
CHAPTER 19: TRANSIT AND PEDESTRIANS

A. INTRODUCTION

This chapter of the EIS describes the transit and pedestrian characteristics and potential impacts associated with the Proposed Action, which involves zoning map and text amendments for an area encompassing approximately 18 acres on portions of eight blocks in the Broadway Triangle area of Williamsburg, Brooklyn. The Project Area is generally bounded by Flushing Avenue to the south, Throop Avenue to the east, Lynch Street to the north, and Union Avenue, Walton Street, and Harrison Avenue to the west. As described in detail in earlier chapters of this EIS, the goals of the proposed zoning map and text amendments are to encourage housing production, including affordable housing, in an area well-served by mass transit, while permitting local commercial and community facility uses to support the growing residential community. Under the Proposed Action, the Broadway Triangle neighborhood would be rezoned to allow as-of-right residential development. Allowable densities for commercial uses would remain the same while new industrial uses would no longer be permitted.

Typically, CEQR assessments of large area-wide zoning proposals not associated with specific development projects assume a 10-year build period. This is the time frame that can be reasonably predicted into the foreseeable future without engaging in highly speculative projections. Thus, the transportation analyses in this EIS address a development program that could reasonably be constructed by 2018, described as the reasonable worst-case development scenario (RWCDS) in Chapter 1, "Project Description." This RWCDS identifies a total of 34 "projected" development sites considered most likely to be developed by 2018 as a result of the Proposed Action. Based on the RWCDS, the Proposed Action is expected to result in a net increase of approximately 1,851 dwelling units (DUs), 103,286 square feet of retail space, 23,522 square feet of office space and 35,456 square feet of community facility space. (This development is referred to as the "Proposed Project.") Compared to the future without the Proposed Action, there would be a net reduction of approximately 114,660 square feet of hotel space, 51,275 square feet of light industrial space and 28,697 square feet of auto repair space. The analyses in this chapter focus on the subway and local bus modes operated by MTA New York City Transit (NYCT), as well as pedestrian trips generated by the 34 projected development sites defined in this reasonable worst-case development scenario. The locations of the 34 projected development sites and their anticipated uses are shown in Figure 1-6 and listed in Table 1-1 in Chapter 1.

This chapter describes in detail the existing transit and pedestrian conditions in the study area. Future conditions in the year 2018 without the Proposed Action (the No-Action condition) are then determined, including additional transportation-system demand and any changes to transit and pedestrian facilities expected by the year 2018. The increase in travel demand resulting from the Proposed Action is then projected and added to the No-Action condition to develop the 2018 future with the Proposed Action (the With-Action condition). Any significant adverse impacts from project-generated trips are then identified.

B. OVERVIEW

The Proposed Action would ~~not~~ result in a significant adverse impact to southbound B46 buses in the weekday PM peak hour, and no impacts to subway stations or pedestrian facilities (sidewalks, corner areas or crosswalks). ~~transit or pedestrian impacts.~~

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SUBWAY SERVICE

The Proposed Action would generate a net total of 636 and 768 new subway trips (in and out combined) during the weekday AM and PM peak hours, respectively. Trips from projected development sites were assigned to individual subway stations based on proximity to station entrances and existing ridership patterns for the subway routes serving each station. The greatest incremental increase in subway trips as a result of the Proposed Action would occur at the Lorimer Street (J, M) station, which would experience approximately 347 new trips in the weekday AM peak hour and 419 in the PM peak hour. The subway station with the second greatest increase in trips as a result of the Proposed Action would be the Flushing Avenue (G) station, which would experience approximately 168 new trips in the AM peak hour and 199 in the PM. By contrast, the Broadway (G) station and the Flushing Avenue (J, M) station are each expected to receive 94 or fewer new trips in any peak hour as a result of the Proposed Action.

CEQR Technical Manual criteria typically require a detailed analysis of a subway station when the incremental increase in peak hour trips totals 200 persons per hour or more. As new subway trips generated by the Proposed Action in 2018 would total 199 trips (one trip below this threshold) in the weekday PM peak hour at the Flushing Avenue (G) subway station, and would exceed the 200-trip threshold in both the AM and PM peak hours at the Lorimer Street (J, M) subway station, these two stations are analyzed quantitatively in this EIS. The analysis of 2018 future conditions with the Proposed Action at the Flushing Avenue (G) subway station indicates that fare arrays N414 and N414AK and the two entrance stairs at this station would all continue to operate below capacity at an acceptable LOS A in both the AM and PM peak hours. At the Lorimer Street (J, M) subway station, fare arrays J5 and J5-H2 and the four entrance stairs at this station would all continue to operate at an acceptable LOS C or better in all peak hours, while fare array J5-H1, a high entry/exit turnstile for the Manhattan-bound platform, would operate at a marginal LOS D. However, all of these facilities would continue to operate below capacity in all peak hours in the With-Action condition. The Proposed Action would therefore not result in significant adverse impacts at either the Flushing Avenue (G) subway station or the Lorimer Street (J, M) subway station in 2018 based on *CEQR Technical Manual* criteria.

BUS SERVICE

The Proposed Action would generate a net total of 227 and 319 new local bus trips (in and out combined) in the AM and PM peak hours, respectively. These new bus trips would be distributed among the five NYCT local bus routes operating within one-quarter mile of the Project Area – the B43, B46, B48, B57 and B60. Trips from projected development sites were assigned to individual bus routes based on proximity and existing ridership patterns at the maximum load point for each route. With this added demand, there would be a capacity shortfall of approximately 32 spaces on southbound B46 buses in the PM peak hour. All other analyzed bus routes would continue to operate with available capacity at their maximum load points in the peak direction in each peak hour in the 2018 future with the Proposed Action.

PEDESTRIANS

The Proposed Action is expected to generate a net total of 729 walk-only trips in the weekday AM peak hour, 2,704 in the midday and 1,660 in the weekday PM peak hour. Trips en route to and from area subway stations and bus stops would account for an additional 863, 730 and 1,087 new pedestrian trips during the weekday AM, midday and PM peak hours, respectively. These new pedestrian trips are expected to be widely distributed throughout the Project Area due to the dispersed locations of the projected development sites, with the highest concentrations of new demand occurring along corridors

connecting projected development sites to area subway stations. The analysis of pedestrian conditions therefore focuses on sidewalks, corner areas and crosswalks that provide the primary access between projected development sites and the entrances to the two subway stations that would be used by the majority of project-generated subway demand – the Lorimer Street (J, M) subway station on Broadway, and the Flushing Avenue (G) subway station at the intersection of Flushing, Union and Marcy Avenues. These include sidewalks, corner areas and crosswalks along the Gerry Street, Wallabout Street, Lorimer Street and Throop Avenue corridors, and at the Broadway/Wallabout Street and Flushing Avenue/Union Avenue/Marcy Avenue intersections adjacent to subway station entrances.

In the future with the Proposed Action, all analyzed sidewalks would continue to operate at an acceptable LOS A or B under platoon conditions in the weekday AM, midday and PM peak hours. As all analyzed sidewalks would continue to operate with flow rates of less than 13 persons/foot-width/minute in all analyzed peak hours, no significant adverse sidewalk impacts are anticipated to result from the Proposed Action under *CEQR Technical Manual* criteria. All analyzed corner areas and crosswalks would continue to operate at an acceptable LOS A or B in the weekday AM, midday and PM peak hours. As all analyzed corners and crosswalks would continue to operate with an average occupancy of more than 20 square feet per pedestrian in all analyzed peak hours, no significant adverse impacts to corner areas or crosswalks are anticipated under *CEQR Technical Manual* criteria.

C. METHODOLOGY

In this chapter, the existing conditions at the transit and pedestrian facilities that are expected to be used by new demand generated by projected development sites are described in detail. The transit analyses focus on the weekday 8-9 AM and 5-6 PM peak commuter hours when overall demand on the subway and bus systems is typically greatest. The pedestrian analyses focus on the weekday 7:30-8:30 AM, 12:45-1:45 PM (midday) and 4:30-5:30 PM hours as counts of existing pedestrian volumes indicate that these are the peak periods for pedestrian demand in the Project Area. The future condition without the Proposed Action (the No-Action condition) is determined based on additional transit and pedestrian demand from anticipated developments and general background growth, along with any changes to transit facilities or services expected by 2018. Increases in travel demand resulting from the Proposed Action, minus the travel demand eliminated due to displaced No-Action uses, are then projected and added to the base No-Action condition to develop the 2018 future condition with the Proposed Action (the With-Action condition). Any significant adverse impacts from the Proposed Action are then identified.

SUBWAY SERVICE

SELECTION OF SUBWAY STATIONS TO BE ANALYZED

The analysis of subway station conditions focuses on those stations in the vicinity of the Project Area that would be used by project-generated subway demand. These include the Broadway and Flushing Avenue stations on the Crosstown (G) Line, which operates beneath Union and Marcy Avenues, and the Lorimer Street and Flushing Avenue stations on the Myrtle Avenue (J, M) Line, which operates along an elevated structure above Broadway. The *CEQR Technical Manual* typically requires a detailed analysis of a transit facility when the incremental increase in peak hour trips totals 200 persons per hour or more. As discussed later in this chapter, net new subway trips generated by the Proposed Action would reach or exceed this threshold at two of the four subway stations – Lorimer Street (J, M) and Flushing Avenue (G). These stations were therefore selected for quantitative analysis in the EIS. The analysis examines key station elements under peak 15-minute flow conditions, focusing on fare arrays (e.g., turnstiles, exit gates,

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etc.) and street-level entrance stairs. As discussed later in this chapter, the remaining two subway stations serving the Project Area would experience a net increase of 94 or fewer trips in each peak hour. These subway stations are therefore discussed qualitatively in this EIS.

ANALYSIS / METHODOLOGY

The analysis of subway station conditions uses the design capacities for stairs, escalators, corridors, turnstiles, and high revolving exits (HEETs) specified in *NYCTA Station Planning and Design Guidelines*, as well as procedures set forth in *Pedestrian Planning and Design* by John J. Fruin. All analyses reflect peak 15-minute conditions in each peak hour. The stairway analyses were conducted using the Fruin pedestrian level of service (LOS) methodology, which equates pedestrian flow per foot of effective stairway or corridor width per minute (PFM) with qualitative measures of pedestrian comfort. Based on the calculated values of pedestrian volumes per foot width of stairway or corridor per minute, six levels of service are defined with letters A through F, as shown in Table 19-1. LOS A is representative of free flow conditions without pedestrian conflicts and LOS F depicts significant capacity limitations and inconvenience. NYCT's minimum standard for pedestrian conditions has traditionally been established as the threshold between LOS C and LOS D, at a volume-to-capacity (v/c) ratio of 1.00. Absolute capacity for a stair is typically considered to be about 15 PFM.

Table 19-1
Stairway Level of Service Definitions

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

Note: PFM—persons per foot of effective width per minute.

Practical capacities are calculated for each stairway analyzed by multiplying the effective stair width in feet by 10 PFM (the LOS C/D threshold), and by an adjustment factor to account for two-directional friction (where applicable). Peak 15-minute volumes are then compared with the capacities to obtain a v/c ratio for each peak hour. Using this methodology, LOS A corresponds to a v/c ratio of up to 0.5, LOS B corresponds to 0.51 to 0.70 and LOS C corresponds to 0.71 to 1.00 (capacity). LOS D, E, and F represent demand levels that exceed capacity, with v/c ratios of 1.01 to 1.30, 1.31 to 1.70, and 1.71 or greater, respectively.

Operating conditions for escalators, turnstiles, HEETs, and high revolving exit gates are also described in terms of LOS and volume-to-capacity ratios, with LOS A corresponding to a v/c ratio of less than 0.2, LOS B corresponding to 0.2 to 0.4, LOS C corresponding to 0.4 to 0.6, LOS D corresponding to 0.6 to 0.8, LOS E corresponding to 0.8 to 1.0, and LOS F corresponding to a v/c ratio of greater than 1.0. Any volume-to-capacity ratio greater than 1.0 signifies volumes beyond capacity and extended queuing.

IMPACT CRITERIA

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

For turnstiles, escalators, and high-wheel exit gates, the *CEQR Technical Manual* defines a significant impact as an increase from a No-Action volume-to-capacity ratio of below 1.00 to a v/c ratio of 1.00 or greater. Where a facility is already at a v/c ratio of 1.00 or greater, a 0.01 change in v/c ratio is also considered significant.

BUS SERVICE

It is anticipated that project-generated bus trips would be concentrated on a total of five NYCT local bus routes that provide service within a one-quarter mile radius of the Project Area, including the B43, B46, B48, B57 and B60. Three other routes – the B15, B44 and B47 – operate at the periphery of this radius, or only operate in proximity to the Project Area in one direction. They are therefore not expected to attract a substantial amount of project-generated demand and are not included in the analysis of local bus conditions.

The analysis of local bus conditions focuses on conditions in the peak direction at the maximum load point for each route during the weekday 8-9 AM and 5-6 PM peak commuter hours when overall demand on the bus system is typically greatest. Assignment of project increment bus trips to individual routes is based on existing demand patterns and the relative proximity of each route to projected development sites. Identification of impacts is based on current NYCT guidelines under which increases in bus load levels to above their maximum capacity at any load point is considered a significant adverse impact as it would necessitate the addition of more bus service along that route.

PEDESTRIANS

STUDY AREA

Walk-only trips from projected development sites (i.e., walk trips not associated with other modes) would be widely dispersed among pedestrian facilities (sidewalks, corner areas and crosswalks) throughout the proposed rezoning area. However, concentrations of new pedestrian trips are expected during peak periods along corridors connecting projected development sites to area subway stations. The analysis of pedestrian conditions therefore focuses on sidewalks, corner areas and crosswalks that provide the primary access between projected development sites and the entrances to the two subway stations that would be used by the majority of project-generated subway demand – the Lorimer Street (J, M) subway station on Broadway, and the Flushing Avenue (G) subway station at the intersection of Flushing, Union and Marcy Avenues. These include sidewalks, corner areas and crosswalks along the Gerry Street,

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Wallabout Street, Lorimer Street and Throop Avenue corridors, and at the Broadway/Wallabout Street and Flushing Avenue/Union Avenue/Marcy Avenue intersections adjacent to subway station entrances.

ANALYSIS / METHODOLOGY

Peak 15-minute pedestrian flow conditions during the weekday AM, midday and PM peak hours are analyzed using the *2000 Highway Capacity Manual* methodology. Under this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity and developing a ratio of existing volume flows to capacity conditions. The resulting ratio is then compared with level of service (LOS) standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a "time-space" analysis methodology is employed which takes into consideration the traffic light cycle at intersections.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. Table 19-2 defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, as based on the *Highway Capacity Manual* methodology.

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

Table 19-2
Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions*

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

Note: *Based on average conditions for 15 minutes.

Source: *Highway Capacity Manual*.

IMPACT CRITERIA

For areas of the City outside of the Manhattan Central Business District and Downtown Brooklyn, *CEQR Technical Manual* criteria define a significant adverse sidewalk impact to have occurred when the platoon flow rate increases by two or more pedestrians per foot per minute for No-Action conditions characterized by flow rates over 13 PFM (mid-LOS D). For crosswalk and corner areas, a significant adverse impact is defined as a decrease in pedestrian space of one or more square feet per pedestrian (SF/ped) when the No-Action condition has an average occupancy under 20 SF/ped (mid-LOS D). Increments of one square foot or more applied to No-Action conditions within LOS D or any deterioration from LOS C or better to LOS D may be perceptible, but not necessarily significant impacts.

D. EXISTING CONDITIONS

DATA COLLECTION

Counts at analyzed stairways and fare arrays at the Lorimer Street (J, M) and Flushing Avenue (G) subway stations were conducted during the weekday AM and PM peak periods in November 2008 and December 2008. Weekday AM, midday and PM peak hour pedestrian counts were also conducted at analyzed sidewalks, corner areas and crosswalks at these times.

SUBWAY SERVICE

A total of four subway stations in the vicinity of the Project Area would be used by demand generated by projected development sites. These include the Broadway and Flushing Avenue stations on the Crosstown (G) Line, and the Flushing Avenue and Lorimer Street stations on the Jamaica (J, M) Line (see Figure 19-1). Table 19-3 shows the average weekday entering turnstile counts at these four stations for the years 2005 through 2007, as well as the 2007 ranking of each station based on average weekday ridership relative to all 423 stations system-wide. Overall, demand increased by approximately 9.7 percent from 2005 to 2007 at subway stations serving the Project Area. The largest percentage increase occurred at the Lorimer Street (J, M) station, which experienced a 17.1 percent increase over the three-year period. Demand at the Flushing Avenue (G) station declined 1.6 percent, likely reflecting the phasing out of operations at the adjacent Pfizer pharmaceutical manufacturing facility. The Broadway (G) and Flushing Avenue (J, M) stations experienced increases in ridership of 6.8 percent and 10.9 percent, respectively, over the 2005 through 2007 period.

As discussed later in this chapter, new subway trips generated by the Proposed Action would only exceed the 200-trips-per-hour *CEQR Technical Manual* threshold for a detailed analysis in one or more analyzed peak hours at the Flushing Avenue (G) station and the Lorimer Street (J, M) station, and these two stations are therefore analyzed quantitatively in this EIS. A qualitative discussion of existing conditions at the other two stations serving the rezoning area (each of which would experience fewer than 200 project-generated trips in any peak hour) is also provided. The physical characteristics and the services provided at each subway station serving the Project Area are described below, along with the results of the analysis of 2008 existing conditions at the entrance stairs and fare arrays at the Flushing Avenue (G) and Lorimer Street (J, M) stations during the weekday 8-9 AM and 5-6 PM peak hours.

Table 19-3
Average Weekday Entering Turnstile Counts

Subway Station	2007 Rank	2005	2006	2007	Percent Change 2005—2007
Broadway (G) Station	344	3,037	3,134	3,242	6.8%
Flushing Avenue (G) Station	398	1,992	1,952	1,961	(1.6%)
Flushing Avenue (J, M) Station	200	6,132	6,490	6,803	10.9%
Lorimer Street (J, M) Station	312	3,295	3,647	3,858	17.1%
Totals		14,456	15,223	15,864	9.7%

Notes:

Ranking out of 423 subway stations system-wide by 2007 average weekday ridership.

Source: NYCT 2007 turnstile registration data.

BROADWAY (G) STATION

As shown in Figure 19-1, the Broadway (G) subway station is located beneath Union Avenue to the north of the Project Area. This station has two side platforms, with street-level access provided by four street stairs at the intersection of Union Avenue, Broadway and Heyward Street. (The stair at the southwest corner of the intersection is currently closed due to construction on the adjacent property.) The station is served at all times by G trains operating on the Crosstown Line between Court Square in Long Island City, Queens, and ~~Smith 9th Streets~~ Church Avenue in Brooklyn. (The Crosstown Line is the only NYCT subway line that does not provide service to Manhattan.) During evening and late night periods and on weekends, G train service is extended to Forest Hills-71st Avenue.

As shown in Table 19-3, with an average weekday ridership of approximately 3,242 entering passengers in 2007, the Broadway (G) station is ranked 344th in weekday ridership among the subway system’s 423 subway stations. Ridership at this station increased by approximately 6.8 percent from 2005 through 2007. As discussed later in this chapter, the Proposed Action would generate an estimated 41 new subway trips at this station in the weekday AM peak hour and 56 in the PM peak hour, below the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A detailed quantitative analysis of the Broadway (G) subway station is therefore not provided in this EIS.

FLUSHING AVENUE (G) STATION

The Flushing Avenue (G) station is located south of the Project Area at the intersection of Union, Flushing and Marcy Avenues and Gerry Street. This station, which is served at all times by G trains operating on the Crosstown Line, has two side platforms, each with its own mezzanine and fare array. As shown in Figure 19-1, access to the Queens-bound platform is via street stair S2 located at the northeast corner of Union Avenue and Gerry Street, and fare array N414AK with three turnstiles and two high entry/exit turnstiles (HEETs). An agent is on duty in the token booth weekdays from 6:10 AM to 9:05 PM, with access limited to the two HEETs at all other times. Stair S1 at the southwest corner of Flushing and Marcy Avenues provides access to the Brooklyn-bound platform via fare array N414, which is comprised of three turnstiles. An agent is on duty at this token booth at all times.

As shown in Table 19-3, with an average weekday ridership of approximately 1,961 entering passengers in 2007, the Flushing Avenue (G) station is ranked 398th in weekday ridership among the subway

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system's 423 subway stations. Ridership at this station decreased by approximately 1.6 percent from 2005 through 2007, likely reflecting the phasing out of operations at the adjacent Pfizer pharmaceutical manufacturing facility. As discussed later in this chapter, the Proposed Action would generate an estimated 168 new subway trips at this station in the weekday AM peak hour and 199 in the PM peak hour. As this would be close to the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis, a detailed quantitative analysis of the Flushing Avenue (G) station is provided in this EIS. As shown in Table 19-4, both street stairs and both fare arrays at this station currently operate at an acceptable LOS A in both the AM and PM peak hours.

FLUSHING AVENUE (J, M) STATION

As shown in Figure 19-1, the Flushing Avenue (J, M) subway station is located to the southeast of the Project Area at the intersection of Broadway and Flushing Avenue. This station, which is on an elevated structure above Broadway, is comprised of two side platforms served from a common mezzanine located between the street and platform levels. Stairs to the mezzanine level are located at the northeast and southwest corners of the intersection, and an elevator is also located at the southwest corner. This station is served at all times by J and M trains operating on the Jamaica Line.

As shown in Table 19-3, with an average weekday ridership of approximately 6,803 entering passengers in 2007, the Flushing Avenue (J, M) station is ranked 200th in weekday ridership among the subway system's 423 subway stations. Ridership at this station increased by approximately 10.9 percent from 2005 through 2007. As discussed later in this chapter, the Proposed Action is expected to generate an estimated 80 new subway trips at this station in the weekday AM peak hour and 94 in the PM peak hour, less than the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A detailed quantitative analysis of the Flushing Avenue (J, M) subway station is therefore not provided in this EIS.

LORIMER STREET (J, M) STATION

The Lorimer Street (J, M) subway station is located to the east of the Project Area at the intersection of Broadway and Lorimer Street. This station, which is on an elevated structure above Broadway, is comprised of two side platforms served from a common mezzanine located between the street and platform levels. As shown in Figure 19-1, two stairs to the mezzanine level are located at the northeast and northwest corners of the Broadway/Lorimer Street intersection. Access to platform level is controlled by three turnstiles and two high revolving exit gates (one for each street stair). Each of the two platforms is also served by an additional stair located near the intersection of Broadway and Wallabout Street. Platform access from each of these stairs is controlled by a single high entry/exit turnstile. This station is served at all times by J and M trains operating on the Jamaica Line.

As shown in Table 19-3, with an average weekday ridership of approximately 3,858 entering passengers in 2007, the Flushing Avenue (J, M) station is ranked 312th in weekday ridership among the subway system's 423 subway stations. Ridership at this station increased by approximately 17.1 percent from 2005 through 2007. As discussed later in this chapter, compared to No-Action demand, the Proposed Action is expected to generate an estimated 347 new subway trips at this station in the weekday AM peak hour and 419 in the PM peak hour, greater than the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A detailed quantitative analysis of the Lorimer Street (J, M) subway station is therefore provided in this EIS. As shown in Table 19-5, in both peak hours all street stairs and fare arrays at this station currently operate at an acceptable LOS C or better with greater than 50 percent of capacity available.

**Table 19-4
Existing Conditions at the Flushing Avenue (G) Subway Station**

Stairways									
No.	Station Element/Location	Peak Period	Actual Width in Feet	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C (5)	LOS
S1	Brooklyn-bound Stairway @ Flushing and Union Avenues	8-9 AM 5-6 PM	4.5 4.5	2.80 2.80	420 420	55 63	1.31 1.50	0.13 0.15	A A
S2	Queens-bound Stairway @ Flushing and Union Avenues	8-9 AM 5-6 PM	6.0 6.0	4.00 4.00	600 600	82 46	1.37 0.77	0.14 0.08	A A
Fare Arrays and Exit Gates									
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS			
N414	Brooklyn-bound Fare Array 3 entry/exit turnstiles	8-9 AM 5-6 PM	1,440 1,440	55 63	0.04 0.04	A A			
N414AK	Queens-bound Fare Array 3 entry/exit turnstiles 2 high entry/exit turnstile	8-9 AM 5-6 PM	2,040 2,040	82 46	0.04 0.02	A A			
Notes:									
(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.									
(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).									
(3) Source: November 2008 and December 2008 field counts.									
(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.									
(5) Stairway LOS - v/c ratio relationship:									

Table 19-5
Existing Conditions at the Lorimer Street (J, M) Subway Station

Stairways									
No.	Station Element/Location	Peak Period	Actual Width in Feet	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C (5)	LOS
S1	Stairway @ NW Corner Broadway/Wallabout Street	8-9 AM	5.0	3.20	480	43	0.90	0.09	A
		5-6 PM	5.0	3.20	480	73	1.52	0.15	A
S2	Stairway @ NE Corner Broadway/Moore Street	8-9 AM	5.0	3.20	480	125	2.60	0.26	A
		5-6 PM	5.0	3.20	480	24	0.50	0.05	A
S3	Stairway @ NW Corner Broadway/Lorimer Street	8-9 AM	5.0	3.20	480	116	2.42	0.24	A
		5-6 PM	5.0	3.20	480	61	1.27	0.13	A
S4	Stairway @ NE Corner Broadway/Lorimer Street	8-9 AM	5.0	3.20	480	152	3.17	0.32	A
		5-6 PM	5.0	3.20	480	117	2.44	0.24	A

Fare Arrays and Exit Gates						
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
J5	Lorimer Street Fare Array 3 entry/exit turnstiles 2 high revolving exit gates	8-9 AM	2,340	268	0.11	A
		5-6 PM	2,340	178	0.08	A
H2	Queens-bound Platform Fare Array @ Wallabout Street 1 high entry/exit turnstile	8-9 AM	300	43	0.14	A
		5-6 PM	300	73	0.24	B
H1	Manhattan-bound Platform Fare Array @ Wallabout Street 1 high entry/exit turnstile	8-9 AM	300	125	0.42	C
		5-6 PM	300	24	0.08	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Source: November 2008 and December 2008 field counts.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

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

BUS SERVICE

As shown in Figure 19-2, a total of eight NYCT local bus routes operate within one-quarter mile of the Project Area. It is anticipated, however, that project-generated bus trips would be concentrated on a total of five of these routes including the B43, B46, B48, B57 and B60. The remaining three routes – the B15, B44 and B47 – all operate at the periphery of this radius, or only operate in proximity to the Project Area in one direction. They are therefore not expected to attract a substantial number of project-generated trips and are not included in the analysis of local bus conditions.

As discussed in more detail later in this chapter, compared to the No-Action condition, the Proposed Action would generate a net increase of 227 bus trips in the weekday AM peak hour and 319 bus trips in the PM peak hour. As these numbers of new bus trips exceed the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis, a quantitative analysis of local bus conditions is provided in this EIS. Existing conditions on each of the five local bus routes expected to be used by project-generated demand are shown in Table 19-6 and discussed below. The analysis examines conditions at the maximum load point in the peak direction in the weekday 8-9 AM and 5-6 PM peak hours. (The maximum load point is the point where the buses carry the greatest number of passengers during the peak hour.) The analysis shows the average passengers per bus, and the available peak hour capacity on each route based on a maximum of 65 passengers per bus for standard buses. For example, as shown in Table 19-6, the route with the greatest demand is the B46, which carries approximately 2,197 passengers at its maximum load point in the peak northbound direction in the AM peak hour, and 1,751 passengers in the peak southbound direction in the PM peak hour. The B46 route averages 55 passengers per northbound bus in the AM and 58 passengers per southbound bus in the PM.

The following provides a brief description of each of the five analyzed NYCT local bus routes.

B43 (Lefferts Gardens/Greenpoint)

The B43 provides daily service in Brooklyn between a northern terminus at Box Street/Manhattan Avenue in Greenpoint and a southern terminus at Lincoln Road/Flatbush Avenue in the Prospect-Lefferts Gardens neighborhood at all times. As shown in Figure 19-2, in the vicinity of the Project Area this route primarily operates along Throop, Tompkins, Flushing and Graham Avenues. During the AM peak hour, the maximum load point in the peak northbound direction occurs at Throop and Myrtle Avenues with an average of 50 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction occurs at Graham Avenue and Grand Street, with an average of 38 passengers per bus.

B46 (Kings Plaza/Williamsburg)

The B46 provides daily, Limited-Stop and local service in Brooklyn between a northern terminus at the Williamsburg Bridge Plaza in Williamsburg and a southern terminus at Kings Plaza in Marine Park. The full route between Williamsburg Bridge Plaza and Kings Plaza is served days and evenings by Limited-Stop buses. When Limited-Stop service is provided, local buses operate between DeKalb Avenue/Malcolm X Boulevard and Kings Plaza and/or Avenue H/Utica Avenue. Late nights, local buses operate along the entire route. In the vicinity of the Project Area, B46 buses operate along Broadway. During the AM peak hour, the maximum load point in the peak northbound direction for the combined Limited-Stop and local service occurs at Utica Avenue and Eastern Parkway with an average of 55 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction also occurs at Utica Avenue and Eastern Parkway, with an average of 58 passengers per bus.

**Table 19-6
Existing Local Bus Conditions**

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	Peak Hour Passengers (2)	Average Passengers Per Bus	Available Capacity (3)	Notes
AM	B43	NB	Throop Ave & Myrtle Ave	6	298	50	92	
	B46	NB	Utica Ave & Eastern Parkway	40	2,197	55	403	(4)
	B48	SB	Franklin Ave & Flushing Ave	6	231	39	159	
	B57	WB	Flushing Ave & Nostrand Ave	6	257	43	133	
	B60	NB	Rockaway Ave & Hegman Ave	10	465	47	185	
PM	B43	SB	Graham Ave & Grand Street	6	225	38	165	
	B46	SB	Utica Ave & Eastern Parkway	30	1,751	58	199	(4)
	B48	NB	Lorimer St & Broadway	5	169	34	156	
	B57	EB	Flushing Ave & Nostrand Ave	5	195	39	130	
	B60	SB	Rockaway Ave & Hegman Ave	6	264	44	126	

Notes:

- (1) Peak hours: weekday 7:30-8:30 AM and 5-6 PM.
- (2) Based on most currently available data from NYCT from years 2006 and 2007.
- (3) Available capacity based on MTA NYCT loading guidelines of 65 passengers per standard bus unless otherwise noted.
- (4) Combined local and limited service.

Broadway Triangle

B48 (Lefferts Gardens/Greenpoint)

The B48 provides daily service in Brooklyn between a northern terminus at Meeker/Gardner Avenues in Greenpoint and a southern terminus at Lincoln Road/Flatbush Avenue in the Prospect-Lefferts Gardens neighborhood at all times. In the vicinity of the Project Area, this route primarily operates along Lorimer Street. During the AM peak hour, the maximum load point in the peak southbound direction occurs at Franklin and Flushing Avenues with an average of 39 passengers per bus. During the PM peak hour, the maximum load point in the peak northbound direction occurs at Lorimer Street and Broadway, with an average of 34 passengers per bus.

B57 (Downtown Brooklyn/Maspeth)

The B57 provides daily service at all times between an eastern terminus at Fresh Pond Road/Flushing Avenue in Maspeth, Queens and a western terminus at Boerum Place/Livingston Street in Downtown Brooklyn. In the vicinity of the Project Area, this route operates along Flushing Avenue. During the AM peak hour, the maximum load point in the peak westbound direction occurs at Flushing and Nostrand Avenues with an average of 43 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction also occurs at Flushing and Nostrand Avenues, with an average of 39 passengers per bus.

B60 (Williamsburg/Canarsie)

The B60 provides daily service at all times in Brooklyn between a northern terminus at Williamsburg Bridge Plaza in Williamsburg and a southern terminus at Williams and Flatlands Avenues in Canarsie. In the vicinity of the Project Area, this route primarily operates along Messerole Street (northbound) and Montrose Avenue (southbound). During the AM peak hour, the maximum load point in the peak northbound direction occurs at Rockaway and Hegman Avenues with an average of 47 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction also occurs at Rockaway and Hegman Avenues, with an average of 44 passengers per bus.

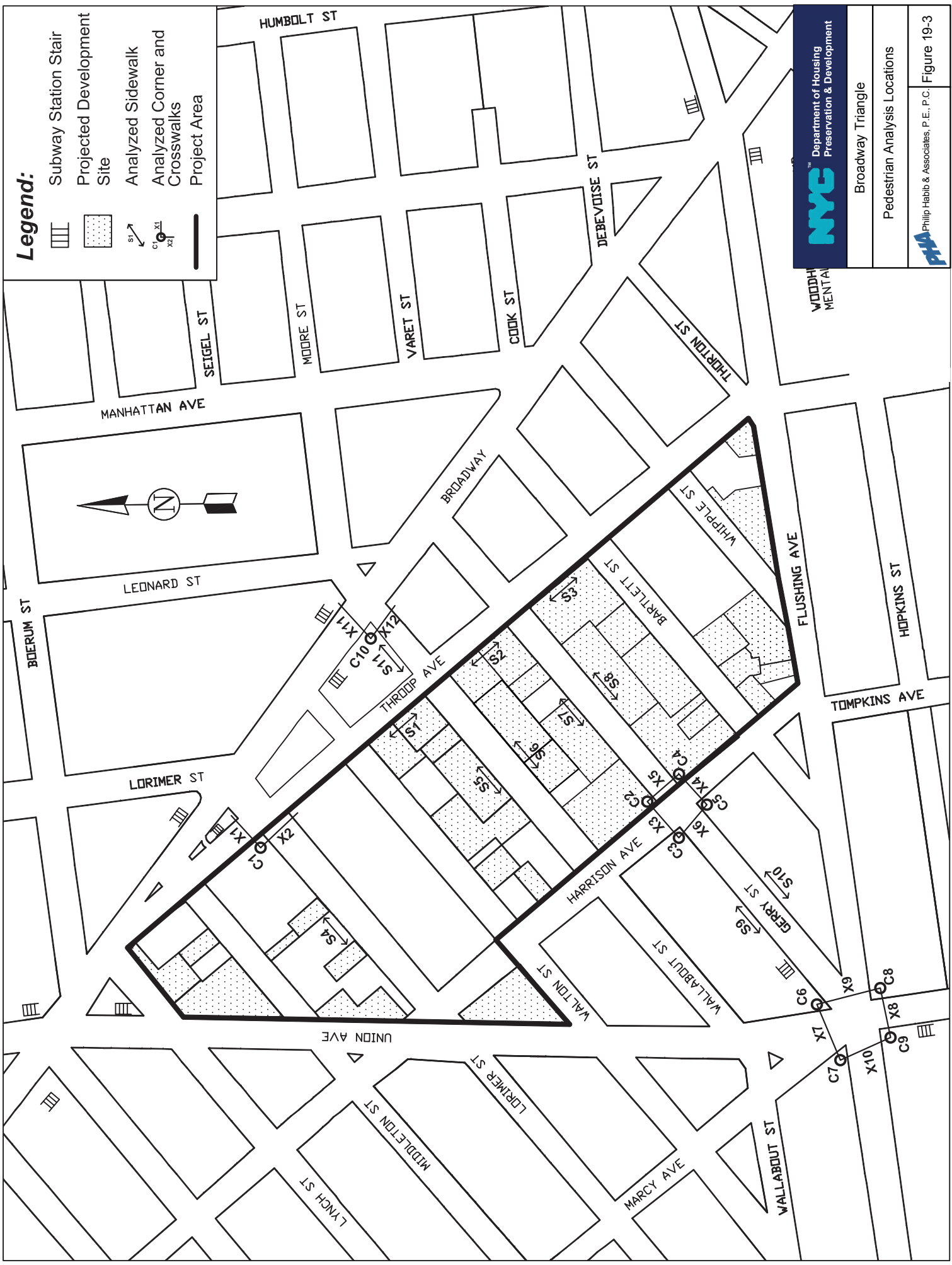
PEDESTRIANS

Walk-only trips from the 34 projected development sites (i.e., walk trips not associated with other modes) would be widely dispersed among pedestrian facilities (sidewalks, corner areas and crosswalks) throughout the Project Area. However, concentrations of new pedestrian trips are expected during peak periods along corridors connecting projected development sites to area subway stations. The analysis of pedestrian conditions therefore focuses on sidewalks, corner areas and crosswalks that provide the primary access between projected development sites and the entrances to the two subway stations that would be used by the majority of project-generated subway demand – the Lorimer Street (J, M) subway station on Broadway, and the Flushing Avenue (G) subway station at the intersection of Flushing, Union and Marcy Avenues. As shown in Figure 19-3, analyzed pedestrian facilities include sidewalks, corner areas and crosswalks along the Gerry Street, Wallabout Street, Lorimer Street and Throop Avenue corridors, and at the Broadway/Wallabout Street and Flushing Avenue/Union Avenue/Marcy Avenue intersections adjacent to subway station entrances.

Analyzed sidewalks along Throop Avenue generally range from 11 to 18 feet in width, while those along the Wallabout Street and Gerry Street corridors generally range 12 to 18 feet in width. The analyzed sidewalk on the north side of Lorimer Street west of Throop Avenue is approximately 15 feet in width.

Legend:

-  Subway Station Stair
-  Projected Development Site
-  Analyzed Sidewalk
-  Analyzed Corner and Crosswalks
-  Project Area



NYC Department of Housing
Preservation & Development

Broadway Triangle

Pedestrian Analysis Locations

PHPA Philip Habib & Associates, P.E., P.C. Figure 19-3

* This figure has been modified for the FEIS to reflect the revised boundaries of Projected Development Sites 15 and 16.

Broadway Triangle

Analyzed crosswalks are generally 14 to 16 feet in width except for the 11-foot-wide west crosswalk on Flushing Avenue at Union/Marcy Avenues. As the north crosswalk on Union/Marcy Avenues at this intersection was not marked during the 2008 pedestrian data collection effort (possibly due to recently-completed street reconstruction work), a width of 11 feet was assumed based on a photograph of this intersection from a prior year. In addition, it should be noted that both the north and south crosswalks on Harrison Avenue at Gerry Street had not been installed at the time of the data collection effort. For the purposes of the analysis, these two crosswalks were assumed to be 17 feet and 16 feet in width, respectively, based on the widths of the adjacent sidewalks. In general, existing pedestrian volumes in the vicinity of the Project Area are relatively light, with peak 15-minute volumes at analyzed sidewalks ranging from one to 67 in each peak period.

Tables 19-7 through 19-9 show the results of the analyses of existing sidewalk, corner area and crosswalk conditions for the weekday AM, midday and PM peak hours. As shown in Table 19-7, all analyzed sidewalks currently operate at an acceptable LOS A (unrestricted flow) in the weekday AM, midday and PM peak hours under platoon conditions. As shown in Tables 19-8 and 19-9, all analyzed corner areas and crosswalks also currently operate at an acceptable LOS A in all peak hours.

E. FUTURE CONDITION WITHOUT THE PROPOSED ACTIONS

Between 2008 and 2018, it is expected that transit and pedestrian demands in the vicinity of the Project Area would increase due to long-term background growth as well as development that could occur pursuant to existing zoning. Development on projected development sites is expected to add a net total of approximately five dwelling units, 19,600 square feet of office space, 69,600 square feet of local retail space, and 114,660 square feet of hotel space (143 rooms) compared to existing conditions. Approximately 32,500 square feet of existing light industrial space and 108,648 square feet of auto repair space would be displaced by this new development.

In order to forecast the future condition without the Proposed Action (the No-Action condition), development on projected development sites, and developments listed on Table 18-5 in Chapter 18 were considered, in addition to an annual background growth rate of one percent per year applied to existing travel demand for the 2008 to 2018 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Brooklyn outside of the Downtown area, is applied to account for smaller projects and general increases in travel demand not attributable to specific development projects.

The following sections describe how the growth in travel demand in the vicinity of the Project Area is expected to affect transit and pedestrian facilities in the 2018 future without the Proposed Action.

SUBWAY SERVICE

Under No-Action conditions, subway demand would grow as a result of background growth and new development projects. Development on projected development sites is expected to add trips at both the Flushing Avenue (G) subway station and the Lorimer Street (J, M) subway station. Tables 19-10 and 19-11 show the results of the analysis of No-Action AM and PM peak hour conditions for the analyzed station elements at these two subway stations, respectively. As shown in Tables 19-10 and 19-11, in the future without the Proposed Action, all analyzed stairways and fare arrays at the Flushing Avenue (G) and Lorimer Street (J, M) subway stations would continue to operate at an acceptable LOS C or better with available capacity in both the AM and PM peak hours.

**Table 19-7
Existing Sidewalk Conditions**

Sidewalk No.	Location	Total Width	Effective Width (1)	Peak 15-Minute Volumes			Flow Rate (persons/foot/min)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
S1	Throop Av between Walton St and Wallabout St	18	15	19	7	13	0.1	0.0	0.1	A	A	A	A	A	A
S2	Throop Av between Wallabout St and Gerry St	13	10	15	6	10	0.1	0.0	0.1	A	A	A	A	A	A
S3	Throop Av between Gerry St and Bartlett St	11	8	16	8	18	0.1	0.1	0.2	A	A	A	A	A	A
S4	Lorimer St between Harrison Av and Throop Av	15	12	16	9	17	0.1	0.1	0.1	A	A	A	A	A	A
S5	Wallabout St between Harrison Av and Throop Av	18	15	21	11	11	0.1	0.0	0.0	A	A	A	A	A	A
S6	Wallabout St between Harrison Av and Throop Av	12	9	9	9	10	0.1	0.1	0.1	A	A	A	A	A	A
S7	Gerry St between Harrison Av and Throop Av	12	9	13	8	19	0.1	0.1	0.1	A	A	A	A	A	A
S8	Gerry St between Harrison Av and Throop Av	18	15	6	11	16	0.0	0.0	0.1	A	A	A	A	A	A
S9	Gerry St between Union Av and Harrison Av	18	15	9	10	7	0.0	0.0	0.0	A	A	A	A	A	A
S10	Gerry St between Union Av and Harrison Av	18	15	11	6	4	0.0	0.0	0.0	A	A	A	A	A	A
S11	Wallabout St between Throop Av and Broadway	18	15	8	3	1	0.0	0.0	0.0	A	A	A	A	A	A

Notes:
(1) Effective width excludes 1.5 ft for wall avoidance and 1.5 ft for curbside avoidance.

Table 19-8
Existing Corner Conditions

No.	Intersection	Corner	Curb Radii (feet)	Peak 15-Minute Volume			Avg Pedestrian Space (sq-ft/ped)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM
C1	Throop Av @ Lorimer St	NW	12	2	2	3	335.5	2,061.8	658.3	A	A	A
C2	Harrison Av @ Gerry St	NE	15	0	1	0	2,154.4	2,685.3	2,683.3	A	A	A
C3	Harrison Av @ Gerry St	NW	16	0	1	0	2,938.5	4,294.7	5,084.0	A	A	A
C4	Harrison Av @ Gerry St	SE	14	0	1	4	3,004.9	5,114.9	3,200.4	A	A	A
C5	Harrison Av @ Gerry St	SW	14	2	0	0	470.5	4,977.3	4,516.8	A	A	A
C6	Union Av @ Flushing Av	NE	18	7	4	4	625.7	1,072.0	733.3	A	A	A
C7	Union Av @ Flushing Av	NW	12	7	4	4	328.5	734.6	475.7	A	A	A
C8	Union Av @ Flushing Av	SE	18	2	1	0	368.4	730.2	425.9	A	A	A
C9	Union Av @ Flushing Av	SW	14	2	1	0	916.0	2,383.2	1,275.4	A	A	A
C10	Broadway @ Wallabout St	NW	13	21	3	1	669.0	1,116.5	806.4	A	A	A

Table 19-9
Existing Crosswalk Conditions

	Intersection	Crosswalk	Peak 15-Minute Volume			Avg. Pedestrian Space (sq-ft/ped)			Level of Service		
			AM	MD	PM	AM	MD	PM	AM	MD	PM
X1	Throop Av @ Lorimer St	North	59	9	28	263.8	1,800.8	569.9	A	A	A
X2	Throop Av @ Lorimer St	West	95	15	50	145.9	990.8	287.4	A	A	A
X3	Harrison Av @ Gerry St	North	6	9	6	2,367.8	1,573.6	2,367.8	A	A	A
X4	Harrison Av @ Gerry St	South	8	7	6	126.4	1,890.1	2,197.5	A	A	A
X5	Harrison Av @ Gerry St	East	9	2	6	2,109.0	9,554.8	3,172.7	A	A	A
X6	Harrison Av @ Gerry St	West	13	3	5	1,540.2	6,734.4	4,046.1	A	A	A
X7	Union Av @ Flushing Av	North	35	23	36	458.8	683.7	450.6	A	A	A
X8	Union Av @ Flushing Av	South	51	25	51	402.0	802.5	402.0	A	A	A
X9	Union Av @ Flushing Av	East	49	26	37	214.6	341.0	272.1	A	A	A
X10	Union Av @ Flushing Av	West	42	11	18	183.4	657.3	444.8	A	A	A
X11	Broadway @ Wallabout St	North	23	18	31	493.2	605.8	378.5	A	A	A
X12	Broadway @ Wallabout St	West	46	33	42	444.0	606.6	494.1	A	A	A

Table 19-10
Future Condition Without the Proposed Action
at the Flushing Avenue (G) Subway Station

Stairways									
No.	Station Element/Location	Peak Period	Actual Width in Feet	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C (5)	LOS
S1	Brooklyn-bound Stairway @ Flushing and Union Avenues	8-9 AM	4.50	2.80	420	71	1.69	0.17	A
		5-6 PM	4.50	2.80	420	83	1.98	0.20	A
S2	Queens-bound Stairway @ Flushing and Union Avenues	8-9 AM	6.00	4.00	600	99	1.65	0.17	A
		5-6 PM	6.00	4.00	600	61	1.02	0.10	A

Fare Arrays and Exit Gates						
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
N414	Brooklyn-bound Fare Array 3 entry/exit turnstiles	8-9 AM	1,440	71	0.05	A
		5-6 PM	1,440	83	0.06	A
N414AK	Queens-bound Fare Array 3 entry/exit turnstiles 2 high entry/exit turnstile	8-9 AM	2,040	99	0.05	A
		5-6 PM	2,040	61	0.03	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 1.0 percent/year background growth for the 2008 - 2018 period plus demand from No-Action developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

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

Table 19-11
Future Condition Without the Proposed Action
at the Lorimer Street (J, M) Subway Station

Stairways									
No.	Station Element/Location	Peak Period	Actual Width in Feet	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C (5)	LOS
S1	Stairway @ NW Corner Broadway/Wallabout Street	8-9 AM	5.00	3.20	480	47	0.98	0.10	A
		5-6 PM	5.00	3.20	480	84	1.75	0.18	A
S2	Stairway @ NE Corner Broadway/Moore Street	8-9 AM	5.00	3.20	480	137	2.85	0.29	A
		5-6 PM	5.00	3.20	480	27	0.56	0.06	A
S3	Stairway @ NW Corner Broadway/Lorimer Street	8-9 AM	5.00	3.20	480	157	3.27	0.33	A
		5-6 PM	5.00	3.20	480	101	2.10	0.21	A
S4	Stairway @ NE Corner Broadway/Lorimer Street	8-9 AM	5.00	3.20	480	168	3.50	0.35	A
		5-6 PM	5.00	3.20	480	129	2.69	0.27	A

Fare Arrays and Exit Gates						
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
J5	Lorimer Street Fare Array 3 entry/exit turnstiles 2 high revolving exit gates	8-9 AM	2,340	325	0.14	A
		5-6 PM	2,340	231	0.10	A
H2	Queens-bound Platform Fare Array @ Wallabout Street 1 high entry/exit turnstile	8-9 AM	300	47	0.16	A
		5-6 PM	300	84	0.28	B
H1	Manhattan-bound Platform Fare Array @ Wallabout Street 1 high entry/exit turnstile	8-9 AM	300	137	0.46	C
		5-6 PM	300	27	0.09	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 1.0 percent/year background growth for the 2008 - 2018 period plus demand from No-Action developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

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

BUS SERVICE

~~During the 2008 through 2018 period, potential service reductions currently being considered by NYCT may affect weekend and overnight local bus service on the B48 and B57 routes. However, it is anticipated that local bus service during the analyzed weekday peak periods would not be affected by these potential service reductions.~~ Table 19-12 shows the estimated peak hour, peak direction ridership at the maximum load point of each local bus route serving the Project Area in the 2018 future without the Proposed Action. During the 2008 through 2018 period, demand on NYCT local bus routes serving the Project Area is expected to increase as a result of new development on projected development sites, new developments located outside of the Project Area, and general background growth. In addition to demand from discrete development projects, a background growth rate of one percent per year was applied to account for general demand increases in the area. As shown in Table 19-12, all analyzed local bus routes are expected to operate with available peak direction capacity in each peak hour with the exception of the B46, which would experience a capacity shortfall of 21 spaces in the peak southbound direction in the PM.

As standard practice, NYCT routinely conducts periodic ridership counts and increases service where operationally warranted and fiscally feasible. It is therefore anticipated that in the future condition without the Proposed Action, NYCT would increase frequency on the B46 to address its capacity shortfall. As shown in Table 19-12, the addition of one southbound B46 bus in the PM peak hour (increasing frequency from 30 to 31 buses/hour) would fully address the capacity shortfall on this route in the 2018 future without the Proposed Action.

PEDESTRIANS

Pedestrian flow conditions at analyzed sidewalks, corners areas, and crosswalks were analyzed for the 2018 future without the Proposed Action, incorporating anticipated demand from new development and a background growth rate of one percent per year for the 2008 through 2018 period. Tables 19-13 through 19-15 show the results of the analyses of sidewalk, corner area and crosswalk conditions for the weekday AM, midday and PM peak hours in the 2018 future without the Proposed Action. As shown in Table 19-13, during these peak hours, all analyzed sidewalks would operate at an acceptable LOS A or B under platoon conditions. As shown in Tables 19-14 and 19-15, all analyzed corner areas and crosswalks would continue to operate at an acceptable LOS A in all peak hours in the future without the Proposed Action.

F. FUTURE CONDITION WITH THE PROPOSED ACTION

This section provides an analysis of transit and pedestrian conditions in the 2018 future with the Proposed Action (the With-Action condition). As described in detail in Chapter 1, “Project Description,” under the reasonable worst-case development scenario, the Proposed Action is expected to result in the development of approximately 1,851 dwelling units, 35,456 square feet of community facility space, 23,522 square feet of office space and a total of 103,286 square feet of new local retail uses within the Project Area, along with an incremental increase of approximately ~~587~~ 628 parking spaces. Compared to the future without the Proposed Action, a total of approximately 114,660 square feet of hotel uses and 51,275 square feet of manufacturing/warehouse space would be displaced, as would approximately 28,697 square feet of space used for automotive repair. The analyses in this section examine future subway, bus and pedestrian conditions in 2018 with the full build-out of this reasonable worst-case development scenario.

**Table 19-12
No-Action Local Bus Conditions**

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	2018 Peak Hour Passengers (2)	No-Action Conditions with Current Service Levels			No-Action Conditions with Potential Service Adjustments			Notes
					Peak Hour Buses (3)	Average Passengers/Bus	Available Capacity (4)	Peak Hour Buses (5)	Average Passengers/Bus	Available Capacity (4)	
AM	B43	NB	Throop Ave & Myrtle Ave	337	6	56	53	6	56	53	(6)
	B46	NB	Utica Ave & Eastern Parkway	<u>2,443</u>	40	61	<u>157</u>	40	61	<u>157</u>	
	B48	SB	Franklin Ave & Flushing Ave	268	6	45	122	6	45	122	
	B57	WB	Flushing Ave & Nostrand Ave	289	6	48	101	6	48	101	
	B60	NB	Rockaway Ave & Hegman Ave	525	10	53	125	10	53	125	
	PM	B43	SB	Graham Ave & Grand Street	<u>286</u>	6	48	<u>104</u>	6	48	
B46		SB	Utica Ave & Eastern Parkway	1,971	30	66	-21	31	64	44	
B48		NB	Lorimer St & Broadway	208	5	<u>42</u>	<u>117</u>	5	<u>42</u>	<u>117</u>	
B57		EB	Flushing Ave & Nostrand Ave	221	5	44	104	5	44	104	
B60		SB	Rockaway Ave & Hegman Ave	<u>320</u>	6	53	<u>70</u>	6	53	<u>70</u>	

Notes:

- (1) Peak hours: weekday 7:30-8:30 AM and 5-6 PM.
- (2) Assumes 1.0 percent per year background growth plus demand from No Build sites developed by 2018.
- (3) Based on most currently available NYC Transit ridership summaries, unless otherwise noted.
- (4) Available capacity based on MTA NYCT loading guidelines of 65 passengers per standard bus unless otherwise noted.
- (5) Assumes service levels adjusted to address capacity shortfalls during the 2008 through 2018 period.
- (6) Combined local and limited service.

**Table 19-13
Future Condition Without the Proposed Action - Sidewalks**

Sidewalk No.	Location	Total Width	Effective Width (1) (ft)	Peak 15-Minute Volumes			Flow Rate (persons/foot/min)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
S1	Throop Av between Walton St and Wallabout St	18	15	31	66	44	0.1	0.3	0.2	A	A	A	A	A	A
S2	Throop Av between Wallabout St and Gerry St	13	10	26	66	41	0.2	0.4	0.3	A	A	A	A	A	A
S3	Throop Av between Gerry St and Bartlett St	11	8	27	67	49	0.2	0.6	0.4	A	A	A	A	B	A
S4	Lorimer St between Harrison Av and Throop Av	15	12	18	11	20	0.1	0.1	0.1	A	A	A	A	A	A
S5	Wallabout St between Harrison Av and Throop Av	18	15	44	200	106	0.2	0.9	0.5	A	A	A	A	B	A
S6	Wallabout St between Harrison Av and Throop Av	12	9	46	200	105	0.3	1.5	0.8	A	A	A	A	B	B
S7	Gerry St between Harrison Av and Throop Av	12	9	17	29	32	0.1	0.2	0.2	A	A	A	A	A	A
S8	Gerry St between Harrison Av and Throop Av	18	15	11	33	28	0.0	0.1	0.1	A	A	A	A	A	A
S9	Gerry St between Union Av and Harrison Av	18	15	10	20	11	0.0	0.1	0.0	A	A	A	A	A	A
S10	Gerry St between Union Av and Harrison Av	18	15	13	12	7	0.1	0.1	0.0	A	A	A	A	A	A
S11	Wallabout St between Throop Av and Broadway	18	15	16	64	28	0.1	0.3	0.1	A	A	A	A	A	A

Notes:
(1) Effective width excludes 1.5 ft for wall avoidance and 1.5 ft for curbside avoidance.

Table 19-14

Future Condition Without the Proposed Action - Corners

No.	Intersection	Corner	Curb Radii (feet)	Peak 15-Minute Volume			Avg Pedestrian Space (sq-ft/ped)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM
C1	Throop Av @ Lorimer St	NW	12	2	2	3	284.8	596.8	441.8	A	A	A
C2	Harrison Av @ Gerry St	NE	15	0	3	2	1,240.1	373.6	666.7	A	A	A
C3	Harrison Av @ Gerry St	NW	16	0	1	0	2,536.5	2,531.6	3,990.7	A	A	A
C4	Harrison Av @ Gerry St	SE	14	0	5	6	1,762.6	618.4	980.7	A	A	A
C5	Harrison Av @ Gerry St	SW	14	2	0	0	1,834.8	3,105.8	3,545.0	A	A	A
C6	Union Av @ Flushing Av	NE	18	7	4	4	525.8	507.1	510.0	A	A	A
C7	Union Av @ Flushing Av	NW	12	7	4	4	289.7	479.8	382.0	A	A	A
C8	Union Av @ Flushing Av	SE	18	2	1	0	305.7	334.2	301.4	A	A	A
C9	Union Av @ Flushing Av	SW	14	2	1	0	812.0	1,492.9	1,034.2	A	A	A
C10	Broadway @ Wallabout St	NW	13	23	13	5	567.0	438.4	505.9	A	A	A

Table 19-15

Future Condition Without the Proposed Action - Crosswalks

	Intersection	Crosswalk	Peak 15-Minute Volume			Avg. Pedestrian Space (sq-ft/ped)			Level of Service		
			AM	MD	PM	AM	MD	PM	AM	MD	PM
X1	Throop Av @ Lorimer St	North	66	12	32	234.5	1,347.2	497.0	A	A	A
X2	Throop Av @ Lorimer St	West	115	75	85	118.3	188.9	164.9	A	A	A
X3	Harrison Av @ Gerry St	North	8	18	9	1,772.1	779.6	1,573.6	A	A	A
X4	Harrison Av @ Gerry St	South	11	13	9	1,191.0	1,010.2	1,458.9	A	A	A
X5	Harrison Av @ Gerry St	East	18	64	37	1,045.4	281.7	499.5	A	A	A
X6	Harrison Av @ Gerry St	West	14	3	5	1,427.1	6,725.8	4,041.0	A	A	A
X7	Union Av @ Flushing Av	North	42	41	48	378.1	377.7	333.0	A	A	A
X8	Union Av @ Flushing Av	South	59	45	65	345.4	440.6	312.2	A	A	A
X9	Union Av @ Flushing Av	East	59	66	58	176.3	129.6	168.9	A	A	A
X10	Union Av @ Flushing Av	West	46	13	20	166.4	554.7	399.0	A	A	A
X11	Broadway @ Wallabout St	North	25	77	60	447.4	133.7	188.0	A	A	A
X12	Broadway @ Wallabout St	West	58	46	52	347.7	430.0	394.9	A	A	A

Table 18-9 in Chapter 18, “Traffic and Parking,” presents the transportation planning factors utilized in the travel demand forecast for projected development sites, while Table 19-16, below, summarizes the total estimated weekday peak hour transit and pedestrian trips generated under the RWCDS with implementation of the Proposed Action. The numbers in Table 19-16 represent the net change in subway, bus and walk-only trips compared to the future condition without the Proposed Action. As shown in Table 19-16, the RWCDS would result in a net increase 126 inbound and 510 outbound subway trips in the weekday AM peak hour, 214 inbound and 220 outbound subway trips in the midday peak hour, and 511 inbound and 257 outbound subway trips in the PM peak hour. Trips by local bus would increase by a net total of 64 inbound and 163 outbound in the weekday AM peak hour, 147 inbound and 149 outbound in the midday, and 191 inbound and 128 outbound in the PM peak hour. Trips by walking-only would increase by 256 inbound and 473 outbound in the weekday AM peak hour, 1,342 inbound and 1,362 outbound in the midday, and 901 inbound and 759 outbound in the weekday PM peak hour.

Table 19-16
Transit and Pedestrian Travel Demand Forecast for the Proposed Action
(Person Trips)

	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Subway	126	510	636	214	220	434	511	257	768
Local Bus	64	163	227	147	149	296	191	128	319
Walk-Only	256	473	729	1,342	1,362	2,704	901	759	1,660

SUBWAY SERVICE

As shown in Table 19-16, the Proposed Action would generate a net total of 636 and 768 new subway trips (in and out combined) during the weekday AM and PM peak hours, respectively. The distribution of these trips among the four subway stations located in proximity to the Project Area is shown in Table 19-17. Trips from projected development sites were assigned to individual subway stations based on proximity to station entrances and existing ridership patterns for the subway routes serving each station. As shown in Table 19-17, the greatest incremental increase in subway trips as a result of the Proposed Action would likely occur at the Flushing Avenue (G) station and the Lorimer Street (J, M) station. The Proposed Action would generate an estimated 168 and 199 new trips during the AM and PM peak hours, respectively, at the Flushing Avenue (G) station, and an estimated 347 and 419 new subway trips during these periods, respectively, at the Lorimer Street (J, M) station. The Broadway (G) and the Flushing Avenue (J, M) subway stations would each experience a net increase of 94 or fewer new trips in each peak hour in the future with the Proposed Action.

As previously discussed, *CEQR Technical Manual* criteria typically require a detailed analysis of a subway station when the incremental increase in peak hour trips totals 200 persons per hour or more. As new subway trips generated by the Proposed Action in 2018 would total 199 (one trip below this threshold) in the PM peak hour at the Flushing Avenue (G) station, and 347 in the AM peak hour and 419 in the PM at the Lorimer Street (J, M) station, these two subway stations are analyzed quantitatively in this EIS.

**Table 19-17
Weekday Peak Hour Project Increment
Subway Trips by Station**

Subway Station	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Broadway (G) Station	34	7	41	19	37	56
Flushing Avenue (G) Station	133	35	168	66	133	199
Flushing Avenue (J, M) Station	55	25	80	40	54	94
Lorimer Street (J, M) Station	288	59	347	132	287	419
Total	510	126	636	257	511	768

Note: Numbers shown are entering and exiting the subway stations.

The results of the analysis of 2018 future conditions with the Proposed Action at the Flushing Avenue (G) and Lorimer Street (J, M) subway stations are shown in Tables 19-18 and 19-19, respectively. As shown in Table 19-18, both the Brooklyn-bound and Queens-bound fare arrays (N414 and N414AK) at the Flushing Avenue (G) station would continue to operate at an acceptable LOS A in both the AM and PM peak hours, as would the adjoining street stairs (S1 and S2). At the Lorimer Street (J, M) station, fare arrays J5 and J5-H2 and the four entrance stairs would all continue to operate at an acceptable LOS C or better in all peak hours, while fare array J5-H1, a high entry/exit turnstile for the Manhattan-bound platform, would operate at a marginal LOS D in the AM (see Table 19-19). However, all of these facilities would continue to operate below capacity in all peak hours in the With-Action condition. The Proposed Action would therefore not result in significant adverse impacts at either the Flushing Avenue (G) subway station or the Lorimer Street (J, M) subway station in 2018 based on *CEQR Technical Manual* criteria.

BUS SERVICE

As shown in Table 19-16, compared to the No-Action condition, the Proposed Action would generate a net total of approximately 64 new inbound trips and 163 new outbound trips by local bus in the weekday AM peak hour, and 191 inbound and 128 outbound trips in the PM peak hour. These trips were assigned to the maximum load points of each of the five NYCT bus routes serving the Project Area based on existing demand patterns and the proximity of individual projected developments sites to each route and its maximum load point.

Table 19-20 shows the resulting conditions on these local bus routes at the maximum load points in the 2018 future with the Proposed Action. As shown in Table 19-20, the greatest increases in demand as a result of the Proposed Action would occur on the B46, which would experience 41 new peak direction passengers in the AM peak hour and 76 in the PM peak hour. Project-generated demand at the maximum load points on all other analyzed bus routes would total nine or fewer trips in the peak direction in each peak hour. With this added demand, all analyzed bus routes would continue to operate with available capacity at their maximum load points in each peak hour with the exception of southbound B46 buses, which would experience a capacity shortfall of 32 spaces in the PM peak hour.

According to current NYCT guidelines, increases in bus load levels to above their maximum capacity at any load point is considered a significant adverse impact as it would necessitate the addition of more bus service along that route. Based on this standard, southbound B46 service would be significantly adversely impacted by project-generated demand in the PM peak hour in 2018. As discussed in Chapter 24,

**Table 19-18
Future Condition With the Proposed Action
at the Flushing Avenue (G) Subway Station**

Stairways															
No.	Station Element/Location	Peak Period	Actual Width in Feet	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No-Action Pk 15 Min Volume	Pk 15 Min W/Action Increment	W/Action Pk 15 Min Volume	2018 No-Action			2018 With Action			Width Increment Threshold in Inches (3)
									PFM (2)	V/C (5)	LOS	PFM (2)	V/C (5)	LOS	
S1	Brooklyn-bound Stairway @ Flushing and Union Avenues	8-9 AM 5-6 PM	4.50 4.50	2.80 2.80	420 420	71 83	29 34	100 117	1.69 1.98	0.17 0.20	A A	2.38 2.79	0.24 0.28	A A	---
S2	Queens-bound Stairway @ Flushing and Union Avenues	8-9 AM 5-6 PM	6.00 6.00	4.00 4.00	600 600	99 61	24 28	123 89	1.65 1.02	0.17 0.10	A A	2.05 1.48	0.21 0.15	A A	---
Fare Arrays and Exit Gates															
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	No-Action Pk 15 Min Volume	Pk 15 Min W/Action Increment	W/Action Pk 15 Min Volume	2018 No-Action		2018 With Action		Notes				
							V/C	LOS	V/C	LOS					
N414	Brooklyn-bound Fare Array 3 entry/exit turnstiles	8-9 AM 5-6 PM	1,440 1,440	71 83	29 34	100 117	0.05 0.06	A A	0.07 0.08	A A	(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows. (2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM). (3) Width increment threshold needed to restore processor to No-Action conditions. (4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines. (5) Stairway LOS - v/c ratio relationship: * Denotes a significant adverse impact based on CEQR criteria.				
N414AK	Queens-bound Fare Array 3 entry/exit turnstiles 2 high entry/exit turnstile	8-9 AM 5-6 PM	2,040 2,040	99 61	24 28	123 89	0.05 0.03	A A	0.06 0.04	A A					

**Table 19-19
Future Condition With the Proposed Action
at the Lorimer Street (J, M) Subway Station**

Stairways															
No.	Station Element/Location	Peak Period	Actual Width in Feet	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No-Action Pk 15 Min Volume	Pk 15 Min W/Action Increment	W/Action Pk 15 Min Volume	2018 No-Action PFM (2)	V/C (5)	LOS	2018 With-Action PFM (2)	V/C (5)	LOS	Width Increment Threshold in Inches (3)
S1	Stairway @ NW Corner Broadway/Wallabout Street	8-9 AM 5-6 PM	5.00 5.00	3.20 3.20	480 480	47 84	8 76	55 160	0.98 1.75	0.10 0.18	A A	1.15 3.33	0.11 0.33	A A	---
S2	Stairway @ NE Corner Broadway/Moore Street	8-9 AM 5-6 PM	5.00 5.00	3.20 3.20	480 480	137 27	72 19	209 46	2.85 0.56	0.29 0.06	A A	4.35 0.96	0.44 0.10	A A	---
S3	Stairway @ NW Corner Broadway/Lorimer Street	8-9 AM 5-6 PM	5.00 5.00	3.20 3.20	480 480	157 101	28 37	185 138	3.27 2.10	0.33 0.21	A A	3.85 2.88	0.39 0.29	A A	---
S4	Stairway @ NE Corner Broadway/Lorimer Street	8-9 AM 5-6 PM	5.00 5.00	3.20 3.20	480 480	168 129	0 0	168 129	3.50 2.69	0.35 0.27	A A	3.50 2.69	0.35 0.27	A A	---
Fare Arrays and Exit Gates															
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	No-Action Pk 15 Min Volume	Pk 15 Min W/Action Increment	W/Action Pk 15 Min Volume	2018 No-Action V/C	LOS	2018 With-Action V/C	LOS					
J5	Lorimer Street Fare Array 3 entry/exit turnstiles 2 high revolving exit gates	8-9 AM 5-6 PM	2,340 2,340	325 231	28 37	353 268	0.14 0.10	A A	0.15 0.11	A A					
H2	Queens-bound Platform Fare Array @ Wallabout Street 1 high entry/exit turnstile	8-9 AM 5-6 PM	300 300	47 84	8 76	55 160	0.16 0.28	A B	0.18 0.53	A C					
H1	Manhattan-bound Platform Fare Array @ Wallabout Street 1 high entry/exit turnstile	8-9 AM 5-6 PM	300 300	137 27	72 19	209 46	0.46 0.09	C A	0.70 0.15	D A					

Notes:

- (1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.
- (2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PPM).
- (3) Width increment threshold needed to restore processor to No-Action conditions.
- (4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.
- (5) Stairway LOS - v/c ratio relationship.

* Denotes a significant adverse impact based on CEQR criteria.

**Table 19-20
Future With the Proposed Action Local Bus Conditions**

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	No-Action		Project Increment	Available Capacity w/Proposed Action (3)	Notes
					Available Capacity (3)	Capacity (3)			
AM	B43	NB	Throop Ave & Myrtle Ave	6	53	4	49		
	B46	NB	Utica Ave & Eastern Parkway	40	<u>157</u>	41	<u>116</u>	(4)	
	B48	SB	Franklin Ave & Flushing Ave	6	122	9	113		
	B57	WB	Flushing Ave & Nostrand Ave	6	101	9	92		
	B60	NB	Rockaway Ave & Hegman Ave	10	125	0	125		
	PM	B43	SB	Graham Ave & Grand Street	6	<u>104</u>	6	<u>98</u>	
B46		SB	Utica Ave & Eastern Parkway	31	44	76	-32	*	
B48		NB	Lorimer St & Broadway	5	<u>117</u>	6	<u>111</u>	(4)	
B57		EB	Flushing Ave & Nostrand Ave	5	104	7	97		
B60		SB	Rockaway Ave & Hegman Ave	6	<u>70</u>	4	<u>66</u>		
Notes:									
(1) Peak hours: weekday 7:30-8:30 AM and 5-6 PM.									
(2) Assumes service levels adjusted to address capacity shortfalls in the No Build condition.									
(3) Available capacity based on MTA NYCT loading guidelines of 65 passengers per standard bus unless otherwise noted.									
(4) Combined local and limited service.									
* Denotes a significant adverse impact based on current NYC Transit guidelines.									

“Mitigation,” as standard practice, NYCT routinely conducts ridership counts and adjusts bus service frequency to meet its service criteria, within fiscal and operating constraints. Therefore, no sponsor-provided mitigation is needed for the potential PM peak hour impact to southbound B46 service.

PEDESTRIANS

The Proposed Action would generate new pedestrian demand on analyzed sidewalks, corner areas and crosswalks by 2018. This new demand would include trips made solely by walking, as well as pedestrian trips en route to and from subway station entrances and bus stops. As shown in Table 19-16, the Proposed Action is expected to generate a net total of 729 walk-only trips in the weekday AM peak hour, 2,704 in the midday and 1,660 in the weekday PM peak hour. Trips en route to and from area subway stations and bus stops would account for an additional 863, 730 and 1,087 new pedestrian trips during the weekday AM, midday and PM peak hours, respectively.

As previously discussed, new pedestrian trips generated by the Proposed Action are expected to be widely distributed due to the dispersed locations of the projected development sites within the Project Area, with the highest concentrations typically occurring along corridors connecting projected development sites to area subway stations. Tables 19-21 through 19-23 show the project-generated peak 15-minute pedestrian volumes on analyzed sidewalks, corners and crosswalks, respectively. As shown in Table 19-21, the greatest increases in peak period pedestrian demand are generally expected to occur on analyzed sidewalks along Throop Avenue and Gerry Street adjacent to projected development sites. It is estimated that peak 15-minute pedestrian volumes along the west sidewalk on Throop Avenue between Wallabout and Gerry Streets (location S2 in Figure 19-3) would increase by approximately 71 trips in the AM peak period, 127 in the midday and 73 in the PM. Peak 15-minute volumes along the west sidewalk between Gerry and Bartlett Streets (location S3) would increase by 39, 104 and 73 during these periods, respectively. Both of these sidewalks are adjacent to projected development sites and would be utilized by concentrations of pedestrians en route to and from the Lorimer Street (J, M) subway station. Along Gerry Street, peak 15-minute pedestrian volumes on the north sidewalk between Harrison and Throop Avenues (location S7) would increase by approximately 65, 167 and 125 trips in the AM, midday and PM peak hours, respectively, while volumes on the south sidewalk (location S8) would increase by 67, 170 and 126 trips, respectively. Both of these sidewalks are adjacent to projected development sites and would be utilized by concentrations of pedestrians en route to and from the Flushing Avenue (G) subway station.

All other analyzed sidewalks would experience net increases of 100 or fewer trips in the peak 15-minutes of each peak period under With-Action conditions. In addition, as shown in Table 19-21, the north and south sidewalks along Wallabout Street between Harrison and Throop Avenues (locations S5 and S6 in Figure 19-3), would experience net decreases in midday peak 15-minute pedestrian demand of 28 and 33 trips, respectively, as a result of the displacement of local retail and light industrial uses on nearby projected development sites in the With-Action condition.

As shown in Table 19-23, at analyzed crosswalks, the greatest increase in peak period pedestrian demand is expected to occur on the west crosswalk on Lorimer Street at Throop Avenue (location X2 in Figure 19-3). It is estimated that peak 15-minute pedestrian volumes on this crosswalk would increase by approximately 31 trips in the AM peak period, 101 in the midday and 64 in the PM. Also of note is the east crosswalk on Flushing Avenue at Union/Marcy Avenues (location X9) where peak 15-minute volumes would increase by 39 trips in the AM, 86 in the midday and 79 in the PM peak period. All other analyzed sidewalks would experience net increases of fewer than 80 trips in the peak 15-minutes of each peak period under With-Action conditions.

**Table 19-21
Future Condition With the Proposed Action - Sidewalks**

Sidewalk No.	Location	Total Width	Effective Width (1) (ft)	Project Increment Peak 15-Minute Volumes			Total Peak 15-Minute Volumes			Flow Rate (persons/foot/min)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
S1	Throop Av between Walton St and Wallabout St	18	15	25	96	58	56	162	102	0.2	0.7	0.5	A	A	A	A	B	A
S2	Throop Av between Wallabout St and Gerry St	13	10	71	127	73	97	193	114	0.6	1.3	0.8	A	A	A	B	B	B
S3	Throop Av between Gerry St and Bartlett St	11	8	39	104	73	66	171	122	0.6	1.4	1.0	A	A	A	B	B	B
S4	Lorimer St between Harrison Av and Throop Av	15	12	17	34	28	35	45	48	0.2	0.3	0.3	A	A	A	A	A	A
S5	Wallabout St between Harrison Av and Throop Av	18	15	36	-28	25	80	172	131	0.4	0.8	0.6	A	A	A	A	B	B
S6	Wallabout St between Harrison Av and Throop Av	12	9	37	-33	23	83	167	128	0.6	1.2	0.9	A	A	A	B	B	B
S7	Gerry St between Harrison Av and Throop Av	12	9	65	167	125	82	196	157	0.6	1.5	1.2	A	A	A	B	B	B
S8	Gerry St between Harrison Av and Throop Av	18	15	67	170	126	78	203	154	0.3	0.9	0.7	A	A	A	A	B	B
S9	Gerry St between Union Av and Harrison Av	18	15	34	49	50	44	69	61	0.2	0.3	0.3	A	A	A	A	A	A
S10	Gerry St between Union Av and Harrison Av	18	15	17	41	31	30	53	38	0.1	0.2	0.2	A	A	A	A	A	A
S11	Wallabout St between Throop Av and Broadway	18	15	46	18	51	62	82	79	0.3	0.4	0.4	A	A	A	A	A	A

Notes:
(1) Effective width excludes 1.5 ft for wall avoidance and 1.5 ft for curbside avoidance.

Table 19-22
Future Condition With the Proposed Action - Corners

No.	Intersection	Corner	Curb Radii (feet)	Project Increment Peak 15-Minute Volume			Total With-Action Peak 15-Minute Volume			Avg Pedestrian Space (sq-ft/ped)			Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
C1	Throop Av @ Lorimer St	NW	12	2	2	3	4	4	6	220.2	228.5	241.2	A	A	A
C2	Harrison Av @ Gerry St	NE	15	5	18	11	5	21	13	349.0	136.4	188.8	A	A	A
C3	Harrison Av @ Gerry St	NW	16	1	0	1	1	1	1	992.6	786.4	859.9	A	A	A
C4	Harrison Av @ Gerry St	SE	14	6	20	13	6	25	19	647.6	230.3	329.1	A	A	A
C5	Harrison Av @ Gerry St	SW	14	0	0	0	2	0	0	1,123.4	877.7	1,092.1	A	A	A
C6	Union Av @ Flushing Av	NE	18	0	0	0	7	4	4	336.2	240.9	256.6	A	A	A
C7	Union Av @ Flushing Av	NW	12	0	0	0	7	4	4	221.5	288.0	267.6	A	A	A
C8	Union Av @ Flushing Av	SE	18	0	0	0	2	1	0	191.1	152.4	141.5	A	A	A
C9	Union Av @ Flushing Av	SW	14	0	0	0	2	1	0	594.1	836.9	629.8	A	A	A
C10	Broadway @ Wallabout St	NW	13	6	10	37	29	23	42	247.8	312.2	257.1	A	A	A

Table 19-23
Future Condition With the Proposed Action - Crosswalks

	Intersection	Crosswalk	Project Increment Peak 15-Minute Volume			Total With-Action Peak 15-Minute Volume			Avg. Pedestrian Space (sq-ft/ped)			Level of Service		
			AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
X1	Throop Av @ Lorimer St	North	19	36	30	85	48	62	179.4	327.1	250.4	A	A	A
X2	Throop Av @ Lorimer St	West	31	101	64	146	176	149	91.3	75.1	89.6	A	A	A
X3	Harrison Av @ Gerry St	North	33	48	49	41	66	58	334.4	202.7	232.4	A	A	A
X4	Harrison Av @ Gerry St	South	17	40	31	28	53	40	453.0	235.2	312.8	A	A	A
X5	Harrison Av @ Gerry St	East	26	74	57	44	138	94	417.3	122.4	186.7	A	A	A
X6	Harrison Av @ Gerry St	West	0	0	0	14	3	5	1,427.1	6,725.8	4,041.0	A	A	A
X7	Union Av @ Flushing Av	North	19	32	25	61	73	73	255.9	207.6	214.3	A	A	A
X8	Union Av @ Flushing Av	South	30	40	49	89	85	114	224.0	227.9	171.7	A	A	A
X9	Union Av @ Flushing Av	East	39	86	79	98	152	137	102.2	52.8	66.4	A	B	A
X10	Union Av @ Flushing Av	West	9	6	5	55	19	25	137.2	376.6	316.6	A	A	A
X11	Broadway @ Wallabout St	North	78	20	26	103	97	86	99.8	104.4	127.5	A	A	A
X12	Broadway @ Wallabout St	West	45	24	48	103	70	100	187.7	275.6	192.5	A	A	A

Broadway Triangle

For sidewalks outside of the Manhattan CBD (the area of Manhattan below 60th Street) and downtown Brooklyn, *CEQR Technical Manual* criteria define a significant adverse impact to have occurred when the flow rate increases by two or more pedestrians per foot per minute (PFM) over No-Action conditions characterized by flow rates over 13 PFM (mid-LOS D). Increments of one PFM may be perceptible, but not necessarily significant impacts.

As shown in Table 19-21, in the future with the Proposed Action, all analyzed sidewalks would continue to operate at an acceptable LOS A or B under platoon conditions in all peak hours. As all analyzed sidewalks would continue to operate with flow rates of less than 13 PFM in all analyzed peak hours, no significant adverse sidewalk impacts are anticipated to result from the Proposed Action.

For crosswalk and corner areas outside of the Manhattan CBD and downtown Brooklyn, *CEQR Technical Manual* criteria define a significant adverse impact as a decrease in pedestrian space of one or more square feet per pedestrian when the No-Action condition has an average occupancy under 20 square feet per pedestrian (mid-LOS D). Increments of one square foot or more applied to No-Action conditions within LOS D or any deterioration from LOS C or better to LOS D may be perceptible, but not necessarily significant impacts.

As shown in Tables 19-22 and 19-23, with implementation of the Proposed Action, all analyzed corners and crosswalks would continue to operate at an acceptable LOS A or B in the weekday AM, midday and PM peak hours. As all analyzed corners and crosswalks would continue to operate with an average occupancy of more than 20 square feet per pedestrian in all analyzed peak hours, no significant adverse impacts to corner areas or crosswalks are anticipated.

G. NEPA CONSIDERATION

The Proposed Action would not result in significant adverse transit or pedestrian impacts, with the exception of a significant adverse impact to one local bus route in the PM peak hour. As discussed in the analysis above, the Proposed Action would not result in significant adverse impacts at either the Flushing Avenue (G) subway station or the Lorimer Street (J, M) subway station in 2018 based on *CEQR Technical Manual* criteria. Furthermore, as all analyzed sidewalks, corners and crosswalks would continue to operate at acceptable levels of service with an average occupancy of more than 20 square feet per pedestrian in all analyzed peak hours, no significant adverse impacts to these pedestrian facilities corner areas or crosswalks are anticipated under *CEQR Technical Manual* criteria. However, demand for local bus service generated by the Proposed Action would result in a significant adverse impact to southbound B46 buses in the weekday PM peak hour. As standard practice, NYCT routinely conducts ridership counts and adjusts bus service frequency to meet its service criteria, within fiscal and operating constraints. Therefore, no sponsor-provided mitigation is needed for the potential PM peak hour impact to southbound B46 service.

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