting stair between N051 paid zone and IND northbound platform	12.50	11.25	689	1449	215	453	90%	80%	75%	0.57	B
P4	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	215	367	67	115	90%	80%	75%	0.20	A
P5	Connecting stair between N051 paid zone and IRT southbound platform	23.50	21.50	166	59	52	18	90%	100%	75%	0.03	A
P6	Connecting stair between N051 paid zone and IND northbound platform	10.00	8.75	153	1419	48	443	90%	80%	75%	0.55	B
P8	Connecting stair between intermediate landing level and IND southbound platform	8.00	6.75	671	1058	210	331	90%	80%	75%	0.77	C
P10	Connecting stair between intermediate landing level and IND northbound platform	8.00	6.75	340	1994	106	623	90%	80%	75%	1.06	D
P11	Connecting stair between N049 paid zone and IND southbound platform	8.00	6.75	254	1577	79	493	90%	80%	75%	0.83	C
P13	Connecting stair between N049 paid zone and IND northbound platform	8.00	6.75	137	873	43	273	90%	80%	75%	0.46	B
P14/P15	Connecting stair between N049A paid zone and IND northbound platform	11.00	9.75	198	1262	62	394	90%	80%	75%	0.46	B
P16	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	93	1601	29	500	100%	80%	75%	0.54	B
PL1/PL3	Connecting stair between IRT northbound platform and IND southbound platform	10.00	8.75	2067	1102	646	344	90%	80%	75%	1.07	D
ML1	Connecting stair between N051 paid zone and IRT southbound platform	25.00	23.25	181	151	57	47	90%	80%	75%	0.04	A

Table 4C-69. Existing Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E250X	Street elevator by Time Warner Center	1	40	90%	0	2,382	0	744	945	0.87	C
E251X	Street elevator by Time Warner Center	1	40	100%	893	0	279	0	945	0.30	A

Table 4C-70. Existing Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Time Warner Center (N051)											
Two-Way Turnstiles	10	4,200	6,450	1,932	4,081	604	1,275	90%	80%	0.43	A
High Exit Only Turnstile	4	0	2,220	0	1,404	0	439	100%	80%	0.25	A
Trump Hotel (N049)											
Two-Way Turnstiles	10	4,200	6,450	3,618	633	1,131	198	90%	80%	0.34	A
Columbus Circle and Central Park South – southeast corner (R157)											
Two-Way Turnstiles	4	1,680	2,580	182	455	57	142	90%	80%	0.11	A
West 60th Street and Broadway Median – north side (R158 North)											
Two-Way Turnstiles	2	840	1,290	30	279	9	87	90%	80%	0.11	A
West 60th Street and Broadway Median - south side (R158 South)											
Two-Way Turnstiles	3	1,260	1,935	324	533	101	167	90%	80%	0.21	A
West 60th Street and Broadway – northwest corner (R158A)											
HEET	3	765	1,620	101	49	31	15	90%	80%	0.06	A

Table 4C-71. Existing Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7	Connecting stair between O7/O8/O9/O10 stairs and Turnstyle Underground Market	11.50	10.00	587	160	183	50	90%	100%	80%	0.18	A
O5/O6	Street stair at southeast corner of West 57th Street and Eighth Avenue	7.00	5.75	715	239	223	75	90%	100%	80%	0.41	A
O20/O21	Street stair at northwest corner of West 57th Street and Eighth Avenue	8.50	7.25	288	64	90	20	90%	100%	80%	0.12	A
S2	Street stair at northeast corner of West 57th Street and Eighth Avenue	4.50	3.50	308	52	96	16	90%	100%	80%	0.25	A
S4/M11	Street stair at northeast corner of West 58th Street and Eighth Avenue	3.50	2.50	483	137	151	43	90%	100%	80%	0.61	B
O1/O2/O3	Street stair by Time Warner Center	10.00	8.75	820	129	256	40	90%	100%	80%	0.26	A
S4	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	3.00	573	192	179	60	90%	100%	80%	0.63	B
S5	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	6.75	341	58	107	18	90%	100%	80%	0.14	A
O18/M14	Street stair by Trump Hotel	17.50	16.00	1,967	2,060	615	644	90%	100%	80%	0.66	B
M7/S7	Street stair at northwest corner of West 60th Street and Broadway	7.00	5.75	272	32	85	10	90%	100%	80%	0.13	A
S2/P2	Street level stair at West 60th Street and Broadway median	6.00	5.00	121	318	38	99	90%	100%	80%	0.24	A
S3/P3	Street level stair at West 60th Street and Broadway median	6.00	5.00	430	274	134	86	90%	100%	80%	0.36	A
P1	Connecting stair between N051 paid zone and IND southbound platform	12.00	10.75	2,407	212	752	66	90%	80%	75%	0.71	C
P3	Connecting stair between N051 paid zone and IND northbound platform	12.50	11.25	1,885	475	589	148	90%	80%	75%	0.61	B
P4	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	298	175	93	55	90%	80%	75%	0.16	A
P5	Connecting stair between N051 paid zone and IRT southbound platform	23.50	21.50	272	32	85	10	90%	100%	75%	0.03	A
P6	Connecting stair between N051 paid zone and IND northbound platform	10.00	8.75	636	986	199	308	90%	80%	75%	0.56	B
P8	Connecting stair between intermediate landing level and IND southbound platform	8.00	6.75	1,533	378	479	118	90%	80%	75%	0.83	C
P10	Connecting stair between intermediate landing level and IND northbound platform	8.00	6.75	997	1268	312	396	90%	80%	75%	1.01	D
P11	Connecting stair between N049 paid zone and IND southbound platform	8.00	6.75	408	538	128	168	90%	80%	75%	0.42	A
P13	Connecting stair between N049 paid zone and IND northbound platform	8.00	6.75	433	614	135	192	90%	80%	75%	0.47	B
P14/P15	Connecting stair between N049A paid zone and IND northbound platform	11.00	9.75	546	798	171	249	90%	80%	75%	0.41	A
P16	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	186	474	58	148	90%	80%	75%	0.23	A
PL1/PL3	Connecting stair between IRT northbound platform and IND southbound platform	10.00	8.75	1,626	381	508	119	90%	80%	75%	0.67	B
ML1	Connecting stair between N051 paid zone and IRT southbound platform	25.00	23.25	73	223	23	70	90%	80%	75%	0.04	A

Table 4C-72. Existing Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E250X	Street elevator by Time Warner Center	1	40	90%	0	1,396	0	436	945	0.51	B
E251X	Street elevator by Time Warner Center	1	40	100%	2,207	0	690	0	945	0.73	C

Table 4C-73. Existing Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Time Warner Center (N051)											
Two-Way Turnstiles	10	4,200	6,450	5,407	1,619	1,690	506	90%	80%	0.56	B
High Exit Only Turnstile	4	0	2,220	0	557	0	174	100%	80%	0.10	A
Trump Hotel (N049)											
Two-Way Turnstiles	10	4,200	6,450	1,967	2,060	615	644	90%	80%	0.30	A
Columbus Circle and Central Park South – southeast corner (R157)											
Two-Way Turnstiles	4	1,680	2,580	914	250	286	78	90%	80%	0.23	A
West 60th Street and Broadway Median – north side (R158 North)											
Two-Way Turnstiles	2	840	1,290	81	212	25	66	90%	80%	0.10	A
West 60th Street and Broadway Median - south side (R158 South)											
Two-Way Turnstiles	3	1,260	1,935	430	274	134	86	90%	80%	0.18	A
West 60th Street and Broadway – northwest corner (R158A)											
HEET	3	765	1,620	165	27	52	8	90%	80%	0.08	A

Table 4C-74. No Action Alternative Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7	Connecting stair between O7/O8/O9/O10 stairs and Turnstyle Underground Market	11.50	10.00	322	736	101	230	90%	100%	80%	0.29	A
O5/O6	Street stair at southeast corner of West 57th Street and Eighth Avenue	7.00	5.75	111	1025	35	320	90%	100%	80%	0.56	B
O20/O21	Street stair at northwest corner of West 57th Street and Eighth Avenue	8.50	7.25	126	158	39	49	90%	100%	80%	0.10	A
S2	Street stair at northeast corner of West 57th Street and Eighth Avenue	4.50	3.50	41	238	13	74	90%	100%	80%	0.22	A
S4/M11	Street stair at northeast corner of West 58th Street and Eighth Avenue	3.50	2.50	106	427	33	133	90%	100%	80%	0.59	B
O1/O2/O3	Street stair by Time Warner Center	10.00	8.75	334	518	104	162	90%	100%	80%	0.26	A
S4	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	3.00	103	342	32	107	90%	100%	80%	0.41	A
S5	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	6.75	79	113	25	35	90%	100%	80%	0.08	A
O18/M14	Street stair by Trump Hotel	17.50	16.00	3618	633	1,131	198	90%	100%	80%	0.64	B
M7/S7	Street stair at northwest corner of West 60th Street and Broadway	7.00	5.75	166	59	52	18	90%	100%	80%	0.10	A
S2/P2	Street level stair at West 60th Street and Broadway median	6.00	5.00	45	418	14	131	90%	100%	80%	0.26	A
S3/P3	Street level stair at West 60th Street and Broadway median	6.00	5.00	324	533	101	167	90%	100%	80%	0.46	B
P1	Connecting stair between N051 paid zone and IND southbound platform	12.00	10.75	1533	872	479	273	90%	80%	75%	0.66	B
P3	Connecting stair between N051 paid zone and IND northbound platform	12.50	11.25	689	1449	215	453	90%	80%	75%	0.57	B
P4	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	215	367	67	115	90%	80%	75%	0.20	A
P5	Connecting stair between N051 paid zone and IRT southbound platform	23.50	21.50	166	59	52	18	90%	100%	75%	0.03	A
P6	Connecting stair between N051 paid zone and IND northbound platform	10.00	8.75	153	1419	48	443	90%	80%	75%	0.55	B
P8	Connecting stair between intermediate landing level and IND southbound platform	8.00	6.75	671	1058	210	331	90%	80%	75%	0.77	C
P10	Connecting stair between intermediate landing level and IND northbound platform	8.00	6.75	340	1994	106	623	90%	80%	75%	1.06	D
P11	Connecting stair between N049 paid zone and IND southbound platform	8.00	6.75	254	1577	79	493	90%	80%	75%	0.83	C
P13	Connecting stair between N049 paid zone and IND northbound platform	8.00	6.75	137	873	43	273	90%	80%	75%	0.46	B
P14/P15	Connecting stair between N049A paid zone and IND northbound platform	11.00	9.75	198	1262	62	394	90%	80%	75%	0.46	B
P16	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	93	1601	29	500	100%	80%	75%	0.54	B
PL1/PL3	Connecting stair between IRT northbound platform and IND southbound platform	10.00	8.75	2067	1102	646	344	90%	80%	75%	1.07	D
ML1	Connecting stair between N051 paid zone and IRT southbound platform	25.00	23.25	181	151	57	47	90%	80%	75%	0.04	A

Table 4C-75. No Action Alternative Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E250X	Street elevator by Time Warner Center	1	40	90%	0	2,382	0	744	945	0.87	C
E251X	Street elevator by Time Warner Center	1	40	100%	893	0	279	0	945	0.30	A

Table 4C-76. No Action Alternative Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Time Warner Center (N051)											
Two-Way Turnstiles	10	4,200	6,450	1,932	4,081	604	1,275	90%	80%	0.43	A
High Exit Only Turnstile	4	0	2,220	0	1,404	0	439	100%	80%	0.25	A
Trump Hotel (N049)											
Two-Way Turnstiles	10	4,200	6,450	3,618	633	1,131	198	90%	80%	0.34	A
Columbus Circle and Central Park South – southeast corner (R157)											
Two-Way Turnstiles	4	1,680	2,580	182	455	57	142	90%	80%	0.11	A
West 60th Street and Broadway Median – north side (R158 North)											
Two-Way Turnstiles	2	840	1,290	30	279	9	87	90%	80%	0.11	A
West 60th Street and Broadway Median - south side (R158 South)											
Two-Way Turnstiles	3	1,260	1,935	324	533	101	167	90%	80%	0.21	A
West 60th Street and Broadway – northwest corner (R158A)											
HEET	3	765	1,620	101	49	31	15	90%	80%	0.06	A

Table 4C-77. No Action Alternative Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7	Connecting stair between O7/O8/O9/O10 stairs and Turnstyle Underground Market	11.50	10.00	587	160	183	50	90%	100%	80%	0.18	A
O5/O6	Street stair at southeast corner of West 57th Street and Eighth Avenue	7.00	5.75	715	239	223	75	90%	100%	80%	0.41	A
O20/O21	Street stair at northwest corner of West 57th Street and Eighth Avenue	8.50	7.25	288	64	90	20	90%	100%	80%	0.12	A
S2	Street stair at northeast corner of West 57th Street and Eighth Avenue	4.50	3.50	308	52	96	16	90%	100%	80%	0.25	A
S4/M11	Street stair at northeast corner of West 58th Street and Eighth Avenue	3.50	2.50	483	137	151	43	90%	100%	80%	0.61	B
O1/O2/O3	Street stair by Time Warner Center	10.00	8.75	820	129	256	40	90%	100%	80%	0.26	A
S4	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	3.00	573	192	179	60	90%	100%	80%	0.63	B
S5	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	6.75	341	58	107	18	90%	100%	80%	0.14	A
O18/M14	Street stair by Trump Hotel	17.50	16.00	1967	2060	615	644	90%	100%	80%	0.66	B
M7/S7	Street stair at northwest corner of West 60th Street and Broadway	7.00	5.75	272	32	85	10	90%	100%	80%	0.13	A
S2/P2	Street level stair at West 60th Street and Broadway median	6.00	5.00	121	318	38	99	90%	100%	80%	0.24	A
S3/P3	Street level stair at West 60th Street and Broadway median	6.00	5.00	430	274	134	86	90%	100%	80%	0.36	A
P1	Connecting stair between N051 paid zone and IND southbound platform	12.00	10.75	2407	212	752	66	90%	80%	75%	0.71	C
P3	Connecting stair between N051 paid zone and IND northbound platform	12.50	11.25	1885	475	589	148	90%	80%	75%	0.61	B
P4	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	298	175	93	55	90%	80%	75%	0.16	A
P5	Connecting stair between N051 paid zone and IRT southbound platform	23.50	21.50	272	32	85	10	90%	100%	75%	0.03	A
P6	Connecting stair between N051 paid zone and IND northbound platform	10.00	8.75	636	986	199	308	90%	80%	75%	0.56	B
P8	Connecting stair between intermediate landing level and IND southbound platform	8.00	6.75	1533	378	479	118	90%	80%	75%	0.83	C
P10	Connecting stair between intermediate landing level and IND northbound platform	8.00	6.75	997	1268	312	396	90%	80%	75%	1.01	D
P11	Connecting stair between N049 paid zone and IND southbound platform	8.00	6.75	408	538	128	168	90%	80%	75%	0.42	A
P13	Connecting stair between N049 paid zone and IND northbound platform	8.00	6.75	433	614	135	192	90%	80%	75%	0.47	B
P14/P15	Connecting stair between N049A paid zone and IND northbound platform	11.00	9.75	546	798	171	249	90%	80%	75%	0.41	A
P16	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	186	474	58	148	90%	80%	75%	0.23	A
PL1/PL3	Connecting stair between IRT northbound platform and IND southbound platform	10.00	8.75	1626	381	508	119	90%	80%	75%	0.67	B
ML1	Connecting stair between N051 paid zone and IRT southbound platform	25.00	23.25	73	223	23	70	90%	80%	75%	0.04	A

Table 4C-78. No Action Alternative Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E250X	Street elevator by Time Warner Center	1	40	90%	0	1,396	0	436	945	0.51	B
E251X	Street elevator by Time Warner Center	1	40	100%	2,207	0	690	0	945	0.73	C

Table 4C-79. No Action Alternative Level of Service Summary: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Time Warner Center (N051)											
Two-Way Turnstiles	10	4,200	6,450	5,407	1,619	1,690	506	90%	80%	0.56	B
High Exit Only Turnstile	4	0	2,220	0	557	0	174	100%	80%	0.10	A
Trump Hotel (N049)											
Two-Way Turnstiles	10	4,200	6,450	1,967	2,060	615	644	90%	80%	0.30	A
Columbus Circle and Central Park South – southeast corner (R157)											
Two-Way Turnstiles	4	1,680	2,580	914	250	286	78	90%	80%	0.23	A
West 60th Street and Broadway Median – north side (R158 North)											
Two-Way Turnstiles	2	840	1,290	81	212	25	66	90%	80%	0.10	A
West 60th Street and Broadway Median - south side (R158 South)											
Two-Way Turnstiles	3	1,260	1,935	430	274	134	86	90%	80%	0.18	A
West 60th Street and Broadway – northwest corner (R158A)											
HEET	3	765	1,620	165	27	52	8	90%	80%	0.08	A

Table 4C-80. CBD Tolling Alternative: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7	Connecting stair between O7/O8/O9/O10 stairs and Turnstyle Underground Market	11.50	10.00	325	762	102	238	90%	100%	80%	0.30	A
O5/O6	Street stair at southeast corner of West 57th Street and Eighth Avenue	7.00	5.75	114	1051	36	328	90%	100%	80%	0.57	B
O20/O21	Street stair at northwest corner of West 57th Street and Eighth Avenue	8.50	7.25	127	171	40	53	90%	100%	80%	0.11	A
S2	Street stair at northeast corner of West 57th Street and Eighth Avenue	4.50	3.50	42	251	13	78	90%	100%	80%	0.23	A
S4/M11	Street stair at northeast corner of West 58th Street and Eighth Avenue	3.50	2.50	107	440	33	138	90%	100%	80%	0.61	B
O1/O2/O3	Street stair by Time Warner Center	10.00	8.75	335	518	105	162	90%	100%	80%	0.26	A
S4	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	3.00	104	350	33	109	90%	100%	80%	0.42	A
S5	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	6.75	80	121	25	38	90%	100%	80%	0.08	A
O18/M14	Street stair by Trump Hotel	17.50	16.00	3625	641	1,133	200	90%	100%	80%	0.64	B
M7/S7	Street stair at northwest corner of West 60th Street and Broadway	7.00	5.75	171	67	53	21	90%	100%	80%	0.10	A
S2/P2	Street level stair at West 60th Street and Broadway median	6.00	5.00	46	418	14	131	90%	100%	80%	0.26	A
S3/P3	Street level stair at West 60th Street and Broadway median	6.00	5.00	325	533	102	167	90%	100%	80%	0.46	B
P1	Connecting stair between N051 paid zone and IND southbound platform	12.00	10.75	1535	895	480	280	90%	80%	75%	0.67	B
P3	Connecting stair between N051 paid zone and IND northbound platform	12.50	11.25	691	1522	216	476	90%	80%	75%	0.60	B
P4	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	216	367	68	115	90%	80%	75%	0.20	A
P5	Connecting stair between N051 paid zone and IRT southbound platform	23.50	21.50	174	64	54	20	90%	100%	75%	0.03	A
P6	Connecting stair between N051 paid zone and IND northbound platform	10.00	8.75	159	1420	50	444	90%	80%	75%	0.55	B
P8	Connecting stair between intermediate landing level and IND southbound platform	8.00	6.75	673	1059	210	331	90%	80%	75%	0.77	C
P10	Connecting stair between intermediate landing level and IND northbound platform	8.00	6.75	345	2010	108	628	90%	80%	75%	1.07	D
P11	Connecting stair between N049 paid zone and IND southbound platform	8.00	6.75	255	1578	80	493	90%	80%	75%	0.83	C
P13	Connecting stair between N049 paid zone and IND northbound platform	8.00	6.75	137	873	43	273	90%	80%	75%	0.46	B
P14/P15	Connecting stair between N049A paid zone and IND northbound platform	11.00	9.75	203	1277	63	399	90%	80%	75%	0.46	B
P16	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	95	1624	30	508	90%	80%	75%	0.61	B
PL1/PL3	Connecting stair between IRT northbound platform and IND southbound platform	10.00	8.75	2116	1137	661	355	90%	80%	75%	1.10	D
ML1	Connecting stair between N051 paid zone and IRT southbound platform	25.00	23.25	181	157	57	49	90%	80%	75%	0.04	A

Table 4C-81. CBD Tolling Alternative: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E250X	Street elevator by Time Warner Center	1	40	90%	0	2,421	0	757	945	0.89	C
E251X	Street elevator by Time Warner Center	1	40	100%	895	0	280	0	945	0.30	A

Table 4C-82. CBD Tolling Alternative: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Time Warner Center (N051)											
Two-Way Turnstiles	10	4,200	6,450	1,943	4,177	607	1,305	90%	80%	0.44	A
High Exit Only Turnstile	4	0	2,220	0	1,438	0	449	100%	80%	0.25	A
Trump Hotel (N049)											
Two-Way Turnstiles	10	4,200	6,450	3,625	641	1,133	200	90%	80%	0.34	A
Columbus Circle and Central Park South – southeast corner (R157)											
Two-Way Turnstiles	4	1,680	2,580	183	471	57	147	90%	80%	0.12	A
West 60th Street and Broadway Median – north side (R158 North)											
Two-Way Turnstiles	2	840	1,290	31	279	10	87	90%	80%	0.11	A
West 60th Street and Broadway Median - south side (R158 South)											
Two-Way Turnstiles	3	1,260	1,935	325	533	102	167	90%	80%	0.21	A
West 60th Street and Broadway – northwest corner (R158A)											
HEET	3	765	1,620	104	56	32	18	90%	80%	0.06	A

Table 4C-83. CBD Tolling Alternative: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M7	Connecting stair between O7/O8/O9/O10 stairs and Turnstyle Underground Market	11.50	10.00	622	162	194	51	90%	100%	80%	0.19	A
O5/O6	Street stair at southeast corner of West 57th Street and Eighth Avenue	7.00	5.75	750	241	234	75	90%	100%	80%	0.42	A
O20/O21	Street stair at northwest corner of West 57th Street and Eighth Avenue	8.50	7.25	295	65	92	20	90%	100%	80%	0.12	A
S2	Street stair at northeast corner of West 57th Street and Eighth Avenue	4.50	3.50	315	53	98	17	90%	100%	80%	0.25	A
S4/M11	Street stair at northeast corner of West 58th Street and Eighth Avenue	3.50	2.50	497	138	155	43	90%	100%	80%	0.62	B
O1/O2/O3	Street stair by Time Warner Center	10.00	8.75	831	129	260	40	90%	100%	80%	0.26	A
S4	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	3.00	582	193	182	60	90%	100%	80%	0.63	B
S5	Street stair at southeast corner of Columbus Circle and Central Park South	4.00	6.75	350	59	109	18	90%	100%	80%	0.14	A
O18/M14	Street stair by Trump Hotel	17.50	16.00	1976	2067	618	646	90%	100%	80%	0.66	B
M7/S7	Street stair at northwest corner of West 60th Street and Broadway	7.00	5.75	281	38	88	12	90%	100%	80%	0.13	A
S2/P2	Street level stair at West 60th Street and Broadway median	6.00	5.00	121	318	38	99	90%	100%	80%	0.24	A
S3/P3	Street level stair at West 60th Street and Broadway median	6.00	5.00	430	274	134	86	90%	100%	80%	0.36	A
P1	Connecting stair between N051 paid zone and IND southbound platform	12.00	10.75	2451	212	766	66	90%	80%	75%	0.72	C
P3	Connecting stair between N051 paid zone and IND northbound platform	12.50	11.25	1929	482	603	151	90%	80%	75%	0.63	B
P4	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	299	175	93	55	90%	80%	75%	0.16	A
P5	Connecting stair between N051 paid zone and IRT southbound platform	23.50	21.50	278	41	87	13	90%	100%	75%	0.04	A
P6	Connecting stair between N051 paid zone and IND northbound platform	10.00	8.75	640	987	200	308	90%	80%	75%	0.56	B
P8	Connecting stair between intermediate landing level and IND southbound platform	8.00	6.75	1536	378	480	118	90%	80%	75%	0.83	C
P10	Connecting stair between intermediate landing level and IND northbound platform	8.00	6.75	1013	1288	317	403	90%	80%	75%	1.02	D
P11	Connecting stair between N049 paid zone and IND southbound platform	8.00	6.75	410	538	128	168	90%	80%	75%	0.42	A
P13	Connecting stair between N049 paid zone and IND northbound platform	8.00	6.75	433	614	135	192	90%	80%	75%	0.47	B
P14/P15	Connecting stair between N049A paid zone and IND northbound platform	11.00	9.75	562	816	176	255	90%	80%	75%	0.43	A
P16	Connecting stair between N051 paid zone and IND southbound platform	10.00	8.75	230	474	72	148	90%	80%	75%	0.24	A
PL1/PL3	Connecting stair between IRT northbound platform and IND southbound platform	10.00	8.75	1661	412	519	129	90%	80%	75%	0.69	B
ML1	Connecting stair between N051 paid zone and IRT southbound platform	25.00	23.25	73	252	23	79	90%	80%	75%	0.04	A

Table 4C-84. CBD Tolling Alternative: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E250X	Street elevator by Time Warner Center	1	40	90%	0	1,399	0	437	945	0.51	B
E251X	Street elevator by Time Warner Center	1	40	100%	2,238	0	699	0	945	0.74	C

Table 4C-85. CBD Tolling Alternative: 59th Street – Columbus Circle Station (A, B, C, D, and No. 1 lines) Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Time Warner Center (N051)											
Two-Way Turnstiles	10	4,200	6,450	5,548	1,628	1,734	509	90%	80%	0.57	B
High Exit Only Turnstile	4	0	2,220	0	560	0	175	100%	80%	0.10	A
Trump Hotel (N049)											
Two-Way Turnstiles	10	4,200	6,450	1,976	2,067	618	646	90%	80%	0.30	A
Columbus Circle and Central Park South – southeast corner (R157)											
Two-Way Turnstiles	4	1,680	2,580	932	251	291	78	90%	80%	0.23	A
West 60th Street and Broadway Median – north side (R158 North)											
Two-Way Turnstiles	2	840	1,290	81	213	25	66	90%	80%	0.10	A
West 60th Street and Broadway Median - south side (R158 South)											
Two-Way Turnstiles	3	1,260	1,935	430	275	134	86	90%	80%	0.18	A
West 60th Street and Broadway – northwest corner (R158A)											
HEET	3	765	1,620	171	32	53	10	90%	80%	0.09	A

Table 4C-86. Existing Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M1/S1	A004 FCA: northwest corner of Lexington Avenue and East 60th Street	4.00	3.00	625	447	195	140	90%	100%	80%	0.91	C
O5/O6	R244 FCA: southwest corner of Lexington Avenue and East 60th Street	8.00	6.75	197	1637	62	512	90%	100%	80%	0.77	C
MB1/SB1	R244A FCA: southwest corner of Lexington Avenue and East 59th Street	8.00	6.75	281	1569	88	490	90%	100%	80%	0.77	C
O11/O12	R244A FCA: northwest corner of Lexington Avenue and East 59th Street	7.50	6.25	250	282	78	88	90%	100%	80%	0.22	A
O8/O9/O10	R245A FCA: southeast corner of Lexington Avenue and East 59th Street	9.50	8.25	223	2752	70	860	90%	100%	80%	1.03	D
S3/M3	R245 FCA: northeast corner of Lexington Avenue and East 60th Street	5.00	4.00	156	833	49	260	90%	100%	80%	0.69	B
O1/O2/O3	R245 FCA: southeast corner of Lexington Avenue and East 60th Street	10.00	8.75	43	592	13	185	90%	100%	80%	0.21	A
S2/S4	A002 FCA: southwest corner of Third Avenue and East 60th Street	6.00	5.00	73	483	23	151	90%	100%	80%	0.31	A
S5/S7	A002 FCA: northwest corner of Third Avenue and East 60th Street	6.00	5.00	94	61	29	19	90%	100%	80%	0.08	A
S6/S8	A002 FCA: southeast corner of Third Avenue and East 60th Street	6.00	5.00	389	717	122	224	90%	100%	80%	0.60	B
S9/S11	A002 FCA: northeast corner of Third Avenue and East 60th Street	6.00	5.00	544	865	170	270	90%	100%	80%	0.75	C
P8	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	1901	701	594	219	90%	80%	75%	1.39	E
P1	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	773	670	242	209	90%	80%	75%	0.78	C
P2	R244 FCA: Connecting stair to intermediate mezzanine - west	12.75	11.50	2674	1371	836	428	90%	80%	80%	1.02	D
PL1/PL3/PL5/PL7	Near R244A FCA: Connecting stair between downtown 6 platform and downtown 4/5 platform	3.00	2.00	709	21	222	7	100%	75%	75%	1.02	D
PL2/PL4/PL6/PL8	Near R245A FCA: Connecting stair between uptown 6 platform and uptown 4/5 platform	2.75	1.75	287	59	90	18	90%	75%	75%	0.61	B
P3	R245 FCA: Connecting stair to intermediate mezzanine - east	9.50	8.25	112	1128	35	353	90%	80%	80%	0.44	A
P5/P13	R245 FCA: Connecting stair to intermediate mezzanine - east	6.50	5.50	89	2041	28	638	100%	80%	80%	1.01	D
P6	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.00	6.75	97	2023	30	632	100%	80%	75%	0.87	C
P7	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.50	7.25	201	1531	63	478	90%	80%	75%	0.73	C
ML3/ML4	Connecting stair between BMT platform and lower intermediate mezzanine	4.50	3.50	1014	1052	317	329	90%	75%	80%	1.76	F
ML1/ML2	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	2289	579	715	181	90%	75%	80%	2.18	F
ML5/ML6	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	1686	1056	527	330	90%	75%	80%	2.07	F
PL9	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1748	2292	546	716	90%	80%	75%	2.43	F
PL10	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1164	756	364	236	90%	80%	75%	1.14	D
PL11	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1320	1038	413	324	90%	80%	75%	1.40	E
PL12	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	681	601	213	188	90%	80%	75%	0.77	C
P9/P10/P11/P12	Connecting stair A002 paid zone and BMT platform	3.50	2.50	2	114	1	36	100%	80%	75%	0.13	A

Table 4C-87. Existing Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E211	Near R245A FCA: Connecting escalator between uptown 6 platform and uptown 4/5 platform	1	40	75%	0	1,386	0	433	945	0.61	B
E212	Near R244A FCA: Connecting escalator between downtown 6 platform and downtown 4/5 platform	1	40	75%	0	1,595	0	498	945	0.70	C
E213	Near R245 FCA: Connecting escalator between uptown 6 platform and intermediate mezzanine	1	40	80%	0	1,280	0	400	945	0.53	B
E214	Near R244 FCA: Connecting escalator between downtown 6 platform and intermediate mezzanine	1	40	80%	0	872	0	273	945	0.36	A
E215	Near A004 FCA: Connecting escalator between A004 paid zone and BMT platform	1	40	75%	0	1,903	0	595	945	0.84	C
E248	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	75%	0	1,963	00	613	945	0.86	C
E249	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	100%	1,085	0	339	0	945	0.36	A

Table 4C-88. Existing Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lexington Avenue and East 60th Street – northeast corner (A004)											
Two-Way Turnstiles	3	1,260	1,935	625	447	195	140	90%	80%	0.27	A
Lexington Avenue and East 60th Street - southwest corner (R244)											
Two-Way Turnstiles	9	3,780	5,805	197	1,637	62	512	90%	80%	0.14	A
Lexington Avenue and East 59th Street – west side (R244A)											
Two-Way Turnstiles	5	2,100	3,225	427	1,387	134	433	90%	80%	0.26	A
HEET	2	510	1,080	104	464	32	145	90%	80%	0.26	A
Lexington Avenue and East 59th Street – southeast corner (R245A)											
Two-Way Turnstiles	3	1,260	1,935	159	1,766	50	552	90%	80%	0.44	A
HEET	2	510	1,080	64	986	20	308	90%	80%	0.44	A
Lexington Avenue and East 59th Street – west side (R245)											
Two-Way Turnstiles	8	3,360	5,160	159	848	50	265	90%	80%	0.09	A
High Exit Only Turnstile	1	0	555	0	91	0	29	100%	80%	0.07	A
Third Avenue and East 60th Street (A002)											
Two-Way Turnstiles	10	4,200	6,450	1,100	1,582	344	494	90%	80%	0.20	A
High Exit Only Turnstile	4	0	2,220	0	544	0	170	100%	80%	0.10	A

Table 4C-89. Existing Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M1/S1	A004 FCA: northwest corner of Lexington Avenue and East 60th Street	4.00	3.00	866	133	271	42	90%	100%	80%	0.80	C
O5/O6	R244 FCA: southwest corner of Lexington Avenue and East 60th Street	8.00	6.75	905	573	283	179	90%	100%	80%	0.56	B
MB1/SB1	R244A FCA: southwest corner of Lexington Avenue and East 59th Street	8.00	6.75	1843	343	576	107	90%	100%	80%	0.78	C
O11/O12	R244A FCA: northwest corner of Lexington Avenue and East 59th Street	7.50	6.25	930	131	291	41	90%	100%	80%	0.41	A
O8/O9/O10	R245A FCA: southeast corner of Lexington Avenue and East 59th Street	9.50	8.25	2237	1036	699	324	90%	100%	80%	0.99	C
S3/M3	R245 FCA: northeast corner of Lexington Avenue and East 60th Street	5.00	4.00	635	679	198	212	90%	100%	80%	0.86	C
O1/O2/O3	R245 FCA: southeast corner of Lexington Avenue and East 60th Street	10.00	8.75	285	376	89	118	90%	100%	80%	0.20	A
S2/S4	A002 FCA: southwest corner of Third Avenue and East 60th Street	6.00	5.00	653	76	204	24	90%	100%	80%	0.35	A
S5/S7	A002 FCA: northwest corner of Third Avenue and East 60th Street	6.00	5.00	129	20	40	6	90%	100%	80%	0.07	A
S6/S8	A002 FCA: southeast corner of Third Avenue and East 60th Street	6.00	5.00	610	253	191	79	90%	100%	80%	0.43	A
S9/S11	A002 FCA: northeast corner of Third Avenue and East 60th Street	6.00	5.00	809	257	253	80	90%	100%	80%	0.52	B
P8	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	3354	170	1,048	53	100%	80%	75%	1.67	F
P1	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	1463	144	457	45	90%	80%	75%	0.85	C
P2	R244 FCA: Connecting stair to intermediate mezzanine - west	12.75	11.50	4817	314	1,505	98	90%	80%	80%	1.29	D
PL1/PL3/PL5/PL7	Near R244A FCA: Connecting stair between downtown 6 platform and downtown 4/5 platform	3.00	2.00	1973	6	617	2	100%	75%	75%	2.75	F
PL2/PL4/PL6/PL8	Near R245A FCA: Connecting stair between uptown 6 platform and uptown 4/5 platform	2.75	1.75	1280	2	400	1	100%	75%	75%	2.04	F
P3	R245 FCA: Connecting stair to intermediate mezzanine - east	9.50	8.25	564	428	176	134	90%	80%	80%	0.35	A
P5/P13	R245 FCA: Connecting stair to intermediate mezzanine - east	6.50	5.50	1357	1268	424	396	90%	80%	80%	1.38	E
P6	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.00	6.75	770	919	241	287	90%	80%	75%	0.75	C
P7	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.50	7.25	1090	673	341	210	90%	80%	75%	0.72	C
ML3/ML4	Connecting stair between BMT platform and lower intermediate mezzanine	4.50	3.50	760	871	238	272	90%	75%	80%	1.39	E
ML1/ML2	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	1534	1079	479	337	90%	75%	80%	1.96	F
ML5/ML6	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	877	636	274	199	90%	75%	80%	1.14	D
PL9	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	477	1257	149	393	90%	80%	75%	1.05	D
PL10	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1322	894	413	279	90%	80%	75%	1.32	D
PL11	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	269	417	84	130	90%	80%	75%	0.41	A
PL12	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	904	674	283	211	90%	80%	75%	0.94	C
P9/P10/P11/P12	Connecting stair A002 paid zone and BMT platform	3.50	2.50	166	4	52	1	100%	80%	75%	0.18	A

Table 4C-90. Existing Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E211	Near R245A FCA: Connecting escalator between uptown 6 platform and uptown 4/5 platform	1	40	75%	0	666	0	208	945	0.29	A
E212	Near R244A FCA: Connecting escalator between downtown 6 platform and downtown 4/5 platform	1	40	75%	0	540	0	169	945	0.24	A
E213	Near R245 FCA: Connecting escalator between uptown 6 platform and intermediate mezzanine	1	40	80%	0	791	0	247	945	0.33	A
E214	Near R244 FCA: Connecting escalator between downtown 6 platform and intermediate mezzanine	1	40	80%	0	271	0	85	945	0.11	A
E215	Near A004 FCA: Connecting escalator between A004 paid zone and BMT platform	1	40	75%	0	481	0	150	945	0.21	A
E248	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	75%	0	593	0	185	945	0.26	A
E249	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	100%	2,041	0	638	0	945	0.68	B

Table 4C-91. Existing Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lexington Avenue and East 60th Street – northeast corner (A004)											
Two-Way Turnstiles	3	1,260	1,935	866	133	271	42	90%	80%	0.27	A
Lexington Avenue and East 60th Street - southwest corner (R244)											
Two-Way Turnstiles	9	3,780	5,805	905	573	283	179	90%	80%	0.13	A
Lexington Avenue and East 59th Street – west side (R244A)											
Two-Way Turnstiles	5	2,100	3,225	2,231	355	697	111	90%	80%	0.42	A
HEET	2	510	1,080	542	119	169	37	90%	80%	0.42	A
Lexington Avenue and East 59th Street – southeast corner (R245A)											
Two-Way Turnstiles	3	1,260	1,935	1,592	665	498	208	90%	80%	0.59	B
HEET	2	510	1,080	645	371	201	116	90%	80%	0.59	B
Lexington Avenue and East 59th Street – west side (R245)											
Two-Way Turnstiles	8	3,360	5,160	736	628	230	196	90%	80%	0.13	A
High Exit Only Turnstile	1	0	555	0	68	0	21	100%	80%	0.05	A
Third Avenue and East 60th Street (A002)											
Two-Way Turnstiles	10	4,200	6,450	2,201	451	688	141	90%	80%	0.21	A
High Exit Only Turnstile	4	0	2,220	0	155	0	48	100%	80%	0.03	A

Table 4C-92. No Action Alternative Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M1/S1	A004 FCA: northwest corner of Lexington Avenue and East 60th Street	4.00	3.00	625	447	195	140	90%	100%	80%	0.91	C
O5/O6	R244 FCA: southwest corner of Lexington Avenue and East 60th Street	8.00	6.75	197	1637	62	512	90%	100%	80%	0.77	C
MB1/SB1	R244A FCA: southwest corner of Lexington Avenue and East 59th Street	8.00	6.75	281	1569	88	490	90%	100%	80%	0.77	C
O11/O12	R244A FCA: northwest corner of Lexington Avenue and East 59th Street	7.50	6.25	250	282	78	88	90%	100%	80%	0.22	A
O8/O9/O10	R245A FCA: southeast corner of Lexington Avenue and East 59th Street	9.50	8.25	223	2752	70	860	90%	100%	80%	1.03	D
S3/M3	R245 FCA: northeast corner of Lexington Avenue and East 60th Street	5.00	4.00	156	833	49	260	90%	100%	80%	0.69	B
O1/O2/O3	R245 FCA: southeast corner of Lexington Avenue and East 60th Street	10.00	8.75	43	592	13	185	90%	100%	80%	0.21	A
S2/S4	A002 FCA: southwest corner of Third Avenue and East 60th Street	6.00	5.00	73	483	23	151	90%	100%	80%	0.31	A
S5/S7	A002 FCA: northwest corner of Third Avenue and East 60th Street	6.00	5.00	94	61	29	19	90%	100%	80%	0.08	A
S6/S8	A002 FCA: southeast corner of Third Avenue and East 60th Street	6.00	5.00	389	717	122	224	90%	100%	80%	0.60	B
S9/S11	A002 FCA: northeast corner of Third Avenue and East 60th Street	6.00	5.00	544	865	170	270	90%	100%	80%	0.75	C
P8	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	1901	701	594	219	90%	80%	75%	1.39	E
P1	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	773	670	242	209	90%	80%	75%	0.78	C
P2	R244 FCA: Connecting stair to intermediate mezzanine - west	12.75	11.50	2674	1371	836	428	90%	80%	80%	1.02	D
PL1/PL3/PL5/PL7	Near R244A FCA: Connecting stair between downtown 6 platform and downtown 4/5 platform	3.00	2.00	709	21	222	7	100%	75%	75%	1.02	D
PL2/PL4/PL6/PL8	Near R245A FCA: Connecting stair between uptown 6 platform and uptown 4/5 platform	2.75	1.75	287	59	90	18	90%	75%	75%	0.61	B
P3	R245 FCA: Connecting stair to intermediate mezzanine - east	9.50	8.25	112	1128	35	353	90%	80%	80%	0.44	A
P5/P13	R245 FCA: Connecting stair to intermediate mezzanine - east	6.50	5.50	89	2041	28	638	100%	80%	80%	1.01	D
P6	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.00	6.75	97	2023	30	632	100%	80%	75%	0.87	C
P7	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.50	7.25	201	1531	63	478	90%	80%	75%	0.73	C
ML3/ML4	Connecting stair between BMT platform and lower intermediate mezzanine	4.50	3.50	1014	1052	317	329	90%	75%	80%	1.76	F
ML1/ML2	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	2289	579	715	181	90%	75%	80%	2.18	F
ML5/ML6	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	1686	1056	527	330	90%	75%	80%	2.07	F
PL9	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1748	2292	546	716	90%	80%	75%	2.43	F
PL10	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1164	756	364	236	90%	80%	75%	1.14	D
PL11	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1320	1038	413	324	90%	80%	75%	1.40	E
PL12	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	681	601	213	188	90%	80%	75%	0.77	C
P9/P10/P11/P12	Connecting stair A002 paid zone and BMT platform	3.50	2.50	2	114	1	36	100%	80%	75%	0.13	A

Table 4C-93. No Action Alternative Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E211	Near R245A FCA: Connecting escalator between uptown 6 platform and uptown 4/5 platform	1	40	75%	0	1,386	0	433	945	0.61	B
E212	Near R244A FCA: Connecting escalator between downtown 6 platform and downtown 4/5 platform	1	40	75%	0	1,595	0	498	945	0.70	C
E213	Near R245 FCA: Connecting escalator between uptown 6 platform and intermediate mezzanine	1	40	80%	0	1,280	0	400	945	0.53	B
E214	Near R244 FCA: Connecting escalator between downtown 6 platform and intermediate mezzanine	1	40	80%	0	872	0	273	945	0.36	A
E215	Near A004 FCA: Connecting escalator between A004 paid zone and BMT platform	1	40	75%	0	1,903	0	595	945	0.84	C
E248	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	75%	0	1,963	0	613	945	0.86	C
E249	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	100%	1,085	0	339	0	945	0.36	A

Table 4C-94. No Action Alternative Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lexington Avenue and East 60th Street – northeast corner (A004)											
Two-Way Turnstiles	3	1,260	1,935	625	447	195	140	90%	80%	0.27	A
Lexington Avenue and East 60th Street - southwest corner (R244)											
Two-Way Turnstiles	9	3,780	5,805	197	1,637	62	512	90%	80%	0.14	A
Lexington Avenue and East 59th Street – west side (R244A)											
Two-Way Turnstiles	5	2,100	3,225	427	1,387	134	433	90%	80%	0.26	A
HEET	2	510	1,080	104	464	32	145	90%	80%	0.26	A
Lexington Avenue and East 59th Street – southeast corner (R245A)											
Two-Way Turnstiles	3	1,260	1,935	159	1,766	50	552	90%	80%	0.44	A
HEET	2	510	1,080	64	986	20	308	90%	80%	0.44	A
Lexington Avenue and East 59th Street – west side (R245)											
Two-Way Turnstiles	8	3,360	5,160	159	848	50	265	90%	80%	0.09	A
High Exit Only Turnstile	1	0	555	0	91	0	29	100%	80%	0.07	A
Third Avenue and East 60th Street (A002)											
Two-Way Turnstiles	10	4,200	6,450	1,100	1,582	344	494	90%	80%	0.20	A
High Exit Only Turnstile	4	0	2,220	0	544	0	170	100%	80%	0.10	A

Table 4C-95. No Action Alternative Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M1/S1	A004 FCA: northwest corner of Lexington Avenue and East 60th Street	4.00	3.00	866	133	271	42	90%	100%	80%	0.80	C
O5/O6	R244 FCA: southwest corner of Lexington Avenue and East 60th Street	8.00	6.75	905	573	283	179	90%	100%	80%	0.56	B
MB1/SB1	R244A FCA: southwest corner of Lexington Avenue and East 59th Street	8.00	6.75	1843	343	576	107	90%	100%	80%	0.78	C
O11/O12	R244A FCA: northwest corner of Lexington Avenue and East 59th Street	7.50	6.25	930	131	291	41	90%	100%	80%	0.41	A
O8/O9/O10	R245A FCA: southeast corner of Lexington Avenue and East 59th Street	9.50	8.25	2237	1036	699	324	90%	100%	80%	0.99	C
S3/M3	R245 FCA: northeast corner of Lexington Avenue and East 60th Street	5.00	4.00	635	679	198	212	90%	100%	80%	0.86	C
O1/O2/O3	R245 FCA: southeast corner of Lexington Avenue and East 60th Street	10.00	8.75	285	376	89	118	90%	100%	80%	0.20	A
S2/S4	A002 FCA: southwest corner of Third Avenue and East 60th Street	6.00	5.00	653	76	204	24	90%	100%	80%	0.35	A
S5/S7	A002 FCA: northwest corner of Third Avenue and East 60th Street	6.00	5.00	129	20	40	6	90%	100%	80%	0.07	A
S6/S8	A002 FCA: southeast corner of Third Avenue and East 60th Street	6.00	5.00	610	253	191	79	90%	100%	80%	0.43	A
S9/S11	A002 FCA: northeast corner of Third Avenue and East 60th Street	6.00	5.00	809	257	253	80	90%	100%	80%	0.52	B
P8	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	3354	170	1,048	53	100%	80%	75%	1.67	F
P1	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	1463	144	457	45	90%	80%	75%	0.85	C
P2	R244 FCA: Connecting stair to intermediate mezzanine - west	12.75	11.50	4817	314	1,505	98	90%	80%	80%	1.29	D
PL1/PL3/PL5/PL7	Near R244A FCA: Connecting stair between downtown 6 platform and downtown 4/5 platform	3.00	2.00	1973	6	617	2	100%	75%	75%	2.75	F
PL2/PL4/PL6/PL8	Near R245A FCA: Connecting stair between uptown 6 platform and uptown 4/5 platform	2.75	1.75	1280	2	400	1	100%	75%	75%	2.04	F
P3	R245 FCA: Connecting stair to intermediate mezzanine - east	9.50	8.25	564	428	176	134	90%	80%	80%	0.35	A
P5/P13	R245 FCA: Connecting stair to intermediate mezzanine - east	6.50	5.50	1357	1268	424	396	90%	80%	80%	1.38	E
P6	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.00	6.75	770	919	241	287	90%	80%	75%	0.75	C
P7	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.50	7.25	1090	673	341	210	90%	80%	75%	0.72	C
ML3/ML4	Connecting stair between BMT platform and lower intermediate mezzanine	4.50	3.50	760	871	238	272	90%	75%	80%	1.39	E
ML1/ML2	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	1534	1079	479	337	90%	75%	80%	1.96	F
ML5/ML6	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	877	636	274	199	90%	75%	80%	1.14	D
PL9	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	477	1257	149	393	90%	80%	75%	1.05	D
PL10	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1322	894	413	279	90%	80%	75%	1.32	D
PL11	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	269	417	84	130	90%	80%	75%	0.41	A
PL12	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	904	674	283	211	90%	80%	75%	0.94	C
P9/P10/P11/P12	Connecting stair A002 paid zone and BMT platform	3.50	2.50	166	4	52	1	100%	80%	75%	0.18	A

Table 4C-96. No Action Alternative Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E211	Near R245A FCA: Connecting escalator between uptown 6 platform and uptown 4/5 platform	1	40	75%	0	666	0	208	945	0.29	A
E212	Near R244A FCA: Connecting escalator between downtown 6 platform and downtown 4/5 platform	1	40	75%	0	540	0	169	945	0.24	A
E213	Near R245 FCA: Connecting escalator between uptown 6 platform and intermediate mezzanine	1	40	80%	0	791	0	247	945	0.33	A
E214	Near R244 FCA: Connecting escalator between downtown 6 platform and intermediate mezzanine	1	40	80%	0	271	0	85	945	0.11	A
E215	Near A004 FCA: Connecting escalator between A004 paid zone and BMT platform	1	40	75%	0	481	0	150	945	0.21	A
E248	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	75%	0	593	0	185	945	0.26	A
E249	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	100%	2,041	0	638	0	945	0.68	B

Table 4C-97. No Action Alternative Level of Service Summary: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lexington Avenue and East 60th Street – northeast corner (A004)											
Two-Way Turnstiles	3	1,260	1,935	866	133	271	42	90%	80%	0.27	A
Lexington Avenue and East 60th Street - southwest corner (R244)											
Two-Way Turnstiles	9	3,780	5,805	905	573	283	179	90%	80%	0.13	A
Lexington Avenue and East 59th Street – west side (R244A)											
Two-Way Turnstiles	5	2,100	3,225	2,231	355	697	111	90%	80%	0.42	A
HEET	2	510	1,080	542	119	169	37	90%	80%	0.42	A
Lexington Avenue and East 59th Street – southeast corner (R245A)											
Two-Way Turnstiles	3	1,260	1,935	1,592	665	498	208	90%	80%	0.59	B
HEET	2	510	1,080	645	371	201	116	90%	80%	0.59	B
Lexington Avenue and East 59th Street – west side (R245)											
Two-Way Turnstiles	8	3,360	5,160	736	628	230	196	90%	80%	0.13	A
High Exit Only Turnstile	1	0	555	0	68	0	21	100%	80%	0.05	A
Third Avenue and East 60th Street (A002)											
Two-Way Turnstiles	10	4,200	6,450	2,201	451	688	141	90%	80%	0.21	A
High Exit Only Turnstile	4	0	2,220	0	155	0	48	100%	80%	0.03	A

Table 4C-98. CBD Tolling Alternative: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M1/S1	A004 FCA: northwest corner of Lexington Avenue and East 60th Street	4.00	3.00	639	452	200	141	90%	100%	80%	0.93	C
O5/O6	R244 FCA: southwest corner of Lexington Avenue and East 60th Street	8.00	6.75	201	1657	63	518	90%	100%	80%	0.78	C
MB1/SB1	R244A FCA: southwest corner of Lexington Avenue and East 59th Street	8.00	6.75	287	1588	90	496	90%	100%	80%	0.78	C
O11/O12	R244A FCA: northwest corner of Lexington Avenue and East 59th Street	7.50	6.25	256	285	80	89	90%	100%	80%	0.23	A
O8/O9/O10	R245A FCA: southeast corner of Lexington Avenue and East 59th Street	9.50	8.25	228	2785	71	870	90%	100%	80%	1.04	D
S3/M3	R245 FCA: northeast corner of Lexington Avenue and East 60th Street	5.00	4.00	159	843	50	263	90%	100%	80%	0.70	C
O1/O2/O3	R245 FCA: southeast corner of Lexington Avenue and East 60th Street	10.00	8.75	44	599	14	187	90%	100%	80%	0.21	A
S2/S4	A002 FCA: southwest corner of Third Avenue and East 60th Street	6.00	5.00	75	489	23	153	90%	100%	80%	0.32	A
S5/S7	A002 FCA: northwest corner of Third Avenue and East 60th Street	6.00	5.00	96	62	30	19	90%	100%	80%	0.08	A
S6/S8	A002 FCA: southeast corner of Third Avenue and East 60th Street	6.00	5.00	398	726	124	227	90%	100%	80%	0.60	B
S9/S11	A002 FCA: northeast corner of Third Avenue and East 60th Street	6.00	5.00	556	875	174	273	90%	100%	80%	0.76	C
P8	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	1911	710	597	222	90%	80%	75%	1.40	E
P1	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	777	679	243	212	90%	80%	75%	0.79	C
P2	R244 FCA: Connecting stair to intermediate mezzanine - west	12.75	11.50	2687	1389	840	434	90%	80%	80%	1.03	D
PL1/PL3/PL5/PL7	Near R244A FCA: Connecting stair between downtown 6 platform and downtown 4/5 platform	3.00	2.00	716	21	224	7	100%	75%	75%	1.03	D
PL2/PL4/PL6/PL8	Near R245A FCA: Connecting stair between uptown 6 platform and uptown 4/5 platform	2.75	1.75	290	61	91	19	90%	75%	75%	0.62	B
P3	R245 FCA: Connecting stair to intermediate mezzanine - east	9.50	8.25	114	1135	36	355	90%	80%	80%	0.44	A
P5/P13	R245 FCA: Connecting stair to intermediate mezzanine - east	6.50	5.50	90	2054	28	642	100%	80%	80%	1.02	D
P6	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.00	6.75	98	2041	31	638	100%	80%	75%	0.88	C
P7	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.50	7.25	203	1540	63	481	90%	80%	75%	0.74	C
ML3/ML4	Connecting stair between BMT platform and lower intermediate mezzanine	4.50	3.50	1025	1111	320	347	90%	75%	80%	1.82	F
ML1/ML2	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	2319	611	725	191	90%	75%	80%	2.23	F
ML5/ML6	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	1704	1115	533	348	90%	75%	80%	2.12	F
PL9	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1765	2392	552	748	90%	80%	75%	2.50	F
PL10	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1181	759	369	237	90%	80%	75%	1.15	D
PL11	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1333	1083	417	338	90%	80%	75%	1.44	E
PL12	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	691	603	216	188	90%	80%	75%	0.77	C
P9/P10/P11/P12	Connecting stair A002 paid zone and BMT platform	3.50	2.50	2	115	1	36	100%	80%	75%	0.13	A

Table 4C-99. CBD Tolling Alternative: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E211	Near R245A FCA: Connecting escalator between uptown 6 platform and uptown 4/5 platform	1	40	75%	0	1,460	0	456	945	0.64	B
E212	Near R244A FCA: Connecting escalator between downtown 6 platform and downtown 4/5 platform	1	40	75%	0	1,626	0	508	945	0.72	C
E213	Near R245 FCA: Connecting escalator between uptown 6 platform and intermediate mezzanine	1	40	80%	0	1,285	0	402	945	0.53	B
E214	Near R244 FCA: Connecting escalator between downtown 6 platform and intermediate mezzanine	1	40	80%	0	873	0	273	945	0.36	A
E215	Near A004 FCA: Connecting escalator between A004 paid zone and BMT platform	1	40	75%	0	1,912	0	598	945	0.84	C
E248	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	75%	0	1,987	0	621	945	0.88	C
E249	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	100%	1,109	0	347	0	945	0.37	A

Table 4C-100. CBD Tolling Alternative: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lexington Avenue and East 60th Street – northeast corner (A004)											
Two-Way Turnstiles	3	1,260	1,935	639	452	200	141	90%	80%	0.28	A
Lexington Avenue and East 60th Street - southwest corner (R244)											
Two-Way Turnstiles	9	3,780	5,805	201	1,657	63	518	90%	80%	0.14	A
Lexington Avenue and East 59th Street – west side (R244A)											
Two-Way Turnstiles	5	2,100	3,225	437	1,403	137	438	90%	80%	0.26	A
HEET	2	510	1,080	106	470	33	147	90%	80%	0.26	A
Lexington Avenue and East 59th Street – southeast corner (R245A)											
Two-Way Turnstiles	3	1,260	1,935	162	1,787	51	559	90%	80%	0.45	A
HEET	2	510	1,080	66	998	21	312	90%	80%	0.45	A
Lexington Avenue and East 59th Street – west side (R245)											
Two-Way Turnstiles	8	3,360	5,160	162	858	51	268	90%	80%	0.09	A
High Exit Only Turnstile	1	0	555	0	92	0	29	100%	80%	0.07	A
Third Avenue and East 60th Street (A002)											
Two-Way Turnstiles	10	4,200	6,450	1,124	1,601	351	500	90%	80%	0.20	A
High Exit Only Turnstile	4	0	2,220	0	544	0	170	100%	80%	0.10	A

Table 4C-101. CBD Tolling Alternative: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M1/S1	A004 FCA: northwest corner of Lexington Avenue and East 60th Street	4.00	3.00	878	135	274	42	90%	100%	80%	0.81	C
O5/O6	R244 FCA: southwest corner of Lexington Avenue and East 60th Street	8.00	6.75	917	583	287	182	90%	100%	80%	0.56	B
MB1/SB1	R244A FCA: southwest corner of Lexington Avenue and East 59th Street	8.00	6.75	1868	349	584	109	90%	100%	80%	0.79	C
O11/O12	R244A FCA: northwest corner of Lexington Avenue and East 59th Street	7.50	6.25	943	133	295	42	90%	100%	80%	0.41	A
O8/O9/O10	R245A FCA: southeast corner of Lexington Avenue and East 59th Street	9.50	8.25	2267	1054	708	329	90%	100%	80%	1.00	D
S3/M3	R245 FCA: northeast corner of Lexington Avenue and East 60th Street	5.00	4.00	644	691	201	216	90%	100%	80%	0.87	C
O1/O2/O3	R245 FCA: southeast corner of Lexington Avenue and East 60th Street	10.00	8.75	289	383	90	120	90%	100%	80%	0.20	A
S2/S4	A002 FCA: southwest corner of Third Avenue and East 60th Street	6.00	5.00	662	77	207	24	90%	100%	80%	0.35	A
S5/S7	A002 FCA: northwest corner of Third Avenue and East 60th Street	6.00	5.00	131	20	41	6	90%	100%	80%	0.07	A
S6/S8	A002 FCA: southeast corner of Third Avenue and East 60th Street	6.00	5.00	618	258	193	81	90%	100%	80%	0.44	A
S9/S11	A002 FCA: northeast corner of Third Avenue and East 60th Street	6.00	5.00	820	262	256	82	90%	100%	80%	0.53	B
P8	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	3367	174	1,052	54	100%	80%	75%	1.68	F
P1	Near R244 FCA: Connecting stair between BMT platform and intermediate mezzanine - west	6.50	5.50	1469	147	459	46	90%	80%	75%	0.86	C
P2	R244 FCA: Connecting stair to intermediate mezzanine - west	12.75	11.50	4836	321	1,511	100	90%	80%	80%	1.30	D
PL1/PL3/PL5/PL7	Near R244A FCA: Connecting stair between downtown 6 platform and downtown 4/5 platform	3.00	2.00	2017	6	630	2	100%	75%	75%	2.81	F
PL2/PL4/PL6/PL8	Near R245A FCA: Connecting stair between uptown 6 platform and uptown 4/5 platform	2.75	1.75	1311	2	410	1	100%	75%	75%	2.09	F
P3	R245 FCA: Connecting stair to intermediate mezzanine - east	9.50	8.25	568	436	178	136	90%	80%	80%	0.35	A
P5/P13	R245 FCA: Connecting stair to intermediate mezzanine - east	6.50	5.50	1366	1292	427	404	90%	80%	80%	1.40	E
P6	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.00	6.75	775	938	242	293	90%	80%	75%	0.76	C
P7	Near R245 FCA: Connecting stair between BMT platform and intermediate mezzanine - east	8.50	7.25	1097	687	343	215	90%	80%	75%	0.73	C
ML3/ML4	Connecting stair between BMT platform and lower intermediate mezzanine	4.50	3.50	775	917	242	287	90%	75%	80%	1.44	E
ML1/ML2	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	1581	1136	494	355	90%	75%	80%	2.04	F
ML5/ML6	Connecting stair between BMT platform and lower intermediate mezzanine	5.00	4.00	895	670	280	209	90%	75%	80%	1.18	D
PL9	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	494	1341	154	419	90%	80%	75%	1.11	D
PL10	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	1354	909	423	284	90%	80%	75%	1.34	E
PL11	Connecting stair between downtown 4/5 platform and lower intermediate mezzanine	6.00	5.00	278	445	87	139	90%	80%	75%	0.44	A
PL12	Connecting stair between uptown 4/5 platform and lower intermediate mezzanine	6.00	5.00	926	685	289	214	90%	80%	75%	0.96	C
P9/P10/P11/P12	Connecting stair A002 paid zone and BMT platform	3.50	2.50	168	4	53	1	100%	80%	75%	0.18	A

Table 4C-102. CBD Tolling Alternative: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E211	Near R245A FCA: Connecting escalator between uptown 6 platform and uptown 4/5 platform	1	40	75%	0	734	0	229	945	0.32	A
E212	Near R244A FCA: Connecting escalator between downtown 6 platform and downtown 4/5 platform	1	40	75%	0	545	0	170	945	0.24	A
E213	Near R245 FCA: Connecting escalator between uptown 6 platform and intermediate mezzanine	1	40	80%	0	791	0	247	945	0.33	A
E214	Near R244 FCA: Connecting escalator between downtown 6 platform and intermediate mezzanine	1	40	80%	0	271	0	85	945	0.11	A
E215	Near A004 FCA: Connecting escalator between A004 paid zone and BMT platform	1	40	75%	0	488	0	153	945	0.22	A
E248	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	75%	0	604	0	189	945	0.27	A
E249	Near A002 FCA: Connecting escalator between A002 paid zone and BMT platform	1	40	100%	2,069	0	647	0	945	0.68	B

Table 4C-103. CBD Tolling Alternative: 59th Street Lexington Avenue Station (Nos. 4, 5, 6, and N, Q, R, W lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lexington Avenue and East 60th Street – northeast corner (A004)											
Two-Way Turnstiles	3	1,260	1,935	878	135	274	42	90%	80%	0.27	A
Lexington Avenue and East 60th Street - southwest corner (R244)											
Two-Way Turnstiles	9	3,780	5,805	917	583	287	182	90%	80%	0.13	A
Lexington Avenue and East 59th Street – west side (R244A)											
Two-Way Turnstiles	5	2,100	3,225	2,262	361	707	113	90%	80%	0.42	A
HEET	2	510	1,080	549	121	172	38	90%	80%	0.42	A
Lexington Avenue and East 59th Street – southeast corner (R245A)											
Two-Way Turnstiles	3	1,260	1,935	1,614	676	504	211	90%	80%	0.60	B
HEET	2	510	1,080	653	378	204	118	90%	80%	0.60	B
Lexington Avenue and East 59th Street – west side (R245)											
Two-Way Turnstiles	8	3,360	5,160	746	639	233	200	90%	80%	0.13	A
High Exit Only Turnstile	1	0	555	0	69	0	21	100%	80%	0.05	A
Third Avenue and East 60th Street (A002)											
Two-Way Turnstiles	10	4,200	6,450	2,231	459	697	143	90%	80%	0.22	A
High Exit Only Turnstile	4	0	2,220	0	158	0	49	100%	80%	0.03	A

Table 4C-104. Existing Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S1	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	313	740	98	231	90%	100%	80%	0.57	B
S3	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	298	1430	93	447	90%	100%	80%	0.97	C
M1	Connecting stair between S1/S3 and Control Area R182 free zone	12.00	10.75	611	2170	191	678	90%	100%	80%	0.72	C
M4	Connecting stair between S4 and Control Area N13 free zone	12.00	10.75	1361	1127	425	352	90%	100%	80%	0.60	B
S4	Street stair at southeast corner of St. Nicholas Avenue and West 168th Street	5.00	4.00	1361	1127	425	352	90%	100%	80%	1.60	E
S5	Street stair at northwest corner of Broadway and West 169th Street	3.00	2.00	64	62	20	19	90%	100%	80%	0.16	A
S6	Street stair at northwest corner of Broadway and West 169th Street	4.00	3.00	641	188	200	59	90%	100%	80%	0.68	B
M5	Connecting stair between S5/S6 and Control Area N12 free zone	11.00	9.75	705	250	220	78	90%	100%	80%	0.24	A
M6	Connecting stair between S5/S6 and Control Area N12 free zone	13.50	12.25	705	250	220	78	90%	100%	80%	0.19	A
S7	Street stair at northeast corner of Broadway and West 169th Street	4.50	3.50	96	94	30	29	90%	100%	80%	0.14	A
IND P3	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	40	54	13	17	90%	80%	75%	0.07	A
IND P5	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	573	67	179	21	90%	80%	75%	0.47	B
IND P7	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	549	81	172	25	90%	80%	75%	0.46	B
IND P9	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	505	104	158	33	90%	80%	75%	0.45	A
IND P11	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	8	29	3	9	90%	100%	75%	0.03	A
IND P13	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	763	46	238	14	90%	100%	75%	0.48	B
IND P4	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	3	477	1	149	100%	80%	75%	0.33	A
IND P6	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	36	783	11	245	100%	80%	75%	0.57	B
IND P8	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	49	438	15	137	90%	80%	75%	0.37	A
IND P10	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	34	556	11	174	90%	80%	75%	0.46	B
IND P12	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	3	185	1	58	100%	100%	75%	0.13	A
IND P14	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	25	261	8	82	90%	100%	75%	0.22	A
IRT P1	Connecting stair between south overpass and west platform	6.00	5.00	121	460	38	144	90%	75%	75%	0.36	A
IRT P3	Connecting stair between south overpass and west platform	6.00	5.00	57	133	18	42	90%	75%	75%	0.12	A
IRT U1/U2	Overpass stair above IRT platform	12.00	10.75	368	156	115	49	90%	75%	80%	0.15	A
IRT P5	Connecting stair between north overpass and west platform	6.00	5.00	176	200	55	63	90%	75%	75%	0.23	A
IRT P7	Connecting stair between north overpass and west platform	6.00	5.00	154	347	48	108	90%	75%	75%	0.31	A
IRT P2	Connecting stair between north overpass and east platform	6.00	5.00	111	249	35	78	90%	75%	75%	0.22	A
IRT P4	Connecting stair between north overpass and east platform	6.00	5.00	45	119	14	37	90%	75%	75%	0.10	A
IRT P6	Connecting stair between lower mezzanine and east platform	6.50	5.50	184	66	58	21	90%	75%	75%	0.14	A
IRT P8	Connecting stair between lower mezzanine and east platform	6.50	5.50	110	142	34	44	90%	75%	75%	0.14	A
IRT P9	Overpass stair above IRT platform	8.00	6.75	294	208	92	65	90%	75%	80%	0.22	A

Table 4C-105. Existing Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and West 168th Street – southwest corner (R182)											
Two-Way Turnstiles	7	2,940	4,515	2,170	611	678	191	90%	80%	0.31	A
St. Nicholas Avenue and West 168th Street – southeast corner (N013)											
Two-Way Turnstiles	5	2,100	3,225	1,361	1,127	425	352	90%	80%	0.38	A
Broadway and West 169th Street – northeast corner (N012)											
HEET	2	510	1,080	195	115	61	36	90%	80%	0.18	A
High Exit Only Turnstile	3	0	1,665	0	178	0	56	100%	80%	0.04	A

Table 4C-106. Existing Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S1	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	1100	241	344	75	90%	100%	80%	0.65	B
S3	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	1789	477	559	149	90%	100%	80%	1.10	D
M1	Connecting stair between S1/S3 and Control Area R182 free zone	12.00	10.75	2889	718	903	224	90%	100%	80%	0.82	C
M4	Connecting stair between S4 and Control Area N13 free zone	12.00	10.75	804	670	251	209	90%	100%	80%	0.35	A
S4	Street stair at southeast corner of St. Nicholas Avenue and West 168th Street	5.00	4.00	804	670	251	209	90%	100%	80%	0.95	C
S5	Street stair at northwest corner of Broadway and West 169th Street	3.00	2.00	66	36	21	11	90%	100%	80%	0.13	A
S6	Street stair at northwest corner of Broadway and West 169th Street	4.00	3.00	299	549	93	172	90%	100%	80%	0.76	C
M5	Connecting stair between S5/S6 and Control Area N12 free zone	11.00	9.75	365	585	114	183	90%	100%	80%	0.26	A
M6	Connecting stair between S5/S6 and Control Area N12 free zone	13.50	12.25	365	585	114	183	90%	100%	80%	0.21	A
S7	Street stair at northeast corner of Broadway and West 169th Street	4.50	3.50	99	53	31	17	90%	100%	80%	0.11	A
IND P3	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	47	24	15	8	90%	80%	75%	0.05	A
IND P5	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	940	26	294	8	100%	80%	75%	0.63	B
IND P7	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	1092	55	341	17	100%	80%	75%	0.75	C
IND P9	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	557	33	174	10	100%	80%	75%	0.38	A
IND P11	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	12	18	4	6	90%	100%	75%	0.02	A
IND P13	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	389	20	122	6	100%	100%	75%	0.22	A
IND P4	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	7	299	2	93	100%	80%	75%	0.21	A
IND P6	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	77	364	24	114	90%	80%	75%	0.34	A
IND P8	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	145	262	45	82	90%	80%	75%	0.31	A
IND P10	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	102	346	32	108	90%	80%	75%	0.34	A
IND P12	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	5	246	2	77	100%	100%	75%	0.17	A
IND P14	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	32	380	10	119	90%	100%	75%	0.31	A
IRT P1	Connecting stair between south overpass and west platform	6.00	5.00	371	234	116	73	90%	75%	75%	0.37	A
IRT P3	Connecting stair between south overpass and west platform	6.00	5.00	131	60	41	19	90%	75%	75%	0.12	A
IRT U1/U2	Overpass stair above IRT platform	12.00	10.75	133	564	42	176	90%	75%	80%	0.19	A
IRT P5	Connecting stair between north overpass and west platform	6.00	5.00	222	53	69	17	90%	75%	75%	0.17	A
IRT P7	Connecting stair between north overpass and west platform	6.00	5.00	185	127	58	40	90%	75%	75%	0.19	A
IRT P2	Connecting stair between north overpass and east platform	6.00	5.00	379	292	118	91	90%	75%	75%	0.41	A
IRT P4	Connecting stair between north overpass and east platform	6.00	5.00	205	125	64	39	90%	75%	75%	0.20	A
IRT P6	Connecting stair between lower mezzanine and east platform	6.50	5.50	189	54	59	17	90%	75%	75%	0.14	A
IRT P8	Connecting stair between lower mezzanine and east platform	6.50	5.50	255	136	80	43	90%	75%	75%	0.22	A
IRT P9	Overpass stair above IRT platform	8.00	6.75	444	190	139	59	90%	75%	80%	0.28	A

Table 4C-107. Existing Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and West 168th Street – southwest corner (R182)											
Two-Way Turnstiles	7	2,940	4,515	718	2,889	224	903	90%	80%	0.36	A
St. Nicholas Avenue and West 168th Street – southeast corner (N013)											
Two-Way Turnstiles	5	2,100	3,225	804	670	251	209	90%	80%	0.22	A
Broadway and West 169th Street – northeast corner (N012)											
HEET	2	510	1,080	113	214	35	67	90%	80%	0.16	A
High Exit Only Turnstile	3	0	1,665	0	329	0	103	100%	80%	0.08	A

Table 4C-108. No Action Alternative Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S1	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	313	740	98	231	90%	100%	80%	0.57	B
S3	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	298	1430	93	447	90%	100%	80%	0.97	C
M1	Connecting stair between S1/S3 and Control Area R182 free zone	12.00	10.75	611	2170	191	678	90%	100%	80%	0.72	C
M4	Connecting stair between S4 and Control Area N13 free zone	12.00	10.75	1361	1127	425	352	90%	100%	80%	0.60	B
S4	Street stair at southeast corner of St. Nicholas Avenue and West 168th Street	5.00	4.00	1361	1127	425	352	90%	100%	80%	1.60	E
S5	Street stair at northwest corner of Broadway and West 169th Street	3.00	2.00	64	62	20	19	90%	100%	80%	0.16	A
S6	Street stair at northwest corner of Broadway and West 169th Street	4.00	3.00	641	188	200	59	90%	100%	80%	0.68	B
M5	Connecting stair between S5/S6 and Control Area N12 free zone	11.00	9.75	705	250	220	78	90%	100%	80%	0.24	A
M6	Connecting stair between S5/S6 and Control Area N12 free zone	13.50	12.25	705	250	220	78	90%	100%	80%	0.19	A
S7	Street stair at northeast corner of Broadway and West 169th Street	4.50	3.50	96	94	30	29	90%	100%	80%	0.14	A
IND P3	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	40	54	13	17	90%	80%	75%	0.07	A
IND P5	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	573	67	179	21	90%	80%	75%	0.47	B
IND P7	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	549	81	172	25	90%	80%	75%	0.46	B
IND P9	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	505	104	158	33	90%	80%	75%	0.45	A
IND P11	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	8	29	3	9	90%	100%	75%	0.03	A
IND P13	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	763	46	238	14	90%	100%	75%	0.48	B
IND P4	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	3	477	1	149	100%	80%	75%	0.33	A
IND P6	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	36	783	11	245	100%	80%	75%	0.57	B
IND P8	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	49	438	15	137	90%	80%	75%	0.37	A
IND P10	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	34	556	11	174	90%	80%	75%	0.46	B
IND P12	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	3	185	1	58	100%	100%	75%	0.13	A
IND P14	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	25	261	8	82	90%	100%	75%	0.22	A
IRT P1	Connecting stair between south overpass and west platform	6.00	5.00	121	460	38	144	90%	75%	75%	0.36	A
IRT P3	Connecting stair between south overpass and west platform	6.00	5.00	57	133	18	42	90%	75%	75%	0.12	A
IRT U1/U2	Overpass stair above IRT platform	12.00	10.75	368	156	115	49	90%	75%	80%	0.15	A
IRT P5	Connecting stair between north overpass and west platform	6.00	5.00	176	200	55	63	90%	75%	75%	0.23	A
IRT P7	Connecting stair between north overpass and west platform	6.00	5.00	154	347	48	108	90%	75%	75%	0.31	A
IRT P2	Connecting stair between north overpass and east platform	6.00	5.00	111	249	35	78	90%	75%	75%	0.22	A
IRT P4	Connecting stair between north overpass and east platform	6.00	5.00	45	119	14	37	90%	75%	75%	0.10	A
IRT P6	Connecting stair between lower mezzanine and east platform	6.50	5.50	184	66	58	21	90%	75%	75%	0.14	A
IRT P8	Connecting stair between lower mezzanine and east platform	6.50	5.50	110	142	34	44	90%	75%	75%	0.14	A
IRT P9	Overpass stair above IRT platform	8.00	6.75	294	208	92	65	90%	75%	80%	0.22	A

Table 4C-109. No Action Alternative Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and West 168th Street – southwest corner (R182)											
Two-Way Turnstiles	7	2,940	4,515	2,170	611	678	191	90%	80%	0.31	A
St. Nicholas Avenue and West 168th Street – southeast corner (N013)											
Two-Way Turnstiles	5	2,100	3,225	1,361	1,127	425	352	90%	80%	0.38	A
Broadway and West 169th Street – northeast corner (N012)											
HEET	2	510	1,080	195	115	61	36	90%	80%	0.18	A
High Exit Only Turnstile	3	0	1,665	0	178	0	56	100%	80%	0.04	A

Table 4C-110. No Action Alternative Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S1	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	1100	241	344	75	90%	100%	80%	0.65	B
S3	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	1789	477	559	149	90%	100%	80%	1.10	D
M1	Connecting stair between S1/S3 and Control Area R182 free zone	12.00	10.75	2889	718	903	224	90%	100%	80%	0.82	C
M4	Connecting stair between S4 and Control Area N13 free zone	12.00	10.75	804	670	251	209	90%	100%	80%	0.35	A
S4	Street stair at southeast corner of St. Nicholas Avenue and West 168th Street	5.00	4.00	804	670	251	209	90%	100%	80%	0.95	C
S5	Street stair at northwest corner of Broadway and West 169th Street	3.00	2.00	66	36	21	11	90%	100%	80%	0.13	A
S6	Street stair at northwest corner of Broadway and West 169th Street	4.00	3.00	299	549	93	172	90%	100%	80%	0.76	C
M5	Connecting stair between S5/S6 and Control Area N12 free zone	11.00	9.75	365	585	114	183	90%	100%	80%	0.26	A
M6	Connecting stair between S5/S6 and Control Area N12 free zone	13.50	12.25	365	585	114	183	90%	100%	80%	0.21	A
S7	Street stair at northeast corner of Broadway and West 169th Street	4.50	3.50	99	53	31	17	90%	100%	80%	0.11	A
IND P3	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	47	24	15	8	90%	80%	75%	0.05	A
IND P5	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	940	26	294	8	100%	80%	75%	0.63	B
IND P7	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	1092	55	341	17	100%	80%	75%	0.75	C
IND P9	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	557	33	174	10	100%	80%	75%	0.38	A
IND P11	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	12	18	4	6	90%	100%	75%	0.02	A
IND P13	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	389	20	122	6	100%	100%	75%	0.22	A
IND P4	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	7	299	2	93	100%	80%	75%	0.21	A
IND P6	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	77	364	24	114	90%	80%	75%	0.34	A
IND P8	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	145	262	45	82	90%	80%	75%	0.31	A
IND P10	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	102	346	32	108	90%	80%	75%	0.34	A
IND P12	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	5	246	2	77	100%	100%	75%	0.17	A
IND P14	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	32	380	10	119	90%	100%	75%	0.31	A
IRT P1	Connecting stair between south overpass and west platform	6.00	5.00	371	234	116	73	90%	75%	75%	0.37	A
IRT P3	Connecting stair between south overpass and west platform	6.00	5.00	131	60	41	19	90%	75%	75%	0.12	A
IRT U1/U2	Overpass stair above IRT platform	12.00	10.75	133	564	42	176	90%	75%	80%	0.19	A
IRT P5	Connecting stair between north overpass and west platform	6.00	5.00	222	53	69	17	90%	75%	75%	0.17	A
IRT P7	Connecting stair between north overpass and west platform	6.00	5.00	185	127	58	40	90%	75%	75%	0.19	A
IRT P2	Connecting stair between north overpass and east platform	6.00	5.00	379	292	118	91	90%	75%	75%	0.41	A
IRT P4	Connecting stair between north overpass and east platform	6.00	5.00	205	125	64	39	90%	75%	75%	0.20	A
IRT P6	Connecting stair between lower mezzanine and east platform	6.50	5.50	189	54	59	17	90%	75%	75%	0.14	A
IRT P8	Connecting stair between lower mezzanine and east platform	6.50	5.50	255	136	80	43	90%	75%	75%	0.22	A
IRT P9	Overpass stair above IRT platform	8.00	6.75	444	190	139	59	90%	75%	80%	0.28	A

Table 4C-111. No Action Alternative Level of Service Summary: 168th Street Washington Heights Station (1, A, C lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and West 168th Street – southwest corner (R182)											
Two-Way Turnstiles	7	2,940	4,515	718	2,889	224	903	90%	80%	0.36	A
St. Nicholas Avenue and West 168th Street – southeast corner (N013)											
Two-Way Turnstiles	5	2,100	3,225	804	670	251	209	90%	80%	0.22	A
Broadway and West 169th Street – northeast corner (N012)											
HEET	2	510	1,080	113	214	35	67	90%	80%	0.16	A
High Exit Only Turnstile	3	0	1,665	0	329	0	103	100%	80%	0.08	A

Table 4C-112. CBD Tolling Alternative: 168th Street Washington Heights Station (1, A, C lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S1	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	319	757	100	237	90%	100%	80%	0.59	B
S3	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	303	1463	95	457	90%	100%	80%	0.99	C
M1	Connecting stair between S1/S3 and Control Area R182 free zone	12.00	10.75	622	2220	194	694	90%	100%	80%	0.73	C
M4	Connecting stair between S4 and Control Area N13 free zone	12.00	10.75	1386	1153	433	360	90%	100%	80%	0.61	B
S4	Street stair at southeast corner of St. Nicholas Avenue and West 168th Street	5.00	4.00	1386	1153	433	360	90%	100%	80%	1.64	E
S5	Street stair at northwest corner of Broadway and West 169th Street	3.00	2.00	65	63	20	20	90%	100%	80%	0.17	A
S6	Street stair at northwest corner of Broadway and West 169th Street	4.00	3.00	653	192	204	60	90%	100%	80%	0.69	B
M5	Connecting stair between S5/S6 and Control Area N12 free zone	11.00	9.75	718	256	224	80	90%	100%	80%	0.25	A
M6	Connecting stair between S5/S6 and Control Area N12 free zone	13.50	12.25	718	256	224	80	90%	100%	80%	0.20	A
S7	Street stair at northeast corner of Broadway and West 169th Street	4.50	3.50	98	96	31	30	90%	100%	80%	0.14	A
IND P3	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	42	56	13	18	90%	80%	75%	0.07	A
IND P5	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	590	69	184	22	90%	80%	75%	0.48	B
IND P7	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	565	84	177	26	90%	80%	75%	0.47	B
IND P9	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	520	108	163	34	90%	80%	75%	0.46	B
IND P11	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	8	29	3	9	90%	100%	75%	0.03	A
IND P13	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	777	47	243	15	90%	100%	75%	0.49	B
IND P4	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	3	493	1	154	100%	80%	75%	0.34	A
IND P6	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	38	809	12	253	100%	80%	75%	0.59	B
IND P8	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	52	453	16	142	90%	80%	75%	0.39	A
IND P10	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	36	575	11	180	90%	80%	75%	0.47	B
IND P12	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	3	188	1	59	100%	100%	75%	0.13	A
IND P14	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	25	265	8	83	90%	100%	75%	0.22	A
IRT P1	Connecting stair between south overpass and west platform	6.00	5.00	128	476	40	149	90%	75%	75%	0.37	A
IRT P3	Connecting stair between south overpass and west platform	6.00	5.00	60	138	19	43	90%	75%	75%	0.12	A
IRT U1/U2	Overpass stair above IRT platform	12.00	10.75	379	168	118	53	90%	75%	80%	0.15	A
IRT P5	Connecting stair between north overpass and west platform	6.00	5.00	186	207	58	65	90%	75%	75%	0.24	A
IRT P7	Connecting stair between north overpass and west platform	6.00	5.00	163	359	51	112	90%	75%	75%	0.32	A
IRT P2	Connecting stair between north overpass and east platform	6.00	5.00	125	253	39	79	90%	75%	75%	0.23	A
IRT P4	Connecting stair between north overpass and east platform	6.00	5.00	51	121	16	38	90%	75%	75%	0.11	A
IRT P6	Connecting stair between lower mezzanine and east platform	6.50	5.50	194	68	61	21	90%	75%	75%	0.15	A
IRT P8	Connecting stair between lower mezzanine and east platform	6.50	5.50	116	146	36	46	90%	75%	75%	0.15	A
IRT P9	Overpass stair above IRT platform	8.00	6.75	302	218	94	68	90%	75%	80%	0.23	A

Table 4C-113. CBD Tolling Alternative: 168th Street Washington Heights Station (1, A, C lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and West 168th Street – southwest corner (R182)											
Two-Way Turnstiles	7	2,940	4,515	2,181	661	682	207	90%	80%	0.32	A
St. Nicholas Avenue and West 168th Street – southeast corner (N013)											
Two-Way Turnstiles	5	2,100	3,225	1,386	1,153	433	360	90%	80%	0.38	A
Broadway and West 169th Street – northeast corner (N012)											
HEET	2	510	1,080	198	118	62	37	90%	80%	0.18	A
High Exit Only Turnstile	3	0	1,665	0	182	0	57	100%	80%	0.04	A

Table 4C-114. CBD Tolling Alternative: 168th Street Washington Heights Station (1, A, C lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S1	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	1124	248	351	78	90%	100%	80%	0.66	B
S3	Street stair at southwest corner of Broadway and West 168th Street	6.00	5.00	1828	490	571	153	90%	100%	80%	1.13	D
M1	Connecting stair between S1/S3 and Control Area R182 free zone	12.00	10.75	2952	737	923	230	90%	100%	80%	0.83	C
M4	Connecting stair between S4 and Control Area N13 free zone	12.00	10.75	821	688	257	215	90%	100%	80%	0.36	A
S4	Street stair at southeast corner of St. Nicholas Avenue and West 168th Street	5.00	4.00	821	688	257	215	90%	100%	80%	0.97	C
S5	Street stair at northwest corner of Broadway and West 169th Street	3.00	2.00	67	37	21	12	90%	100%	80%	0.13	A
S6	Street stair at northwest corner of Broadway and West 169th Street	4.00	3.00	305	564	95	176	90%	100%	80%	0.78	C
M5	Connecting stair between S5/S6 and Control Area N12 free zone	11.00	9.75	373	601	117	188	90%	100%	80%	0.27	A
M6	Connecting stair between S5/S6 and Control Area N12 free zone	13.50	12.25	373	601	117	188	90%	100%	80%	0.21	A
S7	Street stair at northeast corner of Broadway and West 169th Street	4.50	3.50	101	54	32	17	90%	100%	80%	0.11	A
IND P3	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	49	25	15	8	90%	80%	75%	0.05	A
IND P5	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	968	27	303	8	100%	80%	75%	0.65	B
IND P7	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	1125	57	352	18	100%	80%	75%	0.77	C
IND P9	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	574	34	179	11	90%	80%	75%	0.44	A
IND P11	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	13	18	4	6	90%	100%	75%	0.02	A
IND P13	Connecting stair between west platform and Control Area N13 paid zone	5.00	4.00	398	20	124	6	100%	100%	75%	0.22	A
IND P4	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	7	310	2	97	100%	80%	75%	0.22	A
IND P6	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	81	378	25	118	90%	80%	75%	0.35	A
IND P8	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	152	272	48	85	90%	80%	75%	0.32	A
IND P10	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	107	359	33	112	90%	80%	75%	0.35	A
IND P12	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	5	253	2	79	100%	100%	75%	0.18	A
IND P14	Connecting stair between east platform and Control Area N13 paid zone	5.00	4.00	33	391	10	122	90%	100%	75%	0.32	A
IRT P1	Connecting stair between south overpass and west platform	6.00	5.00	381	246	119	77	90%	75%	75%	0.39	A
IRT P3	Connecting stair between south overpass and west platform	6.00	5.00	135	63	42	20	90%	75%	75%	0.12	A
IRT U1/U2	Overpass stair above IRT platform	12.00	10.75	147	576	46	180	90%	75%	80%	0.20	A
IRT P5	Connecting stair between north overpass and west platform	6.00	5.00	228	56	71	18	90%	75%	75%	0.18	A
IRT P7	Connecting stair between north overpass and west platform	6.00	5.00	190	134	59	42	90%	75%	75%	0.20	A
IRT P2	Connecting stair between north overpass and east platform	6.00	5.00	392	306	123	96	90%	75%	75%	0.43	A
IRT P4	Connecting stair between north overpass and east platform	6.00	5.00	212	131	66	41	90%	75%	75%	0.21	A
IRT P6	Connecting stair between lower mezzanine and east platform	6.50	5.50	216	56	68	18	90%	75%	75%	0.15	A
IRT P8	Connecting stair between lower mezzanine and east platform	6.50	5.50	292	142	91	44	90%	75%	75%	0.24	A
IRT P9	Overpass stair above IRT platform	8.00	6.75	462	212	144	66	90%	75%	80%	0.30	A

Table 4C-115. CBD Tolling Alternative: 168th Street Washington Heights Station (1, A, C lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and West 168th Street – southwest corner (R182)											
Two-Way Turnstiles	7	2,940	4,515	781	2,908	244	909	90%	80%	0.37	A
St. Nicholas Avenue and West 168th Street – southeast corner (N013)											
Two-Way Turnstiles	5	2,100	3,225	821	688	257	215	90%	80%	0.23	A
Broadway and West 169th Street – northeast corner (N012)											
HEET	2	510	1,080	115	219	36	69	90%	80%	0.17	A
High Exit Only Turnstile	3	0	1,665	0	338	0	106	100%	80%	0.08	A

Table 4C-116. Existing Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
O7A/O7B/O7C/O7D/O7E	Barclays Center plaza	20.00	16.00	1,092	1,153	341	360	90%	100%	80%	0.37	A
M1/S1	Northwest corner of Fourth Avenue and Pacific Street	6.00	5.00	734	1,092	229	341	90%	100%	80%	0.97	C
M2/S2	Northeast corner of Fourth Avenue and Pacific Street	7.00	6.00	660	846	206	264	90%	100%	80%	0.66	B
South Side Hanson Place Street Stairs: West	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	904	359	283	112	90%	100%	80%	0.85	C
South Side Hanson Place Street Stairs: East	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	955	387	298	121	90%	100%	80%	0.91	C
O1	Northeast corner of Hanson Place and Ashland Place	5.83	4.83	508	649	159	203	90%	100%	80%	0.63	B
O7	LIRR tracks 1 and 2	3.50	2.50	473	68	148	21	90%	75%	90%	0.65	B
O6	LIRR tracks 1 and 2	4.00	3.00	185	148	58	46	90%	75%	90%	0.32	A
O4	LIRR tracks 3 and 4	6.00	5.00	476	144	149	45	90%	75%	90%	0.37	A
O2	LIRR tracks 5 and 6	5.50	4.50	397	47	124	15	90%	75%	90%	0.30	A
P6/P8	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	540	2,172	169	679	90%	80%	75%	1.65	E
P10/P12	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	516	586	161	183	90%	80%	75%	0.66	B
P14/P16	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	635	397	198	124	90%	80%	75%	0.61	B
P7/P9	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,351	354	422	111	90%	80%	75%	1.00	D
P9/P11	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	129	103	40	32	90%	80%	75%	0.14	A
P13/P15	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,118	111	349	35	90%	80%	75%	0.72	C

Table 4C-117. Existing Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E258	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A
E259	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A

Table 4C-118. Existing Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Fourth Avenue and Pacific Street (C009)											
Two-Way Turnstiles	8	3,360	5,160	1,566	1,484	489	464	90%	90%	0.27	A
LIRR concourse by Hanson Place and Ashland Place (R610)											
Two-Way Turnstiles	8	3,360	5,160	2,609	1,342	815	419	90%	90%	0.37	A
Hanson Place and Ashland Place (B001)											
HEET	2	510	1,080	436	306	136	96	90%	90%	0.41	A
LIRR tracks 1 and 2 (B002)											
HEET	2	510	1,080	473	68	148	21	90%	90%	0.35	A
LIRR tracks 1 and 2 (B002A)											
HEET	1	255	540	185	148	58	46	90%	90%	0.36	A
LIRR tracks 3 and 4 (B002B)											
Two-Way Turnstiles	3	1,260	1,935	476	144	149	45	90%	90%	0.16	A
LIRR tracks 3 and 4 (B002C)											
Two-Way Turnstiles	3	1,260	1,935	397	47	124	15	90%	90%	0.12	A
LIRR tracks 5 and 6 (R612)											
Two-Way Turnstiles	14	5,880	9,030	1,153	981	360	307	90%	90%	0.11	A

Table 4C-119. Existing Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
O7A/O7B/O7C/O7D/O7E	Barclays Center plaza	20.00	16.00	834	327	261	102	90%	100%	80%	0.18	A
M1/S1	Northwest corner of Fourth Avenue and Pacific Street	6.00	5.00	583	717	182	224	90%	100%	80%	0.68	B
M2/S2	Northeast corner of Fourth Avenue and Pacific Street	7.00	6.00	586	940	183	294	90%	100%	80%	0.68	B
South Side Hanson Place Street Stairs: West	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	491	1,024	153	320	90%	100%	80%	1.12	D
South Side Hanson Place Street Stairs: East	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	488	1,134	153	354	90%	100%	80%	1.20	D
O1	Northeast corner of Hanson Place and Ashland Place	5.83	4.83	342	294	107	92	90%	100%	80%	0.34	A
O7	LIRR tracks 1 and 2	3.50	2.50	58	402	18	126	90%	75%	90%	0.49	B
O6	LIRR tracks 1 and 2	4.00	3.00	126	157	39	49	90%	75%	90%	0.26	A
O4	LIRR tracks 3 and 4	6.00	5.00	122	405	38	126	90%	75%	90%	0.28	A
O2	LIRR tracks 5 and 6	5.50	4.50	40	337	13	105	90%	75%	90%	0.22	A
P6/P8	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	175	1,633	55	510	90%	80%	75%	1.11	D
P10/P12	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	209	312	65	98	90%	80%	75%	0.31	A
P14/P16	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	398	40	124	13	90%	80%	75%	0.26	A
P7/P9	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,395	1,015	436	317	90%	80%	75%	1.43	D
P9/P11	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	382	273	119	85	90%	80%	75%	0.39	A
P13/P15	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,824	401	570	125	90%	80%	75%	1.30	D

Table 4C-120. Existing Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E258	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A
E259	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A

Table 4C-121. Existing Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Fourth Avenue and Pacific Street (C009)											
Two-Way Turnstiles	8	3,360	5,160	307	655	96	205	90%	90%	0.08	A
LIRR concourse by Hanson Place and Ashland Place (R610)											
Two-Way Turnstiles	8	3,360	5,160	1,141	2,218	357	693	90%	90%	0.28	A
Hanson Place and Ashland Place (B001)											
HEET	2	510	1,080	260	371	81	116	90%	90%	0.31	A
LIRR tracks 1 and 2 (B002)											
HEET	2	510	1,080	58	402	18	126	90%	90%	0.18	A
LIRR tracks 1 and 2 (B002A)											
HEET	1	255	540	126	157	39	49	90%	90%	0.28	A
LIRR tracks 3 and 4 (B002B)											
Two-Way Turnstiles	3	1,260	1,935	122	405	38	126	90%	90%	0.11	A
LIRR tracks 3 and 4 (B002C)											
Two-Way Turnstiles	3	1,260	1,935	40	337	13	105	90%	90%	0.08	A
LIRR tracks 5 and 6 (R612)											
Two-Way Turnstiles	14	5,880	9,030	834	980	261	306	90%	90%	0.09	A

Table 4C-122. No Action Alternative Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
O7A/O7B/O7C/O7D/O7E	Barclays Center plaza	20.00	16.00	1,092	1,153	341	360	90%	100%	80%	0.37	A
M1/S1	Northwest corner of Fourth Avenue and Pacific Street	6.00	5.00	734	1,092	229	341	90%	100%	80%	0.97	C
M2/S2	Northeast corner of Fourth Avenue and Pacific Street	7.00	6.00	660	846	206	264	90%	100%	80%	0.66	B
South Side Hanson Place Street Stairs: West	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	904	359	283	112	90%	100%	80%	0.85	C
South Side Hanson Place Street Stairs: East	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	955	387	298	121	90%	100%	80%	0.91	C
O1	Northeast corner of Hanson Place and Ashland Place	5.83	4.83	508	649	159	203	90%	100%	80%	0.63	B
O7	LIRR tracks 1 and 2	3.50	2.50	473	68	148	21	90%	75%	90%	0.65	B
O6	LIRR tracks 1 and 2	4.00	3.00	185	148	58	46	90%	75%	90%	0.32	A
O4	LIRR tracks 3 and 4	6.00	5.00	476	144	149	45	90%	75%	90%	0.37	A
O2	LIRR tracks 5 and 6	5.50	4.50	397	47	124	15	90%	75%	90%	0.30	A
P6/P8	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	540	2,172	169	679	90%	80%	75%	1.65	E
P10/P12	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	516	586	161	183	90%	80%	75%	0.66	B
P14/P16	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	635	397	198	124	90%	80%	75%	0.61	B
P7/P9	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,351	354	422	111	90%	80%	75%	1.00	D
P9/P11	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	129	103	40	32	90%	80%	75%	0.14	A
P13/P15	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,118	111	349	35	90%	80%	75%	0.72	C

Table 4C-123. No Action Alternative Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E258	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A
E259	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A

Table 4C-124. No Action Alternative Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Fourth Avenue and Pacific Street (C009)											
Two-Way Turnstiles	8	3,360	5,160	1,566	1,484	489	464	90%	90%	0.27	A
LIRR concourse by Hanson Place and Ashland Place (R610)											
Two-Way Turnstiles	8	3,360	5,160	2,609	1,342	815	419	90%	90%	0.37	A
Hanson Place and Ashland Place (B001)											
HEET	2	510	1,080	436	306	136	96	90%	90%	0.41	A
LIRR tracks 1 and 2 (B002)											
HEET	2	510	1,080	473	68	148	21	90%	90%	0.35	A
LIRR tracks 1 and 2 (B002A)											
HEET	1	255	540	185	148	58	46	90%	90%	0.36	A
LIRR tracks 3 and 4 (B002B)											
Two-Way Turnstiles	3	1,260	1,935	476	144	149	45	90%	90%	0.16	A
LIRR tracks 3 and 4 (B002C)											
Two-Way Turnstiles	3	1,260	1,935	397	47	124	15	90%	90%	0.12	A
LIRR tracks 5 and 6 (R612)											
Two-Way Turnstiles	14	5,880	9,030	1,153	981	360	307	90%	90%	0.11	A

Table 4C-125. No Action Alternative Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
O7A/O7B/O7C/O7D/O7E	Barclays Center plaza	20.00	16.00	834	327	261	102	90%	100%	80%	0.18	A
M1/S1	Northwest corner of Fourth Avenue and Pacific Street	6.00	5.00	583	717	182	224	90%	100%	80%	0.68	B
M2/S2	Northeast corner of Fourth Avenue and Pacific Street	7.00	6.00	586	940	183	294	90%	100%	80%	0.68	B
South Side Hanson Place Street Stairs: West	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	491	1,024	153	320	90%	100%	80%	1.12	D
South Side Hanson Place Street Stairs: East	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	488	1,134	153	354	90%	100%	80%	1.20	D
O1	Northeast corner of Hanson Place and Ashland Place	5.83	4.83	342	294	107	92	90%	100%	80%	0.34	A
O7	LIRR tracks 1 and 2	3.50	2.50	58	402	18	126	90%	75%	90%	0.49	B
O6	LIRR tracks 1 and 2	4.00	3.00	126	157	39	49	90%	75%	90%	0.26	A
O4	LIRR tracks 3 and 4	6.00	5.00	122	405	38	126	90%	75%	90%	0.28	A
O2	LIRR tracks 5 and 6	5.50	4.50	40	337	13	105	90%	75%	90%	0.22	A
P6/P8	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	175	1,633	55	510	90%	80%	75%	1.11	D
P10/P12	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	209	312	65	98	90%	80%	75%	0.31	A
P14/P16	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	398	40	124	13	90%	80%	75%	0.26	A
P7/P9	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,395	1,015	436	317	90%	80%	75%	1.43	D
P9/P11	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	382	273	119	85	90%	80%	75%	0.39	A
P13/P15	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,824	401	570	125	90%	80%	75%	1.30	D

Table 4C-126. No Action Alternative Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E258	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A
E259	Street escalator to Barclays Center plaza	1	40	90%	0	327	0	102	945	0.12	A

Table 4C-127. No Action Alternative Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Fourth Avenue and Pacific Street (C009)											
Two-Way Turnstiles	8	3,360	5,160	307	655	96	205	90%	90%	0.08	A
LIRR concourse by Hanson Place and Ashland Place (R610)											
Two-Way Turnstiles	8	3,360	5,160	1,185	2,301	370	719	0.90	0.90	0.29	A
Hanson Place and Ashland Place (B001)											
HEET	2	510	1,080	260	371	81	116	90%	90%	0.31	A
LIRR tracks 1 and 2 (B002)											
HEET	2	510	1,080	58	402	18	126	90%	90%	0.18	A
LIRR tracks 1 and 2 (B002A)											
HEET	1	255	540	135	164	42	51	0.90	0.90	0.30	A
LIRR tracks 3 and 4 (B002B)											
Two-Way Turnstiles	3	1,260	1,935	131	422	41	132	0.90	0.90	0.12	A
LIRR tracks 3 and 4 (B002C)											
Two-Way Turnstiles	3	1,260	1,935	40	337	13	105	90%	90%	0.08	A
LIRR tracks 5 and 6 (R612)											
Two-Way Turnstiles	14	5,880	9,030	834	980	261	306	90%	90%	0.09	A

Table 4C-128. CBD Tolling Alternative: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
O7A/O7B/O7C/O7D/O7E	Barclays Center plaza	20.00	16.00	1,097	1,162	343	363	90%	100%	80%	0.37	A
M1/S1	Northwest corner of Fourth Avenue and Pacific Street	6.00	5.00	740	1,097	231	343	90%	100%	80%	0.98	C
M2/S2	Northeast corner of Fourth Avenue and Pacific Street	7.00	6.00	666	850	208	266	90%	100%	80%	0.67	B
South Side Hanson Place Street Stairs: West	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	913	363	285	113	90%	100%	80%	0.86	C
South Side Hanson Place Street Stairs: East	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	965	392	302	123	90%	100%	80%	0.92	C
O1	Northeast corner of Hanson Place and Ashland Place	5.83	4.83	511	651	160	203	90%	100%	80%	0.63	B
O7	LIRR tracks 1 and 2	3.50	2.50	485	72	152	23	90%	75%	90%	0.68	B
O6	LIRR tracks 1 and 2	4.00	3.00	190	156	59	49	90%	75%	90%	0.33	A
O4	LIRR tracks 3 and 4	6.00	5.00	488	151	153	47	90%	75%	90%	0.38	A
O2	LIRR tracks 5 and 6	5.50	4.50	407	49	127	15	90%	75%	90%	0.31	A
P6/P8	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	556	2,187	174	683	90%	80%	75%	1.67	F
P10/P12	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	536	593	168	185	90%	80%	75%	0.68	B
P14/P16	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	659	407	206	127	90%	80%	75%	0.63	B
P7/P9	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,360	357	425	112	90%	80%	75%	1.01	D
P9/P11	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	131	104	41	33	90%	80%	75%	0.14	A
P13/P15	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,138	113	356	35	90%	80%	75%	0.73	C

Table 4C-129. CBD Tolling Alternative: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E258	Street escalator to Barclays Center plaza	1	40	90%	0	329	0	103	945	0.12	A
E259	Street escalator to Barclays Center plaza	1	40	90%	0	329	0	103	945	0.12	A

Table 4C-130. CBD Tolling Alternative Level of Service Summary: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Fourth Avenue and Pacific Street (C009)											
Two-Way Turnstiles	8	3,360	5,160	1,578	1,494	493	467	90%	90%	0.27	A
LIRR concourse by Hanson Place and Ashland Place (R610)											
Two-Way Turnstiles	8	3,360	5,160	2,662	1,370	832	428	90%	90%	0.38	A
Hanson Place and Ashland Place (B001)											
HEET	2	510	1,080	439	308	137	96	90%	90%	0.41	A
LIRR tracks 1 and 2 (B002)											
HEET	2	510	1,080	485	72	152	23	90%	90%	0.36	A
LIRR tracks 1 and 2 (B002A)											
HEET	1	255	540	190	156	59	49	90%	90%	0.37	A
LIRR tracks 3 and 4 (B002B)											
Two-Way Turnstiles	3	1,260	1,935	488	151	153	47	90%	90%	0.16	A
LIRR tracks 3 and 4 (B002C)											
Two-Way Turnstiles	3	1,260	1,935	407	49	127	15	90%	90%	0.12	A
LIRR tracks 5 and 6 (R612)											
Two-Way Turnstiles	14	5,880	9,030	1,162	987	363	308	90%	90%	0.11	A

Table 4C-131. CBD Tolling Alternative: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
O7A/O7B/O7C/O7D/O7E	Barclays Center plaza	20.00	16.00	844	331	264	103	90%	100%	80%	0.18	A
M1/S1	Northwest corner of Fourth Avenue and Pacific Street	6.00	5.00	585	720	183	225	90%	100%	80%	0.69	B
M2/S2	Northeast corner of Fourth Avenue and Pacific Street	7.00	6.00	588	944	184	295	90%	100%	80%	0.68	B
South Side Hanson Place Street Stairs: West	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	498	1,035	156	323	90%	100%	80%	1.13	D
South Side Hanson Place Street Stairs: East	Southwest corner of Hanson Place and Ashland Place	4.67	3.67	494	1,147	154	358	90%	100%	80%	1.21	D
O1	Northeast corner of Hanson Place and Ashland Place	5.83	4.83	345	298	108	93	90%	100%	80%	0.34	A
O7	LIRR tracks 1 and 2	3.50	2.50	62	415	19	130	90%	75%	90%	0.50	B
O6	LIRR tracks 1 and 2	4.00	3.00	134	162	42	51	90%	75%	90%	0.28	A
O4	LIRR tracks 3 and 4	6.00	5.00	130	418	41	131	90%	75%	90%	0.30	A
O2	LIRR tracks 5 and 6	5.50	4.50	43	348	13	109	90%	75%	90%	0.23	A
P6/P8	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	176	1,635	55	511	90%	80%	75%	1.11	D
P10/P12	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	213	329	67	103	90%	80%	75%	0.33	A
P14/P16	C009 Fare Control Area: Stair to northbound D/N/R platform	6.00	5.00	406	43	127	13	90%	80%	75%	0.26	A
P7/P9	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,395	1,016	436	318	90%	80%	75%	1.44	D
P9/P11	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	389	282	122	88	90%	80%	75%	0.40	A
P13/P15	C009 Fare Control Area: Stair to southbound D/N/R platform	6.00	5.00	1,858	414	581	129	90%	80%	75%	1.33	D

Table 4C-132. CBD Tolling Alternative: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E258	Street escalator to Barclays Center plaza	1	40	90%	0	331	0	103	945	0.12	A
E259	Street escalator to Barclays Center plaza	1	40	90%	0	331	0	103	945	0.12	A

Table 4C-133. CBD Tolling Alternative: Atlantic Avenue Barclays Center Station (2, 3, 4, 5, B, D, N, Q, R lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Fourth Avenue and Pacific Street (C009)											
Two-Way Turnstiles	8	3,360	5,160	311	662	97	207	90%	90%	0.08	A
LIRR concourse by Hanson Place and Ashland Place (R610)											
Two-Way Turnstiles	8	3,360	5,160	1,185	2,301	370	719	90%	90%	0.29	A
Hanson Place and Ashland Place (B001)											
HEET	2	510	1,080	266	378	83	118	90%	90%	0.32	A
LIRR tracks 1 and 2 (B002)											
HEET	2	510	1,080	63	419	20	131	90%	90%	0.19	A
LIRR tracks 1 and 2 (B002A)											
HEET	1	255	540	135	164	42	51	90%	90%	0.30	A
LIRR tracks 3 and 4 (B002B)											
Two-Way Turnstiles	3	1,260	1,935	131	422	41	132	90%	90%	0.12	A
LIRR tracks 3 and 4 (B002C)											
Two-Way Turnstiles	3	1,260	1,935	43	348	13	109	90%	90%	0.08	A
LIRR tracks 5 and 6 (R612)											
Two-Way Turnstiles	14	5,880	9,030	844	991	264	310	90%	90%	0.09	A

Table 4C-134. Existing Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1/P2	Connecting stair between N124 paid zone and southbound IND platform	13.50	12.00	524	1263	164	395	90%	80%	75%	0.45	B
P3/P4	Connecting stair between N124 paid zone and northbound IND platform	13.50	12.00	3487	1238	1,090	387	90%	80%	75%	1.16	D
M1/M2/M3/M4	Connecting stair between N124 paid zone and BMT-Jamaica mezzanine	7.50	6.25	44	2244	14	701	100%	90%	90%	0.85	C
U1/U3	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	739	226	231	71	90%	80%	75%	0.71	C
U5/U7	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	284	258	89	81	90%	80%	75%	0.41	A
U9/U11	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	114	161	36	50	90%	80%	75%	0.21	A
U2/U4	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	934	1009	292	315	90%	80%	75%	1.45	E
U6/U8	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	1168	420	365	131	90%	80%	75%	1.17	D
U10/U12	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	234	252	73	79	90%	80%	75%	0.36	A
U9/U10	Connecting stair between JAM mezzanine and BMT-Canarsie line overpass	11.50	10.00	1814	2507	567	783	90%	90%	80%	1.19	D
U11/U13	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	766	1496	239	468	90%	80%	75%	1.01	D
U12/U14	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	1048	1011	327	316	90%	80%	75%	0.91	C

Table 4C-135. Existing Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E330	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	0	2,059	0	643	750	0.95	C
E331	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,333	0	417	0	750	0.62	B
E347	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,333	0	417	0	750	0.62	B

Table 4C-136. Existing Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) - Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Van Sinderen Avenue and Truxton Street - southwest corner (N124)											
Two-Way Turnstiles	7	2,940	4,515	1,005	503	314	157	90%	90%	0.16	A

Table 4C-137. Existing Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1/P2	Connecting stair between N124 paid zone and southbound IND platform	13.50	12.00	954	4003	298	1,251	90%	80%	75%	1.26	D
P3/P4	Connecting stair between N124 paid zone and northbound IND platform	13.50	12.00	1316	634	411	198	90%	80%	75%	0.48	B
M1/M2/M3/M4	Connecting stair between N124 paid zone and BMT-Jamaica mezzanine	7.50	6.25	334	913	105	285	90%	90%	90%	0.51	B
U1/U3	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	1315	367	411	115	90%	80%	75%	1.24	D
U5/U7	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	506	420	158	131	90%	80%	75%	0.69	B
U9/U11	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	202	262	63	82	90%	80%	75%	0.35	A
U2/U4	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	234	659	73	206	90%	80%	75%	0.68	B
U6/U8	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	293	275	91	86	90%	80%	75%	0.42	A
U10/U12	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	59	165	18	51	90%	80%	75%	0.17	A
U9/U10	Connecting stair between JAM mezzanine and BMT-Canarsie line overpass	11.50	10.00	887	801	277	250	90%	90%	80%	0.46	B
U11/U13	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	479	539	150	168	90%	80%	75%	0.45	B
U12/U14	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	409	262	128	82	90%	80%	75%	0.30	A

Table 4C-138. Existing Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E330	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	0	1,534	0	479	750	0.71	C
E331	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,574	0	492	0	750	0.73	C
E347	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,574	0	492	0	750	0.73	C

Table 4C-139. Existing Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Van Sinderen Avenue and Truxton Street - southwest corner (N124)											
Two-Way Turnstiles	7	2,940	4,515	480	1,075	150	336	90%	90%	0.15	A

Table 4C-140. No Action Alternative Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1/P2	Connecting stair between N124 paid zone and southbound IND platform	13.50	12.00	524	1263	164	395	90%	80%	75%	0.45	B
P3/P4	Connecting stair between N124 paid zone and northbound IND platform	13.50	12.00	3487	1238	1,090	387	90%	80%	75%	1.16	D
M1/M2/M3/M4	Connecting stair between N124 paid zone and BMT-Jamaica mezzanine	7.50	6.25	44	2244	14	701	100%	90%	90%	0.85	C
U1/U3	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	739	226	231	71	90%	80%	75%	0.71	C
U5/U7	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	284	258	89	81	90%	80%	75%	0.41	A
U9/U11	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	114	161	36	50	90%	80%	75%	0.21	A
U2/U4	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	934	1009	292	315	90%	80%	75%	1.45	E
U6/U8	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	1168	420	365	131	90%	80%	75%	1.17	D
U10/U12	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	234	252	73	79	90%	80%	75%	0.36	A
U9/U10	Connecting stair between JAM mezzanine and BMT-Canarsie line overpass	11.50	10.00	1814	2507	567	783	90%	90%	80%	1.19	D
U11/U13	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	766	1496	239	468	90%	80%	75%	1.01	D
U12/U14	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	1048	1011	327	316	90%	80%	75%	0.91	C

Table 4C-141. No Action Alternative Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E330	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	0	2,059	0	643	750	0.95	C
E331	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,333	0	417	0	750	0.62	B
E347	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,333	0	417	0	750	0.62	B

Table 4C-142. No Action Alternative Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) - Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Van Sinderen Avenue and Truxton Street - southwest corner (N124)											
Two-Way Turnstiles	7	2,940	4,515	1,005	503	314	157	90%	90%	0.16	A

Table 4C-143. No Action Alternative Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1/P2	Connecting stair between N124 paid zone and southbound IND platform	13.50	12.00	954	4003	298	1,251	90%	80%	75%	1.26	D
P3/P4	Connecting stair between N124 paid zone and northbound IND platform	13.50	12.00	1316	634	411	198	90%	80%	75%	0.48	B
M1/M2/M3/M4	Connecting stair between N124 paid zone and BMT-Jamaica mezzanine	7.50	6.25	334	913	105	285	90%	90%	90%	0.51	B
U1/U3	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	1315	367	411	115	90%	80%	75%	1.24	D
U5/U7	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	506	420	158	131	90%	80%	75%	0.69	B
U9/U11	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	202	262	63	82	90%	80%	75%	0.35	A
U2/U4	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	234	659	73	206	90%	80%	75%	0.68	B
U6/U8	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	293	275	91	86	90%	80%	75%	0.42	A
U10/U12	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	59	165	18	51	90%	80%	75%	0.17	A
U9/U10	Connecting stair between JAM mezzanine and BMT-Canarsie line overpass	11.50	10.00	887	801	277	250	90%	90%	80%	0.46	B
U11/U13	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	479	539	150	168	90%	80%	75%	0.45	B
U12/U14	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	409	262	128	82	90%	80%	75%	0.30	A

Table 4C-144. No Action Alternative Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E330	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	0	1,534	0	479	750	0.71	C
E331	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,574	0	492	0	750	0.73	C
E347	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,574	0	492	0	750	0.73	C

Table 4C-145. No Action Alternative Level of Service Summary: Broadway Junction Station (A, C, J, L, Z lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Van Sinderen Avenue and Truxton Street - southwest corner (N124)											
Two-Way Turnstiles	7	2,940	4,515	480	1,075	150	336	90%	90%	0.15	A

Table 4C-146. CBD Tolling Alternative: Broadway Junction Station (A, C, J, L, Z lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1/P2	Connecting stair between N124 paid zone and southbound IND platform	13.50	12.00	536	1299	168	406	90%	80%	75%	0.46	B
P3/P4	Connecting stair between N124 paid zone and northbound IND platform	13.50	12.00	3571	1278	1,116	399	90%	80%	75%	1.19	D
M1/M2/M3/M4	Connecting stair between N124 paid zone and BMT-Jamaica mezzanine	7.50	6.25	45	2290	14	716	100%	90%	90%	0.87	C
U1/U3	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	753	229	235	71	90%	80%	75%	0.72	C
U5/U7	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	289	262	90	82	90%	80%	75%	0.41	A
U9/U11	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	116	163	36	51	90%	80%	75%	0.21	A
U2/U4	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	947	1036	296	324	90%	80%	75%	1.49	E
U6/U8	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	1185	431	370	135	90%	80%	75%	1.19	D
U10/U12	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	237	259	74	81	90%	80%	75%	0.37	A
U9/U10	Connecting stair between JAM mezzanine and BMT-Canarsie line overpass	11.50	10.00	1863	2563	582	801	90%	90%	80%	1.22	D
U11/U13	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	787	1530	246	478	90%	80%	75%	1.04	D
U12/U14	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	1076	1034	336	323	90%	80%	75%	0.93	C

Table 4C-147. CBD Tolling Alternative: Broadway Junction Station (A, C, J, L, Z lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E330	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	0	2,101	0	656	750	0.97	C
E331	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,370	0	428	0	750	0.63	B
E347	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1,370	0	428	0	750	0.63	B

Table 4C-148. CBD Tolling Alternative: Broadway Junction Station (A, C, J, L, Z lines) - Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Van Sinderen Avenue and Truxton Street - southwest corner (N124)											
Two-Way Turnstiles	7	2,940	4,515	1,033	524	323	164	90%	90%	0.17	A

Table 4C-149. CBD Tolling Alternative: Broadway Junction Station (A, C, J, L, Z lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1/P2	Connecting stair between N124 paid zone and southbound IND platform	13.50	12.00	989	4076	309	1,274	90%	80%	75%	1.29	D
P3/P4	Connecting stair between N124 paid zone and northbound IND platform	13.50	12.00	1376	648	430	202	90%	80%	75%	0.50	B
M1/M2/M3/M4	Connecting stair between N124 paid zone and BMT-Jamaica mezzanine	7.50	6.25	343	947	107	296	90%	90%	90%	0.53	B
U1/U3	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	1343	376	420	118	90%	80%	75%	1.26	D
U5/U7	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	517	431	162	135	90%	80%	75%	0.71	C
U9/U11	Connecting stair to Jamaica-bound BMT-Jamaica platform	5.00	4.00	206	269	64	84	90%	80%	75%	0.36	A
U2/U4	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	240	679	75	212	90%	80%	75%	0.70	B
U6/U8	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	301	283	94	88	90%	80%	75%	0.43	A
U10/U12	Connecting stair to Manhattan-bound BMT-Jamaica platform	5.00	4.00	61	170	19	53	90%	80%	75%	0.17	A
U9/U10	Connecting stair between JAM mezzanine and BMT-Canarsie line overpass	11.50	10.00	919	839	287	262	90%	90%	80%	0.48	B
U11/U13	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	496	565	155	176	90%	80%	75%	0.47	B
U12/U14	Connecting stair to Manhattan-bound BMT-Canarsie platform	8.00	6.75	424	275	132	86	90%	80%	75%	0.31	A

Table 4C-150. CBD Tolling Alternative: Broadway Junction Station (A, C, J, L, Z lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E330	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	0	1592	0	498	750	0.74	C
E331	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1614	0	504	0	750	0.75	C
E347	Connecting escalator between N124 paid zone and BMT-Jamaica mezzanine	1	32	90%	1614	0	504	0	750	0.75	C

Table 4C-151. CBD Tolling Alternative: Broadway Junction Station (A, C, J, L, Z lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Van Sinderen Avenue and Truxton Street - southwest corner (N124)											
Two-Way Turnstiles	7	2,940	4,515	503	1,105	157	345	90%	90%	0.15	A

Table 4C-152. Existing Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1-S1	Street level stair at southwest corner of Bleecker Street and Lafayette Street	5.00	4.00	51	424	16	133	90%	100%	80%	0.34	A
P3-S3	Street level stair at northwest corner of Bleecker Street and Lafayette Street	5.00	4.00	118	283	37	88	90%	100%	80%	0.27	A
M2-S2	Street level stair at northwest corner of Houston Street and Mulberry Street	8.00	6.75	398	270	124	84	90%	100%	80%	0.25	A
R217A ML1	Connecting stair between northbound IRT platform ad lower mezzanine near R217	12.00	11.00	549	439	172	137	90%	100%	80%	0.23	A
R217A S1	Street level stair at southwest corner of Houston Street and Mulberry Street	5.00	4.00	549	439	172	137	90%	100%	80%	0.64	B
R217A M1	Street level stair at southwest corner of Houston Street and Mulberry Street	9.50	8.25	549	439	172	137	90%	100%	80%	0.31	A
P4-S4	Street level stair at southeast of Bleecker Street and Mulberry Street	4.00	3.00	137	25	43	8	90%	100%	80%	0.13	A
P2-S2	Street level stair at southwest corner of Bleecker Street and Mulberry Street	4.00	3.00	142	47	44	15	90%	100%	80%	0.15	A
P6-S6	Street level stair at northeast corner of Bleecker Street and Mulberry Street	8.00	7.00	309	88	97	28	90%	100%	80%	0.14	A
N519 M6-M11	Street level stair at northwest corner of Broadway and Houston Street	9.00	7.75	237	2249	74	703	90%	100%	90%	0.82	C
N519 S9	Street level stair at northwest corner of Broadway and Houston Street	4.75	3.75	237	2249	74	703	90%	100%	90%	1.69	F
N519A M4	Street level stair at northeast corner of Crosby Street and Houston Street	8.00	7.00	118	502	37	157	90%	100%	80%	0.25	A
N519A S6	Street level stair at northeast corner of Crosby Street and Houston Street	5.00	4.00	118	502	37	157	90%	100%	80%	0.43	A
M3	Street level stair at southeast corner of Crosby Street and Houston Street	13.00	11.75	81	795	25	248	90%	100%	80%	0.21	A
N519B S4	Street level stair at southeast corner of Crosby Street and Houston Street	4.00	3.00	73	716	23	224	90%	100%	80%	0.75	C
N519B S5	Street level stair at southeast corner Crosby Street and Houston Street	4.00	3.00	65	636	20	199	90%	100%	80%	0.66	B
P1-ML13	Connecting stair between southbound IND platform and lower mezzanine below R217A	4.00	3.00	97	344	30	108	90%	90%	75%	0.44	A
P2	Connecting stair between northbound IND platform and lower mezzanine below R217A	5.00	4.00	662	545	207	170	90%	90%	75%	0.85	C
P5	Connecting stair between southbound IND platform and lower mezzanine below R519	6.00	5.00	164	279	51	87	90%	90%	75%	0.26	A
P8	Connecting stair between northbound IND platform and lower mezzanine below R519	6.00	5.00	41	500	13	156	90%	90%	75%	0.33	A
ML10-ML12-P10	Connecting stair between northbound IND platform to mezzanine levels near N519	9.50	8.25	143	1048	45	328	90%	90%	75%	0.44	A
ML3-ML5-P9	Connecting stair between southbound IND platform and lower mezzanine near N519	8.50	7.25	144	693	45	217	90%	90%	75%	0.35	A
ML8-ML6	Connecting stair between upper mezzanine and lower mezzanine near N519	20.00	18.50	60	791	19	247	90%	100%	90%	0.12	A
P7	Connecting stair between southbound IND platform and lower mezzanine near N519	6.00	5.00	356	324	111	101	90%	90%	75%	0.38	A
P6	Connecting stair between northbound IND platform and lower mezzanine near N519	6.00	5.00	46	352	14	110	90%	90%	75%	0.24	A
P4	Connecting stair between northbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	211	329	66	103	90%	90%	75%	0.31	A
P3	Connecting stair between southbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	553	495	173	155	90%	90%	75%	0.59	B
ML2-ML4	Connecting stair between lower mezzanine level and N519A paid zone	20.00	18.50	988	1153	309	360	90%	80%	80%	0.33	A

Table 4C-153. Existing Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
ESC01	Connecting escalator between IRT platform to IND platform near R217A	1	40	95%	0	2,760	0	863	945	0.96	C

Table 4C-154. Existing Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lafayette Street at Bleecker Street – west side (R218)											
HEET	2	510	1,080	169	349	53	109	90%	90%	0.24	A
High Exit Only Turnstile	2	0	1,110	0	358	0	112	100%	90%	0.11	A
East Houston Street and Mulberry Street – northwest corner (R217A North)											
Two-Way Turnstiles	3	1,260	1,935	398	210	124	66	90%	80%	0.16	A
High Exit Only Turnstile	1	0	555	0	60	0	19	100%	80%	0.04	A
East Houston Street and Mulberry Street – southwest corner (R217A South)											
Two-Way Turnstiles	3	1,260	1,935	439	427	137	133	90%	80%	0.22	A
High Exit Only Turnstile	1	0	555	0	122	0	38	100%	80%	0.09	A
Mulberry Street and Bleecker Street – east side (R217)											
Two-Way Turnstiles	3	1,260	1,935	588	160	184	50	90%	90%	0.19	A
Broadway and Houston Street – east side (N519)											
Two-Way Turnstiles	7	2,940	4,515	237	2,249	74	703	90%	90%	0.22	A
East Houston Street and Crosby Street – northeast corner (N519A)											
Two-Way Turnstiles	10	4,200	6,450	118	502	37	157	90%	80%	0.04	A
East Houston Street and Crosby Street – southeast corner (N519B)											
Two-Way Turnstiles	4	1,680	2,580	81	795	25	248	90%	80%	0.15	A

Table 4C-155. Existing Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1-S1	Street level stair at southwest corner of Bleecker Street and Lafayette Street	5.00	4.00	103	636	32	199	90%	100%	80%	0.52	B
P3-S3	Street level stair at northwest corner of Bleecker Street and Lafayette Street	5.00	4.00	224	378	70	118	90%	100%	80%	0.40	A
M2-S2	Street level stair at northwest corner of Houston Street and Mulberry Street	8.00	6.75	361	265	113	83	90%	100%	80%	0.24	A
R217A ML1	Connecting stair between northbound IRT platform ad lower mezzanine near R217	12.00	11.00	796	425	249	133	90%	100%	80%	0.28	A
R217A S1	Street level stair at southwest corner of Houston Street and Mulberry Street	5.00	4.00	796	425	249	133	90%	100%	80%	0.77	C
R217A M1	Street level stair at southwest corner of Houston Street and Mulberry Street	9.50	8.25	796	425	249	133	90%	100%	80%	0.37	A
P4-S4	Street level stair at southeast of Bleecker Street and Mulberry Street	4.00	3.00	167	48	52	15	90%	100%	80%	0.17	A
P2-S2	Street level stair at southwest corner of Bleecker Street and Mulberry Street	4.00	3.00	233	53	73	17	90%	100%	80%	0.23	A
P6-S6	Street level stair at northeast corner of Bleecker Street and Mulberry Street	8.00	7.00	305	84	95	26	90%	100%	80%	0.13	A
N519 M6-M11	Street level stair at northwest corner of Broadway and Houston Street	9.00	7.75	1957	1731	612	541	90%	100%	90%	1.16	D
N519 S9	Street level stair at northwest corner of Broadway and Houston Street	4.75	3.75	1957	1731	612	541	90%	100%	90%	2.40	F
N519A M4	Street level stair at northeast corner of Crosby Street and Houston Street	8.00	7.00	541	444	169	139	90%	100%	80%	0.36	A
N519A S6	Street level stair at northeast corner of Crosby Street and Houston Street	5.00	4.00	541	444	169	139	90%	100%	80%	0.63	B
M3	Street level stair at southeast corner of Crosby Street and Houston Street	13.00	11.75	649	806	203	252	90%	100%	80%	0.33	A
N519B S4	Street level stair at southeast corner of Crosby Street and Houston Street	4.00	3.00	584	725	183	227	90%	100%	80%	1.15	D
N519B S5	Street level stair at southeast corner Crosby Street and Houston Street	4.00	3.00	519	645	162	202	90%	100%	80%	1.02	D
P1-ML13	Connecting stair between southbound IND platform and lower mezzanine below R217A	4.00	3.00	406	579	127	181	90%	90%	75%	0.94	C
P2	Connecting stair between northbound IND platform and lower mezzanine below R217A	5.00	4.00	704	64	220	20	90%	90%	75%	0.50	B
P5	Connecting stair between southbound IND platform and lower mezzanine below R519	6.00	5.00	490	268	153	84	90%	90%	75%	0.42	A
P8	Connecting stair between northbound IND platform and lower mezzanine below R519	6.00	5.00	113	496	35	155	90%	90%	75%	0.36	A
ML10-ML12-P10	Connecting stair between northbound IND platform to mezzanine levels near N519	9.50	8.25	944	551	295	172	90%	90%	75%	0.50	B
ML3-ML5-P9	Connecting stair between southbound IND platform and lower mezzanine near N519	8.50	7.25	1110	825	347	258	90%	90%	75%	0.75	C
ML8-ML6	Connecting stair between upper mezzanine and lower mezzanine near N519	20.00	18.50	195	541	61	169	90%	100%	90%	0.10	A
P7	Connecting stair between southbound IND platform and lower mezzanine near N519	6.00	5.00	775	380	242	119	90%	90%	75%	0.63	B
P6	Connecting stair between northbound IND platform and lower mezzanine near N519	6.00	5.00	126	198	39	62	90%	90%	75%	0.19	A
P4	Connecting stair between northbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	794	171	248	53	90%	90%	75%	0.51	B
P3	Connecting stair between southbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	1705	362	533	113	90%	90%	75%	1.10	D
ML2-ML4	Connecting stair between lower mezzanine level and N519A paid zone	20.00	18.50	3311	722	1,035	226	90%	80%	80%	0.63	B

Table 4C-156. Existing Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
ESC01	Connecting escalator between IRT platform to IND platform near R217A	1	40	95%	0	1,219	0	381	945	0.42	A

Table 4C-157. Existing Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lafayette Street at Bleecker Street – west side (R218)											
HEET	2	510	1,080	327	500	102	156	90%	90%	0.40	A
High Exit Only Turnstile	2	0	1,110	0	514	0	161	100%	90%	0.16	A
East Houston Street and Mulberry Street – northwest corner (R217A North)											
Two-Way Turnstiles	3	1,260	1,935	1,157	536	362	168	90%	80%	0.44	A
High Exit Only Turnstile	1	0	555	0	154	0	48	100%	80%	0.11	A
East Houston Street and Mulberry Street – southwest corner (R217A South)											
Two-Way Turnstiles	3	1,260	1,935	425	619	133	193	90%	80%	0.26	A
High Exit Only Turnstile	1	0	555	0	177	0	55	100%	80%	0.12	A
Mulberry Street and Bleecker Street – east side (R217)											
Two-Way Turnstiles	3	1,260	1,935	705	185	220	58	90%	90%	0.23	A
Broadway and Houston Street – east side (N519)											
Two-Way Turnstiles	7	2,940	4,515	1,957	1,731	612	541	90%	90%	0.38	A
East Houston Street and Crosby Street – northeast corner (N519A)											
Two-Way Turnstiles	10	4,200	6,450	541	444	169	139	90%	80%	0.07	A
East Houston Street and Crosby Street – southeast corner (N519B)											
Two-Way Turnstiles	4	1,680	2,580	649	806	203	252	90%	80%	0.27	A

Table 4C-158. No Action Alternative Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1-S1	Street level stair at southwest corner of Bleecker Street and Lafayette Street	5.00	4.00	51	424	16	133	90%	100%	80%	0.34	A
P3-S3	Street level stair at northwest corner of Bleecker Street and Lafayette Street	5.00	4.00	118	283	37	88	90%	100%	80%	0.27	A
M2-S2	Street level stair at northwest corner of Houston Street and Mulberry Street	8.00	6.75	398	270	124	84	90%	100%	80%	0.25	A
R217A ML1	Connecting stair between northbound IRT platform ad lower mezzanine near R217	12.00	11.00	549	439	172	137	90%	100%	80%	0.23	A
R217A S1	Street level stair at southwest corner of Houston Street and Mulberry Street	5.00	4.00	549	439	172	137	90%	100%	80%	0.64	B
R217A M1	Street level stair at southwest corner of Houston Street and Mulberry Street	9.50	8.25	549	439	172	137	90%	100%	80%	0.31	A
P4-S4	Street level stair at southeast of Bleecker Street and Mulberry Street	4.00	3.00	137	25	43	8	90%	100%	80%	0.13	A
P2-S2	Street level stair at southwest corner of Bleecker Street and Mulberry Street	4.00	3.00	142	47	44	15	90%	100%	80%	0.15	A
P6-S6	Street level stair at northeast corner of Bleecker Street and Mulberry Street	8.00	7.00	309	88	97	28	90%	100%	80%	0.14	A
N519 M6-M11	Street level stair at northwest corner of Broadway and Houston Street	9.00	7.75	237	2249	74	703	90%	100%	90%	0.82	C
N519 S9	Street level stair at northwest corner of Broadway and Houston Street	4.75	3.75	237	2249	74	703	90%	100%	90%	1.69	F
N519A M4	Street level stair at northeast corner of Crosby Street and Houston Street	8.00	7.00	118	502	37	157	90%	100%	80%	0.25	A
N519A S6	Street level stair at northeast corner of Crosby Street and Houston Street	5.00	4.00	118	502	37	157	90%	100%	80%	0.43	A
M3	Street level stair at southeast corner of Crosby Street and Houston Street	13.00	11.75	81	795	25	248	90%	100%	80%	0.21	A
N519B S4	Street level stair at southeast corner of Crosby Street and Houston Street	4.00	3.00	73	716	23	224	90%	100%	80%	0.75	C
N519B S5	Street level stair at southeast corner Crosby Street and Houston Street	4.00	3.00	65	636	20	199	90%	100%	80%	0.66	B
P1-ML13	Connecting stair between southbound IND platform and lower mezzanine below R217A	4.00	3.00	97	344	30	108	90%	90%	75%	0.44	A
P2	Connecting stair between northbound IND platform and lower mezzanine below R217A	5.00	4.00	662	545	207	170	90%	90%	75%	0.85	C
P5	Connecting stair between southbound IND platform and lower mezzanine below R519	6.00	5.00	164	279	51	87	90%	90%	75%	0.26	A
P8	Connecting stair between northbound IND platform and lower mezzanine below R519	6.00	5.00	41	500	13	156	90%	90%	75%	0.33	A
ML10-ML12-P10	Connecting stair between northbound IND platform to mezzanine levels near N519	9.50	8.25	143	1048	45	328	90%	90%	75%	0.44	A
ML3-ML5-P9	Connecting stair between southbound IND platform and lower mezzanine near N519	8.50	7.25	144	693	45	217	90%	90%	75%	0.35	A
ML8-ML6	Connecting stair between upper mezzanine and lower mezzanine near N519	20.00	18.50	60	791	19	247	90%	100%	90%	0.12	A
P7	Connecting stair between southbound IND platform and lower mezzanine near N519	6.00	5.00	356	324	111	101	90%	90%	75%	0.38	A
P6	Connecting stair between northbound IND platform and lower mezzanine near N519	6.00	5.00	46	352	14	110	90%	90%	75%	0.24	A
P4	Connecting stair between northbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	211	329	66	103	90%	90%	75%	0.31	A
P3	Connecting stair between southbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	553	495	173	155	90%	90%	75%	0.59	B
ML2-ML4	Connecting stair between lower mezzanine level and N519A paid zone	20.00	18.50	988	1153	309	360	90%	80%	80%	0.33	A

Table 4C-159. No Action Alternative Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
ESC01	Connecting escalator between IRT platform to IND platform near R217A	1	40	95%	0	2,762	0	863	945	0.96	C

Table 4C-160. No Action Alternative Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lafayette Street at Bleecker Street – west side (R218)											
HEET	2	510	1,080	169	349	53	109	90%	90%	0.24	A
High Exit Only Turnstile	2	0	1,110	0	358	0	112	100%	90%	0.11	A
East Houston Street and Mulberry Street – northwest corner (R217A North)											
Two-Way Turnstiles	3	1,260	1,935	398	210	124	66	90%	80%	0.16	A
High Exit Only Turnstile	1	0	555	0	60	0	19	100%	80%	0.04	A
East Houston Street and Mulberry Street – southwest corner (R217A South)											
Two-Way Turnstiles	3	1,260	1,935	439	427	137	133	90%	80%	0.22	A
High Exit Only Turnstile	1	0	555	0	122	0	38	100%	80%	0.09	A
Mulberry Street and Bleecker Street – east side (R217)											
Two-Way Turnstiles	3	1,260	1,935	588	160	184	50	90%	90%	0.19	A
Broadway and Houston Street – east side (N519)											
Two-Way Turnstiles	7	2,940	4,515	237	2,249	74	703	90%	90%	0.22	A
East Houston Street and Crosby Street – northeast corner (N519A)											
Two-Way Turnstiles	10	4,200	6,450	118	502	37	157	90%	80%	0.04	A
East Houston Street and Crosby Street – southeast corner (N519B)											
Two-Way Turnstiles	4	1,680	2,580	81	795	25	248	90%	80%	0.15	A

Table 4C-161. No Action Alternative Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1-S1	Street level stair at southwest corner of Bleecker Street and Lafayette Street	5.00	4.00	103	636	32	199	90%	100%	80%	0.52	B
P3-S3	Street level stair at northwest corner of Bleecker Street and Lafayette Street	5.00	4.00	224	378	70	118	90%	100%	80%	0.40	A
M2-S2	Street level stair at northwest corner of Houston Street and Mulberry Street	8.00	6.75	361	265	113	83	90%	100%	80%	0.24	A
R217A ML1	Connecting stair between northbound IRT platform ad lower mezzanine near R217	12.00	11.00	796	425	249	133	90%	100%	80%	0.28	A
R217A S1	Street level stair at southwest corner of Houston Street and Mulberry Street	5.00	4.00	796	425	249	133	90%	100%	80%	0.77	C
R217A M1	Street level stair at southwest corner of Houston Street and Mulberry Street	9.50	8.25	796	425	249	133	90%	100%	80%	0.37	A
P4-S4	Street level stair at southeast of Bleecker Street and Mulberry Street	4.00	3.00	167	48	52	15	90%	100%	80%	0.17	A
P2-S2	Street level stair at southwest corner of Bleecker Street and Mulberry Street	4.00	3.00	233	53	73	17	90%	100%	80%	0.23	A
P6-S6	Street level stair at northeast corner of Bleecker Street and Mulberry Street	8.00	7.00	305	84	95	26	90%	100%	80%	0.13	A
N519 M6-M11	Street level stair at northwest corner of Broadway and Houston Street	9.00	7.75	1957	1731	612	541	90%	100%	90%	1.16	D
N519 S9	Street level stair at northwest corner of Broadway and Houston Street	4.75	3.75	1957	1731	612	541	90%	100%	90%	2.40	F
N519A M4	Street level stair at northeast corner of Crosby Street and Houston Street	8.00	7.00	541	444	169	139	90%	100%	80%	0.36	A
N519A S6	Street level stair at northeast corner of Crosby Street and Houston Street	5.00	4.00	541	444	169	139	90%	100%	80%	0.63	B
M3	Street level stair at southeast corner of Crosby Street and Houston Street	13.00	11.75	649	806	203	252	90%	100%	80%	0.33	A
N519B S4	Street level stair at southeast corner of Crosby Street and Houston Street	4.00	3.00	584	725	183	227	90%	100%	80%	1.15	D
N519B S5	Street level stair at southeast corner Crosby Street and Houston Street	4.00	3.00	519	645	162	202	90%	100%	80%	1.02	D
P1-ML13	Connecting stair between southbound IND platform and lower mezzanine below R217A	4.00	3.00	406	579	127	181	90%	90%	75%	0.94	C
P2	Connecting stair between northbound IND platform and lower mezzanine below R217A	5.00	4.00	704	64	220	20	90%	90%	75%	0.50	B
P5	Connecting stair between southbound IND platform and lower mezzanine below R519	6.00	5.00	490	268	153	84	90%	90%	75%	0.42	A
P8	Connecting stair between northbound IND platform and lower mezzanine below R519	6.00	5.00	113	496	35	155	90%	90%	75%	0.36	A
ML10-ML12-P10	Connecting stair between northbound IND platform to mezzanine levels near N519	9.50	8.25	944	551	295	172	90%	90%	75%	0.50	B
ML3-ML5-P9	Connecting stair between southbound IND platform and lower mezzanine near N519	8.50	7.25	1110	825	347	258	90%	90%	75%	0.75	C
ML8-ML6	Connecting stair between upper mezzanine and lower mezzanine near N519	20.00	18.50	195	541	61	169	90%	100%	90%	0.10	A
P7	Connecting stair between southbound IND platform and lower mezzanine near N519	6.00	5.00	775	380	242	119	90%	90%	75%	0.63	B
P6	Connecting stair between northbound IND platform and lower mezzanine near N519	6.00	5.00	126	198	39	62	90%	90%	75%	0.19	A
P4	Connecting stair between northbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	794	171	248	53	90%	90%	75%	0.51	B
P3	Connecting stair between southbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	1705	362	533	113	90%	90%	75%	1.10	D
ML2-ML4	Connecting stair between lower mezzanine level and N519A paid zone	20.00	18.50	3311	722	1,035	226	90%	80%	80%	0.63	B

Table 4C-162. No Action Alternative Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
ESC01	Connecting escalator between IRT platform to IND platform near R217A	1	40	95%	0	1,219	0	381	945	0.42	A

Table 4C-163. No Action Alternative Level of Service Summary: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lafayette Street at Bleecker Street – west side (R218)											
HEET	2	510	1,080	327	500	102	156	90%	90%	0.40	A
High Exit Only Turnstile	2	0	1,110	0	514	0	161	100%	90%	0.16	A
East Houston Street and Mulberry Street – northwest corner (R217A North)											
Two-Way Turnstiles	3	1,260	1,935	1,157	536	362	168	90%	80%	0.44	A
High Exit Only Turnstile	1	0	555	0	154	0	48	100%	80%	0.11	A
East Houston Street and Mulberry Street – southwest corner (R217A South)											
Two-Way Turnstiles	3	1,260	1,935	425	619	133	193	90%	80%	0.26	A
High Exit Only Turnstile	1	0	555	0	177	0	55	100%	80%	0.12	A
Mulberry Street and Bleecker Street – east side (R217)											
Two-Way Turnstiles	3	1,260	1,935	712	187	223	58	90%	90%	0.23	A
Broadway and Houston Street – east side (N519)											
Two-Way Turnstiles	7	2,940	4,515	1,977	1,748	618	546	90%	90%	0.38	A
East Houston Street and Crosby Street – northeast corner (N519A)											
Two-Way Turnstiles	10	4,200	6,450	541	444	169	139	0.90	0.80	0.07	A
East Houston Street and Crosby Street – southeast corner (N519B)											
Two-Way Turnstiles	4	1,680	2,580	656	814	205	254	90%	80%	0.27	A

Table 4C-164. CBD Tolling Alternative: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1-S1	Street level stair at southwest corner of Bleecker Street and Lafayette Street	5.00	4.00	52	446	16	139	90%	100%	80%	0.35	A
P3-S3	Street level stair at northwest corner of Bleecker Street and Lafayette Street	5.00	4.00	120	298	38	93	90%	100%	80%	0.29	A
M2-S2	Street level stair at northwest corner of Houston Street and Mulberry Street	8.00	6.75	412	281	129	88	90%	100%	80%	0.26	A
R217A ML1	Connecting stair between northbound IRT platform ad lower mezzanine near R217	12.00	11.00	549	439	172	137	90%	100%	80%	0.23	A
R217A S1	Street level stair at southwest corner of Houston Street and Mulberry Street	5.00	4.00	569	458	178	143	90%	100%	80%	0.66	B
R217A M1	Street level stair at southwest corner of Houston Street and Mulberry Street	9.50	8.25	569	458	178	143	90%	100%	80%	0.32	A
P4-S4	Street level stair at southeast of Bleecker Street and Mulberry Street	4.00	3.00	139	26	43	8	90%	100%	80%	0.13	A
P2-S2	Street level stair at southwest corner of Bleecker Street and Mulberry Street	4.00	3.00	144	49	45	15	90%	100%	80%	0.16	A
P6-S6	Street level stair at northeast corner of Bleecker Street and Mulberry Street	8.00	7.00	314	92	98	29	90%	100%	80%	0.14	A
N519 M6-M11	Street level stair at northwest corner of Broadway and Houston Street	9.00	7.75	246	2344	77	733	90%	100%	90%	0.85	C
N519 S9	Street level stair at northwest corner of Broadway and Houston Street	4.75	3.75	246	2344	77	733	90%	100%	90%	1.76	F
N519A M4	Street level stair at northeast corner of Crosby Street and Houston Street	8.00	7.00	123	524	38	164	90%	100%	80%	0.26	A
N519A S6	Street level stair at northeast corner of Crosby Street and Houston Street	5.00	4.00	123	524	38	164	90%	100%	80%	0.45	A
M3	Street level stair at southeast corner of Crosby Street and Houston Street	13.00	11.75	84	829	26	259	90%	100%	80%	0.22	A
N519B S4	Street level stair at southeast corner of Crosby Street and Houston Street	4.00	3.00	76	747	24	233	90%	100%	80%	0.78	C
N519B S5	Street level stair at southeast corner Crosby Street and Houston Street	4.00	3.00	67	664	21	208	90%	100%	80%	0.69	B
P1-ML13	Connecting stair between southbound IND platform and lower mezzanine below R217A	4.00	3.00	102	360	32	113	90%	90%	75%	0.46	B
P2	Connecting stair between northbound IND platform and lower mezzanine below R217A	5.00	4.00	670	568	209	178	90%	90%	75%	0.87	C
P5	Connecting stair between southbound IND platform and lower mezzanine below R519	6.00	5.00	167	299	52	93	90%	90%	75%	0.27	A
P8	Connecting stair between northbound IND platform and lower mezzanine below R519	6.00	5.00	42	532	13	166	90%	90%	75%	0.35	A
ML10-ML12-P10	Connecting stair between northbound IND platform to mezzanine levels near N519	9.50	8.25	152	1080	48	338	90%	90%	75%	0.45	B
ML3-ML5-P9	Connecting stair between southbound IND platform and lower mezzanine near N519	8.50	7.25	153	714	48	223	90%	90%	75%	0.36	A
ML8-ML6	Connecting stair between upper mezzanine and lower mezzanine near N519	20.00	18.50	64	815	20	255	90%	100%	90%	0.12	A
P7	Connecting stair between southbound IND platform and lower mezzanine near N519	6.00	5.00	361	347	113	108	90%	90%	75%	0.40	A
P6	Connecting stair between northbound IND platform and lower mezzanine near N519	6.00	5.00	47	374	15	117	90%	90%	75%	0.26	A
P4	Connecting stair between northbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	220	359	69	112	90%	90%	75%	0.33	A
P3	Connecting stair between southbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	561	509	175	159	90%	90%	75%	0.60	B
ML2-ML4	Connecting stair between lower mezzanine level and N519A paid zone	20.00	18.50	1048	1178	328	368	90%	80%	80%	0.35	A

Table 4C-165. CBD Tolling Alternative: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
ESC01	Connecting escalator between IRT platform to IND platform near R217A	1	40	95%	0	2,774	0	867	945	0.97	C

Table 4C-166. CBD Tolling Alternative: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lafayette Street at Bleecker Street – west side (R218)											
HEET	2	510	1,080	172	367	54	115	90%	90%	0.25	A
High Exit Only Turnstile	2	0	1,110	0	377	0	118	100%	90%	0.12	A
East Houston Street and Mulberry Street – northwest corner (R217A North)											
Two-Way Turnstiles	3	1,260	1,935	412	218	129	68	90%	80%	0.16	A
High Exit Only Turnstile	1	0	555	0	63	0	20	100%	80%	0.05	A
East Houston Street and Mulberry Street – southwest corner (R217A South)											
Two-Way Turnstiles	3	1,260	1,935	459	441	143	138	90%	80%	0.23	A
High Exit Only Turnstile	1	0	555	0	122	0	38	100%	80%	0.09	A
Mulberry Street and Bleecker Street – east side (R217)											
Two-Way Turnstiles	3	1,260	1,935	598	168	187	53	90%	90%	0.20	A
Broadway and Houston Street – east side (N519)											
Two-Way Turnstiles	7	2,940	4,515	246	2,344	77	733	90%	90%	0.23	A
East Houston Street and Crosby Street – northeast corner (N519A)											
Two-Way Turnstiles	10	4,200	6,450	123	524	38	164	90%	90%	0.05	A
East Houston Street and Crosby Street – southeast corner (N519B)											
Two-Way Turnstiles	4	1,680	2,580	84	829	26	259	90%	80%	0.16	A

Table 4C-167. CBD Tolling Alternative: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
P1-S1	Street level stair at southwest corner of Bleecker Street and Lafayette Street	5.00	4.00	108	643	34	201	90%	100%	80%	0.53	B
P3-S3	Street level stair at northwest corner of Bleecker Street and Lafayette Street	5.00	4.00	235	382	73	119	90%	100%	80%	0.41	A
M2-S2	Street level stair at northwest corner of Houston Street and Mulberry Street	8.00	6.75	377	269	118	84	90%	100%	80%	0.24	A
R217A ML1	Connecting stair between northbound IRT platform ad lower mezzanine near R217	12.00	11.00	796	425	249	133	90%	100%	80%	0.28	A
R217A S1	Street level stair at southwest corner of Houston Street and Mulberry Street	5.00	4.00	832	431	260	135	90%	100%	80%	0.79	C
R217A M1	Street level stair at southwest corner of Houston Street and Mulberry Street	9.50	8.25	805	446	252	139	90%	100%	80%	0.38	A
P4-S4	Street level stair at southeast of Bleecker Street and Mulberry Street	4.00	3.00	175	49	55	15	90%	100%	80%	0.18	A
P2-S2	Street level stair at southwest corner of Bleecker Street and Mulberry Street	4.00	3.00	244	54	76	17	90%	100%	80%	0.24	A
P6-S6	Street level stair at northeast corner of Bleecker Street and Mulberry Street	8.00	7.00	319	85	100	27	90%	100%	80%	0.14	A
N519 M6-M11	Street level stair at northwest corner of Broadway and Houston Street	9.00	7.75	2046	1757	639	549	90%	100%	90%	1.19	D
N519 S9	Street level stair at northwest corner of Broadway and Houston Street	4.75	3.75	1980	1817	619	568	90%	100%	90%	2.47	F
N519A M4	Street level stair at northeast corner of Crosby Street and Houston Street	8.00	7.00	565	450	177	141	90%	100%	80%	0.37	A
N519A S6	Street level stair at northeast corner of Crosby Street and Houston Street	5.00	4.00	547	465	171	145	90%	100%	80%	0.65	B
M3	Street level stair at southeast corner of Crosby Street and Houston Street	13.00	11.75	678	818	212	256	90%	100%	80%	0.34	A
N519B S4	Street level stair at southeast corner of Crosby Street and Houston Street	4.00	3.00	610	736	191	230	90%	100%	80%	1.18	D
N519B S5	Street level stair at southeast corner Crosby Street and Houston Street	4.00	3.00	542	655	169	205	90%	100%	80%	1.05	D
P1-ML13	Connecting stair between southbound IND platform and lower mezzanine below R217A	4.00	3.00	409	581	128	182	90%	90%	75%	0.95	C
P2	Connecting stair between northbound IND platform and lower mezzanine below R217A	5.00	4.00	709	68	222	21	90%	90%	75%	0.51	B
P5	Connecting stair between southbound IND platform and lower mezzanine below R519	6.00	5.00	492	269	154	84	90%	90%	75%	0.42	A
P8	Connecting stair between northbound IND platform and lower mezzanine below R519	6.00	5.00	114	513	36	160	90%	90%	75%	0.38	A
ML10-ML12-P10	Connecting stair between northbound IND platform to mezzanine levels near N519	9.50	8.25	944	551	295	172	90%	90%	75%	0.50	B
ML3-ML5-P9	Connecting stair between southbound IND platform and lower mezzanine near N519	8.50	7.25	1110	825	347	258	90%	90%	75%	0.75	C
ML8-ML6	Connecting stair between upper mezzanine and lower mezzanine near N519	20.00	18.50	195	541	61	169	90%	100%	90%	0.10	A
P7	Connecting stair between southbound IND platform and lower mezzanine near N519	6.00	5.00	777	385	243	120	90%	90%	75%	0.64	B
P6	Connecting stair between northbound IND platform and lower mezzanine near N519	6.00	5.00	127	205	40	64	90%	90%	75%	0.19	A
P4	Connecting stair between northbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	801	177	250	55	90%	90%	75%	0.52	B
P3	Connecting stair between southbound IND platform and lower mezzanine near N519A/N519B	6.00	5.00	1710	367	534	115	90%	90%	75%	1.11	D
ML2-ML4	Connecting stair between lower mezzanine level and N519A paid zone	20.00	18.50	3320	750	1,038	234	90%	80%	80%	0.64	B

Table 4C-168. CBD Tolling Alternative: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
ESC01	Connecting escalator between IRT platform to IND platform near R217A	1	40	95%	0	1209	0	378	945	0.42	A

Table 4C-169. CBD Tolling Alternative: Broadway–Lafayette Street/Bleecker Street Station (6, B, D, F, M lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Lafayette Street at Bleecker Street – west side (R218)											
HEET	2	510	1,080	342	505	107	158	90%	90%	0.41	A
High Exit Only Turnstile	2	0	1,110	0	520	0	162	100%	90%	0.16	A
East Houston Street and Mulberry Street – northwest corner (R217A North)											
Two-Way Turnstiles	3	1,260	1,935	1,173	539	367	169	90%	80%	0.44	A
High Exit Only Turnstile	1	0	555	0	155	0	48	100%	80%	0.11	A
East Houston Street and Mulberry Street – southwest corner (R217A South)											
Two-Way Turnstiles	3	1,260	1,935	461	623	144	195	90%	80%	0.27	A
High Exit Only Turnstile	1	0	555	0	179	0	56	100%	80%	0.13	A
Mulberry Street and Bleecker Street – east side (R217)											
Two-Way Turnstiles	3	1,260	1,935	745	189	233	59	90%	90%	0.24	A
Broadway and Houston Street – east side (N519)											
Two-Way Turnstiles	7	2,940	4,515	2,046	1,757	639	549	0.90	0.90	0.39	A
East Houston Street and Crosby Street – northeast corner (N519A)											
Two-Way Turnstiles	10	4,200	6,450	570	454	178	142	90%	80%	0.08	A
East Houston Street and Crosby Street – southeast corner (N519B)											
Two-Way Turnstiles	4	1,680	2,580	685	826	214	258	90%	80%	0.28	A

Table 4C-170. Existing Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M3-S12	Street stair at northeast corner of Canal Street and Broadway	15.00	13.50	106	1,182	33	369	90%	100%	90%	0.24	A
M2	Connecting stair between S6/S7 stairs and A043/A043A free zone	12.00	10.50	114	1,499	36	468	90%	100%	90%	0.39	A
A043 S6	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	103	1,349	32	422	90%	100%	90%	0.74	C
A043 S7	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	91	1,199	29	375	90%	100%	90%	0.66	B
A044 S10	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	29	257	9	80	90%	100%	90%	0.18	A
A044 S11	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	26	228	8	71	90%	100%	90%	0.16	A
A044 P14	Connecting stair between S10/S11 stairs and A044 free zone	10.00	8.75	32	285	10	89	90%	100%	90%	0.09	A
A044 P11	Connecting stair between S8 stairs and A044 free zone	6.00	5.00	34	190	11	59	90%	100%	90%	0.11	A
A044 S8	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	34	190	11	59	90%	100%	90%	0.14	A
P13-S9	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	14	92	4	29	90%	100%	90%	0.07	A
P5-S5	Street stair at northwest corner of Canal Street and Lafayette Street	4.00	3.00	39	1,000	12	313	100%	100%	90%	0.80	C
P1-S1	Street stair at southwest corner of Canal Street and Lafayette Street	4.00	3.00	36	1,344	11	420	100%	100%	90%	1.06	D
A046 P3-S3	Street stair at southeast corner of Canal Street and Lafayette Street	5.00	4.00	182	35	57	11	90%	100%	90%	0.13	A
P2-S2	Street stair at southeast corner of Canal Street and Lafayette Street	4.00	3.00	198	450	62	141	90%	100%	90%	0.54	B
P6-S6	Street stair at northeast corner of Canal Street and Lafayette Street	5.00	4.00	487	257	152	80	90%	100%	90%	0.45	A
A066 S3	Street stair at northwest corner of Walker Street and Centre Street	16.00	14.50	2210	303	691	95	90%	100%	90%	0.41	A
P4	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	65	337	20	105	90%	80%	80%	0.23	A
P5	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	287	1,918	90	599	90%	80%	80%	1.28	D
PL23	Connecting passageway near A043A paid zone to southbound BMT R, W platform	6.00	5.00	241	76	75	24	90%	90%	75%	0.17	A
PL22	Connecting passageway near A043A paid zone to southbound BMT R, W platform	8.00	7.00	421	84	132	26	90%	90%	75%	0.19	A
PL31-PL29	Connecting passageway near A043A paid zone to BMT Q, N northbound platform	8.00	7.00	158	1,287	49	402	90%	90%	75%	0.62	B
PL41	Connecting stair between BMT Q, N northbound platform and BMT J, M, Z platform	5.00	4.00	1063	881	332	275	90%	90%	75%	1.36	E
PL15	Connecting stair between BMT Q, N northbound platform and IRT 6 platform	7.00	6.00	213	1,331	67	416	90%	90%	75%	0.78	C
PL30-PL28	Connecting passageway to BMT Q, N southbound platform	8.00	7.00	62	988	19	309	90%	90%	75%	0.46	B
PL40	Connecting stair between BMT Q, N southbound platform and BMT J, M, Z platform	5.00	4.00	552	618	173	193	90%	90%	75%	0.83	C
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	13.00	11.75	2	538	1	168	100%	90%	75%	0.13	A
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	8.00	7.00	2	538	1	168	100%	90%	75%	0.21	A
ML1	Connecting stair between IRT 6 platform and BMT Q, N platform	16.00	14.75	148	985	46	308	90%	90%	75%	0.23	A
ML2	Connecting stair between IRT 6 platform and BMT Q, N platform	12.00	10.75	208	1,869	65	584	90%	90%	75%	0.59	B
P6 (P4+P5)	Connecting stair between P4 and P5 (J, M, Z platform) and A066 paid zone	12.00	11.00	352	2,255	110	705	90%	90%	75%	0.72	C
PL16-PL18	Connecting stair between southbound Q, N platform and downtown IRT 6 platform	8.00	7.00	35	483	11	151	90%	90%	75%	0.23	A
PL17-PL19	Connecting stair between northbound Q, N platform and downtown IRT 6 platform	8.00	7.00	113	502	35	157	90%	90%	75%	0.26	A
PL26-PL27	Connecting stair near A044 paid zone between southbound and northbound R, W platforms	6.00	5.00	241	76	75	24	90%	90%	75%	0.17	A

Table 4C-171. Existing Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and Canal Street – east side (A043)											
Two-Way Turnstiles	5	2,100	3,225	147	1,787	46	559	90%	90%	0.24	A
Broadway and Canal Street – east side (A043A)											
Two-Way Turnstiles	3	1,260	1,935	49	596	15	186	90%	90%	0.13	A
Broadway and Canal Street – west side (A044)											
HEET	3	765	1,620	80	336	25	105	90%	90%	0.12	A
High Exit Only Turnstile	2	0	1,110	0	231	0	72	100%	90%	0.07	A
Canal Street and Lafayette Street - northwest corner (R214A)											
HEET	3	765	1,620	39	1,000	12	313	100%	90%	0.23	A
Canal Street and Lafayette Street - southwest corner (R214)											
HEET	3	765	1,620	36	1,344	11	420	100%	90%	0.30	A
Canal Street and Lafayette Street - southeast corner (A046)											
Two-Way Turnstiles	6	2,520	3,870	380	688	119	215	90%	90%	0.12	A
Canal Street and Lafayette Street - northeast corner (A046A)											
HEET	5	1,275	2,700	257	487	80	152	90%	90%	0.14	A
Walker Street and Centre Street - southeast corner (A066)											
Two-Way Turnstiles	3	1,260	1,935	303	2,210	95	691	90%	90%	0.52	B

Table 4C-172. Existing Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M3-S12	Street stair at northeast corner of Canal Street and Broadway	15.00	13.50	1,145	453	358	142	90%	100%	90%	0.28	A
M2	Connecting stair between S6/S7 stairs and A043/A043A free zone	12.00	10.50	1,173	321	367	100	90%	100%	90%	0.34	A
A043 S6	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	1,056	289	330	90	90%	100%	90%	0.64	B
A043 S7	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	938	257	293	80	90%	100%	90%	0.57	B
A044 S10	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	244	302	76	95	90%	100%	90%	0.34	A
A044 S11	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	217	269	68	84	90%	100%	90%	0.30	A
A044 P14	Connecting stair between S10/S11 stairs and A044 free zone	10.00	8.75	271	336	85	105	90%	100%	90%	0.17	A
A044 P11	Connecting stair between S8 stairs and A044 free zone	6.00	5.00	317	172	99	54	90%	100%	90%	0.24	A
A044 S8	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	317	172	99	54	90%	100%	90%	0.29	A
P13-S9	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	114	106	36	33	90%	100%	90%	0.13	A
P5-S5	Street stair at northwest corner of Canal Street and Lafayette Street	4.00	3.00	319	643	100	201	90%	100%	90%	0.80	C
P1-S1	Street stair at southwest corner of Canal Street and Lafayette Street	4.00	3.00	392	795	123	248	90%	100%	90%	0.98	C
A046 P3-S3	Street stair at southeast corner of Canal Street and Lafayette Street	5.00	4.00	568	9	178	3	100%	100%	90%	0.30	A
P2-S2	Street stair at southeast corner of Canal Street and Lafayette Street	4.00	3.00	666	187	208	58	90%	100%	90%	0.67	B
P6-S6	Street stair at northeast corner of Canal Street and Lafayette Street	5.00	4.00	272	1,261	85	394	90%	100%	90%	0.97	C
A066 S3	Street stair at northwest corner of Walker Street and Centre Street	16.00	14.50	702	1,837	219	574	90%	100%	90%	0.44	A
P4	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	348	104	109	33	90%	80%	80%	0.26	A
P5	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	1,472	527	460	165	90%	80%	80%	1.16	D
PL23	Connecting passageway near A043A paid zone to southbound BMT R, W platform	6.00	5.00	256	637	80	199	90%	90%	75%	0.52	B
PL22	Connecting passageway near A043A paid zone to southbound BMT R, W platform	8.00	7.00	318	597	99	187	90%	90%	75%	0.38	A
PL31-PL29	Connecting passageway near A043A paid zone to BMT Q, N northbound platform	8.00	7.00	914	243	286	76	90%	90%	75%	0.44	A
PL41	Connecting stair between BMT Q, N northbound platform and BMT J, M, Z platform	5.00	4.00	536	508	168	159	90%	90%	75%	0.74	C
PL15	Connecting stair between BMT Q, N northbound platform and IRT 6 platform	7.00	6.00	547	278	171	87	90%	90%	75%	0.38	A
PL30-PL28	Connecting passageway to BMT Q, N southbound platform	8.00	7.00	1,029	467	322	146	90%	90%	75%	0.58	B
PL40	Connecting stair between BMT Q, N southbound platform and BMT J, M, Z platform	5.00	4.00	1,023	827	320	258	90%	90%	75%	1.30	D
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	13.00	11.75	470	280	147	88	90%	90%	75%	0.18	A
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	8.00	7.00	470	280	147	88	90%	90%	75%	0.30	A
ML1	Connecting stair between IRT 6 platform and BMT Q, N platform	16.00	14.75	866	378	271	118	90%	90%	75%	0.23	A
ML2	Connecting stair between IRT 6 platform and BMT Q, N platform	12.00	10.75	1,017	557	318	174	90%	90%	75%	0.40	A
P6 (P4+P5)	Connecting stair between P4 and P5 (J, M, Z platform) and A066 paid zone	12.00	11.00	1,820	631	569	197	90%	90%	75%	0.60	B
PL16-PL18	Connecting stair between southbound Q, N platform and downtown IRT 6 platform	8.00	7.00	374	308	117	96	90%	90%	75%	0.27	A
PL17-PL19	Connecting stair between northbound Q, N platform and downtown IRT 6 platform	8.00	7.00	492	70	154	22	90%	90%	75%	0.21	A
PL26-PL27	Connecting stair near A044 paid zone between southbound and northbound R, W platforms	6.00	5.00	256	637	80	199	90%	90%	75%	0.52	B

Table 4C-173. Existing Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and Canal Street – east side (A043)											
Two-Way Turnstiles	5	2,100	3,225	1,159	387	362	121	90%	90%	0.24	A
Broadway and Canal Street – east side (A043A)											
Two-Way Turnstiles	3	1,260	1,935	1,159	387	362	121	90%	90%	0.40	A
Broadway and Canal Street – west side (A044)											
HEET	3	765	1,620	702	364	219	114	90%	90%	0.40	A
High Exit Only Turnstile	2	0	1,110	0	250	0	78	100%	90%	0.08	A
Canal Street and Lafayette Street - northwest corner (R214A)											
HEET	3	765	1,620	319	643	100	201	90%	90%	0.30	A
Canal Street and Lafayette Street - southwest corner (R214)											
HEET	3	765	1,620	392	795	123	248	90%	90%	0.37	A
Canal Street and Lafayette Street - southeast corner (A046)											
Two-Way Turnstiles	6	2,520	3,870	1,234	278	386	87	90%	90%	0.20	A
Canal Street and Lafayette Street - northeast corner (A046A)											
HEET	5	1,275	2,700	1,261	272	394	85	90%	90%	0.38	A
Walker Street and Centre Street - southeast corner (A066)											
Two-Way Turnstiles	3	1,260	1,935	1,837	702	574	219	90%	90%	0.65	B

Table 4C-174. No Action Alternative Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M3-S12	Street stair at northeast corner of Canal Street and Broadway	15.00	13.50	106	1,182	33	369	90%	100%	90%	0.24	A
M2	Connecting stair between S6/S7 stairs and A043/A043A free zone	12.00	10.50	114	1,499	36	468	90%	100%	90%	0.39	A
A043 S6	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	103	1,349	32	422	90%	100%	90%	0.74	C
A043 S7	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	91	1,199	29	375	90%	100%	90%	0.66	B
A044 S10	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	29	257	9	80	90%	100%	90%	0.18	A
A044 S11	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	26	228	8	71	90%	100%	90%	0.16	A
A044 P14	Connecting stair between S10/S11 stairs and A044 free zone	10.00	8.75	32	285	10	89	90%	100%	90%	0.09	A
A044 P11	Connecting stair between S8 stairs and A044 free zone	6.00	5.00	34	190	11	59	90%	100%	90%	0.11	A
A044 S8	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	34	190	11	59	90%	100%	90%	0.14	A
P13-S9	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	14	92	4	29	90%	100%	90%	0.07	A
P5-S5	Street stair at northwest corner of Canal Street and Lafayette Street	4.00	3.00	39	1,000	12	313	100%	100%	90%	0.80	C
P1-S1	Street stair at southwest corner of Canal Street and Lafayette Street	4.00	3.00	36	1,344	11	420	100%	100%	90%	1.06	D
A046 P3-S3	Street stair at southeast corner of Canal Street and Lafayette Street	5.00	4.00	182	35	57	11	90%	100%	90%	0.13	A
P2-S2	Street stair at southeast corner of Canal Street and Lafayette Street	4.00	3.00	198	450	62	141	90%	100%	90%	0.54	B
P6-S6	Street stair at northeast corner of Canal Street and Lafayette Street	5.00	4.00	487	257	152	80	90%	100%	90%	0.45	A
A066 S3	Street stair at northwest corner of Walker Street and Centre Street	16.00	14.50	2,210	303	691	95	90%	100%	90%	0.41	A
P4	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	65	337	20	105	90%	80%	80%	0.23	A
P5	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	287	1,918	90	599	90%	80%	80%	1.28	D
PL23	Connecting passageway near A043A paid zone to southbound BMT R, W platform	6.00	5.00	241	76	75	24	90%	90%	75%	0.17	A
PL22	Connecting passageway near A043A paid zone to southbound BMT R, W platform	8.00	7.00	421	84	132	26	90%	90%	75%	0.19	A
PL31-PL29	Connecting passageway near A043A paid zone to BMT Q, N northbound platform	8.00	7.00	158	1,287	49	402	90%	90%	75%	0.62	B
PL41	Connecting stair between BMT Q, N northbound platform and BMT J, M, Z platform	5.00	4.00	1,063	881	332	275	90%	90%	75%	1.36	E
PL15	Connecting stair between BMT Q, N northbound platform and IRT 6 platform	7.00	6.00	213	1,331	67	416	90%	90%	75%	0.78	C
PL30-PL28	Connecting passageway to BMT Q, N southbound platform	8.00	7.00	62	988	19	309	90%	90%	75%	0.46	B
PL40	Connecting stair between BMT Q, N southbound platform and BMT J, M, Z platform	5.00	4.00	552	618	173	193	90%	90%	75%	0.83	C
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	13.00	11.75	2	538	1	168	100%	90%	75%	0.13	A
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	8.00	7.00	2	538	1	168	100%	90%	75%	0.21	A
ML1	Connecting stair between IRT 6 platform and BMT Q, N platform	16.00	14.75	148	985	46	308	90%	90%	75%	0.23	A
ML2	Connecting stair between IRT 6 platform and BMT Q, N platform	12.00	10.75	208	1,869	65	584	90%	90%	75%	0.59	B
P6 (P4+P5)	Connecting stair between P4 and P5 (J, M, Z platform) and A066 paid zone	12.00	11.00	352	2,255	110	705	90%	90%	75%	0.72	C
PL16-PL18	Connecting stair between southbound Q, N platform and downtown IRT 6 platform	8.00	7.00	35	483	11	151	90%	90%	75%	0.23	A
PL17-PL19	Connecting stair between northbound Q, N platform and downtown IRT 6 platform	8.00	7.00	113	502	35	157	90%	90%	75%	0.26	A
PL26-PL27	Connecting stair near A044 paid zone between southbound and northbound R, W platforms	6.00	5.00	241	76	75	24	90%	90%	75%	0.17	A

Table 4C-175. No Action Alternative Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and Canal Street – east side (A043)											
Two-Way Turnstiles	5	2,100	3,225	147	1,787	46	559	90%	90%	0.24	A
Broadway and Canal Street – east side (A043A)											
Two-Way Turnstiles	3	1,260	1,935	49	596	15	186	90%	90%	0.13	A
Broadway and Canal Street – west side (A044)											
HEET	3	765	1,620	80	336	25	105	90%	90%	0.12	A
High Exit Only Turnstile	2	0	1,110	0	231	0	72	100%	90%	0.07	A
Canal Street and Lafayette Street - northwest corner (R214A)											
HEET	3	765	1,620	39	1,000	12	313	100%	90%	0.23	A
Canal Street and Lafayette Street - southwest corner (R214)											
HEET	3	765	1,620	36	1,344	11	420	100%	90%	0.30	A
Canal Street and Lafayette Street - southeast corner (A046)											
Two-Way Turnstiles	6	2,520	3,870	380	688	119	215	90%	90%	0.12	A
Canal Street and Lafayette Street - northeast corner (A046A)											
HEET	5	1,275	2,700	257	487	80	152	90%	90%	0.14	A
Walker Street and Centre Street - southeast corner (A066)											
Two-Way Turnstiles	3	1,260	1,935	303	2,210	95	691	90%	90%	0.52	B

Table 4C-176. No Action Alternative Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M3-S12	Street stair at northeast corner of Canal Street and Broadway	15.00	13.50	1,145	453	358	142	90%	100%	90%	0.28	A
M2	Connecting stair between S6/S7 stairs and A043/A043A free zone	12.00	10.50	1,173	321	367	100	90%	100%	90%	0.34	A
A043 S6	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	1,056	289	330	90	90%	100%	90%	0.64	B
A043 S7	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	938	257	293	80	90%	100%	90%	0.57	B
A044 S10	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	244	302	76	95	90%	100%	90%	0.34	A
A044 S11	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	217	269	68	84	90%	100%	90%	0.30	A
A044 P14	Connecting stair between S10/S11 stairs and A044 free zone	10.00	8.75	271	336	85	105	90%	100%	90%	0.17	A
A044 P11	Connecting stair between S8 stairs and A044 free zone	6.00	5.00	317	172	99	54	90%	100%	90%	0.24	A
A044 S8	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	317	172	99	54	90%	100%	90%	0.29	A
P13-S9	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	114	106	36	33	90%	100%	90%	0.13	A
P5-S5	Street stair at northwest corner of Canal Street and Lafayette Street	4.00	3.00	319	643	100	201	90%	100%	90%	0.80	C
P1-S1	Street stair at southwest corner of Canal Street and Lafayette Street	4.00	3.00	392	795	123	248	90%	100%	90%	0.98	C
A046 P3-S3	Street stair at southeast corner of Canal Street and Lafayette Street	5.00	4.00	568	9	178	3	100%	100%	90%	0.30	A
P2-S2	Street stair at southeast corner of Canal Street and Lafayette Street	4.00	3.00	666	187	208	58	90%	100%	90%	0.67	B
P6-S6	Street stair at northeast corner of Canal Street and Lafayette Street	5.00	4.00	272	1,261	85	394	90%	100%	90%	0.97	C
A066 S3	Street stair at northwest corner of Walker Street and Centre Street	16.00	14.50	702	1,837	219	574	90%	100%	90%	0.44	A
P4	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	348	104	109	33	90%	80%	80%	0.26	A
P5	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	1,472	527	460	165	90%	80%	80%	1.16	D
PL23	Connecting passageway near A043A paid zone to southbound BMT R, W platform	6.00	5.00	256	637	80	199	90%	90%	75%	0.52	B
PL22	Connecting passageway near A043A paid zone to southbound BMT R, W platform	8.00	7.00	318	597	99	187	90%	90%	75%	0.38	A
PL31-PL29	Connecting passageway near A043A paid zone to BMT Q, N northbound platform	8.00	7.00	914	243	286	76	90%	90%	75%	0.44	A
PL41	Connecting stair between BMT Q, N northbound platform and BMT J, M, Z platform	5.00	4.00	536	508	168	159	90%	90%	75%	0.74	C
PL15	Connecting stair between BMT Q, N northbound platform and IRT 6 platform	7.00	6.00	547	278	171	87	90%	90%	75%	0.38	A
PL30-PL28	Connecting passageway to BMT Q, N southbound platform	8.00	7.00	1,029	467	322	146	90%	90%	75%	0.58	B
PL40	Connecting stair between BMT Q, N southbound platform and BMT J, M, Z platform	5.00	4.00	1,023	827	320	258	90%	90%	75%	1.30	D
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	13.00	11.75	470	280	147	88	90%	90%	75%	0.18	A
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	8.00	7.00	470	280	147	88	90%	90%	75%	0.30	A
ML1	Connecting stair between IRT 6 platform and BMT Q, N platform	16.00	14.75	866	378	271	118	90%	90%	75%	0.23	A
ML2	Connecting stair between IRT 6 platform and BMT Q, N platform	12.00	10.75	1,017	557	318	174	90%	90%	75%	0.40	A
P6 (P4+P5)	Connecting stair between P4 and P5 (J, M, Z platform) and A066 paid zone	12.00	11.00	1,820	631	569	197	90%	90%	75%	0.60	B
PL16-PL18	Connecting stair between southbound Q, N platform and downtown IRT 6 platform	8.00	7.00	374	308	117	96	90%	90%	75%	0.27	A
PL17-PL19	Connecting stair between northbound Q, N platform and downtown IRT 6 platform	8.00	7.00	492	70	154	22	90%	90%	75%	0.21	A
PL26-PL27	Connecting stair near A044 paid zone between southbound and northbound R, W platforms	6.00	5.00	256	637	80	199	90%	90%	75%	0.52	B

Table 4C-177. No Action Alternative Level of Service Summary: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and Canal Street – east side (A043)											
Two-Way Turnstiles	5	2,100	3,225	1,159	387	362	121	90%	90%	0.24	A
Broadway and Canal Street – east side (A043A)											
Two-Way Turnstiles	3	1,260	1,935	1,159	387	362	121	90%	90%	0.40	A
Broadway and Canal Street – west side (A044)											
HEET	3	765	1,620	702	364	219	114	90%	90%	0.40	A
High Exit Only Turnstile	2	0	1,110	0	250	0	78	100%	90%	0.08	A
Canal Street and Lafayette Street - northwest corner (R214A)											
HEET	3	765	1,620	319	643	100	201	90%	90%	0.30	A
Canal Street and Lafayette Street - southwest corner (R214)											
HEET	3	765	1,620	392	795	123	248	90%	90%	0.37	A
Canal Street and Lafayette Street - southeast corner (A046)											
Two-Way Turnstiles	6	2,520	3,870	1,234	278	386	87	90%	90%	0.20	A
Canal Street and Lafayette Street - northeast corner (A046A)											
HEET	5	1,275	2,700	1,261	272	394	85	90%	90%	0.38	A
Walker Street and Centre Street - southeast corner (A066)											
Two-Way Turnstiles	3	1,260	1,935	1,837	702	574	219	90%	90%	0.65	B

Table 4C-178. CBD Tolling Alternative: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M3-S12	Street stair at northeast corner of Canal Street and Broadway	15.00	13.50	108	1,210	34	378	90%	100%	90%	0.25	A
M2	Connecting stair between S6/S7 stairs and A043/A043A free zone	12.00	10.50	117	1,535	37	480	90%	100%	90%	0.40	A
A043 S6	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	105	1,381	33	432	90%	100%	90%	0.76	C
A043 S7	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	93	1,228	29	384	90%	100%	90%	0.68	B
A044 S10	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	30	265	9	83	90%	100%	90%	0.19	A
A044 S11	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	27	235	8	73	90%	100%	90%	0.17	A
A044 P14	Connecting stair between S10/S11 stairs and A044 free zone	10.00	8.75	33	294	10	92	90%	100%	90%	0.10	A
A044 P11	Connecting stair between S8 stairs and A044 free zone	6.00	5.00	35	196	11	61	90%	100%	90%	0.12	A
A044 S8	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	35	196	11	61	90%	100%	90%	0.15	A
P13-S9	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	14	95	4	30	90%	100%	90%	0.07	A
P5-S5	Street stair at northwest corner of Canal Street and Lafayette Street	4.00	3.00	39	1,016	12	318	100%	100%	90%	0.81	C
P1-S1	Street stair at southwest corner of Canal Street and Lafayette Street	4.00	3.00	36	1,366	11	427	100%	100%	90%	1.08	D
A046 P3-S3	Street stair at southeast corner of Canal Street and Lafayette Street	5.00	4.00	184	36	58	11	90%	100%	90%	0.13	A
P2-S2	Street stair at southeast corner of Canal Street and Lafayette Street	4.00	3.00	200	457	63	143	90%	100%	90%	0.55	B
P6-S6	Street stair at northeast corner of Canal Street and Lafayette Street	5.00	4.00	495	260	155	81	90%	100%	90%	0.45	B
A066 S3	Street stair at northwest corner of Walker Street and Centre Street	16.00	14.50	2246	306	702	96	90%	100%	90%	0.41	A
P4	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	65	339	20	106	90%	80%	80%	0.23	A
P5	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	290	1,949	91	609	90%	80%	80%	1.30	D
PL23	Connecting passageway near A043A paid zone to southbound BMT R, W platform	6.00	5.00	245	97	77	30	90%	90%	75%	0.19	A
PL22	Connecting passageway near A043A paid zone to southbound BMT R, W platform	8.00	7.00	440	130	138	41	90%	90%	75%	0.22	A
PL31-PL29	Connecting passageway near A043A paid zone to BMT Q, N northbound platform	8.00	7.00	168	1,327	53	415	90%	90%	75%	0.65	B
PL41	Connecting stair between BMT Q, N northbound platform and BMT J, M, Z platform	5.00	4.00	1068	895	334	280	90%	90%	75%	1.38	E
PL15	Connecting stair between BMT Q, N northbound platform and IRT 6 platform	7.00	6.00	218	1,342	68	419	90%	90%	75%	0.78	C
PL30-PL28	Connecting passageway to BMT Q, N southbound platform	8.00	7.00	66	1,018	21	318	90%	90%	75%	0.47	B
PL40	Connecting stair between BMT Q, N southbound platform and BMT J, M, Z platform	5.00	4.00	555	636	173	199	90%	90%	75%	0.85	C
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	13.00	11.75	4	547	1	171	100%	90%	75%	0.13	A
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	8.00	7.00	4	547	1	171	100%	90%	75%	0.22	A
ML1	Connecting stair between IRT 6 platform and BMT Q, N platform	16.00	14.75	154	1,018	48	318	90%	90%	75%	0.24	A
ML2	Connecting stair between IRT 6 platform and BMT Q, N platform	12.00	10.75	215	1,887	67	590	90%	90%	75%	0.59	B
P6 (P4+P5)	Connecting stair between P4 and P5 (J, M, Z platform) and A066 paid zone	12.00	11.00	355	2,291	111	716	90%	90%	75%	0.73	C
PL16-PL18	Connecting stair between southbound Q, N platform and downtown IRT 6 platform	8.00	7.00	35	483	11	151	90%	90%	75%	0.23	A
PL17-PL19	Connecting stair between northbound Q, N platform and downtown IRT 6 platform	8.00	7.00	113	502	35	157	90%	90%	75%	0.26	A
PL26-PL27	Connecting stair near A044 paid zone between southbound and northbound R, W platforms	6.00	5.00	249	94	78	29	90%	90%	75%	0.19	A

Table 4C-179. CBD Tolling Alternative: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and Canal Street – east side (A043)											
Two-Way Turnstiles	5	2,100	3,225	150	1,830	47	572	90%	90%	0.24	A
Broadway and Canal Street – east side (A043A)											
Two-Way Turnstiles	3	1,260	1,935	51	617	16	193	90%	90%	0.14	A
Broadway and Canal Street – west side (A044)											
HEET	3	765	1,620	83	347	26	108	90%	90%	0.12	A
High Exit Only Turnstile	2	0	1,110	0	238	0	74	100%	90%	0.07	A
Canal Street and Lafayette Street - northwest corner (R214A)											
HEET	3	765	1,620	39	1,016	12	318	100%	90%	0.23	A
Canal Street and Lafayette Street - southwest corner (R214)											
HEET	3	765	1,620	36	1,366	11	427	100%	90%	0.31	A
Canal Street and Lafayette Street - southeast corner (A046)											
Two-Way Turnstiles	6	2,520	3,870	384	699	120	218	90%	90%	0.12	A
Canal Street and Lafayette Street - northeast corner (A046A)											
HEET	5	1,275	2,700	260	495	81	155	90%	90%	0.14	A
Walker Street and Centre Street - southeast corner (A066)											
Two-Way Turnstiles	3	1,260	1,935	306	2,246	96	702	90%	90%	0.53	B

Table 4C-180. CBD Tolling Alternative: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
M3-S12	Street stair at northeast corner of Canal Street and Broadway	15.00	13.50	1,176	456	368	143	90%	100%	90%	0.29	A
M2	Connecting stair between S6/S7 stairs and A043/A043A free zone	12.00	10.50	1,205	323	377	101	90%	100%	90%	0.35	A
A043 S6	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	1,085	291	339	91	90%	100%	90%	0.65	B
A043 S7	Street stair at southeast corner of Canal Street and Broadway	6.00	5.00	963	258	301	81	90%	100%	90%	0.58	B
A044 S10	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	245	320	77	100	90%	100%	90%	0.35	A
A044 S11	Street stair at northwest corner of Canal Street and Broadway	5.00	4.00	218	285	68	89	90%	100%	90%	0.31	A
A044 P14	Connecting stair between S10/S11 stairs and A044 free zone	10.00	8.75	280	338	88	106	90%	100%	90%	0.17	A
A044 P11	Connecting stair between S8 stairs and A044 free zone	6.00	5.00	328	173	103	54	90%	100%	90%	0.24	A
A044 S8	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	328	173	103	54	90%	100%	90%	0.30	A
P13-S9	Street stair at southwest corner of Canal Street and Broadway	5.00	4.00	118	107	37	33	90%	100%	90%	0.14	A
P5-S5	Street stair at northwest corner of Canal Street and Lafayette Street	4.00	3.00	325	646	102	202	90%	100%	90%	0.81	C
P1-S1	Street stair at southwest corner of Canal Street and Lafayette Street	4.00	3.00	400	798	125	249	90%	100%	90%	0.99	C
A046 P3-S3	Street stair at southeast corner of Canal Street and Lafayette Street	5.00	4.00	579	9	181	3	100%	100%	90%	0.31	A
P2-S2	Street stair at southeast corner of Canal Street and Lafayette Street	4.00	3.00	679	188	212	59	90%	100%	90%	0.69	B
P6-S6	Street stair at northeast corner of Canal Street and Lafayette Street	5.00	4.00	273	1,285	85	402	90%	100%	90%	0.98	C
A066 S3	Street stair at northwest corner of Walker Street and Centre Street	16.00	14.50	705	1,873	220	585	90%	100%	90%	0.44	A
P4	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	354	105	111	33	90%	80%	80%	0.27	A
P5	Connecting stair between A066 paid zone and BMT J, M, Z platform	6.00	5.00	1,499	530	468	166	90%	80%	80%	1.17	D
PL23	Connecting passageway near A043A paid zone to southbound BMT R, W platform	6.00	5.00	296	641	93	200	90%	90%	75%	0.55	B
PL22	Connecting passageway near A043A paid zone to southbound BMT R, W platform	8.00	7.00	395	599	123	187	90%	90%	75%	0.41	A
PL31-PL29	Connecting passageway near A043A paid zone to BMT Q, N northbound platform	8.00	7.00	948	244	296	76	90%	90%	75%	0.46	B
PL41	Connecting stair between BMT Q, N northbound platform and BMT J, M, Z platform	5.00	4.00	540	509	169	159	90%	90%	75%	0.74	C
PL15	Connecting stair between BMT Q, N northbound platform and IRT 6 platform	7.00	6.00	570	281	178	88	90%	90%	75%	0.39	A
PL30-PL28	Connecting passageway to BMT Q, N southbound platform	8.00	7.00	1,080	473	338	148	90%	90%	75%	0.61	B
PL40	Connecting stair between BMT Q, N southbound platform and BMT J, M, Z platform	5.00	4.00	1,031	831	322	260	90%	90%	75%	1.30	D
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	13.00	11.75	485	289	152	90	90%	90%	75%	0.18	A
PL11-PL13	Connecting stair between BMT Q, N southbound platform and IRT 6 platform	8.00	7.00	485	289	152	90	90%	90%	75%	0.31	A
ML1	Connecting stair between IRT 6 platform and BMT Q, N platform	16.00	14.75	877	386	274	121	90%	90%	75%	0.23	A
ML2	Connecting stair between IRT 6 platform and BMT Q, N platform	12.00	10.75	1,060	569	331	178	90%	90%	75%	0.42	A
P6 (P4+P5)	Connecting stair between P4 and P5 (J, M, Z platform) and A066 paid zone	12.00	11.00	1,853	634	579	198	90%	90%	75%	0.61	B
PL16-PL18	Connecting stair between southbound Q, N platform and downtown IRT 6 platform	8.00	7.00	374	309	117	97	90%	90%	75%	0.27	A
PL17-PL19	Connecting stair between northbound Q, N platform and downtown IRT 6 platform	8.00	7.00	492	70	154	22	90%	90%	75%	0.21	A
PL26-PL27	Connecting stair near A044 paid zone between southbound and northbound R, W platforms	6.00	5.00	268	653	84	204	90%	90%	75%	0.54	B

Table 4C-181. CBD Tolling Alternative: Canal Street Station (6, N, Q, R, W, J, M, Z lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Broadway and Canal Street – east side (A043)											
Two-Way Turnstiles	5	2,100	3,225	1,201	390	375	122	90%	90%	0.25	A
Broadway and Canal Street – east side (A043A)											
Two-Way Turnstiles	3	1,260	1,935	1,180	388	369	121	90%	90%	0.40	A
Broadway and Canal Street – west side (A044)											
HEET	3	765	1,620	726	367	227	115	90%	90%	0.42	A
High Exit Only Turnstile	2	0	1,110	0	251	0	79	100%	90%	0.08	A
Canal Street and Lafayette Street - northwest corner (R214A)											
HEET	3	765	1,620	325	646	102	202	90%	90%	0.30	A
Canal Street and Lafayette Street - southwest corner (R214)											
HEET	3	765	1,620	400	798	125	249	90%	90%	0.37	A
Canal Street and Lafayette Street - southeast corner (A046)											
Two-Way Turnstiles	6	2,520	3,870	1,258	279	393	87	90%	90%	0.20	A
Canal Street and Lafayette Street - northeast corner (A046A)											
HEET	5	1,275	2,700	1,285	273	402	85	90%	90%	0.39	A
Walker Street and Centre Street - southeast corner (A066)											
Two-Way Turnstiles	3	1,260	1,935	1,873	705	585	220	90%	90%	0.66	B

Table 4C-182. Existing Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
QBL M3/S3	Street stair at southeast corner of 21st Street and 44th Drive	5.00	4.00	282	206	88	64	90%	90%	80%	0.33	A
QBL M4/S4	Street stair at northeast corner of 21st Street and 44th Drive	5.00	4.00	452	304	141	95	90%	90%	80%	0.51	B
QBL O6/O7	Street stair at southeast corner of 23rd Street and 44th Drive	10.00	8.50	508	310	159	97	90%	90%	80%	0.26	A
XTN M1/S1	Street stair at northeast corner of Jackson Avenue and Pearson Street	5.00	4.00	49	45	15	14	90%	90%	80%	0.06	A
XTN M3/S3	Street stair at southwest corner of Jackson Avenue and Court Square	5.50	4.50	227	533	71	167	90%	90%	80%	0.47	B
XTN O1/O2	Street stair at northeast corner of Jackson Avenue and 45th Avenue	9.00	7.75	212	292	66	91	90%	90%	80%	0.18	A
O3/O4	Stair in Citicorp Building/One Court Square	9.00	7.75	12	30	4	9	90%	90%	80%	0.02	A
FLU M1/S1	Street stair at southeast corner of Jackson Avenue and 23rd Street	8.00	6.75	152	109	48	34	90%	90%	80%	0.11	A
FLU M2/S2	Street stair at northwest corner of 23rd Street and 45th Road	5.00	4.00	209	150	65	47	90%	90%	80%	0.24	A
QBL P1	Connecting stair between N308 paid zone and Queens-bound E/M platform	14.00	12.75	647	1,290	202	403	90%	80%	75%	0.46	B
QBL P2	Connecting stair between N308 paid zone and Manhattan-bound E/M platform	14.00	12.75	4,255	1,580	1,330	494	90%	80%	75%	1.35	E
QBL P3	Connecting stair between N307 paid zone and Queens-bound E/M platform	11.00	9.75	56	245	18	77	90%	80%	75%	0.10	A
QBL P4	Connecting stair between N307 paid zone and Manhattan-bound E/M platform	11.00	9.75	695	260	217	81	90%	80%	75%	0.29	A
FLU P1/P3	Connecting stair between R508 paid zone and Queens-bound 7 platform	8.00	6.75	713	906	223	283	90%	80%	75%	0.72	C
FLU P2/P4	Connecting stair between R508 paid zone and Manhattan-bound 7 platform	7.50	6.25	1718	2107	537	658	90%	80%	75%	1.84	F
O3/O4/O5	Connecting stair between 7 train mezzanine and G train mezzanine	7.00	6.00	200	865	63	270	90%	80%	80%	0.51	B
XTN P1	Connecting stair between N400C paid zone and G train platform	8.75	7.50	1,390	324	434	101	90%	80%	75%	0.67	B
XTN P2	Connecting stair between N400 paid zone and G train platform	9.25	8.00	694	1,132	217	354	90%	80%	75%	0.69	B
XTN P3	Connecting stair between N400 paid zone and G train platform	9.25	8.00	613	1,221	192	382	90%	80%	75%	0.69	B
XTN P5	Connecting stair between N400B paid zone and G train platform	7.00	6.00	0	597	0	187	100%	80%	75%	0.28	A
XTN P6	Connecting stair between N400B paid zone and G train platform	9.25	8.00	56	934	18	292	90%	80%	75%	0.38	A
XTN P7	Connecting stair between N400C paid zone and G train platform	9.25	8.00	155	973	48	304	90%	80%	75%	0.43	A
QBL M1	Connecting stair between E/M platforms and N308 paid zone	13.00	11.75	4,255	1,580	1,330	494	90%	80%	80%	1.44	E

Table 4C-183. Existing Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E265	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	148	0	46	0	750	0.07	A
E266	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	0	321	0	100	750	0.15	A
E461X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	0	1,674	0	523	1,050	0.55	B
E462X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	2,170	0	678	0	1,050	0.72	C

Table 4C-184. Existing Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
21st Street and 44th Drive - northeast corner (N307)											
Two-Way Turnstiles	4	1,680	2,580	734	304	229	95	90%	80%	0.20	A
21st Street and 44th Drive – southeast corner (N307A)											
High Exit Only Turnstile	2	0	1,110	0	206	0	64	100%	80%	0.07	A
23rd Street and 44th Road – northeast corner (N308)											
Two-Way Turnstiles	4	1,680	2,580	508	310	159	97	90%	75%	0.16	A
Jackson Avenue and Pearson Street – northeast corner (N400C)											
HEET	2	510	1,080	49	45	15	14	90%	80%	0.05	A
Jackson Avenue and Court Square – southwest corner (N400)											
Two-Way Turnstiles	3	1,260	1,935	227	533	71	167	90%	80%	0.18	A
Jackson Avenue and 45th Avenue – northeast corner (N400B)											
Two-Way Turnstiles	3	1,260	1,935	212	292	66	91	90%	80%	0.12	A
Citicorp Building/One Court Square (N400A)											
Two-Way Turnstiles	7	2,940	4,515	160	351	50	110	90%	80%	0.05	A
Jackson Avenue and 23rd Street – southeast corner (R508)											
Two-Way Turnstiles	6	2,520	3,870	361	259	113	81	90%	80%	0.08	A

Table 4C-185. Existing Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
QBL M3/S3	Street stair at southeast corner of 21st Street and 44th Drive	5.00	4.00	181	364	57	114	90%	90%	80%	0.38	A
QBL M4/S4	Street stair at northeast corner of 21st Street and 44th Drive	5.00	4.00	439	163	137	51	90%	90%	80%	0.40	A
QBL O6/O7	Street stair at southeast corner of 23rd Street and 44th Drive	10.00	8.50	380	203	119	63	90%	90%	80%	0.18	A
XTN M1/S1	Street stair at northeast corner of Jackson Avenue and Pearson Street	5.00	4.00	52	37	16	12	90%	90%	80%	0.06	A
XTN M3/S3	Street stair at southwest corner of Jackson Avenue and Court Square	5.50	4.50	443	266	138	83	90%	90%	80%	0.42	A
XTN O1/O2	Street stair at northeast corner of Jackson Avenue and 45th Avenue	9.00	7.75	337	102	105	32	90%	90%	80%	0.15	A
O3/O4	Stair in Citicorp Building/One Court Square	9.00	7.75	95	259	30	81	90%	90%	80%	0.13	A
FLU M1/S1	Street stair at southeast corner of Jackson Avenue and 23rd Street	8.00	6.75	395	137	123	43	90%	90%	80%	0.21	A
FLU M2/S2	Street stair at northwest corner of 23rd Street and 45th Road	5.00	4.00	356	157	111	49	90%	90%	80%	0.34	A
QBL P1	Connecting stair between N308 paid zone and Queens-bound E/M platform	14.00	12.75	1,301	1,860	407	581	90%	80%	75%	0.75	C
QBL P2	Connecting stair between N308 paid zone and Manhattan-bound E/M platform	14.00	12.75	1,647	632	515	198	90%	80%	75%	0.53	B
QBL P3	Connecting stair between N307 paid zone and Queens-bound E/M platform	11.00	9.75	214	434	67	136	90%	80%	75%	0.20	A
QBL P4	Connecting stair between N307 paid zone and Manhattan-bound E/M platform	11.00	9.75	408	110	128	34	90%	80%	75%	0.16	A
FLU P1/P3	Connecting stair between R508 paid zone and Queens-bound 7 platform	8.00	6.75	1,847	1,128	577	353	90%	80%	75%	1.31	D
FLU P2/P4	Connecting stair between R508 paid zone and Manhattan-bound 7 platform	7.50	6.25	818	778	256	243	90%	80%	75%	0.76	C
O3/O4/O5	Connecting stair between 7 train mezzanine and G train mezzanine	7.00	6.00	104	444	33	139	90%	80%	80%	0.27	A
XTN P1	Connecting stair between N400C paid zone and G train platform	8.75	7.50	2,367	187	740	58	90%	80%	75%	0.99	C
XTN P2	Connecting stair between N400 paid zone and G train platform	9.25	8.00	1,183	652	370	204	90%	80%	75%	0.68	B
XTN P3	Connecting stair between N400 paid zone and G train platform	9.25	8.00	1,043	703	326	220	90%	80%	75%	0.65	B
XTN P5	Connecting stair between N400B paid zone and G train platform	7.00	6.00	0	343	0	107	100%	80%	75%	0.16	A
XTN P6	Connecting stair between N400B paid zone and G train platform	9.25	8.00	96	537	30	168	90%	80%	75%	0.24	A
XTN P7	Connecting stair between N400C paid zone and G train platform	9.25	8.00	263	560	82	175	90%	80%	75%	0.31	A
QBL M1	Connecting stair between E/M platforms and N308 paid zone	13.00	11.75	1,647	632	515	198	90%	80%	80%	0.56	B

Table 4C-186. Existing Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E265	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	237	0	74	0	750	0.11	A
E266	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	0	193	0	60	750	0.09	A
E461X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	0	1,794	0	561	1,050	0.59	B
E462X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	1,713	0	535	0	1,050	0.57	B

Table 4C-187. Existing Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
21st Street and 44th Drive - northeast corner (N307)											
Two-Way Turnstiles	4	1,680	2,580	620	163	194	51	90%	80%	0.16	A
21st Street and 44th Drive – southeast corner (N307A)											
High Exit Only Turnstile	2	0	1,110	0	364	0	114	100%	80%	0.13	A
23rd Street and 44th Road – northeast corner (N308)											
Two-Way Turnstiles	4	1,680	2,580	380	203	119	63	90%	75%	0.11	A
Jackson Avenue and Pearson Street – northeast corner (N400C)											
HEET	2	510	1,080	52	37	16	12	90%	80%	0.05	A
Jackson Avenue and Court Square – southwest corner (N400)											
Two-Way Turnstiles	3	1,260	1,935	443	266	138	83	90%	80%	0.18	A
Jackson Avenue and 45th Avenue – northeast corner (N400B)											
Two-Way Turnstiles	3	1,260	1,935	337	102	105	32	90%	80%	0.12	A
Citicorp Building/One Court Square (N400A)											
Two-Way Turnstiles	7	2,940	4,515	332	452	104	141	90%	80%	0.08	A
Jackson Avenue and 23rd Street – southeast corner (R508)											
Two-Way Turnstiles	6	2,520	3,870	751	294	235	92	90%	80%	0.14	A

Table 4C-188. No Action Alternative Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
QBL M3/S3	Street stair at southeast corner of 21st Street and 44th Drive	5.00	4.00	282	206	88	64	90%	90%	80%	0.33	A
QBL M4/S4	Street stair at northeast corner of 21st Street and 44th Drive	5.00	4.00	452	304	141	95	90%	90%	80%	0.51	B
QBL O6/O7	Street stair at southeast corner of 23rd Street and 44th Drive	10.00	8.50	508	310	159	97	90%	90%	80%	0.26	A
XTN M1/S1	Street stair at northeast corner of Jackson Avenue and Pearson Street	5.00	4.00	49	45	15	14	90%	90%	80%	0.06	A
XTN M3/S3	Street stair at southwest corner of Jackson Avenue and Court Square	5.50	4.50	227	533	71	167	90%	90%	80%	0.47	B
XTN O1/O2	Street stair at northeast corner of Jackson Avenue and 45th Avenue	9.00	7.75	212	292	66	91	90%	90%	80%	0.18	A
O3/O4	Stair in Citicorp Building/One Court Square	9.00	7.75	12	30	4	9	90%	90%	80%	0.02	A
FLU M1/S1	Street stair at southeast corner of Jackson Avenue and 23rd Street	8.00	6.75	152	109	48	34	90%	90%	80%	0.11	A
FLU M2/S2	Street stair at northwest corner of 23rd Street and 45th Road	5.00	4.00	209	150	65	47	90%	90%	80%	0.24	A
QBL P1	Connecting stair between N308 paid zone and Queens-bound E/M platform	14.00	12.75	647	1,290	202	403	90%	80%	75%	0.46	B
QBL P2	Connecting stair between N308 paid zone and Manhattan-bound E/M platform	14.00	12.75	4,255	1,580	1,330	494	90%	80%	75%	1.35	E
QBL P3	Connecting stair between N307 paid zone and Queens-bound E/M platform	11.00	9.75	56	245	18	77	90%	80%	75%	0.10	A
QBL P4	Connecting stair between N307 paid zone and Manhattan-bound E/M platform	11.00	9.75	695	260	217	81	90%	80%	75%	0.29	A
FLU P1/P3	Connecting stair between R508 paid zone and Queens-bound 7 platform	8.00	6.75	713	906	223	283	90%	80%	75%	0.72	C
FLU P2/P4	Connecting stair between R508 paid zone and Manhattan-bound 7 platform	7.50	6.25	1718	2107	537	658	90%	80%	75%	1.84	F
O3/O4/O5	Connecting stair between 7 train mezzanine and G train mezzanine	7.00	6.00	200	865	63	270	90%	80%	80%	0.51	B
XTN P1	Connecting stair between N400C paid zone and G train platform	8.75	7.50	1,390	324	434	101	90%	80%	75%	0.67	B
XTN P2	Connecting stair between N400 paid zone and G train platform	9.25	8.00	694	1,132	217	354	90%	80%	75%	0.69	B
XTN P3	Connecting stair between N400 paid zone and G train platform	9.25	8.00	642	1,888	201	590	90%	80%	75%	0.96	C
XTN P5	Connecting stair between N400B paid zone and G train platform	7.00	6.00	10	597	3	187	100%	80%	75%	0.28	A
XTN P6	Connecting stair between N400B paid zone and G train platform	9.25	8.00	56	934	18	292	90%	80%	75%	0.38	A
XTN P7	Connecting stair between N400C paid zone and G train platform	9.25	8.00	155	973	48	304	90%	80%	75%	0.43	A
QBL M1	Connecting stair between E/M platforms and N308 paid zone	13.00	11.75	4,255	1,580	1,330	494	90%	80%	80%	1.44	E

Table 4C-189. No Action Alternative Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E265	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	148	0	46	0	750	0.07	A
E266	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	0	321	0	100	750	0.15	A
E461X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	0	1,674	0	523	1,050	0.55	B
E462X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	2,170	0	678	0	1,050	0.72	C

Table 4C-190. No Action Alternative Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
21st Street and 44th Drive - northeast corner (N307)											
Two-Way Turnstiles	4	1,680	2,580	734	304	229	95	90%	80%	0.20	A
21st Street and 44th Drive – southeast corner (N307A)											
High Exit Only Turnstile	2	0	1,110	0	206	0	64	100%	80%	0.07	A
23rd Street and 44th Road – northeast corner (N308)											
Two-Way Turnstiles	4	1,680	2,580	508	310	159	97	90%	75%	0.16	A
Jackson Avenue and Pearson Street – northeast corner (N400C)											
HEET	2	510	1,080	49	45	15	14	90%	80%	0.05	A
Jackson Avenue and Court Square – southwest corner (N400)											
Two-Way Turnstiles	3	1,260	1,935	227	533	71	167	90%	80%	0.18	A
Jackson Avenue and 45th Avenue – northeast corner (N400B)											
Two-Way Turnstiles	3	1,260	1,935	212	292	66	91	90%	80%	0.12	A
Citicorp Building/One Court Square (N400A)											
Two-Way Turnstiles	7	2,940	4,515	160	351	50	110	90%	80%	0.05	A
Jackson Avenue and 23rd Street – southeast corner (R508)											
Two-Way Turnstiles	6	2,520	3,870	361	259	113	81	90%	80%	0.08	A

Table 4C-191. No Action Alternative Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
QBL M3/S3	Street stair at southeast corner of 21st Street and 44th Drive	5.00	4.00	181	364	57	114	90%	90%	80%	0.38	A
QBL M4/S4	Street stair at northeast corner of 21st Street and 44th Drive	5.00	4.00	439	163	137	51	90%	90%	80%	0.40	A
QBL O6/O7	Street stair at southeast corner of 23rd Street and 44th Drive	10.00	8.50	380	203	119	63	90%	90%	80%	0.18	A
XTN M1/S1	Street stair at northeast corner of Jackson Avenue and Pearson Street	5.00	4.00	52	37	16	12	90%	90%	80%	0.06	A
XTN M3/S3	Street stair at southwest corner of Jackson Avenue and Court Square	5.50	4.50	443	266	138	83	90%	90%	80%	0.42	A
XTN O1/O2	Street stair at northeast corner of Jackson Avenue and 45th Avenue	9.00	7.75	337	102	105	32	90%	90%	80%	0.15	A
O3/O4	Stair in Citicorp Building/One Court Square	9.00	7.75	95	259	30	81	90%	90%	80%	0.13	A
FLU M1/S1	Street stair at southeast corner of Jackson Avenue and 23rd Street	8.00	6.75	395	137	123	43	90%	90%	80%	0.21	A
FLU M2/S2	Street stair at northwest corner of 23rd Street and 45th Road	5.00	4.00	356	157	111	49	90%	90%	80%	0.34	A
QBL P1	Connecting stair between N308 paid zone and Queens-bound E/M platform	14.00	12.75	1,301	1,860	407	581	90%	80%	75%	0.75	C
QBL P2	Connecting stair between N308 paid zone and Manhattan-bound E/M platform	14.00	12.75	1,647	632	515	198	90%	80%	75%	0.53	B
QBL P3	Connecting stair between N307 paid zone and Queens-bound E/M platform	11.00	9.75	214	434	67	136	90%	80%	75%	0.20	A
QBL P4	Connecting stair between N307 paid zone and Manhattan-bound E/M platform	11.00	9.75	408	110	128	34	90%	80%	75%	0.16	A
FLU P1/P3	Connecting stair between R508 paid zone and Queens-bound 7 platform	8.00	6.75	1,847	1,128	577	353	90%	80%	75%	1.31	D
FLU P2/P4	Connecting stair between R508 paid zone and Manhattan-bound 7 platform	7.50	1.00	1.00	6.25	818	778	256	243	90%	80%	75%
O3/O4/O5	Connecting stair between 7 train mezzanine and G train mezzanine	7.00	6.00	104	444	33	139	90%	80%	80%	0.27	A
XTN P1	Connecting stair between N400C paid zone and G train platform	8.75	7.50	2,367	187	740	58	90%	80%	75%	0.99	C
XTN P2	Connecting stair between N400 paid zone and G train platform	9.25	8.00	1,183	652	370	204	90%	80%	75%	0.68	B
XTN P3	Connecting stair between N400 paid zone and G train platform	9.25	8.00	1,095	1,087	342	340	90%	80%	75%	0.82	C
XTN P5	Connecting stair between N400B paid zone and G train platform	7.00	6.00	17	343	5	107	100%	80%	75%	0.17	A
XTN P6	Connecting stair between N400B paid zone and G train platform	9.25	8.00	96	537	30	168	90%	80%	75%	0.24	A
XTN P7	Connecting stair between N400C paid zone and G train platform	9.25	8.00	263	560	82	175	90%	80%	75%	0.31	A
QBL M1	Connecting stair between E/M platforms and N308 paid zone	13.00	11.75	1,647	632	515	198	90%	80%	80%	0.56	B

Table 4C-192. No Action Alternative Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E265	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	237	0	74	0	750	0.11	A
E266	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	0	193	0	60	750	0.09	A
E461X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	0	1,794	0	561	1,050	0.59	B
E462X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	1,713	0	535	0	1,050	0.57	B

Table 4C-193. No Action Alternative Level of Service Summary: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
21st Street and 44th Drive - northeast corner (N307)											
Two-Way Turnstiles	4	1,680	2,580	620	163	194	51	90%	80%	0.16	A
21st Street and 44th Drive – southeast corner (N307A)											
High Exit Only Turnstile	2	0	1,110	0	364	0	114	100%	80%	0.13	A
23rd Street and 44th Road – northeast corner (N308)											
Two-Way Turnstiles	4	1,680	2,580	380	203	119	63	90%	75%	0.11	A
Jackson Avenue and Pearson Street – northeast corner (N400C)											
HEET	2	510	1,080	52	37	16	12	90%	80%	0.05	A
Jackson Avenue and Court Square – southwest corner (N400)											
Two-Way Turnstiles	3	1,260	1,935	443	266	138	83	90%	80%	0.18	A
Jackson Avenue and 45th Avenue – northeast corner (N400B)											
Two-Way Turnstiles	3	1,260	1,935	337	102	105	32	90%	80%	0.12	A
Citicorp Building/One Court Square (N400A)											
Two-Way Turnstiles	7	2,940	4,515	332	452	104	141	90%	80%	0.08	A
Jackson Avenue and 23rd Street – southeast corner (R508)											
Two-Way Turnstiles	6	2,520	3,870	751	294	235	92	90%	80%	0.14	A

Table 4C-194. CBD Tolling Alternative: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
QBL M3/S3	Street stair at southeast corner of 21st Street and 44th Drive	5.00	4.00	300	207	94	65	90%	90%	80%	0.34	A
QBL M4/S4	Street stair at northeast corner of 21st Street and 44th Drive	5.00	4.00	481	305	150	95	90%	90%	80%	0.53	B
QBL O6/O7	Street stair at southeast corner of 23rd Street and 44th Drive	10.00	8.50	540	313	169	98	90%	90%	80%	0.27	A
XTN M1/S1	Street stair at northeast corner of Jackson Avenue and Pearson Street	5.00	4.00	52	45	16	14	90%	90%	80%	0.07	A
XTN M3/S3	Street stair at southwest corner of Jackson Avenue and Court Square	5.50	4.50	241	537	75	168	90%	90%	80%	0.48	B
XTN O1/O2	Street stair at northeast corner of Jackson Avenue and 45th Avenue	9.00	7.75	225	294	70	92	90%	90%	80%	0.18	A
O3/O4	Stair in Citicorp Building/One Court Square	9.00	7.75	13	30	4	9	90%	90%	80%	0.02	A
FLU M1/S1	Street stair at southeast corner of Jackson Avenue and 23rd Street	8.00	6.75	162	110	51	34	90%	90%	80%	0.11	A
FLU M2/S2	Street stair at northwest corner of 23rd Street and 45th Road	5.00	4.00	222	151	69	47	90%	90%	80%	0.25	A
QBL P1	Connecting stair between N308 paid zone and Queens-bound E/M platform	14.00	12.75	668	1,288	209	403	90%	80%	75%	0.46	B
QBL P2	Connecting stair between N308 paid zone and Manhattan-bound E/M platform	14.00	12.75	4,343	1,597	1,357	499	90%	80%	75%	1.37	E
QBL P3	Connecting stair between N307 paid zone and Queens-bound E/M platform	11.00	9.75	60	245	19	77	90%	80%	75%	0.10	A
QBL P4	Connecting stair between N307 paid zone and Manhattan-bound E/M platform	11.00	9.75	738	264	231	83	90%	80%	75%	0.30	A
FLU P1/P3	Connecting stair between R508 paid zone and Queens-bound 7 platform	8.00	6.75	732	918	229	287	90%	80%	75%	0.73	C
FLU P2/P4	Connecting stair between R508 paid zone and Manhattan-bound 7 platform	7.50	6.25	1767	2188	552	684	90%	80%	75%	1.90	F+
O3/O4/O5	Connecting stair between 7 train mezzanine and G train mezzanine	7.00	6.00	208	880	65	275	90%	80%	80%	0.52	B
XTN P1	Connecting stair between N400C paid zone and G train platform	8.75	7.50	1,434	335	448	105	90%	80%	75%	0.69	B
XTN P2	Connecting stair between N400 paid zone and G train platform	9.25	8.00	710	1,145	222	358	90%	80%	75%	0.70	B
XTN P3	Connecting stair between N400 paid zone and G train platform	9.25	8.00	657	1,910	205	597	90%	80%	75%	0.97	C
XTN P5	Connecting stair between N400B paid zone and G train platform	7.00	6.00	10	604	3	189	100%	80%	75%	0.28	A
XTN P6	Connecting stair between N400B paid zone and G train platform	9.25	8.00	57	945	18	295	90%	80%	75%	0.39	A
XTN P7	Connecting stair between N400C paid zone and G train platform	9.25	8.00	160	1,006	50	314	90%	80%	75%	0.45	A
QBL M1	Connecting stair between E/M platforms and N308 paid zone	13.00	11.75	4,343	1,597	1,357	499	90%	80%	80%	1.46	E

NOTE: + denotes a significant adverse effect

Table 4C-195. CBD Tolling Alternative: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E265	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	157	0	49	0	750	0.07	A
E266	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	0	324	0	101	750	0.15	A
E461X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	0	1,703	0	532	1,050	0.56	B
E462X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	2,253	0	704	0	1,050	0.74	C

Table 4C-196. CBD Tolling Alternative: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
21st Street and 44th Drive - northeast corner (N307)											
Two-Way Turnstiles	4	1,680	2,580	781	307	244	96	90%	80%	0.21	A
21st Street and 44th Drive – southeast corner (N307A)											
High Exit Only Turnstile	2	0	1,110	0	208	0	65	100%	80%	0.07	A
23rd Street and 44th Road – northeast corner (N308)											
Two-Way Turnstiles	4	1,680	2,580	540	313	169	98	90%	75%	0.17	A
Jackson Avenue and Pearson Street – northeast corner (N400C)											
HEET	2	510	1,080	52	45	16	14	90%	80%	0.05	A
Jackson Avenue and Court Square – southwest corner (N400)											
Two-Way Turnstiles	3	1,260	1,935	241	537	75	168	90%	80%	0.19	A
Jackson Avenue and 45th Avenue – northeast corner (N400B)											
Two-Way Turnstiles	3	1,260	1,935	225	294	70	92	90%	80%	0.13	A
Citicorp Building/One Court Square (N400A)											
Two-Way Turnstiles	7	2,940	4,515	170	354	53	111	90%	80%	0.05	A
Jackson Avenue and 23rd Street – southeast corner (R508)											
Two-Way Turnstiles	6	2,520	3,870	384	261	120	82	90%	80%	0.08	A

Table 4C-197. CBD Tolling Alternative: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
QBL M3/S3	Street stair at southeast corner of 21st Street and 44th Drive	5.00	4.00	182	373	57	117	90%	90%	80%	0.39	A
QBL M4/S4	Street stair at northeast corner of 21st Street and 44th Drive	5.00	4.00	442	167	138	52	90%	90%	80%	0.40	A
QBL O6/O7	Street stair at southeast corner of 23rd Street and 44th Drive	10.00	8.50	383	220	120	69	90%	90%	80%	0.19	A
XTN M1/S1	Street stair at northeast corner of Jackson Avenue and Pearson Street	5.00	4.00	52	40	16	13	90%	90%	80%	0.06	A
XTN M3/S3	Street stair at southwest corner of Jackson Avenue and Court Square	5.50	4.50	446	266	139	83	90%	90%	80%	0.43	A
XTN O1/O2	Street stair at northeast corner of Jackson Avenue and 45th Avenue	9.00	7.75	339	110	106	34	90%	90%	80%	0.15	A
O3/O4	Stair in Citicorp Building/One Court Square	9.00	7.75	96	280	30	88	90%	90%	80%	0.14	A
FLU M1/S1	Street stair at southeast corner of Jackson Avenue and 23rd Street	8.00	6.75	398	148	124	46	90%	90%	80%	0.21	A
FLU M2/S2	Street stair at northwest corner of 23rd Street and 45th Road	5.00	4.00	358	170	112	53	90%	90%	80%	0.35	A
QBL P1	Connecting stair between N308 paid zone and Queens-bound E/M platform	14.00	12.75	1,357	1,826	424	571	90%	80%	75%	0.75	C
QBL P2	Connecting stair between N308 paid zone and Manhattan-bound E/M platform	14.00	12.75	1,811	639	566	200	90%	80%	75%	0.57	B
QBL P3	Connecting stair between N307 paid zone and Queens-bound E/M platform	11.00	9.75	215	434	67	136	90%	80%	75%	0.20	A
QBL P4	Connecting stair between N307 paid zone and Manhattan-bound E/M platform	11.00	9.75	414	144	129	45	90%	80%	75%	0.17	A
FLU P1/P3	Connecting stair between R508 paid zone and Queens-bound 7 platform	8.00	6.75	1,865	1,204	583	376	90%	80%	75%	1.35	E
FLU P2/P4	Connecting stair between R508 paid zone and Manhattan-bound 7 platform	7.50	6.25	848	948	265	296	90%	80%	75%	0.86	C
O3/O4/O5	Connecting stair between 7 train mezzanine and G train mezzanine	7.00	6.00	123	459	38	143	90%	80%	80%	0.28	A
XTN P1	Connecting stair between N400C paid zone and G train platform	8.75	7.50	2,415	199	755	62	90%	80%	75%	1.01	D
XTN P2	Connecting stair between N400 paid zone and G train platform	9.25	8.00	1,188	691	371	216	90%	80%	75%	0.70	B
XTN P3	Connecting stair between N400 paid zone and G train platform	9.25	8.00	1,100	1,152	344	360	90%	80%	75%	0.84	C
XTN P5	Connecting stair between N400B paid zone and G train platform	7.00	6.00	17	363	5	113	100%	80%	75%	0.17	A
XTN P6	Connecting stair between N400B paid zone and G train platform	9.25	8.00	96	569	30	178	90%	80%	75%	0.25	A
XTN P7	Connecting stair between N400C paid zone and G train platform	9.25	8.00	268	596	84	186	90%	80%	75%	0.33	A
QBL M1	Connecting stair between E/M platforms and N308 paid zone	13.00	11.75	1,811	639	566	200	90%	80%	80%	0.60	B

Table 4C-198. CBD Tolling Alternative: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E265	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	239	0	75	0	750	0.11	A
E266	Exiting Escalator below Citicorp Building/One Court Square	1	32	90%	0	209	0	65	750	0.10	A
E461X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	0	1,824	0	570	1,050	0.60	B
E462X	Connecting escalator between 7 train mezzanine and G train mezzanine	1	40	90%	1,922	0	601	0	1,050	0.64	B

Table 4C-199. CBD Tolling Alternative: Court Square-23rd Street Station (E, M, G, and No. 7 lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
21st Street and 44th Drive - northeast corner (N307)											
Two-Way Turnstiles	4	1,680	2,580	624	176	195	55	90%	80%	0.16	A
21st Street and 44th Drive – southeast corner (N307A)											
High Exit Only Turnstile	2	0	1,110	0	394	0	123	100%	80%	0.14	A
23rd Street and 44th Road – northeast corner (N308)											
Two-Way Turnstiles	4	1,680	2,580	383	220	120	69	90%	75%	0.12	A
Jackson Avenue and Pearson Street – northeast corner (N400C)											
HEET	2	510	1,080	52	40	16	13	90%	80%	0.05	A
Jackson Avenue and Court Square – southwest corner (N400)											
Two-Way Turnstiles	3	1,260	1,935	446	288	139	90	90%	80%	0.19	A
Jackson Avenue and 45th Avenue – northeast corner (N400B)											
Two-Way Turnstiles	3	1,260	1,935	339	110	106	34	90%	80%	0.12	A
Citicorp Building/One Court Square (N400A)											
Two-Way Turnstiles	7	2,940	4,515	334	489	104	153	90%	80%	0.09	A
Jackson Avenue and 23rd Street – southeast corner (R508)											
Two-Way Turnstiles	6	2,520	3,870	756	318	236	99	90%	80%	0.14	A

Table 4C-200. Existing Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S6/M6	Street stair at northwest corner of Roosevelt Avenue and Main Street	6.00	5.00	2,184	677	683	212	90%	90%	80%	1.52	E
S4/M4	Street stair at northeast corner of Roosevelt Avenue and Main Street	5.00	4.00	1,218	433	381	135	90%	100%	80%	1.02	D
S7/M7	Street stair at southwest corner of Roosevelt Avenue and Main Street	5.00	4.00	802	788	251	246	90%	80%	80%	1.15	D
S3	Street stair at southeast corner of Roosevelt Avenue and Main Street	5.00	4.00	140	86	44	27	90%	100%	80%	0.14	A
S5	Street stair at southeast corner of Roosevelt Avenue and Main Street	4.80	3.80	1,940	347	606	108	90%	80%	80%	1.74	F
M3/M5	Street stair at southeast corner of Roosevelt Avenue and Main Street	11.50	10.25	2,080	433	650	135	90%	90%	80%	0.64	B
M11	Street stair on south side of Roosevelt Avenue between Main Street and Union Street	10.00	8.75	552	8	173	3	100%	80%	75%	0.17	A
P11	Connecting stair between platform and R533 paid zone west	4.25	3.25	2,378	433	743	135	90%	80%	75%	2.53	F
P12	Connecting stair between platform and R533 paid zone west	4.25	3.25	522	258	163	81	90%	80%	75%	0.71	C
P15	Connecting stair between platform and R533 paid zone west	4.25	3.25	1,092	288	341	90	90%	80%	75%	1.25	D
P16	Connecting stair between platform and R533 paid zone west	4.25	3.25	80	187	25	58	90%	80%	75%	0.25	A
P3	Connecting stair between platform and R533 paid zone east	4.25	3.25	142	308	44	96	90%	80%	75%	0.42	A
P4	Connecting stair between platform and R533 paid zone east	4.25	3.25	23	190	7	59	90%	80%	75%	0.20	A
P5/P7	Connecting stair between platform and R533 paid zone east	4.25	3.25	1,846	415	577	130	90%	80%	75%	2.04	F
P6/P8	Connecting stair between platform and R533 paid zone east	4.25	3.25	201	251	63	78	90%	80%	75%	0.42	A

Table 4C-201. Existing Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E455	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	880	0	275	1,050	0.35	A
E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	2,984	0	933	0	1,050	1.18	D
E457	Street escalator at south side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	385	0	120	1,050	0.15	A

Table 4C-202. Existing Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Main Street and Roosevelt Avenue (R533-West)											
Two-Way Turnstiles	8	3,360	5,160	4,072	1,166	1,273	364	90%	80%	0.52	B
Main Street and Roosevelt Avenue (R533-East)											
Two-Way Turnstiles	8	3,360	5,160	2,212	1,164	691	364	90%	80%	0.33	A
Roosevelt Avenue between Main Street and Union Street (R534)											
Two-Way Turnstiles	9	3,780	5,805	3,536	1,273	1,105	398	90%	75%	0.43	A

Table 4C-203. Existing Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S6/M6	Street stair at northwest corner of Roosevelt Avenue and Main Street	6.00	5.00	801	1,473	250	460	90%	90%	80%	1.26	D
S4/M4	Street stair at northeast corner of Roosevelt Avenue and Main Street	5.00	4.00	600	871	188	272	90%	100%	80%	0.98	C
S7/M7	Street stair at southwest corner of Roosevelt Avenue and Main Street	5.00	4.00	485	1,461	152	457	90%	80%	80%	1.41	E
S3	Street stair at southeast corner of Roosevelt Avenue and Main Street	5.00	4.00	243	599	76	187	90%	100%	80%	0.57	B
S5	Street stair at southeast corner of Roosevelt Avenue and Main Street	4.80	3.80	578	1,244	181	389	90%	80%	80%	1.39	E
M3/M5	Street stair at southeast corner of Roosevelt Avenue and Main Street	11.50	10.25	821	1,843	257	576	90%	90%	80%	0.73	C
M11	Street stair on south side of Roosevelt Avenue between Main Street and Union Street	10.00	8.75	71	67	22	21	90%	80%	75%	0.05	A
P11	Connecting stair between platform and R533 paid zone west	4.25	3.25	465	605	145	189	90%	80%	75%	0.99	C
P12	Connecting stair between platform and R533 paid zone west	4.25	3.25	1,059	962	331	301	90%	80%	75%	1.86	F
P15	Connecting stair between platform and R533 paid zone west	4.25	3.25	38	665	12	208	100%	80%	75%	0.60	B
P16	Connecting stair between platform and R533 paid zone west	4.25	3.25	121	847	38	265	90%	80%	75%	0.91	C
P3	Connecting stair between platform and R533 paid zone east	4.25	3.25	34	513	11	160	90%	80%	75%	0.52	B
P4	Connecting stair between platform and R533 paid zone east	4.25	3.25	25	791	8	247	100%	80%	75%	0.70	B
P5/P7	Connecting stair between platform and R533 paid zone east	4.25	3.25	342	526	107	164	90%	80%	75%	0.80	C
P6/P8	Connecting stair between platform and R533 paid zone east	4.25	3.25	622	739	194	231	90%	80%	75%	1.25	D

Table 4C-204. Existing Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E455	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	1,331	0	416	1,050	0.53	B
E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	689	0	215	0	1,050	0.27	A
E457	Street escalator at south side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	1,527	0	477	1,050	0.61	B

Table 4C-205. Existing Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Main Street and Roosevelt Avenue (R533-West)											
Two-Way Turnstiles	8	3,360	5,160	1,683	3,079	526	962	90%	80%	0.43	A
Main Street and Roosevelt Avenue (R533-East)											
Two-Way Turnstiles	8	3,360	5,160	1,023	2,569	320	803	90%	80%	0.32	A
Roosevelt Avenue between Main Street and Union Street (R534)											
Two-Way Turnstiles	9	3,780	5,805	760	2,925	238	914	90%	75%	0.30	A

Table 4C-206. No Action Alternative Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S6/M6	Street stair at northwest corner of Roosevelt Avenue and Main Street	6.00	5.00	2184	677	683	212	90%	90%	80%	1.52	E
S4/M4	Street stair at northeast corner of Roosevelt Avenue and Main Street	5.00	4.00	1,218	433	381	135	90%	100%	80%	1.02	D
S7/M7	Street stair at southwest corner of Roosevelt Avenue and Main Street	5.00	4.00	802	788	251	246	90%	80%	80%	1.15	D
S3	Street stair at southeast corner of Roosevelt Avenue and Main Street	5.00	4.00	140	86	44	27	90%	100%	80%	0.14	A
S5	Street stair at southeast corner of Roosevelt Avenue and Main Street	4.80	3.80	1,940	347	606	108	90%	80%	80%	1.74	F
M3/M5	Street stair at southeast corner of Roosevelt Avenue and Main Street	11.50	10.25	2,080	433	650	135	90%	90%	80%	0.64	B
M11	Street stair on south side of Roosevelt Avenue between Main Street and Union Street	10.00	8.75	552	8	173	3	100%	80%	75%	0.17	A
P11	Connecting stair between platform and R533 paid zone west	4.25	3.25	2,378	433	743	135	90%	80%	75%	2.53	F
P12	Connecting stair between platform and R533 paid zone west	4.25	3.25	522	258	163	81	90%	80%	75%	0.71	C
P15	Connecting stair between platform and R533 paid zone west	4.25	3.25	1,092	288	341	90	90%	80%	75%	1.25	D
P16	Connecting stair between platform and R533 paid zone west	4.25	3.25	80	187	25	58	90%	80%	75%	0.25	A
P3	Connecting stair between platform and R533 paid zone east	4.25	3.25	142	308	44	96	90%	80%	75%	0.42	A
P4	Connecting stair between platform and R533 paid zone east	4.25	3.25	23	190	7	59	90%	80%	75%	0.20	A
P5/P7	Connecting stair between platform and R533 paid zone east	4.25	3.25	1,846	415	577	130	90%	80%	75%	2.04	F
P6/P8	Connecting stair between platform and R533 paid zone east	4.25	3.25	201	251	63	78	90%	80%	75%	0.42	A

Table 4C-207. No Action Alternative Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E455	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	880	0	275	1,050	0.35	A
E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	2,984	0	933	0	1,050	1.18	D
E457	Street escalator at south side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	385	0	120	1,050	0.15	A

Table 4C-208. No Action Alternative Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Main Street and Roosevelt Avenue (R533-West)											
Two-Way Turnstiles	8	3,360	5,160	4,072	1,166	1,273	364	90%	80%	0.52	B
Main Street and Roosevelt Avenue (R533-East)											
Two-Way Turnstiles	8	3,360	5,160	2,212	1,164	691	364	90%	80%	0.33	A
Roosevelt Avenue between Main Street and Union Street (R534)											
Two-Way Turnstiles	9	3,780	5,805	3,536	1,273	1,105	398	90%	75%	0.43	A

Table 4C-209. No Action Alternative Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S6/M6	Street stair at northwest corner of Roosevelt Avenue and Main Street	6.00	5.00	801	1,473	250	460	90%	90%	80%	1.26	D
S4/M4	Street stair at northeast corner of Roosevelt Avenue and Main Street	5.00	4.00	600	871	188	272	90%	100%	80%	0.98	C
S7/M7	Street stair at southwest corner of Roosevelt Avenue and Main Street	5.00	4.00	485	1,461	152	457	90%	80%	80%	1.41	E
S3	Street stair at southeast corner of Roosevelt Avenue and Main Street	5.00	4.00	243	599	76	187	90%	100%	80%	0.57	B
S5	Street stair at southeast corner of Roosevelt Avenue and Main Street	4.80	3.80	578	1,244	181	389	90%	80%	80%	1.39	E
M3/M5	Street stair at southeast corner of Roosevelt Avenue and Main Street	11.50	10.25	821	1,843	257	576	90%	90%	80%	0.73	C
M11	Street stair on south side of Roosevelt Avenue between Main Street and Union Street	10.00	8.75	71	67	22	21	90%	80%	75%	0.05	A
P11	Connecting stair between platform and R533 paid zone west	4.25	3.25	465	605	145	189	90%	80%	75%	0.99	C
P12	Connecting stair between platform and R533 paid zone west	4.25	3.25	1,059	962	331	301	90%	80%	75%	1.86	F
P15	Connecting stair between platform and R533 paid zone west	4.25	3.25	38	665	12	208	100%	80%	75%	0.60	B
P16	Connecting stair between platform and R533 paid zone west	4.25	3.25	121	847	38	265	90%	80%	75%	0.91	C
P3	Connecting stair between platform and R533 paid zone east	4.25	3.25	34	513	11	160	90%	80%	75%	0.52	B
P4	Connecting stair between platform and R533 paid zone east	4.25	3.25	25	791	8	247	100%	80%	75%	0.70	B
P5/P7	Connecting stair between platform and R533 paid zone east	4.25	3.25	342	526	107	164	90%	80%	75%	0.80	C
P6/P8	Connecting stair between platform and R533 paid zone east	4.25	3.25	622	739	194	231	90%	80%	75%	1.25	D

Table 4C-210. No Action Alternative Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E455	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	1,331	0	416	1,050	0.53	B
E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	689	0	215	0	1,050	0.27	A
E457	Street escalator at south side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	1,527	0	477	1,050	0.61	B

Table 4C-211. No Action Alternative Level of Service Summary: Main Street- Flushing Station (No. 7 line) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Main Street and Roosevelt Avenue (R533-West)											
Two-Way Turnstiles	8	3,360	5,160	1,683	3,079	526	962	90%	80%	0.43	A
Main Street and Roosevelt Avenue (R533-East)											
Two-Way Turnstiles	8	3,360	5,160	1,023	2,569	320	803	90%	80%	0.32	A
Roosevelt Avenue between Main Street and Union Street (R534)											
Two-Way Turnstiles	9	3,780	5,805	760	2,925	238	914	90%	75%	0.30	A

Table 4C-212. CBD Tolling Alternative: Main Street- Flushing Station (No. 7 line) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S6/M6	Street stair at northwest corner of Roosevelt Avenue and Main Street	6.00	5.00	2225	692	695	216	90%	90%	80%	1.54	E
S4/M4	Street stair at northeast corner of Roosevelt Avenue and Main Street	5.00	4.00	1,241	442	388	138	90%	100%	80%	1.04	D
S7/M7	Street stair at southwest corner of Roosevelt Avenue and Main Street	5.00	4.00	817	805	255	252	90%	80%	80%	1.17	D
S3	Street stair at southeast corner of Roosevelt Avenue and Main Street	5.00	4.00	143	88	45	28	90%	100%	80%	0.15	A
S5	Street stair at southeast corner of Roosevelt Avenue and Main Street	4.80	3.80	1,977	355	618	111	90%	80%	80%	1.78	F
M3/M5	Street stair at southeast corner of Roosevelt Avenue and Main Street	11.50	10.25	2,119	442	662	138	90%	90%	80%	0.66	B
M11	Street stair on south side of Roosevelt Avenue between Main Street and Union Street	10.00	8.75	562	8	176	3	100%	80%	75%	0.17	A
P11	Connecting stair between platform and R533 paid zone west	4.25	3.25	2,423	442	757	138	90%	80%	75%	2.58	F
P12	Connecting stair between platform and R533 paid zone west	4.25	3.25	532	264	166	83	90%	80%	75%	0.73	C
P15	Connecting stair between platform and R533 paid zone west	4.25	3.25	1,113	294	348	92	90%	80%	75%	1.27	D
P16	Connecting stair between platform and R533 paid zone west	4.25	3.25	82	191	26	60	90%	80%	75%	0.26	A
P3	Connecting stair between platform and R533 paid zone east	4.25	3.25	146	315	46	98	90%	80%	75%	0.43	A
P4	Connecting stair between platform and R533 paid zone east	4.25	3.25	24	194	8	61	90%	80%	75%	0.21	A
P5/P7	Connecting stair between platform and R533 paid zone east	4.25	3.25	1,902	424	594	133	90%	80%	75%	2.10	F
P6/P8	Connecting stair between platform and R533 paid zone east	4.25	3.25	207	256	65	80	90%	80%	75%	0.43	A

Table 4C-213. CBD Tolling Alternative: Main Street- Flushing Station (No. 7 line) – Escalator Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E455	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	899	0	281	1,050	0.36	A
E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	3,040	0	950	0	1,050	1.21	D+
E457	Street escalator at south side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	393	0	123	1,050	0.16	A
NOTE: + denotes a significant adverse effect											

Table 4C-214. CBD Tolling Alternative: Main Street- Flushing Station (No. 7 line) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Main Street and Roosevelt Avenue (R533-West)											
Two-Way Turnstiles	8	3,360	5,160	4,149	1,191	1,297	372	90%	80%	0.53	B
Main Street and Roosevelt Avenue (R533-East)											
Two-Way Turnstiles	8	3,360	5,160	2,254	1,189	704	372	90%	80%	0.33	A
Roosevelt Avenue between Main Street and Union Street (R534)											
Two-Way Turnstiles	9	3,780	5,805	3,603	1,301	1,126	407	90%	75%	0.43	A

Table 4C-215. CBD Tolling Alternative: Main Street- Flushing Station (No. 7 line) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
S6/M6	Street stair at northwest corner of Roosevelt Avenue and Main Street	6.00	5.00	820	1,507	256	471	90%	90%	80%	1.29	D
S4/M4	Street stair at northeast corner of Roosevelt Avenue and Main Street	5.00	4.00	615	891	192	278	90%	100%	80%	1.00	C
S7/M7	Street stair at southwest corner of Roosevelt Avenue and Main Street	5.00	4.00	497	1,495	155	467	90%	80%	80%	1.44	E
S3	Street stair at southeast corner of Roosevelt Avenue and Main Street	5.00	4.00	249	613	78	192	90%	100%	80%	0.59	B
S5	Street stair at southeast corner of Roosevelt Avenue and Main Street	4.80	3.80	592	1,273	185	398	90%	80%	80%	1.42	E
M3/M5	Street stair at southeast corner of Roosevelt Avenue and Main Street	11.50	10.25	841	1,886	263	589	90%	90%	80%	0.74	C
M11	Street stair on south side of Roosevelt Avenue between Main Street and Union Street	10.00	8.75	73	69	23	22	90%	80%	75%	0.05	A
P11	Connecting stair between platform and R533 paid zone west	4.25	3.25	476	619	149	193	90%	80%	75%	1.01	D
P12	Connecting stair between platform and R533 paid zone west	4.25	3.25	1,085	984	339	308	90%	80%	75%	1.90	F
P15	Connecting stair between platform and R533 paid zone west	4.25	3.25	39	680	12	213	100%	80%	75%	0.61	B
P16	Connecting stair between platform and R533 paid zone west	4.25	3.25	124	867	39	271	90%	80%	75%	0.93	C
P3	Connecting stair between platform and R533 paid zone east	4.25	3.25	35	525	11	164	90%	80%	75%	0.53	B
P4	Connecting stair between platform and R533 paid zone east	4.25	3.25	25	809	8	253	100%	80%	75%	0.71	C
P5/P7	Connecting stair between platform and R533 paid zone east	4.25	3.25	348	538	109	168	90%	80%	75%	0.82	C
P6/P8	Connecting stair between platform and R533 paid zone east	4.25	3.25	633	756	198	236	90%	80%	75%	1.28	D

Table 4C-216. CBD Tolling Alternative: Main Street- Flushing Station (No. 7 line) – Escalator Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
					In to Station	Out from Station	In to Station	Out from Station			
E455	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	1,362	0	426	1,050	0.54	B
E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	706	0	221	0	1,050	0.28	A
E457	Street escalator at south side of Roosevelt Avenue between Main Street and Union Street	1	40	75%	0	1,562	0	488	1,050	0.62	B

Table 4C-217. CBD Tolling Alternative: Main Street- Flushing Station (No. 7 line) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Main Street and Roosevelt Avenue (R533-West)											
Two-Way Turnstiles	8	3,360	5,160	1,724	3,150	539	984	90%	80%	0.44	A
Main Street and Roosevelt Avenue (R533-East)											
Two-Way Turnstiles	8	3,360	5,160	1,048	2,629	328	822	90%	80%	0.33	A
Roosevelt Avenue between Main Street and Union Street (R534)											
Two-Way Turnstiles	9	3,780	5,805	778	2,993	243	935	90%	75%	0.31	A

Table 4C-218. CBD Tolling Alternative: Level of Service Summary with and without Project Improvements (2023)

The four (4) vertical circulation elements in this table are modeled to meet CEQR thresholds for significant adverse effects under the tolling scenario with the highest incremental increases in ridership.

ELEMENT	LOCATION	STAIR EFFECTIVE WIDTH/ESCALATOR TREAD WIDTH	PROJECT IMPROVEMENT	AM PEAK HOUR			PM PEAK HOUR		
				No Action v/c (LOS)	With Action v/c (LOS)	With Action With Improvements v/c (LOS)	No Action v/c (LOS)	With Action v/c (LOS)	With Action With Improvements v/c (LOS)
14th Street Union Square Station (Nos. 4, 5, 6, and N, Q, R, W, L lines)									
E219	Connecting escalator between R221A paid zone and Canarsie line platform	32 inches	Raise escalator speed to 120 fpm	1.26 (D)	1.27 (D)	1.15 (D)	No Adverse Effects		
42nd Street Times Square Station (Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, W, S lines)									
IRT ML6	Connecting stair between lower mezzanine and uptown Nos. 1/2/3 platform	6.75 feet	Remove intermediate handrail	No Adverse Effects			1.65 (E)	1.70 (F)	1.64 (E)
Court Square-23rd Street Station (E, M, G, and No. 7 lines)									
FLU P2/P4	Connecting stair between R508 paid zone and Manhattan-bound No. 7 line platform	6.25 feet	Add new 5-foot-wide platform stair on north end of Manhattan-bound No. 7 line platform	1.84 (F)	1.90 (F)	1.56 (E)	No Adverse Effects		
NEW FLU plat stair	New connecting stair between new FCA and Manhattan-bound No. 7 line platform	4 feet	New platform stair on north end of Manhattan-bound No. 7 line platform	N/A	N/A	0.53 (B)	N/A	N/A	0.44 (A)
Main Street Flushing Station (No. 7 line)									
E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	40 inches	Raise escalator speed to 120 fpm	1.18 (D)	1.21 (D)	1.08 (D)	No Adverse Effects		

4C.8 LEVEL OF SERVICE TABLES – NJ TRANSIT AND PATH STATIONS

Level of service at stations where CEQR threshold would be exceeded and analysis of specific circulation elements

Table 4C-219. Existing Level of Service Summary: Various New Jersey Station Locations – Stair Analysis (AM Peak Hour, 2019)

LOCATION/ELEMENT	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
			Down	Up	Down	Up		Down	Up		
Hoboken Terminal, Stair 05, inside terminal platform 1/2 to PATH mezzanine	13.00	11.75	48	704	15	220	90%	80%	80%	0.19	A
Hoboken Terminal, Stair 01/02, NE corner of terminal to east end of PATH platforms	12.50	11.00	5174	230	1,617	72	100%	80%	80%	1.28	D
Secaucus Junction, Stair Center Corridor Track A/B	11.00	9.75	230	10	72	3	100%	80%	80%	0.06	A
Secaucus Junction, Stair Center Corridor Track 3	5.50	4.50	170	99	53	31	90%	90%	80%	0.16	A
Newark Penn Station, Ramp Platform H to Tracks 3/4	10.00	9.00	0	0	0	0	90%	N/A	N/A	N/A	N/A

Table 4C-220. Existing Level of Service Summary: Various New Jersey Station Locations – Escalator Analysis (AM Peak Hour, 2019)

LOCATION/ELEMENT	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
				Down	Up	Down	Up			
Secaucus Junction Main Corridor Track A/B escalator closest to wall	1	40	75%		64		20	945	0.03	A
Secaucus Junction Main Corridor Track A/B escalator center	1	40	75%		67		21	945	0.03	A
Secaucus Junction Main Corridor Track A/B escalator furthest from wall	1	40	80%	1,501		469		945	0.62	B
Secaucus Junction, Center Corridor Track 3 escalator	1	40	80%		205		64	945	0.08	A
Secaucus Junction, Center Corridor Track A/B escalator	1	40	80%		42		13	945	0.02	A

Table 4C-221. Existing Level of Service Summary: Various New Jersey Station Locations – Stair Analysis (PM Peak Hour, 2019)

LOCATION/ELEMENT	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
			Down	Up	Down	Up		Down	Up		
Hoboken Terminal, Stair 05, inside terminal platform 1/2 to PATH mezzanine	13.00	11.75	96	966	30	302	90%	80%	80%	0.26	A
Hoboken Terminal, Stair 01/02, NE corner of terminal to east end of PATH platforms	12.50	11.00	416	3,658	130	1,143	90%	80%	80%	1.07	D
Secaucus Junction, Stair Center Corridor Track A/B	11.00	9.75	29	48	9	15	90%	80%	80%	0.02	A
Secaucus Junction, Stair Center Corridor Track 2	5.50	4.50	512	35	160	11	90%	80%	80%	0.35	A
Newark Penn Station, Ramp Platform H to Tracks 3/4	10.00	9.00	1,856	80	580	25	100%	90%	80%	0.33	A

Table 4C-222. Existing Level of Service Summary: Various New Jersey Station Locations – Escalator Analysis (PM Peak Hour, 2019)

LOCATION/ELEMENT	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
				Down	Up	Down	Up			
Secaucus Junction Main Corridor Track A/B escalator closest to wall	1	40	75%		589		184	945	0.26	A
Secaucus Junction Main Corridor Track A/B escalator center	1	40	75%		378		118	945	0.17	A
Secaucus Junction Main Corridor Track A/B escalator furthest from wall	1	40	80%	208		65		945	0.09	A
Secaucus Junction, Center Corridor Track 2 escalator	1	40	80%		192		60	945	0.08	A
Secaucus Junction, Center Corridor Track A/B escalator	1	40	80%		422		132	945	0.17	A

Table 4C-223. No-Action Alternative Level of Service Summary: Various New Jersey Station Locations – Stair Analysis (AM Peak Hour, 2023)

LOCATION/ELEMENT	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
			Down	Up	Down	Up		Down	Up		
Hoboken Terminal, Stair 05, inside terminal platform 1/2 to PATH mezzanine	13.00	11.75	48	704	15	220	90%	80%	80%	0.19	A
Hoboken Terminal, Stair 01/02, NE corner of terminal to east end of PATH platforms	12.50	11.00	5,174	230	1,617	72	100%	80%	80%	1.28	D
Secaucus Junction, Stair Center Corridor Track A/B	11.00	9.75	230	10	72	3	100%	80%	80%	0.06	A
Secaucus Junction, Stair Center Corridor Track 3	5.50	4.50	170	99	53	31	90%	80%	80%	0.17	A
Newark Penn Station, Ramp Platform H to Tracks 3/4	10.00	9.00	0	0	0	0	90%	N/A	N/A	N/A	N/A

Table 4C-224. No-Action Alternative Level of Service Summary: Various New Jersey Station Locations – Escalator Analysis (AM Peak Hour, 2023)

LOCATION/ELEMENT	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
				Down	Up	Down	Up			
Secaucus Junction Main Corridor Track A/B escalator closest to wall	1	40	75%		64		20	945	0.03	A
Secaucus Junction Main Corridor Track A/B escalator center	1	40	75%		67		21	945	0.03	A
Secaucus Junction Main Corridor Track A/B escalator furthest from wall	1	40	80%	1,501		469		945	0.62	B
Secaucus Junction, Center Corridor Track 3 escalator	1	40	80%		205		64	945	0.08	A
Secaucus Junction, Center Corridor Track A/B escalator	1	40	80%		42		13	945	0.02	A

Table 4C-225. No-Action Alternative Level of Service Summary: Various New Jersey Station Locations – Stair Analysis (PM Peak Hour, 2023)

LOCATION/ELEMENT	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
			Down	Up	Down	Up		Down	Up		
Hoboken Terminal, Stair 05, inside terminal platform 1/2 to PATH mezzanine	13.00	11.75	96	966	30	302	90%	80%	80%	0.26	A
Hoboken Terminal, Stair 01/02NE corner of terminal to east end of PATH platforms	12.50	11.00	416	3,658	130	1,143	90%	80%	80%	1.07	D
Secaucus Junction, Stair Center Corridor Track A/B	11.00	9.75	29	48	9	15	90%	80%	80%	0.02	A
Secaucus Junction, Stair Center Corridor Track 2	5.50	4.50	512	35	160	11	90%	80%	80%	0.35	A
Newark Penn Station, Ramp Platform H to Tracks 3/4	10.00	9.00	1,856	80	580	25	100%	90%	80%	0.33	A

Table 4C-226. No-Action Alternative Level of Service Summary: Various New Jersey Station Locations – Escalator Analysis (PM Peak Hour, 2023)

LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
				Down	Up	Down	Up			
Secaucus Junction Main Corridor Track A/B escalator closest to wall	1	40	75%		589		184	945	0.26	A
Secaucus Junction Main Corridor Track A/B escalator center	1	40	75%		378		118	945	0.17	A
Secaucus Junction Main Corridor Track A/B escalator furthest from wall	1	40	80%	208		65		945	0.09	A
Secaucus Junction, Center Corridor Track 2 escalator	1	40	80%		192		60	945	0.08	A
Secaucus Junction, Center Corridor Track A/B escalator	1	40	80%		422		132	945	0.17	A

Table 4C-227. CBD Tolling Alternative Level of Service Summary: Various New Jersey Station Locations – Stair Analysis (AM Peak Hour, 2023)

LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	REPRESENTATIVE TOLLING SCENARIO	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				Down	Up	Down	Up		Down	Up		
Hoboken Terminal, Stair 05, inside terminal platform 1/2 to PATH mezzanine	13.00	11.75	E	51	704	16	220	90%	80%	80%	0.19	A
Hoboken Terminal, Stair 01/02, NE corner of terminal to east end of PATH platforms	12.50	11.00	E	5,413	231	1,691	72	100%	80%	80%	1.34	E
Secaucus Junction, Stair Center Corridor Track A/B	11.00	9.75	E	286	10	90	3	100%	80%	80%	0.08	A
Secaucus Junction, Stair Center Corridor Track 3	5.50	4.50	E	170	99	53	31	90%	80%	80%	0.17	A
Newark Penn Station, Ramp Platform H to Tracks 3/4	10.00	9.00	C	36	0	11	0	100%	90%	80%	0.01	A

Table 4C-228. CBD Tolling Alternative Level of Service Summary: Various New Jersey Locations – Escalator Analysis Tolling Scenario E (AM Peak Hour, 2023)

LOCATION	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
				Down	Up	Down	Up			
Secaucus Junction Main Corridor Track A/B escalator closest to wall	1	40	75%		64		20	945	0.03	A
Secaucus Junction Main Corridor Track A/B escalator center	1	40	75%		67		21	945	0.03	A
Secaucus Junction Main Corridor Track A/B escalator furthest from wall	1	40	80%	1,614		504	0	945	0.67	B
Secaucus Junction, Center Corridor Track 3 escalator	1	40	80%		205		64	945	0.08	A
Secaucus Junction, Center Corridor Track A/B escalator	1	40	80%		42		13	945	0.02	A

Table 4C-229. CBD Tolling Alternative Level of Service Summary: Various New Jersey Station Locations – Stair Analysis (PM Peak Hour, 2023)

LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	REPRESENTATIVE TOLLING SCENARIO	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				Down	Up	Down	Up		Down	Up		
Hoboken Terminal, Stair 05, inside terminal platform 1/2 to PATH mezzanine	13.00	11.75	E	96	1,032	30	322	90%	80%	80%	0.28	A
Hoboken Terminal, Stair 01/02, NE corner of terminal to east end of PATH platforms	12.50	11.00	E	418	3,864	131	1,208	90%	80%	80%	1.13	D
Secaucus Junction, Stair Center Corridor Track A/B	11.00	9.75	E	29	48	9	15	90%	80%	80%	0.02	A
Secaucus Junction, Stair Center Corridor Track 2	5.50	4.50	E	512	35	160	11	90%	80%	80%	0.35	A
Newark Penn Station, Ramp Platform H to Tracks 3/4	10.00	9.00	C	1,990	80	622	25	100%	90%	80%	0.36	A

Table 4C-230. CBD Tolling Alternative Level of Service Summary: Various New Jersey Station Locations – Escalator Analysis Tolling Scenario E (PM Peak Hour, 2023)

LOCATION/ELEMENT	QUANTITY	TREAD WIDTH (IN)	SURGE FACTOR	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		PEAK 15-MINUTE CAPACITY (WITHOUT SURGING FACTOR)	V/C RATIO	LOS
				Down	Up	Down	Up			
Secaucus Junction Main Corridor Track A/B escalator closest to wall	1	40	75%		674		211	945	0.30	A
Secaucus Junction Main Corridor Track A/B escalator center	1	40	75%		463		145	945	0.20	A
Secaucus Junction Main Corridor Track A/B escalator furthest from wall	1	40	80%	208		65	0	945	0.00	A
Secaucus Junction, Center Corridor Track 2 escalator	1	40	80%		192		60	945	0.08	A
Secaucus Junction, Center Corridor Track A/B escalator	1	40	80%		479		150	945	0.20	A

4C.9 SUPPLEMENTAL ANALYSIS OF CANAL STREET (A/C/E) STATION

Per discussion with the Metropolitan Transportation Authority and New York City Transit, a comparative assessment was conducted to evaluate the potential differences in environmental review findings for analyzed New York City subway stations associated with a future 2023 baseline that assumes the completion and operations of East Side Access. This assessment also included a new quantitative analysis of the Canal Street Station (A, C, and E lines), which was not one of the stations included for analysis in **Subchapter 4C, "Transportation: Transit,"** of the EA because the projected incremental trips at this station were below the *CEQR Technical Manual* threshold warranting a quantitative analysis. With the completion and operations of East Side Access considered, the projected incremental trips at this station would be greater than the CEQR analysis threshold of 200 or more subway riders during commuter peak hours. Hence, a quantitative analysis, involving the use of newly collected data and previously approved volumes, assignment of projected incremental trips, and analyses of station element for existing and future conditions was prepared. This undertaking concluded that the Project would not result in adverse effects at this station.

In coordination with New York City Transit and following the analysis procedures and methodologies detailed in **Subchapter 4C, "Transportation: Transit,"** and **Section 4C.2.3,** additional data were collected at the Canal Street Station (A, C, and E lines) and calibrated against other volume data provided by New York City Transit and projected volumes presented in the October 2021 *So-Ho/No-Ho Neighborhood Plan Final Environmental Impact Statement* (21DCP059M) to establish a representative baseline for analysis. As shown in **Table 4C-231 through Table 4C-234**, most station elements would operate at favorable levels (LOS A to LOS C) under existing conditions, with all fare arrays operating at LOS A and only 1 of the 19 stairs (S6) in the station operating at LOS D during both the AM and PM peak hours. Under the No Action Alternative (**Table 4C-235 through Table 4C-238**), the station's fare arrays would continue to operate at LOS A with only 1 of the 19 stairs (S6) operating at LOS D. Based on the station travel patterns exhibited from the existing conditions volume data, the projected incremental trips (with East Side Access) were assigned to the station's various FCAs and circulation elements. **Table 4C-239 through Table 4C-242** summarize the CBD Tolling Alternative analysis results. Like the existing and No Action Alternative conditions, all of the station's fare arrays would operate at LOS A with the implementation of the Project. During the AM peak hour, 2 of the station's 19 stairs (S1 and S6) would operate at LOS D, while S6 would continue to be the only station stair operating at LOS D during the PM peak hour.

For S1 and S6, width incremental threshold values were calculated and compared to the guidance presented in the *CEQR Technical Manual*. This assessment concluded that the changes in projected service conditions at neither of these stairs would constitute an adverse effect under CEQR. Therefore, the Proposed Project with East Side Access would not have the potential to result in adverse effects in the operations of the Canal Street Station (A, C, and E lines).

Table 4C-231. Existing Level of Service Summary: Canal Street (A, C, E lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
AT&T	Connecting Stair between Control Area N90 free zone and AT&T building lobby	4.50	3.50	6	314	2	98	100%	100%	80%	0.24	A
S1	Street Stair at northeast corner of Walker Street and Sixth Avenue	5.50	4.50	256	1289	80	403	90%	100%	80%	0.96	C
M1	Connecting Stair between Control Area N90 free zone and Street Level S1 stair	8.25	7.00	256	1289	80	403	90%	100%	80%	0.62	B
S3	Street Stair at southeast corner of West Broadway and Sixth Avenue/Lispenard Street	5.50	4.50	59	322	18	101	90%	100%	80%	0.24	A
M4	Connecting Stair between free zone and Street Level S1 stair	12.50	11.25	59	322	18	101	90%	100%	80%	0.09	A
S4-M5	Street Stair at southwest corner of West Broadway and York Street	4.50	3.50	115	507	36	158	90%	100%	80%	0.49	B
M6A/M6B	Connecting Stair between free zone and Street Level S4/M5 stair	11.42	10.17	115	507	36	158	90%	100%	80%	0.17	A
S5	Street Stair at southwest corner of Laight Street and Sixth Avenue	4.50	3.50	76	518	24	162	90%	100%	80%	0.48	B
M7	Connecting Stair between free zone and Street Level S5 Stair	9.50	8.25	76	518	24	162	90%	100%	80%	0.20	A
M8	Connecting Stair between free zone and Street Level S6 Stair	5.67	4.67	120	1304	38	408	90%	100%	75%	0.92	C
S6	Street Stair at northeast corner of Sixth Avenue and Canal Street/Thompson Street	4.67	3.67	120	1304	38	408	90%	100%	75%	1.17	D
P1	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	115	264	36	83	90%	100%	75%	0.20	A
P2	Connecting Stair between Control Area N90 paid zone and southbound platform	8.00	7.00	33	1076	10	336	100%	100%	75%	0.44	A
P3	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	115	264	36	83	90%	100%	75%	0.20	A
P4	Connecting Stair between Control Area N89A paid zone and southbound platform	5.00	4.00	36	653	11	204	100%	100%	75%	0.47	B
P5	Connecting Stair between Control Area N89 paid zone and northbound platform	6.50	5.50	113	180	35	56	90%	100%	75%	0.15	A
P6	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	37	973	12	304	100%	100%	75%	0.58	B
P7	Connecting Stair between Control Area N88 paid zone and northbound platform	6.58	5.58	161	657	50	205	90%	100%	75%	0.43	A
P8	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	23	732	7	229	100%	100%	75%	0.43	A

Table 4C-232. Existing Level of Service Summary: Canal Street (A, C, E lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and Canal Street – southeast corner (N88)											
Two-Way Turnstiles	3	1,260	1,935	134	514	42	161	0.90	0.75	0.16	A
HEET	1	255	540	27	143	8	45	0.90	0.75	0.16	A
Sixth Avenue and Canal Street – southwest corner (N88A)											
Two-Way Turnstiles	3	1,260	1,935	50	1,333	16	417	1.00	0.75	0.30	A
HEET	1	255	540	10	372	3	116	1.00	0.75	0.30	A
Sixth Avenue and West Broadway – northeast corner (N89)											
Two-Way Turnstiles	4	1,680	2,580	113	180	35	56	0.90	0.80	0.05	A
Sixth Avenue and York Street – northeast corner (N89A)											
Two-Way Turnstiles	4	1,680	2,580	36	653	11	204	0.90	0.80	0.12	A
Sixth Avenue and Walker Street – east side (N90)											
Two-Way Turnstiles	4	1,680	2,580	201	1,130	63	353	0.90	0.80	0.23	A
HEET	2	510	1,080	61	473	19	148	0.90	0.80	0.23	A

Table 4C-233. Existing Level of Service Summary: Canal Street (A, C, E lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
AT&T	Connecting Stair between Control Area N90 free zone and AT&T building lobby	4.50	3.50	206	5	64	2	100%	100%	80%	0.13	A
S1	Street Stair at northeast corner of Walker Street and Sixth Avenue	5.50	4.50	1352	273	423	85	90%	100%	80%	0.87	C
M1	Connecting Stair between Control Area N90 free zone and Street Level S1 stair	8.25	7.00	1352	273	423	85	90%	100%	80%	0.56	B
S3	Street Stair at southeast corner of West Broadway and Sixth Avenue/Lispenard Street	5.50	4.50	288	72	90	23	90%	100%	80%	0.20	A
M4	Connecting Stair between free zone and Street Level S1 stair	12.50	11.25	288	72	90	23	90%	100%	80%	0.08	A
S4-M5	Street Stair at southwest corner of West Broadway and York Street	4.50	3.50	562	113	176	35	90%	100%	80%	0.47	B
M6A/M6B	Connecting Stair between free zone and Street Level S4/M5 stair	11.42	10.17	562	113	176	35	90%	100%	80%	0.16	A
S5	Street Stair at southwest corner of Laight Street and Sixth Avenue	4.50	3.50	371	115	116	36	90%	100%	80%	0.34	A
M7	Connecting Stair between free zone and Street Level S5 Stair	9.50	8.25	371	115	116	36	90%	100%	80%	0.14	A
M8	Connecting Stair between free zone and Street Level S6 Stair	5.67	4.67	1378	197	431	62	90%	100%	75%	0.82	C
S6	Street Stair at northeast corner of Sixth Avenue and Canal Street/Thompson Street	4.67	3.67	1378	197	431	62	90%	100%	75%	1.04	D
P1	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	530	31	166	10	90%	100%	75%	0.24	A
P2	Connecting Stair between Control Area N90 paid zone and southbound platform	8.00	7.00	499	194	156	61	90%	100%	75%	0.25	A
P3	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	530	31	166	10	90%	100%	75%	0.24	A
P4	Connecting Stair between Control Area N89A paid zone and southbound platform	5.00	4.00	55	3	17	1	90%	100%	75%	0.03	A
P5	Connecting Stair between Control Area N89 paid zone and northbound platform	6.50	5.50	174	27	54	8	90%	100%	75%	0.09	A
P6	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	502	164	157	51	90%	100%	75%	0.35	A
P7	Connecting Stair between Control Area N88 paid zone and northbound platform	6.58	5.58	1385	119	433	37	90%	100%	75%	0.64	B
P8	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	483	98	151	31	90%	100%	75%	0.29	A

Table 4C-234. Existing Level of Service Summary: Canal Street (A, C, E lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and Canal Street – southeast corner (N88)											
Two-Way Turnstiles	3	1,260	1,935	1,152	93	360	29	0.90	0.75	0.34	A
HEET	1	255	540	233	26	73	8	0.90	0.75	0.34	A
Sixth Avenue and Canal Street – southwest corner (N88A)											
Two-Way Turnstiles	3	1,260	1,935	819	205	256	64	0.90	0.75	0.27	A
HEET	1	255	540	166	57	52	18	0.90	0.75	0.28	A
Sixth Avenue and West Broadway – northeast corner (N89)											
Two-Way Turnstiles	4	1,680	2,580	174	27	54	9	0.90	0.80	0.04	A
Sixth Avenue and York Street – northeast corner (N89A)											
Two-Way Turnstiles	4	1,680	2,580	55	3	17	1	0.90	0.80	0.01	A
Sixth Avenue and Walker Street – east side (N90)											
Two-Way Turnstiles	4	1,680	2,580	1,195	180	373	56	0.90	0.80	0.28	A
HEET	2	510	1,080	363	75	113	24	0.90	0.80	0.28	A

Table 4C-235. No Action Alternative Level of Service Summary: Canal Street (A, C, E lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
AT&T	Connecting Stair between Control Area N90 free zone and AT&T building lobby	4.50	3.50	6	314	2	98	100%	100%	80%	0.24	A
S1	Street Stair at northeast corner of Walker Street and Sixth Avenue	5.50	4.50	256	1289	80	403	90%	100%	80%	0.96	C
M1	Connecting Stair between Control Area N90 free zone and Street Level S1 stair	8.25	7.00	256	1289	80	403	90%	100%	80%	0.62	B
S3	Street Stair at southeast corner of West Broadway and Sixth Avenue/Lispenard Street	5.50	4.50	59	322	18	101	90%	100%	80%	0.24	A
M4	Connecting Stair between free zone and Street Level S1 stair	12.50	11.25	59	322	18	101	90%	100%	80%	0.09	A
S4-M5	Street Stair at southwest corner of West Broadway and York Street	4.50	3.50	115	507	36	158	90%	100%	80%	0.49	B
M6A/M6B	Connecting Stair between free zone and Street Level S4/M5 stair	11.42	10.17	115	507	36	158	90%	100%	80%	0.17	A
S5	Street Stair at southwest corner of Laight Street and Sixth Avenue	4.50	3.50	76	518	24	162	90%	100%	80%	0.48	B
M7	Connecting Stair between free zone and Street Level S5 Stair	9.50	8.25	76	518	24	162	90%	100%	80%	0.20	A
M8	Connecting Stair between free zone and Street Level S6 Stair	5.67	4.67	120	1304	38	408	90%	100%	75%	0.92	C
S6	Street Stair at northeast corner of Sixth Avenue and Canal Street/Thompson Street	4.67	3.67	120	1304	38	408	90%	100%	75%	1.17	D
P1	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	115	264	36	83	90%	100%	75%	0.20	A
P2	Connecting Stair between Control Area N90 paid zone and southbound platform	8.00	7.00	33	1076	10	336	100%	100%	75%	0.44	A
P3	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	115	264	36	83	90%	100%	75%	0.20	A
P4	Connecting Stair between Control Area N89A paid zone and southbound platform	5.00	4.00	36	653	11	204	100%	100%	75%	0.47	B
P5	Connecting Stair between Control Area N89 paid zone and northbound platform	6.50	5.50	113	180	35	56	90%	100%	75%	0.15	A
P6	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	37	973	12	304	100%	100%	75%	0.58	B
P7	Connecting Stair between Control Area N88 paid zone and northbound platform	6.58	5.58	161	657	50	205	90%	100%	75%	0.43	A
P8	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	23	732	7	229	100%	100%	75%	0.43	A

Table 4C-236. No Action Alternative Level of Service Summary: Canal Street (A, C, E lines) – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and Canal Street – southeast corner (N88)											
Two-Way Turnstiles	3	1,260	1,935	134	514	42	161	0.90	0.75	0.16	A
HEET	1	255	540	27	143	8	45	0.90	0.75	0.16	A
Sixth Avenue and Canal Street – southwest corner (N88A)											
Two-Way Turnstiles	3	1,260	1,935	50	1,333	16	417	1.00	0.75	0.30	A
HEET	1	255	540	10	372	3	116	1.00	0.75	0.30	A
Sixth Avenue and West Broadway – northeast corner (N89)											
Two-Way Turnstiles	4	1,680	2,580	113	180	35	56	0.90	0.80	0.05	A
Sixth Avenue and York Street – northeast corner (N89A)											
Two-Way Turnstiles	4	1,680	2,580	36	653	11	204	0.90	0.80	0.12	A
Sixth Avenue and Walker Street – east side (N90)											
Two-Way Turnstiles	4	1,680	2,580	201	1,130	63	353	0.90	0.80	0.23	A
HEET	2	510	1,080	61	473	19	148	0.90	0.80	0.23	A

Table 4C-237. No Action Alternative Level of Service Summary: Canal Street (A, C, E lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
AT&T	Connecting Stair between Control Area N90 free zone and AT&T building lobby	4.50	3.50	206	5	64	2	100%	100%	80%	0.13	A
S1	Street Stair at northeast corner of Walker Street and Sixth Avenue	5.50	4.50	1352	273	423	85	90%	100%	80%	0.87	C
M1	Connecting Stair between Control Area N90 free zone and Street Level S1 stair	8.25	7.00	1352	273	423	85	90%	100%	80%	0.56	B
S3	Street Stair at southeast corner of West Broadway and Sixth Avenue/Lispenard Street	5.50	4.50	288	72	90	23	90%	100%	80%	0.20	A
M4	Connecting Stair between free zone and Street Level S1 stair	12.50	11.25	288	72	90	23	90%	100%	80%	0.08	A
S4-M5	Street Stair at southwest corner of West Broadway and York Street	4.50	3.50	562	113	176	35	90%	100%	80%	0.47	B
M6A/M6B	Connecting Stair between free zone and Street Level S4/M5 stair	11.42	10.17	562	113	176	35	90%	100%	80%	0.16	A
S5	Street Stair at southwest corner of Laight Street and Sixth Avenue	4.50	3.50	371	115	116	36	90%	100%	80%	0.34	A
M7	Connecting Stair between free zone and Street Level S5 Stair	9.50	8.25	371	115	116	36	90%	100%	80%	0.14	A
M8	Connecting Stair between free zone and Street Level S6 Stair	5.67	4.67	1378	197	431	62	90%	100%	75%	0.82	C
S6	Street Stair at northeast corner of Sixth Avenue and Canal Street/Thompson Street	4.67	3.67	1378	197	431	62	90%	100%	75%	1.04	D
P1	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	530	31	166	10	90%	100%	75%	0.24	A
P2	Connecting Stair between Control Area N90 paid zone and southbound platform	8.00	7.00	499	194	156	61	90%	100%	75%	0.25	A
P3	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	530	31	166	10	90%	100%	75%	0.24	A
P4	Connecting Stair between Control Area N89A paid zone and southbound platform	5.00	4.00	55	3	17	1	90%	100%	75%	0.03	A
P5	Connecting Stair between Control Area N89 paid zone and northbound platform	6.50	5.50	174	27	54	8	90%	100%	75%	0.09	A
P6	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	502	164	157	51	90%	100%	75%	0.35	A
P7	Connecting Stair between Control Area N88 paid zone and northbound platform	6.58	5.58	1385	119	433	37	90%	100%	75%	0.64	B
P8	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	483	98	151	31	90%	100%	75%	0.29	A

Table 4C-238. No Action Alternative Level of Service Summary: Canal Street (A, C, E lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and Canal Street – southeast corner (N88)											
Two-Way Turnstiles	3	1,260	1,935	1,152	93	360	29	0.90	0.75	0.34	A
HEET	1	255	540	233	26	73	8	0.90	0.75	0.34	A
Sixth Avenue and Canal Street – southwest corner (N88A)											
Two-Way Turnstiles	3	1,260	1,935	819	205	256	64	0.90	0.75	0.27	A
HEET	1	255	540	166	57	52	18	0.90	0.75	0.28	A
Sixth Avenue and West Broadway – northeast corner (N89)											
Two-Way Turnstiles	4	1,680	2,580	174	27	54	9	0.90	0.80	0.04	A
Sixth Avenue and York Street – northeast corner (N89A)											
Two-Way Turnstiles	4	1,680	2,580	55	3	17	1	0.90	0.80	0.01	A
Sixth Avenue and Walker Street – east side (N90)											
Two-Way Turnstiles	4	1,680	2,580	1,195	180	373	56	0.90	0.80	0.28	A
HEET	2	510	1,080	363	75	113	24	0.90	0.80	0.28	A

Table 4C-239. CBD Tolling Alternative: Main Street: Canal Street (A, C, E lines) – Stair Analysis (AM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
AT&T	Connecting Stair between Control Area N90 free zone and AT&T building lobby	4.50	3.50	6	327	2	102	100%	100%	80%	0.25	A
S1	Street Stair at northeast corner of Walker Street and Sixth Avenue	5.50	4.50	270	1342	84	419	90%	100%	80%	1.00	D
M1	Connecting Stair between Control Area N90 free zone and Street Level S1 stair	8.25	7.00	270	1342	84	419	90%	100%	80%	0.64	B
S3	Street Stair at southeast corner of West Broadway and Sixth Avenue/Lispenard Street	5.50	4.50	62	335	19	105	90%	100%	80%	0.25	A
M4	Connecting Stair between free zone and Street Level S1 stair	12.50	11.25	62	335	19	105	90%	100%	80%	0.10	A
S4-M5	Street Stair at southwest corner of West Broadway and York Street	4.50	3.50	121	528	38	165	90%	100%	80%	0.52	B
M6A/M6B	Connecting Stair between free zone and Street Level S4/M5 stair	11.42	10.17	121	528	38	165	90%	100%	80%	0.18	A
S5	Street Stair at southwest corner of Laight Street and Sixth Avenue	4.50	3.50	80	539	25	168	90%	100%	80%	0.50	B
M7	Connecting Stair between free zone and Street Level S5 Stair	9.50	8.25	80	539	25	168	90%	100%	80%	0.21	A
M8	Connecting Stair between free zone and Street Level S6 Stair	5.67	4.67	127	1358	40	424	90%	100%	75%	0.96	C
S6	Street Stair at northeast corner of Sixth Avenue and Canal Street/Thompson Street	4.67	3.67	127	1358	40	424	90%	100%	75%	1.22	D
P1	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	122	279	38	87	90%	100%	75%	0.21	A
P2	Connecting Stair between Control Area N90 paid zone and southbound platform	8.00	7.00	34	1105	11	345	100%	100%	75%	0.45	A
P3	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	122	279	38	87	90%	100%	75%	0.21	A
P4	Connecting Stair between Control Area N89A paid zone and southbound platform	5.00	4.00	38	677	12	212	100%	100%	75%	0.49	B
P5	Connecting Stair between Control Area N89 paid zone and northbound platform	6.50	5.50	119	187	37	58	90%	100%	75%	0.15	A
P6	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	39	1009	12	315	100%	100%	75%	0.60	B
P7	Connecting Stair between Control Area N88 paid zone and northbound platform	6.58	5.58	170	681	53	213	90%	100%	75%	0.45	A
P8	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	24	759	8	237	100%	100%	75%	0.45	A

Table 4C-240. CBD Tolling Alternative: Canal Street (A, C, E lines) – – Fare Array Area Analysis (AM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and Canal Street – southeast corner (N88)											
Two-Way Turnstiles	3	1,260	1,935	141	532	44	166	0.90	0.75	0.17	A
HEET	1	255	540	29	149	9	46	0.90	0.75	0.17	A
Sixth Avenue and Canal Street – southwest corner (N88A)											
Two-Way Turnstiles	3	1,260	1,935	52	1,382	16	432	1.00	0.75	0.31	A
HEET	1	255	540	11	386	3	121	1.00	0.75	0.31	A
Sixth Avenue and West Broadway – northeast corner (N89)											
Two-Way Turnstiles	4	1,680	2,580	119	187	37	58	0.90	0.80	0.06	A
Sixth Avenue and York Street – northeast corner (N89A)											
Two-Way Turnstiles	4	1,680	2,580	38	677	12	212	0.90	0.80	0.12	A
Sixth Avenue and Walker Street – east side (N90)											
Two-Way Turnstiles	4	1,680	2,580	212	1,172	66	366	0.90	0.80	0.24	A
HEET	2	510	1,080	65	490	20	153	0.90	0.80	0.24	A

Table 4C-241. CBD Tolling Alternative: Canal Street (A, C, E lines) – Stair Analysis (PM Peak Hour)

SUBWAY STAIR	LOCATION	ACTUAL WIDTH (FT)	EFFECTIVE WIDTH (FT)	PEAK-HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR		V/C RATIO	LOS
				In to Station	Out from Station	In to Station	Out from Station		In to Station	Out from Station		
AT&T	Connecting Stair between Control Area N90 free zone and AT&T building lobby	4.50	3.50	215	5	67	2	100%	100%	80%	0.13	A
S1	Street Stair at northeast corner of Walker Street and Sixth Avenue	5.50	4.50	1414	286	442	89	90%	100%	80%	0.91	C
M1	Connecting Stair between Control Area N90 free zone and Street Level S1 stair	8.25	7.00	1414	286	442	89	90%	100%	80%	0.59	B
S3	Street Stair at southeast corner of West Broadway and Sixth Avenue/Lispenard Street	5.50	4.50	301	76	94	24	90%	100%	80%	0.20	A
M4	Connecting Stair between free zone and Street Level S1 stair	12.50	11.25	301	76	94	24	90%	100%	80%	0.08	A
S4-M5	Street Stair at southwest corner of West Broadway and York Street	4.50	3.50	588	119	184	37	90%	100%	80%	0.49	B
M6A/M6B	Connecting Stair between free zone and Street Level S4/M5 stair	11.42	10.17	588	119	184	37	90%	100%	80%	0.17	A
S5	Street Stair at southwest corner of Laight Street and Sixth Avenue	4.50	3.50	388	121	121	38	90%	100%	80%	0.36	A
M7	Connecting Stair between free zone and Street Level S5 Stair	9.50	8.25	388	121	121	38	90%	100%	80%	0.15	A
M8	Connecting Stair between free zone and Street Level S6 Stair	5.67	4.67	1441	207	450	65	90%	100%	75%	0.85	C
S6	Street Stair at northeast corner of Sixth Avenue and Canal Street/Thompson Street	4.67	3.67	1441	207	450	65	90%	100%	75%	1.08	D
P1	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	559	31	175	10	100%	100%	75%	0.23	A
P2	Connecting Stair between Control Area N90 paid zone and southbound platform	8.00	7.00	512	208	160	65	90%	100%	75%	0.26	A
P3	Connecting Stair between Control Area N90 paid zone and northbound platform	6.50	5.50	559	31	175	10	100%	100%	75%	0.23	A
P4	Connecting Stair between Control Area N89A paid zone and southbound platform	5.00	4.00	58	3	18	1	100%	100%	75%	0.03	A
P5	Connecting Stair between Control Area N89 paid zone and northbound platform	6.50	5.50	182	29	57	9	90%	100%	75%	0.09	A
P6	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	525	173	164	54	90%	100%	75%	0.36	A
P7	Connecting Stair between Control Area N88 paid zone and northbound platform	6.58	5.58	1448	126	453	39	90%	100%	75%	0.67	B
P8	Connecting Stair between Control Area N88A paid zone and southbound platform	5.83	4.83	505	104	158	33	90%	100%	75%	0.31	A

Table 4C-242. CBD Tolling Alternative: Canal Street (A, C, E lines) – Fare Array Area Analysis (PM Peak Hour)

FARE ARRAY ELEMENT	QUANTITY	CAPACITY		PEAK HOUR VOLUMES		PEAK 15-MINUTE VOLUMES		FRICTION FACTOR	SURGE FACTOR (OUT)	V/C RATIO	LOS
		In to Station	Out from Station	In to Station	Out from Station	In to Station	Out from Station				
Sixth Avenue and Canal Street – southeast corner (N88)											
Two-Way Turnstiles	3	1,260	1,935	1,204	99	376	31	0.90	0.75	0.36	A
HEET	1	255	540	244	27	76	9	0.90	0.75	0.36	A
Sixth Avenue and Canal Street – southwest corner (N88A)											
Two-Way Turnstiles	3	1,260	1,935	857	217	268	68	0.90	0.75	0.29	A
HEET	1	255	540	173	60	54	19	0.90	0.75	0.29	A
Sixth Avenue and West Broadway – northeast corner (N89)											
Two-Way Turnstiles	4	1,680	2,580	182	29	57	9	0.90	0.80	0.04	A
Sixth Avenue and York Street – northeast corner (N89A)											
Two-Way Turnstiles	4	1,680	2,580	58	3	18	1	1.00	0.80	0.01	A
Sixth Avenue and Walker Street – east side (N90)											
Two-Way Turnstiles	4	1,680	2,580	1,250	190	391	59	0.90	0.80	0.29	A
HEET	2	510	1,080	379	80	119	25	0.90	0.80	0.29	A