

A. INTRODUCTION

This chapter describes transit and pedestrian conditions associated with the proposed action. Based on the size and mix of uses in the proposed Flushing Commons project, the proposed action is projected to generate net increases in transit and pedestrian trips above the 200-trip per hour threshold, thereby requiring a detailed analysis in accordance with guidelines presented in the *City Environmental Quality Review (CEQR) Technical Manual*.

B. PRINCIPAL CONCLUSIONS

TRANSIT

Future conditions With and Without the Proposed Action at the Flushing-Main Street No. 7 subway station were studied at critical station points, including a stairway and two escalators. The increases in the volume-to-capacity ratios that would be generated by the proposed action at these station areas are not considered to be significant according to *CEQR Technical Manual* guidelines, and, therefore, no significant impacts in the peak analysis hours would result.

However, significant impacts are projected for local buses, including the Q17, Q27, Q44/20, and Q48, as project-generated ridership would compound other growth projected on these and other routes by 2013. Measures to mitigate these impacts are discussed in Chapter 20, "Mitigation." There would be no impacts on the local bus system during the Saturday peak hour. This FEIS provides updated ridership and operations data for the newly added Q19 bus route on Main Street and other routes in Flushing.

PEDESTRIANS

Future conditions With and Without the Proposed Action were studied at nearby crosswalks, corner reservoirs, walkways, and sidewalks. As set forth in Chapter 14, the analyses are based on a future condition scenario based on the City's original concept to convert Main Street and Union Street between Northern Boulevard and Sanford Avenue to a one-way northbound-southbound roadway pair with contra-flow bus lanes. The City continues to analyze other scenarios as alternatives to the contra-flow configuration to improve pedestrian safety in Downtown Flushing. The proposed action would add person trips to the study area's pedestrian facilities during the analyzed peak hours. These trips would increase pedestrian volumes adjacent to the project site. The proposed action would not result in any significant adverse impacts at any location during the weekday AM peak hour. During the weekday midday peak hour, significant adverse impacts are projected at five crosswalks, three corners, and three sidewalk segments. During the weekday PM peak hour, significant adverse impacts are projected to occur at three crosswalks, three corners, and two sidewalk segments. During the Saturday midday peak hour, significant adverse impacts are projected at three crosswalks, three corners,

and two sidewalk segments. Measures to mitigate some, but not all, of these impacts are discussed in Chapter 20, "Mitigation."

C. TRANSIT

SUBWAY

EXISTING CONDITIONS

The project site is located within a short walking distance of the Flushing-Main Street station, the terminus of the No. 7 Flushing line, which is part of the Interborough Rapid Transit Subway (IRT) division. The Flushing line runs between Times Square in Manhattan and Main Street in Flushing and carries the No. 7 local service as well as the No. 7 express during rush hours in the peak direction. Express trains run to Manhattan from 6:30 AM to 12:30 PM and from Manhattan from 12:30 PM to 10:00 PM. Some express trains operate during New York Mets games and U.S. Open tennis matches. The Flushing Line tracks are generally elevated in Queens and run underground along Roosevelt Avenue between College Point Boulevard and the Main Street terminus.

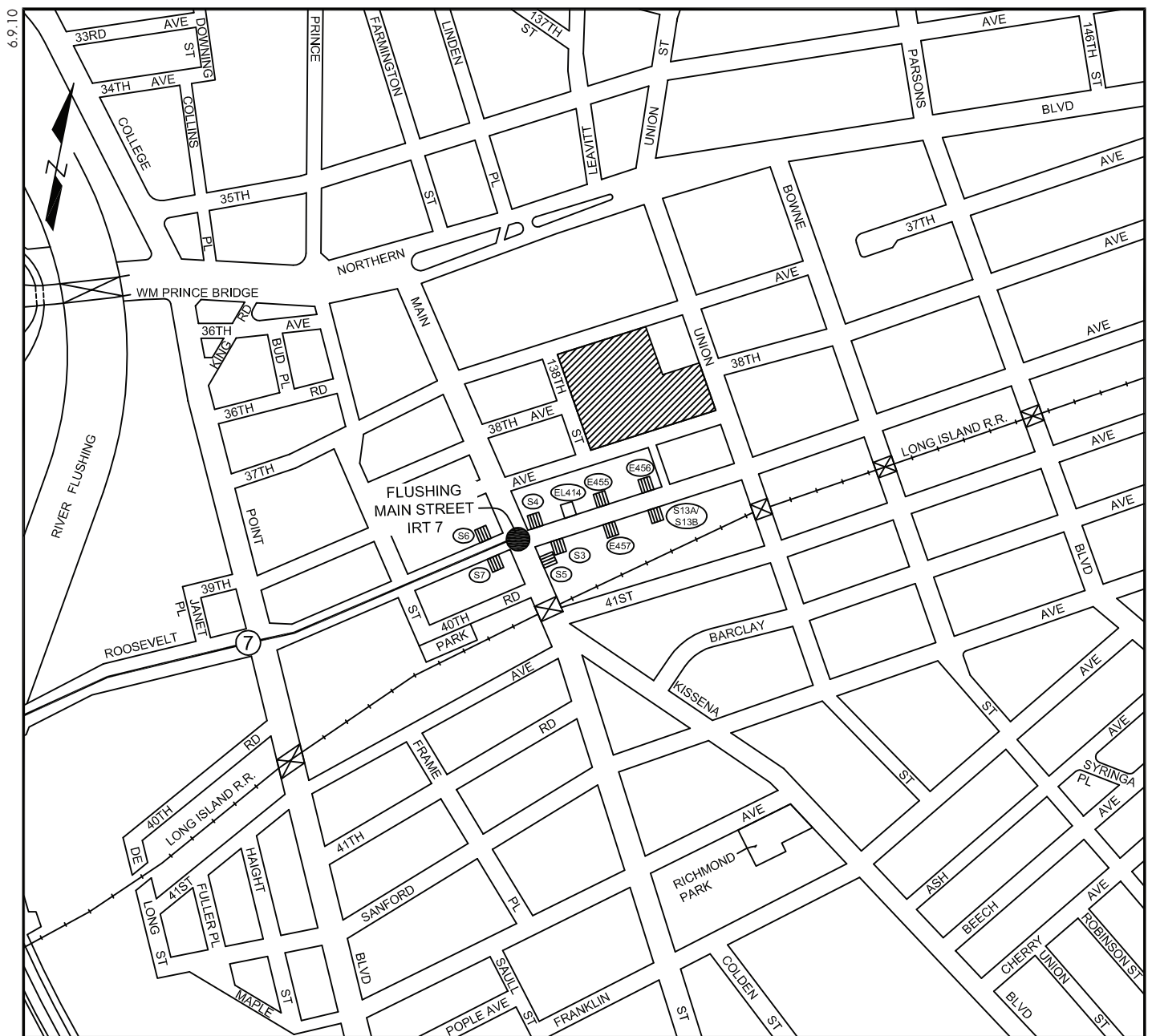
The Flushing-Main Street station is a key component of the Downtown Flushing transportation hub. It provides important connections to the Long Island Rail Road (LIRR) Flushing Main Street station (Port Washington Branch), La Guardia Airport (Q48 bus), and many radial bus routes that connect to various sections of eastern Queens, Manhattan, the Bronx, and Nassau County. Figure 15-1 shows the locations of the Flushing-Main Street station and the Flushing Commons site.

Subway ridership has increased in Downtown Flushing in recent years. Data from the 2006 MTA Subway and Bus Ridership Report indicate that from 2004 to 2006, the average annual increase in ridership was 3.0 percent at the Flushing-Main Street station (see Table 15-1). The Flushing-Main Street station is a three-track, two-island platform station that was renovated in 1999 and 2000, when Americans with Disabilities Act (ADA)-compliant passenger access was added. The station is ranked 11th in annual ridership among the subway system's 466 stations, and it is MTA's busiest inter-modal transfer station outside Manhattan.

Table 15-1
Total Annual Subway Ridership Summary

Station	Rank	2004	2005	2006	% Increase (2004-2005)	% Increase (2005-2006)	% Avg. Increase/year (2004-2006)
Main Street	11	16,794,958	17,063,571	17,818,980	1.6	4.4	3.0
Source: New York City Transit (2006 Subway and Bus Ridership Report, May 2007).							

The Flushing-Main Street station has six stairways. The original street access system to the station is located approximately in the middle third section of the platforms with a separate mezzanine above the tracks. The new fare control area located at the east end of the station includes an elevator, three escalators, and a stairway connecting the station to street level at Lippmann Arcade. The two escalators on the north side of Flushing Avenue generally run in the opposite direction during the peak hours (E455 running up, E456 running down). One stairway (S4) at the northeast corner of Main Street and Roosevelt Avenue and the two analyzed escalators (E455 and E456) located east of Main Street on the north side of Roosevelt Avenue



Note: Drawing not to Scale

Legend:



Project Site

S3

Subway Stairway I.D. Number

E456

Subway Escalator I.D. Number

EL414

Subway Elevator I.D. Number



Subway Station



Subway Stairway

provide the most direct access to the project site (see Figure 15-1) and were therefore selected for this analysis of potential impacts of the proposed project on this station.

Passenger counts were conducted in September 2005 at these stairway and escalator locations for the weekday AM (7:00-9:00), midday (noon-2:00), and PM (4:00-6:00) peak periods as well as the Saturday midday (12:00-2:00) peak. All analyses reflect peak 15-minute conditions in those four peak periods. A subway station level of service (LOS) analysis was then performed for these locations, based on NYCT's *Station Planning and Design Guidelines* as well as on procedures in *Pedestrian Planning and Design Guidelines* by John J. Fruin. The Fruin pedestrian methodology equates pedestrian flow per minute per foot (PFM) of stairway width with qualitative measures of pedestrian comfort. The methodology defines six LOS ranges ("A" to "F"), from LOS "A" representing free flow conditions to LOS "F" where pedestrian congestion results in many stoppages and has no discernable flow. Escalator capacities of a given width are expressed in terms of pedestrians per minutes (PPM); and LOS are described in terms of volume-to-capacity (v/c) ratios ranging from 0.2 or less (LOS A) to over 1.0 (LOS F). The 2001 *CEQR Technical Manual* recommends using the criteria shown in Tables 15-2 and 15-3 for LOS determination for stairways and escalators, respectively.

Table 15-2
Stairway Level of Service Definitions

Level of Service	Pedestrians/Foot/Minute (PFM)	State of Pedestrian Flow
A	5 or less	Unrestricted
B	5-7	Slightly restricted
C	7-10	Speeds reduced, difficult to pass
D	10-13	Restricted, reverse flow conflicts
E	13-17	Severely restricted
F	17 or more	Many stoppages, no discernible flow
Source: 2001 <i>CEQR Technical Manual</i> .		

Table 15-3
Escalator Level of Service Definitions

Level of Service	Volume-to-Capacity (v/c) Ratios	State of Pedestrian Flow
A	0.2 or less	Unrestricted
B	0.2-0.4	Slightly restricted
C	0.4-0.6	Restricted, but fluid
D	0.6-0.8	Restricted
E	0.8-1.0	Severely restricted
F	Over 1.0	Extended queues
Source: 2001 <i>CEQR Technical Manual</i> .		

This analysis concentrated on the stairways and escalators leading from the station's fare control areas to the sidewalks above, as these are the facilities expected to be used primarily by subway travelers heading to and from the project site. All analyses reflect peak 15-minute conditions in the AM, midday, PM, and Saturday peak hours.

Table 15-4 summarizes the level of service analysis for the existing (2005) condition, including the effective widths of the three subway station elements and the associated peak 15-minute pedestrian volumes. The analyzed stairway operates at LOS C or better. The up escalator

Flushing Commons

operates at LOS D or better, and the down escalator operates at LOS E in the weekday AM peak hour and LOS C or better in other peak hours.

Table 15-4
Subway Stairway and Escalator Analysis Existing Conditions

Facility	No.	Effective Width (feet) (1)	Peak Period	Friction Adjust. Factor (2)	Maximum 15 min. Capacity (3)	Peak 15 min. Volume (4)	PFM (5)	Volume to Capacity Ratio	Level of Service LOS
Stairwell at Northeast Corner Main and Roosevelt	S4	5.0	AM	0.9	675	528	7.82	0.78	C
			MD	0.9	675	212	3.14	0.31	A
			PM	0.9	675	445	6.59	0.66	B
			SAT	0.8	600	270	4.50	0.45	A
Up Escalator on North Side of Roosevelt Avenue	E455	3.0	AM	1.0	780	473	N/A	0.61	D
			MD	1.0	780	119	N/A	0.15	A
			PM	1.0	780	390	N/A	0.50	C
			SAT	1.0	780	325	N/A	0.42	C
Down Escalator on North Side of Roosevelt Avenue	E456	3.0	AM	1.0	780	731	N/A	0.94	E
			MD	1.0	780	260	N/A	0.33	B
			PM	1.0	780	335	N/A	0.43	C
			SAT	1.0	780	317	N/A	0.41	C

Notes:

- (1) Effective width measured between the handrails.
- (2) Friction adjustment factors to account for reverse flows.
- (3) Stairway capacity based on NYCT guidelines of 10 PFM
- (4) Source: Urbitran field stairway counts, 2005.
- (5) PFM - Persons per foot width of stairway, per minute.
- (6) Escalator capacity estimated based on NYCT guidelines of 35 and 70 PPM for 2-foot and 4-foot wide escalators, respectively.

THE FUTURE WITHOUT THE PROPOSED ACTION

Subway demand is expected to increase in the 2013 Future Without the Proposed Action (or the “No Build” condition) as a result of background growth and demand from other major planned developments in the area (e.g., Flushing Town Center). The No Build analysis of selected elements of the Flushing-Main Street station assumes no changes in existing operations, or in the characteristics of the station’s passenger-carrying elements (i.e., elevator, stairways, and escalators).

The demand analysis for the 2013 No Build is based on historical ridership trends at the Flushing-Main Street station. Published ridership data for the 3-year span 2004-2006 from the 2006 MTA Subway and Bus Ridership Report shows an average annual increase of 2.8 percent in ridership for Queens. The 2.8 percent rate was applied to the 2005 ridership volumes to project the 2013 No Build volumes (see Table 15-5). This analysis determined that:

- stairway S4 would continue to operate at LOS C or better;
- the up escalator (E455) would operate at LOS D during the weekday AM peak hour, LOS A in the weekday midday peak hour, LOS D in the weekday PM peak hour, and LOS C in the Saturday midday peak hour; and
- the down escalator (E456) would operate at LOS F in the AM peak hour with extended queuing (v/c of 1.15), and LOS C in the other peak periods.

Table 15-5
Subway Stairway and Escalator Analysis
No Build Condition (2013)

Facility	No.	Effective Width (feet) (1)	Peak Period	Friction Adjust. Factor (2)	Maximum 15 min. Capacity (3)	Peak 15 min. Volume (4)	PFM (5)	Volume to Capacity Ratio	Level of Service LOS
Stairwell at Northeast Corner Main and Roosevelt	S4	5.0	AM	0.9	675	646	9.57	0.96	C
			MD	0.9	675	259	3.84	0.38	A
			PM	0.9	675	545	8.07	0.81	C
			SAT	0.8	600	330	5.51	0.55	B
Up Escalator on North Side of Roosevelt Avenue	E455	3.0	AM	1.0	780	579	N/A	0.74	D
			MD	1.0	780	146	N/A	0.19	A
			PM	1.0	780	477	N/A	0.61	D
			SAT	1.0	780	398	N/A	0.51	C
Down Escalator on North Side of Roosevelt Avenue	E456	3.0	AM	1.0	780	895	N/A	1.15	F
			MD	1.0	780	318	N/A	0.41	C
			PM	1.0	780	410	N/A	0.53	C
			SAT	1.0	780	388	N/A	0.50	C
Notes: (1) Effective width measured between the handrails. (2) Friction adjustment factors to account for reverse flows. (3) Stairway capacity based on NYCT guidelines of 10 PFM (4) Source: Urbitran field stairway counts, 2005. (5) PFM - Persons per foot width of stairway, per minute. (6) Escalator capacity estimated based on NYCT guidelines of 35 and 70 PPM for 2-foot and 4-foot wide escalators, respectively.									

PROBABLE IMPACTS OF THE PROPOSED ACTION

The *CEQR Technical Manual* identifies a significant impact for stairways in terms of the amount of additional stairway width – the width increment threshold (WIT) -- needed to restore the stairway to the No Build condition or acceptable levels. Significant stairway impacts are considered to have occurred when the following thresholds are reached: a build LOS D condition with a WIT of 6 inches; a build LOS E condition with a WIT of 3 inches; or a build LOS F with a WIT of 1 inch. For escalators, the *CEQR Technical Manual* indicates that since a v/c ratio of 1.0 (LOS E bottom) is considered the theoretical capacity, any measurable increase in v/c ratio that would begin to cause queuing would constitute a significant impact.

The proposed development would generate 416 and 493 subway person-trips in the weekday AM and PM peak hours, respectively (Table 14-17, Scenario 1: Office), and 532 and 464 subway person-trips in the weekday midday and Saturday midday peak hours, respectively (Table 14-18, Scenario 2: Hotel). These trips that equate to 104, 133, 123, 116 subway person trips in the peak 15 minutes during the weekday AM, midday, PM, and Saturday peak hours, respectively, were assigned among the station's passenger-carrying elements and superimposed on the future No Build pedestrian volume levels to yield the Future with the Proposed Action (or the "Build" condition) volumes. Table 15-6 compares operations under the No Build and Build conditions at these locations.

Table 15-6
Subway Stairway and Escalator Analysis
Build Condition (2013)

Facility	No.	Effective Width (feet) (1)	Peak Period	Friction Adjust. Factor (2)	Maximum 15 min. Capacity (3)	Build Increment Peak 15 min.	Peak 15 min. Volume (4)	PFM (5)	No Build Volume to Capacity Ratio	Build Volume to Capacity Ratio	Build Level of Service LOS
Stairwell at Northeast Corner Main and Roosevelt	S4	5.0	AM	0.9	675	13	659	9.77	0.96	0.98	C
			MD	0.9	675	17	276	4.10	0.38	0.41	A
			PM	0.9	675	16	561	8.31	0.81	0.83	C
			SAT	0.8	600	14	344	5.74	0.55	0.57	B
Up Escalator on North Side of Roosevelt Avenue	E455	3.0	AM	1.0	780	11	590	N/A	0.74	0.76	D
			MD	1.0	780	15	161	N/A	0.19	0.21	A
			PM	1.0	780	14	491	N/A	0.61	0.63	D
			SAT	1.0	780	15	413	N/A	0.51	0.53	C
Down Escalator on North Side of Roosevelt Avenue	E456	3.0	AM	1.0	780	11	906	N/A	1.15	1.16	F
			MD	1.0	780	13	331	N/A	0.41	0.42	C
			PM	1.0	780	13	423	N/A	0.53	0.54	C
			SAT	1.0	780	11	399	N/A	0.50	0.51	C

Notes:

- (1) Effective width measured between the handrails.
(2) Friction adjustment factors to account for reverse flows.
(3) Stairway capacity based on NYCT guidelines of 10 PFM
(4) Source: Urbitran field stairway counts, 2005.
(5) PFM - Persons per foot width of stairway, per minute.
(6) Escalator capacity estimated based on NYCT guidelines of 35 and 70 PPM for 2-foot and 4-foot wide escalators, respectively.

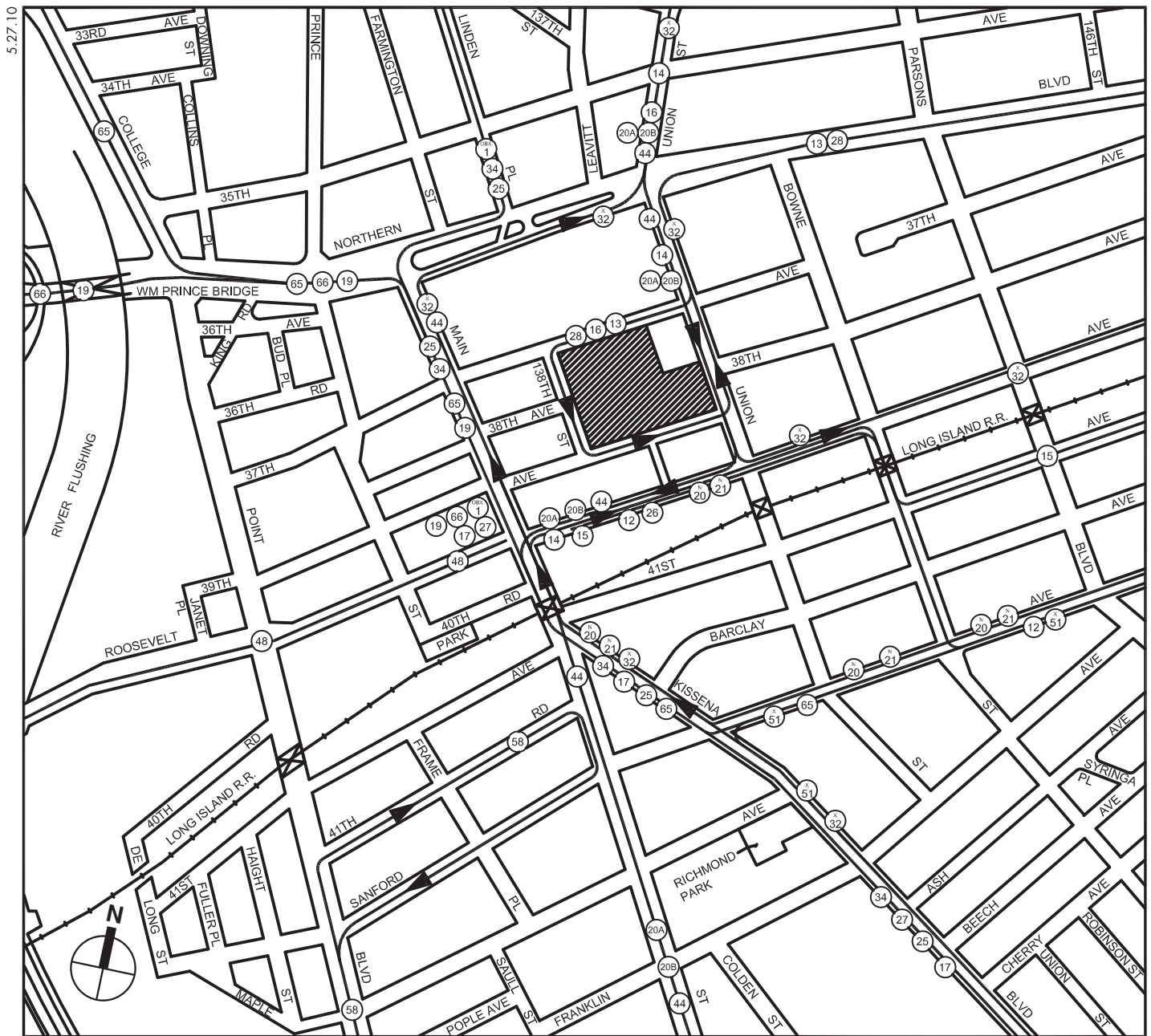
In the Build condition, as shown in Table 15-6, stairway S4 would operate at LOS C or better in all peak periods. Up escalator E455 would continue to operate at LOS D or better, with a v/c increase of 0.02. Down escalator E456 would continue to operate at LOS C or better in all periods except the AM peak, when it would continue to operate at LOS F with a v/c increase over future No Build of 0.01. These increases in v/c ratios for the analyzed escalators are not considered to be significant according to CEQR guidelines, and, therefore, no significant adverse impacts to the operation of the escalators in the analyzed peak hours would result.

BUS





EXISTING CONDITIONS

Downtown Flushing is well served by more than 20 transit bus routes (MTA/NYCT local and express, MTA Long Island Bus, and MTA Bus Company local). This bus analysis focuses on the MTA/NYCT local buses that travel in the vicinity of the Flushing Commons site. Most buses in the study area generally radiate from the intersection of Main Street and Roosevelt Avenue, providing access to downtown Flushing as well as the IRT No.7 train station at Roosevelt Avenue and Main Street and the LIRR station two blocks to the south. The information presented below reflects data collected in 2005. Since these data were collected, the MTA Bus Company has added the operation of the Q19 bus along Main Street. This FEIS provides updated ridership and operations data for this new route and other routes in Flushing.

Figure 15-2 shows the study area's bus routes. The NYCT bus and MTA Bus routes were grouped based on the locations of the routes and their relation to the project site and to the Main Street- Roosevelt Avenue transit hub:



Note: Drawing not to Scale

Legend:  Project Site
 Bus Route
 Direction of Service
 Bus Route Number

Source: NYC Transit Authority Queens Bus Map

* Q19 Bus Route Extended to Downtown Flushing in 2007

- Three buses (Q13, Q16, and Q28) loop around the project site via 37th Avenue, 138th Street, 39th Avenue, and Union Street.
- Four buses (Q14, Q20A, Q20B, and Q44) travel adjacent to the project site on Union Street. The combined Q20A, Q20B, and Q44 routes are generally referred as Q44/20.
- Four buses (Q17, Q19, Q27, and Q34) travel on Main Street and Roosevelt Avenue and through the intersection of those two streets.
- Four buses (Q48 on the west, and Q15, Q12, and Q26 on the east and one block south of the project site) travel on Roosevelt Avenue with terminals at the intersection of Main Street and Roosevelt Avenue.

The existing (2005) condition analysis of the bus routes is summarized in Table 15-7. The analysis is based on the most recently published MTA bus schedule and schedule adjustment summaries, the 2006 MTA Subway and Bus Ridership Report, and other MTA schedules and route profiles for identified bus routes in Downtown Flushing. The following 11 identified routes closest to the project site are briefly described in terms of the location of their terminals, land uses serviced, maximum load points or areas of maximum loading, closest stops to the project site, scheduled headway during the peak periods, and respective rank among 193 (City-wide) local bus routes listed in the 2006 MTA Subway and Bus Ridership Report (see Figure 15-2 for the bus routes through the project area.) The analysis of the proposed action's potential impacts of bus operations focuses on these 11 bus routes. This approach results in a relatively conservative analyses, as other bus routes (e.g., the N20 and N21 from Nassau County, the QBx1 from Co-op City in the Bronx, Q19 from Astoria, Q25 and Q65 from College Point and Jamaica, and the Q66 along Northern Boulevard from Long Island City) would likely handle some of the bus trips that would be generated by the proposed action.

Q12

The Q12 provides local service between Flushing and Little Neck and operates between the Flushing-Main Street subway station and Glenwood Street. It travels on Roosevelt Avenue one block south of the project site and traverses along Browne Street and Northern Boulevard. During the weekday AM, midday, and PM peak hours, the maximum load point is at Roosevelt Avenue and Main Street in the eastbound direction and Sandford Avenue and Parsons Boulevard in the westbound direction. Headways of 4 and 5.5 minutes are generally scheduled for the Q12 route during the AM and PM peak hours, respectively. A 12-minute headway is generally scheduled during the weekday midday and Saturday peak periods. In 2006, the Q12 was ranked 87th in annual ridership (3,175,240 passengers) based on MTA's ranking of 193 local bus routes.

Q13

The Q13 provides local service between Flushing and Fort Totten and operates between the Flushing-Main Street subway station area and Fort Road/Cross Island Parkway. Its western terminal is on 39th Avenue at Lippmann Arcade and its eastern terminal is at Totten Avenue. The Q13 loops around the project site via 37th Avenue, 138th Street, 39th Avenue, and Union Street and travels on Northern Boulevard, Bell Boulevard, and Totten Avenue. During the weekday AM, midday, and PM peak hours, the maximum load point is at the intersection of 39th Avenue and 138th Street in both the eastbound and westbound directions. Headways of 10 and 8.5 minutes are generally scheduled for the Q13 route during the weekday AM and PM hours, respectively. A 15-minute headway is generally scheduled during the weekday midday and

Flushing Commons

Saturday peak periods. In 2006, the Q13 was ranked 100th in annual ridership (2,717,092 passengers) based on MTA's ranking of 193 local bus routes.

Q14

The Q14 provides local service between Flushing and Whitestone. It is a feeder route from its southern terminal at Roosevelt Avenue and Main Street to its northern terminal at 7th Avenue and Clintonville Street. It provides service along Union Street (the area of maximum loading), 149th Street, and 150th Street, serving Flushing High School and I.S. 185. The route also provides feeder service to the No. 7 train in the Main Street shopping district. Headways of 10 and 12 minutes are generally scheduled for the Q14 route during in the AM and PM peak hours, respectively. A 30-minute headway is generally scheduled during the weekday midday and Saturday peak periods. In 2006, the Q14 was ranked 172nd in annual ridership (586,006 passengers) based on MTA's ranking of 193 local bus routes.

Q15

The Q15 provides local service between Flushing and Beechhurst. It is a feeder route that provides service from its terminal at Roosevelt Avenue and Main Street to its northern terminal at 166th Street and Powells Cove Boulevard. It provides service along 41st Avenue (the area of maximum loading), 150th Street, and 154th Street. The route also provides feeder service to the No. 7 train in the Main Street shopping district. Headways of 10 and 7.5 minutes are generally scheduled for this route during in the AM and PM peak hours, respectively. A 20-minute headway is generally scheduled during the weekday midday and Saturday peak periods. In 2006, the Q15 was ranked 150th in annual ridership (1,299,923 passengers) based on MTA's ranking of 193 local bus routes.

Q16

The Q16 provides local service between Flushing and Fort Totten. It is a feeder route that provides service from its western terminal at 39th Avenue to its eastern terminus at Fort Totten. The Q16 loops around the project site via 37th Avenue, 138th Street, 39th Avenue, and Union Street (east of the site). It provides service along Union Street (the area of maximum loading), Bayside Avenue, and alternating service between Francis Lewis Boulevard and Utopia Parkway to the Cross Island Parkway service road. The route services Flushing High School, Holy Cross High School, Bowne Park, and Clearview Park and also connects with the No. 7 train in the Main Street shopping district. Headways of 6 and 7.5 minutes are generally scheduled for the Q16 route during in the AM and PM peak hours, respectively. A 20-minute headway is generally scheduled during the weekday midday and Saturday peak periods. In 2006, the Q16 was ranked 155th in annual ridership (1,092,478 passengers) based on MTA's ranking of 193 local bus routes.

Q17

The Q17 provides local and limited-stop service between Flushing and Jamaica. It is a feeder route that provides service from its northern terminal at Main Street and Roosevelt Avenue to its terminal at Merrick Boulevard and Archer Avenue. It provides service along Kissena Boulevard (the area of maximum loading on weekdays), Horace Harding Expressway, 188th Street, and Hillside Avenue serving Kissena Park, Queens College, Francis Lewis High School, and I.S. 216. The route also provides feeder service to the No. 7 train station at Main Street, the F train station at 179th and 169th Streets, and the E, J, and Z train station at Archer Avenue in the Jamaica shopping district. Headways of 4.5 and 5.5 minutes are generally scheduled for the Q17 route during the AM and PM peak hours, respectively. An 8-minute headway is generally scheduled during the weekday midday and Saturday

peak periods. In 2006, the Q17 was ranked 36th in annual ridership (5,964,972 passengers) based on MTA's ranking of 193 local bus routes.

Q44/20

The Q44/20 provides local and limited-stop service. It is a grid route that operates from its southern terminal at Merrick Boulevard/ Archer Avenue in Jamaica to its northern terminals at 14th Avenue/ College Point Boulevard in College Point (Q20A/Q20B) or East 180th Street/ Boston Road at the Bronx Zoo (Q44). It operates along Archer Avenue, Main Street, 20th Avenue (Q20A), 14th Avenue (Q20B), and the Cross Bronx Expressway service road (Q44), and serves York College, the Jamaica business district, New York State Supreme Court, New York Hospital-Cornell Medical Center, Queens Botanical Garden, the Flushing business district, the College Point industrial park (Q20A), the Parkchester shopping area (Q44), and the Bronx Zoo (Q44). On weekdays, the maximum load point on the route is Main Street/Horace Harding Expressway in both directions. The Q4420 also connects with eight subway routes: the E, F, J, and Z in Jamaica; the No. 7 in Flushing; the No.6 in Parkchester; and the No. 2 and No. 3 at West Farms Square. Headways for the Q4420 routes during individual peak periods vary by route location traversed and type of service (i.e., local and limited-stops). In 2006, the Q20 (annual ridership of 4,639,150 passengers) and the Q44 (annual ridership of 7,572,876 passengers) were ranked 58th and 22nd, respectively, based on MTA's ranking of 193 local bus routes.

Q26

The Q26 provides local weekday-only service between Fresh Meadows and Flushing. It is a feeder route providing service from its western terminal at Roosevelt Avenue and Main Street to its eastern terminal at Horace Harding Expressway and Hollis Court Boulevard. It provides service along Parsons Boulevard, 46th Avenue, and Hollis Court Boulevard, serving Flushing Hospital, Flushing Cemetery, and Saint Francis Prep. The route also provides feeder service to the No. 7 train in the Main Street shopping district. During the weekday AM peak hour, the maximum load point is at Sandford Avenue and Parsons Boulevard in the westbound direction. During the weekday PM peak hour, the maximum load point is at Roosevelt Avenue and Main Street in eastbound direction. Headways of 6 minutes are generally scheduled for the Q26 route during in the weekday AM, and PM peak hours, and 12 minutes during the midday peak period. In 2006, the Q26 was ranked 178th in annual ridership (516,932 passengers) based on MTA's ranking of 193 local bus routes.

Q27

The Q27 provides local and limited-stop service between Flushing and Cambria Heights. It is a feeder route providing service from its western terminal at Roosevelt Avenue and Main Street to its terminal at the Queens Village LIRR station. It provides service along Kissena Boulevard, Hollis Avenue, 46th Avenue, 48th Avenue, 216th Street, 56th Avenue, and Springfield Boulevard, serving Flushing Cemetery, I.S. 158, Queensborough Community College, Cardozo High School, and Alley Pond Park. The route also provides feeder service to the No.7 train in the Main Street shopping district. The maximum load point is at Roosevelt Avenue and Main Street. Average headways of 2.5 and 4 minutes are generally scheduled for the Q27 route during in the AM and PM peak hours, respectively. A 7.5-minute headway is generally scheduled for the Q48 during the weekday midday and Saturday peak periods. In 2006, the Q27 was ranked 28th in annual ridership (6,631,507 passengers) based on MTA's ranking of 193 local bus routes.

Q28

The Q28 provides local service between Flushing and Bayside. It is a feeder route providing service from the Flushing-Main Street subway station area to its eastern terminal at 23rd Avenue and Bell Boulevard. It provides service along Union Street, Northern Boulevard, Crocheron Avenue, Francis Lewis Boulevard, 32nd Avenue, and Corporate Kennedy Street, serving Flushing High School, I.S. 25, Bayside High School, and the Bay Terrace shopping district. The Q28 loops around the project site via 37th Avenue, 138th Street, 39th Avenue, and Union Street and has its western terminal on 39th Avenue at Lippmann Arcade. The route also provides feeder service to the No. 7 train in the Main Street shopping district. During the AM and PM peak hours, the maximum load point is at 39th Avenue and Lippmann Arcade. Headways of 4 and 6.5 minutes are generally scheduled for the Q28 route during in the AM and PM peak hours, respectively. A 12-minute headway is generally scheduled during the weekday midday and Saturday peak periods. In 2006, the Q28 was ranked 91st in annual ridership (2,982,476 passengers) based on MTA's ranking of 193 local bus routes.

Q48

The Q48 is a feeder route providing service from its eastern terminal at Roosevelt Avenue and Main Street to its western terminal at La Guardia Airport. It provides service along Roosevelt Avenue (the area of maximum loading), 108th Street, Ditmars Boulevard, and La Guardia Road/Central Terminal Drive, Runway Drive, and Bowery Terminal Road. The Q48 serves Shea Stadium, Flushing Meadows-Corona Park, the Hall of Science, and the Marine Air Terminal. The route also provides feeder service to the No. 7 train in the Main Street shopping district and 111th Street. Headways of 8.5 and 12 minutes are generally scheduled for the Q48 route during in the AM and PM peak hours, respectively. A 20-minute headway is generally scheduled for the Q48 during the weekday midday and Saturday peak periods. In 2006, the Q48 was ranked 160th in annual ridership (972,569 passengers) based on MTA's ranking of 193 local bus routes.

The analysis results in Table 15-7 indicate that the bus routes reviewed above presently operate within capacity at their peak load points during the AM and PM peak hours, although several routes—the Q16 in the AM peak and the Q26 in the Midday peak—have available hourly capacities of under 15 passengers. The analysis was based on a maximum scheduled load of 64 passengers on a typical 40-foot bus.

THE FUTURE WITHOUT THE PROPOSED ACTION

The No Build analysis of local buses expected to serve the project site assumes no changes in existing routes, frequencies, services, maximum load points, or areas of maximum loading. The proposed plan to institute one-way traffic operations on Main and Union Streets between Northern Boulevard and Sanford Avenue is projected to be in place by 2013 (see Chapter 14 for details). However, the inclusion of contra-flow bus lanes as part of that plan on Main Street (between Northern Boulevard and Sanford Avenue) and on Union Street (from 39th Avenue to Northern Boulevard) will allow the bus routes noted above to continue on their existing routes. The No Build condition includes the Q19 bus route that has serviced Flushing since 2007 and was not analyzed in existing 2005 conditions.

Table 15-7
Existing Local Bus Service

PEAK HOUR	ROUTE	PEAK DIRECTION	MAX LOAD POINT / AREA OF MAX LOADING	NO. OF BUSES	NO. OF RIDERS	AVG. NO. RIDERS PER BUS	AVAILABLE CAPACITY
AM	Q12	WB	Sanford Ave / Parsons Blvd	15	653	44	307
	Q13	WB	39 Ave / 138 St	6	273	46	111
	Q14	SB	Union St	6	237	40	147
	Q15	SB	41 Ave	6	320	53	64
	Q16	SB	Union St	10	630	63	10
	Q17	NB	Kissena Blvd / Sanford Ave	13	661	51	171
	Q44/20	NB	Main St / Horace Harding Expwy	20	1138	57	142
	Q26	WB	Sanford Ave / Parsons Blvd	6	331	55	53
	Q27	NB	Roosevelt Ave / Main St	22	1049	48	359
	Q28	WB	39 Ave / Lippmann Ped Arcade	15	715	48	245
Midday	Q48	EB	Roosevelt Ave / Main St	7	420	60	28
	Q12	WB	Sanford Ave / Parsons Blvd	5	147	29	173
	Q13	EB	39 Ave / 138 St	5	138	28	182
	Q14	SB	Union St	2	54	27	74
	Q15	SB	41 Ave	3	99	33	93
	Q16	SB	Union St	3	118	39	74
	Q17	SB	Kissena Blvd / Sanford Ave	7.5	289	39	191
	Q44/20	NB	Main St / Horace Harding Expwy	12	520	43	248
	Q26	WB	Roosevelt Ave / Main St	2	115	58	13
	Q27	SB	Roosevelt Ave / Main St	8	311	39	201
PM	Q28	WB	39 Ave / Lippmann Ped Arcade	5	189	38	131
	Q48	EB	Roosevelt Ave / Main St	5	99	20	221
	Q12	EB	Roosevelt Ave / Main St	11	597	54	107
	Q13	EB	39 Ave / 138 St	7	310	44	138
	Q14	NB	Union St	5	168	34	152
	Q15	NB	41 Ave	8	357	45	155
	Q16	NB	Union St	8	352	44	160
	Q17	SB	Kissena Blvd / Standford Ave	16	870	54	154
	Q44/20	SB	Main St / Horace Harding Expwy	13	807	62	25
	Q26	EB	Roosevelt Ave / Main St	6	237	40	147
Sat	Q27	SB	Roosevelt Ave / Main St	14	676	48	220
	Q28	EB	39th Ave / Lippmann Ped Arcade	9	441	49	135
	Q48	WB	Roosevelt Ave / Main St	5	260	52	60
	Q12	WB	Roosevelt Ave / Main St	5	130	26	190
	Q13	WB	39th Ave / Lippmann Ped Arcade	5	85	17	235
	Q14	SB	Union St	2	20	10	108
	Q15	WB	Union St	3	40	13	152
	Q16	WB	39 Ave / Lippmann Ped Arcade	3	25	8	167
	Q17	NB	Roosevelt Ave / Main St	7.5	180	24	300
	Q44/20	NB	Roosevelt Ave / Main St	12	300	25	468
	Q26	WB	Roosevelt Ave / Main St	-	-	-	-
	Q27	SB	Roosevelt Ave / Main St	8	135	17	377
	Q28	WB	39 Ave / Lippmann Ped Arcade	5	60	12	260
	Q48	EB	Roosevelt Ave / Main St	5	60	12	260

Q19

The Q19 provides local service between Astoria Boulevard/21st Street and the Flushing-Main Street (IRT No. 7) subway station. The Q19 route is a former Triboro Coach Corporation local route that is currently operated by the MTA Bus Company. It was extended from 102nd Street to Flushing in 2007 and mainly provides service along Astoria Boulevard, Northern Boulevard, Roosevelt Avenue, Prince Street, 39th Avenue, and Main Street. The Q19 provides feeder service to the Astoria Boulevard N and W elevated train station on the western section of the route and to the No.

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7 train in the Main Street shopping district. Headways of 20 minutes are generally scheduled on weekdays, and 30 minutes on Saturdays. The Q19 provides no evening or overnight service. Communications from the MTA Bus Company indicate that the average daily ridership for the Q19 was 2,400 for weekdays, 1,230 on Saturdays, and 825 on Sundays. The most recent Q19 ridership survey was conducted by the MTA Bus Company on Thursday, February 5 and Monday, February 23, 2009. This weekday survey included on- and off- counts, and load counts for the Q19 at key points along the route, including the bus stop at the Flushing terminal (near Main Street & Roosevelt Avenue). During the weekday AM peak hour, the maximum load point is at Astoria Boulevard and 85th Street in the westbound direction. During the weekday PM peak hour, the maximum load point is at Astoria Boulevard and 82nd Street in eastbound direction. Ridership data are not available for the Saturday peak periods.

The analysis of 2013 No Build demand considered the historical ridership trend of individual routes. While the 2006 MTA Subway and Bus Ridership Report shows for Queens an overall increase of 2.9 percent in ridership between 2003 and 2006, some study routes were shown to have lost ridership (2 to 4 percent) over that 3-year period (i.e., the Q14, Q15, and Q16) and others (i.e., the Q4420 and Q27) experienced greater increases in ridership (3.6 and 6.5 percent, respectively). The ridership of another study area route, the Q26, which runs parallel to the Q27, decreased by 2.8 percent in 2005/2006; however, the overall trend for the Q26 is positive over the 3-year period.

The future growth in ridership at the peak load points or areas of maximum loading for individual routes was based on these 3-year ridership growth data. For the routes with increased ridership, an average annual rate was computed and a growth factor was projected for the 10-year span from 2003 to 2013 and applied to the base (2003) ridership volumes. For the three routes that have experienced a decrease in ridership (the Q14, Q15, and Q16), the base volume level was used in the No Build analysis. Growth factors of 1.65 and 1.36 were computed for the Q27 and Q44/20, respectively, based on an 8-year (1998-2006) trend analysis that generally showed continuous increases in ridership on those two routes. The Q27 route was extended from the Queens Village LIRR station farther south to its current terminal and a limited-stop service was added around the same time. For the Q44/20 route, the growth was likely due to a few modifications in routing for the Q20A and Q20B in College Point, and increases in limited stop service on the route.¹ Table 15-8 shows that, under the No Build condition, a capacity deficit would likely occur on the Q44/20, Q26, Q27, and Q48 routes during the weekday AM peak hour and on the Q12, Q17, Q44/20 and Q27 in the PM peak hour. Peak hour ridership data for the Q19 under the No Build condition are also summarized in Table 15-8. A growth factor of 1.08 (2 percent per year) was applied to the 2009 ridership data to project the 2013 No Build ridership levels.

PROBABLE IMPACTS OF THE PROPOSED ACTION

To assess the potential impacts of the proposed action, the project-generated bus trips from the proposed Flushing Commons development were added to the No Build volume levels at the maximum load points or areas of maximum loading in the prevailing peak directions. The analysis of the Build condition includes the following assumptions and other factors:

¹ This analysis approach is conservative. The sustained ridership growth experienced between 2003 and 2006 on the Q27 and Q4420 routes may decrease by 2013.

Table 15-8
No Build Local Bus Service

Peak Hour	Route	Peak Direction	Max Load Point Area of Max Loading	Existing	2013 No Build Condition				
				No. of Buses	No. of Riders	2003-2013 Growth Factor	No. of Riders	Avg. No. of Riders per Bus	Available Capacity
AM	Q12	WB	Sanford Ave / Parsons Blvd	15	653	1.22	794	53	166
	Q13	WB	39 Ave / 138 St	6	273	1.21	331	55	53
	Q14	SB	Union St	6	237	1.0	237	40	147
	Q15	SB	41 Ave	6	320	1.0	320	53	64
	Q16	SB	Union St	10	630	1.0	630	63	10
	Q17	NB	Kissena Blvd / Sanford Ave	13	661	1.23	815	63	17
	Q19*	WB	Astoria Blvd/85th St	3	137	1.08	148	49	44
	Q44/20	NB	Main St / Horace Harding Expwy	20	1138	1.36	1544	77	-264
	Q26	WB	Sanford Ave / Parsons Blvd	6	331	1.17	387	65	-3
	Q27	NB	Roosevelt Ave / Main St	22	1049	1.65	1732	79	-324
Midday	Q28	WB	39 Ave / Lippmann Ped Arcade	15	715	1.09	782	52	178
	Q48	EB	Roosevelt Ave / Main St	7	420	1.23	516	74	-68
	Q12	WB	Sanford Ave / Parsons Blvd	5	147	1.22	179	36	141
	Q13	EB	39 Ave / 138 St	5	138	1.21	167	33	153
	Q14	SB	Union St	2	54	1.0	54	27	74
	Q15	SB	41 Ave	3	99	1.0	99	33	93
	Q16	SB	Union St	3	118	1.0	118	39	74
	Q17	SB	Kissena Blvd / Sanford Ave	7.5	289	1.23	356	48	124
	Q19*	WB	Astoria Blvd/94th St	3	27	1.08	29	10	163
	Q44/20	NB	Main St / Horace Harding Expwy	12	520	1.36	705	59	63
PM	Q26	WB	Roosevelt Ave / Main St	2	115	1.17	135	67	-7
	Q27	SB	Roosevelt Ave / Main St	8	311	1.65	513	64	-1
	Q28	WB	39 Ave / Lippmann Ped Arcade	5	189	1.09	207	41	113
	Q48	EB	Roosevelt Ave / Main St	5	99	1.23	122	24	198
	Q12	EB	Roosevelt Ave / Main St	11	597	1.22	726	66	-22
	Q13	EB	39 Ave / 138 St	7	310	1.21	376	54	72
	Q14	NB	Union St	5	168	1.0	168	34	152
	Q15	NB	41 Ave	8	357	1.0	357	45	155
	Q16	NB	Union St	8	352	1.0	352	44	160
	Q17	SB	Kissena Blvd / Standford Ave	16	870	1.23	1073	67	-49
Sat.	Q19*	EB	Astoria Blvd/82nd St	3.5	85	1.08	92	26	132
	Q44/20	SB	Main St / Horace Harding Expwy	13	807	1.36	1095	84	-263
	Q26	EB	Roosevelt Ave / Main St	6	237	1.14	269	45	115
	Q27	SB	Roosevelt Ave / Main St	14	676	1.65	1116	80	-220
	Q28	EB	39th Ave / Lippmann Ped Arcade	9	441	1.09	482	54	94
	Q48	WB	Roosevelt Ave / Main St	5	260	1.23	320	64	0
	Q12	WB	Roosevelt Ave / Main St	5	130	1.22	158	32	162
	Q13	WB	39th Ave / Lippmann Ped Arcade	5	85	1.21	103	21	217
	Q14	SB	Union St	2	20	1.0	54	27	74
	Q15	WB	Union St	3	40	1.0	99	33	93
	Q16	WB	39 Ave / Lippmann Ped Arcade	3	25	1.0	118	39	74
	Q17	NB	Roosevelt Ave / Main St	8	180	1.23	222	30	258
	Q19*	N/A**							
	Q44/20	NB	Roosevelt Ave / Main St	12	300	1.36	407	34	361
	Q26	WB	Roosevelt Ave / Main St	-	-	-	-	-	-
	Q27	SB	Roosevelt Ave / Main St	8	135	1.65	223	28	289
	Q28	WB	39 Ave / Lippmann Ped Arcade	5	60	1.09	66	13	254
	Q48	EB	Roosevelt Ave / Main St	5	60	1.23	74	15	246

Notes:

* The Q19 was extended in 2007. No Build ridership was projected based on March 2009 ridership survey conducted by the MTA Bus Company.

** No data available.

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- The project site is within the influence area of the Flushing Main Street transportation hub.
- In general, the peak bus transit direction is inbound (i.e., toward Main Street/Roosevelt Avenue) in the AM peak, outbound in the PM peak hour, and somewhat balanced during the midday peak periods.
- The analysis focused on the peak transit direction and the prevailing directional distribution (i.e., inbound or outbound) of the project site-generated bus trips during the analyzed peak hours.
- The 12 analyzed bus routes in the Build condition handle approximately 80 percent of the total buses using the Flushing Main Street-Flushing Avenue hub.
- The site-generated bus trips were distributed among the study routes according to their current market share (ratio of individual route trips to total route trips in the peak direction) of individual routes during individual peak hours.

The proposed development is projected to generate 259 inbound and 470 outbound trips on study area buses in the peak direction of travel during the AM and PM peak hours, respectively. Bus trips are projected to total 493 inbound and 475 outbound during the weekday midday peak hours and 348 inbound and 332 outbound during the Saturday peak hours. As shown in the No Build analysis above, capacity deficits were projected mostly for the Q17, Q27, Q44/20, and Q48 buses, and these deficits would be attributable to anticipated growth under the 2013 No Build condition. Schedule adjustments by MTA would be necessary even without the Flushing Commons development. Table 15-9 compares available bus capacities in the future Build and No Build conditions, along with the trip increment for individual bus routes, based on the assumptions and considerations noted above.

As shown in the table, the proposed action would result in significant impacts on the Q17, Q27, Q44/20, and Q48 bus routes, as project-generated ridership would compound other growth projected on these and other routes by 2013. Measures to mitigate these impacts are discussed in Chapter 20, "Mitigation." There would be no impacts on the local bus system during the Saturday peak hour.

Table 15-9
Comparison of Future Build and No Build Local Bus Service

Peak Hour	Route	Peak Direction	Max Load Point / Area of Max Loading	2013 No Build Condition		2013 Build Condition			
				No. of Buses	No. of riders	No. of Site generated riders	No. of riders	Avg. No. of Riders per Bus	Available Capacity
AM	Q12	WB	Sanford Ave / Parsons Blvd	15	794	20	814	54	146
	Q13	WB	39 Ave / 138 St	6	331	8	339	57	45
	Q14	SB	Union St	6	237	6	243	40	141
	Q15	SB	41 Ave	6	320	8	328	55	56
	Q16	SB	Union St	10	630	16	646	65	-6
	Q17	NB	Kissena Blvd / Sanford Ave	13	815	20	836	64	-4
	Q19*	WB	Astoria Blvd/85th St	3	148	4	152	51	40
	Q44/20	NB	Main St / Horace Harding Expwy	20	1544	38	1582	79	-302
	Q26	WB	Sanford Ave / Parsons Blvd	6	387	10	397	66	-13
	Q27	NB	Roosevelt Ave / Main St	22	1732	43	1774	81	-366
Midday	Q28	WB	39 Ave / Lippmann Ped Arcade	15	782	19	801	53	159
	Q48	EB	Roosevelt Ave / Main St	7	516	13	529	76	-81
	Q12	WB	Sanford Ave / Parsons Blvd	5	179	14	193	39	127
	Q13	EB	39 Ave / 138 St	5	167	13	181	36	139
	Q14	SB	Union St	2	54	4	58	29	70
	Q15	SB	41 Ave	3	99	8	107	36	85
	Q16	SB	Union St	3	118	9	127	42	65
	Q17	SB	Kissena Blvd / Sanford Ave	7.5	356	29	385	51	95
	Q19*	WB	Astoria Blvd/94th St	3	29	2	31	11	161
	Q44/20	NB	Main St / Horace Harding Expwy	12	705	57	762	63	6
PM	Q26	WB	Roosevelt Ave / Main St	2	135	11	145	73	-17
	Q27	SB	Roosevelt Ave / Main St	8	513	41	555	69	-43
	Q28	WB	39 Ave / Lippmann Ped Arcade	5	207	17	223	45	97
	Q48	EB	Roosevelt Ave / Main St	5	122	10	131	26	189
	Q12	EB	Roosevelt Ave / Main St	11	726	43	769	70	-65
	Q13	EB	39 Ave / 138 St	7	376	22	399	57	49
	Q14	NB	Union St	5	168	10	178	36	142
	Q15	NB	41 Ave	8	357	21	378	47	134
	Q16	NB	Union St	8	352	21	373	47	139
	Q17	SB	Kissena Blvd / Standford Ave	16	1073	64	1137	71	-113
Sat	Q19*	EB	Astoria Blvd/82nd St	3.5	92	6	98	28	126
	Q44/20	SB	Main St / Horace Harding Expwy	13	1095	65	1160	89	-328
	Q26	EB	Roosevelt Ave / Main St	6	269	16	285	48	99
	Q27	SB	Roosevelt Ave / Main St	14	1116	66	1182	84	-286
	Q28	EB	39th Ave / Lippmann Ped Arcade	9	482	29	511	57	65
	Q48	WB	Roosevelt Ave / Main St	5	320	19	339	68	-19
	Q12	WB	Roosevelt Ave / Main St	5	158	19	177	35	143
	Q13	WB	39th Ave / Lippmann Ped Arcade	5	103	13	116	23	204
	Q14	SB	Union St	2	54	7	61	30	67
	Q15	WB	Union St	3	99	12	111	37	81
	Q16	WB	39 Ave / Lippmann Ped Arcade	3	118	14	132	44	60
	Q17	NB	Roosevelt Ave / Main St	8	222	27	249	33	231
	Q19*			N/A**					
	Q44/20	NB	Roosevelt Ave / Main St	12	407	50	457	38	311
	Q26	WB	Roosevelt Ave / Main St	-	-	-	-	-	-
	Q27	SB	Roosevelt Ave / Main St	8	223	27	250	31	262
	Q28	WB	39 Ave / Lippmann Ped Arcade	5	66	8	74	15	246
	Q48	EB	Roosevelt Ave / Main St	5	74	9	83	17	237

Notes:

* The Q19 was extended in 2007. No Build ridership was projected based on March 2009 ridership survey conducted by the MTA Bus Company.

** No data available.

D. PEDESTRIANS

EXISTING CONDITIONS

Downtown Flushing is a bustling area, with a mix of residential, institutional, commercial, retail, and governmental land uses that generate substantial amounts of pedestrian traffic. All person trips involving other modes of transportation, such as vehicular traffic, taxi, bus, subway, etc., in the area generally include a walking component as the first or last mode of travel. These walking trips contribute to pedestrian volumes using the study area's sidewalks, street corners, ramps, and crosswalks; and the Flushing-Main Street subway station's staircases, escalators, and elevators.

In addition, the Lippmann Arcade is a major pedestrian conduit connecting Roosevelt Avenue and 39th Avenue between Main Street and Union Street and providing access to the Flushing-Main Street station. The walkway is approximately 25 feet wide and is divided by planters located along the walkway's centerline. The effective width of the walkway is reduced by the planters, which occupy about 10.6 feet, leaving about approximately 7.2 feet for pedestrian movements on both sides of the planters.

Three types of pedestrian analysis were initially performed for pedestrian facilities likely to be the most heavily affected by the proposed Flushing Commons project:

- Crosswalk analysis for the intersections of Main Street and Roosevelt Avenue (north, south, and east crosswalks), Main Street and 39th Avenue (south and east crosswalks), and Union Street and 39th Street (north, south, and west/east crosswalks);
- Street corner analysis for the following locations: Main Street and Roosevelt Avenue (northeast and southeast corners), Main Street and 39th Avenue (southeast corner), and Union Street and 39th Avenue (northwest and southwest corners);
- Sidewalk analysis for the intersections of Main Street and Roosevelt Avenue, Main Street and 39th Avenue, Union Street and 39th Avenue, 39th Avenue and 138th Street and Walkway analysis for the Lippmann Arcade.

Pedestrian flow conditions in the study area were analyzed using the *2000 Highway Capacity Manual (HCM2000)* methodology for platoon-adjusted conditions for sidewalks, signalized crosswalks, and street corners in the peak 15-minute periods in the weekday AM, midday, PM peak and the Saturday midday peak hours. The methodology for crosswalks and street corners is based on pedestrian density or circulation area per pedestrian expressed as square feet/person (SFP). The crosswalk and street corner LOS ranges are listed in Table 15-10A.

Table 15-10A
Crosswalk and Street Corner Level of Service Ranges

LOS	Circulation Area Per Pedestrian (SFP)
A	at least 60 SFP
B	40 to 60 SFP
C	24 to 40 SFP
D	15 to 24 SFP
E	8 to 15 SFP
F	less than 8 SFP
Note: * SFP = Square feet per pedestrian	

For walkways and sidewalks, the methodology is based on pedestrian flow rates (persons/minute/foot or PFM) through a given number of feet of available sidewalk width. The walkway LOS ranges are listed in Table 15-10B.

Table 15-10B
Platoon-Adjusted Walkway and Sidewalk Level of Service Ranges

LOS	Pedestrian Flow (PFM)
A	under 0.5 PFM
B	0.5 to 3 PFM
C	3 to 6 PFM
D	6 to 11 PFM
E	11 to 18 PFM
F	over 18 PFM
Note: * PFM = Pedestrian per foot per minute	

For crosswalks at unsignalized intersections (138th Street and 37th Avenue, 138th Street and 39th Avenue and 39th Avenue midblock crossing), the following methodology was used, based on criteria for pedestrians at unsignalized intersections. Pedestrians are expected to tolerate smaller delays at unsignalized intersections. The crosswalk LOS ranges are listed in Table 15-11.

Table 15-11
Crosswalk Level of Service Ranges for Unsignalized Intersections

LOS	Average Delay/pedestrian
A	Under 5 seconds
B	5 to 10 seconds
C	10 to 20 seconds
D	20 to 30 seconds
E	30 to 45 seconds
F	Over 45 seconds

The analyzed crosswalks at Main Street and Roosevelt Avenue and at Main Street and 39th Avenue have the high-visibility “ladder” crosswalk design. At the intersection of Union Street and 39th Avenue, the north and south crosswalks have regular crosswalk designs while the west crosswalk has a high-visibility crossing design.

Field counts and observations of pedestrian conditions were conducted in November 2005 at the analyzed locations during the AM, midday, PM, and Saturday peak hours.

At the request of NYCDOT, additional pedestrian counts and analyses were conducted at locations where the project is expected to add more than 200 pedestrians per hour. Additional data for crosswalks, corners and sidewalks were collected in May 2009 at the following six (6) intersections:

- 138th Street and 39th Avenue
- Main Street and 37th Avenue
- 138th Street and 37th Avenue
- 39th Avenue midblock crossing
- Union Street and 37th Avenue
- Union Street and Roosevelt Avenue

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In addition, as part of the supplemental May 2009 survey, additional data were requested by NYCDOT to be included in the pedestrian analysis for two (2) of the four (4) intersections, that were previously surveyed:

- Main Street and Roosevelt Avenue
- Union Street and 39th Avenue

Table 15-12 shows the Existing Conditions analysis results for the analyzed pedestrian facilities (crosswalks, street corners, and walkways) for the weekday AM, midday, and PM peak hours and the Saturday midday peak hour. The following is a summary of existing conditions at each of the analyzed locations in these four peak hours:

CROSSWALKS

39th Avenue and Union Street

All crosswalks operate at LOS A during all peak hours.

39th Avenue and Main Street

All crosswalks operate at LOS C or better, except for the east crosswalk that operates at LOS D during the PM peak hour.

Roosevelt Avenue and Main Street

All crosswalks operate at LOS C or better, except for the west crosswalk that operate at LOS D during the midday peak hour and LOS E during the Saturday midday peak hour and the east crosswalk that operates at LOS D during the PM and Saturday midday peak hours.

39th Avenue and 138th Street

All crosswalks operate at LOS C or better, except for the east crosswalk which operate at LOS E during the midday and PM peak hour and at LOS F during the Saturday midday peak hour.

37th Avenue and Main Street

All crosswalks operate at LOS C or better during all peak hours.

37th Avenue and 138th Street

The south crosswalk operates at LOS C or better during all peak hours.

39th Avenue and Lippmann Arcade midblock crossing

The north crosswalk operates at LOS C or better during the AM, midday, and PM peak hours and LOS E during the Saturday midday peak hour.

37th Avenue and Union Street

All crosswalks operate at LOS A or better during all peak hours.

Roosevelt Avenue and Union Street

All crosswalks operate at LOS C or better during all peak hours.

Table 15-12
Peak Hour Pedestrian Level Of Service
Existing Conditions

Location	Side	Weekday AM		Weekday MD		Weekday PM		Saturday MD	
		8:00 to 9:00 AM		12:30 to 1:30 PM		5:00 to 6:00 PM		12:00 to 1:00 PM	
		Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS
Crosswalks at Signalized Intersections									
39th Ave / Union Street	N	256.7	A	127.8	A	198.9	A	148.1	A
	S	137.3	A	129.2	A	180.0	A	109.1	A
	W	89.0	A	92.7	A	46.7	B	69.1	A
39th Ave / Main Street	S	79.0	A	69.7	A	37.7	C	37.6	C
	E	51.1	B	38.6	C	18.5	D	26.2	C
Roosevelt Ave / Main Street	N	54.8	B	40.7	B	33.3	C	31.1	C
	S	86.1	A	34.9	C	27.2	C	27.5	C
	E	45.6	B	24.3	C	21.0	D	15.8	D
	W	28.9	C	17.0	D	24.5	C	12.4	E
	N	225.6	A	95.3	A	111.6	A	143.1	A
	S	166.0	A	106.9	A	101.9	A	80.4	A
	E	92.4	A	36.3	C	59.5	B	33.3	C
	W	238.1	A	70.9	A	82.4	A	56.8	B
	N	189.7	A	68.5	A	91.8	A	69.0	A
	S	367.5	A	94.3	A	98.8	A	76.4	A
37th Ave / Union Street	E	633.3	A	165.6	A	190.1	A	161.4	A
	W	294.6	A	95.3	A	93.8	A	97.1	A
	N	41.8	B	48.0	B	57.4	B	49.3	B
Roosevelt Ave / Union Street	S	108.7	A	55.6	B	68.8	A	63.7	A
	E	120.0	A	122.2	A	91.9	A	162.5	A
	W	83.7	A	39.5	C	29.5	C	47.1	B
Crosswalks at Unsignalized Intersections									
39th Ave / 138th Street	N	16.3	C	16.3	C	16.3	C	16.3	C
	E	19.8	C	40.1	E	42.7	E	160.0	F
	W	3.7	A	6.7	B	5.9	B	8.8	B
37th Ave / 138th Street	S	9.1	B	13.8	C	9.6	B	8.0	B
39th Ave / Midblock Crossing	N	10.1	C	15.2	C	16.1	C	41.9	E
Street Corners									
39th Avenue / Union Street	NW	186.7	A	168.6	A	112.2	A	141.8	A
	SW	373.4	A	313.9	A	232.4	A	322.1	A
39th Ave / Main Street	SE	53.7	B	52.5	B	23.4	D	31.7	C
Roosevelt Ave / Main Street	NW	65.3	A	49.4	B	42.6	B	39.4	C
	NE	54.5	B	40.5	B	30.8	C	28.8	C
	SW	64.4	A	43.9	B	43.0	B	35.6	C
	SE	93.4	A	48.1	B	38.3	C	37.0	C
	NW	199.0	A	73.0	A	77.1	A	71.7	A
	NE	103.4	A	50.5	B	66.4	A	54.7	B
	SW	165.8	A	77.2	A	79.1	A	54.2	B
	SE	69.8	A	34.2	C	45.1	B	31.6	C
	NW	166.9	A	58.6	B	66.3	A	61.0	A
	NE	226.2	A	77.9	A	97.9	A	67.8	A
	SW	322.3	A	88.4	A	90.6	A	87.8	A
	SE	510.1	A	220.5	A	251.6	A	165.3	A
	NW	94.3	A	83.7	A	70.0	A	97.2	A
	NE	29.2	C	39.7	C	36.0	C	42.9	B
Roosevelt Ave / Union Street	SW	94.0	A	49.0	B	43.3	B	64.1	A
	SE	83.1	A	58.1	B	55.9	B	63.7	A

Table 15-12 (cont'd)
Peak Hour Pedestrian Level Of Service
Existing Conditions

Location	Side	Weekday AM		Weekday MD		Weekday PM		Saturday MD	
Walkway									
Lippmann Arcade	NS	4.3	A	2.5	A	3.2	A	2.2	A
Sidewalks									
39th Ave / Union Street	NW sidewalk along Union Street	0.6	B	0.8	B	1.2	B	1.3	B
	NW sidewalk along 39 Avenue	0.7	B	0.8	B	0.6	B	0.6	B
	SW sidewalk along Union Street	1.2	B	1.7	B	2.0	B	1.1	B
	SW Sidewalk along 39 Avenue	0.4	A	0.4	A	0.5	A	0.3	A
	East sidewalk along Union Street North of 39th Avenue	1.2	B	1.3	B	0.9	B	2.1	B
	East sidewalk along Union Street South of 39th Avenue	1.1	B	1.1	B	0.7	B	1.3	B
39th Ave / Main Street	NE sidewalk along 39th Avenue	0.7	B	1.1	B	0.8	B	1.8	B
	SE sidewalk along 39th Avenue	4.8	C	3.0	C	4.0	C	6.5	D
Main Street / Roosevelt Avenue	NE sidewalk along Main Street	6.0	D	10.7	D	10.9	D	10.9	D
	NE sidewalk along Roosevelt Avenue	6.9	D	9.6	D	11.5	E	8.7	D
	NW sidewalk along Main Street	4.4	C	8.3	D	9.3	D	10.4	D
	NW sidewalk along Roosevelt Avenue	4.8	C	8.0	D	6.3	D	8.5	D
	SE Sidewalk along Main Street	15.3	E	23.6	F	24.4	F	21.4	F
	SE Sidewalk along Roosevelt Avenue	4.7	C	8.1	D	9.2	D	9.3	D
	SW sidewalk along Main Street	9.8	D	14.7	E	15.4	E	15.9	E
	SW Sidewalk along Roosevelt Avenue	2.8	B	6.0	D	4.8	C	7.3	D
39th Avenue / 138th Street	NE sidewalk along 138th Street	1.0	B	0.8	B	0.8	B	1.2	B
	NE sidewalk along 39 Avenue	1.7	B	1.6	B	1.0	B	1.4	B
	NW sidewalk along 138th Street	1.0	B	1.3	B	1.3	B	1.1	B
	NW sidewalk along 39 Avenue	1.9	B	1.8	B	2.4	B	2.3	B
	South sidewalk along 39 Avenue between 138th Street and Main Street	1.5	B	2.7	B	1.4	B	2.2	B
	South sidewalk along 39 Avenue between 138th Street and Lippmann Plaza	1.7	B	2.7	B	2.5	B	2.7	B
37th Ave / Main Street	NE sidewalk along Main Street	2.0	B	3.2	C	3.6	C	4.2	C
	NE sidewalk along 37th Avenue	0.6	B	2.5	B	2.5	B	3.5	C
	NW sidewalk along Main Street	1.2	B	2.2	B	2.4	B	2.8	B
	NW sidewalk along 37th Avenue	0.8	B	2.4	B	2.0	B	2.9	B
	SE Sidewalk along Main Street	2.6	B	6.9	D	5.9	C	7.3	D
	SE Sidewalk along 37th Avenue	2.3	B	3.7	C	2.3	B	4.3	C
	SW sidewalk along Main Street	1.1	B	2.3	B	2.3	B	3.2	C
37th Ave / 138th Street	SW Sidewalk along 37th Avenue	0.7	B	2.4	B	1.7	B	3.2	C
	SE sidewalk along 138 Street	0.3	A	0.7	B	0.6	B	0.7	B
	SE sidewalk along 37 Avenue	0.3	A	1.3	B	0.5	B	1.5	B
	SW sidewalk along 138 Street	0.6	B	1.9	B	0.9	B	1.8	B
	SW sidewalk along 37 Avenue	1.0	B	3.3	C	3.1	C	5.4	C
	North sidewalk along 37 Avenue between 138th Street and Main Street	0.5	A	2.3	B	1.9	B	3.2	C
	North sidewalk along 37 Avenue between 138th Street and Union Street	0.3	A	2.5	B	1.7	B	4.1	C
37th Ave / Union Street	NE sidewalk along Union Street	1.6	B	2.6	B	3.0	B	3.0	B
	NE sidewalk along 37 Avenue	2.1	B	1.7	B	1.8	B	1.7	B
	NW sidewalk along Union Street	4.0	C	3.2	C	5.2	C	3.0	C
	NW sidewalk along 37 Avenue	1.6	B	4.2	C	3.3	C	3.8	C
	SE Sidewalk along Union Street	1.0	B	1.2	B	1.8	B	1.4	B
	SE Sidewalk along 37 Avenue	1.3	B	1.3	B	1.8	B	2.1	B
	SW sidewalk along Union Street	2.8	B	3.9	C	4.2	C	4.6	C
	SW Sidewalk along 37 Avenue	0.7	B	0.9	B	0.9	B	1.0	B
Roosevelt Ave / Union Street	NE sidewalk along Union Street	1.8	B	2.2	B	1.7	B	2.3	B
	NE sidewalk along Roosevelt Avenue	4.2	C	6.2	D	5.8	C	3.9	C
	NW sidewalk along Union Street	1.7	B	3.1	C	3.6	C	3.3	C
	NW sidewalk along Roosevelt Avenue	2.8	B	3.0	B	3.4	C	3.6	C
	SE Sidewalk along Union Street	2.5	B	2.3	B	1.9	B	2.0	B
	SE Sidewalk along Roosevelt Avenue	5.1	C	4.4	C	5.1	C	4.9	C
	SW sidewalk along Union Street	1.9	B	2.4	B	2.5	B	2.7	B
	SW Sidewalk along Roosevelt Avenue	1.6	B	2.2	B	3.5	C	2.6	B

STREET CORNERS

39th Avenue and Union Street

All corners operate at LOS A during all peak hours.

39th Avenue and Main Street

The south-east corner operates at LOS B the AM and midday peak hours, at LOS D during the PM peak hour, and at LOS C during the Saturday midday peak hour.

Roosevelt Avenue and Main Street

All corners operate at LOS C during all peak hours.

37th Avenue and Main Street

All corners operate at LOS B during all peak hours.

37th Avenue and Union Street

All corners operate at LOS C or better during all peak hours.

Roosevelt Avenue and Union Street

All corners operate at LOS C or better during all peak hours.

LIPPMANN ARCADE

The Lippmann Arcade operates at LOS A during all peak hours.

SIDEWALKS

39th Avenue and Union Street

All sidewalks operate at LOS B or better during all peak hours.

Main Street and 39th Avenue

The NE sidewalk, along 39th Avenue, operates at LOS B during all peak hours. The SE sidewalk along 39th Avenue, along 39th Avenue, operates at LOS C during the AM, midday, and PM peak hours and at LOS D during the Saturday midday peak hour.

Main Street and Roosevelt Avenue

The NE sidewalk along Main Street operates at LOS D during all peak hours. The NE sidewalk along Roosevelt Avenue operates at LOS D during the AM, midday, and Saturday midday peak hours and at LOS E during the PM peak hour.

The NW sidewalks operate at LOS C during the AM peak hour and at LOS D during the midday, PM, and Saturday midday peak hours.

The SE sidewalk along Main Street operates at LOS E during the AM peak hour and LOS F during the midday, PM, and Saturday midday peak hours. The SE sidewalk along Roosevelt Avenue operates at LOS C during the AM peak hour and LOS D during the midday, PM, and Saturday midday peak hours.

Flushing Commons

The SW sidewalk along Main Street operates at LOS D during the AM peak hour and LOS E during the midday, PM, and Saturday midday peak hours. The SW sidewalk along Roosevelt Avenue operates at LOS B during the AM peak hour, LOS D during the midday and Saturday midday peak hours and LOS C during the PM peak hour.

39th Avenue and 138th Street

All sidewalks operate at LOS B during all peak hours.

37th Avenue and Main Street

All sidewalks operate at LOS C or better except for the SE sidewalk along Main Street that operates at LOS D during the midday and Saturday midday peak hours.

37th Avenue and 138th Street

All sidewalks operate at LOS C or better during all peak hours.

37th Avenue and Union Street

All sidewalks operate at LOS C or better during all peak hours.

Roosevelt Avenue and Union Street

All sidewalks operate at LOS C or better during all peak hours.

FUTURE WITHOUT THE PROPOSED ACTION

The level of pedestrian activity in the study area at the analyzed crosswalks, sidewalks, and street corners is expected to increase in 2013 under the No Build condition as a result of background growth, traffic generated to and from other developments, and the anticipated overall increase in transit ridership. Collectively, from these factors, pedestrian volumes were increased using an annual growth rate of 2.8 percent, which amounted to approximately 22.5 percent over the 8-year period from 2005 to 2013 and approximately 11.2 percent over the 4 year period from 2009 to 2013. In addition, as set forth in Chapter 14, the analyses are based on a future condition scenario based on the City's original concept to convert Main Street and Union Street between Northern Boulevard and Sanford Avenue to a one-way northbound-southbound roadway pair with contra-flow bus lanes. The City continues to analyze other scenarios as alternatives to the contra-flow configuration to improve pedestrian safety in Downtown Flushing.

The effects of this anticipated increase in pedestrian demand on pedestrian flows are shown in Table 15-13. The following is a summary of projected 2013 No Build operating levels at each of the analyzed locations in the four peak hours:

CROSSWALKS

39th Avenue and Union Street

All crosswalks will operate at LOS C or better during all peak hours.

39th Avenue and Main Street

All crosswalks will operate at LOS C or better, except for the east crosswalk which will operate at LOS E during the PM peak hour.

Table 15-13
Peak Hour Pedestrian Level of Service
2013 No Build Condition

Location	Side	WEEKDAY AM		WEEKDAY MD		WEEKDAY PM		SATURDAY MD	
		8:00 to 9:00 AM		12:30 to 1:30 PM		5:00 to 6:00 PM		12:00 to 1:00 PM	
		Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS
Crosswalks at Signalized Intersections									
39th Ave / Union Street	N	231.7	A	191.5	A	189.8	A	164.8	A
	S	103.4	A	91.7	A	144.2	A	82.9	A
	W	71.6	A	60.8	A	37.1	C	55.2	B
39th Ave / Main Street	S	68.6	A	59.9	B	32.3	C	32.2	C
	E	38.2	C	30.1	C	13.9	E	20.9	D
	N	48.6	B	36.2	C	29.4	C	27.5	C
Roosevelt Ave / Main Street	S	78.0	A	31.3	C	24.5	C	24.9	C
	E	40.0	C	21.0	D	18.0	D	13.7	E
	W	25.8	C	15.1	D	21.7	D	11.1	E
37th Ave / Main Street	N	193.7	A	82.5	A	82.8	A	115.4	A
	S	170.0	A	100.5	A	100.9	A	77.2	A
	E	82.0	A	32.0	C	52.6	B	29.4	C
37th Ave / Union Street	W	226.7	A	70.1	A	81.7	A	57.4	B
	N	111.0	A	32.1	C	54.4	B	33.0	C
	S	229.9	A	44.0	B	57.7	B	35.4	C
Roosevelt Ave / Union Street	E	172.4	A	38.4	C	51.2	B	37.0	C
	W	84.3	A	20.7	D	25.2	C	21.8	D
	N	33.2	C	49.9	B	37.9	C	47.7	B
Roosevelt Ave / Union Street	S	70.4	A	43.5	B	35.3	C	44.3	B
	E	134.9	A	104.6	A	90.0	A	143.1	A
	W	73.6	A	27.7	C	28.1	C	33.6	C
Crosswalks at Unsignalized Intersections									
39th Ave / 138th Street	E	21.3	D	39.3	E	33.2	E	69.8	F
	W	4.8	A	5.6	B	4.1	A	5.4	B
	N	16.3	C	82.2	F	28.1	D	34.7	E
37th Ave / 138th Street	S	10.3	C	15.7	C	9.1	B	9.1	B
39th Ave / Midblock Crossing	N	10.8	C	16.4	C	17.3	C	16.0	C
Street Corners									
39th Avenue / Union Street	NW	151.2	A	126.5	A	89.5	A	114.0	A
	SW	301.4	A	234.7	A	187.9	A	259.5	A
39th Ave / Main Street	SE	42.6	B	42.1	B	17.9	D	25.0	C
Roosevelt Ave / Main Street	NW	57.9	B	43.7	B	37.6	C	34.8	C
	NE	48.3	B	35.9	C	26.9	C	25.2	C
	SW	57.4	B	38.9	C	38.0	C	31.5	C
	SE	82.9	A	42.6	B	33.6	C	32.5	C
37th Ave / Main Street	NW	178.7	A	64.9	A	68.4	A	63.8	A
	NE	92.7	A	44.9	B	59.0	B	48.7	B
	SW	147.7	A	69.1	A	70.3	A	48.2	B
	SE	62.4	A	30.1	C	40.0	C	27.8	C
37th Ave / Union Street	NW	153.4	A	53.6	B	60.5	A	56.7	B
	NE	204.5	A	71.9	A	89.9	A	62.3	A
	SW	296.6	A	81.5	A	84.1	A	80.2	A
	SE	459.5	A	200.6	A	227.7	A	148.8	A
Roosevelt Ave / Union Street	NW	85.0	A	74.8	A	64.4	A	86.9	A
	NE	25.3	C	35.1	C	32.5	C	37.7	C
	SW	86.7	A	43.5	B	40.4	B	57.1	B
	SE	75.7	A	52.0	B	50.5	B	56.2	B

Table 15-13 (cont'd)
Peak Hour Pedestrian Level of Service
2013 No Build Condition

Location	Direction	WEEKDAY AM		WEEKDAY MD		WEEKDAY PM		SATURDAY MD	
		8:00 to 9:00 AM		12:30 to 1:30 PM		5:00 to 6:00 PM		12:00 to 1:00 PM	
		Flow (PFM)	LOS	Flow (PFM)	LOS	Flow (PFM)	LOS	Flow (PFM)	LOS
Walkway									
Lippmann Arcade	NS	5.3	A	3.0	A	4.0	A	2.7	A
Sidewalks									
39th Ave / Union Street	NW sidewalk along Union Street	0.8	B	0.9	B	1.5	B	1.6	B
	NW sidewalk along 39 Avenue	0.8	B	1.0	B	0.8	B	0.8	B
	SW sidewalk along Union Street	1.4	B	2.1	B	2.5	B	1.3	B
	SW Sidewalk along 39 Avenue	0.5	A	0.5	A	0.6	B	0.4	A
	East sidewalk along Union Street North of 39th Avenue	1.4	B	1.6	B	1.1	B	2.6	B
	East sidewalk along Union Street South of 39th Avenue	1.4	B	1.4	B	0.9	B	1.6	B
39th Ave / Main Street	NE sidewalk along 39th Avenue	0.9	B	1.4	B	1.0	B	2.3	B
	SE sidewalk along 39th Avenue	5.9	C	3.7	C	4.8	C	7.9	D
Main Street / Roosevelt Avenue	NE sidewalk along Main Street	6.7	D	11.8	E	12.2	E	12.1	E
	NE sidewalk along Roosevelt Avenue	7.6	D	10.6	D	12.8	E	9.7	D
	NW sidewalk along Main Street	4.9	C	9.2	D	10.4	D	11.5	E
	NW sidewalk along Roosevelt Avenue	5.3	C	8.9	D	7.0	D	9.4	D
	SE Sidewalk along Main Street	17.0	E	26.3	F	27.1	F	23.8	F
	SE Sidewalk along Roosevelt Avenue	5.2	C	9.0	D	10.3	D	10.4	D
	SW sidewalk along Main Street	10.9	D	16.4	E	17.1	E	17.7	E
	SW Sidewalk along Roosevelt Avenue	3.2	C	6.7	D	5.4	C	8.1	D
39th Avenue / 138th Street	NE sidewalk along 138th Street	1.1	B	0.9	B	0.9	B	1.3	B
	NE sidewalk along 39 Avenue	1.8	B	1.8	B	1.1	B	1.5	B
	NW sidewalk along 138th Street	1.1	B	1.5	B	1.5	B	1.2	B
	NW sidewalk along 39 Avenue	2.1	B	2.0	B	2.7	B	2.5	B
	South sidewalk along 39 Avenue between 138th Street and Main St	1.7	B	3.0	B	1.5	B	2.4	B
	South sidewalk along 39 Avenue between 138th Street and Lippmann Plaza	1.9	B	3.0	C	2.8	B	3.0	C
37th Ave / Main Street	NE sidewalk along Main Street	2.2	B	3.6	C	4.0	C	4.7	C
	NE sidewalk along 37th Avenue	0.6	B	2.8	B	2.7	B	3.9	C
	NW sidewalk along Main Street	1.3	B	2.4	B	2.7	B	3.1	C
	NW sidewalk along 37th Avenue	0.9	B	2.6	B	2.2	B	3.2	C
	SE Sidewalk along Main Street	2.9	B	7.6	D	6.5	D	8.1	D
	SE Sidewalk along 37th Avenue	2.6	B	4.1	C	2.6	B	4.7	C
	SW sidewalk along Main Street	1.3	B	2.6	B	2.6	B	3.6	C
37th Ave / 138th Street	SW Sidewalk along 37th Avenue	0.7	B	2.7	B	1.9	B	3.5	C
	SE sidewalk along 138 Street	0.3	A	0.8	B	0.6	B	0.8	B
	SE sidewalk along 37 Avenue	0.3	A	1.5	B	0.6	B	1.7	B
	SW sidewalk along 138 Street	0.7	B	2.2	B	1.0	B	2.0	B
	SW sidewalk along 37 Avenue	1.1	B	3.7	C	3.5	C	6.0	C
	North sidewalk along 37 Avenue between 138th Street and Main Street	0.5	B	2.5	B	2.1	B	3.5	C
	North sidewalk along 37 Avenue between 138th Street and Union Street	0.3	A	2.8	B	1.9	B	4.6	C
37th Ave / Union Street	NE sidewalk along Union Street	1.8	B	2.8	B	3.3	C	3.3	C
	NE sidewalk along 37 Avenue	2.4	B	2.0	B	2.0	B	2.0	B
	NW sidewalk along Union Street	4.4	C	3.6	C	5.8	C	3.4	C
	NW sidewalk along 37 Avenue	1.8	B	4.7	C	3.7	C	4.2	C
	SE Sidewalk along Union Street	1.1	B	1.4	B	2.0	B	1.6	B
	SE Sidewalk along 37 Avenue	1.4	B	1.4	B	1.9	B	2.3	B
	SW sidewalk along Union Street	3.1	C	4.3	C	4.7	C	5.1	C
Roosevelt Ave / Union Street	SW Sidewalk along 37 Avenue	0.8	B	1.0	B	1.0	B	1.1	B
	NE sidewalk along Union Street	2.0	B	2.4	B	1.8	B	2.5	B
	NE sidewalk along Roosevelt Avenue	4.7	C	6.9	D	6.5	D	4.3	C
	NW sidewalk along Union Street	1.9	B	3.4	C	4.0	C	3.7	C
	NW sidewalk along Roosevelt Avenue	3.2	C	3.3	C	3.7	C	4.0	C
	SE Sidewalk along Union Street	2.8	B	2.6	B	2.2	B	2.2	B
	SE Sidewalk along Roosevelt Avenue	5.7	C	4.9	C	5.7	C	5.4	C
	SW sidewalk along Union Street	2.1	B	2.7	B	2.8	B	3.1	C
	SW Sidewalk along Roosevelt Avenue	1.8	B	2.5	B	3.9	C	2.9	B

Roosevelt Avenue and Main Street

All crosswalks will operate at LOS C or better, except for the east and west crosswalks which will operate at LOS D during the midday and PM peak hours and at LOS E during the Saturday midday peak hour.

39th Avenue and 138th Street

The east crosswalk will operate at LOS D in the AM peak hour, at LOS E during the midday and PM peak hours, and at LOS F during the Saturday midday peak hour. The west crosswalk will operate at LOS B or better during all peak hours. The north crosswalk will operate at LOS C during the AM peak hour, at LOS F during the midday peak hour, at LOS D during the PM peak hour, and at LOS E during the Saturday midday peak hour.

37th Avenue and Main Street

All crosswalks will operate at LOS C or better during all peak hours.

37th Avenue and 138th Street

The south crosswalk will operate at LOS C or better during all peak hours.

39th Avenue and Lippmann Arcade midblock crossing

The north crosswalk will operate at LOS C or better during all peak hours.

37th Avenue and Union Street

All crosswalks will operate at LOS C during all peak hours.

Roosevelt Avenue and Union Street

All crosswalks will operate at LOS C or better during all peak hours.

STREET CORNERS

39th Avenue and Union Street

All corners will operate at LOS A or better during all peak hours.

39th Avenue and Main Street

The southeast corner will operate at LOS B during the AM and midday peak hours, at LOS D during the PM peak hour, and at LOS C during the Saturday midday peak hour.

Roosevelt Avenue and Main Street

All corners will operate at LOS C or better during all peak hours.

37th Avenue and Main Street

All corners will operate at LOS C or better during all peak hours.

37th Avenue and Union Street

All corners will operate at LOS C or better during all peak hours.

Flushing Commons

Roosevelt Avenue and Union Street

All corners will operate at LOS C or better during all peak hours.

LIPPMANN ARCADE

The Lippmann Arcade will operate at LOS A during all peak hours.

SIDEWALKS

39th Avenue and Union Street

All sidewalks will operate at LOS B or better during all peak hours.

Main Street and 39th Avenue

The NE sidewalk, along 39th Avenue, will operate at LOS B during all peak hours. The SE sidewalk along 39th Avenue will operate at LOS C during the AM, midday, and PM peak hours, and at LOS D during the Saturday midday peak hour.

Main Street and Roosevelt Avenue

The NE sidewalk along Main Street will operate at LOS D during the AM peak hour and at LOS E during the midday, PM, and Saturday midday peak hours. The NE sidewalk along Roosevelt Avenue will operate at LOS D during the AM, midday, and Saturday midday peak hours, and at LOS E during the PM peak hour.

The NW sidewalk along Main Street will operate at LOS C during the AM peak hour and at LOS D during the midday, PM, and Saturday midday peak hours. The NW sidewalk along Roosevelt Avenue will operate at LOS C during the AM peak hour, at LOS D during the midday and PM peak hours, and at LOS E during the Saturday midday peak hour.

The SE sidewalk along Main Street will operate at LOS E during the AM peak hour and LOS F during the midday, PM, and Saturday midday peak hours. The SE sidewalk along Roosevelt Avenue will operate at LOS C during the AM peak hour and LOS D during the midday, PM, and Saturday midday peak hours.

The SW sidewalk along Main Street will operate at LOS D during the AM peak hour and LOS E during the midday, PM, and Saturday midday peak hours. The SW sidewalk along Roosevelt Avenue will operate at LOS C during the AM and the PM peak hours and at LOS D during the midday and Saturday midday peak.

39th Avenue and 138th Street

All sidewalks will operate at LOS C or better during all peak hours.

37th Avenue and Main Street

All sidewalks will operate at LOS C or better, except for the SE sidewalk along Main Street which will operate at LOS D during the midday, PM, and Saturday midday peak hours.

37th Avenue and 138th Street

All sidewalks will operate at LOS C or better during all peak hours.

37th Avenue and Union Street

All sidewalks will operate at LOS C or better during all peak hours.

Roosevelt Avenue and Union Street

All sidewalks will operate at LOS C or better during all peak hours, except for the NE sidewalk along Roosevelt Avenue which will operate at LOS D during the midday and PM peak hours.

PROBABLE IMPACTS OF THE PROPOSED ACTION

The proposed action would add person trips to the study area's pedestrian facilities (crosswalks, street corners, sidewalks and walkway) during the analyzed peak hours, as presented in Table 15-14. These person trips would increase pedestrian volumes adjacent to the project site. Since the vehicular site-generated traffic would be accommodated at the proposed garage complex, person-trips generated by drivers who park at the garage are not included in the pedestrian analysis of crosswalks, sidewalks, and street corners.

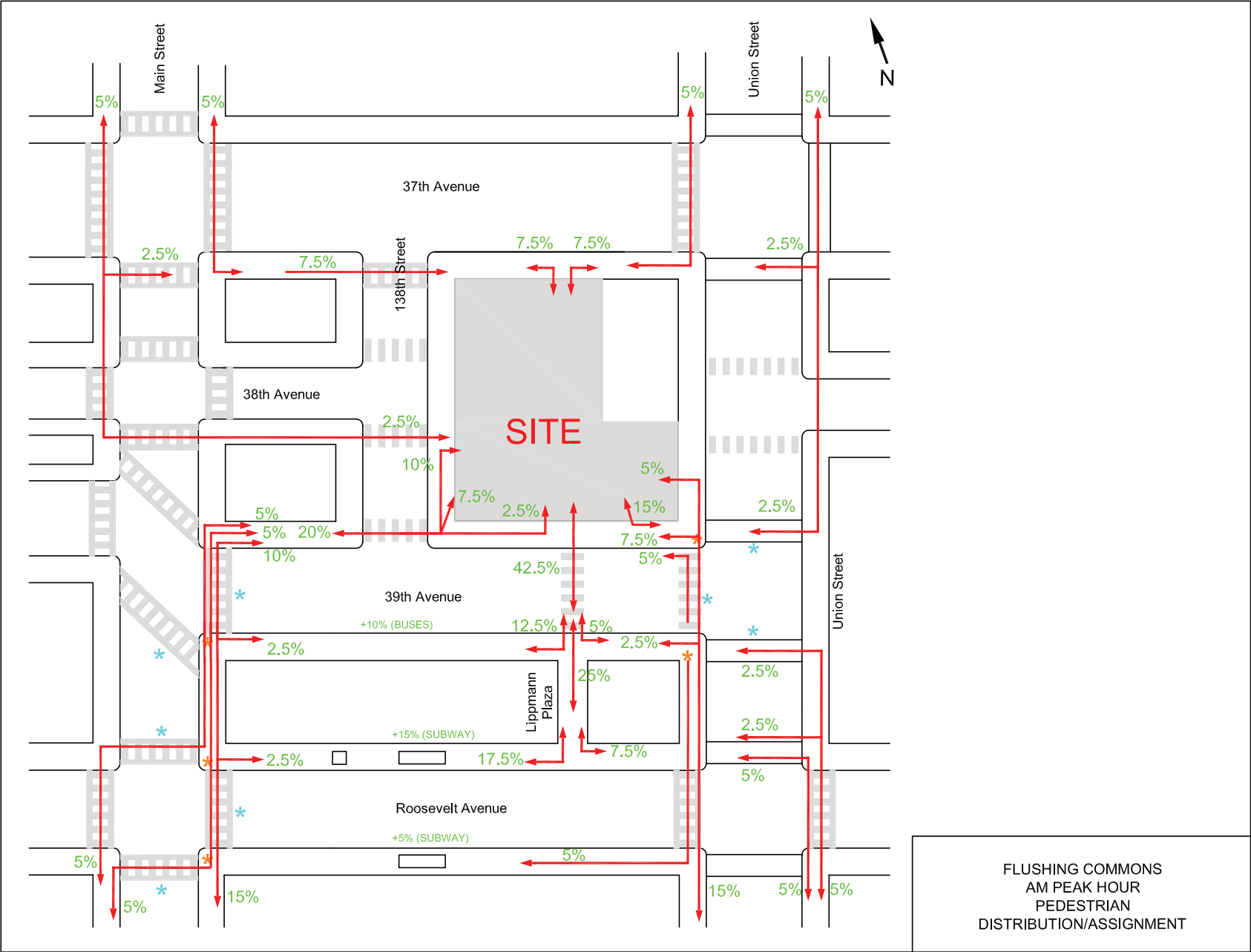
Table 15-14
Project Generated Pedestrian Trips

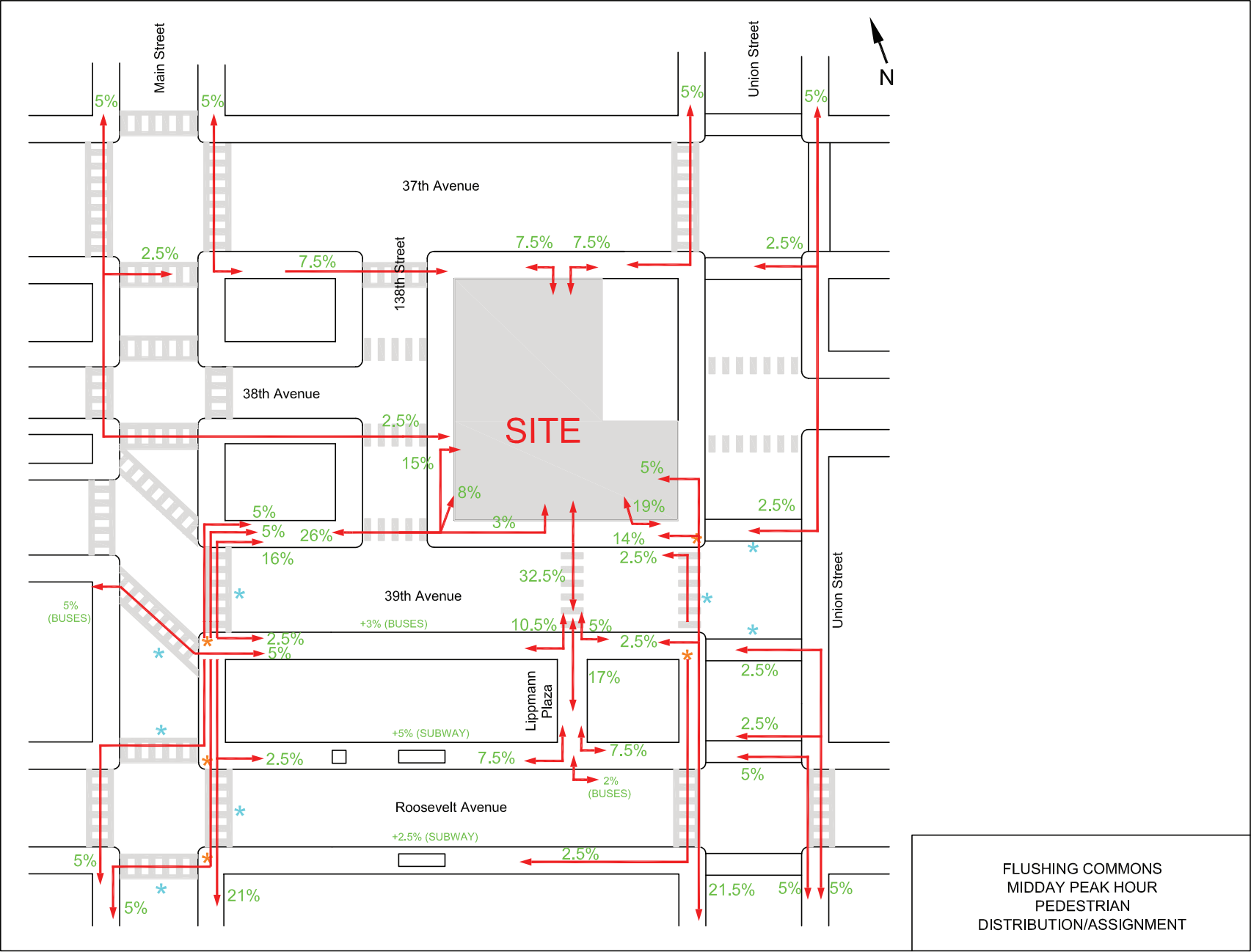
	Weekday AM Peak Hour	Weekday midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
No. of pedestrian generated trips*	2,079	7,034	4,491	4,594

To account for the person pedestrian flow expected to be attracted to the multiple uses at the Flushing Commons development, credits to up to 15 percent were applied to the above site-generated pedestrian trips. No Build condition pedestrian flow levels were taken into consideration when applying the credit(s) in order to avoid negative flows at the analyzed locations. The assignment of the net pedestrian trips (total trips minus credits), as seen in Figures 15-3 through 15-6, reflect an associated distribution based on the location of the proposed project, desire lines of travel (i.e., the likely paths that people take to walk to and from the project site and key points in the study area) and the location of various pedestrian facilities related to those travel lines. Pedestrians were distributed separately by four modes of travel—walk-only, subway, LIRR, and bus—and then summed and assigned to the pedestrian facilities. As such, pedestrian assignments to and from the project site reflect the locations of subway stairs, bus stops and entrances/exits of the proposed development. In addition, as set forth in Chapter 14, the analyses are based on a future condition scenario based on the City's original concept to convert Main Street and Union Street between Northern Boulevard and Sanford Avenue to a one-way northbound-southbound roadway pair with contra-flow bus lanes. The City continues to analyze other scenarios as alternatives to the contra-flow configuration to improve pedestrian safety in Downtown Flushing.

To assess the potential significant pedestrian impacts from the proposed action, projected operating levels in the No Build condition are compared with those in the Build condition. This analysis uses LOS impact criteria and guidelines presented in the *2001 CEQR Technical Manual* for average flow criteria for crosswalks and corners stated in Table 15-12A, and platoon adjusted criteria for sidewalks as stated in Table 15-12B.

For crosswalks and street corners, a significant impact is defined as a decrease of 1 square foot per person (SFP) or more due to the proposed action when the future No Build condition has average occupancies under 15 SFP (the threshold between LOS D and LOS E). For walkways, a





Flushing Commons

Figure 15-4

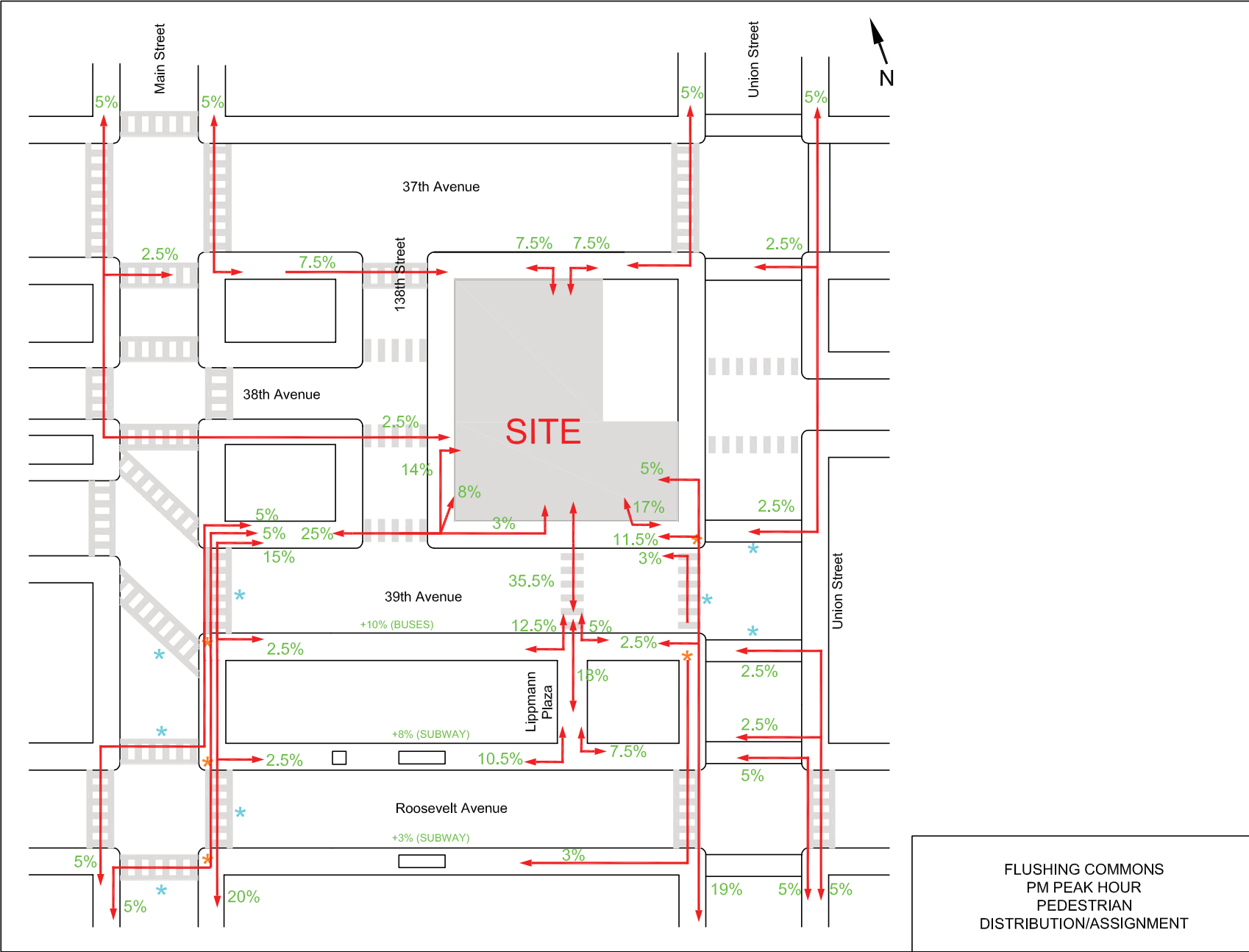




Figure 15-6

Flushing Commons

significant impact occurs with the proposed action would increase the pedestrian flow rate by two pedestrians per foot per minute (PFM) or more when the future No Build condition is at flow rates over 11 PFM (the platoon threshold of LOS D/E). In addition, a level-of-service deterioration from LOS A, B, C, or D to LOS E or worse with changes equal to or greater than 1 SFP or 2 PFM would be considered a significant adverse impact.

Tables 15-15 through 15-18 provide detailed comparisons of pedestrian operations in the future Build and No Build conditions for the weekday AM, midday, and PM peak and Saturday midday peak hours, respectively.

A summary of the significant adverse pedestrian impacts identified for the proposed action is presented in Table 15-19. As shown, the proposed action would not result in any significant adverse impacts at any location during the weekday AM peak hour. During the weekday midday peak hour, significant adverse impacts are projected at five crosswalks, three corners, and three sidewalk segments. During the weekday PM peak hour, significant adverse impacts are projected to occur at three crosswalks, three corners, and two sidewalk segments. During the Saturday midday peak hour, significant adverse impacts are projected at three crosswalk, three corners, and two sidewalk segments. Chapter 20 summarizes the measures recommended to mitigate these significant adverse impacts.

Table 15-15
Future Build vs. No Build
Pedestrian Level of Service Comparison
Weekday AM Peak Hour (8:00–9:00)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	
Crosswalks at Signalized Intersections						
39th Ave / Union Street	N	231.7	A	169.9	A	
	S	103.4	A	69.9	A	
	W	71.6	A	42.8	B	
39th Ave / Main Street	S	68.6	A	68.6	A	
	E	38.2	C	28.5	C	
Roosevelt Ave / Main Street	N	48.6	B	44.7	B	
	S	78.0	A	69.1	A	
	E	40.0	C	29.5	C	
	W	25.8	C	24.2	C	
37th Ave / Main Street	N	193.7	A	99.3	A	
	S	170.0	A	140.2	A	
	E	82.0	A	73.2	A	
	W	226.7	A	174.0	A	
37th Ave / Union Street	N	111.0	A	111.0	A	
	S	229.9	A	131.4	A	
	E	172.4	A	89.1	A	
	W	84.3	A	55.6	B	
Roosevelt Ave / Union Street	N	33.2	C	29.1	C	
	S	70.4	A	70.4	A	
	E	134.9	A	69.6	A	
	W	73.6	A	37.4	C	
Crosswalks at Unsignalized Intersections						
39th Ave / 138th Street	E	21.3	D	55.5	F	*
	W	4.8	A	6.6	B	
	N	16.3	C	28.1	D	
37th Ave / 138th Street	S	10.3	C	9.6	B	*
39th Ave / Midblock Crossing	N-S	10.8	C	27.5	D	**

Table 15-15 (cont'd)
Future Build vs. No Build
Pedestrian Level of Service Comparison
Weekday AM Peak Hour (8:00–9:00)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Flow (PFM)	LOS	Flow (PFM)	LOS	
Street Corners						
39th Ave / Union Street	NW	151.2	A	75.2	A	
	SW	301.4	A	159.9	A	
39th Ave / Main Street	NE	42.6	B	31.9	C	
Roosevelt Ave / Main Street	NW	57.9	B	51.4	B	
	NE	48.3	B	34.7	C	
	SW	57.4	B	51.5	B	
	SE	82.9	A	56.5	B	
37th Ave / Main Street	NW	178.7	A	126.6	A	
	NE	92.7	A	78.6	A	
	SW	147.7	A	100.7	A	
	SE	62.4	A	49.0	B	
37th Ave / Union Street	NW	153.4	A	105.2	A	
	NE	204.5	A	104.0	A	
	SW	296.6	A	138.9	A	
	SE	459.5	A	232.5	A	
Roosevelt Ave / Union Street	NW	85.0	A	53.8	B	
	NE	25.3	C	15.6	D	
	SW	86.7	A	53.0	B	
	SE	75.7	A	50.4	B	
Walkway						
Lippmann Arcade	NS	5.3	B	5.9	B	
Sidewalks						
39th Ave / Union Street	NW sidewalk along Union Street	0.8	B	1.0	B	
	NW sidewalk along 39 Avenue	0.8	B	3.3	C	
	SW sidewalk along Union Street	1.4	B	2.4	B	
	SW Sidewalk along 39 Avenue	0.5	A	0.6	B	
	East sidewalk along Union Street North of 39th Avenue	1.4	B	1.7	B	
	East sidewalk along Union Street South of 39th Avenue	1.4	B	1.7	B	
39th Ave / Main Street	NE sidewalk along 39th Avenue	0.9	B	2.3	B	
	SE sidewalk along 39th Avenue	5.9	C	6.1	D	
Main Street / Roosevelt Avenue	NE sidewalk along Main Street	6.7	D	7.7	D	
	NE sidewalk along Roosevelt Avenue	7.6	D	8.6	D	
	NW sidewalk along Main Street	4.9	C	4.9	C	
	NW sidewalk along Roosevelt Avenue	5.3	C	5.3	C	
	SE Sidewalk along Main Street	17.0	E	18.2	F	
	SE Sidewalk along Roosevelt Avenue	5.2	C	5.4	C	
	SW sidewalk along Main Street	10.9	D	11.4	E	
	SW Sidewalk along Roosevelt Avenue	3.2	C	3.2	C	
39th Avenue / 138th Street	NE sidewalk along 138th Street	1.1	B	1.6	B	
	NE sidewalk along 39 Avenue	1.8	B	2.0	B	
	NW sidewalk along 138th Street	1.1	B	1.1	B	
	NW sidewalk along 39 Avenue	2.1	B	3.6	C	
	South sidewalk along 39 Avenue between 138th Street and Main Street	1.7	B	4.1	C	
	South sidewalk along 39 Avenue between 138th Street and Lippmann Plaza	1.9	B	2.3	B	
37th Ave / Main Street	NE sidewalk along Main Street	2.2	B	2.4	B	
	NE sidewalk along 37th Avenue	0.6	B	0.6	B	
	NW sidewalk along Main Street	1.3	B	1.6	B	
	NW sidewalk along 37th Avenue	0.9	B	0.9	B	
	SE Sidewalk along Main Street	2.9	B	2.9	B	
	SE Sidewalk along 37th Avenue	2.6	B	3.5	C	
	SW sidewalk along Main Street	1.3	B	1.4	B	
SW Sidewalk along 37th Avenue	0.7	B	0.7	B		

Table 15-15 (cont'd)
Future Build vs. No Build
Pedestrian Level of Service Comparison
Weekday AM Peak Hour (8:00–9:00)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Flow (PFM)	LOS	Flow (PFM)	LOS	
Sidewalks (continued)						
37th Ave / 138th Street	SE sidewalk along 138 Street	0.3	A	0.3	A	
	SE sidewalk along 37 Avenue	0.3	A	0.7	B	
	SW sidewalk along 138 Street	0.7	B	0.7	B	
	SW sidewalk along 37 Avenue	1.1	B	2.0	B	
	North sidewalk along 37 Avenue between 138th Street and Main Street	0.5	B	0.5	B	
	North sidewalk along 37 Avenue between 138th Street and Union Street	0.3	A	0.3	A	
37th Ave / Union Street	NE sidewalk along Union Street	1.8	B	2.4	B	
	NE sidewalk along 37 Avenue	2.4	B	2.4	B	
	NW sidewalk along Union Street	4.4	C	5.0	C	
	NW sidewalk along 37 Avenue	1.8	B	1.8	B	
	SE Sidewalk along Union Street	1.1	B	1.2	B	
	SE Sidewalk along 37 Avenue	1.4	B	1.4	B	
	SW sidewalk along Union Street	3.1	C	3.1	C	
Roosevelt Ave / Union Street	SW Sidewalk along 37 Avenue	0.8	B	1.4	B	
	NE sidewalk along Union Street	2.0	B	2.3	B	
	NE sidewalk along Roosevelt Avenue	4.7	C	4.7	C	
	NW sidewalk along Union Street	1.9	B	2.9	B	
	NW sidewalk along Roosevelt Avenue	3.2	C	3.5	C	
	SE Sidewalk along Union Street	2.8	B	3.9	C	
	SE Sidewalk along Roosevelt Avenue	5.7	C	5.7	C	
	SW sidewalk along Union Street	2.1	B	2.8	B	
	SW Sidewalk along Roosevelt Avenue	1.8	B	2.0	B	
Notes: * No impact criteria available for pedestrian crossing unsignalized intersections ** No impact criteria for crosswalk changing from unsignalized in the No Build condition to Signalized in the Build condition						

Table 15-16
Future Build vs. No Build
Pedestrian Level of Service Comparison
Weekday Midday Peak Hour (12:30-1:30)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Sq Ft per Ped. (sf/p) or Sec per Ped.	LOS	Sq Ft per Ped. (sf/p) or Sec per Ped.	LOS	
Crosswalks at Signalized Intersections						
39th Ave / Union Street	N	191.5	A	94.9	A	
	S	91.7	A	35.6	C	
	W	60.8	A	16.0	D	
39th Ave / Main Street	S	59.9	B	34.1	C	
	E	30.1	C	13.0	E	YES
Roosevelt Ave / Main Street	N	36.2	C	29.4	C	
	S	31.3	C	26.0	C	
	E	21.0	D	9.7	E	YES
37th Ave / Main Street	W	15.1	D	12.9	E	YES
	N	82.5	A	61.8	A	
	S	100.5	A	75.7	A	
	E	32.0	C	25.6	C	
37th Ave / Union Street	W	70.1	A	47.2	B	
	N	32.1	C	32.1	C	
	S	44.0	B	26.6	C	
	E	38.4	C	19.3	D	
Roosevelt Ave / Union Street	W	20.7	D	12.8	E	YES
	N	49.9	B	29.4	C	
	S	43.5	B	43.5	B	
	E	104.6	A	26.7	C	
	W	27.7	C	9.4	E	YES
Crosswalks at Unsignalized Intersections						
39th Ave / 138th Street	E	39.3	E	308.8	F	*
	W	5.6	B	8.9	B	
	N	82.2	F	418.0	F	
37th Ave / 138th Street	S	10.3	C	12.9	C	*
39th Ave / Midblock Crossing	N	16.4	C	10.1	E	**
Street Corners						
39th Ave / Union Street	NW	126.5	A	25.9	C	
	SW	234.7	A	59.6	B	
39th Ave / Main Street	NE	42.1	B	14.3	E	YES
Roosevelt Ave / Main Street	NW	43.7	B	32.6	C	
	NE	35.9	C	14.4	E	YES
	SW	38.9	C	30.3	C	
37th Ave / Main Street	SE	42.6	B	19.0	D	
	NW	64.9	A	40.5	B	
	NE	44.9	B	33.4	C	
	SW	69.1	A	38.5	C	
37th Ave / Union Street	SE	30.1	C	22.2	D	
	NW	53.6	B	34.2	C	
	NE	71.9	A	38.6	C	
	SW	81.5	A	37.4	C	
Roosevelt Ave / Union Street	SE	200.6	A	79.6	A	
	NW	74.8	A	22.0	D	
	NE	35.1	C	7.9	F	YES
	SW	43.5	B	15.7	D	
	SE	52.0	B	21.9	D	
Walkway						
Lippmann Arcade	NS	3.0	A	4.5	A	
Sidewalks						
39th Ave / Union Street	NW sidewalk along Union Street	0.9	B	1.7	B	
	NW sidewalk along 39 Avenue	1.0	B	13.5	E	YES
	SW sidewalk along Union Street	2.1	B	6.0	C	
	SW Sidewalk along 39 Avenue	0.5	A	1.0	B	
	East sidewalk along Union Street North of 39th Avenue	1.6	B	2.6	B	
	East sidewalk along Union Street South of 39th Avenue	1.4	B	2.3	B	

Table 15-16 (cont'd)
Future Build vs. No Build
Pedestrian Level of Service Comparison
Weekday Midday Peak Hour (12:30-1:30)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Flow (PFM)	LOS	Flow (PFM)	LOS	
Sidewalks (continued)						
39th Ave / Main Street	NE sidewalk along 39th Avenue	1.4	B	7.6	D	
	SE sidewalk along 39th Avenue	3.7	C	5.6	C	
Main Street / Roosevelt Avenue	NE sidewalk along Main Street	11.8	E	16.2	E	YES
	NE sidewalk along Roosevelt Avenue	10.6	D	12.1	E	
	NW sidewalk along Main Street	9.2	D	9.2	D	
	NW sidewalk along Roosevelt Avenue	8.9	D	8.9	D	
	SE Sidewalk along Main Street	26.3	F	32.1	F	YES
	SE Sidewalk along Roosevelt Avenue	9.0	D	9.4	D	
	SW sidewalk along Main Street	16.4	E	18.1	F	
	SW Sidewalk along Roosevelt Avenue	6.7	D	6.7	D	
39th Avenue / 138th Street	NE sidewalk along 138th Street	0.9	B	3.4	C	
	NE sidewalk along 39 Avenue	1.8	B	2.5	B	
	NW sidewalk along 138th Street	1.5	B	1.5	B	
	NW sidewalk along 39 Avenue	2.0	B	8.7	D	
	South sidewalk along 39 Avenue between 138th Street and Main Street	3.0	B	8.8	D	
	South sidewalk along 39 Avenue between 138th Street and Lippmann Plaza	3.0	C	4.3	C	
37th Ave / Main Street	NE sidewalk along Main Street	3.6	C	4.4	C	
	NE sidewalk along 37th Avenue	2.8	B	2.8	B	
	NW sidewalk along Main Street	2.4	B	3.4	C	
	NW sidewalk along 37th Avenue	2.6	B	2.6	B	
	SE Sidewalk along Main Street	7.6	D	7.6	D	
	SE Sidewalk along 37th Avenue	4.1	C	7.1	D	
	SW sidewalk along Main Street	2.6	B	3.0	B	
	SW Sidewalk along 37th Avenue	2.7	B	2.7	B	
37th Ave / 138th Street	SE sidewalk along 138 Street	0.8	B	0.8	B	
	SE sidewalk along 37 Avenue	1.5	B	2.9	B	
	SW sidewalk along 138 Street	2.2	B	2.2	B	
	SW sidewalk along 37 Avenue	3.7	C	6.5	D	
	North sidewalk along 37 Avenue between 138th Street and Main Street	2.5	B	2.5	B	
	North sidewalk along 37 Avenue between 138th Street and Union Street	2.8	B	2.8	B	
37th Ave / Union Street	NE sidewalk along Union Street	2.8	B	4.8	C	
	NE sidewalk along 37 Avenue	2.0	B	2.0	B	
	NW sidewalk along Union Street	3.6	C	5.8	C	
	NW sidewalk along 37 Avenue	4.7	C	4.7	C	
	SE Sidewalk along Union Street	1.4	B	1.9	B	
	SE Sidewalk along 37 Avenue	1.4	B	1.4	B	
	SW sidewalk along Union Street	4.3	C	4.3	C	
	SW Sidewalk along 37 Avenue	1.0	B	3.1	C	
Roosevelt Ave / Union Street	NE sidewalk along Union Street	2.4	B	3.2	C	
	NE sidewalk along Roosevelt Avenue	6.9	D	6.9	D	
	NW sidewalk along Union Street	3.4	C	7.4	D	
	NW sidewalk along Roosevelt Avenue	3.3	C	4.5	C	
	SE Sidewalk along Union Street	2.6	B	6.6	D	
	SE Sidewalk along Roosevelt Avenue	4.9	C	4.9	C	
	SW sidewalk along Union Street	2.7	B	6.1	D	
	SW Sidewalk along Roosevelt Avenue	2.5	B	2.8	B	
Notes: * No impact criteria available for pedestrian crossing unsignalized intersections ** No impact criteria for crosswalk changing from unsignalized in the No Build condition to Signalized in the Build condition						

Table 15-17
Future Build vs. No Build
Pedestrian Level of Service Comparison
Weekday PM Peak Hour (5:00-6:00)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	
Crosswalks at Signalized Intersections						
39th Ave / Union Street	N	189.8	A	114.7	A	
	S	144.2	A	56.7	B	
	W	37.1	C	18.5	D	
39th Ave / Main Street	S	32.3	C	32.3	C	
	E	13.9	E	9.4	E	YES
	N	29.4	C	26.0	C	
Roosevelt Ave / Main Street	S	24.5	C	22.0	D	
	E	18.0	D	11.4	E	YES
	W	21.7	D	19.2	D	
37th Ave / Main Street	N	82.8	A	57.7	B	
	S	100.9	A	78.3	A	
	E	52.6	B	44.3	B	
37th Ave / Union Street	W	81.7	A	64.2	A	
	N	54.4	B	54.4	B	
	S	57.7	B	40.3	B	
Roosevelt Ave / Union Street	E	51.2	B	30.3	C	
	W	25.2	C	18.2	D	
	N	37.9	C	27.7	C	
Roosevelt Ave / Union Street	S	35.3	C	35.3	C	
	E	90.0	A	37.2	C	
	W	28.1	C	14.0	E	YES
Crosswalks at Unsignalized Intersections						
39th Ave / 138th Street	E	33.2	E	107.2	F	*
	W	4.1	A	6.1	B	
	N	28.1	D	51.1	F	
37th Ave / 138th Street	S	9.1	B	6.8	B	*
39th Ave / Midblock Crossing	N	17.3	C	13.9	E	**
Street Corners						
39th Ave / Union Street	NW	89.5	A	34.7	C	
	SW	187.9	A	79.8	A	
39th Ave / Main Street	NE	17.9	D	11.6	E	YES
Roosevelt Ave / Main Street	NW	37.6	C	31.2	C	
	NE	26.9	C	14.7	E	YES
	SW	38.0	C	31.9	C	
37th Ave / Main Street	SE	33.6	C	19.8	D	
	NW	68.4	A	49.3	B	
	NE	59.0	B	46.7	B	
	SW	70.3	A	45.7	B	
37th Ave / Union Street	SE	40.0	C	24.2	C	
	NW	60.5	A	43.1	B	
	NE	89.9	A	54.1	B	
Roosevelt Ave / Union Street	SW	84.1	A	47.6	B	
	SE	227.7	A	109.8	A	
	NW	64.4	A	29.7	C	
	NE	32.5	C	12.1	E	YES
Roosevelt Ave / Union Street	SW	40.4	B	21.6	D	
	SE	50.5	B	28.5	C	
Walkway						
Lippmann Arcade	NS	4.0	A	5.0	A	

Table 15-17 (cont'd)
Future Build vs. No Build
Pedestrian Level of Service Comparison
Weekday PM Peak Hour (5:00-6:00)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Flow (PFM)	LOS	Flow (PFM)	LOS	
Sidewalks						
39th Ave / Union Street	NW sidewalk along Union Street	1.5	B	2.0	B	
	NW sidewalk along 39 Avenue	0.8	B	7.8	D	
	SW sidewalk along Union Street	2.5	B	4.8	C	
	SW Sidewalk along 39 Avenue	0.6	B	0.9	B	
	East sidewalk along Union Street North of 39th Avenue	1.1	B	1.8	B	
	East sidewalk along Union Street South of 39th Avenue	0.9	B	1.5	B	
39th Ave / Main Street	NE sidewalk along 39th Avenue	1.0	B	4.8	C	
	SE sidewalk along 39th Avenue	4.8	C	5.2	C	
Main Street / Roosevelt Avenue	NE sidewalk along Main Street	12.2	E	14.8	E	YES
	NE sidewalk along Roosevelt Avenue	12.8	E	14.1	E	
	NW sidewalk along Main Street	10.4	D	10.4	D	
	NW sidewalk along Roosevelt Avenue	7.0	D	7.0	D	
	SE Sidewalk along Main Street	27.1	F	30.7	F	YES
	SE Sidewalk along Roosevelt Avenue	10.3	D	10.6	D	
	SW sidewalk along Main Street	17.1	E	18.3	F	
	SW Sidewalk along Roosevelt Avenue	5.4	C	5.4	C	
39th Avenue / 138th Street	NE sidewalk along 138th Street	0.9	B	0.9	B	
	NE sidewalk along 39 Avenue	1.1	B	1.5	B	
	NW sidewalk along 138th Street	1.5	B	3.1	C	
	NW sidewalk along 39 Avenue	2.7	B	6.7	D	
	South sidewalk along 39 Avenue between 138th Street and Main Street	1.5	B	3.9	C	
	South sidewalk along 39 Avenue between 138th Street and Lippmann Plaza	2.8	B	3.7	C	
37th Ave / Main Street	NE sidewalk along Main Street	4.0	C	4.6	C	
	NE sidewalk along 37th Avenue	2.7	B	2.7	B	
	NW sidewalk along Main Street	2.7	B	3.3	C	
	NW sidewalk along 37th Avenue	2.2	B	2.2	B	
	SE Sidewalk along Main Street	6.5	D	6.5	D	
	SE Sidewalk along 37th Avenue	2.6	B	4.5	C	
	SW sidewalk along Main Street	2.6	B	2.8	B	
	SW Sidewalk along 37th Avenue	1.9	B	1.9	B	
37th Ave / 138th Street	SE sidewalk along 138 Street	0.6	B	0.6	B	
	SE sidewalk along 37 Avenue	0.6	B	1.5	B	
	SW sidewalk along 138 Street	1.0	B	1.0	B	
	SW sidewalk along 37 Avenue	3.5	C	5.3	C	
	North sidewalk along 37 Avenue between 138th Street and Main Street	2.1	B	2.1	B	
	North sidewalk along 37 Avenue between 138th Street and Union Street	1.9	B	1.9	B	
37th Ave / Union Street	NE sidewalk along Union Street	3.3	C	4.6	C	
	NE sidewalk along 37 Avenue	2.0	B	2.0	B	
	NW sidewalk along Union Street	5.8	C	7.2	D	
	NW sidewalk along 37 Avenue	3.7	C	3.7	C	
	SE Sidewalk along Union Street	2.0	B	2.3	B	
	SE Sidewalk along 37 Avenue	1.9	B	1.9	B	
	SW sidewalk along Union Street	4.7	C	4.7	C	
	SW Sidewalk along 37 Avenue	1.0	B	2.4	B	
Roosevelt Ave / Union Street	NE sidewalk along Union Street	1.8	B	2.4	B	
	NE sidewalk along Roosevelt Avenue	6.5	D	6.5	D	
	NW sidewalk along Union Street	4.0	C	6.3	D	
	NW sidewalk along Roosevelt Avenue	3.7	C	4.5	C	
	SE Sidewalk along Union Street	2.2	B	4.7	C	
	SE Sidewalk along Roosevelt Avenue	5.7	C	5.7	C	
	SW sidewalk along Union Street	2.8	B	4.7	C	
	SW Sidewalk along Roosevelt Avenue	3.9	C	4.2	C	
Notes:						
* No impact criteria available for pedestrian crossing unsignalized intersections						
** No impact criteria for crosswalk changing from unsignalized in the No Build condition to Signalized in the Build condition						

Table 15-18
Future Build vs. No Build
Pedestrian Level of Service Comparison
Saturday Midday Peak Hour (12:00-1:00)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	Sq Ft per Ped. (sfp) or Sec per Ped.	LOS	
Crosswalks at Signalized Intersections						
39th Ave / Union Street	N	164.8	A	105.1	A	
	S	82.9	A	33.0	C	
	W	55.2	B	22.0	D	
39th Ave / Main Street	S	32.2	C	25.1	C	
	E	20.9	D	13.1	E	YES
Roosevelt Ave / Main Street	N	27.5	C	24.6	C	
	S	24.9	C	22.4	D	
	E	13.7	E	9.1	E	YES
	W	11.1	E	10.2	E	
37th Ave / Main Street	N	115.4	A	95.1	A	
	S	77.2	A	66.2	A	
	E	29.4	C	25.5	C	
	W	57.4	B	45.5	B	
37th Ave / Union Street	N	33.0	C	33.0	C	
	S	35.4	C	26.3	C	
	E	37.0	C	23.0	D	
	W	21.8	D	15.4	D	
Roosevelt Ave / Union Street	N	47.7	B	32.7	C	
	S	44.3	B	44.3	B	
	E	143.1	A	43.5	B	
	W	33.6	C	14.5	E	YES
Crosswalks at Unsignalized Intersections						
39th Ave / 138th Street	E	69.8	F	454.8	F	*
	W	5.4	B	7.1	B	
	N	34.7	E	99.2	F	
37th Ave / 138th Street	S	9.1	B	6.8	B	*
39th Ave / Midblock Crossing	N	16.0	C	13.7	E	**
Street Corners						
39th Ave / Union Street	NW	114.0	A	36.7	C	
	SW	259.5	A	87.1	A	
39th Ave / Main Street	NE	25.0	C	14.0	E	YES
Roosevelt Ave / Main Street	NW	34.8	C	29.4	C	
	NE	25.2	C	14.7	E	YES
	SW	31.5	C	27.2	C	
	SE	32.5	C	19.9	D	
37th Ave / Main Street	NW	63.8	A	46.3	B	
	NE	48.7	B	39.4	C	
	SW	48.2	B	34.9	C	
	SE	27.8	C	20.6	D	
37th Ave / Union Street	NW	56.7	B	40.5	B	
	NE	62.3	A	42.1	B	
	SW	80.2	A	46.1	B	
	SE	148.8	A	85.7	A	
Roosevelt Ave / Union Street	NW	86.9	A	33.4	C	
	NE	37.7	C	13.3	E	YES
	SW	57.1	B	25.7	C	
	SE	56.2	B	29.7	C	
Walkway						
Lippmann Arcade	NS	2.7	A	3.8	A	
Sidewalks						
39th Ave / Union Street	NW sidewalk along Union Street	1.6	B	2.1	B	
	NW sidewalk along 39 Avenue	0.8	B	8.5	D	
	SW sidewalk along Union Street	1.3	B	3.8	C	
	SW Sidewalk along 39 Avenue	0.4	A	0.8	B	
	East sidewalk along Union Street North of 39th Avenue	2.6	B	3.2	C	
	East sidewalk along Union Street South of 39th Avenue	1.6	B	2.2	B	

Table 15-18 (cont'd)
Future Build vs. No Build
Pedestrian Level of Service Comparison
Saturday Midday Peak Hour (12:00-1:00)

Location	Side/Corner	Future No Build Condition		Future Build Condition		Impact?
		Flow (PFM)	LOS	Flow (PFM)	LOS	
Sidewalks (continued)						
39th Ave / Main Street	NE sidewalk along 39th Avenue	2.3	B	6.2	D	
	SE sidewalk along 39th Avenue	7.9	D	9.2	D	
Main Street / Roosevelt Avenue	NE sidewalk along Main Street	12.1	E	15.3	E	YES
	NE sidewalk along Roosevelt Avenue	9.7	D	10.8	D	
	NW sidewalk along Main Street	11.5	E	11.5	E	
	NW sidewalk along Roosevelt Avenue	9.4	D	9.4	D	
	SE Sidewalk along Main Street	23.8	F	28.1	F	YES
	SE Sidewalk along Roosevelt Avenue	10.4	D	10.7	D	
	SW sidewalk along Main Street	17.7	E	19.1	F	
	SW Sidewalk along Roosevelt Avenue	8.1	D	8.1	D	
39th Avenue / 138th Street	NE sidewalk along 138th Street	1.3	B	3.1	C	
	NE sidewalk along 39 Avenue	1.5	B	2.0	B	
	NW sidewalk along 138th Street	1.2	B	1.2	B	
	NW sidewalk along 39 Avenue	2.5	B	6.7	D	
	South sidewalk along 39 Avenue between 138th Street and Main Street	2.4	B	6.9	D	
	South sidewalk along 39 Avenue between 138th Street and Lippmann Plaza	3.0	C	3.9	C	
37th Ave / Main Street	NE sidewalk along Main Street	4.7	C	5.4	C	
	NE sidewalk along 37th Avenue	3.9	C	3.9	C	
	NW sidewalk along Main Street	3.1	C	3.9	C	
	NW sidewalk along 37th Avenue	3.2	C	3.2	C	
	SE Sidewalk along Main Street	8.1	D	8.1	D	
	SE Sidewalk along 37th Avenue	4.7	C	7.0	D	
	SW sidewalk along Main Street	3.6	C	3.9	C	
	SW Sidewalk along 37th Avenue	3.5	C	3.5	C	
37th Ave / 138th Street	SE sidewalk along 138 Street	0.8	B	0.8	B	
	SE sidewalk along 37 Avenue	1.7	B	2.8	B	
	SW sidewalk along 138 Street	2.0	B	2.0	B	
	SW sidewalk along 37 Avenue	6.0	C	8.1	D	
	North sidewalk along 37 Avenue between 138th Street and Main Street	3.5	C	3.5	C	
	North sidewalk along 37 Avenue between 138th Street and Union Street	4.6	C	4.6	C	
37th Ave / Union Street	NE sidewalk along Union Street	3.3	C	4.8	C	
	NE sidewalk along 37 Avenue	2.0	B	2.0	B	
	NW sidewalk along Union Street	3.4	C	5.1	C	
	NW sidewalk along 37 Avenue	4.2	C	4.2	C	
	SE Sidewalk along Union Street	1.6	B	2.0	B	
	SE Sidewalk along 37 Avenue	2.3	B	2.3	B	
	SW sidewalk along Union Street	5.1	C	5.1	C	
	SW Sidewalk along 37 Avenue	1.1	B	2.8	B	
Roosevelt Ave / Union Street	NE sidewalk along Union Street	2.5	B	3.2	C	
	NE sidewalk along Roosevelt Avenue	4.3	C	4.3	C	
	NW sidewalk along Union Street	3.7	C	6.6	D	
	NW sidewalk along Roosevelt Avenue	4.0	C	4.9	C	
	SE Sidewalk along Union Street	2.2	B	5.3	C	
	SE Sidewalk along Roosevelt Avenue	5.4	C	5.4	C	
	SW sidewalk along Union Street	3.1	C	5.5	C	
	SW Sidewalk along Roosevelt Avenue	2.9	B	3.2	C	
Notes:						
* No impact criteria available for pedestrian crossing unsignalized intersections						
** No impact criteria for crosswalk changing from unsignalized in the No Build condition to Signalized in the Build condition						

Table 15-19
Number of Significantly Impacted Locations

	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Crosswalks *	0	5	3	3
Corners	0	3	3	3
Sidewalks and Walkway	0	3	2	2
Note: *Crosswalks impacts do not include those at unsignalized intersections.				

NYCDOT MODIFIED TWO-WAY PROPOSAL

Subsequent to the publication of the DEIS, NYCDOT, through its on-going efforts to improve vehicular and pedestrian traffic conditions in downtown Flushing, developed a proposal for an alternative roadway configuration (Modified Two-Way) for further study. Although still a proposal, NYCDOT believes that the Modified Two-Way proposal, if implemented, may improve traffic flow and safety in downtown Flushing. As summarized in more detail in Chapter 14: “Traffic and Parking,” and Appendix D, the proposal would essentially retain most of the existing roadway configuration for Main and Union Streets but would impose several turn prohibitions and a street direction reversal with the possibility of incorporating pedestrian space improvements.

With regard to bus transit, the Modified Two-Way proposal, if implemented, is expected to yield similar findings as those presented above for the One-Way Pair with Contra Flow bus lanes. Most existing bus routes would be maintained except for those buses which currently make turns from northbound and southbound Main Street onto Roosevelt Avenue. Northbound buses would be rerouted to turn left at 40th Road and would access Roosevelt Avenue from Prince Street. This rerouting would be made possible via the street direction reversals of 40th Road from eastbound to westbound between Prince and Main Streets and of Prince Street from southbound to northbound between 40th Road and Roosevelt Avenue. These street direction reversals, however, may be changed or may not occur together with the remaining elements of the Modified Two-Way proposal, if it is ultimately implemented. Southbound buses would be rerouted to turn right at 39th Avenue and would access Roosevelt Avenue from Prince Street. The prohibition of bus turns from northbound and southbound Main Street onto Roosevelt Avenue would eliminate conflicts between turning vehicles and pedestrians at the Main Street and Roosevelt Avenue east and west crosswalks, which would likely result in improved pedestrian conditions at these locations. Furthermore, sidewalk widenings along Main Street to accommodate better pedestrian circulation could be possible with the Modified Two-Way proposal, if it is implemented in the future by NYCDOT. *