

Police Academy – College Point, Queens
CHAPTER 12: TRANSIT AND PEDESTRIANS

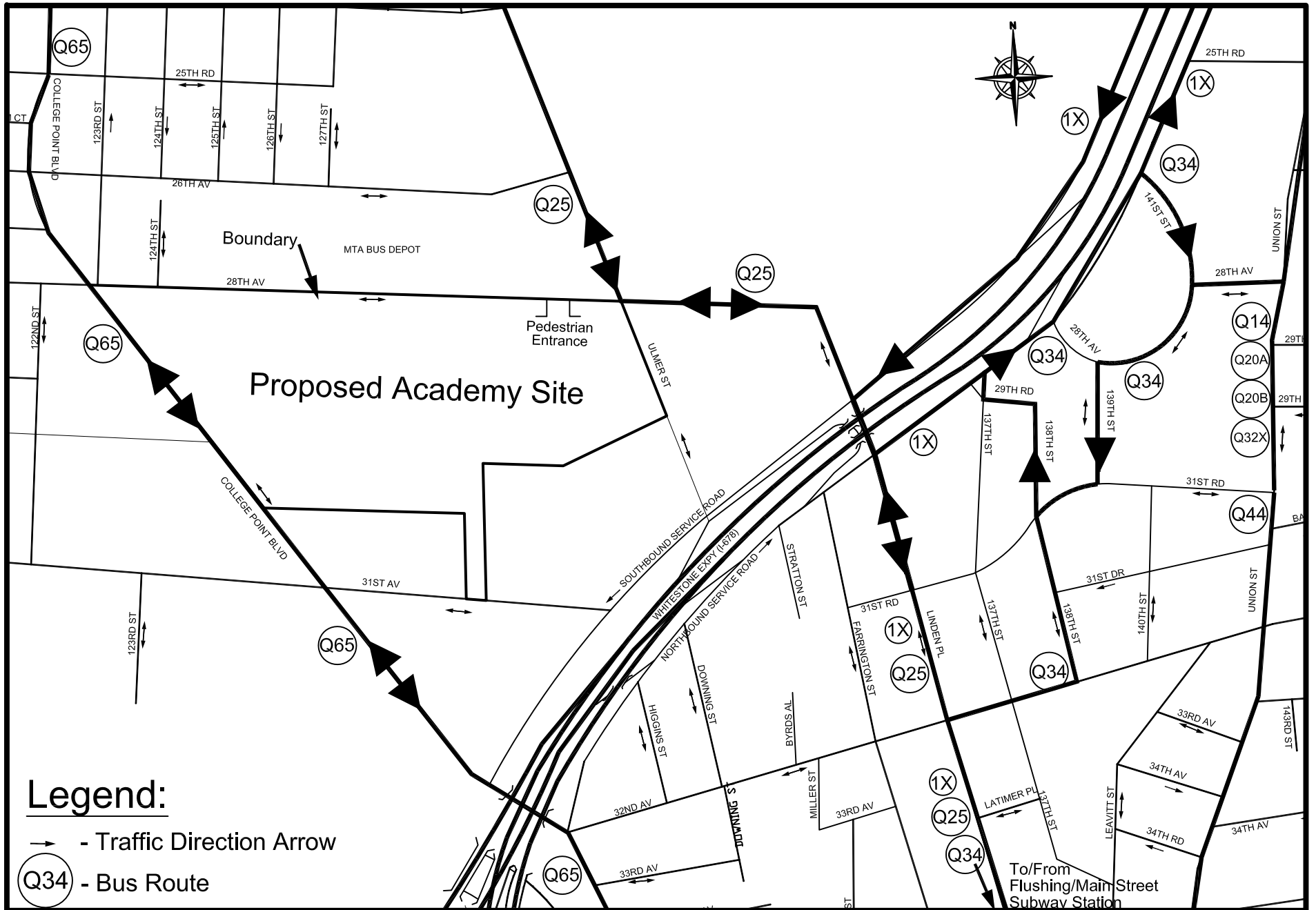
A. INTRODUCTION

This chapter of the EIS describes the transit and pedestrian travel characteristics and potential impacts associated with the Proposed Action. As described in Chapter 1 “Project Description,” the total development size would consist of approximately 2.4 million gross square feet and would include indoor training facilities, classrooms, and related support space, an indoor pistol training facility, a tactical village, an indoor track, a police museum, a visiting police/lecturer lodging facility and an above-grade parking facility to accommodate on-site parking demand. The primary pedestrian entrance would be located 28th Avenue, approximately 500 feet west of Ulmer Street.

The proposed Academy is located approximately one and one-quarter miles to the north of the Flushing/ Main Street subway station, which is located at Roosevelt Avenue and Main Street. This is the last station on the Flushing Line that services No. 7 trains. As this is the closest subway station to the project site, it is anticipated that all project generated subway trips would be concentrated at the Flushing/Main Street subway station. As shown previously in Table 11-7 in Chapter 11, “Traffic and Parking” the proposed project would generate 668 and 694 subways trips in the 6-7 AM and 3-4 PM peak hour peak hours, respectively. According to the *CEQR Technical Manual*, projects that generate more than 200 subways trips at a station require a detailed analysis. As the Proposed Action is expected to generate more than 200 trips during the AM and PM peak hours, a detailed subway analysis is warranted at the Flushing/Main Street station for both peak hours. In addition, a line haul analysis is provided for each peak hour.

As presented above the proposed Academy is located one and one-quarter miles from the Flushing/ Main Street subway station. It is anticipated that all subway trips would also utilize the bus service in the area of the Flushing/Main Street station to access the site. As shown in Table 11-7 in Chapter 11 “Traffic and Parking,” the Proposed Action is expected to generate approximately 98 and 105 new bus trips in the AM and PM peak hours, respectively. However, as mentioned above, it is expected that all subway users would use buses to and from the Flushing/Main Street station and the proposed Academy site. As such, the total combined number of new subway and bus trips is expected to be approximately 766 and 799 during the AM and PM peak hours respectively.

Two local bus routes operate within close proximity to the proposed Academy site: the Q65 and the Q25. In the vicinity of the project site, the Q65 route runs to the west of the main pedestrian entrance, along College Point Boulevard; the Q25 route runs along 28th Avenue and Ulmer Street. As the Q25 bus has a bus stop (both in-bound and out-bound) near the proposed main pedestrian entry, at 28th Avenue, near Ulmer Street, it is conservatively assumed that many bus users would prefer to take the Q25 bus to and from Flushing. As shown in Figure 12-1, in the vicinity of the project site the Q25 bus line stops closest to the project site’s pedestrian entrance located on 28th Avenue and Ulmer Street.



Legend:

- - Traffic Direction Arrow
- Q34 - Bus Route

B. EXISTING CONDITIONS

Data Collection

Counts at the primary subway station stairways and fare arrays were conducted during the weekday AM and PM peak periods in May 2008 at the Flushing/Main Street Station on the No. 7 subway line. AM and PM peak period pedestrian counts were also conducted at the same time along the sidewalks that border the site, including: the east sidewalk along College Point Boulevard; the south sidewalk along 28th Avenue; and the west sidewalk along Ulmer Street. Crosswalks counts were also conducted at this time at the intersection of College Point Boulevard and 28th Avenue and Ulmer Street and 28th Avenue, the two intersections that would be expected to experience the highest increase in pedestrian volumes in the future with the proposed action.

Subway Station

One subway line serves the study area in College Point. The Flushing Line, which carries the No. 7 train, terminates at the Flushing/Main Street Station, approximately one and quarter miles south of the project site. The Flushing Line runs east/west from the 42nd Street/Times Square station in Manhattan to the Flushing/Main Street station in Queens. In general, tracks are underground in Manhattan, and elevated in Queens. During weekdays from 6:30 AM to 12:00 PM, express trains run on a dedicated track from Main Street to Queensboro Plaza. From noon until 10:00 PM, express trains reverse directions and run from Queensboro Plaza to Main Street.

Table 12-1 shows the average weekday-entering turnstile counts at the Flushing/Main Street station from 2005 through 2007, as well as the 2007 ranking of the station based on average weekday ridership relative to all 422 stations system-wide. As shown in Table 12-1, based on 2007 data, the Flushing/Main Street station is one of the most heavily used stations in the entire subway system. It is ranked 12th out of 422 based on an average of 57,426 persons entering on a typical weekday. Demand at this station increased by 3.8 percent from 2005 to 2006, and by 1.3 percent from 2006 to 2007.

Station	Rank	2005	2006	2007	Percent Change	
					2005-2006	2006-2007
Flushing-Main Street (7)	12	54,591	56,671	57,426	3.8%	1.3%
Notes: Rank out of 422 stations system-wide.						
Source: NYC Transit 2006 Subway and Bus Ridership Report with the Supplemental 2007 Ridership Report.						

The examination of conditions at the analyzed station focuses on those station elements (street stairways and fare arrays) with the potential to be affected in the future with the Proposed Action. The analyses were prepared using the design capacities for stairs, escalators, turnstiles, and high-wheel exits specified in the *CEQR Technical Manual* and *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 the AM and PM peak hours. The stairway analyses were conducted using the Fruin pedestrian level of service (LOS) methodology, which equates pedestrian flow per minute per foot of stairway width with qualitative measures of pedestrian comfort. Based on the calculated values of pedestrian volumes per foot width of stairway per minute, Fruin defines six levels of service with letters A through F, as shown in Table 12-2. LOS A is representative of free flow conditions without pedestrian conflicts and LOS F depicts significant capacity limitations and inconvenience.

Level of Service	Pedestrians/Foot/Minute (PFM)	Comments
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 traffic conflicts, and intermittent stoppages.
F	More than 17	Complete breakdown in traffic flow.

Practical capacities were calculated for each stairway analyzed by multiplying service volumes at LOS C/D, which is 10 persons per foot width per minute (PFM), by the effective stair width and an adjustment factor to account for two-directional friction. Peak 15-minute volumes were then compared with the capacities to obtain a v/c ratio for each peak hour. Using this methodology, LOS A, B, and C correspond to volume-to-capacity ratios of less than 1.0. LOS D, E, and F represent demand levels that exceed capacity, and hence, the v/c ratios are greater than 1.0.

Levels of service for turnstiles and high-wheel exits are also described in terms of volume-to-capacity ratios, with LOS A being less than 0.2, LOS B from 0.2 to 0.4, LOS C from 0.4 to 0.6, LOS D from 0.6 to 0.8, LOS E from 0.8 to 1.0 and LOS F over 1.0. Any volume-to-capacity ratio greater than 1.0 signifies volumes beyond capacity and extended queues.

The Flushing/Main Street station is located beneath Roosevelt Avenue and Main Street, is comprised of a double island platform with one full-time access mezzanine. The mezzanine is reached via stairs on all four corners of the intersection above, and is controlled by 2 large fare arrays (H-9) with sixteen entry/exit turnstiles. Figure 12-2 shows the layout of this station's elements. It is anticipated that new peak hour subway trips generated by the proposed Academy would utilize two (S1 and S2) of the five street stairs at this station, which are closest to the Q25 bus stop. As described above, all of the demand traveling to/from the Academy are assumed to ride the Q25 bus because it is most convenient to the main campus entry (see Figure 12-3, "Local Bus Stops" for locations of the bus stops in the vicinity of the project site). Table 12-3 shows

existing conditions of station stairs and fare arrays in the 6-7 AM and 3-4 PM peak hours, respectively. As shown in 12-3 the fare array and both analyzed stairs operate at LOS A in both the AM and PM peak hours, respectively.

Station Elements	Peak Hour ⁽¹⁾	Effective Width in Feet ⁽²⁾	Maximum 15 Minute Capacity ^(3,7)	Peak 15 Minute Volume ⁽⁴⁾	PFM⁽⁵⁾	Volume to Capacity Ratio	LOS ^(6,8)
Stairway at NW Corner of Roosevelt Avenue - Main Street (S1)	AM	8.8	1,320	367	2.78	0.28	A
	PM	8.8	1,320	348	2.64	0.26	A
Stairway at SW Corner of Roosevelt Avenue - Main Street (S2)	AM	8.8	1,320	324	2.45	0.24	A
	PM	8.8	1,320	359	2.71	0.27	A
Fare Arrays - 16 Turnstiles (combined)	AM	N/A	7,680	1,120	N/A	0.15	A
	PM	N/A	7,680	1,333	N/A	0.17	A

Notes:

(1) Existing Peak hours 6-7 AM and 3-4 PM

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

(3) Stair capacity in persons per 15 minutes based on NYC Transit guild lines of 10 PFM. (see note 5)

(4) Source: PHA Field Counts conducted in May 2008.

(5) PFM = Persons per foot of stairway per minute.

(6) Refer to Table 12-2 Stairway Level of Service Definition

(7) Analysis assumes capacities of 32 per minute for turnstiles.

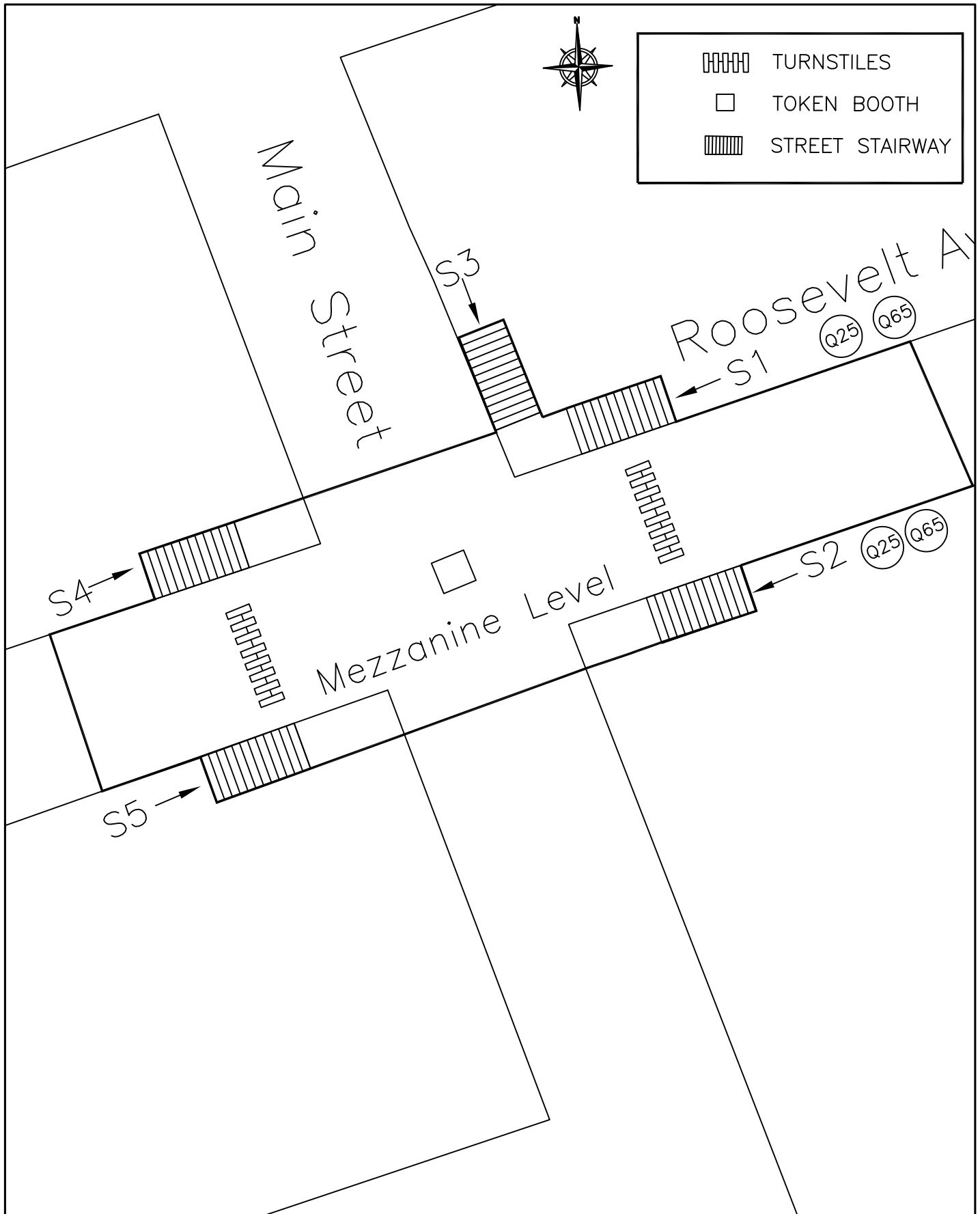
(8) Level of Service for turnstiles: LOS A: v/c < 0.2; LOS B: v/c = 0.2 to 0.4; LOS C: v/c = 0.4 to 0.6; LOS D: v/c = 0.6 to 0.8; LOS E: 0.8 to 1.0; LOS F: v/c > 1.0.

Subway Line Haul

Line haul is the volume of subway riders passing a defined point (usually the point of maximum demand or “peak load point”) on a given subway line. The line haul capacity of a given subway line is a factor of the number of trains scheduled, the number of cars per train, and the per-car capacity. The line haul analysis for the Proposed Action focuses on the Flushing-Main Street Line, as this is the only route serving the study area.

An analysis of Existing Conditions subway line haul on the Flushing Line is provided in Table 12-4. In the AM peak hour the peak load points are in the Manhattan-bound direction at the 40th Street and Woodside/61st Street stations for the local and express lines respectively. In the PM the peak load points are in the Queens-bound direction at the 74th Street/Broadway and Queensboro Plaza stations for the local and express lines, respectively. As shown in Table 12-4, under Existing Conditions, local trains operate under capacity while express trains operate over capacity in the peak Manhattan-bound direction in the AM peak hour with a volume-to-capacity

Main Street Station Mezzanine Level



(v/c) ratio of 0.85 and 1.05 for the local and express lines respectively. During the PM peak hour, trains typically operate under capacity with a v/c ratio of 0.65 and 0.75 for the local and express lines respectively in the peak Queens-bound direction and on which project-generated demand will converge.

Table 12- 4: Existing Subway Line Haul Conditions

Route	Peak Hour	Peak Direction	Service	Trains per Hour ⁽¹⁾	Cars per Hour ⁽¹⁾	Available Capacity ⁽²⁾	Passengers per Hour ⁽¹⁾	V/C Ratio ⁽³⁾
Flushing Line	AM	Manhattan-Bound	Local	13	143	15,730	13,380	0.85
			Express	13	143	15,730	16,472	1.05
	PM	Queens-Bound	Local	12	132	14,520	9,452	0.65
			Express	25	275	30,250	22,630	0.75

Notes:

- (1) Source: NYC Transit 2007 peak load point data.
- (2) Capacity based on 110 passengers/car for 50' cars as per NYC Transit subway car loading guidelines. Trains operate with 11 50'-cars.
- (3) Volume-to-capacity ratio.

Bus Service

Two MTA bus route connects the proposed Academy in College Point with the Flushing/Main Street subway station. As shown earlier in Figure 12-1, the principal bus corridors in the area include College Point Boulevard, Main Street and Roosevelt Avenue. The highest concentration of bus services in the area can be found in the vicinity of the Flushing/Main Street subway station that is the terminus for the Flushing Line. Figure 12-1 shows the bus routes in the vicinity of the project site. As noted above, it is expected that all of project-generated subway demand would use the MTA buses to access the new academy.

Q25

The Q25 provides local service in Queens from a terminus at Sutphin Boulevard/Archer Avenue to Poppenhusen Avenue in College Point. In the vicinity of the proposed Academy site, the Q25 buses run along 28th Avenue and Ulmer Street. During the AM peak hour buses run every 10 minutes, while in the PM peak buses run every 15 minutes. Limited-Stop Service is also provided during both peak periods however does not stop at the location of the proposed action.

Q65

The Q65 provides local service in Queens from a terminus at Sutphin Boulevard/Archer Avenue to 110th Street/14 Avenue in College Point. In the vicinity of the proposed Academy site, the Q65 runs along College Point Boulevard. During the both the AM and PM peak hours, buses run every 10 minutes.

It should be noted that with AM, the peak ridership direction is southbound towards the Flushing/Main Street station, with a reversed peak direction in the PM peak hour. As such project generated demand between the station and the Academy would be utilizing the Q25 and Q65 bus in the off-peak direction in peak periods.



Pedestrians

The analysis of pedestrian conditions focuses on representative pedestrian elements where new trips generated by projected developments are expected to be most concentrated. These elements include the southern sidewalk along 28th Avenue between College Point Boulevard and Ulmer Street, the two southern corners at the intersection of 28th Avenue and Ulmer Street, and the eastern and southern crosswalks at 28th Avenue and Ulmer Street. Sidewalks in the area typically range from 12 to 16 feet in width. Crosswalks in the area generally range from 11 to 14 feet in width.

Among analyzed pedestrian facilities in this area, demand counted in May 2008 was found to be very light in the immediate vicinity of the proposed Academy site in all directions during AM and PM peak hours. This is due to the land-uses in the area, which are predominately industrial or manufacturing on large tracts of land. These types of land uses do not generate many person trips throughout the day. Two-way pedestrian volumes on crosswalks along 28th Avenue at Ulmer Street were found to range from only 7 to 9 persons per hour in the AM, and from 4 to 8 persons per hour during the PM peak period. The proximity to the Q25 bus stop does not add measurable pedestrian demand at these intersections.

As discussed earlier in this chapter, the Proposed Action would generate few new walking trips only. However many new bus and subway trips would be generated during the AM or PM peak hours. Bus trips are primarily from the Flushing/Main Street station on the Flushing Line to the proposed Academy site. The net increase in combined walk and bus trips would total 852 in the AM peak hour and 886 in the PM peak hour. Therefore, transit-related pedestrian trips would comprise 90 percent of walk trips.

Peak 15-minute pedestrian flow conditions during the AM and PM peak hours were analyzed using the *Highway Capacity Manual* methodology. Under this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volumes, 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 standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corner areas 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. In analyzing corner areas, allowance is also made for the presence of light poles, waste receptacles, and other pieces of sidewalk furniture that may occupy space otherwise available for pedestrian queuing and movement.

Level of service standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. Level of service (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 12-5

defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, as based on the *Highway Capacity Manual*.

Level of Service		Crosswalk / Corner Area Criteria (sq. ft./ped.)	Sidewalk Criteria (ped./min./ft.)
A	Unrestricted	≥ 60	≤ 5
B	Slightly restricted	≥ 40	≤ 7
C	Restricted but fluid	≥ 24	≤ 10
D	Restricted, need 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
Notes: Based on average conditions for 15 minutes.			
Source: Highway Capacity Manual 2000			

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 12-6 shows the results of the analyses of existing sidewalk, corner area and crosswalk conditions for the AM, and PM peak hours. As shown in table 12-6, all analyzed sidewalks, corners and crosswalks operate at LOS A in both the AM and PM peak hours, due to the very low existing demand. A minimum of five pedestrians was assumed for the 15-minute peak period analysis (in-bound and out-bound), though even that low level of demand does not occur.

Accidents

The annual number of pedestrians and bicyclists injured or killed in motor vehicle accidents from 2005 through 2007 at study area intersections is summarized in Table 12-7. The accident data do not distinguish injuries from fatalities. Accidents resulting in injuries or fatalities to pedestrians or bicyclists often involve turning vehicles, with failure to yield the right-of-way to pedestrians in crosswalks frequently cited as a causal factor. The NYCDOT considers any intersection at which five or more pedestrians or cyclists are killed or injured per year as a high accident location. As shown in Table 12-7, no intersections experienced more than three pedestrians or bicyclists accidents during the 2005 to 2007 study period. Therefore, the proposed Academy would not be located within a high-accident location and a more detailed safety analysis is not warranted.

Table 12-6: 2008 Existing Sidewalk, Corner and Crosswalk Level of Service

Sidewalk

Facility Number	Location	Effective Width (feet)	Peak 15-Min Volumes		Average Conditions				Platoon Conditions			
			AM	PM	AM		PM		AM		PM	
					PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	South Side of 28th Ave. Between College Point Blvd & Ulmer St.	9.5	6	5	0.04	A	0.04	A	0.04	A	0.04	A

Corners

Facility Number	Location	Corner	Peak 15-Min Volumes		Average Conditions			
			AM	PM	AM		PM	
					SF/Ped	LOS	SF/Ped	LOS
C1	28th Avenue @ Ulmer Street	Southeast	5	5	1,804.9	A	1,804.9	A
C2	28th Avenue @ Ulmer Street	Southwest	5	5	371.1	A	568.3	A

Crosswalk

Facility Number	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes		Average Conditions (w/Conflicting Vehicles)			
				AM	PM	AM		PM	
						SF/Ped	LOS	SF/Ped	LOS
X1	28th Ave @ Ulmer St - South	68.0	10.0	10	10	859.5	A	874.1	A
X2	28th Ave @ Ulmer St - East	57.0	12.0	10	10	867.8	A	858.2	A

Notes:

AM - weekday 6-7 AM

PM - weekday 3-4 PM

PFM - persons per foot of effective width per minute.

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Intersection		Bicyclists Killed / Injured			Pedestrians Killed / Injured		
		2005	2006	2007	2005	2006	2007
College Point Blvd at	Roosevelt Ave.	0	0	0	2	0	1
	32nd Ave.	0	0	0	1	0	0
	Whitestone Expressway	0	0	0	0	0	0
	31st Ave.	0	0	0	0	0	0
	30th Ave.	0	0	0	0	0	0
	28th Ave.	0	0	0	0	0	0
Ulmer Street at	Whitestone Expressway	0	0	0	0	0	0
	28th Ave.	1	0	0	0	2	0
Linden Place at	Whitestone Expressway	0	0	0	1	0	0
	28th Ave.	0	0	0	0	0	0
31st Avenue at	Whitestone Expressway	0	0	0	0	0	1
20th Avenue at	Whitestone Expressway	0	0	0	1	3	1
Source: NYCDOT							

C. THE FUTURE WITHOUT THE PROPOSED ACTION

Subway

In the 2014 future without the project (No-Action), no significant physical changes are anticipated at the analyzed street stairs. Under No-Action conditions, passenger volumes at the analyzed stairways are expected to increase gradually. A one percent per year growth in existing demand is assumed to account for background growth. In addition, increments of major No-Action developments that are expected to generate demand at these stairways, based on their location, are also accounted for in identifying passenger volumes at these locations.

Table 12-8 shows the 2014 No-Action AM and PM peak hour conditions at the two station elements analyzed. As shown in the table, the two stairways (S1 and S2) would continue to operate at acceptable levels of service. Stairway S1 would operate at LOS A with V/C ratios of 0.36 and 0.40 in the AM and PM peak hours, respectively. Stairway S2 would also continue to operate at LOS A with V/C ratio of 0.33 and 0.40 in the AM and PM peak hours, respectively. The fare array would operate at LOS B, versus LOS A under existing conditions, with a V/C ratio of 0.21 and 0.28 in the AM and PM peak hours, respectively.

**Table 12-8:
2014 No-Action Subway Station Stairway Analysis-Flushing/Main Street on the Flushing Line**

Station Elements	Peak Hour ⁽¹⁾	Effective Width in Feet ⁽²⁾	Maximum 15 Minute Capacity ^(3,6)	Peak 15 Minute Volume	PFM ⁽⁴⁾	Volume to Capacity Ratio	LOS ^(5,7)
Stairway at NW Corner of Roosevelt Avenue - Main Street (S1)	AM	8.8	1,320	476	3.61	0.36	A
	PM	8.8	1,320	523	3.96	0.40	A
Stairway at SW Corner of Roosevelt Avenue - Main Street (S2)	AM	8.8	1,320	432	3.27	0.33	A
	PM	8.8	1,320	534	4.04	0.40	A
Fare Array - 16 Turnstiles	AM	N/A	7,680	1,644	N/A	0.21	B
	PM	N/A	7,680	2,185	N/A	0.28	B

Notes:

(1) Existing Peak hours 7-8 AM and 3-4 PM

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

(3) Stair capacity in persons per 15 minutes based on NYC Transit guild lines of 10 PFM. (see note 5)

(4) PFM = Persons per foot of stairway per minute.

(5) Refer to Table 12-2 Stairway Level of Service Definition

(6) Analysis assumes capacities of 32 per minute for turnstiles.

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

Bus

Under No-Action conditions, bus service is expected to remain unchanged, with no additional bus routes anticipated within the study area. Demand for existing local buses is expected to increase as a result of new development in the area. As a standard practice, MTA Bus routinely conducts periodic ridership counts and increases service where operationally warranted and fiscally feasible. It is therefore anticipated that in the future conditions without the proposed action, MTA Bus would increase frequency, where necessary, to address any capacity shortfalls. However, for this analysis it is assumed that the current 2008 bus frequency would continue into the future No-Action conditions

Pedestrian

Under No-Action conditions, pedestrian volumes in the vicinity of the project are expected to remain very low with no congestion. To account for some general growth in the area, a background rate of 1 percent per year was applied to the 2008 existing volumes to identify the 2014 No-Action volumes. As shown in Table 12-9, all analyzed pedestrian elements would continue to operate at LOS A.

Table 12-9: 2014 No-Action Sidewalk, Corner and Crosswalk Level of Service**Sidewalk**

Facility Number	Location	Effective Width (feet)	Peak 15-Min Volumes		Average Conditions				Platoon Conditions			
			AM	PM	AM		PM		AM		PM	
					PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	South Side of 28th Ave. Between College Point Blvd & Ulmer St.	9.5	6	5	0.04	A	0.04	A	0.04	A	0.04	A

Corners

Facility Number	Location	Corner	Peak 15-Min Volumes		Average Conditions			
			AM	PM	AM		PM	
					SF/Ped	LOS	SF/Ped	LOS
C1	28th Avenue @ Ulmer Street	Southeast	5	5	1,804.7	A	1,804.9	A
C2	28th Avenue @ Ulmer Street	Southwest	5	5	371.1	A	568.3	A

Crosswalk

Facility Number	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes		Average Conditions (w/Conflicting Vehicles)			
				AM	PM	AM		PM	
						SF/Ped	LOS	SF/Ped	LOS
X1	28th Ave @ Ulmer St - South	68.0	10.0	10	10	854.4	A	870.1	A
X2	28th Ave @ Ulmer St - East	57.0	12.0	10	10	867.8	A	857.6	A

Notes:

AM - weekday 6-7 AM

PM - weekday 3-4 PM

PFM - persons per foot of effective width per minute.

SF/Ped - average square feet per pedestrian.

LOS - level of service.

D. THE FUTURE WITH THE PROPOSED ACTION

Subway

As shown in Table 11-7 in Chapter 11 “Traffic and Parking,” the proposed project is expected to generate approximately 668 and 671 subway trips in the 6-7 AM and 3-4 PM peak hours, respectively in 2014. All trips would be expected to terminate at the Main Street station during the AM peak hour and commence at the Main Street station during the PM peak hour.

Project generated trips at the Main Street station would likely use two street stairs for access and egress. For example, many passengers traveling between the project site and the stations would use the Q25 bus, given the distance between the project site and the bus stop. Therefore, passengers would use the street stair S2 closest to the Q25 bus stop on Main Street. Figure 12-2 shows the layout of the Main Street /Flushing Station with five stairways to the street level. It is anticipated that all outbound subway trips (primarily during the AM peak hour) exiting the station would use Stair S1, which is closest to the Q25 bus stop (traveling toward the project site). Subway trips (primarily in the PM peak hour) are expected to utilize Stair S2, which is the closest stairway to the Q25 bus stop (traveling away from the project site).

The *CEQR Technical Manual* identifies a significant impact for stairways in terms of the number of inches of effective stairway widening that be would be needed to restore conditions to there No-Action state. Significant stairway impacts are considered to have occurred once the following thresholds are reached: for a Build LOS D condition, a required widening of 6 inches or more is considered significant; for a Build LOS E conditions 3 to 6 inches is considered significant; and for Build LOS F, a 1 to 3 inches widening is considered significant.

For turnstiles, 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 under With-Action conditions. 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.

Table 12-10 shows the results of the impact assessments for analyzed stairways and fare array at the Main Street/Flushing subway station. As shown in the table, Stairway S1 would operate at LOS B with a v/c ratio of 0.51 in the AM peak hour. The PM peak the stairway would operate at LOS A with a v/c ratio of 0.39. Stairway S2 would operate at LOS A with a v/c ratio of 0.32 in the AM peak hour, while in the PM peak hour the stairway would operate at LOS B with a v/c ratio 0.56. The fare array would operate at LOS B with a v/c ratio of 0.23 to 0.31 during the AM and PM peak hours, respectively.

Table 12-10: 2014 With-Action Subway Station Stairway Analysis - Flushing Main Street (No. 7) Line

Station Elements	Peak Hour ⁽¹⁾	Effective Width in Feet ⁽²⁾	Maximum 15 Minute Capacity ^(3,6)	Peak 15 Minute Volume	PFM ⁽⁴⁾	Volume to Capacity Ratio	LOS ^(5,7)
Stairway at NW Corner of Roosevelt Avenue - Main Street (S1)	AM	8.8	1,320	685	5.19	0.52	B
	PM	8.8	1,320	523	3.96	0.40	A
Stairway at SW Corner of Roosevelt Avenue - Main Street (S2)	AM	8.8	1,320	423	3.20	0.32	A
	PM	8.8	1,320	751	5.68	0.57	B
Fare Array - 16 Turnstiles	AM	N/A	7,680	1853	N/A	0.24	B
	PM		7,680	2402		0.31	B

Notes:
 (1) Existing Peak hours 6-7 AM and 3-4 PM
 (2) Effective width measured as stairwell width less one foot to account for handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.
 (3) Stair capacity in persons per 15 minutes based on NYC Transit guild lines of 10 PFM. (see note 5)
 (4) PFM = Persons per foot of stairway per minute.
 (5) Refer to Table 12-2 Stairway Level of Service Definition
 (6) Analysis assumes capacities of 32 per minute for turnstiles.
 (7) Level of Service for turnstiles: LOS A: v/c < .02; LOS B: v/c = .2 to .4; LOS C: v/c = .4 to .6; LOS D: v/c = .6 to .8; LOS E: .8 to 1.0; LOS F: v/c > 1.0.

Bus

The proposed action would generate approximately 766 new bus trips in the AM peak hour and 799 new trips in the PM peak hour. These project-generated trips would include approximately 668 subway to bus trips and 98 bus-only trips in the AM peak hour, and 694 and 105, respectively in the PM. These trips would be all inbound to the project site in the AM and outbound in the PM. Most are expected to utilize the first bus that arrives, though the Q25 would be preferred due to the close proximity of the Q25 bus stop to the main pedestrian entry. However, due to the anticipated demand for bus service, it is expected that the bus riders would take the first bus that arrives. Although the Q65 bus stop would be a 7 to 10 minute walk from the gatehouse (main pedestrian entrance to the Academy), limited bus service to the area would necessitate that people use the Q65 bus. These two routes are operated by MTA Bus, which has indicated that maximum load point data is currently unavailable.

However, field observations indicate that the peak direction on these routes is typically southbound en route to the Flushing-Main Street subway station in the AM peak hour and northbound from the Flushing-Main Street station in the PM. Therefore, the majority of project-generated demand would typically occur in the non-peak direction as most trips would be en route northbound (from the Flushing-Main Street station) in the AM peak hour and southbound (to the subway) in the PM. As mentioned previously in section B, “Existing Conditions,” the Q25 line operates approximately 5 and 4 buses in each direction during AM and PM peak periods, respectively, while the Q65 operates approximately 6 buses in each

direction during the both the AM and PM peak periods. The proposed action would generate an average of approximately 70 and 89 new trips per bus in the AM and PM peak hours, respectively, on the tow routes combined. As a standard practice, MTA Bus routinely conducts periodic ridership counts and increases service where operationally warranted and fiscally feasible. It is therefore anticipated that in the future conditions with the proposed action, MTA Bus would increase frequency, where necessary, to address any capacity shortfalls.

Pedestrians

The proposed project would potentially add approximately 848 and 847 pedestrian trips to the study area during the 6-7 AM and 3-4 PM peak hours, respectively. These include walk-only trips as well as trips en route to and from the bus stops. Pedestrians are expected to be concentrated on the south side of 28th Avenue (to and from the Q25 bus and the main pedestrian entrance on 28th Avenue). It is expected that sidewalk widths adjacent to the site would not be significantly changed as a result of the proposed project.

Table 12-11 shows total peak 15-minute pedestrian volumes and conditions at the analyzed sidewalks, corners areas and crosswalks under the 2014 With-Action conditions. According to CEQR criteria, a significant impact to a sidewalk occurs when the platoon flow rate increases by two or more pedestrians per foot per minute (PFM) over No-Action conditions characterized by flow rates over 15 PFM (the threshold of LOS D/E). As shown in Table 12-10, the analyzed sidewalk would operate at an acceptable LOS B under platoon conditions in the AM and PM peak hours. For corner areas and crosswalks, CEQR criteria defines a significant adverse impact 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 of 15 SF/ped (LOS D/E threshold) or less. As shown in Table 12-10, all analyzed corner areas would operate at an acceptable LOS B or better during both the AM and PM peak hours. Also shown in Table 12-10 all analyzed crosswalks would operate at an acceptable LOS D or better during the AM and PM peak hours. As such, the proposed project is not expected to have any significant adverse impacts on pedestrian flow in the future with the proposed Academy.

E. CONCLUSION

The Proposed Action would generate new subway, bus, and pedestrian trips in the area during the 6-7 AM and 3-4 PM peak hours. Trips made to and from the proposed Academy are expected to be primarily via bus (including subway to bus) due to the location of the project site. A detailed analysis of subway stairway conditions at the Main Street/Flushing station, the location that would process the greatest number of project-generated trips, found that the addition of trips due to the proposed Academy would not result in any significant adverse impacts. Project-generated bus trips would exceed the threshold for detailed analysis. However, as described above, MTA Bus has been consulted and they indicated that adequate capacity would be added to the Q25 and Q65 bus lines to accommodate the anticipated ridership to and from the proposed Academy site.

Table 12-11: 2014 With-Action Sidewalk, Corner and Crosswalk Level of Service

Sidewalk

Facility Number	Location	Effective Width (feet)	Peak 15-Min Volumes		Average Conditions				Platoon Conditions			
					AM		PM		AM		PM	
					PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	South Side of 28th Ave. Between College Point Blvd & Ulmer St.	9.5	273	282	1.92	A	1.98	A	1.92	B	1.98	B

Corners

Facility Number	Location	Corner	Peak 15-Min Volumes		Average Conditions			
					AM		PM	
					SF/Ped	LOS	SF/Ped	LOS
C1	28th Avenue @ Ulmer Street	Southeast	271	282	52.4	B	74.3	A
C2	28th Avenue @ Ulmer Street	Southwest	271	282	81.0	A	74.3	A

Crosswalk

Facility Number	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes		Average Conditions (w/Conflicting Vehicles)			
						AM		PM	
						SF/Ped	LOS	SF/Ped	LOS
X1	28th Ave @ Ulmer St - South	68.0	10.0	276	287	27.5	C	22.0	D
X2	28th Ave @ Ulmer St - East	57.0	12.0	276	10	27.5	C	857.6	A

Notes:

AM - weekday 6-7 AM

PM - weekday 3-4 PM

PFM - persons per foot of effective width per minute.

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Project-generated subway and bus trips, together with “walk only” trips would increase pedestrian volumes on nearby sidewalks. The greatest concentration on project-generated pedestrian demand would be on the sidewalks, street corners, and crosswalks between the main pedestrian entrance on 28th Avenue and the Q25 bus stop (east of Ulmer Street on 28th Avenue). A detailed analysis found that the proposed project would not result in any significant adverse impacts on pedestrian conditions. In summary, the proposed project would not have any significant adverse impacts on transit and pedestrian facilities in the study area.