Chapter 17: Traffic and Parking

A. INTRODUCTION

The Willets Point Development District is located adjacent to Shea Stadium and is generally bounded by 126th Street to the west, Roosevelt Avenue to the south, the Van Wyck Expressway and an undeveloped parcel owned by the Metropolitan Transportation Authority (MTA) to the east, and Northern Boulevard to the north. Willets Point is also within close proximity to primary highways including the Whitestone Expressway to the north and east, the Grand Central Parkway to the west, and the Long Island Expressway (LIE) to the south. This network of highway mainlines and ramp interchanges carries significant traffic volumes and frequently experiences congestion during peak travel periods. Sections of the local street network adjacent to the District, such as Roosevelt Avenue and Northern Boulevard, experience moderate to heavy traffic volumes during peak travel periods, while other sections, such as 126th Street, have substantial amounts of unused capacity during typical weekday and weekend conditions.

The District lies between the neighborhoods of Corona/North Corona to the west and Downtown Flushing, across the Flushing River, to the east, a key commercial center and intermodal transportation hub. Both Northern Boulevard and Roosevelt Avenue provide connections between the District, Downtown Flushing, and Corona. In addition, the close proximity of the District to Shea Stadium results in significant changes to traffic characteristics and operations on roadways adjacent to the District before and after Mets home games. With parking lot entrances located along Roosevelt Avenue, 126th Street, and Stadium Road, access and egress to Shea Stadium during pre- and post-game periods significantly affects traffic conditions on both the highway and local street networks near Willets Point.

The proposed Willets Point Development Plan, with its mix of residential, retail, office, community facility, and institutional uses, would replace the existing lower-density uses currently within the Willets Point Development District and, thus, generate significantly more traffic on the adjacent local street and highway network. In addition, the demapping and subsequent re-construction of streets within the District would create new access and egress points along Northern Boulevard and 126th Street and alter traffic circulation patterns on the adjacent street network. Improvements to connections between the Van Wyck Expressway and the District, which would be built as part of the proposed Plan, would further modify travel patterns in the study area.

This chapter addresses the potential traffic and parking impacts of the proposed Plan and Lot B, as well as the No Convention Center Scenario. The approach routes to the study area traverse intersections along Northern Boulevard, Astoria Boulevard, Roosevelt Avenue, Sanford Avenue, Main Street, College Point Boulevard, 126th Street, and 34th Avenue, as well as exits from the Grand Central Parkway and the Van Wyck/Whitestone Expressway, both north and west of the Willets Point development district. In accordance with the approach outlined in Chapter 2, "Procedural and Analytical Framework," this chapter analyzes the cumulative impact of traffic

generated by both the Willets Point Development Plan and the anticipated development on Lots B and D.

B. PRINCIPAL CONCLUSIONS

The Willets Point Development Plan is expected to be a significant traffic generator on both the highways surrounding the District—including the Grand Central Parkway, the Van Wyck Expressway, and the Whitestone Expressway—and the local street network. The Build volume increments generated by the proposed Plan and Lot B would be 3,685 vehicles per hour (vph) in the AM peak hour, 5,434 vph in the midday peak hour, and 6,752 vph in the PM peak hour on a typical weekday without a Mets home game. The volume increment generated by the proposed Plan and Lot B during a typical Saturday midday peak hour without a Mets home game would be 7,099 vph—the highest increment of all the analyzed peak hours. For peak hours with a Mets home game, the proposed Plan and Lot B are is expected to generate 5,199 vph in the weekday PM (evening) pre-game peak hour, 5,544 vph in the Saturday midday pre-game peak hour, and 5,128 vph in the Saturday PM (afternoon) post-game peak hour.

The future baseline (future No Build) volumes, to which the traffic generated by the proposed Plan and Lot B would be added, and the future levels of service are expected to be significantly worse than existing conditions due directly to the approximately 90 background developments planned within the study area and a background traffic growth of about 11.5 percent, between the year data were collected, 2006, and the future year of 2017. Therefore, traffic generated by the proposed Plan and Lot B would be in addition to high baseline volumes and poor levels of service at many of the analysis intersections and along key sections of the highway network, resulting in numerous significant impacts.

As a result, the proposed Plan is expected to have significant traffic impacts at 22 of the 29 intersections analyzed, both signalized and unsignalized, for the future Build condition in the weekday AM peak hour, 18 of 29 in the weekday midday peak hour, 24 of 29 in the weekday PM peak hour, and 22 of 29 in the non-game-Saturday midday peak hour. During the PM pre-game weekday peak hour, 25 of 29 intersections analyzed would have significant traffic impacts, and during the Saturday pre-game and post-game peak hours 24 of 29 intersections analyzed would have significant impacts.

Although the proposed Plan would include new access ramps to and from the Van Wyck Expressway at the northeastern corner of the District, it is projected that some sections of the highway mainlines and critical ramp junctions would be significantly impacted as well. Furthermore, the new access ramps are expected to reduce the use by project-generated traffic of certain local streets to access the District. However, project generated traffic would also cause significant traffic increases and level of service degradations on the Van Wyck Expressway mainline in both directions in the vicinity of the District.

The proposed Plan would provide sufficient new off-street and on-street parking as part of the development to service its demand. The redevelopment of the Willets Point Development District would include the demapping and realignment of the local street network within the boundaries of the District, which is expected to increase the available on-street parking supply. Moreover, the proposed Plan's expected parking needs would be provided within the District. Consequently, it is not expected that traffic generated by the proposed Plan would have to seek parking opportunities outside of the District.

As compared with the proposed Plan, the No Convention Center Scenario would have approximately 6 percent more residential development and approximately 3 percent more retail development, and would result in an overall reduction equal to approximately 7 to 14 percent of the total number of generated trips during each of the peak hours. The greatest trip reductions would be in the weekday PM peak hour, the weekday evening pre-game peak hour, and the Saturday afternoon post-game peak hour. Since the assignment of convention center trips assumes predominant use of the highway routes to and from the District, it is expected that the No Convention Center Scenario would show some improvement in highway levels of service, but would not necessarily mean a reduction in the number of significant impacts on the highways. There would also be levels of service improvements at highway ramp approaches to the intersections on 126th Street at 34th Avenue and at Northern Boulevard due to the reduction in convention center traffic to and from the highway network.

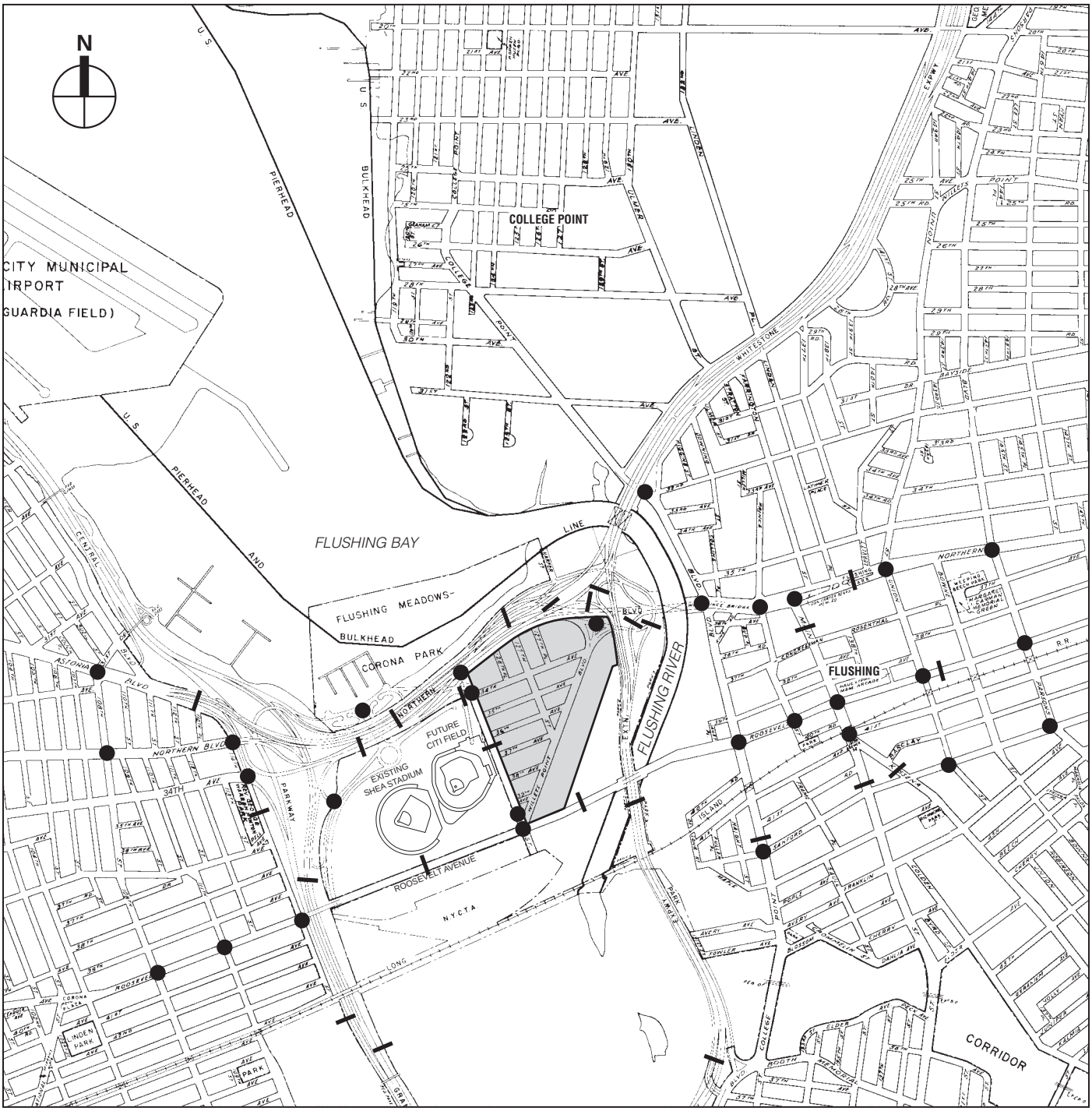
C. METHODOLOGY

The traffic and parking analyses cover a large study area encompassing 24 existing signalized intersections and five existing unsignalized intersections, plus two new intersections for access and egress that would be created along the District's boundaries. Key segments of the Grand Central Parkway, Van Wyck Expressway, and Whitestone Expressway, including interchange ramps, have also been studied (see Figure 17-1).

The analyses begin with an assessment of existing traffic and parking conditions in the study area, and proceed to an analysis of conditions in the future without the proposed Plan—i.e., the future No Build condition. The Existing and No Build conditions are analyzed under typical weekday and Saturday peak hour roadway conditions and under roadway conditions typically experienced immediately before and after Mets games on a weekday and Saturday. Four non-game-day peak hours are analyzed, including the 7:45-8:45 AM weekday morning, 1:00-2:00 PM weekday midday, 5:15-6:15 PM weekday evening, and 1:00-2:00 PM Saturday midday peak hours. Also, three game-day peak hours are analyzed, including the 6:00-7:00 PM pre-game weekday evening, 12:00-1:00 PM pre-game Saturday midday, and 3:45-4:45 PM post-game Saturday PM peak hours. Post-game conditions are not analyzed for a weekday evening game, since project-generated traffic expected during that peak hour would not be significant. These analyses are presented for the 2017 future Build year. All of the analyses of local intersection conditions are based on *2000 Highway Capacity Manual (HCM)* procedures, in accordance with 2001 *City Environmental Quality Review (CEQR) Technical Manual* guidelines. A detailed traffic simulation analysis was also performed using the CORSIM model for the sections of the highway network being analyzed.

The next step in the analyses considers the amount of vehicular traffic expected to be generated by the proposed Plan and Lot B in the Build year, and an assessment of future traffic and parking conditions with the proposed Plan in place in 2017 (Build condition). Like the No Build condition, the Build condition analyzes roadway conditions with and without Mets games, on weekdays, and the weekend (Saturday). The Build year analyses identify the location and extent of significant impacts potentially generated by the proposed Plan and Lot B. Traffic improvements that would be needed to mitigate these impacts are identified and evaluated in Chapter 23, "Mitigation." The parking analysis addresses the ability of the proposed Plan to accommodate the parking demands in the Build year. In addition to the analyses presented in this chapter, data on traffic volumes and detailed traffic impact analyses are presented in Appendix E.

4.17.08



Willets Point Development District

Study Area Intersection Analyzed

Automatic Traffic Recorder Location

Figure 17-1

Traffic Study Area
Existing and No Build Conditions

D. EXISTING CONDITIONS

ROADWAY NETWORK AND TRAFFIC STUDY AREA

The overall study area generally consists of a grid network of local streets within Downtown Flushing interspersed between Northern Boulevard and Sanford Avenue, as well as a series of intersections along Roosevelt Avenue and Northern Boulevard between 108th and 126th Streets, and along 126th Street between Northern Boulevard and Roosevelt Avenue in Willets Point. There are also additional analysis locations farther away from the immediate study area. The presence of the Grand Central Parkway and the Van Wyck/Whitestone Expressways (both designated as I-678), and the network of ramps and interchanges have a major influence on traffic conditions in the area, since the highways attract a substantial volume of through and destination traffic. Key access points between the local street network and the limited access highways are located along Northern Boulevard, Astoria Boulevard, College Point Boulevard, West Park Loop/Stadium Road, World's Fair Marina, and 114th Street.

The Van Wyck Expressway is elevated, passing partially over the Flushing River, with three lanes in each direction, and provides a north-south connection from the LIE to where the Van Wyck Expressway becomes the Whitestone Expressway (north of Exit 13), with ramps to/from College Point Boulevard and Northern Boulevard. In particular, the ramps connecting the Van Wyck Expressway with Northern Boulevard provide access, though not completely direct access, to the local street network adjacent to the Willets Point Development District.

The Van Wyck Expressway northbound Exit 13W is a single-lane ramp that carries traffic along the eastern and northern boundary of the site, where it joins with an off-ramp from the Whitestone Expressway (southbound Exit 13W) and terminates at the signalized intersection of westbound Northern Boulevard and 126th Street. Since the ramp terminates on westbound Northern Boulevard at 126th Street, where left turns are not permitted, traffic from the northbound Van Wyck Expressway (and southbound Whitestone Expressway) does not currently have direct access to the District.

The Grand Central Parkway is an at-grade highway with four lanes typically in each direction; the westbound direction gains an additional lane north of the World's Fair Marina on-ramp. The Grand Central Parkway has a major interchange with the LIE and provides access to Northern Boulevard, Astoria Boulevard, and West Park Loop/Stadium Road. In the eastbound direction, Exit 9E, a two-lane exit ramp, provides access to eastbound Northern Boulevard as well as a route toward the southbound Van Wyck Expressway and northbound Whitestone Expressway. The ramp toward eastbound Northern Boulevard also provides access to 126th Street, touching down at the signalized intersection of 126th Street and 34th Avenue/Stadium Road. South of the Exit 9E off-ramp, there is a single-lane on-ramp to the eastbound Grand Central Parkway from Astoria Boulevard/34th Avenue/114th Street.

In the westbound direction, the Grand Central Parkway mainline splits into a pair of two-lane sections immediately upstream of Exit 9P (to Flushing Meadows-Corona Park). The eastern pair provides access to eastbound Northern Boulevard, West Park Loop/Stadium Road, and a route to the Van Wyck/Whitestone Expressway via Exit 9E. The western pair provides access to westbound Northern Boulevard at 114th Street via Exit 9W. North of these exits, the Grand Central Parkway lanes recombine into one mainline section toward LaGuardia Airport.

The local street network throughout the study area is primarily oriented in an east-west direction, with Northern Boulevard and Roosevelt Avenue extending from Corona on the west side to

Downtown Flushing east of the District. Most of the study area locations are where north-south streets intersect Northern Boulevard and Roosevelt Avenue. Due to the breadth of the study area, roadway characteristics along these roadways can vary, including their width, number of lanes, presence of parking, and adjacent land uses. In addition to Northern Boulevard and Roosevelt Avenue, the other primary east-west streets consist of Kissena Boulevard, Sanford Avenue, 34th Avenue, Astoria Boulevard, and West Park Loop/Stadium Road, as described below.

- Northern Boulevard is a primary east-west arterial across the study area, carrying significant traffic volumes to and from the Grand Central Parkway and Van Wyck Expressway, as well as through traffic toward western Queens and Manhattan. Its geometric and traffic characteristics vary throughout the study area. Through Downtown Flushing (between Prince Street and Parsons Boulevard) and Corona (between 108th Street and 114th Street), Northern Boulevard is a multilane roadway with curbside parking and is predominantly undivided except for a section between Prince Street and Union Street, where the roadway's east and west travel directions are separated by a wide landscaped median. Immediately west of Prince Street, the mainline section of Northern Boulevard transitions into a viaduct over the Flushing River, flanked by service roads to and from College Point Boulevard. The section of Northern Boulevard between 114th Street and Prince Street is generally a highway-type roadway with ramps to/from the Grand Central Parkway and Van Wyck Expressway; there is limited curbside parking and only one intermediate traffic signal, at the intersection with 126th Street.
- Roosevelt Avenue extends east-west through the entire study area from Corona to Flushing, carrying moderate traffic volumes. Between 108th and 114th Streets, Roosevelt Avenue has one moving lane in each direction with curbside parking, but east of 114th Street it changes to two moving lanes per direction and with no parking up to College Point Boulevard. For most of this segment, the roadway is straddled by the elevated No. 7 subway line until the train moves underground after passing the Flushing River. Through Downtown Flushing, Roosevelt Avenue has generally one moving lane per direction with a mix of parking, MTA bus stops and layover zones, and other curbside activities.
- Sanford Avenue study locations are situated within Downtown Flushing, where the roadway operates one-way westbound from Kissena Boulevard to College Point Boulevard and two-way from Kissena Boulevard to Parsons Boulevard. The one-way segment typically operates with two moving lanes, while the two-way section has one to two lanes in each direction.
- 34th Avenue is discontinuous between 114th Street and 126th Street, and its intersection with 114th Street serves as a primary access point to the eastbound Grand Central Parkway. West of 114th Street, the roadway is two-lane and bi-directional, and where it continues east of 126th Street through the District, its condition is in general disrepair, with very low traffic volumes.
- Astoria Boulevard, like Northern Boulevard, is a major east-west arterial that carries significant traffic volumes between the study area—particularly the highway network—and northwestern Queens and the Triboro Bridge. In the eastbound direction, the roadway terminates at its ramps toward the Grand Central Parkway and the Van Wyck/Whitestone Expressway. Through North Corona on the west side of the study area, Astoria Boulevard is divided by a raised median, with multiple lanes in each direction and curbside parking.
- West Park Loop/Stadium Road is a limited access roadway along the west and north boundaries of Shea Stadium parking lots Shea A and Shea C. Due to its direct ramps to and from the westbound Grand Central Parkway at Exit 9E, the roadway experiences the

heaviest volumes before and after Mets games; otherwise, it does not have much traffic. West of the traffic circle at Boat Basin Road, West Park Loop/Stadium Road has two lanes in each direction, divided by a landscaped median; the roadway is undivided east of the traffic circle up to 126th Street.

The primary north-south cross-streets, which consist of College Point Boulevard, Main Street, Parsons Boulevard, and 108th Street, provide access to Northern Boulevard and Roosevelt Avenue from neighborhoods north and south of Downtown Flushing and Corona as well as the LIE. The remaining north-south streets, which carry less traffic and/or provide less regional access for though traffic, include Prince Street, Union Street, 111th Street, 114th Street, and 126th Street.

- College Point Boulevard is a bi-directional, multi-lane roadway between the LIE, south of the study area, to College Point, north of Downtown Flushing. The roadway serves as the link between the westbound LIE and the Van Wyck Expressway, since there are no direct interchange ramps between them. Due to highway access and adjacent land uses, College Point Boulevard carries both significant auto volumes and moderate to high truck traffic.
- Main Street extends through the core of Downtown Flushing, terminating at Northern Boulevard from the LIE and neighborhoods to the south, and serves as a primary MTA bus transit corridor. Although the roadway generally has two moving lanes in each direction and traffic volumes are moderate, the mix of bus traffic and the frequency of stops, parking and other curbside activities, and pedestrian crossings impact capacity.
- Kissena Boulevard is a northwest-southeast oriented street that approaches Downtown Flushing from areas to the south, terminates at Main Street within the downtown core near the Long Island Rail Road (LIRR) trestle, and serves as another primary MTA bus transit corridor to and from the south. Kissena Boulevard generally has one to two lanes in each direction with moderate volumes, but it also suffers from the same capacity hindrances as Main Street in the immediate Downtown Flushing area.
- Union Street connects to Northern Boulevard and Roosevelt and Sanford Avenues, and carries moderate traffic volumes through Downtown Flushing. Union Street also serves as a primary access and egress route for Municipal Lot No. 1. Its cross-section width varies with one or two moving lanes in each direction, and curbside parking is typical north of Roosevelt Avenue.
- Parsons Boulevard extends parallel to Main and Union Streets through Downtown Flushing and is primarily a residential street through the study area, with low to moderate volumes. It also connects to Northern Boulevard and Roosevelt and Sanford Avenues, and has one moving lane in each direction with curbside parking.
- 108th Street has one moving lane in each direction through the study area, with curbside parking. It extends through Roosevelt Avenue and Northern and Astoria Boulevards, providing access to residential blocks in the neighborhood of Corona, and carries low to moderate traffic volumes.
- Prince Street is a minor two-way, two-lane street within Downtown Flushing carrying low traffic volumes. It connects to Roosevelt Avenue and Northern Boulevard, as well as some cross-streets though the downtown.
- 111th Street is one-way northbound through the neighborhood of Corona, providing access to Northern Boulevard from Roosevelt Avenue. Across a number of residential blocks, it has

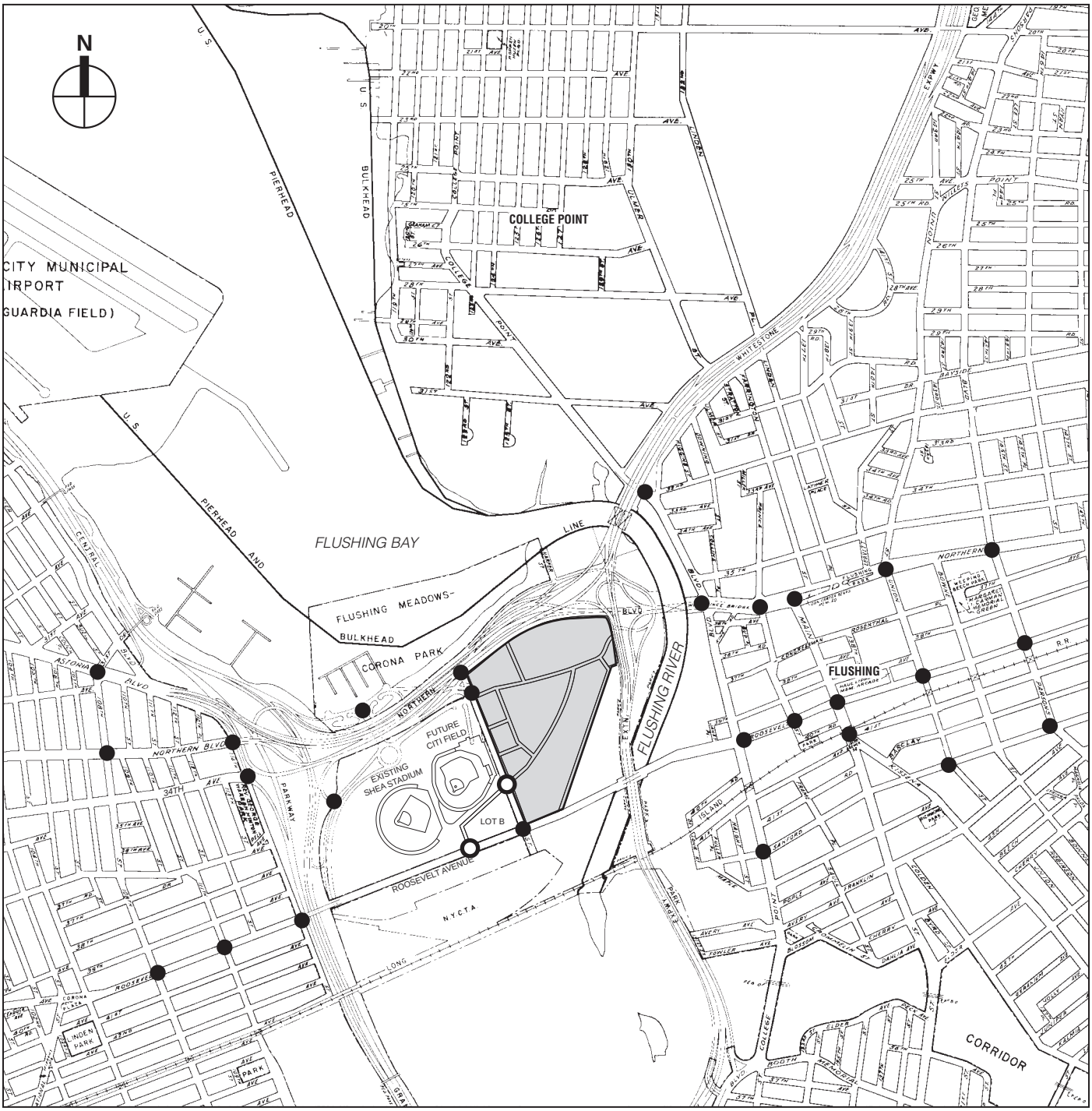
one moving lane with curbside parking in each direction and carries low to moderate traffic volumes.

- 114th Street is typically two-way, except for the block between Northern Boulevard and 34th Avenue, where it is one-way southbound only. The roadway provides access to the ramp to the eastbound Grand Central Parkway at 34th Avenue; it carries high volumes of traffic southbound from Northern Boulevard to the on-ramp. Between 34th and Roosevelt Avenues, 114th Street is two-way, with one lane typical in each direction, and carries lower volumes.
- 126th Street forms the boundary between Shea Stadium and the Willets Point Development District. This two-way roadway generally has two moving lanes in each direction and carries low volumes, although the high number of parking maneuvers due to land uses along the east side of the street affects capacity. During the hours before and after Mets games, traffic volumes and queuing along 126th Street are significantly higher.

The traffic study area developed for this Draft Generic Environmental Impact Statement (DGEIS) includes the following 29 intersections, which are shown in Figure 17-2 (all intersections are signalized unless otherwise noted):

- 108th Street at Astoria Boulevard
- 108th Street at Northern Boulevard
- 114th Street at Northern Boulevard
- 126th Street at Northern Boulevard
- Prince Street at Northern Boulevard
- Main Street at Northern Boulevard
- Union Street at Northern Boulevard
- Parsons Boulevard at Northern Boulevard
- 114th Street at 34th Avenue
- 126th Street at 34th Avenue
- 108th Street at Roosevelt Avenue
- 111th Street at Roosevelt Avenue
- 114th Street at Roosevelt Avenue
- 126th Street at Roosevelt Avenue
- College Point Boulevard at Roosevelt Avenue
- Prince Street at Roosevelt Avenue
- Main Street at Roosevelt Avenue
- Union Street at Roosevelt Avenue
- Parsons Boulevard at Roosevelt Avenue
- Main Street at Kissena Boulevard
- College Point Boulevard at Sanford Avenue
- Union Street at Sanford Avenue
- Parsons Boulevard at Sanford Avenue
- College Point Boulevard at 32nd Avenue/Whitestone Expressway service road

4.17.08



Willets Point Development District

Study Area Intersection Analyzed

Intersection Added as Part of Proposed Plan

Figure 17-2
Traffic Study Area, Build Conditions

- Willets Point Boulevard at 126th Street (unsignalized)
- Boat Basin Road at World's Fair Marina (unsignalized)
- Willets Point Boulevard at Northern Boulevard (unsignalized)
- College Point Boulevard at Northern Boulevard (unsignalized)
- The Grand Central Parkway ramp at West Park Loop/Stadium Road (unsignalized).

Two additional intersections created by the design of the Willets Point development project along 126th Street are analyzed under Build condition.

Sections of the highway network are also analyzed, including:

- Grand Central Parkway mainline in both directions between the LIE and Roosevelt Avenue
- Van Wyck Expressway mainline in both directions between the LIE and Roosevelt Avenue
- Whitestone Expressway mainline in both directions between Northern Boulevard and Linden Place
- Ramp from World's Fair Marina/Boat Basin Road to the Grand Central Parkway
- Ramps from the northbound Van Wyck Expressway to eastbound and westbound Northern Boulevard
- Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway
- Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway
- Ramp from eastbound Astoria Boulevard and eastbound Northern Boulevard to the northbound Whitestone Expressway
- Ramps from the southbound Whitestone Expressway to the eastbound and westbound Grand Central Parkway
- Ramp from westbound Northern Boulevard and southbound Whitestone Expressway to westbound Astoria Boulevard
- Ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard
- Ramp from the eastbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway
- Ramp from the southbound Whitestone Expressway to westbound Northern Boulevard

EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

For continuous traffic data collection, 24-hour Automatic Traffic Recorders (ATRs) were installed along selected local streets, ramps, and expressway mainlines during the periods of August 19 to August 25, 2006; and September 8 to September 22, 2006. Concurrent manual turning movement counts (TMCs) were conducted for a typical weekday with no Mets home game, a Saturday with no Mets home game, weekday pre-game conditions, and weekend pre- and post-game conditions. The weekend Mets game began at 1:10 PM (on August 20, 2006), and the weeknight game began at 7:10 PM (on September 20, 2006). Due to the start date of the count program in mid-August, late in the regular baseball season, no home games were scheduled for the remainder of the 2006 season on a Saturday midday beginning at 1:10 PM, except for Saturday, September 9, 2006—which, however, coincided with the USTA National

Tennis Center event (the U.S. Open). Therefore, turning movement counts were conducted for the game on Sunday, August 20, 2006 to capture game arrival and departure traffic volumes. Based on Sunday midday game-day data collected and the background ATR data of typical Saturday traffic volumes, Saturday pre-game and post-game peak hour volumes were estimated. For verification of the weekend game-day peak hour volumes, an upcoming Mets home game on a Saturday beginning at 1:10 PM is expected to be counted in late April or early May, 2008, with those findings reported in the Final Generic Environmental Impact Statement (FGEIS). The volumes were used, along with observations of actual traffic conditions, to determine the seven peak hours. Table 17-1 summarizes the analysis time periods.

Table 17-1
Traffic Study Peak Hours

Day	Without Mets Game		With Mets Game	
	Time	Peak Hour	Time	Peak Hour
Weekday	7:45–8:45 AM	Non-game AM	Not analyzed	
	1:00–2:00 PM	Non-game midday	Not analyzed	
	5:15–6:15 PM	Non-game PM	6:00–7:00 PM	Pre-game PM arrival peak
Saturday	1:00–2:00 PM	Non-game midday	12:00–1:00 PM	Pre-game midday arrival peak
	Not analyzed		3:45–4:45 PM	Post-game PM departure peak

Without a Mets home game at Shea Stadium:

- Weekday AM peak hour (7:45 AM – 8:45 AM)
- Weekday midday peak hour (1:00 PM – 2:00 PM)
- Weekday PM peak hour (5:15 PM – 6:15 PM)
- Saturday midday peak hour (1:00 PM – 2:00 PM).

With a Mets home game at Shea Stadium:

- Weekday PM peak hour pre-game arrivals (6:00 PM – 7:00 PM)
- Weekend midday peak hour pre-game arrivals (12:00 PM – 1:00 PM)
- Weekend late afternoon peak hour post-game departures (3:45 PM – 4:45 PM).

Analyses of traffic conditions in urban areas are based on critical conditions at intersections and are defined in terms of levels of service (LOS). According to the *2000 Highway Capacity Manual* (HCM) that was used for these analyses as per the *CEQR Technical Manual* guidelines, LOS at signalized intersections are defined in terms of a vehicle's total average control delay at an intersection, as follows:

- LOS A describes operations with very low delays, i.e., 10 seconds or less per vehicle. This occurs when signal progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all.
- LOS B describes operations with delays in the range of greater than 10 seconds to less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. Again, most vehicles do not stop at the intersection.
- LOS C describes operations with delays in the range of greater than 20 seconds to less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

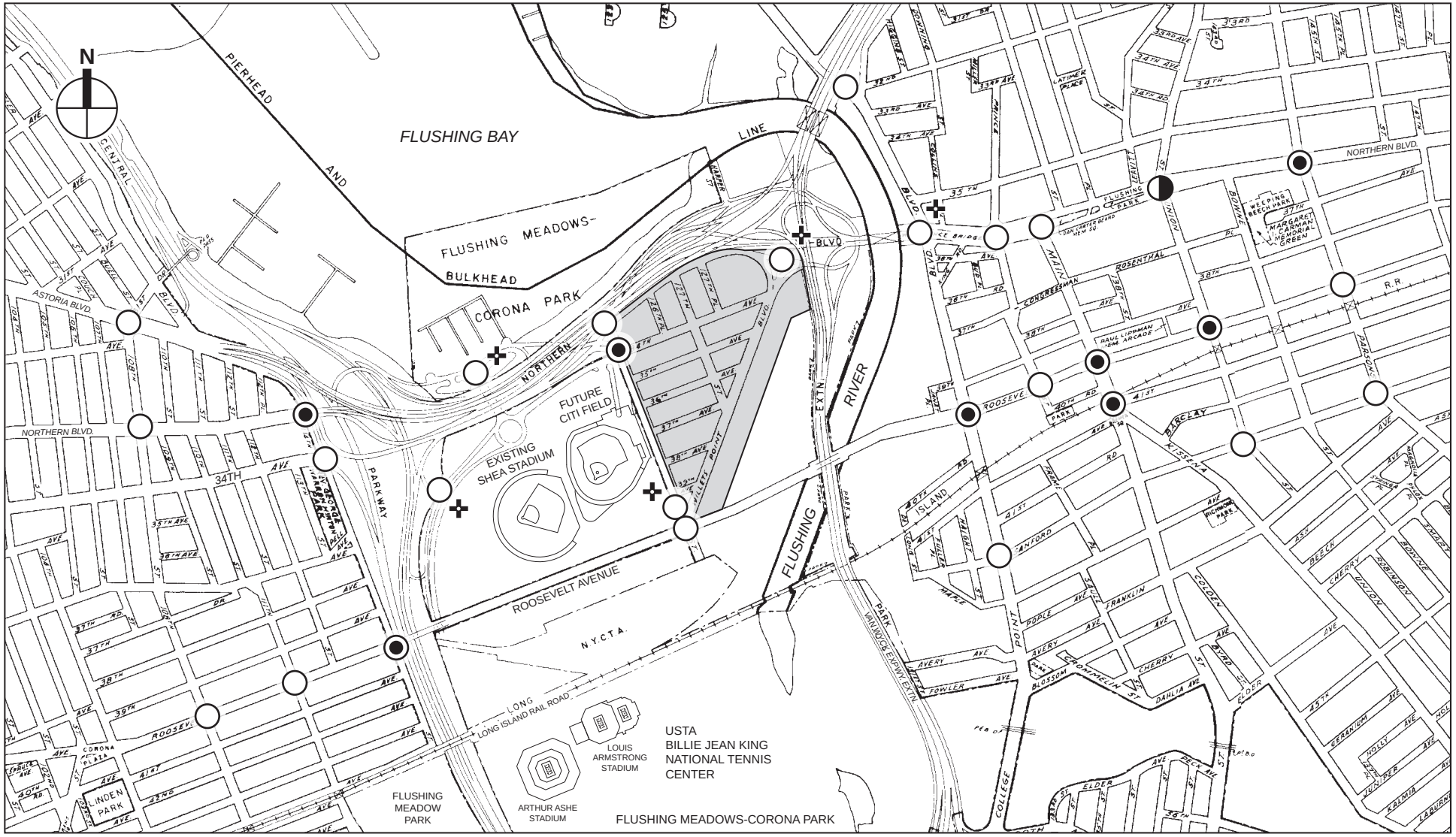
- LOS D describes operations with delays in the range of greater than 35 seconds to less than or equal to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Delays in this range greater than 45 seconds are considered marginally unacceptable; delays of 45 seconds or less are considered marginally acceptable.
- LOS E describes operations with delays in the range of greater than 55 seconds to less than or equal to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.
- LOS F describes operations with delays in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with cycle failures. Poor progression and long cycle lengths may also contribute to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

LOS A, B, and C are considered acceptable; LOS D is generally considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections), and is considered unacceptable above mid-LOS D. LOS E and F are considered unacceptable.

For unsignalized intersections, delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line: LOS A describes operations with very low delay, i.e., 10 seconds or less per vehicle; LOS B describes operations with delays in the range of greater than 10 seconds to less than or equal to 15 seconds; LOS C has delays in the range of greater than 15 seconds to less than or equal to 25 seconds; LOS D, greater than 25 seconds to less than or equal to 35 seconds per vehicle; and LOS E, greater than 35 seconds to less than or equal to 50 seconds per vehicle, which is considered to be the limit of acceptable delay. LOS F describes operation with delays in excess of 50 seconds per vehicle, which is considered unacceptable to most drivers. This condition exists when there are insufficient gaps of suitable size to allow side street traffic to cross safely through a major vehicular traffic stream.

Tables 17-2 and 17-3 provide an overview of the levels of service of the overall intersections and the individual lane groups (i.e., set[s] of lanes established at an intersection approach for discrete capacity and level of service analysis), respectively, that characterize the traffic study area during the peak hours. A summary description is also provided below:

- During the non-game weekday AM peak hour, one of the 24 signalized intersections analyzed operates at overall unacceptable LOS E, and eight other intersections operate at overall LOS D. “Overall” LOS E or F means that serious congestion exists—either one specific traffic lane group has severe delays, or two or more of the specific traffic lane groups at the intersection are at LOS E or F with very significant delays (the overall intersection LOS is a weighted average of all of the individual traffic lane groups). Twenty-two specific traffic lane groups out of approximately 120 total traffic lane groups analyzed are at LOS E or F conditions. Figure 17-3 illustrates overall levels of service.
- In the non-game weekday midday peak hour, none of the signalized intersections operate at overall unacceptable LOS E or F; five signalized intersections operate at overall LOS D. Twelve lane groups operate at LOS E or F. Figure 17-4 illustrates overall levels of service.



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

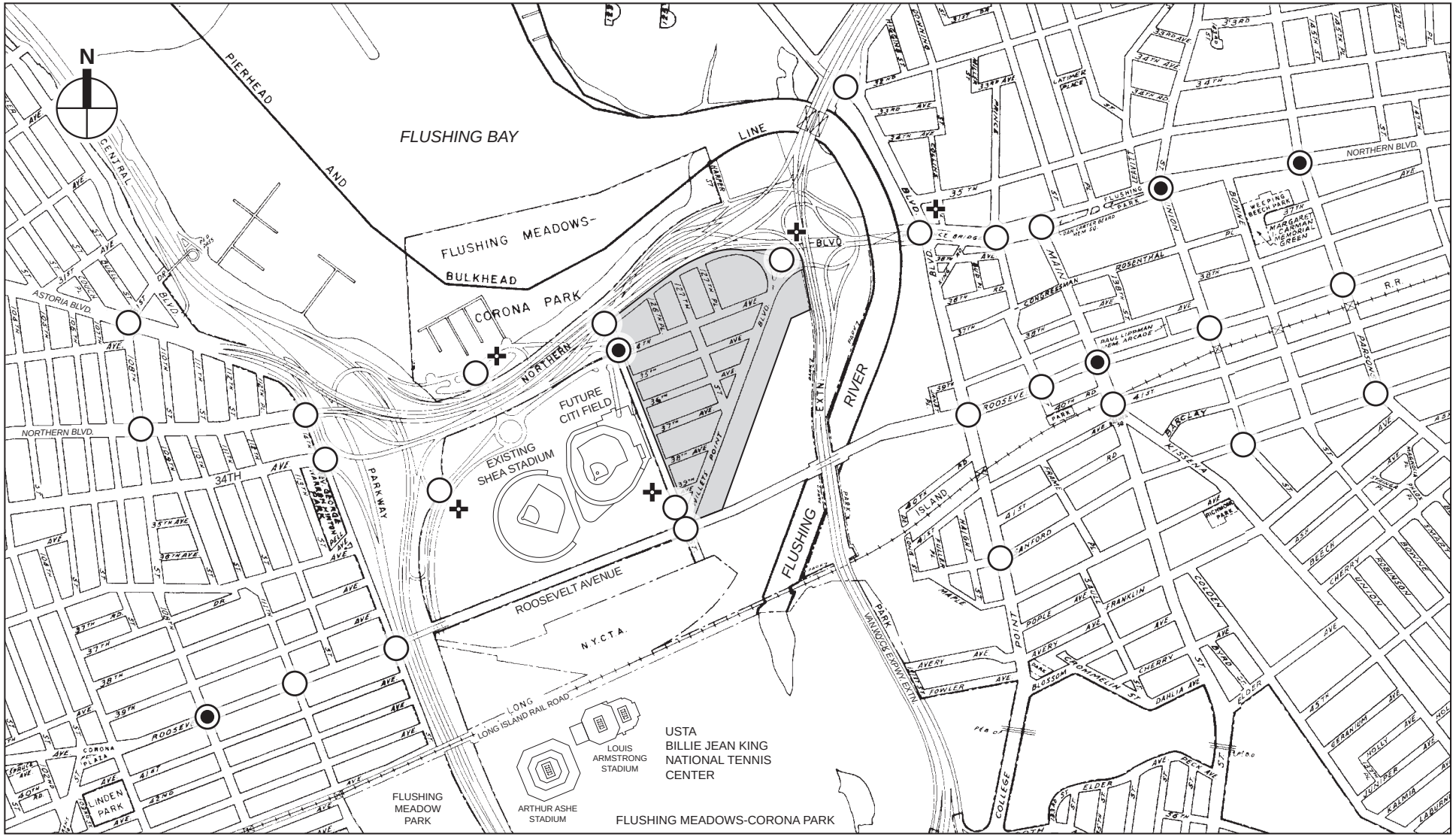
LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

Figure 17-3

Existing Traffic Levels of Service
Weekday Non-Game AM Peak Hour



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

SCALE

Figure 17-4

Existing Traffic Levels of Service

Weekday Non-Game Midday Peak Hour

Table 17-2
Existing Overall Intersection Level of Service Summary

Signalized Intersections (24 Total)	Non-Game Day				Game Day		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Pre-game Weekday PM	Pre-game Saturday Midday	Post-game Saturday PM
Overall Intersection LOS A/B/C	15	19	16	12	10	10	12
Overall Intersection LOS D	8	5	6	10	9	14	9
Overall Intersection LOS E	1	0	2	2	5	0	0
Overall Intersection LOS F	0	0	0	0	0	0	3

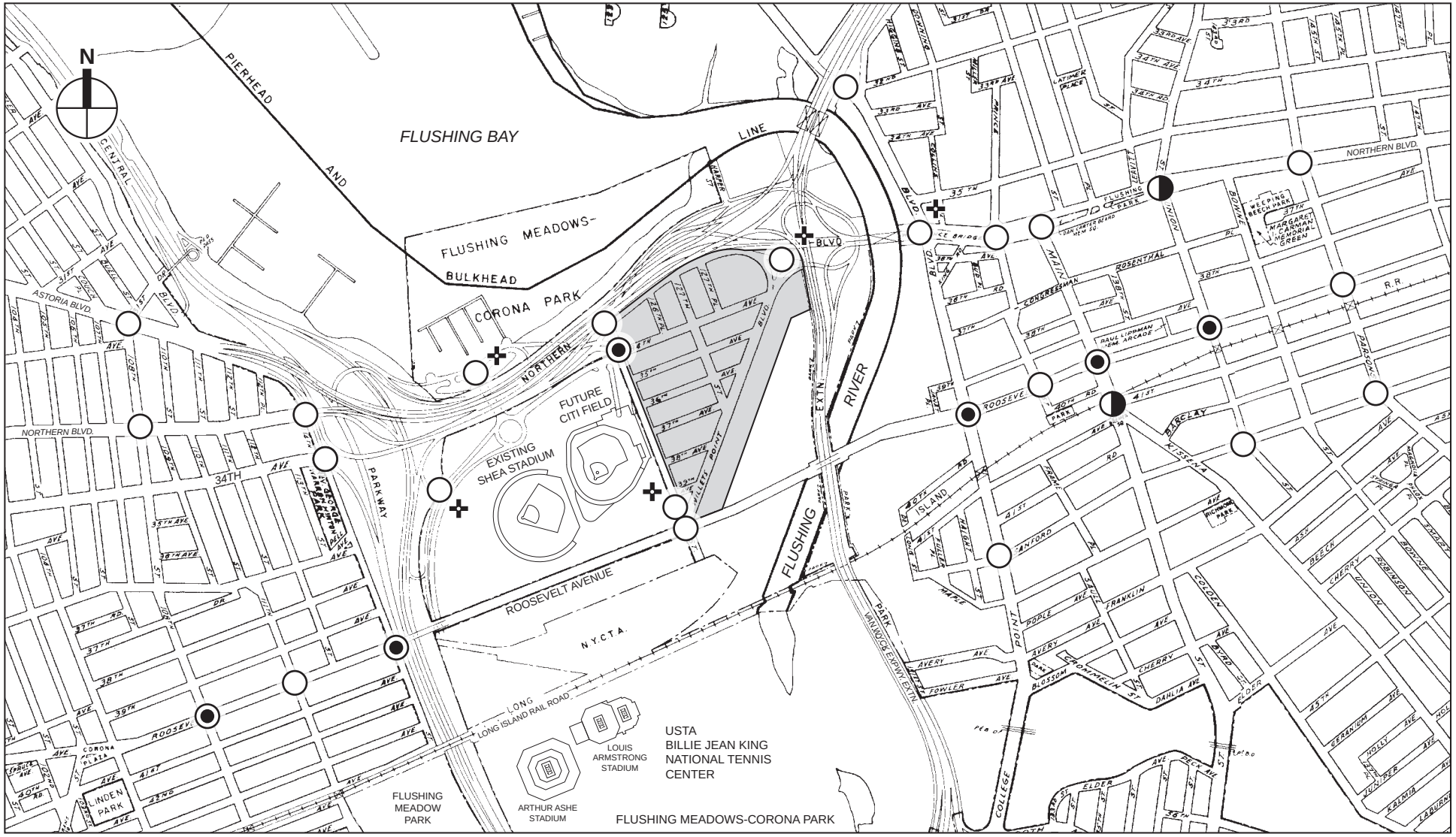
Note: During the non game and weekday pre-game peak hours, all 5 unsignalized intersections operate at overall LOS A/B or C; during the weekend pre-game peak hour, the Grand Central Parkway ramp at West Park Loop/Stadium Road operates at overall LOS E; during the weekend post-game peak period, Boat Basin Road at World's Fair Marina operates at overall LOS F.

Table 17-3
Existing Traffic Lane Group Level of Service Summary

Signalized Lane Groups (Approx. 120 Total)	Non-Game Day				Game Day		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Pre-game Weekday PM	Pre-game Saturday Midday	Post-game Saturday PM
Number of Lane Groups at LOS A/B/C	59	82	63	58	56	63	70
Number of Lane Groups at LOS D	38	25	31	34	29	32	20
Number of Lane Groups at LOS E	15	10	21	20	26	20	14
Number of Lane Groups at LOS F	7	2	4	9	11	7	18

Note: During the non game and weekday pre-game peak hours, all unsignalized lane groups operate at LOS A, B, C or D; during the weekend pre-game peak hour, eastbound left turns from Grand Central Parkway ramp onto West Park Loop/Stadium Road operate at LOS F; during the weekend post-game peak period, northbound left turns from Boat Basin Road onto World's Fair Marina operate at LOS F, and the westbound approach of the Northern Boulevard Service Road at College Point Boulevard operates at LOS E.

- The non-game weekday PM peak hour has two intersections that operate at overall unacceptable LOS E, and six others that operate at overall LOS D. Twenty-five lane groups have overall unacceptable LOS E or F conditions. Figure 17-5 illustrates overall levels of service.
- In the non-game Saturday midday peak hour, two of the signalized intersections operate at overall unacceptable LOS E, and 10 others operate at overall LOS D. Twenty-nine lane groups operate at LOS E or F. Figure 17-6 illustrates overall levels of service.
- In the pre-game weekday PM arrival peak hour, five of the signalized intersections operate at overall unacceptable LOS E, and nine others operate at overall LOS D. Thirty-seven lane groups operate at LOS E or F. Figure 17-7 illustrates overall levels of service.
- In the pre-game Saturday midday arrival peak hour, none of the signalized intersections operate at overall unacceptable LOS E or F; 14 signalized intersections operate at overall LOS D. Twenty-seven lane groups operate at LOS E or F. Figure 17-8 illustrates overall levels of service.



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

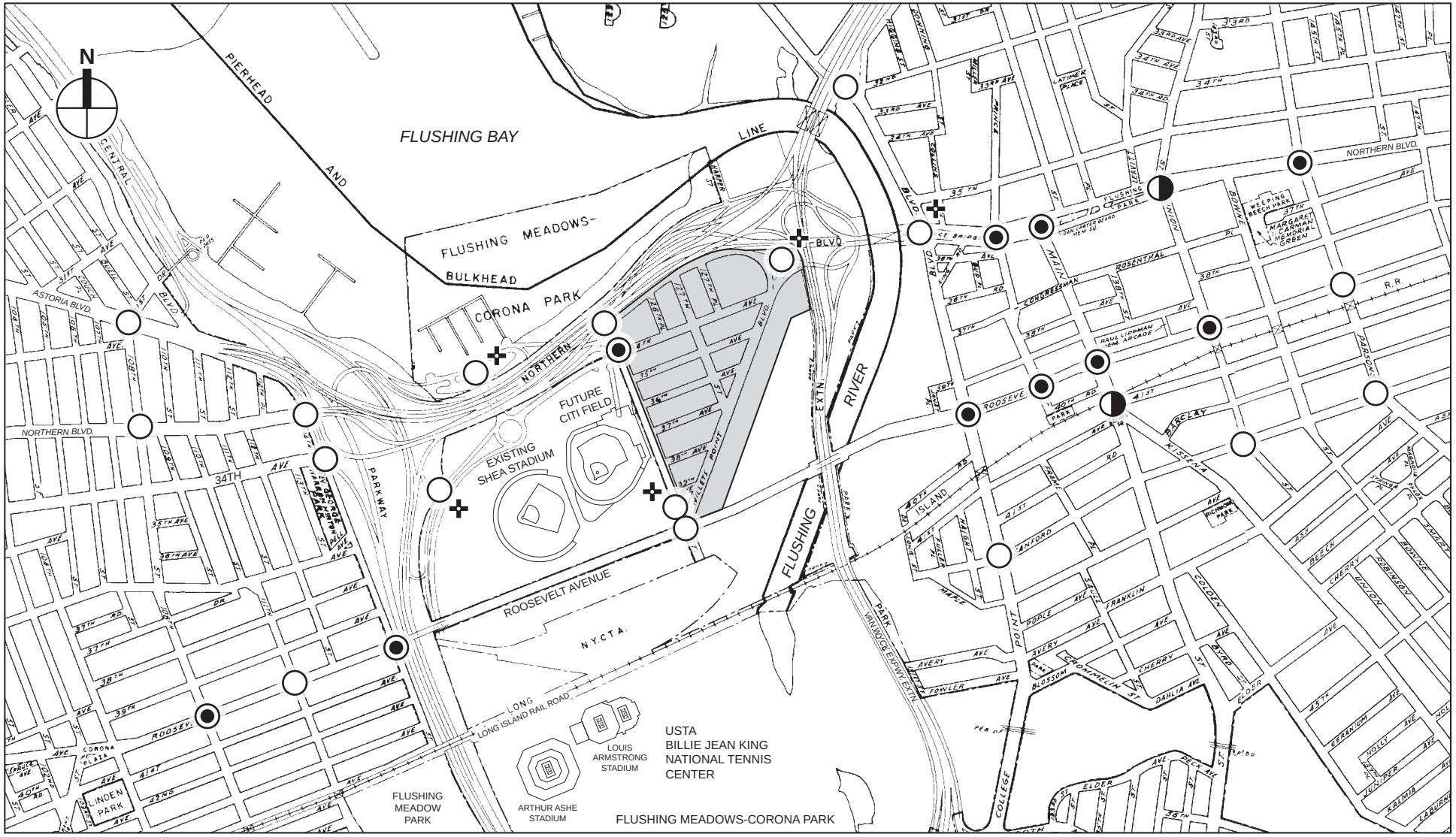
LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

Figure 17-5

Existing Traffic Levels of Service
Weekday Non-Game PM Peak Hour



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

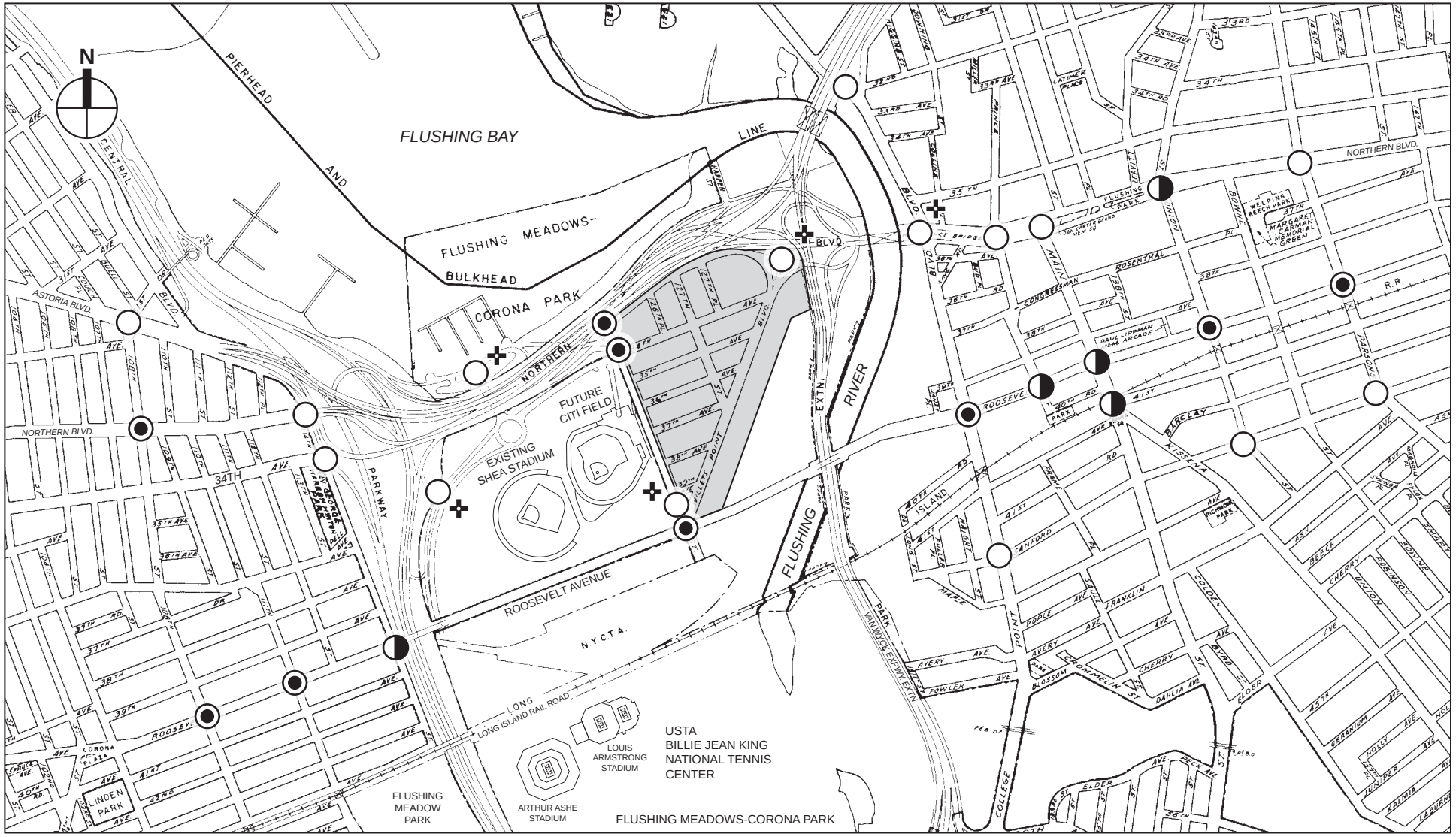
0 1000 2000 FEET

SCALE

Figure 17-6

Existing Traffic Levels of Service

Saturday Non-Game Midday Peak Hour



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

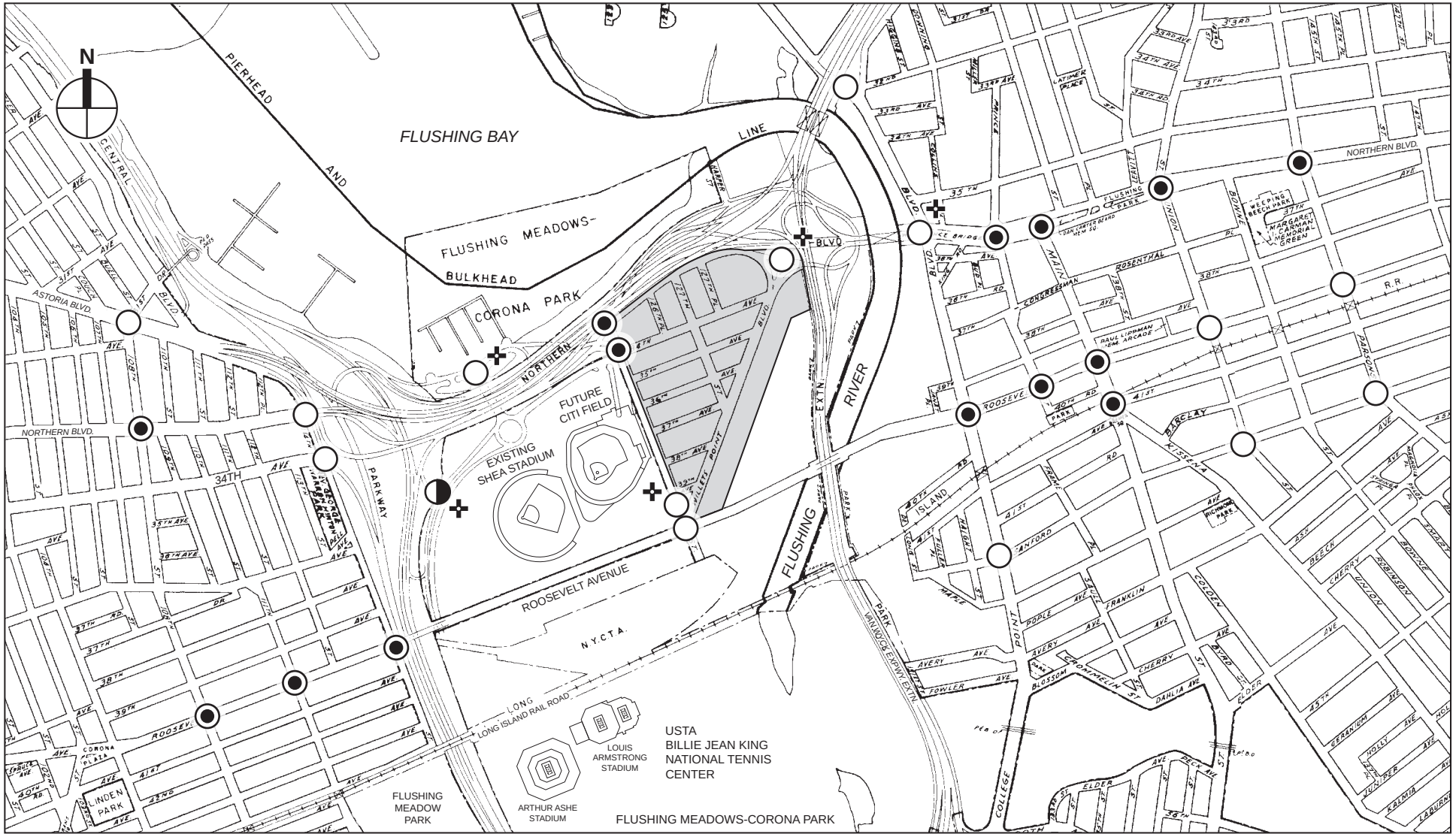
NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

SCALE

Figure 17-7

Existing Traffic Levels of Service Weeknight Pre-Game Peak Hour



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

SCALE

Figure 17-8

Existing Traffic Levels of Service
Saturday Pre-Game Peak Hour

- In the post-game Saturday weekend PM departure peak hour, three of the signalized intersections operate at overall unacceptable LOS E, and nine others operate at overall LOS D. Thirty-two lane groups operate at LOS E or F. Figure 17-9 illustrates overall levels of service.
- Generally, the five unsignalized intersections operate at overall acceptable levels of service during the four non-game peak hours and the weekday PM pre-game condition. However, during the weekend pre-game arrival peak, one intersection, the Grand Central Parkway ramp at West Park Loop/Stadium Road, operates at overall unacceptable LOS E, with one lane group at LOS F. During the weekend post-game departure peak, one intersection, Boat Basin Road at World's Fair Marina, operates at overall unacceptable LOS F, also with one lane group at LOS F.

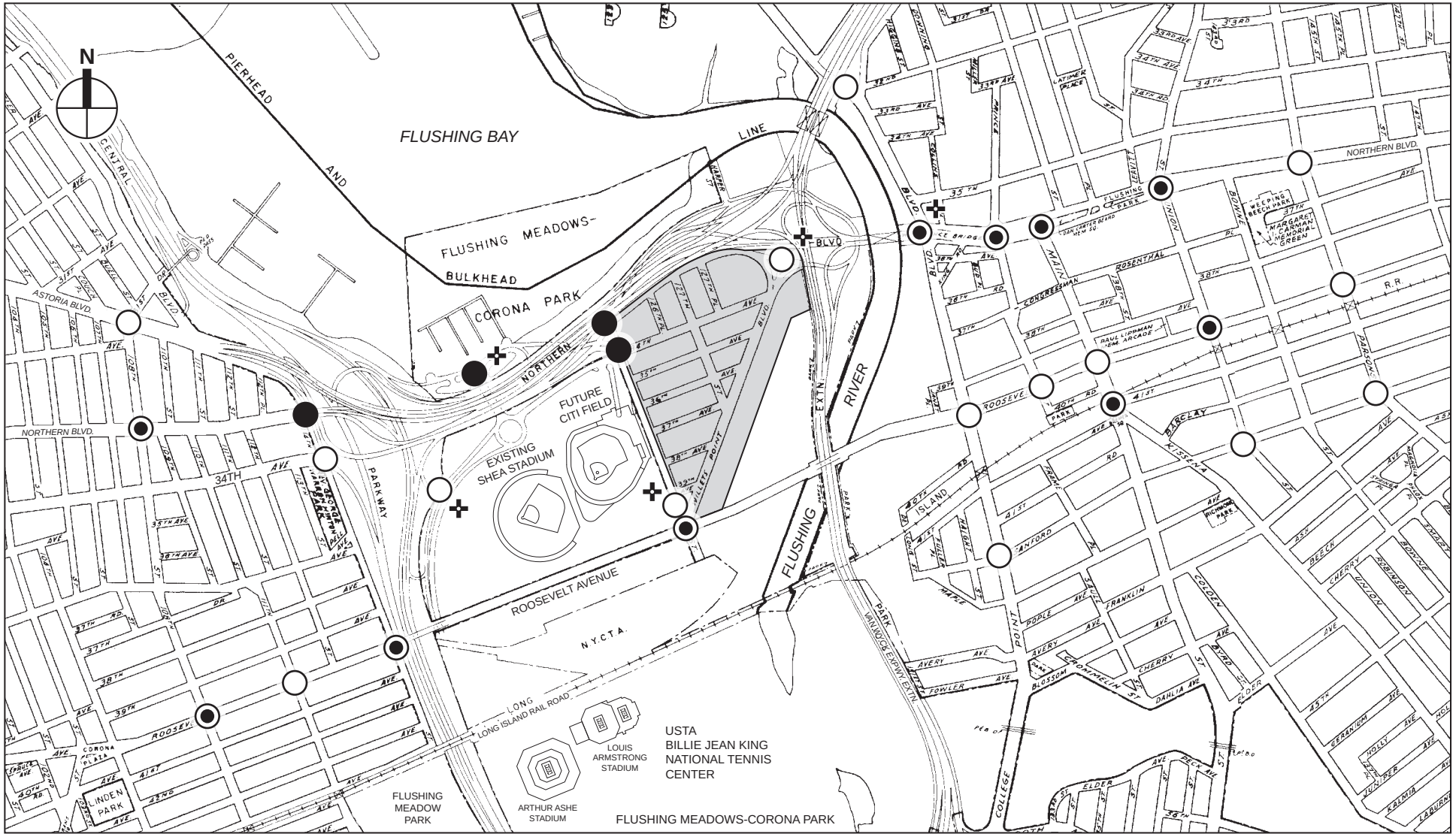
A more detailed presentation of traffic volumes and levels of service by corridor are provided below. (Details of the levels of service analyses for each traffic lane group at each of the intersections analyzed appear in Tables 17-39 through 17-44 at the end of this chapter. Detailed traffic volume maps appear in Appendix E.)

NORTHERN BOULEVARD

Through Downtown Flushing, Northern Boulevard is traveled by approximately 900–1,425 vehicles per hour (vph) in the eastbound direction and 1,700–2,475 vph in the westbound direction during the weekday AM peak hour on non-game days. Since westbound is the prevailing travel direction in the weekday AM peak hour, westbound volumes generally build through Downtown Flushing toward the ramps to the Van Wyck Expressway and the Grand Central Parkway. Adjacent to the Willets Point Development District and Shea Stadium, Northern Boulevard carries approximately 300–1,025 vph and 1,275–2,525 vph in the eastbound and westbound directions, respectively. At the intersection with 126th Street, 1,070 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and 615 vph enter eastbound Northern Boulevard from the Grand Central Parkway/Astoria Boulevard ramp. Northern Boulevard eastbound and westbound volumes in the vicinity of 108th and 114th Streets are approximately 1,025 and 2,100 vph, respectively.

During the weekday midday peak hour on non-game days, there are approximately 1,000–1,450 vph in the eastbound direction and 1,100–1,675 vph in the westbound direction on Northern Boulevard through Downtown Flushing. Northern Boulevard carries approximately 300–1,100 vph and 650–1,900 vph in the eastbound and westbound directions, respectively, adjacent to the Willets Point Development District and Shea Stadium. At the intersection with 126th Street, approximately 990 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and about 650 vph enter eastbound Northern Boulevard from the Grand Central Parkway/Astoria Boulevard ramp. Northern Boulevard eastbound and westbound volumes in the vicinity of 108th and 114th Streets are approximately 875 and 1,225 vph, respectively.

During the weekday PM peak hour on a non-game day, Northern Boulevard is traveled by approximately 1,425–2,125 vph in the eastbound direction and 1,075–1,575 vph in the westbound direction through Downtown Flushing. Adjacent to the Willets Point Development District and Shea Stadium, Northern Boulevard carries approximately 550–1,500 vph and 600–1,825 vph in the eastbound and westbound directions, respectively. At the intersection with 126th Street, 980 vph enter westbound Northern Boulevard from the ramp connection from the



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

Figure 17-9
Existing Traffic Levels of Service
Saturday Post-Game Peak Hour

southbound Whitestone Expressway and northbound Van Wyck Expressway, and approximately 810 vph enter eastbound Northern Boulevard from the Grand Central Parkway/Astoria Boulevard ramp. Northern Boulevard eastbound and westbound volumes in the vicinity of 108th and 114th Streets are approximately 1,750 and 1,625 vph, respectively.

During the Saturday midday peak hour on a non-game day, there are approximately 975–1,750 vph in the eastbound direction and 1,325–1,945 vph in the westbound direction on Northern Boulevard through Downtown Flushing. Northern Boulevard carries approximately 325–1,225 vph and 550–1,800 vph in the eastbound and westbound directions, respectively, adjacent to the Willets Point Development District and Shea Stadium. At the intersection with 126th Street, 940 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and approximately 705 vph enter eastbound Northern Boulevard from the Grand Central Parkway/Astoria Boulevard ramp. Northern Boulevard eastbound and westbound volumes in the vicinity of 108th and 114th Streets are approximately 1,150 and 1,650 vph, respectively.

During the weekday PM pre-game arrival peak hour, eastbound volumes on Northern Boulevard are approximately 1,375–2,125 vph through Downtown Flushing, generally similar to those on non-game days. Westbound volumes are approximately 1,175–1,700 vph, higher than on non-game days, which is expected due to increased traffic toward Shea Stadium. Adjacent to the Willets Point Development District and Shea Stadium in the vicinity of 126th Street, Northern Boulevard eastbound volumes are approximately 550–1,500 vph; westbound volumes are approximately 675–2,850 vph. At the intersection with 126th Street, approximately 1,780 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and about 825 vph enter eastbound Northern Boulevard from the Grand Central Parkway/Astoria Boulevard ramp. The New York City Police Department (NYPD) channelizes and operates the one-lane ramp as free-flow through the traffic signal at 126th Street so that it is able to process the heavy pre-game volume. Much of this entering traffic immediately exits Northern Boulevard onto the slip ramp to World's Fair Marina to access stadium parking lots. Northern Boulevard eastbound and westbound volumes in the vicinity of 108th and 114th Streets are approximately 1,850 and 1,650 vph, respectively.

During the weekend midday pre-game arrival peak hour, there are approximately 1,050–1,725 vph in the eastbound direction and 1,325–1,850 vph in the westbound direction on Northern Boulevard through Downtown Flushing. Northern Boulevard carries approximately 350–1,525 vph and 425–2,350 vph in the eastbound and westbound directions, respectively, adjacent to the Willets Point Development District and Shea Stadium. At the intersection with 126th Street, approximately 1,580 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and approximately 1,030 vph enter eastbound Northern Boulevard from the Grand Central Parkway/Astoria Boulevard ramp. Again, NYPD operates the ramp similarly to the weekday PM pre-game condition, since a large portion of the entering traffic immediately exits to World's Fair Marina. Northern Boulevard eastbound and westbound volumes in the vicinity of 108th and 114th Streets are approximately 1,200 and 1,725 vph, respectively.

During the weekend PM post-game departure peak hour, there are approximately 1,200–1,925 vph in the eastbound direction and 1,050–1,775 vph westbound direction on Northern Boulevard through Downtown Flushing. Northern Boulevard carries approximately 375–1,675 vph and 625–2,375 vph in the eastbound and westbound directions, respectively, adjacent to the Willets

Point Development District and Shea Stadium. The significant volume source to westbound Northern Boulevard during this time period is 126th Street, carrying about 1,150 vph of departure traffic from Shea Lots B and C, while the ramp from the Grand Central Parkway/Astoria Boulevard adds approximately 980 vph onto eastbound Northern Boulevard. Northern Boulevard eastbound and westbound volumes in the vicinity of 108th and 114th Streets are approximately 1,225 and 1,650 vph, respectively.

Traffic movements with high volumes and/or critical levels of service on Northern Boulevard during one or more analysis time period(s) include: the westbound through movement at 108th Street; the eastbound through and right turn and westbound through/left turn at 114th Street; the westbound through at 126th Street from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway; the eastbound mainline left and through movements and eastbound service road through/right at Prince Street; the eastbound through and right turn movements and the westbound left turn at Main Street; all eastbound and westbound movements at Union Street; and the westbound through/right turn movement at Parsons Boulevard. These movements can often experience significant delays, including unacceptable LOS E or F, due to heavy volumes and over-saturated conditions. The Northern Boulevard westbound left turn onto Prince Street, though a low volume, typically experiences LOS E or F conditions due to the small portion of effective green time it receives out of the long signal cycle. Importantly, the overall intersection levels of service for Northern Boulevard intersections, which are based on a weighted average of the delays for all of the traffic movements at each intersection, are greatly dependent on the delays of the high-volume eastbound and westbound through movements, even though the delays of Northern Boulevard turn movements and cross-street movements are generally worse.

For non-game day conditions, overall levels of service at intersections along Northern Boulevard between 108th Street and Prince Street are generally acceptable LOS B or C. The intersection of Northern Boulevard at 114th Street operates at overall marginally acceptable LOS D during the weekday AM peak hour. Overall, Northern Boulevard at its intersections with Main Street and Prince Street generally operates at acceptable LOS C, except for the Saturday midday peak hour, when it operates at marginally unacceptable LOS D (delays above mid-D). Northern Boulevard at Union Street is a critical intersection along the corridor, typically at capacity and consistently operating at overall LOS D or unacceptable LOS E. Northern Boulevard at Parsons Boulevard operates at overall LOS C or marginally acceptable LOS D (delays below mid-D).

For game-day conditions, the intersection of Northern Boulevard and 114th Street is critical during the weekend PM post-game peak hour, when eastbound right turns and westbound left turns (onto southbound 114th Street toward the Grand Central Parkway westbound on-ramp) are prohibited by NYPD for approximately 15 minutes, to limit the volume of traffic entering the eastbound Grand Central Parkway from the ramp at 34th Avenue. Those movements, as well as the westbound through movement and the overall intersection, are at unacceptable LOS F during that peak hour. At the intersection of Northern Boulevard and 126th Street, NYPD free-flow operation of the westbound through movement from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway during pre-game periods generally helps process traffic from the ramp even though it is still at or over capacity and at unacceptable LOS F. Due to NYPD demand management, the intersection operates at overall LOS D during the pre-game peak hours; however, during the weekend post-game departure peak hour, heavy demand on all approaches, especially 126th Street, cause unacceptable overall LOS F operation. The remaining Northern Boulevard intersections operate at overall LOS C or marginally acceptable LOS D (delays below mid-D) during the three game-day peak hours,

except for Northern Boulevard at Union Street, which operates at unacceptable overall LOS E during the weekday PM pre-game period and marginally unacceptable LOS D (delays above mid-D) during the weekend pre- and post-game conditions, and Northern Boulevard at Parsons Boulevard, which operates at marginally unacceptable LOS D in the weekend pre-game peak hour.

ROOSEVELT AVENUE

Through Downtown Flushing, Roosevelt Avenue is traveled by approximately 150–600 vph in the eastbound direction and 175–475 vph in the westbound direction during the non-game day peak hours. The highest eastbound volumes through the downtown area occur approaching Prince Street, while the highest westbound volumes are at the intersections with Union Street and Prince Street. Adjacent to the Willets Point Development District and Shea Stadium, in the vicinity of 126th Street to 114th Street, eastbound volumes on Roosevelt Avenue are approximately 500–850 vph, while the westbound flow is approximately 450–700 vph for non-game day conditions. Between 108th and 114th Streets, volumes are approximately 300–400 vph eastbound and 350–600 vph westbound.

Similar to the non-game conditions, during the game-day peak hours, there are approximately 150–575 vph and 175–400 vph traveling eastbound and westbound, respectively, on Roosevelt Avenue through Downtown Flushing. Adjacent to the Willets Point Development District and Shea Stadium, in the vicinity of 126th Street to 114th Street, eastbound volumes on Roosevelt Avenue are approximately 650–900 vph, while westbound volumes are approximately 700–1,000 vph for the pre-game conditions. Weekend post-game volumes along the same section of Roosevelt Avenue are approximately 450–625 vph eastbound and 375–825 vph westbound. Also during the weekend PM post-game departure peak hour, there are up to 875 vph on eastbound Roosevelt Avenue approaching College Point Boulevard, much of this as departing game traffic. Between 108th and 114th Streets, volumes are approximately 450–600 vph eastbound and 400–575 vph westbound during pre-game peak hours, and approximately 375–425 vph eastbound and 475–625 vph westbound during the post-game peak hour.

For non-game conditions, overall intersection levels of service along Roosevelt Avenue are generally acceptable LOS C or marginally acceptable LOS D (delays below mid-D). During the Saturday midday peak hour, Roosevelt Avenue at 108th Street and at Prince Street operates at marginally unacceptable LOS D (delays above mid-D). The intersection of Roosevelt Avenue and 114th Street operates at marginally unacceptable LOS D during the weekday PM peak hour. The intersection at Main Street operates at an overall marginally unacceptable LOS D during the weekday PM and Saturday midday peak hours. Traffic conditions on Roosevelt Avenue through Main Street tend to be the most problematic along the corridor due to the heavy bus and pedestrian activity at the intersection, which is the nexus of Downtown Flushing's inter-modal transportation hub. The eastbound and westbound Roosevelt Avenue approaches operate at marginally acceptable LOS D or unacceptable LOS E during all analysis periods.

Overall levels of service during the weekday PM pre-game peak hour conditions along Roosevelt Avenue include marginally unacceptable LOS D at 108th Street and College Point Boulevard, and unacceptable LOS E at 114th Street, Prince Street and Main Street. Overall levels of service during the weekend midday pre-game peak hour are generally acceptable LOS C and marginally acceptable LOS D with the exception of Roosevelt Avenue at Main Street which operates at marginally unacceptable LOS D. In order to manage increased traffic demand to Shea Stadium during the pre-game arrival peak hours, NYPD manages the intersection of

Roosevelt Avenue and 126th Street by adjusting the effective green times, with preference to the eastbound left-turn movement toward the parking north of Shea Stadium and the southbound right-turn movement toward Casey Stengel Plaza/Shea A Lot.

During the weekend post-game peak hour, NYPD continues to manage the Roosevelt Avenue/126th Street intersection, especially to process the eastbound through and southbound left turn movements carrying traffic out of the South Lot and Lot D (south side of Roosevelt Avenue) and the south portion of Lot B (on the corner of Roosevelt Avenue and 126th Street), respectively. NYPD also closes the Roosevelt Avenue eastbound through movement at 114th Street for approximately 15 minutes at the beginning of the departure peak hour to better control volumes toward the 126th Street intersection. Overall, the post-game demand management along Roosevelt Avenue adjacent to the District and Shea Stadium is effective, with intersections operating at acceptable LOS C or marginally acceptable LOS D; however, the intersections of Roosevelt Avenue at 108th and 114th Streets both are at marginally unacceptable LOS D. Concurrently, the Roosevelt Avenue intersections through Downtown Flushing generally operate at overall acceptable LOS C and marginally acceptable LOS D.

KISSENA BOULEVARD

Kissena Boulevard is traveled by approximately 350–500 vph northbound toward Main Street and 250–350 vph southbound during the non-game analysis peak hours. Volumes during the game conditions are similar, with approximately 450–475 vph northbound and 275–350 vph southbound. Kissena Boulevard also carries significant bus traffic along seven bus routes to and from Main Street, with up to approximately 60 buses per hour per direction.

The intersection of Kissena Boulevard and Main Street operates at marginally unacceptable LOS D (delays above mid-D) or unacceptable LOS E during the weekday AM and PM and Saturday midday non-game peak hours and the pre-game peak hours. Similar to other intersections along Main Street, the terminus of Kissena Boulevard at Main Street experiences recurring congestion and delays due to bus activity, significant pedestrian crossing volumes and conflicts with turning vehicles, spillback from Roosevelt Avenue and 40th Road one block to the north, and geometric constraints, including the downstream narrowing of Main Street under the LIRR trestle. The Kissena Boulevard approach at Main Street typically operates at unacceptable LOS E or F during all analysis periods, both for non-game and game conditions, except for the weekday midday peak hour, when it operates at acceptable LOS C.

SANFORD AVENUE

Analysis locations along Sanford Avenue are located within Downtown Flushing, where traffic volumes are approximately 150–300 vph in the eastbound direction and 225–600 vph in the westbound direction during the non-game day peak hours. During the game-day peak hours, there are approximately 200–375 vph and 325–550 vph traveling eastbound and westbound, respectively, on Sanford Avenue through Downtown Flushing. During all of the analysis peak hours, the three intersections analyzed along Sanford Avenue operate at overall acceptable LOS B or C.

34TH AVENUE

As stated previously, 34th Avenue is discontinuous within the study area between 114th and 126th Streets. East of 126th Street, through the Willets Point Development District, 34th Avenue is traveled by only approximately 50–150 vph in each direction during non-game conditions.

During game-day conditions, traffic to and from 34th Avenue is limited due to NYPD control and turn prohibitions at the intersection with 126th Street and, as a result, volumes are approximately 5–75 vph in each direction. West of 114th Street, 34th Avenue serves as an access route to the Grand Central Parkway westbound on-ramp, where it carries approximately 300–450 vph eastbound and 50–175 vph westbound during non-game peak hours. Weekday PM and weekend midday pre-game peak hour volumes are approximately 400–450 vph eastbound and 100–115 vph westbound. However, the post-game closure by NYPD (for approximately 15 to 20 minutes) of the 34th Avenue eastbound approach, including the through movement onto the Grand Central Parkway, as well as 114th Street southbound from Northern Boulevard, reduces the traffic flows along 34th Avenue. Volumes are approximately 300 vph eastbound and 75 vph westbound at that time.

Non-game levels of service for both 34th Avenue analysis locations are overall acceptable LOS B or C and marginally acceptable LOS D. However, during the Saturday midday non-game peak hour, the intersection at 126th Street operates at marginally unacceptable LOS D. During pre-game conditions, NYPD manages the intersection of 34th Avenue at 126th Street and Stadium Road, including the at-grade ramp from Northern Boulevard and the elevated access ramp from the Grand Central Parkway/Astoria Boulevard. NYPD management includes: (1) deactivation of the traffic signal; (2) traffic cone/barrier channelization of the northbound and southbound approaches; (3) free-flow operation of the ramps and eastbound (West Park Loop/Stadium Road) right turns; and (4) prohibition of all left turns and the eastbound/westbound through movements. The intersection operates at marginally acceptable LOS D for both weekday PM and weekend midday pre-game peak hours. Concurrently, the intersection of 34th Avenue and 114th Street operates at overall acceptable LOS B or C.

During the weekend post-game peak hour, NYPD traffic management includes: (1) the reversal of a 126th Street southbound lane in order to operate three northbound moving lanes on 126th Street from the Shea B Lot north exit; (2) closure of the ramps to the 126th Street/34th Avenue intersection from the Grand Central Parkway/Astoria Boulevard and Northern Boulevard; (3) closure of the westbound left turn movement and the eastbound approach for the first 45 minutes of the peak hour; and (4) manual signal modification to extend the effective green time of northbound 126th Street. The intersection operates at overall unacceptable LOS F, primarily due to the heavy surge of traffic out of the parking lot onto northbound 126th Street as well as the extended delays experienced on the cross-streets. Concurrently, the intersection of 34th Avenue and 114th Street also operates under NYPD control for the first 15 to 20 minutes of the peak hour, including closure of the southbound and eastbound approaches in order to promote uninterrupted flow of the northbound (yield-controlled) right-turn movement onto the Grand Central Parkway westbound ramp. The intersection operates at overall LOS C during the weekend PM post-game peak hour, since delays are generally low until the southbound and eastbound approaches are re-opened.

ASTORIA BOULEVARD

Similar to Northern Boulevard, the prevailing weekday AM traffic on Astoria Boulevard is in the westbound direction, and reversed in the weekday PM. Through the neighborhood of North Corona on the west side of the study area on a typical non-game day, eastbound Astoria Boulevard carries approximately 980 vph during the AM peak hour, which increases to approximately 1,860 vph during the PM peak hour. Conversely, the westbound direction carries approximately 2,350 vph during the AM peak hour, which decreases to approximately 1,050 vph during the PM peak hour. The weekday midday and Saturday midday traffic volumes range from

800–850 vph eastbound and 700–750 westbound. Weeknight pre-game peak hour volumes on Astoria Boulevard are approximately 2,200 vph eastbound and 1,060 vph westbound. Weekend pre- and post-game peak hours volumes range from approximately 875–925 vph eastbound and 700–925 vph westbound. The analyzed intersection at 108th Street operates at overall LOS B or C during all the analysis periods.

WEST PARK LOOP/STADIUM ROAD

West Park Loop/Stadium Road carries low to moderate volumes during non-game conditions, with approximately 50–350 vph during weekday peak hours and 75–200 vph during the Saturday midday peak hour. The roadway experiences a substantial increase in traffic during game conditions due to access from the Grand Central Parkway westbound ramps. Game traffic uses West Park Loop/Stadium road to access Shea Lots A, B, and C; the Whitestone lots (Stadium View lots) adjacent to Boat Basin Road; and the Grand Central Parkway grass berm lot (the "Pork Chop"). Weekday pre-game arrival volumes are approximately 125–675 vph, while weekend pre-game volumes are approximately 275–650 vph. A large portion of post-game traffic travels westbound along West Park Loop/Stadium Road—from the north exits of the main Shea Stadium lots and the other parking lots north of Shea Stadium—toward the Grand Central Parkway on-ramp. Westbound volumes are as high as 1,175 vph approaching the on-ramp toward the westbound Grand Central Parkway ramp toward eastbound Northern Boulevard and the northbound Whitestone Expressway during the weekend post-game departure peak hour, while eastbound volumes are much lower, approximately 125–200 vph. Importantly, due to NYPD control on 126th Street during the post-game condition. The West Park Loop/Stadium Road eastbound approach at the 126th Street is closed for approximately 45 minutes.

The analyzed unsignalized intersection at West Park Loop/Stadium Road and the Grand Central Parkway westbound on- and off-ramps operates at overall acceptable LOS A during all the non-game peak hours. During pre-game conditions, NYPD typically deploys an officer to process the eastbound approach from the Grand Central Parkway, by occasionally stopping the major through movements on West Park Loop/Stadium Road. During the weekday PM pre-game peak hour, the intersection operates at overall acceptable LOS B; however, increased through traffic during the weekend midday pre-game peak hour results in unacceptable LOS E conditions for the intersection, since the eastbound left turn movement operates at LOS F at that time. Furthermore, if the eastbound queues along West Park Loop/Stadium Road spill back to this intersection from the parking lot entrances near the downstream traffic circle, NYPD prohibits eastbound left turns and only allows right turns until the queues clear into the lots. During the weekend PM post-game peak hour, the intersection operates at overall acceptable LOS B, since the heaviest traffic movement is the major right turn onto the Grand Central Parkway on-ramp.

COLLEGE POINT BOULEVARD

Along the western boundary of Downtown Flushing between Sanford Avenue and Roosevelt Avenue, College Point Boulevard carries approximately 800–1,175 vph northbound and 750–1,000 vph southbound, during the non-game peak hours. Through Northern Boulevard, College Point Boulevard is traveled by approximately 600–850 vph in both the northbound and southbound directions, during the non-game peak hours. During weeknight and weekend pre-game conditions, College Point Boulevard between Sanford Avenue and Roosevelt Avenue is traveled by approximately 1,150–1,350 vph northbound and 900–1,100 vph southbound. Along the same section of College Point Boulevard during the weekend post-game peak hour, there are approximately 925–975 vph and 1,025–1,100 vph northbound and southbound, respectively.

Through Northern Boulevard, College Point Boulevard is traveled by approximately 750–900 vph northbound and 575–775 vph southbound, during the game-day peak hours.

Overall levels of service along College Point Boulevard are generally acceptable, ranging from LOS B to marginally acceptable LOS D (delays below mid-D), except for the intersection of College Point Boulevard and Roosevelt Avenue which operates at marginally unacceptable LOS D during the weekday pre-game peak hour. Specifically during pre-game conditions, the College Point Boulevard northbound left turn at Roosevelt Avenue is congested and operates at unacceptable LOS E or F, due to increased traffic toward Shea Stadium. The College Point Boulevard northbound left turn also operates at unacceptable LOS F during the weekday morning non-game peak hour. The intersection of College Point Boulevard and 32nd Avenue at the Whitestone Expressway service road operates at overall acceptable LOS B or C during all analysis periods.

MAIN STREET

Main Street carries approximately 475–775 vph northbound and 575–750 vph southbound, during the non-game peak hours. During game conditions, Main Street is traveled by approximately 600–750 vph northbound and 625–775 vph southbound. Between Kissena Boulevard and Northern Boulevard, Main Street also supports up to 14 bus lines, with volumes as high as approximately 80 buses per hour northbound and 70 buses per hour southbound.

The volume of buses and turn conflicts between vehicles and pedestrians, in concert with general traffic volumes, cause slow travel speeds and moderate to high delays at many intersections along Main Street, particularly during weekday PM and Saturday midday peak hours, both for non-game and pre-game conditions. Furthermore, because northbound Main Street terminates at Northern Boulevard, there are heavy volumes for both the left turn and right turn movements, which generally operate at LOS D or unacceptable LOS E during non-game and game conditions. Other critical movements along Main Street that operate at LOS E include: the northbound left turn movement onto 41st Avenue during the weekday PM and Saturday midday for non-game and pre-game conditions; the southbound left turn movement onto Kissena Boulevard during the weekday PM non-game and pre-game and the Saturday midday non-game peak hours; and the Main Street southbound approach at Roosevelt Avenue during the non-game Saturday midday peak hour.

UNION STREET

Northbound volumes on Union Street are lower between Sanford Avenue and Roosevelt Avenue (approximately 125–425 vph) than between Roosevelt Avenue and Northern Boulevard (approximately 475–625 vph) due mainly to right turn and left turn traffic from eastbound and westbound Roosevelt Avenue, respectively. In the southbound direction, Union Street is traveled by approximately 375–675 vph, with the highest volumes typically between Northern Boulevard and Roosevelt Avenue. During game conditions, Union Street northbound volumes are similar to non-game conditions, ranging between approximately 125–625 vph, while southbound volumes range between 500–615 vph. Union Street also carries bus traffic for a number of transit routes, with up to approximately 40 buses per hour northbound and 55 buses per hour southbound.

The Union Street approaches at Northern Boulevard experience recurring conditions with unacceptable LOS D, E or F. Union Street southbound operates at LOS E during all of the analysis periods, except for the weekend PM post-game peak hour. The northbound approach

has at least one movement operating at LOS E or F during all of the analysis peak hours, except for the weekday midday peak hour.

PARSONS BOULEVARD

Through eastern Downtown Flushing, Parsons Boulevard is traveled by approximately 250–400 vph northbound and 275–425 vph southbound, during the non-game peak hours. Game-day peak hour volume ranges are similar, with approximately 275–450 vph northbound and 250–475 vph southbound. Parsons Boulevard typically has acceptable levels of service at the intersections analyzed, except for its northbound and southbound approaches at Northern Boulevard, where it consistently operates at unacceptable LOS E or F.

108TH STREET

108th Street carries approximately 175–300 vph in the northbound direction and 200–425 vph in the southbound direction during the non-game peak hours. During game conditions, 108th Street is traveled by approximately 250–300 vph northbound and 250–450 vph southbound. Southbound 108th Street at Roosevelt Avenue typically operates at unacceptable LOS E or F during all analysis peak hours, as does northbound 108th Street, except during the non game weekday AM and PM peak hours when it operates at marginally unacceptable LOS D. The northbound 108th Street approach at Northern Boulevard generally operates at LOS E and F during all analysis peak hours. The southbound 108th Street approach operates better at Northern Boulevard, but also experiences unacceptable LOS E and F conditions during the weekday PM non-game peak hour and the game-day peak hours with the exception of the weekend pre-game which operates at marginally unacceptable LOS D.

PRINCE STREET

During the non-game peak hours, Prince Street volumes are approximately 200–325 vph northbound and 175–350 vph southbound with the majority of southbound traffic at Northern Boulevard turning onto the westbound Northern Boulevard viaduct, similar to non-game conditions. During game conditions, Prince Street is traveled by approximately 225–300 vph northbound and 200–300 vph southbound. Northbound Prince Street at Northern Boulevard consistently operates at unacceptable LOS E or F during all analysis peak hours, while the southbound approach operates at marginally acceptable LOS D on Saturdays and marginally unacceptable LOS D on weekdays, except for the non-game weekday AM peak hour, when it also operates at LOS E. Prince Street at Roosevelt Avenue operates at LOS E during the non-game Saturday midday and the weekday PM pre-game and weekend midday pre-game peak hours.

111TH STREET

During all analysis peak hours, 111th Street northbound approaching Roosevelt Avenue is traveled by approximately 175–315 vph, experiencing its highest volume during the weekday PM pre-game arrival peak hour. Northbound 111th Street, which is the only approach to Roosevelt Avenue, since the street is one-way, operates at marginally unacceptable LOS D during the non-game conditions and at unacceptable LOS E during game peak hours.

114TH STREET

Northbound volumes on 114th Street are approximately 175–350 vph during the non-game analysis peak hours. There is heavy northbound right turn traffic at Roosevelt Avenue, and all northbound traffic approaching 34th Avenue turns onto the Grand Central Parkway on-ramp since the roadway becomes one-way southbound between that intersection and the intersection at Northern Boulevard. Northbound 114th Street volumes entering the Grand Central Parkway range between 200–325 vph for non-game conditions. In the southbound direction, volumes along 114th Street vary greatly due to the Grand Central Parkway on-ramp. During the non-game peak hours, southbound traffic approaching 34th Avenue is approximately 500–700 vph, but downstream, approaching Roosevelt Avenue, volumes are 150–250 vph.

Pre-game volumes on 114th Street northbound are approximately 300–325 vph, and southbound volumes approaching 34th Avenue range between 650–815 vph. Approaching Roosevelt Avenue, volumes are approximately 200–300 vph, which are higher than non-game conditions due to increased left turns toward Shea Stadium. During the weekend PM post-game peak hour, 114th Street southbound is closed from Northern Boulevard to 34th Avenue, in order process the northbound yield-controlled right turn volume (approximately 510 vph) onto the Grand Central Parkway. Southbound traffic from Northern Boulevard is about 425 vph once the roadway is open, and about 200 vph downstream approaching Roosevelt Avenue.

Northbound 114th Street at Roosevelt Avenue operates at unacceptable LOS E or F during all analysis periods, except for the weekday midday peak hour, when it is at marginally unacceptable LOS D. The southbound 114th Street left turn movement at Roosevelt Avenue is at marginally unacceptable LOS D or unacceptable LOS F during non-game conditions, and consistently experiences LOS E or F conditions during game analysis periods.

PARKING

OFF-STREET PARKING

An inventory of public parking lots within the area generally bounded by College Point Boulevard, West Park Loop/Stadium Road, and the Grand Central Parkway north of Flushing Meadows-Corona Park and south of Flushing Bay, shown in Tables 17-4 and 17-5, was conducted along with hourly parking facility occupancy surveys during the periods of 7:00 AM–10:00 AM, 11:00 AM–2:00 PM, and 4:00 PM–7:00 PM on a typical weekday (September 13, 2006), and 11:00 AM-2:00 PM on Saturday without a Mets home game (July 21, 2007). For periods with a Mets home game, parking surveys were conducted from 4:30 PM–7:30 PM (on September 19, 2006) for the weekday PM pre-game arrival period and from 11:00 AM–2:00 PM and 3:30 PM–6:30 PM (on July 15, 2007) for the weekend pre- and post-game periods (see Tables 17-6 and 17-7). This study area constitutes a region within approximately ¼ mile from the boundary of the Willets Point development district. However, none of the parking lots surveyed directly abut the Willets Point Development District, and some, such as the Marina West lot and especially Municipal Lot No. 4, are at significant walking distances from the District.

Table 17-4
Hourly Parking Occupancy by Percentage of Spaces Occupied per Facility
Off-Street Parking Survey – Weekday Non-Game Day

Parking Facility	Capacity	7-8 AM	8-9 AM	9-10 AM	11AM -12PM	12-1 PM	1-2 PM	4-5 PM	5-6 PM	6-7 PM
South Lot and Lot D	1,556	25%	33%	40%	43%	38%	43%	37%	31%	20%
Marina East	590	0%	0%	1%	0%	0%	0%	1%	1%	1%
Marina West	263	2%	3%	5%	7%	6%	6%	5%	3%	4%
Boat Basin East	75	12%	19%	27%	33%	33%	33%	31%	39%	64%
Boat Basin West	75	0%	0%	0%	0%	0%	0%	0%	0%	1%
Stadium View	471	0%	0%	0%	0%	0%	0%	0%	0%	0%
Northern Blvd. Median[1]	501	7%	7%	8%	9%	9%	9%	8%	6%	5%
Municipal Lot No. 4	53	30%	36%	92%	96%	98%	98%	94%	85%	32%
TOTAL	**3,584**	**13%**	**17%**	**21%**	**23%**	**21%**	**23%**	**20%**	**17%**	**12%**

Note: [1] Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street.

Table 17-5
Hourly Parking Occupancy by Percentage of Spaces Occupied per Facility
Off-Street Parking Survey – Saturday Non-Game Day

Parking Facility	Capacity	11AM-12PM	12-1PM	1-2 PM
South Lot and Lot D	1,556	8%	8%	7%
Marina East	590	0%	0%	1%
Marina West	263	4%	3%	3%
Boat Basin East	75	105%	80%	57%
Boat Basin West	75	39%	36%	32%
Stadium View	471	0%	0%	0%
Northern Blvd. Median[1]	501	11%	11%	8%
Municipal Lot No. 4	53	100%	100%	100%
TOTAL	**3,584**	**10%**	**9%**	**8%**

Note: [1] Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street.

Table 17-6
Hourly Parking Occupancy by Percentage of Spaces Occupied per Facility
Off-Street Parking Survey – Weekday Game Day

Parking Facility	Capacity	Weeknight Pre-game		
		4:30-5:30 PM	5:30-6:30 PM	6:30-7:30 PM
South Lot and Lot D	1,556	40%	35%	45%
Marina East	590	1%	1%	3%
Marina West	263	12%	16%	17%
Boat Basin East	75	111%	109%	109%
Boat Basin West	75	0%	0%	0%
Stadium View	471	2%	8%	27%
Northern Blvd. Median[1]	501	13%	24%	46%
Municipal Lot No. 4	53	81%	68%	36%
TOTAL	**3,584**	**24%**	**24%**	**34%**

Note: [1] Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street.

Table 17-7
Hourly Parking Occupancy by Percentage of Spaces Occupied per Facility
Off-Street Parking Survey – Weekend Game Day

Parking Facility	Capacity	Weekend Pre-game			Weekend Post-game		
		11AM-12PM	12-1 PM	1-2 PM	3:30-4:30 PM	4:30-5:30 PM	5:30-6:30 PM
South Lot and Lot D	1,556	15%	96%	102%	71%	8%	1%
Marina East	590	7%	56%	104%	82%	11%	1%
Marina West	263	7%	30%	60%	78%	11%	13%
Boat Basin East	75	71%	80%	113%	105%	57%	99%
Boat Basin West	75	32%	69%	100%	83%	4%	1%
Stadium View	471	10%	68%	98%	80%	7%	1%
Northern Blvd. Median[1]	501	22%	65%	73%	65%	9%	1%
Municipal Lot No. 4	53	91%	92%	91%	75%	57%	45%
TOTAL	**3,584**	**16%**	**75%**	**95%**	**75%**	**10%**	**5%**

Note: [1] Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street.

Overall, there is a mix of controlled and uncontrolled public parking lots as well as undesignated parking areas, including space on roadway shoulders and medians, which are typically used only during periods of high parking demand, such as during a Mets game (see Figure 17-10). The controlled lots include: the Shea Lots A-C, which serve game and official stadium parking only on both game and non-game days; South Lot and Lot D[1], which serves as a pay park-and-ride lot for commuters on typical weekdays and weekends, and is a pay lot for Shea Stadium during game periods; Marina East and Marina West, which are also pay lots for Shea Stadium during game periods but are free and uncontrolled on typical weekdays and weekends; and Stadium View (Whitestone Lot) that flanks Boat Basin Road under the elevated expressway, which is also a pay lot for Shea Stadium during game periods, but is free on non-game weekdays and weekends. Occupancy surveys of Shea Lots A-C were not conducted since they serve only official Shea Stadium and NYPD vehicles on typical weekdays and weekends, and official and attendee parking during game periods. Furthermore, a substantial portion, approximately 1,200 spaces (at the time of the September 2006 data collection) of Shea Lot B has been closed due to construction of the new Citi Field; the number of lost spaces due to the construction had increased to approximately 1,900 spaces as of July 2007.

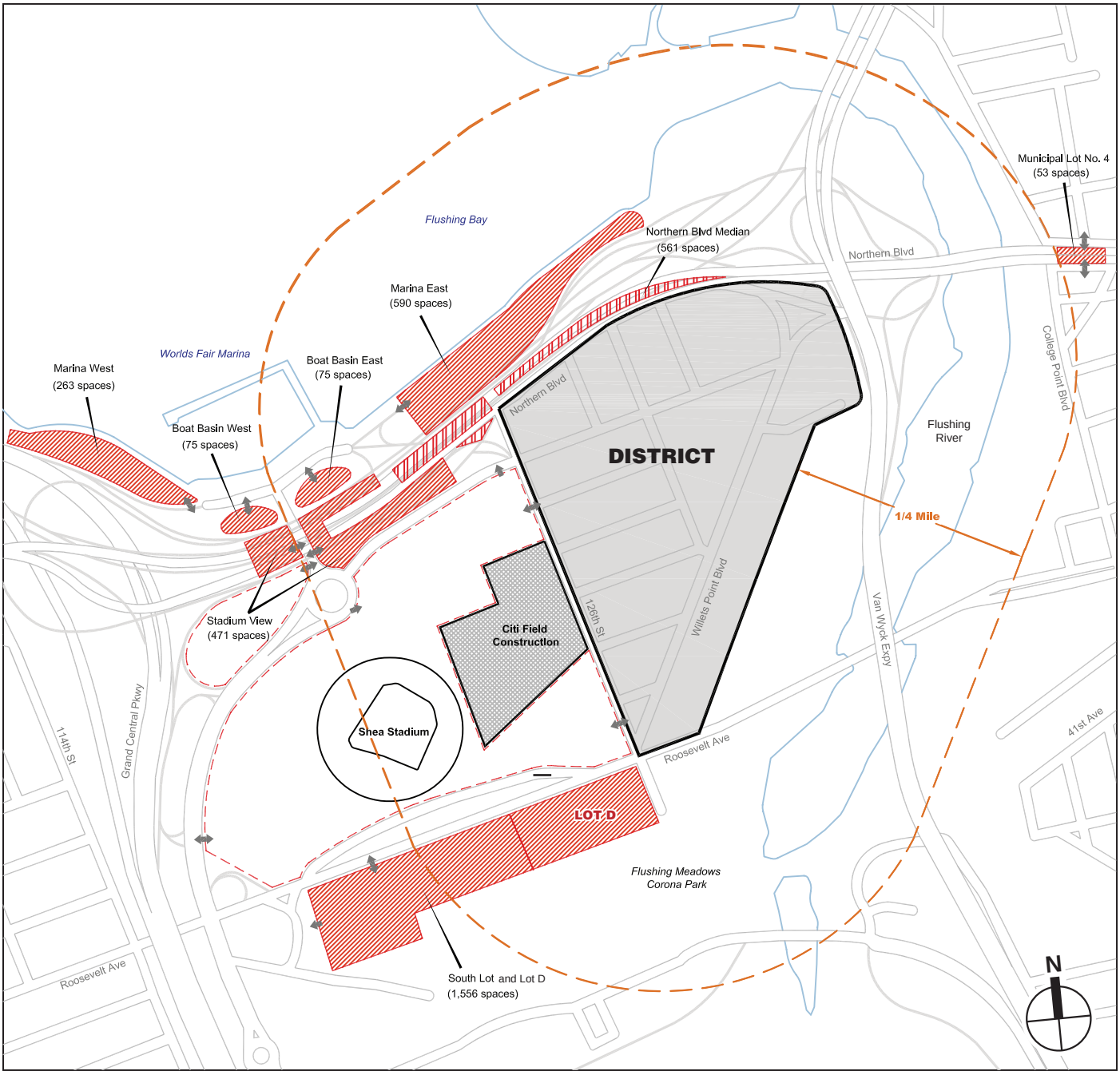
The remaining group of lots and other off-street parking areas include: the Marina Boat Basin East and West lots; the Northern Boulevard dirt/pavement median both east and west of 126th Street, which has significant parking volumes during Mets game periods only; the Grand Central Parkway grass berm lot, which is also used only during game periods; and Municipal Lot No. 4, which is under the Northern Boulevard viaduct in Downtown Flushing. Except for the Grand Central Parkway grass berm lot (the "Pork Chop"), these parking lots are not part of Shea Stadium's pay parking facilities and, not including Municipal Lot No. 4, are only partially used during typical weekday and weekend when there is no Mets home game. Municipal Lot No. 4 is consistently utilized on both game and non game-days.

Non-Game-Day Parking

As shown in Table 17-4, there are eight surveyed parking facilities open to public use on non-game days, containing approximately 3,584 spaces. During non-game days, parking lots Shea A,

[1] South Lot and Lot D currently operate as a single surface parking lot, with common entrance/exit locations.

9.10.08



- *Willets Point Development District*
- *Construction Site*
- *Parking Facility*
- *Parking Median*
- *Shea Controlled Parking*
- *1/4 Mile Perimeter*
- *Directional Entrance/Exit*

0 200 400 1000 Feet
SCALE

This figure has been updated since the DGEIS

Figure 17-10
Parking Facilities

B, C, and the "Pork Chop" are used only for official Shea Stadium parking or are not occupied. A maximum occupancy level of about 23 percent is reached during the hours of 11:00 AM to 12:00 PM, and again between 1:00 PM to 2:00 PM, on a typical day without a Mets home game. During the AM peak hour, the primary commuter (pay) lot near the Willets Point Development District, South Lot and Lot D, has approximately 1,045 available, unoccupied spaces out of the 1,556 spaces located there, which decreases to about 889 spaces during the midday peak hour. As park-and-ride commuters return to the lot and leave with their vehicles during the PM peak hour, the number of available, unoccupied spaces increases to 1,076 spaces.

Also during the midday peak hour, parking on the dirt/pavement median of Northern Boulevard east of 126th Street—more specifically, in the vicinity of 127th Street and 127th Place—peaks at about 9 percent, an occupancy of approximately 45 vehicles. However, the median, which extends almost the entire length of the northern boundary of the Willets Point Development District, is not a designated, striped parking area.

Municipal Lot No. 4 under the Northern Boulevard viaduct in Downtown Flushing, which is the farthest parking facility from the Willets Point Development District, is almost at capacity during the 1:00-2:00 PM midday peak hour and remains at or above 85 percent full through the 5:00-6:00 PM hour. Furthermore, Municipal Lot No. 4 is typically at over 90 percent of capacity between 9:00 and 10:00 AM in the morning. Examining the other more distant lots during days without a Mets home game, the two Boat Basin lots and Marina West service the club and marina visitors; however, the larger nearby lots, such as Marina East and Stadium View, which are generally utilized only during game days, are at or near zero percent occupancy.

As shown in Table 17-5, the occupancy level ranges between 8 and 10 percent between the hours of 11:00 AM and 2:00 PM on a typical Saturday without a Mets game. Therefore, during the Saturday midday peak hour, 1:00-2:00 PM, there are approximately 3,300 unoccupied spaces available within the off-street lots. Municipal Lot No. 4 is at capacity by the 11:00 AM to 12:00 PM hour, and remains full through the Saturday midday peak hour; however, South Lot and Lot D, which is not a pay lot on typical Saturdays without a Mets game, is nearly empty, with only about 109 out of 1,556 spaces occupied.

Game Day Parking

On game days, parking lots Shea A, B, C and the "Pork Chop" are used for Shea Stadium game attendance parking only. During the weekday PM hours preceding a 7:10 PM-start Mets home game, parking occupancy in the surveyed lots is approximately 34 percent. As shown in Table 17-6, from 4:30 to 7:30 PM, South Lot and Lot D experiences a transition from commuter park-and-ride occupants to Mets game attendees, which is apparent by the decrease from 40 percent to 35 percent by 6:30 PM, and the subsequent increase to 45 percent by the start of the game. Other lots, such as Stadium View, Marina East and Marina West, which are controlled for game traffic on game days only, increase in occupancy approaching the start of the game, but never reach more than about 14 percent of their combined capacity. Moreover, the available free parking on the Northern Boulevard median, which is frequently used for parking by Mets attendees, reaches approximately 46 percent of capacity, or about 230 vehicles. It should be noted that, likely due to attendance, parking fluctuations and/or availability in the main Shea Lots, Marina East was nearly unutilized during the surveyed weekday Mets game.

Table 17-7 shows off-street parking inventories preceding and following a weekend Mets game with a 1:10 PM start. South Lot and Lot D, the Marina East and Marina West lots, Stadium View, and the Northern Boulevard median area fill rapidly throughout the 12:00-1:00 PM pre-

game peak hour, and by the 1:00-2:00 PM hour, the five lots are near or over capacity. The demand for parking in the periphery lots, both designated and undesignated, is likely due to higher attendance for a weekend game as well as the increasing loss of parking in the main Shea Lot B. Beginning in the 3:30-4:30 PM post-game hour, the lots start to empty, and overall occupancy drops from 75 percent to 10 percent. By the 5:30-6:30 PM hour, most lots are nearly vacant, except for Marina West and Boat Basin East, still servicing Marina traffic, and Municipal Lot No. 4.

ON-STREET PARKING

On-street parking inventories, which cover the area within a ¼-mile radius of the Willets Point Development District as well as some areas within the Willets Point development district, include a mix of regulated spaces and unregulated spaces, while much of the block lengths within the study area are not adequately built and maintained for any type of on-street parking. Since much of the existing roadway network within Willets Point is in general disrepair, there are few blocks with defined sidewalks, curbs, and designated on-street parking space, and much of the block lengths act as garage entrances and extensions of the abutting land uses. The small number of regulated spaces within or adjacent to the site are generally located along the south curb of eastbound Northern Boulevard (between 126th Street and Willets Point Boulevard) and along 126th Street. The remaining block space that can facilitate on-street parking is not regulated, such as along partial sections of 126th Place, 127th Street, 127th Place, and Willets Point Boulevard, near Northern Boulevard, and along one block of 34th Avenue.

Overall, within the area surveyed, there are approximately 230–270 legal spaces available on-street (depending on time of day and prevailing regulations), including the unregulated blocks discussed above. This total also includes parking spaces along College Point Boulevard between Roosevelt Avenue and 32nd Avenue, although much of this length of College Point Boulevard is slightly beyond the ¼-mile radius from the Willets Point Development District. Within the surveyed area, there are no legal spaces along Roosevelt Avenue, West Park Loop/Stadium Road, and 126th Street, with a mix of No Standing Anytime and No Parking Anytime, though there is frequent illegal parking along both sides of 126th Street.

As shown in Table 17-8, the number of parked vehicles counted for the AM, midday, and PM periods on a typical weekday (September 13, 2006) exceeds the capacity of spaces (except for the 6:00-7:00 PM hour), primarily due to the number of illegally parked vehicles along 126th Street between Roosevelt Avenue and Northern Boulevard. Some of the surveyed blocks along College Point Boulevard north of Northern Boulevard are also parked over capacity, with a number of trucks and other delivery vehicles double parked near the warehouses and industrial land uses there. Within the Willets Point Development District, many of the limited, unregulated blocks that have curb space for parking are typically filled to or beyond capacity by double-parked vehicles and vehicles blocking driveway/garage entrances. The number of parked vehicles remains below capacity for the hours surveyed during a typical Saturday midday without a Mets home game (July 21, 2007).

Table 17-8
Existing Hourly On-Street Parking

		Without Mets Game						With Mets Game					
		Weekday			Weekend			Weekday			Weekend		
Time	Corridor	Legal Capacity	Legal Occupancy	Illegal Occupancy	Legal Capacity	Legal Occupancy	Illegal Occupancy	Legal Capacity	Legal Occupancy	Illegal Occupancy	Legal Capacity	Legal Occupancy	Illegal Occupancy
7:00–8:00 AM	126th Street	0	0	32									
	Northern Boulevard	11	10	0									
	College Point Boulevard	113	113	3									
	Other	106	106	3									
8:00–9:00 AM	126th Street	0	0	35									
	Northern Boulevard	11	11	2									
	College Point Boulevard	113	113	16									
	Other	106	106	7									
9:00–10:00 AM	126th Street	0	0	37									
	Northern Boulevard	11	11	1									
	College Point Boulevard	151	129	0									
	Other	106	106	11									
11:00 AM–12:00 PM	126th Street	0	0	35	0	0	72				0	0	17
	Northern Boulevard	11	11	0	11	7	0				11	11	0
	College Point Boulevard	151	151	9	151	145	0				151	109	0
	Other	106	105	0	106	19	0				106	23	0
12:00–1:00 PM	126th Street	0	0	37	0	0	62				0	0	21
	Northern Boulevard	11	9	0	11	8	0				11	9	0
	College Point Boulevard	151	151	13	151	149	0				151	109	0
	Other	106	106	3	106	19	0				106	37	0
1:00–2:00 PM	126th Street	0	0	37	0	0	67				0	0	27
	Northern Boulevard	11	11	0	11	8	0				11	11	0
	College Point Boulevard	151	151	18	151	149	0				151	121	0
	Other	106	105	0	106	16	0				106	55	0
3:30–4:30 PM	126th Street										0	0	17
	Northern Boulevard										11	11	8
	College Point Boulevard										151	96	0
	Other										106	54	0
4:00–5:00 PM	126th Street	0	0	31									
	Northern Boulevard	0	0	4									
	College Point Boulevard	151	151	5									
	Other	106	98	0									
4:30–5:30 PM	126th Street							0	0	51	0	0	6
	Northern Boulevard							0	0	17	11	4	0
	College Point Boulevard							151	146	0	151	76	0
	Other							106	93	0	106	18	0
5:00–6:00 PM	126th Street	0	0	39									
	Northern Boulevard	0	0	2									
	College Point Boulevard	151	130	0									
	Other	106	93	0									
5:30–6:30 PM	126th Street							0	0	32	0	0	2
	Northern Boulevard							0	0	17	11	0	0
	College Point Boulevard							151	117	0	151	79	0
	Other							106	81	0	106	6	0
6:00–7:00 PM	126th Street	0	0	19									
	Northern Boulevard	0	0	0									
	College Point Boulevard	151	86	0									
	Other	106	65	0									
6:30–7:30 PM	126th Street							0	0	13			
	Northern Boulevard							0	0	6			
	College Point Boulevard							151	81	0			
	Other							106	61	0			

Notes: For weekdays and Saturday, the number of designated legal parking spaces increases from approximately 230 to 268 at 9:00 AM due to a 7:00–9:00 AM parking restriction along a section of College Point Boulevard For weekdays only, the number of designated legal parking spaces decreases from approximately 268 to 257 at 4:00 PM due to a 4:00–7:00 PM parking restriction along a section of Northern Boulevard (Number of spaces are within approximately ¼ mile of the Willets Point Development District.)

Also, as shown in Table 17-8, the number of vehicles parked on-street preceding a weeknight Mets Game (September 29, 2006), and before and after a weekend Mets game (July 15, 2007), are generally below capacity, except for the 4:30-5:30 PM hour on a weekday. Overall, game fans opt to park in pay and free lots rather than along the limited curb space on-street where available. With additional parking demand, typically for a weekend game, a small number of game fans park on-street along the south side of Northern Boulevard adjacent to the District and the blocks of 127th Street and 127th Place just south of Northern Boulevard. The illegal parking along the west side of 126th Street that is generally present during times without a Mets game is reduced during the pre- and post-game hours, likely due to the increased southbound traffic to the Shea Stadium lots and increased NYPD activity.

DUAL EVENT CONDITION

The "dual event" is an overlap of a Mets game at Shea Stadium and a U.S. Open tennis match (or matches) at the USTA National Tennis Center. The USTA National Tennis Center, located south of Shea Stadium and the Willets Point Development District, across Roosevelt Avenue, annually hosts the U.S. Open tennis tournament during a two-week span beginning at the end of August and ending in early September. Mets home games can potentially overlap with U.S. Open tennis matches on weekday evenings or during weekend middays (one such overlap is commonly known as "Super Saturday," corresponding to the U.S. Open women's singles final match and the men's two singles semifinal matches). This "Super Saturday" event overlap occurs approximately once every two years, so a quantitative analysis of this condition was not considered in this study. Previous attendance records of a U.S. Open tennis tournament approached 30,000 to 40,000 visitors per match; while the Mets home games typically draw about 20,000 visitors (for low attendance games) to about 45,000 visitors (for high attendance games). The 85th percentile attendance for Shea Stadium was determined at 40,450 visitors in the Shea Stadium Redevelopment Study Final Environmental Impact Statement (FEIS).

When these events occur simultaneously, the traffic volumes in the study area vicinity are higher than typically experienced. More rigorous traffic demand management measures are taken, such as additional NYPD presence at critical intersections around Shea Stadium and Flushing Meadows-Corona Park, and the use of portable variable message signs to implement the separation of baseball and tennis traffic, which facilitates better circulation of traffic to appropriate parking facilities. In general, the traffic demand management strategies keep Mets game traffic along routes north of Roosevelt Avenue and tennis tournament traffic along roads within the park, south of the Tennis Center. According to the Shea Stadium Redevelopment Study FEIS, the dual event conditions with the new Citi Field (discussed below in Section E: "The Future Without the Proposed Plan") would remain similar to existing conditions.

Since the dual event conditions are an infrequent occurrence, and since those conditions include special traffic control strategies in the vicinity of the Willets Point Development District, a quantitative traffic analysis was not done. The control strategies currently employed under the dual event condition are expected to continue under future conditions.

The Shea Stadium Redevelopment Study FEIS indicates that South Lot and Lot D are used by tennis patrons during a USTA event when there is no Mets home game. However, during a dual event, parking usage by tennis patrons shifts farther south in the park toward the LIE, since Mets game attendees use the lots around Shea Stadium, including South Lot and Lot D. Similar parking conditions are expected to remain when Citi Field is completed.

E. THE FUTURE WITHOUT THE PROPOSED PLAN

Future conditions without the Willets Point Development Plan (the No Build conditions) are established in order to provide the baseline against which the impacts of the proposed Plan can be compared and to account for changes in traffic conditions between existing conditions and the future analysis year. Future year conditions were analyzed for 2017. Future No Build traffic volumes were developed by applying a background traffic growth rate of one percent per year as stated in the *CEQR Technical Manual*, and by adding trips expected to be generated by anticipated development projects that are expected to be operational by 2017.

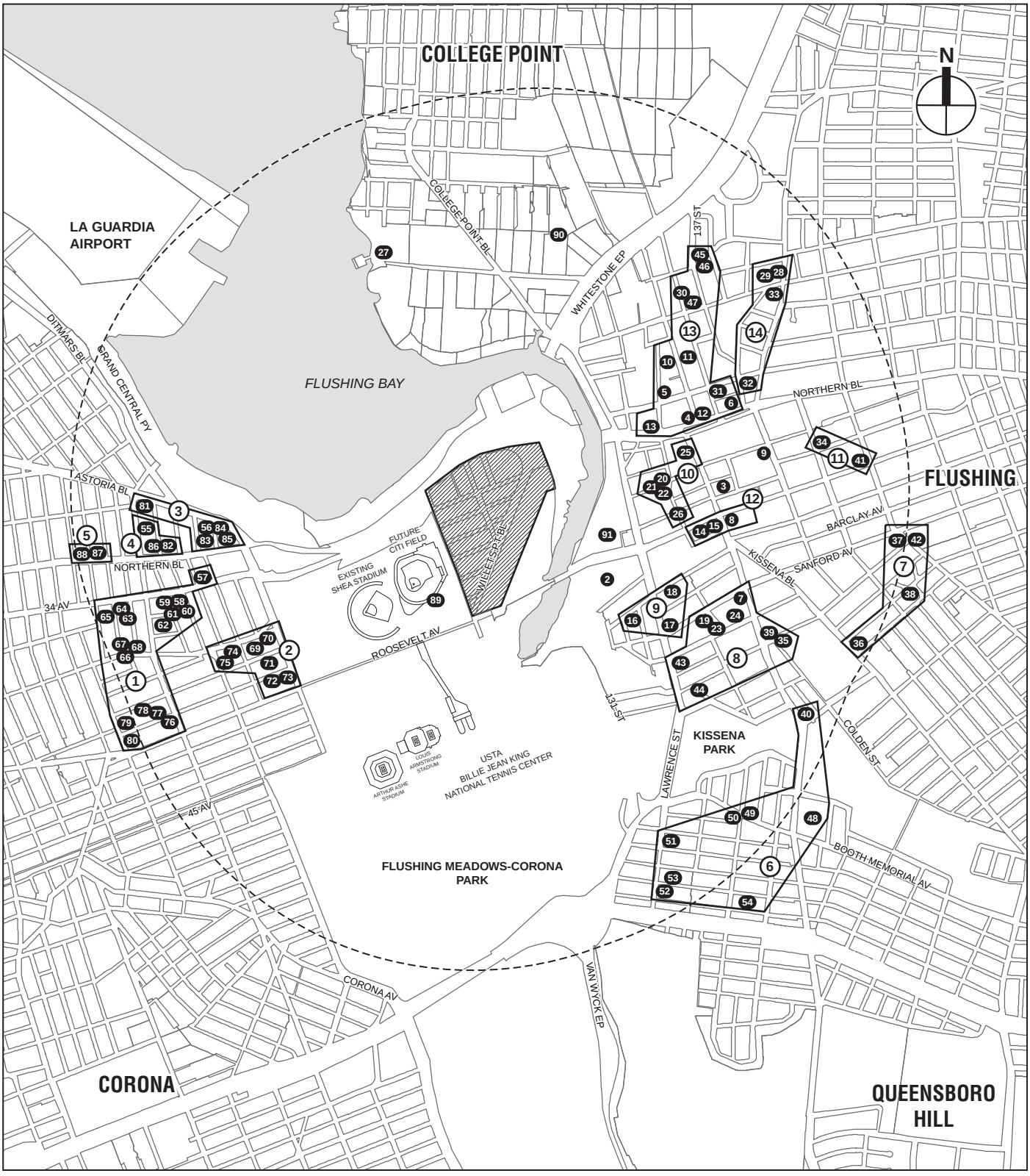
NO BUILD BACKGROUND PROJECTS

Trip generation and specific traffic assignments for anticipated development projects were taken directly from their respective Environmental Impact Statements (EIS) or EAS where such information was available. For projects where such information was not readily available, trip generation analyses were conducted to determine the volume of generated vehicle trips and these trips were assigned through study area intersections.

The 2017 No Build condition would include a large number of development projects—approximately 90—within an area approximately up to and including one mile of the Willets Point Development District. (See Table 17-9 for a complete list of No Build Projects in the one-mile study area and corresponding Figure 17-11). In order to assign the trips generated for these developments, clusters of developments were created based on their relative locations (to each other) and general land use composition. Many of the expected developments, generally those that consist of only residential units, are relatively small, ranging between one and 50 units. Fourteen clusters were created, grouping nearby projects that would have similar assignment routes based on their location. The clusters and corresponding No Build project numbers are presented in Table 17-10.

Traffic assignments for the following projects were taken directly from their respective EIS, EAS, or latest available information from on-going studies: Sky View Parc; Queens Crossing; RKO Keith Plaza; Flushing Commons; River Park Place; North Shore Marine Transfer Station; and Citi Field, which includes a small traffic increment only for game-day peak hours (based on its 2001 FEIS). For the College Point Boulevard Police Academy, most trips are expected to be generated during hours outside of the analysis peak hours for the proposed Plan. The minimal number of trips anticipated during some of the analysis peak hours for the proposed Plan would have little effect on the study area intersections and was assumed to be accounted for as part of the background growth. A summary of all No Build project-generated vehicle trips is presented in Table 17-11 for non-game-day peak hours and in Table 17-12 for game-day peak hours.

As shown in Table 17-11, the expected magnitude of background development generated volumes added to the study area network for the non-game peak hours would be substantial, ranging from approximately 1,700 to 3,810 trips, with the lowest increment expected during the weekday AM peak hour and highest during the Saturday midday peak hour. As shown in Table 17-12, the expected magnitude of background development generated volumes added to the study area network for the game peak hours would also be substantial, ranging from approximately 2,720 to 3,845 trips.



Willets Point Development District

Traffic and Parking Study Area Boundary (1-Mile Perimeter)

No Build Project Location (See Table 17-9)

Cluster

0 2000 FEET

SCALE

This figure has been updated since the DGEIS

Figure 17-11

Transportation Analysis No Build Project Locations

Table 17-9
No-Build Projects in the Traffic Study Area

Map No.[1]	Project Name/Address	Development Proposal/Program	Study Area	Build Year
1	Downtown Flushing One-Way Pair	Transportation project - Main Street to become one-way northbound; Union Street to become one-way southbound	primary/ secondary	2010
2	Sky View Parc - College Point Blvd and 40th Road	750 residential units, 760,000 sf retail, 51,800 sf restaurant, 3,000 parking spaces (the residential component may be developed in phases)	primary	2008 (UC)
3	Queens Crossing - Main Street and 39th Avenue	144,400 sf office, 110,000 sf retail, 29,600 sf community facility, 400 parking spaces	primary	2007 (UC)
4	RKO Keith Theater - Main Street and Northern Boulevard	200 residential units, 10,000 sf retail, 12,500 sf community facility, 229 parking spaces	primary	TBD
5	New Millennium - 134-03 35th Avenue	84 residential units, 33,600 sf community facility, 3,600 sf retail, 222 parking spaces	primary	2008
6	New Millennium Northern Boulevard - 137-61 Northern Boulevard	91 residential units, 60 hotel rooms, 35,722 sf community facility, 17,167 sf retail, 223 parking spaces	secondary	2008
7	Victoria Tower - 41-60 Main Street	178 residential units	secondary	2007-8 (UC)
8	Caldor Site - 136-20 Roosevelt Avenue	155,000 sf retail	secondary	TBD
9	Flushing Commons (Municipal Parking Lot 1) - 138th Street, 37th Avenue, 39th Avenue, and Union Street	500 residential units; 200,000 sf of retail; 100,000 sf of office; 100,000 sf of community facility space; 1,600 parking spaces, including 760 accessory spaces; and either 250 hotel rooms or an additional 120,000 sf of office	secondary	2011
10	33-34 Farrington Street	20,469 sf storage facility	primary	2007 (UC)
11	33-35 Farrington Street	9,887 sf hotel	primary	2007 (UC)
12	137-07 Northern Boulevard	38 residential units	primary	2007 (UC)
13	134-39 Northern Boulevard	12,212 sf expansion to existing office building	primary	2007 (UC)
14	135-11 40th Road	14 residential units, 55,170 sf office	primary	2007 (UC)
15	40-22 Main Street	17,015 sf retail	primary	2007 (UC)
16	41-18 Haight Street	6 residential units	primary	
17	41-55 College Point Boulevard	50 residential units	primary	2007 (UC)
18	132-27 to 132-61 41st Road	43 residential units	primary	2007 (UC)
19	5-10 Summit Court	18 residential units	secondary	2007 (UC)
20	133-53 37th Avenue	47 residential units	primary	2007 (UC)
21	133-51 37th Avenue	9,050 sf office	primary	2007 (UC)
22	133-40 37th Avenue	12,742 sf office	primary	2007 (UC)
23	132-73 Maple Avenue	8 residential units	secondary	2007 (UC)
24	134-43 Maple Avenue	23 residential units	secondary	2007 (UC)
25	36-36 Main Street	26,936 sf office	primary	2007 (UC)
26	133-47 39th Avenue	12,270 sf office, 11,420 sf retail, 9,755 sf medical office	primary	2008
27	North Shore Marine Transfer Station - 31st Avenue & 122nd Street	Converted facility will receive and containerize DSNY-managed waste from Queens Community Districts 7 through 14	secondary	2011
28	31-38, 31-22 Union Street	30 residential units	secondary	2007 (UC)
29	140-24 31st Drive	20 residential units	secondary	2007 (UC)
30	31-33 Linden Place	8 residential units	primary	2007 (UC)
31	136-16 35th Avenue	28 residential units	secondary	2007 (UC)
32	138-06 35th Avenue	9 residential units	secondary	2007 (UC)
33	32-18 Union Street	8 residential units	secondary	2007 (UC)
34	143-21 38th Avenue	25 residential units	secondary	2007 (UC)
35	P.S. 244 - 137-20 Franklin Avenue	441-seat primary school	secondary	2007 (UC)
36	140-22 Beech Avenue	42 residential units	secondary	2007 (UC)
37	143-51 Franklin Avenue	1 residential unit	secondary	2007 (UC)
38	143-22 Beech Avenue	2 residential units	secondary	2007 (UC)
39	42-33 Main Street	66 residential units	secondary	2007-8
40	43-57 Main Street	2,085 sf office, retail	secondary	2007 (UC)
41	38-34 Parsons Boulevard	40 residential units	secondary	2007 (UC)
42	42-11 Parsons Boulevard	20 residential units	secondary	2007 (UC)
43	132-25 Pople Avenue	14 residential units	secondary	2007 (UC)
44	133-20 Avery Avenue	26 residential units	secondary	2007 (UC)
45	137-04 31st Road	3 residential units	secondary	2007 (UC)
46	31-27 137th Street	9 residential units	secondary	2007 (UC)
47	31-38 137th Street	16 residential units	secondary	2007 (UC)
48	New York Hospital Queens	Major modernization program – New hospital addition with 80 beds	secondary	2007 (UC)
49	56-71 136th Street	2 residential units	secondary	2007 (UC)
50	135-02 Booth Memorial Avenue	3 residential units	secondary	2007 (UC)
51	57-35 Lawrence Street	5 residential units	secondary	2007 (UC)
52	132-14 59th Avenue	2 residential units	secondary	2007 (UC)

Table 17-9 (cont'd)
No-Build Projects in the Traffic Study Area

Map No.[1]	Project Name/Address	Project Name/Address	Study Area	Build Year
53	132-35 59th Avenue	2 residential units	secondary	2007 (UC)
54	136-20 59th Avenue	3 residential units	secondary	2007 (UC)
55	32-37 108th Street	2 residential units	secondary	2007 (UC)
56	32-10 112th Street	4 residential units	secondary	2007 (UC)
57	111-17 34th Avenue	2 residential units	secondary	2007 (UC)
58	109-18 34th Avenue	6 residential units	secondary	2007 (UC)
59	109-12 34th Avenue	3 residential units	secondary	2007 (UC)
60	34-30 110th Street	5 residential units	secondary	2007 (UC)
61	35-01 109th Street	3 residential units	secondary	2007 (UC)
62	108-18 35th Avenue	3 residential units	secondary	2007 (UC)
63	34-12 107th Street	3 residential units	secondary	2007 (UC)
64	106-08 34th Avenue	6 residential units	secondary	2007 (UC)
65	34-16 106th Street	3 residential units	secondary	2007 (UC)
66	106-07 37th Avenue	5 residential units	secondary	2007 (UC)
67	34-64 107th Street	3 residential units	secondary	2007 (UC)
68	34-59 106th Street	4 residential units	secondary	2007 (UC)
69	112-31 38th Avenue	18 residential units	secondary	2007 (UC)
70	112-37 38th Avenue	8 residential units	secondary	2007 (UC)
71	112-26 38th Avenue	18 residential units	secondary	2007 (UC)
72	112-34 39th Avenue	8 residential units	secondary	2007 (UC)
73	112-32 39th Avenue	8 residential units	secondary	2007 (UC)
74	111-03 38th Avenue	3 residential units	secondary	2007 (UC)
75	111-13 38th Avenue	8 residential units	secondary	2007 (UC)
76	39-06 108th Street	22 residential units	secondary	2007 (UC)
77	104-63 39th Avenue	4 residential units	secondary	2007 (UC)
78	104-52 38th Avenue	4 residential units	secondary	2007 (UC)
79	104-20 38th Avenue	8 residential units	secondary	2007 (UC)
80	104-24 39th Avenue	8 residential units	secondary	2007 (UC)
81	108-04, 14, 16 Astoria Blvd [2]	84 residential units, 69,930 sf community facility	secondary	2013
82	110-09 Northern Boulevard [2]	31 residential units, 15,500 sf of commercial use	secondary	2013
83	111-10, 12, 16 Astoria Blvd; 32-20 112th Street; 32-19 111th Street [2]	78 residential units, 65,242 sf community facility, 51 parking spaces	secondary	2013
84	112-12, 18, 24 Astoria Blvd [2]	38 residential units, 32,068 sf community facility	secondary	2013
85	Block bounded by Astoria Blvd, Northern Blvd, and 112th Place [2]	147 residential units, 73,329 sf of commercial use	secondary	2013
86	108-09 Northern Boulevard	18 residential units, 8,970 sf commercial	secondary	2007 (UC)
87	106-15 Northern Boulevard	11 residential units, 5,502 sf commercial	secondary	2007 (UC)
88	32-56 106th Street	14 residential units, 7,144 commercial	secondary	2007 (UC)
89	Shea Stadium Redevelopment	New 44,100-seat stadium (to replace existing 56,000-seat stadium) and redistribution of 8,800 existing parking spaces	primary	2009
90	College Point Police Academy - 129-05 31st Avenue	450,000-square-foot physical training area, 250 beds for visiting law enforcement agencies, 250 classrooms, firing range and fields for emergency-vehicle and other training exercises	secondary	2012
91	River Park Place - 39-08 Janet Place	475 residential units, 10,200 sf retail, 1,500 sf community facility, 251,000 sf office, and either 175 hotel rooms or an additional 96,500 sf of office	primary	2011

Notes:
UC = Under Construction when data used for analysis purposes was compiled.
[1] See Figure 2-1.
[2] Projects anticipated as a result of the North Corona Rezoning (CEQR No. 03DCP058Q).
Sources: AKRF, Inc., New York City Department of City Planning, New York City Department of Buildings.

Table 17-10
No Build Project Clusters

Cluster ID No.	No Build Projects (Refer to Figure 17-11)
1	57,58,59,60,61,62,63,64,65,66,67,68,69,77,78,79,80
2	69, 70,71,72,73,74,75
3	56,81,83,84,85
4	55,82,86
5	87,88
6	40,48,49, 50,51,52,53,54
7	36,37,38,42
8	7,19,23,24,35,39,43,44
9	16, 17,18
10	20,21,22,25,26
11	34,41
12	8,14,15
13	5,6,10,11,12,13,30,31,45,46,47
14	28,29,32,33

Table 17-11
Vehicle Trips from Background Development Projects – Non-Game Day

Project Name / Project Cluster	AM Peak		Midday Peak		PM Peak		Sat. Midday	
	In	Out	In	Out	In	Out	In	Out
Sky View Parc	156	172	525	448	449	446	651	602
Queens Crossing	81	13	84	101	74	132	125	115
RKO Keith	8	23	18	19	31	20	33	31
Flushing Commons	226	134	407	380	322	451	484	452
River Park Place	177	48	59	78	52	215	48	41
Cluster 1	1	9	1	1	7	1	6	2
Cluster 2	0	11	2	2	10	2	10	8
Cluster 3	62	68	131	135	106	94	178	146
Cluster 4	6	11	36	36	22	19	48	39
Cluster 5	3	6	17	17	12	11	25	20
Cluster 6	51	10	12	8	22	51	12	8
Cluster 7	1	6	2	2	6	3	3	3
Cluster 8	21	38	11	11	32	17	16	16
Cluster 9	2	10	3	3	10	4	4	4
Cluster 10	36	9	24	28	12	47	19	13
Cluster 11	1	7	2	2	6	3	3	3
Cluster 12	77	34	187	158	153	202	288	268
Cluster 13	37	50	56	53	55	48	34	31
Cluster 14	1	7	2	2	7	2	2	2
North Shore Marine Transfer Station	47	42	11	12	6	6	9	10
TOTAL TRIPS ASSIGNED TO NO BUILD	**994**	**708**	**1,590**	**1,496**	**1,394**	**1,774**	**1,998**	**1,814**

Table 17-12
Vehicle Trips from Background Development Projects – Game Day

Project Name / Project Cluster	Weekday Pre-game		Weekend Pre-game		Weekend Post-game	
	In	Out	In	Out	In	Out
Sky View Parc	381	379	618	572	585	541
Queens Crossing	63	112	119	109	113	104
RKO Keith	26	17	31	30	30	28
Flushing Commons	274	383	460	429	436	407
River Park Place	35	34	46	40	45	38
Cluster 1	4	1	4	4	4	4
Cluster 2	10	2	10	10	10	10
Cluster 3	87	68	169	147	170	148
Cluster 4	18	15	48	40	48	40
Cluster 5	9	8	24	20	24	20
Cluster 6	19	50	12	8	12	8
Cluster 7	5	3	3	3	3	3
Cluster 8	28	14	16	16	17	17
Cluster 9	8	4	4	4	4	4
Cluster 10	10	40	18	13	18	12
Cluster 11	5	2	3	3	3	3
Cluster 12	131	172	274	255	259	241
Cluster 13	47	42	33	30	32	29
Cluster 14	7	2	2	2	2	2
North Shore Marine Transfer Station	6	5	10	12	15	16
Citi Field	195	0	195	0	0	195
TOTAL TRIPS ASSIGNED TO NO BUILD	**1,368**	**1,353**	**2,099**	**1,747**	**1,830**	**1,870**

In addition to the No Build projects, improvements resulting from NYCDOT's Safe Streets for Seniors initiative have been included in the No Build analysis. These improvements are focused in downtown Flushing at designated senior crossing locations and include signal timing changes to accommodate senior crossing walk times and geometric modifications such as lane restriping.

Also included in the 2017 No Build condition is the proposed one-way pairing of Main Street and Union Street in Downtown Flushing. The proposed one-way pair plan, which is anticipated for implementation in 2010, would include: Main Street one-way northbound and Union Street one-way southbound between Sanford Avenue and Northern Boulevard; a southbound contra-flow bus lane along Main Street between Northern Boulevard and Sanford Avenue and a northbound contra-flow bus lane along Union Street between Roosevelt Avenue and Northern Boulevard; a northbound with-flow bus lane on Main Street between 40th Road and Northern Boulevard; two general travel lanes on Main Street, and two to three general travel lanes (depending on block) on Union Street; Sanford Avenue two-way between Kissena Boulevard and Main Street (it is one-way westbound under existing conditions); minor sidewalk widening along Main Street; and geometric modifications and/or signal timing changes at intersections along Main Street and Union Street. For those intersections designated as senior crossing locations and included under the one-way pair with contraflow bus lanes study, minimum senior crossing walk times are incorporated into the timing plans. A loss of on-street parking along sections of Main Street, Union Street, Northern Boulevard, and Sanford Avenue is also expected due to geometric changes and traffic operations under the one-way pair plan. Also, the unsignalized intersection of Northern Boulevard and College Point Boulevard would be signalized.

The proposed one-way pair plan includes traffic circulation changes at the following Willets Point Development Plan traffic study locations in Downtown Flushing:

- College Point Boulevard at Northern Boulevard

- Prince Street at Northern Boulevard
- Main Street at Northern Boulevard
- Union Street at Northern Boulevard
- College Point Boulevard at Roosevelt Avenue
- Prince Street at Roosevelt Avenue
- Main Street at Roosevelt Avenue
- Union Street at Roosevelt Avenue
- Main Street at Kissena Boulevard
- College Point Boulevard at Sanford Avenue
- Union Street at Sanford Avenue

However, the one-way pair plan would not add additional traffic volumes to the network. Also, any southbound volumes on Main Street and northbound volumes on Union Street under the 2017 No Build condition would be transit buses using the contra-flow bus lanes.

The one-way pair with bus contraflow lanes on Main and Union Streets has been assumed throughout the DGEIS traffic studies and has been carried through the FGEIS as well, reflecting the outcome of the initial Downtown Flushing Traffic Simulation Study completed in 2006 and reviewed with NYCEDC, NYCDOT, and MTA New York City Transit (MTA/NYCT). However, NYCDOT has recently indicated a preference for a one-way traffic plan which converts Main and Union Streets to one-way traffic flow (and again with Main Street operating northbound and Union Street operating southbound) but without the addition of bus contraflow lanes on each street. Buses would operate in the same direction as general traffic. This alternative, which is discussed qualitatively below, will be the subject of a comprehensive follow-up simulation study where the findings of this simulation study will be reviewed by involved City Agencies.

General vehicular traffic patterns and volumes would be virtually identical under both one-way plans but under the alternative without contraflow there could be additional street capacity available to general traffic as well as sidewalks that are wider than envisioned under the one-way plan with the bus contraflow lanes. As such, it is likely that the one-way pair with bus contraflow lanes assumption carried through the DGEIS and this FGEIS presents a conservative assessment of general vehicular traffic conditions, potential impacts, and potential mitigation measures.

The alternative without contraflow would require a rerouting of all or nearly all bus routes serving the downtown Flushing area. For example, bus routes that currently operate in both directions along Main Street—and which would continue to operate in both directions along Main Street under the one-way plan with the bus contraflow lanes—would now have their southbound trips diverted to Union Street under the plan without contraflow. Due to the changes in bus routings, at some locations there would be new left turn or right turn movements made by buses, and the need to redesign the routes will also be addressed within the follow-up simulation study.

The simulation study for the alternative without contraflow is currently being conducted. While NYCDOT believes that the simulation study will show that the alternative without contraflow is the preferable option, the detailed analysis and the findings of the study will not be available until after this FGEIS is completed. The findings of this study will be reviewed by NYCDOT

and MTA/NYCT before the optimal overall plan is selected for implementation. At this time, the assumptions made for the FGEIS represent a reasonable source of information because it relies on a completed analysis representing a conservative prediction of future conditions. The final configuration will be selected once the simulation study and agency reviews are completed. The assumption of the one-way plan with the bus contraflow lanes employed in the DGEIS and this FGEIS does not mean that the affected City agencies have committed to its implementation.

Based on access and egress changes expected once Citi Field replaces Shea Stadium, a game-day-only change in the circulation of some stadium traffic in the vicinity of West Park Loop/Stadium Road, 126th Street, and Boat Basin Road is included in the No Build condition. Under the 2017 No Build condition, the primary entrance/exit for the main Citi Field lot would be located at the intersection (traffic circle) of Stadium Road and Boat Basin Road, instead of at the intersection of Stadium Road, 34th Avenue, and 126th Street, as is the case for Shea Stadium under existing conditions. For arriving game traffic during the weekday PM and weekend midday peak hours, ramp traffic from eastbound Astoria Boulevard and the Grand Central Parkway that currently enters the main Shea Stadium lot through the entrance at the intersection of 126th Street and 34th Avenue would shift to the proposed Citi Field entrance on Stadium Road at Boat Basin Road. For departing game traffic during the weekend PM peak hour, traffic that currently exits on 126th Street near its intersection with 34th Avenue and routes toward westbound Northern Boulevard, westbound Astoria Boulevard, and the westbound Grand Central Parkway would use the proposed primary exit on Stadium Road and travel north on Boat Basin Road to the unsignalized intersection with World's Fair Marina to access their departure routes.

NO BUILD TRAFFIC CONDITIONS

Traffic volume increases on the study area's roadway network due to the cumulative effect of background projects are quantified and discussed below. The peak hour volumes reported below include the Table 17-11 and Table 17-12 traffic volumes assigned to the study area's networks, but do not include the general 1 percent per year growth rate that has been separately applied to existing traffic volumes, which would add about 11.5 percent more traffic to all streets. However, the 1 percent per year increase, as well as the diversions previously discussed, are included in the 2017 No Build totals. Because of background growth and No Build developments, very substantial increases in traffic volumes can be expected under the 2017 No Build condition, independent from those that the Willets Point Development Plan would add (discussed below in Section F: "Probable Impacts of the Proposed Plan").

The more substantial traffic increases between existing and No Build conditions would occur along the primary streets in the study area network, including Northern Boulevard, Roosevelt Avenue, Astoria Boulevard, and College Point Boulevard. Projected volume increases on northbound Main Street and southbound Union Street in Downtown Flushing are mostly due to the one-way pair plan; however, those volume increases correspond to equally substantial volume decreases in the opposite directions on those two streets. Furthermore, it should be noted that while eastbound Northern Boulevard volumes between Main Street and Union Street would also increase due to circulation changes under the one-way pair plan, volumes on westbound Northern Boulevard between those two streets would decrease.

During game-day conditions, the development of Citi Field would cause some stadium traffic circulation changes as compared with existing conditions with Shea Stadium. As previously discussed, the circulation change would be due to relocation of one of the main lot's entrances

from the intersection of 126th Street at Stadium Road/34th Avenue to the intersection (traffic circle) of Boat Basin Road at Stadium Road. The traffic shift would primarily affect post-game traffic circulation, with an increase in traffic traveling northbound on Boat Basin Road and a corresponding decrease in traffic traveling northbound on 126th Street. Weekend post-game volumes on northbound 126th Street in the vicinity of Stadium Road/34th Avenue and Northern Boulevard are expected to decrease by about 850 vph, with a corresponding increase on northbound Boat Basin Road.

Northern Boulevard volumes through Downtown Flushing between Parsons Boulevard and Union Street can be expected to increase by about 170 to 450 vph during the seven peak hours. Due primarily to the traffic circulation changes for the one-way pair plan, westbound Northern Boulevard volumes between Main Street and Union Street would decrease by about 130 to 240 vph, while eastbound Northern Boulevard volumes along the same section would increase by about 720 to 1,170 vph during the seven peak hours. The westbound volume decrease would be due to the shift of northbound traffic from the Union Street intersection to the Main Street intersection, which feeds westbound Northern Boulevard; the eastbound volume increase would be due in part to a shift of eastbound right turning traffic from the Main Street intersection to the Union Street intersection. At Prince Street and farther west, adjacent to the Willets Point Development District and Citi Field, Northern Boulevard volumes can be expected to increase by approximately 95 to 510 vph per direction during the all of the peak hours. Northern Boulevard volumes in the vicinity of 108th and 114th Street can be expected to increase by about 185 to 530 vph per direction during the seven peak hours.

Roosevelt Avenue volumes can be expected to increase by about 5 to 280 vph per direction in the weekday AM peak hour, by about 75 to 400 vph per direction in the weekday midday and PM and weekday pre-game peak hours, by about 160 to 510 vph per direction in the Saturday midday non-game peak hour, and by about 130 to 515 vph per direction in the two weekend game-day peak hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard, due in part to diversions for the one-way pair plan. Adjacent to the Willets Point Development District and Citi Field, Roosevelt Avenue volumes can be expected to increase by approximately 160 to 385 vph per direction during the seven peak hours. Roosevelt Avenue volumes in the vicinity of 108th, 111th, and 114th Street can be expected to increase by about 100 to 310 vph per direction during all of the peak hours.

Kissena Boulevard volumes near the intersection with Main Street can be expected to increase by approximately 450 to 555 vph per direction during all of the peak hours. A significant portion of the increase would be due to diversions for the one-way pairing of Main Street and Union Street.

Sanford Avenue volumes through Downtown Flushing between Parsons Boulevard and College Point Boulevard can be expected to increase by about 20 to 115 vph per direction during the seven peak hours.

On the west side of the study area, in the vicinity of 114th Street, and also within the Willets Point Development District, volumes on 34th Avenue can be expected to increase by about 5 to 55 vph during all of the peak hours.

Astoria Boulevard volumes in the vicinity of 108th and 114th Streets can be expected to increase by about 135 to 300 vph per direction during the seven peak hours.

Volumes along West Park Loop/Stadium Road can be expected to increase by up to about 75 vph during the non-game peak hours, by up to about 85 vph during the pre-game peak hours, and

by up to about 200 vph during post-game peak hour. During the pre-game peak hours, there would be a small decrease in southbound traffic on West Park Loop/Stadium Road of up to approximately 35 vph due to a diversion to the new Citi Field main lot entrance at the intersection (traffic circle) with Boat Basin Road.

College Point Boulevard volumes between Sanford Avenue and Roosevelt Avenue can be expected to increase by about 115 to 585 vph per direction during all of the peak hours.

Northbound Main Street volumes from Kissena Boulevard to Northern Boulevard can be expected to increase by approximately 535 to 1,005 vph during the seven peak hours, primarily because of the diversions for the one-way pairing with Union Street. Southbound Main Street volumes would reduce to bus-only traffic, decreasing by about 390 to 650 vph during all of the peak hours.

Southbound Union Street volumes can be expected to increase by approximately 470 to 1,110 vph during the seven peak hours, primarily because of the diversion for the one-way pairing with Main Street. Northbound Union Street volumes between Roosevelt Avenue and Northern Boulevard would reduce to bus-only traffic, decreasing by about 495 to 600 vph during the seven peak hours. There would not be any northbound traffic on Union Street between Sanford Avenue and Roosevelt Avenue.

Parsons Boulevard volumes between Northern Boulevard and Sanford Avenue can be expected to increase by about 35 to 60 vph per direction during the seven peak hours.

Volumes along 108th Street in the vicinity of Astoria Boulevard and Northern Boulevard and at Roosevelt Avenue can be expected to increase by about 10 to 70 vph per direction during the seven peak hours.

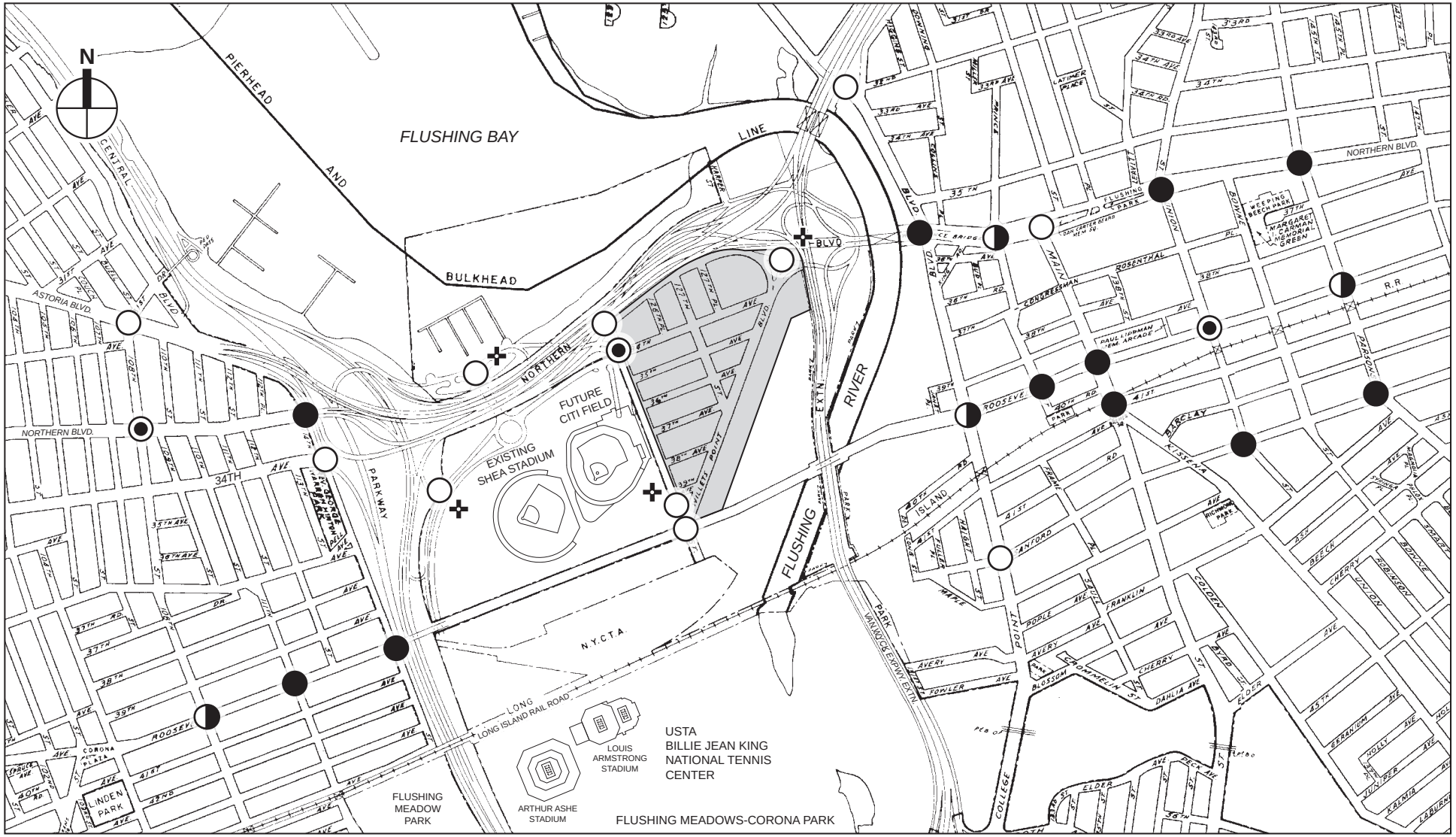
Prince Street volumes at Northern Boulevard and Roosevelt Avenue can be expected to increase by approximately 35 to 150 vph per direction during the seven peak hours. A portion of the increase would be due to diversions for the one-way pairing of Main Street and Union Street.

Volumes along 111th Street in the vicinity of Roosevelt Avenue can be expected to increase by about 20 to 35 vph per direction during the all of the peak hours.

Volumes along 114th Street in the vicinity of Northern Boulevard and Roosevelt Avenue can be expected to increase by approximately 20 to 135 vph per direction during the seven peak hours.

Based on these projected traffic volume changes, 2017 No Build traffic levels of service were determined for the 29 No Build analysis locations within the study area. Tables 17-13 and 17-14 show comparisons of overall intersection and individual movement levels of service, respectively, for existing and 2017 No Build conditions for non-game-day peak hours, and Tables 17-15 and 17-16 show the comparisons for the game-day peak hours. Figures 17-12 through 17-18 present an illustrative overview of overall intersection traffic levels of service throughout the study area. It is clear, in comparing overall intersection levels of service and individual traffic movement levels of service, that considerably more locations would operate at LOS E or F under the 2017 No Build condition than in existing conditions due to the substantial additional volumes generated by the approximately 90 expected background developments superimposed on top of a background growth rate of 11.5 percent.

9.9.08



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

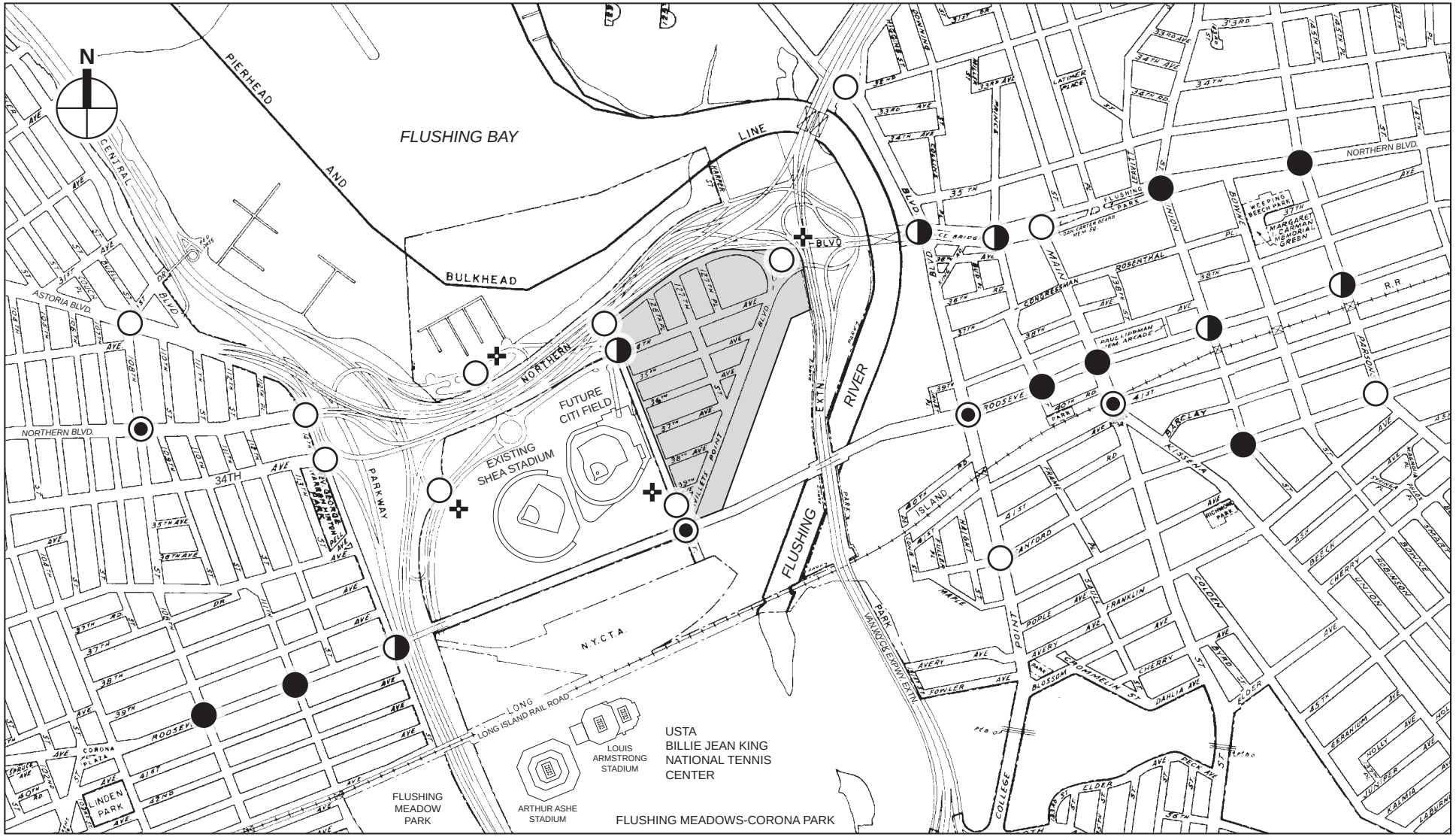
NOTE: *Overall intersection LOS is shown*

This figure has been updated since the DGEIS

Figure 17-12

No Build Traffic Levels of Service Weekday Non-Game AM Peak Hour

9.9.08



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

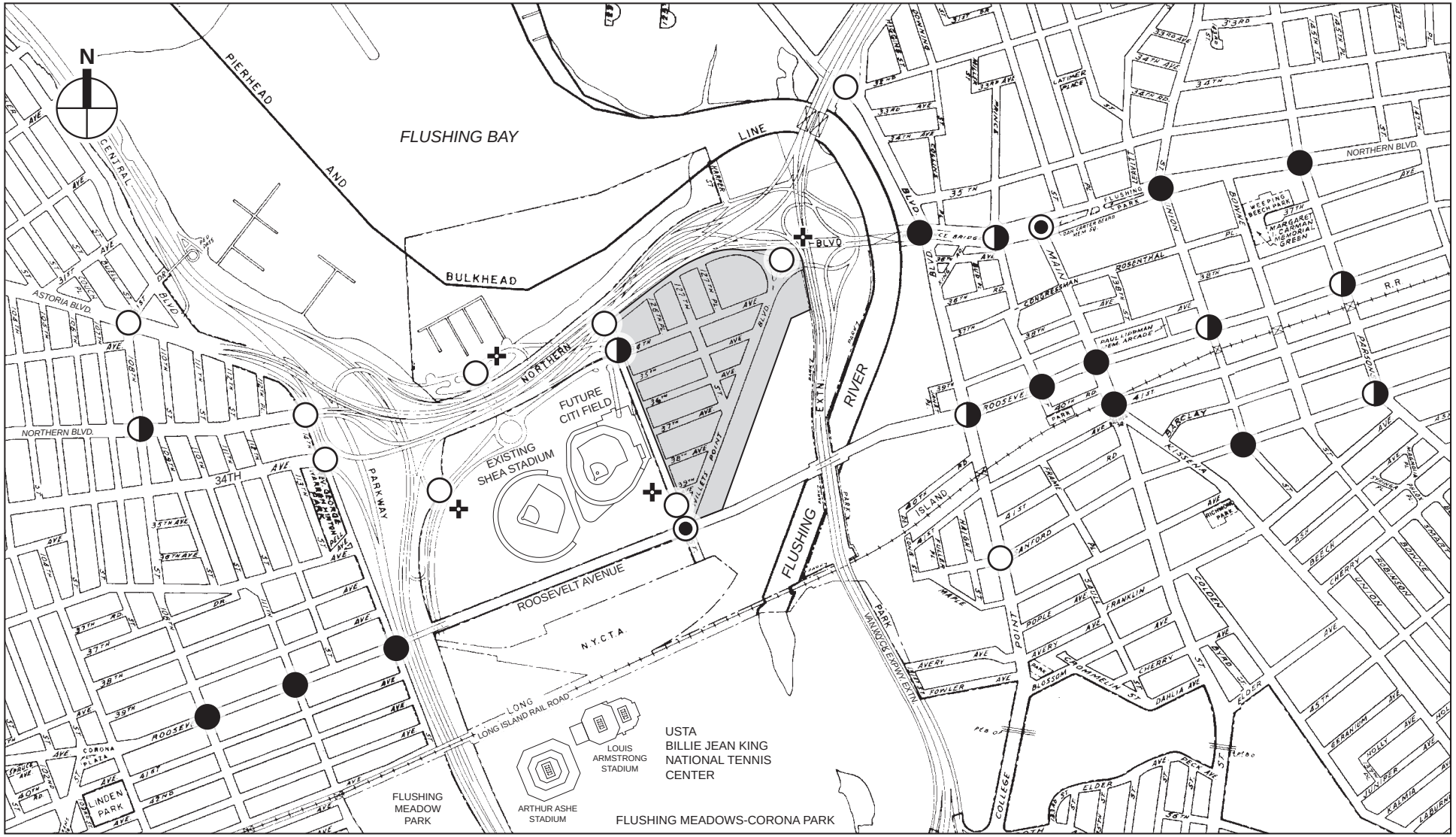
0 1000 2000 FEET

SCALE

This figure has been updated since the DGEIS

Figure 17-13

No Build Traffic Levels of Service
Weekday Non-Game Midday Peak Hour



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

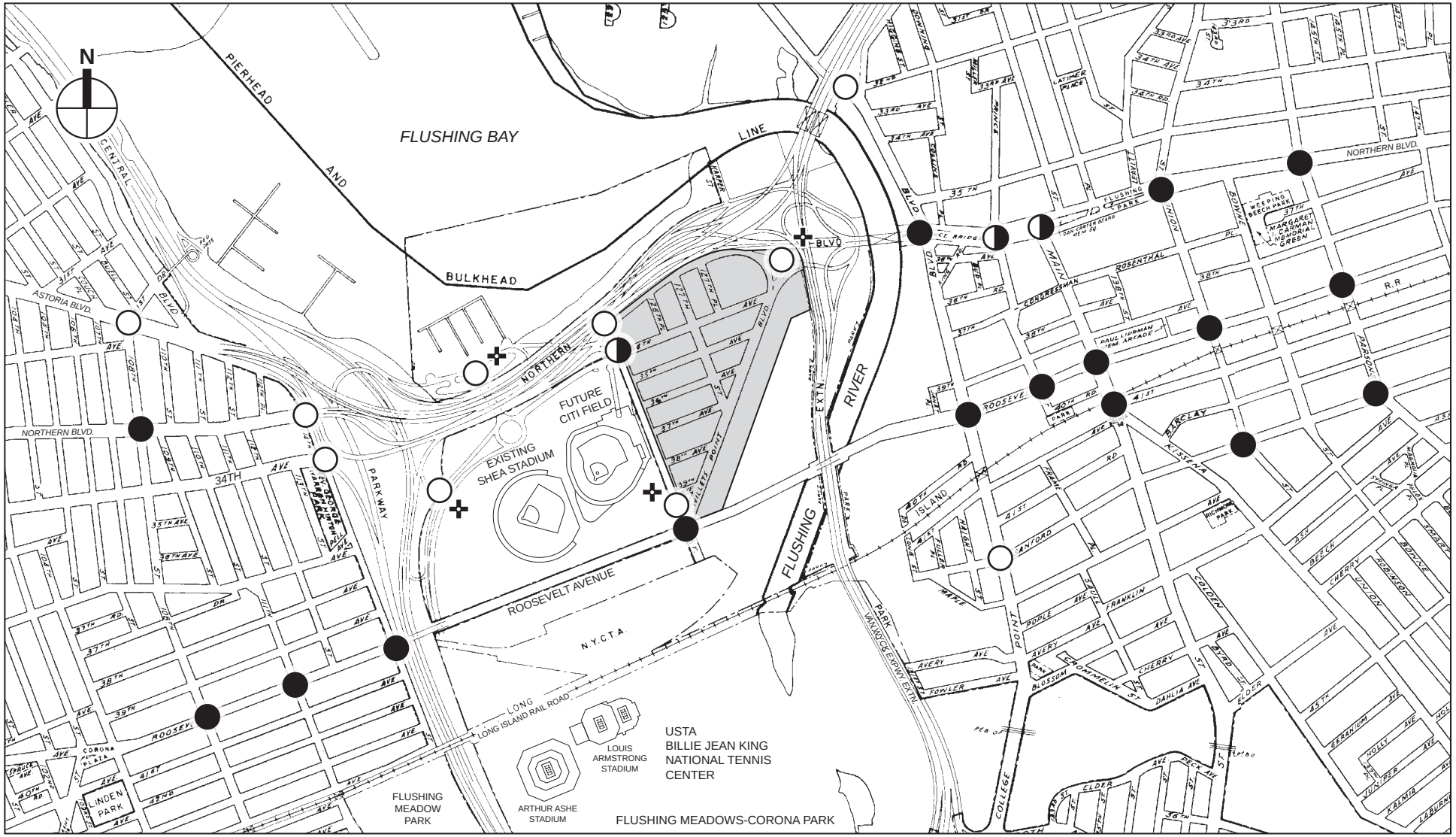
SCALE

This figure has been updated since the DGEIS

Figure 17-14

No Build Traffic Levels of Service
Weekday Non-Game PM Peak Hour

9.9.08



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

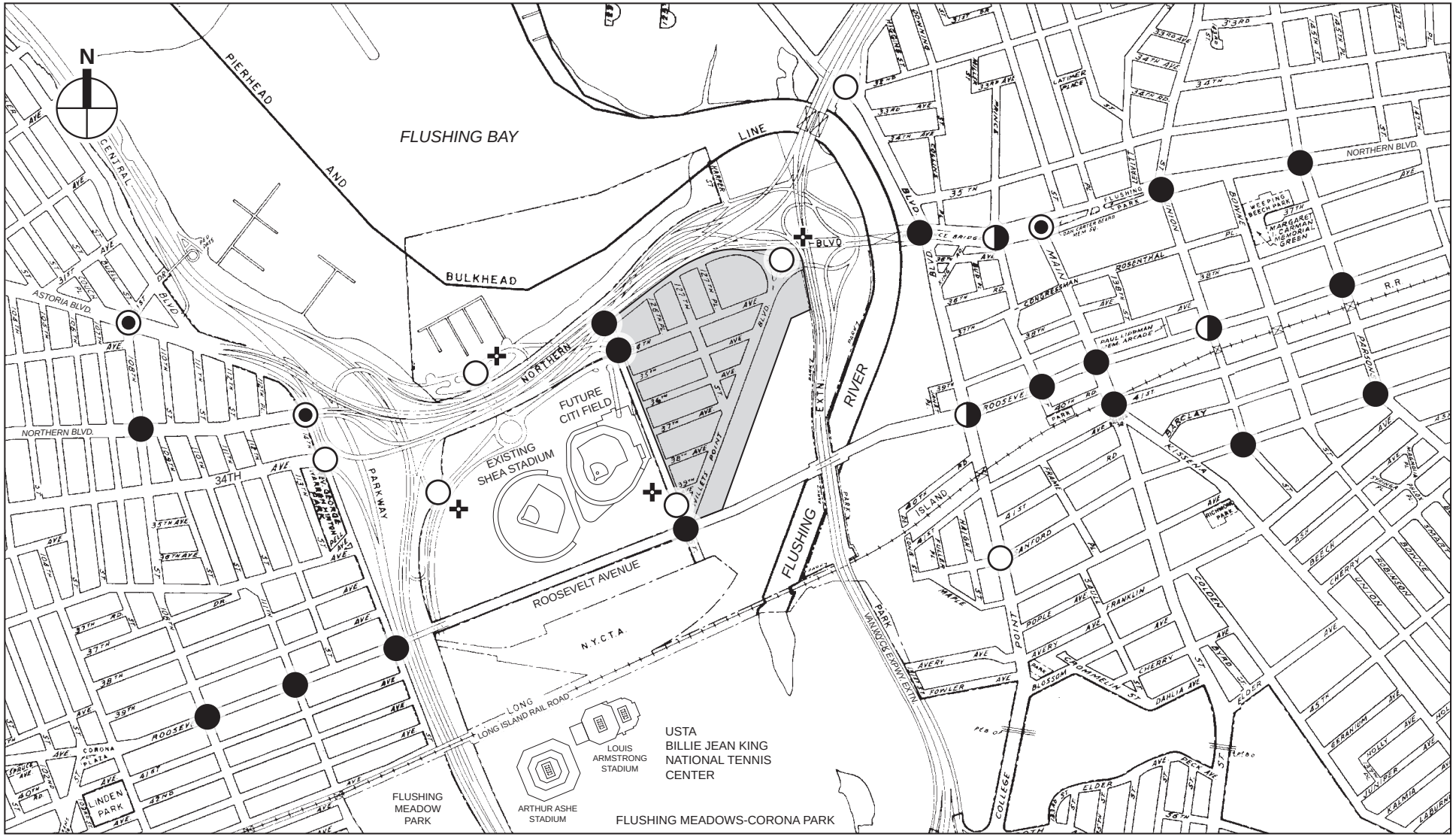
SCALE

This figure has been updated since the DGEIS

Figure 17-15

No Build Traffic Levels of Service
Saturday Non-Game Midday Peak Hour

9.9.08



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

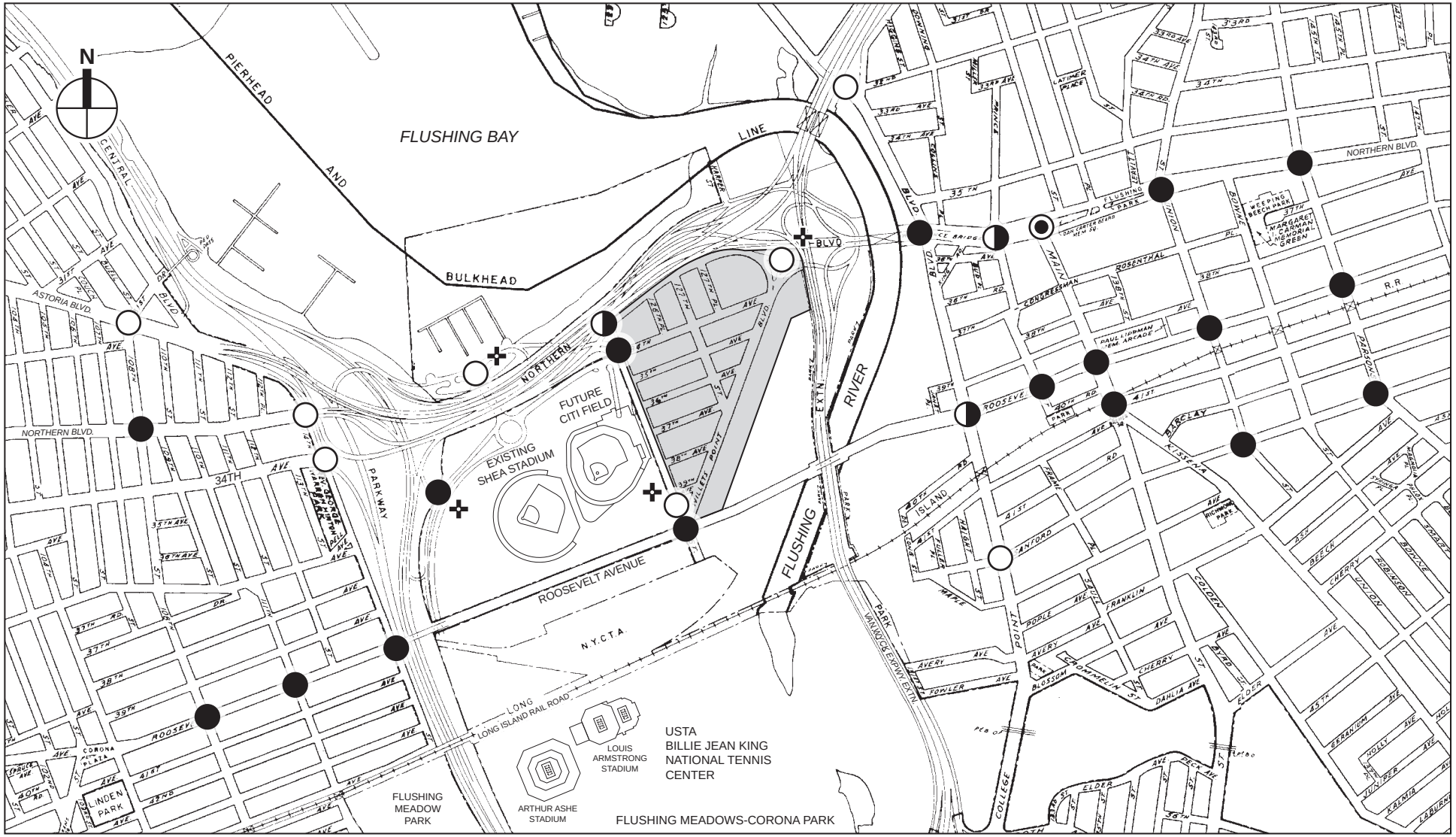
SCALE

This figure has been updated since the DGEIS

Figure 17-16

No Build Traffic Levels of Service Weekday Pre-Game Peak Hour

9.9.08



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

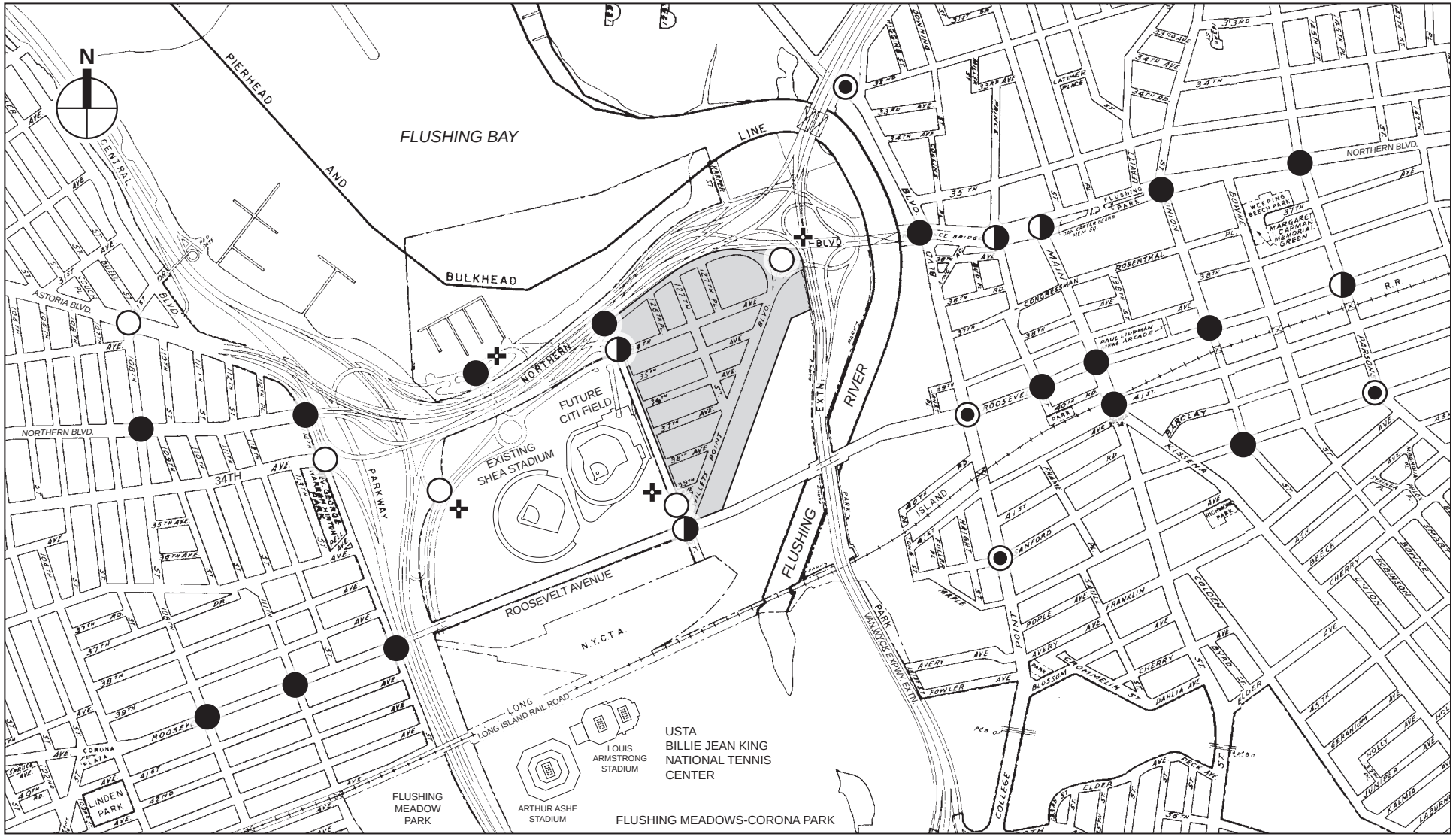
0 1000 2000 FEET

SCALE

This figure has been updated since the DGEIS

Figure 17-17

No Build Traffic Levels of Service
Saturday Pre-Game Peak Hour



Willets Point Development District

Unsignalized Intersection

LOS A, B, or C

LOS D

LOS E

LOS F

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

SCALE

This figure has been updated since the DGEIS

Figure 17-18

No Build Traffic Levels of Service
Saturday Post-Game Peak Hour

Table 17-13
Overall Intersection Level of Service Summary Comparison
Existing vs. 2017 No Build Conditions – Non-Game Day

Signalized Intersections	Existing Conditions				2017 No Build Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	24 Signalized Intersections				25 Signalized Intersections [1]			
Overall Intersection LOS A/B/C	15	19	16	12	7	8	6	6
Overall Intersection LOS D	8	5	6	10	3	5	2	0
Overall Intersection LOS E	1	0	2	2	4	5	7	3
Overall Intersection LOS F	0	0	0	0	11	7	10	16

Notes: [1] Under 2017 No Build conditions, the intersection of Northern Boulevard and College Point Boulevard would be signalized. During the non game peak hours, all 4 unsignalized intersections would operate at overall LOS A/B or C.

Table 17-14
Traffic Lane Group Level of Service Summary Comparison
Existing vs. 2017 No Build Conditions – Non-Game Day

Signalized Movements	Existing Conditions				2017 No Build Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	24 Signalized Intersections				25 Signalized Intersections [1]			
No. of Lane Groups at LOS A/B/C	59	82	63	58	53	60	33	42
No. of Lane Groups at LOS D	38	25	31	34	25	27	41	26
No. of Lane Groups at LOS E	15	10	21	20	15	8	10	8
No. of Lane Groups at LOS F	7	2	4	9	34	31	42	52

Notes:
[1] Under 2017 No Build conditions, the intersection of Northern Boulevard and College Point Boulevard would be signalized. During the non game peak hours, all unsignalized lane groups would operate at overall LOS A/B or C.

Table 17-15
Overall Intersection Level of Service Summary Comparison
Existing vs. 2017 No Build Conditions – Game Day

Signalized Intersections	Existing Conditions			2017 No Build Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	24 Signalized Intersections			25 Signalized Intersections [1]		
Overall Intersection LOS A/B/C	10	10	12	3	5	2
Overall Intersection LOS D	9	14	9	3	1	4
Overall Intersection LOS E	5	0	0	3	3	5
Overall Intersection LOS F	0	0	3	16	16	14

Notes:
[1] Under 2017 No Build conditions, the intersection of Northern Boulevard and College Point Boulevard would be signalized. During the weekday pre-game peak hour, all 4 unsignalized intersections would operate at overall LOS A/B or C; during the weekend pre-game peak period, the Grand Central Parkway ramp at West Park Loop/Stadium Road would operate at overall LOS F; during the weekend post-game peak period, Boat Basin Road at World's Fair Marina would operate at overall LOS F.

Table 17-16
Traffic Lane Group Level of Service Summary Comparison
Existing vs. 2017 No Build Conditions – Game Day

Signalized Lane Groups	Existing Conditions			2017 No Build Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	24 Signalized Intersections [1]			25 Signalized Intersections [1]		
No. of Lane Groups at LOS A/B/C	56	63	70	32	44	43
No. of Lane Groups at LOS D	29	32	20	23	26	24
No. of Lane Groups at LOS E	26	20	14	19	6	10
No. of Lane Groups at LOS F	11	7	18	54	52	52

Notes:
1 Under 2017 No Build conditions, the intersection of Northern Boulevard and College Point Boulevard would be signalized.
In the 2017 No Build condition, northbound left turns from Boat Basin Road onto World Fair Marina would operate at LOS F during all game peak hours; eastbound left turns from the Grand Central Parkway ramp onto West Park Loop/Stadium Road would operate at LOS F during the weekend pre-game peak hour. All other lane groups would operate at LOS A, B, C or D.

The summary overview of the 2017 No Build condition without a Mets game indicates that:

- In the weekday AM peak hour, of the 25 signalized intersections analyzed, the number of locations that are projected to operate at overall LOS E or F would increase from one under existing conditions to 15 under the 2017 No Build condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 22 to 49. A review of Figure 17-12 indicates that most of the projected LOS E or F intersections would be located in Downtown Flushing and along Roosevelt Avenue from 108th Street to 114th Street.
- In the weekday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from zero to 12, while the number of traffic lane groups at LOS E or F would increase from 12 to 39. Figure 17-13 shows overall levels of service.
- In the weekday PM peak hour, the number of locations that are projected to operate at overall LOS E or F would increase from two under existing conditions to 17 under 2017 No Build conditions. The number of lane groups projected to operate at LOS E or F would increase from 25 to 52. A review of Figure 17-14 indicates that, similar to weekday AM, most of the projected LOS E or F intersections would be located in Downtown Flushing and along Roosevelt Avenue from 108th Street to 114th Street.
- In the Saturday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from two to 19, while the number of lane groups at LOS E or F would increase from 29 to 60. Figure 17-15 shows overall levels of service.

The summary overview of the 2017 No Build condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, of the 25 signalized intersections analyzed, the number of locations that are projected to operate at LOS E or F would increase from five under existing conditions to 19 under the 2017 No Build condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 37 to 73. Figure 17-16 shows overall levels of service.
- In the Saturday midday pre-game peak hour, the number of locations that are projected to operate at LOS E or F would increase from zero under existing conditions to 19 under the 2017 No Build condition. The number of lane groups projected to operate at LOS E or F would increase from 27 to 58. The unsignalized intersection of the westbound Grand Central

Parkway ramp at West Park Loop/Stadium Road would operate at LOS F. Figure 17-17 shows overall levels of service.

- In the Saturday PM post-game peak hour, the number of locations that are projected to operate at LOS E or F would increase from three under existing conditions to 19 under the 2017 No Build conditions. The number of lane groups projected to operate at LOS E or F would increase from 32 to 62. The unsignalized intersection of Boat Basin Road at World's Fair Marina would operate at LOS F. Figure 17-18 shows overall levels of service.

PARKING

Based on a background traffic growth rate of one percent per year, demand for off-street parking facilities and on-street parking in the area can generally be expected to increase by the same rate. The maximum occupancy level for parking facilities on non-game days would increase by about one to two percent of total capacity in 2017 from the existing occupancy level range of 12 to 23 percent on a typical weekday without a Mets game. On a typical Saturday without a Mets game, the maximum occupancy level for parking facilities would increase by about one percent of capacity in 2017 from the existing occupancy level range of 8 to 10 percent.

On a typical weeknight with a Mets game, the maximum occupancy between 6:30-7:30 PM would peak at about 38 percent in 2017, compared to approximately 34 percent in 2006. On a typical weekend game day, the maximum occupancy (peaking at 1-2 PM) would increase from 95 percent in 2006 to 100 percent in 2017 (with some of the unmet demand perhaps shifting to other nearby, available off-street parking facilities). This off-street demand projection for a weekend game day is a conservative assumption since it includes increases in Mets fan parking, which are not really subject to annual increases. Regarding game-day parking, it should be noted that with the redevelopment of Shea Stadium into Citi Field, the official stadium parking lots (immediately surrounding the ballpark) would provide approximately the same capacity, according to the 2001 Shea Stadium Redevelopment Project FEIS.

Because the existing weekday non game maximum on-street parking occupancy exceeds the legal capacity during the AM, midday, and PM periods, the on-street parking utilization is assumed to continue to peak above 100 percent after assigning a one percent per year growth rate to the existing parking occupancy. The existing Saturday midday non game on-street parking, which is nearly fully utilized under existing conditions, can be expected to operate at approximately 100 percent utilization. Since the existing weekday pre-game maximum parking occupancy exceeds the legal capacity, the on-street parking utilization is assumed to continue to peak above 100 percent. For weekend game day, the maximum on-street occupancy would increase from 80 percent in 2006 to 89 percent in 2017.

DUAL EVENT CONDITION

According to the Shea Stadium Redevelopment Study FEIS, the proposed access/egress routings for Citi Field would not negatively affect USTA event traffic management, circulation, and operations. Therefore, any expected changes in the Dual Event Condition for the 2017 future without the proposed Plan would be limited to worsened delays and increased queuing on the local streets and highway network due to increased traffic volumes as a result of background traffic growth and the additional developments surrounding the USTA National Tennis Center and Citi Field. This traffic growth would not necessarily require modification of tennis event access and egress routings and traffic management strategies, but would likely increase the severity of additional delays during the Dual Event Condition.

F. PROBABLE IMPACTS OF THE PROPOSED PLAN

Upon completion of the proposed Plan, there would be several likely changes to the roadway network within the Willets Point Development District. The existing Willets Point Boulevard and 34th Avenue within the boundaries of the District would be demapped, in whole or in part, and two connector streets would be built, one beginning at the intersection of 126th Street and 34th Avenue, continuing 34th Avenue into the District, and the other at the intersection of 126th Street and the continuation of Citi Field's southern edge, continuing that line into the District. Both streets would join with each other and connect to the new Van Wyck Expressway access ramps (described below). Two new east-west retail streets would continue into the District from the intersection of 126th Street and the Citi Field entrance center line, and from the intersection of 126th Street and the continuation of Citi Field's northern edge. A third retail street, running north-south, would intersect those retail streets and both connector streets. A new street would follow the border between the District and the abutting MTA lot, and intersect Roosevelt Avenue east of 126th Street. Service streets may be located as one of the streets bounding the two blocks located at the intersection of 126th Street and Northern Boulevard, and the intersection of 126th Street and Roosevelt Avenue.

A new access ramp from the northbound Van Wyck Expressway would be constructed off of the existing Exit 13 ramp and would connect to the new street network within the District at the northeast corner. A new ramp to the southbound Van Wyck Expressway would connect the northeast corner of the District to the expressway mainline immediately south of the interchange with the Whitestone Expressway. The new ramps would provide inbound trip access to the District from the northbound Van Wyck Expressway and outbound trip access from the District to the southbound Van Wyck Expressway and the eastbound and westbound Grand Central Parkway via the existing ramp, which leads westbound toward the elevated southbound Whitestone Expressway along the northern edge of the District.

Under the proposed Plan, a street following Citi Field's southern edge would form the northern and western edges of the Lot B development and would extend from the 126th Street (at the intersection with the new southern connector street) to Roosevelt Avenue, west of 126th Street. Roosevelt Avenue and 126th Street would form the southern and eastern edges of the Lot B development. Lot D, a surface parking lot south of Roosevelt Avenue and east of the South Lot, is anticipated to be developed with a five-level parking garage. Lot D would connect with 126th Street south of Roosevelt Avenue and with the adjacent South Lot.

This section includes a determination of the volume of vehicle trips generated under the 2017 Build condition, their distribution within the study area roadway network, the analysis of future traffic levels of service, and the identification of significant impacts as per CEQR Technical Manual guidelines. Mitigation measures are discussed in Chapter 23.

TRIP GENERATION AND MODAL SPLIT

Table 17-17 identifies the development program analyzed for the proposed Plan, including the anticipated development on Lots B and D. Travel demand estimates were prepared for each of the nine land use types. Trip generation estimates were developed in consultation with the New York City Department of Transportation (NYCDOT) and rely on other representative developments with similar land uses, area types, etc., for appropriate trip generation rates. The sources used in determining travel demand factors—shown in Table 17-18 and Table 17-19—are described in further detail below.

Table 17-17
Cumulative Development Program for Analysis

Use	Maximum Development Program
Residential	5,500 DU
Office	500,000 SF
Destination Retail [1]	1,550,000 SF
Local Retail	150,000 SF
Hotel	700 Rooms
Convention/expo Facility	400,000 SF
Community Facility	150,000 SF
School	900 Seats
Lot B Office	280,000 SF
Lot B Destination Retail	184,500 SF

Notes:
[1] The destination retail component includes a 54,000 square foot movie theater complex with approximately 2,700 seats
SF = square feet
DU = dwelling unit

RESIDENTIAL

For the residential component, the weekday trip generation rate used was taken from *Urban Space for Pedestrians (1975)*; the Saturday trip generation rate was developed using rates from *Trip Generation, 7th Edition* (ITE, 2003) to adjust the weekday rate in *Urban Space for Pedestrians*. The weekday delivery trip rate is from *Motor Trucks in the Metropolis* (Wilbur Smith Associates, 1969) while the Saturday delivery trip generation rate is from the Atlantic Yards Arena and Redevelopment Project FEIS (2006).

Census 2000 (U.S Department of Commerce Bureau of the Census, 2000) journey-to-work data were used to develop the modal split for the weekday AM, midday, PM, and evening peak periods based on data for the following census tracts in Queens County: 381, 383, 399, 401, 403, 431, 851, 853, 855, 857, 865, 867, 871, and 875. Census Tract 383, which encompasses the District, is a very large tract with few residential units; therefore, the study area was expanded to include tracts in Corona and Flushing. These tracts have access and transit characteristics similar to the project site. The Saturday modal split was adjusted from the Census journey-to-work data to reflect anticipated higher auto and walk shares.

Auto occupancy rates from the journey-to-work data were used for all analysis time periods. The vehicle occupancy for auto trips was applied to taxi trips.

For the weekday analysis periods, the temporal distribution is from the No. 7 Subway Extension —Hudson Yards Rezoning and Development Program (Hudson Yards Rezoning) FGEIS (2004) and the directional distribution is from Atlantic Yards Arena and Redevelopment Project FEIS (2006). For the Saturday non-game midday peak, the temporal and directional distributions are from *Trip Generation, 7th Edition* (ITE, 2003). The Saturday pre-game and post-game temporal and directional distributions are from the Atlantic Yards Arena and Redevelopment Project FEIS (2006).

Table 17-18
Weekday Trip Generation Factors

Rates	Residential				Office				Destination Retail				Local Retail				Convention/Expo Facility			
Person Trips																				
Daily Trip Rate	8.075 / DU [1]				18.0 / 1,000 SF [4]				78.2 / 1,000 SF [7,8]				205.0 / 1,000 SF [9]				46.2 / 1,000 SF [9]			
Link Trip Credit									15% [17]				15% [17]							
Modal Split	[2]				[2]				[7]				[7,17]				[11,17, 21]			
	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Auto	32.0%	32.0%	32.0%	32.0%	51.0%	25.5%	51.0%	51.0%	59.0%	59.0%	59.0%	59.0%	15.0%	15.0%	15.0%	15.0%	68.0%	68.0%	68.0%	68.0%
Taxi	1.0%	1.0%	1.0%	1.0%	1.0%	0.5%	1.0%	1.0%	3.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.0%	8.0%	8.0%
Subway	46.0%	46.0%	46.0%	46.0%	16.0%	8.0%	16.0%	16.0%	15.0%	15.0%	15.0%	15.0%	5.0%	5.0%	5.0%	5.0%	12.0%	12.0%	12.0%	12.0%
Bus	9.0%	9.0%	9.0%	9.0%	14.0%	7.0%	14.0%	14.0%	18.0%	18.0%	18.0%	18.0%	10.0%	10.0%	10.0%	10.0%	2.0%	2.0%	2.0%	2.0%
Walk Only	12.0%	12.0%	12.0%	12.0%	18.0%	59.0%	18.0%	18.0%	5.0%	5.0%	5.0%	5.0%	70.0%	70.0%	70.0%	70.0%	10.0%	10.0%	10.0%	10.0%
Veh. Occ.	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Auto	1.32 [2]	1.32 [2]	1.32 [2]	1.32 [2]	1.14 [2]	1.14 [2]	1.14 [2]	1.14 [2]	2.05 [7]	2.05 [7]	2.05 [7]	2.05 [7]	2.00 [5]	2.00 [5]	2.00 [5]	2.00 [5]	2.30 [9]	2.30 [9]	2.30 [9]	2.30 [9]
Taxi	1.32 [2]	1.32 [2]	1.32 [2]	1.32 [2]	1.14 [2]	1.14 [2]	1.14 [2]	1.14 [2]	2.05 [7]	2.05 [7]	2.05 [7]	2.05 [7]	2.00 [5]	2.00 [5]	2.00 [5]	2.00 [5]	1.80 [9]	1.80 [9]	1.80 [9]	1.80 [9]
Temporal Dist.	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
	9.1% [3]	4.7% [3]	10.7% [3]	8.3% [3]	11.8% [4]	15.0% [4]	13.7% [4]	0.9% [4]	2.4% [8]	8.7% [8]	8.9% [8]	7.7% [8]	3.1% [9]	19% [9]	9.6% [9]	7.6% [1]	5.5% [3]	7.1% [3]	12.7% [3]	11.7% [3]
Percent In	20.0% [5]	51.0% [5]	65.0% [5]	70.0% [5]	96.2% [3]	48.0% [3]	5.0% [3]	20.0% [3]	61.0% [8]	55.0% [8]	47.0% [8]	55.0% [8]	50.0% [9]	50.0% [9]	50.0% [9]	50.0% [1]	100.0% [3]	73.0% [3]	3.0% [3]	0.0% [3]
Percent Out	80.0%	49.0%	35.0%	30.0%	4.0%	52.0%	95.0%	80.0%	39.0%	45.0%	53.0%	45.0%	50.0%	50.0%	50.0%	50.0%	0.0%	27.0%	97.0%	100.0%
Delivery Trips																				
Daily Trip Rate	0.06 / DU [6]				0.32 / 1,000 SF [20]				0.70 / 1,000 SF [7]				0.70 / 1,000 SF [9]				0.70 / 1,000 SF [9]			
Temporal Dist.	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Percent In/Out	12.0% [19]	9.0% [19]	2.0% [19]	2.0% [19]	10.0% [14]	11.0% [14]	2.0% [14]	2.0% [17]	7.7% [3]	11.0% [3]	1.0% [3]	1.0% [3]	7.7% [9]	11.0% [9]	1.0% [9]	1.0% [17]	7.9% [9]	14.7% [9]	1.1% [9]	1.1% [9]
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

Rates	Movie Theater				Hotel				Community Facility				PS/IS - Students				PS/IS - Faculty			
Person Trips																				
Daily Trip Rate	3.26 / Seat [5]				5.82 / Room [5]				34.0 / 1,000 SF [23]				1.8 / Seat [15]				2.0 / Staff [15]			
Link Trip Credit																				
Modal Split	[22]				[7]				[2]				[15,17]				[15]			
	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Auto	56.0%	56.0%	56.0%	56.0%	70.0%	70.0%	70.0%	70.0%	16.0%	16.0%	16.0%	16.0%	15.0%	15.0%	15.0%	15.0%	50.0%	50.0%	50.0%	50.0%
Taxi	7.0%	7.0%	7.0%	7.0%	15.0%	15.0%	15.0%	15.0%	0.5%	0.5%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subway	18.0%	18.0%	18.0%	18.0%	5.0%	5.0%	5.0%	5.0%	23.0%	23.0%	23.0%	23.0%	15.0%	15.0%	15.0%	15.0%	50.0%	50.0%	50.0%	50.0%
Bus	8.0%	8.0%	8.0%	8.0%	5.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%	4.5%	10.0%	10.0%	10.0%	10.0%	0.0%	0.0%	0.0%	0.0%
Walk Only	11.0%	11.0%	11.0%	11.0%	5.0%	5.0%	5.0%	5.0%	56.0%	56.0%	56.0%	56.0%	60.0%	60.0%	60.0%	60.0%	0.0%	0.0%	0.0%	0.0%
Veh. Occ.	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Auto	2.52 [22]	2.52 [22]	2.52 [22]	2.52 [22]	1.60 [5]	1.60 [5]	1.60 [5]	1.60 [5]	1.50 [14]	1.50 [14]	1.50 [14]	1.50 [14]	1.30 [15]	1.30 [15]	1.30 [15]	1.30 [15]	1.20 [15]	1.20 [15]	1.20 [15]	1.20 [15]
Taxi	2.30 [22]	2.30 [22]	2.30 [22]	2.30 [22]	1.40 [5]	1.40 [5]	1.40 [5]	1.40 [5]	1.50 [14]	1.50 [14]	1.50 [14]	1.50 [14]	1.30 [15]	1.30 [15]	1.30 [15]	1.30 [15]	1.20 [15]	1.20 [15]	1.20 [15]	1.20 [15]
Temporal Dist.	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
	1.0% [5]	3.0% [5]	8.0% [5]	13.0% [5]	6.6% [5]	8.3% [5]	7.7% [5]	6.6% [5]	7.2% [14]	7.1% [14]	8.3% [14]	6.4% [17]	45.0% [15]	0.0% [15]	0.0% [17]	0.0% [17]	45.0% [15]	0.0% [17]	5.0% [17]	0.0% [17]
Percent In	95.0% [5]	62.0% [5]	54.0% [5]	53.0% [5]	41.0% [5]	68.0% [5]	59.0% [5]	60.0% [5]	94.0% [14]	45.0% [14]	42.0% [14]	50.0% [17]	100.0% [15]	0.0% [15]	0.0% [15]	0.0% [17]	100.0% [15]	0.0% [17]	0.0% [15]	0.0% [17]
Percent Out	5.0%	38.0%	46.0%	47.0%	59.0%	32.0%	41.0%	40.0%	6.0%	55.0%	58.0%	50.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Delivery Trips																				
Daily Trip Rate	0.02 / Seat [5]				0.24 / Room [13]				0.38 / 1,000 SF [14]				0.04 / Seat [15,17]				N/A			
Temporal Dist.	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Percent In/Out	12.0% [5]	11.0% [5]	1.0% [5]	1.0% [5]	12.0% [5]	9.0% [5]	0.0% [5]	0.0% [5]	6.0% [14]	11.0% [14]	1.0% [14]	0.0% [17]	9.7% [6]	7.8% [6]	5.1% [6]	0.0% [17]	0.0% [17]	0.0% [17]	0.0% [17]	0.0% [17]
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

Notes: * Truck trips rates for the school component were estimated using the rates for the community facility use. The factor was converted from 1,000 SF to Seat by assuming 6 students per 1,000 SF

Sources:
(1) Pushkarev & Zupan, *Urban Space for Pedestrians* (1975)
(2) U.S. Department of Commerce, Bureau of the Census, Census 2000.
(3) *No. 7 Subway Extension-Hudson Yards Rezoning and Development Program Draft Generic Environmental Impact Statement* (2004)
(4) New York City Mayor's Office of Environmental Coordination, *City Environmental Quality Review Technical Manual* (2001)
(5) *Atlantic Yards Redevelopment Project Final Environmental Impact Statement* (2006)
(6) Wilbur Smith Associates, *Motor Trucks in the Metropolis* (1969)
(7) *Gateway Center at Bronx Terminal Market Final Environmental Impact Statement* (2005)
(8) Institute for Transportation Engineers, *Trip Generation Manual, 7th Edition* (2003)
(9) *Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement* (1997)
(10) *Javits Convention Center Expansion and Renovation Draft Generic Environmental Impact Statement* (2006)
(11) *Shea Stadium Redevelopment Final Environmental Impact Statement* (2001)
(12) *Atlantic Center Plaza Final Environmental Impact Statement* (1999)
(13) *42 Street Development Project: General Project Plan Amendment Final Supplemental Environmental Impact Statement* (1994)
(14) *Downtown Brooklyn Development Final Environmental Impact Statement* (2004)
(15) *PS 260Q School Facility* (2005)
(16) *World Trade Center Memorial and Redevelopment Plan Final Generic Environmental Impact Statement* (2004)
(17) AKRF assumption
(18) *Gateway Estates FEIS* (1996)
(19) *Curbside Pickup & Delivery Operations & Arterial Traffic Impacts*, FHWA, February 1981
(20) PHA June 10, 2004 survey at existing Midtown and Lower Manhattan office buildings
(21) *Pier 94, Unconvention Center, Inc. EAS* (2003)
(22) *Loews Elmhurst Multiplex FEIS* (2000)
(23) *Arverne Urban Renewal Area FEIS* (2003)

Table 17-19
Saturday Trip Generation Factors

Rates	Residential			Office			Destination Retail			Local Retail		
Person Trips												
Daily Trip Rate	9.575 / DU [1,8]			0.9 / 1,000 SF [3]			92.5 / 1,000 SF [7,8]			205.0 / 1,000 SF [9,17]		
Link Trip Credit							15% [17]			15% [17]		
Modal Split	[2,17]			[2]			[7]			[7,17]		
	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Auto	40.0%	40.0%	40.0%	51.0%	51.0%	51.0%	59.0%	59.0%	59.0%	15.0%	15.0%	15.0%
Taxi	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%
Subway	26.0%	26.0%	26.0%	16.0%	16.0%	16.0%	13.0%	13.0%	13.0%	5.0%	5.0%	5.0%
Bus	3.0%	3.0%	3.0%	14.0%	14.0%	14.0%	18.0%	18.0%	18.0%	10.0%	10.0%	10.0%
Walk Only	30.0%	30.0%	30.0%	18.0%	18.0%	18.0%	5.0%	5.0%	5.0%	70.0%	70.0%	70.0%
Vehicle Occupancy	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Auto	1.32 [2]	1.32 [2]	1.32 [2]	1.14 [2]	1.14 [2]	1.14 [2]	2.49 [7]	2.49 [7]	2.49 [7]	2.00 [5]	2.00 [5]	2.00 [5]
Taxi	1.32 [2]	1.32 [2]	1.32 [2]	1.14 [2]	1.14 [2]	1.14 [2]	2.49 [7]	2.49 [7]	2.49 [7]	2.00 [5]	2.00 [5]	2.00 [5]
Temporal Distribution	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
	8.0% [8]	7.0% [5]	7.2% [5]	15.0% [5]	15.0% [5]	15.0% [5]	11.5% [21]	8.0% [7]	6.0% [7]	9.5% [9]	9.5% [5]	9.5% [5]
Percent In	57.0% [8]	50.0% [5]	50.0% [5]	60.0% [5]	15.0% [5]	60.0% [5]	51.0% [21]	53.6% [7]	47.5% [7]	55.0% [9]	55% [5]	45% [5]
Percent Out	43.0%	50.0%	50.0%	40.0%	85.0%	40.0%	49.0%	46.4%	52.5%	45.0%	45.0%	55.0%
Delivery Trips												
Daily Trip Rate	0.02 / DU [5]			0.02 / 1,000 SF [5]			0.04 / 1,000 SF [5]			0.04 / 1,000 SF [5]		
Temporal Distribution	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Percent In/Out	9.0% [20]	9.0% [20]	0.0% [17]	11.0% [5]	11.0% [5]	3.0% [5]	11.0% [5]	11.0% [5]	2.0% [5]	11.0% [9]	11.0% [5]	2.0% [5]
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

Rates	Convention/Expo Facility			Movie Theater			Hotel			Community Facility		
Person Trips												
Daily Trip Rate	46.2 / 1,000 SF [9]			6.25 / Seat [23]			8.61 / Room [5]			34 / 1,000 SF [24]		
Link Trip Credit												
Modal Split	[11,17,22]			[23]			[7]			[2]		
	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Auto	70.0%	70.0%	70.0%	56.0%	56.0%	56.0%	70.0%	70.0%	70.0%	16.0%	16.0%	16.0%
Taxi	6.0%	6.0%	6.0%	7.0%	7.0%	7.0%	15.0%	15.0%	15.0%	0.5%	0.5%	0.5%
Subway	12.0%	12.0%	12.0%	18.0%	18.0%	18.0%	5.0%	5.0%	5.0%	23.0%	23.0%	23.0%
Bus	2.0%	2.0%	2.0%	8.0%	8.0%	8.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%
Walk Only	10.0%	10.0%	10.0%	11.0%	11.0%	11.0%	5.0%	5.0%	5.0%	56.0%	56.0%	56.0%
Vehicle Occupancy	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Auto	2.60 [9]	2.60 [9]	2.60 [9]	2.52 [23]	2.52 [23]	2.52 [23]	1.60 [5]	1.60 [5]	1.60 [5]	1.50 [14]	1.50 [14]	1.50 [14]
Taxi	1.70 [9]	1.70 [9]	1.70 [9]	2.30 [23]	2.30 [23]	2.30 [23]	1.40 [5]	1.40 [5]	1.40 [5]	1.50 [14]	1.50 [14]	1.50 [14]
Temporal Distribution	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
	14.4% [3]	12.0% [3]	13.8% [3]	5.0% [5]	5.0% [5]	8.0% [5]	7.50% [5]	7.50% [5]	7.50% [5]	14.1% [8]	14.1% [8]	14.1% [8,17]
Percent In	50.0% [3]	64.0% [3]	41.0% [3]	62.0% [5]	62.0% [5]	38.0% [5]	56.0% [5]	56.0% [5]	56.0% [5]	49.0% [8]	49.0% [8]	48.0% [8,17]
Percent Out	50.0%	36.0%	59.0%	38.0%	38.0%	62.0%	44.0%	44.0%	44.0%	51.0%	51.0%	52.0%
Delivery Trips												
Daily Trip Rate	0.04 / 1,000 SF [9]			0.00 / Seat [5]			0.08 / Room [5,13]			0.0 / 1,000 SF [17]		
Temporal Distribution	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Percent In/Out	14.7% [9]	14.7% [9]	1.1% [17]	0.0% [5]	0.0% [5]	0.0% [5]	9.0% [5]	9.0% [5]	0.0% [5]	0.0% [17]	0.0% [17]	0.0% [17]
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

Notes: * Trip rates for the community facility component were developed based on a comparison of weekday rates with rates presented in the Institute for Transportation Engineers, Trip Generation 7th Edition (2003).
** The project's school component would not generate trips on a Saturday.

Sources:
(1) Pushkarev & Zupan, *Urban Space for Pedestrians* (1975)
(2) U.S. Department of Commerce, Bureau of the Census, Census 2000.
(3) *No. 7 Subway Extension-Hudson Yards Rezoning and Development Program Draft Generic Environmental Impact Statement* (2004)
(4) New York City Mayor's Office of Environmental Coordination, *City Environmental Quality Review Technical Manual* (2001)
(5) *Atlantic Yards Redevelopment Project Final Environmental Impact Statement* (2006)
(6) Wilbur Smith Associates, *Motor Trucks in the Metropolis* (1969)
(7) *Gateway Center at Bronx Terminal Market Final Environmental Impact Statement* (2005)
(8) Institute for Transportation Engineers, *Trip Generation Manual, 7th Edition* (2003)
(9) *Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement* (1997)
(10) *Javits Convention Center Expansion and Renovation Draft Generic Environmental Impact Statement* (2006)
(11) *Shea Stadium Redevelopment Final Environmental Impact Statement* (2001)
(12) *Atlantic Center Plaza Final Environmental Impact Statement* (1999)
(13) *42 Street Development Project: General Project Plan Amendment Final Supplemental Environmental Impact Statement* (1994)
(14) *Downtown Brooklyn Development Final Environmental Impact Statement* (2004)
(15) *Mott Haven School Facility Draft Environmental Impact Statement* (2006)
(16) *World Trade Center Memorial and Redevelopment Plan Final Generic Environmental Impact Statement* (2004)
(17) AKRF assumption
(18) *Gateway Estates FEIS* (1996)
(19) Saturday modal split adjusted to reflect anticipated higher auto and walk shares.
(20) *Curbside Pickup & Delivery Operations & Arterial Traffic Impacts*, FHWA, February 1981
(21) *Pier 94, Unconvention Center, Inc. EAS* (2003)
(22) *Loews Elmhurst Multiplex FEIS* (2000)
(23) *Arverne Urban Renewal Area FEIS* (2003)

The weekday and Saturday non-game and pre-game delivery trip temporal distributions are from *Curbside Pickup & Delivery Operations & Arterial Traffic Impacts*, Federal Highway Administration (FHWA), February 1981. The Saturday post-game temporal distribution was developed using professional judgment.

OFFICE

The trip generation analysis for the office component used daily trip generation rates reported in the *CEQR Technical Manual* (2001) and the Hudson Yards Rezoning FGEIS for the weekday and Saturday trip generation, respectively. The weekday delivery trip generation rate is based on surveys conducted at office buildings in Midtown and Lower Manhattan. The Saturday delivery trip generation rate used was taken from the Atlantic Yards Arena and Redevelopment Project FEIS (2006).

Census 2000 reverse journey-to-work data were used to develop the modal split and vehicle occupancies for the AM, PM, weekday pre-game, and Saturday peak periods, using the Census tracts listed previously for the residential use. For the weekday midday peak period, it was assumed that a large percentage of office workers would walk to lunch within and near the project site. To estimate the midday modal split, the AM modal split for automobiles, taxis, subway, and bus were reduced by half and the balance was applied to the walk-only component. As with the residential use, the vehicle occupancy for taxi trips was assumed to be the same as for auto trips; both are from Census reverse journey-to-work data.

The weekday temporal and directional distributions are from the *CEQR Technical Manual* and the Hudson Yards Rezoning FGEIS, respectively. Saturday temporal and directional distribution rates are from the Atlantic Yards Arena and Redevelopment Project FEIS.

For temporal distribution for delivery vehicles: Downtown Brooklyn Development, the FEIS (2004), professional judgment, and the Atlantic Yards Arena and Redevelopment Project FEIS were used for various analysis periods.

DESTINATION RETAIL

The basis of the weekday and Saturday trip generation rates for the proposed Plan's destination retail component was the Gateway Center at Bronx Terminal Market FEIS (2005). That study used rates based on surveys at the Queens Place shopping mall and analyses for projects in Harlem and Brooklyn. The Gateway Center at Bronx Terminal Market FEIS presented peak hour trip rates, temporal distribution, and directional distribution for the weekday midday, weekday PM, and Saturday midday peak hours. A weekday and Saturday daily trip rate was projected by comparing the rates from the Gateway Center at Bronx Terminal Market FEIS to rates presented in the Institute for Transportation Engineers, *Trip Generation, 7th Edition* (2003). Because it is expected that some of the retail trips will be made by the proposed Plan's residents and workers en route to or from their homes or offices in the District, a 15 percent linked trip credit was applied to the destination retail trip generation estimates. The 15 percent credit is consistent with guidance presented in the *CEQR Technical Manual*.

Due to its proximity, activities at the stadium would influence retail patronage and local traffic conditions at and near the District. Therefore, the Saturday traffic analysis considered non-game and game-day scenarios. On a game day, the peak period of the background network traffic would not correspond with the peak period for retail traffic. Therefore, trip generation rates were adjusted to reflect retail activity during the overall peak period. In addition, the temporal

distribution of traffic throughout the day was adjusted to reflect the fact that retail patrons are less likely to travel to the District immediately before or after a Mets game. For game days, the number of retail trips was reduced for the pre-game and post-game peak periods under the assumption that these trips would occur during other times of the day. This same methodology was used in the traffic analysis presented in the Gateway Center at Bronx Terminal Market FEIS since that retail center is proximate to Yankee Stadium.

The weekday delivery trip generation rate was taken from the Gateway Center at Bronx Terminal Market FEIS and the Saturday delivery trip generation rate was taken from Atlantic Yards Arena and Redevelopment Project FEIS.

The rates presented in the Gateway Center at Bronx Terminal Market FEIS were also used for the modal split and vehicle occupancies for the destination retail component. The ITE trip generation manual was used to estimate the temporal and directional distribution for the weekday peak periods. The Jamaica Plan: FEIS (2007) provided temporal and directional distribution for the Saturday non-game peak period. The Gateway Center at Bronx Terminal Market FEIS was the source of temporal and directional distribution for the Saturday pre-game and post-game analysis periods.

The weekday AM, midday, and PM temporal distribution for delivery vehicles was taken from the Hudson Yards Rezoning FGEIS, while the weekday pre-game temporal distribution was developed using professional judgment. The Atlantic Yards Arena and Redevelopment Project FEIS was the source for Saturday temporal distribution for delivery vehicles.

LOCAL RETAIL

The weekday and Saturday daily trip generation and delivery vehicle trip generation rates for the proposed Plan's local neighborhood retail component were taken from the Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement ([SEIS] 1997). A 15 percent linked trip credit was applied to the local retail trip generation estimates.

The modal split was derived from the Gateway Estates (Brooklyn) FEIS (1996). The walk mode share was reduced from 80 percent to 70 percent; this 10 percent of trips was reassigned with half (5 percent) assigned to local bus and half (5 percent) assigned to subway. The local retail use was not assumed to generate taxi trips.

Vehicle occupancy rates were taken from the Atlantic Yards Arena and Redevelopment Project FEIS. The Coliseum FSEIS provided temporal distribution and directional distribution for the weekday AM, midday, and PM peak periods as well as for the Saturday non-game peak period. The weekday evening temporal and directional distribution is from *Urban Space for Pedestrians*. The Saturday pre-game and post-game temporal and directional distributions are from the Atlantic Yards Arena and Redevelopment Project FEIS. It was assumed that activities at Shea Stadium would not affect the Saturday temporal distribution for the local retail component.

The Coliseum FSEIS provided the weekday AM, midday, and PM and Saturday non-game temporal distributions for delivery vehicles. The weekday pre-game temporal distribution for delivery vehicles was based on professional judgment. The Saturday pre-game and post-game delivery vehicle temporal distribution was taken from the Atlantic Yards Arena and Redevelopment Project FEIS.

MOVIE THEATER

Person trips and vehicle trips for the proposed Plan's movie theater component were estimated using rates presented in the Loews Elmhurst Multiplex FEIS (2000). This source also provided the modal split and auto and taxi occupancy rates.

Weekday and Saturday delivery trip generation rates and the temporal and directional distribution rates for both visitor/employee trips and deliveries were taken from the Atlantic Yards Redevelopment Project FEIS (2006), with the sole exception being the evening temporal distribution rate for delivery trips, which was based on professional judgment.

CONVENTION CENTER

The trip rates for the convention center component were developed from several sources. The daily trip generation rate, the weekday and Saturday delivery trip generation rate, and the weekday and Saturday auto and taxi occupancy rates were taken from the Coliseum Redevelopment Project Final SEIS (1997).

The modal split was developed using rates from the Pier 94, Unconvention Center, Inc. EAS (2003) and the Shea Stadium Redevelopment EIS (2001). The temporal and directional distribution rates for all analysis time periods were taken from the Hudson Yards Rezoning FGEIS. For the weekday AM, midday, and PM time periods as well as the Saturday non-game and pre-game time periods, the delivery truck temporal distribution was taken from the Coliseum Redevelopment Project Final SEIS (1997). The temporal distribution for the weekday pre-game and the Saturday post-game time periods was developed using professional judgment.

HOTEL

The weekday and Saturday daily trip generation rates, temporal and directional distribution, and vehicle occupancy rates for the hotel use were taken from the Atlantic Yards Arena and Redevelopment Project FEIS. Rates from the Gateway Center at Bronx Terminal Market FEIS were used to estimate the modal split. The 42nd Street Redevelopment Project General Project Plan Amendment FSEIS was the source of delivery trip generation data.

COMMUNITY FACILITY

For the proposed Plan's community facility component, the weekday and Saturday trip generation rates were based on rates for a community recreation center presented in the Arverne Urban Renewal Area FEIS (2003). The weekday delivery trip generation rate, the weekday AM, midday, and PM temporal and directional distributions for employee/visitor trips as well as delivery trips, and the auto and taxi occupancy rates were based on rates for a community facility presented in the Downtown Brooklyn Development FEIS (2004). The Saturday delivery trip generation rate was developed based on professional judgment.

The Downtown Brooklyn Development FEIS did not present a temporal or directional distribution for the weekday pre-game peak period. Therefore, the weekday PM temporal distribution presented in the Downtown Brooklyn Development FEIS was adjusted using the proportional relationship between weekday PM and evening temporal distribution for the residential use to derive the evening temporal distribution for the community facility. The directional distribution for the weekday evening peak period was developed using professional judgment. The Downtown Brooklyn Development FEIS also did not present rates for the

Saturday peak periods; therefore, Saturday rates were developed based on a comparison of weekday and weekend rates presented in ITE's *Trip Generation, 7th Edition.*

The modal split for the community facility use was developed based on journey-to-work data from the Census. However, the journey-to-work data were adjusted to reflect a larger percentage of walk trips and a lesser percentage of trips by other modes. This assumption was predicated on the assumption that a majority of the community facility trips would be made by the proposed Plan's residents. Delivery trip temporal distribution rates for the weekday evening and Saturday peak periods were developed using professional judgment.

SCHOOL

The trip generation analysis for the school component was based on rates developed by the New York City School Construction Authority for their analyses of proposed school projects in New York City. The proposed Plan's school component would generate trips only during the AM and PM peak commuter hours. Because students and staff typically depart before the PM peak commuter hour, the temporal distribution reflects reduced student and staff trips in the PM commuter peak hour. Students and staff were assumed to typically remain on campus and, therefore, would not generate trips during the midday peak hour. Also, the school would not generate trips during the weekday pre-game peak period or on weekends.

Rates presented in the environmental studies for the P.S. 260Q School Facility Environmental Assessment Form and Supplemental Studies (2005) were used for the weekday trip generation rate, temporal distribution, modal split, and vehicle occupancy rates for the student trips.

The delivery trip generation rate was adjusted from the delivery trip generation rate for the community facility. The temporal distribution for delivery trips was taken from *Motor Trucks in the Metropolis.*

Rates from the *P.S. 260Q School Facility* study also provided for the trip generation rate, modal split, temporal and directional distribution, and vehicle occupancy for staff trips. As with the student trips, it was assumed that there would be negligible trip generation during the weekday pre-game and Saturday peak periods.

TRAVEL DEMAND ANALYSIS RESULTS

The volume of person trips and vehicle trips expected to be generated by the proposed Plan would be substantial. Table 17-20 presents the person trips generated by the Plan. The Plan would generate an estimated 11,728, 19,331, 21,413, and 25,020 person trips during the weekday AM, midday, PM, and Saturday midday (non-game days) peak hours, respectively. On game days, the Plan would generate an estimated 17,411 person trips during the weekday PM pre-game peak hour and 19,931 and 18,524 person trips in the Saturday pre-game and post-game hours, respectively.

Table 17-21 presents the vehicle trip estimates for the proposed Plan. The Plan would generate a total of 3,302, 4,905, 6,090, and 6,625 vehicle (auto, taxi, and delivery) trips during the weekday AM, midday, PM, and Saturday midday (non-game days) peak hours, respectively. On game days, the Plan would generate an estimated 4,879 vehicle trips during the weekday PM pre-game peak hour and 5,205 and 4,866 vehicle trips in the Saturday pre-game and post-game hours, respectively. The Plan's taxi trips were adjusted based on the assumption that half of the arriving taxis would depart with a fare, which is consistent with most trip generation analysis performed for projects in New York City.

Table 17-20
Proposed Plan Person Trips by Mode

Use	Auto		Taxi		Subway		Bus		Walk Only		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY AM PEAK HOUR													
Residential	259	1,035	8	32	372	1,487	73	291	96	388	808	3,233	4,041
Office	520	21	10	0	163	7	143	6	184	8	1,020	42	1,062
Destination Retail	859	549	44	28	218	140	262	168	73	46	1,456	931	2,387
Local Retail	61	61	0	0	20	20	41	41	283	283	405	405	810
Movie Theater	47	2	6	0	15	1	7	0	9	1	84	4	88
Hotel	77	111	17	24	6	8	6	8	4	8	110	159	269
Convention/Expo	691	0	81	0	122	0	20	0	102	0	1,016	0	1,016
Community Facility	55	4	2	0	79	5	16	1	193	12	345	22	367
School	156	122	0	0	156	122	81	81	485	485	878	810	1,688
Total	**2,725**	**1,905**	**168**	**84**	**1,151**	**1,790**	**649**	**596**	**1,429**	**1,231**	**6,122**	**5,606**	**11,728**
WEEKDAY MIDDAY PEAK HOUR													
Residential	341	327	11	10	490	471	96	92	127	123	1,065	1,023	2,088
Office	165	179	3	4	52	56	45	49	383	414	648	702	1,350
Destination Retail	2,807	2,297	143	117	714	584	856	701	238	194	4,758	3,893	8,651
Local Retail	372	372	0	0	124	124	248	248	1,739	1,739	2,483	2,483	4,966
Movie Theater	92	56	11	7	30	18	13	8	18	11	164	100	264
Hotel	161	76	35	16	12	5	12	5	10	6	230	108	338
Convention/Expo	651	241	77	28	115	42	19	7	96	36	958	354	1,312
Community Facility	26	32	1	1	37	46	7	9	92	111	163	199	362
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**4,615**	**3,580**	**281**	**183**	**1,574**	**1,346**	**1,296**	**1,119**	**2,703**	**2,634**	**10,469**	**8,862**	**19,331**
WEEKDAY PM PEAK HOUR													
Residential	988	532	31	17	1,421	765	278	150	371	199	3,089	1,663	4,752
Office	32	597	1	12	10	187	9	164	10	211	62	1,171	1,233
Destination Retail	2,454	2,768	125	141	624	704	749	844	208	234	4,160	4,691	8,851
Local Retail	188	188	0	0	63	63	126	126	878	878	1,255	1,255	2,510
Movie Theater	213	181	27	23	68	58	30	26	42	36	380	324	704
Hotel	130	90	28	19	9	6	9	6	9	8	185	129	314
Convention/Expo	48	1,548	6	182	8	273	1	46	7	228	70	2,277	2,347
Community Facility	28	39	1	1	41	57	8	11	100	138	178	246	424
School	20	24	0	0	20	24	14	14	81	81	135	143	278
Total	**4,101**	**5,967**	**219**	**395**	**2,264**	**2,137**	**1,224**	**1,387**	**1,706**	**2,013**	**9,514**	**11,899**	**21,413**
WEEKDAY PRE-GAME PEAK HOUR													
Residential	826	354	26	11	1,187	509	232	100	309	132	2,580	1,106	3,686
Office	8	33	0	1	3	10	2	9	3	12	16	65	81
Destination Retail	2,288	2,288	116	116	582	582	698	698	194	194	3,878	3,878	7,756
Local Retail	149	149	0	0	50	50	99	99	695	695	993	993	1,986
Movie Theater	339	301	42	38	109	97	48	43	68	59	606	538	1,144
Hotel	113	76	24	16	8	5	8	5	8	6	161	108	269
Convention/Expo	15	1,456	2	171	3	257	0	43	2	214	22	2,141	2,163
Community Facility	26	26	1	1	37	37	7	7	92	92	163	163	326
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**3,764**	**4,683**	**211**	**354**	**1,979**	**1,547**	**1,094**	**1,004**	**1,371**	**1,404**	**8,419**	**8,992**	**17,411**
SATURDAY MIDDAY NON-GAME PEAK HOUR													
Residential	960	725	24	18	624	471	72	54	721	544	2,401	1,812	4,213
Office	37	24	1	0	12	8	10	7	12	9	72	48	120
Destination Retail	4,070	3,911	345	331	897	862	1,242	1,193	345	331	6,899	6,628	13,527
Local Retail	205	168	0	0	68	56	137	112	956	781	1,366	1,117	2,483
Movie Theater	293	180	37	22	94	58	42	26	57	35	523	321	844
Hotel	177	139	38	30	13	10	13	10	12	10	253	199	452
Convention/Expo	932	932	80	80	160	160	27	27	132	132	1,331	1,331	2,662
Community Facility	56	59	2	2	81	84	16	17	197	205	352	367	719
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**6,730**	**6,138**	**527**	**483**	**1,949**	**1,709**	**1,559**	**1,446**	**2,432**	**2,047**	**13,197**	**11,823**	**25,020**

Table 17-20 (cont'd)
Proposed Plan Person Trips by Mode

Use	Auto		Taxi		Subway		Bus		Walk Only		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
SATURDAY PRE-GAME PEAK HOUR													
Residential	737	737	18	18	479	479	55	55	554	554	1,843	1,843	3,686
Office	9	52	0	1	3	16	3	14	3	19	18	102	120
Destination Retail	2,976	2,576	252	218	656	568	908	786	252	218	5,044	4,366	9,410
Local Retail	205	168	0	0	68	56	137	112	956	781	1,366	1,117	2,483
Movie Theater	293	180	37	22	94	58	42	26	57	35	523	321	844
Hotel	177	139	38	30	13	10	13	10	12	10	253	199	452
Convention/Expo	993	559	85	48	170	96	28	16	143	79	1,419	798	2,217
Community Facility	56	59	2	2	81	84	16	17	197	205	352	367	719
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**5,446**	**4,470**	**432**	**339**	**1,564**	**1,367**	**1,202**	**1,036**	**2,174**	**1,901**	**10,818**	**9,113**	**19,931**
SATURDAY POST-GAME PEAK HOUR													
Residential	758	758	19	19	493	493	57	57	569	569	1,896	1,896	3,792
Office	37	24	1	0	12	8	10	7	12	9	72	48	120
Destination Retail	1,978	2,186	168	185	436	482	603	667	167	185	3,352	3,705	7,057
Local Retail	168	205	0	0	56	68	112	137	781	956	1,117	1,366	2,483
Movie Theater	287	469	36	59	92	151	41	67	57	91	513	837	1,350
Hotel	177	139	38	30	13	10	13	10	12	10	253	199	452
Convention/Expo	732	1,054	63	90	126	181	21	30	104	150	1,046	1,505	2,551
Community Facility	55	60	2	2	79	86	16	17	193	209	345	374	719
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**4,192**	**4,895**	**327**	**385**	**1,307**	**1,479**	**873**	**992**	**1,895**	**2,179**	**8,594**	**9,930**	**18,524**

Table 17-21
Proposed Plan Vehicle Trips by Type

Use	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY AM PEAK HOUR									
Residential	196	784			20	20	216	804	1,020
Office	456	18			8	8	464	26	490
Destination Retail	419	268			40	40	459	308	767
Local Retail	31	31			4	4	35	35	70
Movie Theater	19	1			3	3	22	4	26
Hotel	48	69			10	10	58	79	137
Convention/Expo	300	0			11	11	311	11	322
Community Facility	37	3			2	2	39	5	44
School	122	94			2	2	124	96	220
Total	**1,628**	**1,268**	**103**	**103**	**100**	**100**	**1,831**	**1,471**	**3,302**
WEEKDAY MIDDAY PEAK HOUR									
Residential	258	248			15	15	273	263	536
Office	145	157			9	9	154	166	320
Destination Retail	1,369	1,120			58	58	1,427	1,178	2,605
Local Retail	186	186			6	6	192	192	384
Movie Theater	37	22			3	3	40	25	65
Hotel	101	48			8	8	109	56	165
Convention/Expo	283	105			21	21	304	126	430
Community Facility	17	21			3	3	20	24	44
School	0	0			1	1	1	1	2
Total	**2,396**	**1,907**	**177**	**177**	**124**	**124**	**2,697**	**2,208**	**4,905**

Table 17-21 (cont'd)
Proposed Plan Vehicle Trips by Type

Use	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY PM PEAK HOUR									
Residential	748	403			3	3	751	406	1,157
Office	28	524			2	2	30	526	556
Destination Retail	1,197	1,350			5	5	1,202	1,355	2,557
Local Retail	94	94			1	1	95	95	190
Movie Theater	85	72			0	0	85	72	157
Hotel	81	56			0	0	81	56	137
Convention/Expo	21	673			2	2	23	675	698
Community Facility	19	26			0	0	19	26	45
School	15	18			1	1	16	19	35
Total	**2,288**	**3,216**	**279**	**279**	**14**	**14**	**2,581**	**3,509**	**6,090**
WEEKDAY PRE-GAME PEAK HOUR									
Residential	626	268			3	3	629	271	900
Office	7	29			2	2	9	31	40
Destination Retail	1,116	1,116			5	5	1,121	1,121	2,242
Local Retail	75	75			1	1	76	76	152
Movie Theater	135	119			0	0	135	119	254
Hotel	71	48			0	0	71	48	119
Convention/Expo	7	633			2	2	9	635	644
Community Facility	17	17			0	0	17	17	34
School	0	0			0	0	0	0	0
Total	**2,054**	**2,305**	**247**	**247**	**13**	**13**	**2,314**	**2,565**	**4,879**
SATURDAY MIDDAY NON-GAME PEAK HOUR									
Residential	727	549			5	5	732	554	1,286
Office	32	21			1	1	33	22	55
Destination Retail	1,635	1,571			3	3	1,638	1,574	3,212
Local Retail	103	84			0	0	103	84	187
Movie Theater	116	71			0	0	116	71	187
Hotel	111	87			3	3	114	90	204
Convention/Expo	358	358			1	1	359	359	718
Community Facility	37	39			0	0	37	39	76
School	0	0			0	0	0	0	0
Total	**3,119**	**2,780**	**350**	**350**	**13**	**13**	**3,482**	**3,143**	**6,625**
SATURDAY PRE-GAME PEAK HOUR									
Residential	558	558			5	5	563	563	1,126
Office	8	46			1	1	9	47	56
Destination Retail	1,195	1,035			3	3	1,198	1,038	2,236
Local Retail	103	84			0	0	103	84	187
Movie Theater	116	71			0	0	116	71	187
Hotel	111	87			3	3	114	90	204
Convention/Expo	382	215			1	1	383	216	599
Community Facility	37	39			0	0	37	39	76
School	0	0			0	0	0	0	0
Total	**2,510**	**2,135**	**267**	**267**	**13**	**13**	**2,790**	**2,415**	**5,205**
SATURDAY POST-GAME PEAK HOUR									
Residential	574	574			1	1	575	575	1,150
Office	32	21			0	0	32	21	53
Destination Retail	794	878			1	1	795	879	1,674
Local Retail	84	103			0	0	84	103	187
Movie Theater	114	186			0	0	114	186	300
Hotel	111	87			0	0	111	87	198
Convention/Expo	282	405			0	0	282	405	687
Community Facility	37	40			0	0	37	40	77
School	0	0			0	0	0	0	0
Total	**2,028**	**2,294**	**270**	**270**	**2**	**2**	**2,300**	**2,566**	**4,866**

Note: This table presents inbound and outbound taxi trips for the District rather than by a particular land use. Taxi trips are not assigned to a particular land use because taxi trips are assumed to be shared among all the land uses in the District. Taxi trips are balanced to account for some arriving empty and leaving full, some arriving full and leaving empty, and some arriving and leaving full.

Table 17-22 and Table 17-23 present the person trips and vehicle trips, respectively, expected to be generated by the anticipated development on Lot B. The anticipated development on Lot B would generate an estimated 890, 1,823, 1,782, and 1,735 person trips during the weekday AM, midday, PM, and Saturday midday (non-game days) peak hours, respectively. On game days, the development would generate an estimated 1,001 person trips during the weekday PM pre-game peak hour and 1,227 and 937 person trips in the Saturday pre-game and post-game hours, respectively. For vehicle trips, the anticipated development on Lot B would generate a total of 383, 529, 662, and 474 vehicle (auto, taxi, and delivery) trips during the weekday AM, midday, PM, and Saturday midday (non-game days) peak hours, respectively. On game days, the development would generate an estimated 320 vehicle trips during the weekday PM pre-game peak hour and 339 and 262 vehicle trips in the Saturday pre-game and post-game hours, respectively.

TRIP DISTRIBUTION AND ASSIGNMENT TO THE ROADWAY NETWORK

The Willets Point Development District lies within a major highway system in north-central Queens, between the Grand Central Parkway, the LIE, the Van Wyck Expressway, and the Whitestone Expressway. As part of the proposed Plan, a new access ramp from the northbound Van Wyck Expressway, at the existing Exit 13 ramp, would be constructed and would connect to the new street network within the District at the northeast corner of the site. A new ramp to the southbound Van Wyck Expressway would also be built and connect the northeast corner of the site to the expressway mainline immediately south of the interchange with the Whitestone Expressway. The two new ramps would provide inbound trip access to the site from the northbound Van Wyck Expressway and outbound trip access from the site to the southbound Van Wyck Expressway and the eastbound and westbound Grand Central Parkway, via the existing ramp which leads westbound toward the elevated southbound Whitestone Expressway along the northern edge of the district.

The volume of vehicular traffic generated by the proposed Plan and Lot B was assigned to the highway and roadway networks using regional and local origin/destination patterns attributed to different land use types. The route assignments for vehicular trips generated by the proposed Plan assume those ramp access improvements and street network changes within the Willets Point Development District. Trips generated by the proposed land uses within the District were assigned to its primary access points. Lot B-generated trips were assigned to Lot D.

OFFICE TRIPS

For office auto trips, 16 percent were assigned to the eastbound Grand Central Parkway, 2 percent were assigned to eastbound Astoria Boulevard, 5 percent were assigned to eastbound Northern Boulevard, 2 percent were assigned to eastbound Roosevelt Avenue, 4 percent were assigned to the eastbound LIE, 20 percent were assigned to the westbound Grand Central Parkway (from south of the LIE; 16 percent were assigned to the westbound LIE, 17 percent were assigned to the southbound Whitestone Expressway, 14 percent were assigned to the northbound Van Wyck Expressway (from south of the LIE); 2 percent were assigned to westbound Northern Boulevard, and a combined 2 percent were assigned to westbound Roosevelt Avenue, westbound Sanford Avenue, and College Point Boulevard. Office taxi trips were assigned with approximately 65 to 70 percent on the highways and the remaining 30 to 35 percent on local streets through the study area, following similar routes as auto trips.

Table 17-22
Lot B Person Trips by Mode

Use	Auto		Taxi		Subway		Bus		Walk Only		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY AM PEAK HOUR													
Office	291	12	6	0	91	4	80	3	103	5	571	24	595
Destination Retail	106	68	5	3	27	17	32	21	10	6	180	115	295
Total	**397**	**80**	**11**	**3**	**118**	**21**	**112**	**24**	**113**	**11**	**751**	**139**	**890**
WEEKDAY MIDDAY PEAK HOUR													
Office	93	100	2	2	29	31	25	28	214	232	363	393	756
Destination Retail	346	283	18	14	88	72	106	86	29	25	587	480	1,067
Total	**439**	**383**	**20**	**16**	**117**	**103**	**131**	**114**	**243**	**257**	**950**	**873**	**1,823**
WEEKDAY PM PEAK HOUR													
Office	18	335	0	7	6	105	5	92	6	117	35	656	691
Destination Retail	303	341	15	17	77	87	92	104	26	29	513	578	1,091
Total	**321**	**676**	**15**	**24**	**83**	**192**	**97**	**196**	**32**	**146**	**548**	**1,234**	**1,782**
WEEKDAY PRE-GAME PEAK HOUR													
Office	5	18	0	0	1	6	1	5	2	7	9	36	45
Destination Retail	282	282	14	14	72	72	86	86	24	24	478	478	956
Total	**287**	**300**	**14**	**14**	**73**	**78**	**87**	**91**	**26**	**31**	**487**	**514**	**1,001**
SATURDAY MIDDAY NON-GAME PEAK HOUR													
Office	20	14	0	0	6	4	6	4	8	5	40	27	67
Destination Retail	502	482	43	41	111	106	153	147	42	41	851	817	1,668
Total	**522**	**496**	**43**	**41**	**117**	**110**	**159**	**151**	**50**	**46**	**891**	**844**	**1,735**
SATURDAY PRE-GAME PEAK HOUR													
Office	5	29	0	1	2	9	1	8	2	10	10	57	67
Destination Retail	367	317	31	27	81	70	112	97	31	27	622	538	1,160
Total	**372**	**346**	**31**	**28**	**83**	**79**	**113**	**105**	**33**	**37**	**632**	**595**	**1,227**
SATURDAY POST-GAME PEAK HOUR													
Office	20	14	0	0	6	4	6	4	8	5	40	27	67
Destination Retail	244	270	21	23	54	59	74	82	20	23	413	457	870
Total	**264**	**284**	**21**	**23**	**60**	**63**	**80**	**86**	**28**	**28**	**453**	**484**	**937**

Table 17-23
Lot B Vehicle Trips by Type

Use	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY AM PEAK HOUR									
Office	255	11			4	4	259	15	274
Destination Retail	52	33			5	5	57	38	95
Total	**307**	**44**	**7**	**7**	**9**	**9**	**323**	**60**	**383**
WEEKDAY MIDDAY PEAK HOUR									
Office	82	88			5	5	87	93	180
Destination Retail	169	138			7	7	176	145	321
Total	**251**	**226**	**14**	**14**	**12**	**12**	**277**	**252**	**529**
WEEKDAY PM PEAK HOUR									
Office	16	294			1	1	17	295	312
Destination Retail	148	166			1	1	149	167	316
Total	**164**	**460**	**17**	**17**	**2**	**2**	**183**	**479**	**662**
WEEKDAY PRE-GAME PEAK HOUR									
Office	4	16			1	1	5	17	22
Destination Retail	138	138			1	1	139	139	278
Total	**142**	**154**	**10**	**10**	**2**	**2**	**154**	**166**	**320**
SATURDAY MIDDAY NON-GAME PEAK HOUR									
Office	18	12			0	0	18	12	30
Destination Retail	202	194			0	0	202	194	396
Total	**220**	**206**	**24**	**24**	**0**	**0**	**244**	**230**	**474**
SATURDAY PRE-GAME PEAK HOUR									
Office	4	25			0	0	4	25	29
Destination Retail	147	127			0	0	147	127	274
Total	**151**	**152**	**18**	**18**	**0**	**0**	**169**	**170**	**339**
SATURDAY POST-GAME PEAK HOUR									
Office	18	12			0	0	18	12	30
Destination Retail	98	108			0	0	98	108	206
Total	**116**	**120**	**13**	**13**	**0**	**0**	**129**	**133**	**262**

Note: This table presents inbound and outbound taxi trips for the District rather than by a particular land use. Taxi trips are not assigned to a particular land use because taxi trips are assumed to be shared among all the land uses in the District. Taxi trips are balanced to account for some arriving empty and leaving full, some arriving full and leaving empty, and some arriving and leaving full.

RETAIL TRIPS

Separate trip distribution patterns were estimated for destination retail trips, local retail trips, and the movie theatre trips. Overall, considering all retail uses, for retail trips traveling to the District from points west of the study area (Manhattan, the Bronx/Westchester, and western/west-central Queens, and surrounding neighborhoods), it was estimated that about 8 to 16 percent would use the eastbound Grand Central Parkway, about 5 to 8 percent would use eastbound Astoria Boulevard, 6 to 12 percent would use eastbound Northern Boulevard, about 3 to 8 percent would use Roosevelt Avenue, and about 6 to 12 percent would use the eastbound LIE. For retail trips traveling to the District from points east of the study area (eastern/southeastern Queens, Long Island, and surrounding neighborhoods), it was estimated that about 5 to 6 percent would use the westbound Grand Central Parkway, 5 to 10 percent would use westbound Northern Boulevard, about 1 to 5 percent would use westbound Roosevelt Avenue, 1 to 3 percent would use westbound Sanford Avenue, and 10 to 16 percent would use the westbound LIE. For retail trips traveling to the District from points north of the study area (northeastern Queens, the Bronx, and surrounding neighborhoods), it was estimated that about 8 to 12 percent would use the southbound Whitestone Expressway, up to 1 percent would use southbound College Point Boulevard, and up to 3 percent would use Parsons Boulevard. For retail trips traveling to the District from points south of the study area (southern Queens, Brooklyn, and surrounding neighborhoods), it was estimated that about 5 to 14 percent would use the northbound Van Wyck Expressway, up to 2 percent would use northbound College Point Boulevard, up to 4 percent would use Kissena Boulevard/Main Street, up to 3 percent would use northbound Parsons Boulevard, and up to 1 percent would use 108th Street. Overall, destination retail and movie theater taxi trips were assigned with approximately 55 to 60 percent on the highways and the remaining 40 to 45 percent on local streets through the study area, following similar routes as auto trips.

CONVENTION CENTER TRIPS

It is expected that a convention center at Willets Point would have regional attractiveness, with trips predominantly on the highway network to the study area. For the convention center, approximately 12 to 18 percent of the trips would be on each of the major highways to the study area, including the eastbound and westbound Grand Central Parkway, the eastbound and westbound LIE, the northbound Van Wyck Expressway, and the southbound Whitestone Expressway. Use of the local streets, including Northern Boulevard, Roosevelt Avenue, and College Point Boulevard, would range from 1 to 6 percent. Convention center taxi trips were assigned with approximately 90 percent on the highways and the remaining 10 percent on local streets through the study area, following similar routes as auto trips.

HOTEL TRIPS

Regional distributions for hotel trips are expected to be generally similar to those of the convention center, but with a somewhat higher use of the local street network through the study area. It is expected that hotel trip distributions on the highway network would be about 10 to 18 percent on each highway to the District, and local street use would range from 1 to 8 percent each on Astoria Boulevard, Northern Boulevard, Roosevelt Avenue, Sanford Avenue, and College Point Boulevard. Hotel taxi trips were assigned with approximately 75 percent on the highways and the remaining 25 percent on local streets through the study area, following similar routes as auto trips.

SCHOOL TRIPS

Student drop-off trips were assigned to the District from local streets and arterials serving surrounding neighborhoods. School "in" trips for the weekday AM peak hour were assigned as follows: about 10 to 18 percent each on eastbound Astoria Boulevard, eastbound and westbound Northern Boulevard, and eastbound Roosevelt Avenue; and about 2 to 8 percent each on westbound Roosevelt Avenue, westbound Sanford Avenue, Parsons Boulevard in both directions, southbound Union Street, Kissena Boulevard/Main Street, College Point Boulevard in both directions, and 34th Avenue. The small number of faculty trips to the school were assumed to follow similar routes as the weekday AM "in" distributions.

It was assumed that many of the drop-off trips would proceed to places to work; therefore, school "out" trips for the weekday AM peak hour were partly assigned according to morning commuter patterns (weekday AM peak hour residential "out" trip assignments). Weekday PM pick-up "in" trips would arrive along the reverse of the weekday AM "out" trips, and the pick-up "out" trips would route back to the origins of the weekday AM drop-off "in" trips.

COMMUNITY FACILITY

The community center is expected to serve surrounding neighborhoods, and therefore trips were assigned to the District from local streets and arterials similar to the weekday AM "in"/weekday PM "out" school trips. The very small number of expected community center taxi trips were assigned to Northern Boulevard.

DELIVERIES

Trucks were assigned along NYCDOT designated truck routes, including the Van Wyck and the Whitestone Expressways, the LIE, Northern Boulevard, Astoria Boulevard, Roosevelt Avenue, and College Point Boulevard. (Trucks are not allowed on the Grand Central Parkway.) Overall on the highways, approximately 10 to 15 percent of all truck trips were assigned to the Van Wyck Expressway (south of the LIE), approximately 10 to 15 percent were assigned to the Whitestone Expressway, and approximately 20 to 25 percent were assigned to each the eastbound and westbound LIE (these trucks would access the project area along the Van Wyck Expressway). For local streets, about 10 to 15 percent were assigned to Astoria Boulevard, about 2 to 10 percent were assigned to each eastbound and westbound Northern Boulevard, and about 1 to 5 percent were assigned to Roosevelt Avenue and College Point Boulevard.

GENERATED TRAFFIC VOLUMES

The above trip generation-modal split-trip distribution process produced specific roadway-by-roadway and intersection-by-intersection traffic volume projections within the study area, an overview of which is provided below. Specific block-by-block generated volume projections are provided in detail in the technical appendices.

In 2017, the proposed Plan and Lot B traffic volume increments would make up approximately 6 percent of the overall traffic volumes in the AM peak hour, 8 percent in the midday peak hour, 8 percent in the PM peak hour, and 9 percent in the Saturday midday peak hour, without a Mets game, when comparing these volume increments to overall 2017 Build traffic volumes entering and exiting the traffic study area's local street network. For peak hours with a Mets game, the proposed Plan and Lot B traffic increments would make up about 7 percent and 8 percent of the

overall traffic volumes during the weekday PM and Saturday midday pre-game peak hours, and about 7 percent during the Saturday PM post-game peak hour.

Northern Boulevard volumes can be expected to increase by about 90 to 230 vph per direction during the seven peak hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the Willets Point Development District and Citi Field, Northern Boulevard volumes can be expected to increase by approximately 110 to 475 vph per direction during all of the peak hours, with the increase in traffic along this section of the roadway primarily due to traffic from the ramp from the southbound Whitestone Expressway onto westbound Northern Boulevard. Northern Boulevard volumes in the vicinity of 108th and 114th Street can be expected to increase by about 130 to 270 vph per direction during the seven peak hours.

Roosevelt Avenue volumes can be expected to increase by about 25 to 85 vph per direction during the non game and game peak hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the Willets Point Development District and the Lot B and Lot D developments, Roosevelt Avenue volumes can be expected to increase by approximately 40 to 630 vph per direction during the peak hours without a Mets game – with the highest increment due to combined outbound office and retail trips during the weekday PM peak hour, and by about 100 to 360 vph per direction during the peak hours with a Mets game. The Roosevelt Avenue volumes would be generally higher under conditions with a Mets game, except for westbound Roosevelt Avenue during the weekday PM peak hour, due to a portion of inbound traffic on the southbound Whitestone Expressway that can be expected to exit toward College Pont Boulevard to Roosevelt Avenue, instead of exiting closer to the District, at westbound Northern Boulevard, which is typically very congested during game peak hours. Furthermore, during game-day peak hours, inbound traffic from westbound Northern Boulevard can be expected to use College Point Boulevard instead of proceeding past the District to the ramp to Boat Basin Road and back along Stadium Road – also very congested during game peak hours. Roosevelt Avenue volumes in the vicinity of 108th, 111th, and 114th Streets can be expected to increase by about 60 to 475 vph per direction during the seven peak hours.

Sanford Avenue volumes through Downtown Flushing between Parsons Boulevard and College Point Boulevard can be expected to increase by about 15 to 65 vph per direction during all of the peak hours.

Astoria Boulevard volumes in the vicinity of 108th and 114th Streets can be expected to increase by about 60 to 165 vph per direction during the seven peak hours.

Volumes on 34th Avenue from the Willets Point Development District at the intersection with 126th Street are expected to increase by about 290 to 625 vph per direction during the seven peak hours. Furthermore, volumes along West Park Loop/Stadium Road at the intersection with 126th Street can be expected to increase by approximately 420 to 605 vph per direction during the peak hours without a Mets game, and by 145 to 180 vph per direction during the peak hours with a Mets game.

Volumes along 126th Street in the vicinity of 34th Avenue can be expected to increase by approximately 120 to 840 vph per direction during the seven peak hours. In the vicinity of the intersections with Roosevelt Avenue and the new Willets Point Boulevard, 126th Street volumes can be expected to increase by about 90 to 595 vph per direction during all of the peak hours.

College Point Boulevard volumes can be expected to increase by about 5 to 180 vph per direction during the peak hours without a Mets game, and by approximately 25 to 360 vph per direction during the peak hours with a Mets game. The increased increment under the game-day conditions would be due to the exiting traffic from the southbound Whitestone Expressway and westbound Northern Boulevard, as previously discussed for the Roosevelt Avenue game-day increments.

Volumes along 114th Street in the vicinity of Roosevelt Avenue can be expected to increase by approximately 5 to 345 vph during the seven peak hours. Projected volume increments on the other north-south streets, including 108th Street, Main Street, Union Street, and Parsons Boulevard can be expected to range from about 5 to 35 vph during all of the peak hours.

GAME DAY CIRCULATION CHANGES

It is expected that the new ramp connecting the northbound and southbound Van Wyck Expressway to the Willets Point Development District as part of the proposed Plan would also be used as an alternate route for stadium traffic to Citi Field on game days. Citi Field traffic using the ramp would route through the District, either along the new 34th Avenue or Willets Point Boulevard connector streets to 126th Street to enter the stadium lots.

Furthermore, it is expected that the traffic using the new ramp would comprise a portion of the stadium trips generated to the east and south of Citi Field, approaching along the westbound LIE, the northbound Van Wyck Expressway (from south of the LIE), northbound College Point Boulevard, and some traffic on the westbound Grand Central Parkway. Based on the Shea Stadium Redevelopment Study FEIS, approach distributions from the east and south along those routes total approximately 50 percent of the total game trips. For future conditions with the proposed Plan, an estimated 20 to 25 percent of that inbound traffic is expected to use the new ramp, which would equal approximately 300 to 450 trips in the weekday PM and weekend midday pre-game peak hours. This traffic is expected to proceed west along 34th Avenue to Stadium Road to access the Citi Field main lot entrance at Boat Basin Road. The rest of the stadium-bound traffic is expected to use the new Willets Point Boulevard to 126th Street and enter the Citi Field lots from Roosevelt Avenue and the internal roadway around the proposed Lot B development.

For the post-game peak hour, it is expected that approximately 150 to 200 trips would route through the District to access the new ramp to the southbound Van Wyck Expressway. The volume of such trips is expected to be about one half of the game traffic entering the southbound Van Wyck Expressway along the ramp from the northbound Whitestone Expressway immediately north of the District.

Furthermore, it is expected that during game-day peak hours, some trips generated by the proposed Plan along certain routes would make path modifications to avoid game-related traffic issues. Specifically, a portion (about 50 percent) of the trips along the southbound Whitestone Expressway, which on typical non-game days would exit onto westbound Northern Boulevard at 126th and circle back to the District along World's Fair Marina/Boat Basin Road and Stadium Road, would instead exit toward College Point Boulevard and travel south to Roosevelt Avenue and west to the District (some outbound trips would follow the reverse path). The other path modification would be for trips traveling westbound along Northern Boulevard, which on typical non-game days are expected to use two routes to the District. On game days, it is expected that they would predominantly use the route that includes the Northern Boulevard service road to College Point Boulevard, to Roosevelt Avenue and west to the District.

TRAFFIC LEVELS OF SERVICE AND IMPACTS

The assessment of potential significant traffic impacts of the Proposed Actions is based on significant impact criteria defined in the *CEQR Technical Manual*. No Build LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future Build conditions are considered a significant traffic impact. For future No Build LOS A, B, or C conditions that deteriorate to unacceptable LOS D, mitigation to mid-LOS D (45.0 seconds of delay for

signalized intersections and 30.0 seconds of delay for unsignalized intersections) needs to be considered to fully mitigate the impact.

For a No Build LOS D, an increase of delay by 5 or more seconds in the Build condition is considered a significant impact if the Build delay exceeds 45.0 seconds. For a No Build LOS E, the threshold is a 4-second increase in Build delay; for a No Build LOS F, a 3-second increase in delay in the Build condition is significant. However, if a No Build LOS F condition already has delays in excess of 120 seconds, an increase in delay of more than 1 second is considered significant, unless the proposed Plan would generate fewer than 5 vehicles through that intersection in the peak hour (signalized intersections) or fewer than 5 passenger-car-equivalents (PCEs) in the peak hour along the critical approach (unsignalized intersections). In addition, for unsignalized intersections, for the minor street to generate a significant impact, 90 PCEs must be identified in the Build condition in any peak hour.

The remainder of this section provides an overview of significant traffic impacts that would be generated under the Build conditions, primarily through the use of figures indicating overall levels of service intersection-by-intersection and significantly impacted locations. Detailed volume-to-capacity (v/c) ratios, average vehicle delay, and levels of service movement-by-movement at each intersection under the 2017 Build condition, along with generated-traffic volume increment maps and total Build volume maps, are provided within the technical traffic appendices.

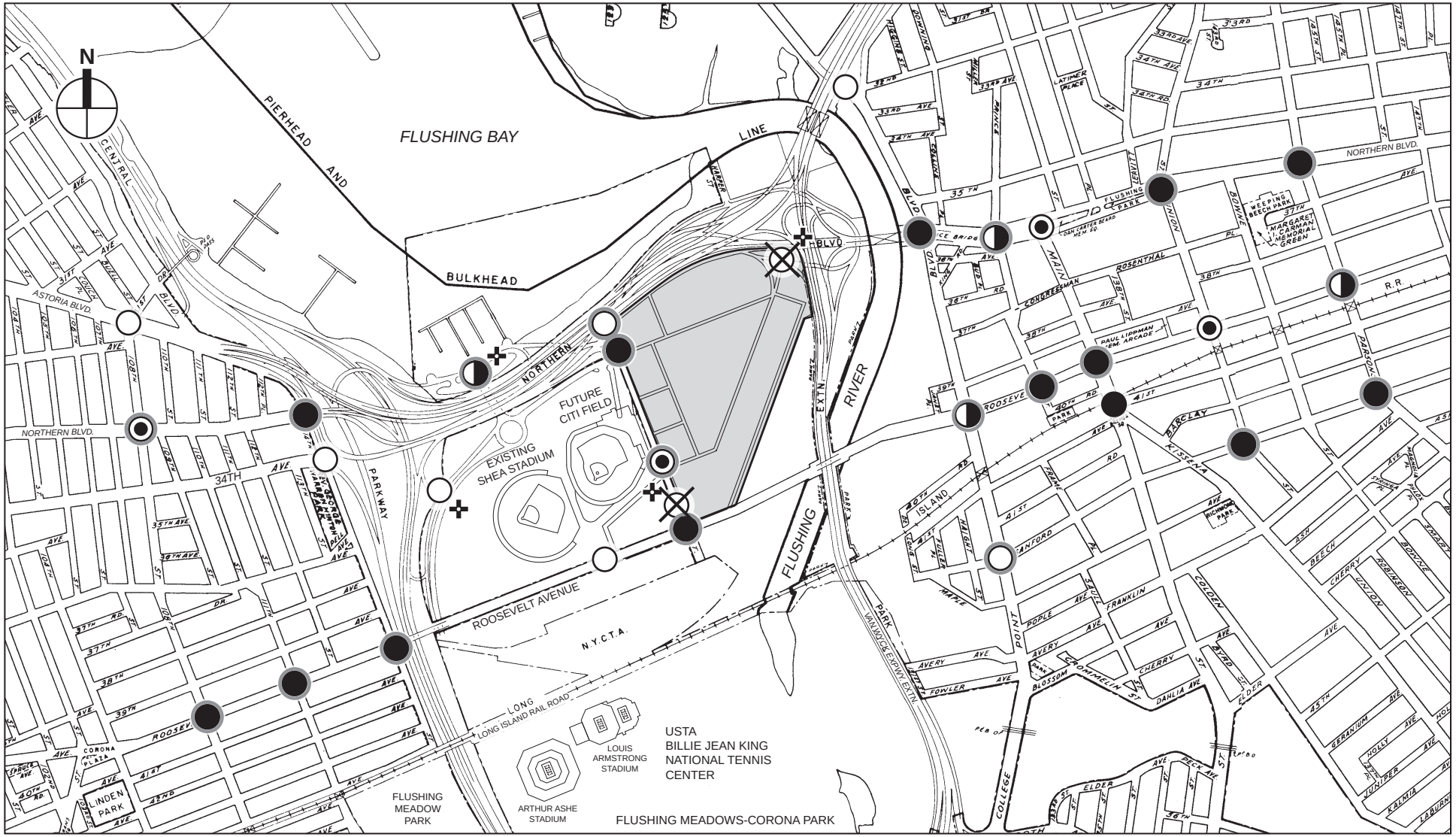
Using the previously discussed volume increases, the levels of service for the 2017 Build condition were determined for 27 of the 29 intersections (both signalized and unsignalized) analyzed under the No Build condition, and for two new signalized intersections (126th Street and New Willets Point Boulevard, and Citi Field/Lot B and Roosevelt Avenue) that would be constructed as part of the proposed Plan. Two unsignalized intersections, Willets Point Boulevard at 126th Street and Willets Point Boulevard at Northern Boulevard, analyzed under the No Build condition, would be eliminated due to street demapping in the proposed Plan. Future traffic levels of service under the Build condition are shown in Figures 17-19 through 17-25 and in Tables 17-24 through 17-27.

Table 17-24
Overall Intersection Level of Service Summary Comparison
2017 No Build vs. 2017 Build Conditions – Non-Game Day

	2017 No Build Condition				2017 Build Condition			
Signalized Intersections	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	25 Signalized Intersections				27 Signalized Intersections [1]			
Overall Intersection LOS A/B/C	7	8	6	6	6	7	3	4
Overall Intersection LOS D	3	5	2	0	4	4	3	2
Overall Intersection LOS E	4	5	7	3	3	5	3	3
Overall Intersection LOS F	11	7	10	16	14	11	18	18
No. of Locations with Significant Impacts	--	--	--	--	21	17	23	21

Notes:
1. The 2017 Build analysis includes the new signalized intersections of 126th Street and New Willets Point Boulevard, and Citi Field/Lot B and Roosevelt Avenue.

During the non game peak hours in the 2017 Build condition, the Grand Central Parkway ramp at West Park Loop/Stadium Road would operate at LOS A or B, and Boat Basin Road at World Fair Marina would operate at LOS E or F. One of the two unsignalized intersections would be significantly impacted in all non-game-day peak hours.



Willets Point Development District

Unsignalized Intersection

Significant Impacts

LOS A, B, or C

LOS D

LOS E

LOS F

Removed under Build Condition

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

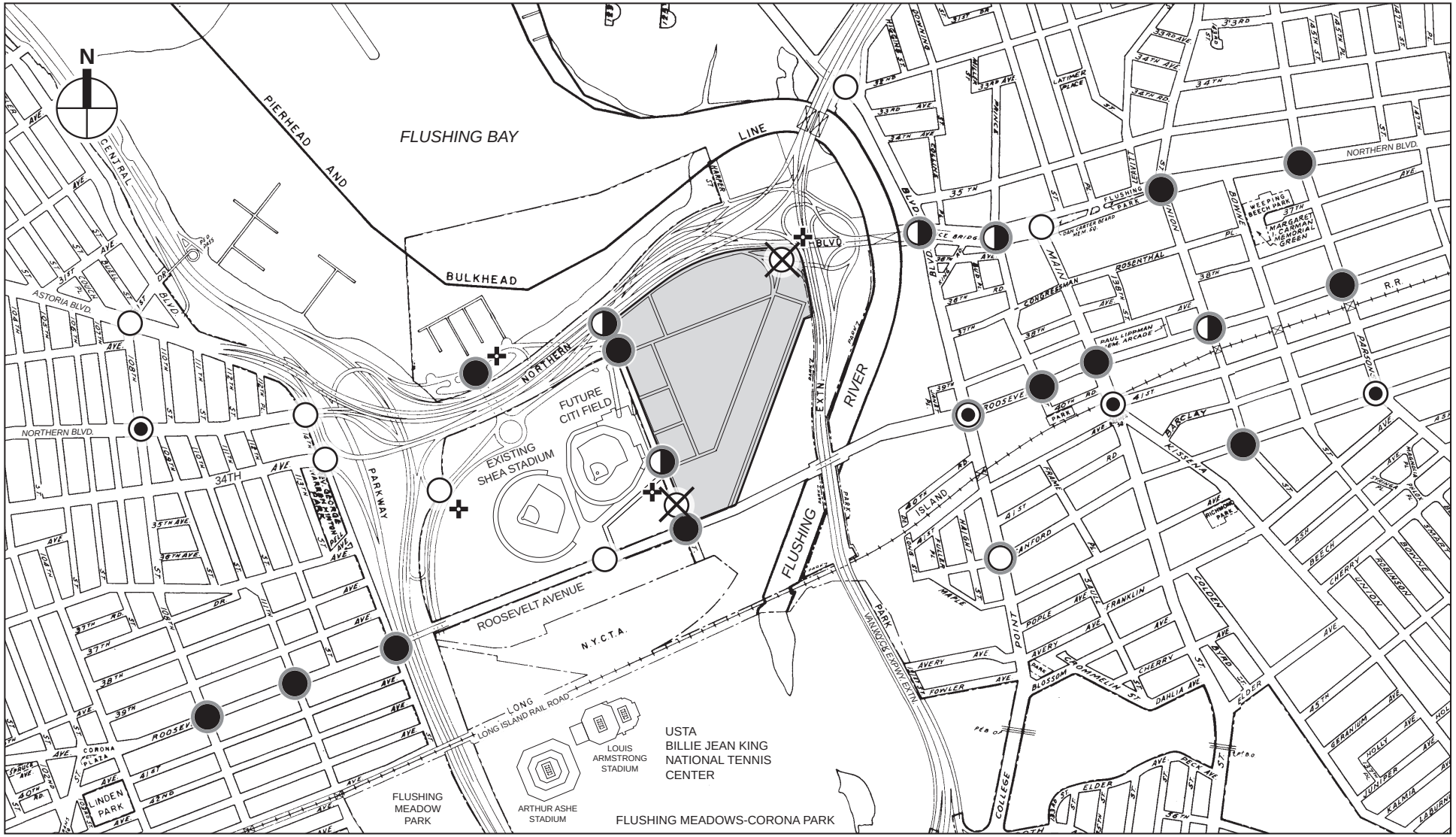
SCALE

This figure has been updated since the DGEIS

Figure 17-19

Build Traffic Levels of Service Weekday Non-Game AM Peak Hour

9.8.08



Willets Point Development District

Unsignalized Intersection

Significant Impacts

LOS A, B, or C

LOS D

LOS E

LOS F

Removed under Build Condition

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

SCALE

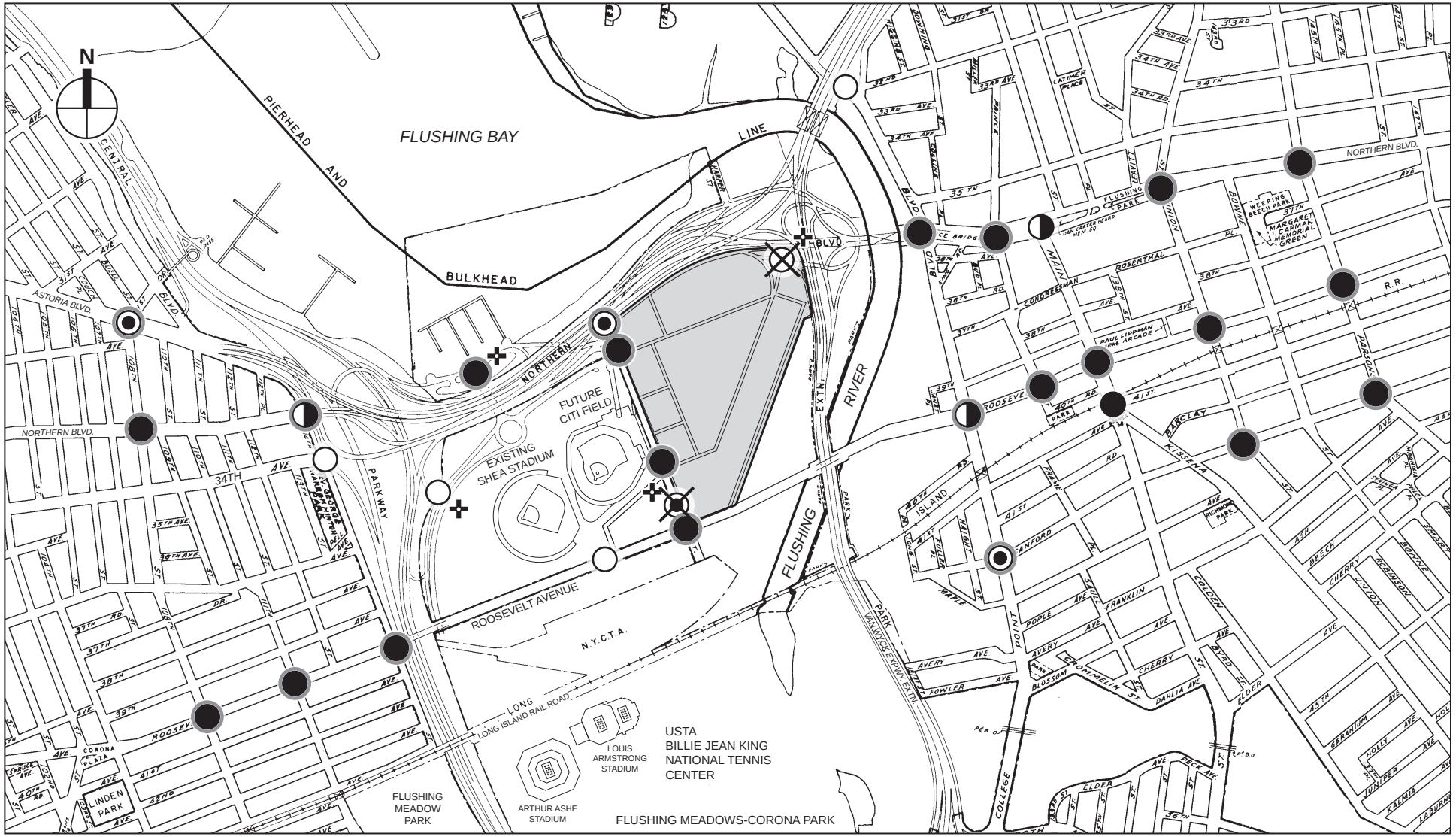
This figure has been updated since the DGEIS

Figure 17-20

Build Traffic Levels of Service

Weekday Non-Game Midday Peak Hour

9.8.08



Willets Point Development District

Unsignalized Intersection

Significant Impacts

LOS A, B, or C

LOS D

LOS E

LOS F

Removed under Build Condition

NOTE: *Overall intersection LOS is shown*

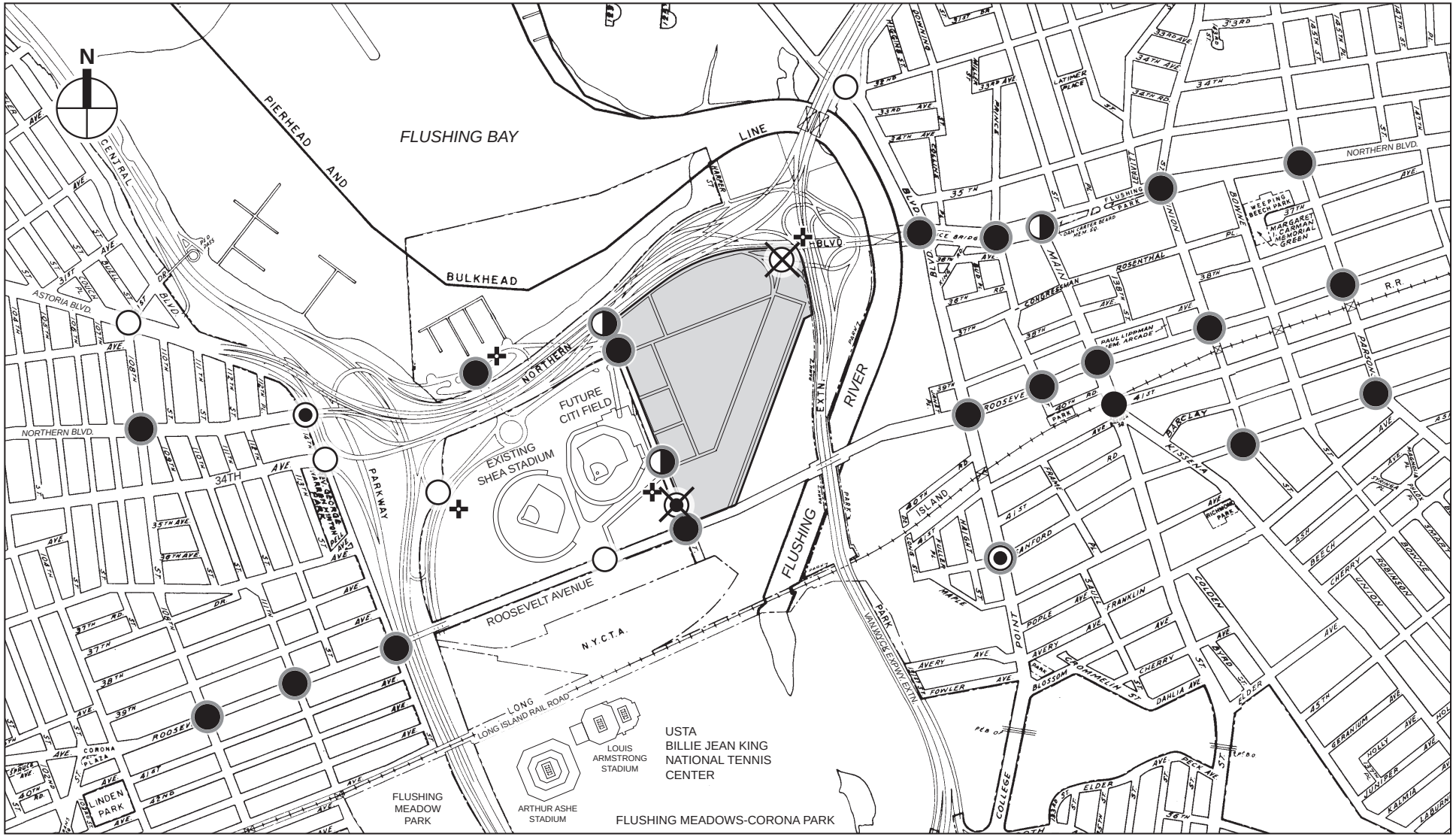
0 1000 2000 FEET

SCALE

This figure has been updated since the DGEIS

Figure 17-21

Build Traffic Levels of Service Weekday Non-Game PM Peak Hour

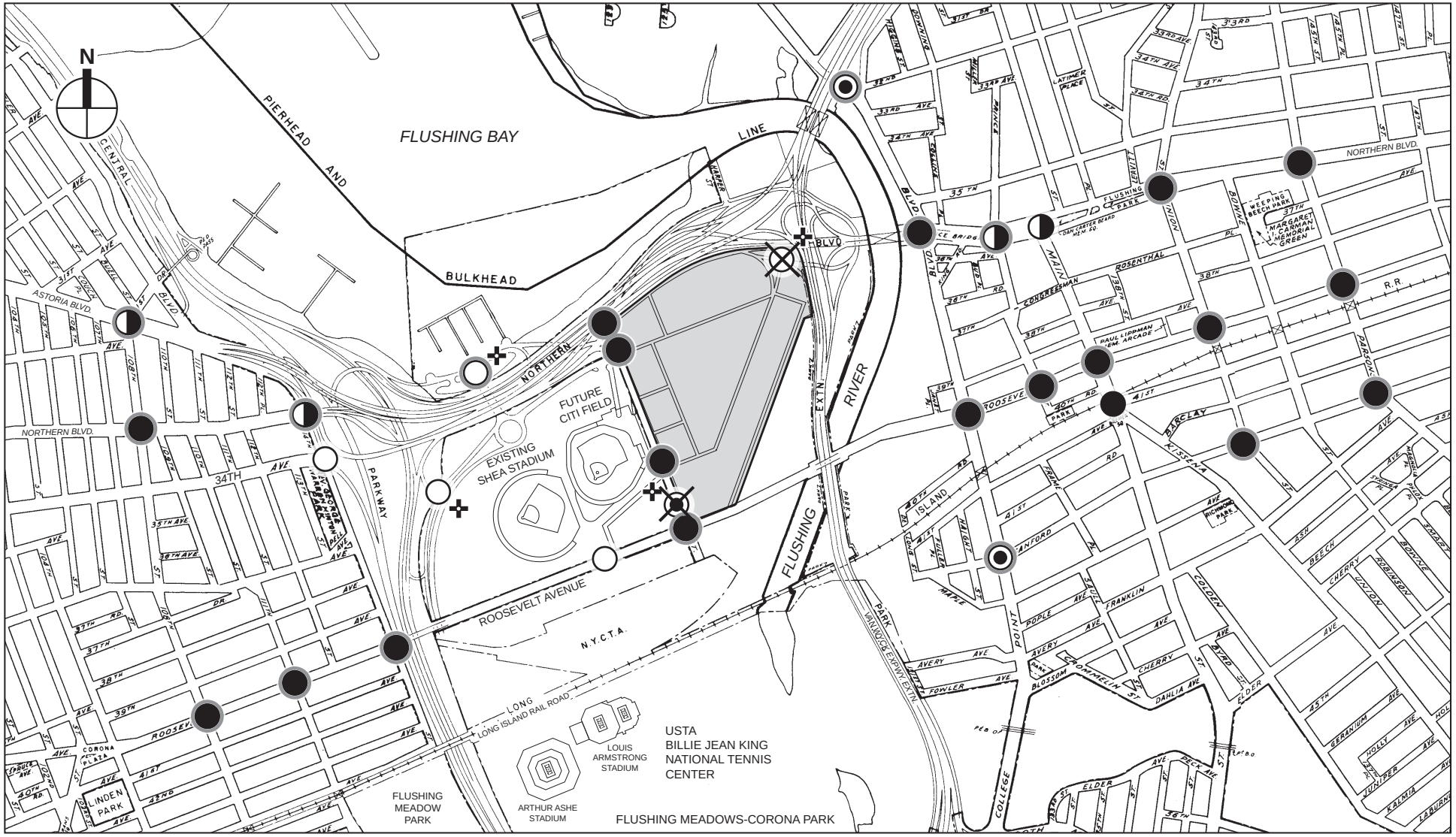


This figure has been updated since the DGEIS

Figure 17-22

Build Traffic Levels of Service
Saturday Non-Game Midday Peak Hour

9.8.08



Willets Point Development District

Unsignalized Intersection

Significant Impacts

LOS A, B, or C

LOS D

LOS E

LOS F

Removed under Build Condition

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

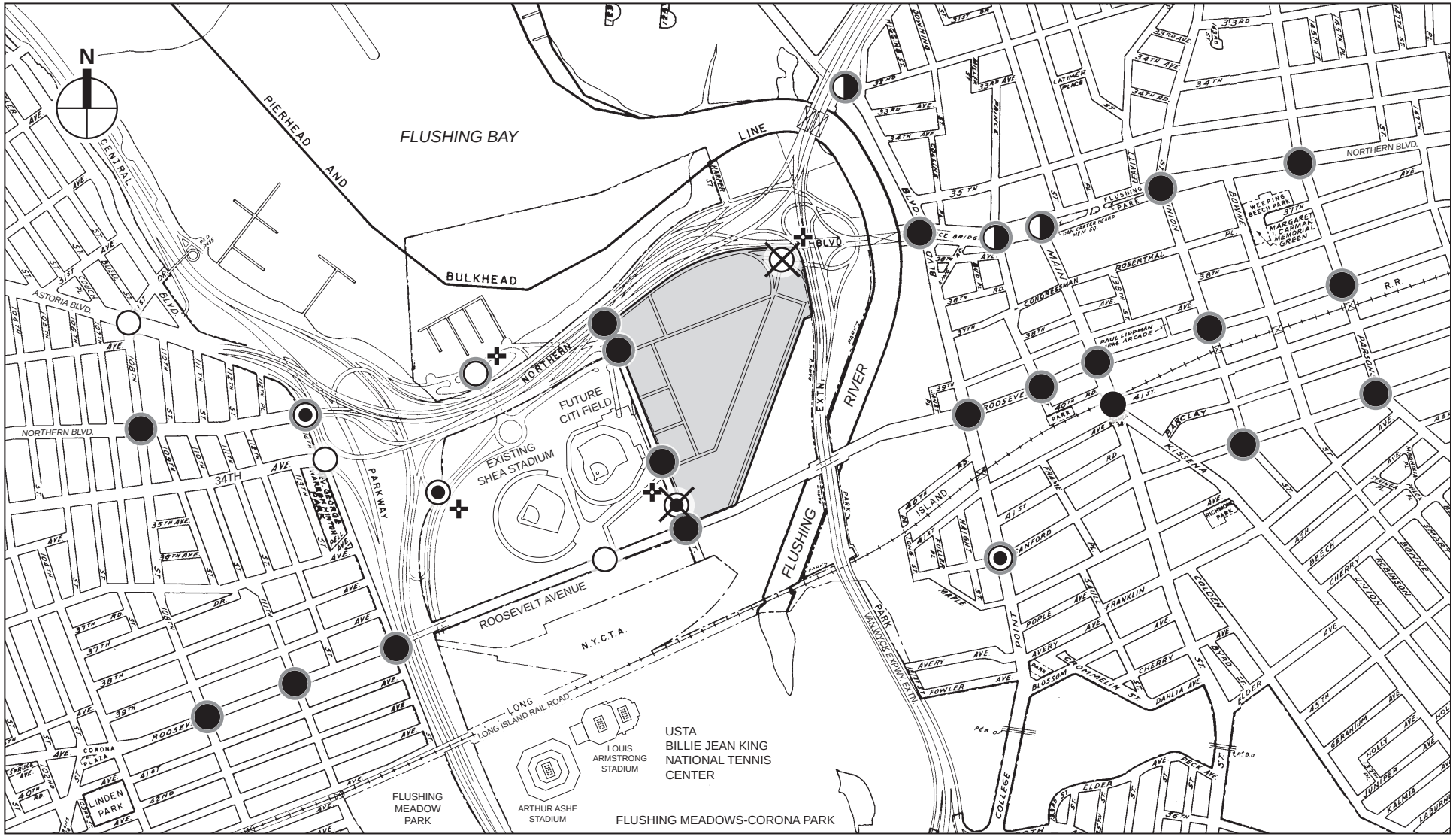
SCALE

This figure has been updated since the DGEIS

Figure 17-23

Build Traffic Levels of Service
Weekday Pre-Game Peak Hour

9.8.08



Willets Point Development District

Unsignalized Intersection

Significant Impacts

LOS A, B, or C

LOS D

LOS E

LOS F

Removed under Build Condition

NOTE: *Overall intersection LOS is shown*

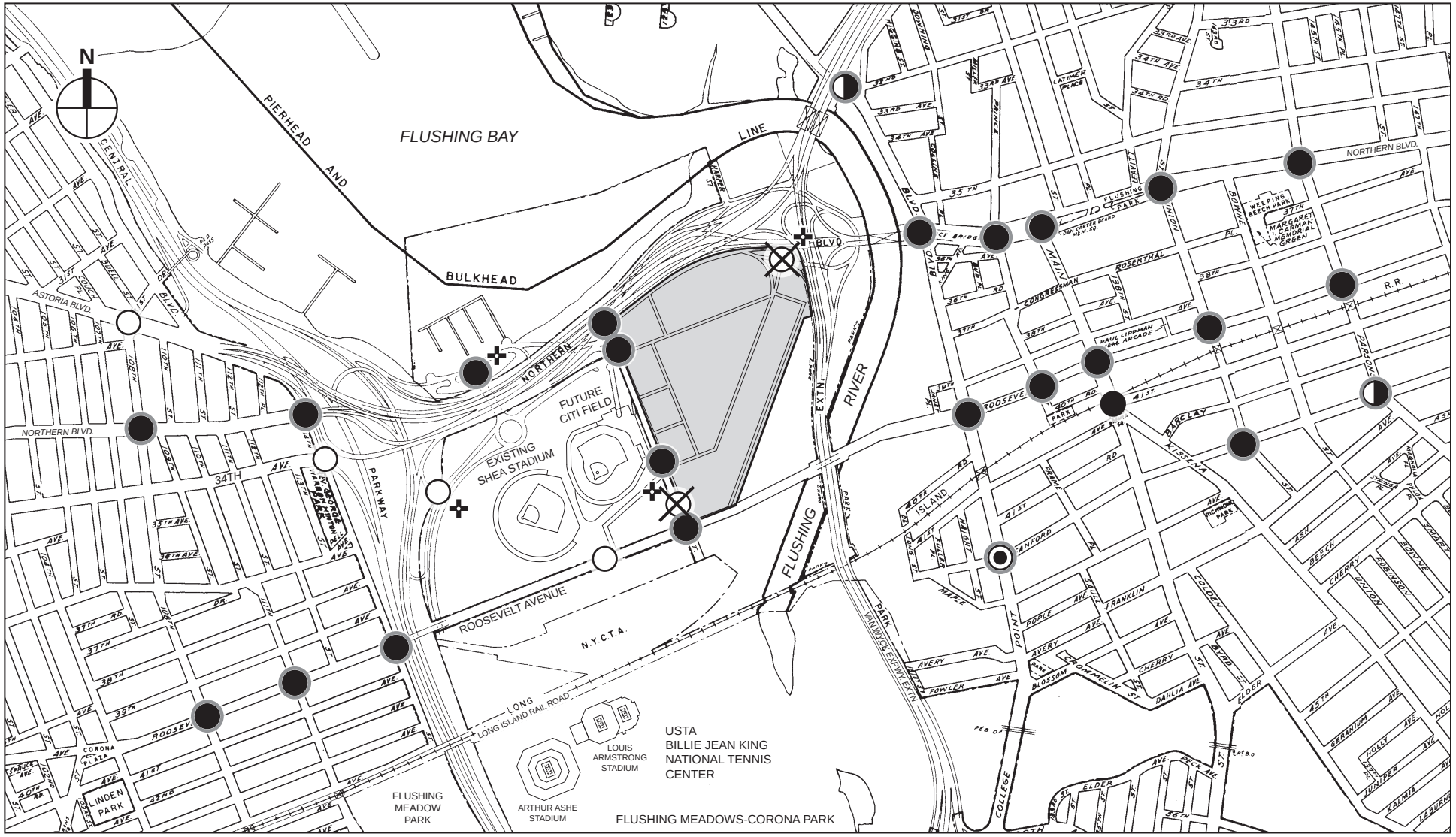
0 1000 2000 FEET

SCALE

This figure has been updated since the DGEIS

Figure 17-24

Build Traffic Levels of Service
Saturday Pre-Game Peak Hour



Willets Point Development District

Unsignalized Intersection

Significant Impacts

LOS A, B, or C

LOS D

LOS E

LOS F

Removed under Build Condition

NOTE: *Overall intersection LOS is shown*

0 1000 2000 FEET

SCALE

This figure has been updated since the DGEIS

Figure 17-25

Build Traffic Levels of Service
Saturday Post-Game Peak Hour

Table 17-25
Traffic Lane Group Level of Service Summary Comparison
2017 No Build vs. 2017 Build Conditions – Non-Game Day

Signalized Movements	2017 No Build Condition				2017 Build Condition			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	25 Signalized Intersections [1]				27 Signalized Intersections [1]			
No. of Lane Groups at LOS A/B/C	53	60	33	42	54	58	30	37
No. of Lane Groups at LOS D	25	27	41	26	23	24	29	22
No. of Lane Groups at LOS E	15	8	10	8	16	10	19	9
No. of Lane Groups at LOS F	34	31	42	52	44	46	59	70

Notes:
1. The 2017 Build analysis includes the new signalized intersections of 126th Street and New Willets Point Boulevard, and Citi Field/Lot B and Roosevelt Avenue.

During the non game peak hours in the 2017 Build conditions, all unsignalized lane groups would operate at LOS A or B, except for the northbound left turn from Boat Basin Road onto World Fair Marina which would operate at LOS F.

Table 17-26
Overall Intersection Level of Service Summary Comparison
2017 No Build vs. 2017 Build Conditions – Game Day

Signalized Intersections	2017 No Build Condition			2017 Build Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	25 Signalized Intersections			27 Signalized Intersections [1]		
Overall Intersection LOS A/B/C	3	5	2	2	3	3
Overall Intersection LOS D	3	1	4	2	2	1
Overall Intersection LOS E	3	3	5	4	3	2
Overall Intersection LOS F	16	16	14	19	19	21
No. of Locations with Significant Impacts	--	--	--	24	23	23

Notes:
1. The 2017 Build analysis includes the new signalized intersections of 126th Street and New Willets Point Boulevard, and Citi Field/Lot B and Roosevelt Avenue.

In the 2017 Build condition, during the pre-game peak hours, both unsignalized intersections would operate at overall LOS C or D; during the weekend post-game peak period, the Grand Central Parkway ramp at West Park Loop/Stadium Road would operate at LOS B, and Boat Basin Road at World's Fair Marina would operate at overall LOS F. One of the two unsignalized intersections would be significantly impacted in all game-day peak hours.

Table 17-27
Traffic Lane Group Level of Service Summary Comparison
2017 No Build vs. 2017 Build Conditions – Game Day

Signalized Movements	2017 No Build Condition			2017 Build Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	25 Signalized Intersections			27 Signalized Intersections [1]		
No. of Lane Groups at LOS A/B/C	32	44	43	30	38	42
No. of Lane Groups at LOS D	23	26	24	22	23	22
No. of Lane Groups at LOS E	19	6	10	15	9	6
No. of Lane Groups at LOS F	54	52	52	71	68	67

Notes:
1. The 2017 Build analysis includes the new signalized intersections of 126th Street and New Willets Point Boulevard, and Citi Field/Lot B and Roosevelt Avenue.

In the 2017 Build condition, the northbound left turn from Boat Basin Road onto World Fair Marina would operate at LOS F during all game peak hours; the eastbound left turn from the Grand Central Parkway ramp onto West Park Loop/Stadium Road would operate at LOS E during the weekend pre-game peak hour. All other lane groups would operate at LOS D or better.

At many traffic study area intersections, the addition of the proposed Plan and Lot B's projected traffic to the already poor future baseline (No Build) conditions—with many movements operating at unacceptable levels of service—would cause these sensitive locations to be significantly impacted. As a result, the proposed Plan would have significant traffic impacts at 21 of the 27 signalized intersections analyzed in the weekday AM peak hour, 17 of 27 in the weekday midday peak hour, 23 of 27 in the weekday PM peak hour, and 21 of 27 in the non-game Saturday midday peak hour. During the PM pre-game weekday peak hour, 24 of 27 signalized intersections analyzed would have significant traffic impacts, and during the Saturday pre-game and post-game peak hours 23 of 27 signalized intersections analyzed would have significant impacts. Of the two unsignalized intersections analyzed, one (World's Fair Marina at Boat Basin Road) would be significantly impacted in each of the seven peak hours.

The summary overview of the 2017 Build condition without a Mets game indicates that:

- In the weekday AM peak hour, 17 of the 27 analyzed signalized intersections are projected to operate at overall LOS E or F, which is two more than under the No Build condition. Twenty-one signalized intersections would be significantly impacted. The number of traffic lane groups that are expected to operate at LOS E or F would increase from 49 to 60. Figure 17-19 shows the overall levels of service.
- In the weekday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from 12 under the No Build condition to 16 under the Build condition, and there would be significant impacts at 17 of the 27 signalized intersections. The number of individual lane groups that would operate at LOS E or F would increase from 39 to 56. Figure 17-20 shows the overall levels of service.
- In the weekday PM peak hour, the number of intersections that are projected to operate at overall LOS E or F would increase from 17 to 21 under the Build condition, with 23 signalized intersections significantly impacted. The number of individual lane groups that would operate at LOS E or F would increase from 52 to 78. Figure 17-21 shows the overall levels of service.
- In the Saturday midday peak hour, the number of signalized intersections projected to operate at LOS E or F would increase from 19 under the No Build condition to 21 under the Build condition. Twenty-one signalized intersections would be significantly impacted. The number of lane groups at LOS E or F would increase from 60 to 79. Figure 17-22 shows the overall levels of service.
- One of the two unsignalized intersections, World's Fair Marina at Boat Basin Road, would consistently have a traffic lane group operate at LOS F during the weekday AM, midday, PM, and Saturday midday non-game peak hours, and as a result, would be significantly impacted in all non-game-day peak hours. The other unsignalized intersection, Stadium Road at the Grand Central Parkway, would operate at acceptable levels of service.

The summary overview of the 2017 Build condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, 23 out of 27 signalized intersections would operate at LOS E or F under the Build condition, which is an increase from 19 signalized intersections at LOS E or F under the No Build condition. There would be significant impacts at 24 of the 27 signalized intersections. The number of lane groups that would operate at LOS E or F would increase from 73 to 86. Figure 17-23 shows the overall levels of service.

- During the Saturday midday pre-game peak hour, the number of intersections that are expected to operate at LOS E or F would increase from 19 to 22 under the Build condition, with 23 signalized intersections significantly impacted. The number of lane groups at LOS E or F would increase from 58 to 77. Figure 17-24 shows the overall intersection levels of service.
- In the Saturday PM post-game peak hour, the number of locations that would operate at LOS E or F would increase from 19 to 23 under the Build condition. Twenty-three signalized intersections would be significantly impacted. The number of lane groups that would operate at LOS E or F would increase from 62 to 73. Figure 17-25 shows the overall levels of service for this peak hour.
- One of the two unsignalized intersections, World's Fair Marina at Boat Basin Road, would consistently have a lane group operate at LOS F during the weekday PM and Saturday midday pre-game peak hours and the Saturday PM post-game peak hour, and as a result, would be significantly impacted in all game-day peak hours. The other unsignalized intersection, Stadium Road at the Grand Central Parkway, would operate at acceptable levels of service.

Table 17-28 shows the locations and time periods where significant impacts would occur in the 2017 Build condition. Mitigation measures for significantly impacted locations are discussed in Chapter 23.

PARKING

The proposed Plan would provide approximately 6,700 off-street accessory parking spaces to satisfy the projected parking demand due to the proposed Plan. The existing roadway network within the District would also be reconfigured under the proposed Plan, and any associated existing on-street parking spaces removed or replaced with new on-street spaces as part of the new street network. The projected parking demand is anticipated to be satisfied entirely within the District and is not expected to affect other nearby Citi Field, commuter, municipal, and other public on-street or off-street parking areas.

New parking areas would consist primarily of off-street parking facilities contained within the Willets Point Development District and limited on-street parking opportunities. As detailed street configurations and curbside parking regulations have not yet been defined within the District, it is expected that some level of on-street parking would be available. The proposed regulations would be designed to satisfy the needs of adjacent land uses; metered parking would likely be installed adjacent to retail uses or other commercial buildings, alternate side regulations would likely be installed near residential uses, and curbside parking restrictions would likely be imposed near the convention center, hotel, community facilities, or along primary delivery routes.

Table 17-28
2017 Build Condition Significant Impact Summary

Intersections	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Pre-game Weekday PM	Pre-game Saturday Midday	Post-game Saturday PM
Astoria Boulevard at 108th Street			x		x		
Northern Boulevard at 108th Street	x		x	x	x	x	x
Northern Boulevard at 114th Street	x		x		x	x	x
Northern Boulevard at 126th Street	x	x	x	x	x	x	x
Northern Boulevard at Prince Street	x	x	x	x	x	x	x
Northern Boulevard at Main Street	x		x	x	x	x	x
Northern Boulevard at Union Street	x	x	x	x	x	x	x
Northern Boulevard at Parsons Boulevard	x	x	x	x	x	x	x
34th Avenue at 114th Street							
34th Avenue at 126th Street	x	x	x	x	x	x	x
Roosevelt Avenue at 108th Street	x	x	x	x	x	x	x
Roosevelt Avenue at 111th Street	x	x	x	x	x	x	x
Roosevelt Avenue at 114th Street	x	x	x	x	x	x	x
Roosevelt Avenue at 126th Street	x	x	x	x	x	x	x
Roosevelt Avenue at College Point Boulevard	x	x	x	x	x	x	x
Roosevelt Avenue at Prince Street	x	x	x	x	x	x	x
Roosevelt Avenue at Main Street	x	x	x	x	x	x	x
Roosevelt Avenue at Union Street			x	x	x	x	x
Roosevelt Avenue at Parsons Boulevard	x	x	x	x	x	x	x
Kissena Boulevard at Main Street							
Sanford Avenue at College Point Boulevard	x		x	x	x	x	x
Sanford Avenue at Union Street	x	x	x	x	x	x	x
Sanford Avenue at Parsons Boulevard	x	x	x	x	x	x	x
32nd Avenue at College Point Boulevard					x	x	x
World's Fair Marina at Boat Basin Road	x	x	x	x	x	x	x
Northern Boulevard at College Point Boulevard	x	x	x	x	x	x	x
Stadium Road at Grand Central Parkway							
New Willets Point Boulevard at 126th Street	x	x	x	x	x	x	x
Roosevelt Avenue at New Citi Field Internal Street							

Notes: x means the intersection would be significantly impacted.

Parking demand for the proposed residential component would be satisfied through on-street and off-street parking opportunities. It is assumed that approximately 10 percent of residents would use available on-street parking opportunities, which would reduce the need for off-street parking demand by about 200 spaces. Given the anticipated residential demand of 2,700 spaces, approximately 2,500 off-street residential parking spaces would need to be provided. Residential parking demand is typically lowest during the daytime hours when office, community uses, and primary school parking demands are at a maximum. Therefore, shared parking strategies would be implemented and where possible, office, community, and primary school parking demands would use parking spaces vacated by residents during the daytime hours. This would maximize usage of vacant residential parking spaces during daytime hours and minimize the need for additional dedicated parking spaces for office, community, and primary school uses.

It is expected that the remaining land uses, retail, hotel, and the convention center, could also share common parking areas. However, because peaking patterns among these uses are similar to each other, there would be minimal savings in the number of required parking spaces. Hence, the projected weekday and Saturday parking demands for these uses are based on the sum of the

individual peak demands, or approximately 3,700 spaces and 4,200 spaces, respectively. The parking supply within in the District would be provided to accommodate the highest demand, 4,200 spaces, which would be expected to occur on a Saturday. Since parking areas designated for the retail, hotel, and convention center would likely be underutilized during the weekday, shared parking strategies could again be implemented and these parking facilities also used to accommodate office, community, and primary school parking demands.

Table 17-29 and Table 17-30 show the Willets Point Development District's projected parking accumulation by hour on a weekday and Saturday, respectively. Since it is assumed that the proposed parking would not be utilized by Citi Field traffic on game days, the accumulations of proposed parking would be the same for non-game days and game days.

The Citi Field Lot B development project would displace 660 existing parking spaces for game-day stadium traffic. These spaces would be replaced within a new parking structure on Lot D, located on the south side of Roosevelt Avenue to the east of the South Lot. Within the footprint of the new structure, a total of 1,543 spaces would be constructed, 573 of which would replace the existing Lot D surface spaces lost to the new structure. The remaining 970 spaces would accommodate Mets game day traffic and the Lot B development. On a typical weekday, the Lot B demand, primarily from the office use, is expected to peak at 662 spaces. This demand would diminish to approximately by 200 by 6 PM, leaving 770 spaces available for Mets patrons on a typical weekday 7 PM game. On a typical Saturday, the office parking demand would be negligible, while the retail demand would peak at approximately 310 parking spaces, leaving the remaining 660 spaces available for Mets game-day parking. Table 17-31 shows the projected parking accumulation by hour for the proposed Lot B development on a weekday and on a Saturday.

The new parking structure on Lot D would have designated internal areas for parking currently accommodated on Lot D, parking associated with the new Lot B development, and Mets game day patrons. Access to the parking garage would be provided via a connection to the South Lot immediately west of Lot D, and a new driveway entrance on the west side of 126th Street. Motorists currently accommodated on Lot D would enter/exit via the South Lot connection to the garage, while Mets game day and Lot B development vehicles would enter/exit the garage from the driveway on 126th Street.

DUAL EVENT CONDITION

Since the proposed Plan would add significant traffic volumes to the surrounding highway network and key local roadways, such as Northern Boulevard and Roosevelt Avenue, the Dual Event Condition would experience worsened delays and additional queuing compared with the No Build condition. The proposed Plan would not affect the access and egress routings for the USTA National Tennis Center; however, the circulation of Citi Field traffic predominantly to the parking areas only north of the LIRR during the tennis event—since the areas south of the LIRR provide parking for tennis attendees during the Dual Event Condition—would cause additional traffic congestion when combined with the traffic generated by the proposed Plan and Lot B, especially along Northern Boulevard, Roosevelt Avenue, 126th Street, Stadium Road, and the highway ramps to the key intersections along those roadways. More rigorous management of traffic operations at locations where control is already maintained during the Dual Event Condition would likely be necessary with the proposed Plan. Again, this condition would represent an infrequent special case with the overlap of two concurrent events in combination with the expected traffic activity of the proposed Plan.

Table 17-29
Proposed Plan Weekday Parking Accumulation

Time Begin	Residential			Office			Destination Retail			Local Retail			Convention/Expo			
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Mid.	91	92	2,750	0	0	0	0	0	0	0	0	0	0	0	0	
1 AM	38	37	2,751	0	0	0	0	0	0	0	0	0	0	0	0	
2 AM	22	21	2,752	0	0	0	0	0	0	0	0	0	0	0	0	
3 AM	16	16	2,752	0	0	0	0	0	0	0	0	0	0	0	0	
4 AM	16	16	2,752	0	0	0	0	0	0	0	0	0	0	0	0	
5 AM	16	16	2,752	0	0	0	0	0	0	0	0	0	0	0	0	
6 AM	31	34	2,749	0	0	0	0	0	0	0	0	0	27	0	27	
7 AM	42	378	2,413	52	0	52	86	86	0	13	1	12	191	0	218	
8 AM	196	784	1,825	456	18	490	419	268	151	31	31	12	300	0	518	
9 AM	142	568	1,399	359	15	834	426	175	402	12	8	16	696	14	1,200	
10 AM	135	403	1,131	89	54	869	565	265	702	12	8	20	418	74	1,544	
11 AM	189	285	1,035	35	91	813	837	622	917	29	30	19	350	87	1,807	
Noon	258	248	1,045	145	157	801	1,369	1,120	1,166	186	186	19	283	105	1,985	
1 PM	248	247	1,046	164	84	881	2,210	2,167	1,209	147	147	19	264	310	1,939	
2 PM	226	226	1,046	99	46	934	1,413	1,562	1,060	78	79	18	44	147	1,836	
3 PM	296	285	1,057	34	36	932	1,319	1,170	1,209	78	79	17	68	309	1,595	
4 PM	465	310	1,212	52	393	591	1,201	1,317	1,093	79	79	17	61	349	1,307	
5 PM	748	403	1,557	28	524	95	1,197	1,350	940	94	94	17	21	673	655	
6 PM	658	354	1,861	18	91	22	1,259	1,460	739	89	88	18	7	633	29	
7 PM	626	268	2,219	7	29	0	1,116	1,116	739	75	75	18	0	29	0	
8 PM	271	116	2,374	0	0	0	640	762	617	44	54	8	0	0	0	
9 PM	218	94	2,498	0	0	0	246	863	0	14	22	0	0	0	0	
10 PM	249	106	2,641	0	0	0	0	0	0	0	0	0	0	0	0	
11 PM	184	74	2,751	0	0	0	0	0	0	0	0	0	0	0	0	
Total	5,381	5,381		1,538	1,538		14,303	14,303		981	981		2,730	2,730		

Time Begin	Movie Theater			Hotel			Community Facility			School – Students			School – Staff			Total
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Mid.	0	10	10	8	1	234	0	0	0	0	0	0	0	0	0	**2,994**
1 AM	0	10	0	8	1	241	0	0	0	0	0	0	0	0	0	**2,992**
2 AM	0	0	0	0	0	241	0	0	0	0	0	0	0	0	0	**2,993**
3 AM	0	0	0	0	0	241	0	0	0	0	0	0	0	0	0	**2,993**
4 AM	0	0	0	0	0	241	0	0	0	0	0	0	0	0	0	**2,993**
5 AM	0	0	0	0	0	241	0	0	0	0	0	0	0	0	0	**2,993**
6 AM	0	0	0	0	0	241	0	0	0	0	0	0	0	0	0	**3,017**
7 AM	10	0	10	9	12	238	21	1	20	5	5	0	3	0	3	**2,966**
8 AM	19	1	28	48	69	217	37	3	54	94	94	0	28	0	31	**3,326**
9 AM	22	4	46	48	69	196	27	11	70	5	5	0	0	0	31	**4,194**
10 AM	39	10	75	66	58	204	23	15	78	0	0	0	0	0	31	**4,654**
11 AM	37	16	96	69	57	216	17	20	75	0	0	0	0	0	31	**5,009**
Noon	37	22	111	101	48	269	17	21	71	0	0	0	0	0	31	**5,498**
1 PM	47	32	126	38	70	237	13	19	65	0	0	0	0	0	31	**5,553**
2 PM	68	50	144	29	61	205	11	16	60	0	0	0	0	0	31	**5,334**
3 PM	77	61	160	40	86	159	18	25	53	78	78	0	0	25	6	**5,188**
4 PM	97	80	177	56	104	111	21	28	46	10	10	0	0	3	3	**4,557**
5 PM	85	72	190	81	56	136	19	26	39	15	15	0	0	3	0	**3,629**
6 PM	127	109	208	89	89	136	23	31	31	0	0	0	0	0	0	**3,044**
7 PM	135	119	224	71	48	159	17	17	31	0	0	0	0	0	0	**3,390**
8 PM	121	174	171	53	36	176	5	21	15	0	0	0	0	0	0	**3,361**
9 PM	40	98	113	37	16	197	2	17	0	0	0	0	0	0	0	**2,808**
10 PM	16	63	66	27	9	215	0	0	0	0	0	0	0	0	0	**2,922**
11 PM	6	53	19	14	2	227	0	0	0	0	0	0	0	0	0	**2,997**
Total	983	984		892	892		271	271		207	207		31	31		

Note: Acc. = Accumulation
Source: Based on travel demand estimates

Table 17-30
Proposed Plan Saturday Parking Accumulation

Time Begin	Residential			Office			Destination Retail			Local Retail			Convention/Expo			
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Mid.	40	40	2,750	0	0	0	0	0	0	0	0	0	0	0	0	
1 AM	40	40	2,750	0	0	0	0	0	0	0	0	0	0	0	0	
2 AM	0	0	2,750	0	0	0	0	0	0	0	0	0	0	0	0	
3 AM	0	0	2,750	0	0	0	0	0	0	0	0	0	0	0	0	
4 AM	0	0	2,750	0	0	0	0	0	0	0	0	0	0	0	0	
5 AM	80	80	2,750	0	0	0	0	0	0	0	0	0	0	0	0	
6 AM	40	120	2,670	0	0	0	11	0	11	0	0	0	0	0	0	
7 AM	128	382	2,416	3	1	2	139	0	150	0	0	0	0	0	0	
8 AM	160	478	2,098	6	3	5	265	14	401	9	1	8	0	0	0	
9 AM	199	599	1,698	8	6	7	251	28	624	18	2	24	129	0	129	
10 AM	239	718	1,219	16	10	13	446	112	958	79	19	84	468	29	568	
11 AM	259	778	700	26	18	21	1,756	753	1,961	93	94	83	522	174	916	
Noon	279	838	141	32	21	32	1,195	1,035	2,121	103	84	102	348	348	916	
1 PM	727	549	319	32	21	43	1,635	1,571	2,185	103	84	121	358	358	916	
2 PM	678	470	527	24	29	38	1,450	1,338	2,297	103	84	140	348	348	916	
3 PM	679	453	753	15	29	24	1,450	1,338	2,409	103	84	159	174	522	568	
4 PM	670	447	976	8	18	14	795	878	2,326	84	103	140	124	373	319	
5 PM	670	447	1,199	4	10	8	1,255	1,254	2,327	79	78	141	12	237	94	
6 PM	726	391	1,534	2	7	3	1,129	1,380	2,076	71	86	126	2	96	0	
7 PM	782	335	1,981	1	4	0	878	1,631	1,323	66	82	110	0	0	0	
8 PM	670	287	2,364	0	0	0	781	1,449	655	51	87	74	0	0	0	
9 PM	591	207	2,748	0	0	0	502	1,157	0	24	92	6	0	0	0	
10 PM	241	238	2,751	0	0	0	0	0	0	0	6	0	0	0	0	
11 PM	80	80	2,751	0	0	0	0	0	0	0	0	0	0	0	0	
Total	7,978	7,977		177	177		13,938	13,938		986	986		2,485	2,485		

Time Begin	Movie Theater			Hotel			Community Facility			School – Students			School – Staff			Total
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Mid.	0	19	19	11	2	234	0	0	0	0	0	0	0	0	0	**3,003**
1 AM	0	19	0	12	1	245	0	0	0	0	0	0	0	0	0	**2,995**
2 AM	0	0	0	0	0	245	0	0	0	0	0	0	0	0	0	**2,995**
3 AM	0	0	0	0	0	245	0	0	0	0	0	0	0	0	0	**2,995**
4 AM	0	0	0	0	0	245	0	0	0	0	0	0	0	0	0	**2,995**
5 AM	0	0	0	0	0	245	0	0	0	0	0	0	0	0	0	**2,995**
6 AM	0	0	0	0	0	245	0	0	0	0	0	0	0	0	0	**2,926**
7 AM	19	0	19	22	31	236	0	0	0	0	0	0	0	0	0	**2,823**
8 AM	36	1	54	71	103	204	0	0	0	0	0	0	0	0	0	**2,770**
9 AM	64	11	107	71	103	172	22	5	17	0	0	0	0	0	0	**2,778**
10 AM	75	19	163	96	89	179	22	5	34	0	0	0	0	0	0	**3,218**
11 AM	73	39	197	96	89	186	13	14	33	0	0	0	0	0	0	**4,097**
Noon	116	71	242	103	95	194	37	39	31	0	0	0	0	0	0	**3,779**
1 PM	116	71	287	111	87	218	37	39	29	0	0	0	0	0	0	**4,118**
2 PM	123	101	309	40	92	166	37	38	28	0	0	0	0	0	0	**4,421**
3 PM	144	118	335	55	130	91	37	38	27	0	0	0	0	0	0	**4,366**
4 PM	103	84	354	99	99	91	36	40	23	0	0	0	0	0	0	**4,243**
5 PM	162	137	379	102	101	92	12	14	21	0	0	0	0	0	0	**4,261**
6 PM	242	207	414	132	132	92	9	17	13	0	0	0	0	0	0	**4,258**
7 PM	253	233	434	105	69	128	8	18	3	0	0	0	0	0	0	**3,979**
8 PM	230	331	333	79	53	154	0	3	0	0	0	0	0	0	0	**3,580**
9 PM	76	186	223	55	24	185	0	0	0	0	0	0	0	0	0	**3,162**
10 PM	30	120	133	40	13	212	0	0	0	0	0	0	0	0	0	**3,096**
11 PM	11	106	38	21	8	225	0	0	0	0	0	0	0	0	0	**3,014**
Total	1,873	1,873		1,321	1,321		270	270		0	0		0	0		

Note: Acc. = Accumulation
Source: Based on travel demand estimates

Table 17-31
Lot B Weekday and Saturday Parking Accumulation

Time Begin	Weekday							Saturday						
	Office			Destination Retail			Total	Office			Destination Retail			Total
	In	Out	Acc.	In	Out	Acc.		In	Out	Acc.	In	Out	Acc.	
Mid.	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
1 AM	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
2 AM	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
3 AM	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
4 AM	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
5 AM	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
6 AM	0	0	0	0	0	0	**0**	0	0	0	11	0	11	**11**
7 AM	29	0	29	11	10	1	**30**	2	0	2	17	0	28	**30**
8 AM	255	11	273	52	33	20	**293**	3	2	3	33	1	60	**63**
9 AM	202	8	467	53	21	52	**519**	5	3	5	31	3	88	**93**
10 AM	50	36	481	70	32	90	**571**	9	6	8	55	14	129	**137**
11 AM	20	54	447	103	77	116	**563**	15	10	13	217	93	253	**266**
Noon	82	88	441	169	138	147	**588**	18	12	19	148	127	274	**293**
1 PM	92	50	483	273	267	153	**636**	18	12	25	202	194	282	**307**
2 PM	55	27	511	174	193	134	**645**	14	16	23	179	165	296	**319**
3 PM	19	21	509	163	144	153	**662**	9	16	16	179	165	310	**326**
4 PM	29	207	331	148	163	138	**469**	5	10	11	98	109	299	**310**
5 PM	16	294	53	148	166	120	**173**	2	6	7	155	155	299	**306**
6 PM	10	51	12	155	180	95	**107**	1	4	4	139	171	267	**271**
7 PM	4	16	0	138	138	95	**95**	0	4	0	108	202	173	**173**
8 PM	0	0	0	78	95	78	**78**	0	0	0	96	179	90	**90**
9 PM	0	0	0	30	108	0	**0**	0	0	0	62	152	0	**0**
10 PM	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
11 PM	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**
Total	863	863		1,765	1,765			101	101		1,730	1,730		

Note: Acc. = Accumulation
Source: Based on travel demand estimates.

NO CONVENTION CENTER SCENARIO

The No Convention Center Scenario, which is addressed qualitatively in this document, would be an altered development program in which the 400,000-square-foot convention center is replaced with 350,000 square feet (sf) of residential use (about 350 more dwelling units) and 50,000 sf of ground floor retail use. Generally, this scenario would have approximately 6 percent more residential development and approximately 3 percent more retail development than the cumulative development program analyzed. The No Convention Center Scenario would result in an overall reduction equal to approximately 7 to 14 percent of the total number of generated trips during each of the peak hours. In terms of numbers of trips, the reduction would be about 270 to 730 vph in each peak hour. The greatest trip reductions would be in the weekday PM peak hour, the weekday evening pre-game peak hour, and the Saturday afternoon post-game peak hour.

Since the assignment of convention center trips assumes predominant use of the highway routes to and from the Willets Point Development District, it is expected that the No Convention Center Scenario would show some improvement in highway levels of service, especially on the Van Wyck Expressway and the new access ramps to the District. However, the lessened severity of such impacts could result in more successful mitigation options. There would also be levels of service improvements at highway ramp approaches to the intersections on 126th Street at 34th Avenue and at Northern Boulevard due to the reduction in convention center traffic to and from the highway network.

G. HIGHWAY NETWORK ANALYSIS

INTRODUCTION AND METHODOLOGY

Because of the proximity of the Willets Point Development District to the regional highway network through north-central Queens, analyses were performed to assess the potential for significant adverse impacts on the Grand Central Parkway, the Van Wyck/Whitestone Expressway (both designated as I-678), and the ramps connecting the highways to the local street network. The highway analyses include the following locations:

- Grand Central Parkway mainline in both directions between the LIE and Roosevelt Avenue
- Van Wyck Expressway mainline in both directions between the LIE and Roosevelt Avenue
- Whitestone Expressway mainline in both directions between Northern Boulevard and Linden Place
- Ramp from World's Fair Marina/Boat Basin Road to the Grand Central Parkway
- Ramps from the northbound Van Wyck Expressway to eastbound and westbound Northern Boulevard
- Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway
- Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway
- Ramp from eastbound Astoria Boulevard and eastbound Northern Boulevard to the northbound Whitestone Expressway
- Ramps from the southbound Whitestone Expressway to the eastbound and westbound Grand Central Parkway
- Ramp from westbound Northern Boulevard and southbound Whitestone Expressway to westbound Astoria Boulevard
- Ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard
- Ramp from the eastbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway
- Ramp from the southbound Whitestone Expressway to westbound Northern Boulevard

The ramps from eastbound Northern Boulevard and the Grand Central Parkway to 126th Street as well as the combined ramp section from the northbound Van Wyck Expressway and southbound Whitestone Expressway to westbound Northern Boulevard at 126th Street are signalized approaches and, as such, are included in the intersection analyses instead of the highway analyses.

It is beyond the scope of the *2000 HCM* to analyze a highway section that is operating at low speeds or over-saturated conditions. Therefore, a simulation of the highway network using the CORSIM model was used instead (as has been done on numerous recent EISs in New York City), because it better replicates existing and projected future conditions in the study area. The ability to account for traffic conditions that influence the immediate study area is critical when modeling traffic conditions on typical weekdays and, even more importantly, before and after Mets home games at Shea Stadium.

The CORSIM model reports the density and an average speed for the highway section being analyzed, but does not readily report the levels of service. Levels of service are necessary to assess potential impacts of the proposed development on the highway as per *CEQR Technical Manual* guidelines. The 2000 HCM defines levels of service thresholds for merge and diverge areas using density in passenger cars per mile per lane (pc/mi/ln), and these thresholds have been applied to the results of the CORSIM model. The levels of service thresholds for each density range are as follows:

- LOS A describes operations with very low densities (i.e., less than or equal to 10 pc/mi/ln) and high free flow speeds.
- LOS B describes operations with fairly low densities (i.e., greater than 10 to 20 pc/mi/ln) and moderate to high free flow speeds.
- LOS C describes operations with moderate densities (i.e., greater than 20 to 28 pc/mi/ln) and moderate free flow speeds.
- LOS D describes operations with moderate to high densities (i.e., greater than 28 to 35 pc/mi/ln) and moderate to low free flow speeds. A mid-LOS D density of 31.5 pc/mi/ln is considered the high range of acceptable density. Densities greater than 31.5 pc/mi/ln are unacceptable but are commonplace on highways in New York City.
- LOS E describes operations with high densities (i.e., greater than 35 pc/mi/ln) and low free flow speeds. 45 pc/mi/ln is considered the maximum density for sustained flows at capacity on a typical freeway. Queuing can begin at densities higher than this.
- LOS F describes operations with very high densities and very low free flow speeds. Queuing is common within LOS F, which leads to failure conditions and congestion.

According to the *CEQR Technical Manual*, for highway or ramp sections being analyzed—including mainline capacity sections, weaving areas, and ramp junctions—a significant adverse impact occurs when conditions deteriorate by more than half an LOS between No Build and Build conditions when No Build LOS is in the D, E, or F range. The following significant impact criteria are used in the Build analyses to assess potential impacts of the proposed development on the highway network:

- For No Build LOS D to Build LOS D: Since the starting value of LOS E is 28 pc/mi/ln and the highest value of LOS E is 35 pc/mi/ln, one half of the difference between these two is 3.5 pc/mi/ln. Hence, an increase in the projected density of 4 pc/mi/ln or more as a result of traffic volume added between the No Build and Build conditions is considered a significant impact.
- For No Build LOS D to Build LOS E: Since the value of mid-LOS D is 31.5 pc/mi/ln and the starting value of LOS E is 35 pc/mi/ln, one half of the difference between these two is 1.75 pc/mi/ln. Therefore, an increase in the projected density of 2 pc/mi/ln or more between No Build and Build is considered a significant impact.
- For No Build LOS E to Build LOS F: The same criteria as No Build LOS D to Build LOS E applies.

EXISTING CONDITIONS

GRAND CENTRAL PARKWAY VOLUMES

Traffic volumes on the eastbound Grand Central Parkway mainline approaching the diverge to the Whitestone Expressway and eastbound Northern Boulevard (designated as eastbound Exit 9E), range from 5,100–7,200 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 5,800–7,200 vph during game conditions. The ramp from the eastbound Grand Central Parkway to the Whitestone Expressway and eastbound Northern Boulevard, which is a major split toward the Willets Point Development District from the eastbound mainline, carries approximately 2,050–3,250 vph during the non-game analysis periods and 2,100–3,300 vph during game periods. South of the diverge, the Grand Central Parkway receives approximately 350–850 vph from the ramp from the Whitestone Expressway and westbound Northern Boulevard during the non-game periods and 350–550 vph during the game periods. The next merge onto the eastbound mainline (from the 34th Avenue/114th Street intersection and from Astoria Boulevard) adds approximately 1,200–1,850 vph during the various analysis peak hours. Farther south along the eastbound Grand Central Parkway, between the Roosevelt Avenue overpass and the LIE, traffic volumes range from 4,850–6,400 vph during the non-game analysis time periods, and from 5,250–6,250 vph for game conditions.

Traffic volumes on the Grand Central Parkway westbound mainline just north of the ramps from the LIE range from 4,350–6,000 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 5,550–5,750 vph during game conditions. Farther north, the westbound mainline divides: traffic destined for the ramp to the Whitestone Expressway and eastbound Northern Boulevard (designated as westbound Exit 9E) as well as a portion of traffic that continues on the mainline through the study area take the east side of the highway; and traffic destined for the ramp to westbound Northern Boulevard (designated as westbound Exit 9W) as well as the remaining traffic that continues on the mainline through the study area take the west side of the highway. The east half of the mainline carries approximately 1,750–2,400 vph and 2,500–2,700 vph during the non-game and game peak hours, respectively. The west half of the mainline carries approximately 2,600–3,600 vph and 3,000–3,050 vph during the non-game and game peak hours, respectively. The ramp to the Whitestone Expressway and eastbound Northern Boulevard (Exit 9E), which provides access to the vicinity of Shea Stadium and the Willets Point Development District from the westbound mainline, carries approximately 250–400 vph during the non-game analysis periods and 450–1,100 vph during game periods. The ramp to westbound Northern Boulevard (Exit 9W) carries approximately 750–1,250 vph during the non-game analysis periods and 1,000–1,050 vph during game periods. Farther north just prior to the point where the two segments of the westbound mainline rejoin, traffic entering the east half of the mainline from the combined ramp from the Whitestone Expressway and westbound Northern Boulevard as well as the World's Fair Marina/Boat Basin Road ranges from 1,550–2,300 vph and 1,450–2,450 vph during the non-game and game peak hours, respectively.

THE VAN WYCK / WHITESTONE EXPRESSWAY VOLUMES

The Van Wyck Expressway (I-678) northbound mainline, north of the LIE and the on-ramp from College Point Boulevard, is traveled by approximately 3,050–4,400 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 3,150–3,750 vph during game conditions. The northbound diverge toward Northern Boulevard (Exit 13) carries approximately 950–1,400 vph and 850–1,200 vph during the non-game and game analysis periods, respectively. Of the total volumes during all of the analysis peak hours, approximately

550–700 vph take Exit 13E toward Downtown Flushing, while 250–750 vph take Exit 13W toward westbound Northern Boulevard, the Grand Central Parkway and access to Shea Stadium. North of the Willets Point Development District, the continuation of I-678 northbound, the Whitestone Expressway, is traveled by approximately 4,150–6,800 vph and 4,250–6,350 vph during non-game and game analysis periods, respectively.

North of the Willets Point Development District, the Whitestone Expressway southbound mainline splits, with one section of the highway continuing south as the Van Wyck Expressway and the other turning west toward the Grand Central Parkway. Upstream of this split, the Whitestone Expressway is traveled by approximately 3,900–6,450 vph and 4,000–5,800 vph during non-game and game analysis periods, respectively. In the vicinity of Northern Boulevard, the southbound mainline (now the Van Wyck Expressway) receives traffic from two ramps: the merge from westbound Northern Boulevard, which adds approximately 500–700 vph during the seven analysis peak hours; and the merge with the ramp from the northbound Whitestone Expressway (with the combined traffic entering from the Grand Central Parkway, eastbound Northern Boulevard, and Astoria Boulevard), which totals approximately 450–850 vph during all of the peak hours. The Van Wyck Expressway southbound mainline, north of the exit to College Point Boulevard (Exit 12A), carries approximately 3,050–4,500 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 3,350–4,300 vph during game conditions.

EXISTING LEVELS OF SERVICE

Table 17-32 presents existing speeds, densities, and levels of service for 19 segments of the mainlines or ramps of the highway network analyzed for typical non-game-day peak hours. Average travel speeds on the highway mainlines are generally between 40 and 55 miles per hour (mph) during the AM peak hour, except for the southbound Whitestone Expressway, which has an average travel speed of approximately 29 mph. Average travel speeds on the highway mainlines during the weekday midday, PM, and Saturday midday peak hours generally range from 35 to 50 mph.

For the highway mainline sections, unacceptable LOS E or F conditions generally occur along the westbound Grand Central Parkway and southbound Whitestone Expressway during the AM peak hour, and along the eastbound Grand Central Parkway, southbound Van Wyck Expressway, and the northbound Whitestone Expressway during the PM peak hour. The other mainline sections generally operate at LOS B, C, and D during the weekday AM and PM peak hours. During the weekday midday and Saturday midday peak hours, all of the analyzed highway mainlines generally operate at acceptable LOS B and C and marginally unacceptable LOS D. Because of significant westbound volumes in the AM peak hour, the combined ramp to Astoria Boulevard from westbound Northern Boulevard and the southbound Whitestone Expressway operates at unacceptable LOS E. The other ramps are generally at acceptable levels of service during the non-game day peak hours; the ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard operates at marginally acceptable LOS D during the AM peak hour, as does the ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard and the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway during the PM peak hour.

Table 17-32
Existing Highway Levels of Service Summary – Non-Game Day

Mainlines	Weekday AM				Weekday midday				Weekday PM				Saturday midday			
	Observed speed	Speed (mph)	Density (pc/mi/ln)	LOS	Observed speed	Speed (mph)	Density (pc/mi/ln)	LOS	Observed speed	Speed (mph)	Density (pc/mi/ln)	LOS	Observed speed	Speed (mph)	Density (pc/mi/ln)	LOS
Grand Central Parkway EB Mainline (Between Roosevelt Ave & Long Island Expwy)	50.0	49.1	26.3	C	50.0	49.2	23.6	C	42.5	41.4	36.6	E	46.1	45.9	30.5	D
Grand Central Parkway WB Mainline (East Side) (Between Roosevelt Ave & Long Island Expwy)	51.2	51.4	19.3	B	50.0	49.4	14.3	B	49.1	50.0	19.4	B	50.6	48.8	18.9	B
Grand Central Parkway WB Mainline (West Side) (Between Roosevelt Ave & Long Island Expwy)	n/a	41.4	39.2	E	n/a	45.9	26.7	C	n/a	49.7	26.3	C	n/a	44.9	33.9	D
Van Wyck Expressway NB Mainline (Between Roosevelt Ave & Long Island Expwy)	39.0	40.1	33.9	D	36.2	36.5	26.1	C	40.5	39.9	29.6	D	40.6	41.0	26.4	C
Van Wyck Expressway SB Mainline (Between Roosevelt Ave & Long Island Expwy)	41.1	40.6	27.9	C	39.2	39.3	24.8	C	42.6	40.7	36.6	E	46.6	46.5	25.9	C
Whitestone Expressway NB Mainline (Between Northern Boulevard & Linden Place)	46.6	47.5	23.8	C	46.2	46.4	18.1	B	35.9	36.4	37.1	E	44.2	44.0	22.9	C
Whitestone Expressway SB Mainline (Between Northern Boulevard & Linden Place)	29.3	29.1	45.2	F	36.0	36.9	21.7	C	39.6	40.0	27.2	C	37.5	38.4	25.2	C
Ramps																
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	n/a	36.3	15.2	B	n/a	36.4	12.8	B	n/a	36.9	12.7	B	n/a	36.6	13.2	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	n/a	24.2	25.8	C	n/a	23.8	27.3	C	n/a	23.9	30.2	D	n/a	23.7	27.9	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	22.1	22.4	31.2	D	22.7	23.6	18.3	B	25.2	26.0	15.8	B	n/a	25.5	10.7	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	n/a	34.0	16.8	B	n/a	34.0	16.5	B	n/a	32.0	30.2	D	n/a	34.0	14.3	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	n/a	28.9	21.5	C	n/a	29.2	20.7	C	n/a	29.0	20.6	C	n/a	28.9	25.1	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	n/a	41.0	10.3	B	n/a	41.1	8.5	A	n/a	39.9	18.6	B	n/a	42.2	9.7	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	n/a	44.0	23.0	C	n/a	44.0	18.5	B	n/a	44.3	16.4	B	n/a	44.3	17.8	B
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	41.2	41.4	10.3	B	38.3	39.7	5.2	A	39.5	39.9	8.2	A	n/a	38.9	6.1	A
Ramp from Northern Boulevard WB & Whitestone Expressway SB to Astoria Boulevard WB	25.1	26.6	36.2	E	n/a	29.4	10.8	B	39.6	39.9	10.2	B	n/a	23.3	12.9	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	38.8	37.1	19.0	B	n/a	39.8	16.0	B	n/a	39.2	26.2	C	n/a	41.9	16.4	B
Ramp from Grand Central Parkway WB toward Stadium Road & Whitestone Expressway NB	47.5	47.0	6.4	A	45	44.0	5.9	A	n/a	46.6	6.2	A	46.6	45.4	7.2	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	n/a	25.6	26.6	C	n/a	28.1	25.5	C	n/a	28.6	24.7	C	n/a	28.3	25.8	C

Note: n/a-signifies not available

Table 17-33 presents existing speeds, densities, and levels of service for the 19 sections or ramps of the highway network during the game-day peak hours, respectively. Pre-game traffic to Shea Stadium on the highways primarily uses the southbound Whitestone Expressway, taking the exit to westbound Northern Boulevard; the eastbound Grand Central Parkway, taking the exit to 126th Street; and the westbound Grand Central Parkway, taking the exit to Stadium Road and the exit to 126th Street. These exit ramps frequently spill back onto the highway mainlines during the pre-game peak hours, causing additional slowdown for through (non-exiting) traffic. Departing traffic during the post-game peak hour accesses the northbound Whitestone Expressway and the westbound Grand Central Parkway from the entrance ramps from Stadium Road; exiting game traffic also accesses the westbound Grand Central Parkway via the entrance ramp from World's Fair Marina/Boat Basin Road. Exiting game traffic to the eastbound Grand Central Parkway uses the entrance ramp from 114th Street and the entrance ramp farther south, from the park roads (United Nations Avenue and Avenue of Science).

Table 17-33
Existing Highway Levels of Service Summary – Game Day

Mainlines	Weekday AM				Weekday Midday				Weekday PM				Saturday Midday			
	[illegible]				[illegible]				[illegible]				[illegible]			
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	50.0	49.1	26.3	C	50.0	49.2	23.6	C	42.5	41.4	36.6	E	46.1	45.9	30.5	D
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	51.2	51.4	19.3	B	50.0	49.4	14.3	B	49.1	50.0	19.4	B	50.6	48.8	18.9	B
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	n/a	41.4	39.2	E	n/a	45.9	26.7	C	n/a	49.7	26.3	C	n/a	44.9	33.9	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	39.0	40.1	33.9	D	36.2	36.5	26.1	C	40.5	39.9	29.6	D	40.6	41.0	26.4	C
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	41.1	40.6	27.9	C	39.2	39.3	24.8	C	42.6	40.7	36.6	E	46.6	46.5	25.9	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	46.6	47.5	23.8	C	46.2	46.4	18.1	B	35.9	36.4	37.1	E	44.2	44.0	22.9	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	29.3	29.1	45.2	F	36.0	36.9	21.7	C	39.6	40.0	27.2	C	37.5	38.4	25.2	C
Ramps																
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	n/a	36.3	15.2	B	n/a	36.4	12.8	B	n/a	36.9	12.7	B	n/a	36.6	13.2	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	n/a	24.2	25.8	C	n/a	23.8	27.3	C	n/a	23.9	30.2	D	n/a	23.7	27.9	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	22.1	22.4	31.2	D	22.7	23.6	18.3	B	25.2	26.0	15.8	B	n/a	25.5	10.7	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	n/a	34.0	16.8	B	n/a	34.0	16.5	B	n/a	32.0	30.2	D	n/a	34.0	14.3	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	n/a	28.9	21.5	C	n/a	29.2	20.7	C	n/a	29.0	20.6	C	n/a	28.9	25.1	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	n/a	41.0	10.3	B	n/a	41.1	8.5	A	n/a	39.9	18.6	B	n/a	42.2	9.7	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	n/a	44.0	23.0	C	n/a	44.0	18.5	B	n/a	44.3	16.4	B	n/a	44.3	17.8	B
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	41.2	41.4	10.3	B	38.3	39.7	5.2	A	39.5	39.9	8.2	A	n/a	38.9	6.1	A
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	25.1	26.6	36.2	E	n/a	29.4	10.8	B	39.6	39.9	10.2	B	n/a	23.3	12.9	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	38.8	37.1	19.0	B	n/a	39.8	16.0	B	n/a	39.2	26.2	C	n/a	41.9	16.4	B
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	47.5	47.0	6.4	A	45	44.0	5.9	A	n/a	46.6	6.2	A	46.6	45.4	7.2	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	n/a	25.6	26.6	C	n/a	28.1	25.5	C	n/a	28.6	24.7	C	n/a	28.3	25.8	C

Note: n/a signifies not available.

Weekday PM and Saturday midday pre-game average travel speeds on the highway mainlines generally range between 30 and 55 mph; the southbound Whitestone Expressway travel speeds are approximately 21 mph and 32 mph for those two peak hours, respectively, due to spillback from the exit ramp to westbound Northern Boulevard. That ramp operates with a travel speed of about 8 mph during the pre-game peak hours.

Pre-game highway traffic toward Shea Stadium and its surrounding lots causes unacceptable LOS E or F conditions on the southbound Whitestone Expressway mainline during the weekday pre-game peak hour and on the westbound Grand Central Parkway. The other highway mainlines generally operate at LOS C and D during the pre-game peak hours, except for the northbound Whitestone Expressway, which is acceptable LOS B during the Saturday midday pre-game peak hour. The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard and the combined ramp from the Grand Central Parkway and Astoria Boulevard toward eastbound Northern Boulevard and northbound Whitestone Expressway also experience LOS E/F conditions during the weekday and Saturday pre-game periods. During the Saturday midday pre-game, the westbound Grand Central Parkway ramp to West Park

Loop/Stadium Road operates at LOS F due to spillback from the roadway leading to the traffic circle and nearby parking lot entrances. The other ramps operate at acceptable levels of service during the pre-game peak hours.

The Saturday post-game highway conditions are the most congested of all the time periods due to the surge of game traffic from the parking lots onto the adjacent streets and onto the connected ramps and highway mainlines. As a result, post-game peak hour average travel speeds generally range between 25 and 45 mph, but the northbound Whitestone Expressway average travel speed is only around 8 mph. Both directions of the Grand Central Parkway as well as the northbound Whitestone Expressway experience unacceptable LOS E or F conditions. Both directions on the Van Wyck Expressway and the southbound Whitestone Expressway operate at LOS C and D. Also experiencing LOS E or F conditions are the ramp from the World's Fair Marina/Boat Basin Road to the westbound Grand Central Parkway, the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway, the combined ramp from the Grand Central Parkway and Astoria Boulevard toward eastbound Northern Boulevard and the northbound Whitestone Expressway, the ramp from the westbound Grand Central Parkway to West Park Loop/Stadium Road (not due to the volume of exiting traffic but due to the amount of traffic entering downstream), and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard, due to NYPD control of the traffic signal at 126th Street. The other ramps operate at acceptable levels of service during the post-game peak hour.

FUTURE WITHOUT THE PROPOSED PLAN

Traffic volumes on the analyzed sections of the highway network are expected to increase by a background growth rate of 1 percent per year between 2006 and 2017, plus traffic expected to be generated by other projected No Build development projects as described for the intersection analyses in Section E, "The Future Without the Proposed Plan." In the No Build condition, traffic volumes along the Grand Central Parkway eastbound mainline would increase by about 610 to 820 vph. In the westbound direction along the Grand Central Parkway, volumes would increase by approximately 200 to 360 vph on the east side split and by 350 to 450 vph on the west side split. Traffic volumes along the northbound mainline of the Van Wyck Expressway would increase by 380 to 520 vph, and by 375 to 540 vph along the southbound mainline. Traffic volumes along the Whitestone Expressway would increase by 495 to 790 vph in the northbound direction and by 460 to 1,340 in the southbound direction.

Table 17-34 presents the projected No Build levels of service, speeds, and densities for the 19 sections of the highway network analyzed during the non-game day peak hours. During the weekday AM peak hour, the eastbound Grand Central Parkway and northbound Van Wyck Expressway mainlines would deteriorate from acceptable LOS C and marginally unacceptable LOS D, respectively, to unacceptable LOS E. The west side of the westbound Grand Central Parkway mainline split would deteriorate from unacceptable LOS E and marginally unacceptable LOS D during the weekday AM and Saturday midday peak hours, respectively, to unacceptable LOS F and LOS E, respectively. The west side split of the westbound Grand Central Parkway would also experience a corresponding drop in average speed from approximately 41 mph to 17 mph and 45 mph to 44 mph during the weekday AM and Saturday midday peak hours, respectively. During the weekday AM, midday, and Saturday midday peak hours, the southbound Van Wyck Expressway mainline would deteriorate from acceptable LOS C to marginally unacceptable LOS D, as would the northbound Van Wyck Expressway mainline during the weekday midday and Saturday midday peak hours. During the weekday PM and

Saturday midday peak hours, the southbound Whitestone Expressway mainline would deteriorate from acceptable LOS C to marginally unacceptable LOS D. The following ramp sections would deteriorate to a marginally unacceptable LOS D under the No Build condition: the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard during the weekday PM and Saturday midday peak hours, the ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard during the weekday AM, weekday midday, and Saturday midday peak hours, and the ramp from Astoria Boulevard eastbound to Whitestone Expressway northbound during the weekday PM peak hour.

Table 17-34
No Build Highway Levels of Service Summary – Non-Game Day

Mainlines	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	39.5	36.9	E	48.9	26.8	C	40.1	43.0	E	45.6	33.3	D
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	50.9	22.7	C	49.4	16.3	B	49.8	21.8	C	48.5	21.0	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	16.5	103.3	F	45.6	30.2	D	49.4	29.7	D	44.0	39.6	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	39.1	38.9	E	36.3	29.4	D	39.5	33.4	D	40.7	29.8	D
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	40.2	32.4	D	38.7	29.3	D	40.5	39.8	E	46.1	29.4	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	47.1	26.6	C	46.2	20.5	C	36.1	41.4	E	44.0	26.0	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	28.4	51.6	F	36.5	24.5	C	39.2	30.9	D	38.2	28.4	D
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	36.5	18.5	B	36.4	14.7	B	36.7	14.5	B	36.5	15.5	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	24.0	30.0	D	23.7	28.6	D	23.7	32.1	D	23.7	31.7	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	22.5	34.8	D	23.5	20.0	B	25.8	18.1	B	25.5	11.6	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.6	17.7	B	34.0	19.7	B	32.3	30.6	D	34.0	15.9	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.9	24.6	C	29.0	24.5	C	28.9	24.0	C	28.8	30.2	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	40.8	11.6	B	41.1	9.1	A	39.4	20.7	C	41.9	10.8	B
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	43.6	28.3	D	43.6	20.9	C	43.6	19.0	B	44.6	21.0	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	41.2	12.4	B	39.4	6.1	A	39.4	9.1	A	38.1	6.6	A
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	26.6	35.8	E	29.5	11.4	B	39.6	11.4	B	23.3	14.4	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.1	21.4	C	39.2	18.5	B	38.9	28.9	D	41.6	19.7	B
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	46.2	7.3	A	44.0	6.5	A	46.2	7.4	A	45.1	8.0	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	27.1	26.4	C	28.3	25.4	C	27.4	32.3	D	28.3	29.2	D

The No Build levels of service, speeds, and densities for the analyzed sections during the game-day peak hours are shown in Table 17-35. Under No Build conditions, increased vehicular volumes would result in higher densities and lower speeds on several ramps and highway sections leading to Citi Field. The southbound Whitestone Expressway would continue to operate at unacceptable LOS F during the weekday pre-game peak hour, similar to the existing conditions, but with a higher traffic density and a drop in average travel speed from about 21 mph to 14 mph. During the Saturday pre-game peak hour, the southbound Whitestone Expressway mainline would deteriorate from marginally unacceptable LOS D to unacceptable LOS F, with a drop in average travel speed from approximately 32 mph to 11 mph. The eastbound Grand Central Parkway would deteriorate from marginally unacceptable LOS D to unacceptable LOS E during the weekday pre-game peak hours, and from unacceptable LOS E to LOS F during the Saturday post-game peak hour, with a drop in average speed from about 36 mph to 16 mph. During the weekday pre-game peak hour the southbound Van Wyck Expressway would deteriorate from marginally unacceptable LOS D to unacceptable LOS E with a drop in average speed from about 46 mph to 45 mph. The westbound Grand Central Parkway (east side) would deteriorate from unacceptable LOS E to unacceptable LOS F during the Saturday pre-game peak hour with a drop in average speed from about 30 mph to 29 mph. The majority of ramp locations would continue to operate similar to existing conditions, except for the ramp from the westbound Grand Central Parkway toward Stadium Road and northbound Whitestone Expressway, which would deteriorate from acceptable LOS B to unacceptable LOS F, with a drop in average travel speed from about 41 mph to 11 mph, during the weekday pre-game peak hour.

During the Saturday post-game peak hour, both directions of the Grand Central Parkway and the northbound Whitestone Expressway would continue to operate at unacceptable LOS E or F, with corresponding slowing of average travel speeds, while the northbound Van Wyck Expressway would deteriorate from marginally unacceptable LOS D to unacceptable LOS F, with a drop in average travel speed from approximately 30 mph to 7 mph. This would be due to spillback from the northbound Whitestone Expressway over the Flushing River. The four ramps that experience unacceptable LOS F conditions during the Saturday post-game peak hour under existing conditions would continue to operate as such under the No Build condition, with one of them, the ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard, experiencing a drop in average speed from about 21 mph to 7 mph. In addition, the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway would deteriorate from LOS E under existing conditions to LOS F under the No Build condition during the Saturday post-game peak period, and its average travel speed would remain similar at about 24 mph.

PROBABLE IMPACTS OF THE PROPOSED PLAN

The proposed Plan would generate a significant number of trips during all analyzed peak hours on both directions of the Van Wyck Expressway and the Whitestone Expressway. The eastbound Grand Central Parkway mainline and the east side of the westbound Grand Central Parkway mainline split would also experience a higher volume during the peak hours.

Table 17-35
No Build Highway Levels of Service Summary – Game Day

Mainlines	Weekday Pregame			Saturday Pregame			Saturday Postgame		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	42.2	39.1	F	48.8	29.0	D	16.2	92.0	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.2	26.1	C	29.2	46.0	F	27.1	44.6	E
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	41.6	42.9	E	41.7	41.2	E	26.8	60.3	F
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.5	33.6	D	36.7	30.6	D	7.1	128.0	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	45.2	36.6	E	46.0	30.4	D	44.6	34.1	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	43.3	34.3	D	53.0	18.8	B	7.5	145.8	F
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	14.1	96.6	F	11.2	96.7	F	35.0	26.2	C
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	36.7	12.3	B	36.7	11.5	B	24.8	54.6	F
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.7	33.8	D	23.9	29.1	D	23.3	20.6	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.6	22.8	C	33.0	11.6	B	32.4	6.6	A
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	32.6	27.4	C	33.3	19.1	B	23.6	48.4	F
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.9	23.0	C	29.0	20.1	C	28.8	25.1	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.3	23.9	C	41.7	11.5	B	28.1	28.7	D
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	43.6	16.3	B	45.7	15.4	B	45.7	16.9	B
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	34.8	10.1	B	25.9	8.2	A	21.0	17.1	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	30.4	22.1	C	23.7	12.5	B	22.9	18.3	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	13.1	101.1	F	11.1	91.3	F	6.6	144.4	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	11.1	60.2	F	8.0	101.1	F	7.6	102.3	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	7.8	159.7	F	6.8	168.7	F	1.6	220.9	F

The Build volumes on the eastbound mainline of the Grand Central Parkway would increase by approximately 300 to 600 vehicles during the peak hour, a roughly 4 to 8 percent increase compared with No Build; the east side of the westbound Grand Central Parkway split would increase by 310 to 500 vph, also approximately a 4 to 8 percent increase. The Whitestone Expressway would experience volume increases of approximately 140 to 480 vph and 130 to 390 vph in the northbound and southbound directions, respectively, roughly a 2 to 7 percent increase per direction compared with the No Build volumes. The Van Wyck Expressway volumes would increase by about 710 to 1,360 vph in the northbound direction and by 570 to 1,370 vph in the southbound direction, approximately a 12 to 25 percent increase per direction compared with the No Build volumes. The substantial increases on the Van Wyck Expressway in both directions would be due to traffic entering from and exiting to the new access ramps

connecting the highway to the Willets Point Development District. Furthermore, as described for the game-day circulation changes in Section F, "Probable Impacts of the Proposed Plan," it is expected that a portion of Citi Field traffic on the highway network would use the new access ramps to and from the Van Wyck Expressway under the proposed Plan.

Table 17-36 shows the Build levels of service, speeds and densities for the highway sections and ramps analyzed during the non-game-day peak hours. Because of the substantial increase in volume on the Van Wyck Expressway, the mainline would experience high densities and low speeds and operate at LOS E or F in both directions during all of the non-game day peak hours. While average No Build travel speeds on the northbound Van Wyck Expressway mainline would range between 30 and 40 mph during the non-game-day peak hours, the average Build travel speeds would deteriorate to a range of 10 to 25 mph. The congestion on the Van Wyck Expressway would in turn worsen levels of service on the ramps that provide access to and from the mainline. The entrance ramp providing access to the southbound Van Wyck Expressway mainline from the northbound Whitestone Expressway would be slow-moving during the PM and Saturday midday peak hours; similarly, the entrance ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway would also be slow-moving during the midday, PM, and Saturday midday peak hours. The congestion is attributed to entering traffic joining merging traffic from the new access ramp onto to the elevated one lane ramp leading to the southbound mainline. The average travel speeds on those two ramps would drop significantly, from a range of 30 to 35 mph to about 3 mph for the ramp from the northbound Whitestone Expressway, and from a range of 25 to 30 mph to about 1 to 3 mph for the ramp from westbound Northern Boulevard.

The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from marginally unacceptable LOS D to unacceptable LOS E during the non-game weekday AM peak hour, and the ramp from the northbound Van Wyck Expressway mainline to eastbound Northern Boulevard would deteriorate from marginally unacceptable LOS D to unacceptable LOS E during the weekday midday, PM, and Saturday midday peak hours. During all four non-game peak hours, the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard, which would operate at acceptable LOS C and marginally acceptable LOS D under the No Build condition, would consistently operate at unacceptable LOS F.

Similarly, the ramp from eastbound Astoria Boulevard and Grand Central Parkway to northbound Whitestone Expressway and eastbound Northern Boulevard would deteriorate from an acceptable LOS B and marginally acceptable LOS D range to unacceptable LOS F during all four non-game peak hours.

For the non-game peak hours, the eastbound Grand Central Parkway mainline would be significantly impacted during the weekday AM peak hour, due to an increase in density of 18.6 pc/mi/ln, which is above the deterioration threshold of 2 pc/mi/ln that defines a significant adverse traffic impact. Also during the weekday AM peak hour, the southbound Whitestone Expressway mainline would be significantly impacted (with density increases of 8.4 pc/mi/ln), and the west side of the westbound Grand Central Parkway mainline would be significantly impacted during the AM and Saturday midday peak hours (with a density increase of 8.5 and 20 pc/mi/ln, respectively). Both the northbound and southbound Van Wyck Expressway mainlines would be significantly impacted in all four non-game peak hours, with density increases ranging from approximately 33 to 75 pc/mi/ln in the northbound direction (due to the proposed Plan's generated traffic to the new exit ramp), and about 5 to 15 pc/mi/ln in the southbound direction.

Table 17-36
Build Highway Levels of Service Summary – Non-Game Day

Mainlines	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	25.2	55.5	F	48.8	28.0	D	36.2	44.6	E	45.7	33.0	D
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	50.5	24.9	C	48.3	18.8	B	49.7	25.0	C	47.6	24.8	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	14.8	111.8	F	45.5	31.5	D	48.8	30.1	D	34.5	53.7	F
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	24.6	69.9	F	11.6	105.3	F	16.7	85.4	F	13.3	100.8	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	39.4	37.8	E	37.3	36.6	E	31.0	55.7	F	45.0	35.0	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	46.9	28.1	D	46.4	22.6	C	36.5	38.6	E	44.0	27.4	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	25.2	60.0	F	36.4	26.5	C	39.0	32.6	D	37.6	30.9	D
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	36.3	19.6	B	36.6	17.4	B	36.5	17.6	B	36.4	18.3	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.9	31.5	D	23.7	36.7	E	23.6	38.2	E	23.7	37.9	E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	22.3	38.0	E	23.4	23.9	C	25.3	30.7	D	24.6	24.4	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	34.0	20.4	C	31.4	22.5	C	2.8	218.7	F	3.7	174.1	F
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.9	24.1	C	2.8	169.9	F	1.4	248.9	F	1.5	237.7	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	40.8	11.6	B	41.1	9.1	A	36.1	23.1	C	42.1	10.7	B
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	43.3	29.6	D	43.6	21.8	C	43.6	20.4	C	44.3	23	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	41.1	12.9	B	39.0	8.2	A	39.4	12.8	B	38.1	9.4	A
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	26.6	35.9	E	29.4	11.8	B	39.9	11.4	B	23.3	16.0	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	13.7	73.8	F	13.0	83.9	F	7.0	144.3	F	13.3	88.5	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	46.2	11.3	B	43.3	13	B	45.1	14.7	B	44.7	15.2	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	5.7	163.9	F	6.5	162.9	F	11.1	99.5	F	7.7	148.5	F

The levels of service, speeds and densities during the game-day peak hours are shown in Table 17-37. On several highway and ramp sections, the high Build demand volume would exceed the capacity, especially during the game-day peak hours, and the highway network would be unable to process the projected volumes within the duration of the peak hour. Both directions of the Van Wyck Expressway mainline would experience similar traffic congestion during the game-day peak hours as in the non-game day peak hours; both directions would consistently operate at unacceptable LOS F. On the Grand Central Parkway, the eastbound mainline and the west side of the westbound split would operate at unacceptable LOS F during the Saturday post-game peak hour. The westbound Grand Central Parkway mainline and on the east side of the mainline

Table 17-37
Build Highway Level of Service Summary – Game Day

Mainlines	Weekday Pregame			Saturday Pregame			Saturday Postgame		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	40.2	44.5	E	48.7	28.4	D	13.1	111.5	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	6.3	155.4	F	8.1	138.7	F	18.1	73.6	F
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	41.6	44.5	E	39.0	43.8	E	18.2	82.3	F
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	16.4	86.4	F	11.8	106.9	F	13.5	97.1	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	29.3	60.8	F	17.1	92.1	F	15.1	95.5	F
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	43.7	33.8	D	53.3	20.4	C	7.6	141.7	F
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	12.4	114.8	F	9.5	123.4	F	29.4	31.3	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	35.3	13.0	B	36.5	12.2	B	16.2	85.0	F
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.6	38.4	E	23.6	38.9	E	23.6	37.3	E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.0	35.0	D	32.0	18.5	B	31.1	22.1	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	3.6	204.1	F	13.0	49.5	F	2.6	212.9	F
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	1.4	255.0	F	5.3	98.9	F	1.5	249.1	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	36.4	25.9	C	41.7	11.2	B	37.9	15.6	B
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	43.3	18.6	B	45.0	16.4	B	34.1	29.4	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	34.5	10.9	B	25.8	11.9	B	20.4	23.6	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	30.4	19.3	B	23.6	12.8	B	22.9	19.4	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	6.3	171.4	F	6.3	158.0	F	4.3	191.1	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	2.0	228.0	F	2.0	222.2	F	1.5	220.7	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	8.7	150.6	F	7.8	158.8	F	1.2	236.6	F

split would operate at LOS F during all game day peak hours. The southbound Whitestone Expressway mainline would operate at unacceptable LOS F during the weekday and Saturday pre-game peak hours.

The ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway and the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway would operate at un acceptable LOS F, and the northbound Van Wyck Expressway ramp to eastbound Northern Boulevard would operate at unacceptable LOS E conditions during all game day peak hours. The ramp from World's Fair Marina and Boat Basin Road to the westbound Grand Central Parkway would operate at unacceptable LOS F during the Saturday post-game peak hour only.

The volume of traffic on the ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard, the ramp from the westbound Grand Central Parkway toward Stadium Road, and the ramp from the

southbound Whitestone Expressway to westbound Northern Boulevard would cause substantially high densities, with LOS F conditions and average travel speeds between about 1 and 10 mph, during the three game-day peak hours.

For the game peak hours, the eastbound Grand Central Parkway mainline would be significantly impacted during the Saturday post-game peak hour, due to a density increase of 19.5 pc/mi/ln. The east side of the westbound Grand Central Parkway mainline would be significantly impacted in all three game day peak hours, with density increases ranging from approximately 30 to 130 pc/mi/ln (due to the addition of the proposed Plan and Lot B's traffic onto the queues of Citi Field traffic), and the west side of that mainline would be significantly impacted during the Saturday post-game peak hour (with a density increase of 22 pc/mi/ln). The southbound Whitestone Expressway mainline would also be significantly impacted during weekday and Saturday pre-game peak hours, with density increases ranging from about 18 to 26 pc/mi/ln. The northbound Van Wyck Expressway would experience significant impacts during the weeknight and Saturday pre-game peak hours (with density increases ranging from approximately 53 to 76 pc/mi/ln), while the southbound direction would be significantly impacted during all three game day peak hours (with density increases of 24.2 pc/mi/ln and 61.7 pc/mi/ln in the weeknight and Saturday pre-game peak hours, respectively, and 61.4 pc/mi/ln in the post-game peak hour).

H. TRAFFIC AND SAFETY

Accident data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between July 1, 2004 and June 30, 2007. The data obtained quantify the total number of reportable accidents (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related accidents at each location. According to the *CEQR Technical Manual*, a high pedestrian accident location is one where there were five or more pedestrian-related accidents in any year of the most recent three-year period for which data are available.

During this period, a total of 417 reportable accidents, two fatalities, 426 injuries, and 92 pedestrian-related accidents occurred at the study area intersections. A rolling total of accident data identifies three study area intersections as high pedestrian accident locations in the 2004 to 2007 period. These intersections are: Main Street at Roosevelt Avenue; Union Street at Northern Boulevard; and Parsons Boulevard at Northern Boulevard. Table 17-38 depicts total accident characteristics by intersection during the study period, as well as, a breakdown of pedestrian and bicycle accidents by year and location.

All three high vehicular-pedestrian accident intersections are located within the secondary traffic study area where project-generated vehicle trips would all be through trips and there would not be any project-generated pedestrian trips. A review of the accident histories at these locations indicates that the majority of the pedestrian-related accidents were caused by pedestrian inattentiveness and driver failure to yield the right of way. Since these accidents occurred primarily during vehicles making left and right turning movements, the through vehicle trips generated by the proposed Plan and Lot B at these locations would not result in additional conflicts with normal pedestrian flow or further adversely affect pedestrian safety conditions at the respective intersections. Nonetheless, a field reconnaissance of conditions at these intersections was conducted to identify specific geometric and operational issues and determine whether measures could be recommended to improve pedestrian safety.

Table 17-38
Accident Data

Intersection		Study Period			Accidents by Year							
					Pedestrian				Bicycle			
North-South Roadway	East-West Roadway	Reportable Accidents	Total Fatalities	Total Injuries	2004	2005	2006	2007	2004	2005	2006	2007
108th Street	Astoria Blvd.	12	1	13	0	0	0	0	0	0	0	0
108th Street	Northern Blvd.	14	0	16	1	0	1	0	0	0	0	0
108th Street	Roosevelt Ave.	12	0	14	0	0	2	0	0	1	0	0
111th Street	Roosevelt Ave.	15	0	12	0	3	2	0	0	0	0	0
114th Street	Northern Blvd.	6	0	9	0	1	0	0	0	0	0	0
114th Street	34th Avenue	1	0	2	0	0	0	0	0	0	0	0
114th Street	Roosevelt Ave.	1	0	2	0	0	0	0	0	0	0	0
126th Street	Northern Blvd.	52	0	67	0	0	0	0	0	0	0	0
126th Street	34th Avenue	6	0	9	0	0	0	0	0	1	0	0
126th Street	Roosevelt Ave.	1	0	1	0	0	0	0	0	0	0	0
Willets Point Blvd.	Northern Blvd.	2	0	1	0	0	0	0	0	0	0	0
College Point Blvd.	32nd Avenue	10	0	9	0	0	0	0	0	0	0	0
College Point Blvd.	Northern Blvd.	1	0	1	0	0	0	0	0	0	0	0
College Point Blvd.	Roosevelt Ave.	25	0	26	0	0	0	0	0	0	0	0
College Point Blvd.	Sanford Ave.	4	0	3	0	0	0	0	0	0	0	0
Prince Street	Northern Blvd.	34	1	33	0	0	1	0	0	1	0	0
Prince Street	Roosevelt Ave.	9	0	6	1	1	1	1	0	0	0	0
Main Street	Northern Blvd.	30	0	15	2	0	3	0	0	0	0	0
Main Street	**Roosevelt Ave.**	23	0	19	1	**6***	**5***	2	0	0	0	0
Main Street	41st Ave.	13	0	8	2	0	2	1	0	0	0	0
Union Street	**Northern Blvd.**	70	0	73	**6***	**8***	**12***	2	0	0	0	2
Union Street	Roosevelt Ave.	17	0	17	2	2	1	2	1	0	0	0
Union Street	Sanford Ave.	8	0	9	0	0	2	2	0	0	0	0
Parsons Blvd.	**Northern Blvd.**	38	0	46	1	3	**5***	1	0	0	0	0
Parsons Blvd.	Roosevelt Ave.	5	0	4	0	1	1	0	0	0	0	0
Parsons Blvd.	Sanford Ave.	8	0	11	0	2	0	0	0	0	0	0

Note: * High vehicular-pedestrian accident location.
Source: NYSDOT July 1, 2004 to June 30, 2007 accident data.

The field inspection indicates that there are no high-visibility crosswalks or warning signs for motorists at Northern and Parsons Boulevards. Safety here could be enhanced by the installation of high visibility crosswalks, and signs warning motorists of pedestrian crossing locations. In addition, due to lagging eastbound and westbound protected left-turn signals, pedestrians tend to begin their crossing as soon as the main signal for Northern Boulevard turns red. The installation of "Wait for Walk Signal" signs would help to alert pedestrians of the intersection's signal operation.

The Northern Boulevard and Union Street intersection already has high visibility crosswalks across its northern and western legs and standard pedestrian warning signs on all approaches. At this location where 62 percent of the pedestrian-related accidents involved turning vehicles, safety could be improved by replacing or amending the standard pedestrian signs with "Turning Vehicles/Yield to Pedestrians" signs at all approaches, and by installing high visibility crosswalks on the eastern and southern legs of the intersection. Extending the raised median on Northern Boulevard into the crosswalk on the western leg of the intersection would provide pedestrians a more protected refuge while waiting for another "walk" phase to complete their crossing.

At Roosevelt Avenue and Main Street, where the No. 7 Flushing subway line and numerous bus routes terminate, pedestrian volumes are substantial on all crosswalks. No turns are permitted at this intersection from 7 AM to 7 PM except for buses, all approaches have high visibility crosswalks, and all have signs warning motorists of pedestrians crossing. Most of the pedestrian

accidents involved vehicles proceeding straight through the intersection, and field inspection indicates that corner reservoirs are crowded during peak hours; many pedestrians stand off the corners waiting for a walk signal. Safety at this location could be improved by the installation of bulb-outs at all corners to provide additional waiting and circulation space for pedestrians. A raised speed table across the entire intersection, including crosswalks, with a distinctive pavement surface would also serve to slow passing motorists.

It should be noted that under the one-way pair plan in Downtown Flushing, which is expected to be implemented independent of the proposed Plan, Main Street would be converted to a northbound-only street between Sanford Avenue and Northern Boulevard, with a potential contra-flow bus lane. The elimination of two-way auto and truck traffic on Main Street would reduce conflicting movements and simplify pedestrian crossings at intersections along Main Street, including its intersection at Roosevelt Avenue. Numerous other geometric and signal control improvements along Main Street would also be incorporated as part this planning alternative. At the same time, Union Street between Sanford Avenue and Northern Boulevard would be converted to one-way southbound operation with a potential contra-flow bus lane between Roosevelt Avenue and Northern Boulevard. The related geometric and signal control improvements along Union Street would similarly reduce some of the existing intersection pedestrian conflicts. While the safety improvement recommendations described above are relevant to the existing roadway conditions, many elements of the one-way pair plan either would have incorporated some of these improvement elements or could be combined with them to further improve overall pedestrian safety at the high vehicular-pedestrian accident locations. ✶

TABLE 17-39
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2006 EXISTING TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

		Weekday AM (7:45-8:45 AM)				Weekday Midday (1:00-2:00 PM)				Weekday PM (5:15-6:15 PM)				Saturday Midday (1:00-2:00 PM)			
				Control				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
SIGNALIZED INTERSECTIONS																	
ASTORIA BOULEVARD																	
108th Street at Astoria Boulevard																	
108th Street	NB	DefL	0.59	50.8	D	DefL	0.42	33.6	C	DefL	0.74	63.0	E	DefL	0.53	36.0	D
		T	0.21	41.1	D	T	0.13	28.6	C	T	0.19	41.0	D	T	0.30	30.6	C
	SB	LTR	0.24	41.7	D	LTR	0.16	28.9	C	LTR	0.48	46.0	D	LTR	0.20	29.4	C
Astoria Boulevard	EB	LTR	0.49	19.9	B	LTR	0.40	14.4	B	LTR	0.85	21.9	C	LTR	0.36	14.0	B
	WB	L	0.62	11.9	B	L	0.42	8.3	A	L	0.67	37.8	D	L	0.45	8.4	A
		TR	0.85	14.8	B	TR	0.27	6.3	A	TR	0.32	6.5	A	TR	0.23	6.0	A
Overall Intersection		**-**	**0.80**	**17.9**	**B**	**-**	**0.48**	**12.8**	**B**	**-**	**0.82**	**21.4**	**C**	**-**	**0.49**	**13.8**	**B**
NORTHERN BOULEVARD																	
108th Street at Northern Boulevard (RT. 25A)																	
108th Street	NB	LTR	1.03	76.0	E	LTR	1.05	84.0	F	LTR	1.05	75.5	E	LTR	1.05	77.2	E
	SB	LTR	0.83	40.6	D	LTR	0.70	31.3	C	LTR	1.05	66.4	E	LTR	0.88	38.6	D
Northern Boulevard (Rt. 25A)	EB	L	0.17	19.5	B	L	0.08	12.3	B	L	0.18	25.8	C	L	0.06	27.0	C
		TR	0.46	14.0	B	TR	0.44	13.8	B	TR	0.81	13.1	B	TR	0.78	20.6	C
	WB	L	0.42	14.6	B	L	0.31	11.7	B	L	0.52	35.6	D	L	0.41	23.9	C
		TR	0.89	15.6	B	T	0.64	17.1	B	TR	0.97	34.4	C	T	0.96	31.8	C
		-	-	-	-	R	0.13	11.0	B	-	-	-	-	R	0.23	11.9	B
Overall Intersection		**-**	**0.81**	**21.1**	**C**	**-**	**0.65**	**22.9**	**C**	**-**	**0.93**	**30.1**	**C**	**-**	**0.86**	**32.0**	**C**
114th Street at Northern Boulevard (RT. 25A)																	
114th Street	SB	LTR	0.47	49.7	D	LTR	0.46	49.9	D	LTR	0.63	38.1	D	LTR	0.54	51.4	D
Northern Boulevard (Rt. 25A)	EB	T	0.68	30.5	C	T	0.44	15.0	B	T	0.82	23.4	C	T	0.48	15.7	B
		R	0.71	34.3	C	R	0.44	15.7	B	R	0.65	20.3	C	R	0.57	18.1	B
	WB	-	-	-	-	-	-	-	-	DefL	0.67	27.6	C	DefL	0.79	20.8	C
		LT	1.04	40.0	D	LT	0.90	16.8	B	T	0.90	16.0	B	T	0.86	13.4	B
Overall Intersection		**-**	**0.95**	**37.9**	**D**	**-**	**0.82**	**17.6**	**B**	**-**	**1.20+**	**20.5**	**C**	**-**	**1.18**	**16.8**	**B**
126th Street at Northern Boulevard (RT. 25A)																	
126th Street	NB	L	0.36	42.7	D	L	0.60	46.9	D	L	0.44	43.8	D	L	0.55	45.5	D
		R	0.37	43.6	D	R	0.43	44.5	D	R	0.33	42.7	D	R	0.41	43.9	D
Northern Boulevard	EB	T	0.16	6.3	A	T	0.17	6.3	A	T	0.33	7.4	A	T	0.18	6.3	A
	WB	T	0.77	14.4	B	T	0.36	7.8	A	T	0.32	7.3	A	T	0.29	7.1	A
Grand Central Parkway Ramp	EB	T	0.34	7.5	A	T	0.36	7.7	A	T	0.39	8.0	A	T	0.34	7.5	A
Van Wyck & Whitestone Expressway Ramp	WB	T	0.79	16.6	B	T	0.76	15.5	B	T	0.75	15.3	B	T	0.73	14.4	B
Overall Intersection		**-**	**0.70**	**15.3**	**B**	**-**	**0.72**	**15.5**	**B**	**-**	**0.68**	**13.5**	**B**	**-**	**0.69**	**15.2**	**B**
Prince Street at Northern Boulevard (RT. 25A)																	
Prince Street	NB	LTR	0.92	82.3	F	LTR	0.89	71.7	E	LTR	0.82	62.3	E	LTR	1.01	95.8	F
	SB	LTR	0.89	67.1	E	LTR	0.68	48.0	D	LTR	0.63	45.5	D	LTR	0.61	44.9	D
Northern Boulevard	EB	L	0.98	56.8	E	L	0.94	64.1	E	L	0.91	57.5	E	L	0.65	39.5	D
		T	0.47	7.2	A	T	0.49	15.8	B	T	0.82	23.7	C	T	0.98	56.0	E
	WB	L	0.40	63.6	E	L	0.72	79.2	E	L	0.75	81.8	F	L	0.88	89.6	F
		T	0.98	13.9	B	T	0.74	24.2	C	T	0.81	34.1	C	T	0.84	26.6	C
Northern Boulevard Service Rd.	EB	TR	0.41	13.5	B	TR	0.55	19.3	B	TR	0.47	17.2	B	TR	0.85	52.5	D
	WB	TR	0.53	18.5	B	TR	0.51	25.0	C	TR	0.54	29.5	C	TR	0.66	28.5	C
Overall Intersection		**-**	**0.94**	**22.9**	**C**	**-**	**0.85**	**30.5**	**C**	**-**	**0.86**	**33.6**	**C**	**-**	**0.88**	**45.6**	**D**
Main Street at Northern Boulevard (RT. 25A)																	
Main Street	NB	L	0.92	78.2	E	L	0.78	53.5	D	L	0.94	79.1	E	L	0.90	63.6	E
		R	0.87	61.1	E	R	0.75	37.9	D	R	0.94	76.5	E	R	0.77	38.9	D
Northern Boulevard	EB	T	0.60	20.0	B	T	0.71	29.1	C	T	0.98	18.5	B	TR	1.03	60.0	E
		R	0.77	27.8	C	R	0.83	39.0	D	R	0.93	21.1	C	R	1.03	78.8	E
	WB	L	0.62	37.0	D	L	0.87	57.6	E	L	0.91	66.1	E	L	0.88	58.6	E
		T	0.87	4.6	A	T	0.65	11.7	B	T	0.85	19.2	B	T	0.87	24.6	C
Overall Intersection		**-**	**0.89**	**20.3**	**C**	**-**	**0.78**	**28.2**	**C**	**-**	**0.98**	**26.8**	**C**	**-**	**0.89**	**47.1**	**D**
Union Street at Northern Boulevard (RT. 25A)																	
Union Street	NB	DefL	0.93	78.4	E	DefL	0.78	53.3	D	DefL	0.92	74.3	E	DefL	1.00	90.5	F
		TR	0.97	73.6	E	TR	0.78	45.2	D	TR	0.96	68.7	E	TR	1.00	79.3	E
	SB	LTR	1.00	76.3	E	LTR	0.95	65.7	E	LTR	0.97	70.2	E	LTR	0.96	68.8	E
Northern Boulevard	EB	L	0.99	64.9	E	L	0.70	30.4	C	L	0.76	33.6	C	L	0.71	36.0	D
		TR	0.97	47.2	D	TR	0.90	41.2	D	TR	1.05	82.9	F	TR	1.05	71.4	E
	WB	L	0.72	31.4	C	L	0.65	26.7	C	L	0.87	55.1	E	L	0.80	45.4	D
		T	1.05	80.2	F	TR	0.81	36.6	D	TR	0.84	37.9	D	TR	0.96	46.2	D
		R	0.41	27.8	C	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		**-**	**1.05**	**66.7**	**E**	**-**	**0.96**	**44.0**	**D**	**-**	**1.03**	**64.6**	**E**	**-**	**1.05**	**63.0**	**E**
Parsons Boulevard at Northern Boulevard (RT. 25A)																	
Parsons Boulevard	NB	LTR	1.01	90.6	F	LTR	0.95	76.9	E	LTR	0.93	72.3	E	LTR	1.05	102.1	F
	SB	LTR	1.01	90.5	F	LTR	1.00	90.2	F	LTR	1.03	96.6	F	LTR	0.97	82.4	F
Northern Boulevard	EB	L	0.49	43.0	D	L	0.37	30.9	C	L	0.38	23.5	C	L	0.46	35.7	D
		TR	0.80	26.2	C	TR	0.80	19.6	B	TR	0.73	17.1	B	TR	0.90	24.0	C
	WB	L	0.50	29.8	C	L	0.24	18.4	B	L	0.39	26.4	C	L	0.39	27.7	C
		TR	0.94	25.5	C	TR	0.93	33.5	C	TR	0.84	21.1	C	TR	1.00	37.0	D
Overall Intersection		**-**	**1.05**	**39.5**	**D**	**-**	**0.85**	**39.8**	**D**	**-**	**0.89**	**33.1**	**C**	**-**	**0.92**	**44.0**	**D**
34TH AVENUE																	
114th Street at 34th Avenue																	
114th Street	SB	L	0.42	16.3	B	L	0.48	18.9	B	L	0.62	18.5	B	L	0.63	21.8	C
		T	0.26	14.6	B	T	0.23	16.0	B	T	0.28	13.7	B	T	0.31	16.9	B
34th Avenue	EB	TR	0.55	22.0	C	TR	0.45	18.5	B	TR	0.78	29.9	C	TR	0.59	20.7	C
Overall Intersection		**-**	**0.48**	**18.5**	**B**	**-**	**0.46**	**18.3**	**B**	**-**	**0.69**	**22.5**	**C**	**-**	**0.61**	**20.5**	**C**

TABLE 17-39
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2006 EXISTING TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

INTERSECTION & APPROACH		Weekday AM (7:45-8:45 AM) Mvt.	V/C	Control Delay	LOS	Weekday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS	Weekday PM (5:15-6:15 PM) Mvt.	V/C	Control Delay	LOS	Saturday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	LTR	0.28	21.3	C	LTR	0.46	23.9	C	LTR	0.71	31.3	C	LTR	0.75	33.1	C
Northern Boulevard Ramp	SB	LTR	0.23	20.8	C	LTR	0.38	24.1	C	LTR	0.45	25.2	C	LTR	0.51	26.8	C
GCP Ramp	SB	LTR	0.52	48.6	D	LTR	0.63	52.8	D	LTR	0.71	56.6	E	LTR	0.68	54.9	D
34th Avenue	EB	LTR	0.59	49.7	D	LTR	0.60	50.2	D	LTR	0.27	42.0	D	LTR	0.52	47.3	D
Stadium Road	WB	LTR	0.62	58.9	E	LTR	0.81	76.5	E	LTR	0.80	69.5	E	LTR	0.86	77.0	E
Overall Intersection		**-**	**0.41**	**37.9**	**D**	**-**	**0.59**	**40.8**	**D**	**-**	**0.73**	**42.9**	**D**	**-**	**0.76**	**45.8**	**D**
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	0.70	47.4	D	LTR	0.91	65.5	E	LTR	0.82	53.6	D	LTR	0.99	81.9	F
	SB	LTR	0.83	56.5	E	LTR	0.94	70.2	E	LTR	0.98	78.9	E	LTR	0.99	78.1	E
Roosevelt Avenue	EB	LTR	0.67	14.9	B	LTR	0.72	16.1	B	LTR	0.88	26.5	C	LTR	0.88	27.0	C
	WB	LTR	0.94	31.3	C	LTR	0.62	13.6	B	LTR	0.72	17.0	B	LTR	0.85	22.8	C
Overall Intersection		**-**	**0.91**	**34.5**	**C**	**-**	**0.78**	**36.9**	**D**	**-**	**0.91**	**41.9**	**D**	**-**	**0.91**	**49.1**	**D**
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	0.75	49.6	D	LTR	0.68	47.6	D	LTR	0.74	49.2	D	LTR	0.75	49.4	D
Roosevelt Avenue	EB	LTR	0.83	22.8	C	LTR	0.80	20.9	C	LTR	0.80	20.5	C	LTR	0.82	22.1	C
	WB	LTR	0.94	30.4	C	LTR	0.84	22.7	C	LTR	0.85	22.0	C	LTR	0.88	24.5	C
Overall Intersection		**-**	**0.89**	**32.2**	**C**	**-**	**0.79**	**27.3**	**C**	**-**	**0.82**	**27.6**	**C**	**-**	**0.85**	**29.4**	**C**
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	0.96	73.0	E	LTR	0.70	49.1	D	LTR	1.03	77.6	E	LTR	0.99	81.5	F
	SB	DefL	0.87	83.4	F	DefL	0.65	51.8	D	DefL	0.67	52.0	D	DefL	0.98	95.5	F
		TR	0.74	58.2	E	TR	0.26	37.4	D	TR	0.42	40.3	D	TR	0.80	62.7	E
Roosevelt Avenue	EB	LTR	0.77	18.9	B	LTR	0.63	13.9	B	LTR	0.69	15.3	B	LTR	0.78	19.4	B
	WB	DefL	0.84	28.4	C	-	-	-	-	-	-	-	-	-	-	-	-
		TR	0.97	40.8	D	LTR	0.86	23.0	C	LTR	1.00	50.9	D	LTR	0.89	24.5	C
Overall Intersection		**-**	**0.97**	**43.1**	**D**	**-**	**0.81**	**27.4**	**C**	**-**	**1.01**	**48.2**	**D**	**-**	**0.92**	**41.7**	**D**
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	0.31	39.1	D	LTR	0.78	60.7	E	LTR	0.34	40.1	D	LTR	0.29	39.0	D
	SB	-	-	-	-	DefL	0.74	54.6	D	DefL	0.79	54.4	D	DefL	0.68	48.5	D
		LTR	0.64	43.7	D	TR	0.67	47.0	D	TR	0.67	46.8	D	TR	0.66	46.4	D
Roosevelt Avenue	EB	LTR	0.53	11.5	B	LTR	0.52	11.5	B	LTR	0.66	13.9	B	LTR	0.69	15.1	B
	WB	LTR	0.60	12.2	B	LTR	0.51	11.1	B	LTR	0.57	12.0	B	LTR	0.65	13.9	B
Overall Intersection		**-**	**0.61**	**19.0**	**B**	**-**	**0.59**	**26.3**	**C**	**-**	**0.69**	**23.7**	**C**	**-**	**0.69**	**23.8**	**C**
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.04	88.4	F	L	0.76	29.6	C	L	0.91	52.4	D	L	0.68	41.0	D
		TR	0.73	30.9	C	TR	0.75	26.1	C	TR	0.76	31.9	C	TR	0.95	36.3	D
	SB	T	0.72	47.9	D	T	0.80	39.9	D	T	0.91	49.1	D	T	1.00	62.7	E
		R	0.34	38.5	D	R	0.26	28.2	C	R	0.24	36.4	D	R	0.35	29.4	C
Roosevelt Avenue	EB	LTR	0.44	26.2	C	LTR	0.49	20.9	C	LTR	0.61	29.3	C	LTR	0.49	20.0	B
	WB	LTR	0.29	36.5	D	LTR	0.25	28.3	C	LTR	0.24	38.5	D	LTR	0.39	28.1	C
Overall Intersection		**-**	**0.72**	**42.9**	**D**	**-**	**0.67**	**28.6**	**C**	**-**	**0.83**	**38.0**	**D**	**-**	**0.70**	**38.5**	**D**
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.60	35.6	D	LTR	0.75	38.4	D	LTR	0.74	41.2	D	LTR	0.95	61.7	E
Roosevelt Avenue	EB	-	-	-	-	-	-	-	-	-	-	-	-	DefL	0.99	56.5	E
		LTR	0.50	17.6	B	LTR	0.72	15.8	B	LTR	0.87	32.5	C	TR	0.99	49.9	D
	WB	LTR	0.88	35.5	D	LTR	0.69	16.5	B	LTR	0.84	33.4	C	LTR	0.95	41.4	D
Overall Intersection		**-**	**0.77**	**29.0**	**C**	**-**	**0.73**	**21.0**	**C**	**-**	**0.82**	**34.8**	**C**	**-**	**0.98**	**51.2**	**D**
Main Street at Roosevelt Avenue																	
Main Street	NB	LTR	0.80	26.7	C	LTR	0.98	45.8	D	LTR	0.95	39.6	D	LTR	0.98	44.6	D
	SB	LTR	0.72	30.0	C	LTR	0.56	22.1	C	LTR	0.87	39.9	D	LTR	0.99	55.4	E
Roosevelt Avenue	EB	LTR	0.76	35.8	D	LTR	0.89	39.2	D	LTR	0.97	63.5	E	LTR	1.00	59.0	E
	WB	LTR	0.99	61.9	E	LTR	0.84	35.8	D	LTR	0.98	67.3	E	LTR	1.00	61.5	E
Overall Intersection		**-**	**0.90**	**37.4**	**D**	**-**	**0.93**	**36.7**	**D**	**-**	**0.96**	**48.4**	**D**	**-**	**1.00**	**53.2**	**D**
Union Street at Roosevelt Avenue																	
Union Street	NB	TR	0.85	42.8	D	TR	0.52	19.8	B	TR	0.59	34.0	C	TR	0.58	20.7	C
	SB	LT	0.77	42.0	D	LT	0.76	27.3	C	LT	0.97	54.1	D	LT	0.97	48.0	D
		R	0.66	42.4	D	R	0.62	28.9	C	R	0.64	34.0	C	R	0.83	45.2	D
Roosevelt Avenue	EB	LTR	0.95	49.0	D	LTR	0.98	54.2	D	LTR	0.76	27.2	C	LTR	0.96	51.9	D
	WB	LTR	0.93	42.1	D	LTR	0.82	33.1	C	LTR	0.95	50.3	D	LTR	0.92	43.0	D
Overall Intersection		**-**	**0.91**	**43.7**	**D**	**-**	**0.87**	**32.7**	**C**	**-**	**0.96**	**42.1**	**D**	**-**	**0.97**	**41.3**	**D**
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	0.84	40.3	D	LTR	0.59	21.8	C	LTR	0.77	34.3	C	LTR	0.77	28.0	C
	SB	LTR	0.76	33.1	C	LTR	0.65	23.1	C	LTR	0.77	33.3	C	LTR	0.77	27.3	C
Roosevelt Avenue	EB	LTR	0.50	25.1	C	LTR	0.51	20.4	C	LTR	0.45	24.0	C	LTR	0.53	20.9	C
	WB	LTR	0.80	35.9	D	LTR	0.56	21.4	C	LTR	0.56	26.2	C	LTR	0.47	28.8	C
Overall Intersection		**-**	**0.82**	**34.4**	**C**	**-**	**0.61**	**21.8**	**C**	**-**	**0.66**	**30.3**	**C**	**-**	**0.65**	**26.6**	**C**

TABLE 17-39
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2006 EXISTING TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

		Weekday AM (7:45-8:45 AM)				Weekday Midday (1:00-2:00 PM)				Weekday PM (5:15-6:15 PM)				Saturday Midday (1:00-2:00 PM)			
				Control				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.87	47.3	D	L	0.68	28.0	C	L	0.98	71.8	E	L	1.00	75.6	E
		TR	0.86	35.8	D	TR	0.64	20.1	C	TR	0.90	40.1	D	TR	0.96	41.4	D
	SB	L	0.75	40.4	D	L	0.50	22.9	C	L	0.95	60.5	E	L	0.95	57.0	E
		TR	0.85	35.5	D	TR	0.85	30.7	C	TR	0.93	44.2	D	TR	0.98	49.1	D
Kissena Boulevard	WB	TR	1.00	81.2	F	TR	0.72	34.3	C	TR	1.02	83.2	F	TR	1.05	84.8	F
Overall Intersection		**-**	**0.92**	**49.0**	**D**	**-**	**0.76**	**27.6**	**C**	**-**	**0.98**	**58.2**	**E**	**-**	**0.98**	**58.5**	**E**
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.23	10.0	A	L	0.25	10.8	B	L	0.36	13.3	B	L	0.41	14.0	B
		T	0.45	10.8	B	T	0.41	10.5	B	T	0.39	10.2	B	T	0.50	11.3	B
	SB	TR	0.52	11.8	B	TR	0.63	13.4	B	TR	0.64	13.4	B	TR	0.62	13.0	B
Sanford Avenue	WB	LTR	0.86	42.5	D	LTR	0.69	33.8	C	LTR	0.74	35.8	D	LTR	0.83	40.5	D
Overall Intersection		**-**	**0.63**	**20.0**	**B**	**-**	**0.65**	**16.7**	**B**	**-**	**0.67**	**17.3**	**B**	**-**	**0.69**	**18.7**	**B**
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.65	24.7	C	LTR	0.36	17.3	B	LTR	0.69	29.4	C	LTR	0.41	18.6	B
	SB	LTR	0.48	17.9	B	LTR	0.58	19.6	B	LTR	0.93	39.8	D	LTR	0.93	38.3	D
Sanford Avenue	EB	LTR	0.36	12.3	B	LTR	0.42	13.0	B	LTR	0.43	10.8	B	LTR	0.54	12.9	B
	WB	LTR	0.70	19.1	B	LTR	0.52	14.3	B	LTR	0.62	13.8	B	LTR	0.72	16.7	B
Overall Intersection		**-**	**0.68**	**18.9**	**B**	**-**	**0.54**	**16.5**	**B**	**-**	**0.74**	**26.5**	**C**	**-**	**0.80**	**25.3**	**C**
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	0.96	41.1	D	LTR	0.72	19.5	B	LTR	0.80	23.4	C	LTR	1.00	50.1	D
	SB	LTR	0.69	17.4	B	LTR	0.52	14.4	B	LTR	0.83	24.0	C	LTR	0.88	27.5	C
Sanford Avenue	EB	LTR	0.88	28.0	C	LTR	0.50	14.4	B	LTR	0.71	19.3	B	LTR	0.51	14.4	B
	WB	LTR	0.97	38.3	D	LTR	0.60	16.3	B	LTR	0.65	17.2	B	LTR	0.89	29.7	C
Overall Intersection		**-**	**0.96**	**31.7**	**C**	**-**	**0.66**	**16.3**	**B**	**-**	**0.77**	**21.3**	**C**	**-**	**0.94**	**32.0**	**C**
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.74	23.5	C	T	0.74	24.3	C	T	0.70	22.5	C	T	0.62	20.5	C
		TR	0.69	24.1	C	TR	0.62	21.9	C	TR	0.62	21.5	C	TR	0.75	24.9	C
	SB	L	0.37	22.3	C	L	0.61	32.3	C	L	0.53	26.5	C	L	0.46	23.0	C
		T	0.51	9.9	A	T	0.48	9.7	A	T	0.48	9.6	A	T	0.40	8.9	A
32nd Avenue	WB	LTR	0.70	28.5	C	LTR	0.71	28.7	C	LTR	0.55	22.3	C	LTR	0.61	24.1	C
Overall Intersection		**-**	**0.70**	**19.1**	**B**	**-**	**0.77**	**20.9**	**C**	**-**	**0.69**	**18.2**	**B**	**-**	**0.66**	**18.4**	**B**
UNSIGNALIZED INTERSECTIONS																	
Willets Point Boulevard at 126th Street																	
126th Street	SB	LT	-	8.0	A	LT	-	8.2	A	LT	-	8.1	A	LT	-	8.2	A
Willets Point Boulevard	WB	LR	-	12.5	B	LR	-	13.2	B	LR	-	14.2	B	LR	-	14.0	B
Overall Intersection		**-**	**-**	**11.1**	**B**	**-**	**-**	**11.7**	**B**	**-**	**-**	**13.2**	**B**	**-**	**-**	**12.8**	**B**
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	19.1	C	L	-	16.9	C	L	-	12.2	B	L	-	13.4	B
		R	-	8.6	A	R	-	8.4	A	R	-	8.7	A	R	-	8.5	A
Worlds Fair Marina	WB	LT	-	8.3	A	LT	-	8.3	A	LT	-	8.0	A	LT	-	7.7	A
Overall Intersection		**-**	**-**	**8.9**	**A**	**-**	**-**	**9.1**	**A**	**-**	**-**	**8.4**	**A**	**-**	**-**	**8.5**	**A**
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	T	-	10.2	B	T	-	10.3	B	T	-	9.6	A	T	-	9.7	A
Overall Intersection		**-**	**-**	**10.2**	**B**	**-**	**-**	**10.3**	**B**	**-**	**-**	**9.6**	**A**	**-**	**-**	**9.7**	**A**
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	SB	LT	-	11.4	B	LT	-	10.5	B	LT	-	11.2	B	LT	-	10.8	B
Northern Blvd Service Rd	WB	LR	-	14.7	B	LR	-	13.7	B	LR	-	14.9	B	LR	-	14.9	B
Overall Intersection		**-**	**-**	**13.3**	**B**	**-**	**-**	**12.9**	**B**	**-**	**-**	**13.7**	**B**	**-**	**-**	**14.0**	**B**
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Grand Central Parkway Ramp	EB	L	-	10.4	B	L	-	9.7	A	L	-	9.7	A	L	-	9.8	A
		R	-	9.0	A	R	-	8.7	A	R	-	8.8	A	R	-	8.8	A
Overall Intersection		**-**	**-**	**9.9**	**A**	**-**	**-**	**9.4**	**A**	**-**	**-**	**9.1**	**A**	**-**	**-**	**9.3**	**A**

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.

TABLE 17-40
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2006 EXISTING TRAFFIC LEVELS OF SERVICE - *GAME DAY*

INTERSECTION & APPROACH		Weekday Pre Game (6:00-7:00 PM) Mvt.	V/C	Control Delay	LOS	Saturday Pre Game (12:00-1:00 PM) Mvt.	V/C	Control Delay	LOS	Saturday Post Game (3:45-4:45 PM) Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS													
ASTORIA BOULEVARD													
108th Street at Astoria Boulevard													
108th Street	NB	DefL	0.70	59.2	E	DefL	0.59	38.0	D	DefL	0.51	35.5	D
		T	0.62	50.3	D	T	0.23	29.8	C	T	0.18	29.1	C
	SB	LTR	0.43	44.9	D	LTR	0.22	29.7	C	LTR	0.21	29.5	C
Astoria Boulevard	EB	LTR	0.93	25.9	C	LTR	0.36	14.0	B	LTR	0.42	14.6	B
	WB	L	0.99	78.1	E	L	0.41	8.0	A	L	0.61	11.5	B
		TR	0.32	6.5	A	TR	0.21	2.3	A	TR	0.31	2.6	A
Overall Intersection		-	**0.98**	**27.9**	**C**	-	**0.50**	**12.9**	**B**	-	**0.52**	**11.9**	**B**
NORTHERN BOULEVARD													
108th Street at Northern Boulevard (RT. 25A)													
108th Street	NB	LTR	1.05	101.8	F	LTR	1.05	76.5	E	LTR	1.05	82.7	F
	SB	LTR	1.05	98.4	F	LTR	0.93	45.7	D	LTR	1.05	81.4	F
Northern Boulevard (Rt. 25A)	EB	L	0.20	26.1	C	L	0.02	29.2	C	L	0.05	26.7	C
		TR	0.88	14.9	B	TR	0.79	20.7	C	T	0.71	18.4	B
		-	-	-	-	-	-	-	-	R	0.10	10.8	B
	WB	L	0.71	49.6	D	L	0.46	26.5	C	L	0.40	22.9	C
		TR	0.96	33.0	C	T	1.02	45.4	D	T	0.97	32.9	C
		-	-	-	-	R	0.18	11.5	B	R	0.17	11.4	B
Overall Intersection		-	**1.01**	**36.2**	**D**	-	**0.90**	**38.7**	**D**	-	**0.86**	**35.4**	**D**
114th Street at Northern Boulevard (RT. 25A) [i]													
114th Street	SB	LTR	0.64	54.1	D	LTR	0.68	37.1	D	LTR	0.99	90.8	F
Northern Boulevard (Rt. 25A)	EB	T	0.96	25.1	C	T	0.54	16.5	B	T	0.96	53.1	D
		R	0.72	22.4	C	R	0.47	16.3	B	R	0.66	90.2	F
	WB	DefL	0.88	47.8	D	DefL	0.77	21.4	C	DefL	1.01	120.0+	F*
		T	0.93	18.5	B	T	0.87	13.6	B	T	1.01	120.0+	F*
Overall Intersection		-	**1.20+**	**24.8**	**C**	-	**1.20+**	**16.4**	**B**	-	**1.20+**	**113.8**	**F**
126th Street at Northern Boulevard (RT. 25A) [ii]													
126th Street	NB	L	0.94	75.5	E	L	0.67	49.9	D	L	1.00	99.4	F
		R	0.45	45.4	D	R	0.59	49.2	D	R	0.50	20.5	C
Northern Boulevard	EB	T	0.35	10.5	B	T	0.19	9.2	A	T	0.41	28.6	C
	WB	T	0.81	22.0	C	T	0.49	12.0	B	T	0.95	80.7	F
Grand Central Parkway Ramp	EB	T	0.49	11.9	B	T	0.75	17.0	B	T	1.03	102.4	F
Van Wyck & Whitestone Expressway Ramp	WB	T	1.04	99.0	F	T	1.00	94.8	F	T	1.02	120.0+	F*
Overall Intersection		-	**1.03**	**54.2**	**D**	-	**0.95**	**48.7**	**D**	-	**1.01**	**92.0**	**F**
Prince Street at Northern Boulevard (RT. 25A)													
Prince Street	NB	LTR	0.88	69.0	E	LTR	0.95	82.7	F	LTR	1.00	91.9	F
	SB	LTR	0.65	46.5	D	LTR	0.53	42.9	D	LTR	0.45	41.1	D
Northern Boulevard	EB	L	0.75	43.7	D	L	0.75	43.8	D	L	1.05	95.9	F
		T	0.80	22.8	C	T	0.95	48.7	D	T	0.81	23.8	C
	WB	L	0.72	77.6	E	L	0.74	80.6	F	L	0.64	71.5	E
		T	0.84	34.9	C	T	0.79	25.1	C	T	0.79	25.3	C
Northern Boulevard Service Rd.	EB	TR	0.56	20.2	C	TR	0.91	59.9	E	TR	0.64	22.0	C
	WB	TR	0.48	28.3	C	TR	0.67	28.9	C	TR	0.58	22.5	C
Overall Intersection		-	**0.86**	**33.2**	**C**	-	**0.86**	**42.3**	**D**	-	**1.15**	**36.2**	**D**
Main Street at Northern Boulevard (RT. 25A)													
Main Street	NB	L	0.94	78.5	E	L	0.82	55.5	E	L	0.85	57.1	E
		R	0.96	79.1	E	R	0.72	35.7	D	R	0.62	30.3	C
Northern Boulevard	EB	T	0.97	15.4	B	TR	1.01	55.9	E	T	0.92	39.8	D
		R	0.93	22.0	C	R	0.96	63.0	E	R	1.05	80.2	F
	WB	L	1.05	80.4	F	L	0.89	57.7	E	L	0.87	55.4	E
		T	0.91	22.9	C	T	0.91	27.2	C	T	0.88	25.6	C
Overall Intersection		-	**0.96**	**33.5**	**C**	-	**0.87**	**44.7**	**D**	-	**0.93**	**40.7**	**D**
Union Street at Northern Boulevard (RT. 25A)													
Union Street	NB	DefL	0.82	59.5	E	DefL	0.86	61.7	E	DefL	0.88	65.2	E
		TR	0.92	59.3	E	TR	0.87	52.7	D	TR	0.82	46.6	D
	SB	LTR	0.99	74.9	E	LTR	0.91	59.3	E	LTR	0.82	50.9	D
Northern Boulevard	EB	L	0.78	43.8	D	L	0.60	28.5	C	L	0.69	31.9	C
		TR	1.05	68.0	E	TR	1.02	61.1	E	TR	1.04	64.5	E
	WB	L	0.84	50.3	D	L	0.84	50.9	D	L	0.73	39.8	D
		TR	0.91	41.9	D	TR	0.92	41.6	D	TR	0.83	37.5	D
Overall Intersection		-	**0.98**	**58.9**	**E**	-	**0.96**	**52.7**	**D**	-	**0.96**	**51.5**	**D**
Parsons Boulevard at Northern Boulevard (RT. 25A)													
Parsons Boulevard	NB	LTR	0.99	86.6	F	LTR	0.99	85.5	F	LTR	0.94	73.6	E
	SB	LTR	0.97	79.3	E	LTR	0.88	65.6	E	LTR	0.94	76.2	E
Northern Boulevard	EB	L	0.32	24.0	C	L	0.54	40.7	D	L	0.31	20.5	C
		TR	0.75	17.6	B	TR	0.91	24.4	C	TR	0.91	24.6	C
	WB	L	0.43	30.1	C	L	0.31	24.3	C	L	0.31	24.7	C
		TR	0.88	22.7	C	TR	1.05	52.3	D	TR	0.79	19.1	B
Overall Intersection		-	**0.89**	**33.1**	**C**	-	**0.94**	**46.5**	**D**	-	**0.82**	**33.9**	**C**
34TH AVENUE													
114th Street at 34th Avenue [iii]													
114th Street	SB	L	0.63	18.6	B	L	0.59	20.8	C	L	0.62	21.5	C
		T	0.32	14.2	B	T	0.34	17.3	B	T	0.21	15.8	B
34th Avenue	EB	TR	0.69	26.4	C	TR	0.57	20.4	C	TR	0.65	22.0	C
Overall Intersection		-	**0.65**	**20.8**	**C**	-	**0.58**	**20.0**	**B**	-	**0.63**	**21.0**	**C**

TABLE 17-40
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2006 EXISTING TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
126th Street/GCP Ramp at 34th Avenue [iv]													
126th Street	NB	LTR	0.49	23.5	C	TR	0.36	21.8	C	LTR	1.05	120.0+	F*
Northern Boulevard Ramp	SB	LTR	0.33	12.1	B	TR	0.21	11.1	B	LTR	0.33	21.5	C
GCP Ramp	SB	LTR	1.01	66.8	E	LTR	1.02	67.5	E	LTR	0.23	40.5	D
34th Avenue	EB	-	-	-	-	-	-	-	-	DefL	0.75	75.5	E
		R	0.50	5.8	A	R	0.64	4.5	A	TR	0.19	47.0	D
Stadium Road	WB	R	0.35	42.5	D	R	0.58	48.6	D	LTR	1.05	120.0+	F*
Overall Intersection		**-**	**0.70**	**40.2**	**D**	**-**	**0.73**	**40.6**	**D**	**-**	**0.88**	**120.0+**	**F***
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	0.93	67.2	E	LTR	0.94	70.0	E	LTR	1.01	85.7	F
	SB	LTR	1.02	85.4	F	LTR	0.99	84.1	F	LTR	1.01	86.6	F
Roosevelt Avenue	EB	LTR	0.93	30.4	C	LTR	0.86	23.6	C	LTR	0.79	19.3	B
	WB	LTR	0.80	19.8	B	LTR	0.87	24.3	C	LTR	0.92	29.8	C
Overall Intersection		**-**	**0.95**	**47.4**	**D**	**-**	**0.90**	**43.6**	**D**	**-**	**0.95**	**50.3**	**D**
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	0.96	61.5	E	LTR	0.97	77.6	E	LTR	0.88	60.6	E
Roosevelt Avenue	EB	LTR	0.91	27.2	C	LTR	0.82	20.5	C	LTR	0.59	12.6	B
	WB	LTR	0.92	29.0	C	LTR	0.94	31.3	C	LTR	0.94	31.5	C
Overall Intersection		**-**	**0.93**	**35.8**	**D**	**-**	**0.95**	**37.0**	**D**	**-**	**0.93**	**32.1**	**C**
114th Street at Roosevelt Avenue [v]													
114th Street	NB	LTR	1.05	96.6	F	LTR	1.01	84.9	F	LTR	1.03	98.2	F
	SB	DefL	1.00	94.5	F	DefL	0.93	81.4	F	DefL	0.93	79.2	E
		TR	0.74	57.4	E	TR	0.54	46.1	D	TR	0.90	73.6	E
Roosevelt Avenue	EB	LTR	1.00	44.1	D	LTR	0.94	31.3	C	LTR	1.00	43.3	D
	WB	DefL	0.82	27.7	C	-	-	-	-	-	-	-	-
		TR	0.98	41.5	D	LTR	0.86	22.1	C	LTR	0.99	38.5	D
Overall Intersection		**-**	**1.01**	**55.0**	**E**	**-**	**0.96**	**42.1**	**D**	**-**	**1.00**	**54.9**	**D**
126th Street at Roosevelt Avenue [vi]													
126th Street	NB	LTR	0.21	35.3	D	LTR	0.20	35.1	D	LTR	0.15	34.6	C
	SB	LT	0.88	60.5	E	LT	0.59	41.1	D	DefL	1.01	68.2	E
		R	1.00	78.5	E	R	1.00	79.5	E	TR	0.50	27.4	C
Roosevelt Avenue	EB	DefL	1.03	70.7	E	DefL	1.02	65.6	E	-	-	-	-
		TR	0.80	17.3	B	TR	0.61	11.5	B	LTR	0.82	27.0	C
	WB	LTR	0.68	12.5	B	LTR	0.67	15.3	B	LTR	0.38	17.0	B
Overall Intersection		**-**	**1.02**	**35.3**	**D**	**-**	**1.01**	**33.7**	**C**	**-**	**0.90**	**36.2**	**D**
College Point Boulevard at Roosevelt Avenue [vii]													
College Point Boulevard	NB	L	1.04	120.0+	F*	L	1.04	78.7	E	L	0.57	34.7	C
		TR	0.74	31.3	C	TR	0.96	40.6	D	TR	0.80	27.4	C
	SB	T	0.93	62.4	E	T	0.84	41.1	D	T	0.76	37.3	D
		R	0.70	48.6	D	R	0.60	34.9	C	R	0.27	28.2	C
Roosevelt Avenue	EB	LTR	0.67	30.5	C	LTR	0.44	19.3	B	LTR	0.75	28.8	C
	WB	LTR	0.31	37.2	D	LTR	0.46	31.7	C	LTR	0.32	28.2	C
Overall Intersection		**-**	**0.84**	**52.2**	**D**	**-**	**0.71**	**40.3**	**D**	**-**	**0.77**	**30.4**	**C**
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	0.91	60.5	E	LTR	0.99	71.5	E	LTR	0.90	54.4	D
Roosevelt Avenue	EB	DefL	1.00	73.0	E	DefL	0.91	41.2	D	-	-	-	-
		TR	0.99	60.3	E	TR	0.94	39.3	D	LTR	0.74	16.6	B
	WB	LTR	0.95	50.3	D	LTR	0.90	32.4	C	LTR	0.85	26.8	C
Overall Intersection		**-**	**0.96**	**59.8**	**E**	**-**	**0.96**	**44.9**	**D**	**-**	**0.87**	**28.2**	**C**
Main Street at Roosevelt Avenue													
Main Street	NB	LTR	0.97	43.3	D	LTR	0.93	35.6	D	LTR	0.88	31.3	C
	SB	LTR	0.94	48.7	D	LTR	0.98	54.2	D	LTR	0.71	25.6	C
Roosevelt Avenue	EB	LTR	1.03	79.4	E	LTR	0.89	39.8	D	LTR	0.89	39.2	D
	WB	LTR	1.05	84.1	F	LTR	1.00	57.2	E	LTR	0.85	35.4	D
Overall Intersection		**-**	**1.01**	**58.7**	**E**	**-**	**0.99**	**45.4**	**D**	**-**	**0.89**	**31.8**	**C**
Union Street at Roosevelt Avenue													
Union Street	NB	TR	0.60	34.2	C	TR	0.61	21.3	C	TR	0.52	19.6	B
	SB	LT	0.93	54.2	D	LT	0.86	32.5	C	LT	0.84	31.5	C
		R	0.50	34.2	C	R	0.86	52.2	D	R	0.77	40.5	D
Roosevelt Avenue	EB	LTR	0.79	28.9	C	LTR	0.87	38.1	D	LTR	1.00	57.5	E
	WB	LTR	0.86	35.1	D	LTR	0.92	42.5	D	LTR	0.83	33.0	C
Overall Intersection		**-**	**0.89**	**39.0**	**D**	**-**	**0.89**	**34.6**	**C**	**-**	**0.92**	**36.2**	**D**
Parsons Boulevard at Roosevelt Avenue													
Parsons Boulevard	NB	LTR	0.95	54.1	D	LTR	0.83	32.0	C	LTR	0.57	21.4	C
	SB	LTR	0.92	45.6	D	LTR	0.72	25.3	C	LTR	0.63	22.6	C
Roosevelt Avenue	EB	LTR	0.59	27.3	C	LTR	0.58	21.9	C	LTR	0.52	20.5	C
	WB	LTR	0.63	28.7	C	LTR	0.81	32.3	C	LTR	0.43	18.8	B
Overall Intersection		**-**	**0.79**	**41.3**	**D**	**-**	**0.82**	**28.2**	**C**	**-**	**0.58**	**21.1**	**C**

TABLE 17-40
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2006 EXISTING TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.94	59.4	E	L	0.99	69.7	E	L	0.78	37.3	D
		TR	0.97	53.0	D	TR	0.84	27.4	C	TR	0.67	20.0	C
	SB	L	0.95	67.9	E	L	0.70	31.2	C	L	0.67	28.5	C
		TR	0.95	49.0	D	TR	0.92	36.8	D	TR	0.88	32.0	C
Kissena Boulevard	WB	TR	1.02	81.8	F	TR	1.03	75.1	E	TR	1.00	66.5	E
Overall Intersection		-	**0.97**	**62.1**	**E**	-	**1.02**	**46.5**	**D**	-	**0.94**	**37.8**	**D**
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.23	10.8	B	L	0.33	12.3	B	L	0.29	12.2	B
		T	0.51	11.5	B	T	0.57	12.2	B	T	0.41	10.4	B
	SB	TR	0.68	14.2	B	TR	0.64	13.4	B	TR	0.71	14.8	B
Sanford Avenue	WB	LTR	0.87	44.0	D	LTR	0.87	43.9	D	LTR	0.77	36.8	D
Overall Intersection		-	**0.74**	**19.9**	**B**	-	**0.71**	**19.5**	**B**	-	**0.73**	**18.1**	**B**
Union Street at Sanford Avenue													
Union Street	NB	LTR	0.74	34.0	C	LTR	0.37	17.7	B	LTR	0.34	17.1	B
	SB	LTR	0.91	35.8	D	LTR	0.85	30.7	C	LTR	0.77	25.7	C
Sanford Avenue	EB	LTR	0.49	11.6	B	LTR	0.55	13.3	B	LTR	0.43	11.0	B
	WB	LTR	0.63	14.1	B	LTR	0.79	19.7	B	LTR	0.66	14.7	B
Overall Intersection		-	**0.74**	**25.5**	**C**	-	**0.81**	**22.4**	**C**	-	**0.70**	**18.7**	**B**
Parsons Boulevard at Sanford Avenue													
Parsons Boulevard	NB	LTR	0.98	43.1	D	LTR	0.95	37.0	D	LTR	0.74	20.1	C
	SB	LTR	0.92	30.8	C	LTR	0.83	23.0	C	LTR	0.82	23.0	C
Sanford Avenue	EB	LTR	0.91	32.5	C	LTR	0.59	14.1	B	LTR	0.61	14.3	B
	WB	LTR	0.81	22.8	C	LTR	0.93	31.5	C	LTR	0.71	16.7	B
Overall Intersection		-	**0.94**	**32.7**	**C**	-	**0.94**	**27.8**	**C**	-	**0.76**	**19.0**	**B**
WHITESTONE EXPRESSWAY / 32ND AVENUE													
College Point Boulevard at 32nd Avenue													
College Point Boulevard	NB	T	0.66	21.5	C	T	0.39	17.1	B	T	0.38	17.0	B
		TR	0.66	22.5	C	TR	0.84	29.8	C	TR	0.95	40.7	D
	SB	L	0.59	27.9	C	L	0.41	17.6	B	L	0.41	17.6	B
		T	0.46	9.4	A	T	0.43	9.2	A	T	0.35	8.5	A
32nd Avenue	WB	LTR	0.61	24.4	C	LTR	0.59	23.6	C	LTR	0.52	21.5	C
Overall Intersection		-	**0.72**	**18.8**	**B**	-	**0.57**	**17.9**	**B**	-	**0.58**	**21.6**	**C**

Game Day Notes for Signalized Intersections

[i] 114th Street at Northern Boulevard: During post game peak hours, NYPD closes the WB left, SB thru, and EB right movements onto southbound 114th Street for approximately 15 minutes.

[ii] 126th Street at Northern Boulevard: During pre game peak hours, NYPD operates the WB lane from the Whitestone Expwy/Van Wyck Expwy ramps as free flow (its approach lane to 126th Street is channelized with cones), and the adjacent lane from Northern Boulevard is closed (traffic from Northern

[iii] 114th Street at 34th Avenue: During post game peak hours, NYPD does not allow southbound traffic along 114th Street from Northern Boulevard or the 34th Avenue eastbound through movement, for approximately 15 minutes. During this time, the only traffic entering the eastbound Grand Cen

[iv] 126th Street/GCP Ramp at 34th Avenue: During pre game peak hours, NYPD disables the signal and operates the SB ramps and EB approach as free flow with movement prohibitions. During post game peak hours, NYPD operates three NB lanes with turn prohibitions from the SB, EB, and WB approaches, an

[v] 114th Street at Roosevelt Avenue: During the weekend post game peak hour, NYPD closes the EB through movement for approximately 15 minutes.

[vi] 126th Street at Roosevelt Avenue: During pre and post game peak hours, NYPD manually adjusts the signal timing based on demand and lengthens/shortens effective green times of the EB left and SB movements.

[vii] College Point Blvd. at Roosevelt Ave. During the weeknight pre-game peak hour, NYPD may place a TEA at the intersection to help process NB lefts.

UNSIGNALIZED INTERSECTIONS													
Willets Point Boulevard at 126th Street													
126th Street	SB	LT	-	9.0	A	LT	-	8.8	A	LT	-	7.9	A
Willets Point Boulevard	WB	LR	-	15.4	C	LR	-	17.2	C	LR	-	27.1	D
Overall Intersection		-	-	**14.2**	**B**	-	-	**13.4**	**B**	-	-	**23.4**	**C**
Boat Basin Road at Worlds Fair Marina													
Boat Basin Road	NB	L	-	31.7	D	L	-	31.7	D	L	-	105.6	F
		R	-	8.5	A	R	-	8.5	A	R	-	8.9	A
Worlds Fair Marina	WB	LT	-	9.2	A	LT	-	10.2	B	LT	-	7.9	A
Overall Intersection		-	-	**10.4**	**B**	-	-	**11.4**	**B**	-	-	**61.2**	**F**
Willets Point Boulevard at Northern Boulevard													
Willets Point Boulevard	NB	T	-	9.4	A	T	-	10.0	A	T	-	10.3	B
Overall Intersection		-	-	**9.4**	**A**	-	-	**10.0**	**A**	-	-	**10.3**	**B**
College Point Boulevard at Northern Boulevard Service Road													
College Point Boulevard	SB	LT	-	14.1	B	LT	-	10.6	B	LT	-	12.4	B
Northern Blvd Service Rd	WB	LR	-	20.1	C	LR	-	27.2	D	LR	-	39.6	E
Overall Intersection		-	-	**17.9**	**C**	-	-	**23.3**	**C**	-	-	**31.2**	**D**
Grand Central Parkway Ramp at West Park Loop/Stadium Road													
Grand Central Parkway Ramp	EB	L	-	18.2	C	L	-	64.4	F	L	-	13.4	B
		R	-	10.0	B	R	-	18.0	C	R	-	10.7	B
Overall Intersection		-	-	**15.0**	**B**	-	-	**42.0**	**E**	-	-	**11.9**	**B**

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.

TABLE 17-41
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 NO BUILD TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

INTERSECTION & APPROACH		Weekday AM (7:45-8:45 AM) Mvt.	V/C	Control Delay	LOS	Weekday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS	Weekday PM (5:15-6:15 PM) Mvt.	V/C	Control Delay	LOS	Saturday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
ASTORIA BOULEVARD																	
108th Street at Astoria Boulevard																	
108th Street	NB	DefL	0.71	57.4	E	DefL	0.48	35.1	D	DefL	0.93	91.8	F	DefL	0.60	38.3	D
		T	0.25	41.7	D	T	0.18	29.2	C	T	0.25	41.8	D	T	0.37	31.7	C
	SB	LTR	0.28	42.3	D	LTR	0.23	29.7	C	LTR	0.57	48.6	D	LTR	0.28	30.4	C
Astoria Boulevard	EB	LTR	0.57	21.1	C	LTR	0.47	15.2	B	LTR	0.98	31.9	C	LTR	0.43	14.7	B
	WB	L	0.74	20.8	C	L	0.53	10.4	B	L	0.76	44.3	D	L	0.58	10.9	B
		TR	0.96	23.2	C	TR	0.33	6.6	A	TR	0.38	6.9	A	TR	0.28	6.3	A
Overall Intersection		**-**	**0.91**	**24.2**	**C**	**-**	**0.54**	**13.7**	**B**	**-**	**0.96**	**28.8**	**C**	**-**	**0.55**	**14.7**	**B**
NORTHERN BOULEVARD																	
108th Street at Northern Boulevard (RT. 25A)																	
108th Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	0.99	66.2	E	LTR	0.88	45.4	D	LTR	1.20+	120.0+	F*	LTR	1.17	119.5	F
Northern Boulevard (Rt. 25A)	EB	L	0.19	26.9	C	L	0.12	18.5	B	L	0.22	42.2	D	L	0.08	44.3	D
		TR	0.54	15.2	B	TR	0.55	15.3	B	TR	0.96	19.9	B	TR	0.98	36.2	D
	WB	L	0.58	25.7	C	L	0.50	21.8	C	L	0.69	50.0	D	L	0.72	49.8	D
		TR	1.03	35.6	D	T	0.83	22.2	C	TR	1.20+	120.0+	F*	T	1.20+	120.0+	F*
		-	-	-	-	R	0.16	11.2	B	-	-	-	-	R	0.27	12.4	B
Overall Intersection		**-**	**0.97**	**40.3**	**D**	**-**	**0.95**	**35.7**	**D**	**-**	**1.15**	**78.5**	**E**	**-**	**1.15**	**92.0**	**F**
114th Street at Northern Boulevard (RT. 25A)																	
114th Street	SB	LTR	0.68	56.5	E	LTR	0.91	79.9	E	LTR	1.03	87.2	F	LTR	1.01	98.3	F
Northern Boulevard (Rt. 25A)	EB	T	0.82	35.2	D	T	0.56	16.9	B	T	0.97	35.7	D	T	0.62	17.9	B
		R	0.84	41.7	D	R	0.56	18.0	B	R	0.78	24.8	C	R	0.71	22.0	C
	WB	DefL	0.52	17.0	B	LT	0.93	18.1	B	DefL	0.89	60.7	E	DefL	0.89	35.7	D
		T	1.20+	120.0+	F*					T	0.96	20.8	C	T	0.93	17.4	B
Overall Intersection		**-**	**1.20+**	**104.9**	**F**	**-**	**0.92**	**21.5**	**C**	**-**	**1.20+**	**31.4**	**C**	**-**	**1.20+**	**24.2**	**C**
126th Street at Northern Boulevard (RT. 25A)																	
126th Street	NB	L	0.44	43.9	D	L	0.78	52.6	D	L	0.60	46.7	D	L	0.72	49.8	D
		R	0.41	44.4	D	R	0.48	45.6	D	R	0.37	43.3	D	R	0.47	44.8	D
Northern Boulevard	EB	T	0.21	6.6	A	T	0.24	6.8	A	T	0.41	8.2	A	T	0.26	6.9	A
	WB	T	0.89	20.6	C	T	0.49	9.1	A	T	0.45	8.6	A	T	0.42	8.3	A
Grand Central Parkway Ramp	EB	T	0.39	8.0	A	T	0.43	8.4	A	T	0.46	8.7	A	T	0.40	8.0	A
Van Wyck & Whitestone Expressway Ramp	WB	T	0.88	22.4	C	T	0.85	20.2	C	T	0.84	19.8	B	T	0.82	18.3	B
Overall Intersection		**-**	**0.79**	**19.4**	**B**	**-**	**0.83**	**17.8**	**B**	**-**	**0.79**	**15.5**	**B**	**-**	**0.80**	**16.9**	**B**
Prince Street at Northern Boulevard (RT. 25A)																	
Prince Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	0.99	86.4	F	LTR	0.75	51.5	D	LTR	0.70	48.0	D	LTR	0.68	47.2	D
Northern Boulevard	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	0.97	94.5	F
		T	0.55	8.0	A	T	0.61	17.8	B	T	0.97	37.6	D	T	0.83	24.5	C
	WB	L	1.17	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	1.10	59.3	E	T	0.92	30.8	C	T	1.02	55.6	E	T	1.05	58.7	E
Northern Boulevard Service Rd.	EB	TR	0.46	14.6	B	TR	0.70	24.5	C	TR	0.60	20.4	C	TR	0.74	27.0	C
	WB	TR	0.61	20.4	C	TR	0.58	26.6	C	TR	0.61	31.3	C	TR	0.74	31.4	C
Overall Intersection		**-**	**1.20+**	**72.7**	**E**	**-**	**1.13**	**68.0**	**E**	**-**	**1.16**	**72.4**	**E**	**-**	**1.11**	**75.2**	**E**
Main Street at Northern Boulevard (RT. 25A)																	
Main Street	NB	L	0.77	46.5	D	L	0.87	53.9	D	L	1.04	86.0	F	L	1.18	120.0+	F*
		R	0.68	29.7	C	R	0.81	35.2	D	R	0.87	44.0	D	R	0.88	40.0	D
Northern Boulevard	EB	TR	0.84	32.1	C	TR	0.88	33.7	C	TR	1.02	31.0	C	TR	1.02	55.2	E
	WB	L	0.10	34.0	C	L	0.05	44.8	D	L	0.10	58.8	E	L	0.03	44.3	C
		T	1.04	28.5	C	T	0.69	12.1	B	T	0.99	39.5	D	T	0.90	26.5	C
Overall Intersection		**-**	**0.95**	**31.9**	**C**	**-**	**0.84**	**29.8**	**C**	**-**	**1.01**	**42.8**	**D**	**-**	**0.99**	**57.9**	**E**
Union Street at Northern Boulevard (RT. 25A)																	
Union Street	NB	LTR	0.12	31.1	C	LTR	0.08	30.5	C	LTR	0.16	32.3	C	LTR	0.17	32.5	C
	SB	LTR	1.17	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Northern Boulevard	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	0.68	25.2	C	T	0.67	29.2	C	T	0.88	36.1	D	T	0.80	32.5	C
		R	1.20+	120.0+	F*	R	1.17	108.6	F	R	1.18	112.5	F	R	1.20+	120.0+	F*
	WB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		TR	1.14	113.8	F	TR	0.73	30.8	C	TR	0.81	32.5	C	TR	0.86	34.8	C
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**118.3**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Northern Boulevard (RT. 25A)																	
Parsons Boulevard	NB	L	1.03	120.0+	F*	L	0.77	64.5	E	L	0.78	69.8	E	L	0.95	100.0	F
		TR	0.72	47.0	D	TR	0.58	40.9	D	TR	0.67	44.4	D	TR	0.75	49.9	D
	SB	LTR	1.04	96.7	F	LTR	1.11	120.0+	F*	LTR	1.07	105.2	F	LTR	1.19	120.0+	F*
Northern Boulevard	EB	L	0.48	47.8	D	L	0.45	48.9	D	L	0.50	47.8	D	L	0.53	50.5	D
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.13	93.5	F	TR	1.20+	120.0+	F*
	WB	L	0.67	49.4	D	L	0.34	38.0	D	L	0.43	43.1	D	L	0.48	48.6	D
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.07**	**120.0+**	**F***	**-**	**1.10**	**120.0+**	**F***	**-**	**1.03**	**120.0+**	**F***	**-**	**1.19**	**120.0+**	**F***
34TH AVENUE																	
114th Street at 34th Avenue																	
114th Street	SB	L	0.50	17.4	B	L	0.60	21.1	C	L	0.73	21.2	C	L	0.78	26.2	C
		T	0.30	15.0	B	T	0.26	16.3	B	T	0.31	14.0	B	T	0.35	17.4	B
34th Avenue	EB	TR	0.62	23.3	C	TR	0.50	19.3	B	TR	0.88	35.5	D	TR	0.66	22.2	C
Overall Intersection		**-**	**0.55**	**19.5**	**B**	**-**	**0.55**	**19.7**	**B**	**-**	**0.80**	**26.0**	**C**	**-**	**0.72**	**23.2**	**C**

TABLE 17-41
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 NO BUILD TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

INTERSECTION & APPROACH		Weekday AM (7:45-8:45 AM) Mvt.	V/C	Control Delay	LOS	Weekday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS	Weekday PM (5:15-6:15 PM) Mvt.	V/C	Control Delay	LOS	Saturday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	LTR	0.33	21.9	C	LTR	0.56	25.8	C	LTR	0.92	46.8	D	LTR	0.94	50.1	D
Northern Boulevard Ramp	SB	LTR	0.30	21.8	C	LTR	0.57	29.0	C	LTR	0.60	29.1	C	LTR	0.70	33.8	C
GCP Ramp	SB	LTR	0.67	54.6	D	LTR	0.88	73.2	E	LTR	0.92	80.0	E	LTR	0.94	83.7	F
34th Avenue	EB	-	-	-	-	-	-	-	-	-	-	-	-	DefL	0.61	62.9	E
		LTR	0.67	53.1	D	LTR	0.68	53.7	D	LTR	0.31	42.7	D	TR	0.65	55.5	E
Stadium Road	WB	LTR	0.70	65.3	E	LTR	0.98	111.0	F	LTR	0.90	83.1	F	LTR	0.95	94.7	F
Overall Intersection		**-**	**0.50**	**40.7**	**D**	**-**	**0.74**	**50.1**	**D**	**-**	**0.92**	**55.8**	**E**	**-**	**0.94**	**62.0**	**E**
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	0.80	52.8	D	LTR	1.06	102.0	F	LTR	0.96	70.6	E	LTR	1.20	120.0+	F*
	SB	LTR	1.01	85.3	F	LTR	1.16	120.0+	F*	LTR	1.16	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	LTR	0.94	32.6	C	LTR	1.20	118.8	F	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.15	96.0	F	LTR	0.90	27.2	C	LTR	1.11	81.2	F	LTR	1.18	110.8	F
Overall Intersection		**-**	**1.11**	**68.4**	**E**	**-**	**1.19**	**93.9**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	0.84	55.5	E	LTR	0.77	52.1	D	LTR	0.83	54.4	D	LTR	0.83	54.7	D
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.16	101.6	F	LTR	1.20	118.4	F	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.11**	**101.7**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.15**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	1.07	103.3	F	LTR	0.78	54.5	D	LTR	1.15	118.4	F	LTR	1.11	117.1	F
	SB	DefL	0.97	103.6	F	DefL	0.73	57.0	E	DefL	0.76	57.7	E	DefL	1.09	120.0+	F*
		TR	0.83	67.8	E	TR	0.28	37.9	D	TR	0.47	41.4	D	TR	0.90	77.1	E
Roosevelt Avenue	EB	LTR	1.09	74.8	E	LTR	1.06	61.8	E	LTR	1.06	61.4	E	LTR	1.20+	120.0+	F*
	WB	DefL	0.94	42.0	D	-	-	-	-	-	-	-	-	-	-	-	-
		TR	1.15	99.9	F	LTR	1.17	103.6	F	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.13**	**83.7**	**F**	**-**	**1.06**	**78.9**	**E**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	0.34	39.9	D	LTR	0.87	71.1	E	LTR	0.39	41.5	D	LTR	0.35	40.6	D
	SB	DefL	0.81	58.8	E	DefL	1.20+	120.0+	F*	DefL	1.14	120.0+	F*	DefL	1.14	120.0+	F*
		TR	0.77	52.4	D	TR	0.75	50.8	D	TR	0.75	50.6	D	TR	0.74	49.8	D
Roosevelt Avenue	EB	LTR	0.75	16.5	B	LTR	0.89	24.7	C	LTR	1.02	48.6	D	LTR	1.20	117.7	F
	WB	LTR	0.73	14.9	B	LTR	0.77	17.0	B	LTR	0.87	21.6	C	LTR	0.99	41.7	D
Overall Intersection		**-**	**0.77**	**24.0**	**C**	**-**	**1.01**	**51.3**	**D**	**-**	**1.05**	**49.4**	**D**	**-**	**1.19**	**83.3**	**F**
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.20	120.0+	F*	L	0.86	39.1	D	L	0.86	46.4	D	L	0.66	40.3	D
		TR	0.86	37.1	D	TR	0.94	37.6	D	TR	0.93	42.6	D	TR	1.17	108.0	F
	SB	T	0.85	54.4	D	T	0.99	61.2	E	T	1.17	120.0+	F*	T	1.20+	120.0+	F*
		R	0.54	43.2	D	R	0.43	31.1	C	R	0.34	38.2	D	R	0.50	32.6	C
Roosevelt Avenue	EB	LTR	0.63	30.9	C	LTR	0.76	27.0	C	LTR	0.86	39.2	D	LTR	0.80	27.3	C
	WB	LTR	0.53	44.8	D	LTR	0.58	36.3	D	LTR	0.62	82.4	F	LTR	0.77	54.7	D
Overall Intersection		**-**	**0.69**	**55.3**	**E**	**-**	**0.90**	**39.2**	**D**	**-**	**0.96**	**69.1**	**E**	**-**	**0.97**	**81.0**	**F**
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.79	45.4	D	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	DefL	0.69	29.3	C	DefL	1.10	93.2	F	DefL	1.09	103.2	F	DefL	1.20+	120.0+	F*
		TR	0.50	18.0	B	TR	0.78	19.0	B	TR	0.92	40.0	D	TR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.09**	**96.8**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Main Street at Roosevelt Avenue																	
Main Street	NB	LT	1.17	109.8	F	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
		R	1.00	76.4	E	R	0.49	22.6	C	R	0.61	23.8	C	R	0.68	26.7	C
	SB	LTR	0.23	20.5	C	LTR	0.07	16.3	B	LTR	0.15	19.4	B	LTR	0.13	17.1	B
Roosevelt Avenue	EB	LTR	1.02	73.9	E	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Union Street at Roosevelt Avenue																	
Union Street	NB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SB	LT	0.72	23.2	C	LT	1.01	49.1	D	LT	1.06	59.4	E	LT	1.18	109.3	F
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Roosevelt Avenue	EB	LT	0.73	25.9	C	LT	0.80	24.8	C	LT	0.96	48.2	D	LT	0.95	45.3	D
		R	0.64	24.1	C	R	0.68	21.5	C	R	0.90	43.9	D	R	1.15	108.5	F
	WB	LTR	0.78	26.7	C	LTR	0.65	21.9	C	LTR	1.17	119.2	F	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**0.99**	**40.4**	**D**	**-**	**1.20+**	**65.4**	**E**	**-**	**1.20+**	**79.4**	**E**	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.02	72.1	E	LTR	0.73	26.2	C	LTR	0.94	52.7	D	LTR	0.93	42.9	D
	SB	LTR	0.87	40.5	D	LTR	0.73	26.0	C	LTR	0.88	41.9	D	LTR	0.87	34.2	C
Roosevelt Avenue	EB	LTR	0.73	32.4	C	LTR	1.09	84.0	F	LTR	1.15	113.9	F	LTR	1.20+	120.0+	F*
	WB	LTR	1.04	76.3	E	LTR	1.10	86.8	F	LTR	0.96	53.3	D	LTR	1.02	74.7	E
Overall Intersection		**-**	**1.03**	**57.0**	**E**	**-**	**0.92**	**61.2**	**E**	**-**	**1.05**	**69.2**	**E**	**-**	**1.15**	**96.8**	**F**

TABLE 17-41
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 NO BUILD TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

INTERSECTION & APPROACH		Weekday AM (7:45-8:45 AM) Mvt.	V/C	Control Delay	LOS	Weekday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS	Weekday PM (5:15-6:15 PM) Mvt.	V/C	Control Delay	LOS	Saturday Midday (1:00-2:00 PM) Mvt.	V/C	Control Delay	LOS
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.47	20.6	C	L	0.41	19.0	B	L	0.46	20.3	C	L	0.45	19.5	B
		TR	1.03	66.2	E	TR	0.94	40.1	D	TR	1.14	104.5	F	TR	1.20+	120.0+	F*
	SB	L	0.37	28.6	C	L	0.12	15.2	B	L	0.25	25.7	C	L	0.18	16.4	B
		TR	0.13	15.6	B	TR	0.10	15.0	B	TR	0.11	15.4	B	TR	0.09	14.8	B
Kissena Boulevard	NB	TR	1.20+	120.0+	F*	TR	1.00	55.0	D	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.18**	**120.0+**	**F***	**-**	**0.97**	**44.7**	**D**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.44	15.4	B	L	0.66	37.1	D	L	0.90	73.8	E	L	1.17	120.0+	F*
		T	0.59	12.4	B	T	0.59	12.5	B	T	0.54	11.9	B	T	0.68	13.9	B
	SB	TR	0.77	16.6	B	TR	0.99	33.8	C	TR	1.02	42.1	D	TR	0.97	30.5	C
Sanford Avenue	WB	LTR	0.97	57.5	E	LTR	0.77	37.6	D	LTR	0.84	41.7	D	LTR	0.93	51.7	D
Overall Intersection		**-**	**0.84**	**24.9**	**C**	**-**	**0.92**	**27.3**	**C**	**-**	**1.07**	**33.3**	**C**	**-**	**1.18**	**31.4**	**C**
Union Street at Sanford Avenue																	
Union Street	NB	LR	1.20+	120.0+	F*	LR	0.71	37.9	D	LR	0.84	48.5	D	LR	0.84	55.1	E
	SB	LT	0.56	28.8	C	LT	0.64	29.0	C	LT	0.92	50.2	D	LT	0.91	50.3	D
		R	0.84	38.6	D	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Sanford Avenue	EB	TR	0.62	34.2	C	TR	0.75	42.5	D	TR	0.84	47.0	D	TR	0.75	38.9	D
	WB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**105.4**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.20+	120.0+	F*	LTR	1.00	59.0	E	LTR	1.14	104.8	F	LTR	1.20+	120.0+	F*
	SB	LTR	0.79	28.4	C	LTR	0.61	22.3	C	LTR	0.97	48.1	D	LTR	1.01	58.9	E
Sanford Avenue	EB	LTR	1.13	97.3	F	LTR	0.68	25.1	C	LTR	0.95	47.4	D	LTR	0.68	24.8	C
	WB	LTR	1.17	109.6	F	LTR	0.74	27.4	C	LTR	0.82	31.0	C	LTR	1.09	85.5	F
Overall Intersection		**-**	**1.20+**	**110.3**	**F**	**-**	**0.87**	**34.9**	**C**	**-**	**1.04**	**58.4**	**E**	**-**	**1.20+**	**116.5**	**F**
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.74	22.7	C	T	0.74	23.3	C	T	0.70	21.7	C	T	0.62	20.0	B
		TR	0.83	30.5	C	TR	0.82	29.6	C	TR	0.86	31.8	C	TR	0.99	49.1	D
	SB	L	0.49	24.2	C	L	0.78	34.0	C	L	0.71	29.4	C	L	0.59	25.0	C
		T	0.62	11.2	B	T	0.61	11.2	B	T	0.60	10.8	B	T	0.53	10.0	B
32nd Avenue	WB	LTR	0.83	38.3	D	LTR	0.82	37.2	D	LTR	0.63	25.4	C	LTR	0.70	28.4	C
Overall Intersection		**-**	**0.79**	**21.7**	**C**	**-**	**0.92**	**23.3**	**C**	**-**	**0.93**	**20.8**	**C**	**-**	**0.80**	**24.5**	**C**
UNSIGNALIZED INTERSECTIONS																	
Willets Point Boulevard at 126th Street																	
126th Street	SB	LT	-	8.2	A	LT	-	8.5	A	LT	-	8.4	A	LT	-	8.6	A
Willets Point Boulevard	WB	LR	-	14.3	B	LR	-	16.6	C	LR	-	19.4	C	LR	-	19.3	C
Overall Intersection		**-**	**-**	**12.5**	**B**	**-**	**-**	**14.1**	**B**	**-**	**-**	**17.4**	**C**	**-**	**-**	**17.1**	**C**
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	22.1	C	L	-	18.9	C	L	-	12.8	B	L	-	14.3	B
		R	-	8.6	A	R	-	8.4	A	R	-	8.7	A	R	-	8.5	A
Worlds Fair Marina	WB	LT	-	8.5	A	LT	-	8.5	A	LT	-	8.0	A	LT	-	7.8	A
Overall Intersection		**-**	**-**	**9.2**	**A**	**-**	**-**	**9.5**	**A**	**-**	**-**	**8.5**	**A**	**-**	**-**	**8.7**	**A**
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	T	-	10.2	B	T	-	10.4	B	T	-	9.7	A	T	-	9.8	A
Overall Intersection		**-**	**-**	**10.2**	**B**	**-**	**-**	**10.4**	**B**	**-**	**-**	**9.7**	**A**	**-**	**-**	**9.8**	**A**
College Point Boulevard at Northern Boulevard Service Road (SIGNALIZED IN 2007)																	
College Point Boulevard	NB	TR	0.83	22.5	C	TR	0.82	22.6	C	TR	0.87	25.0	C	TR	1.00	42.9	D
	SB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Northern Blvd Service Rd	WB	L	0.35	13.7	B	L	0.31	13.1	B	L	0.28	12.6	B	L	0.39	14.0	B
		R	0.36	14.1	B	R	0.46	15.8	B	R	0.43	15.0	B	R	0.37	14.0	B
Overall Intersection		**-**	**0.97**	**120.0+**	**F***	**-**	**0.86**	**69.5**	**E**	**-**	**1.01**	**120.0+**	**F***	**-**	**0.90**	**101.5**	**F**
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Grand Central Parkway Ramp	EB	L	-	10.7	B	L	-	9.8	A	L	-	9.8	A	L	-	9.9	A
		R	-	9.1	A	R	-	8.7	A	R	-	8.9	A	R	-	8.9	A
Overall Intersection		**-**	**-**	**10.1**	**B**	**-**	**-**	**9.4**	**A**	**-**	**-**	**9.2**	**A**	**-**	**-**	**9.4**	**A**

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.

TABLE 17-42
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 NO BUILD TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
SIGNALIZED INTERSECTIONS													
ASTORIA BOULEVARD													
108th Street at Astoria Boulevard													
108th Street	NB	DefL	0.87	79.1	E	DefL	0.68	41.6	D	DefL	0.60	38.3	D
		T	0.71	54.6	D	T	0.30	30.8	C	T	0.23	29.8	C
	SB	LTR	0.51	46.8	D	LTR	0.29	30.6	C	LTR	0.29	30.5	C
Astoria Boulevard	EB	LTR	1.06	55.2	E	LTR	0.48	15.2	B	LTR	0.50	15.4	B
	WB	L	1.11	115.5	F	L	0.57	11.4	B	L	0.77	19.3	B
		TR	0.37	6.8	A	TR	0.25	2.5	A	TR	0.37	2.8	A
Overall Intersection		**-**	**1.20+**	**48.7**	**D**	**-**	**0.60**	**14.2**	**B**	**-**	**0.60**	**13.3**	**B**
NORTHERN BOULEVARD													
108th Street at Northern Boulevard (RT. 25A)													
108th Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Northern Boulevard (Rt. 25A)	EB	L	0.24	41.1	D	L	0.02	43.5	D	L	0.05	43.9	D
		TR	1.03	34.8	C	TR	0.99	37.5	D	T	0.88	24.5	C
		-	-	-	-	-	-	-	-	R	0.12	11.0	B
	WB	L	0.87	64.7	E	L	0.78	54.2	D	L	0.68	46.8	D
		TR	1.19	112.7	F	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*
		-	-	-	-	R	0.22	11.8	B	R	0.21	11.8	B
Overall Intersection		**-**	**1.15**	**82.7**	**F**	**-**	**1.20+**	**108.3**	**F**	**-**	**1.15**	**93.5**	**F**
114th Street at Northern Boulevard (RT. 25A)													
114th Street	SB	LTR	0.87	69.3	E	LTR	1.11	106.3	F	LTR	1.20+	120.0+	F*
Northern Boulevard (Rt. 25A)	EB	T	1.12	77.4	E	T	0.68	19.2	B	T	1.18	120.0+	F*
		R	0.84	28.3	C	R	0.60	18.8	B	R	0.94	120.0+	F*
	WB	DefL	0.99	74.2	E	DefL	0.87	34.9	C	DefL	1.14	120.0+	F*
		T	0.94	18.5	B	T	0.97	22.7	C	T	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**46.1**	**D**	**-**	**1.20+**	**27.5**	**C**	**-**	**1.20+**	**120.0+**	**F***
126th Street at Northern Boulevard (RT. 25A)													
126th Street	NB	L	1.14	120.0+	F*	L	0.87	63.3	E	L	0.22	17.2	B
		R	0.51	46.1	D	R	0.68	54.0	D	R	0.58	22.4	C
Northern Boulevard	EB	T	0.43	11.2	B	T	0.28	9.8	A	T	0.58	31.3	C
	WB	T	1.09	77.8	E	T	0.76	19.1	B	T	1.20+	120.0+	F*
Grand Central Parkway Ramp	EB	T	0.56	13.0	B	T	0.87	22.8	C	T	1.20	120.0+	F*
Van Wyck & Whitestone Expressway Ramp	WB	T	1.20	120.0+	F*	T	1.16	120.0+	F*	T	1.16	120.0+	F*
Overall Intersection		**-**	**1.19**	**96.2**	**F**	**-**	**1.11**	**74.9**	**E**	**-**	**0.89**	**120.0+**	**F***
Prince Street at Northern Boulevard (RT. 25A)													
Prince Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	0.73	49.5	D	LTR	0.58	44.3	D	LTR	0.50	42.2	D
Northern Boulevard	EB	L	1.01	96.3	F	L	1.11	120.0+	F*	L	1.20+	120.0+	F*
		T	0.94	32.1	C	T	0.80	23.0	C	T	0.99	42.1	D
	WB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	1.03	58.7	E	T	1.00	40.8	D	T	0.99	40.3	D
Northern Boulevard Service Rd.	EB	TR	0.67	24.5	C	TR	0.79	30.2	C	TR	0.82	31.9	C
	WB	TR	0.55	29.7	C	TR	0.76	32.1	C	TR	0.66	24.3	C
Overall Intersection		**-**	**1.09**	**60.6**	**E**	**-**	**1.10**	**59.4**	**E**	**-**	**1.18**	**75.6**	**E**
Main Street at Northern Boulevard (RT. 25A)													
Main Street	NB	L	1.18	120.0+	F*	L	1.03	80.9	F	L	1.07	95.9	F
		R	0.89	45.4	D	R	0.79	33.5	C	R	0.72	29.9	C
Northern Boulevard	EB	TR	0.98	22.7	C	TR	1.02	55.5	E	TR	1.10	87.0	F
	WB	L	0.14	59.6	E	L	0.05	43.9	D	L	0.02	43.3	D
		T	1.06	60.6	E	T	0.95	30.9	C	T	0.91	27.1	C
Overall Intersection		**-**	**1.10**	**53.1**	**D**	**-**	**0.97**	**48.7**	**D**	**-**	**0.96**	**63.7**	**E**
Union Street at Northern Boulevard (RT. 25A)													
Union Street	NB	LTR	0.27	35.0	C	LTR	0.16	32.4	C	LTR	0.17	32.6	C
	SB	LTR	1.20+	120.0+	F*	LTR	1.15	120.0+	F*	LTR	1.06	91.6	F
Northern Boulevard	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	0.87	34.2	C	T	0.81	32.9	C	T	0.86	34.3	C
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
	WB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		TR	0.88	35.3	D	TR	0.83	33.4	C	TR	0.75	31.3	C
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**119.7**	**F**
Parsons Boulevard at Northern Boulevard (RT. 25A)													
Parsons Boulevard	NB	L	0.94	99.0	F	L	1.04	120.0+	F*	L	0.87	80.2	F
		TR	0.67	44.4	D	TR	0.66	44.6	D	TR	0.67	45.1	D
	SB	LTR	1.00	86.8	F	LTR	1.08	116.0	F	LTR	1.14	120.0+	F*
Northern Boulevard	EB	L	0.40	44.3	D	L	0.60	52.2	D	L	0.45	46.2	D
		TR	1.14	96.6	F	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	L	0.94	44.2	D	L	0.39	46.0	D	L	0.38	45.9	D
		TR	0.67	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.01**	**120.0+**	**F***	**-**	**1.20**	**120.0+**	**F***	**-**	**1.05**	**120.0+**	**F***
34TH AVENUE													
114th Street at 34th Avenue													
114th Street	SB	L	0.73	21.2	C	L	0.73	24.3	C	L	0.80	27.2	C
		T	0.36	14.6	B	T	0.39	17.8	B	T	0.23	16.0	B
34th Avenue	EB	TR	0.77	29.1	C	TR	0.64	21.9	C	TR	0.73	24.2	C
Overall Intersection		**-**	**0.75**	**23.0**	**C**	**-**	**0.68**	**22.1**	**C**	**-**	**0.77**	**24.6**	**C**

TABLE 17-42
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 NO BUILD TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
126th Street/GCP Ramp at 34th Avenue													
126th Street	NB	LTR	0.59	25.1	C	LTR	0.45	23.0	C	LTR	0.70	64.6	E
Northern Boulevard Ramp	SB	LTR	0.44	13.3	B	LTR	0.31	11.9	B	LTR	0.58	25.4	C
GCP Ramp	SB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	0.87	66.8	E
34th Avenue	EB	-	-	-	-	-	-	-	-	DefL	0.83	92.5	F
		LTR	0.00	38.4	D	LTR	0.00	36.8	D	TR	0.22	47.4	D
Stadium Road	WB	LTR	0.37	41.3	D	LTR	0.55	45.2	D	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.03**	**120.0+**	**F***	**-**	**1.03**	**120.0+**	**F***	**-**	**0.81**	**68.8**	**E**
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	1.08	104.6	F	LTR	1.14	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	1.18	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.10	80.0	E	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	1.07	90.5	F	LTR	1.08	107.7	F	LTR	0.99	79.9	E
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.02	49.2	D
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.17**	**93.9**	**F**
114th Street at Roosevelt Avenue													
114th Street	NB	LTR	1.17	120.0+	F*	LTR	1.13	120.0+	F*	LTR	1.15	120.0+	F*
	SB	DefL	1.12	120.0+	F*	DefL	1.04	107.9	F	DefL	1.03	104.3	F
		TR	0.84	67.2	E	TR	0.60	48.9	D	TR	1.01	99.0	F
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	DefL	0.91	39.6	D	-	-	-	-	-	-	-	-
		TR	1.20+	120.0+	F*	LTR	1.17	105.9	F	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
126th Street at Roosevelt Avenue													
126th Street	NB	LTR	0.30	36.6	D	LTR	0.29	36.5	D	LTR	0.42	53.5	D
	SB	LT	1.20+	120.0+	F*	LT	1.09	114.9	F	DefL	1.20+	120.0+	F*
		R	1.12	116.1	F	R	1.12	117.2	F	TR	0.30	50.9	D
Roosevelt Avenue	EB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	-	-	-	-
		TR	1.06	62.8	E	TR	0.98	39.5	D	LTR	1.08	56.1	E
	WB	LTR	0.93	24.3	C	LTR	0.97	34.0	C	LTR	0.43	3.2	A
Overall Intersection		**-**	**1.20+**	**98.1**	**F**	**-**	**1.20+**	**98.4**	**F**	**-**	**1.13**	**60.2**	**E**
College Point Boulevard at Roosevelt Avenue													
College Point Boulevard	NB	L	1.13	120.0+	F*	L	1.20	120.0+	F*	L	0.57	35.3	D
		TR	0.89	38.9	D	TR	1.18	114.4	F	TR	1.00	48.4	D
	SB	T	1.06	116.2	F	T	1.02	75.0	E	T	0.91	47.1	D
		R	0.77	52.9	D	R	0.75	41.3	D	R	0.36	29.5	C
Roosevelt Avenue	EB	LTR	0.91	43.2	D	LTR	0.73	24.9	C	LTR	1.07	74.8	E
	WB	LTR	0.72	61.6	E	LTR	0.93	74.4	E	LTR	0.75	37.9	D
Overall Intersection		**-**	**0.99**	**71.7**	**E**	**-**	**1.20+**	**79.8**	**E**	**-**	**1.04**	**54.1**	**D**
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.09	92.5	F
		TR	1.15	113.2	F	TR	0.94	35.1	D	TR	1.01	50.8	D
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Main Street at Roosevelt Avenue													
Main Street	NB	LT	1.19	117.3	F	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
		R	0.60	24.4	C	R	0.58	23.8	C	R	0.68	26.9	C
	SB	LTR	0.20	20.4	C	LTR	0.24	19.1	B	LTR	0.11	16.7	B
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Union Street at Roosevelt Avenue													
Union Street	NB	-	-	-	-	-	-	-	-	-	-	-	-
	SB	LT	0.99	42.0	D	LT	1.03	53.3	D	LT	1.00	43.5	D
		R	1.05	77.0	E	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Roosevelt Avenue	EB	LT	0.92	41.4	D	LT	0.89	36.1	D	LT	1.03	64.1	E
		R	0.93	48.7	D	R	0.87	37.6	D	R	1.08	83.1	F
	WB	LTR	1.20+	120.0+	F*	LTR	0.99	52.1	D	LTR	1.07	77.5	E
Overall Intersection		**-**	**1.13**	**62.2**	**E**	**-**	**1.20+**	**113.6**	**F**	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Roosevelt Avenue													
Parsons Boulevard	NB	LTR	1.08	89.2	F	LTR	0.94	44.5	D	LTR	0.68	24.5	C
	SB	LTR	1.04	71.0	E	LTR	0.82	30.0	C	LTR	0.72	25.3	C
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.16	109.2	F
	WB	LTR	1.11	100.6	F	LTR	1.20+	120.0+	F*	LTR	0.90	37.8	D
Overall Intersection		**-**	**1.19**	**110.9**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**0.94**	**56.0**	**E**

TABLE 17-42
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 NO BUILD TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.51	21.4	C	L	0.50	20.2	C	L	0.38	18.4	B
		TR	0.92	40.8	D	TR	1.20+	120.0+	F*	TR	0.99	48.2	D
	SB	L	0.37	29.3	C	L	0.17	16.2	B	L	0.14	15.6	B
		TR	0.07	14.8	B	TR	0.07	14.7	B	TR	0.06	14.5	B
Kissena Boulevard	NB	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.17**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.13**	**103.2**	**F**
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.55	27.7	C	L	0.95	85.8	F	L	0.61	32.5	C
		T	0.69	14.1	B	T	0.77	15.8	B	T	0.58	12.2	B
	SB	TR	1.01	38.2	D	TR	0.98	32.6	C	TR	1.08	62.7	E
Sanford Avenue	WB	LTR	0.98	61.7	E	LTR	0.98	60.3	E	LTR	0.87	43.4	D
Overall Intersection		**-**	**1.00**	**33.8**	**C**	**-**	**1.00**	**32.0**	**C**	**-**	**1.01**	**42.7**	**D**
Union Street at Sanford Avenue													
Union Street	NB	LR	1.20+	120.0+	F*	LR	0.89	60.3	E	LR	0.96	72.5	E
	SB	LT	1.01	70.8	E	LT	0.75	35.2	D	LT	0.71	32.9	C
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Sanford Avenue	EB	TR	0.79	42.0	D	TR	0.78	41.0	D	TR	0.65	34.5	C
	WB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Sanford Avenue													
Parsons Boulevard	NB	LTR	1.15	106.0	F	LTR	1.20+	120.0+	F*	LTR	1.09	89.2	F
	SB	LTR	1.10	86.7	F	LTR	0.95	44.9	D	LTR	0.95	44.3	D
Sanford Avenue	EB	LTR	1.16	112.5	F	LTR	0.79	26.5	C	LTR	0.80	27.2	C
	WB	LTR	1.03	64.7	E	LTR	1.13	93.9	F	LTR	0.88	32.5	C
Overall Intersection		**-**	**1.16**	**93.0**	**F**	**-**	**1.20+**	**109.9**	**F**	**-**	**0.98**	**48.8**	**D**
WHITESTONE EXPRESSWAY / 32ND AVENUE													
College Point Boulevard at 32nd Avenue													
College Point Boulevard	NB	T	0.66	20.9	C	T	0.48	18.0	B	T	0.48	17.9	B
		TR	0.83	29.7	C	TR	1.10	82.2	F	TR	1.18	112.1	F
	SB	L	0.75	31.7	C	L	0.51	20.9	C	L	0.50	20.9	C
		T	0.56	10.4	B	T	0.57	10.5	B	T	0.47	9.5	A
32nd Avenue	WB	LTR	0.70	28.6	C	LTR	0.68	27.7	C	LTR	0.60	24.0	C
Overall Intersection		**-**	**0.86**	**21.1**	**C**	**-**	**0.83**	**31.9**	**C**	**-**	**0.83**	**42.6**	**D**
UNSIGNALIZED INTERSECTIONS													
Willets Point Boulevard at 126th Street													
126th Street	SB	LT	-	9.4	A	LT	-	9.3	A	LT	-	8.1	A
Willets Point Boulevard	WB	LR	-	18.4	C	LR	-	24.7	C	LR	-	14.3	B
Overall Intersection		**-**	**-**	**16.8**	**C**	**-**	**-**	**17.9**	**C**	**-**	**-**	**13.2**	**B**
Boat Basin Road at Worlds Fair Marina													
Boat Basin Road	NB	L	-	65.3	F	L	-	73.6	F	L	-	120.0+	F*
		R	-	8.5	A	R	-	8.5	A	R	-	29.4	D
Worlds Fair Marina	WB	LT	-	10.2	B	LT	-	12.0	B	LT	-	7.9	A
Overall Intersection		**-**	**-**	**13.0**	**B**	**-**	**-**	**15.3**	**C**	**-**	**-**	**120.0+**	**F***
Willets Point Boulevard at Northern Boulevard													
Willets Point Boulevard	NB	T	-	9.5	A	T	-	10.1	B	T	-	10.4	B
Overall Intersection		**-**	**-**	**9.5**	**A**	**-**	**-**	**10.1**	**B**	**-**	**-**	**10.4**	**B**
College Point Boulevard at Northern Boulevard Service Road (SIGNALIZED IN 2007)													
College Point Boulevard	NB	TR	1.13	85.2	F	TR	0.86	23.9	C	TR	1.04	55.7	E
	SB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Northern Blvd Service Rd	WB	L	0.24	12.3	B	L	0.38	13.9	B	L	0.33	13.2	B
		R	0.31	13.4	B	R	0.41	14.9	B	R	0.37	14.1	B
Overall Intersection		**-**	**1.13**	**120.0+**	**F***	**-**	**0.95**	**115.1**	**F**	**-**	**0.90**	**106.5**	**F**
Grand Central Parkway Ramp at West Park Loop/Stadium Road													
Grand Central Parkway Ramp	EB	L	-	25.8	D	L	-	120.0+	F*	L	-	14.5	B
		R	-	10.1	B	R	-	18.9	C	R	-	11.1	B
Overall Intersection		**-**	**-**	**20.0**	**C**	**-**	**-**	**75.0**	**F**	**-**	**-**	**12.6**	**B**

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.

TABLE 17-43
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

		Weekday AM (7:45-8:45 AM)				Weekday Midday (1:00-2:00 PM)				Weekday PM (5:15-6:15 PM)				Saturday Midday (1:00-2:00 PM)			
				Control				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
SIGNALIZED INTERSECTIONS																	
ASTORIA BOULEVARD																	
108th Street at Astoria Boulevard																	
108th Street	NB	DefL	0.71	57.4	E	DefL	0.48	35.1	D	DefL	0.93	91.8	F	DefL	0.60	38.3	D
		T	0.25	41.7	D	T	0.18	29.2	C	T	0.25	41.8	D	T	0.37	31.7	C
	SB	LTR	0.28	42.3	D	LTR	0.23	29.7	C	LTR	0.57	48.6	D	LTR	0.28	30.4	C
Astoria Boulevard	EB	LTR	0.61	21.8	C	LTR	0.54	16.0	B	LTR	1.04	48.8	D	LTR	0.50	15.5	B
	WB	L	0.77	26.2	C	L	0.59	12.2	B	L	0.76	44.7	D	L	0.65	13.5	B
		TR	0.99	27.7	C	TR	0.38	7.0	A	TR	0.43	7.3	A	TR	0.34	6.7	A
Overall Intersection		**-**	**0.93**	**27.4**	**C**	**-**	**0.58**	**14.0**	**B**	**-**	**1.00**	**38.1**	**D**	**-**	**0.59**	**14.9**	**B**
NORTHERN BOULEVARD																	
108th Street at Northern Boulevard (RT. 25A)																	
108th Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	0.99	66.2	E	LTR	0.88	45.4	D	LTR	1.20+	120.0+	F*	LTR	1.17	119.5	F
Northern Boulevard (Rt. 25A)	EB	L	0.19	30.6	C	L	0.13	24.1	C	L	0.22	46.0	D	L	0.08	44.3	D
		TR	0.61	16.2	B	TR	0.64	16.8	B	TR	1.05	45.0	D	TR	1.17	105.1	F
	WB	L	0.64	33.1	C	L	0.58	32.3	C	L	0.69	51.7	D	L	0.76	58.4	E
		TR	1.09	58.6	E	T	0.94	29.2	C	TR	1.20+	120.0+	F*	T	1.20+	120.0+	F*
		-	-	-	-	R	0.16	11.2	B	-	-	-	-	R	0.27	12.4	B
Overall Intersection		**-**	**1.03**	**52.3**	**D**	**-**	**0.98**	**37.8**	**D**	**-**	**1.20+**	**116.9**	**F**	**-**	**1.20+**	**120.0+**	**F***
114th Street at Northern Boulevard (RT. 25A)																	
114th Street	SB	LTR	0.72	58.3	E	LTR	0.92	81.4	F	LTR	1.04	88.2	F	LTR	1.02	99.3	F
Northern Boulevard (Rt. 25A)	EB	T	0.94	44.6	D	T	0.69	19.5	B	T	1.09	74.1	E	T	0.78	21.9	C
		R	0.86	43.9	D	R	0.58	18.5	B	R	0.79	25.5	C	R	0.73	22.7	C
	WB	DefL	0.56	24.8	C	DefL	0.59	13.2	B	DefL	0.89	64.8	E	DefL	0.89	38.7	D
		T	1.20+	120.0+	F*	T	0.83	11.9	B	T	1.07	53.1	D	T	1.03	38.9	D
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**18.7**	**B**	**-**	**1.20+**	**59.2**	**E**	**-**	**1.20+**	**35.8**	**D**
126th Street at Northern Boulevard (RT. 25A)																	
126th Street	NB	L	0.84	56.4	E	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		R	0.53	47.5	D	R	0.88	67.8	E	R	0.95	78.4	E	R	0.99	87.7	F
Northern Boulevard	EB	T	0.24	6.8	A	T	0.26	6.9	A	T	0.45	8.6	A	T	0.30	7.1	A
	WB	T	0.92	22.9	C	T	0.52	9.5	A	T	0.48	8.9	A	T	0.46	8.7	A
Grand Central Parkway Ramp	EB	T	0.44	8.5	A	T	0.48	9.0	A	T	0.53	9.5	A	T	0.49	9.0	A
Van Wyck & Whitestone Expressway Ramp	WB	T	1.08	66.6	E	T	1.12	81.1	F	T	1.06	59.7	E	T	1.11	80.1	F
Overall Intersection		**-**	**1.03**	**34.8**	**C**	**-**	**1.17**	**65.2**	**E**	**-**	**1.10**	**48.0**	**D**	**-**	**1.19**	**72.7**	**E**
Prince Street at Northern Boulevard (RT. 25A)																	
Prince Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	0.99	86.4	F	LTR	0.75	51.5	D	LTR	0.70	48.0	D	LTR	0.68	47.2	D
Northern Boulevard	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.02	107.8	F
		T	0.59	8.4	A	T	0.67	19.2	B	T	1.07	65.8	E	T	0.93	31.5	C
	WB	L	1.17	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	1.12	68.1	E	T	0.95	33.6	C	T	1.05	67.1	E	T	1.10	76.0	E
Northern Boulevard Service Rd.	EB	TR	0.46	14.6	B	TR	0.70	24.5	C	TR	0.60	20.4	C	TR	0.74	27.0	C
	WB	TR	0.83	27.9	C	TR	0.78	33.1	C	TR	0.83	39.6	D	TR	1.01	60.7	E
Overall Intersection		**-**	**1.20+**	**78.5**	**E**	**-**	**1.15**	**68.2**	**E**	**-**	**1.18**	**85.9**	**F**	**-**	**1.13**	**83.4**	**F**
Main Street at Northern Boulevard (RT. 25A)																	
Main Street	NB	L	0.77	46.5	D	L	0.87	53.9	D	L	1.04	86.0	F	L	1.18	120.0+	F*
		R	0.68	29.7	C	R	0.81	35.2	D	R	0.87	44.0	D	R	0.88	40.0	D
Northern Boulevard	EB	TR	0.88	33.8	C	TR	0.95	38.7	D	TR	1.10	63.2	E	TR	1.12	93.3	F
	WB	L	0.10	34.0	C	L	0.05	44.8	D	L	0.10	58.8	E	L	0.03	44.3	D
		T	1.10	55.3	E	T	0.77	13.5	B	T	1.11	81.4	F	T	1.03	48.0	D
Overall Intersection		**-**	**0.99**	**44.6**	**D**	**-**	**0.88**	**31.7**	**C**	**-**	**1.09**	**68.7**	**E**	**-**	**1.08**	**78.4**	**E**
Union Street at Northern Boulevard (RT. 25A)																	
Union Street	NB	LTR	0.22	33.7	C	LTR	0.16	32.3	C	LTR	0.16	32.3	C	LTR	0.17	32.5	C
	SB	LTR	1.18	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Northern Boulevard	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	0.74	26.5	C	T	0.75	31.3	C	T	0.99	56.2	E	T	0.92	38.2	D
		R	1.20+	120.0+	F*	R	1.17	108.6	F	R	1.18	112.5	F	R	1.20+	120.0+	F*
	WB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		TR	1.20+	120.0+	F*	TR	0.84	33.9	C	TR	0.91	37.1	D	TR	0.99	48.3	D
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Northern Boulevard (RT. 25A)																	
Parsons Boulevard	NB	L	1.06	120.0+	F*	L	0.79	67.1	E	L	0.80	73.4	E	L	0.97	107.0	F
		TR	0.72	47.0	D	TR	0.58	40.9	D	TR	0.67	44.4	D	TR	0.75	49.9	D
	SB	LTR	1.07	106.3	F	LTR	1.14	120.0+	F*	LTR	1.09	113.9	F	LTR	1.20+	120.0+	F*
Northern Boulevard	EB	L	0.50	48.3	D	L	0.48	49.5	D	L	0.54	49.3	D	L	0.57	51.4	D
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	L	0.66	51.8	D	L	0.34	43.7	D	L	0.43	45.6	D	L	0.48	49.3	D
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.12**	**120.0+**	**F***	**-**	**1.20**	**120.0+**	**F***	**-**	**1.11**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
34TH AVENUE																	
114th Street at 34th Avenue																	
114th Street	SB	L	0.50	17.4	B	L	0.60	21.1	C	L	0.73	21.2	C	L	0.78	26.2	C
		T	0.31	15.2	B	T	0.29	16.7	B	T	0.33	14.3	B	T	0.37	17.7	B
34th Avenue	EB	TR	0.63	23.7	C	TR	0.50	19.3	B	TR	0.88	35.9	D	TR	0.66	22.3	C
Overall Intersection		**-**	**0.56**	**19.7**	**B**	**-**	**0.55**	**19.7**	**B**	**-**	**0.80**	**26.1**	**C**	**-**	**0.72**	**23.2**	**C**

TABLE 17-43
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

		Weekday AM (7:45-8:45 AM)				Weekday Midday (1:00-2:00 PM)				Weekday PM (5:15-6:15 PM)				Saturday Midday (1:00-2:00 PM)			
				Control				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		LTR	0.44	23.6	C	LTR	1.00	55.1	E	LTR	1.14	104.2	F	LTR	1.00	55.6	E
Northern Boulevard Ramp	SB	LTR	0.42	23.9	C	LTR	1.00	71.7	E	LTR	0.92	51.7	D	LTR	1.20+	120.0+	F*
GCP Ramp	SB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
34th Avenue	EB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Stadium Road	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	0.82	54.2	D	LTR	1.12	120.0+	F*	LTR	0.98	75.6	E	LTR	1.20+	120.0+	F*
	SB	LTR	1.01	85.3	F	LTR	1.16	120.0+	F*	LTR	1.16	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	LTR	1.05	61.0	E	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.11	80.7	F	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.19**	**95.0**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	0.84	55.5	E	LTR	0.77	52.1	D	LTR	0.83	54.4	D	LTR	0.83	54.7	D
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	1.07	103.3	F	LTR	0.78	54.5	D	LTR	1.15	118.4	F	LTR	1.11	117.1	F
	SB	DefL	1.16	120.0+	F*	DefL	0.81	64.4	E	DefL	0.81	62.4	E	DefL	1.18	120.0+	F*
		TR	0.83	67.8	E	TR	0.28	37.9	D	TR	0.47	41.4	D	TR	0.90	77.1	E
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	DefL	0.94	42.0	D	-	-	-	-	-	-	-	-	-	-	-	-
		TR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
126th Street at Roosevelt Avenue																	
126th Street	NB	DefL	0.22	37.4	D	DefL	0.83	65.9	E	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
		TR	0.29	39.1	D	TR	1.09	120.0+	F*	TR	1.04	104.3	F	TR	0.52	44.6	D
	SB	-	-	-	-	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Roosevelt Avenue	EB	DefL	1.20+	120.0+	F*	DefL	1.05	88.0	F	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
		TR	0.80	18.7	B	TR	0.93	30.8	C	TR	0.97	36.8	D	TR	1.14	94.5	F
	WB	LTR	0.94	27.9	C	LTR	1.13	86.4	F	LTR	1.14	89.2	F	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.20+	120.0+	F*	L	1.17	119.8	F	L	1.17	120.0+	F*	L	1.05	89.7	F
		TR	0.86	37.1	D	TR	0.94	37.6	D	TR	0.93	42.6	D	TR	1.17	108.0	F
	SB	T	0.85	54.4	D	T	0.99	61.2	E	T	1.17	120.0+	F*	T	1.20+	120.0+	F*
		R	0.99	86.8	F	R	1.05	88.5	F	R	0.92	70.1	E	R	1.20+	120.0+	F*
Roosevelt Avenue	EB	LTR	0.68	32.0	C	LTR	0.87	33.0	C	LTR	1.00	59.3	E	LTR	0.93	40.5	D
	WB	LTR	0.56	44.6	D	LTR	0.63	36.5	D	LTR	0.66	80.1	F	LTR	0.83	55.2	E
Overall Intersection		**-**	**0.95**	**70.3**	**E**	**-**	**1.04**	**51.3**	**D**	**-**	**1.10**	**79.6**	**E**	**-**	**1.04**	**90.2**	**F**
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.79	45.4	D	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	DefL	0.72	31.5	C	DefL	1.18	120.0+	F*	DefL	1.16	120.0+	F*	DefL	1.20+	120.0+	F*
		TR	0.54	19.0	B	TR	0.88	26.1	C	TR	1.09	83.3	F	TR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.12**	**107.4**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Main Street at Roosevelt Avenue																	
Main Street	NB	LT	1.17	109.8	F	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
		R	1.00	76.4	E	R	0.49	22.6	C	R	0.61	23.8	C	R	0.68	26.7	C
	SB	LTR	0.23	20.5	C	LTR	0.07	16.3	B	LTR	0.15	19.4	B	LTR	0.13	17.1	B
Roosevelt Avenue	EB	LTR	1.10	99.5	F	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Union Street at Roosevelt Avenue																	
Union Street	NB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SB	LT	0.72	23.2	C	LT	1.01	49.1	D	LT	1.06	59.4	E	LT	1.18	109.3	F
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Roosevelt Avenue	EB	LT	0.79	28.7	C	LT	0.91	33.4	C	LT	1.13	98.5	F	LT	1.11	89.2	F
		R	0.64	24.1	C	R	0.68	21.5	C	R	0.90	43.9	D	R	1.15	108.5	F
	WB	LTR	0.85	30.7	C	LTR	0.72	24.1	C	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.02**	**41.3**	**D**	**-**	**1.20+**	**65.6**	**E**	**-**	**1.20+**	**105.1**	**F**	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.02	73.4	E	LTR	0.75	27.4	C	LTR	0.96	56.1	E	LTR	0.94	44.9	D
	SB	LTR	0.87	40.6	D	LTR	0.74	26.1	C	LTR	0.88	42.1	D	LTR	0.87	34.2	C
Roosevelt Avenue	EB	LTR	0.80	36.6	D	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.12	100.8	F	LTR	1.20	120.0+	F*	LTR	1.06	82.5	F	LTR	1.14	115.9	F
Overall Intersection		**-**	**1.07**	**65.7**	**E**	**-**	**1.00**	**93.2**	**F**	**-**	**1.16**	**108.6**	**F**	**-**	**1.20+**	**120.0+**	**F***

TABLE 17-43
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

		Weekday AM (7:45-8:45 AM)				Weekday Midday (1:00-2:00 PM)				Weekday PM (5:15-6:15 PM)				Saturday Midday (1:00-2:00 PM)			
				Control				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.48	20.6	C	L	0.42	19.1	B	L	0.47	20.4	C	L	0.46	19.5	B
		TR	1.03	66.2	E	TR	0.94	40.1	D	TR	1.14	104.5	F	TR	1.20+	120.0+	F*
	SB	L	0.37	28.6	C	L	0.12	15.2	B	L	0.25	25.7	C	L	0.18	16.4	B
		TR	0.13	15.6	B	TR	0.10	15.0	B	TR	0.11	15.4	B	TR	0.09	14.8	B
Kissena Boulevard	NB	TR	1.20+	120.0+	F*	TR	1.00	55.0	E	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.18**	**120.0+**	**F***	**-**	**0.97**	**44.7**	**D**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.47	16.4	B	L	0.66	37.1	D	L	0.90	73.8	E	L	1.17	120.0+	F*
		T	0.60	12.7	B	T	0.61	12.8	B	T	0.56	12.1	B	T	0.70	14.3	B
	SB	TR	0.80	17.3	B	TR	1.02	43.7	D	TR	1.07	56.9	E	TR	1.02	41.2	D
Sanford Avenue	WB	LTR	1.02	70.6	E	LTR	0.85	42.5	D	LTR	0.93	52.7	D	LTR	1.03	74.3	E
Overall Intersection		**-**	**0.87**	**28.6**	**C**	**-**	**0.97**	**33.0**	**C**	**-**	**1.10**	**42.8**	**D**	**-**	**1.20+**	**40.6**	**D**
Union Street at Sanford Avenue																	
Union Street	NB	LR	1.20+	120.0+	F*	LR	0.71	37.9	D	LR	0.84	48.5	D	LR	0.84	55.1	E
	SB	LT	0.56	28.8	C	LT	0.64	29.0	C	LT	0.92	50.2	D	LT	0.91	50.3	D
		R	0.84	38.6	D	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Sanford Avenue	EB	TR	0.62	34.2	C	TR	0.75	42.5	D	TR	0.84	47.0	D	TR	0.75	38.9	D
	WB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**113.4**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.20+	120.0+	F*	LTR	1.02	65.3	E	LTR	1.16	112.9	F	LTR	1.20+	120.0+	F*
	SB	LTR	0.86	33.0	C	LTR	0.69	25.0	C	LTR	1.19	120.0+	F*	LTR	1.20+	120.0+	F*
Sanford Avenue	EB	LTR	1.14	101.6	F	LTR	0.68	25.1	C	LTR	0.95	47.4	D	LTR	0.68	24.8	C
	WB	LTR	1.20	120.0+	F*	LTR	0.79	29.4	C	LTR	0.86	34.3	C	LTR	1.16	110.2	F
Overall Intersection		**-**	**1.20+**	**119.4**	**F**	**-**	**0.90**	**37.5**	**D**	**-**	**1.07**	**82.9**	**F**	**-**	**1.20+**	**120.0+**	**F***
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.74	22.5	C	T	0.74	23.1	C	T	0.70	21.5	C	T	0.62	19.9	B
		TR	0.83	30.5	C	TR	0.82	29.6	C	TR	0.86	31.8	C	TR	0.99	49.1	D
	SB	L	0.49	24.2	C	L	0.78	34.0	C	L	0.71	29.4	C	L	0.59	25.0	C
		T	0.63	11.4	B	T	0.63	11.4	B	T	0.62	11.1	B	T	0.55	10.2	B
32nd Avenue	WB	LTR	0.83	38.3	D	LTR	0.82	37.2	D	LTR	0.63	25.4	C	LTR	0.70	28.4	C
Overall Intersection		**-**	**0.86**	**21.7**	**C**	**-**	**0.92**	**23.2**	**C**	**-**	**0.85**	**20.7**	**C**	**-**	**0.88**	**24.3**	**C**
UNSIGNALIZED INTERSECTIONS																	
Willets Point Boulevard at 126th Street																	
126th Street	SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Willets Point Boulevard	WB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	120.0+	F*	L	-	120.0+	F*	L	-	120.0+	F*	L	-	120.0+	F*
		R	-	8.6	A	R	-	8.4	A	R	-	8.7	A	R	-	8.5	A
Worlds Fair Marina	WB	LT	-	10.4	B	LT	-	11.4	B	LT	-	10.3	B	LT	-	10.7	B
Overall Intersection		**-**	**-**	**41.2**	**E**	**-**	**-**	**120.0+**	**F***	**-**	**-**	**120.0+**	**F***	**-**	**-**	**120.0+**	**F***
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
College Point Boulevard at Northern Boulevard Service Road (SIGNALIZED IN 2007)																	
College Point Boulevard	NB	TR	0.83	22.8	C	TR	0.84	23.3	C	TR	0.88	25.9	C	TR	1.01	45.5	D
	SB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Northern Blvd Service Rd	WB	L	0.65	19.6	B	L	0.56	17.4	B	L	0.49	15.6	B	L	0.71	21.2	C
		R	0.41	14.8	B	R	0.48	16.2	B	R	0.45	15.4	B	R	0.40	14.4	B
Overall Intersection		**-**	**1.12**	**120.0+**	**F***	**-**	**0.93**	**73.2**	**E**	**-**	**1.07**	**120.0+**	**F***	**-**	**1.09**	**106.1**	**F**
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Grand Central Parkway Ramp	EB	L	-	11.6	B	L	-	10.5	B	L	-	10.3	B	L	-	10.7	B
		R	-	9.1	A	R	-	8.7	A	R	-	8.9	A	R	-	8.9	A
Overall Intersection		**-**	**-**	**11.2**	**B**	**-**	**-**	**10.3**	**B**	**-**	**-**	**9.9**	**A**	**-**	**-**	**10.3**	**B**

TABLE 17-43
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *NON GAME DAY*

		Weekday AM (7:45-8:45 AM)				Weekday Midday (1:00-2:00 PM)				Weekday PM (5:15-6:15 PM)				Saturday Midday (1:00-2:00 PM)			
				Control				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
NEW (BUILD) SIGNALIZED INTERSECTION																	
126th Street at New Willets Point Boulevard																	
126th Street	NB	LTR	0.88	59.7	E	LTR	1.13	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.11	110.1	F
	SB	DefL	0.96	53.2	D	DefL	0.97	61.3	E	DefL	0.93	67.3	E	DefL	1.00	70.9	E
		TR	0.57	11.9	B	TR	0.60	12.7	B	TR	0.80	29.9	C	TR	0.74	18.8	B
New Willets Point Boulevard	EB	LTR	0.04	35.9	D	LTR	0.06	36.1	D	LTR	0.02	23.7	C	LTR	0.04	32.8	C
	WB	LT	1.04	120.0+	F*	LT	0.96	101.0	F	LT	0.72	44.8	D	LT	0.96	93.4	F
		R	0.13	8.0	A	R	0.44	12.2	B	R	0.52	14.9	B	R	0.36	12.7	B
Overall Intersection		**-**	**0.94**	**46.4**	**D**	**-**	**1.07**	**61.3**	**E**	**-**	**1.20+**	**83.1**	**F**	**-**	**1.17**	**60.9**	**E**
Citi Field/Lot B Internal Street at Roosevelt Avenue																	
Citi Field/Lot B Internal Street	SB	LR	0.02	34.0	C	LR	0.03	34.2	C	LR	0.02	28.3	C	LR	0.04	34.3	C
Roosevelt Avenue	EB	LT	0.51	11.1	B	LT	0.54	11.5	B	LT	0.70	18.8	B	LT	0.60	12.6	B
	WB	TR	0.63	13.0	B	TR	0.63	13.0	B	TR	0.95	34.5	C	TR	0.70	14.6	B
Overall Intersection		**-**	**0.46**	**12.2**	**B**	**-**	**0.47**	**12.4**	**B**	**-**	**0.63**	**28.1**	**C**	**-**	**0.52**	**13.8**	**B**

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.

TABLE 17-44
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *GAME DAY*

INTERSECTION & APPROACH		Weekday Pre Game (6:00-7:00 PM) Control Mvt.	V/C	Delay	LOS	Saturday Pre Game (12:00-1:00 PM) Control Mvt.	V/C	Delay	LOS	Saturday Post Game (3:45-4:45 PM) Control Mvt.	V/C	Delay	LOS
SIGNALIZED INTERSECTIONS													
ASTORIA BOULEVARD													
108th Street at Astoria Boulevard													
108th Street	NB	DefL	0.87	79.1	E	DefL	0.68	41.6	D	DefL	0.60	38.3	D
		T	0.71	54.6	D	T	0.30	30.8	C	T	0.23	29.8	C
	SB	LTR	0.51	46.8	D	LTR	0.29	30.6	C	LTR	0.29	30.5	C
Astoria Boulevard	EB	LTR	1.11	75.4	E	LTR	0.53	15.9	B	LTR	0.54	16.0	B
	WB	L	1.11	115.8	F	L	0.62	13.4	B	L	0.82	26.1	C
		TR	0.42	7.1	A	TR	0.30	2.6	A	TR	0.42	3.0	A
Overall Intersection		**-**	**1.20+**	**59.8**	**E**	**-**	**0.63**	**14.2**	**B**	**-**	**0.65**	**13.8**	**B**
NORTHERN BOULEVARD													
108th Street at Northern Boulevard (RT. 25A)													
108th Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Northern Boulevard (Rt. 25A)	EB	L	0.24	45.0	D	L	0.02	43.5	D	L	0.05	43.9	D
		TR	1.12	71.8	E	TR	1.14	91.5	F	T	1.00	40.5	D
		-	-	-	-	-	-	-	-	R	0.12	11.0	B
	WB	L	0.87	66.5	E	L	0.82	62.1	E	L	0.75	56.1	E
		TR	1.20+	120.0+	F*	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*
		-	-	-	-	R	0.22	11.8	B	R	0.21	11.8	B
Overall Intersection		**-**	**1.20+**	**116.5**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
114th Street at Northern Boulevard (RT. 25A)													
114th Street	SB	LTR	0.88	70.5	E	LTR	1.12	113.0	F	LTR	1.20+	120.0+	F*
Northern Boulevard (Rt. 25A)	EB	T	1.20+	120.0+	F*	T	0.81	23.0	C	T	1.20+	120.0+	F*
		R	0.85	28.9	C	R	0.61	19.1	B	R	0.96	120.0+	F*
	WB	DefL	0.99	76.2	E	DefL	0.87	37.6	D	DefL	1.14	120.0+	F*
		T	1.02	34.1	C	T	1.06	47.1	D	T	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**73.5**	**E**	**-**	**1.20+**	**41.1**	**D**	**-**	**1.20+**	**120.0+**	**F***
126th Street at Northern Boulevard (RT. 25A)													
126th Street	NB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	0.48	20.4	C
		R	1.08	120.0+	F*	R	1.20+	120.0+	F*	R	0.85	37.3	D
Northern Boulevard	EB	T	0.48	11.7	B	T	0.32	10.2	B	T	0.67	33.4	C
	WB	T	1.09	77.8	E	T	0.76	19.1	B	T	1.20+	120.0+	F*
Grand Central Parkway Ramp	EB	T	0.71	15.9	B	T	1.08	68.7	E	T	1.20+	120.0+	F*
Van Wyck & Whitestone Expressway Ramp	WB	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.12**	**120.0+**	**F***
Prince Street at Northern Boulevard (RT. 25A)													
Prince Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	0.73	49.5	D	LTR	0.58	44.3	D	LTR	0.50	42.2	D
Northern Boulevard	EB	L	1.03	100.8	F	L	1.16	120.0+	F*	L	1.20+	120.0+	F*
		T	1.01	46.4	D	T	0.87	26.8	C	T	1.08	70.9	E
	WB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	1.03	58.7	E	T	1.00	40.8	D	T	0.99	40.3	D
Northern Boulevard Service Rd.	EB	TR	0.67	24.5	C	TR	0.79	30.2	C	TR	0.82	31.9	C
	WB	TR	0.84	40.6	D	TR	1.08	84.1	F	TR	0.96	44.4	D
Overall Intersection		**-**	**1.11**	**65.4**	**E**	**-**	**1.11**	**65.3**	**E**	**-**	**1.19**	**86.4**	**F**
Main Street at Northern Boulevard (RT. 25A)													
Main Street	NB	L	1.18	120.0+	F*	L	1.03	80.9	F	L	1.07	95.9	F
		R	0.89	45.4	D	R	0.79	33.5	C	R	0.72	29.9	C
Northern Boulevard	EB	TR	1.05	41.1	D	TR	1.10	84.8	F	TR	1.20	120.0+	F*
	WB	L	0.14	59.6	E	L	0.05	43.9	D	L	0.02	43.3	D
		T	1.17	107.4	F	T	1.06	61.2	E	T	1.01	42.6	D
Overall Intersection		**-**	**1.18**	**73.4**	**E**	**-**	**1.05**	**69.8**	**E**	**-**	**1.03**	**85.4**	**F**
Union Street at Northern Boulevard (RT. 25A)													
Union Street	NB	LTR	0.27	35.0	C	LTR	0.16	32.4	C	LTR	0.17	32.6	C
	SB	LTR	1.20+	120.0+	F*	LTR	1.15	120.0+	F*	LTR	1.06	92.0	F
Northern Boulevard	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		T	0.95	40.4	D	T	0.91	37.0	D	T	0.96	41.4	D
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
	WB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		TR	0.97	44.3	D	TR	0.94	39.4	D	TR	0.84	34.1	C
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**118.3**	**F**
Parsons Boulevard at Northern Boulevard (RT. 25A)													
Parsons Boulevard	NB	L	0.97	106.0	F	L	1.06	120.0+	F*	L	0.88	83.5	F
		TR	0.67	44.4	D	TR	0.66	44.6	D	TR	0.67	45.1	D
	SB	LTR	1.03	94.5	F	LTR	1.13	120.0+	F*	LTR	1.18	120.0+	F*
Northern Boulevard	EB	L	0.44	46.8	D	L	0.63	53.2	D	L	0.51	47.5	D
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	L	0.47	46.1	D	L	0.38	47.5	D	L	0.38	47.5	D
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		**-**	**1.09**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.14**	**120.0+**	**F***
34TH AVENUE													
114th Street at 34th Avenue													
114th Street	SB	L	0.73	21.2	C	L	0.73	24.3	C	L	0.80	27.2	C
		T	0.37	14.7	B	T	0.40	18.0	B	T	0.25	16.1	B
34th Avenue	EB	TR	0.77	29.2	C	TR	0.64	21.9	C	TR	0.73	24.2	C
Overall Intersection		**-**	**0.75**	**23.0**	**C**	**-**	**0.68**	**22.1**	**C**	**-**	**0.77**	**24.6**	**C**

TABLE 17-44
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
126th Street/GCP Ramp at 34th Avenue													
126th Street	NB	LTR	0.73	28.4	C	LTR	0.63	25.9	C	LTR	0.67	54.3	D
Northern Boulevard Ramp	SB	LTR	0.59	15.7	B	LTR	0.45	13.4	B	LTR	0.45	23.1	C
GCP Ramp	SB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
34th Avenue	EB	-	-	-	-	-	-	-	-	-	-	-	-
		LTR	0.34	41.6	D	LTR	0.35	40.2	D	LTR	1.20+	120.0+	F*
Stadium Road	WB	LTR	1.16	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.10**	**120.0+**	**F***
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	1.11	114.6	F	LTR	1.18	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	LTR	1.18	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	1.07	90.5	F	LTR	1.08	107.7	F	LTR	0.99	79.9	E
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.16	100.6	F
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
114th Street at Roosevelt Avenue													
114th Street	NB	LTR	1.17	120.0+	F*	LTR	1.13	120.0+	F*	LTR	1.15	120.0+	F*
	SB	DefL	1.16	120.0+	F*	DefL	1.10	120.0+	F*	DefL	1.12	120.0+	F*
		TR	0.84	67.2	E	TR	0.60	48.9	D	TR	1.01	99.0	F
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	DefL	0.91	39.6	D	-	-	-	-	-	-	-	-
		TR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
126th Street at Roosevelt Avenue													
126th Street	NB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	-	-	-	-
		TR	0.48	38.9	D	TR	0.43	38.1	D	LTR	1.20+	120.0+	F*
	SB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Roosevelt Avenue	EB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	-	-	-	-
		TR	1.17	105.2	F	TR	1.10	76.2	E	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	0.80	7.9	A
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
College Point Boulevard at Roosevelt Avenue													
College Point Boulevard	NB	L	1.16	120.0+	F*	L	1.20+	120.0+	F*	L	0.82	46.1	D
		TR	0.89	38.9	D	TR	1.18	114.4	F	TR	1.00	48.4	D
	SB	T	1.06	116.2	F	T	1.02	75.0	E	T	0.91	47.1	D
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Roosevelt Avenue	EB	LTR	1.12	101.4	F	LTR	0.93	38.6	D	LTR	1.20+	120.0+	F*
	WB	LTR	0.77	61.4	E	LTR	0.98	80.4	F	LTR	0.79	61.4	E
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**112.6**	**F**
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Roosevelt Avenue	EB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.14	109.7	F
		TR	1.20+	120.0+	F*	TR	1.06	65.5	E	TR	1.17	104.9	F
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Main Street at Roosevelt Avenue													
Main Street	NB	LT	1.19	117.3	F	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
		R	0.60	24.4	C	R	0.58	23.8	C	R	0.68	26.9	C
	SB	LTR	0.20	20.4	C	LTR	0.24	19.1	B	LTR	0.11	16.7	B
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Union Street at Roosevelt Avenue													
Union Street	NB	-	-	-	-	-	-	-	-	-	-	-	-
	SB	LT	0.99	42.0	D	LT	1.03	53.3	D	LT	1.00	43.5	D
		R	1.05	77.0	E	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Roosevelt Avenue	EB	LT	1.04	68.8	E	LT	1.01	57.5	E	LT	1.17	114.3	F
		R	0.93	48.7	D	R	0.87	37.6	D	R	1.08	83.1	F
	WB	LTR	1.20+	120.0+	F*	LTR	1.15	105.5	F	LTR	1.20+	120.0+	F*
	Overall Intersection	**-**	**1.20+**	**82.4**	**F**	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Roosevelt Avenue													
Parsons Boulevard	NB	LTR	1.08	90.7	F	LTR	0.95	45.5	D	LTR	0.69	25.0	C
	SB	LTR	1.04	71.0	E	LTR	0.82	30.0	C	LTR	0.72	25.3	C
Roosevelt Avenue	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	WB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	0.98	49.7	D
	Overall Intersection	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.03**	**89.4**	**F**

TABLE 17-44
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.52	21.5	C	L	0.50	20.3	C	L	0.39	18.5	B
		TR	0.92	40.8	D	TR	1.20+	120.0+	F*	TR	0.99	48.2	D
	SB	L	0.37	29.3	C	L	0.17	16.2	B	L	0.14	15.6	B
		TR	0.07	14.8	B	TR	0.07	14.7	B	TR	0.06	14.5	B
Kissena Boulevard	NB	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Overall Intersection		-	**1.17**	**120.0+**	**F***	-	**1.20+**	**120.0+**	**F***	-	**1.13**	**103.1**	**F**
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.55	27.7	C	L	0.95	85.8	F	L	0.61	32.5	C
		T	0.67	13.7	B	T	0.76	15.6	B	T	0.59	12.5	B
	SB	TR	1.04	48.5	D	TR	1.02	40.8	D	TR	1.12	78.1	E
Sanford Avenue	WB	LTR	1.06	82.4	F	LTR	1.07	86.7	F	LTR	0.93	51.3	D
Overall Intersection		-	**1.05**	**43.0**	**D**	-	**1.12**	**40.8**	**D**	-	**1.06**	**51.8**	**D**
Union Street at Sanford Avenue													
Union Street	NB	LR	1.20+	120.0+	F*	LR	0.89	60.3	E	LR	0.96	72.5	E
	SB	LT	1.01	70.8	E	LT	0.75	35.2	D	LT	0.71	32.9	C
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Sanford Avenue	EB	TR	0.79	42.0	D	TR	0.78	41.0	D	TR	0.65	34.5	C
	WB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Overall Intersection		-	**1.20+**	**120.0+**	**F***	-	**1.20+**	**120.0+**	**F***	-	**1.20+**	**120.0+**	**F***
Parsons Boulevard at Sanford Avenue													
Parsons Boulevard	NB	LTR	1.15	107.4	F	LTR	1.20+	120.0+	F*	LTR	1.11	95.8	F
	SB	LTR	1.20+	120.0+	F*	LTR	1.11	91.7	F	LTR	1.14	101.8	F
Sanford Avenue	EB	LTR	1.17	116.5	F	LTR	0.79	26.7	C	LTR	0.81	27.5	C
	WB	LTR	1.08	81.1	F	LTR	1.18	114.9	F	LTR	0.91	36.7	D
Overall Intersection		-	**1.20+**	**120.0+**	**F***	-	**1.20+**	**120.0+**	**F***	-	**1.02**	**68.7**	**E**
WHITESTONE EXPRESSWAY / 32ND AVENUE													
College Point Boulevard at 32nd Avenue													
College Point Boulevard	NB	T	0.66	20.8	C	T	0.51	18.3	B	T	0.50	18.2	B
		TR	1.15	102.6	F	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	SB	L	0.75	31.7	C	L	0.52	21.5	C	L	0.51	21.5	C
		T	0.67	11.8	B	T	0.69	12.2	B	T	0.56	10.4	B
32nd Avenue	WB	LTR	0.70	28.6	C	LTR	0.68	27.7	C	LTR	0.60	24.0	C
Overall Intersection		-	**0.93**	**36.3**	**D**	-	**1.02**	**66.5**	**E**	-	**1.00**	**77.0**	**E**
UNSIGNALIZED INTERSECTIONS													
Willets Point Boulevard at 126th Street													
126th Street	SB	-	-	-	-	-	-	-	-	-	-	-	-
Willets Point Boulevard	WB	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		-	-	-	-	-	-	-	-	-	-	-	-
Boat Basin Road at Worlds Fair Marina													
Boat Basin Road	NB	L	-	114.3	F	L	-	120.0+	F*	L	-	120.0+	F*
		R	-	8.5	A	R	-	8.5	A	R	-	29.4	D
Worlds Fair Marina	WB	LT	-	11.0	B	LT	-	13.6	B	LT	-	8.4	A
Overall Intersection		-	-	**15.8**	**C**	-	-	**20.3**	**C**	-	-	**120.0+**	**F***
Willets Point Boulevard at Northern Boulevard													
Willets Point Boulevard	NB	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection		-	-	-	-	-	-	-	-	-	-	-	-
College Point Boulevard at Northern Boulevard Service Road (SIGNALIZED IN 2007)													
College Point Boulevard	NB	TR	1.20+	120.0+	F*	TR	0.97	37.7	D	TR	1.17	103.8	F
	SB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
Northern Blvd Service Rd	WB	L	0.50	16.0	B	L	0.81	26.3	C	L	0.61	18.1	B
		R	0.33	13.7	B	R	0.45	15.5	B	R	0.40	14.5	B
Overall Intersection		-	**1.20+**	**120.0+**	**F***	-	**1.20+**	**120.0+**	**F***	-	**1.13**	**120.0+**	**F***
Grand Central Parkway Ramp at West Park Loop/Stadium Road													
Grand Central Parkway Ramp	EB	L	-	18.7	C	L	-	42.6	E	L	-	14.9	B
		R	-	10.1	B	R	-	18.9	C	R	-	11.1	B
Overall Intersection		-	-	**15.1**	**C**	-	-	**30.2**	**D**	-	-	**12.9**	**B**

TABLE 17-44
WILLETS POINT DEVELOPMENT DISTRICT FGEIS
2017 BUILD TRAFFIC LEVELS OF SERVICE - *GAME DAY*

		Weekday Pre Game (6:00-7:00 PM)				Saturday Pre Game (12:00-1:00 PM)				Saturday Post Game (3:45-4:45 PM)			
				Control				Control				Control	
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
NEW (BUILD) SIGNALIZED INTERSECTION													
126th Street at New Willets Point Boulevard													
126th Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
	SB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.17	120.0+	F*
		TR	1.20+	120.0+	F*	TR	1.02	59.6	E	TR	0.28	9.6	A
New Willets Point Boulevard	EB	LTR	0.02	22.4	C	LTR	0.02	26.3	C	LTR	0.02	32.5	C
	WB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
		R	0.21	10.7	B	R	0.18	11.3	B	R	0.24	16.9	B
Overall Intersection		**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**1.20+**	**120.0+**	**F***
Citi Field/Lot B Internal Street at Roosevelt Avenue													
Citi Field/Lot B Internal Street	SB	LR	0.02	34.0	C	LR	0.03	34.1	C	LR	0.02	34.0	C
Roosevelt Avenue	EB	LT	0.73	15.5	B	LT	0.68	14.1	B	LT	0.79	17.4	B
	WB	TR	0.90	23.1	C	TR	0.93	27.0	C	TR	0.41	9.8	A
Overall Intersection		**-**	**0.66**	**19.8**	**B**	**-**	**0.69**	**21.8**	**C**	**-**	**0.58**	**14.8**	**B**

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.