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## CHAPTER 16: TRANSIT AND PEDESTRIANS

### A. INTRODUCTION

This chapter of the EIS describes the transit and pedestrian characteristics and potential impacts associated with the proposed actions, which involve zoning map and text amendments for an area encompassing 36 whole and four partial blocks in the Dutch Kills neighborhood located in Long Island City, Queens. The rezoning area, which is adjacent to the Sunnyside Yards and just north of Queens Plaza and the Long Island City central business district (CBD), is generally bounded by 36<sup>th</sup> Avenue on the north, 41<sup>st</sup> Avenue on the south, Northern Boulevard on the east, and 23<sup>rd</sup> Street on the west (see Figure 15-1). As described in detail in earlier chapters of this EIS, the goals of the proposed zoning map and text amendments are to encourage moderate and higher density development near public transportation, and to support continued economic growth in a mixed-use residential, commercial and light industrial community. Overall, the proposed zoning changes would result in an increase in permitted residential density on approximately 50 acres of land, representing 72 percent of the rezoning area, and a decrease in commercial and light industrial density on 39 acres of land representing approximately 53 percent of the rezoning area. Approximately 20 acres, or about 30 percent of the rezoning area would experience no change in permitted residential density, but residential development would be permitted as-of-right.

The transportation analyses in this EIS address a development program that could reasonably be constructed by 2017. The analyses in this chapter focus on the subway and local bus modes operated by MTA New York City Transit (NYCT) and MTA Bus, as well as pedestrian trips generated by the 40 projected development sites defined in the Reasonable Worst Case Development Scenario (RWCDs) in Chapter 1, "Project Description." The locations of the 40 projected development sites and their anticipated uses are shown in Figure 1-6 and listed in Table 1-3 in Chapter 1.

### B. OVERVIEW

#### SUBWAY SERVICE

The proposed actions would generate a net total of 230 and 336 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 actions would occur at the 39<sup>th</sup> Avenue (N, W) station and the Queens Plaza (E, G, R, V) station. The proposed actions would generate an estimated 159 and 203 new subway trips in the AM and PM peak hours, respectively, at the 39<sup>th</sup> Avenue station, and an estimated 106 and 153 new trips during these periods, respectively, at the Queens Plaza station. All other subway stations serving the rezoning area would experience a net increase of 22 or fewer trips in each peak hour or, in the case of the 36<sup>th</sup> Street station, a net decrease in peak hour trips.

*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 actions in 2017 would exceed this threshold in the weekday PM peak hour at the 39<sup>th</sup> Avenue (N, W) subway station, this station is analyzed quantitatively in this EIS. The analysis of future 2017 conditions with the proposed actions at the 39<sup>th</sup> Avenue subway station indicates that fare array R510 and the two entrance stairs at this station would continue to operate below capacity at an acceptable LOS A or B in

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both the AM and PM peak hours. The proposed actions would therefore not result in significant adverse impacts at the 39<sup>th</sup> Avenue (N, W) subway station in 2017 based on *CEQR Technical Manual* criteria.

### **BUS SERVICE**

Compared to the future condition without the proposed actions, the proposed actions would generate a net reduction of 25 bus trips in the weekday AM peak hour and a net increase of three bus trips in the weekday PM peak hour. The net change in bus trips in each peak hour would be distributed among the ten bus routes operating within one quarter mile of projected development sites. As the proposed actions would result in a net reduction of 25 bus trips in the weekday AM peak hour, and a net increase of only three bus trips in the weekday PM peak hour (less than the *CEQR Technical Manual* analysis threshold of 200 trips below which significant bus impacts are considered unlikely), and as the net increase in bus trips in the PM peak hour would be distributed among multiple bus routes, no significant adverse impacts to local bus services are anticipated to result from implementation of the proposed actions.

### **PEDESTRIANS**

The proposed actions are expected to generate a net total of 262 walk-only trips in the weekday AM peak hour, 247 in the midday and 532 in the weekday PM peak hour. Trips en route to and from area subway stations and bus stops would account for an additional 205, 292 and 333 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 rezoning area due to the dispersed locations of the projected development sites, with the highest concentrations of new demand occurring in proximity to subway station entrances. The analysis of pedestrian conditions therefore focuses on pedestrian facilities in the vicinity of entrances to the two subway stations where the majority of project-generated subway demand is expected to occur – the 39<sup>th</sup> Avenue station and the Queens Plaza station. These pedestrian facilities include all sidewalks, corner areas and crosswalks at the intersection of 31<sup>st</sup> Street and 39<sup>th</sup> Avenue; the southwest corner and adjacent sidewalks and crosswalks at the intersection of Northern Boulevard and 40<sup>th</sup> Road; and the north sidewalk on 41<sup>st</sup> Avenue west of Northern Boulevard.

In the future with the proposed actions, 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 actions 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 analyses focus on the weekday AM (8-9 AM) and PM (5-6 PM) peak commuter hours, as it is during these periods that peak demand from these primarily residential and retail development sites would coincide with peak demand on the subway, local bus and pedestrian systems. The pedestrian analyses also examine conditions during the weekday midday (12-1 PM) and Saturday midday (1-2 PM) peak hours as these are typically periods of peak pedestrian demand for retail uses. The future condition without the proposed

actions (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 2017. Increases in travel demand resulting from the proposed actions, 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 2017 future condition with the proposed actions (the With-Action condition). Any significant adverse impacts from the proposed actions 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 rezoning area that would be used by project-generated subway demand. These include Queens Plaza (E, G, R, and V trains), Queensboro Plaza (N, W, 7), 39<sup>th</sup> Avenue (N, W), 36<sup>th</sup> Avenue (N, W), 36<sup>th</sup> Street (G, R, V) and 21<sup>st</sup> Street-Queensbridge (F). 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 exceed this threshold at only one subway station – 39<sup>th</sup> Avenue. This station was therefore selected for quantitative analysis in the EIS. The analysis examines key station elements under peak 15-minute flow conditions, focusing on the two street-level entrance stairs and the station's fare array. As discussed later in this chapter, all other subway stations serving the rezoning area would experience a net increase of 153 or fewer trips in each peak hour or, in the case of the 36<sup>th</sup> Street station, a net decrease in peak hour trips. 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 16-1. LOS A is representative of free flow conditions without pedestrian conflicts and LOS F depicts significant capacity limitations and inconvenience. New York City Transit'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.

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.

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Table 16-1  
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.

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 queues.

### 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

The Queens Plaza area immediately to the south of the proposed rezoning area is a major nexus of local bus service in Queens. Approximately ten MTA Bus and NYC Transit local bus routes are located within one quarter mile of one or more projected development sites. These routes include the Q19A, Q32, Q39, Q60, Q61, Q66, Q67, Q101, Q102, and Q103. As discussed later in this chapter, based on the travel demand forecast for the RWCDS, the proposed actions would generate a net decrease of 25 bus trips in

the weekday AM peak hour and a net increase of only three bus trips in the PM peak hour. As the proposed actions would result in fewer than the 200 new bus trips in either the AM or PM peak hours (the *CEQR Technical Manual* threshold for a detail transit impact analysis), conditions on the various routes serving the proposed rezoning area are discussed qualitatively.

## **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 will therefore focus on pedestrian facilities in the vicinity of entrances to the two subway stations where the majority of project-generated subway demand is expected to occur – the 39<sup>th</sup> Avenue station and the Queens Plaza station. These pedestrian facilities include all sidewalks, corner areas and crosswalks at the intersection of 31<sup>st</sup> Street and 39<sup>th</sup> Avenue; the southwest corner and adjacent sidewalks and crosswalks at the intersection of Northern Boulevard and 40<sup>th</sup> Road; and the north sidewalk on 41<sup>st</sup> Avenue west of Northern Boulevard.

### *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 16-2 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.

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**Table 16-2**  
**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 39<sup>th</sup> Avenue and Queens Plaza subway stations were conducted during the weekday AM and PM peak periods in June 2007. Weekday AM, midday and PM peak hour pedestrian counts were also conducted at analyzed sidewalks, corner areas and crosswalks at this time, as well as in February 2008.

#### SUBWAY SERVICE

A total of six subway stations in the vicinity of the rezoning area would be used by demand generated by projected development sites. These include Queens Plaza (E, G, R, and V trains), Queensboro Plaza (N, W, 7), 39<sup>th</sup> Avenue (N, W), 36<sup>th</sup> Avenue (N, W), 36<sup>th</sup> Street (G, R, V) and 21<sup>st</sup> Street-Queensbridge (F). Table 16-3 shows the average weekday entering turnstile counts at these six stations for the years 2004 through 2006, as well as the 2006 ranking of each station based on average weekday ridership relative to all 423 stations system-wide. Overall, demand increased by approximately 1.6 percent from 2004 to 2006 at subway stations serving the rezoning area. The largest percentage increase occurred at the 36<sup>th</sup> Avenue (N, W) station which experienced a 6.6 percent increase over the three-year period. Demand at the Queens Plaza and 36<sup>th</sup> Street stations declined 1.9 percent and 1.3 percent, respectively. The remaining three stations experienced increases in ridership ranging from 1.1 to 1.6 percent.

**Table 16-3**  
Average Weekday Entering Turnstile Counts

Subway Station	2006 Rank	2004	2005	2006	Percent Change 2004—2006
21 <sup>st</sup> Street-Queensbridge (F) Station	195	6,804	6,844	6,900	1.4%
36 <sup>th</sup> Avenue (N, W) Station	191	6,661	6,941	7,104	6.6%
36 <sup>th</sup> Street (G, R, V) Station	337	3,298	3,190	3,254	(1.3%)
39 <sup>th</sup> Avenue (N, W) Station	388	1,936	1,929	2,027	1.1%
Queensboro Plaza (N, W, 7)	165	8,195	8,375	8,330	1.6%
Queens Plaza (E, G, R, V) Station	177	7,805	7,533	7,654	(1.9%)
Totals		34,699	34,812	35,269	1.6%

**Notes:**

Ranking out of 423 subway stations system-wide by 2005 average weekday ridership.

**Source:** NYCT 2006 Subway & Bus Ridership Report.

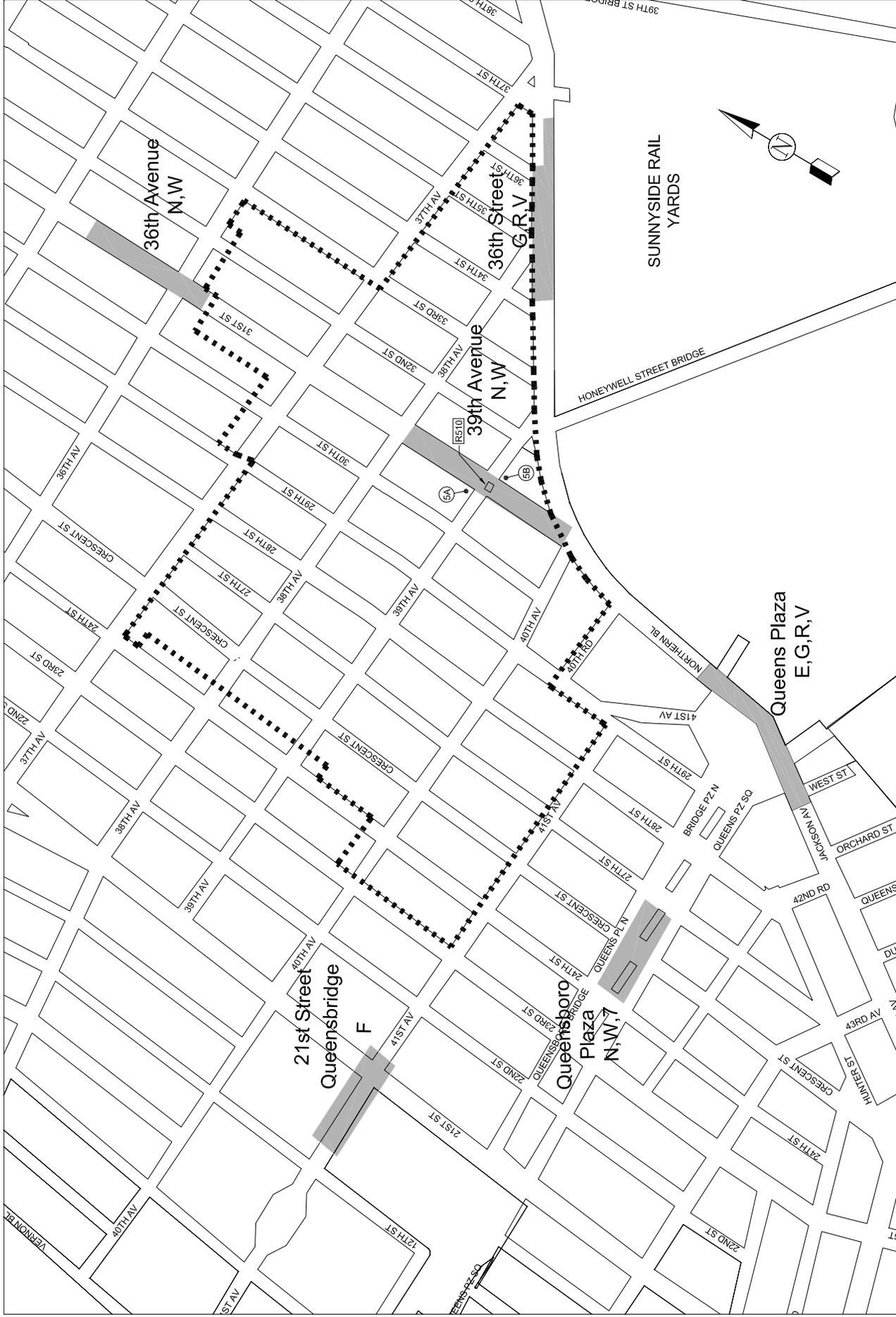
As discussed later in this chapter, new subway trips generated by the proposed action would only exceed the 200-trips-per-hour *CEQR Technical Manual* threshold for a detailed analysis in one or more analyzed peak hours at the 39<sup>th</sup> Avenue (N, W) station, and this station is therefore analyzed quantitatively in this EIS. A qualitative discussion of existing conditions at the other five 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 rezoning area are described below, along with the results of the analysis of 2007 existing conditions at the entrance stairs and fare array at the 39<sup>th</sup> Avenue station during the weekday 8-9 AM and 5-6 PM peak hours.

### 21<sup>ST</sup> STREET-QUEENSBRIDGE (F) STATION

As shown in Figure 16-1, the 21<sup>st</sup> Street-Queensbridge station is located two blocks to the west of the rezoning area beneath 41st Street. Opened in October 1989, this station has two side platforms accessed from a mezzanine located at the east end of the station at 21<sup>st</sup> Street. Street-level access is provided by two street stairs at the northeast corner of 21<sup>st</sup> Street and 41<sup>st</sup> Avenue, and an elevator and escalator at the northwest corner. The station is served at all times by F trains operating to and from the Sixth Avenue Line in Manhattan via the 63<sup>rd</sup> Street Tunnel. In Queens, F trains operate along the Queens Boulevard Line.

As shown in Table 16-3, with an average weekday ridership of approximately 6,900 entering passengers in 2006, the 21<sup>st</sup> Street-Queensbridge station is ranked 195<sup>th</sup> in weekday ridership among the subway system's 423 subway stations. Ridership at this station increased by approximately 1.4 percent from 2004 through 2006. As discussed later in this chapter, the proposed actions would generate an estimated seven new subway trips at this station in the weekday AM peak hour and nine in the PM peak hour, below the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A detailed quantitative analysis of the 21<sup>st</sup> Street-Queensbridge station is therefore not provided in this EIS.

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**Figure 16-1**  
**Rezoning Area Subway Stations**  
**and Analyzed Station Facilities**



### *36<sup>TH</sup> AVENUE (N, W) STATION*

The 36<sup>th</sup> Avenue station is located immediately to the north of the rezoning area on an elevated structure above 31<sup>st</sup> Street at 36<sup>th</sup> Avenue. This Astoria Line station, served by N trains at all times and W trains on weekdays only, consists of two side platforms located above a mezzanine level which is accessed from four stairways at the intersection of 31<sup>st</sup> Street and 36<sup>th</sup> Avenue. Trains serving this station operate between a terminus in Astoria and the Broadway Line in Manhattan via the 60<sup>th</sup> Street Tunnel.

As shown in Table 16-3, with an average weekday ridership of approximately 7,104 entering passengers in 2006, the 36<sup>th</sup> Avenue station is ranked 191<sup>st</sup> in weekday ridership among the subway system's 423 subway stations. Ridership at this station increased by approximately 6.6 percent from 2004 through 2006. As discussed later in this chapter, the proposed actions would generate an estimated 10 new subway trips at this station in the weekday AM peak hour and 19 in the PM peak hour, below the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A detailed quantitative analysis of the 36<sup>th</sup> Avenue station is therefore not provided in this EIS.

### *36<sup>TH</sup> STREET (G, R, V) STATION*

As shown in Figure 16-1, the 36<sup>th</sup> Street station is located beneath Northern Boulevard between 34<sup>th</sup> and 36<sup>th</sup> Streets, adjacent to the eastern boundary of the proposed rezoning area. This station has two side platforms. Access to the Manhattan-bound platform is via a platform-level fare array and two street stairs on the north side of Northern Boulevard (one each at 34<sup>th</sup> and 35<sup>th</sup> Streets). Two fare arrays control access to the Queens-bound platform, each located on a mezzanine above the platform level (one at the east end of the station and the second at the western end). Access from street level is provided by two stairs on the south side of Northern Boulevard, one near 34<sup>th</sup> Street and the second near 36<sup>th</sup> Street. The station, a local stop on the Queens Boulevard Line, is served by R trains at all times, V trains on weekdays only, and G trains during evening and late night hours and on weekends.

As shown in Table 16-3, with an average weekday ridership of approximately 3,254 entering passengers in 2006, the 36<sup>th</sup> Street station is ranked 337<sup>th</sup> in weekday ridership among the subway system's 423 subway stations. Ridership at this station declined by approximately 1.3 percent from 2004 through 2006. As discussed later in this chapter, compared to No-Action demand, the proposed actions are expected to generate an estimated 62 fewer subway trips at this station in the weekday AM peak hour and 70 fewer in the PM peak hour. As demand from projected development sites using this station would be less than under No-Action conditions, significant adverse impacts from the proposed actions are not anticipated, and a detailed quantitative analysis of the 36<sup>th</sup> Street station is therefore not provided in this EIS.

### *39<sup>TH</sup> AVENUE (N, W) STATION*

As shown in Figure 16-1, the 39<sup>th</sup> Avenue station is located within the proposed rezoning area on an elevated structure above 31<sup>st</sup> Street at 39<sup>th</sup> Avenue. This Astoria Line station, served by N trains at all times and W trains on weekdays only, consists of two side platforms located above a mezzanine level. Access to the mezzanine from street level is provided by stair S1 at the northwest corner of 31<sup>st</sup> Street and 39<sup>th</sup> Avenue, and stair S2 at the southeast corner. Access to the platforms is controlled by fare array R510 consisting of three turnstiles and a 24-hour token booth. Trains serving this station operate between a terminus in Astoria and the Broadway Line in Manhattan via the 60<sup>th</sup> Street Tunnel.

As shown in Table 16-3, with an average weekday ridership of approximately 2,027 entering passengers in 2006, the 39<sup>th</sup> Avenue station is ranked 388<sup>th</sup> in weekday ridership among the subway system's 423

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subway stations. Ridership at this station increased by approximately 1.1 percent from 2004 through 2006. As discussed later in this chapter, the proposed actions would generate an estimated 159 new subway trips at this station in the weekday AM peak hour and 203 in the PM peak hour, above the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A quantitative analysis of the potential effects of this increased demand is therefore provided in this EIS. As shown in Table 16-4, both street stairs and the fare array at this station currently operate at an acceptable LOS A in both the AM and PM peak hours.

### *QUEENSBORO PLAZA (N, W, 7) STATION*

As shown in Figure 16-1, the Queensboro Plaza station is located to the south of the proposed rezoning area on an elevated structure above Queens Plaza between 24<sup>th</sup> and 27<sup>th</sup> Streets. This three-level facility (a mezzanine level topped by two platform levels with island platforms) is a transfer point between N and W trains operating on the Astoria Line and No. 7 trains operating on the Flushing Line. A pedestrian bridge spanning Queens Plaza North connects the mezzanine to an in-building stairway on the north side of the plaza, while a second pedestrian bridge over Queens Plaza South provides access to a sidewalk stair on the south side of the plaza. N and W trains serving this station operate between a terminus in Astoria and the Broadway Line in Manhattan via the 60<sup>th</sup> Street Tunnel, while No. 7 trains operate between Flushing and Times Square in Manhattan via the Steinway Tunnel.

As shown in Table 16-3, with an average weekday ridership of approximately 8,330 entering passengers in 2006, the Queensboro Plaza station is ranked 165<sup>th</sup> in weekday ridership among the subway system's 423 subway stations. Ridership at this station increased by approximately 1.6 percent from 2004 through 2006. As discussed later in this chapter, the proposed actions would generate a net increase of approximately 10 new subway trips at this station in the weekday AM peak hour and 22 in the PM peak hour, below the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A detailed quantitative analysis of the Queensboro Plaza station is therefore not provided in this EIS.

### *QUEENS PLAZA (E, G, R, V) STATION*

The Queens Plaza station is located to the south of the proposed rezoning area under the junction of Queens Plaza, Queens Boulevard, Jackson Avenue and Northern Boulevard. The station, a local and express stop on the Queens Boulevard Line, consists of two island platforms located beneath an extensive mezzanine level with entrance stairs located along Queens Boulevard and Jackson Avenue. Trains serving this station include E (express) and R (local) trains at all times, V (local) trains on weekdays, and G (local) trains evenings, nights and weekends.

As shown in Table 16-3, with an average weekday ridership of approximately 7,654 entering passengers in 2006, the Queens Plaza station is ranked 177<sup>th</sup> in weekday ridership among the subway system's 423 subway stations. Ridership at this station decreased by approximately 1.9 percent from 2004 through 2006. As discussed later in this chapter, the proposed actions would generate a net increase of approximately 106 new subway trips at this station in the weekday AM peak hour and 153 in the PM peak hour, below the *CEQR Technical Manual* 200-trip threshold for a detailed impact analysis. A detailed quantitative analysis of the Queens Plaza station is therefore not provided in this EIS.

**Table 16-4  
Existing Condition at the 39th Avenue (N, W) Subway Station**

<b>Stairways</b>										
No.	Station Element/Location	Peak Period	Actual Width in Feet	Friction Factor (1)	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 39th Avenue/31st Street	8-9 AM 5-6 PM	5.0 5.0	0.8 0.8	3.20 3.20	480 480	109 98	2.27 2.04	0.23 0.20	A A
S2	Stairway @ SE Corner 39th Avenue/31st Street	8-9 AM 5-6 PM	5.0 5.0	0.8 0.8	3.20 3.20	480 480	38 36	0.79 0.75	0.08 0.08	A A
<b>Fare Arrays and Exit Gates</b>										
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS				
R510	39th Avenue Fare Array 3 entry/exit turnstiles	8-9 AM 5-6 PM	1,440 1,440	147 134	0.10 0.09	A A				
<b>Notes:</b>										
(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: June 2007 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:										
LOS	V/C Ratio									
A	0.00 - 0.50									
B	0.51 - 0.70									
C	0.71 - 1.00									
D	1.01 - 1.30									
E	1.31 - 1.70									
F	>1.71									

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### **BUS SERVICE**

The Queens Plaza area immediately to the south of the proposed rezoning area is a major nexus of local bus service in Queens. As shown in Figure 16-2, ten NYC Transit and MTA Bus local bus routes operate within one quarter mile of one or more projected development sites. These routes include the Q19A, Q39, Q60, Q66, Q67, Q101, Q102, Q103 operated by MTA Bus, and the B61 and Q32 operated by NYC Transit.

As discussed in more detail later in this chapter, compared to the future condition without the proposed actions, the proposed actions would generate a net decrease of 25 bus trips in the weekday AM peak hour and a net increase of only three bus trips in the PM peak hour. As the proposed actions would result in the addition of fewer than 200 new bus trips in either the AM or PM peak hours (the *CEQR Technical Manual* threshold for a quantitative transit impact analysis), significant adverse impacts to local bus services are considered unlikely. A qualitative discussion of the ten routes serving the proposed rezoning area is provided below.

#### *Q19A (MTA BUS)*

The Q19A provides daily service between the Queensboro Plaza subway station in Long Island City and Astoria Boulevard/82<sup>nd</sup> Street in Jackson Heights, generally between the hours of 5:00 AM and 1:00 AM. In the vicinity of the rezoning area, Q19A buses operate along 21<sup>st</sup> Street.

#### *Q32 (NYC TRANSIT)*

The Q32 provides daily service between Northern Boulevard at 81<sup>st</sup> Street in Jackson Heights and 7<sup>th</sup> Avenue/32<sup>nd</sup> Street (Penn Station) in Manhattan, via the Queensboro Bridge. Service is generally provided between the hours of 4:30 AM and 1:30 AM (6:00 AM to 11:00 PM on Sundays). In the vicinity of the proposed rezoning area, Q32 buses operate along Queens Plaza and Queens Boulevard.

#### *Q39 (MTA BUS)*

The Q39 provides daily service at all times between the Queensboro Plaza subway station and 60<sup>th</sup> Lane/Cooper Avenue in Ridgewood, Queens. As shown in Figure 16-2, in the vicinity of the proposed rezoning area, Q39 buses operate along Jackson Avenue, 42<sup>nd</sup> Road and 23<sup>rd</sup> Street south of Queens Plaza.

#### *Q60 (MTA BUS)*

The Q60 provides daily service between 109<sup>th</sup> Avenue/157<sup>th</sup> Street in South Jamaica and 2<sup>nd</sup> Avenue/East 60<sup>th</sup> Street in East Midtown, Manhattan via the Queensboro Bridge. Service is generally provided between the hours of 4:30 AM and 2:00 AM. In the vicinity of the proposed rezoning area, Q60 buses operate along Queens Plaza and Queens Boulevard.

#### *Q66 (MTA BUS)*

The Q66 provides daily service at all times between Queensboro Plaza and the Flushing-Main Street subway station in Flushing. (Additional Q66 service operates between the Flushing-Main Street subway station and 51<sup>st</sup> Street/Northern Boulevard in Woodside from 4:00 AM to 2:00 AM, daily). Q66 buses operate along 35<sup>th</sup> Avenue and 21<sup>st</sup> Street in the vicinity of the proposed rezoning area.

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Figure 16-2  
Local Bus Routes

- Legend:
- 1/4 - Mile Radius
  - ..... Rezoning Area Boundary

## **Dutch Kills Rezoning and Related Actions EIS**

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### *Q67 (MTA BUS)*

The Q67 provides daily service between the Queensboro Plaza subway station and Metropolitan Avenue/Fresh Pond Road in Middle Village. Service is generally provided between the hours of 3:00 AM and 11:00 PM on weekdays, 7:00 AM to 11:00 AM on Saturdays, and 9:00 AM to 11:00 AM on Sundays. In the vicinity of the proposed rezoning area, Q67 buses operate along Jackson Avenue and 42<sup>nd</sup> Road.

### *Q101 (MTA BUS)*

The Q101 provides daily service at all times between 19<sup>th</sup> Avenue/Hazen Street in Astoria and 2<sup>nd</sup> Avenue/East 59<sup>th</sup> Street in East Midtown, Manhattan via the Queensboro Bridge. Q101 buses operate along Northern Boulevard on the eastern periphery of the proposed rezoning area as well as along Queens Plaza and Steinway Street.

### *Q102 (MTA BUS)*

The Q102 provides daily service between 27<sup>th</sup> Avenue and 2<sup>nd</sup> Street in Astoria and Bird S. Coler and Goldwater Hospitals on Roosevelt Island. Service is generally provided between the hours of 5:00 AM and 1:10 AM. Q102 buses operate through the proposed rezoning area along 31<sup>st</sup> Street.

### *Q103 (MTA BUS)*

The Q103 provides weekday-only service between 27<sup>th</sup> Avenue and 2<sup>nd</sup> Street in Astoria and Borden Avenue/Vernon Boulevard in Long Island City where it provides a connection to No. 7 subway service at the Vernon Boulevard-Jackson Avenue station. Service is generally provided from 7:00 AM to 6 :00 PM. In the vicinity of the proposed rezoning area, Q103 buses operate along 21<sup>st</sup> Street between 40<sup>th</sup> and 41<sup>st</sup> Avenues.

### *B61 (NYC TRANSIT)*

The B61 provides daily service at all times between Jackson Avenue/Queens Plaza South in Long Island City, and Van Brunt/Beard Streets in Red Hook, Brooklyn. In Long Island City, B61 buses travel along Jackson Avenue and utilize the Pulaski Bridge over Newtown Creek for access to and from Brooklyn.

## **PEDESTRIANS**

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 pedestrian facilities in the vicinity of the entrances to the two subway stations where the majority of project-generated subway demand is expected to occur – the 39<sup>th</sup> Avenue station and the Queens Plaza station. As shown in Figure 16-3, analyzed pedestrian facilities include all sidewalks, corner areas and crosswalks at the intersection of 31<sup>st</sup> Street and 39<sup>th</sup> Avenue; the southwest corner and adjacent sidewalks and crosswalks at the intersection of Northern Boulevard and 40<sup>th</sup> Road; and the north sidewalk on 41<sup>st</sup> Avenue east of Northern Boulevard.

Analyzed sidewalks along Northern Boulevard, 40<sup>th</sup> Road, 39<sup>th</sup> Avenue and 41<sup>st</sup> Avenue are typically 14 to 15 feet in width. Analyzed sidewalks along 31<sup>st</sup> Street are typically 20 feet in width, with the exception

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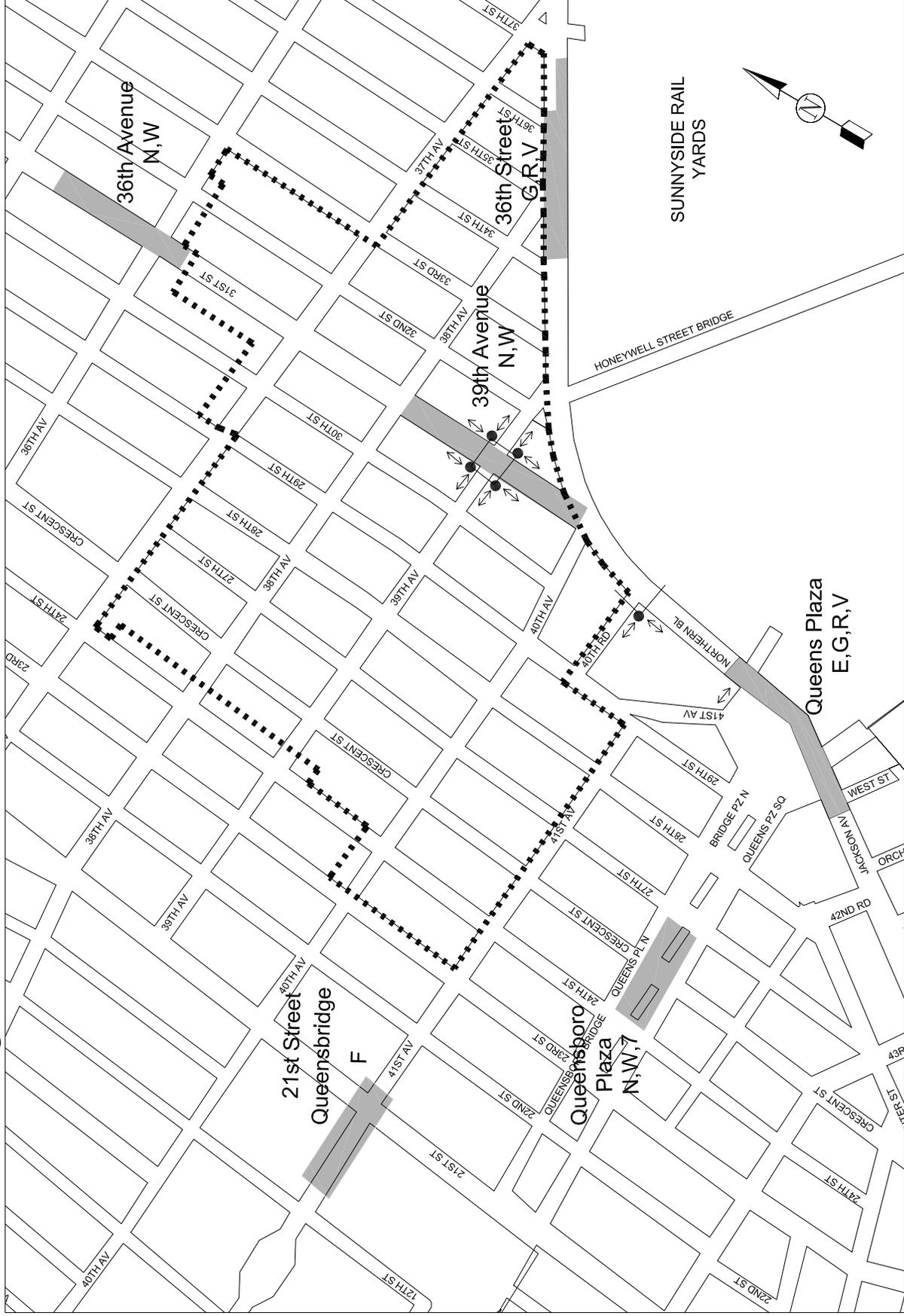


Figure 16-3  
Pedestrian Analysis Locations

## **Dutch Kills Rezoning and Related Actions EIS**

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of the east sidewalk between 38<sup>th</sup> and 39<sup>th</sup> Avenues which is a narrower 14 feet in width. Thirteen-foot-wide crosswalks are provided on 31<sup>st</sup> Street at 39<sup>th</sup> Avenue, while the crosswalks on 39<sup>th</sup> Avenue at this intersection are 15-feet in width. At the southwest corner of Northern Boulevard and 40<sup>th</sup> Road, a 16-foot-wide crosswalk is provided on Northern Boulevard and a 13-foot-wide crosswalk is provided on 40<sup>th</sup> Road. In general, existing peak hour pedestrian volumes within the proposed rezoning area are relatively light, with peak 15-minute volumes at analyzed sidewalks ranging from three to 89.

Tables 16-5 through 16-7 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 16-5, 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 16-6 and 16-7, 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 2007 and 2017, it is expected that transit and pedestrian demands in the study 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 101,525 square feet of office space, 37,009 square feet of retail space, 81,470 square feet of community facility space and 285 hotel rooms over existing conditions. Approximately 80,800 square feet of existing light industrial space and five dwelling units would be displaced by this new development. In order to forecast the future conditions without the proposed actions (the No-Action condition), development on projected development sites, and developments listed on Table E-1 in Appendix E were considered, in addition to an annual background growth rate of 0.5 percent per year applied to existing travel demand for the 2007 to 2017 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Long Island City, 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 proposed rezoning area is expected to affect transit and pedestrian facilities in the 2017 future without the proposed actions.

#### **SUBWAY SERVICE**

Under No-Action conditions, subway demand would grow as a result of background growth and new development projects. Development within the proposed rezoning area is expected to add trips at the 39<sup>th</sup> Avenue (N, W) subway station. Table 16-8 shows the results of the analysis of No-Action AM and PM peak hour conditions for the analyzed station elements at this station. As shown in Table 16-8, in the future without the proposed actions, analyzed stairways S1 and S2 and the station's fare array would continue to operate at an acceptable LOS A (free-flow) in both the AM and PM peak hours.

#### **BUS SERVICE**

During the 2007 through 2017 period, it is anticipated that demand on MTA Bus and NYC Transit-operated bus routes serving the proposed rezoning area would increase as a result of general background growth, new development within the proposed rezoning area, and development projects located outside of the proposed rezoning area. As standard practice, MTA Bus and NYC Transit routinely conduct periodic ridership counts and increase service where operationally warranted and fiscally feasible. It is therefore

**Table 16-5  
Existing Sidewalk Conditions**

Block	Sidewalk Location	Total Width	Effective Width (1) (ft)	Peak 15-Minute Volumes			Flow Rate (per/min/ft)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
31st Street between btwn 38th Ave and 39th Ave	East	14	11	6	11	9	0.0	0.1	0.1	A	A	A	A	A	A
	West	20	17	89	17	76	0.3	0.1	0.3	A	A	A	A	A	A
31st Street between btwn 39th Ave and 40th Ave	East	20	17	38	8	30	0.1	0.0	0.1	A	A	A	A	A	A
	West	20	17	11	8	16	0.0	0.0	0.1	A	A	A	A	A	A
39th Avenue between btwn 30th St and 31st St	North	15	12	81	38	72	0.5	0.2	0.4	A	A	A	A	A	A
	South	14	11	3	3	7	0.0	0.0	0.0	A	A	A	A	A	A
39th Avenue between btwn 31st St and 32nd St	North	15	12	23	25	19	0.1	0.1	0.1	A	A	A	A	A	A
	South	15	12	26	14	22	0.1	0.1	0.1	A	A	A	A	A	A
40th Road between 29th St and Northern Blvd	South	15	12	5	10	5	0.0	0.1	0.0	A	A	A	A	A	A
	West	15	12	18	11	19	0.1	0.1	0.1	A	A	A	A	A	A
41st Avenue west of Northern Boulevard	North	15	12	71	63	85	0.4	0.4	0.5	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 16-6  
Existing Corner Conditions**

Intersection	Corner	Curb Radii (feet)	Peak 15-Minute Volume		Avg Pedestrian Space (sq-ft/ped)		Level of Service	
			AM	PM	AM	PM	AM	PM
31 Street & 39th Avenue	NE	12	2	3	1,675.0	1,911.6	A	A
	NW	12	64	54	685.6	784.3	A	A
	SE	12	30	18	1,342.1	1,776.7	A	A
	SW	12	0	4	3,288.7	2,235.7	A	A
Nothern Blvd & 40th Road	SW	12	4	4	1,814.0	1,814.0	A	A

**Table 16-7  
Existing Crosswalk Conditions**

Intersection	Crosswalk	Peak 15-Minute Volume		Avg. Pedestrian Space (sq-ft/ped)		Level of Service	
		AM	PM	AM	PM	AM	PM
31 Street & 39th Avenue	North	13	7	1,004.8	1,885.4	A	A
	South	6	5	2,248.5	2,650.1	A	A
	East	9	11	1,661.1	1,356.6	A	A
	West	11	16	1,356.6	928.3	A	A
Nothern Blvd & 40th Road	South	0	0	1,298.7	1,217.5	A	A
	West	0	0	1,286.4	1,157.7	A	A

**Table 16-8**  
**Future Condition Without the Proposed Actions**  
**at the 39th Avenue (N,W) Subway Station**

<b>Stairways</b>												
No.	Station Element/Location	Peak Period	Actual Width in Feet	Friction Factor (1)	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 39th Avenue/31st Street	8-9 AM	5.00	0.8	3.20	480	149	3.10	0.31	A		
		5-6 PM	5.00	0.8	3.20	480	142	2.96	0.30	A		
S2	Stairway @ SE Corner 39th Avenue/31st Street	8-9 AM	5.00	0.8	3.20	480	124	2.58	0.26	A		
		5-6 PM	5.00	0.8	3.20	480	123	2.56	0.26	A		
<b>Fare Arrays and Exit Gates</b>												
No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS						
R510	39th Avenue Fare Array 3 entry/exit turnstiles	8-9 AM	1,440	273	0.19	A						
		5-6 PM	1,440	265	0.18	A						
<b>Notes:</b>												
(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 0.5 percent/year background growth for the 2007 - 2017 period plus demand from No Build 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:												
LOS	V/C Ratio											
A	0.00 - 0.50											
B	0.51 - 0.70											
C	0.71 - 1.00											
D	1.01 - 1.30											
E	1.31 - 1.70											
F	>1.71											

anticipated that in the future condition without the proposed actions, MTA Bus and NYC Transit would increase frequency where necessary to address any capacity shortfalls.

## **PEDESTRIANS**

Pedestrian flow conditions at analyzed sidewalks, corners areas, and crosswalks were analyzed for the 2017 future without the proposed actions, incorporating anticipated demand from new development and a background growth rate of 0.5 percent per year for the 2007 through 2017 period. Tables 16-9 through 16-11 show the results of the analyses of sidewalk, corner area and crosswalk conditions for the weekday AM, midday and PM peak hours in the 2017 future without the proposed actions. As shown in Table 16-9, during these peak hours, all analyzed sidewalks would operate at an acceptable LOS A or B under platoon conditions. As shown in Tables 16-10 and 16-11, all analyzed corner areas and crosswalks would also continue to operate at an acceptable LOS A or B in all peak hours in the future without the proposed actions.

## **F. FUTURE CONDITION WITH THE PROPOSED ACTIONS**

This section provides an analysis of transit and pedestrian conditions in the future with the proposed actions (the With-Action condition). As described in detail in Chapter 1, “Project Description”, under the reasonable worst case development scenario, the proposed actions are expected to result in the development of approximately 1,555 dwelling units (DUs), 61,092 square feet of local retail and 70,606 square feet of destination (supermarket) retail uses on 40 projected development sites. There would be a net reduction of 132,848 square feet of office, 196,320 square feet of hotel, 180,536 square feet of light industrial, and 41,697 square feet of community facility uses compared to the future conditions without the proposed actions. The analyses in this section examine future transit and pedestrian conditions in 2017 with the full build-out of this reasonable worst case development scenario.

Table 15-7 in Chapter 15, “Traffic and Parking”, presents the transportation planning factors utilized in the travel demand forecast for projected development sites, while Table 16-12, below, summarizes the total estimated weekday peak hour transit and pedestrian trips generated under the RWCDS with implementation of the proposed actions. The numbers in Table 16-12 represent the net change in subway, bus and walk-only trips compared to the future condition without the proposed actions. As shown in Table 16-12, the RWCDS would result in a net reduction of 259 inbound subway trips and a net increase of 489 outbound subway trips in the weekday AM peak hour, an increase of 153 inbound and 146 outbound subway trips in the midday peak hour, and an increase of 475 inbound subway trips and a net reduction of 139 outbound subway trips in the weekday PM peak hour. (Negative increments reflect the elimination of No-Action trips generated by community facility, office, hotel and light industrial uses that would be displaced in the future condition with the proposed actions.) There would be 44 fewer inbound trips by bus and 19 more outbound trips by bus in the weekday AM peak hour, one fewer inbound and six fewer outbound bus trips in the midday, and 29 more inbound and 26 fewer outbound bus trips in the weekday PM peak hour. Trips by walking-only, bicycle or other non-vehicular modes would increase by 40 inbound and 222 outbound in the weekday AM peak hour, 152 inbound and 95 outbound in the midday and 332 inbound and 200 outbound in the weekday PM peak hour. Given the rezoning area’s distance from commuter rail stations in Long Island City, (both existing and planned), most if not all project-generated commuter rail trips are expected to arrive or depart the area via other modes (primarily subway and bus).

**Table 16-9  
Future Condition Without the Proposed Actions - Sidewalks**

Block	Sidewalk Location	Total Width	Effective Width (1)	Peak 15-Minute Volumes			Flow Rate (per/min/ft)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
31st Street between btwn 38th Ave and 39th Ave	East	14	11	7	13	10	0.0	0.1	0.1	A	A	A	A	A	A
	West	20	17	117	33	110	0.5	0.1	0.4	A	A	A	A	A	A
31st Street between btwn 39th Ave and 40th Ave	East	20	17	119	99	116	0.5	0.4	0.5	A	A	A	A	A	A
	West	20	17	17	23	26	0.1	0.1	0.1	A	A	A	A	A	A
39th Avenue between btwn 30th St and 31st St	North	15	12	98	58	91	0.5	0.3	0.5	A	A	A	B	A	B
	South	14	11	6	7	10	0.0	0.0	0.1	A	A	A	A	A	A
39th Avenue between btwn 31st St and 32nd St	North	15	12	38	40	34	0.2	0.2	0.2	A	A	A	A	A	A
	South	15	12	29	17	25	0.2	0.1	0.1	A	A	A	A	A	A
40th Road between 29th St and Northern Blvd	South	15	12	22	74	41	0.1	0.4	0.2	A	A	A	A	A	A
Northern Blvd between 40th Rd and 41st Ave	West	15	12	54	128	89	0.3	0.7	0.5	A	A	A	A	B	A
41st Avenue west of Northern Boulevard	North	15	12	132	253	200	0.7	1.4	1.1	A	A	A	B	B	B

**Notes:**

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

**Table 16-10**  
**Future Condition Without the Proposed Actions - Corners**

Intersection	Corner	Curb Radii (feet)	Peak 15-Minute Volume		Avg Pedestrian Space (sq-ft/ped)		Level of Service	
			AM	PM	AM	PM	AM	PM
31 Street & 39th Avenue	NE	12	2	3	1,029.7	1,051.6	A	A
	NW	12	79	68	528.7	579.9	A	A
	SE	12	31	19	1,021.2	1,183.1	A	A
	SW	12	0	4	2,147.0	1,508.7	A	A
Nothern Blvd & 40th Road	SW	12	8	5	542.5	542.5	A	A

**Table 16-11**  
**Future Condition Without the Proposed Actions - Crosswalks**

Intersection	Crosswalk	Peak 15-Minute Volume		Avg. Pedestrian Space (sq-ft/ped)		Level of Service	
		AM	PM	AM	PM	AM	PM
31 Street & 39th Avenue	North	18	12	718.3	1,088.1	A	A
	South	9	9	1,482.7	1,455.1	A	A
	East	19	23	779.6	641.6	A	A
	West	17	24	872.9	614.3	A	A
Nothern Blvd & 40th Road	South	34	67	186.5	86.3	A	B
	West	37	59	582.4	362.1	A	A

**Table 16-12**  
**Transit and Pedestrian Travel Demand Forecast for the Proposed Actions**  
**(Person Trips)**

	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
<b>Subway</b>	-259	489	230	153	146	299	475	-139	336
<b>Local Bus</b>	-44	19	-25	-1	-6	-7	29	-26	3
<b>Walk</b>	40	222	262	152	95	247	332	200	532

**SUBWAY SERVICE**

As shown in Table 16-12, the proposed actions would generate a net total of 230 and 336 new subway trips (in and out combined) during the weekday AM and PM peak hours, respectively. The distribution of these trips among the six subway stations located in proximity to the proposed rezoning area is shown in Table 16-13. 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 16-13, the greatest incremental increase in subway trips as a result of the proposed actions would occur at the 39<sup>th</sup> Avenue (N, W) station and the Queens Plaza (E, G, R, V) station. The proposed actions would generate an estimated 159 and 203 new subway trips in the AM and PM peak hours, respectively, at the 39<sup>th</sup> Avenue station, and an estimated 106 and 153 new trips during these periods, respectively, at the Queens Plaza station. All other subway stations serving the rezoning area would experience a net increase of 22 or fewer trips in each peak hour or, in the case of the 36<sup>th</sup> Street station, a net decrease in peak hour trips.

**Table 16-13**  
**Weekday Peak Hour Project Increment**  
**Subway Trips by Station**

Subway Station	8-9 AM Peak Hour			5-6 PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
21 <sup>st</sup> Street-Queensbridge (F) Station	11	-4	7	-1	10	9
36 <sup>th</sup> Avenue (N, W) Station	37	-27	10	-14	33	19
36 <sup>th</sup> Street (G, R, V) Station	29	-91	-62	-96	26	-70
39 <sup>th</sup> Avenue (N, W) Station	241	-82	159	-31	234	203
Queensboro Plaza (N, W, 7)	39	-29	10	-14	36	22
Queens Plaza (E, G, R, V) Station	130	-24	106	22	131	153
<b>Total</b>	<b>487</b>	<b>-257</b>	<b>230</b>	<b>-134</b>	<b>470</b>	<b>336</b>

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

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 actions in 2017 would exceed this threshold in the weekday PM peak hour at the 39<sup>th</sup> Avenue (N, W) subway station, this station is analyzed quantitatively in this EIS. The results of the

## **Dutch Kills Rezoning and Related Actions EIS**

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analysis of future 2017 conditions with the proposed actions at the 39<sup>th</sup> Avenue subway station are shown in Table 16-14. As shown in Table 16-14, fare array R510 and both analyzed stairways (S1 and S2) would continue to operate below capacity at an acceptable LOS A or B in both the AM and PM peak hours. The proposed actions would therefore not result in significant adverse impacts at the 39<sup>th</sup> Avenue (N, W) subway station in 2017.

### **BUS SERVICE**

As shown in Table 16-12, compared to No-Action conditions, the proposed actions would generate a net reduction of 25 bus trips in the weekday AM peak hour and a net increase of three bus trips in the weekday PM peak hour. The net change in bus trips in each peak hour would be distributed among the ten bus routes operating within one quarter mile of projected development sites. As the proposed actions would result in a net reduction of 25 bus trips in the weekday AM peak hour, and a net increase of only three bus trips in the weekday PM peak hour (less than the *CEQR Technical Manual* analysis threshold of 200 trips below which significant bus impacts are considered unlikely), and as the net increase in bus trips in the PM peak hour would be distributed among the multiple bus routes serving the proposed rezoning area, no significant adverse impacts to local bus services are anticipated to result from implementation of the proposed actions.

### **PEDESTRIANS**

The proposed actions would generate new pedestrian demand on analyzed sidewalks, corner areas and crosswalks by 2017. 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 16-12, the proposed actions are expected to generate a net total of 262 walk-only trips in the weekday AM peak hour, 247 in the midday and 532 in the weekday PM peak hour. Trips en route to and from area subway stations and bus stops would account for an additional 205, 292 and 333 new pedestrian trips during the weekday AM, midday and PM peak hours, respectively.

As previously discussed, new pedestrian trips generated by the proposed actions are expected to be widely distributed due to the dispersed locations of the projected development sites within the proposed rezoning area, with the highest concentrations occurring in proximity to subway station entrances. Along analyzed sidewalks, the greatest increase in peak hour pedestrian demand is expected to occur on the west sidewalk along 31<sup>st</sup> Street between 39<sup>th</sup> and 40<sup>th</sup> Avenues adjacent to projected development site No. 4 which would be developed with 345 dwelling units and a 70,606 square-foot supermarket under the RWCDS. It is estimated that peak 15-minute pedestrian volumes along this sidewalk would increase by 60 trips in the weekday AM peak hour, 67 in the midday and 86 in the weekday PM peak hour. Peak 15-minute volumes along the west sidewalk on Northern Boulevard between 40<sup>th</sup> Road and 41<sup>st</sup> Avenue would increase by approximately 47 trips in the weekday AM peak hour, 58 trips in the midday, and 70 trips in the weekday PM peak hour. Much of this new demand would be en route to and from an entrance stair to the Queens Plaza subway station located at the northwest corner of Northern Boulevard and 41<sup>st</sup> Avenue. All other analyzed sidewalks would experience net increases of 52 or fewer trips in the peak 15-minutes of each peak hour under With-Action conditions.

At analyzed crosswalks, the greatest increase in peak hour pedestrian demand is expected to occur on the west crosswalk on 39<sup>th</sup> Avenue at 31<sup>st</sup> Street, (adjacent to projected development site No. 4 and the 39<sup>th</sup> Avenue subway station). It is estimated that peak 15-minute pedestrian volumes using this crosswalk would increase by 51 trips in the weekday AM peak hour, 56 in the midday and 73 in the weekday PM peak hour. Peak 15-minute volumes along the west crosswalk on 40<sup>th</sup> Road at Northern Boulevard would

**Table 16-14  
Future Condition With the Proposed Action  
at the 39th Avenue (N,W) Subway Station**

<b>Stairways</b>																
No.	Station Element/Location	Peak Period	Actual Width in Feet	Friction Factor (1)	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	2017 No Action PFM (2)	V/C (5)	LOS	2017 With Action PFM (2)	V/C (5)	LOS	Width Increment Threshold in Inches (3)
S1	Stairway @ NW Corner 39th Avenue/31st Street	8-9 AM 5-6 PM	5.00 5.00	0.8 0.8	3.20 3.20	480 480	149 142	37 46	186 188	3.10 2.96	0.31 0.30	A A	3.88 3.92	0.39 0.39	A A	--- ---
S2	Stairway @ SE Corner 39th Avenue/31st Street	8-9 AM 5-6 PM	5.00 5.00	0.8 0.8	3.20 3.20	480 480	124 123	13 18	137 141	2.58 2.56	0.26 0.26	A A	2.85 2.94	0.29 0.29	A A	--- ---
<b>Fare Arrays and Exit Gates</b>																
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	2017 No Action V/C	LOS	2017 With Action V/C	LOS						
R510	39th Avenue Fare Array 3 entry/exit turnstiles	8-9 AM 5-6 PM	1,440 1,440	273 265	50 64	323 329	0.19 0.18	A A	0.22 0.23	B B						

**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) Width increment threshold needed to restore processor to No Build 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:

LOS	V/C Ratio
A	0.00 - 0.50
B	0.51 - 0.70
C	0.71 - 1.00
D	1.01 - 1.30
E	1.31 - 1.70
F	>1.71

\* Denotes a significant adverse impact based on CEQR criteria.

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increase by approximately 47 trips in the weekday AM peak hour, 59 trips in the midday, and 67 trips in the weekday PM peak hour, with much of this new demand en route to and from the Queens Plaza subway station. Peak 15-minute pedestrian volumes at all other analyzed crosswalks are expected to increase by no more than 13 trips in any peak hour in the future with the proposed actions.

For sidewalks outside of the Manhattan CBD (the area of Manhattan below 60<sup>th</sup> 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 16-15, in the future with the proposed actions, 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 actions.

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 16-16 and 16-17, with implementation of the proposed actions, 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.

It should be noted that the proposed actions are expected to generate their highest level of new pedestrian demand in the Saturday midday peak hour. As shown in Table 15-8 in Chapter 15, "Traffic and Parking", With-Action increment trips by the subway, bus and walk modes would total 957 in the Saturday midday peak hour compared to 467, 539 and 871 trips in the weekday AM, midday and PM peak hours, respectively. As is the case for the weekday peak hours, these Saturday midday trips are expected to be widely dispersed throughout the proposed rezoning area. Concentrations of new demand would, however, occur in the vicinity of subway station entrances, especially at the intersection of 31<sup>st</sup> Street and 39<sup>th</sup> Avenue (the location of the 39<sup>th</sup> Avenue subway station) which would also be located adjacent to the proposed project's destination retail (supermarket) component. A screening analysis was therefore conducted to assess the potential for significant adverse pedestrian impacts at this location during the Saturday midday peak hour. For this screening analysis, supplemental Saturday midday pedestrian counts were conducted on sidewalks, corner areas and crosswalks at this intersection in March 2008. Weekday PM peak hour pedestrian demand from No-Action and With-Action development was then added to the Saturday midday baseline volumes along with a 0.5 percent per year background growth rate. (Weekday PM No-Action and With-Action pedestrian trips would total 1,451, comparable to the 1,409 trips in the Saturday midday.) Level of service analyses based on these volumes indicate that in the Saturday midday peak hour, all analyzed sidewalks, corner areas and crosswalks at the intersection of 31<sup>st</sup> Street and 39<sup>th</sup> Avenue would continue to operate at LOS A. Consequently, based on

**Table 16-15  
Future Condition With the Proposed Actions - Sidewalks**

Block	Sidewalk Location	Total Width	Effective Width (1)	Peak 15-Minute Volumes			Flow Rate (per/min/ft)			Average Flow Level of Service			Platoon-Adjusted Level of Service		
				AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
31st Street between btwn 38th Ave and 39th Ave	East	14	11	7	13	10	0.0	0.1	0.1	A	A	A	A	A	A
	West	20	17	133	85	137	0.5	0.3	0.5	A	A	A	B	A	B
31st Street between btwn 39th Ave and 40th Ave	East	20	17	118	98	116	0.5	0.4	0.5	A	A	A	A	A	A
	West	20	17	77	90	112	0.3	0.4	0.4	A	A	A	A	A	A
39th Avenue between btwn 30th St and 31st St	North	15	12	100	57	94	0.6	0.3	0.5	A	A	A	B	A	B
	South	14	11	6	6	10	0.0	0.0	0.1	A	A	A	A	A	A
39th Avenue between btwn 31st St and 32nd St	North	15	12	42	40	40	0.2	0.2	0.2	A	A	A	A	A	A
	South	15	12	29	17	25	0.2	0.1	0.1	A	A	A	A	A	A
40th Road between 29th St and Northern Blvd	South	15	12	22	74	41	0.1	0.4	0.2	A	A	A	A	A	A
Northern Blvd between 40th Rd and 41st Ave	West	15	12	101	186	159	0.6	1.0	0.9	A	A	A	B	B	B
41st Avenue west of Northern Boulevard	North	15	12	149	289	234	0.8	1.6	1.3	A	A	A	B	B	B

**Notes:**

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

**Table 16-16  
Future Condition With the Proposed Actions - Corners**

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
31 Street & 39th Avenue	NE	12	2	5	3	976.7	726.0	952.4	A	A	A
	NW	12	82	30	72	362.0	433.4	333.5	A	A	A
	SE	12	31	12	19	826.3	1,136.0	858.3	A	A	A
	SW	12	0	2	4	633.9	548.0	450.3	A	A	A
Nothern Blvd & 40th Road	SW	12	8	6	5	339.9	161.3	339.9	A	A	A

**Table 16-17  
Future Condition With the Proposed Actions - 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
31 Street & 39th Avenue	North	16	27	10	809.6	477.2	1,310.9	A	A	A
	South	19	18	22	696.4	742.3	591.0	A	A	A
	East	23	23	29	641.6	641.6	506.1	A	A	A
	West	68	81	97	208.4	172.9	142.4	A	A	A
Nothern Blvd & 40th Road	South	34	114	68	186.5	52.2	85.0	A	B	A
	West	84	134	126	246.6	148.1	160.6	A	A	A

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this screening analysis, significant adverse pedestrian impacts are not expected to occur during the Saturday midday peak hour as a result of the proposed actions.