

WILLETS POINT Development

Final Supplemental Environmental Impact Statement

CEQR No.:

07DME014Q

ULURP Nos.:

N130220ZRQ

N130222ZSQ

N130223ZSQ

N130224ZSQ

N130225ZSQ

M080221(A)MMQ

Lead Agency:

Office of the Deputy Mayor for Economic Development

Lead Agency Contact:

Robert R. Kulikowski, Ph.D.

Project Applicant:

Queens Development Group, LLC

August 2013

Willets Point Development
FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
(FSEIS)

Project Location: Willets Point / CitiField Parking Lots
Borough of Queens
The Willets Point portion of the site (east of 126th Street) is located within Community District 7; the remainder of the project site comprising CitiField parking lots is mapped parkland and lies outside community district boundaries.

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Type of Action: Type I

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The FSEIS is available for review on the website of the Mayor's Office of Environmental Coordination.

<http://www.nyc.gov/oec>

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Foreword

This document is the Final Supplemental Environmental Impact Statement (FSEIS) for the Willets Point Development (the proposed project). The Draft Supplemental Environmental Impact Statement (DSEIS) for the proposed project was accepted as complete by the New York City Office of the Deputy Mayor's Office for Economic Development (ODMED) and a Notice of Completion for the DSEIS was issued on March 13, 2013. A public hearing was held on the DSEIS in conjunction with the City Planning Commission's public hearing pursuant to the Uniform Land Use Review Procedure (ULURP) on July 10, 2013, at the City Planning Commission, Spector Hall, 22 Reade Street, New York, NY, to accept oral and written comment on the DSEIS. The comment period was open for receiving written comments until July 22, 2013.

This FSEIS addresses all substantive comments made on the DSEIS during the public hearing and subsequent comment period. Those comments are summarized and responded to in Chapter 26, "Responses to Comments Received on the DSEIS." Written comments on the DSEIS are included in the FSEIS as Appendix F. Changes to the text and graphics from the DSEIS were made in this FSEIS, as necessary, in response to these comments.

Substantive changes between the DSEIS and FSEIS include:

- Revisions to Chapter 9, "Natural Resources," and Chapter 16, "Greenhouse Gas Emissions and Climate Change," to reflect the Federal Emergency Management Agency's new Best Available Flood Hazard Data and new projections on sea level rise from the New York City Panel on Climate Change.
- Revisions to Chapter 10, "Hazardous Materials," to reflect the Phase II Subsurface Investigation Work Plan and Health and Safety Plan for the Willets West portion of the project site that were approved by the New York City Department of Environmental Protection in July 2013.
- Revisions to Chapter 14, "Transportation" and Chapter 22, "Alternatives," to reflect further consultation with the New York City Department of Transportation regarding the feasibility of proposed mitigation measures. Revisions to Chapter 14 also reflect the commitment in the DSEIS to analyze three additional traffic and pedestrian analysis locations, as well as the analysis of another subway line.
- Revisions to Chapter 15, "Air Quality," to reflect the results of the refined mobile source analysis conducted for PM_{2.5} between the DSEIS and FSEIS in consultation with the New York City Department of Environmental Protection.
- Updated conclusions in Chapter 21, "Mitigation," in the areas of child care and transportation, and the effect of transportation mitigation measures on air quality and noise, to reflect further analysis of potential mitigation measures conducted between the DSEIS and FSEIS; and

Riverside Center FSEIS

- Chapter 26, “Responses to Comments Received on the DSEIS,” which is entirely new to the document.

All text changes since publication of the DSEIS are marked by double-underlining and strikeouts in this FSEIS. No double-underlining is used for the Foreword or Chapter 26, which are entirely new. *

A. INTRODUCTION

This Supplemental Environmental Impact Statement (SEIS) addresses proposed modifications to the previously approved Willets Point Development Plan for the approximately 61-acre Special Willets Point District in Queens, to include the proposed “Willets West” development on the surface parking lot west of the CitiField baseball stadium; the development of structured parking facilities on surface parking Lot D and South Lot along Roosevelt Avenue, adjacent to the stadium (see **Figure S-1**); and changes to the phasing of the project. With these modifications, the project site would comprise approximately 108.9 acres and the proposed project could result in up to 10.34 million square feet of development. This SEIS also considers changes in background conditions, including federal approval of the Freeway Access Modification Report (AMR) for new vehicular connections from the Special Willets Point District to the Van Wyck Expressway.

A Final Generic Environmental Impact Statement (FGEIS) for the Willets Point Development Plan (the Plan) was issued in September 2008 by the Office of the Deputy Mayor for Economic Development (ODMED) as lead agency under the New York State Environmental Quality Review Act (SEQRA), its implementing regulations (6 NYCRR Part 617), and New York City Environmental Quality Review (CEQR). The approved project was for redevelopment of a largely underutilized site with substandard conditions and environmental degradation into a lively, sustainable community and regional destination with approximately 8.94 million square feet of residential, retail, hotel, convention center, entertainment, commercial office, community facility, open space, and parking uses.

The proposed modifications to the previously approved Willets Point Development Plan require public review, including by the local Community Board and the Queens Borough President, and approvals by government agencies, including the Office of the Deputy Mayor for Economic Development, the New York City Planning Commission (CPC), and the City Council. Because it has been determined that the proposed project may result in new or greater significant adverse impacts than were disclosed in the 2008 FGEIS, the proposed project requires review and the preparation of an SEIS under CEQR.

B. PROJECT BACKGROUND

Since World War II, there have been numerous attempts to redevelop Willets Point, which became known over the years for its many auto repair businesses and junkyards. Since 2000, these planning efforts have accelerated. In 2001, the City’s Department of Housing Preservation and Development (HPD) design workshop explored potential redevelopment ideas and recommended land uses that would connect Willets Point with neighboring communities and complement nearby attractions and facilities. In 2002, the City created the Downtown Flushing Task Force, which outlined land use and economic goals for the redevelopment of Willets Point in its Downtown Flushing Development Framework. The Downtown Flushing Development



Willets Point Development

Framework became the starting point for the City's creation of the Willets Point Development Plan. The numerous actions required for the Plan—which included the creation of a new special zoning district (the Special Willets Point District) and an urban renewal plan for the area—required review under SEQRA and CEQR.

An FGEIS for the Willets Point Development Plan was issued in September 2008 by ODMED as lead agency under SEQRA, its implementing regulations (6 NYCRR Part 617), and CEQR. The Willets Point Development Plan was approved by the City Council in 2008. Subsequent technical memoranda assessed the potential effects of modifications to the proposed actions and were accepted by ODMED; SEQRA findings were issued on February 11, 2011.

In May 2011, the City issued a revised Request for Qualifications and Request for Proposals for the redevelopment of this area. The City has also undertaken several measures that support the goals of the Plan, including measures related to site acquisition, assistance for District workers, advancement of the proposed connections to the Van Wyck Expressway, and ongoing infrastructure work. In December 2011, the City also broke ground on the new sanitary and storm water mains that will provide new public sanitary sewer service to support the redevelopment of the District and adjacent areas and replace an inadequately sized storm water sewer and outfall to help alleviate chronic flooding that occurs in the District and adjacent areas. Adjacent to the Special Willets Point District, the new CitiField stadium opened in 2009, replacing the former Shea Stadium, and the area formerly occupied by Shea Stadium was converted to a surface parking lot.

In 2012, in response to a competitive Request for Proposal process, the Queens Development Group, LLC (QDG)—a joint venture between the Related Companies and Sterling Equities—was selected as the City's designated developer for Phases 1A and 1B of the Willets Point Development Plan.¹ QDG is proposing to include in its proposed development additional land beyond the boundaries of the Special Willets Point District in order to develop portions of the main CitiField stadium parking field ("Willets West") and CitiField parking fields south of Roosevelt Avenue. QDG is also proposing to develop interim parking uses on a portion of the land within the Special Willets Point District to accommodate the stadium's parking demand during the initial phase of the area's proposed redevelopment. The discretionary actions needed for the proposed modifications include a zoning text amendment, a special permit to allow surface parking and recreational uses within the Special Willets Point District, and modification of the City's existing lease for the CitiField parking lot, as well as potential additional actions discussed below.

PRIOR ENVIRONMENTAL REVIEW

The 2008 FGEIS examined the potential for significant impacts resulting from the redevelopment of the project site in the impact categories of land use, zoning, and public policy; socioeconomic conditions; community facilities; open space; shadows; historic resources; urban design and visual resources; neighborhood character; natural resources; hazardous materials; waterfront revitalization program; infrastructure; solid waste and sanitation; energy; traffic and parking; transit and pedestrians; air quality; noise; construction impacts; and public health. The 2008 FGEIS found that no significant adverse environmental impacts would result from the proposed development Plan with respect to land use, zoning, and public policy; socioeconomic

¹ Formerly Phase 1 in Technical Memorandum #4, with some adjustments to footprint.

conditions; open space; shadows; urban design and visual resources; neighborhood character; natural resources; waterfront revitalization program; infrastructure; solid waste and sanitation; energy air quality; construction impacts; and public health. Potentially significant impacts were identified for publicly funded child care, historic resources, hazardous materials, traffic, transit and pedestrians, and noise.

Subsequent to the issuance of the 2008 FGEIS, CPC proposed several modifications to the Special Willets Point District zoning regulations. These modifications were described, and their potential for significant adverse environmental impacts examined, in a technical memorandum dated September 23, 2008 (Technical Memorandum #1), which found that there were no additional impacts due to the modifications that had not been disclosed in the 2008 FGEIS. CPC voted in favor of the Willets Point Development Plan with those modifications on September 24, 2008.

Following the CPC vote, new information became available related to: negotiated property acquisition by the City in the District; Phase II Environmental Site Investigations (ESIs) in the District; the amount of affordable housing to be provided in the District (an increase from 20 to 35 percent); and projected school and day care populations. This information was described, and its potential to result in significant adverse environmental impacts not previously identified was examined, in a technical memorandum dated November 12, 2008 (Technical Memorandum #2). That technical memorandum concluded that none of the newly available information would lead to significant adverse environmental impacts that had not been identified and addressed in the 2008 FGEIS. The City Council voted to approve the Willets Point Development Plan with the CPC modifications on November 13, 2008.

In 2009, the City considered the effect of the economic downturn on the Willets Point project. The City anticipated that economic conditions would make it challenging for developers to finance the acquisition and remediation of the entire Willets Point site at one time and prior to any development, as described in the 2008 FGEIS. In a technical memorandum dated November 23, 2009 (Technical Memorandum #3), an Adjusted Plan for Willets Point was analyzed similar to the Staged Acquisition Alternative analyzed in the FGEIS. In the Adjusted Plan, remediation and development of an initial portion of the District would have proceeded first, followed by remediation and development of the remaining portion of the District. The Adjusted Plan assumed the same overall development program at full build-out as the Staged Acquisition Alternative (with revisions described in the prior technical memoranda), but anticipated a smaller development footprint during the first years of development, with approximately 70 percent as much floor area in the initial phase compared with the Staged Acquisition Alternative.

In a technical memorandum dated February 10, 2011 (Technical Memorandum #4), the City considered an Updated Plan that was similar to the Adjusted Plan analyzed in the 2009 technical memorandum as well as to the Staged Acquisition Alternative analyzed in the 2008 FGEIS. Compared with both the Adjusted Plan and the Staged Acquisition Alternative, the Updated Plan anticipated a smaller development footprint and less overall development (approximately 1.345 million gross square feet or gsf) in the first phase; however, at full build-out the Updated Plan would have developed the District with the same gross floor area and mix of uses as the Approved Plan (with subsequent revisions described in the prior technical memoranda) and would have had the same controls on floor area ratios set forth in the provisions of the Special District zoning text that had been approved by CPC and the City Council.

A substantial difference between the Approved Plan and the Updated Plan was the timing of property acquisition and construction phasing. Under the Approved Plan, the necessary

remediation, grading, and infrastructure improvements would have taken place across the District at the beginning stages of construction; in comparison, with the Updated Plan (as with the Staged Acquisition Alternative and the Adjusted Plan), development activities would have proceeded incrementally, with the necessary remediation, grading, infrastructure improvements, and construction activities associated with the buildings in the southwestern portion of the District occurring first, and construction activities on the remainder of the District following. Whereas the Staged Acquisition Alternative and Adjusted Plan assumed the District's connections to the Van Wyck Expressway would be constructed before the end of the first phase of development, with the Updated Plan these connections would have been completed no later than after the end of the first phase of development and before the first building to be developed in the second phase of construction is completed. Some negotiated acquisition might also have occurred within the remainder of the District during the initial phase of development.

In March 2012, the New York State Department of Environmental Coordination (NYSDEC) approved a State Pollutant Discharge Elimination System (SPDES) Construction Dewatering and Discharge Permit for construction of the proposed new sanitary and storm water mains for the Willets Point area. As described above, these improvements are currently being constructed.

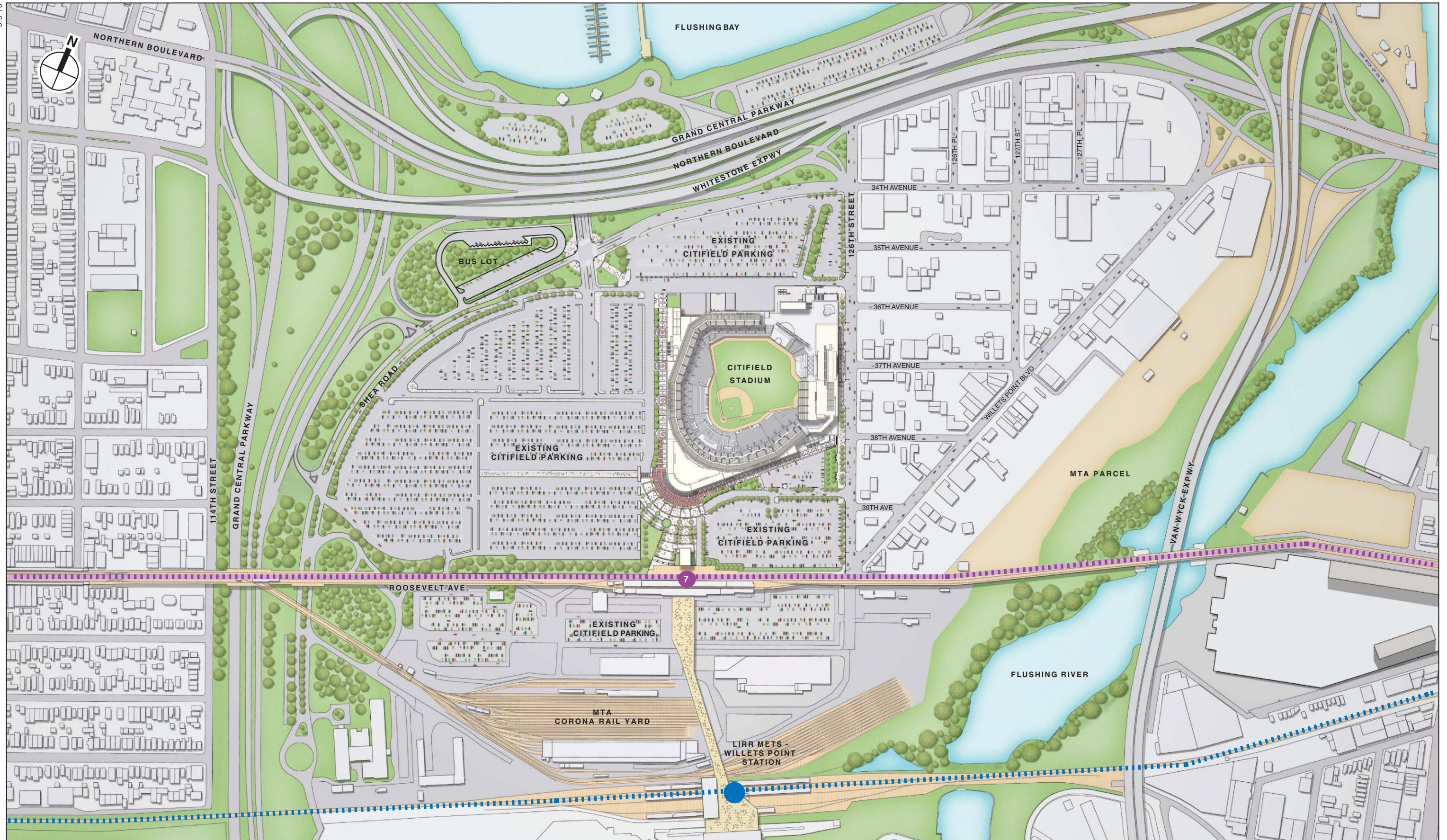
The new connection to the Van Wyck Expressway, which was assumed in the 2008 FGEIS and subsequent technical memoranda, was subject to federal approval of the Freeway AMR. A Finding of No Significant Impact was issued and the AMR was approved in April 2012; the City has committed to provide capital funds for its construction.

C. PROJECT DESCRIPTION

SITE DESCRIPTION

The project site is composed of three discrete areas roughly bounded by Shea Road and Northern Boulevard to the north, the Van Wyck Expressway to the east, Roosevelt Avenue and the Metropolitan Transportation Authority (MTA) Corona Rail Yard to the south, and Shea Road to the west (see **Figures S-1** and **S-2**). The “Willets Point” portion of the project site (the Special Willets Point District) comprises approximately 61 acres, approximately 15.8 acres of which are within public street rights-of-way, approximately 0.6 acres of which are owned by the MTA, and the remainder of which is a mix of privately owned land and land owned by the City. The Willets Point area comprises 128 tax lots and one partial lot (Block 1833, Lot 1) located on 14 blocks. Since the FGEIS was completed in 2008, the City has acquired, or is in contract to purchase, 95 percent of the land area within the proposed Phase 1A/1B footprint (Assemblage Option 2) in the District, and has control of 4 lots in the remainder of the District.

The “Willets West” portion of the project site is mapped parkland that comprises an approximately 30.7-acre section of the surface parking field west of CitiField. This area comprises a portion of Block 1787, Lot 20. The “Roosevelt Avenue” portions of the project site comprise three CitiField-related surface parking lots (South Lot and Lots B and D) along Roosevelt Avenue south and southwest of CitiField. The Lot B parking lot, which comprises a portion of Block 1787, Lot 20, is approximately 4.7 acres in size; the South Lot and Lot D parking lot, which comprise a portion of Block 2018, Lot 1500, are together approximately 12.1 acres in size. Lot D and South Lot are used for commuter parking and United States Tennis Association (USTA) National Tennis Center (NTC) events when baseball games are not in progress.



In total, the project site comprises approximately 108.9 acres.

GOALS AND OBJECTIVES

The proposed project is intended to remediate and transform the area surrounding CitiField, which is largely separated from adjoining neighborhoods by major highways, into a thriving new neighborhood and regional destination. The project would expand on the goals and objectives of the original (2008) Willets Point Development Plan. By providing development that spans both sides of the new CitiField, the proposed project would allow for a more comprehensive and continuous neighborhood linking Flushing and Corona. The environmental degradation of the Special Willets Point District would be remediated. The commercial components of the proposed project would provide jobs and create new retail, hotel and entertainment uses that would complement the adjacent sports venue and strengthen economic activity in the neighborhood, borough, and City. The substantial residential component (which includes affordable housing units) would accommodate a portion of the City's current and future housing needs. The new structures and open spaces are intended to create an active streetscape that includes retail uses as part of a diverse mixed-use program, enhancing the pedestrian experience.

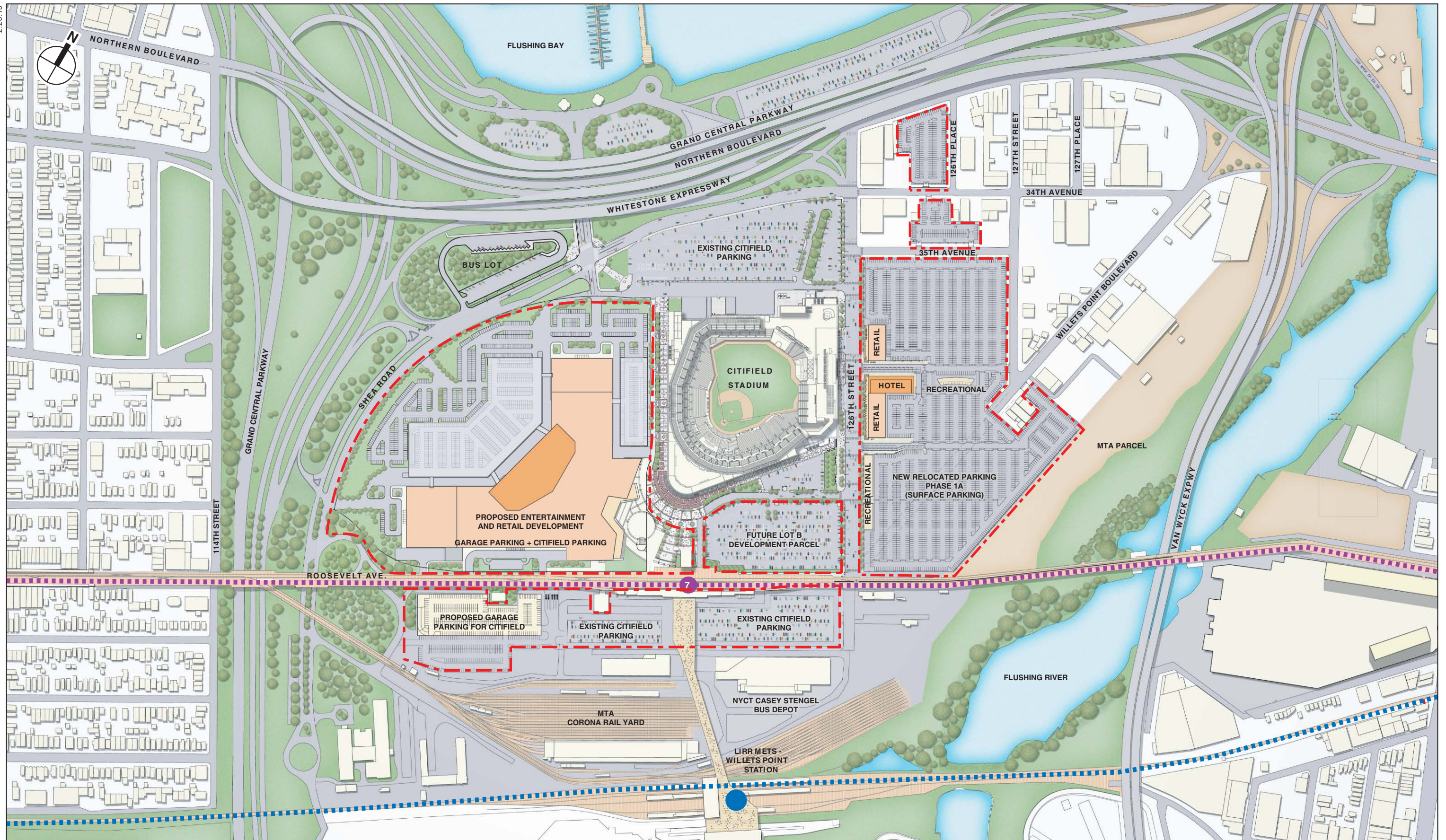
PROPOSED PROJECT

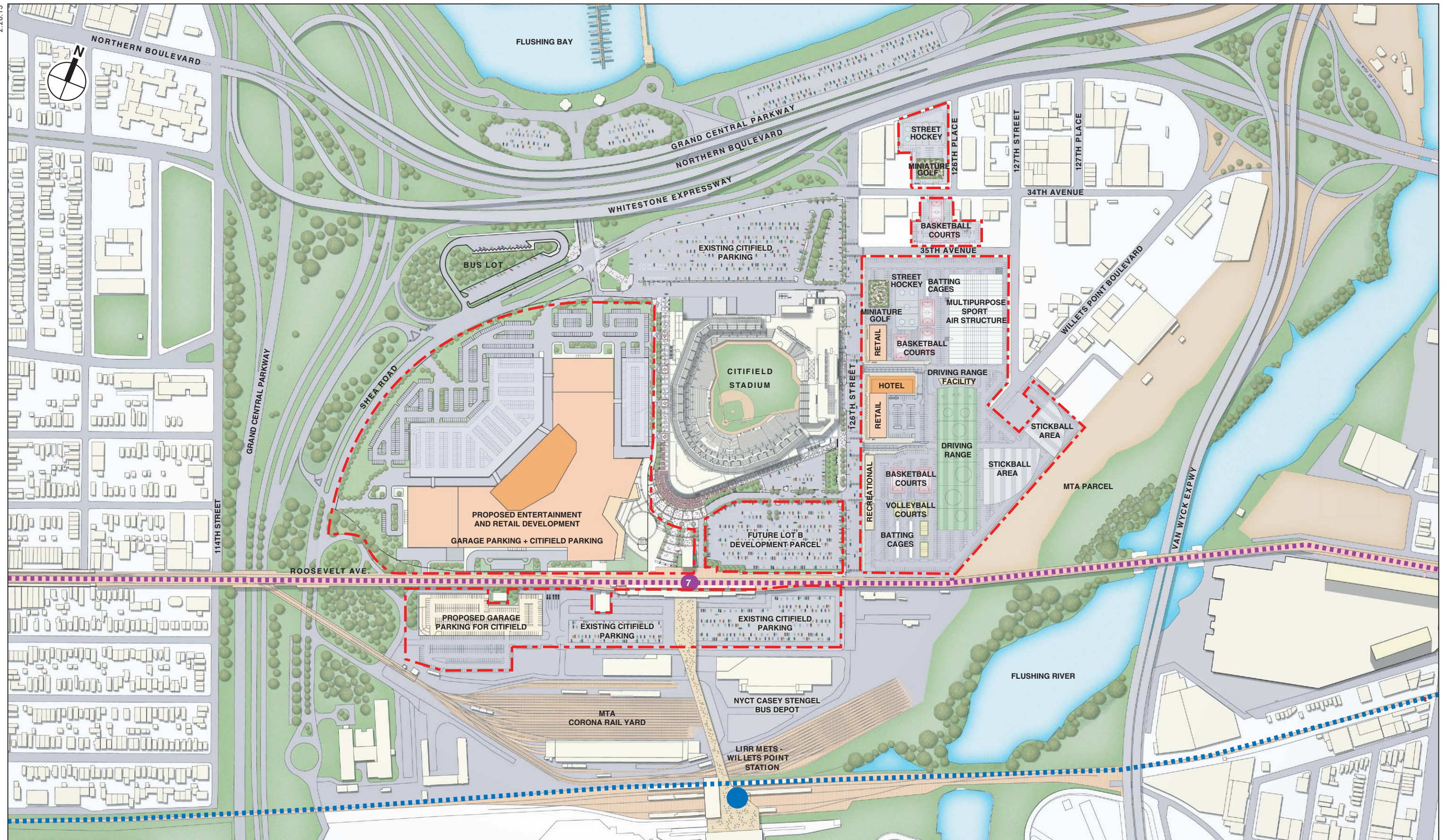
The proposed project would redevelop the Willets Point/CitiField area with a mix of uses that is expected to be completed by 2032. The redevelopment would incorporate a development in the Special Willets Point District substantially as anticipated and analyzed in the 2008 FGEIS and subsequent technical memoranda, as well as a major entertainment/retail component and parking adjacent to CitiField. Changes to the development analyzed here versus that analyzed in the 2008 FGEIS include an increase in the overall amount of retail development from 1.7 million square feet to 2.65 million square feet. This increase results from the 1.4 million gross square feet (1 million leasable square feet) of development at Willets West combined with a concurrent reduction in the overall amount of retail in the Special Willets Point District from 1.7 million square feet to 1.25 million square feet. The DSEIS also assumes 5.85 million gross square feet of residential development to match the highest amount of residential development analyzed in the 2008 FGEIS (in the No Convention Center Scenario), and a 230,000-square-foot school rather than the 2008 FGEIS's 130,000-square-foot school to accommodate a greater amount of the project's potential school seat demand.

The project is anticipated to proceed in three continuous phases, as follows.

PHASE 1A

The first phase of the project would commence with the remediation and development of an approximately 23-acre portion of the Special Willets Point District and the development of "Willets West" on the existing parking lot west of CitiField (see **Figures S-3a** and **S-3b**). The 23-acre portion of the District would be remediated to address any hazardous materials issues. Upon completion of the environmental remediation, a 200-room hotel and associated parking, and approximately 30,000 square feet of retail space would be constructed above the floodplain along the east side of 126th Street, activating the 126th Street corridor—according to the District's regulations—with a 20-foot-wide public esplanade. A 2,750-space surface parking area would be developed east of the retail and hotel uses. The parking area would be converted to active recreational use a minimum of 6 months per year. This interim parking/recreational area would be replaced by permanent development in Phase 1B, as described below.





Willets Point Development

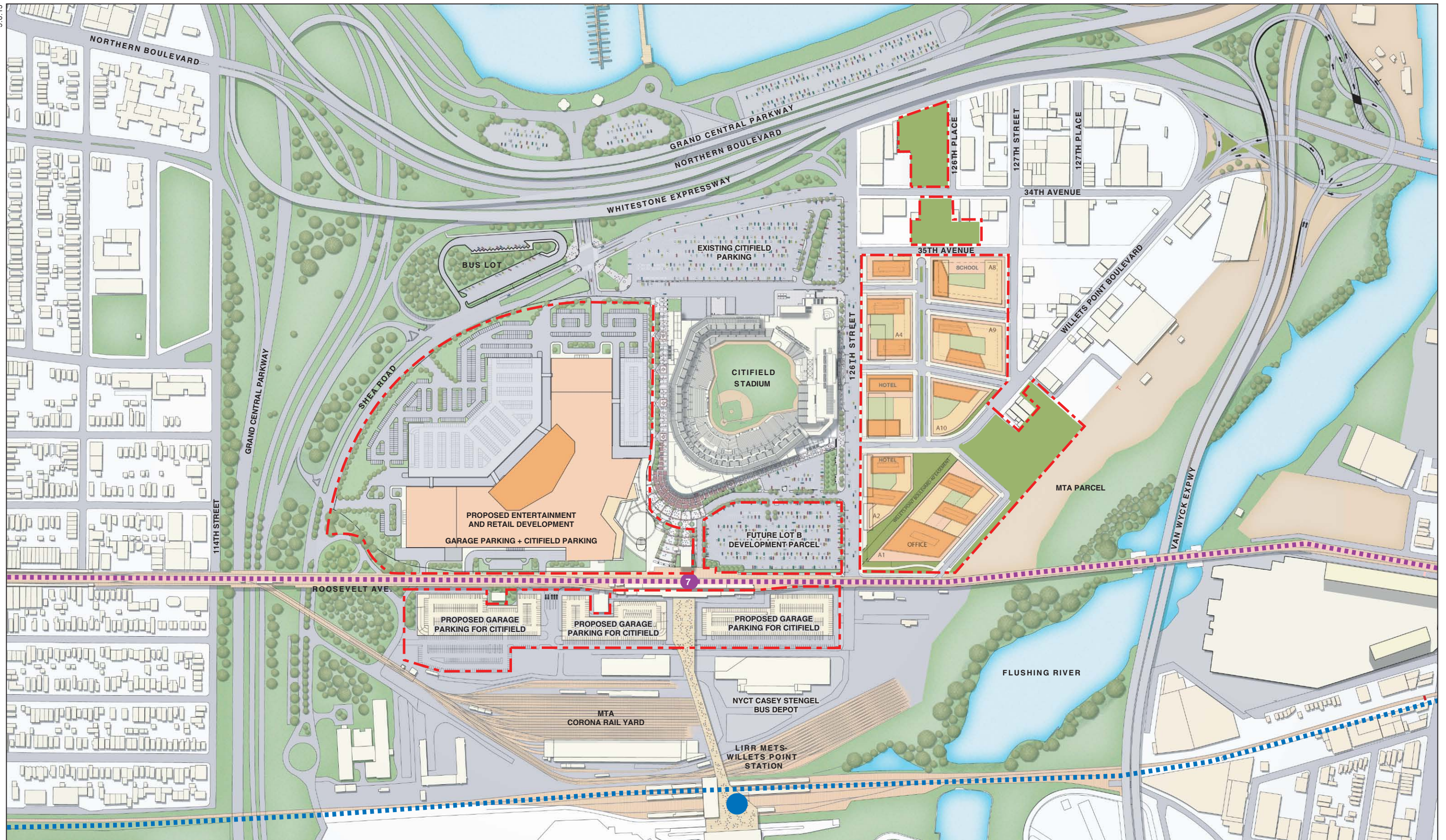
In tandem with the development of the parking area, “Willets West”—an entertainment and retail center of approximately 1.4 million gross square feet (approximately one million square feet of gross leasable area)—would be developed on a portion of the surface parking lot west of CitiField. This entertainment and retail center, which would be developed on mapped parkland as authorized by statute, would allow for more comprehensive transit-oriented development around the Mets/Willets Point stops on the No. 7 train and Long Island Rail Road and would support the economic development of the area. The complex could include over 200 retail stores, including anchor and “mini” anchor retailers, as well as movie theaters, restaurant and food hall spaces, and entertainment venues. Surface parking and a parking structure also would be developed in this location, including 2,500 new spaces for the entertainment/retail center and 400 spaces of replacement parking for use by the Mets. It is anticipated that the Willets West development, by building a critical mass of uses, would create a new destination that would serve as a catalyst for the subsequent build-out of the Willets Point area. In addition, the westernmost CitiField surface parking lot south of Roosevelt Avenue (a portion of the South Lot) would be redeveloped as a structured parking facility, to replace a portion of the CitiField parking spaces formerly located on the Willets West site. Phase 1A is expected to be completed in 2018.

PHASE 1B

In the next phase of the project, the interim surface parking lot/recreational space created during Phase 1A within the Special Willets Point District would be developed, transforming this formerly contaminated area into a new neighborhood. Consistent with the goals and objectives of the Willets Point Development Plan, Phase 1B of the proposed project would create more development on the east side of 126th Street, featuring a more active, attractive streetscape, providing new jobs, and complementing the adjacent CitiField. In addition, the new development would complement the new Willets West development created in Phase 1A. The residential units to be developed in this phase (which include affordable housing units) would accommodate a portion of the City’s current and future housing needs, and the proposed school would address the project-generated school seat demand.

The program for this development would include approximately 4.23 million square feet (sf) of development: 2.49 million sf of residential use (2,490 units, 872 of which would be affordable), 875,000 sf of retail use, 500,000 sf of office use, approximately 235,000 sf of hotel use (290 rooms), 25,000 sf of community facility use, and a 105,000 sf public school, along with parking and more than six acres of new public open space (see **Figures S-4** and **S-5**). This development is anticipated to be developed block by block, substantially as envisioned in the Willets Point Development Plan. In addition, new structured parking facilities would be constructed on portions of the CitiField leasehold along Roosevelt Avenue (South Lot and Lot D) to replace the 2,750 CitiField parking spaces formerly located within the Special Willets Point District. The 75 accessory parking spaces created in Phase 1A for the hotel would remain in the District.

Construction of the new Van Wyck Expressway access ramps—which was anticipated in the 2008 FGEIS and for which the City has received approval from the Federal Highway Administration—is slated to be completed in 2024. Construction of the Phase 1B program is anticipated to take four years; however, the buildings within the District are not expected to be occupied until after the ramp improvements have been completed. The ramps would be operational prior to the occupancy of the Phase 1B buildings. Phase 1B is expected to be completed in 2028.



Publicly-Accessible Open Space within the Special Willets Point District

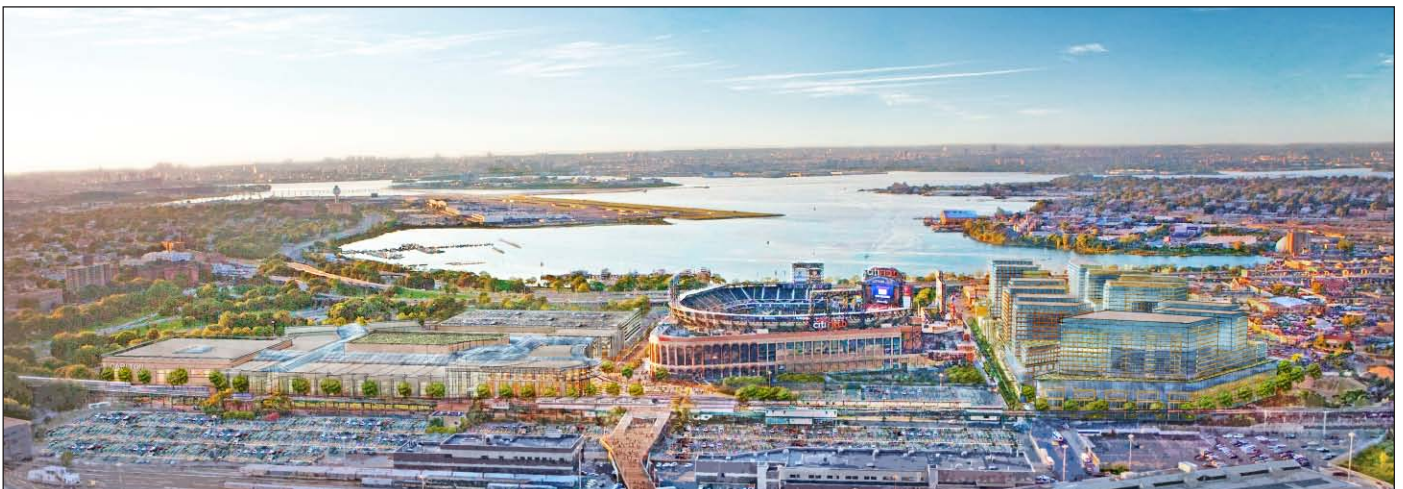
Private Open Spaces within the Special Willets Point District



Existing Conditions



Illustrative rendering of Phase 1A



Illustrative rendering of Phase 1B

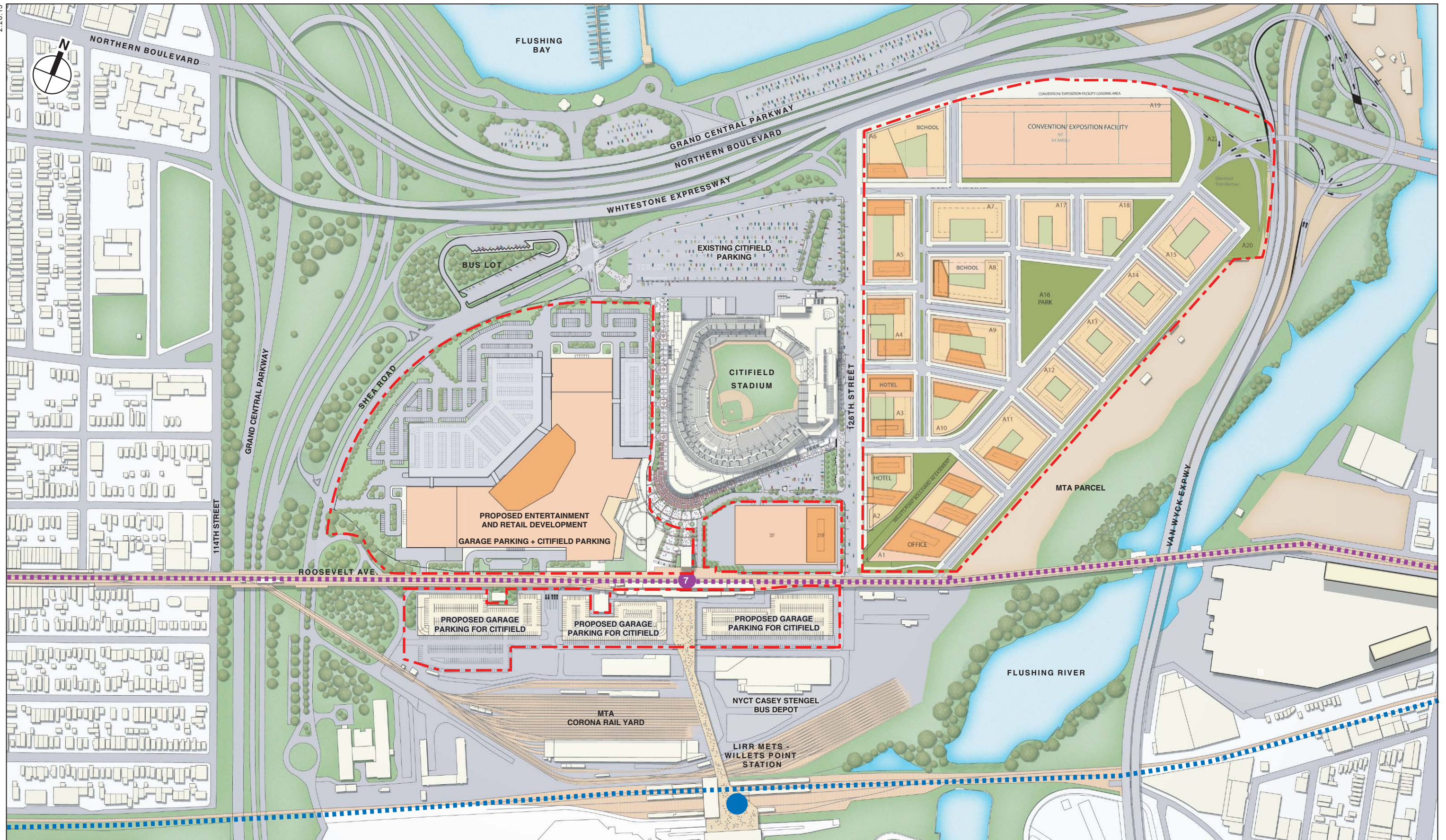
PHASE 2

In Phase 2, the remainder of the Special Willets Point District would be built out substantially as described in the 2008 FGEIS. Upon completion of Phase 2, the full build-out of all phases of the District is anticipated to total approximately 8.94 million square feet of development, including: up to 5.85 million sf of residential use (approximately 5,850 units, of which 2,048 would be affordable); up to 1.25 million sf of retail; approximately 500,000 sf of office; up to 400,000 sf of convention center use; up to 560,000 sf of hotel use (approximately 700 rooms); up to 150,000 sf of community facility use; approximately 230,000 sf of public school use; and a minimum of 8 acres of publicly-accessible open space. The number of proposed parking spaces within the District would be determined based on project-generated demand, but is anticipated to be no more than the 6,700 spaces identified in the 2008 FGEIS. Remediation of the portions of the District not already developed in Phases 1A and 1B is assumed to be completed prior to 2028. As with Phase 1B, Phase 2 is anticipated to be completed incrementally over four years, with full build-out expected to be completed by 2032. A developer for Phase 2 has not yet been selected. Phase 2, illustrated in **Figure S-6**, assumes a similar generic program to that analyzed in the 2008 FGEIS, while Phase 1A and Phase 1B have discrete programs and designs.

Table S-1 below provides a summary of the proposed program, by phase, with a summary of the proposed new parking and relocation of existing CitiField parking shown in **Table S-2**.

Table S-1
Summary of Proposed Program, by Phase

Use (sf)	Project Area	Phase 1A	Phase 1B	Phase 2	Totals by Use
Retail	SWPD	30,000	875,000	345,000	1,250,000
	WW	1,400,000 ¹			1,400,000
Hotel	SWPD	160,000 [200 rooms]	235,000 [290 rooms]	165,000 [210 rooms]	560,000 [700 rooms]
Residential	SWPD		2,490,000 [2,490 units]	3,360,000 [3,360 units]	5,850,000 [5,850 units]
School	SWPD		105,000	125,000	230,000
Community Facility	SWPD		25,000	125,000	150,000
Office	SWPD		500,000		500,000
Convention Center	SWPD			400,000	400,000
Open Space	SWPD	TBD	6 acres	5 acres	8 acres ²
Total		1,590,000 gsf	4,230,000 gsf 6 acres	4,520,000 gsf 5 acres	10,340,000 gsf 8 acres
Notes: SWPD = Special Willets Point District WW = Willets West ¹ Anticipated to include cinema use and approximately 400,000 sf of common area and back of house space. ² Some of the open spaces developed in Phase 1B would be replaced or expanded with new open space in Phase 2. The cumulative total of open space to be developed within the District is 8 acres.					



Publicly-Accessible Open Space within the Special Willets Point District

Private Open Spaces within the Special Willets Point District

Table S-2

Proposed New and Replacement Parking Spaces (Cumulative by Phase)

Project Area	Existing Conditions			Phase 1A			Phase 1B			Phase 2		
	CitiField	New	Total	CitiField	New	Total	CitiField	New	Total	CitiField	New	Total
WW	4,100	-	4,100	400	2,500	2,900	400	2,500	2,900	400	2,500	2,900
SWPD	-	-	-	2,750	75	2,825	-	2,700	2,700*	-	6,700	6,700*
South Lot/Lot D	1,795	-	1,795	2,745	-	2,745	5,495	-	5,495	5,495	-	5,495
Total	5,895	-	5,895	5,895	2,575	8,470	5,895	5,200	11,095	5,895	9,200	15,095

Notes: SWPD = Special Willets Point District
 WW = Willets West
 "CitiField" parking is the total number of spaces within the project site that either currently or would in the future serve events at CitiField. Existing Willets West spaces lost to development would be replaced as shown, in Phases 1A and 1B.
 "New" parking is the total number of parking spaces that would serve the proposed project.
 *These reflect newly developed spaces for Phase 1A, Phase 1B and Phase 2 (2,750 Mets spaces would be relocated to South Lot/Lot D in Phase 1B).

COMPARISON OF SEIS AND FGEIS

The actions requested to facilitate the proposed project would not change the maximum overall development of 8.94 million square feet permitted within the District. However, the proposed project would differ from the development analyzed in the 2008 FGEIS in that the FGEIS program did not include any development outside of the District and did not anticipate the use of the District for surface public parking and recreation. Accordingly, the DSEIS will analyze 1.4 million gross square feet (1 million leasable square feet) of retail that would be developed at Willets West, the interim parking and recreational uses that would occur within the District, and the proposed parking garages at Willets West, the South Lot and Lot D. Given the retail development that would occur in Willets West, it is assumed that less destination retail would be developed within the District, so this SEIS analyzes 1.25 million square feet of retail within the District rather than 1.7 million square feet. Although the residential program and its projected population have not changed since the 2008 FGEIS (as analyzed in the No Convention Center Scenario), an increase of 100,000 square feet of school space is assumed in this DSEIS to reflect updated projections of increased school seat demand citywide and in Queens in particular. See **Table S-3** below for a comparison of the proposed project for the District vs. the program analyzed in the 2008 FGEIS. Uses not noted below are not proposed to change from the program analyzed in the 2008 FGEIS.

Table S-3

**Totals by Use in Special Willets Point District
Proposed Program vs. 2008 FGEIS**

Use	FGEIS (gsf)	Proposed Program (gsf)
Retail	1,700,000	1,250,000
Residential	5,550,000 [5,500 units] (Convention Center Scenario) 5,850,000 [5,850 units] (No Convention Center Scenario)	5,850,000 [5,850 units]
Public School	130,000	230,000

The 2008 FGEIS analyzed a Staged Acquisition Alternative, in which the western portion of the District was assumed to be developed by 2013 and the remaining portion of the District would be built out by 2017. Technical Memoranda #3 and #4 also considered the phasing of development in the District over two analysis years. In comparison, this SEIS analyzes the development of the proposed project over three analysis years (2018, 2028, and 2032).

PURPOSE AND NEED

As described above, the proposed project would remediate and transform the area surrounding CitiField. The proposed entertainment and retail destination of Willets West would complement the anticipated development within the District, and both would connect Flushing to the east with Corona to the west through the creation of a more continuous series of uses along Roosevelt Avenue stretching from east of the Flushing River to west of the Grand Central Parkway. Over 2,000 units of affordable housing would be developed to accommodate a portion of the City's current and future affordable housing needs. The project's retail components would capture spending that currently is lost to the surrounding suburbs, and would thereby strengthen economic activity in the neighborhood, borough, and City. The proposed project would represent a significant investment by the City to improve the infrastructure of the project area. Raising the District portion of the project site out of the floodplain would not only minimize the potential loss of life, structures, and natural resources caused by flooding and erosion, but would also protect the City's new infrastructure investment. Eliminating flooding within the District and improving the quality of the soil substrate on the site would also improve water quality in Flushing Bay.

DISCRETIONARY ACTIONS SUBJECT TO CEQR AND SEQRA

The proposed project would require multiple City and State approvals. These anticipated approvals may include:

- Zoning text amendment to ZR Section 124-60 to allow use modifications as part of a phased development within the Special Willets Point District;
- Special permit pursuant to ZR Section 124-60 to allow surface parking/open and enclosed privately operated recreation uses for Phase 1A within the Special Willets Point District;
- Modification of the existing lease for the CitiField property and adjacent parking properties;
- Mayoral and Queens Borough Board approval of the business terms pursuant to New York City Charter Section 384(b)(4);
- Approval by the New York City Industrial Development Agency (IDA) or other government agencies for the waiver of mortgage recording tax for property within the Special Willets Point District; and
- Minor modification of the previously approved changes to the City Map to modify the staging for the closure of City Streets. This modification would not result in the demapping of any additional City streets beyond those previously approved for demapping.

In addition to the discretionary approvals listed above, Public Design Commission approval also would be required for the Willets West development. Confirmation that all proposed buildings fall within the maximum Federal Aviation Administration (FAA) height limitations also would be sought from the FAA; however, no approval or permit to exceed such permitted heights is anticipated to be sought.

D. ANALYTICAL FRAMEWORK FOR ENVIRONMENTAL REVIEW

OVERVIEW

The SEIS for the development of the project site supplements the 2008 FGEIS. The SEIS will contain:

- A description of the proposed project and its environmental setting;
- A description of the evolution of project site conditions since 2008;
- The identification and analysis of any significant adverse environmental impacts of the proposed project, including the short- and long-term impacts;
- The identification of any significant adverse environmental impacts that cannot be avoided if the proposed project is implemented;
- A discussion of reasonable alternatives to the proposed project;
- The identification of irreversible and irretrievable commitments of resources that would be involved in the proposed project, should it be implemented; and
- The identification and analysis of practicable mitigation to address any significant adverse impacts generated by the proposed project not previously identified in the FGEIS.

ANALYSIS APPROACH

Each chapter of the SEIS first summarizes the conclusions of the 2008 FGEIS and subsequent technical memoranda for that particular technical area. Then, the chapter assesses whether changes in the analysis years and background conditions, variations between the proposed project and the redevelopment assumed in the 2008 FGEIS, and new proposed actions could result in new or different significant adverse impacts than those disclosed in the 2008 FGEIS. Existing conditions are updated as necessary and presented. Next, the chapter projects changed existing conditions forward into the future without the proposed project, incorporating the most recent information available on known land-use proposals and, as appropriate, changes in anticipated overall growth. Finally, the future with the proposed project is described, the differences between the future without and with the proposed project are measured, and any significant adverse environmental impacts are disclosed. To the extent that specific discretionary actions or program elements could potentially alter the conclusions in the 2008 FGEIS and subsequent technical memoranda, the SEIS focuses on evaluating the potential significant adverse impacts of those actions or elements. The SEIS also identifies and analyzes appropriate mitigation for any significant adverse environmental impacts.

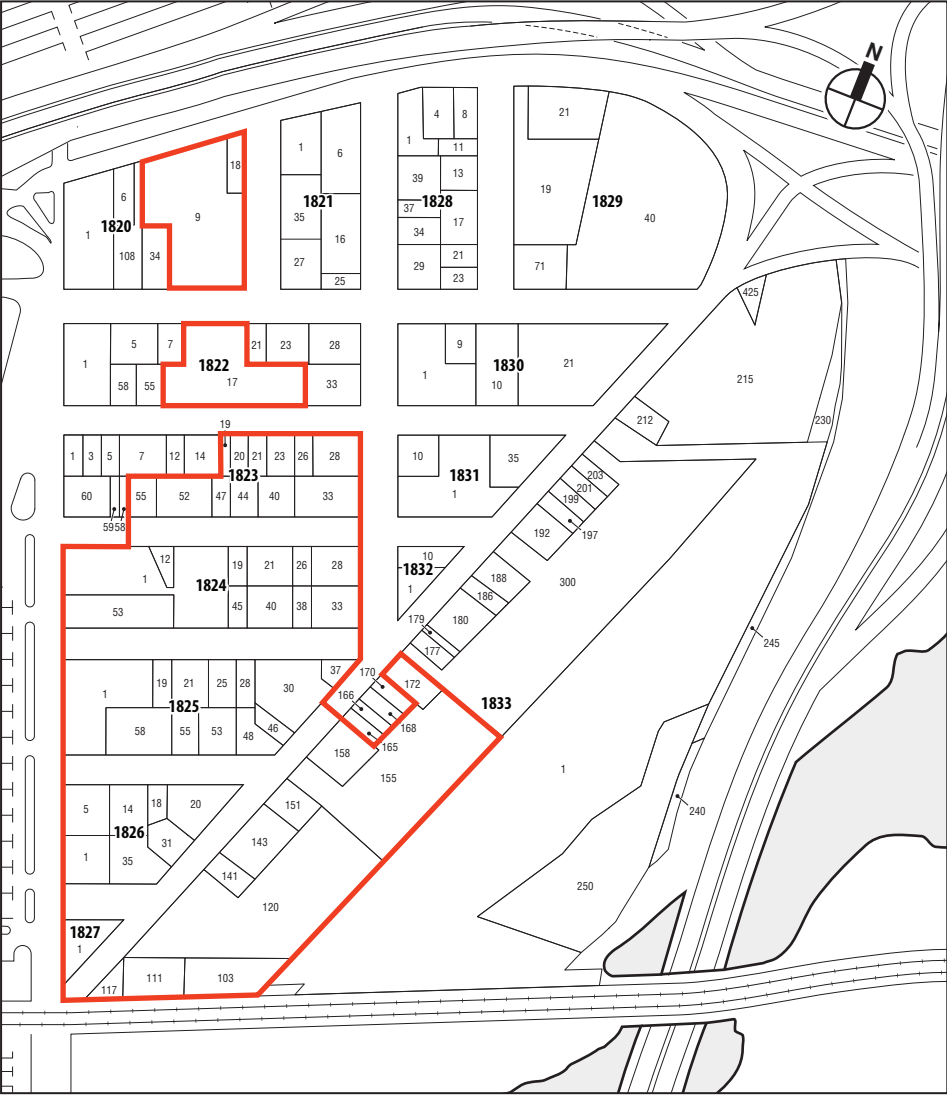
While the 2008 FGEIS was prepared in accordance with the guidelines set forth in the 2001 *CEQR Technical Manual*, this SEIS addresses the updated guidance and analysis methodologies provided in the 2012 *CEQR Technical Manual*.

REASONABLE WORST-CASE DEVELOPMENT SCENARIO

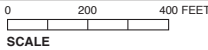
The proposed program detailed above, along with the potential development analyzed in the 2008 FGEIS for Lot B, is analyzed as the reasonable worst-case development scenario (RWCDs) in the SEIS. It is currently anticipated that the assemblage of land within the Special Willets Point District for the Phase 1A and Phase 1B developments could take one of two forms, as shown in **Figure S-7**. As shown, both assemblage options would include Block 1823 (Lots



Assemblage Option 1



Assemblage Option 2



19, 20, 21, 23, 26, 28, 33, 40, 44, 47, 52, and 55), Block 1824, Block 1825, Block 1826, Block 1827, Block 1833 (Lots 117, 111, 103, 120, 141, 143, 151, 155, 158, and 172), and Block 1822, Lot 17. In addition to the land common to the two assemblage options, Assemblage Option 1 would include the remaining lots on Block 1823, that is Lots 1, 3, 5, 7, 12, 14, 58, 59, and 60. Assemblage Option 2 would not include the land specific to Assemblage Option 1, but would instead include Lots 9 and 18, on Block 1820. In either scenario, the assemblage would total approximately 23 acres. However, for the purposes of a conservative analysis, the SEIS assumes that all of the potential project site area, totaling 25 acres, would be utilized in Phase 1A and 1B development. For Phase 2, the SEIS assumes that all land comprising both assemblage options taken for Phases 1A and 1B has been developed.

The SEIS analyzes the potential development of parking, retail, and office uses on Lot B, a portion of the CitiField leasehold along Roosevelt Avenue. The 2008 FGEIS anticipated that if the Willets Point Development Plan were approved and the District were redeveloped into a new mixed-use community and regional destination, additional development could occur on this lot. Any such program for Lot B would require an amendment to the current lease agreement and discretionary approval by IDA, acting through the New York City Department of Parks and Recreation (DPR), which administers the IDA lease. This action would be the subject of a separate environmental review process subject to SEQRA and/or CEQR. This potential development is not part of the proposed program, and no specific development plans have been proposed; however, for the purposes of a conservative analysis, a conceptual program for Lot B will be analyzed as part of the RWCDS. The conceptual program to be analyzed is the same as proposed in the 2008 FGEIS: 184,500 sf of retail use and 280,000 sf of commercial use, which could include a one-story retail structure and a 10-story office building. The existing VIP/ADA (Americans with Disabilities Act) parking spaces on Lot B are assumed to be replaced on site; accessory parking for the Lot B development is assumed to be included on Lot D, as analyzed in the 2008 FGEIS. For the purposes of the RWCDS, it is assumed that this development would be completed by 2032.

STUDY AREAS

Each technical study must address impacts within an appropriate geographical area. These “study areas” vary depending on the technical issue being addressed. In most cases, the study areas for the SEIS for impacts arising from the proposed project are different than those presented in the 2008 FGEIS because the geographic extent of the project site for the SEIS will extend west of West 126th Street.

FUTURE ANALYSIS YEAR AND BASELINE CONDITIONS

The analysis of the proposed project is performed for the expected year of completion of full build-out of the project, which is anticipated to be 2032. However, some project elements are anticipated for completion by 2018 and 2028, and those elements could result in significant adverse impacts prior to completion of the full development program. While the construction of the Phase 1B program is anticipated to take four years, the buildings within the Special Willets Point District are not expected to be ~~occupied~~ constructed until the Van Wyck Expressway ramp improvements have been completed, which is slated to be in 2024. Therefore, three future baseline conditions are examined under the “future without the proposed project” in all technical chapters: the 2018, 2028, and 2032 No Action scenarios. For the purposes of a conservative analysis, this SEIS assumes that the existing uses on the project site would be maintained in each of the three No Action scenarios.

E. PROBABLE IMPACTS OF THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse impacts to land use, zoning, or public policy.

As anticipated in the 2008 FGEIS, the proposed project would dramatically change land uses in the Special Willets Point District by replacing predominantly low-density, auto-related, and industrial uses with a new mixed-use neighborhood. The proposed project also would constitute a significant change for the Willets West portion of the project site by replacing a surface parking field with a new entertainment and retail center of approximately 1.4 million gross square feet (gsf) (approximately one million square feet (sf) of gross leasable area). New structured parking facilities would be built on the South Lot and Lot D to accommodate a portion of the parking for Mets patrons relocated from the Willets West surface parking field.

While the proposed project would result in significant land use changes on the project site, the effects of this change would not be adverse. The District would create a dynamic, sustainable community by integrating regional attractions and residential, retail, and other uses within a network of pedestrian-scaled streetscapes. The previously approved zoning regulations would continue to determine elements such as the placement of uses within the District, building heights and setbacks, street controls (i.e., mandatory intersections and street types), streetscape design, and basic site planning and design provisions. The Willets West portion of the project would create a regional entertainment and retail destination center that would support and be compatible with the new uses in the District as well as uses in the surrounding area.

Consistent with the 2008 FGEIS, the proposed project represents a critical step in implementing the 2004 Downtown Flushing Development Framework, a land use and economic planning strategy for the growth of Downtown Flushing, the Flushing waterfront, and adjacent areas. The District would be developed pursuant to the zoning regulations approved in 2008 and pursuant to the proposed zoning text amendment, and the proposed project would advance a number of the Framework's fundamental goals, including the creation of a regional destination that would enhance economic growth in Downtown Flushing; improvement of environmental conditions; and integration of new development with surrounding amenities, including the Flushing Bay Promenade, CitiField, Flushing Meadows-Corona Park, and Downtown Flushing. The proposed project would be consistent with and vital to the advancement of several of the goals of PlaNYC, which aim to create a more sustainable New York by the year 2030. The proposed project would also be consistent with the coastal policies set forth in the New York City Waterfront Revitalization Program (WRP).

SOCIOECONOMIC CONDITIONS

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse impacts to socioeconomic conditions. The following summarizes the conclusions for each of the six CEQR areas of socioeconomic concern.

DIRECT RESIDENTIAL DISPLACEMENT

The proposed project would result in the same direct residential displacement as identified in the 2008 FGEIS (one residential unit/household located in the District); there are no residential units located on the expanded portions of the project site. Therefore, the SEIS does not require further assessment of potential socioeconomic impacts due to direct residential displacement.

INDIRECT RESIDENTIAL DISPLACEMENT

A detailed analysis finds that the proposed project would not result in significant adverse impacts due to indirect residential displacement. The proposed project would develop more total residential units (5,850 vs. 5,500) and more affordable housing (35 percent of units) than analyzed in the indirect residential displacement analysis of the 2008 FGEIS, which considered the Convention Center Scenario. The increase in the affordable housing percentage was analyzed in the subsequent Technical Memorandum No. 2 (2008), and no significant adverse impacts were identified related to that change.

The increase in the number of residential units as analyzed in the SEIS does not alter the 2008 FGEIS finding that the District is geographically separated from the at-risk population, limiting its potential to influence surrounding residential trends. Residential markets within the study area are similar to the markets described in the 2008 FGEIS; as with the FGEIS, the SEIS finds that these geographically separated communities would experience upward rent pressure with or without the proposed project due to planned projects that are within their distinct residential markets. Similar to the 2008 FGEIS, the SEIS finds that although the population that would be introduced by the proposed project may include a larger proportion of households at higher incomes as compared with the existing study area population, the proposed project's 2,048 affordable housing units would ensure that a substantial portion of the new population would have incomes that would more closely reflect existing incomes in the study area.

DIRECT BUSINESS DISPLACEMENT

The proposed project would result in the same direct business displacement identified and analyzed in the 2008 FGEIS and subsequent technical memoranda, and market conditions are similar to those described in the 2008 FGEIS; there are no businesses located in the expanded portions of the project site.¹ Therefore, the SEIS does not require further assessment of potential socioeconomic impacts due to direct business displacement.

The 2008 FGEIS found that the Willets Point Development Plan would displace approximately 260 businesses and 1,711 employees associated with those businesses. As of December 2012, there were an estimated 220 businesses and 1,353 employees still located within the District portion of the project site. As shown in **Table S-4**, a vast majority of the remaining businesses (193 businesses, or 88 percent) are auto-related, but those businesses employ only 53 percent of the remaining employees. The remainder of the employees works in the 27 non-auto-related businesses.

¹ Any businesses locating in the District since the 2008 FGEIS have voluntarily done so knowing that they could be displaced; therefore, they do not meet the CEQR definition of direct business displacement, which is the involuntary displacement of businesses from a project site.

Willets Point Development

While the timeline for the displacement of any individual business varies depending on its business plans and relocation efforts, overall it is anticipated that by the 2018 Build year all of the 122 remaining businesses currently located in the Phase 1A/Phase 1B portion of the project site would be displaced to accommodate development of Phase 1A. The 98 remaining business located in the Phase 2 portion of the project site would be displaced by the 2028 Build year.

Table S-4
Project Site Employment by Business Type and Sector
December 2012

North American Industry Classification System (NAICS) Economic Sector	Number of Businesses/ Institutions	Percent of Businesses/ Institutions	Number of Jobs	Jobs as a Percentage of Total
Auto-Related Businesses	193	88%	712	53%
Retail Trade (NAICS 44 & 45)	31	14%	210	16%
Repair & Maintenance Services (NAICS 811)	153	70%	457	34%
Wholesale Trade (NAICS 42) – <i>scrap yards</i>	4	2%	33	2%
Transportation & Warehousing (NAICS 48)	5	2%	12	1%
Non Auto-Related Businesses	27	12%	641	47%
Construction (NAICS 236 & 238)	6	3%	147	9%
Manufacturing (NAICS 31-33)	5	2%	72	5%
Wholesale Trade (NAICS 42)	7	3%	232	12%
Administrative and Support and Waste Management and Remediation Services (NAICS 56)	5	2%	178	11%
Arts, Entertainment & Recreation (NAICS 71)	0	0%	0	0%
Accommodation & Food Services (NAICS 72)	5	2%	12	1%
Other Services (NAICS 813)	0	0%	0	0%
Total District Businesses	220	100%	1,353	100%
Notes: Employment figures for auto repair and maintenance establishments were derived from AKRF site visits, interviews by Howard/Stein-Hudson, Cornerstone and EDC business interviews, and estimates for businesses based on New York State Department of Labor (DOL) sector averages for Queens County and Dun and Bradstreet.				
Sources: AKRF, Inc., Howard/Stein-Hudson Business Survey, Cornerstone interviews, EDC, DOL				

EDC has contracted with Cornerstone Group, a business relocation expert, to provide relocation assistance and advisory services to impacted businesses in Willets Point. Cornerstone Group has been engaged in outreach to tenant businesses since January 2008 and commenced its most recent round of outreach to affected Willets Point businesses on City-owned property in September 2012. They have already identified several potential relocation sites and will continue to work with business to provide relocation assistance.

EDC retained LaGuardia Community College (LAGCC) to develop a Workforce Assistance Plan for District workers who are directly displaced by the project. The program provides displaced workers with services such as job training and job placement services, ESL and GED coursework, and additional social services. To date, there have been over 600 program participants and the program is ongoing.

INDIRECT BUSINESS DISPLACEMENT DUE TO INCREASED RENTS

The proposed project would introduce approximately 1.4 million gsf (1.0 million sf of leasable area) of entertainment and retail uses as part of Willets West, which was not analyzed in the 2008 FGEIS. The SEIS preliminary assessment finds that these additional commercial and entertainment uses would not introduce trends that are substantially different from those identified in the 2008 FGEIS, and would not result in significant indirect business displacement due to increased rents.

While the proposed project's uses would be a substantial addition to the ¾-mile study area, they would not be new types of uses within the study area, and therefore would not introduce a new trend that could substantially alter economic patterns. The study area is already experiencing a trend toward increased retail and residential development. The proposed project's additional retail would serve existing residents, and would accommodate future consumer demand introduced by residents of planned developments and the proposed project. The uses, residents, and workers introduced by the proposed project represent a continuation of existing trends, rather than a new trend that would place upward pressure on office rents in the study area. Similarly, there are already destinations in the study area that offer entertainment and/or recreational opportunities, including Flushing Bay Promenade, CitiField, USTA National Tennis Center, Flushing Meadows-Corona Park, College Point Multiplex Theater, and Downtown Flushing.

INDIRECT BUSINESS DISPLACEMENT DUE TO RETAIL MARKET SATURATION

The proposed project would introduce approximately 1.4 million gsf (1.0 million sf of leasable area) of entertainment and retail uses as part of Willets West, which was not analyzed in the 2008 FGEIS. Similar to the 2008 FGEIS, the SEIS analysis finds that the proposed project, including these additional proposed retail uses, would not substantially raise retail market capture rates within a 5-mile Primary Trade Area and, therefore, would not have the potential to adversely affect competitive stores in the Primary Trade Area.

The SEIS preliminary assessment finds that the retail introduced by the proposed project would result in trade area capture rates well below 100 percent by 2032, which is the *CEQR Technical Manual* threshold requiring detailed analysis.¹ However, to maintain a scope of analysis consistent with that performed for the 2008 FGEIS, the SEIS includes a detailed analysis of indirect business displacement due to retail market saturation.

Similar to the analysis in the 2008 FGEIS, the detailed analysis focuses on grocery stores in the immediate vicinity of the proposed project, in particular, because grocery stores generally serve as anchors for retail concentrations, and the proposed project could introduce stores offering products that substantially overlap with typical grocery store offerings. In addition, the SEIS detailed analysis examines the future viability of anchors in regional retail centers, including movie theaters and restaurants, because the Willets West component of the proposed project would constitute a major new shopping and entertainment center, adding destination retail space to the Primary Trade Area.

The detailed analysis finds that the amount of indirect business displacement due to competition from the proposed project would be minimal, is not expected to jeopardize the viability of any neighborhood retail strips, and is not expected to diminish the level of services provided. Therefore, the proposed project would not result in significant adverse impacts due to retail market saturation.

¹ The 2008 FGEIS analysis of indirect business displacement due to competition was performed under the 2001 CEQR Technical Manual, which required detailed analysis even when capture rates were below 100 percent. The 2012 CEQR Technical Manual does not require similar detailed analysis if capture rates with the proposed project do not exceed 100 percent.

ADVERSE EFFECTS ON A SPECIFIC INDUSTRY

The proposed project would result in the same direct business displacement as analyzed in the 2008 FGEIS, and would not present any new or different uses that would alter the findings of the 2008 FGEIS with respect to potential effects on the auto industry or industries dependent on auto repair. Therefore, no further assessment of this issue of concern is required for the SEIS.

COMMUNITY FACILITIES

The analysis ~~provided below~~ regarding potential indirect effects to health care facilities and police and fire protection facilities concludes that—consistent with the conclusions of the 2008 FGEIS—the proposed project would not result in any significant adverse impacts on these community facilities and services.

The analysis of potential indirect effects on elementary, intermediate, and high schools finds that the proposed project would not result in any significant adverse impacts on high schools. In order to accommodate all of the project-generated elementary and intermediate school students, thereby avoiding any significant adverse impacts, the Queens Development Group, LLC (QDG) would coordinate with the School Construction Authority (SCA) to determine whether the public school space currently planned as part of Phase 1B would be sufficient to accommodate all of the school children generated by the proposed project by 2028. Provision of the school in Phase 1B would be ensured through a contractual agreement. If necessary, the school spaces would be expanded, and corresponding reductions in square footage would be made elsewhere in the development program. For Phase 2, the New York City Economic Development Corporation (EDC) would require as part of the developer's agreement that the designated developer similarly coordinate with SCA.

The analysis of potential indirect effects on library services finds that the holdings per resident ratio for the combined study area would decrease from 3.03 under the No Action condition to 2.80 with the proposed project in 2032. This ratio would decrease to 5.02 for the Flushing Library and to 0.69 for the Corona Library. For both the Flushing Library and Corona Library, the catchment area population increase would exceed five percent, which may represent a significant adverse impact on library services according to the *CEQR Technical Manual*. However, as noted above, many of the residents in the catchment areas also reside within the catchment areas for other nearby libraries and would also be served by these libraries, residents of the study area would have access to the entire Queens Library system through the inter-library loan system, and would also have access to libraries near their places of work. In consideration of the above, the lead agency, in consultation with the Queens Public Library, has determined that the additional population introduced by the proposed project would impair the delivery of library services in the study area in 2032. Therefore, Phase 2 of the proposed project would result in a significant adverse impact on library services. To mitigate this impact, adequate space¹ within the 125,000 square feet of as-yet-unprogrammed community facility space in the program for Phase 2 ~~could potentially~~ would be made available to be utilized as a branch library or auxiliary facility for the Queens Library system, or additional volumes or programs to accommodate new users could be provided if adequate space in nearby branches exists. Although no developer has yet been

¹ In other projects, 15,000–20,000 square feet of community facility space has been adequate for the operation of a branch library.

designated for Phase 2, the provision of additional library space in Phase 2 would be based on further consultation with Queens Public Library and the lead agency.

The analysis of indirect effects on child care facilities finds that the proposed project may result in significant adverse impacts on publicly funded child care facilities in 2028. Therefore, consistent with the conclusions of the 2008 FGEIS, to mitigate the potential impact on child care facilities that could occur by 2028, the QDG (i) would consult with the New York City Administration for Child Services (ACS) to determine whether adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site is the appropriate way to meet demand for child care services generated by the proposed project; and (ii) would, as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site. EDC would require, as part of the developer's agreement, that the designated developer of Phase 2 similarly consult with ACS to determine the appropriate way to meet demand for child care services generated by development in the District by 2032 and would as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site.

OPEN SPACE

This analysis finds that the RWCDs would not result in significant adverse open space impacts that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

DIRECT EFFECTS

By 2018, the Willets West portion of the proposed project would be constructed upon 30.7 acres of the surface parking lot west of CitiField, and one of the CitiField parking lots along Roosevelt Avenue (South Lot) would also be developed. While this land is mapped as parkland, it does not function as recreational open space. The land was occupied by Shea Stadium and associated parking and circulation space until it was replaced by CitiField in 2009, and it is now occupied exclusively by surface parking. There is one event—the Major League Wheelchair Softball Tournament—that is held in this area; however, this is not an event that occurs on a constant and regular basis for designated daily periods. This parking area is therefore not considered a public open space use as defined under CEQR. Furthermore, the Major League Wheelchair Softball Tournament would be relocated to the Special Willets Point District in Phase 1A of the proposed project. Therefore, developing this mapped parkland has no direct effect on the adequacy of open space for the study area residential and non-residential populations.

The proposed project would activate the Willets West area, making the area more appealing to residential and non-residential populations and improving connections between the study area populations and the Flushing Bay Promenade. It is anticipated that some of the trees within the Willets West portion of the project site would require removal during construction, as would trees within the Lot B area. Tree replacement would be conducted in conformance with DPR requirements, including approval from DPR's Queens forestry division. The portions of the project to be constructed by 2028 and 2032 also would have no direct effect on the adequacy of open space for the study area residential and non-residential populations.

The proposed project would not have any adverse impacts on existing open space in terms of air quality, noise, or shadows. The World's Fair Marina Park, which was predicted in the 2008 FGEIS to experience a significant adverse noise impact during the Saturday mid-day time period, is no longer expected to experience a significant adverse impact.

Willets Point Development

The proposed project would add to the inventory of open space in the study area. During Phase 1A of the proposed project, the parking area within the Special Willets Point District would be converted to active recreational use a minimum of six months per year. Permanent publicly accessible open space would be built as part of Phase 1B and Phase 2, in accordance with the District's zoning requirements, as residential populations are introduced. Phase 1B would include approximately six acres of new publicly accessible open space, approximately 3.5 of which would subsequently be developed with new structures in Phase 2. Phase 2 would create another 5.5 acres of open space, for a total of 8 acres of publicly accessible open space at the conclusion of the development of the proposed project.

INDIRECT EFFECTS

Although the development of the proposed project would include the creation of publicly accessible open space, because it would also introduce demand from a new population the RWCDS would result in a decrease in total, active, and passive open space ratios in the residential study area and a decrease in total and passive open space ratios in the non-residential study area. These decreases would not result in a significant adverse open space impact. Open space ratios would remain near or above the recommended City guidelines, with the exception of the active open space ratio, which would decrease from 1.80 acres per 1,000 residents in the 2018 No Action condition to 1.54 in the 2028 With Action condition and 1.31 in the 2032 With Action condition. The total open space ratio would remain above the recommended City guideline until 2032, when it would decrease to 2.46, falling slightly below the guideline of 2.5 acres per 1,000 residents. The amount of active open space available in the study area during Phase 1A would be higher than indicated by the ratios, due to the presence of the interim active recreational use to be provided within the District, which was not considered in the open space ratios. Upon completion, the RWCDS would include a minimum of 8 acres of publicly accessible open space, including an approximately two-acre park developed with primarily active recreational uses.

The RWCDS would not result in a significant adverse open space impact during any of the three analysis years. The proposed project would introduce substantial new open space, and study area residents would continue to have access to the portions of Flushing Meadows-Corona Park and the Flushing Bay Promenade that fall just outside of the residential study area's boundaries. Further, QDG would work to incorporate ground-level, active open space and other recreational resources such as rooftop and interior programming of recreational amenities into the project design for Phase 1B, and EDC would encourage through its formal Request for Proposals (RFP) process the future developer of Phase 2 to incorporate similar features into the Phase 2 development. While these recreational amenities may be available only to tenants and residents of the site—and thus have not been included in the quantitative analysis—these amenities would help offset the burden on public active and passive resources resulting from the introduction of new users on the project site.

SHADOWS

The analysis concluded that the proposed parking structure in the South Lot would cast new shadows early in the mornings in all seasons onto adjacent traffic islands and a portion of an area containing trees, but that the shadows would be limited in extent and duration and would not cause significant adverse shadow impacts to these sections of Flushing Meadows-Corona Park. The Willets West development would cast new shadows of very limited extent and duration on nearby landscaped traffic islands in the winter only, and these would not cause significant

adverse shadow impacts. Therefore, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in any significant adverse shadows impacts.

HISTORIC AND CULTURAL RESOURCES

This analysis finds that the proposed project would not result in significant adverse impacts related to historic and cultural resources that were not addressed in the 2008 FGEIS or subsequent technical memoranda. Consistent with the findings in the 2008 FGEIS, the development that would occur within the Special Willets Point District during Phase 2 of the proposed project would have a significant adverse impact on the former Empire Millwork Corporation Building.

URBAN DESIGN AND VISUAL RESOURCES

This analysis concludes that the proposed project would not have any significant adverse impacts related to urban design and visual resources, consistent with the findings of the 2008 FGEIS and subsequent technical memoranda.

NATURAL RESOURCES

This analysis finds that existing conditions and potential impacts to natural resources are largely the same as were addressed in the 2008 FGEIS and subsequent memoranda, and that the RWCDs would not result in significant adverse impacts to floodplains, wetlands, groundwater, terrestrial resources, aquatic resources and Essential Fish Habitat (EFH), threatened or endangered species, species of special concern, or rare ecological communities. The 100-year floodplain within and adjacent to the study area is affected by coastal flooding rather than local flooding, and therefore, would not be affected by construction or regrading/filling that would occur as part of the RWCDs; building designs would be consistent with *New York City Building Code* requirements for construction within the 100-year floodplain and any future changes to these requirements that may be made on the basis of the newly-released FEMA ~~Advisory Base Flood Elevations~~ Best Available Flood Hazard Data (BAFHD). Prior to commencement of construction for each phase of the project, the project sponsor will work with the Mayor's Office of Environmental Coordination (MOEC) to develop a plan for resilience of the proposed area to be developed in that phase from future flood levels, considering the types of uses proposed. No wetlands are present on or adjacent to Willets West or the South Lot, and wetland boundaries in the vicinity of the District, Lot B, and Lot D are as described in the 2008 FGEIS. No significant adverse impacts to wetlands would occur as a result of the RWCDs. Terrestrial natural resources, such as vegetation and wildlife, are largely the same as described in the 2008 FGEIS, and the RWCDs would have no significant adverse impacts to these resources, including threatened or endangered species. Consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts to groundwater quality. With the implementation of erosion and sediment control measures, water quality, aquatic biota, and EFH of Flushing Bay would not be affected by land-disturbing construction activities. No in-water construction would occur. The proposed stormwater infrastructure for the RWCDs may improve stormwater quality above the existing condition by addressing existing chronic flooding, improving the quality of the soil substrate of the site, providing direct drainage to storm sewers, and incorporating sustainable design features, where feasible, to reduce the discharge volume. Overall, no significant adverse impacts to natural resources would result from the RWCDs.

HAZARDOUS MATERIALS

This analysis finds that, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials.

As described below, Phase I Environmental Site Assessments (ESA) have been performed for the entire project site. These identified the potential for contamination due to current and past usage:

- **Special Willets Point District:** sampling undertaken as part of previous Phase II ESAs confirmed that contamination is present and is expected to be widespread.
- **Lot D:** Tires and apparently empty 35-gallon drums were present on Lot D. Evidence of a potential underground storage tank was observed. However, the Phase I ESA found no registered historical or current petroleum storage tanks, which indicates that the tank may have been installed/operated prior to tank registration requirements or may have been of too small a capacity to require registration. Prior to development, a Phase II ESA would be performed for Lot D to assess potential contamination and assist in preparation of any necessary remedial plans and health and safety procedures.
- **Lot B:** Subsurface sampling identified fill material (including cinders, wood, brick, metal, and asphalt) overlying marsh deposits. This was consistent with historical information regarding prior conditions and uses. The soil sampling did not identify significant contamination (the results were consistent with those usually found in historical fill materials in New York City). Similarly, the shallow groundwater sampling identified some levels (generally of metals) above the most stringent (drinking water) standards but these were consistent with the levels of metals found in the soil samples of the fill material. The soil gas sampling found elevated levels of methane (potentially attributable to the marsh deposits).
- **Willets West and South Lot:** The Phase I ESA indicated that these portions of the project site were also part of the much larger “ash dump” in the early part of the 20th century. Around 1950, Willets West was paved and used for parking until 1964, when Shea Stadium opened on the property. The South Lot has been used for parking since the mid 1960s. In 2009, Shea Stadium was demolished and has since been used for parking with multiple small ticketing structures. The Phase I ESA found no evidence of historical or current petroleum storage tanks or other historical uses of concern. Prior to development, a Phase II ESA would be performed for the Willets West and South Lot areas to assess potential contamination and assist in preparation of remedial plans, if necessary, and health and safety procedures to be implemented during construction.

By implementing investigation and remediation measures including appropriate engineering/institutional controls into the development, as well as incorporating health and safety procedures into the construction, it is expected that no potential exposure or significant adverse impacts related to hazardous materials would occur during or after construction of the proposed project. Construction of the proposed project would involve both demolition of all existing structures (some of which are believed to contain asbestos containing materials, lead-based paint, and polychlorinated biphenyls containing electrical components) and a variety of earthmoving/excavating activities that would encounter subsurface contamination (e.g., petroleum, solvents, polychlorinated biphenyls, or other contaminants associated with the area’s historical filling), particularly within the District. To avoid the potential for significant adverse

impacts related to hazardous materials the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and comprehensive investigative/remedial measures (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) that would be undertaken in conjunction with the excavation and disturbance of fill material. Understanding that the entire area includes ash fill and that within the project site fill material would remain, residual soil and groundwater contamination would need to be accounted for in any new development. Engineering controls to address the residual contamination can include a variety of measures including but not limited to capping surfaces, groundwater controls to prevent migration, and systems beneath buildings to prevent infiltration of soil vapor.

While development of the District is contemplated to occur in phases, Phase 1A will incorporate a comprehensive site investigation and associated remedial action that will remove areas of significant contamination and prepare the site for development. When subsequent development takes place over or adjacent to these areas, measures will be undertaken to prevent human exposure. These will include stringent measures for dust control, procedures for dewatering, proper handling and disposal or backfill of excavated material and prevention of stormwater pollution from runoff. Additional measures (e.g., the mandatory implementation of appropriate health and safety procedures) will be undertaken to prevent exposure following development during intrusive work and subsurface utility repairs at developed sites.

Institutional controls would be used to ensure that the various measures outlined above would be implemented, all lots in the project site would have restrictions placed on them. Specifically, for the District, these restrictions include the E designations already placed following the 2008 FGEIS and potentially State of New York Brownfield Cleanup Program (BCP) requirements, should any developments enter into this (voluntary) program. For lots outside of the District, the restrictions would be incorporated into the development agreements and/or amended leases for each lot. These lots are and would remain in City ownership.

A Phase II Subsurface Investigation Work Plan and a Health and Safety Plan (HASP) were prepared for the Willets West portion of the project site in February 2013 and submitted to the New York City Department of Environmental Protection (DEP) for review and approval. The Phase II Work Plan and HASP were revised and resubmitted to DEP in June 2013 based on a DEP letter requiring additional testing (dated March 27, 2013), and the revised Work Plan and HASP were approved by DEP in a letter dated July 31, 2013.

WATER AND SEWER INFRASTRUCTURE

This analysis finds that the proposed project would not result in significant adverse impacts to water and sewer infrastructure that were not addressed in the 2008 FGEIS and subsequent technical memoranda. Infrastructure improvements would be required for various phases of the project, as detailed in this section:

PHASE 1A

New 12-inch water mains in 35th Avenue, 126th Street, 127th Street, and Willets Point Boulevard would be constructed as necessary to support the proposed development. For Willets West, a new on-site water loop would be required to tie into existing water main in Roosevelt Avenue.

Willets Point Development

Sanitary sewer infrastructure, either existing or being built by the New York City Economic Development Corporation (EDC), would be adequate to accommodate the Phase 1A development. A 36-inch sanitary sewer, as well two stubbed connections in 126th Street: one 24-inch and one 16-inch, is currently being constructed by EDC. As a part of the proposed project, the 16-inch connection would be extended south along 126th Street by the Queens Development Group, LLC (QDG). Based on current estimates, the 36-inch sanitary sewer under construction, the 24-inch sewer downstream from it, and the 37th Avenue pump station would have sufficient capacity to accommodate the development proposed under Phase 1A. As part of the Phase 1A DEP approval process, QDG would work with DEP to assess the operations of the existing pump station. Based on this assessment, QDG would replace or upgrade components identified as requiring such work as a result of the additional flows associated with the Phase 1A development. Based on measured existing flow to the Bowery Bay Water Pollution Treatment Plant (WPTP) and the projected sanitary flow from the proposed development in Phase 1A, the WPTP would have sufficient capacity to accommodate the proposed project flow.

A 7.5-foot by 5-foot box storm sewer currently under construction by EDC would be extended south along 126th Street by QDG as part of the proposed project to accommodate Phase 1A development within the Special Willets Point District. For Willets West and the other sites, existing infrastructure would be sufficient to convey stormwater runoff.

PHASE 1B

Consultation with DEP would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required to support the Phase 1B development. As assumed in the 2008 FGEIS, the existing 72-inch water main within Willets Point Boulevard would remain in place and a permanent easement, mapped on the City map, would be provided to enable DEP access to this water main. A grade change and replacement of portions of the water main, contemplated in TM#4 would not be required.

Based on current estimates, the 36-inch sanitary sewer currently under construction would have sufficient capacity to accommodate the development proposed under Phase 1B. Upgrades to the 37th Avenue pump station and its force main would likely be required for Phase 1B development. If needed to support Phase 1B development, QDG would fund the 37th Avenue pump station upgrade, at the time when the need arises. It is anticipated that the upgrade would occur within the existing city land or rights-of-way. Verification of this requirement by DEP will be obtained prior to Phase 1B development. Based on measured existing flow to the Bowery Bay WPTP and the projected sanitary flow from the proposed development through Phase 1B, the WPTP would have sufficient capacity to accommodate the proposed project flow.

Stormwater and sanitary sewer infrastructure constructed would be sized in accordance with the DEP-approved amended drainage plan (ADP) prepared by QDG.

PHASE 2

For the District, consultation with DEP would be required to determine water supply requirements for Phase 2 of the proposed project. Additional internal water service would likely be required to support the proposed development in 2032. Additionally, consultation with DEP would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required to support the Phase 2 development, if not already constructed in a prior phase. For all other sites, water service would remain as constructed.

For the District, new sanitary sewer trunk mains would be required in Northern Boulevard 126th Street, and Roosevelt Avenue. These sewers would be sized in accordance with the ADP that would be developed. Based on current estimates, the 36-inch sanitary sewer currently under construction would have sufficient capacity to accommodate the development proposed with the full development through Phase 2. Per the draft ADP, upgrades to the 37th Avenue pump station and its force main would be required for Phase 2. Specifically, the operating capacity of the 37th Avenue pump station (currently 3,450 gpm) would need to be upgraded to 8,400 gpm. If not previously performed upgrades to the 24-inch sewer under the Grand Central Parkway, the 37th Avenue pump station and its associated downstream force main would be required, and would be funded by the developer of Phase 2. These upgrades would be in conformance with the DEP approved ADP. Based on measured existing flow to the Bowery Bay WTP and the projected sanitary flow from the proposed development through Phase 2, the WTP would have sufficient capacity to accommodate the proposed project flow.

For the District, new storm sewers would be required in Northern Boulevard, 126th Street, and Roosevelt Avenue. These sewers would be sized in accordance with the ADP developed for Phase 2. In addition, a 60-inch outfall would be required in 127th Street for Phase 2.

SANITATION AND SOLID WASTE

This analysis finds that the RWCDS would not result in significant adverse impacts to solid waste and sanitation that were not addressed in the 2008 FGEIS or subsequent technical memoranda.

While the RWCDS would create new demands on solid waste and sanitation services, the municipal systems serving the project site area have adequate capacity to meet the projected increases in demand. The New York City Department of Sanitation (DSNY), which collects solid waste and recyclables, is anticipated to provide municipal solid waste and sanitation services to the District. Private carters currently and will continue to provide these services to non-residential users. The RWCDS would cumulatively increase the volumes of solid waste and recyclables, but would not affect the delivery of these services, place a significant burden on the City's solid waste management services (public or private), or require any amendments to the City's solid waste management objectives as stated in the SWMP. As disclosed in the 2008 FGEIS, the RWCDS would displace waste transfer businesses from the District by 2032, but this displacement would not have a significant adverse impact on the waste and sanitation services in Queens or in New York City.

ENERGY

Consistent with the findings of the 2008 FGEIS and subsequent technical memoranda, this analysis concludes that the proposed project would not result in significant adverse impacts on energy demand and infrastructure. The cumulative annual energy consumption that would result from the RWCDS, including the potential future development on Lot B, would be 1,952,503 million BTUs. Phase 1A and 1B are subject to Local Law 86 of 2005 (see New York City Charter section 224.1) and the project sponsor would comply with the requirements thereof. To the extent Local Law 86 of 2005 applies to any portion of Phase 2, the City would further ensure that the sponsor for Phase 2 complies with the requirements thereof. Accordingly, in Phase 1A, the retail buildings, including the proposed development on the Willets West site, will be designed and constructed to achieve Leadership in Energy and Environmental Design (LEED) silver certification for core and shell (LEED-CS), and the hotel building will be designed and

constructed to achieve LEED silver certification for new construction (LEED-NC). In Phases 1B and 2, as set forth in the FGEIS and reiterated in Technical Memorandum #4, all portions of the project within the Willets Point Special District will be required to achieve LEED for neighborhood development (LEED-ND) certification. Phase 1B buildings will also comply with all the applicable requirements of Local Law 86 of 2005. Specifically, retail, hotel, community facility and office buildings will be designed and constructed to achieve LEED silver certification pursuant to the LEED rating system that is most appropriate under Local Law 86 (see Section 10-02 of chapter 10 of title 43 of the Rules of the City of New York). To meet the requirements of LEED and the energy cost reduction requirements of Local Law 86 of 2005 that are applicable to the project under NYC Charter section 224.1(b)(2)(ii), energy efficiency measures would be incorporated into building designs, as described in this chapter. The requirements of Local Law 86 of 2005 and the commitments set forth in this chapter would be incorporated into the development agreements and/or amended lease agreements. The provisions of the development agreements and/or amended lease agreements, relating to substance and enforceability of these commitments, would be subject to approval by Mayor's Office of Environmental Coordination.

TRANSPORTATION

TRAFFIC AND PARKING

As was found in the FGEIS, the proposed project is expected to be a significant traffic generator on both the highways surrounding the project site—including the Grand Central Parkway, the Van Wyck Expressway, and the Whitestone Expressway—and the local street network over the course of its three buildout phases. The With Action volume increments generated by the proposed project would be as follows:

Phase 1A of the project is expected to generate 883 vehicles per hour (vph) in the AM peak hour, 2,517 vph in the midday peak hour, 2,618 vph in the PM peak hour on a typical weekday without a Mets home game, and 3,132 vph in the Saturday midday peak hour on a non-game weekend. For peak hours with a Mets home game, the proposed project is expected to generate 2,324 vph in the weekday PM (evening) pre-game peak hour, 2,313 vph in the Saturday afternoon pre-game peak hour, and 2,063 vph in the Saturday evening post-game peak hour.

With the completion of Phase 1B, 2,649 vehicles per hour (vph) would be generated in the AM peak hour, 5,152 vph in the midday peak hour, 5,420 vph in the PM peak hour on a typical weekday without a Mets home game, and 5,855 vph in the Saturday midday peak hour on a non-game weekend.

For peak hours with a Mets home game, the proposed project is expected to generate 4,194 vph in the weekday PM (evening) pre-game peak hour, 4,576 vph in the Saturday afternoon pre-game peak hour, and 4,037 vph in the Saturday evening post-game peak hour.

With full buildout at the completion of Phase 2, including the potential future development of Lot B, 4,533 vehicles per hour (vph) would be generated in the AM peak hour, 7,551 vph in the midday peak hour, 8,361 vph in the PM peak hour on a typical weekday without a Mets home game, and 8,740 vph in the Saturday midday peak hour on a non-game weekend. For peak hours with a Mets home game, the proposed project is expected to generate 6,339 vph in the weekday PM (evening) pre-game peak hour, 6,981 vph in the Saturday afternoon pre-game peak hour, and 6,445 vph in the Saturday evening post-game peak hour. This includes volume increment generated by the proposed project and the Lot B development.

Future baseline (future No Action) volumes, to which the traffic generated by the proposed project and Lot B would be added, and future levels of service are expected to be significantly worse than existing conditions due to background traffic growth plus traffic generated from additional background development projects. Traffic generated by the proposed project 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.

As a result, by Phase 1A, the proposed project is expected to have significant traffic impacts at 15 of the ~~29~~ 32 intersections analyzed, both signalized and unsignalized, for the future With Action condition in the weekday AM peak hour, ~~17~~ 16 of ~~29~~ 32 in the weekday midday peak hour, and 20 of ~~29~~ 32 in the weekday PM and Saturday midday non-game peak hour. On game days, ~~24~~ 23 of ~~29~~ 32 intersections analyzed would have significant traffic impacts during the PM pre-game weekday peak hour, ~~17~~ 19 of ~~29~~ 32 intersections analyzed would have significant traffic impacts during the Saturday pre-game peak hour and ~~19~~ 21 of ~~29~~ 32 intersections analyzed would have significant impacts during the Saturday post-game peak hour.

In Phase 1B, the proposed project is expected to have significant traffic impacts at 19 of the ~~30~~ 33 intersections analyzed in the weekday AM peak hour, ~~20~~ 21 of ~~30~~ 33 in the weekday midday peak hour, ~~22~~ 21 of ~~30~~ 33 in the weekday PM peak hour, and ~~25~~ 24 of ~~30~~ 33 in the non-game-Saturday midday peak hour. On game days, 22 of ~~30~~ 33 intersections analyzed would have significant traffic impacts during the PM pre-game weekday peak hour, ~~20~~ 21 of ~~30~~ 33 intersections analyzed would have significant traffic impacts during the Saturday pre-game peak hour and ~~24~~ 23 of ~~30~~ 33 intersections analyzed would have significant impacts during the Saturday post-game peak hour.

By full buildout in Phase 2, including the potential future development of Lot B, the proposed project is expected to have significant traffic impacts at ~~22~~ 23 of the ~~34~~ 34 intersections analyzed in the weekday AM peak hour, and ~~26~~ 28 of ~~34~~ 34 in the weekday midday peak hour, ~~29~~ 29 of ~~34~~ 34 in the weekday PM peak hour, and ~~27~~ 27 of ~~34~~ 34 in the Saturday midday non-game peak hours. During the PM pre-game weekday peak hour, ~~25~~ 28 of ~~34~~ 34 intersections analyzed would have significant traffic impacts, and during the Saturday pre-game and post-game peak hours, ~~23~~ 25 of ~~34~~ 34 intersections analyzed would have significant impacts.

Some sections of the highway mainlines and several ramp junctions would incur level of service degradations and be significantly impacted. In Phase 1A, ~~three~~ five of the seven highway mainline locations analyzed (including the westbound Grand Central Parkway and the southbound Whitestone Expressway) and five of the 12 ramp locations would be significantly impacted during at least one of the seven peak analysis hours. In Phase 1B, five of the seven highway mainline locations analyzed (including both directions of the Grand Central Parkway and Whitestone and Van Wyck Expressways) and seven of the 12 ramp locations would be significantly impacted during at least one peak hour. In Phase 2, ~~five~~ four of the seven highway mainline locations analyzed (including the westbound Grand Central Parkway, and both directions of the Whitestone and Van Wyck Expressways) and ~~eight~~ seven of the 12 ramp locations would be significantly impacted during at least one peak hour.

Under Phase 2 for the proposed project (i.e., full buildout conditions), the number of significantly impacted intersections would be approximately the same or somewhat higher as compared to the 2008 FGEIS. The magnitude of delays experienced would be higher at many locations as compared to the 2008 FGEIS. Under Phase 2 for the proposed project, the number of significantly impacted highway sections and ramps, and the magnitude of delays, would

Willets Point Development

generally be higher as compared to the 2008 FGEIS. Potential measures to mitigate these projected significant adverse impacts are described in “Mitigation.”

By its full buildout in Phase 2, the proposed project would provide sufficient new off-street and on-street parking as part of the development to service its peak demand of 5,850 spaces. The redevelopment of the 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. The proposed project’s expected parking needs would be provided within the immediate area by full buildout, and it is not expected that project-generated traffic would have to seek parking opportunities outside of the area. In all phases, Willets West’s proposed 2,500 accessory parking spaces would be sufficient to meet parking demands generated by the development at Willets West. Under Phase 1A, all project-generated parking demand within the District would be satisfied by accessory parking provided as part of the proposed project. Under Phase 1B, the 2,700 accessory parking spaces that would accompany development in the District would fully satisfy project demand in 2028 except from 2 to 4 PM on Saturday where there would be an additional need of up to approximately 45 spaces. However, this demand is expected to be fully satisfied by available on-street spaces within the District and off-street spaces in facilities within walking distance of the District. For the originally proposed project analyzed in the 2008 FGEIS, the amount of parking to be provided plus available on-street parking was concluded to be similarly sufficient to accommodate the projected parking demand.

In addition to providing accessory parking for project demand, the proposed project would also replace the 4,100 Mets parking spaces in the main CitiField lots to the west of the stadium that would be displaced by the Willets West development. These replacement spaces would be distributed amongst an interim parking facility in the District (2,750 spaces, used as recreational space in the off-season), Lot D/South Lot (950 spaces), and the Willets West development (400 spaces) in Phase 1A, and between Lot D/South Lot (5,495 spaces) and the Willets West development (400 spaces) in Phases 1B and 2. Therefore, Mets parking needs would be accommodated.

TRANSIT AND PEDESTRIANS

Significant adverse transit impacts were identified for the street-level stairways and mezzanine stairway on the north side of Roosevelt Avenue at the Mets-Willets Point subway station, line-haul conditions on the No. 7 subway line, ~~train~~ and the Q19, Q48, and Q66 bus routes. In addition, if NYCT reverts back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, which would take place independent of the proposed project, additional interagency coordination is expected to take place to develop the appropriate game-day management strategies. However, additional impacts for the station’s street-level connections and the unpaid zone passageway could occur during game days with this reconfiguration. Between Draft and Final SEIS, no changes to operating plans were announced by NYCT; therefore, any potential changes that may be considered for future implementation will be addressed outside of this environmental review. Significant pedestrian impacts were identified for the east crosswalk at the intersection of Northern Boulevard and 126th Street; the north and west crosswalks at the intersection of Roosevelt Avenue and 126th Street; the north, south, and east crosswalks at the intersection of 34th Avenue and 126th Street; ~~the south crosswalk at the intersection of New Willets Point Boulevard and 126th Street;~~ the north and south crosswalks at the intersection of 37th Avenue and 126th Street; and the north crosswalk at the newly signalized intersection of Roosevelt Avenue and the Lot B driveway. Potential measures to mitigate these projected significant adverse impacts are described in “Mitigation.”

In the 2008 FGEIS and subsequent technical memoranda, significant adverse impacts were identified for the Mets-Willets Point subway station, area bus routes, and pedestrian elements adjacent to the District. Similar or greater impacts have been identified for Phase 2 of the proposed project. In addition, the previous analyses did not identify the significant adverse subway line-haul impact or the additional station impacts associated with potential station reconfiguration by NYCT that had been identified with the current proposed project.

AIR QUALITY

Concentrations of carbon monoxide (CO) and fine particulate matter less than 10 microns in diameter (PM₁₀) due to project-generated traffic at intersections near the project site would not result in any violations of National Ambient Air Quality Standards (NAAQS). It was also determined that CO and PM_{2.5} increments impacts from mobile sources associated with the proposed project would not exceed CEQR *de minimis* criteria. ~~While incremental increases in fine particulate matter less than 2.5 microns in diameter (PM_{2.5}) from mobile sources would be between 2 µg/m³ and 5 µg/m³, based on the frequency and magnitude of the concentrations above 2 µg/m³, which will be subject to further~~ A refined mobile source analysis conducted for PM_{2.5} between DSEIS and FSEIS in consultation with DEP confirmed that there would be no the predicted PM_{2.5} increments would not indicate a significant air quality impact. In addition, impacts due to the proposed project's parking facilities were found to result in no significant adverse air quality impacts.

Based on refined analyses, using conservative assumptions regarding floor area served by a single heating and hot water system stack, there would be no potential for significant adverse air quality impacts from the proposed project's heating and hot water systems (considering buildings proposed for construction in all phases), provided that certain requirements on the fuel type, placement of heating and hot water system stacks, exhaust height, and use of low-nitrogen oxide (low-NO_x) burners are imposed. These restrictions would supersede those identified in the 2008 FGEIS and Technical Memorandum #4. The restrictions reflect the changes to the proposed project since the 2008 FGEIS and subsequent technical memoranda, as well as the promulgation of the 1-hour nitrogen dioxide (NO₂) standard in 2010. A screening level analysis was conducted to assess whether existing auto, manufacturing, and industrial uses that may remain in the area proposed for development in Phase 2, would have the potential to significantly impact the air quality in the area proposed for development in Phase 1A and Phase 1B, which would be occupied by recreational, residential, hotel, open space, and commercial uses. The results of that analysis show that there would be no potential for significant adverse impact on air quality from these sources on the proposed project. Therefore, there would be no potential for a significant adverse impact from stationary sources.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

As discussed in the following sections, the building energy use and vehicle use associated with the full build-out of the proposed project would result in approximately 150,000 metric tons of carbon dioxide equivalent (CO₂e) emissions per year. The RWCDS, which includes the potential future development on Lot B, would result in approximately 161,000 metric tons of CO₂e emissions from building energy consumption and vehicle use. The overall RWCDS emissions are lower than those presented in Technical Memorandum #4 (TM4), despite the increase in the floor area proposed for development, due to the expected improvement in vehicle efficiency from 2022—the final build year analyzed in TM4, and 2032—the anticipated year of proposed project completion.

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The proximity of the proposed development to public transportation, its mixed-use nature, and dense design are all factors that contribute to the energy efficiency. To meet the requirements of LEED certification, the energy cost reduction requirements of Local Law 86 of 2005, and to comply with the regulations of the Special Willets Point District, specific measures would be incorporated into the proposed project design, which would decrease the potential GHG emissions and further the GHG reduction goal.

~~As detailed local climate change projections become available and are adopted into the City's infrastructure design criteria, such criteria would be incorporated into the development program. In addition, an engineering study would be prepared prior to commencement of construction that would assess the feasibility of implementing strategies to improve resilience to climate change impacts into the design of the development program, in light of the most current climate change projections. Based on that engineering study, practicable strategies to improve resilience to climate change would be implemented.~~

The proposed project is located within the 100-year floodplain, and therefore, the potential effects of global climate change on the proposed project have been considered. Given that the projections for sea level rise are changing, further measures will be investigated and implemented within the proposed project site to the extent practicable. Prior to the commencement of construction for each phase of the project, the project sponsor will work with MOEC to develop a plan for resilience of the proposed area to be developed in that phase from future flood levels, considering the types of uses proposed. The plan will be designed with the goal of making the project area resilient to end-of-century flood levels in residential areas, and mid-century in other areas.

NOISE

The analysis concludes that noise associated with traffic generated by the proposed project and its associated parking facilities would not be expected to result in any significant increases in noise levels, including at World's Fair Marina Park, which was predicted to experience a significant adverse noise impact in the 2008 FGEIS during the Saturday mid-day (MD) time period. This resulted from slightly less incremental traffic noise generated on streets immediately adjacent to the Park between the No Build and Build scenarios analyzed for the proposed project as compared to the 2008 FGEIS analysis. To meet CEQR interior noise level requirements, the analysis prescribes between 31 and 43 dBA of building attenuation for the proposed project buildings, which is similar to the amount of building attenuation specified in the 2008 FGEIS, except for the buildings included in the proposed project very close to the existing elevated subway tracks along Roosevelt Avenue, which would require greater attenuation than the levels specified in the 2008 FGEIS analysis. Similar to what was predicted in the 2008 FGEIS, noise levels in the newly created open spaces would be greater than the 55 dBA $L_{10(1)}$ prescribed by CEQR criteria, but would be comparable to other parks around New York City and would not constitute a significant adverse impact.

PUBLIC HEALTH

According to the *CEQR Technical Manual*, for most proposed projects, a public health analysis is not necessary. Where no significant unmitigated adverse impact is found in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise, no public health analysis is warranted. If an unmitigated significant adverse impact is identified in one of these

analysis areas, the lead agency may determine that a public health assessment is warranted for that specific technical area.

As described in the relevant analyses of this SEIS, during construction, and after completion of construction, the proposed project would not result in unmitigated significant adverse impacts in any of the technical areas related to public health. Therefore, a public health analysis is not necessary, as the proposed project would not result in a significant adverse public health impact.

NEIGHBORHOOD CHARACTER

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse impacts to neighborhood character.

The study area has diverse characteristics owing to the varied land uses surrounding the project site. No one defining feature would be considered critical to the character of the neighborhood; rather all the various localized features contribute to it. Taking into consideration the effects of the proposed project on the contributing features, the proposed project would not have a significant adverse impact on neighborhood character. Rather, the proposed project would result in an improvement in neighborhood character, as it would remediate the area and would represent a significant investment to improve the project area's infrastructure. The proposed project would allow for a more comprehensive and continuous neighborhood by linking Flushing and Corona, and would transform the area surrounding CitiField into a thriving new neighborhood and regional destination.

CONSTRUCTION

There would be temporary inconvenience and disruption arising from the construction of the proposed project throughout the Willets Point/CitiField area. As detailed below, construction of the proposed project would result in significant adverse construction impacts related to transportation and historic and cultural resources. Potential mitigation for these significant adverse impacts is discussed in Chapter 21, "Mitigation."

TRANSPORTATION

The construction of the proposed project, from 2014 to 2032, would generate construction worker and truck traffic. Because of the lengthy duration of these activities, an evaluation of construction sequencing and worker/truck projections was undertaken to assess the potential transportation-related impacts. It is expected that the project construction activities would yield considerably less traffic than that projected for the proposed project and that parking and staging needs could be managed primarily within the District, or next to the stadium (for Lot B construction). However, given the high traffic volume in the existing and No Action conditions, and the inclusion of traffic from the project as it is being built out as well as construction traffic, significant adverse traffic impacts could still occur at some of the study area locations during construction. Where impacts during construction may occur, measures recommended to mitigate impacts associated with the proposed project could be implemented early to aid in alleviating congested traffic conditions. At locations where the proposed project is expected to result in unmitigated significant adverse traffic impacts, these impacts could similarly exist during construction.

Construction worker transit trips would occur outside of peak periods of transit ridership and would be distributed and dispersed to the nearby transit facilities, and would not result in any significant adverse transit impacts. However, the significant adverse transit impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition are expected to also address the potential transit impacts during construction. As with the 2028 and 2032 With Action conditions, the projected subway line-haul impact during the weekday AM peak period may remain unmitigated. ~~Additionally, as discussed in more detail in Chapter 14, "Transportation," and Chapter 21, "Mitigation," subway station impacts may remain unmitigated, if mitigation options are found to be infeasible, or if NYCT changes the current game day operation of the station.~~

Pedestrian trips during peak construction in 2031 would primarily be concentrated during off-peak hours (6 to 7 AM and 3 to 4 PM) and would be distributed among numerous pedestrian facilities in the area. Accordingly, there would also not be a potential for significant adverse pedestrian impacts attributable to the projected construction worker pedestrian trips. However, the significant adverse pedestrian impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition are expected to also address the potential pedestrian impacts during construction. At locations where the proposed project is expected to result in unmitigated significant adverse pedestrian impacts, these impacts could similarly exist during construction.

AIR QUALITY

Based on a detailed analysis of construction during Phase 2 and a qualitative evaluation of construction during Phases 1A and 1B, the proposed project would not result in significant adverse impacts with respect to air quality. A detailed analysis of the combined effects of on-site and on-road emissions, determined that annual-average nitrogen dioxide (NO₂), carbon monoxide (CO), and particulate matter with an aerodynamic diameter less than 10 microns (PM₁₀) and particulate matter with an aerodynamic diameter less than 2.5 microns (PM_{2.5}) concentrations would be below their corresponding National Ambient Air Quality Standards (NAAQS) or de minimis criteria. Therefore, the proposed projects would not cause or contribute to any significant adverse air quality impacts with respect to these standards.

~~Dispersion modeling determined that the maximum predicted incremental concentrations of PM_{2.5} (using a worst case emissions scenario) would exceed the City's applicable 24-hour interim guidance criterion of 2 µg/m³ at a few receptor locations on the northeastern façade of parcel A1 during the construction activities at parcel A11 located immediately to the northeast, where the likelihood of prolonged exposure is very low.~~

~~The maximum predicted incremental concentrations of PM_{2.5} would also exceed 2 µg/m³ at a sidewalk location due to mobile sources on the southeast corner of 34th Avenue and 126th Street. The occurrences of elevated 24-hour average concentrations for PM_{2.5} would be limited in duration, frequency, and magnitude. Therefore, after taking into account the limited duration and extent of these predicted exceedances, and the limited area wide extent of the 24-hour impacts, it is concluded that no significant adverse air quality impacts for PM_{2.5} are expected from construction.~~

Because background concentrations are not known and the analysis methodology for mobile and construction sources have not been developed for the new 1-hour NO₂ NAAQS, exceedances of the 1-hour NO₂ standard resulting from construction activities cannot be ruled out. Therefore,

measures including diesel equipment reduction, utilization of newer equipment, and source location and idling restriction, would be implemented by the proposed project to minimize NO_x emissions from construction activities.

NOISE AND VIBRATION

Based on a detailed analysis of construction during Phase 2 and a qualitative evaluation of construction during Phases 1A and 1B, construction activities would not be expected to result in significant noise impacts at any nearby sensitive receptor locations. Proposed buildings that would be completed and occupied before construction is completed at other project building sites would also experience exterior noise levels due to construction activities in the low 70s to mid-80s dBA range. The design of all project buildings would include building façades providing not less than 31-43 dBA of attenuation and alternate means of ventilation (i.e., air conditioners) that do not degrade the acoustical performance of the façade. During the time period when these proposed buildings would be occupied and loud construction activities would be underway at immediately adjacent building sites (approximately two years according to the conceptual construction schedule on which the construction noise analysis is based), interior noise levels would, during some times, exceed 45 dBA L₁₀₍₁₎ (the CEQR acceptable interior noise level criteria for residential uses). Such exceedances may be intrusive, but would be only temporary and of limited duration. Consequently, they would not result in any significant impacts.

On-site, construction activities would produce L₁₀₍₁₎ noise levels at open space areas up to approximately the mid 70s dBA, which would exceed the levels recommended by CEQR for passive open spaces (55 dBA L₁₀). (Noise levels in these areas exceed CEQR recommended values for existing and No Action conditions.) While this is not desirable, there is no effective practical mitigation¹ that could be implemented to avoid these levels during construction. Noise levels in many parks and open space areas throughout the city, which are located near heavily trafficked roadways and/or near construction sites, experience comparable and sometimes higher noise levels, and consequently such levels would not be considered a significant adverse impact. Noise levels in many parks and open space areas throughout the city, which are located near heavily trafficked roadways and/or near construction sites, experience comparable and sometimes higher noise and consequently such levels would not be considered a significant adverse impact.

OTHER TECHNICAL AREAS

Consistent with the 2008 FGEIS and subsequent technical memoranda, and as described in greater detail below, construction of the proposed project would not be expected to result in any significant adverse impacts to land use, socioeconomic conditions, community facilities, open space, or natural resources.

Consistent with the findings in the 2008 FGEIS, construction activities related to the development that would occur within the Special Willets Point District during Phase 2 of the proposed project would be anticipated to result in the demolition of the former Empire Millwork Corporation Building, which was found by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) to be eligible for listing on the State and National Registers of

¹ Noise barriers would not be practical because of security concerns.

Historic Places (S/NR). Demolition of this structure would be considered a significant adverse effect on this architectural resource.

As described in detail in Chapter 10, “Hazardous Materials,” and consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials during construction. To avoid the potential for significant adverse impacts related to hazardous materials, the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and investigative/remedial (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) measures that would precede or govern both demolition and soil disturbance activities. These measures would be conducted in compliance with all applicable laws and regulations and would conform to appropriate engineering practices.

Construction would create major direct benefits resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the direct activity.

MITIGATION

COMMUNITY FACILITIES AND SERVICES

As described in Chapter 4, “Community Facilities and Services,” the lead agency, in consultation with the Queens Public Library, has determined that the additional population introduced by the proposed project would impair the delivery of library services in the study area in 2032. Therefore, Phase 2 of the proposed project would result in a significant adverse impact on library services. To mitigate this impact, adequate space¹ within the 125,000 square feet of as-yet-unprogrammed community facility space in the program for Phase 2 ~~could potentially~~ would be made available to be utilized as a branch library or auxiliary facility for the Queens Library system, or additional volumes or programs to accommodate new users could be provided if adequate space in nearby branches exists. Although no developer has yet been designated for Phase 2, the provision of additional library space in Phase 2 would be based on further consultation with Queens Public Library and the lead agency.

As discussed in Chapter 4, “Community Facilities and Services,” the analysis of indirect effects on child care facilities finds that the proposed project may result in significant adverse impacts on publicly funded child care facilities in 2028. Therefore, consistent with the conclusions of the 2008 FGEIS, to mitigate the potential impact on child care facilities that could occur by 2028, the QDG (i) would consult with ACS to determine whether adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site is the appropriate way to meet demand for child care services generated by the proposed project; and (ii) would, as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site. To mitigate the potential impact on child care facilities that could occur by 2032, EDC would require, as part of the developer’s agreement, that the designated developer of Phase 2 similarly consult with ACS to determine the appropriate way to meet demand for child care services generated by development in the District

¹ In other projects, 15,000–20,000 square feet of community facility space has been adequate for the operation of a branch library.

by 2032 and would, as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site.

~~Possible mitigation measures, which would be implemented by the developer(s) of Phase 1B and Phase 2, include adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site. At this point, however, it is not possible to know exactly which type of mitigation would be most appropriate and when, because several factors may limit the number of children in need of publicly funded child care slots. Families in the study area could make use of alternatives to publicly funded child care facilities, such as homes licensed to provide family child care which families of eligible children could elect to use instead of a public child care center. In addition, parents of eligible children may use ACS vouchers to finance care at private child care centers either within the study area or could use facilities outside of study area.~~

HISTORIC AND CULTURAL RESOURCES

As discussed in Chapter 7, “Historic and Cultural Resources,” there are substantial challenges inherent in retaining the historic building located in the District—the Former Empire Millwork Corporation Building—and the proposed project contemplates demolition of this building in Phase 2. A developer for Phase 2 has not yet been selected, and QDG may or may not be selected as the designated developer for Phase 2. Before the development of Phase 2, the selected developer will consult with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and the New York City Landmarks Preservation Commission (LPC) to evaluate any remaining potential alternatives to demolition. If none are identified, measures to mitigate this adverse impact would be developed in consultation with OPRHP and LPC. The mitigation measures could include recording the building through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative.

TRAFFIC AND PARKING

A broad range of traffic improvement measures would be needed to mitigate projected significant adverse traffic impacts. Intersection traffic improvements ~~will require~~ have received approval from the New York City Department of Transportation (NYCDOT). Overall, these intersection traffic improvements—including signal phasing and timing changes, traffic signal installations, lane additions, lane re-striping, geometric improvements, turn prohibitions, channelization improvements and parking prohibitions—fall within the range of typical measures employed by NYCDOT in improving traffic conditions in New York City. Each of the highway network-related improvements beyond the operational improvements which are under NYCDOT jurisdiction would require a collaborative review process between NYCDOT and the New York State Department of Transportation (NYSDOT), and where appropriate, DPR closer to the time of construction when the design of those measures is finalized.

The analyses have not identified significant parking impacts requiring mitigation in its various Build phases. However, the implementation of the traffic mitigation measures would result in the removal of parking or “standing” spaces during various times of the day and days of the week: approximately ~~60~~ 66 such spaces during Phase 1A; ~~94~~ 87 spaces during Phase 1B; ~~94~~ 101 spaces during Phase 2. No designated truck loading/unloading or commercial vehicle zones or bus layover space would be affected.

New traffic signals are proposed at the following, currently unsignalized, intersections: Boat Basin Road at World’s Fair Marina; the intersection of the Grand Central Parkway westbound

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exit ramp at West Park Loop/Stadium Road; Willets Point Boulevard at Northern Boulevard; New Willets Point Boulevard at 126th Street; ~~and the intersection of the eastbound Northern Boulevard ramp to 126th Street at the eastbound Astoria Boulevard/Grand Central Parkway ramp to eastbound Northern Boulevard; Northern Boulevard at 126th Place; 126th Street at 36th Avenue; and 126th Street at 37th Avenue.~~ An upgrade to an actuated signal control at the intersection of Boat Basin Road at Stadium Road and traffic signal equipment upgrades from the current mechanical systems to computerized systems at the intersection of College Point Boulevard and Sanford Avenue are proposed in order to accommodate variable signal phase green times among the seven analysis time periods. ~~Should NYCDOT determine that any of the proposed traffic signals are not warranted, alternative means of mitigating significant adverse impacts at those locations will need to be developed or unmitigated impacts may result and would be identified as such in the Final SEIS.~~

In order to verify the need and effectiveness of the mitigation measures proposed in this SEIS (especially the more cost intensive highway network improvements), the developer, in consultation with the lead agency and NYCDOT, will develop and conduct a detailed traffic monitoring plan at the completion of the buildout phases of the proposed project. The traffic monitoring plan is described further in Chapter 21, "Mitigation." The developer will submit to NYCDOT and the lead agency design drawings for any mitigation measures as per American Association of State Highway and Transportation Officials (AASHTO) and NYCDOT specifications. NYCDOT will participate in the review process relating to all future modifications to geometric alignment, striping, and signage during the preliminary and final design phases. In addition, as mutually agreed upon, the City and the developer will be responsible for any cost associated with the monitoring effort. The developer of each phase of the project will be responsible for the cost of the design and construction of any or all mitigation measures identified in this SEIS, for that phase.

Depending on the peak traffic hour analyzed, approximately one-half or more of the significantly impacted intersections could be fully or partially mitigated with traffic signal phasing or timing changes, signalization of unsignalized intersections, lane re-striping, parking prohibitions, or turn prohibitions. Three locations at or near highway exit ramps would require more intensive mitigation measures such as roadway widenings and reconfigurations that have been incorporated in the traffic mitigation analyses. These measures would collectively improve conditions but would not be able to fully mitigate all projected impacts. Final design for construction of those measures which do not fall under the jurisdiction of NYCDOT will be further reviewed by NYSDOT closer to the time of construction. If these mitigation measures are modified or rejected by NYSDOT, significant adverse impacts identified above may be unmitigated.

Under Phase 1A, the number of unmitigated or partially mitigated intersections would range from a low of ~~two~~ three in the weekday AM peak hour on non-game days to a high of ~~six~~ ten under weeknight pre-game and weekend post-game conditions. Under Phase 1B, the number of unmitigated or partially mitigated intersections would range from a low of ~~four~~ five in the weekday AM peak hour on non-game days to a high of 12 under weekday PM and Saturday midday conditions on non-game days and all three game day peak hours. Under Phase 2, the number of unmitigated or partially mitigated intersections would range from a low of ~~eight~~ ten in the weekday AM peak hour on non-game days to a high of ~~15~~ 16 under weekday and Saturday midday conditions on non-game days and Saturday post-game conditions. ~~In addition, the~~

~~intersections of 126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place are expected to carry a significant amount of project generated trips in all three project phases. These three intersections were not analyzed for this Draft SEIS since the majority of project generated trips from the District were assigned to the adjacent analyzed intersections. Since impacts have been identified for these adjacent intersections, the three intersections listed above will be analyzed for the Final SEIS to determine if they would similarly experience significant adverse impacts. If they are found to be significantly impacted under the With Action condition, mitigation measures would be explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

Improvements to local intersections and highway ramps would also mitigate some, but not all, significant highway impacts if implemented. Highway network improvements were not identified as mitigation in the 2008 FGEIS analyses. Both this SEIS and the 2008 FGEIS, however, include the new Van Wyck Expressway ramps as part of the With Action (i.e., Build) analyses in its expected implementation year. ~~Additional evaluations may be needed for the Final SEIS and could identify alternative measures that are deemed preferable to those identified in the Draft SEIS, in which case additional analyses may determine that projected conditions are better than those depicted in the Draft SEIS, or which may identify some deterioration in conditions and potential for previously identified significant adverse impacts that would be unmitigated or partially mitigated.~~

TRANSIT AND PEDESTRIANS

The proposed project would not result in any significant adverse transit impacts by the 2018 Phase 1A completion. However, it would result in significant adverse bus line-haul impacts on the Q19, Q48, and Q66 bus lines and subway line-haul impacts on the No. 7 Subway line by the 2028 Phase 1B completion. It should be noted that this significant adverse line-haul impact on the No. 7 line would not occur until Phase 2 should NYCT be able to process an additional Manhattan-bound express train during the AM peak hour, as assumed in the Draft SEIS. Upon the proposed project's full build-out in 2032, significant adverse transit impacts were identified for the Mets-Willets Point subway station stairs, the No. 7 subway line-haul, and Q19, Q48, and Q66 bus line-haul conditions. In addition, if NYCT reverts back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, which would take place independent of the proposed project, additional interagency coordination is expected to take place to develop the appropriate game-day management strategies. However, additional impacts for the station's street-level connections and the unpaid zone passageway could occur during game days with this reconfiguration. Between the Draft and Final SEIS, no changes to operating plans were announced by NYCT; therefore, any potential changes that may be considered for future implementation will be addressed outside of this environmental review. For purposes of disclosure in this Final SEIS, any impacts that may be attributed to future passage of a reconfigured Mets-Willets Point subway station may potentially be deemed unmitigatable. For pedestrian operations, significant adverse impacts were identified for numerous study area crosswalks during all three analysis years.

To mitigate the 2032 significant adverse stairway impacts, the effective widths of the S-3, S-2, and M-4 stairways would need to be widened. In addition, these stairway widenings would need to be accompanied by an ADA-compliant elevator between the street and mezzanine levels. The feasibility of the stairway widening and elevator installation were ~~will be~~ further evaluated between the Draft and Final SEIS. ~~In the event these mitigation measures are determined to be infeasible, the~~

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~~projected significant adverse stairway impacts would be deemed unmitigatable. Specifically, an engineering feasibility study and design schematics were prepared and concluded that the recommended stairway widenings, as well as the installation of an ADA-compliant elevator, would be feasible. It should be noted that the above proposed mitigation measures may be subject to modification due to NYCT's future master plan for the Mets-Willets Point subway station. Any modifications in conformance with the future master plan would provide equivalent functionalities that would similarly mitigate the stairway impacts identified above. Since the projected impacts that prompted the stairway and elevator feasibility study would not occur until Phase 2 of the proposed project, no funding commitments are in place at this time. The City will coordinate with NYCT and the lead agency to ensure the proper mitigation would be implemented at the appropriate time and would add language to the RFP for Phase 2 of the project as well as to the development agreement and/or other legally binding agreements, requiring the designated developer to fund the implementation of this mitigation. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent the introduction of new LIRR service to the area. The addition of regular LIRR service to Willets Point would provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing. To address the Q19, Q48, and Q66 bus line-haul impacts under Phases 1B and 2 in 2028 and 2032, respectively, substantial service improvements in terms of frequency of service would be required to meet the projected demand. Recognizing that these improvements may not be operationally viable or adequate in accommodating the projected future demand from developments planned for the District, discussions were initiated with NYCT to explore opportunities to extend existing bus routes from adjacent neighborhoods (e.g., downtown Flushing) and/or creating new bus routes. To accommodate these potential service improvements, new bus stops and layover areas would be needed in and around Willets West and the District. Between the Draft and Final SEIS, additional discussions were initiated with MTA NYCT regarding the potential bus service improvements discussed above. MTA NYCT considered the Q19 westbound loop to serve Willets West and the District to be unfavorable due to its circuitous routing. The MTA Bus Company would consider extending the Q50 and NYCT would consider extending one of the current bus routes terminating in downtown Flushing to Willets West and the District initially. Additional bus route extensions to Willets West and the District would be considered based on future demand. In addition, several conceptual bus routing options were explored to provide the necessary layover areas and stop locations for the potential bus route extensions. MTA NYCT has found the conceptual bus routing options to be generally reasonable and feasible. While no definitive plans have been made at this time, the City and applicant will continue to collaborate with MTA and NYCT during and after this environmental review process to ensure that adequate bus service improvements would be implemented.~~

To address the significant adverse pedestrian impacts, crosswalk widenings were proposed either solely or in conjunction with the proposed traffic mitigation measures. In some cases, achieving the widening necessary to mitigate the projected significant adverse impacts may not be feasible. Hence, these crosswalk impacts would be either partially mitigated or unmitigated. In addition, related pedestrian analyses ~~will be~~ were prepared for the three intersections (126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place) where additional traffic analyses ~~will were~~ also be conducted and ~~are presented in the this~~ Final EIS. Mitigation measures were recommended where appropriate for the additional three intersections. If additional pedestrian impacts are identified, mitigation measures would be explored to address

~~the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

It should be noted that pedestrian volumes at some of the impacted crosswalks could be substantially lower if an areawide bus service improvement is implemented, as discussed above. As a result, some of the projected significant adverse pedestrian impacts may not occur or may occur to a lesser extent, requiring no or less mitigation. The reduction of pedestrian volumes at these crosswalk locations could also lessen pedestrian conflicts with turning vehicles, thereby potentially lessening the projected traffic impacts and required traffic mitigation measures. Similar to the proposed traffic mitigation measures, the eventual implementation of the proposed pedestrian mitigation measures would be subject to a monitoring program undertaken by the developer, in consultation with the lead agency and NYCDOT, to determine actual needs upon completion and occupancy of various components during the three phases of the proposed project.

AIR QUALITY

The proposed project would not result in significant adverse impacts on air quality. Therefore, no air quality mitigation is required. Since the proposed traffic mitigation measures would alter traffic conditions when compared with the proposed project, the localized air quality impacts with mitigation were modeled. With traffic mitigation measures, the predicted 8-hour average carbon dioxide concentration increments from mobile sources were predicted to be below the CO *de minimis* concentration, and the PM₁₀ 24-hour concentrations when added to the background PM₁₀ levels were predicted to be less than the National Ambient Air Quality Standard. PM_{2.5} 24-hour average and annual average concentration increments with the traffic mitigation measures would not exceed the PM_{2.5} *de minimis* criteria. Therefore, no significant adverse air quality impacts would occur as a result of the proposed traffic mitigation measures. ~~above 2 µg/m³ were predicted. Based on the magnitude, extent, and frequency of 24-hour average PM_{2.5} concentrations above 2.0 µg/m³, the proposed project with traffic mitigation would not result in significant PM_{2.5} impacts. Furthermore, the maximum predicted 24-hour average concentrations with traffic mitigation when added to the PM_{2.5} background concentration of 26 µg/m³ would be less than the corresponding NAAQS of 35 µg/m³.~~

NOISE

The proposed project would not result in any significant adverse noise impacts. Therefore, no noise mitigation measures are required. Since the proposed traffic mitigation measures would alter traffic conditions when compared with the proposed project, noise levels at sensitive receptor locations with the traffic mitigation measures in effect were examined. The analysis of noise levels with the proposed traffic mitigation measures found that noise levels would increase less than 1 dBA with the proposed traffic mitigation measures, which would be considered imperceptible and insignificant according to CEQR criteria.

ALTERNATIVES

NO ACTION ALTERNATIVE

The No Action Alternative assumes the continuation of existing uses on the various portions of the project site. Since this alternative would allow the continued industrial use of the District, it would not allow for development of affordable housing, community facilities, schools, and

public open space. It also would not comprehensively remediate contaminated soils and groundwater, nor provide new sanitary and storm sewers; as a result, there would continue to be degraded water quality and potential impacts to aquatic biota through the continued discharge of wastewater, polluted stormwater, and sediments from the District to the Flushing River, Flushing Bay, and groundwater aquifers. Because the No Action Alternative would not develop new retail and entertainment uses at Willets West and the District, it would not generate the substantial economic and civic benefits resulting from the proposed project in the way of new jobs and tax revenues. Moreover, this alternative would not advance a number of the Downtown Flushing Development Framework's fundamental goals, including the creation of a regional destination that would enhance economic growth in Downtown Flushing and Corona, improvement of environmental conditions, and integration of new development in the District with surrounding amenities. The former Empire Millwork Corporation Building would remain under private ownership in the No Action Alternative and could be demolished as-of-right; mitigation measures such as photographic documentation would not be required.

NO UNMITIGATED SIGNIFICANT IMPACTS ALTERNATIVE

The No Unmitigated Significant Impacts Alternative explores modifications to the proposed project that would avoid the unmitigated significant impacts to historic and cultural resources, traffic, transit, and pedestrians:

- For historic and cultural resources, this alternative would avoid the demolition of the former Empire Millwork Corporation Building that would occur with Phase 2 of the proposed project. Although this could be achieved through adaptive reuse, exterior elements would still need to be upgraded to comply with building codes and noise attenuation requirements, and flood protection measures such as gates or pumps would be required to comply with flood insurance requirements. Overall, this alternative would reduce the footprint of any new development, which would result in greater density in the remainder of the District, fewer housing units, less open space, or some combination of these possibilities. As noted above, the former Empire Millwork Corporation Building could be demolished as-of-right under existing conditions, and mitigation measures such as photographic documentation would not be required.
- For traffic, the proposed project and the potential future development on Lot B would result in significant adverse impacts that cannot be fully alleviated with practical mitigation measures. Because of existing congestion at a number of intersections, even a minimal increase in traffic would result in unmitigated impacts. Based on a sensitivity analysis of intersections within the study area, it was determined that in all three phases of the proposed project, the addition of five or fewer vehicles through some intersections would trigger an impact that cannot be fully mitigated. Thus, almost any new development at the project site would result in unmitigated traffic impacts, and no reasonable alternative could be developed to avoid such impacts.
- For transit, the proposed project and potential future development on Lot B would result in significant adverse subway line-haul impacts on the Manhattan-bound No.7 subway line express service during the 2028 and 2032 AM peak periods and on station operations at the Mets-Willets Point subway station under the 2018, 2028, and 2032 With Action conditions. Should NYCT revert back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, the significant adverse impacts on station operations may potentially be deemed unmitigatable. Although the City had consulted with the MTA on extending

- regular LIRR service to Willets Point, which would be expected to provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing, the implementation of the LIRR service improvement would depend on whether the actual future demand shows that such service improvement is warranted. It should be noted that this significant adverse line-haul impact on the No. 7 line would not occur until Phase 2 should NYCT be able to process an additional Manhattan-bound express train during the AM peak hour, as assumed in the Draft SEIS. To avoid this potentially unmitigatable impact, portions or all of Phase 1B and Phase 2 of the proposed project and the potential future development on Lot B would need to be eliminated from the current development plan. Almost any new development at the project site would result in the potentially unmitigatable impact on station operations at the Mets-Willets Point subway station, and no reasonable alternative could be developed to avoid such impacts without substantially compromising the proposed project's stated goals.
- For pedestrians, the proposed project and potential future development on Lot B would result in significant adverse impacts at ~~five~~ seven study area crosswalks upon Phase 1A completion in 2018, five study area crosswalks upon and Phase 1B completion in 2028, and seven study area crosswalks upon the Phase 2 full-build out in 2032. ~~2018 and 2028, respectively, and at eight study area crosswalks upon the Phase 2 full build out in 2032.~~ No reasonable alternative could be developed to avoid these impacts without substantially compromising the proposed project's stated goals.

UNAVOIDABLE ADVERSE IMPACTS

INTRODUCTION

Unavoidable significant adverse impacts are defined as those for which there are no reasonably practicable mitigation measures to eliminate the impacts; and there are no reasonable alternatives to the proposed project that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant adverse impacts.

As described in "Mitigation," a number of the potential impacts identified for the proposed project could be mitigated. However, as described below, in some cases, project impacts would not be fully mitigated.

HISTORIC AND CULTURAL RESOURCES

Phase 2 of the proposed project contemplates demolition of the former Empire Millwork Corporation Building, located at 128-50 Willets Point Boulevard in the Special Willets Point District. Demolition of this building would constitute a significant adverse impact on this historic resource. A developer for Phase 2 has not yet been selected, and QDG may or may not be selected as the designated developer for Phase 2. Before the development of Phase 2, the selected developer will consult with OPRHP and LPC to evaluate any remaining potential alternatives to demolition. If none are identified, measures to mitigate this adverse impact would be developed in consultation with OPRHP and LPC. The mitigation measures could include recording the building through a HABS-level photographic documentation and accompanying narrative. However, this impact would not be completely eliminated, as the resource would still be demolished. Therefore, consistent with the conclusions of the 2008 FGEIS, the demolition would constitute an unavoidable significant adverse impact on this historic resource as a result of the proposed project.

TRANSPORTATION

Traffic and Parking

The proposed project would result in unmitigated impacts at local intersections and highway elements within the traffic study area and partially mitigated impacts at other locations. Not all of the unmitigated impact locations would occur in all seven traffic analysis periods. This section summarizes the unmitigated and partially mitigated locations based on the mitigation measures described in “Mitigation.”

Local Intersections

Under Phase 1A, ~~8~~ 13 of the ~~29~~ 32 intersections analyzed would have significant impacts that could not be fully mitigated in at least one peak hour, including:

- Astoria Boulevard at 108th Street;
- Northern Boulevard at 126th Street, Prince Street and at Main Street;
- Roosevelt Avenue at 108th Street, 114th Street, 126th Street, College Point Boulevard, and Union Street; ~~and~~
- 126th Street at 34th Avenue, 36th Avenue, and 37th Avenue; and
- Boat Basin Road at Stadium Road.

Under Phase 1B, ~~44~~ 18 of the ~~30~~ 33 intersections analyzed (there is one additional intersection analyzed in the study area under Phase 1B) would have significant impacts that could not be fully mitigated in at least one peak hour, including the following locations in addition to those cited above for Phase 1A (Note: the intersection of Roosevelt Avenue at 108th Street, which could not be fully mitigated in Phase 1A, could be fully mitigated in Phase 1B):

- Northern Boulevard at Union Street and at Parsons Boulevard;
- ~~34th Avenue at 126th Street;~~
- Roosevelt Avenue at 111th Street, at Main Street, and at Parsons Boulevard; and
- Sanford Avenue at Parsons Boulevard.

Under Phase 2, ~~48~~ 23 of the ~~34~~ 34 intersections analyzed (there is one more intersection analyzed in the study area under Phase 2) would have significant impacts that could not be fully mitigated in at least one peak hour, including the following locations in addition to those cited above for Phase 1B:

- Northern Boulevard at 108th Street and at 114th Street;
- Roosevelt Avenue at ~~114th~~ 108th Street and Prince Street; and
- Northern Boulevard at College Point Boulevard.

Highway Network

Under Phase 1A, 6 of the 19 highway elements analyzed would have significant impacts that could not be fully mitigated in at least one peak hour, including:

- Westbound Grand Central Parkway (GCP) mainline (east side and west side), between Roosevelt Avenue and the Long Island Expressway (LIE);
- ~~Southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place; Southbound Van Wyck Expressway between Roosevelt Avenue and LIE;~~

- Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway;
- Ramp from the Grand Central Parkway/eastbound Astoria Boulevard to the northbound Whitestone Expressway/eastbound Northern Boulevard; and
- Ramp from the southbound Whitestone Expressway to westbound Northern Boulevard.

~~There would be additional highway locations that would be slightly or moderately impacted due to the implementation of mitigation measures at local intersections and highway ramps. In Phase 1A, the eastbound GCP mainline between Roosevelt Avenue and the LIE would be slightly impacted and unmitigated during one of the seven peak traffic analysis hours.~~

Under Phase 1B, ~~40~~ 11 of the 19 analyzed highway elements would have significant traffic impacts that could not be fully mitigated in at least one peak hour, including the following locations in addition to those cited under Phase 1A (Note: the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway, which could not be fully mitigated in Phase 1A, could be fully mitigated in Phase 1B):

- Northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE;
- Southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place;
- Ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard;
- Ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard;
- Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway; and
- Ramp from the westbound GCP toward Stadium Road and the northbound Whitestone Expressway.

~~As mentioned above for Phase 1A, In Phase 1B there would be additional highway locations that would be slightly or moderately impacted due to the implementation of mitigation measures at local intersections and highway ramps, including the following in addition to the one location cited above for Phase 1A:~~

- Eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE;
- Southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE;
- Southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place; and
- Ramp from World's Fair Marina/Boat Basin Road to the westbound Grand Central Parkway.
- ~~Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway; and~~
- ~~Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway.~~

Under Phase 2, the same ~~11~~ 11 of the 19 analyzed highway elements would have significant impacts that could not be fully mitigated in at least one peak hour as in Phases 1A and 1B above. ~~, including the following location in addition to those cited for Phases 1A and 1B:~~

- ~~Southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE.~~

As mentioned above for Phases 1A and 1B, in Phase 2 there would be additional highway locations that would be slightly or moderately impacted due to the implementation of mitigation

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measures at local intersections and highway ramps, including the following in addition to locations cited above for Phases 1A and 1B:

- Westbound Grand Central Parkway mainline (east side), between Roosevelt Avenue and the LIE;
- Northbound Whitestone Expressway mainline between Northern Boulevard and Linden Place;
- Ramp from World's Fair Marina/Boat Basin Road to the westbound GCP; and
- Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway;
- Ramp from the southbound Whitestone Expressway to the westbound GCP; and
- Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway.

~~Some intensive mitigation measures would be required to partially or fully mitigate significant impacts at several locations. If these measures are not implemented, and equivalent mitigation measures are not identified, the number or severity of unmitigated impacts would increase.~~

TRANSIT AND PEDESTRIANS

The proposed project would potentially result in unmitigated significant adverse impacts on station operations at the Mets-Willets Point subway station under the 2018, 2028, and 2032 With Action conditions, subway line haul operations for the No. 7 line under the 2032 With Action condition, and street level pedestrian facility operations under the 2018, 2028, and 2032 With Action conditions. Not all of these potentially unmitigated impacts would occur in all analysis time periods. This section summarizes the potentially unmitigated and partially mitigated locations; for additional information, see "Mitigation."

Subway Station Operations

Under Phase 2, the proposed project would result in significant adverse impacts on the S-3, S-2, and M-4 stairways located on the north side of Roosevelt Avenue, requiring stairway widenings and the installation of an ADA-compliant elevator between the street and mezzanine levels. The feasibility of the stairway widening and elevator installation ~~were~~ will be further evaluated between the Draft and Final SEIS. ~~In the event these mitigation measures are determined to be infeasible, the projected significant adverse stairway impacts would be deemed unmitigatable. Specifically, an engineering feasibility study and design schematics were prepared and concluded that the recommended stairway widenings, as well as the installation of an ADA-compliant elevator, would be feasible. It should be noted that the above proposed mitigation measures may be subject to modification due to NYCT's future master plan for the Mets-Willets Point subway station. Any modifications in conformance with the future master plan would provide equivalent functionalities that would similarly mitigate the stairway impacts identified above. Since the projected impacts that prompted the stairway and elevator feasibility study would not occur until Phase 2 of the proposed project, no funding commitments are in place at this time. The City will coordinate with NYCT and the lead agency to ensure the proper mitigation would be implemented at the appropriate time and would add language to the RFP for Phase 2 of the project as well as to the development agreement and/or other legally binding agreements, requiring the designated developer to fund the implementation of this mitigation.~~

In addition, NYCT may revert back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, whereby passage through the station between parking in South

Lot/Lot D and the north side of Roosevelt Avenue could be made only within the unpaid zone. If NYCT decides to proceed with this plan, which would take place independent of the proposed project, additional impacts for the station's street-level connections and the unpaid zone passageway could occur during game days. Although these impacts would be intermittent, occurring on average only approximately 80 40 to 50 times a year, and subject to game-day traffic and pedestrian management, they may potentially be deemed unmitigatable. No changes to operating plans were announced by NYCT between the Draft and Final Supplemental Environmental Impact Statements; therefore, any potential changes that may be considered for future implementation will be addressed outside of this environmental review.

Subway Line Haul

Under Phase 1B and Phase 2, the proposed project would result in a significant adverse impact on the Manhattan-bound No. 7 subway line express service during the AM peak period. It should be noted that this significant adverse line-haul impact on the No. 7 line would not occur until Phase 2 should NYCT be able to process an additional Manhattan-bound express train during the AM peak hour, as assumed in the Draft SEIS. The addition of regular LIRR service to Willets Point would provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent the introduction of new LIRR service to the area.

Pedestrians

Under Phases 1A and 1B, widening the east crosswalk of Northern Boulevard and 126th Street could fully mitigate the significant adverse impact during all peak periods. However, if the proposed widening was determined to be infeasible, the projected significant adverse impacts at this crosswalk would be either partially mitigated or unmitigated.

Under Phase 2, widening the east crosswalk of Northern Boulevard and 126th Street, the west crosswalk of Roosevelt Avenue and 126th Street, and the east crosswalk of 34th Avenue and 126th Street could fully mitigate the significant adverse impacts during all peak periods. However, if the proposed widenings were determined to be infeasible, the projected significant adverse impacts at these crosswalks would be either partially mitigated or unmitigated.

In addition, related pedestrian analyses ~~will be~~ were prepared for the three intersections (126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place) where additional traffic analyses ~~will be~~ were also be conducted and are presented in ~~the~~ this Final SEIS. Mitigation measures were recommended where appropriate for the additional three intersections and would not result in any additional unmitigatable impacts. ~~If additional pedestrian impacts are identified, mitigation measures would be explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

GROWTH-INDUCING ASPECTS OF THE PROPOSED PROJECT

Growth-inducing aspects of the proposed project are “secondary” impacts from the project that could trigger additional development in areas outside of the project site that would not have occurred without the proposed project. The *CEQR Technical Manual* indicates that an analysis of the growth-inducing aspects of a proposed action is appropriate when an action either adds

Willets Point Development

substantial new land use, new residents, or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or introduces or greatly expands infrastructure capacity.

While the uses proposed for Willets West and the Special Willets Point District would contribute to growth in the local Queens, City, and State economies, they would not be expected to induce notable growth outside of the project site and the anticipated development on Lot B. It is unlikely that the proposed project and potential future development on Lot B would alter land use patterns in surrounding neighborhoods. Given the recent trend to redevelop underutilized sites near the Flushing River waterfront, it is possible that the proposed project and new development on Lot B could encourage further redevelopment of some nearby underutilized sites along the Flushing River. However, given that such changes are already under way, potential development parcels are limited, and the project site is physically separated from surrounding neighborhoods by water bodies, roadways, and parkland, the ability of the proposed project to alter land use and economic patterns or induce substantial growth in the study area would be minimal.

Substantial infrastructure and roadway improvements would be provided as part of the proposed project. The infrastructure and roadway improvements included in the proposed project are intended to support the anticipated growth in the Willets West and District portions of the project site, as well as the potential future development of Lot B. The infrastructure in the study area is already well-developed such that improvements associated with the proposed project would not induce additional growth.

IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

There are a number of resources, both natural and built, that would be expended in the construction and operation of the proposed project. These resources include the building materials used in construction of the proposed project; energy in the form of gas and electricity consumed during construction and operation of the proposed project; and the human effort required to develop, construct, and operate various components of the proposed project. They are considered irretrievably committed because their reuse for some purpose other than the proposed project would be highly unlikely. The proposed project constitutes a commitment of the project site as a land resource, thereby rendering the land's use for other purposes infeasible. However, the transformation of surface parking lots and a largely underutilized site with substandard conditions and substantial environmental degradation into a lively, mixed-use, sustainable community and regional destination would be an improvement to the District and areas surrounding CitiField. *

A. INTRODUCTION

This Supplemental Environmental Impact Statement (SEIS) addresses proposed modifications to the previously approved Willets Point Development Plan for the approximately 61-acre Special Willets Point District in Queens, to include the proposed “Willets West” development on the surface parking lot west of the CitiField baseball stadium; the development of structured parking facilities on surface parking Lot D and South Lot along Roosevelt Avenue, adjacent to the stadium (see **Figure 1-1**); and changes to the phasing of the project. With these modifications, the project site would comprise approximately 108.9 acres and the proposed project could result in up to 10.34 million square feet of development. This SEIS also considers changes in background conditions, including federal approval of the Freeway Access Modification Report (AMR) for new vehicular connections from the Special Willets Point District to the Van Wyck Expressway.

A Final Generic Environmental Impact Statement (FGEIS) for the Willets Point Development Plan (the Plan) was issued in September 2008 by the Office of the Deputy Mayor for Economic Development (ODMED) as lead agency under the New York State Environmental Quality Review Act (SEQRA), its implementing regulations (6 NYCRR Part 617), and New York City Environmental Quality Review (CEQR). The approved project was for redevelopment of a largely underutilized site with substandard conditions and environmental degradation—into a lively, sustainable community and regional destination with approximately 8.94 million square feet of residential, retail, hotel, convention center, entertainment, commercial office, community facility, open space, and parking uses.

The proposed modifications to the previously approved Willets Point Development Plan require public review, including by the local Community Board and the Queens Borough President, and approvals by government agencies, including the Office of the Deputy Mayor for Economic Development, the New York City Planning Commission (CPC), and the City Council. Because it has been determined that the proposed project may result in new or greater significant adverse impacts than were disclosed in the 2008 FGEIS, it requires review and the preparation of an SEIS under CEQR.

B. PROJECT BACKGROUND

Since World War II, there have been numerous attempts to redevelop Willets Point, which became known over the years for its many auto repair businesses and junkyards. Since 2000, these planning efforts have accelerated. In 2001, the City’s Department of Housing Preservation and Development (HPD) design workshop explored potential redevelopment ideas and recommended land uses that would connect Willets Point with neighboring communities and complement nearby attractions and facilities. In 2002, the City created the Downtown Flushing Task Force, which outlined land use and economic goals for the redevelopment of Willets Point in its Downtown Flushing Development Framework. The Downtown Flushing Development



Project Site Map
Figure 1-1

Willets Point Development

Framework became the starting point for the City's creation of the Willets Point Development Plan, which was approved by the City Council in 2008. The numerous actions required for the Plan—which included the creation of a new special zoning district (the Special Willets Point District) and an urban renewal plan for the area—required review under SEQRA and CEQR.

An FGEIS for the Willets Point Development Plan was issued in September 2008 by ODMED as lead agency under SEQRA, its implementing regulations (6 NYCRR Part 617), and CEQR. The Willets Point Development Plan was approved by the City Council in 2008. The approved project was for redevelopment of a largely underutilized site with substandard conditions and environmental degradation—into a lively, sustainable community and regional destination with approximately 8.94 million square feet of residential, retail, hotel, convention center, entertainment, commercial office, community facility, open space, and parking uses. Subsequent technical memoranda assessed the potential effects of modifications to the proposed actions and were accepted by ODMED; SEQRA findings were issued on February 11, 2011.

Subsequent to the City Council's approval of the Willets Point Development Plan in 2008, the City revised and reissued a Request for Qualifications and Request for Proposals for the redevelopment of this area. The City has also undertaken several measures that support the goals of the Plan, including measures related to site acquisition, assistance for District workers, advancement of the proposed connections to the Van Wyck Expressway, and ongoing infrastructure work. In December 2011, the City also broke ground on the new sanitary and storm water mains that will provide new public sanitary sewer service to support the redevelopment of the District and adjacent areas and replace an inadequately sized storm water sewer and outfall to help alleviate chronic flooding that occurs in the District and adjacent areas. Adjacent to the Special Willets Point District, the new CitiField stadium opened in 2009, replacing the former Shea Stadium, and the area formerly occupied by Shea Stadium was converted to a surface parking lot.

In 2012, in response to a competitive Request for Proposal process, the Queens Development Group, LLC (QDG)—a joint venture between the Related Companies and Sterling Equities—was selected as the City's designated developer for Phases 1A and 1B of the Willets Point Development Plan.¹ QDG is proposing to include in its proposed development additional land beyond the boundaries of the Special Willets Point District in order to develop portions of the main CitiField stadium parking field ("Willets West") and CitiField parking fields south of Roosevelt Avenue. QDG is also proposing to develop interim parking uses on a portion of the land within the Special Willets Point District to accommodate the stadium's parking demand during the initial phase of the area's proposed redevelopment. The discretionary actions needed for the proposed modifications include a zoning text amendment and a special permit to allow surface parking and recreational uses within the Special Willets Point District and modification of the City's existing lease for the CitiField parking lot, as well as potential additional actions discussed below.

PRIOR ENVIRONMENTAL REVIEW

The 2008 FGEIS examined the potential for significant impacts resulting from the redevelopment of the project site in the impact categories of land use, zoning, and public policy; socioeconomic conditions; community facilities; open space; shadows; historic resources; urban

¹ Formerly Phase 1 in Technical Memorandum #4, with some adjustments to footprint.

design and visual resources; neighborhood character; natural resources; hazardous materials; waterfront revitalization program; infrastructure; solid waste and sanitation; energy; traffic and parking; transit and pedestrians; air quality; noise; construction impacts; and public health. The 2008 FGEIS found that no significant adverse environmental impacts would result from the proposed development Plan with respect to land use, zoning, and public policy; socioeconomic conditions; open space; shadows; urban design and visual resources; neighborhood character; natural resources; waterfront revitalization program; infrastructure; solid waste and sanitation; energy air quality; construction impacts; and public health. Potentially significant impacts were identified for publicly funded child care, historic resources, hazardous materials, traffic, transit and pedestrians, and noise.

Subsequent to the issuance of the 2008 FGEIS, CPC proposed several modifications to the Special Willets Point District zoning regulations. These modifications were described, and their potential for significant adverse environmental impacts examined, in a technical memorandum dated September 23, 2008 (Technical Memorandum #1), which found that there were no additional impacts due to the modifications that had not been disclosed in the 2008 FGEIS. CPC voted in favor of the Willets Point Development Plan with those modifications on September 24, 2008.

Following the CPC vote, new information became available related to: negotiated property acquisition by the City in the District; Phase II Environmental Site Investigations (ESIs) in the District; the amount of affordable housing to be provided in the District (an increase from 20 to 35 percent); and projected school and day care populations. This information was described, and its potential to result in significant adverse environmental impacts not previously identified was examined, in a technical memorandum dated November 12, 2008 (Technical Memorandum #2). That technical memorandum concluded that none of the newly available information would lead to significant adverse environmental impacts that had not been identified and addressed in the 2008 FGEIS. The City Council voted to approve the Willets Point Development Plan with the CPC modifications on November 13, 2008.

In 2009, the City considered the effect of the economic downturn on the Willets Point project. The City anticipated that economic conditions would make it challenging for developers to finance the acquisition and remediation of the entire Willets Point site at one time and prior to any development, as described in the 2008 FGEIS. In a technical memorandum dated November 23, 2009 (Technical Memorandum #3), an Adjusted Plan for Willets Point was analyzed similar to the Staged Acquisition Alternative analyzed in the FGEIS. In the Adjusted Plan, remediation and development of an initial portion of the District would have proceeded first, followed by remediation and development of the remaining portion of the District. The Adjusted Plan assumed the same overall development program at full build-out as the Staged Acquisition Alternative (with revisions described in the prior technical memoranda), but anticipated a smaller development footprint during the first years of development, with approximately 70 percent as much floor area in the initial phase compared with the Staged Acquisition Alternative.

In a technical memorandum dated February 10, 2011 (Technical Memorandum #4), the City considered an Updated Plan that was similar to the Adjusted Plan analyzed in the 2009 technical memorandum as well as to the Staged Acquisition Alternative analyzed in the 2008 FGEIS. Compared with both the Adjusted Plan and the Staged Acquisition Alternative, the Updated Plan anticipated a smaller development footprint and less overall development (approximately 1.345 million gross square feet or gsf) in the first phase; however, at full build-out the Updated Plan would have developed the District with the same gross floor area and mix of uses as the Approved Plan

(with subsequent revisions described in the prior technical memoranda) and would have had the same controls on floor area ratios set forth in the provisions of the Special District zoning text that had been approved by CPC and the City Council.

A substantial difference between the Approved Plan and the Updated Plan was the timing of property acquisition and construction phasing. Under the Approved Plan, the necessary remediation, grading, and infrastructure improvements would have taken place across the District at the beginning stages of construction; in comparison, with the Updated Plan (as with the Staged Acquisition Alternative and the Adjusted Plan), development activities would have proceeded incrementally, with the necessary remediation, grading, infrastructure improvements, and construction activities associated with the buildings in the southwestern portion of the District occurring first, and construction activities on the remainder of the District following. Whereas the Staged Acquisition Alternative and Adjusted Plan assumed the District's connections to the Van Wyck Expressway would be constructed before the end of the first phase of development, with the Updated Plan these connections would have been completed no later than after the end of the first phase of development and before the first building to be developed in the second phase of construction is completed. Some negotiated acquisition might also have occurred within the remainder of the District during the initial phase of development.

In March 2012, the New York State Department of Environmental Coordination (NYSDEC) approved a State Pollutant Discharge Elimination System (SPDES) Construction Dewatering and Discharge Permit for construction of the proposed new sanitary and storm water mains for the Willets Point area. As described above, these improvements are currently being constructed.

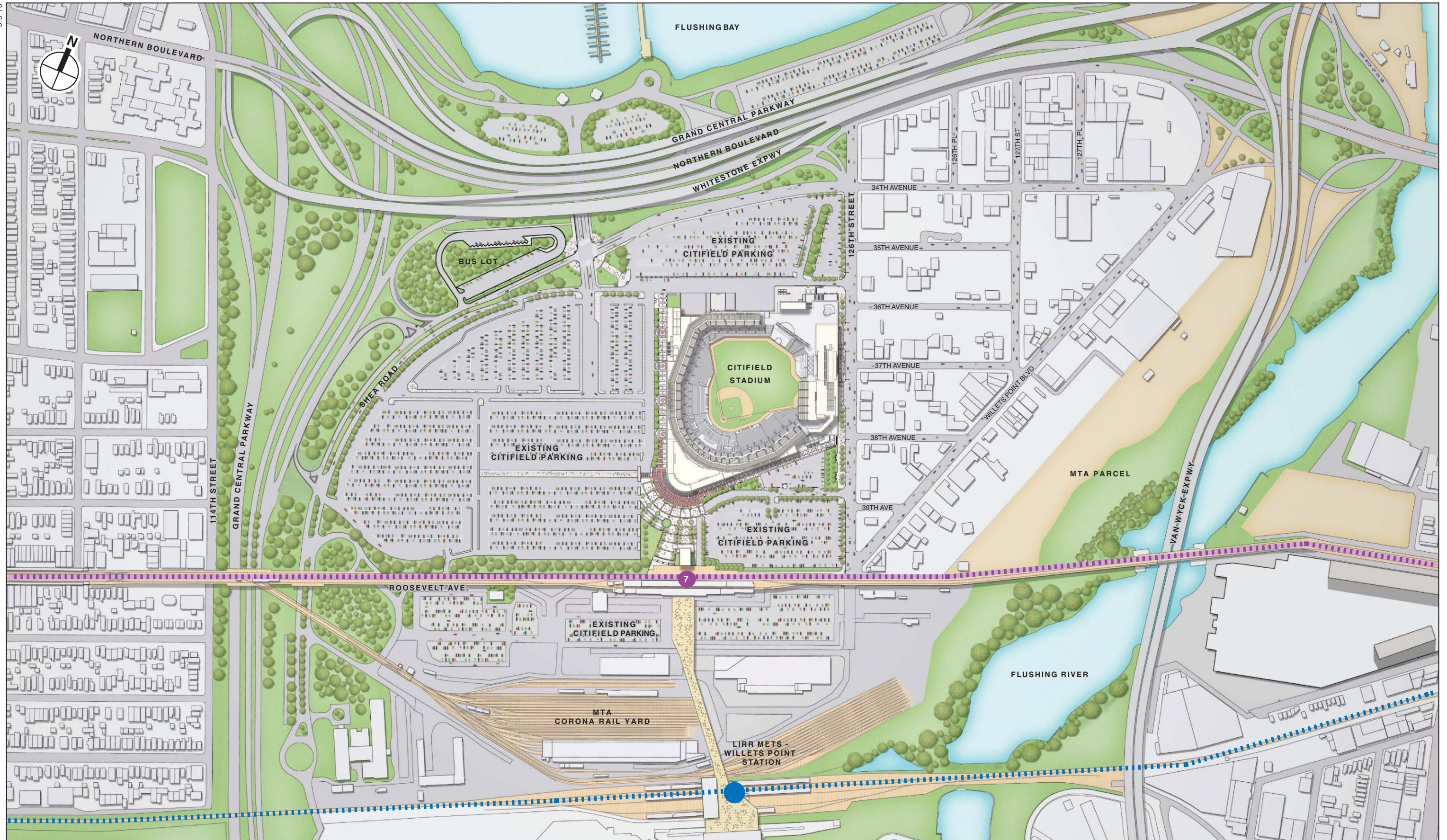
The new connection to the Van Wyck Expressway, which was assumed in the 2008 FGEIS and subsequent technical memoranda, was subject to federal approval of the Freeway AMR. A Finding of No Significant Impact was issued and the AMR was approved in April 2012; the City has committed to provide capital funds for its construction.

C. PROJECT DESCRIPTION

SITE DESCRIPTION

The project site is composed of three discrete areas roughly bounded by Shea Road and Northern Boulevard to the north, the Van Wyck Expressway to the east, Roosevelt Avenue and the Metropolitan Transportation Authority (MTA) Corona Rail Yard to the south, and Shea Road to the west (see **Figures 1-1** and **1-2**). The “Willets Point” portion of the project site (the Special Willets Point District) comprises approximately 61 acres, approximately 15.8 acres of which are within public street right-of-ways, approximately 0.6 acres of which are owned by the MTA, and the remainder of which is a mix of privately owned land and land owned by the City. The Willets Point area comprises 128 tax lots and one partial lot (Block 1833, Lot 1) located on 14 blocks. Since the FGEIS was completed in 2008, the City has acquired, or is in contract to purchase, 95 percent of the land area within the proposed Phase 1A/1B footprint (Assemblage Option 2) in the District, and has control of 4 lots in the remainder of the District.

The “Willets West” portion of the project site is mapped parkland that comprises an approximately 30.7-acre section of the surface parking field west of CitiField. This area comprises a portion of Block 1787, Lot 20. The “Roosevelt Avenue” portions of the project site comprise three CitiField-related surface parking lots (South Lot and Lots B and D) along Roosevelt Avenue south and southwest of CitiField. The Lot B parking lot, which comprises a portion of Block 1787, Lot 20, is



approximately 4.7 acres in size; the South Lot and Lot D parking lot, which comprise a portion of Block 2018, Lot 1500, are together approximately 12.1 acres in size. Lot D and South Lot are used for commuter parking and United States Tennis Association (USTA) National Tennis Center (NTC) events when baseball games are not in progress.

In total, the project site comprises approximately 108.9 acres.

GOALS AND OBJECTIVES

The proposed project is intended to remediate and transform the area surrounding CitiField, which is largely separated from adjoining neighborhoods by major highways, into a thriving new neighborhood and regional destination. The project would expand on the goals and objectives of the original (2008) Willets Point Development Plan. By providing development that spans both sides of the new CitiField, the proposed project would allow for a more comprehensive and continuous neighborhood linking Flushing and Corona. The environmental degradation of the Special Willets Point District would be remediated. The commercial components of the proposed project would provide jobs and create new retail, hotel and entertainment uses that would complement the adjacent sports venue and strengthen economic activity in the neighborhood, borough, and City. The substantial residential component (which includes affordable housing units) would accommodate a portion of the City's current and future housing needs. The new structures and open spaces are intended to create an active streetscape that includes retail uses as part of a diverse mixed-use program, enhancing the pedestrian experience.

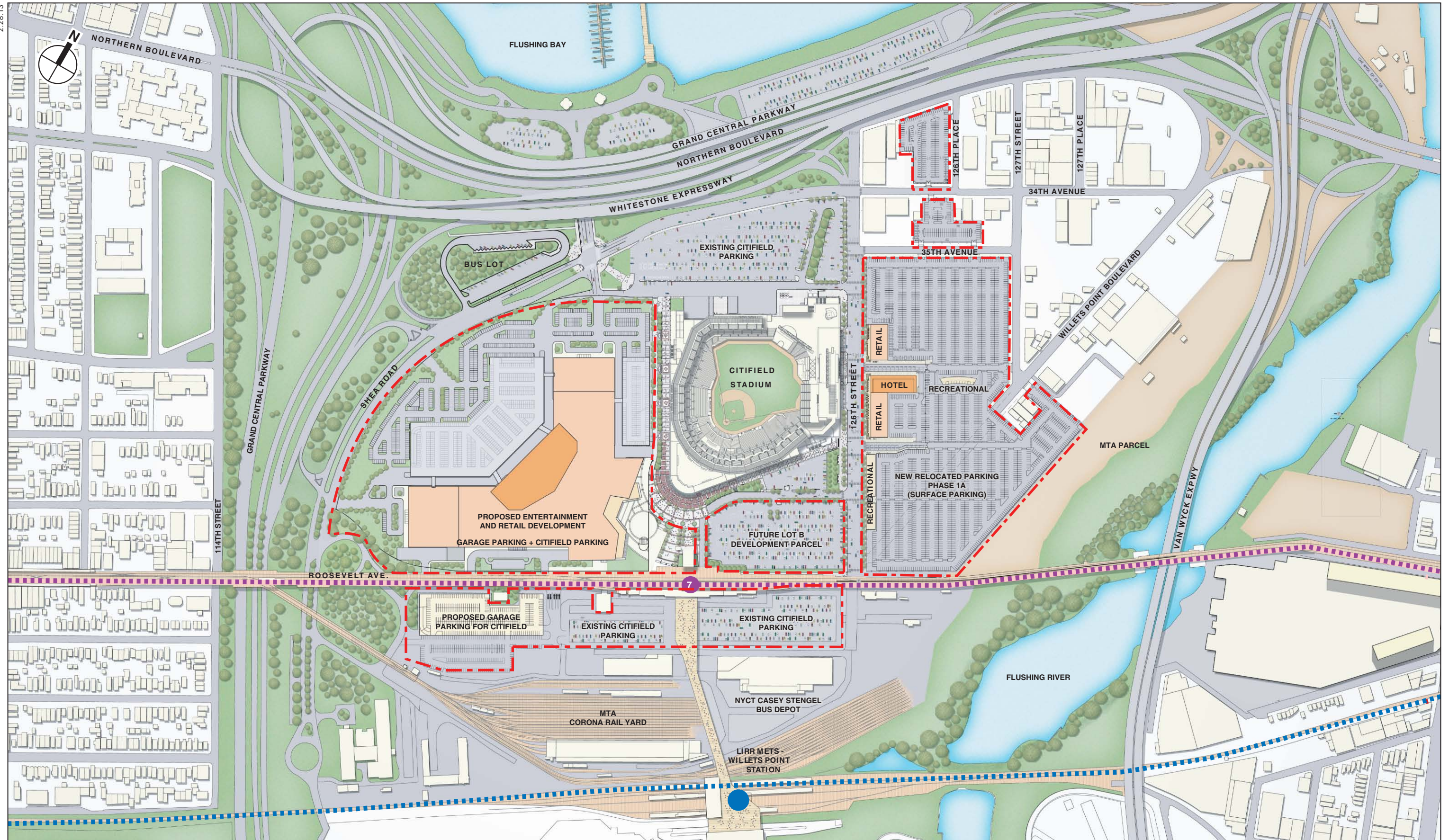
PROPOSED PROJECT

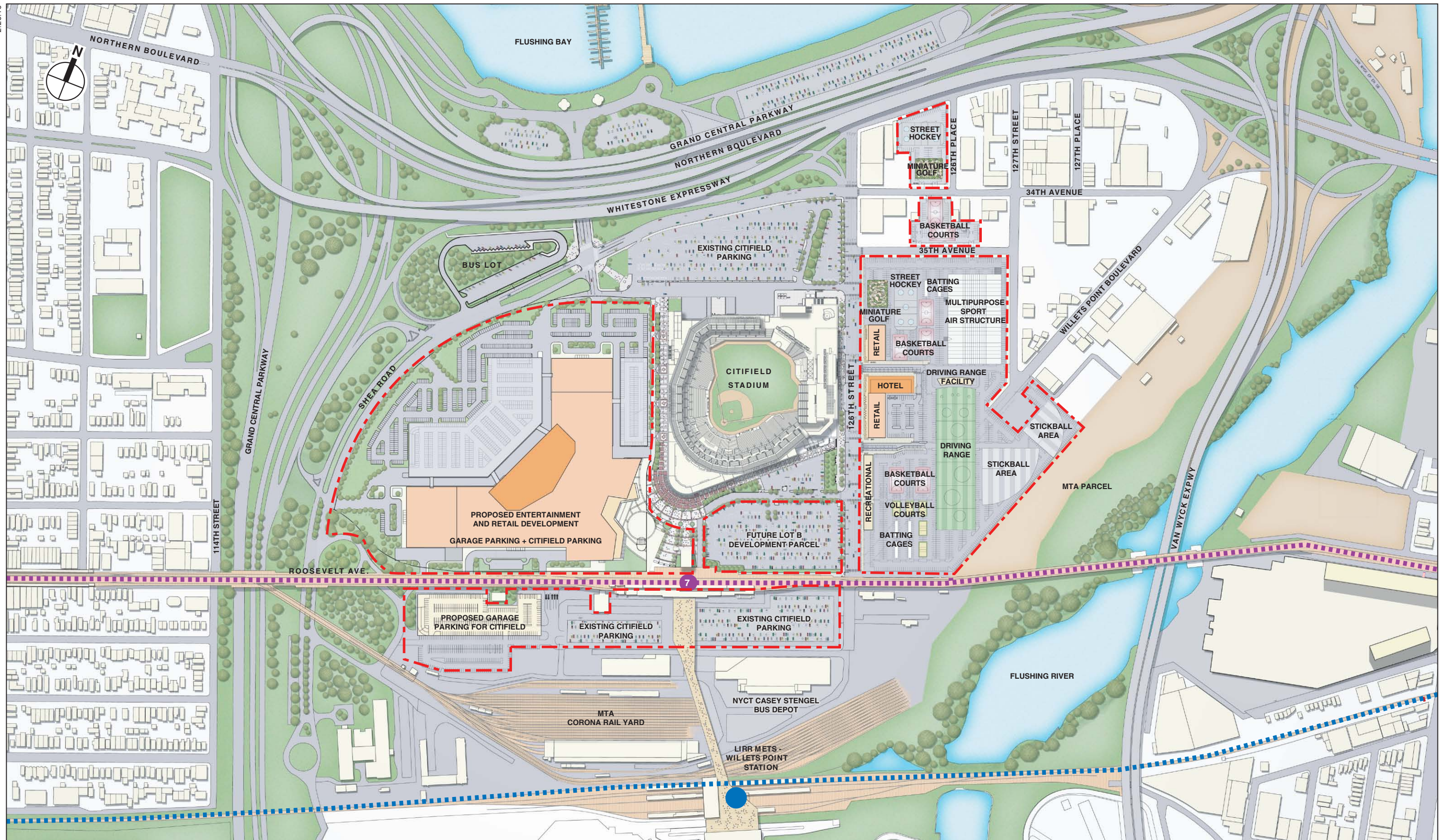
The proposed project would redevelop the Willets Point/CitiField area with a mix of uses that is expected to be completed by 2032. The redevelopment would incorporate a development in the Special Willets Point District substantially as anticipated and analyzed in the 2008 FGEIS and subsequent technical memoranda, as well as a major entertainment/retail component and parking adjacent to CitiField. Changes to the development analyzed here versus that analyzed in the 2008 FGEIS include an increase in the overall amount of retail development from 1.7 million square feet to 2.65 million square feet. This increase results from the 1.4 million gross square feet (1 million leasable square feet) of development at Willets West combined with a concurrent reduction in the overall amount of retail in the Special Willets Point District from 1.7 million square feet to 1.25 million square feet. The SEIS also assumes 5.85 million gross square feet of residential development to match the highest amount of residential analyzed in the 2008 FGEIS (in the No Convention Center Scenario), and a 230,000-square-foot school rather than the 2008 FGEIS's 130,000-square-foot school to accommodate a greater amount of the project's potential school seat demand.

The project is anticipated to proceed in three continuous phases, as follows.

PHASE 1A

The first phase of the project would commence with the remediation and development of an approximately 23-acre portion of the Special Willets Point District and the development of "Willets West" on the existing parking lot west of CitiField (see **Figures 1-3a** and **1-3b**). The 23-acre portion of the District would be remediated to address any hazardous materials issues. Upon completion of the environmental remediation, a 200-room hotel and associated parking, and approximately 30,000 square feet of retail space would be constructed above the floodplain along the east side of 126th Street, activating the 126th Street corridor—according to the District's regulations—with a 20-foot-





Willets Point Development

wide public esplanade, and a 2,750-space surface parking area would be developed east of the retail and hotel uses. The parking area would be converted to active recreational use a minimum of 6 months per year. This interim parking/recreational area would be replaced by permanent development in Phase 1B, as described below.

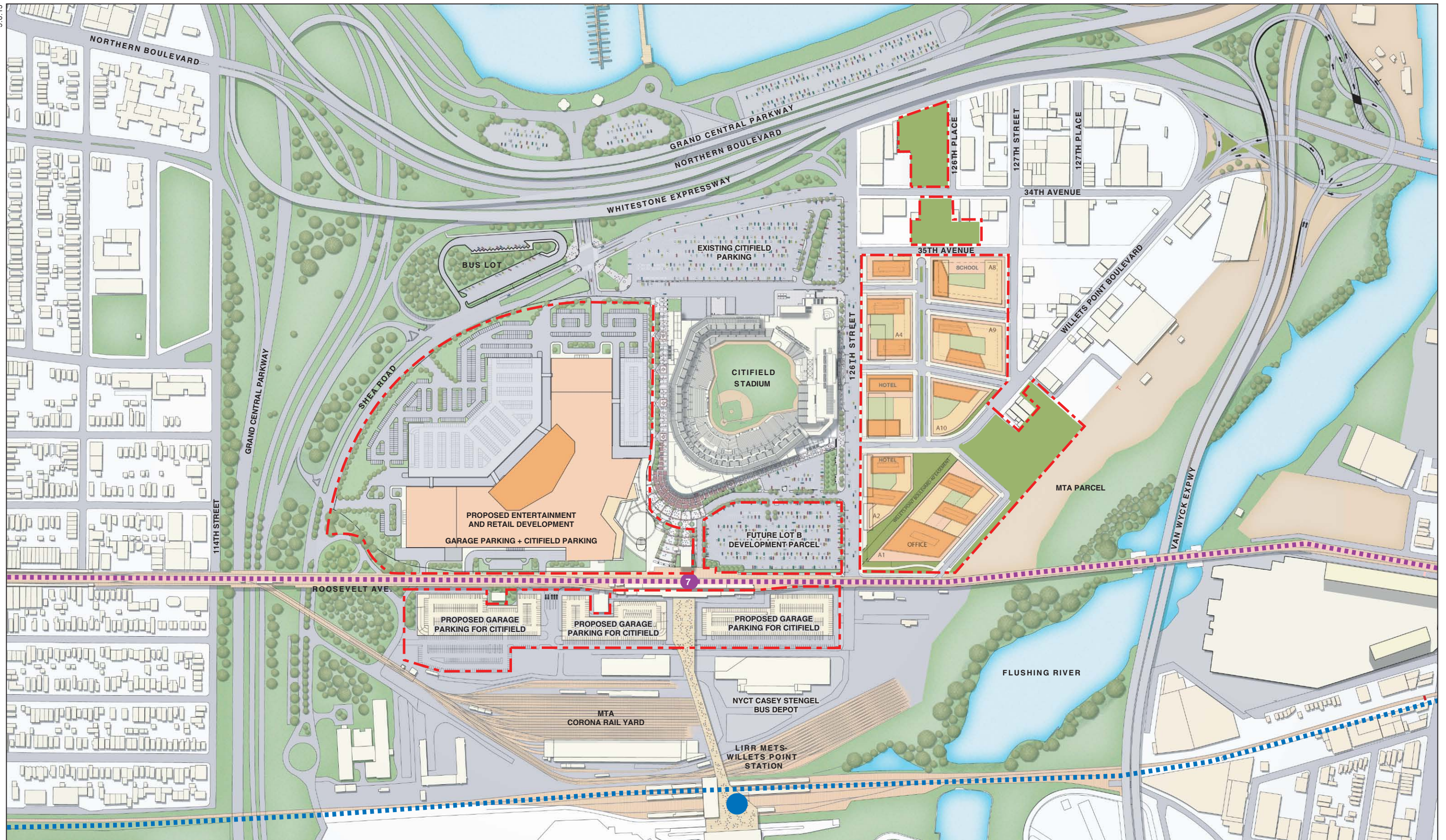
In tandem with the development of the parking area, “Willets West”—an entertainment and retail center of approximately 1.4 million gross square feet (approximately one million square feet of gross leasable area) —would be developed on a portion of the surface parking lot west of CitiField. This entertainment and retail center, which would be developed on mapped parkland as authorized by statute, would allow for more comprehensive transit-oriented development around the Mets/Willets Point stops on the No. 7 train and Long Island Rail Road and would support the economic development of the area. The complex could include over 200 retail stores, including anchor and “mini” anchor retailers, as well as movie theaters, restaurant and food hall spaces, and entertainment venues. Surface parking and a parking structure also would be developed in this location, including 2,500 new spaces for the entertainment/retail center and 400 spaces of replacement parking for use by the Mets. It is anticipated that the Willets West development, by building a critical mass of uses, would create a new destination that would serve as a catalyst for the subsequent build-out of the Willets Point area. In addition, the westernmost CitiField surface parking lot south of Roosevelt Avenue (a portion of the South Lot) would be redeveloped as a structured parking facility, to replace a portion of the CitiField parking spaces formerly located on the Willets West site. Phase 1A is expected to be completed by 2018.

PHASE 1B

In the next phase of the project, the interim surface parking lot/recreational space created during Phase 1A within the Special Willets Point District would be developed, transforming this formerly contaminated area into a new neighborhood. Consistent with the goals and objectives of the Willets Point Development Plan, Phase 1B of the proposed project would create more development on the east side of 126th Street, featuring a more active, attractive streetscape, providing new jobs, and complementing the adjacent CitiField. In addition, the new development would complement the new Willets West development created in Phase 1A. The residential units to be developed in this phase (which include affordable housing units) would accommodate a portion of the City’s current and future housing needs, and the proposed school would address the project-generated school seat demand.

The program for this development would include approximately 4.23 million square feet of development: 2.49 million sf of residential use (2,490 units, 872 of which would be affordable), 875,000 sf of retail use, 500,000 sf of office use, approximately 235,000 sf of hotel use (290 rooms), 25,000 sf of community facility use, and a 105,000 sf public school, along with parking and more than six acres of new public open space (see **Figures 1-4** and **1-5**). This development is anticipated to be developed block by block, substantially as envisioned in the Willets Point Development Plan. In addition, new structured parking facilities would be constructed on portions of the CitiField leasehold along Roosevelt Avenue (South Lot and Lot D) to replace the 2,750 CitiField parking spaces formerly located within the Special Willets Point District. The 75 accessory parking spaces created in Phase 1A for the hotel would remain in the District.

Construction of the new Van Wyck Expressway access ramps—which was anticipated in the 2008 FGEIS and for which the City has received approval from the Federal Highway Administration—is slated to be completed in 2024. Construction of the Phase 1B program is



Publicly-Accessible Open Space within the Special Willets Point District

Private Open Spaces within the Special Willets Point District



Existing Conditions



Illustrative rendering of Phase 1A



Illustrative rendering of Phase 1B

anticipated to take four years; however, the buildings within the District are not expected to be occupied until after the ramp improvements have been completed. The ramps would be operational prior to the occupancy of the Phase 1B buildings. Phase 1B is expected to be completed by 2028.

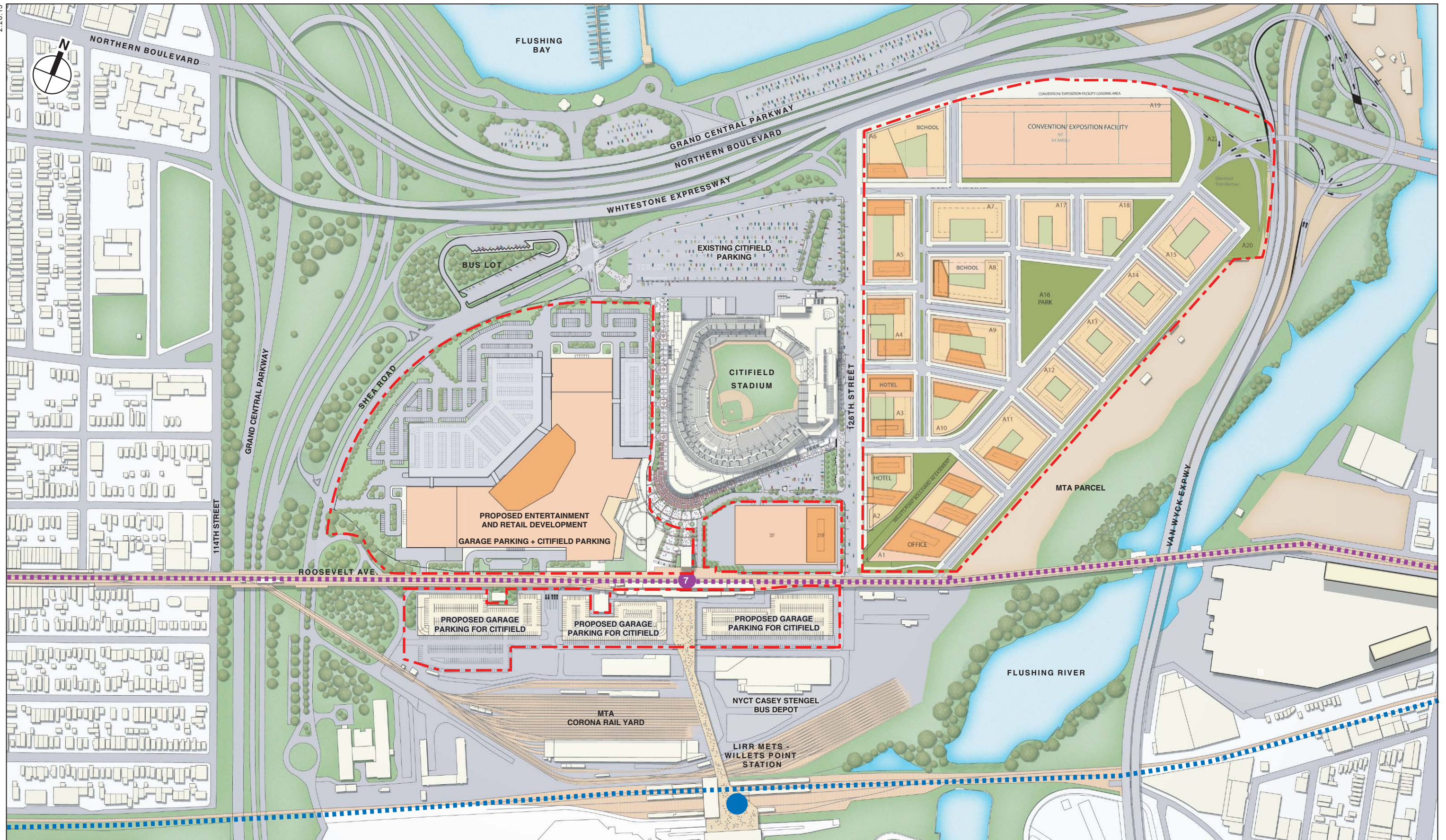
PHASE 2

In Phase 2, the remainder of the Special Willets Point District would be built out substantially as described in the 2008 FGEIS. Upon completion of Phase 2, the full build-out of all phases of the District is anticipated to total approximately 8.94 million square feet of development, including: up to 5.85 million gsf of residential use (approximately 5,850 units, 2,048 of which would be affordable); up to 1.25 million gsf of retail; approximately 500,000 gsf of office; up to 400,000 gsf of convention center use; up to 560,000 gsf of hotel use (approximately 700 rooms); up to 150,000 gsf of community facility use; approximately 230,000 gsf of public school use; and a minimum of 8 acres of publicly-accessible open space. The number of proposed parking spaces within the District would be determined based on project-generated demand, but is anticipated to be no more than the 6,700 spaces identified in the 2008 FGEIS. Remediation of the portions of the District not already developed in Phases 1A and 1B is assumed to be completed prior to 2028. As with Phase 1B, Phase 2 is anticipated to be completed incrementally over four years, with full build-out expected to be completed by 2032. A developer for Phase 2 has not yet been selected. Phase 2, illustrated in **Figure 1-6**, assumes a similar generic programming to that analyzed in the 2008 FGEIS, while Phase 1A and Phase 1B have discrete programs and designs.

Table 1-1 below provides a summary of the proposed program, by phase, with a summary of the proposed new parking and relocation of existing CitiField parking shown in **Table 1-2**.

COMPARISON OF SEIS AND FGEIS

The actions requested to facilitate the proposed project would not change the maximum overall development of 8.94 million square feet permitted within the District. However, the proposed project would differ from the development analyzed in the 2008 FGEIS in that the FGEIS program did not include any development outside of the District and did not anticipate the use of the District for surface public parking and recreation. Accordingly, the SEIS will analyze 1.4 million gross square feet (1 million leasable square feet) of retail that would be developed at Willets West, the interim parking and recreational uses that would occur within the District, and the proposed parking garages at Willets West, the South Lot, and Lot D. Given the retail development that would occur in Willets West, it was assumed that less destination retail would be developed within the District, so this SEIS analyzes 1.25 million square feet of retail within the District rather than 1.7 million square feet. Although the residential program and its projected population have not changed since the 2008 FGEIS (as analyzed in the No Convention Center Scenario), an increase of 100,000 square feet of school space is assumed in this SEIS to reflect updated projections of increased school seat demand citywide and in particular in Queens. See **Table 1-3** for a comparison of the proposed project for the District vs. the program analyzed in the 2008 FGEIS. Any uses not noted below are not proposed to change from the program analyzed in the 2008 FGEIS.



Publicly-Accessible Open Space within the Special Willets Point District

Private Open Spaces within the Special Willets Point District

Willets Point Development

Table 1-1
Summary of Proposed Program, by Phase

Use (gsf)	Project Area	Phase 1A	Phase 1B	Phase 2	Totals by Use
Retail	SWPD	30,000	875,000	345,000	1,250,000
	WW	1,400,000 ¹			1,400,000
Hotel	SWPD	160,000 [200 rooms]	235,000 [290 rooms]	165,000 [210 rooms]	560,000 [700 rooms]
Residential	SWPD		2,490,000 [2,490 units]	3,360,000 [3,360 units]	5,850,000 [5,850 units]
School	SWPD		105,000	125,000	230,000
Community Facility	SWPD		25,000	125,000	150,000
Office	SWPD		500,000		500,000
Convention Center	SWPD			400,000	400,000
Open Space	SWPD	TBD	6 acres	5 acres	8 acres ²
Total		1,590,000 gsf	4,230,000 gsf 6 acres	4,520,000 gsf 5 acres	10,340,000 gsf 8 acres

Notes:

SWPD = Special Willets Point District

WW = Willets West

¹ Anticipated to include cinema use and approximately 400,000 sf of common area and back of house space.

² Some of the open spaces developed in Phase 1B would be replaced or expanded with new open space in Phase 2. The cumulative total of open space to be developed within the District is 8 acres.

Table 1-2
Proposed New and Replacement Parking (Cumulative by Phase)

Project Area	Existing Conditions			Phase 1A			Phase 1B			Phase 2		
	CitiField	New	Total	CitiField	New	Total	CitiField	New	Total	CitiField	New	Total
WW	4,100	-	4,100	400	2,500	2,900	400	2,500	2,900	400	2,500	2,900
SWPD	-	-	-	2,750	75	2,825	-	2,700	2,700*	-	6,700	6,700*
South Lot/Lot D	1,795	-	1,795	2,745	-	2,745	5,495	-	5,495	5,495	-	5,495
Total	5,895	-	5,895	5,895	2,575	8,470	5,895	5,200	11,095	5,895	9,200	15,095

Notes: SWPD = Special Willets Point District

WW = Willets West

"CitiField" parking is the total number of spaces within the project site that either currently or would in the future serve events at CitiField. Existing Willets West spaces lost to development would be replaced as shown, in Phases 1A and 1B.

"New" parking is the total number of parking spaces that would serve the proposed project.

*These reflect newly developed spaces for Phase 1A, Phase 1B and Phase 2 (2,750 Mets spaces would be relocated to South Lot/Lot D in Phase 1B).

Table 1-3
Totals by Use in Special Willets Point District
Proposed Program vs. 2008 FGEIS

Use	FGEIS	Proposed Program
Retail	1,700,000	1,250,000
Residential	5,550,000 [5,500 units] (<i>Convention Center Scenario</i>) 5,850,000 [5,850 units] (<i>No Convention Center Scenario</i>)	5,850,000 [5,850 units]
Public School	130,000	230,000

The 2008 FGEIS analyzed a Staged Acquisition Alternative, in which the western portion of the District was assumed to be developed by 2013 and the remaining portion of the District would be built out by 2017. Technical Memoranda #3 and #4 also considered the phasing of development in the District over two analysis years. In comparison, this SEIS analyzes the development of the proposed project over three analysis years (2018, 2028, and 2032).

PURPOSE AND NEED

As described above, the proposed project would remediate and transform the area surrounding CitiField. The proposed entertainment and retail destination of Willets West would complement the anticipated development within the District, and both would connect Flushing to the east with Corona to the west through the creation of an unbroken series of uses along Roosevelt Avenue stretching from east of the Flushing River to west of the Grand Central Parkway. Over 2,000 units of affordable housing would be developed to accommodate a portion of the City's current and future affordable housing needs. The project's retail components would capture spending that currently is lost to the surrounding suburbs, and would thereby strengthen economic activity in the neighborhood, borough, and City. The proposed project would represent a significant investment by the City to improve the infrastructure of the project area. Raising the District portion of the project site out of the floodplain would not only minimize the potential loss of life, structures, and natural resources caused by flooding and erosion, but would also protect the City's new infrastructure investment. Eliminating flooding within the District and improving the quality of the soil substrate on the site would also improve water quality in Flushing Bay.

DISCRETIONARY ACTIONS SUBJECT TO CEQR AND SEQRA

The proposed project would require multiple City and State approvals. These anticipated approvals may include:

- Zoning text amendment to ZR Section 124-60 to allow use modifications as part of a phased development within the Special Willets Point District;
- Special permit pursuant to ZR Section 124-60 to allow surface parking/open and enclosed privately operated recreation uses for Phase 1A within the Special Willets Point District;
- Modification of the existing lease for the CitiField property and adjacent parking properties;
- Mayoral and Queens Borough Board approval of the business terms pursuant to New York City Charter Section 384(b)(4);

Willets Point Development

- Approval by the New York City Industrial Development Agency (IDA) or other government agencies for the waiver of mortgage recording tax for property within the Special Willets Point District; and
- A minor modification of the previously approved changes to the City Map to modify the staging for the closure of City Streets. This modification would not result in the demapping of any additional City streets beyond those previously approved for demapping.

In addition to the discretionary approvals listed above, Public Design Commission approval also will be required for the Willets West development. In addition to the above approvals, confirmation that all proposed buildings fall within the maximum Federal Aviation Administration (FAA) height limitations would be sought from the FAA; however, no approval or permit to exceed such permitted heights is anticipated to be sought.

D. ANALYTICAL FRAMEWORK FOR ENVIRONMENTAL REVIEW

OVERVIEW

The SEIS for the development of the project site will supplement the 2008 FGEIS. The SEIS will contain:

- A description of the proposed project and its environmental setting;
- A description of the evolution of project site conditions since 2008;
- The identification and analysis of any significant adverse environmental impacts of the proposed project, including the short- and long-term impacts;
- An identification of any significant adverse environmental impacts that cannot be avoided if the proposed project is implemented;
- A discussion of reasonable alternatives to the proposed project;
- An identification of irreversible and irretrievable commitments of resources that would be involved in the proposed project, should it be implemented; and
- The identification and analysis of practicable mitigation to address any significant adverse impacts generated by the proposed project not previously identified in the FGEIS.

ANALYSIS APPROACH

Each chapter of the SEIS first summarizes the conclusions of the 2008 FGEIS and subsequent technical memoranda for that particular technical area. Then, the chapter assesses whether changes in the analysis years and background conditions, variations between the proposed project and the redevelopment assumed in the 2008 FGEIS, and new proposed actions could result in new or different significant adverse impacts than those disclosed in the 2008 FGEIS. Existing conditions are updated as necessary and presented. Next, the chapter projects changed existing conditions forward into the future without the proposed project, incorporating the most recent information available on known land-use proposals and, as appropriate, changes in anticipated overall growth. Finally, the future with the proposed project is described, the differences between the future without and with the proposed project are measured, and any significant adverse environmental impacts are disclosed. To the extent that specific discretionary actions or program elements could potentially alter the conclusions in the 2008 FGEIS and subsequent technical memoranda, the SEIS focuses on evaluating the potential significant

adverse impacts of those actions or elements. The SEIS also identifies and analyzes appropriate mitigation for any significant adverse environmental impacts.

As noted above, while the 2008 FGEIS was prepared in accordance with the guidelines set forth in the 2001 *CEQR Technical Manual*, this SEIS addresses the updated guidance and analysis methodologies provided in the 2012 *CEQR Technical Manual*.

REASONABLE WORST-CASE DEVELOPMENT SCENARIO

The proposed program detailed above, along with the potential development analyzed in the 2008 FGEIS for Lot B, is analyzed as the reasonable worst-case development scenario (RWCDS) in the SEIS. It is currently anticipated that the assemblage of land within the Special Willets Point District for the Phase 1A and Phase 1B developments could take one of two forms, as shown in **Figure 1-7**. As shown, both assemblage options would include Block 1823 (Lots 19, 20, 21, 23, 26, 28, 33, 40, 44, 47, 52, and 55) Block 1824, Block 1825, Block 1826, Block 1827, Block 1833 (Lots 117, 111, 103, 120, 141, 143, 151, 155, 158, and 172), and Block 1822, Lot 17. In addition to the land common to the two assemblage options, Assemblage Option 1 would include the remaining lots on Block 1823, that is Lots 1, 3, 5, 7, 12, 14, 58, 59, and 60. Assemblage Option 2 would not include the land specific to Assemblage Option 1, but would instead include Lots 9 and 18, on Block 1820. In either scenario, the assemblage would total approximately 23 acres. However, for the purposes of a conservative analysis, the SEIS assumes that all of the potential project site area, totaling 25 acres, would be utilized for surface parking/off-season recreational use in Phase 1A and for development in Phase 1B. For Phase 2, the SEIS assumes that all land comprising both assemblage options taken for Phases 1A and 1B has been developed.

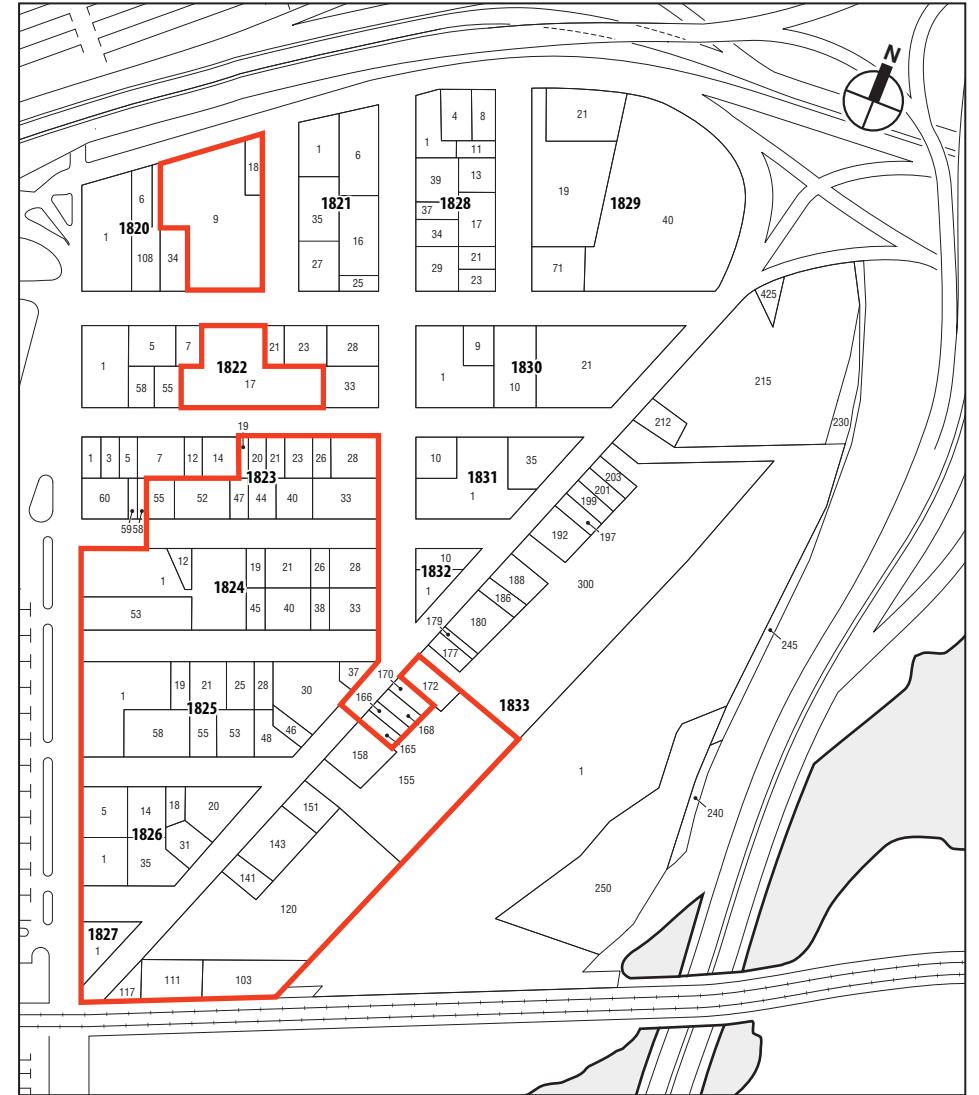
As noted above, the SEIS analyzes the potential development of parking, retail and office uses on Lot B, a portion of the CitiField leasehold along Roosevelt Avenue. The 2008 FGEIS anticipated that if the Willets Point Development Plan were approved and the District were redeveloped into a new mixed-use community and regional destination, additional development could occur on this lot. Any such program for Lot B would require an amendment to the current lease agreement and discretionary approval by IDA, acting through the New York City Department of Parks and Recreation (DPR), which administers the IDA lease. This action would be the subject of a separate environmental review process subject to SEQRA and/or CEQR. This potential development is not part of the proposed program, and no specific development plans have been proposed; however, for the purposes of a conservative analysis, a conceptual program for Lot B will be analyzed as part of the RWCDS. The conceptual program to be analyzed is the same as proposed in the 2008 FGEIS: 184,500 sf of retail use and 280,000 sf of commercial use, which could include a one-story retail structure and a 10-story office building. The existing VIP/ADA parking spaces on Lot B are assumed to be replaced on site; accessory parking for the Lot B development is assumed to be included on Lot D, as analyzed in the 2008 FGEIS. For the purposes of the RWCDS, it is assumed that this development would be completed by 2032.

STUDY AREAS

Each technical study must address impacts within an appropriate geographical area. These “study areas” vary depending on the technical issue being addressed. In most cases, the study areas for the SEIS for impacts arising from the proposed project are different than those presented in the 2008 FGEIS because the geographic extent of the project site for the SEIS will extend west of West 126th Street.



Assemblage Option 1



Assemblage Option 2

0 200 400 FEET
SCALE

FUTURE ANALYSIS YEAR AND BASELINE CONDITIONS

The analysis of the proposed project is performed for the expected year of completion of full build-out of the project, which is anticipated to be 2032. However, some project elements are anticipated for completion by 2018 and 2028, and those elements could result in significant adverse impacts prior to completion of the full development program. While the construction of the Phase 1B program is anticipated to take four years, the buildings within the Special Willets Point District are not expected to be ~~occupied~~constructed until the Van Wyck Expressway ramp improvements have been completed, which is slated to be in 2024. Therefore, three future baseline conditions are examined under the “future without the proposed project” in all technical chapters: the 2018, 2028, and 2032 No Action scenarios. For the purposes of a conservative analysis, this SEIS assumes that the existing uses on the project site would be maintained in each of the three No Action scenarios. *

A. INTRODUCTION

This chapter assesses whether any changed background conditions or the differences between the reasonable worst-case development scenario (RWCDs) and the program assessed in the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda would result in any significant adverse impacts on land use, zoning, and public policy that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

PRINCIPAL CONCLUSIONS

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse impacts to land use, zoning, or public policy.

As anticipated in the 2008 FGEIS, the proposed project would dramatically change land uses in the Special Willets Point District by replacing predominantly low-density, auto-related, and industrial uses with a new mixed-use neighborhood. The proposed project also would constitute a significant change for the Willets West portion of the project site by replacing a surface parking field with a new entertainment and retail center of approximately 1.4 million gross square feet (gsf) (approximately one million square feet (sf) of gross leasable area). New structured parking facilities would be built on the South Lot and Lot D to accommodate a portion of the parking for Mets patrons relocated from the Willets West surface parking field. The potential future development of Lot B is the same as projected in the 2008 FGEIS.

While the proposed project would result in significant land use changes on the project site, the effects of this change would not be adverse. The District would create a dynamic, sustainable community by integrating regional attractions and residential, retail, and other uses within a network of pedestrian-scaled streetscapes. The previously approved zoning regulations would continue to determine elements such as the placement of uses within the District, building heights and setbacks, street controls (i.e., mandatory intersections and street types), streetscape design, and basic site planning and design provisions. The Willets West portion of the project would create a regional entertainment and retail destination center that would support and be compatible with the new uses in the District as well as uses in the surrounding area.

Consistent with the 2008 FGEIS, the proposed project represents a critical step in implementing the 2004 Downtown Flushing Development Framework, a land use and economic planning strategy for the growth of Downtown Flushing, the Flushing waterfront, and adjacent areas. The District would be developed pursuant to the zoning regulations approved in 2008, and the proposed project would advance a number of the Framework's fundamental goals, including the creation of a regional destination that would enhance economic growth in Downtown Flushing; improvement of environmental conditions; and integration of new development with surrounding amenities, including the Flushing Bay Promenade, CitiField, Flushing Meadows-

Corona Park, and Downtown Flushing. The proposed project would be consistent with and vital to the advancement of several of the goals of PlaNYC, which aim to create a more sustainable New York by the year 2030. The proposed project would also be consistent with the coastal policies set forth in the New York City Waterfront Revitalization Program (WRP).

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

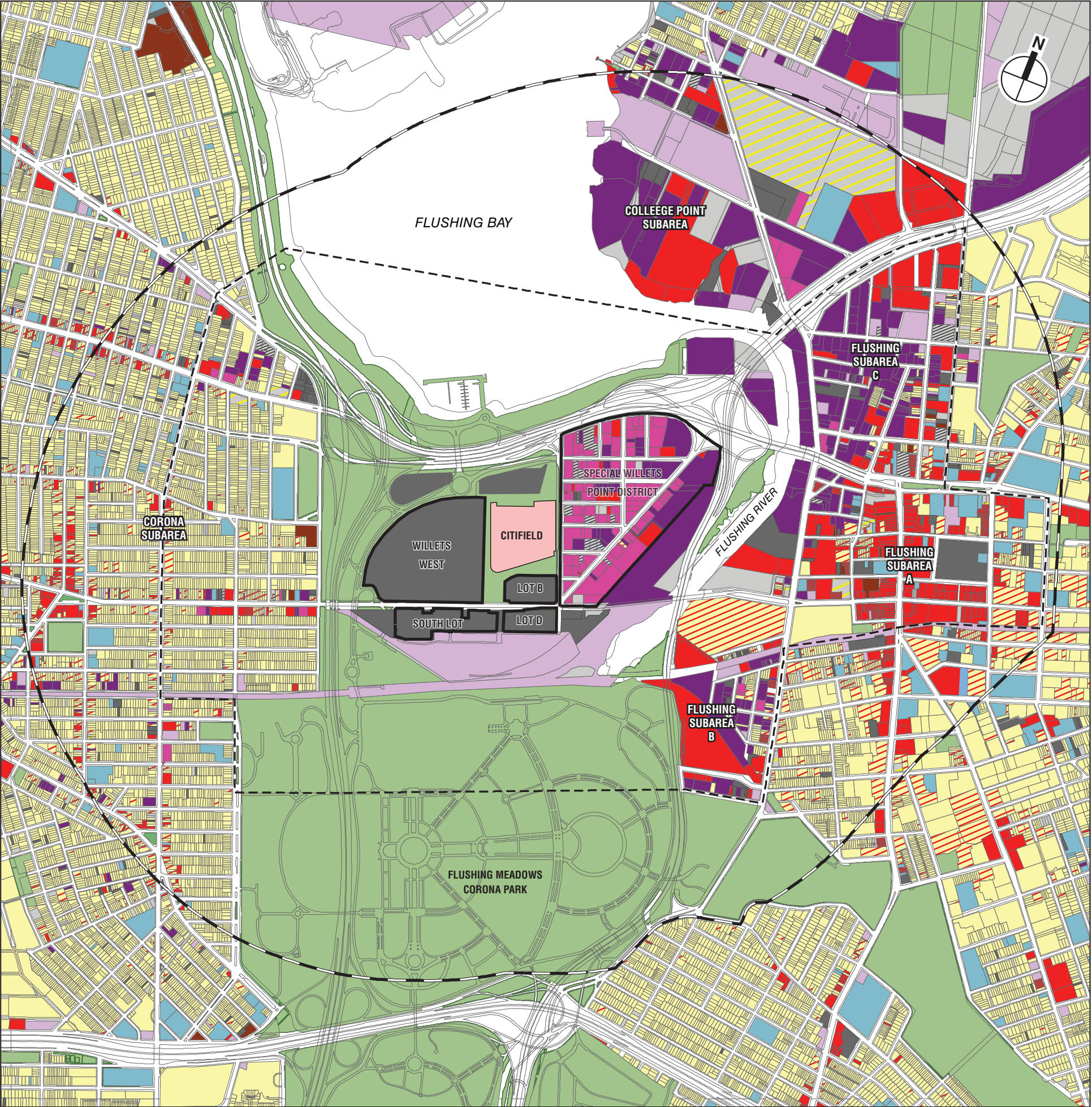
The 2008 FGEIS concluded that, although land uses would dramatically change in the District as a result of the proposed Willeys Point Development Plan (the “Plan”), replacing a predominantly low-density, auto-related and industrial use area with a new mixed-use neighborhood, including community facilities and additional open space, would improve the quality of life for area residents and visitors. Furthermore, the proposed convention center and commercial uses would enhance Flushing and Corona’s roles as regional economic centers, and would attract visitors to the area, and the proposed Plan would create a pedestrian-oriented regional entertainment and commercial center along 126th Street, which would complement the new retail uses planned along the west side of 126th Street as part of CitiField, creating synergy between CitiField and the proposed District. The 2008 FGEIS also noted that the proposed redevelopment represented a critical step in implementing the 2004 Downtown Flushing Development Framework strategy for the Flushing River waterfront and the Willeys Point peninsula. Therefore, the 2008 FGEIS concluded that the proposed Plan would not have any significant adverse impacts on land use, zoning, or public policy on the project site or study areas. Subsequent technical memoranda also concluded that the proposed revisions to the Plan would not have significant adverse impacts on land use, zoning, or public policy on the project site or study areas.

C. METHODOLOGY

This chapter has been prepared in accordance with the guidelines of the 2012 *City Environmental Quality Review (CEQR) Technical Manual*. It describes existing land use conditions and future conditions without the proposed project, and analyzes the probable impacts that the proposed project may have on land use, zoning, and public policy. Because of the scale of the proposed project, this analysis considers both a primary and secondary study area. The primary study area is the area generally located within ½ mile from the project site, and includes Downtown Flushing, portions of Flushing Meadows-Corona Park, and portions of Corona adjacent to Flushing Meadows-Corona Park (see **Figure 2-1**). The secondary study area is generally located between ½ and ¾ mile from the project site and includes portions of the Corona, College Point, and greater Flushing neighborhoods. The boundaries of the secondary study area generally extend from Bowne Street in Flushing to the east to 101st Street in Corona to the west, 28th Avenue in College Point to the north, and the Long Island Expressway (LIE) in Flushing Meadows-Corona Park to the south.

The primary and secondary land use study area boundaries are not defined solely by the ½- and ¾-mile radii around the project site, but rather reflect natural and manmade barriers and current land use patterns. Portions of several neighborhoods fall within the study area boundaries. Therefore, the impact analysis addresses several sub-areas as follows:

- **Flushing Subarea:** This area extends east of the Flushing River from Kissena Corridor Park to the Whitestone Expressway. The land use and zoning discussion below separates the Flushing Subarea into three sections, which generally reflect the different land use patterns



- Willets Point Development District Boundary
- - - Primary Study Area Boundary
- Secondary Study Area Boundary

- Residential
- Residential with Commercial Below
- Hotels
- Commercial and Office Buildings
- Public Facilities and Institutions
- Entertainment
- Auto-Related Use
- Industrial and Manufacturing
- Transportation and Utility
- Open Space and Outdoor Recreation
- Parking Facilities
- Vacant Land
- Vacant Building
- Under Construction

within the overall area, as follows: the area between the Long Island Rail Road (LIRR) tracks and Northern Boulevard (Flushing Subarea A); the area between the LIRR tracks and Kissena Corridor Park (Flushing Subarea B); and the area between Northern Boulevard and the Whitestone Expressway (Flushing Subarea C).

- Although a portion of Downtown Flushing (Flushing Subarea A) is located outside of the ½-mile primary study area boundary, the entire Downtown Flushing area is considered to be within the primary study area, as a cohesive district. In Flushing Subarea B, College Point Boulevard is approximately ½ mile from the District, and generally divides into distinct land use patterns; in light of this, the area to the west of College Point Boulevard is considered to be within the primary study area, and the area to the east is considered to be within the secondary study area. Similarly, in Flushing Subarea C, Linden Place is approximately ½ mile from the District and generally divides into distinct land use patterns; similarly, the area to the west of Linden Place is considered within the primary study area, and the area to the east is considered within the secondary study area.
- Corona Subarea: This area is roughly bounded by the Grand Central Parkway to the north, 55th Avenue to the south, 101st Street to the west, and 114th Street to the east. The Corona Subarea is located within both the ½- and ¾-mile radii around the project site, and is therefore considered in both study areas.
- College Point Subarea: This area extends south of 28th Avenue and west of the Whitestone Expressway to Flushing Bay. While a portion of College Point is located within ½ mile of the District, the entire College Point Subarea is considered within the secondary study area, as it is physically separated from the District by Flushing Bay and the Whitestone Expressway.
- Flushing Meadows-Corona Park: The park area considered within the primary study area is roughly within the ½-mile radius around the project site. The park area considered within the secondary study area includes the remainder of the park to the north of the LIE (which is beyond the ¾-mile radius), to reflect the intrinsic cohesiveness of the amenities and uses in that section of the park.

This analysis assesses future conditions in 2018, 2028, and 2032, when full buildout of the RWCDs is anticipated.

D. EXISTING CONDITIONS

LAND USE

PROJECT SITE

The project site is composed of three discrete areas—the Special Willets Point District (the “District”), Willets West, and three surface parking lots along Roosevelt Avenue (“Roosevelt Avenue”)—which are roughly bounded by Shea Road and Northern Boulevard to the north, the Van Wyck Expressway to the east, Roosevelt Avenue and the Metropolitan Transportation Authority (MTA) Corona Rail Yard to the south, and Shea Road to the west.

Special Willets Point District

The District portion of the project site comprises approximately 61 acres, approximately 15.8 acres of which are within public street rights-of-way, approximately 0.6 acres of which are owned by MTA, and the remainder of which is a mix of privately owned land and City-owned

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land. The District comprises 128 tax lots and one partial lot (Block 1833, Lot 1) located on 14 blocks. Since the FGEIS was completed in 2008, the City has acquired, or is in contract to purchase 95 percent of the land area within the proposed Phase 1A/1B footprint (Assemblage Option 2), and has control of 4 lots in the remainder of the District.

Land uses in the District primarily consist of auto-related services and industrial uses. Auto-related services are the most prevalent use in the District. These services consist of auto-body repair, auto glass, car washes and auto detailing, used and new auto part sales, tire sales, and vehicle towing. For the most part, these auto-related businesses occupy one-story garage buildings and Quonset-type structures, many of which contain multiple auto-related businesses. There are also a number of car junkyards in the District, which support auto salvage businesses.

The District also contains some industrial uses, including construction-related services and materials, and waste transfer and recycling. Lot areas in the District vary greatly in size and range from approximately 2,000 to 173,000 sf; the industrial uses generally occupy the larger lots. Two waste transfer businesses (Tully Environmental and Crown Container) are currently operating in the portion of the District that would be developed in Phase 2. Tully Environmental and Crown Container process putrescible waste, and construction and demolition debris. One large food production and distribution use—House of Spices—is located in the portion east of Willets Point Boulevard in the portion of the District that would be developed in Phase 2. One recycling business—Metal Green Recycling—is located on a City-owned parcel in the District north of 34th Avenue that would be developed in Phase 1A/1B. Several undeveloped lots in the District all contain either open-air storage of construction materials or used auto parts.

In addition to the auto-related and industrial uses, a few commercial uses exist in the District to cater to businesses in the area. These include a deli and grocery, and a restaurant. The District contains one institutional use, a private, members-only motorcycle club. Although residential uses are not permitted under the existing zoning, there is one residential unit in the District, located on Willets Point Boulevard.

Existing uses in the District consist of predominantly auto-related uses located in buildings with small footprints, with some commercial and manufacturing uses located throughout the District. In contrast, industrial uses along the Flushing River and Flushing Bay from Whitestone Expressway to approximately 37th Avenue consist primarily of manufacturing and industrial uses located on large lots in buildings with large footprints. These industrial and manufacturing uses contrast sharply with most of the uses and types of development in the nearby communities, such as the higher-density commercial and residential development in Downtown Flushing, and the primarily low- to mid-density residential neighborhood of Corona to the west of CitiField and the Grand Central Parkway. Deteriorated sidewalks, large potholes, corrugated metal building façades, and the widespread use of streets and sidewalks for vehicle parking and storage for adjacent automotive uses contribute to an unappealing streetscape and create uninviting and unsafe pedestrian conditions. Despite its transit-oriented location and proximity to Downtown Flushing and several thriving neighborhoods, Willets Point contains virtually none of the land use characteristics or patterns of its neighbors.

Willets West

The Willets West portion of the project site comprises an approximately 30.7-acre section of the surface parking field adjacent to CitiField, the stadium for the New York Mets. This area comprises a portion of Block 1787, Lot 20. While this portion of the project site is mapped as parkland in Flushing Meadows-Corona Park, it does not function as public open space. It was

occupied by Shea Stadium and associated parking and circulation space until it was replaced by CitiField in 2009; it is now occupied exclusively by surface parking.

Roosevelt Avenue

The Roosevelt Avenue portion of the project site comprises three CitiField-related surface parking lots (South Lot and Lots B and D) along Roosevelt Avenue. These lots are also mapped as parkland, but are occupied exclusively by surface parking. The Lot B parking lot, which comprises a portion of Block 1787, Lot 20 (north of Roosevelt Avenue), is approximately 4.7 acres in size; the South Lot and Lot D parking lots (south of Roosevelt Avenue), which comprises a portion of Block 2018, Lot 1500, are collectively approximately 12.1 acres in size. Lot D and South Lot are used for commuter parking and United States Tennis Association (USTA) National Tennis Center (NTC) events when baseball games are not in progress. Lot B is used as player and staff parking for CitiField events.

In total, the project site comprises approximately 108.9 acres.

The project site is mostly isolated from the surrounding neighborhoods by several natural and manmade barriers. The Flushing River lies to the east of the Van Wyck Expressway and beyond it, Downtown Flushing. North of Northern Boulevard is Flushing Bay, with the industrial area of College Point on its northern shore. To the south of the project site are the LIRR tracks for the Port Washington Line, the MTA Corona Rail Yard, and the USTA NTC, and to the west are located the Grand Central Parkway and the Corona neighborhood.

PRIMARY STUDY AREA

The primary study area includes portions of Flushing Meadows-Corona Park, Downtown Flushing, the greater Flushing area, and portions of Corona. Also included in the primary study area are the other uses on the Willets Point peninsula that lie outside the District. Directly east of the District is a large, undeveloped MTA property located along the Flushing River waterfront, a majority of which is leased to Tully Environmental, Inc., which operates a construction and demolition debris recycling operation on the site. To the north of the District, across Northern Boulevard, is a New York City Department of Transportation (NYCDOT) maintenance and repair facility, and between Northern Boulevard and the Van Wyck Expressway is an asphalt plant. To the northwest of the District, across Northern Boulevard, is the Flushing Bay Promenade, which lies within the boundary of Flushing Meadows-Corona Park and is described below. To the south of the District—south of Roosevelt Avenue, near the LIRR tracks—is the MTA Corona Rail Yard. The Corona Rail Yard, which is not part of Flushing Meadows-Corona Park, contains a storage area for subway cars as well as repair shops. The Casey Stengel Bus Depot is adjacent to the Corona Rail Yard.

Flushing Meadows-Corona Park

Flushing Meadows-Corona Park is a major recreational and cultural destination for Queens residents and visitors from throughout the New York metropolitan area. The park covers approximately 1,255 acres and is under the jurisdiction of the New York City Department of Parks and Recreation (DPR). The park is roughly bounded by several major thoroughfares: the Grand Central Parkway to the west, the Van Wyck Expressway to the east, and the beginning of the Whitestone Expressway to the north.

The primary study area includes the portion of the park that extends from Flushing Bay to just south of the USTA NTC. This portion of the park includes CitiField and its surrounding parking

Willets Point Development

fields. The elevated No. 7 subway line serves the primary study area, with the Mets-Willets Point station located adjacent to CitiField above Roosevelt Avenue. The LIRR also has a Mets-Willets Point station adjacent to the Corona Rail Yard, which operates on baseball game and USTA NTC event days. The Passerelle Ramp, which is for pedestrian use, spans the rail yard and connects both stations to CitiField and the USTA NTC.

The USTA NTC contains three stadiums and is host to tennis events year-round, including the U.S. Open. The USTA NTC contains the 23,000-seat Arthur Ashe Stadium, 10,000-seat Louis Armstrong Stadium, a smaller 3,500-seat stadium, and 30 additional tennis courts. The courts are open during the year for tennis clinics and camps, as well as for general public use. There is a small parking lot located adjacent to the USTA NTC; however, during the U.S. Open, CitiField lots are also used for parking.

East of the USTA NTC, the park contains a pitch and putt golf center, and a large area for passive and active recreation, with trees, pathways, and seating areas. West of the USTA NTC and the Grand Central Parkway, the park includes the New York Hall of Science. There is a large (500-space) parking lot adjacent to the museum. The Olmsted Center, located near the LIRR right-of-way immediately west of the USTA NTC, contains offices for the design and construction supervision divisions of DPR. The Passerelle Building, located under the Passerelle Ramp, contains offices and support facilities for the park. The Allied Building, located on the far-east side of the park south of Roosevelt Avenue and near the Van Wyck Expressway, contains DPR offices and storehouses.

To the north of Northern Boulevard is the Flushing Bay Promenade, which winds along Flushing Bay for approximately 1.4 miles from LaGuardia Airport to the Willets Point peninsula. The promenade contains many seating areas and provides access to the World's Fair Marina and a restaurant located northeast of CitiField. There are more than 1,000 parking spaces located to the east and west of the marina, which are also available for parking on Mets game days.

Flushing

Flushing is a thriving business and residential area known for its Asian goods and culture. Downtown Flushing and the greater Flushing area are home to a significant Chinese and Korean population, and there are many specialty food and retail stores, restaurants, and other services that are utilized not only by local residents, but also serve as a destination for people living outside of the community. The primary study area in Flushing contains Downtown Flushing, a regional transportation and commercial hub for Queens. While most of the commercial and cultural activity is centered along Northern Boulevard, Roosevelt Avenue, and Main Street, the Downtown Flushing study area (Flushing Subarea A) generally extends between the Flushing River to the west, Northern Boulevard to the north, Bowne Street to the east, and the LIRR tracks located south of Roosevelt Avenue to the south. Also located within the primary study area are the predominantly industrial areas in Flushing which are generally located along the Flushing River within approximately ½ mile of the District, with some commercial and mixed-uses areas south of 37th Avenue. To the south of the LIRR Port Washington Line (Flushing Subarea B), industrial uses are concentrated west of College Point Boulevard. To the north of Northern Boulevard (Flushing Subarea C), a large industrial district extends east of the Flushing River to Linden Place.

Downtown Flushing—Flushing Subarea A

Downtown Flushing is a center of commercial and cultural activity in Queens, and contains many Asian specialty food stores, restaurants, and retail stores that cater to the local population

and serve as a regional destination. Commercial uses predominate and are concentrated along Roosevelt Avenue, Northern Boulevard, Main Street, Union Street, and Prince Street. Industrial uses are mostly located west of College Point Boulevard along the Flushing River. Some residential and community facility uses are scattered throughout Downtown Flushing. East of Union Street, the neighborhood begins to transition to a more predominantly residential area.

The Downtown Flushing area has been changing in character in recent years, as more high-density residential and large-scale mixed-use developments are either under construction or planned throughout the area. Queens Crossing, a recently completed large mixed-use development, is located between Main and Union Streets, north of 39th Avenue. Another large mixed-use development planned in this area is Flushing Commons. Two large mixed-use developments—Sky View Parc Phase II and River Park Place—are planned on sites located near the Flushing River. These and other planned development projects are described below in Section D, “Future without the Proposed Project.”

Residential Uses.

Residential uses in Downtown Flushing are primarily located east of Union Street, where the neighborhood becomes more residential in character. In this area, residential uses primarily consist of mid-rise apartment buildings between 6 and 10 stories with retail uses on the ground floor, as well as three-story rowhouses, some of which contain ground-floor retail uses. Some residential uses are interspersed between the commercial uses in Downtown Flushing to the west of Union Street. The 400-unit New York City Housing Authority (NYCHA) Bland Houses are located at the southeast corner of Roosevelt Avenue and College Point Boulevard, and a 60-unit residential building is located at the corner of 39th Avenue and College Point Boulevard.

Commercial Uses.

Specialty retail uses are prevalent on most streets in the area, which are lined with numerous retail shops, food establishments, convenience goods stores, and neighborhood services. As mentioned previously, Roosevelt Avenue, Northern Boulevard, Main Street, and Prince Street are the primary commercial corridors in Subarea A. Two major commercial centers, Assi Plaza and the Flushing Mall, are located near the intersection of College Point Boulevard and 39th Avenue and contain a collection of businesses catering to the area’s Asian population. Sky View Center—part of the Sky View Parc development bounded by Whitestone Expressway, 40th Road, College Point Boulevard, and Roosevelt Avenue—is also a major commercial center with several large department and electronic stores and a warehouse club. In addition, a 173-room Sheraton hotel is located on 39th Avenue between Prince and Main Streets.

Manufacturing and Industrial Uses.

Most industrial uses are located west of College Point Boulevard, along the eastern bank of the Flushing River. These include a 110,000-sf U-Haul facility and an asphalt plant that utilizes barges for transporting materials to and from its facility.

Transportation and Utility Uses.

The No. 7 subway line has a terminal station at Roosevelt Avenue and Main Street. The right-of-way for the LIRR Port Washington Line forms the southern boundary of this subarea, with a station located at Main Street and 41st Avenue.

There are several municipal parking lots in Downtown Flushing. Municipal Lot No. 1, located between Union Street, 138th Street, and 37th and 39th Avenues, contains approximately 1,020 public parking spaces, and is the site of a proposed mixed-use development known as Flushing Commons, described below in Section D, “Future without the Proposed Project.” Flushing

Willeys Point Development

Municipal Lot No. 2 is located on the east side of Prince Street between 38th and 39th Avenues and contains approximately 87 parking spaces. Flushing Municipal Lot No. 4 is located underneath the Northern Boulevard viaduct and contains approximately 93 parking spaces.

Community Facilities and Open Spaces.

Notable community facilities in Downtown Flushing include Flushing Town Hall, which is located on Northern Boulevard and is used as a concert hall and cultural center; the Flushing Armory, located on Northern Boulevard, which houses the New York City Police Department (NYPD) Queens North task force unit; the Friends Meeting House, also on Northern Boulevard; and St. George's Church on Main Street between 38th and 39th Avenues. Other community facilities in this area include a YMCA building on Northern Boulevard, the Macedonia African Methodist Episcopal Church located adjacent to Municipal Lot No. 1, and the Flushing House Community Residence, a 319-unit nursing home located on Bowne Street and 38th Avenue.

There are only two publicly accessible open spaces in this area. One is an approximately 1.7-acre area with amenities such as basketball courts, walkways, and benches located within the grounds of the NYCHA Bland Houses at the corner of Prince Street and 40th Road. The other is the approximately half-acre Bland Park located just outside of the NYCHA campus.

Flushing Subarea B

This portion of the primary study area located south of the LIRR right-of-way and west of College Point Boulevard is characterized by a mix of industrial, commercial, and residential uses. Since this area is adjacent to Flushing Meadows-Corona Park and there is no outlet for streets running west of College Point Boulevard, traffic is light on these streets.

Residential Uses.

Residential uses in this area are generally located within one to two blocks of College Point Boulevard and are interspersed with active industrial and commercial uses. The residential uses here are generally low-density, consisting of two-story attached residences, as well as a cluster of single family homes located on Haight Street.

Commercial Uses.

The most prominent commercial use in this area is a 150,000-sf Home Depot, located on Avery Avenue just west of College Point Boulevard. Neighborhood retail establishments are also prevalent along College Point Boulevard, and include small retail service establishments, convenience stores, and fast-food restaurants.

Manufacturing and Industrial Uses.

A variety of light-manufacturing, warehousing, and automotive uses are found in this area, including sign stores, a furniture warehouse, and an auto body repair shop.

Transportation and Utility Uses.

The right-of-way for the LIRR Port Washington Line forms the northern boundary of this subarea, and the Van Wyck Expressway forms the western boundary.

Community Facilities and Open Space.

There are no community facility uses in this subarea. Flushing Meadows-Corona Park, described above, is located both west of the Van Wyck Expressway and south of Fowler Avenue. There are no other publicly accessible open spaces in this area.

Flushing Subarea C

This portion of the primary study area located west of Linden Place between Northern Boulevard and the Whitestone Expressway primarily consists of industrial and manufacturing

uses, with some commercial, office, neighborhood retail, and residential uses generally located east of Prince Street.

Residential Uses.

Residential uses are limited in this area, and are interspersed with surrounding commercial, industrial, and warehouse uses. Residential buildings are primarily located east of Prince Street between 32nd and 35th Avenues. The residential buildings in this area are a mix of single-family attached and detached homes and mid-rise buildings, some of which contain commercial uses on the ground floor.

Commercial Uses.

There is a mix of large commercial uses and dense neighborhood retail and office uses along the two main thoroughfares in this area, the Whitestone Expressway and Northern Boulevard. Commercial uses concentrated along the Whitestone Expressway include fast-food restaurants, a bowling alley, commercial office space, a bank, and a car wash. Large commercial buildings, including auto-related uses and commercial distributing uses, are located west of Prince Street and north of 35th Avenue. Neighborhood commercial and office uses, such as gas stations, restaurants, realtors, and nail salons, are mostly located along Northern Boulevard, and in the area east of Prince Street and south of 35th Avenue.

Manufacturing and Industrial Uses.

Manufacturing and industrial uses are the predominant uses in this area, and include building material companies, such as cement, concrete, lumber and tile, warehousing uses, and some auto-related uses. Some of the heavy industrial uses on the Flushing River waterfront, such as the cement and asphalt operations, use barges to transport materials to and from their sites. The area north of 35th Avenue and west of Prince Street primarily contains warehousing, distribution, and wholesale facilities for specialty Asian goods.

Transportation and Utility Uses.

The Whitestone Expressway forms the northern boundary of this subarea. Utility uses include a DEP sewer maintenance facility, located on Downing Street at 32nd Avenue, and Con Edison maintenance and vehicle storage facilities, located on 32nd Avenue near Farrington Street, as well as on College Point Boulevard near 35th Avenue.

Community Facilities and Open Space.

Community facilities in this area are limited, but include religious facilities such as the Queens Alliance Church, Calvary World Mission, and the Disciples Church of New York. There are no open space areas in this area.

Corona

The portion of the primary study area bounded by 114th Street to the east, 108th Street to the west, Grand Central Parkway to the north, and 44th Avenue to the south primarily consists of residential uses, with some commercial and manufacturing uses concentrated along Northern Boulevard and Roosevelt Avenue.

Residential Uses

This portion of the primary study area is predominantly residential in character and contains a variety of housing types, including detached one- and two-family residences on narrow lots, attached row-houses and multi-family dwelling units, and apartment buildings. Other prominent residential uses include the 301-unit Dorie Miller Cooperative housing development located on

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114th Street between Northern Boulevard and 34th Avenue, and the 132-unit Meadow Manor housing development located at 113th Street and 34th Avenue.

Commercial Uses

There is a mix of commercial uses and dense neighborhood retail and office uses along Northern Boulevard and Roosevelt Avenue. Neighborhood commercial uses are located primarily along Roosevelt Avenue, and include realty offices, fast-food restaurants, gas stations, nail salons, grocery stores, clothing stores, discount stores, furniture stores, pharmacies, and restaurants. A few commercial uses are located along Northern Boulevard, including a steakhouse and car dealership. However, recent and anticipated development along Northern Boulevard is establishing more high-density, mixed residential and commercial uses.

Manufacturing and Industrial Uses

A few auto-related uses are located on Northern Boulevard. Some light manufacturing uses are located on 111th Street between Northern Boulevard and Astoria Boulevard, including a live chicken wholesale warehouse and storage warehouse. A construction material distribution warehouse and a few auto-related uses are also located on Roosevelt Avenue.

Transportation and Utility

The right-of-way for the LIRR Port Washington Line forms the southern boundary of this subarea, and the Grand Central Parkway forms the northern boundary. The No. 7 subway line, which is elevated above Roosevelt Avenue, has a station at 111th Street.

Community Facility and Open Space

Notable community facilities in this portion of Corona include the Louis Armstrong School (P.S. 143), located on 37th Avenue between 112th and 113th Streets. Directly opposite is Hinton Park, a 3.7-acre park that stretches from 34th to 37th Avenues between 113th and 114th Streets and features game tables, benches, baseball diamonds, and play areas. Religious facilities include the New York Church of Christ, located at 37-06 111th Street, and Mount Horeb Baptist Church, located at the southwest corner of 34th Avenue and 110th Street. The Child Center of New York day care center is located on Northern Boulevard between 111th and 112th Streets.

SECONDARY STUDY AREA

The secondary study area includes the College Point and Flushing neighborhoods, as well as additional portions of Corona and portions of Flushing Meadows-Corona Park north of the Long Island Expressway. In Flushing and Corona, the secondary study area subareas are extensions of the neighborhoods in the primary study area. The Corona and College Point portions of the study area are separated from the project site either by a substantial distance or by significant natural or manmade barriers.

Flushing Meadows-Corona Park

The portion of Flushing Meadows-Corona Park that falls within the secondary study area contains several cultural institutions housed in buildings dating from the 1939 and 1964 World's Fairs, as well as recreational and sporting facilities, several baseball and soccer fields, and a number of playgrounds. The cultural institutions include the 1939 New York City Pavilion just south of the USTA NTC, which contains the Queens Museum of Art (QMA). The Unisphere sculpture, which has become a symbol for the park and is a New York City Landmark (NYCL), stands directly east of the QMA. The Queens Wildlife Center, Terrace on the Park catering/restaurant facility, and Playground for All Children (a special playground for both able-bodied and disabled children) are located in the portion of the park west of the Grand Central

Parkway, just south of the Hall of Science. The Queens Theatre and Maloof Skate Park are located south of the QMA. An ice rink and natatorium facility are located in the far eastern portion of the park. The southern portion of the park is located south of the LIE and is outside of the land use study area.

In addition to the various cultural institutions, sporting events, and recreational activities in the park, Flushing Meadows-Corona Park is host to numerous festivals and gatherings throughout the year, attracting hundreds of thousands of visitors. Some groups hold daylong events, such as the Peruvian, Colombian, and Dominican festivals. Other well known festivals held in the park are the Hong Kong Dragon Boat Festival, the Korean Harvest and Folklore Festival, and DPR's Spring Festival.

Corona

The predominantly residential neighborhood in the Corona subarea is located west of 108th Street and east of 101st Street between Grand Central Parkway and 53rd Avenue. The subarea's main thoroughfares are Northern Boulevard and Roosevelt Avenue. These corridors, along with 103rd Street from 37th Avenue to 44th Avenue, are lined with neighborhood commercial uses such as delis, grocery stores, retail services, and restaurants. Corona contains a variety of housing types, including detached one- and two-family residences on narrow lots, attached row-houses and multi-family dwelling units, and apartment buildings.

Park of the Americas (Linden Park), bounded by 41st Avenue, 104th Street, 42 Avenue, and 103 Street, is a 3.08-acre park equipped with a ballfield, basketball courts, and playgrounds. The Corona Gold Playground bounded by 46th and 47th Avenue, 109th Street, and the Flushing Meadows-Corona Playground is a 1.7-acre park equipped with basketball courts, fitness equipment, handball courts, and jungle gyms. Notable community facilities include the Louis Armstrong Rehabilitation Center on Northern Boulevard, the BCL Day Care Center on 108th Street, Our Lady of Sorrows Church and School on 105th Street, the Nancy Debeneditis School (P.S. Q016) across from Park of the Americas, St. Leo's Roman Catholic Church on 49th Avenue, and the Thomas Emanuel Early Childhood Center (P.S. 28) on 47th Avenue.

Flushing

The portions of Flushing located in the secondary study area consist of the predominantly residential areas located to the north and south of Downtown Flushing. There are a number of community facility and institutional uses in this subarea, supporting the greater Flushing area. Commercial uses are generally located along main thoroughfares such as Main and Union Streets.

Flushing Subarea B

This subarea is generally located south of the LIRR Port Washington Line and east of College Point Boulevard. Main Street, which divides the area, is the main commercial corridor with retail uses common to Downtown Flushing. The area east of Main Street is characterized by mid-rise residential structures with ground-floor retail interspersed with several large low-rise commercial buildings. The area west of Main Street is primarily residential, with tree-lined streets and low-rise row houses, though recent and ongoing construction activities are replacing some of the low-density residential buildings in this area with new, higher-density development.

Institutional uses are primarily concentrated east of Main Street and include the Flushing Branch of the Queens Public Library at the intersection of Main Street and Kissena Boulevard, Saint Michael's Church on Union Street between Barclay Avenue and 41st Avenue, the Free

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Synagogue of Flushing at the corner of Kissena Boulevard and Sanford Avenue, P.S. 20 at Sanford Avenue and Union Street, and the Flushing Post Office on Main Street between Sanford and Maple Avenues. The Boy's Club of New York is located west of Main Street, at the intersection of Frame Place and 41st Road.

The New York City Department of Environmental Protection (DEP) recently constructed a sewage retention tank at the eastern corner of College Point Boulevard and Fowler Avenue, on top of which is a DPR soccer field.

As stated previously, the LIRR Port Washington Line forms the northern boundary of this subarea, with a station located at Main Street and 41st Avenue. Flushing Municipal Lot No. 3 is adjacent to the LIRR station on 41st Avenue, with approximately 157 parking spaces.

This subarea is bounded on the south by Kissena Corridor West, a 100-acre park that links Flushing Meadows-Corona Park (west of the Van Wyck Expressway) to Kissena Park east of Kissena Boulevard. Kissena Corridor West contains the Queens Botanical Garden, as well as natural areas and recreational amenities.

Flushing Subarea C

This subarea is generally located east of Linden Place, between the Whitestone Expressway and Northern Boulevard, and contains the residential neighborhood surrounding Leavitt Field, a large park.

Residential buildings in this area are a mix of single- and multi-family homes and mid- to high-rise apartment buildings. High-rise apartment buildings are located north of 32nd Avenue. Single- and multi-family homes and some mid-rise apartment buildings are generally located south of 32nd Avenue. Latimer Gardens, a 424-unit NYCHA apartment complex, is located south of 32nd Avenue, adjacent to Leavitt Field. Leavitt Field, an approximately 7.5-acre park bounded by 32nd Avenue, Leavitt Street, and 137th Street, primarily contains active recreational uses, including tennis courts and ballfields.

Neighborhood commercial and office uses are primarily located along Northern Boulevard and Union Street. Commercial uses on Union Street are located on the ground floor with residential units above.

There are numerous community facilities in this area. Educational institutions include Queens Academy High School, P.S. 242, and H.S. 460 (Flushing High School). Several churches are located along Union Street and 35th Avenue. Other community facilities include the Union Plaza Health Care Facility, and Flushing Town Hall, located on Northern Boulevard.

College Point

The College Point subarea is a predominantly industrial area located on the Flushing Bay waterfront, and extends to 28th Avenue to the north and the Whitestone Expressway to the east. This subarea contains heavy industrial and commercial uses located on large lots, and is partially located within the College Point Corporate Park, which covers the area north and east of College Point Boulevard and the Whitestone Expressway. The Corporate Park is described in more detail below under "Public Policy." Several heavy industrial uses located along the waterfront are water-dependent, and use barges to transport materials to and from their facilities.

Large industrial and manufacturing uses in this subarea include Ferraro Brothers Cement, St. Lawrence Cement, and Crystal Windows and Doors, as well as two large municipal facilities that are currently under construction. The new Department of Sanitation of New York (DSNY) North Shore marine transfer station (MTS), part of DSNY's long-term waste export program, is located on Flushing Bay at 31st Avenue. The facility is currently under construction and is expected to be

complete in 2013. The City also is currently constructing a new NYPD academy on the site of the former NYPD tow pound between 28th Avenue and College Point Boulevard. These projects are described in greater detail below in Section D, “Future without the Proposed Project.”

This subarea also includes several large-scale commercial uses. A Home Depot is located on 31st Avenue, west of College Point Boulevard. Several commercial uses are located along the Whitestone Expressway, including a shopping center with a multiplex cinema, Toys ‘R’ Us, an Office Depot, and the Whitestone Executive Plaza, which contains office space and several commercial establishments. Other commercial uses are located along College Point Boulevard and include a Marriott Fairfield Inn hotel, as well as auto-related uses such as towing, car wash, and a truck dealer and repair. In addition, the Williamsburgh Yacht Club is located on Flushing Bay at 28th Avenue.

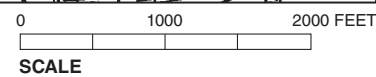
One large institutional use is located in this area; the Korea World Mission Center, which also houses the Full Gospel Christian School. There are no residential or open spaces in this area.

ZONING

Zoning is a tool for implementing the City’s planning and development objectives by regulating land use, density, and building bulk. Existing zoning and its relationship to land use character are described below. The existing zoning on the project site and in the surrounding study areas is shown in **Table 2-1** and **Figure 2-2**.

Table 2-1
Zoning Districts in Primary and Secondary Study Areas

Zoning District	Maximum FAR ^{1,2}	Uses/Zone Type
Residence Districts		
R3-2	0.5 R plus 0.1 attic allowance ³	General residence district; low-density housing
R4	0.75 R plus 0.15 attic allowance ³	General residence district; low-density housing
R5	1.25 R, 2.0 CF	General residence district; low-density housing
R5A	1.1 R, 2.0 CF	Contextual residence district; low-density housing
R5D	2.0 R, 2.0 CF	Contextual residence district, low to medium-density housing
R6	0.78 to 2.43 R, 3.0 QH, 4.8 CF	General residence district, medium-density housing
R6A	3.0 R, 3.0 CF	Contextual residence district allowing medium-density housing
R6B	2.0 R, 2.0 CF	Contextual residence district, allowing medium-density housing, low-rise buildings with greater lot coverage
R7-1	3.44 R, 4.0 QH, 4.8 CF	General residence district; medium-density housing
Commercial Districts		
C4-2 ⁴	3.4 C, 2.43 R, 4.8 CF	Major commercial centers outside of central business district
C4-3	3.4 C, 2.43 R, 4.8 CF	Major commercial centers outside of central business district
C4-4	3.4 C, 3.44 R, 6.5 CF	Major commercial centers outside of central business district
Manufacturing Districts		
M1-1	1.0 M, 1.0 C, 2.4 CF	Light manufacturing and most commercial uses, located adjacent to low-density residential areas
M1-2	2.0 M, 2.0 C, 4.8 CF	Light manufacturing and most commercial uses, older industrial areas, strict manufacturing performance standards
M2-1	2.0 M, 2.0 C	Medium manufacturing and most commercial uses, moderate manufacturing performance standards
M3-1	2.0 M, 2.0 C	Heavy manufacturing and most commercial uses, minimum manufacturing performance standards
Notes:		
¹ Floor area ratio (FAR) is a measure of density establishing the amount of development allowed in proportion to the base lot area. For example, a lot of 10,000 square feet (sf) with a FAR of 1 has an allowable building area of 10,000 square feet. The same lot with an FAR of 10 has an allowable building area of 100,000 sf.		
² CF=Community Facility, R=Residential, QH=Quality Housing, C=Commercial, M=Manufacturing.		
³ The maximum FAR is increased by the attic allowance which provides up to 20 percent additional FAR for space beneath a pitched roof that has structural headroom of between five and eight feet.		
⁴ Commercial overlay districts including C1-2, C1-4, C2-1, C2-2, and C2-4 are mapped with residential districts (R5 and above) along the study area’s heavily traveled roadways.		
Source: New York City Zoning Resolution.		



Existing Zoning
Figure 2-2

PROJECT SITE

The Special Willets Point District is coterminous with a C4-4 zoning district. The District was created in 2008 to allow for the redevelopment of this portion of the project site consistent with the Willets Point Development Plan.

C4-4 commercial districts are located outside of central business districts and generally serve a larger region than neighborhood shopping areas. Within the District, the zoning allows a range of maximum FARs, as follows: in the area generally west of 127th Street and south of 34th Avenue, a maximum 5 FAR; west of 127th Street and north of 34th Avenue, 3.4 FAR; east of Willets Point Boulevard, 4.0 FAR; north of 34th Avenue and east of 127th Street, 2.0 FAR; and in the triangle formed by 34th Avenue, 127th Street, and Willets Point Boulevard, 3.0 FAR. Throughout the District, the maximum commercial FAR is limited to 2.0.

As defined in the Zoning Resolution, the establishment of the District in 2008 was designed to promote several specific goals:

- Transform Willets Point into a diverse and sustainable community that enhances connections to its surroundings through a unique combination of uses;
- Create a retail and entertainment destination that catalyzes future growth and strengthens Flushing's role as a nexus of economic, social, and cultural activity;
- Encourage a mix of uses that complement sporting venues within Flushing Meadows-Corona Park;
- Maximize utilization of mass transit, reducing the automobile dependency of the redevelopment;
- Create a livable community combining housing, retail, and other uses throughout the District;
- Create a walkable, urban streetscape environment with publicly accessible open spaces;
- Encourage the pedestrian orientation of ground floor uses;
- Build upon the diversity of the Borough of Queens as well as the proximity of regional transportation facilities, including the Van Wyck and Whitestone Expressways, LaGuardia and JFK Airports and the LIRR;
- Provide flexibility of architectural design within limits established to assure adequate access of light and air to the street, and thus to encourage more attractive and economic building forms; and
- Promote the most desirable use of land and building development in accordance with the District Plan and Urban Renewal Plan for Willets Point and thus improve the value of land and buildings and thereby improve the City's tax revenues.

The regulations of the District waive certain C4-4 district requirements and the need for certain CPC and New York City Board of Standards and Appeals (BSA) special permits. To create an appropriate scale and density within the District's surroundings, the District regulates a number of urban design elements, including the number of intersections along 126th Street, building heights and setbacks, street hierarchies, streetscape design, and basic site planning and design provisions.

The Willets West and Roosevelt Avenue areas of the project site are mapped parkland that has been authorized for other uses by statute. A small M1-1 area in the South Lot along Roosevelt Avenue is not part of the project site.

PRIMARY STUDY AREA

The areas north and east of the District within the Willets Point peninsula are zoned R3-2 and M3-1, and the portions of the Flushing Bay waterfront north of the project site are mapped as parkland. Much of the area south of the project site also is mapped as parkland (part of Flushing Meadows-Corona Park); however, the area south of the Roosevelt Avenue portion of the project site containing the LIRR tracks and Corona Rail Yard is zoned M1-1.

R3-2 districts are general residential districts that allow a variety of housing types. R3-2 districts allow a maximum FAR of 0.6, which includes a 0.1 attic allowance. M3 districts allow heavy industrial uses that generate noise, traffic, or pollutants. They are typically located on waterfronts or in industrial sectors, where they can be buffered from residential areas. M3-1 districts allow a maximum FAR of 2.0, and parking is required. The M1-1 district allows light industrial uses that comply with more stringent performance standards, such as warehousing, storage facilities, and auto repair shops. A maximum FAR of 1.0 is permitted in M1-1 districts.

Flushing

The Flushing subarea contains a mix of zoning districts, with manufacturing (M3-1, M2-1, M1-2, and M1-1) and commercial (C4-2) districts located near the Flushing River waterfront, and commercial (C4-3) and residential (R6) districts located farther east.

Downtown Flushing—Subarea A

The Downtown Flushing subarea contains commercial C4-2, C4-3, and C4-4 districts and a residential R6 district. The C4-2 district generally extends west of Main Street to the Flushing River waterfront; this area was rezoned in 1998 from a manufacturing district to encourage residential and commercial development along the waterfront. The zoning also requires new development to provide public access to the waterfront in accordance with a Waterfront Access Plan (WAP). The blocks between Main and Union Streets are generally mapped C4-3, and a C4-4 district is bounded by Union Street, Rosenthal Place, 138th Street and 33rd Avenue. C4 districts are mapped in regional commercial districts and allow medium density commercial development and uses such as specialty and department stores, which serve the needs of a larger area. Both the C4-2 and C4-3 districts allow residential uses at a maximum FAR of 2.43 and commercial uses at a maximum FAR of 3.4. C4-4 districts allow residential at a maximum FAR of 3.4 and commercial uses at a maximum FAR of 3.44.

An R6 district extends east of Union Street between Northern Boulevard and the LIRR right-of-way forming the southern boundary of this subarea. Residential R6 districts are medium-density residential districts which allow a maximum FAR of 2.43. The character of R6 districts typically range from row houses to larger tower developments. Much of the R6 district in this subarea contains either a commercial C1-2 or C2-2 overlay. Commercial overlays within residential districts generally serve the local retail needs of the surrounding neighborhoods. Within the R6 district, both commercial overlays permit commercial uses at an FAR of 2.0.

Just south of Northern Boulevard, close to the Flushing River, are manufacturing M3-1 and M1-1 districts. The characteristics of these districts are described above.

Willels Point Development

Flushing Subarea B

This subarea is generally zoned for manufacturing uses. Zoning districts to the west of College Point Boulevard are predominantly M1-1 and M1-2 with a small enclave zoned M3-1. As described above, M1 districts are for lighter industrial uses, while M3 districts are for heavy industrial uses and contain minimum performance standards. M1-1 districts permit a maximum FAR of 1.0, while M1-2 and M3-1 districts permit a maximum FAR of 2.0. Both zoning districts have parking requirements, which vary depending on the type of use and size of the establishment.

A small portion of this area is within a residential R6 district, with a commercial C2-3 overlay extending along a stretch of College Point Boulevard. The commercial C2-3 overlay mapped in this R6 district allows commercial use at 2.0 FAR.

Flushing Subarea C

This subarea is predominantly zoned M1-1 and M2-1; however, a small area to the north of Northern Boulevard is within a residential R6 district with a C2-2 commercial overlay. The characteristics of these zoning districts are described above.

Corona

The Corona subarea is zoned primarily with medium-density residential districts, including R6, R6A, and R6B, with C2-2 and C2-4 commercial overlays. The R6 district has a C2-4 overlay mapped at the corner of Northern Boulevard and Grand Central Parkway; the R6A district has a C2-4 overlay mapped along Northern Boulevard; and the R6B district has a C2-4 overlay mapped along 108th Street and the north side of Roosevelt Avenue, and a C2-2 overlay mapped along the south side of Roosevelt Avenue. The R6A district extends along portions of Astoria and Northern Boulevards; the R6B district stretches along 108th Street from north of LIRR tracks to 37th Avenue, and along 37th Avenue from 106th to 112th Streets. The area generally south of 37th Avenue is zoned as R5 and R5A districts. Two small areas located north of Northern Boulevard and south of Roosevelt Avenue adjacent to Flushing Meadows-Corona Park are zoned as R4 districts.

The R6A contextual district allows medium-density residential development with a maximum FAR of 3.0. The R6B zoning district allows a maximum FAR of 2.0 and restricts density, limits building heights, and requires minimum setbacks in relation to the building's height, thereby maintaining a contextual residential neighborhood with single and multiple-dwelling homes rising four or five stories in height. R5 districts permit a variety of housing stock, including three-story attached houses and small apartment buildings, but limit development to 1.25 FAR with a maximum building height of 40 feet. The R5A district is a contextual residential district with a maximum FAR of 1.1 that restricts building heights and requires minimum setbacks in relation to the building height, thereby maintaining a contextual residential neighborhood with single-dwelling homes rising no greater than 35 feet in height. R4 zoning districts are similar to the R5 district with respect to multi-family development and front, side, and rear-yard requirements; however, they have a lower maximum FAR of 0.75 (up to 0.9 FAR with a 20 percent increase for an attic allowance), which is generally accommodated in the pitched roof design of homes common to this district.

SECONDARY STUDY AREA

Corona

The Corona subarea is zoned primarily for low- to medium-density residential districts, including R4, R5, R5A, and R6B, with commercial overlay districts along the main thoroughfares, such as Roosevelt Avenue, National Street, 103rd Street, and 104th Street. As with the primary study area, smaller portions of this subarea—generally located south of Roosevelt Avenue and north of Northern Boulevard—are within R4 or R5 districts, which are lower-density residential districts described above. An R6B district with C1-2, C1-4, and C2-2 overlays is mapped in the eastern portion of the area along Roosevelt Avenue, National Street, and 103rd Street.

Flushing

Flushing Subarea B

This subarea is primarily zoned R6, although small areas north of Kissena Boulevard are within C4-2 and R7-1 districts. Within the R6 district, a commercial C1-2 overlay is mapped along Main Street. The C4-2 district, as described above, allows major retail businesses and larger local establishments to exist in a high-density area. The R7-1 district allows residential development similar to R6 districts, although a higher FAR (up to 3.44 FAR) is permitted with less lot coverage.

Flushing Subarea C

This subarea is primarily within a residential R6 district. A commercial C2-2 overlay is mapped within this R6 district along Northern Boulevard to the west of Union Street.

College Point

The College Point portion of the secondary study area is predominantly zoned M1-1 and M2-1.

PUBLIC POLICY

Since World War II, there have been numerous attempts to redevelop Willets Point, which became known over the years for its many auto repair businesses and junkyards, and as an incineration ash disposal site for decades prior. Since 2000, these planning efforts have accelerated. In 2001, the New York City Department of Housing Preservation and Development (HPD) held a design workshop that explored potential redevelopment ideas for Willets Point. The workshop recommended land uses that would reconnect Willets Point with its neighboring communities and attract visitors from nearby attractions and facilities such as Downtown Flushing, Flushing Meadows-Corona Park, Shea Stadium, and hotels servicing nearby LaGuardia and Kennedy Airports.

Around the same time, in 2002, the City created the Downtown Flushing Task Force to undertake a community planning process involving City and State agencies, local and State elected officials, community members, advocacy groups, and local business leaders. The resulting development plan, the Downtown Flushing Development Framework, was completed in May 2004. The Framework identified a set of land use and economic goals to revitalize Downtown Flushing, the Flushing River waterfront, and Willets Point, and to strengthen the area as a regional center, with enhanced connections to neighboring amenities and communities, and is described in more detail below.

Willets Point Development

Additional public policies that apply to either the District or the study areas are also described below.

WILLETS POINT URBAN RENEWAL PLAN

The Willets Point Urban Renewal Plan (URP) was adopted in 2008. The URP defined the boundaries of the District and the area to be redeveloped and established maximum square footage development envelopes, in accordance with the City's redevelopment goals. The overall maximum permitted floor area in the District was defined as 8.94 million square feet of zoning floor area (zsf), with maximum permitted floor areas for residential and commercial uses (5,850,000 zsf of residential use, 3,160,000 zsf of commercial use). The URP, as well as the special district regulations, also requires the creation of a minimum of eight acres of open space in the District and a minimum 650-seat school.

DOWNTOWN FLUSHING DEVELOPMENT FRAMEWORK

The Framework was initiated by the New York City Economic Development Corporation (EDC) and New York City Department of City Planning (DCP), and is a land use planning strategy for the future growth and sustainability of Downtown Flushing, the Flushing River waterfront, and the Willets Point peninsula. It considered opportunities for mixed-use development, improved connections with adjacent regional destinations, enhancements to public open spaces and streetscapes, and transportation and parking strategies.

The Framework looked at the development potential of the Willets Point peninsula, examining the opportunity to create a large-scale economic impact and transform the Flushing area into a regional destination. It also discussed the need to improve the environmental quality of the area. The Framework identified the creation of a long-term redevelopment plan for the Willets Point area as one of the principal implementation goals. Based on an analysis of the area's assets and development constraints, the Framework identified the following land use and economic goals to be achieved through development within Willets Point:

- Create a regional destination that would enhance economic growth in Downtown Flushing and Corona;
- Improve environmental conditions in the District and reflect the sensitive nature of its waterfront setting;
- Create a larger, expanded Flushing core by integrating the two sides of the Flushing River through land use and design;
- Complement the adjacent recreational and sporting facilities;
- Optimize use of the existing highway, public transit, and parking infrastructure to minimize local traffic impacts; and
- Create substantial positive economic value for the City and provide a source of quality jobs for area residents.

The Framework identified ways to renew the central business, residential, and shopping core in Downtown Flushing by enhancing the pedestrian experience and retail options. Specific recommendations included a series of streetscape improvements, façade upgrades, a coordinated marketing program, and improvements to the design of critical gateway intersections connecting Downtown Flushing to the surrounding areas. Other recommendations focused on leveraging

Downtown Flushing's significant transportation assets to enhance mobility, improve the pedestrian environment, and enhance mass transit proximity to the waterfront.

The Framework identified the Flushing River waterfront as the greatest unifying element, with the potential to connect activity at Willets Point to the Downtown Flushing area, and envisioned the waterfront area as containing a combination of open space and mixed-use development that would attract residents and visitors to the waterfront. The Framework set forth a number of recommendations for the waterfront area, including: improving the environmental quality of the river and surrounding wetlands; facilitating the creation of an esplanade along the eastern shore of the Flushing River; introducing a new community open space at the northern anchor of the esplanade; and improving access to the waterfront and creating a continuous open space system around the Flushing River.

PLANYC 2030

Released by the City in April 2007 and updated in 2011, this 128-point plan was prepared to create an environmentally sustainable city over the next two decades. PlaNYC focuses on the many facets of New York's environment—its transportation network, housing stock, land and park system, energy network, water supply, and air quality—and sets a course to achieve 10 goals to create a more sustainable New York by the year 2030. Specific goals of the plan include:

- Create enough housing for almost a million more people, and find ways to make housing more affordable;
- Ensure that every New Yorker lives within a 10-minute walk of a park;
- Clean up all contaminated land in New York City;
- Improve the quality of New York City's waterways to increase opportunities for recreation and restore coastal ecosystems;
- Ensure the high quality and reliability of New York City's water supply system;
- Expand sustainable transportation choices and ensure the reliability and high quality of our transportation network;
- Achieve the cleanest air quality of any big city in America;
- Divert 75 percent of our solid waste from landfills;
- Reduce greenhouse gas emissions by more than 30 percent; and
- Increase the resilience of our communities, natural systems, and infrastructure to climate risks.

FLUSHING MEADOWS-CORONA PARK STRATEGIC FRAMEWORK PLAN

The Flushing Meadows-Corona Park Strategic Framework Plan, prepared in 2007, proposes a series of changes and updates to the park with the goal of increasing its functionality and sustainability.

The plan is organized around the concept of remaking Flushing Meadows-Corona Park into "the park of the future," reclaiming the forward-looking heritage of the 1939 and 1964 World's Fairs for which the park was built. The plan includes three broad goals:

Willeys Point Development

- Re-envision the World's Fair Core, including restoration of landmark structures, daylighting of the Flushing River, and creation of more green space, topography, and a new festival gathering space;
- Reconfigure and restore lakes in the park, to improve their utility as natural and recreational resources, create a more diverse ecology, and add additional parkland; and
- Reconnect the park to the neighborhood and city by creating better access and more logical activity corridors within the park, as well as improving accessibility from surrounding neighborhoods and rationalizing parking for visitors from farther afield. This proposal also includes the establishment of a bike-sharing system with the park.

Additional objectives of the plan include reducing runoff, energy use, and impervious coverage in the park; establishing the park as a center for cultural activities; and finding better uses for underutilized structures such as the New York State Pavilion.

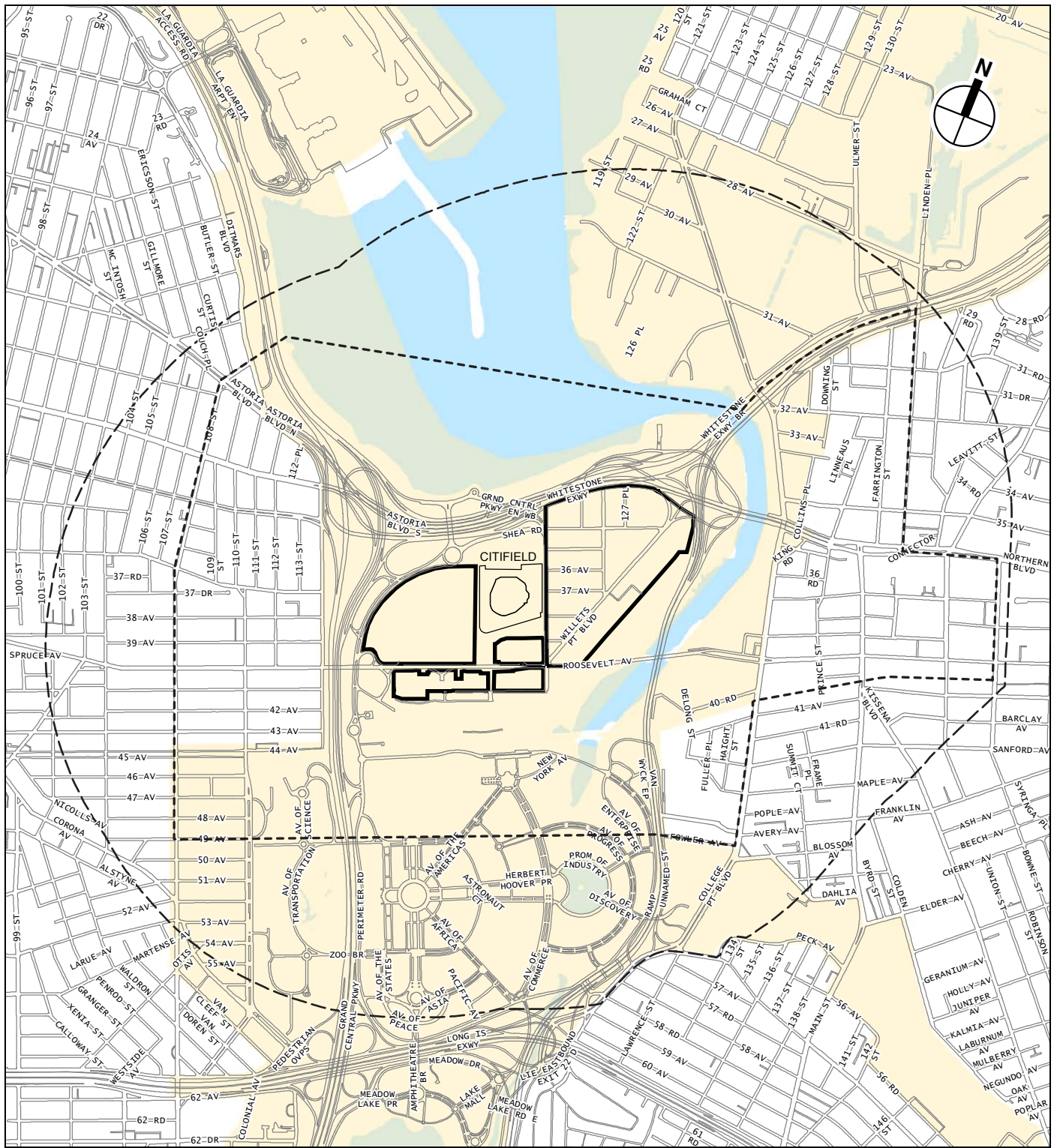
The plan also suggests the creation of a transportation management association to coordinate large events (such as Met games, the US Open, and cultural festivals) and associated transportation and parking strategies; conformance with PlaNYC's standards for green parking lots, including for the CitiField parking areas; and improving of links between the marina area and the park's historic World's Fair core. For the CitiField parking area itself, it suggests that a parking garage could be developed, leaving space for additional green areas. No suggestions are made for the South Lot or Lot D.

COLLEGE POINT CORPORATE PARK

A portion of the College Point subarea lies within the College Point Corporate Park, a 550-acre corporate park formed in 1969 on land acquired through eminent domain under the College Point II Urban Renewal Plan. The corporate park is currently managed by EDC, which disposes the land to various developers. All property disposition in the park includes covenants that restrict land use, guide future design, and require contribution to an improvement fund. The park contains approximately 200 businesses and employs around 6,000 people. Large industrial businesses include the New York Times printing and distribution plant; Crystal Windows, a manufacturer of windows and doors; Ares Printing and Packaging, a printing and distribution company; Graphic Communication Center, another printing and distribution company; and the North American headquarters for Skanska (a Swedish construction company). There are also several big box retailers in the park, including a Target Greatland, BJ's Warehouse, TJ Maxx, and Circuit City. Additional retailers in the park include Old Navy, Staples, Toys 'R' Us, Babies 'R' Us, a Walbaums supermarket (including a Walbaums corporate training center), Boulder Creek Steakhouse, and a multiplex cinema. The former Flushing Airport site, which is within the corporate park, comprises 16 percent of developable land within the park.

WATERFRONT REVITALIZATION PLAN

As shown on **Figure 2-3**, the project site and portions of the study area are within the City's designated Coastal Zone. Therefore, an assessment of the consistency of the proposed project with the City's Waterfront Revitalization Program (WRP) is warranted. This assessment is provided below under Section F, "Waterfront Revitalization Program."



- Project Site**
- Primary Study Area Boundary**
- Secondary Study Area Boundary**
- Coastal Zone**

0 1440 2880 FEET
SCALE

Coastal Zone
Figure 2-3

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

LAND USE

PROJECT SITE

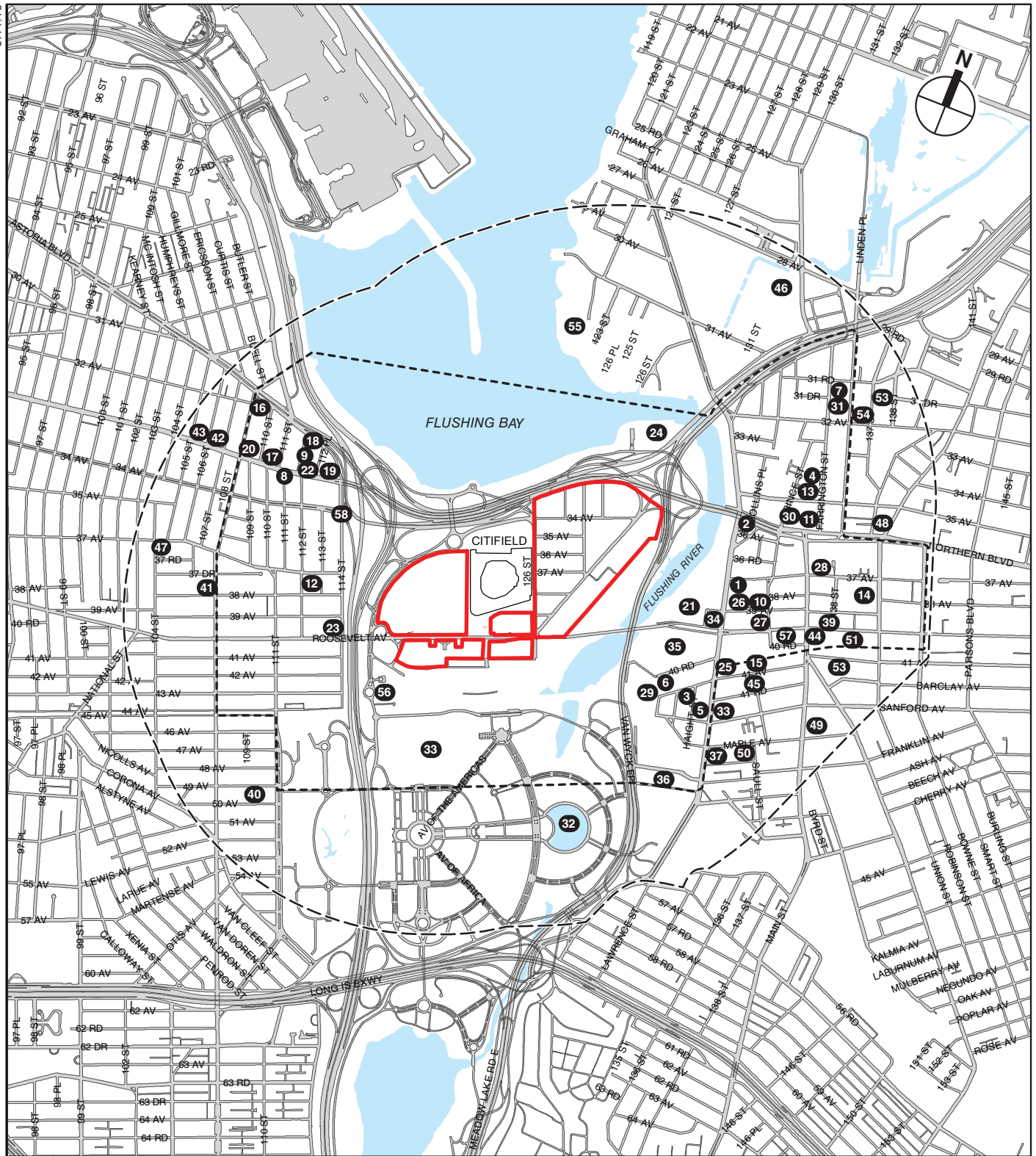
As described in Chapter 1, “Project Description,” for the purposes of a conservative analysis, the RWCDs for this EIS assumes that no changes to land use occur on the project site for the three analysis years: 2018, 2028, and 2032. Without the proposed project, it is expected that the District would continue to have the existing industrial and auto-related uses and would continue to be isolated from surrounding neighborhoods, and that the Willets West and Roosevelt Avenue portions of the project site would continue to serve the parking needs of CitiField.

PRIMARY STUDY AREA

In the future without the proposed project, the existing uses in the remainder of the Willets Point peninsula, including the undeveloped MTA property to the east of the District, also are expected to remain unchanged.

A substantial amount of new development is either under construction or planned within the remainder of the primary study area, including several large-scale mixed-use redevelopment projects, primarily located in Downtown Flushing, and numerous residential developments in the Corona and greater Flushing areas. As shown in **Table 2-2** and mapped in **Figure 2-4**, approximately 39 development projects are either under construction or proposed for the primary study area. All but two of these projects are anticipated to be complete by 2018. The USTA NTC Strategic Vision project is anticipated to be complete by 2019. A portion of the Flushing Commons project is anticipated to be complete by 2018; the remainder of the project will be complete by 2028. No other development projects have been identified for completion between 2018 and 2032 in the primary study area.

In recent years, there has been increased interest in the development of mixed-use projects along the Flushing River waterfront. Across the Flushing River from the District, the second phase of Sky View Parc will add 600 residential units to this mixed-use development by 2018. Another large mixed-use development, River Park Place, is planned on the east side of the Flushing River waterfront just north of Roosevelt Avenue, and has been assumed to be completed in 2018. Current plans for this development include 475 residential units, 251,000 sf of office use, 10,200 sf of retail use, 1,500 sf of community facility use, and either a 175-room hotel or an additional 96,500 sf of office use. This project will also include a waterfront esplanade, as required by the WAP. It is expected that the trend of new mixed-use development along the waterfront will continue over the long term without the proposed project, following current development projects and alongside other initiatives proposed as part of the Framework to improve connections between Downtown Flushing and the Flushing waterfront.



- Project Site Boundary
- Primary Study Area Boundary
- · - · - Secondary Study Area Boundary
- 76 No Action Project

0 1000 2000 FEET
SCALE

Table 2-2
No Action Projects

Site No.	Address	Program	Build Year
Primary Study Area			
1	133-12 37 Avenue	10 dwelling units (DU); 22,336 sf commercial; 1,971 sf community facility	2018*
2	35-19 College Point	35,580 sf manufacturing; 11 parking spaces	2018*
3	41-09, 41-15 Haight Street	28 DU; 12,584 sf community facility	2018*
4	33-39 Prince Street	6,396 sf manufacturing	2018*
5	41-38 College Point Boulevard	8 DU; 1,577 sf commercial; 1,646 sf community facility	2018*
6	131-10, 131-14 40th Road	5,795 sf commercial	2018*
7	31-16 Linden Place	24 DU; 6,085 sf commercial; 2,021 sf community facility	2018*
8	P.S. 287, 110-08 Northern Boulevard	49,471 public school	2016
9	32-29, 32-33 112th Street	2 DU	2018*
10	133-47 39th Avenue	12,270 sf office; 11,420 sf retail; 9,755 sf medical office	2018*
11	RKO Keith Theater, 135-27 Northern Boulevard	357 DU; 17,000 sf retail; 12,500 sf community facility; 385 parking spaces	2016
12	37-06 112th Street	3 DU	2013
13	New Millennium, 134-03 35th Avenue	84 DU; 33,600 sf community facility; 3,600 sf retail; 222 parking spaces	2016
14	Flushing Commons and Macedonia Plaza, block bounded by 138th Street, 37th Avenue, 39th Avenue, and Union Street (Municipal Parking Lot 1)	Flushing Commons: 620 DU; 275,000 sf retail; 110,000 sf office; 98,000 sf community facility; 1,600 parking spaces (700 accessory); and either 250 hotel rooms or an additional 124,000 sf office. Macedonia Plaza: 142 affordable DU; 10,000 sf community facility; 25,000 sf retail.	2018/2028
15	Flushing Municipal Parking Lot 3, 133-45 41st Avenue	120 DU; 23,000 sf commercial; 10,000 sf community facility; 200 parking spaces	2015
16	108-04, 108-14, 108-16 Astoria Boulevard	84 DU; 34,965 sf community facility	2018*
17	110-09 Northern Boulevard	31 DU; 15,500 sf commercial	2018*
18	112-12, 112-18, 112-24 Astoria Boulevard	38 DU; 16,034 sf community facility	2018*
19	Block bounded by Astoria Boulevard, Northern Boulevard, and 112th Place	147 DU; 73,329 sf commercial use	2018*
20	108-09 Northern Boulevard	18 DU; 8,970 sf commercial	2016
21	River Park Place, 39-08 Janet Place	475 DU; 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	2018*
22	112-15 Northern Boulevard	163-room hotel	2013
23	39-14 114th Street	23 DU; 18,638 sf commercial; 4,794 sf community facility; 38 parking spaces	2018*
24	32-11 Harper Street	137 sf commercial	2018*
25	132-15 41st Avenue	25 DU; 5,933 sf community facility; 8 parking spaces	2018*
26	37-19 College Point Boulevard	1 DU; 56,595 sf commercial; 1,000 sf community facility; 31 parking spaces	2018*
27	One Fulton Square	88 DU; 142,180 sf office, 168 hotel rooms; 16,722 sf community facility; 283 parking spaces	2018*
28	136-33 37th Avenue	116,894 sf office; 97 parking spaces	2018*
29	131-08 40th Road	4,548 sf commercial	2018*
30	135-17 Northern Boulevard	28 DU; 8,465 sf commercial; 2,867 sf community facility; 45 parking spaces	2018*

Table 2-2 (cont'd)
No Action Projects

Site No.	Address	Program	Build Year
Primary Study Area (cont'd)			
31	31-39 Farrington Street	5,937 sf commercial (Con Ed)	2018*
32 ¹	Flushing Meadows-Corona Park	35,000-seat major league soccer stadium	2016
33 ⁴	USTA Billie Jean King National Tennis Center Strategic Vision, Flushing Meadows-Corona Park	<u>Expansion to NTC facilities including: additional 6,500 seats; 80,000 gsf admin/retail building/office; 90,000 gsf addition to Arthur Ashe stadium for operational space; 6,500 gsf transportation center; 493 393 parking spaces</u>	2019
34	39-16 College Point Boulevard	7- room hotel; 15 parking spaces	2013
35	Sky View Parc - Phase II, 40-22 College Point Boulevard	600 DU	2018
36	Flushing Meadows East Rezoning, Block 5076, Lots 1, 5, 7, 9, 11, 14, 16, 18, 20, 29, 31, 43, 61, 65, 67, 75, and 160	376 DU	2014
56	Flushing Meadows-Corona Park	Annex to Olmsted Center	2013
57	135-15 40th Road	4,000 sf community facility; 4,100 sf retail or restaurant; 4,100 sf office; no on-site parking	2015
58	34th Avenue and 114th Street	DOT bicycle/pedestrian connection to CitiField	2013
Secondary Study Area			
37	132-08 Pople Avenue	22 DU; 4,500 sf community facility; 12 parking spaces	2018*
38	132-18 41st Road	10 DU (16,538 sf); 4095 sf community facility	2018*
39	136-13 Roosevelt Avenue	2,800 sf commercial	2018*
40	108-30 49th Avenue	3 DU	2018*
41	37-56 108th Street	4 DU; 1,785 sf commercial	2018*
42	106-15 Northern Boulevard	11 DU; 5,502 sf commercial	2016
43	32-56 106th Street	14 DU; 7,144 sf commercial	2016
44	Caldor Site, 136-20 Roosevelt Avenue	155,000 sf retail	2016
45	132-27 to 132-61 41st Road	37 DU	2018*
46	College Point Police Academy, 129-05 31st Avenue	2.4 million sf, including 450,000 sf physical training area, 250 beds for visiting law enforcement agencies, 250 classrooms, firing range, and fields for emergency-vehicle and other training exercises, 2,000 parking spaces	2018*
47	37-19 104th Street	2 DU; 1,100 sf community facility	2018*
48	35-01, 35-05 Leavitt Street	12 DU; 6 parking spaces	2018*
49	42-33 Main Street	79 DU	2018*
50	132-29 Pople Avenue	9 DU; 560 sf community facility	2018*
51	136-68 Roosevelt Avenue	29,124 sf commercial; 14, 279 sf community facility; 34 parking spaces	2018*
52	31-13 137th Street	6 DU	2018*
53	154-32 Barclay Avenue	18 DU; 5,950 sf community facility	2018*
54	31-53 Linden Place	16 DU; 3,746 sf community facility; 8 parking spaces	2018*
55	DSNY North Shore Marine Transfer Station, 31st Avenue and 122nd Street	Converted facility will receive and containerize DSNY-managed waste from Queens Community Districts 7 through 14	2013
Notes: DU = dwelling unit * Projects without specific information regarding their build years are assumed to be developed by 2018 (the first analysis year for the proposed project). ¹ This is a proposal that will require discretionary land use approvals; however, because it is located in close proximity to the project site, it has been included as a No Action development for conservative impact analysis. Sources: AKRF, Inc., New York City Department of City Planning, New York City Department of Buildings, and the New York City Economic Development Corporation.			

Willels Point Development

A planning effort is being undertaken by the Flushing Willels Corona Local Development Corporation (FWCLDC), in consultation with DCP, with funding from the New York State Department of State (NYSDOS) under the Brownfield Opportunity Areas (BOA) Program. This Flushing BOA Plan encompasses approximately 60 acres on the Flushing River waterfront, bounded by Northern Boulevard to the north, Roosevelt Avenue to the south, Prince Street to the east, and the Van Wyck Expressway to the west. Begun in spring 2011, this planning initiative involved a public outreach and participation program including a series of stakeholder and community meetings and visioning sessions. The study seeks to identify land use and zoning recommendations within the Flushing BOA to allow the potential for greater residential density and contextual design in order to create a more mixed-use character, as well as improved public access along the waterfront than currently allowed under the existing C4-2/M1-1 zoning districts. The Flushing BOA Plan builds off the 2004 Downtown Flushing Development Framework. Consistent with the Framework's goals, the Flushing BOA Plan intends to update and improve on the 1998 rezoning enacted in the area as a result of the 1993 Downtown Flushing Waterfront Access Plan. However, this planning effort is still in development with no discrete program or set implementation time table. The recommendations, which have not been developed yet for this Flushing BOA Study, would require future discretionary land use approvals and public review. Ongoing consultation with DCP, other key agencies, stakeholders, and the community at-large will continue through 2013.

Several large-scale, mixed-use developments are either under construction or planned for Downtown Flushing. In the heart of Downtown Flushing, Flushing Commons, a mixed-use project proposed for development on Municipal Lot No. 1, is expected to contain approximately 620 residential units, 275,000 sf of retail use, 110,000 sf of office use, 98,000 sf of community facility use, 1,600 parking spaces, and either 250 hotel rooms or an additional 124,000 sf of office use, as well as 1.5 acres of passive open space. The former Caldor building at Roosevelt Avenue and Main Street will be redeveloped with 155,000 sf of retail use.

There are also several mixed-use developments planned or under construction in Flushing north of Northern Boulevard. These include a mixed-use development on 35th Avenue with 84 residential units, community facility and retail use, and approximately 220 parking spaces and a mixed-use development on Northern Boulevard with 28 residential units, community facility and retail use, and approximately 45 parking spaces. In addition, the redevelopment of RKO Keith's Theater (a 1920s movie house) to include 357 residential units, 17,000 sf of retail use, 12,500 sf of community facility use, and approximately 385 parking spaces is anticipated by 2018.

Eight additional projects are projected to be developed in the area between Northern and Astoria Boulevards by 2018, as a result of the recent rezoning of Corona. If developed, these large mixed-use projects would bring approximately 320 new residential units to the area, along with approximately 98,000 sf of retail use, approximately 61,000 sf of community facility use, a hotel, and a public school.

The City, through DPR, is currently in discussions with a private entity for a lease covering the construction and operation of a new stadium for professional soccer purposes in an approximately 13-acre area within the northern portion of Flushing Meadows-Corona Park south of Roosevelt Avenue and eastward of the USTA NTC. As currently contemplated, a 25,000-seat stadium (with the ability to be expanded to 35,000 seats) would be constructed by 2016 on the present site of the Fountain of the Planets and land surrounding the fountain. In addition to the fountain, the stadium would displace four existing soccer fields, a basketball court, landscaped areas, and pathways, which would be relocated to other locations within the park. Both New

York State parkland alienation legislation and Land and Water Conservation Fund Act considerations will require the provision of replacement park land. Although the project requires city, state, and federal approvals and public review, the project is being considered as part of the No Action condition for the proposed project, as it is currently under consideration by the City and is in proximity of the proposed project.

Elsewhere in Flushing Meadows-Corona Park, ongoing capital improvement projects are being carried out by DPR to provide for up to date recreational facilities. One soccer field is currently being renovated and an additional two soccer fields will be renovated by 2019. In addition, capital funds have been allocated to repair a fourth soccer field and create volleyball courts located on the eastern edge of the park and south of Fountain of the Planets. Construction of an annex to the Olmsted Center is currently underway and is anticipated for completion in 2013. Although it is currently unfunded, DPR has identified as a priority project within Flushing Meadows-Corona Park the repair of the tide gates so as to improve drainage flow that affects existing park facilities. Some City capital funding has been allocated for streetscape improvements on Roosevelt Avenue west into Corona; however, there are no specific designs or timeline for implementation for this proposal.

SECONDARY STUDY AREA

Approximately 19 development projects are proposed for the secondary study area by 2018; no other development projects have been identified for completion between 2018 and 2032 in the secondary study area. Several new multi-family and mid-rise and residential apartment buildings are currently under construction in the Corona subarea. Several new residential buildings within the area between 37th Avenue and the LIRR tracks will bring a total of 73 new units to the area. Two mixed-use buildings and one commercial building are also projected to be developed on Northern Boulevard by 2018.

In the residential area south of Roosevelt Avenue in Flushing, several residential projects are either planned or under construction in this area that will collectively introduce approximately 193 new residential units. In addition, a new 425-seat primary school is being constructed at Franklin and Golden Avenues.

North of Northern Boulevard in Flushing, several residential projects are planned or are under construction, which together will introduce approximately 34 new units to the area. A church at Parsons Boulevard and 32nd Avenue is also projected to be completed by 2018, as well as an approximately 13,500 sf community facility at Parsons Avenue and 34th Avenues.

Two major projects are expected to be completed in the College Point subarea in the future without the proposed project. These include the North Shore MTS on Flushing Creek at 31st Street, and the new NYPD academy on 31st Avenue at College Point Boulevard. The converted MTS is included in DSNY's Solid Waste Management Plan for long-term waste export, and would receive and containerize waste from Queens Community Districts 7 through 14, exporting waste by barge. The MTS facility is expected to begin operating in 2013, once the required permits are granted by the New York State Department of Environmental Conservation (NYSDEC). The new NYPD academy, which is planned to be constructed by 2018, will include a 30-acre campus with 250 classrooms, 250 beds for visiting law enforcement agencies, firing ranges, indoor and outdoor tracks, and areas for simulated training activities.

ZONING

In the future without the proposed project, the Flushing Meadows East Rezoning is expected to occur within the primary study area.¹ The rezoning is anticipated to result in the construction of up to 378 dwelling units and approximately 148,100 square feet of retail space.

PUBLIC POLICY

In the future without the proposed project, no new policies are expected that would affect the project site or the primary and secondary study areas. Without the proposed project, an essential component of the Downtown Flushing Development Framework—i.e., the redevelopment of the Willets Point peninsula—would not proceed, and many of the Framework’s goals, which focus on facilitating future growth and sustainability of the area through the redevelopment of Willets Point, would not be achieved. It is expected that the City would continue to explore opportunities to advance the other components of the Framework, such as opportunities for mixed-use development in Downtown Flushing, enhancements to public open spaces and streetscapes, improved connections between Downtown Flushing and the Flushing waterfront, and transportation and parking strategies. Specific objectives outlined in the Framework include upgrading streetscapes between the Downtown Flushing core and the waterfront, and improving pedestrian conditions along College Point Boulevard. However, goals such as improving environmental conditions in the District and enhancing adjacent regional destinations would not likely be achieved in the future without the proposed project. Additionally, as Willets West, the South Lot, Lot D, and Lot B would remain surface parking areas, the goals outlined in the Framework, such as creating regional destinations that would enhance economic growth in Downtown Flushing and Corona, also are unlikely to be achieved.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

By 2032, the proposed project would incorporate a development substantially similar to what was anticipated and analyzed in the 2008 FGEIS and subsequent technical memoranda, as well as a major entertainment/retail development and several parking garages adjacent to CitiField. Changes to the RWCDs analyzed here versus that analyzed in the 2008 FGEIS include an increase in the overall amount of retail development from 1.7 million square feet to 2.65 million square feet. This increase results from the development of the 1.4 million square foot (1 million leasable square foot) development at Willets West combined with a concurrent reduction in the overall amount of retail in the District from 1.7 million square feet to 1.25 million square feet. The Supplemental EIS (SEIS) also assumes 5.85 million square feet of residential development to match the highest amount of residential analyzed in the 2008 FGEIS (in the No Convention Center Scenario), and a 230,000-square-foot school rather than the 2008 FGEIS’s 130,000-square-foot school. The project is anticipated to proceed in three phases with build years occurring in 2018, 2028, and 2032.

¹ A DCP-initiated rezoning study of East Elmhurst is currently underway, of which Block 1679 is within the primary study area and all or portions of Blocks 1657, Blocks 1657, 1671, 1672, 1675, 1676, 1677, 1691, 1692, 1693, and 1694 are within the secondary study area. Lower-density zoning changes are being considered for most of the rezoning area, however, an upzoning may be proposed for some areas. Additional information on this potential rezoning will be included as it becomes available.

Consistent with the 2008 FGEIS and subsequent technical memoranda, the RWCDs also includes a conceptual development program for Lot B, to be completed by 2032: 184,500 sf of retail use and 280,000 sf of commercial use.

This section evaluates the potential for the RWCDs to result in significant adverse land use, zoning, and public policy impacts compared with the future without the proposed condition described above.

LAND USE

PROJECT SITE

The RWCDs would develop up to 10.34 million zsf in new buildings on the project site, which would include residential, retail, office, hotel, community facility, public school, parking, and convention center uses, as well as publicly-accessible open space. The project would include environmental remediation of the project site; installation of new sanitary and storm sewer lines; and grading and elevation of the District above the 100-year floodplain. It also would result in the displacement of existing uses on the project site.

Phase 1A

The first phase of the project, anticipated to be complete by 2018, would commence with the remediation and development of an approximately 23-acre portion of the District and the development of Willets West on the existing parking lot west of CitiField. Upon completion of the environmental remediation for the District, an approximately 200-room hotel and approximately 30,000 square feet of retail space would be constructed above the floodplain along the east side of 126th Street, with a 20-foot-wide public esplanade. These uses are consistent with existing approvals made for the District in 2008. An approximately 2,825-space interim surface parking area would be developed within the District east of the retail and hotel uses. A majority of this parking area would be converted to active recreational use a minimum of 6 months per year.

The Willets West portion of the project site would be developed with an entertainment and retail center of approximately 1.4 million gross square feet (1 million leasable square foot). The complex could include over 200 retail stores, including anchor and “mini” anchor retailers, as well as movie theaters, restaurant and food hall spaces, and entertainment venues. Surface parking and a parking structure also would be developed in this portion of the project site, including 2,500 new spaces for the entertainment/retail center and 400 spaces of replacement parking for use by the Mets. In addition, a six-story structured parking facility with approximately 1,800 parking spaces would be constructed on the western portion of the South Lot, replacing approximately 640 of the existing surface parking spaces on that portion of the lot.

The redevelopment of the District and the development of the Willets West entertainment and retail complex in Phase 1A would dramatically change land uses on the project site, replacing a surface parking field and low-density auto-related, manufacturing, warehousing and distribution uses with new retail, hotel, entertainment, and recreational uses. The new uses at Willets West would complement existing retail and entertainment uses around the project site in the Flushing and Corona neighborhoods, as well as the CitiField and USTA NTC uses within Flushing Meadows-Corona Park. While the undeveloped portion of the District would continue to contain auto-related and industrial uses, the proposed surface parking use is not considered to be

Willeys Point Development

incompatible with such uses. The proposed surface parking would support the Willets West entertainment and retail complex and the retail and hotel development along 126th Street, when not in use for CitiField game parking or active recreation. The active recreational uses also would be compatible with the recreational uses in Flushing Meadows-Corona Park. During the times of year when the recreational uses would be operational, they would differ from the uses in the undeveloped portion of the District; however, the majority of the recreational uses would be clustered together on a portion of the District that would not have through-access to the remaining portions. This is anticipated to provide a degree of visual and physical separation of the uses between the undeveloped and redeveloped portions of the District.

It is anticipated that the Willets West development, by building a critical mass of uses, would create a new destination that would serve as a catalyst for the subsequent build-out of the District. As described in Chapter 1, "Project Description," this entertainment and retail center would allow for more comprehensive transit-oriented development around the Mets/Willeys Point stops on the No. 7 train and LIRR and support the economic development of the area.

Therefore, there would be no significant adverse impacts to land uses on the project site as a result of the proposed project's first phase.

Phase 1B

In Phase 1B, anticipated to be complete by 2028, the interim surface parking lot/recreational space created during Phase 1A within the District would be developed into a new neighborhood. The program for this development would be consistent with the District's zoning and would include approximately 4.23 million square feet of development, including residential, retail, additional hotel, office, parking, and community facility uses, in addition to a public school and approximately six acres of open space. This development is anticipated to be developed block by block, substantially as envisioned in the Willets Point Development Plan. In addition, two six-level structured parking facilities would be constructed on the eastern portion of the South Lot and Lot D to replace the CitiField parking spaces located within the District in Phase 1A. The 75 accessory parking spaces created in Phase 1A for the hotel would remain in the District and be incorporated into a garage portion of an enlarged hotel block.

Within the District, the previously approved special district regulations would determine the placement of uses, building heights and setbacks, street hierarchies, maximum block dimensions, streetscape design, and basic site planning and design provisions within the District, as well as the general layout of the principal streets, thereby establishing the basic form of the District, encouraging a pedestrian-friendly neighborhood environment, and ensuring that the new uses in the District are integrated into a cohesive site design. The land uses proposed in Phase 1B would be consistent with and support the uses developed in the Willets West portion of the project site in Phase 1A.

As in Phase 1A, the uses in the redeveloped portion of the District in Phase 1B would differ from those in the undeveloped portion of the District, which would continue to contain primarily auto-related uses. The buffer area between the developed and undeveloped portions of the District analyzed in the Staged Acquisition Alternative of the 2008 FGEIS and subsequent technical memoranda is not part of the proposed project. However, because streets in the undeveloped portion of the District would generally remain at their existing grade through Phase 1B, streets in the redeveloped portion of the District would be graded to slope down to the existing streets to the east, forming a physical barrier between the Phase 1B development and existing uses in the undeveloped portion of the District. There is anticipated to be some

regrading in the undeveloped portion of the District to meet the grade of the new Van Wyck Expressway access ramps, which would be operational prior to the occupancy of the Phase 1B buildings. Any grade changes that would exist in Phase 1B would serve to provide a degree of visual and physical separation of the uses between the undeveloped and redeveloped portions of the District. In addition, although there is no designated buffer area between the Phase 1B development and adjacent auto-related uses, the open space areas provided east of Willets Point Boulevard and north of 35th Avenue would serve to buffer the residential and community facility uses from nearby auto-related uses. Heavier industrial-related uses associated with the two waste-transfer stations in the District also would not be located near the developed portion of the District. The previously approved rezoning of the District to C4-4 would further ensure that no new industrial or auto-related uses would be established in the undeveloped portion of the District during the four year period between Phase 1B and Phase 2. Finally, as described in more detail below, the placement of high-density mixed-use or residential districts adjacent to auto-related and light-manufacturing districts is not uncommon in the City. Therefore, there would be no significant adverse impacts to land use as a result of the proposed project's second phase.

Phase 2

In Phase 2, anticipated to be complete by 2032, the remainder of the District would be built out consistent with the area's previously approved zoning and substantially as anticipated in the 2008 FGEIS. Upon completion of Phase 2, the District is anticipated to include: up to 5.85 million gross square feet (approximately 5,850 units) of residential use; up to 1.25 million gsf of retail; approximately 500,000 gsf of office; up to 400,000 gsf of convention center use; up to 560,000 gsf of hotel use (approximately 700 rooms); up to 150,000 gsf of community facility use; approximately 230,000 gsf of public school use; and a minimum of 8 acres of publicly accessible open space. The number of proposed parking spaces would be determined based on project-generated demand, but is anticipated to be no more than the 6,700 spaces identified in the 2008 FGEIS.

As described above, for the RWCDs, it also is anticipated that by 2032 Lot B could be developed with a one-story retail structure and a 10-story office building containing 184,500 sf of retail use and 280,000 sf of commercial use with associated surface and structured parking.

Overall, consistent with the conclusions of the 2008 FGEIS, the RWCDs would dramatically change land uses on the project site, replacing predominantly low-density auto-related, manufacturing, warehousing and distribution uses with a new mixed-use neighborhood in the District, and replacing surface parking areas adjacent to CitiField with a new entertainment and retail development and parking garages to serve Mets patrons. Of the approximately 5,850 residential units proposed to be completed by Phase 2, thirty-five percent (approximately 2,048 units, or approximately 2,048,000 zsf) would be affordable housing units. The redevelopment of the District, the development of the Willets West entertainment and retail complex, and the potential future office and retail development on Lot B would create a sustainable, dynamic community around CitiField by integrating regional attractions—such as the convention center, entertainment, and destination retail uses—and residential, community facility, and other uses within a network of pedestrian-scaled streetscapes.

Consistent with the conclusions of the 2008 FGEIS, while the RWCDs would result in a significant change to land use, the effects of this change would not be adverse. The proposed convention center, retail, entertainment, and commercial uses would enhance Flushing and Corona's roles as regional economic centers, and would attract visitors to the area. The RWCDs

Willets Point Development

would create pedestrian-oriented developments on either side of CitiField, creating a dynamic new mixed-use neighborhood with pedestrian-scaled streetscapes and new entertainment and retail attractions and amenities to integrate this area with uses in neighboring Flushing and Corona, thus improving the quality of life for area residents and visitors. The proposed parking facilities on the South Lot and Lot D would serve to support this new regional destination. The anticipated development of Lot B with retail and office uses would further enhance the land uses proposed on the project site as well as the overall economic development of the area.

PRIMARY STUDY AREA

Land use issues associated with the RWCDS focus on the compatibility of the new land uses with those that are already established and anticipated to occur in the primary study area in the future without the proposed project; the effect that introducing dense development on the project site would have on adjacent land use patterns; and the likelihood for the new land uses to generate land use change in the study area.

Land Use Compatibility

Phase 1A

The retail, entertainment, hotel, and parking uses that would be developed in Willets West, the District, and the South Lot in Phase 1A are prevalent throughout the primary study area, particularly within the dense commercial center of Downtown Flushing and the Roosevelt Avenue and Northern Boulevard commercial corridors in Corona. The proposed land uses would be more compatible with these adjacent neighborhoods than the existing industrial and auto-related uses, and would reflect the new trend of higher-density, mixed-use development that is occurring in Downtown Flushing, on the Flushing River waterfront, and along Astoria Boulevard.

Although the entertainment and retail uses proposed for the Willets West portion of the project would not be consistent with some passive park uses in the surrounding area, the entertainment and retail uses would complement the adjacent CitiField stadium and other cultural facilities located within the boundaries of Flushing Meadows-Corona Park, providing restaurants and other amenities to support these adjacent uses. Furthermore, the closest passive open spaces within the Flushing Meadows-Corona Park are located approximately one-quarter of a mile south of Willets West, creating a substantial buffer between the two uses. Additionally, as Willets West would attract more visitors to the area, it is likely that a portion of these visitors would also engage in recreational activities in the Flushing Meadows-Corona Park and Flushing Bay Promenade. The entertainment and retail uses proposed for Willets West in Phase 1A would also be compatible with commercial and retail uses in the Corona area and would enhance the economic development of both Corona and Downtown Flushing.

It is expected that the MTA property adjacent to the District would continue to be undeveloped in 2018, as well as 2028 and 2032, and would contain industrial uses that are the same as or similar to the construction and demolition debris recycling operation that exists there today. Although the recreational uses to be developed in the District would not be compatible with the industrial activities permitted on the nearby MTA property, this industrial use is not expected to result in a significant land use impact on the District due to the limited times during which the two uses would be proximate. For the remainder of the year—during the period in which the Phase 1A uses are active within the District, before construction of Phase 1B commences—the surface parking uses to be developed in this area of the District would be compatible with the uses permitted on the MTA property. Furthermore, the recreational uses proposed in the District

are compatible with the portions of the Flushing Meadows-Corona Park located in the primary study area.

Although the uses proposed for the District in Phase 1A would not be consistent with the industrial uses currently located along the waterfront to the northeast, these uses are separated from the District by the Whitestone Expressway and Northern Boulevard, as well as the Flushing River, and therefore would not result in significant adverse land use impacts on the District. The proposed uses within the District in Phase 1A also would not interfere with the active industrial waterfront uses—including barge operations—in the Flushing River and Flushing Bay.

Phase 1B

While the residential, school, commercial office, and community facility uses to be developed in the District in Phase 1B would not be compatible with the industrial activities permitted on the nearby MTA property, the proximity of these uses is not expected to result in a significant adverse land use impact. The placement of high-density mixed-use or residential districts adjacent to heavy manufacturing districts is not uncommon in the City. Other City-sponsored initiatives, such as the rezoning of West Chelsea in Manhattan and Greenpoint/Williamsburg in Brooklyn, have resulted in new higher-density residential districts adjacent to older heavy manufacturing districts. These efforts reflect the City's desire to respond to documented land use trends and to facilitate redevelopment of underutilized properties on the waterfront with new mixed-use development. Furthermore, the District's regulations require the development of an eastern perimeter street, as well as a landscaped open space between 8 and 15 feet wide, which would provide a buffer between the redeveloped District and the adjacent MTA property.

The open space use proposed in Phase 1B would be compatible with the commercial, recreational, and open space uses located in the primary study area, including CitiField, Flushing Meadows-Corona Park, and the Flushing Bay Promenade. The structured parking facilities proposed to be constructed on South Lot and Lot D also would be compatible with parking uses in Downtown Flushing and the portions of Corona in the primary study area, as well as at the adjacent Casey Stengel Bus Depot.

Similar to Phase 1A, the uses proposed for the District in Phase 1B would not be consistent with the industrial uses currently located along the waterfront to the northeast. However, these uses are separated from the District by the Whitestone Expressway and Northern Boulevard, as well as the Flushing River, and therefore would not result in significant adverse land use impacts on the District. The proposed uses within the District in Phase 1B also would not interfere with the active industrial waterfront uses—including barge operations—in the Flushing River and Flushing Bay. Additionally, the uses proposed within the District in Phase 1B would be consistent with ongoing land use and development trends occurring along the Flushing River waterfront, including higher-density and mixed-use development.

Phase 2

As with Phase 1B, the residential, school, hotel, office, and community facility uses to be developed in the District in Phase 2 would not be compatible with the industrial activities permitted on the nearby MTA property. However, as noted above, the District's regulations require the development of an eastern perimeter street, as well as a landscaped open space between 8 and 15 feet wide, which would provide a buffer between the redeveloped District and the adjacent MTA property. Therefore, the industrial use is not expected to result in a significant adverse land use impact on the District.

Willets Point Development

The proposed convention center use that would be developed in Phase 2 is not common in the primary and secondary study areas; a convention center, by its nature, is singular, and there are few such facilities in the region. However, the proposed convention center use would be located in close proximity to LaGuardia airport, and would be compatible with the prevailing land uses in Downtown Flushing and parts of Corona—commercial office and retail—as well as recreational and cultural uses in Flushing Meadows-Corona Park.

As with Phase 1A and 1B, the uses proposed for the District in Phase 2 would not be consistent with the industrial uses currently located along the waterfront to the northeast. Again, these uses are separated from the District by the Whitestone Expressway and Northern Boulevard, as well as the Flushing River, and therefore would not result in significant adverse land use impacts on the District. The uses proposed in Phase 2 also would not interfere with the active industrial waterfront uses—including barge operations—in the Flushing River and Flushing Bay. Additionally, the proposed uses within the District in Phase 2 would be consistent with ongoing land use and development trends occurring along the Flushing River waterfront, including higher-density and mixed-use development.

The anticipated development of Lot B with retail and office uses by 2032 also would be compatible with existing retail and office uses in Flushing and Corona. Overall, the RWCDs would not result in significant adverse land use compatibility impacts in the primary study area.

Land Use Density

As described above, the RWCDs would transform the underutilized area within the District and surface parking lots within the Willets West and Roosevelt Avenue portions of the project site into a new, higher-density, mixed-use neighborhood. Given existing land use patterns and zoning regulations in the surrounding area, however, it is unlikely that the RWCDs would alter land use patterns in the primary study area in 2018, 2028, or 2032.

Phase 1A

The presence of an active, retail and entertainment center in Willets West, in addition to the hotel and retail development in the District and structured parking facility on the South Lot, would increase land use density in the primary study area. However, such a change to uses on underutilized sites would not constitute an adverse impact on land use density in the study area, because the potential new uses—including retail, entertainment, and hotel uses—would be compatible with other uses in the area and would conform to existing zoning and public land use policies, including the Downtown Flushing Development Framework. Although the proposed Willets West structure and South Lot parking facility could be taller than the low-rise buildings located in the Corona portion of the primary study area, these structures would be separated from the Corona subarea by Grand Central Parkway and would not interfere with the residential and commercial uses in Corona.

Phase 1B

The presence of an active, mixed-use development in the District—including residential, retail, hotel, school, and community facility uses—would further increase land use density in the study area. However, this development would be compatible with existing land use densities in the primary study area, as well as recent development on the western bank of the Flushing River, much of which has been rezoned to allow higher-density, mixed-use waterfront development. Therefore, the development of underutilized sites in the District as well as South Lot and Lot D would not constitute an adverse impact on land use densities in the study area, because the

potential new uses would reflect a continuation of an existing trend. As with Phase 1A, the proposed uses also would conform to existing zoning and public land use policies.

Phase 2

The development proposed in Phase 2 and the potential retail and office building that could be constructed on Lot B would increase the density of the District as well as along Roosevelt Avenue. However, as with Phase 1B, this development would be compatible with existing land use densities in the primary study area. Furthermore, the proposed dense development would be more compatible with the density of surrounding uses than the existing auto-related and industrial uses in the District and the CitiField surface parking lots, and would serve to further integrate the area around CitiField with development along Northern Boulevard, as well as the rapidly expanding Downtown Flushing area. In addition, the density of the RWCDs is consistent with existing land use patterns in Downtown Flushing, as well as new development that is under construction or planned in the greater Flushing area. Therefore, the RWCDs would not result in a significant adverse density impact on land use within the primary study area.

SECONDARY STUDY AREA

The secondary study area is farther from the project site than the primary study area, and thus land uses in the secondary study area are less likely to be affected by the RWCDs in 2018, 2028, or 2032.

The RWCDs would be consistent with the current trend of redevelopment of vacant or underutilized properties for large commercial and retail developments on Flushing Bay in the College Point subarea. While the RWCDs would not be consistent with the large industrial uses also located in this area, these uses are separated from the project site by Flushing Bay, the Whitestone Expressway, and Northern Boulevard, and thus this inconsistency would not result in any significant adverse land use impacts.

The RWCDs would be consistent with the residential, office, retail, recreational, and entertainment uses in the Corona and Flushing subareas within the secondary study area. As with the primary study area, the open space proposed as part of the RWCDs would be consistent with some passive park uses in the surrounding area, and the entertainment and retail uses would be compatible with the adjacent CitiField stadium and other cultural facilities located within the boundaries of Flushing Meadows-Corona Park. Therefore, the RWCDs would not result in a significant adverse impact on land use within the secondary study area.

ZONING

No changes to zoning would be required for any portion of the project site in Phases 1B or 2. For Phase 1A, a text amendment and special permit would be required to allow surface parking and open and enclosed, privately operated recreational uses within the District. (See **Appendix A-1** for the proposed text amendment.) This text amendment and special permit would be required only to facilitate the development of Mets replacement parking until the South Lot structured parking is completed and to allow the provision of interim recreational use for a minimum of six months of the year. The uses that would be allowed by the granting of the text amendment and special permit would be consistent with existing uses on the project site (surface parking), as well as in the primary and secondary study areas (recreational uses). With this exception, all of the development proposed for the District would be consistent with the zoning approved in 2008.

Willets Point Development

Zoning in the primary and secondary study areas would not be affected by the RWCDs in 2018, 2028, or 2032.

Therefore, there would be no adverse impacts to zoning on the project site or in the study areas as a result of the RWCDs.

PUBLIC POLICY

WILLETS POINT URBAN RENEWAL PLAN

The development that would occur within the District in Phase 1A, Phase 1B, and Phase 2 would be consistent with the maximum development envelopes, open space creation requirements, and other regulations set forth in the Willets Point URP.

DOWNTOWN FLUSHING DEVELOPMENT FRAMEWORK

The RWCDs represent a critical step in implementing the 2004 Downtown Flushing Development Framework. Development in the District and Willets West proposed as part of Phase 1A would advance a number of the Framework's fundamental goals, including the development of retail, hotel, and entertainment uses that would enhance economic growth in Downtown Flushing and the Corona neighborhood. The environmental remediation proposed as part of Phase 1A would also improve environmental conditions in the District. The parking area that would be converted to active recreational use would support other park and recreational areas surrounding the project site, including the Flushing Bay Promenade and Flushing Meadows-Corona Park.

Further development of residential, retail, community facility, public school, open space, and office uses in Phase 1B would continue to foster the integration of new development in the District with surrounding amenities, including the Flushing Bay Promenade, CitiField, Flushing Meadows-Corona Park, and Downtown Flushing and Corona. A substantial number of new housing units proposed in this phase would be affordable to a mix of incomes to help meet the growing demand for housing in Queens and the City as a whole, and would create substantial positive economic value for the City and provide a source of quality jobs for area residents.

The build-out of the remainder of the retail, hotel, residential, community facility, public school uses in the District as part of Phase 2, as well as the potential development of commercial and office space on Lot B, would facilitate the creation of a super-regional destination to complement the local and regional aspects of Downtown Flushing and Corona—a goal specifically outlined in the Framework. Therefore, the RWCDs are consistent with this policy.

PLANYC 2030 (2011)

The RWCDs would be consistent with and vital to the advancement of the goals of PlaNYC, specifically, the following:

- *Create homes for almost a million more New Yorkers while making housing more affordable and sustainable:* As discussed in Chapter 1, "Project Description," Phases 1B and 2 of the proposed project would result in the construction of up to approximately 5,850 housing units, 35 percent of which would be reserved for affordable housing. Housing units in the District would offer rental and homeownership opportunities for a range of incomes.

- *Ensure that all New Yorkers live within a 10-minute walk of a park:* No new residential uses would be created in Phase 1A of the proposed project. The minimum of six acres of publically accessible open space to be created in Phase 1B and the minimum of eight acres to be created in Phase 2 would ensure that new residents in the District would be located within a 10-minute walk of a park. The District’s residential units would also be developed in close proximity to the Flushing Meadows-Corona Park.
- *Clean up all contaminated land in New York:* As discussed in further detail in Chapter 11, “Hazardous Materials,” environmental remediation would take place across the project site as part of the RWCDS. Remediation of the Phase 1A/1B portion of the District would be complete by 2016. Remediation of the portions of the District not already developed in Phases 1A and 1B is assumed to be completed prior to 2028.
- *Expand sustainable transportation choices and ensure the reliability and high quality of our transportation network:* The Willets West entertainment and retail center to be developed in Phase 1A, and the residential and commercial uses to be developed in the District in Phases 1B and 2, would allow for more comprehensive transit-oriented development around the Mets/Willets Point stops on the No. 7 train and LIRR. The potential redevelopment of Lot B also would support more comprehensive transit-oriented development around these transportation nodes. The parking facilities proposed to be developed by 2028 and 2032 on the South Lot and Lot D would support this new regional destination center as well as the existing CitiField.
- *Open 90 percent of New York City’s rivers, harbors, and bays for recreation by reducing water pollution and preserving natural areas:* As discussed in Chapter 12, “Infrastructure,” remediation would occur on the project site as part of Phases 1A, 1B, and 2. The RWCDS would eliminate potentially polluting septic fields and any groundwater contaminants from existing auto-related uses within the District. For all three phases, the proposed project would exercise Best Management Practices to detain stormwater during rain events and pre-treat prior to discharge. Therefore, the RWCDS is expected to result in improved stormwater quality and, consequently, improved water quality in Flushing Bay.
- *Embark on a broad effort to adapt our City to the unavoidable climate shifts ahead:* As discussed in Chapter 12, in all three phases the RWCDS would require the developer to consider the most up-to-date information on the effects of climate change in the City and implement adaptation strategies where appropriate and feasible.

FLUSHING MEADOWS-CORONA PARK STRATEGIC FRAMEWORK PLAN

The RWCDS would be compatible with the goals set forth in the Flushing Meadows-Corona Park Strategic Framework Plan. The RWCDS would attract visitors to the project site that would possibly visit and use the amenities available in the park. Additionally, the open space to be developed within the District in Phases 1B and 2, and the recreational space that would be available within the District at least six months of the year during Phase 1A, would be compatible with the goals outlined in this policy.

Although the portions of the RWCDS would be developed on mapped parkland within the boundaries of Flushing Meadows-Corona Park, this development would not conflict with the Park’s Strategic Framework Plan. The areas to be affected are currently paved and used for parking to serve CitiField events, do not contribute to the passive or recreational activities occurring in the park, and have not been considered in future plans for the park, with the exception of a parking garage (rather than a parking field), which has been suggested to serve

the stadium, and the proposed creation of a transportation management association to coordinate large events and associated transportation and parking strategies.

COLLEGE POINT CORPORATE PARK

The RWCDs would not have significant adverse impacts on the College Point Corporate Park in 2018, 2028, or 2032. On the contrary, the proposed entertainment, retail, commercial, and residential uses would most likely enhance the retail uses located in the park by introducing new residential and visitor populations to the area.

Therefore, the RWCDs would not result in any significant adverse impacts to land use, zoning, or public policy that were not previously identified in the 2008 FGEIS and subsequent technical memoranda.

G. WATERFRONT REVITALIZATION PROGRAM

The WRP is the City's principal coastal zone management tool. As originally adopted in 1982 and revised in 1999, it establishes the City's policies for development and use of the waterfront. All proposed actions subject to CEQR, Uniform Land Use Review Procedure (ULURP), or other local, state, or federal agency discretionary actions that are situated within New York City's designated Coastal Zone Boundary must be reviewed and assessed for their consistency with the WRP.

The project site is located within the City's designated Coastal Zone Boundary. Therefore, in accordance with the guidelines of the *CEQR Technical Manual*, a preliminary evaluation of the RWCDs' consistency with WRP policies was undertaken (see **Appendix A-2** for the WRP Coastal Assessment Form [CAF] that was appended to the EAS and Draft Scope of Work for the proposed project). As determined by the CAF, the RWCDs requires detailed assessment for several WRP policies, as described below.

CONSISTENCY OF PROPOSED PROJECT WITH THE WATERFRONT REVITALIZATION PROGRAM POLICIES

New York City's WRP includes 10 principal policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. For each policy and sub-policy question that was answered "yes" in the CAF, this analysis includes a discussion of the policy's applicability to the RWCDs and the RWCDs' consistency with the respective policy.

Policy 1: Support and facilitate commercial and residential development in areas well-suited to such development.

Policy 1.1: Encourage commercial and residential redevelopment in appropriate coastal zone areas.

The RWCDs would create commercial uses in 2018, 2028, and 2032, and residential uses in 2028 and 2032, including both affordable and market-rate housing. The project site is considered to be an appropriate coastal zone area for the redevelopment of such uses, as they are prevalent in the vicinity, particularly within the dense center of Downtown Flushing. The proposed community facility and open space uses would support the proposed residential and commercial uses and provide amenities for area residents and visitors. Therefore, the RWCDs would be consistent with this policy.

Policy 1.2: Encourage non-industrial development that enlivens the waterfront and attracts the public.

The proposed uses of the RWCDs in 2018, 2028, and 2032 would result in substantially greater numbers of people coming to the project area, would attract the public, and would enliven this area of land near the Flushing Bay waterfront. The proposed project also would improve connectivity between the project site and surrounding areas, including the Flushing Bay waterfront. Therefore, the RWCDs would be consistent with this policy.

Policy 1.3: Encourage redevelopment in the coastal area where public facilities and infrastructure are adequate or will be developed.

As described in the other chapters of this EIS, public facilities and infrastructure serving the project site are either presently adequate to handle the demands generated by the RWCDs in 2018, 2028, and 2032, or would be developed independently or as part of the proposed project to the level necessary to support the demands of the RWCDs. As detailed in Chapter 4, “Community Facilities,” a significant adverse impact to public day care facilities would occur in 2028 and 2032 as part of the RWCDs. For Phase 1B, the Queens Development Group (QDG) would consult with the New York City Administration for Children’s Services (ACS) to determine the appropriate way to meet demand for day care services generated by the Phase 1B development in the District. For Phase 2, EDC would require the designated developer also consult with ACS to determine the appropriate way to meet demand for day care services generated by development in the District.

The project site is well served by roadways, including Northern Boulevard, the Van Wyck Expressway, and Roosevelt Avenue, and mass transit including the No. 7 subway line, the LIRR, and the Q48 and Q66 bus routes. By 2024, a new connection between the Van Wyck Expressway and the District is anticipated to be constructed to facilitate the movement of traffic into and out of the District and minimize traffic on nearby local roadways.

As described in Chapter 11, “Infrastructure,” the District is not currently connected to the City’s sanitary sewer system. Under the RWCDs, the District would be connected to the City’s sanitary sewer system, replacing the current reliance on septic tanks. Based on current estimates, the 36-inch sanitary sewer currently under construction by EDC in the project area would have sufficient capacity to accommodate the proposed development; however, upgrades to the 37th Avenue pump station and its force main would likely be required for the later phases of the project. Verification of this requirement by DEP would be obtained prior to development of the later phases. With these measures, the infrastructure needs of future user populations within the project site would be adequately met. Therefore, the RWCDs is consistent with this policy.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

The project site is located within the Long Island Sound Special Natural Waterfront Area (SNWA). The SNWAs are large areas with concentrations of natural resources, including wetlands, habitats, and buffer areas. The RWCDs would not involve any excavating or placing of fill within Flushing Bay or Flushing River and would not interfere with habitats or wetlands in the Long Island Sound SNWA. The RWCDs would introduce a storm water management program for the project site where one currently does not exist, which would help to protect the quality and function of the Flushing River and Flushing Bay. Furthermore, the environmental remediation of the Willets Point District would reduce

pollution flows into the Flushing River and Bay and improve the quality and functions of those systems. Therefore, the RWCDS is consistent with this policy.

Policy 4.3: Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.

There are no terrestrial threatened or endangered species or rare ecological communities present within the project site. Because the RWCDS would not result in in-water construction activities or discharges that would have the potential to adversely affect water quality of the Flushing River or Flushing Bay, the construction and operation of Phases 1A, 1B, and 2 would not have the potential to adversely affect any plant, fish, or wildlife species. On the contrary, the environmental remediation of the project site would have positive impacts on the quality of adjacent water bodies and improve ecological communities. Therefore, the RWCDS would be consistent with this policy.

Policy 5: Protect and improve water quality in the New York City coastal area.

Policy 5.1: Manage direct or indirect discharges to waterbodies.

All phases of the RWCDS would comply with the “New York Guidelines for Urban Erosion and Sediment Control” and the *New York State Management Design Manual*. With implementation of the proposed site remediation (detailed in Chapter 10, “Hazardous Materials”) and development of the RWCDS’s stormwater management facilities, construction and operation of the RWCDS would reduce the potential for contaminants to enter Flushing Bay. The proposed remediation measures are not expected to affect the efficiency and functionality of the existing outfalls. Best management measures implemented during and after construction would include erosion and sediment control measures and treatment of stormwater as part of a stormwater pollution prevention plan (SWPPP) and would minimize potential impacts on Flushing Bay associated with stormwater runoff. The RWCDS is not expected to have a significant adverse construction impact on the water quality of Flushing Bay or the Flushing River.

All phases of the RWCDS would be consistent with the City’s goal to reduce CSO events by requiring construction and maintenance of a separate storm and sanitary sewer system. The additional sanitary flow from the RWCDS would not affect the number of annual CSO events, and water conservation measures would be employed to minimize sanitary sewage flow to the existing combined sewer system.

Stormwater generated within the project site during operation in 2018, 2028, and 2032 would be diverted and discharged through a separate stormwater collection system, to Flushing Bay via two existing outfalls on 126th and 127th Streets. As described in Chapter 12, the current stormwater conveyance system is insufficiently sized to accommodate the runoff currently being generated in the District. To eliminate these stormwater management issues, the RWCDS would require the construction of a new stormwater conveyance system, to accommodate the 3.79 acre-feet of stormwater that is beyond the discharge capacity during a 5-year storm event. With the implementation of adequate stormwater management features, stormwater flow could be controlled so as to remain within the capacity of the two existing outfalls without the need to modify the existing outfalls. In addition, QDG, and the future developer of Phase 2, would be required to prepare and implement a site stormwater management plan, to be reviewed and approved by DEP prior to commencement of construction. This plan would specify Best Management Practices and sustainable design

features to be incorporated in the project. If it is determined that the stormwater management features selected for a specific development plan do not adequately supplement the stormwater flow capacity of the existing outfalls, a new outfall will be proposed to augment the existing system.

Given that the District currently lacks sewer infrastructure, and stormwater from the existing industrial uses flows heavily into Flushing Bay, discharges from the proposed system in the future with the RWCDS in 2018, 2028, and 2032 to Flushing Bay would be an improvement over current conditions. Overall, implementation of the new system is expected to result in improved stormwater quality and, consequently, improved water quality in Flushing Bay by eliminating site flooding, improving the quality of the soil substrate of the site, and providing direct drainage to storm sewers; incorporating sustainable design features, where feasible, to reduce the discharge volume and increase the quality of stormwater discharges; and preventing stormwater generated within the District from entering the combined sewer system, which would increase the frequency and volume of combined sewer overflow (CSO) discharges.

All discharges would be required to meet applicable water quality standards of receiving waters. The projected discharges would not be expected to result in an adverse impact on Flushing Bay or the upper East River; nor would it fail to continue to meet Class I standards. As noted in Chapter 10, the life stages of estuarine-dependent and anadromous fish species, bivalves, and other macroinvertebrates found within Flushing Bay are fairly tolerant of varying environmental conditions and have developed behavioral and physiological mechanisms for dealing with these variations. Therefore, temporary, localized changes in water quality that may occur as a result of the minimal additional CSO discharge would not be expected to result in significant adverse impacts on aquatic biota. Significant adverse impacts on surface water quality would not be expected during operation of the RWCDS.

Therefore, the RWCDS is consistent with this policy.

Policy 5.2: Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.

As noted above, all phases of the RWCDS would comply with the New York Guidelines for Urban Erosion and Sediment Control and the New York State Management Design Manual. With implementation of the proposed site remediation (detailed in Chapter 10, "Hazardous Materials") and development of the proposed stormwater management facilities, construction and operation of the RWCDS would reduce the potential for contaminants to enter Flushing Bay. Additionally, the open space proposed for development in the District by 2028 and 2032 would help minimize stormwater runoff from roadways and impervious surfaces. Therefore, the RWCDS would minimize nonpoint source pollution by using Best Management Practices that include implementing stormwater management facilities where none currently exist and minimizing nonpoint source pollution.

Therefore, the RWCDS is consistent with this policy.

Policy 5.3: Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.

The RWCDS would not result in the excavating or placing of fill within Flushing Bay or Flushing River. Therefore, this policy is not applicable.

Policy 6: Minimize loss of life, structures and natural resources caused by flooding and erosion.

FEMA and New York City Building Code flood resistant design requirements would be taken into account within the design of the proposed project, while complying with the special district zoning elevation requirements. Based on the FEMA Flood Insurance Rate Maps (FIRMs), Willets West, the South Lot, and Lots B and D are within the 100-year floodplain (with flood elevation of 14 feet NGVD29). Most of the District is also within the 100-year floodplain (with flood elevation of 14 feet NGVD29), with the exception of three areas located in the northwest, along the eastern border and along Roosevelt Avenue that are within the 500-year floodplain. The existing FIRM 100-year floodplain is currently the only regulatory standard relating to elevation of new development. The City has been working with FEMA to revise the FIRMs. On February 25, 2013, FEMA released Advisory Base Flood Elevation maps for areas in New York City, including the project site. The 100-year flood ABFE for Willets West, and portions of the project site to the south of 37th Avenue, is 12 feet NAVD88. Within the District, for most of the area to the North of 37th Avenue, the 100-year ABFE is 13 feet NAVD88, with the exception of an area mostly to the north of 34th Avenue, which is outside of the advisory 100-year floodplain. Although the ABFE is subject to further review, if it is adopted as part of a future updated Flood Insurance Rate Map, the proposed project would comply with these flood elevations as required by the New York City Building Code. Raising the District portion of the project site out of the floodplain would not only minimize the potential loss of life, structures, and natural resources caused by flooding and erosion, but would also protect the City's significant investment in new infrastructure. Therefore, the RWCDS is consistent with this policy.

Policy 7: Minimize environmental degradation from solid waste and hazardous substances.

Policy 7.1: Manage solid waste material, hazardous wastes, toxic pollutants, and substances hazardous to the environment to protect public health, control pollution and prevent degradation of coastal ecosystems.

As discussed in Chapter 10, "Hazardous Materials," management of wastes generated in the cleanup and redevelopment of the project site will be conducted in accordance with applicable federal, state and local regulatory requirements and with oversight of NYC regulatory agencies. Cleanup of the soils and groundwater will reduce the potential for migration to nearby waterbodies and help improve the coastal ecosystems. Therefore, the RWCDS is consistent with this policy.

Policy 7.2: Prevent and remediate discharge of petroleum products.

The District portion of the project site has a history of automotive and other uses that are known to have resulted in extensive contamination of soil and groundwater with petroleum. As described in Chapter 10, "Hazardous Materials," prior to development in Phases 1A and 1B, remediation of soils and, if needed, groundwater would be conducted in accordance with state petroleum spill program requirements as well as NYC requirements. Remediation of the portions of the District not already developed in Phases 1A and 1B would be completed prior to 2028. Development proposed in the Willets West and Roosevelt Avenue portions of the project site are not expected to require petroleum remediation. Although the RWCDS might include petroleum storage (e.g., of fuel oil for heating new buildings), it would be in accordance with the current stringent requirements for spill prevention. As such, the RWCDS is consistent with Policy 7.2.

Policy 7.3: Transport solid waste and hazardous substances and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

Transportation of wastes generated in the cleanup and redevelopment of the project site will be conducted in accordance with applicable regulatory requirements, including those relating to the types of trucks and the covering of trucks used for different categories of wastes and requirements relating to designated truck routes. Using the required procedures will reduce the potential for wastes to be released into or to migrate to nearby waterbodies and help improve the coastal ecosystems. New solid and hazardous waste facilities are not components of the RWCDS. Therefore, the RWCDS is consistent with this policy.

Policy 8: Provide public access to and along New York City's coastal waters.

Policy 8.1: Preserve, protect and maintain existing physical, visual and recreational access to the waterfront.

The proposed project would preserve, protect, and maintain existing physical, visual, and recreational access to the waterfront. The proposed action would not result in the provision of open space without the provision for its maintenance. The proposed project would also enhance roadways which support public access to the waterfront.

Policy 8.2: Incorporate public access into new public and private development where compatible with proposed land use and coastal location.

The proposed project would not result in any development along the shoreline; nor would it change any existing public access to the waterfront or result in significant adverse impacts to natural resources. As described below under Policy 8.3, views to coastal lands and waters from the project site are currently obstructed.

Policy 8.3: Provide visual access to coastal lands, waters and open space where physically practical.

Views to coastal lands and waters, specifically Flushing Bay and Flushing River, from the project site are currently obstructed by Van Wyck Expressway to the east, Grand Central Parkway to the west, and Northern Boulevard and Whitestone Expressway to the north. Given that there are no existing views to coastal lands or waters to preserve, no phase of the RWCDS would affect physical, visual, or recreational access to the waterfront. Therefore, the RWCDS would be consistent with this policy.

Policy 8.4: Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.

The project site is not located on the waterfront and the proposed project does not involve the acquisition of waterfront property for public access or open space. Therefore, this policy is not applicable to the proposed project.

Policy 8.5: Preserve the public interest in and use of lands and waters held in public trust by the state and city.

As a portion of the project site is mapped City parkland, it is possible that those portions of the project site could be considered as constituting lands held in public trust by the city. DPR has previously received the legislative authority to enter into leases for the use of the Willets West portion of the project site in furtherance of entertainment, trade and commerce for the benefit of the City. Specifically, Section 18-118 of the Administrative Code

(originally codified as Section 532-15.0) was enacted by the New York State Legislature under Chapter 729 of the Session Laws of 1961 and authorizes, among other things, alienation of the Citi Field parking area and permits the uses now under consideration as part of the proposed project. The statute authorizes the DPR Commissioner to enter into leases, contracts and other agreements for a multitude of purposes, including for any purpose which is of such a nature so as to foster or promote amusement, entertainment or the improvement of trade and commerce. The statute declares that such purposes, as well as others set forth in the statute, are for the benefit of the people of the City and for the improvement of, among other things, their health, welfare, recreation and prosperity, and for the improvement of trade and commerce, and are further declared to be public purposes. The proposed uses fit within the uses allowed by the above statutory provision. In addition to being allowed by the statutory provision, by introducing entertainment and commercial uses for the public, the proposed uses would improve the use of the land over its current use as a paved parking lot not open to the general public except during CitiField and occasional other events. Therefore, the proposed project is consistent with this policy.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

Policy 9.1: Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.

The project site is not located within a working waterfront area. The RWCDS would result in a vibrant, dynamic, mixed-use development with a minimum of 8 acres of new publicly accessible landscaped open space that would improve the visual quality of the project site. As the project site is characterized primarily by industrial shed-like buildings and surface parking lots, the RWCDS would result in a development that is more compatible with scenic elements in the area than the existing condition. Therefore, the RWCDS would be consistent with this policy.

Policy 9.2: Protect scenic values associated with natural resources.

The project site is located within the Long Island Sound Special Natural Waterfront Area (SNWA). Consistent with the goals of Policy 9.2, the proposed project would not result in any fragmentation of or structural intrusion into open space areas, and would not change the continuity or configuration of natural shorelines or associated vegetation. The proposed project would be designed with consideration of the character of adjacent open and natural areas.

Policy 10: Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

There are no architectural resources located within the Willets West or Roosevelt Avenue portions of the project site. Therefore, there would be no adverse impacts to architectural resources from the development of these areas. The District contains the former Empire Millwork Corporation Building (State/National Register [S/NR]-eligible) which would be demolished with Phase 2 of the proposed project, resulting in a significant adverse impact to this architectural resource. The project sponsors will consult with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) and the New York City Landmarks Preservation Commission (LPC) regarding appropriate measures to evaluate any remaining potential alternatives to demolition. If none are identified, measures to fully or partially mitigate this adverse impact have been developed, as discussed in Chapter 21,

“Mitigation.” While the demolition of the former Empire Millwork Corporation Building is a significant adverse impact on a historic resource, the building is not significant to the historical or cultural legacy of New York City’s coastal area. The achievement of this policy is not hindered by the RWCDS, and accordingly the RWCDS is consistent with Policy 10. *

A. INTRODUCTION

This chapter assesses whether any changed background conditions or the differences between the reasonable worst-case development scenario (RWCDS) and the program assessed in the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda would result in any significant adverse impacts on socioeconomic conditions that were not addressed in the 2008 FGEIS and subsequent technical memoranda. As described in the 2012 *City Environmental Quality Review (CEQR) Technical Manual*, the socioeconomic character of an area includes its population, housing, and economic activities. Socioeconomic changes may occur when a project directly or indirectly affects any of these elements.

The proposed project for the most part incorporates development that was anticipated and analyzed in the 2008 FGEIS; the current project now includes a major entertainment/retail component and parking adjacent to CitiField (Willeys West). Compared with the program analyzed in the 2008 FGEIS, the proposed project includes approximately 950,000 gross square feet (gsf) (550,000 sf of leasable area) of additional retail space, an increase resulting from the proposed 1.4 million-gsf development at Willeys West combined with a concurrent reduction in the overall amount of retail in the Special Willeys Point District from 1.7 million gsf to 1.25 million gsf. The Supplemental EIS (SEIS) also assumes the highest amount of residential use analyzed in the 2008 FGEIS (5.85 million gsf of residential development, or 5,850 residential units).

In accordance with *CEQR Technical Manual* guidelines, this analysis considers whether development of this additional space could result in significant adverse socioeconomic impacts as a result of: (1) direct displacement of residential population from the project site; (2) indirect displacement of residential population in a ¾-mile study area; (3) direct displacement of existing businesses from the project site; (4) indirect displacement of businesses in a ¾-mile study area due to increased rents; (5) indirect displacement of businesses within a larger trade area due to retail market saturation; and (6) adverse effects on specific industries.

PRINCIPAL CONCLUSIONS

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse impacts to socioeconomic conditions. The following summarizes the conclusions for each of the six CEQR areas of socioeconomic concern.

DIRECT RESIDENTIAL DISPLACEMENT

The proposed project would result in the same direct residential displacement as identified in the 2008 FGEIS (one residential unit/household located in the District); there are no residential units

located on the expanded portions of the project site. Therefore, the SEIS does not require further assessment of potential socioeconomic impacts due to direct residential displacement.

INDIRECT RESIDENTIAL DISPLACEMENT

A detailed analysis finds that the proposed project would not result in significant adverse impacts due to indirect residential displacement. The proposed project would develop more total residential units (5,850 vs. 5,500) and more affordable housing (35 percent of units) than analyzed in the indirect residential displacement analysis of the 2008 FGEIS, which considered the Convention Center Scenario. The increase in the affordable housing percentage was analyzed in the subsequent Technical Memorandum No. 2 (2008), and no significant adverse impacts were identified related to that change.

The increase in the number of residential units as analyzed in the SEIS does not alter the 2008 FGEIS finding that the District is geographically separated from the at-risk population, limiting its potential to influence surrounding residential trends. Residential markets within the study area are similar to the markets described in the 2008 FGEIS; as with the FGEIS, the SEIS finds that these geographically separated communities would experience upward rent pressure with or without the proposed project due to planned projects that are within their distinct residential markets. Similar to the 2008 FGEIS, the SEIS finds that although the population that would be introduced by the proposed project may include a larger proportion of households at higher incomes as compared with the existing study area population, the proposed project's 2,048 affordable housing units would ensure that a substantial portion of the new population would have incomes that would more closely reflect existing incomes in the study area.

DIRECT BUSINESS DISPLACEMENT

The proposed project would result in the same direct business displacement identified and analyzed in the 2008 FGEIS and subsequent technical memoranda, and market conditions are similar to those described in the 2008 FGEIS; there are no businesses located in the expanded portions of the project site.¹ Therefore, the SEIS does not require further assessment of potential socioeconomic impacts due to direct business displacement.

The 2008 FGEIS found that the Willets Point Development Plan would displace approximately 260 businesses and 1,711 employees associated with those businesses. As of December 2012, there were an estimated 220 businesses and 1,353 employees still located within the District portion of the project site. As shown in **Table 3-1**, a vast majority of the remaining businesses (193 businesses, or 88 percent) are auto-related, but those businesses employ only 53 percent of the remaining employees. The remainder of the employees works in the 27 non-auto-related businesses.

While the timeline for the displacement of any individual business varies depending on its business plans and relocation efforts, overall it is anticipated that by the 2018 Build year all of the 122 remaining businesses currently located in the Phase 1A/Phase 1B portion of the project site would be displaced to accommodate development of Phase 1A. The 98 remaining business located in the Phase 2 portion of the project site would be displaced by the 2028 Build year.

¹ Any businesses locating in the District since the 2008 FGEIS have voluntarily done so knowing that they could be displaced; therefore, they do not meet the CEQR definition of direct business displacement, which is the involuntary displacement of businesses from a project site.

Table 3-1

Project Site Employment by Business Type and Sector
December 2012

North American Industry Classification System (NAICS) Economic Sector	Number of Businesses/ Institutions	Percent of Businesses/ Institutions	Number of Jobs	Jobs as a Percentage of Total
Auto-Related Businesses	193	88%	712	53%
Retail Trade (NAICS 44 & 45)	31	14%	210	16%
Repair & Maintenance Services (NAICS 811)	153	70%	457	34%
Wholesale Trade (NAICS 42) – <i>scrap yards</i>	4	2%	33	2%
Transportation & Warehousing (NAICS 48)	5	2%	12	1%
Non Auto-Related Businesses	27	12%	641	47%
Construction (NAICS 236 & 238)	6	3%	147	9%
Manufacturing (NAICS 31-33)	5	2%	72	5%
Wholesale Trade (NAICS 42)	7	3%	232	12%
Administrative and Support and Waste Management and Remediation Services (NAICS 56)	5	2%	178	11%
Arts, Entertainment & Recreation (NAICS 71)	0	0%	0	0%
Accommodation & Food Services (NAICS 72)	5	2%	12	1%
Other Services (NAICS 813)	0	0%	0	0%
Total District Businesses	220	100%	1,353	100%
Notes: Employment figures for auto repair and maintenance establishments were derived from AKRF site visits, interviews by Howard/Stein-Hudson, Cornerstone and EDC business interviews, and estimates for businesses based on New York State Department of Labor (DOL) sector averages for Queens County and Dun and Bradstreet.				
Sources: AKRF, Inc., Howard/Stein-Hudson Business Survey, Cornerstone interviews, EDC, DOL				

EDC has contracted with Cornerstone Group, a business relocation expert, to provide relocation assistance and advisory services to impacted businesses in Willets Point. Cornerstone Group has been engaged in outreach to tenant businesses since January 2008 and commenced its most recent round of outreach to affected Willets Point businesses on City-owned property in September 2012. They have already identified several potential relocation sites and will continue to work with business to provide relocation assistance.

EDC retained LaGuardia Community College (LAGCC) to develop a Workforce Assistance Plan for District workers who are directly displaced by the project. The program provides displaced workers with services such as job training and job placement services, ESL and GED coursework, and additional social services. To date, there have been over 600 program participants and the program is ongoing.

INDIRECT BUSINESS DISPLACEMENT DUE TO INCREASED RENTS

The proposed project would introduce approximately 1.4 million gsf (1.0 million sf of leasable area) of entertainment and retail uses as part of Willets West, which was not analyzed in the 2008 FGEIS. The SEIS preliminary assessment finds that these additional commercial and entertainment uses would not introduce trends that are substantially different from those identified in the 2008 FGEIS, and would not result in significant indirect business displacement due to increased rents.

While the proposed project's uses would be a substantial addition to the ¼-mile study area, they would not be new types of uses within the study area, and therefore would not introduce a new trend that could substantially alter economic patterns. The study area is already experiencing a trend toward increased retail and residential development. The proposed project's additional retail would serve existing residents, and would accommodate future consumer demand

introduced by residents of planned developments and the proposed project. The uses, residents, and workers introduced by the proposed project represent a continuation of existing trends, rather than a new trend that would place upward pressure on office rents in the study area. Similarly, there are already destinations in the study area that offer entertainment and/or recreational opportunities, including Flushing Bay Promenade, CitiField, USTA National Tennis Center, Flushing Meadows-Corona Park, College Point Multiplex Theater, and Downtown Flushing.

INDIRECT BUSINESS DISPLACEMENT DUE TO RETAIL MARKET SATURATION

The proposed project would introduce approximately 1.4 million gsf (1.0 million sf of leasable area) of entertainment and retail uses as part of Willets West, which was not analyzed in the 2008 FGEIS. Similar to the 2008 FGEIS, the SEIS analysis finds that the proposed project, including these additional proposed retail uses, would not substantially raise retail market capture rates within a 5-mile Primary Trade Area and, therefore, would not have the potential to adversely affect competitive stores in the Primary Trade Area.

The SEIS preliminary assessment finds that the retail introduced by the proposed project would result in trade area capture rates well below 100 percent by 2032, which is the *CEQR Technical Manual* threshold requiring detailed analysis.¹ However, to maintain a scope of analysis consistent with that performed for the 2008 FGEIS, the SEIS includes a detailed analysis of indirect business displacement due to retail market saturation.

Similar to the analysis in the 2008 FGEIS, the detailed analysis focuses on grocery stores in the immediate vicinity of the proposed project, in particular, because grocery stores generally serve as anchors for retail concentrations, and the proposed project could introduce stores offering products that substantially overlap with typical grocery store offerings. In addition, the SEIS detailed analysis examines the future viability of anchors in regional retail centers, including movie theaters and restaurants, because the Willets West component of the proposed project would constitute a major new shopping and entertainment center, adding destination retail space to the Primary Trade Area.

The detailed analysis finds that the amount of indirect business displacement due to competition from the proposed project would be minimal, is not expected to jeopardize the viability of any neighborhood retail strips, and is not expected to diminish the level of services provided. Therefore, the proposed project would not result in significant adverse impacts due to retail market saturation.

ADVERSE EFFECTS ON A SPECIFIC INDUSTRY

The proposed project would result in the same direct business displacement as analyzed in the 2008 FGEIS, and would not present any new or different uses that would alter the findings of the 2008 FGEIS with respect to potential effects on the auto industry or industries dependent on auto repair. Therefore, no further assessment of this issue of concern is required for the SEIS.

¹ The 2008 FGEIS analysis of indirect business displacement due to competition was performed under the 2001 *CEQR Technical Manual*, which required detailed analysis even when capture rates were below 100 percent. The 2012 *CEQR Technical Manual* does not require similar detailed analysis if capture rates with the proposed project do not exceed 100 percent.

B. SUMMARY OF FINDINGS, 2008 FGEIS, AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS concluded that by 2017, the Willets Point Development Plan would not result in any significant adverse impacts as measured by the following socioeconomic areas of concern prescribed in the 2001 *CEQR Technical Manual*: 1) direct displacement of a residential population; 2) direct displacement of existing businesses and institutions; 3) indirect (secondary) displacement of a residential population; 4) indirect displacement of businesses and institutions due to increased rents; 5) indirect displacement of businesses due to competition; and 6) adverse effects on specific industries. Subsequent technical memoranda revisited the socioeconomic analyses and findings from the 2008 FGEIS, and determined that the project modifications, changes to background conditions, and changes in methodology would not result in any significant adverse impacts that were not identified in the FGEIS. The following summarizes the 2008 FGEIS and subsequent technical memoranda findings for each area of CEQR socioeconomic concern.

DIRECT RESIDENTIAL DISPLACEMENT

The 2008 FGEIS found that the proposed Plan would directly displace one residential unit (one household) in the District, and that the displacement of one household would not have the potential to result in significant adverse impacts due to direct residential displacement.

DIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

The 2008 FGEIS found that the proposed Plan and anticipated future development on Lots B and D would not result in significant adverse impacts due to direct business and institutional displacement. The proposed Plan was projected to directly displace approximately 260 businesses and institutions (approximately 1,711 employees) that provide a variety of products and services within numerous economic sectors, including manufacturing, wholesale trade, retail trade, transportation and warehousing, accommodation and food services, and repair and maintenance services. Although the proposed Plan was found to displace businesses and institutions that employ many workers, and offer products and services valued by certain consumers, these businesses and institutions were determined not to be of substantial economic value to the region or City as defined under CEQR. The District's businesses are not unique; similar services and products are provided throughout Queens, the City, and the region. In addition, the vast majority of these businesses and institutions would be able to relocate to other properties within Queens or the City. Although rental costs would likely increase—as a result of the lower rents currently paid in the District compared with other manufacturing areas, and a competitive industrial real estate market citywide—most of these businesses would remain viable elsewhere.

INDIRECT RESIDENTIAL DISPLACEMENT DUE TO INCREASED RENTS

The 2008 FGEIS and subsequent technical memoranda found that the proposed Plan and anticipated future development on Lots B and D would not result in significant adverse impacts due to indirect residential displacement. A detailed analysis of indirect residential displacement determined that the study area contained an estimated 2,134 households (approximately 5,726 residents) in eight Census tracts (381, 853, 865, 867, 871, 875, 889.02, and 907) that were considered to be “at risk” of indirect residential displacement if their rents were to increase.

However, the 2008 FGEIS analysis concluded that significant indirect residential displacement of this at risk population would not occur as a result of the Plan for the following reasons:

- The District is geographically separated from the identified at-risk population, limiting its potential to influence residential trends in those areas.
- Planned residential developments located between the District and the identified at-risk population (i.e., Flushing Commons and Sky View Parc) are likely to have a greater influence on residential market trends in those tracts than the proposed Plan and anticipated future development on Lots B and D.
- By adding new housing units, the proposed Plan could serve to relieve rather than increase market pressure in the study area.
- The proposed Plan would introduce 1,100 affordable housing units to the study area. Although the population that would be introduced by the proposed Plan may include a larger proportion of households at higher incomes as compared with the existing study area population, the proposed Plan's affordable housing component would ensure that a substantial portion of the new population would have incomes that would more closely reflect existing incomes in the study area.

Subsequent technical memoranda found that the increase in the percentage of affordable housing units would not alter the finding that the proposed Plan would not result in significant adverse impacts due to indirect residential displacement.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT DUE TO INCREASED RENTS

The 2008 FGEIS found that the proposed Plan and anticipated future development on Lots B and D would not result in significant indirect business and institutional displacement impacts due to increased rents under either scenario (with or without the convention center). While the introduction of new residents, workers, and visitors to the District would alter existing economic patterns within the District, these changes would not lead to substantial indirect business displacement within the broader study area. Existing local retail establishments in the study area would continue to be more convenient to study area residents outside of the District, while the proposed Plan's residents and visitors—especially convention center and hotel visitors—would shop and dine primarily at retail establishments in the District. The proposed Plan would therefore not result in substantial changes in demand for goods and services that would alter economic conditions in the broader study area. The proposed Plan and anticipated future development on Lots B and D would represent a continuation of existing trends toward the development of retail, office, hotel, and residential uses in the study area, rather than the introduction of a new trend that would change existing economic patterns in the study area.

INDIRECT BUSINESS DISPLACEMENT DUE TO COMPETITION

The 2008 FGEIS analysis found that the proposed Plan would not substantially raise retail capture rates within the Primary Trade Area and, therefore, would not have the potential to adversely affect competitive stores in the Primary Trade Area. The analysis concluded that the proposed Plan would not raise retail capture rates within the Primary Trade Area to the extent that retail supply would out proportion demand, the proposed Plan would not have the potential to significantly affect competitive stores in the Primary Trade Area.

Within the 1½-Mile Trade Area, the detailed analysis focused on grocery stores, because grocery stores often serve as anchors for local retail concentrations. The analysis concluded that local residents would continue to shop at existing grocery stores for their convenience, specialized goods and services familiar to an ethnic community, and public transit accessibility. Although a potential supermarket or wholesale club in the District was found to be potentially competitive with nearby supermarkets and grocery stores within the 1½-Mile Trade Area, such uses were not expected to have a substantial negative effect on nearby grocery stores, nor would they jeopardize the viability of any retail strips in the study area.

Overall, the amount of indirect business displacement due to competition from the proposed Plan and anticipated future development on Lots B and D was predicted to be minimal, and was not expected to jeopardize the viability of any neighborhood retail strips or diminish the level of services provided.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

The 2008 FGEIS found that the proposed Plan and anticipated future development on Lots B and D would not result in significant adverse impacts on any specific industry. Although a large concentration of auto-related uses (227 businesses) was predicted to be displaced from the District, these displaced businesses and their associated employment were found not to significantly impact the industry as a whole. The potentially displaced businesses and employment represented less than 5 percent of citywide employment within the auto-related sectors (including wholesale trade, retail trade, transportation and warehousing, and other services), and the businesses could relocate within the City, potentially in other auto-related clusters, thereby maintaining existing business and employment counts within the industry. Additionally, with 3,642 auto-related businesses within New York City, auto-related goods and services were found to be available elsewhere. Therefore, it was concluded that the potential displacement of these uses would not jeopardize the viability of any industries that rely on those services.

C. METHODOLOGY

This chapter has been prepared in accordance with the guidelines of the 2012 *CEQR Technical Manual*.

BACKGROUND

Under CEQR, the socioeconomic character of an area includes its population, housing, and economic activity. Although socioeconomic changes may not result in impacts under CEQR, they are disclosed if they would affect land-use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area. In some cases, these changes may be substantial but not adverse. In other cases, these changes may be good for some groups but bad for others. The objective of the CEQR analysis is to disclose whether any changes created by the project would have a significant impact compared with what would happen in the No Action condition.

An assessment of socioeconomic impacts distinguishes between impacts on the residents and businesses in an area and separates these impacts into direct and indirect displacement for both of those segments. Direct displacement occurs when residents or businesses are involuntarily displaced from the actual site of the proposed project or sites directly affected by it. For

example, direct displacement would occur if a currently occupied site were redeveloped for new uses or structures or if a proposed easement or right-of-way encroached on a portion of a parcel and rendered it unfit for its current use. In these cases, the occupants of a particular structure to be displaced can usually be identified, and therefore the disclosure of direct displacement focuses on specific businesses and a known number of residents and workers.

Indirect or secondary displacement occurs when residents, businesses, or employees are involuntarily displaced due to a change in socioeconomic conditions in the area caused by the proposed project. Examples include the displacement of lower-income residents who are forced to move due to rising rents caused by higher-income housing introduced by a proposed project. Examples of indirect business displacement include higher-paying commercial tenants replacing industrial uses when new uses introduced by a proposed project cause commercial rents to increase. Unlike direct displacement, the exact occupants to be indirectly displaced are not known. Therefore, an assessment of indirect displacement usually identifies the size and type of groups of residents, businesses, or employees potentially affected.

Some projects may affect the operation and viability of a specific industry not necessarily tied to a specific location. An example would be new regulations that prohibit or restrict the use of certain processes that are critical to certain industries. In these cases, the CEQR review process may involve an assessment of the economic impacts of the project on that specific industry.

DETERMINING WHETHER A SOCIOECONOMIC ASSESSMENT IS APPROPRIATE

According to the *CEQR Technical Manual*, a socioeconomic assessment should be conducted if a project may be reasonably expected to create socioeconomic changes in the area affected by the project that would not be expected to occur in the absence of the project. The following screening assessment considers threshold circumstances identified in the *CEQR Technical Manual* (enumerated below) that can lead to socioeconomic changes warranting further assessment in the SEIS.

- 1. Direct Residential Displacement: Would the project directly displace residential population to the extent that the socioeconomic character of the neighborhood would be substantially altered? Displacement of fewer than 500 residents would not typically be expected to alter the socioeconomic character of a neighborhood.***

The proposed project would result in the same direct residential displacement as identified in the 2008 FGEIS (one residential unit/household located in the District); there are no residential units located on the expanded portions of the project site. Therefore, the SEIS does not require further assessment of potential impacts due to direct residential displacement.

- 2. Direct Business Displacement: Would the project directly displace more than 100 employees? If so, assessments of direct business displacement and indirect business displacement are appropriate.***

The proposed project would result in direct displacement from the same sites that were analyzed in the 2008 FGEIS, and would displace the same types of businesses as analyzed in the 2008 FGEIS. Therefore, the proposed project would not result in impacts due to direct business displacement that are new or different than those identified in the 2008 FGEIS, and further assessment of this issue as part of the SEIS is unwarranted.

The SEIS presents an estimate of the numbers of businesses and employs that remain on the project site, and discloses the anticipated timing of their displacement.

3. ***Direct Business Displacement: Would the project directly displace a business whose products or services are uniquely dependent on its location, are the subject of policies or plans aimed at its preservation, or serve a population uniquely dependent on its services in its present location? If so, an assessment of direct business displacement is warranted.***

The proposed project would result in direct displacement from the same sites that were analyzed in the 2008 FGEIS, and the nature and types of displaced businesses are the same as analyzed in the 2008 FGEIS. Therefore, further assessment of this issue as part of the SEIS is unwarranted.

4. ***Indirect Displacement due to Increased Rents: Would the project result in substantial new development that is markedly different from existing uses, development, and activities within the neighborhood? Residential development of 200 units or less or commercial development of 200,000 square feet or less would typically not result in significant socioeconomic impacts. For projects exceeding these thresholds, assessments of indirect residential displacement and indirect business displacement are appropriate.***

The proposed project would develop more total residential units (5,850 vs. 5,500) and more affordable housing (35 percent of units) than analyzed in the indirect residential displacement analysis of the 2008 FGEIS, which considered the Convention Center Scenario. Since the proposed project would result in 350 more residential units than analyzed in the 2008 FGEIS and subsequent technical memoranda, an assessment of potential indirect residential displacement is warranted.

While the 2008 FGEIS found that the economic patterns generated by the Willets Point Development Plan would not lead to substantial changes in demand for goods and services that would alter economic conditions in the study area, the proposed project would introduce approximately 1.4 million gsf (1.0 million sf of leasable area) of entertainment and retail uses as part of Willets West, which was not analyzed in the 2008 FGEIS. Therefore, an assessment of indirect business displacement due to increased rents is warranted.

5. ***Indirect Business Displacement due to Retail Market Saturation: Would the project result in a total of 200,000 sf or more of retail on a single development site or 200,000 sf or more of region-serving retail across multiple sites? This type of development may have the potential to draw a substantial amount of sales from existing businesses within the study area, resulting in indirect business displacement due to market saturation.***

The proposed project would introduce approximately 1.4 million gsf (1.0 million sf of leasable area) of entertainment and retail uses as part of Willets West, which was not analyzed in the 2008 FGEIS. Therefore, a preliminary assessment is warranted to estimate whether the retail introduced by the proposed project would result in capture rates in excess of 100 percent, which is the *CEQR Technical Manual* threshold requiring detailed analysis.

6. ***Adverse Effects on Specific Industries: Is the project expected to affect conditions within a specific industry? This could affect socioeconomic conditions if a substantial number of workers or residents depend on the goods or services provided by the affected businesses,***

or if the project would result in the loss or substantial diminishment of a particularly important product or service within the city.

The proposed project would result in direct displacement from the same sites that were analyzed in the 2008 FGEIS, and would displace the same types of businesses as analyzed in the 2008 FGEIS. Therefore, the proposed project would not result in adverse effects on specific industries, and no further assessment of this issue of concern is required for the SEIS.

ANALYSIS FORMAT

Based on *CEQR Technical Manual* guidelines, the analyses of indirect residential and business displacement begin with a preliminary assessment. The objective of the preliminary assessment is to learn enough about the potential effects of the proposed project to either rule out the possibility of significant adverse impacts or determine that a more detailed analysis is required to fully determine the extent of the impacts. A detailed analysis is designed to examine existing conditions and then project conditions forward into the future without the proposed project, incorporating the most recent information available on known land-use proposals and changes in anticipated growth. The future condition with the proposed project in 2032 is then described, and the differences between the future without and with the proposed project are measured. The analysis focuses on the year 2032 full build condition because this condition has the greatest potential for socioeconomic impacts; if significant adverse impacts are identified by 2032, the analysis will then consider the 2018 and 2028 interim build conditions to determine the earliest point at which significant adverse impacts would occur so that mitigation could be implemented within an appropriate timeframe. To the extent that specific program elements could potentially alter the conclusions in the 2008 FGEIS and subsequent technical memoranda, the SEIS focuses on evaluating the potential significant adverse impacts of those elements.

For indirect residential displacement, a detailed analysis was required in order to rule out the potential for significant adverse impacts. Preliminary assessments were sufficient to conclude that the proposed project would not result in any significant adverse socioeconomic impacts due to indirect business displacement from increased rents or due to retail market saturation. However, to maintain a scope of analysis consistent with that performed for the 2008 FGEIS, this SEIS includes a detailed analysis of indirect business displacement due to retail market saturation.

STUDY AREA DEFINITION

According to the *CEQR Technical Manual*, the socioeconomic study area typically reflects the land use study area, and should reflect the scale of the project relative to the area's population. As described in Chapter 3, "Land Use, Zoning, and Public Policy," the analysis of land use, zoning, and public policy uses a ¼-mile primary study area and a ¾-mile secondary study area. The *CEQR Technical Manual* also explains that as the socioeconomic assessment seeks to assess change relative to the study area population, projects that would result in a relatively large increase in population may be expected to have potential indirect effects on a larger study area. Therefore, the study area for the socioeconomic assessment of indirect residential and business displacement reflects a ¾-mile perimeter. In order to analyze socioeconomic data, the boundaries of the study area were modified to include all census tracts that fall within the study area. The resulting study area for this analysis is defined as Queens Census Tracts 373, 379, 381,

383.01, 399, 401, 403, 405, 415, 427, 797.01, 797.02, 849, 853, 865, 869, 871, 889.01, and 907 (see **Figure 3-1**).¹

As shown in **Figure 3-1**, the residential study area has been divided into the following subareas, which approximate the District and the neighborhoods that surround it:

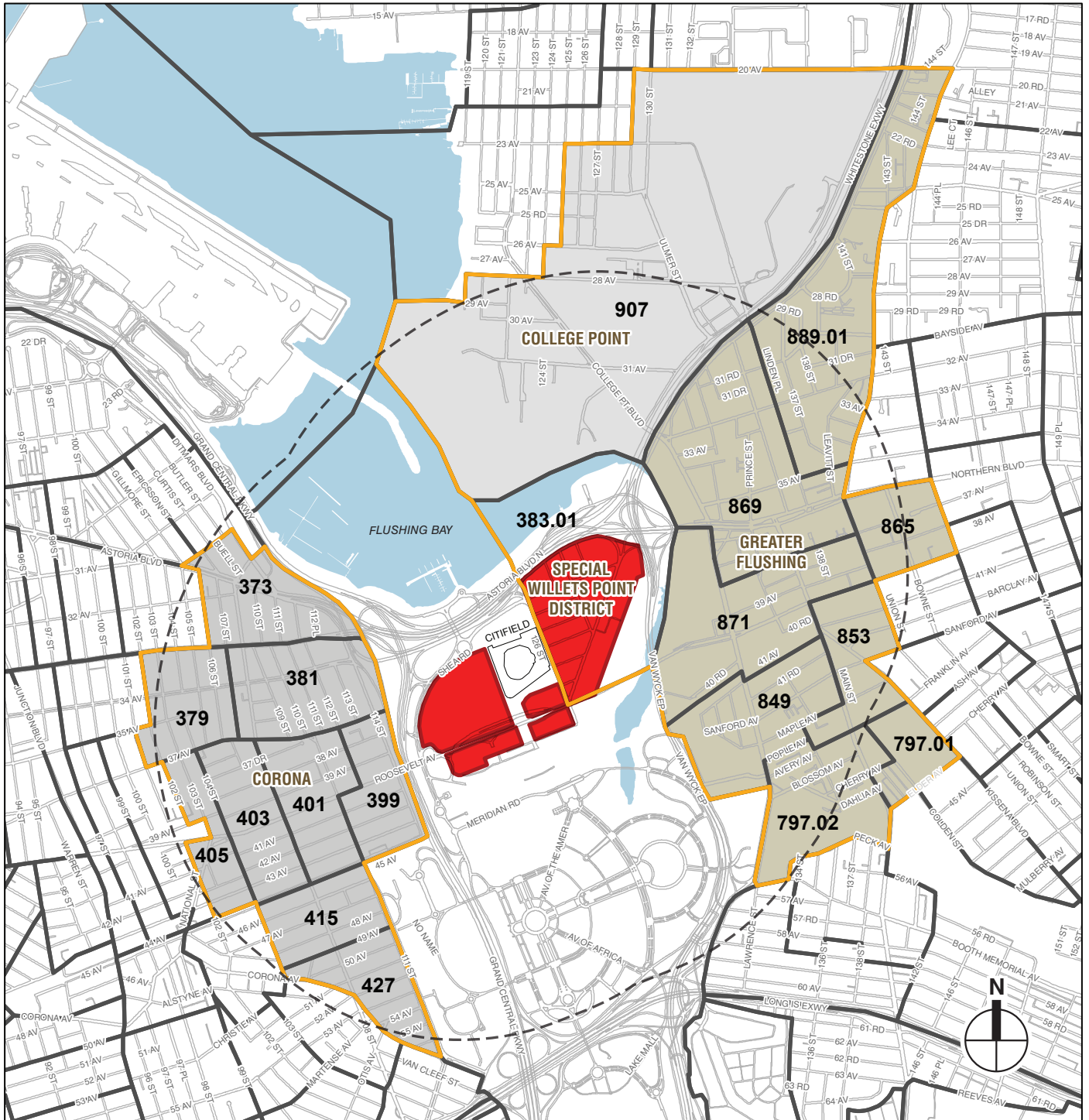
- **Special Willets Point District: Census Tract 383.01.** This area encompasses all of the Special Willet Point District.
- **Greater Flushing: Census Tracts 797.01, 797.02, 849, 853, 865, 869, 871, and 889.01.** This area extends east of the Flushing River from Kissena Corridor Park in the south to the Whitestone Expressway in the north; and to Parsons Boulevard, 149th Street, and Kissena Boulevard in the east.
- **Corona: Census Tracts 373, 379, 381, 399, 401, 403, 405, 415, and 427.** This area is roughly bounded by the Grand Central Parkway to the north, Corona Avenue to the south, 102nd Street to the west, and Grand Central Parkway and 111th Street to the east.
- **College Point: Census Tract 907.** This area extends west of the Whitestone Expressway between 20th Avenue in the north and the Flushing River in the south, and is roughly bounded by 129th Street, 125th Street, 124th Street, and Flushing Bay to the west.

The study area for the analysis of indirect business displacement due to retail market saturation was defined as a “primary trade area,” which is the area from which the bulk of new stores’ sales are likely to be derived. Given the scale and type of retail offerings possible under the proposed project, the Primary Trade Area was defined as the area within an approximately 5-mile radius around the District, bounded by Long Island Sound on the north, the East River on the west, Alley Pond Park on the east, and Rockaway Boulevard on the south (see **Figure 3-2**).

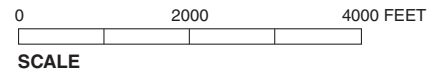
DATA SOURCES

Data related to residential demographic conditions, including population, housing, and income data, were obtained from the U.S. Census Bureau’s 2010 Census and the 2007-2011 American Community Survey (ACS). Land use and parcel data were collected from the New York City Department of Finance’s Real Property Assessment Data (RPAD) 2012 database. Estimates of rent-regulated housing were obtained from the New York State Department of Housing and Community Renewal (DHCR), compiled by the New York City Department of City Planning (DCP) Housing, Economic, and Infrastructure Planning (HEIP) Division from March 2008. Data relating to low income renters was obtained from Public Use Microdata Sample (PUMS) data for 2007-2011 ACS estimates of household income by tenure and household size. The PUMS data was provided by DCP for Public Use Microdata Area (PUMA) 4107, which approximates Queens Community District 4. Additional real estate data were obtained from Prudential Douglas Elliman Real Estate, Streeteasy.com, and other online resources. Employment, retail

¹ Although most of the area of Census Tract 797.01 falls outside of the ¾-mile perimeter, it was included for purposes of comparison with 2000 Census data. In addition, some census tract boundaries for 2000 were altered for the 2010 Census. For 2000 Census data, the ¾-mile study area included the following census tracts: 373, 379, 381, 399, 401, 403, 405, 415, 427, 797, 851, 853, 865, 867, 871, 875, 889.01, 889.02, 907, and Block Group 1 of Census Tract 383. The 2010 boundaries for Census Tracts 373, 381, and 399 include a small area to the east of the 2000 Census boundaries for those tracts, bounded by Northern Boulevard, 44th Avenue, Grand Central Parkway, and 14th Street. This area includes only landscaped areas, and does not contain any residential units or businesses.



- Project Site
- Socioeconomic Study Area
- 3/4-Mile Perimeter
- Census Tract





sales, and retail expenditure potential data were obtained from ESRI, Inc., a commercial data provider. The inventory of businesses currently located on the project site based on data provided by the Cornerstone Group, and supplemented by AKRF field surveys. The overall analysis is also supported by field visits to the study area conducted in November and December 2012.

D. UPDATE ON DIRECT BUSINESS DISPLACEMENT

The 2008 FGEIS found that the Willets Point Development Plan's displacement of approximately 260 businesses and 1,711 employees associated with the displaced business (shown in **Table 3-2**) would not result in significant adverse socioeconomic impacts.

Table 3-2
Project Site Employment by Business Type and Sector
As Reported in 2008 FGEIS

North American Industry Classification System (NAICS) Economic Sector	Number of Businesses/ Institutions	Percent of Businesses/ Institutions	Number of Jobs	Jobs as a Percentage of Total
Auto-Related Businesses	227	87%	1,057	62%
Retail Trade (NAICS 44 & 45)	54	21%	423	25%
Repair & Maintenance Services (NAICS 811)	163	63%	561	33%
Wholesale Trade (NAICS 42) – <i>scrap yards</i>	5	2%	58	3%
Transportation & Warehousing (NAICS 48)	5	2%	15	1%
Non Auto-Related Businesses	33	13%	642	38%
Construction (NAICS 236 & 238)	8	3.1%	153	9%
Manufacturing (NAICS 31-33)	5	2%	79	5%
Wholesale Trade (NAICS 42)	5	2%	210	12%
Administrative and Support and Waste Management and Remediation Services (NAICS 56)	6	2.3%	180	11%
Arts, Entertainment & Recreation (NAICS 71)	1	0.4%	11	0.6%
Accommodation & Food Services (NAICS 72)	7	3%	21	1%
Other Services (NAICS 813)	1	0.4%	0	0%
Total District Businesses	260	100%	1,711	100%
Notes: Employment figures for auto repair and maintenance establishments were derived from AKRF site visits, interviews by Howard/Stein-Hudson and NYCEDC business interviews, and estimates for businesses based on DOL sector averages for Queens County. Sources: AKRF, Inc., Howard/Stein-Hudson Business Survey, EDC, DOL				

The proposed project would result in direct business displacement from the same sites that were analyzed in the 2008 FGEIS and subsequent technical memoranda, and market conditions are similar to those described in the 2008 FGEIS. Therefore, no further analysis is warranted. This section provides an updated profile of the businesses remaining within the District portion of the project site.

As of December 2012, there were an estimated 220 businesses and 1,353 employees still located within the District portion of the project site. As shown in **Table 3-3**, a vast majority of the remaining businesses (193 businesses, or 88 percent) are auto-related, but those businesses employ only 53 percent of the remaining employees. The remainder of the employees work in the 27 non-auto-related businesses. In addition, despite a reduction in the overall numbers of businesses within the District portion of the project site, the distribution of businesses between auto-related and non-auto-related is virtually the same as in 2008: as of December 2012, 88 percent of remaining businesses within the District portion of the project site are auto-related, as compared with 87 percent in 2008.

Table 3-3

Project Site Employment by Business Type and Sector
December 2012

North American Industry Classification System (NAICS) Economic Sector	Number of Businesses/ Institutions	Percent of Businesses/ Institutions	Number of Jobs	Jobs as a Percentage of Total
Auto-Related Businesses	193	88%	712	53%
Retail Trade (NAICS 44 & 45)	31	14%	210	16%
Repair & Maintenance Services (NAICS 811)	153	70%	457	34%
Wholesale Trade (NAICS 42) – <i>scrap yards</i>	4	2%	33	2%
Transportation & Warehousing (NAICS 48)	5	2%	12	1%
Non Auto-Related Businesses	27	12%	641	47%
Construction (NAICS 236 & 238)	6	3%	147	9%
Manufacturing (NAICS 31-33)	5	2%	72	5%
Wholesale Trade (NAICS 42)	7	3%	232	12%
Administrative and Support and Waste Management and Remediation Services (NAICS 56)	5	2%	178	11%
Arts, Entertainment & Recreation (NAICS 71)	0	0%	0	0%
Accommodation & Food Services (NAICS 72)	5	2%	12	1%
Other Services (NAICS 813)	0	0%	0	0%
Total District Businesses	220	100%	1,353	100%
Notes: Employment figures for auto repair and maintenance establishments were derived from AKRF site visits, interviews by Howard/Stein-Hudson, Cornerstone and EDC business interviews, and estimates for businesses based on DOL sector averages for Queens County and Dun and Bradstreet. Sources: AKRF, Inc., Howard/Stein-Hudson Business Survey, Cornerstone interviews, EDC, DOL				

While the timeline for the displacement of any individual business varies depending on its business plans and relocation efforts, overall it is anticipated that by 2018 all of the 122 remaining businesses currently located in the Phase 1A/Phase 1B portion of the project site would be displaced to accommodate development of Phase 1A. The 98 remaining business located in the Phase 2 portion of the project site would be displaced by 2028.

EDC has contracted with Cornerstone Group, a business relocation expert, to provide relocation assistance and advisory services to impacted businesses in Willets Point. Cornerstone Group has been engaged in outreach to tenant businesses since January 2008 and commenced its most recent round of outreach to affected Willets Point businesses on City-owned property in September 2012. They have already identified several potential relocation sites and will continue to work with business to provide relocation assistance.

EDC retained LAGCC to develop a Workforce Assistance Plan for District workers who are directly displaced by the project. The program provides displaced workers with services such as job training and job placement services, ESL and GED coursework, and additional social services. To date, there have been over 600 program participants and the program is ongoing.

E. PRELIMINARY ASSESSMENT

Under *CEQR Technical Manual* guidelines, the first step in a socioeconomic impact analysis is a preliminary assessment. This section examines three areas of potential socioeconomic impact in relation to the proposed project: 1) indirect residential displacement; 2) indirect business displacement due to increased rents; and 3) indirect business displacement due to retail market saturation. The goal of a preliminary assessment is to learn enough about the potential effects of a proposed project either to rule out the possibility of significant impacts, or to establish that a

more detailed analysis will be required to determine whether the proposed project would lead to significant adverse impacts.

For one of the three issue areas—indirect residential displacement—the preliminary assessment indicates that a more detailed analysis is necessary to adequately assess whether the proposed project would have significant adverse impacts. For the remaining two issue areas—indirect business displacement due to increased rents and due to retail market saturation—the preliminary assessment was sufficient to conclude that the proposed project would not result in significant adverse impacts. However, a detailed analysis of indirect business displacement due to retail market saturation is provided in order to maintain a consistent scope of analysis between the 2008 FGEIS and this SEIS.

INDIRECT RESIDENTIAL DISPLACEMENT

Indirect residential displacement usually results from substantial new development that is markedly different from existing uses and activity in an area, which causes increased property values in the area. Increased property values lead to increased rents, which can make it difficult for some existing residents to remain in their homes.

The indirect residential displacement assessment aims to determine whether the proposed project would either introduce a trend or accelerate an existing trend of changing socioeconomic conditions that may have the potential to displace a residential population and substantially change the socioeconomic character of the neighborhood. This preliminary assessment follows the step-by-step preliminary assessment guidelines of the *CEQR Technical Manual*.

Step 1: Determine if the proposed project would add new population with higher average incomes compared with the average incomes of the existing populations and any new population expected to reside in the study area without the project.

The $\frac{3}{4}$ -mile socioeconomic study area includes the Queens neighborhoods of College Point, Corona, and Greater Flushing. College Point is predominantly industrial with concentrations of residential uses, predominantly one to four unit buildings, north of 26th Avenue. Corona is a predominantly residential area, with concentrations of older, one to four unit buildings throughout the area, and commercial uses along the major streets. Flushing is a thriving business and residential area, with large Chinese and Korean communities, concentrations of mixed-use buildings, and one public housing development. According to 2007-2011 ACS data, the average household income for the study area was \$61,715 (See **Table 3-4**). This was lower than the average household income in Queens (\$75,513) and in New York City as a whole (\$84,079) during the same time. Average household income decreased in the study area by 2.7 percent between 1999 and 2007-2011. Over that same time period, average household income decreased in Queens by 1.8 percent and increased in New York City as a whole, by 1.1 percent.

The proposed project would add 2,490 residential units by 2028, of which 872 would be affordable units. By 2032, the proposed project would add another 3,360 residential units to the study area, of which 1,176 would be affordable units, for a total of 5,850 residential units, including 2,048 affordable units. At this time the levels of affordability have not been defined, but it is expected that the affordable housing would be made available to a mix of low- and moderate-income residents. A total of 3,802 residential units would be market rate and would be expected to be priced on the high end of the market for the study area.

Table 3-4
Average Household Income (1999, 2007-2011)

Area	1999	2007-2011	Percent Change
Study Area	\$63,452	\$61,715	-2.7%
Queens	\$76,905	\$75,513	-1.8%
New York City	\$83,124	\$84,079	1.1%
Notes: 1. Average household income for the study area was estimated based on a weighted average of mean household income for the census tracts in the study area. 2. The ACS collects data throughout the period on an on-going, monthly basis and asks for respondents' income over the "past 12 months." The 2007-2011 ACS data therefore reflects incomes over 2007 and 2011, while Census 2000 data reflects income over the prior calendar year (1999). The mean household income for both time periods is presented in 2012 dollars using the U.S. Department of Labor's 2012 half-year average Consumer Price Index for the "New York-Northern New Jersey-Long Island Area."			
Sources: U.S. Census Bureau, 2000 Census, Summary File 3; 2007-2011 American Community Survey; U.S. Department of Labor Bureau of Labor Statistics; AKRF, Inc.			

Based on the HUD Median Family Income for New York City (\$65,000), and assuming that households spend 30 percent of their household income on housing, the average household income of the residents of the affordable housing component of the proposed project would be comparable to the current average household income for the study area. Therefore, it is expected that the average household income of the total population introduced by the proposed project—including both the affordable and market rate housing—would exceed the average incomes of the existing population, and would be comparable to any new population expected to reside in the study area without the project. Based on this finding, the assessment proceeds to Step 2.

Step 2: Determine if the project's increase in population is large enough relative to the size of the population expected to reside in the study area without the project to affect real estate market conditions in the study area.

According to data from the 2010 Census, the ¾-mile study area had a population of 91,156 residents in 2010 (See **Table 3-5**). This represents an approximately 10.4 percent increase in residents since 2000, which is substantially greater than the population increases in Queens County (0.1 percent) and New York City (2.1 percent) over the same period.

Table 3-5
2000 and 2010 Population

Area	2000	2010	Percent Change
Study Area	82,574	91,156	10.4%
Queens County	2,229,379	2,230,722	0.1%
New York City	8,008,278	8,175,133	2.1%
Sources: U.S. Census Bureau, 2000 Census, Summary File 1; 2010 Census, Summary File 1; AKRF, Inc.			

The proposed project would introduce an estimated 16,497 residents to the study area. As shown in **Table 3-6**, when compared with the population expected to reside in the study area by 2032 in the future without the proposed project (the No-Action Condition), the proposed project would increase the 2032 study area population by approximately 16.4 percent.

Table 3-6
Estimated Population in the 3/4-Mile Study Area:
2032 No-Action and With-Action Conditions

	Population			Percent Change (No-Action and With-Action Condition)
	2010	No-Action Condition 2032	With-Action Condition 2032	
Study Area	91,156	100,823	117,320	16.4%
Notes: Population estimates for planned projects in the No Action and With Action conditions assume an average household size of 2.82 persons, the average household size for Queens.				
Sources: Census 2010, New York City Department of City Planning, AKRF, Inc.				

According to *CEQR Technical Manual* methodology, a population increase greater than 10 percent warrants a detailed analysis to determine a project's potential for significant adverse impacts due to indirect residential displacement. Therefore, a detailed analysis is presented in Section E, below.

INDIRECT BUSINESS DISPLACEMENT DUE TO INCREASED RENTS

The preliminary assessment of indirect business displacement due to increased rents focuses on whether the proposed project could increase commercial property values and rents within the 3/4-mile study area so that it would become difficult for some categories of businesses to remain in the area. The following three questions (numbered in italics below) address the potential for significant adverse indirect business displacement impacts.

- 1. Would the proposed project introduce enough of a new economic activity or add to the concentration of a particular sector of the local economy enough to introduce trends that would alter existing economic patterns?*

The 3/4-mile study area contains a mix of economic activities. As shown in **Table 3-7**, in 2011, there were approximately 25,897 people employed at businesses located within the 3/4-mile perimeter that shapes the study area. The employees in the study area represent approximately 4.6 percent of the total employment in Queens. The accommodation and food services sector accounted for the largest proportion of employees in the study area (18.9 percent). This was more than twice the proportion of accommodation and food service employment in both Queens (9.0 percent) and New York City as a whole (8.7 percent).

Retail trade accounted for 15.2 percent of employment in the study area, which was slightly higher than in Queens (12.6 percent) and New York City (11.4 percent). Healthcare and social assistance accounted for 13.7 percent of employment in the study area, which was lower than the proportion of healthcare and social assistance employees in Queens (15.5 percent) but higher than in New York City as a whole (13.2 percent).

Table 3-7
Estimated Employees in ¾-Mile Study Area, Queens, and New York City
2011

Type of Job by NAICS Category	Study Area		Queens		New York City	
	Employees	Percent	Employees	Percent	Employees	Percent
Agriculture, forestry, fishing and hunting	1	0.0%	524	0.1%	1,595	0.0%
Mining	1	0.0%	56	0.0%	772	0.0%
Utilities	16	0.1%	512	0.1%	4,561	0.1%
Construction	1,480	5.7%	32,500	5.8%	114,239	3.0%
Manufacturing	975	3.8%	29,206	5.2%	146,456	3.9%
Wholesale trade	1,275	4.9%	24,431	4.4%	120,018	3.2%
Retail trade	3,955	15.2%	70,735	12.6%	432,984	11.4%
Transportation and warehousing	362	1.4%	33,193	5.9%	96,027	2.5%
Information	415	1.6%	10,405	1.9%	187,167	4.9%
Finance and insurance	1,232	4.7%	18,795	3.3%	316,191	8.3%
Real estate and rental and leasing	1,139	4.4%	21,152	3.8%	143,981	3.8%
Professional, scientific, and technical services	985	3.8%	24,589	4.4%	405,000	10.7%
Management of companies and enterprises	12	0.0%	274	0.0%	32,132	0.8%
Administrative and support and waste management and remediation services	990	3.8%	14,463	2.6%	132,563	3.5%
Educational services	1,930	7.4%	61,666	11.0%	337,391	8.9%
Health care and social assistance	3,561	13.7%	87,261	15.5%	500,871	13.2%
Arts, entertainment, and recreation	286	1.1%	7,016	1.2%	77,188	2.0%
Accommodation and food services	4,916	18.9%	50,446	9.0%	331,181	8.7%
Other services (except public administration)	1,718	6.6%	39,626	7.1%	229,126	6.0%
Public administration	324	1.2%	28,318	5.0%	130,521	3.4%
Unclassified establishments	414	1.6%	6,120	1.1%	55,688	1.5%
Total	25,987	100	561,288	100	3,795,652	100
Source: ESRI Business Analyst Online, Inc., Business Summary Report						

The proposed project would result in a mix of uses by 2032, incorporating development substantially as anticipated and analyzed in the 2008 FGEIS and subsequent technical memoranda, as well as a major entertainment/retail component and parking adjacent to CitiField. Overall, the proposed project would include retail, entertainment, hotel, residential, community facility, and office uses; parking; a school; a convention center; and open space. The hotel, parking, community facility, office, convention center, and open space developments are not proposed to change from the program analyzed in the 2008 FGEIS and subsequent technical memoranda, and therefore are not considered in this assessment.

The proposed project would introduce approximately 1.4 million gsf (1.0 million sf of leasable area) of entertainment and retail uses as part of Willets West, which was not analyzed in the 2008 FGEIS and subsequent technical memoranda. This new retail development would be accompanied by a reduction in the overall amount of retail in the District, from 1.7 million gsf to 1.25 million gsf. As a result, the overall amount of retail and entertainment development would increase from 1.9 million gsf as analyzed in the 2008 FGEIS to 2.8 million gsf (2.4 million sf of leasable area).

As described in Chapter 1, "Project Description," Willets West would be developed on a portion of the surface parking lot west of CitiField. Willets West could include over 200 retail stores,

Willeys Point Development

including anchor and “mini” anchor retailers, as well as movie theaters, restaurant and food hall spaces, and entertainment venues. Surface parking and a parking structure also would be developed in this location, including 2,500 new spaces for the entertainment/retail center and 400 spaces of replacement parking for use by the Mets. In addition, by 2018 the westernmost CitiField surface parking lot south of Roosevelt Avenue (part of the South Lot) would be redeveloped as a structured parking facility, to replace a portion of the CitiField parking spaces formerly located on the Willets West portion of the project site. It is anticipated that this mass of retail uses would create a new destination, allowing for more comprehensive transit-oriented development around the Mets/Willeys Point stops on the No. 7 train and Long Island Rail Road. This development would serve as a catalyst for the subsequent build-out and economic development of the Willets Point area. Willets West would be created in Phase 1A of the proposed project, which is expected to be completed by 2018.

According to RPAD data, the $\frac{3}{4}$ -mile study area contains 5.3 million gsf of retail, and known projects in the study area are expected to add an estimated 660,320 gsf of additional retail space in the future without the proposed project. The 2.83 million gsf of retail and entertainment uses envisioned under the proposed project would be a substantial addition, but it would not be a new economic activity within the study area. Similarly, there are already destinations in the study area that offer entertainment and/or recreational opportunities, including Flushing Bay Promenade, CitiField, USTA National Tennis Center, Flushing Meadows-Corona Park, College Point Multiplex Theater, and Downtown Flushing.

There is already an established trend in the study area toward the development of retail, as evidenced by the several projects that have recently been completed, or are expected to be completed by 2032. Queens Crossing, a mixed-use development containing 110,000 gsf of retail space, was completed in 2007 on Main Street near the No. 7 subway station. Prince Plaza, a mixed-use development containing 72 residential units and 51,000 gsf of retail space, was completed in 2008, on Prince Street near 37th Avenue in Flushing. Sky View Center—part of the Sky View Parc development bounded by Whitestone Expressway, 40th Road, College Point Boulevard, and Roosevelt Avenue—is a major retail center with several large department and electronic stores, a supermarket, and a warehouse club. Flushing Commons, a planned mixed-use development including 275,000 gsf of retail, will be located between Main and Union Streets, north of 39th Avenue in Flushing. Given the existing established trend toward retail development within the study area, the increase in retail represents a continuation of an existing trend and would not change existing economic patterns in the study area.

According to RPAD data, as of 2012 the $\frac{3}{4}$ -mile study area contained an estimated 23,456 housing units. The study area already exhibits a strong trend toward residential development, including several large recently-completed projects such as Tower 3 of the Sky View Parc development, which added 448 market rate condominiums in Flushing. The 5,850 households that would be introduced by the proposed project would shop at some existing retail establishments, but would likely do a large portion of their shopping at the retail that would be introduced in the District. Therefore, it is not likely that the new households would substantially alter existing retail patterns in the study area.

Some industries or occupations tend to be considered more vulnerable than others to indirect displacement pressures. Businesses most vulnerable to indirect displacement due to increased rents are typically those businesses whose uses are less compatible with the economic trends that are creating upward rent pressures in the study area; i.e., those businesses that tend to not directly benefit in terms of increased business activity from the market forces generating the

increases in rent. For example, if a neighborhood is a more desirable place to live, uses that are less compatible with residential conditions (such as manufacturing) would be less able to afford increases in rent due to increases in property values compared with a neighborhood service use, such as a bank, which could see increased business activity from the increased residential presence.

Industrial uses within the study area would not capture any value from these customer trips, while a retail use could potentially capture additional sales from cross-shopping activity. Therefore, industrial uses in the study area could be considered vulnerable to indirect displacement, as a property owner could decide to convert an existing industrial property to a retail use. However, the possibility for this type of indirect displacement is limited by the underlying zoning. College Point and North Flushing are zoned for light manufacturing (M3-1 and M2-1, respectively), which limits the type and size of commercial retail uses without discretionary actions. Also, industrial uses include large municipal facilities, such as the New York City Department of Sanitation (DSNY) North Shore marine transfer station (MTS) in College Point. There are other prominent industrial uses in the study area, including the College Point Corporate Park, a 550-acre corporate park that includes large industrial businesses such as *The New York Times* printing and distribution plant, Skanska's North American headquarters, and Ares Printing and Packaging. The industrial uses on these properties would maintain the strong industrial character of the area.

The proposed project also would include a public school that would be approximately 100,000 gsf larger than analyzed in the FGEIS. This increment would not be larger enough to substantially alter economic trends in the study area, and therefore would not result in significant adverse impacts due to indirect business displacement.

2. Would the proposed project directly displace uses of any type that directly support businesses in the area or bring people to the area that form a customer base for local businesses?

The proposed project would result in the same direct displacement of uses as analyzed in the 2008 FGEIS; there are no businesses located on the portions of the project site outside the District. As described in the 2008 FGEIS, business establishments within the study area do not rely on District employees or visitors for their customer base, nor do business establishments in the study area rely on the products or services offered by District businesses. To the extent that products and services offered by District establishments may be utilized by businesses in the surrounding study area, these would still be available in the future with the proposed project in other areas of Queens and the City. Study area businesses do not require proximity to District businesses, and would not be adversely affected by the proposed project.

3. Would the proposed project directly or indirectly displace residents, workers, or visitors who form the customer base of existing businesses in the study area?

The proposed project would result in the same direct displacement as analyzed in the 2008 FGEIS, and the SEIS finds that the proposed project would result in similar levels of indirect displacement. As described in the 2008 FGEIS, the 1,711 employees directly displaced would represent approximately 4.0 percent of the employment in the study area, and the displacement of these employees would not represent a significant portion of the customer base for existing businesses. Furthermore, although the new residents, workers, and visitors would do the majority of their retail purchases in the District, it is likely that the existing retail businesses in the study area would capture a portion of their retail expenditures.

The proposed project is anticipated to generate approximately 3,671 employees. Similar to the new residents, while most of their spending would be in the proposed retail in the District, a portion would be captured by the retail in the study area. In addition, some project employees may live in the study area, increasing the likelihood that a larger proportion of their retail dollars would be spent at existing study area businesses. The influx of residents, employees, and visitors to the study area would create a sizable new customer base for existing and future retail services and businesses.

The preliminary assessment finds that the proposed project would not result in significant adverse socioeconomic impacts as a result of indirect business displacement due to increased rents. Therefore, detailed analysis of this issue is not warranted.

INDIRECT BUSINESS DISPLACEMENT DUE TO RETAIL MARKET SATURATION

Projects resulting in the development of large, regional-serving retail may draw sales from existing businesses in an area. According to the *CEQR Technical Manual*, this type of competitive pressure does not necessarily result in environmental impacts, especially in New York City, where increases in retail supply can usually be supported by high population density, population growth, visitor-generated sales, and overall purchasing power. However, competition can become an environmental concern if it has the potential to result in prolonged vacancy and disinvestment in neighborhood shopping areas, thereby affecting the character of the neighborhood.

The proposed project would result in the development of up to approximately 2.83 million gsf of retail and entertainment uses, including 1.4 million gsf (1.0 million sf of leasable area) on Willets West, 1.25 million gsf in the District, and 184,500 gsf on Lot B. This exceeds the 200,000-sf CEQR threshold for a preliminary assessment of indirect business displacement due to retail market saturation. For projects exceeding the 200,000-sf threshold, the *CEQR Technical Manual* prescribes a step-by-step preliminary assessment that can be described as a “capture rate analysis.” Capture rates are measures of business activity in a trade area, indicating the percentage of consumer expenditures for retail goods that are being captured by retailers in the trade area. If a capture rate exceeds 100 percent, then there is the potential for market saturation and a detailed analysis is required to determine whether the proposed project may capture retail sales from existing businesses to the extent that vacancies and disinvestment on neighborhood commercial streets would occur, thereby affecting land use patterns and the economic viability of the neighborhood.

CAPTURE RATE ANALYSIS

STEP 1

The first step in a retail capture rate analysis is to determine whether the categories of goods to be sold at the proposed development are similar to the categories of goods sold in stores found on neighborhood retail streets within the study area.

The proposed project would result in the development of up to approximately 2.83 million gsf of entertainment and retail uses, comprising a mix of local retail (i.e., small-scale stores geared towards serving the day-to-day needs of the study area population), and destination retail (i.e., retail generally sold in larger format stores that will attract customers from greater distances in order to compare price, quality, and the selection of merchandise), as well as movie theater, entertainment, and fitness uses.

Providers of business sales and household expenditure data do not typically consider entertainment and fitness-related uses to be retail and do not report data for those uses as part of their retail reports. Therefore, sales and expenditures related to the proposed project's 80,000 gsf movie theater and 400,000 gsf of entertainment and fitness uses are not included in the capture rate analysis presented below. The total amount of proposed project retail analyzed in this capture rate analysis is 1.95 million square feet.

Specific tenants and store sizes for the proposed project have not yet been determined. For purposes of this analysis, it is assumed that the retail program could include, in addition to various small and mid-size retail stores, two traditional department stores and one discount department store. Unlike the 2008 FGEIS, the SEIS does not assume that the proposed project would include wholesale clubs. The site planning for the District does not allow for the footprints and truck access necessary for a wholesale club format, and there are already numerous wholesale clubs within the neighborhoods surrounding the project site.

Nevertheless, with up to approximately 1.95 million gsf of retail excluding the proposed entertainment and fitness uses, it is assumed that the proposed project could include retailers whose product offerings do overlap with the offerings at some study area retail stores.

STEP 2

Step 2 in a retail capture rate analysis is to determine a Primary Trade Area. For the proposed "anchor" stores – the largest stores in the proposed development that are expected to yield the largest proportion of retail sales.

As described in the *CEQR Technical Manual*, an analysis of the potential effects of competition should encompass a primary trade area from which the bulk of new stores' sales are likely to be derived. According to the Urban Land Institute's *Shopping Center Development Handbook*, trade areas for shopping centers similar in size to the proposed project would generally extend 12 miles from the site, and typically can be reached within a 30-minute drive. However, trade areas for retail projects in New York City are typically smaller than the national standards cited in the *Shopping Center Development Handbook*, due primarily to the density of development in the New York metropolitan area. A 12-mile radius from the project site extends throughout Queens and into Brooklyn, Manhattan, and the Bronx, as well as Nassau County, NY; Hudson County, NJ; and Westchester County, NY. This would not be an appropriate trade area for the proposed project because many of those traveling from the more distant reaches of a 12-mile trade area would be traveling past destination retail concentrations of equal or greater size to reach the proposed project. For example, residents of Nassau County are more likely to regularly visit closer retail destinations such as Roosevelt Field Mall.

Therefore, for purposes of analysis, the Primary Trade Area for the proposed project is an adjusted five-mile perimeter around the project site (see **Figure 3-2**). The five-mile perimeter was adjusted to exclude the portions of Manhattan and the Bronx that fall within this area. The East River serves as a natural barrier between Queens and Manhattan and the Bronx, making the route from Manhattan and the Bronx to the project site less direct. Residents traveling by car via the Whitestone Bridge or the Midtown Tunnel would have to pay a toll to access the project site. Such factors would make it more convenient for households living in the Bronx and Manhattan to do their regular shopping in the boroughs in which they live. Thus, the Primary Trade Area excludes Manhattan and the Bronx and is roughly bounded by Long Island Sound on the north, the East River on the west, Alley Pond Park on the east, and Rockaway Boulevard on the south. The proposed project would likely draw a substantial number of customers from throughout

Willets Point Development

Queens because of the retail center's proximity to major roadways, its merchandise mix, and the regional attraction created by the 2.83 million gsf of retail and entertainment space.

STEP 3

Step 3 in the preliminary assessment is to estimate sales volumes for relevant retail stores within the Primary Trade Area, i.e., stores that sell categories of goods similar to those expected to be offered by stores introduced by the proposed project.

As described above, no specific retailing plan has been developed for the proposed project, but it is expected that the project would include retail stores selling a variety of goods and services. Therefore, this analysis assesses sales in three major retail categories: shoppers' goods; convenience goods; and eating and drinking establishments. Shoppers' goods are usually higher value goods—such as clothing, electronics, or furniture—for which consumers compare quality and price at more than one store before making a purchase. Convenience goods are usually lower value goods that are purchased frequently and immediately, often near the home or workplace, with little or no comparison shopping. The eating and drinking establishment category includes restaurants, bars, and other special food services, such as caterers.

Data for department stores and grocery stores—subsets of the shoppers' goods and convenience goods categories, respectively—are also analyzed. This analysis focuses on these stores in particular because grocery stores and department stores often serve as anchors for retail concentrations, and the proposed project could introduce stores offering products that would substantially overlap with typical grocery store or department store offerings.

According to ESRI, a national provider of geographic planning data, retail sales at stores in the Primary Trade Area totaled approximately \$5.9 billion in 2010 for the retail categories analyzed (see **Table 3-8**). Approximately 31 percent of these sales were at shoppers' goods stores (\$1.9 billion), 47 percent at convenience goods stores (\$2.8 billion), and 22 percent at eating and drinking establishments (\$1.3 billion). Only six percent of sales in the shoppers' goods category were attributed to department stores (\$114.2 million), reflecting the prevalence of small- and mid-size stores rather than larger-format department stores in the Primary Trade Area.

Table 3-8
Retail Sales in the Primary Trade Area

Retail Category	Total Sales (Millions of 2012 Dollars)
Shoppers' Goods ¹	\$1,855.79
Department Stores	\$114.23
Convenience Goods ¹	\$2,774.88
Grocery Stores	\$1,697.29
Eating and Drinking Establishments	\$1,318.07
Total²	\$5,948.74
Notes: 1. Shoppers' Goods include: furniture and home furnishings stores; electronics and appliance stores; clothing and clothing accessories stores; sporting goods, hobby, book, and music stores; general merchandise stores; office supply, stationary, and gift stores; and used merchandise stores. Convenience Goods include: food and beverage stores; health and personal care stores; florists; and other miscellaneous store retailers. 2. Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.	
Sources: ESRI, Inc.; AKRF, Inc.	

STEP 4

Step 4 in the preliminary assessment is to estimate the expenditure potential, or retail demand, for relevant retail goods of shoppers within the Primary Trade Area.

Retail demand for any retail concentration can originate from a variety of sources, including local households and workers, businesses, tourists, and online sales. Data sources that report on both retail demand and sales tend to focus on demand from households in a defined geography and do not always address demand from workers, businesses, or tourists, which can be more difficult to pinpoint and relate directly to retail sales. (The U.S. Census Bureau compiles data on household expenditures by retail category, but does not have a corresponding data set for spending by workers or tourists for defined geographies, and many data providers rely heavily on information from the U.S. Census Bureau.) The data sets available for this analysis provide retail demand estimates only for Primary Trade Area households, not for workers, tourists, or other visitors who live outside of the Primary Trade Area, and therefore do not capture the true magnitude of expenditure potential within the trade area. This underestimate of expenditure potential for a trade area typically results in capture rates that are conservatively high.

According to ESRI, households in the Primary Trade Area spent an estimated \$9.7 billion on retail goods in 2010 (see **Table 3-9**).¹ Approximately 32 percent was spent on shoppers' goods, 43 percent on convenience goods, and 25 percent on eating and drinking establishments. On a per household basis, Primary Trade Area residents spent roughly \$5,118 annually on shoppers' goods including an estimated \$458 at department stores, \$6,909 annually on convenience goods including \$4,570 at grocery stores, and \$3,988 on eating and drinking establishments.

Table 3-9
Retail Demand of Households in the Primary Trade Area

	Total Demand (Millions of 2012 Dollars) ¹	Demand per Household (2012 Dollars) ¹
Shoppers' Goods ²	\$3,115.49	\$5,118
<i>Department Stores</i>	\$278.70	\$458
Convenience Goods ²	\$4,205.86	\$6,909
<i>Grocery Stores</i>	\$2,781.73	\$4,570
Eating and Drinking Establishments	\$2,427.84	\$3,988
Total³	\$9,749.18	\$16,016
Notes: 1. Demand (retail expenditure potential) estimates the expected amount spent by consumers at retail establishments. 2. Shoppers' Goods include: furniture and home furnishings stores; electronics and appliance stores; clothing and clothing accessories stores; sporting goods, hobby, book, and music stores; general merchandise stores; office supply, stationary, and gift stores; and used merchandise stores. Convenience Goods include: food and beverage stores; health and personal care stores; florists; and other miscellaneous store retailers. 3. Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.		
Sources: ESRI, Inc.; AKRF, Inc.		

¹ If retail expenditure of workers, tourists or other visitors were added to this figure, total retail demand in the Primary Trade Area would likely well exceed \$9.75 billion.

STEP 5

Step 5 in the preliminary assessment is to compare retail sales (Step 3) with retail demand (Step 4) to develop a “capture rate,” which can help determine whether the Primary Trade Area is currently saturated with retail uses or whether there is likely to be an outflow of sales from the area.

Capture rates are measures of business activity in a trade area, indicating the percentage of consumer expenditures for retail goods that are being captured by retailers in the trade area. If the total sales in the trade area are much lower than the area’s household expenditure potential, then residents are likely spending a large portion of their available dollars outside of the trade area, and the capture rate is low. If sales are closer in value to expenditure potential, then area residents are likely spending a higher proportion of their available resources within the area, and the capture rate is high.

Capture rates are also affected by money flowing into an area from people who do not live in that area. Some of the sales in the Primary Trade Area, for example, are from people living in other areas of Manhattan, other New York City boroughs, Nassau County, NY, Hudson County, NJ and elsewhere, shopping at stores in the Primary Trade Area. However, it is not possible to know exactly who (residents or nonresidents) is spending money in the area. Therefore, a high capture rate may be indicative of an area with a high proportion of destination retail, i.e., retail that will attract customers from greater distances in order to compare price, quality, and the selection of merchandise. This is the case for New York City as a whole, where the retail capture rate is approximately 109 percent and the capture rate for shopper’s goods is 138 percent. Despite these uncertainties about the origin of sales in any particular trade area, comparing expenditure and sales data can provide a good indication of how much of a trade area’s household expenditure potential is being captured by trade area retailers.

Tables 3-10 through 3-12 show the capture rates for the Primary Trade Area, Queens, and New York City. As indicated above, these capture rates are conservative in that they include sales to all households, regardless of where they live, but they only include expenditures from households living within the geography being analyzed. As shown in **Table 3-10**, total retail sales for shoppers’ goods, convenience goods, and eating and drinking establishments in the Primary Trade Area were approximately \$5.95 billion in 2010. Potential retail expenditures for these goods, on the other hand, were \$9.75 billion, indicating that retail stores in the Primary Trade Area are capturing only 61 percent of the Primary Trade Area household expenditure potential. This indicates that Primary Trade Area residents are making a substantial portion of their retail purchases outside of the area, which may include other portions of Queens, other boroughs, and very likely Nassau County. In comparison, the retail capture rate for these retail categories for New York City was 114 percent. As shown in **Table 3-12**, the high overall capture rate for New York City is attributable primarily to shoppers’ goods sales, which has a capture rate of 143 percent. This suggests that shoppers’ goods stores in the City are likely capturing a high percentage of available household expenditure potential, plus additional spending from people who live outside of the City, including day-trippers, but also overnight visitors from outside the metropolitan area, including national and international visitors.

Table 3-10
Household Retail Expenditures and Total Retail Sales, Primary Trade Area, 2010

	Retail Sales in Primary Trade Area ¹	Retail Demand from Primary Trade Area Households ¹	Amount Not Being Captured in Primary Trade Area ¹	Primary Trade Area Capture Rate
Shoppers' Goods	\$1,855.79	\$3,115.49	\$1,259.70	60%
<i>Department Stores</i>	\$114.23	\$278.70	\$164.47	41%
Convenience Goods	\$2,774.88	\$4,205.86	\$1,430.98	66%
<i>Grocery Stores</i>	\$1,697.29	\$2,781.73	\$1,084.45	61%
Eating and Drinking Establishments	\$1,318.07	\$2,427.84	\$1,109.77	54%
Total²	\$5,948.74	\$9,749.18	\$3,800.44	61%
Notes: 1. All values are in millions of 2012 dollars. 2. Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.				
Sources: ESRI, Inc; AKRF, Inc.				

Table 3-11
Household Retail Expenditures and Total Retail Sales, Queens, 2010

	Retail Sales in Primary Trade Area ¹	Retail Demand from Primary Trade Area Households ¹	Amount Not Being Captured in Primary Trade Area ¹	Primary Trade Area Capture Rate
Shoppers' Goods	\$2,052.55	\$4,171.43	\$2,118.88	49%
<i>Department Stores</i>	\$130.16	\$373.41	\$243.25	35%
Convenience Goods	\$3,472.01	\$5,623.09	\$2,151.07	62%
<i>Grocery Stores</i>	\$2,238.66	\$3,709.26	\$1,470.60	60%
Eating and Drinking Establishments	\$1,843.30	\$3,244.03	\$1,400.73	57%
Total²	\$7,367.87	\$13,038.55	\$5,670.68	57%
Notes: 1. All values are in millions of 2012 dollars. 2. Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.				
Sources: ESRI, Inc; AKRF, Inc.				

Table 3-12
Household Retail Expenditures and Total Retail Sales, New York City, 2010

	Retail Sales in Primary Trade Area ¹	Retail Demand from Primary Trade Area Households ¹	Amount Not Being Captured in Primary Trade Area ¹	Primary Trade Area Capture Rate
Shoppers' Goods	\$24,769.56	\$17,326.90	(\$7,442.66)	143%
<i>Department Stores</i>	\$1,199.10	\$1,378.76	\$179.66	87%
Convenience Goods	\$19,820.28	\$22,724.82	\$2,904.54	87%
<i>Grocery Stores</i>	\$1,515.43	\$2,059.49	\$544.06	74%
Eating and Drinking Establishments	\$16,793.81	\$13,716.33	(\$3,077.48)	122%
Total²	\$61,383.64	\$53,768.05	(\$7,615.59)	114%
Notes: 1. All values are in millions of 2012 dollars. 2. Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.				
Sources: ESRI, Inc; AKRF, Inc.				

STEP 6

Step 6 in the preliminary assessment is to assess factors that will affect conditions in the Primary Trade Area in the build year even absent the proposed project. Such factors typically include population changes, which could increase expenditure potential and generate additional demand for retail goods, and new retail projects, which would expand the retail inventory.

The primary changes that may affect retail market conditions in the Primary Trade Area in the future without the proposed project are population changes, which could increase expenditure potential and generate additional demand for retail goods, as well as new retail projects, which would expand the retail inventory

Based on research on projects either planned or currently under construction within an approximately 1-mile radius of the project site, the Primary Trade Area will gain 2,706 housing units, all by 2018. Outside of the 1-mile area, there are no significant residential projects known to be planned or under construction within the Primary Trade Area. With the 2,706 new households in place, the Primary Trade Area will contain approximately 611,439 households. As shown in **Table 3-9**, Primary Trade Area households currently spend approximately \$16,016 per year on the three retail categories highlighted in this analysis. If the additional households continue to spend the same amount per year, the households would increase the retail demand by \$43.34 million. These households would spend approximately \$13.85 million on shoppers' goods (including \$1.24 million at department stores), \$18.70 million on convenience goods (including \$12.37 million at grocery stores), and \$10.79 million at eating and drinking establishments.

Thus, the total household expenditure potential for retail goods—including the additional households anticipated in the No Action condition—will be approximately \$9.8 billion in the future without the proposed project by 2032.

At the same time, retail sales in the Primary Trade Area will also increase as new retail projects are completed. Based on research on projects either planned or currently under construction within 1 mile of the proposed project site, and an additional search for substantial retail projects in the broader Primary Trade Area, there are 30 retail projects expected to be completed in the Primary Trade Area over the next several years. These projects would add approximately 851,300 gsf of retail space to the Primary Trade Area. Based on sales per square foot estimates obtained from *Dollars & Cents of Shopping Centers, 2008*, the stores would have annual sales of approximately \$469 million, increasing total trade area retail sales by approximately 7.9 percent, from \$5.95 billion to \$6.42 billion by 2032 (in constant 2012 dollars).

As shown in **Table 3-13**, with annual sales of approximately \$6.51 billion and household expenditure potential of \$9.81 billion, the capture rate for the Primary Trade Area will be approximately 66 percent in the future without the proposed project by 2032, five percentage points higher than under existing conditions.

Table 3-13
2032 No Action Condition:
Household Retail Expenditures and Total Retail Sales, Primary Trade Area

	Retail Sales in Primary Trade Area ^{1,2}	Retail Demand from Primary Trade Area Households ¹	Amount Not Being Captured in Primary Trade Area ¹	Primary Trade Area Capture Rate
Shoppers' Goods	\$2,090.76	\$3,134.34	\$1,043.58	67%
<i>Department Stores</i>	\$114.23	\$280.39	\$166.16	41%
Convenience Goods	\$3,045.45	\$4,231.31	\$1,185.86	72%
<i>Grocery Stores</i>	\$1,885.29	\$2,798.57	\$913.28	67%
Eating and Drinking Establishments	\$1,370.96	\$2,442.53	\$1,071.57	56%
Total³	\$6,507.18	\$9,808.18	\$3,301.00	66%
Notes: 1. All values are in millions of 2012 dollars. 2. A number of the projects known to be planned or under construction in the Primary Trade Area cite "commercial" uses without specifying whether the commercial space would be office or retail. This analysis conservatively assumes all general "commercial" uses to be retail. 3. Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.				
Sources: ESRI, Inc; AKRF, Inc.				

STEP 7

Step 7 is to project the sales volume for the proposed project's retail uses.

As described above under Step 1, the proposed project would introduce up to approximately 1.95 million gsf of analyzed retail, including both destination and local (neighborhood-oriented) retail, as well as an 80,000 square foot movie theater and 400,000 square feet of entertainment and fitness uses. **Table 3-14** shows the breakdown of retail assumed under this analysis, broken out by development phase. Phase 1A would include 920,000 gsf of enclosed retail on the Willets West site,¹ as well as 30,000 square feet of retail in the District. The Phase 1A District retail is currently anticipated to be comprised of approximately 15,000 square feet of neighborhood retail and 15,000 square feet of food and beverage stores. For the purposes of this analysis, the retail planned for Willets West is anticipated to include two traditional department stores as anchor tenants, 35,000 square feet of specialty food stores, 10,000 square feet of food court, and 90,000 square feet of other restaurant and café space, with the remaining 485,000 square feet occupied by a mix of inline tenants offering a range of shoppers' goods.

The remainder of the District would be built out during Phase 1B and Phase 2 with 820,000 square feet of retail space, as well as the other uses detailed above. It is currently anticipated that approximately 444,500 square feet of this retail space would be occupied by convenience goods stores, 325,500 square feet by shoppers' good stores, and 50,000 square feet by eating and drinking establishments. For purposes of analysis, it is assumed that Phase 1B would include a 115,000-square-foot discount department store offering both shoppers' goods and grocery items.

The reasonable worst-case development scenario assumes that by 2032, consistent with the assumptions of the 2008 FGEIS, Lot B would be developed with an additional 184,000 square feet of retail including a mix of shoppers' goods and eating and drinking establishments.

¹ In addition to retail uses, the Willets West site is anticipated to include an 80,000-square-foot movie theater as part of Phase 1A, and Phase 1B is anticipated to include 400,000 square feet of entertainment and fitness uses.

Table 3-14

Proposed Project Retail Program by Development Phase

Retail Categories	2018/Phase 1A ⁽¹⁾		2028/Phase 1B ⁽¹⁾	2032/Phase 2		TOTAL (GSF)
	Willets West (GSF)	District (GSF)	District (GSF)	District (GSF)	Lot B (GSF)	
Shoppers Goods	785,000	0	257,500	68,000	134,000	1,244,500
Discount Department Store ⁽²⁾	0	0	80,500	0	0	80,500
Department Store	300,000	0	0	0	0	300,000
All Other	485,000	0	177,000	68,000	134,000	864,000
Convenience Goods	35,000	15,000	167,500	277,000	0	494,500
Grocery at Discount Department Store ⁽²⁾	0	0	34,500	0	0	34,500
Specialty Food at Destination Retail	35,000	0	0	0	0	35,000
Grocery at Neighborhood Retail	0	0	45,000	35,000	0	80,000
Other Neighborhood Retail ⁽³⁾	0	15,000	88,000	242,000	0	345,000
Eating and Drinking	100,000	15,000	50,000	0	50,000	215,000
Destination Retail - Restaurants	90,000	0	10,000	0	50,000	150,000
Destination Retail - Food Court	10,000	0	0	0	0	10,000
Neighborhood Retail	0	15,000	40,000	0	0	55,000
Total⁽⁴⁾	920,000	30,000	475,000	345,000	184,000	1,954,000
Notes: (1) In addition to the uses listed above, Phase 1A is anticipated to include an 80,000 square foot movie theater, and Phase 1B is anticipated to include 400,000 square feet of entertainment and fitness uses. Sales from the movie theater and entertainment and fitness uses were not included in this analysis. (2) Based on information from selected SEC 10-K filings of typical discount department stores, approximately 30 percent of sales at the discount department store are assumed to be from grocery items (3) Conservatively includes all neighborhood service businesses (e.g., laundromat, nail and hair salons, etc.) (4) Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.						
Sources: Total retail square footage by development phase was provided by the Queens Development Group, LLC (QDG). Breakdown of retail square footage by broad retail category was developed by AKRF, Inc. with input from QDG for purposes of a reasonable worst-case analysis under CEQR.						

As shown in **Table 3-15**, by 2032 retail sales resulting from the proposed project are projected to be approximately \$1.07 billion annually (in 2012 dollars), generated by approximately 1.24 million square feet of shoppers' goods space, 494,500 square feet of convenience goods space, and 215,000 square feet of eating and drinking establishments. Annual sales for shoppers' goods are estimated at \$541.5 million; annual sales for convenience goods are estimated to be \$311.7 million; and annual sales for eating and drinking establishments are estimated to be \$221.5 million.

The approximately \$1.07 billion in projected retail sales from the proposed project would represent 17 percent of total retail sales for the Primary Trade area in the future without the proposed project, which are estimated to be \$6.42 billion annually.

The proposed actions would also introduce 5,850 residential units to the Primary Trade Area by 2032. Based on 2010 retail expenditure estimates from ESRI, these households would add approximately \$93.7 million to the trade area expenditure potential (see **Table 3-16**).

Table 3-15

Estimated Retail Sales at Stores Introduced Under the RWCDs

	Square Feet	Total Sales (Millions of 2012 Dollars)
Shoppers Goods	1,244,500	\$ 541.53
Discount Department Store	80,500	\$28.98
Department Store	300,000	\$81.27
All Other	864,000	\$431.28
Convenience Goods	494,500	\$ 311.68
Grocery at Discount Department Store	34,500	\$12.42
Specialty Food at Destination Retail	35,000	\$34.36
Grocery at Neighborhood Retail	80,000	\$55.89
Other Neighborhood Retail ⁽¹⁾	345,000	\$209.01
Eating and Drinking	215,000	\$221.53
Destination Retail – Restaurants	150,000	\$172.73
Destination Retail - Food Court	10,000	\$15.01
Neighborhood Retail	55,000	\$33.79
Total⁽²⁾	1,954,000	\$ 1,074.74
Notes: (1) Conservatively includes all neighborhood service businesses (e.g., laundromat, nail and hair salons, etc.) (2) Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included. Sources: Discount department store sales were estimated based on per square foot sales figures obtained from 10-K filings of typical discount department stores. Sales for all other shoppers' goods, convenience goods, and eating and drinking establishments were estimated based on data from the Urban Land Institute's 2008 Dollars and Cents of Shopping Centers.		

Table 3-16

**Estimated Retail Demand from Households
to be Introduced by Proposed Project by 2032**

	Retail Demand from Households⁽¹⁾
Shoppers' Goods	\$29.34
<i>Department Stores</i>	<i>\$2.69</i>
Convenience Goods	\$40.62
<i>Grocery Stores</i>	<i>\$26.88</i>
Eating and Drinking Establishments	\$23.43
Total⁽²⁾	\$93.69
Notes: (1) Values are in millions of 2012 dollars. (2) Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included. Sources: ESRI, Inc; AKRF, Inc.	

STEP 8

Step 8 is to develop a capture rate for the Primary Trade Area in the future with the proposed project. According to the CEQR Technical Manual, if the capture rate for relevant categories of goods would exceed 100 percent, it may have the potential to saturate the market for particular retail goods and a detailed assessment is warranted.

As described above under Step 7, by 2032 the proposed project would increase retail sales in the Primary Trade Area by an estimated \$1.07 billion annually (in 2012 dollars), and by 2032 would increase household retail expenditure potential by approximately \$93.69 million annually (in

2012 dollars). **Table 3-17** compares Primary Trade Area retail sales, demand, and capture rates for existing conditions and in the future with the proposed actions by 2032.

Table 3-17

**Comparison of Estimated Retail Capture Rates in Primary Trade Area:
Existing Conditions, Future Without the Proposed Project
and Future With the Proposed Project in 2032**

	Retail Sales in Primary Trade Area ⁽¹⁾	Retail Demand from Primary Trade Area Households ⁽¹⁾	Primary Trade Area Capture Rate ⁽¹⁾
Existing Conditions			
Shoppers' Goods	\$1,855.79	\$3,115.49	60%
<i>Department Stores</i>	\$114.23	\$278.70	41%
Convenience Goods	\$2,774.88	\$4,205.86	66%
<i>Grocery</i>	\$1,697.29	\$2,781.73	61%
Eating and Drinking	\$1,318.07	\$2,427.84	54%
TOTAL	\$5,948.74	\$9,749.18	61%
2032 Without the Proposed Project			
Shoppers' Goods	\$2,090.76	\$3,134.34	67%
<i>Department Stores</i>	\$114.23	\$280.39	41%
Convenience Goods	\$3,045.45	\$4,231.31	72%
<i>Grocery</i>	\$1,885.29	\$2,798.57	67%
Eating and Drinking	\$1,370.96	\$2,442.53	56%
TOTAL	\$6,507.18	\$9,808.18	66%
2032 With the Proposed Actions			
Shoppers' Goods	\$2,632.30	\$3,164.28	83%
<i>Department Stores</i>	\$224.48	\$283.06	79%
Convenience Goods	\$3,357.13	\$4,271.73	79%
<i>Grocery</i>	\$1,987.95	\$2,825.30	70%
Eating and Drinking	\$1,592.49	\$2,465.86	65%
TOTAL(2)	\$7,581.91	\$9,901.87	77%
Notes: (1) All values are in millions of 2012 dollars. (2) Total does not reflect total for all retail—only those retail categories included in Shoppers' Goods, Convenience Goods, and Eating and Drinking Establishments. Retail establishments not included in this total are: Auto-Related Businesses, Building Materials and Garden Supply, and Non-Store Retailers. Entertainment and fitness uses also are not included.			
Sources: ESRI, Inc.; AKRF, Inc.			

As shown in the table, by 2032 the overall retail capture rate would increase to 77 percent in the future with the proposed project. This capture rate is approximately 11 percentage points higher than in the future without the proposed project (2032). The shoppers' goods category would experience the greatest relative increase, with the capture rate increasing from 67 percent in the future without the proposed project to 83 percent in the future with the proposed project. The capture rate for the department store subset of shoppers' goods would increase from 41 percent to 79 percent. Increases for the other categories would be more modest, with the grocery store capture rate increasing by three percentage points to 70 percent and the eating and drinking establishment capture rate increasing by nine percentage points to 65 percent.

Based on *CEQR Technical Manual* guidelines, if the capture rate for specific, relevant categories of goods would exceed 100 percent in the future with the proposed project, it may have the potential to saturate the market for particular retail goods and a detailed analysis is warranted. As shown above, capture rates for each of the retail categories analyzed would remain below 100 percent in the future with the proposed project. Therefore, this preliminary assessment finds that the proposed project would not have the potential to saturate the market for particular retail goods. Based on *CEQR Technical Manual* methodology, if capture rates with the proposed

project do not exceed 100 percent, then a detailed analysis is not warranted. However, in order to maintain a consistent scope of analysis as performed for the FGEIS, a detailed analysis is provided in section F, below, even though it is not warranted pursuant to *CEQR Technical Manual* guidelines.

F. DETAILED ANALYSIS OF INDIRECT RESIDENTIAL DISPLACEMENT

The preliminary assessment for indirect residential displacement in Section E, above, indicated the need for further analysis in order to determine whether the proposed project could result in significant adverse impacts due to indirect residential displacement. Therefore, a detailed analysis has been conducted. The approach to a detailed analysis of indirect residential displacement builds upon the information provided in the preliminary assessment, but requires more in-depth analysis of census information and includes field surveys. The objective of the detailed analysis is to determine whether the proposed project may introduce or accelerate a socioeconomic trend that may potentially displace a vulnerable population (“population at risk”). Populations at risk are defined as renters living in units not protected by rent stabilization, rent control, or other government regulations restricting rents, whose incomes are too low to afford increases in rents.

In order to determine potential impacts, the detailed analysis characterizes existing conditions of residents and housing and identifies any existing populations that are potentially at risk of indirect residential displacement. The analysis then assesses current and future socioeconomic trends in the area that may affect these populations, and examines the potential effects of the proposed project on those trends.

The detailed analysis uses the $\frac{3}{4}$ -mile study area used in the preliminary assessment of indirect residential displacement. As in the preliminary assessment, the area was modified to conform to census tract boundaries (see **Figure 3-1**). The resulting study area includes the subareas of College Point, Corona, and Greater Flushing.¹ The data are presented for the $\frac{3}{4}$ -mile study area, the subareas, and for individual census tracts, where appropriate.

EXISTING CONDITIONS

This section describes the population and housing characteristics of the $\frac{3}{4}$ -mile study area. It outlines trend data since 2000, and compares the characteristics of the $\frac{3}{4}$ -mile study area to Queens and New York City.

POPULATION

According to the U.S. Census, in 2010 the $\frac{3}{4}$ -mile study area had a population of 91,156 residents (see **Table 3-18**). The residential population grew by approximately 10.4 percent since 2000, which is a higher rate of growth than in Queens during the same time period (0.1 percent),

¹ The 2008 FEIS included three areas within the Greater Flushing subarea—North Flushing, Downtown Flushing, and South Flushing. Due to changes in census tract boundaries since 2000, these areas were combined into one Greater Flushing subarea for this SEIS. In addition, the 2010 Census boundaries for the Corona subarea include an additional small area to the east of the 2000 Census boundaries used in the 2008 FGEIS. This additional area includes only landscaped grounds bordering Grand Central Parkway, and does not contain any residential units or businesses.

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as well as New York City as a whole (2.1 percent). The Corona subarea, comprising the portion of the study area west of the project site between Flushing Bay and Corona Avenue, experienced the highest population growth between 2000 and 2010, with a 16.7 percent increase. This is due to a combination of new residential development within the subarea and an increase in the average household size (see **Table 3-19**). College Point, which is a largely industrial and commercial area, has the lowest residential population within the study area, and it experienced a relatively low rate of population growth between 2000 and 2010.

Table 3-18
Population Change 2000 to 2010

Area	Population		Percent Change
	2000	2010	
Study Area	82,573	91,156	10.4%
College Point	1,354	1,355	0.1%
Corona	39,574	46,175	16.7%
Greater Flushing	41,645	43,626	4.8%
Queens County	2,229,379	2,230,722	0.1%
New York City	8,008,278	8,175,133	2.1%
Sources: U.S. Department of Commerce, Bureau of the Census, 2000 and 2010 Census Summary File 1; AKRF, Inc.			

HOUSEHOLDS AND INCOME

According to the U.S. Census, the $\frac{3}{4}$ -mile study area contained a total of 27,965 households in 2010, with an average household size of 3.24 persons per household (See **Table 3-19**). This is higher than the average household size for both Queens and New York City as a whole. The increase in household size in the $\frac{3}{4}$ -mile study area is reflected in the percent change in total households between 2000 and 2010 (5.9 percent), which was lower than the corresponding increase in population (10.4 percent). The Corona subarea had the largest overall, and percent increase in, average household size over this time, with 3.83 persons per household in 2000 and 4.14 persons per household in 2010.

Table 3-19
Household Characteristics: 2000 and 2010

	Total Households			Average Household Size		
	2000	2010	Percent Change	2000	2010	Percent Change
Study Area	26,417	27,965	5.9%	3.11	3.24	4.3%
College Point	471	448	-4.9%	2.87	3.02	5.2%
Corona	10,301	11,103	7.8%	3.83	4.14	8.0%
Greater Flushing	15,645	16,414	4.9%	2.64	2.64	0.0%
Queens County	782,664	780,117	-0.3%	2.81	2.82	0.4%
New York City	3,021,588	3,109,784	2.9%	2.59	2.57	-0.8%
Sources: U.S. Department of Commerce, Bureau of the Census, 2000 and 2010 Census Summary File 1; AKRF, Inc.						

The preliminary assessment presents the average household income for the study area, Queens, and New York City (see **Table 3-4**). According to 2007-2011 ACS data, the average household income for the study area was \$46,846. This was lower than the average household income in Queens (\$58,893) and in New York City as a whole (\$53,530) during the same time. Average household income decreased in the study area by 3.5 percent between 1999 and 2007-2011.

Over that same time period, average household income decreased in Queens and New York City as a whole, by 2.3 percent and 1.6 percent, respectively.

Based on 2007-2011 ACS data, median household income in the study area was \$48,846—a decrease of approximately 3.5 percent since 1999 (See **Table 3-20**). Both Queens and New York City as whole experienced decreases in median household income over this time (2.3 percent and 1.6 percent, respectively). The decrease in the study area median household income is due to decreased household incomes in College Point (of 27.4 percent) and in Greater Flushing (of 6.3 percent). In Corona, median household income increased during this time, by 1.2 percent.

Table 3-20
Income Characteristics and Trends

Area	Median Household Income ¹			Poverty Status (Percent) ²	
	1999	2007-2011	Percent Change	1999	2007-2011
Study Area	\$48,563	\$46,846	-3.5	22.2	21.3
College Point	\$65,295	\$47,399	-27.4	12.5	14.4
Corona	\$49,988	\$50,607	1.2	23.6	22.2
Greater Flushing	\$47,213	\$44,254	-6.3	21.1	20.5
Queens County	\$60,298	\$58,893	-2.3	14.6	13.7
New York City	\$54,407	\$53,530	-1.6	21.2	19.4
Notes: 1. Median household income is presented in constant 2012 dollars based on the U.S. Department of Labor Bureau of Labor Statistics' 2012 half-year average Consumer Price Index for all Urban Consumers for New York-Northern New Jersey-Long Island. Median household income for the subareas and the study area represents a weighted average of the median incomes of the census tracts in the subareas or study area. 2. Percent of population with incomes below established poverty level. The Census Bureau uses a set of money income thresholds that vary by family size and composition to detect who is in poverty. If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family or unrelated individual is classified as being "below the poverty level." The official poverty thresholds do not vary geographically, but they are updated annually for inflation using the Consumer Price Index.					
Sources: U.S. Department of Commerce, Bureau of the Census, 2000 Census, Summary File 1 and Summary File 3; American Community Survey 2007-2011 5-Year Estimates; U.S. Department of Labor Bureau of Labor Statistics' Consumer Price Index for all Urban Consumers for New York-Northern New Jersey-Long Island.					

The proportion of the population in the study area living below the poverty level has decreased since 1999, from 22.2 percent of the study area population for whom poverty status is determined, to 21.3 percent in 2007-2011 (see **Table 3-20**). Unlike the other subareas, College Point experienced an increase in the proportion of its population living below the poverty level, from 12.5 percent of the population to 14.4 percent.

HOUSING

As shown in **Table 3-21**, the total number of housing units in the study area increased roughly in line with the population increase between 2000 and 2010. The number of housing units in the study area increased by 14.1 percent during this time, compared with a 2.2 percent increase in Queens and a 5.3 percent increase in New York City. Within the study area, Corona and Greater Flushing experienced the largest increases (13.0 percent and 15.3 percent, respectively), while total housing units in College Point declined by 2.1 percent. The 2010 estimated vacancy rate for the study area was greater than in 2000; vacancies increased from 3.6 percent in 2000 to 10.6 percent in 2010, with the largest increase in the Greater Flushing subarea.

Table 3-21
Housing Characteristics and Trends

Area	Total Housing Units			Occupancy Status (Percent)				Tenure (Percent)			
	2000	2010	Percent Change	Occupied		Vacant		Owner		Renter	
				2000	2010	2000	2010	2000	2010	2000	2010
Study Area	27,403	31,269	14.1	96.4	89.4	3.6	10.6	28.0	29.0	72.0	71.0
College Point	485	475	-2.1	97.1	94.3	2.9	5.7	57.5	51.3	42.5	48.7
Corona	10,768	12,170	13.0	95.7	91.2	4.3	8.8	25.0	23.3	75.0	76.7
Greater Flushing	16,150	18,624	15.3	96.9	88.1	3.1	11.9	29.0	32.2	71.0	67.8
Queens County	817,250	835,127	2.2	95.8	93.4	4.2	6.6	42.8	43.0	57.2	57.0
New York City	3,200,912	3,371,062	5.3	94.4	92.2	5.6	7.8	30.2	31.0	69.8	69.0

Sources: U.S. Department of Commerce, Bureau of the Census, 2000 Census, Summary File 3.

The study area has a higher percentage of renters than in Queens and New York City; approximately 71.0 percent of the study area's residential units are renter-occupied, compared with 57.0 percent and 69.0 percent in Queens and New York City, respectively. Study area renters are most concentrated in Corona and Greater Flushing, where they account for 76.7 and 67.8 percent of occupied units, respectively. In contrast, in College Point, renters accounted for 48.7 percent of occupied housing units in 2010, and home-owners accounted for 51.3 percent. In the study area, Queens, and New York City, home ownership has increased slightly since 2000.

As shown in **Table 3-22**, according to 2007-2011 ACS data the median home value in the study area was \$386,553, which is lower than in Queens (\$494,897) and in New York City as a whole (\$537,600). Though median home values are lower in the study area than in Queens and New York City as a whole, home values have increased by 87.1 percent in the study area since 2000, as compared with 68.9 percent and 71.1 percent increases in Queens and New York City, respectively, during the same period. Within the study area, median home values increased in all of the subareas since 2000, with the greatest increase experienced in Greater Flushing (149.5 percent).

Table 3-22
Median Home Value and Contract Rent

	Median Home Value			Median Contract Rent ¹		
	2000	2007-2011	Percent Change	2000	2007-2011	Percent Change
Study Area	\$206,602	\$386,553	87.1%	\$1,044	\$1,209	15.8%
College Point	\$358,896	\$548,981	53.0%	\$941	\$988	5.0%
Corona	\$344,061	\$553,226	60.8%	\$1,065	\$1,340	25.9%
Greater Flushing	\$119,379	\$297,854	149.5%	\$1,036	\$1,112	7.4%
Queens County	\$292,971	\$494,897	68.9%	\$1,024	\$1,185	15.7%
New York City	\$314,283	\$537,600	71.1%	\$918	\$1,055	14.9%

Notes: Median contract rent for study area based on weighted median contract rent for all census tracts for which data was available, using all renter-occupied units for weights, not specified renter-occupied housing units paying cash rent.

Source: American Community Survey 2007-2011 5-Year Estimates.

Based on 2007-2011 ACS data, median contract rent in the study area is an estimated \$1,209 per month, which represents a 15.8 percent increase since 2000. The percent increase in study area median contract rent was slightly higher than experienced in Queens and New York City as a whole. Within the study area, median contract rent increased by the highest percentage in

Corona (25.9 percent), to \$1,340 per month from 2007-2011. This was the highest in the study area, and higher than in Queens and New York City as a whole during the same time period.

RECENT RESIDENTIAL TRENDS

Recent listings on real estate and brokerage websites indicate that median sales prices in the College Point and Flushing subareas were higher than for Queens as a whole, while the median sales price for the Corona subarea was lower than for Queens as a whole. According to recent listings on Streeteasy.com and Elliman.com, the median sales price for residential units in Queens was \$364,949. The median sales price in Corona was \$349,500, slightly lower than the borough median. College Point had a median sales price of \$564,500, and Flushing had a median sales price of \$682,500, both higher than the median sales price for Queens. These median sales prices differ from the median homes values reported in ACS data. As ACS median home value data reports what respondents' estimate their properties would sell for, this discrepancy may reflect the changing nature of the residential market and the perception of the market in these areas, with large new developments skewing listings and smaller, older residential buildings lowering the median. These higher market-rate listings are due to recent residential developments in the study area, primarily in Flushing. In Flushing, Tower 3 of the Sky View Parc development added 448 market rate apartments, which have sold at an average of \$621,000.¹

Listings of market-rate rental rates were generally higher than the median contract rents reported in ACS data, and median rental rates were lower than medians for the same number of bedrooms in Queens and New York City as a whole. A survey of current market-rate rentals in College Point found that average rental rates for one-bedroom units range from \$1,500 to \$1,650 per month, average rental rates for two-bedroom units range from \$1,600 to \$2,275 per month, and average rental rates for three-bedroom units range from \$1,700 to \$2,250 per month. In Corona, average rental rates for one-bedroom units range from \$1,100 to \$1,425 per month, average rental rates for two-bedroom units range from \$1,600 to \$1,850 per month, and average rental rates for three-bedroom units range from \$1,800 to \$2,250 per month. Average rental rates for one-bedroom units in Flushing range from \$1,200 to \$1,800 per month, average rental rates for two-bedroom units range from \$1,450 to \$2,200 per month, and average rental rates for three-bedroom units range from \$1,500 to \$4,900 per month. These rentals rates are higher than the ACS median contract rent, which includes rent-regulated and rent-controlled apartments.²

ESTIMATE OF NON-REGULATED HOUSING

Rental rates in New York City are controlled through several mechanisms. These include rent regulation (either rent control or rent stabilization), direct public subsidies to landlords, and public ownership. In New York City, the rent control program applies to apartments in residential buildings that contain three or more units and were constructed before February 1947. Only apartments in which the tenant has lived continuously since before July 1, 1971 may fall under rent control. When a rent-control apartment becomes vacant, it either becomes rent stabilized or, if it is in a building with fewer than six units, it is removed from regulation. Rent stabilization limits the annual rate at which owners may increase rents. In New York City, rent

¹ Average listing for Sky View Parc was obtained from Streeteasy.com on December 28, 2012.

² Average rental rates were obtained from searches for apartment listings on Streeteasy.com and Elliman.com conducted on November 15, 2012.

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stabilization generally applies to apartments in buildings containing six or more units that were built between February 1, 1947 and January 1, 1974. An apartment is no longer protected by rent stabilization if it becomes vacant and could be offered at a legal regulated rent of \$2,000 or more, or if the legal rent is \$2,000 and the apartment is occupied by tenants whose total annual household income exceeded \$175,000 for each of the past two years.¹ Regulated and non-regulated housing in the study area is discussed below.

Other types of rent-regulated housing include Section 8 housing, public housing, Mitchell-Lama developments, and other HPD-owned housing. The ¾-mile study area does not contain any Mitchell-Lama housing, but does contain three public housing developments: the Bland Houses, Latimer Gardens, and Leavitt Street-34th Avenue, all discussed below.

Study Area

This section describes existing conditions in the study area in terms of the status (rent-regulated or non-regulated) of housing stock in the ¾-mile study area. In accordance with the *CEQR Technical Manual*, the number of unregulated units in the study area was estimated based on Census data and data obtained from the New York City Department of Finance's RPAD database. **Table 3-23** shows the calculations and the estimated count of unregulated units in the study area. As shown in the table, the estimate was based on the number of units in the study area that met the following criteria and were therefore assumed to be unprotected from rent increases:

1. The units are in buildings that are privately owned (i.e., not public housing units);
2. The units are in buildings not old enough to be subject to rent control or rent stabilization; and/or
3. The units are in buildings too small to be subject to rent control or rent stabilization.

Based on these criteria, the ¾-mile study area contains approximately 12,291 renter-occupied units that are currently unprotected from rent increases. These unprotected rental units represent approximately 65 percent of the total housing stock in the study area; the remaining 35 percent of the study area housing stock is rent-regulated or owner-occupied.

Table 3-23

Estimated Unprotected Rental Housing Units in the ¾-Mile Study Area

Row	Units Identified	Components	Total for Study Area	Notes
1	Base of Unprotected Units:	Number of units in buildings with 1-5 units	11,183	Derived from RPAD
2	Units in Small Buildings (1-5 Units)	Estimate of rental units in 1 - 5 unit buildings	7,935	(Row 1) X (Renter occupancy rate for the study area)
3	Additional Unprotected Units: Buildings Built After 1974	Total units (renter and owner occupied) in buildings built after 1974 with more than 5 units	6,138	Derived from RPAD
4		Estimate of rental units in buildings with more than 5 units, built after 1974	4,355	(Row 3) X (Renter occupancy rate for the study area)
5	All Unprotected Rental Units	Estimate of renter-occupied units that are unprotected	12,291	(Row 2) + (Row 4)
Sources: New York City Department of Finance Real Property Assessment Data (RPAD) 2012 database; 2007-2011 American Community Survey 5-Year Estimates, AKRF, Inc.				

¹ Rent regulations obtained from the New York State Division of Housing and Community Renewal, Office of Rent Administration and the New York City Rent Guidelines Board.

POPULATION POTENTIALLY AT RISK OF INDIRECT DISPLACEMENT

Populations potentially at-risk of indirect residential displacement are defined as people living in privately held units that are not protected by rent regulations, whose incomes or poverty status indicates that they could not afford to pay substantial rent increases. This section estimates the population potentially at-risk of indirect residential displacement in the $\frac{3}{4}$ -mile study area.

In order to identify populations in the study area potentially at risk of indirect displacement, the population of low income renters in the study area was estimated, and then adjusted according to the estimated proportion of rental units that were unprotected. The following steps were used to identify population at risk, and the calculations are shown in **Table 3-23**:

1. Estimate the low income population in renter-occupied housing units in the study area.

The low income population in renter-occupied housing units for the study area was estimated using Public Use Microdata Sample (PUMS) data, which is available for specific geographies called Public Use Microdata Areas (PUMAs). PUMS data on household income for renter-occupied housing units by household size was collected for the PUMA that most closely approximates the study area.¹ The share of low income renter households in the PUMA was calculated (45.7 percent).² This proportion was applied to the total renter population in the study area in order to estimate the low income renter population in the study area (28,431 residents).

2. Estimate the low income population living in unprotected rental units in the study area.

The low income population living in unprotected rental units—the population potentially vulnerable to indirect residential displacement—was estimated by multiplying the proportion of rental units in the study area that are unprotected (64.6 percent) by the low income renter population calculated above.

As shown in **Table 3-24**, there are an estimated 18,357 low income residents living in unprotected rental units in the study area. This potentially vulnerable population represents 21.7 percent of residents in the study area.

Between the Draft and Final SEIS, the U.S. Census Bureau, in consultation with DCP HEIP, currently is developing worked to develop additional data for use in CEQR analyses of indirect residential displacement. These data may were intended to allow the analysis to further refine the location and numbers of study area residents who may be potentially vulnerable to displacement. If this data becomes available and if deemed appropriate by the lead agency, the analysis of indirect residential displacement may be updated to incorporate this additional data between Draft and Final SEIS. DCP received and reviewed the data, finding that they could not be utilized because they were based on too limited a sample size to provide statistically accurate estimates. Therefore, the data are not being used for CEQR analyses and were not used in this SEIS.

¹ PUMS data for PUMA 4107 was used for this analysis. PUMA 4107 approximates Queens Community District 4, though the two are not coterminous. PUMA 4107 includes Flushing Meadows Corona Park, which forms its southern boundary, and is bounded by the Van Wyck Expressway and 126th Street to the east. Between the Long Island Expressway to the south and 45th Avenue and Roosevelt Avenue to the north, PUMA 4107 extends west roughly to 74th Street.

² Low income households are defined as those that that meet the HUD-defined low (80 percent) income limits, by household size, for Queens County for FY2012.

Table 3-24

Estimated Population Potentially Vulnerable to Indirect Residential Displacement in the ¾-Mile Study Area

Row	Population Identified	Components	Total for Study Area	Notes
1	Low income population in renter-occupied housing units	Total population in renter-occupied housing units in study area	62,151	ACS 2007-2011 5-Year Estimates
2		Proportion of low income renter population in PUMA	45.7%	PUMA 4107 – Queens Community District 4, ACS 2011 5-Year Estimates, provided by DCP
3		Study Area low income renters	28,431	(Row 1) X (Row 2)
4	Population potentially at-risk of indirect residential displacement	Total unprotected units	12,291	From Table 3-23 , above
5		Total rental units in the study area	19,035	ACS 2007-2011 5-Year Estimates
6		Proportion of rental units in the study area that are unprotected	64.6%	(Row 4) / (Row 5)
7		Low income population living in unprotected rental units in the study area	18,357	(Row 3) X (Row 6)
8	Percentage of study area population potentially vulnerable to indirect residential displacement	Total population	84,543	ACS 2007-2011 5-Year Estimates
9		Proportion of low income renters living in unprotected rental units	21.7%	(Row 7) / (Row 8)
Sources: New York City Department of Finance Real Property Assessment Data (RPAD) 2012 database; 2007-2011 American Community Survey 5-Year Estimates, AKRF, Inc.				

THE FUTURE WITHOUT THE PROPOSED PROJECT

Since potential impacts of the proposed project are assessed in relation to the future without the proposed project, this section considers trends affecting rents and potential displacement that may occur in the future, absent the proposed project. Absent the proposed project, it is anticipated that by the 2018, 2028, and 2032 Build years, the project site will continue to be occupied by existing uses. However, other development projects planned in the study area are expected to add 3,428 housing units by 2032.

In the future without the proposed project, Corona will gain an estimated 366 residential units by 2032. Greater Flushing will gain an estimated 3,062 residential units by 2032, including several large developments: the RKO Keith Theater development will add 357 units; the River Park Place development will add 475 units; Phase II of the Sky View Parc will add 600 residential units; and Flushing Commons will add 620 residential units. In addition, the Elmhurst East Rezoning is expected to add 378 residential units to Greater Flushing. College Point is not anticipated to gain any residential units.

As shown in **Table 3-25**, the dwelling units planned for the study area in the future without the proposed project would increase the study area population by an estimated 10,638 residents, or 11.7 percent.

Table 3-25
Population and Housing Growth
2032 Future Without the Proposed Project

	Housing Units				Population			
	Existing Conditions	Additional by 2032	Total in 2032	Percent Change	Existing Conditions	Additional by 2032	Total in 2032	Percent Change
Study Area	31,269	3,428	34,697	11.0%	91,156	9,667	100,823	10.6%
College Point	475	0	475	0.0%	1,355	0	1,355	0.0%
Corona	12,170	366	12,536	3.0%	46,175	1,032	47,207	2.2%
Greater Flushing	18,624	3,062	21,686	16.4%	43,626	8,635	52,261	19.8%
Note: 1. Population estimates for planned projects in the No Action and With Action conditions assume an average household size of 2.82 persons, the average household size for Queens.								

These planned developments will continue the trend of increased residential development that has already occurred in most parts of the study area. In keeping with this trend, residential development will be concentrated in Flushing and in Corona, along Northern Boulevard. While it is not possible to know the socioeconomic characteristics of the estimated 9,667 residents who will be introduced to the study area by 2032 in the future without the proposed project, based on the fact that these projects will be market rate units and the trends in market rate rents and sales in the study area, it is likely that the new population would have incomes that are substantially higher than the current average for the study area.

PROBABLE IMPACTS OF THE PROPOSED PROJECT

This section considers the effects of the proposed project along with conditions expected in the future without the proposed project in 2032, in order to determine whether the identified vulnerable population would be at risk of displacement as a result of the proposed project. According to the *CEQR Technical Manual*, the assessment of the effects of the proposed project should consider how the real estate market conditions in the study area would change as a result of the proposed project, including whether land use or real estate market conditions would reduce the likelihood that a vulnerable population would be at risk of indirect displacement.

The proposed project would result in the development of an additional 5,850 residential units in the study area, increasing the housing stock to 40,547 residential units by 2032 and representing a 16.9 percent increase over the No Action condition. Based on the average household size for Queens (2.82 persons per household), the proposed project would add up to 16,497 residents to the study area. As shown in **Table 3-26**, when compared with the population expected to reside in the study area in the No Action condition, the proposed project would result in a 16.4 percent population increase in the $\frac{3}{4}$ -mile study area by 2032.

Table 3-26

Population and Housing Growth: 2032 Future With Proposed Project

	Housing Units				Population			
	2032 No Action Condition Total	With Action Additional	Total in 2032	Percent Change	2032 No Action Condition Total	With Action Additional	Total in 2032	Percent Change
3/4-Mile Study Area	34,697	5,850	40,547	16.9%	100,823	16,497	117,320	16.4%
Note: 1. The population added in the With Action condition includes 16,497 residents living in 5,850 residential units (assuming the average household size for Queens of 2.82 persons).								

Generally, if the detailed assessment identified a vulnerable population potentially subject to indirect displacement that exceeds five percent of the study area—or relevant sub-areas, if the vulnerable population is located within the subarea identified—it may substantially affect the socioeconomic character of the study area and a significant adverse impact may occur. However, if it is determined that a project would not cause drastic changes in the real estate market (because of its mixed-income composition or due to land use or real estate market conditions in an area), the project may not affect rents for some or all of the existing vulnerable units.

As described above, there is an estimated population of 18,357 residents in the study area who could be at risk of indirect residential displacement if their rents were to increase. There is the potential for upward pressure on rents in the study area irrespective of the proposed project, due to the existing trend toward market-rate development, particularly in the subareas of Corona and Flushing. The proposed project would contribute to this influence, but would not generate significant adverse indirect residential displacement impacts for the following reasons:

- The District is geographically separated from surrounding communities, limiting its potential to influence residential trends in those communities.** Residential markets within the study area are similar to the markets described in the 2008 FGEIS. The District is geographically separated from the communities of Greater Flushing, College Point, and Corona, limiting the potential effect that the proposed project could have on housing values in those areas since new development in Willets Point would be considered to be in a neighborhood separate from these surrounding neighborhoods, which have well-established markets and characters that are separate from the District. Corona is separated from the District by Grand Central Parkway. In the future with the proposed project (2032), the residential areas in Corona would be further separated from the residential development proposed for the District by the concentration of commercial development in Willets West. Greater Flushing is separated from the District by the Flushing River and the Van Wyck Expressway. The residential areas of Flushing are further separated from the District by concentrated commercial activity in downtown Flushing. Pedestrian connectivity between the District and Greater Flushing is also limited, as Roosevelt Avenue provides the only pedestrian access to the District from the east. Therefore, even the residents living physically closest to the proposed residential uses would be located at a ½-mile walking distance from the District, reinforcing the geographic separation of the residential markets. The residential communities in College Point are separated from the District by large commercial and industrial centers, including College Point Corporate Park and shopping centers and commercial plazas along the Whitestone Expressway. These barriers limit the visual and physical connection between the District and surrounding areas, making it likely that the

District would be considered a distinct neighborhood and separate residential market in the future with the proposed project.

Furthermore, to the extent that residential displacement would occur in the future, it would be influenced by factors other than the proposed project. These geographically separated communities would experience upward rent pressure due to planned projects that are within their distinct residential markets. Large mixed use developments such as the RKO Keith Theater Development, River Park Place, Flushing Commons, and Phase II of Sky View Park in Flushing would provide pressure on the residential markets in Greater Flushing in the future with or without the proposed project. The Corona residential market would be influenced by development on a smaller scale, but would nonetheless experience upward rent pressure from planned residential developments more immediate than the proposed project.

Overall, the residential market characteristics described in the 2008 FGEIS remain in place; multiple geographic boundaries and intervening land uses would limit the potential influence of the proposed project on residential market conditions in the surrounding residential communities. At the same time, planned residential development in the distinct residential communities in Corona, Greater Flushing, and College Point, would have greater potential to influence residential market trends in these communities than the proposed project.

- **By adding new housing units, the proposed project could serve to relieve rather than increase market pressure in the study area.** By 2032, the proposed project would introduce 5,850 new residential units to the study area. By adding a substantial number of new housing units, the proposed project could relieve, rather than increase, market pressure in the study area. The substantial number of market-rate housing units recently completed or currently planned in the study area indicates that there is high demand for housing in the study area. It is likely that demand for housing in the study area will continue to increase in the future with or without the proposed project. Thus, the proposed project could absorb housing demand that might otherwise be expressed through increases in rents in the study area. This could reduce displacement pressures on the at-risk population in the study area.
- **The proposed project would introduce over 2,000 affordable housing units to the study area.** Although the population that would be introduced by the proposed project may include a larger proportion of households at higher incomes, the proposed project's affordable housing component would ensure that a substantial portion of the new population would have incomes that would more closely reflect existing incomes in the study area. Overall, some portion of the population introduced under the proposed project may have socioeconomic characteristics that are different from the existing study area population; however, this is not expected to lead to significant indirect residential displacement.

G. DETAILED ANALYSIS OF INDIRECT BUSINESS DISPLACEMENT DUE TO RETAIL MARKET SATURATION

The preliminary assessment presented in Section E, above, found that the proposed project would not have the potential to saturate the retail market within a 5-mile Primary Trade Area. Nevertheless, in response to public comments on the Draft Scope of Work and to maintain a scope of analysis consistent with that presented in the 2008 FGEIS on this issue, this section presents a detailed analysis of the potential for indirect business displacement due to retail market saturation.

This detailed analysis follows *CEQR Technical Manual* methodology (Chapter 5, Section 332.3) in considering whether the proposed project may result in an increase in vacancy in retail store fronts, affecting the viability of neighborhood shopping areas in the study area. While competitive pressures do not necessarily generate environmental concerns, they become an environmental concern when they have the potential to result in increased and prolonged vacancy leading to disinvestment. Such a change may affect the land use patterns and economic viability of the neighborhood. As noted in the *CEQR Technical Manual*, indirect displacement due to market saturation is rare in New York City, where population density, population growth, and purchasing power are often high enough to sustain increases in retail supply.

The study area for this analysis is the approximately 5-mile Primary Trade Area described in Step 2 of the preliminary assessment and illustrated in **Figure 3-2**. The Primary Trade Area encompasses numerous local retail concentrations whose sales are derived almost entirely from within the Primary Trade Area, as well as regional retail destinations whose sales are drawn from the Primary Trade Area and beyond. From within the mix of retail concentrations in the Primary Trade Area, the detailed analysis focuses on locations where the proposed project's retail would have the greatest potential to draw frequent, repeat visits from customers of existing retail concentrations, thereby potentially affecting the business environment of those areas. In addition, retail concentrations located in close proximity to the project site are profiled regardless of whether they contain overlapping store types, and examined for their potential to be adversely affected by competition with the proposed project.

Similar to the analysis in the 2008 FGEIS, the analysis focuses on grocery stores in the immediate vicinity of the proposed project, in particular, because grocery stores generally serve as anchors for retail concentrations, and the proposed project could introduce stores offering products that substantially overlap with typical grocery store offerings. In addition, the SEIS analysis examines the future viability of anchors in regional retail centers, including movie theaters and restaurants, because the Willets West component of the proposed project would constitute a major new shopping and entertainment center, adding destination retail space to the Primary Trade Area.

EXISTING CONDITIONS

CONSUMER PROFILE OF PRIMARY TRADE AREA

The 5-mile Primary Trade Area contains over 1.7 million residents living in approximately 609,000 households. In 2010, the Primary Trade Area's median disposable income was approximately \$42,000 per household. As detailed in Step 4 of the preliminary assessment, according to ESRI, households in the Primary Trade Area spent an estimated \$9.7 billion on retail goods in 2010 (see **Table 3-9**). Approximately 32 percent was spent on shoppers' goods, 43 percent on convenience goods, and 25 percent on eating and drinking establishments. On a per household basis, Primary Trade Area residents spent roughly \$5,118 annually on shoppers' goods including an estimated \$458 at department stores, an average of \$6,909 annually on convenience goods including \$4,570 at grocery stores, and \$3,988 on eating and drinking establishments.

PROFILE OF RETAIL CONCENTRATIONS WITHIN THE PRIMARY TRADE AREA

The Primary Trade Area, from which the majority of customers of the proposed project are expected to originate, includes numerous retail concentrations that play an important role in the

economic needs of neighborhood residents, but also in the larger regional context of shoppers and consumers in Queens. The following describes 10 major retail concentrations within the 5-Mile Trade Area that, due to their proximity to the project site and/or overlap in retail offering, have the potential to be adversely affected by competition with the proposed project. The location of each profiled retail concentration is shown in **Figure 3-3**. Characterizations of the retail concentrations are based on field visits conducted by AKRF in December 2012.

1. Northern Boulevard from 68th Street to 114th Street

This portion of Northern Boulevard is located to the west of the project site. Approximately 3.5 miles from the project site at its farthest points, between 68th Street and 78th Street, the commercial strip primarily contains large retailers, particularly car dealerships and car wash businesses. Between 78th Street and 90th Street, there is a larger concentration of local neighborhood retail businesses as well as large supermarkets (Super and Mi Tierra) and drug stores (CVS, Walgreens, and Rite Aid). This commercial strip is interrupted by several blocks of public housing abutting Northern Boulevard between 90th Street and Junction Boulevard. The remainder of the commercial strip closest to the project site, between Junction Boulevard and 114th Street, contains a concentration of industrial and commercial supply businesses, including sign making shops, auto body repair shops, and restaurant supply businesses. This section of the strip also contains smaller neighborhood retail businesses that serve the residential communities located immediately to the north and south, particularly the Hispanic community.

2. Northern Boulevard between Union Street and Utopia Parkway

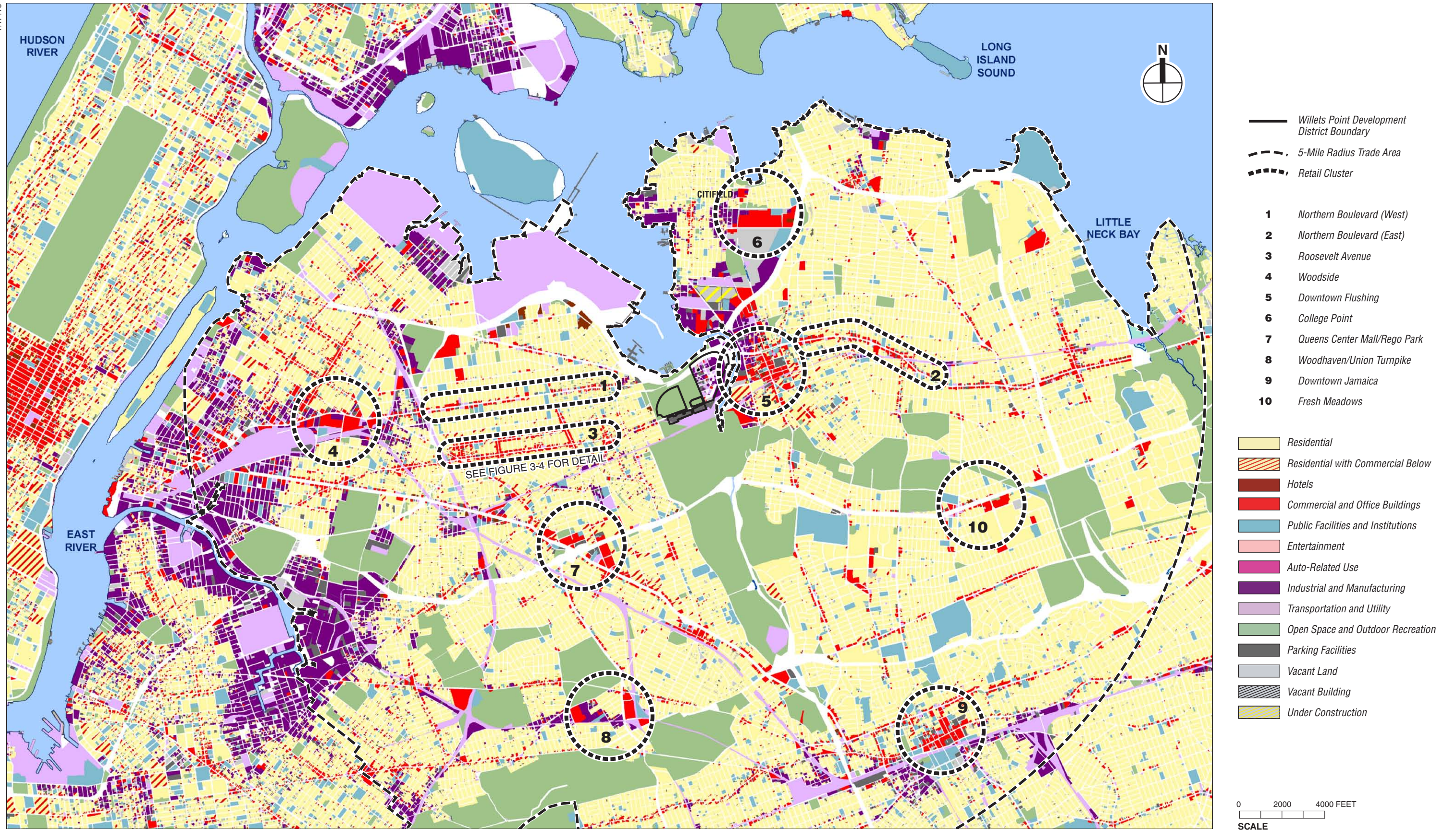
This portion of Northern Boulevard east of the project site extends to the north of downtown Flushing. It contains a similar mix of businesses as the Northern Boulevard Area west of the Flushing River, with auto-related businesses interspersed with neighborhood retail businesses. Most of the small stores along this strip offer neighborhood services or convenience goods, including several supermarkets that cater to surrounding Asian population (HMart, GW Market, and Hanyang Mart). Many shops are in one-story buildings; however, the area also includes several small shopping plazas, including the Koreaville Plaza near 150th Street and the Galaxy Plaza near 159th Street. These plazas are similar to the shopping centers located in downtown Flushing and contain a mix of small local retail businesses and services (such as insurance offices, accountants' offices, and salons) serving the Asian community. As the residential density in the area decreases east of 167th Street and the neighborhood becomes more suburban in scale, the retail corridor becomes less concentrated, with more homes and fewer businesses abutting Northern Boulevard.

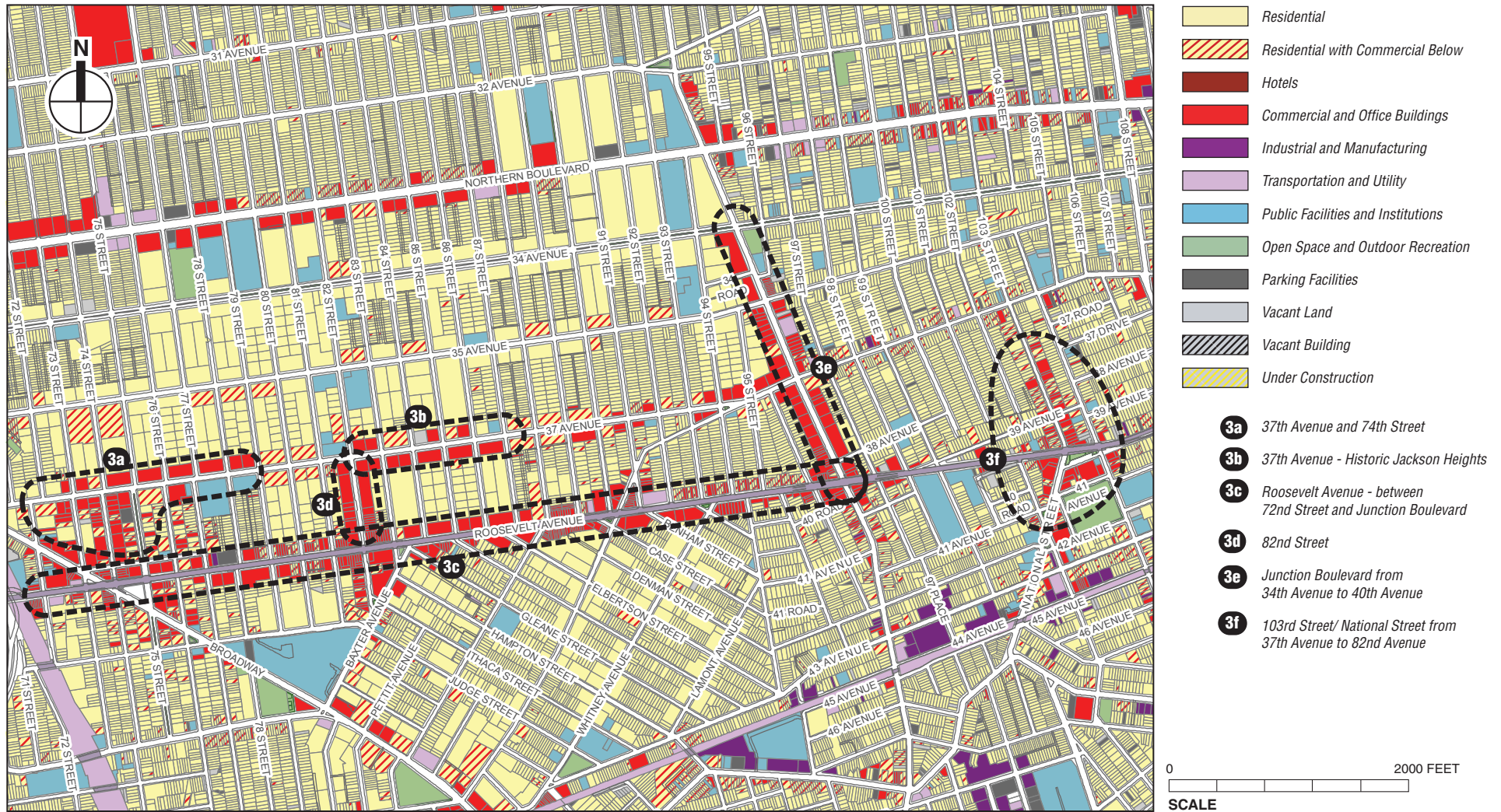
3. Roosevelt Avenue and 37th Avenue, Jackson Heights

West of the project site within Jackson Heights, 37th Avenue and Roosevelt Avenue are major retail concentrations that include the following retail strips (illustrated in **Figure 3-4**):

37th Avenue and 74th Street

37th Avenue contains a local retail section primarily serving the South Asian (Indian, Pakistani, and Bangladeshi) community between 78th Street and 86th Street, containing a large concentration of restaurants, supermarkets, and small grocery stores. This section includes a commercial strip extending south along 74th Street, containing a similar concentration of food-related businesses as well as several neighborhood retailers, such as jewelry stores. Eagle Plaza, a multi-story commercial facility located at the intersection of 74th Street and Roosevelt





Retail Clusters within the 5-Mile Radius Trade Area:
Roosevelt Avenue/ 37th Avenue/ Jackson Heights
Figure 3-4

Willets Point Development

Avenue, contains a mix of local retailers and services, including legal offices, serving the South Asian community.

37th Avenue—Historic Jackson Heights

The 37th Avenue commercial strip also contains a section serving a slightly more affluent community. This section is located in a more historic section of Jackson Heights, centered on the Mt. Sinai medical practice building between 82nd Street and 83rd Street. While this section similarly contains a concentration of neighborhood retailers, it contains a higher mix of clothing boutiques and local services.

Roosevelt Avenue—between 72nd Street and Junction Boulevard

Jackson Heights also contains a retail strip along Roosevelt Avenue between 72nd Street and Junction Boulevard. This strip primarily serves the Hispanic community in the area, and includes a large concentration of neighborhood retailers, including grocery stores, and local services. On several blocks, two-story retail building abut Roosevelt Avenue, with small shops or restaurants located on the first floor and local service businesses (including legal or medical offices) located on the second floor. This commercial strip also includes a larger retail facility located between Whitney Avenue and 94th Street, which contains a Staples office supply store.

82nd Street

Jackson Heights also contains an active destination shopping districts located along 82nd Street. The district contains a mix of local retail and value retail businesses that serve a slightly larger area, such as apparel and electronics stores. These districts also include several national chain retailers, such as Radio Shack and Gamestop.

Junction Boulevard from 34th Avenue to 40th Avenue

This neighborhood retail strip extends from 34th to 40th Avenues along Junction Boulevard. The strip contains a mixture of shoppers' and convenience goods stores, including clothing, shoe, and furniture stores, as well as pharmacies, restaurants, grocery stores, and 99 cent stores. The strip appears to be more heavily weighted toward shoppers' goods than convenience goods. Larger stores include VIM clothing store, Payless Shoe Source, Food Dimensions grocery store, and a Junction Food Bazaar grocery store at Junction Boulevard and 34th Avenue. Chain retailers have a stronger presence along this corridor—food stores and restaurants in particular—cater to a Hispanic population. Transit service to the corridor is good, with a No. 7 subway line express train stop located at Junction Boulevard and Roosevelt Avenue.

103rd Street/National Street from 37th Avenue to 42nd Avenue

The National Street/103rd Street retail concentration is a narrow retail corridor that runs from 37th Avenue to 42nd Avenue and is bisected by Roosevelt Avenue. Stores along this corridor offer mostly convenience goods, such as a 99 cent store, several delis, and a grocery store, as well as neighborhood services like a beauty salon and a barber shop. There are also several limited-service restaurants and shopper's goods stores. Several of the stores appear oriented toward serving the local shopping needs of the surrounding Hispanic community. Pedestrian traffic is highest at 103rd Street and Roosevelt Avenue, where the 103rd Street-Corona Plaza No. 7 subway station is located.

4. Northern Boulevard, Woodside

The commercial strip along Northern Boulevard in Woodside, between 39th Street and 55th Street, is approximately 3.5 miles to the west of the project site. Similar to the commercial portion of Northern Boulevard to the east of 68th Street, this commercial strip contains a concentration of car dealerships and other car-related businesses, such as gas stations and tire

stores. This area also contains a number of chain retailers, including Staples, Home Depot, Best Buy, Toys R Us, Sports Authority, Old Navy, and Marshalls, as well as chain eating and drinking businesses, such as Starbucks Coffee, Boston Market, and Pizza Hut. Several of these businesses are collected in the Tower Square shopping plaza located on the corner of Woodside Avenue and Northern Boulevard.

5. Downtown Flushing

Downtown Flushing is situated to the east of the project site, separated by the Flushing River, and its retail district is centered at the corner of Main Street and Roosevelt Avenue. Downtown Flushing is a full-scale Central Business District (CBD) with a combination of office and retail uses. Flushing has a vibrant retail district with a broad range of store sizes and types, and an active business community supported by the Downtown Flushing Transit Hub Business Improvement District. Downtown Flushing can be reached by the No.7 train subway, which has a station at the corner of Main Street and Roosevelt Avenue, or by any of the approximately two dozen bus lines that converge at the downtown area.

Several large national chain stores, including Macy's and Old Navy, are located at the corner of Main Street and Roosevelt Avenue. Sky View Center, which opened in 2010 as part of the Sky View Parc development on College Point Boulevard near the CBD, is a regional shopping mall that also contains several national chain stores, such as Target, Bed Bath and Beyond, and Best Buy. However, the downtown Flushing CBD primarily consists of a variety of smaller convenience and shoppers' goods stores, a large proportion of which cater to the Asian residential population living in Flushing. Many of these smaller stores are located within shopping plazas or malls scattered throughout the CBD, such as the Flushing Mall, New World Mall, and Queens Crossing.

In addition to small conveniences and shoppers' good stores, downtown Flushing contains a number of large food stores. The food stores located along Main Street close to the denser shopping district, including Good Fortune Supermarket and Chung Fat Supermarket, are neighborhood stores that serve the local Asian community and are easily accessed on foot. Assi Plaza, located to the west of the CBD along College Point Boulevard, and Sky Food, located within Sky View Center, are larger food markets that also cater to the Asian community and offer a wider array of products. Assi Plaza is most easily accessed by car, and therefore likely attracts visitors from a wider part of the Flushing neighborhood. A Western Beef supermarket, also located on College Point Boulevard, provides wholesale-style groceries, including bulk meat and produce sales, and similarly attracts visitors travelling to the area by car.

Main Street from Sanford Avenue to Dahlia Avenue

Main Street continues to function as a retail corridor south of Downtown Flushing from Sanford Avenue to Dahlia Avenue. This stretch of Main Street has fewer shopper's goods stores and more neighborhood services and convenience goods. Pedestrian traffic is generally less than within downtown Flushing, but still high overall. This stretch has several small grocery stores and delis, including grocery stores focusing on Asian-Indian groceries and Halal foods.

6. College Point Shopping Center

The College Point Shopping Center is located on 20th Avenue between 132nd Street and the Van Wyck Expressway in College Point. The center opened in 1998 and today includes a variety of destination retail stores, including Old Navy, Modell's Sporting Goods, Babies R Us, BJ's

Wholesale Club, TJ Maxx, Target, P.C. Richards and Sons, Petco Animal Supplies, and Staples, along with chain eating and drinking establishments such as McDonalds and Starbucks.

7. Queens Boulevard, Elmhurst

Queens Boulevard contains three large malls between 55th Avenue and 64th Avenue, approximately 2 miles southwest of the project site. These malls—the Rego Center, Queens Center and Queens Place—contain predominantly national retail chains and serve shoppers travelling from outside of the neighborhood on public transit (via the nearby Woodhaven Boulevard station on the M and R subway lines) or by car (via Queens Boulevard or the Long Island Expressway). The businesses in the area are typical for a destination shopping district: large department store anchors (Kohl's, Sears, Target, Macy's, and JC Penney), big-box retailers (Best Buy, Costco, Bed Bath & Beyond), large clothing stores (Century 21, TJ Maxx, Old Navy, Marshalls), and other national chain retailers such as Toys R Us and the Disney Store. The facilities also contain a mix of smaller chain retail stores, particularly apparel stores such as Banana Republic, and food court facilities with chain eating and drinking businesses such as KFC and Panera Bread.

8. Woodhaven Boulevard and Atlas Park, Glendale

Woodhaven Boulevard

Several large retail businesses are located in a shopping plaza along Woodhaven Boulevard between Metropolitan Avenue and the rail overpass. They include national retail chains such as Home Depot, and Staples, as well as a Trader Joe's grocery store. Access to the plaza is limited due to the adjacent wide streets and the railroad lines, and can best be reached by car on Metropolitan Avenue; it is particularly isolated from the residential neighborhoods located immediately to the east and west.

Atlas Park

The Shops at Atlas Park, located several blocks to the west of the Woodhaven Boulevard shopping center, is a plaza-style shopping center that contains a number of small retailers. The shops are situated around a circular park and walking area, and are primarily upscale clothing and accessory boutiques. The retail center changed ownership in 2011, and has struggled to attract and retain tenants in recent years, in part due to its relative isolation (shoppers arriving by car can enter garages attached to the center off of Cooper Avenue and 80th Street, but access on foot is limited) and the lack of an anchor retailer such as a department store.

9. Downtown Jamaica

Downtown Jamaica is a traditional CBD area, situated roughly 4 miles to the southeast of the project site. Retail activity focuses on Jamaica Avenue between 146th Street and 172nd Street, with additional concentrations of storefronts located on 165th Street, New York Boulevard, Sutphin Boulevard, and 164th Street. The area is easily accessible by public transportation, with subway stations serving the E, J, Z, and F trains all within walking distance of the CBD, an LIRR train stop located at Sutphin Boulevard and Archer Avenue, and over 20 different bus lines running through the downtown area.

The CBD includes a variety of both shoppers' and convenience goods stores, and appears to have a particularly high concentration of stores offering clothing, shoes, and clothing accessories. Citywide or national chain stores of this type located in Jamaica include VIM, Dr. Jays, Strawberry's, Payless Shoe Source, Gap, and Old Navy. However, the area does not contain a traditional retail anchor, such as a large department store. One block of 165th Street,

between Jamaica and 89th Avenues, serves as a pedestrian mall. Retail activity in downtown Jamaica is very active.

10. Fresh Meadows Shopping Center

The Fresh Meadows Shopping Center is located between 188th Street and 194th Street adjacent to the Long Island Expressway, approximately 3 miles southeast of the project site. The shopping center is connected to the Fresh Meadows housing development, and contains several local shops, services and entertainment options, including a cinema, that serve the development's residents; outside of the shopping center, local retail options in the area are limited to a corridor on Union Turnpike. The shopping center also contains an anchor retailer, a Kohl's department store, as well as smaller chain clothing retailers, such as Dress Barn. These retailers likely attract shoppers from a wide area arriving by car.

THE FUTURE WITHOUT THE PROPOSED PROJECT

The two primary factors that would affect retail conditions in the 5-mile Primary Trade Area in the future without the proposed project include: 1) population growth, which could increase expenditure potential and generate additional demand for retail goods; and 2) new retail projects, which would expand the retail inventory.

In terms of population growth, as described in Step 6 of the preliminary capture rate analysis, the portion of the Primary Trade Area within an approximately 1-mile radius of the project site is expected to add 2,706 new households by 2018. Outside of this 1-mile area, there are no significant residential projects known to be planned or under construction within the Primary Trade Area. With the 2,706 new households in place, the Primary Trade Area will contain an estimated 611,439 households. As shown in **Table 3-9**, Primary Trade Area households currently spend approximately \$16,016 per year on the three retail categories highlighted in this analysis. If the additional households continue to spend the same amount per year, the new households would increase the retail demand by \$43.34 million. These households would spend approximately \$13.85 million on shoppers' goods (including \$1.24 million at department stores), \$18.70 million on convenience goods (including \$12.37 million at grocery stores), and \$10.79 million at eating and drinking establishments. Thus, the total household expenditure potential for retail goods—including the additional households anticipated in the No Action condition—will be approximately \$9.8 billion in the future without the proposed project by 2032.

In terms of retail development, research on projects either planned or currently under construction within the Primary Trade Area, conducted in connection with Step 6 of the preliminary assessment, identified several projects with large retail components. For the purposes of this analysis, planned projects with more than 50,000 gsf of retail space have been identified as having a high potential to contain a destination retail facility, such as a department store. These larger retail facilities are the most likely to compete directly with the destination retail of the proposed project. This excludes neighborhood-wide projects, such as rezoning, that may introduce a large amount of retail over an extended geographic area, but does not necessarily introduce large destination retail facilities on individual sites. **Table 3-27** shows the applicable destination retail projects.

Table 3-27
Planned Destination Retail Projects
Future Without the Proposed Project

Fig.2-4 Site No.	Location/Address	Retail gsf	Build Year
19	Block bounded by Astoria Boulevard, Northern Boulevard, and 112th Place	73,329	2018
26	37-19 College Point Boulevard	56,595	2018
14	Flushing Commons (Municipal Parking Lot 1) and Macedonia Plaza: block bounded by 138th Street, 37th Avenue, 39th Avenue, and Union Street	300,000	2018/2028
44	Caldor Site, 136-20 Roosevelt Avenue	155,000	2016
Notes: Listed projects are limited to large single-site developments located within approximately 1 mile of the proposed project			
Sources: AKRF, Inc.			

The full 5-Mile Primary Trade Area extends to include a majority of Queens and a portion of Brooklyn. Given the scale of this geography and the long time horizon associated with the 2032 Build year, it would be speculative to project the amount of residential and retail development that is likely to occur by 2032 for the Primary Trade Area. As stated in the *CEQR Technical Manual*, New York City's commercial streets are dynamic and are continually affected by changes in consumer spending, shopping trends, demographics, and population growth. Overall, in the future without the proposed project by 2032, it is expected that the retail landscape in the 5-mile Primary Trade Area will continue to evolve consistent with current trends, with natural turnover and growth in retail uses and growing household retail demand.

PROBABLE IMPACTS OF THE PROPOSED PROJECT

As described in the *CEQR Technical Manual*, there may be potential for a significant adverse impact on retail businesses if a project would decrease shopper traffic on commercial streets such that retail vacancies rise and retail businesses in the study area are no longer economically viable. This should be considered likely if the following conditions are met:

- The proposed anchor stores have potential to affect the ability of existing stores selling similar categories of goods to capture the sales volume necessary to remain in business;
- These existing stores draw a substantial share of shopper traffic to the neighborhood commercial strips on which they are located, or the street contains a concentration of businesses that sell the relevant categories of retail goods; and
- Limited demand for retail tenants is expected.

As noted above, the analysis focuses on shopping center anchors and local food stores because grocery stores generally serve as anchors for retail concentrations, and the proposed project could introduce stores offering products that substantially overlap with the retail offerings at grocery stores and shopping center anchors.

POTENTIAL IMPACTS ON LOCAL FOOD STORES

The Northern Boulevard, Roosevelt Avenue, and Downtown Flushing retail corridors contain a wide variety of food and beverage stores, including several large supermarkets and smaller

independent stores such as delis and grocery stores, meat and fish markets, fruit and vegetable markets, and retail bakeries. Grocery stores in these retail clusters include supermarket chains, such as Trade Fair and C-Town. In many cases, the independent stores serve the local ethnic community, particularly the Hispanic and South Asian communities in Jackson Heights and the Asian community in Flushing. Several of the larger supermarkets, such as Sky Foods, Mi Tierra and HMart serve these communities as well. In total, there are approximately 27 supermarkets or grocery stores in these three local retail concentrations that could compete with the proposed project's food stores due to their close proximity and the potential for overlapping consumer base.

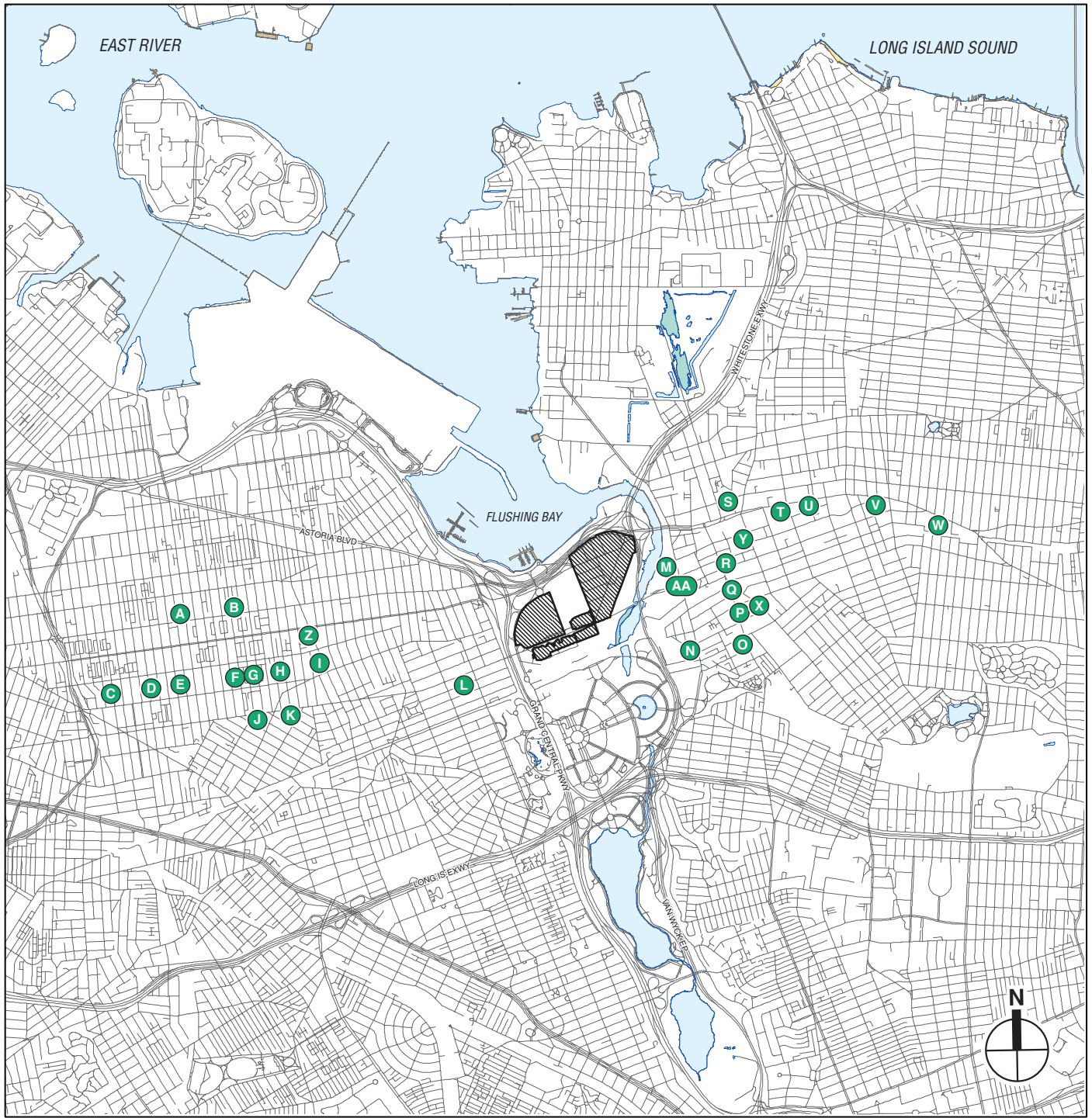
The names and locations of each supermarket or large grocery store are provided in **Table 3-28** and are mapped in **Figure 3-5**.

As described below, with the proposed project, the amount of competitive business displacement of grocery stores and local retail stores more generally would be minimal, is not anticipated to jeopardize the viability of any neighborhood retail strips, is not expected to diminish the level of services provided and, therefore, is not anticipated to result in significant adverse impacts due to retail market saturation.

Local stores would remain more convenient to many shoppers.

Local area residents would continue to make a majority of their shopping trips to stores closest to their homes and closest to public transportation. It is therefore unlikely that a large portion of consumer sales would be diverted from local stores to the proposed project's retail development. Many residents, especially those without access to a car, would continue to do the majority of their grocery shopping at the stores on the local retail corridors because they would remain more convenient and because transit service to the District would not be convenient for many residents of the neighborhoods adjacent to the project site. Although the District is served by the No. 7 subway line and the Q19, Q66, and Q48 buses, it is unlikely that residents would travel out of their way to access a transit route to the District, when many existing retail concentrations are nearby and are also well served by buses and subways. As discussed below, several of the local grocery stores also cater to a particular ethnic community living near the adjacent retail corridors. A supermarket or other food stores in the District is unlikely to attract a large number of shoppers who would normally shop at these specialty grocery stores.

In addition, the central locations of local grocery stores put them at an advantage over the District in some respects. Residents are likely to combine shopping trips for groceries with errands such as trips to the bank or dry cleaner, and may also shop for retail goods such as clothing, shoes, or books on the same trip. Many of the smaller grocery stores in the adjacent retail corridors are located along major commercial corridors that offer a variety of convenience goods, shopping goods, and neighborhood services, or in small retail clusters that include other basic convenience goods stores. Many residents, even those with access to a car, would continue to do the majority of their grocery shopping at these supermarkets because of the opportunity they provide for easily combining trips. It is therefore unlikely that a large portion of their sales would be diverted from local grocery stores to a supermarket or other food stores in the District.



Project Site



Supermarket (see Table 3-28 for reference)

0 1/2 1 MILE
SCALE

Selected Supermarkets in Local Retail Concentration
Figure 3-5

Table 3-28

Selected Supermarkets in Local Retail Concentrations

Map No.	Name	Address/Location
A	Mi Tierra	Northern Boulevard and 81st Street
B	Compare Foods	Northern Boulevard and 86th Street
C	Apna Bazar Cash & Carry	72-20 37th Avenue
D	Trade Fair	37th Avenue and 75th Street
E	Met Food Market	37th Avenue and 76th Street
F	C-Town	85-08 37th Avenue
G	Mi Tierra	37th Avenue and 86th Street
H	Trade Fair	37th Avenue and 89th Street
I	Food Bazaar	37th Avenue and Junction Boulevard
J	Mi Tierra	Roosevelt Avenue and 86th Street
K	Bravo	90-30 Roosevelt Avenue
L	C-Town	Roosevelt Avenue and 111th Street
M	Assi Plaza	College Point Boulevard and 39th Avenue
N	Western Beef	College Point Boulevard and Avery Avenue
O	Good Fortune Supermarket	Main Street and Blossom Avenue
P	Chung Fat Supermarket	Main Street and Maple Avenue
Q	New A&N Market	41-79 Main Street
R	Farmer's Supermarket	Main Street and 41st Road
S	GW Supermarket	Northern Boulevard and Leavitt Street
T	HMart	141-40 Northern Boulevard
U	GW Supermarket	144-50 Northern Boulevard
V	Hanyang Supermarket	Northern Boulevard and Murray Street
W	HMart	Murray Hill Plaza, 156-40 Northern Boulevard
X	Chang Jiang Supermarket	41-41 Kissena Boulevard
Y	Hong Kong Supermarket	37-13 Main Street
Z	Food Dimensions	34-20 Junction Boulevard
AA	Sky Food	40-24 College Point Blvd
Notes: Supermarkets greater than 10,000 sf are listed in bold . Sources: Store square footage based on the New York City Department of Finance's Real Property Assessment Data (RPAD) 2012 database, estimates from aerial photography, and AKRF field surveys conducted in December 2012.		

Small- to medium-sized, independently owned grocery stores, bodegas, and delis serve a retail function similar to specialty food stores, though they offer a wider variety of food items. In general, these smaller grocery stores tend to act as convenience stores, where customers make frequent trips and purchase fewer items that are in immediate demand, such as milk or bread, or housekeeping supplies such as light bulbs. While shoppers may sometimes purchase these types of goods at chain supermarkets, they typically do not make frequent trips for convenience goods to wholesale clubs or area supermarkets; instead, they are likely to continue to fill their more frequent convenience food and beverage needs at smaller, nearby grocery stores.

Many businesses in adjacent retail corridors cater to specific ethnic groups.

Many neighborhoods in Queens have a distinct character in terms of income levels and ethnic background of their residents. The local retail concentrations reflect the income and ethnic patterns of their local neighborhoods, with local retailers offering specialty goods and services familiar to a specific ethnic community and frequently doing business in a foreign language. For example, the corridors near 37th Avenue, and Roosevelt Avenue serve the nearby South Asian

and Hispanic communities in Jackson Heights, while the corridors near Main Street and Northern Boulevard serve the Asian community in Flushing. This is particularly true in the case of food stores in these areas, which specialty items, including imported goods, and are particularly suited to shoppers who do not speak English as their primary language (notably, several of the Asian supermarkets located in Flushing do not have websites translated into English). By focusing on specific, and in some cases, geographically small local market areas, these retail concentrations in Queens have maintained strong local support. And despite the fact that many of the local commercial strips draw from a small primary trade area (in some cases a two- or three-block radius), sales are high due to very high population densities. Furthermore, it is unlikely that the proposed retail would offer goods, services, or restaurants that would directly compete with the specialty goods, services, and ethnic restaurants offered by local retailers focusing on a specific ethnic community. Overall, many shopping areas would be likely to retain their customer base.

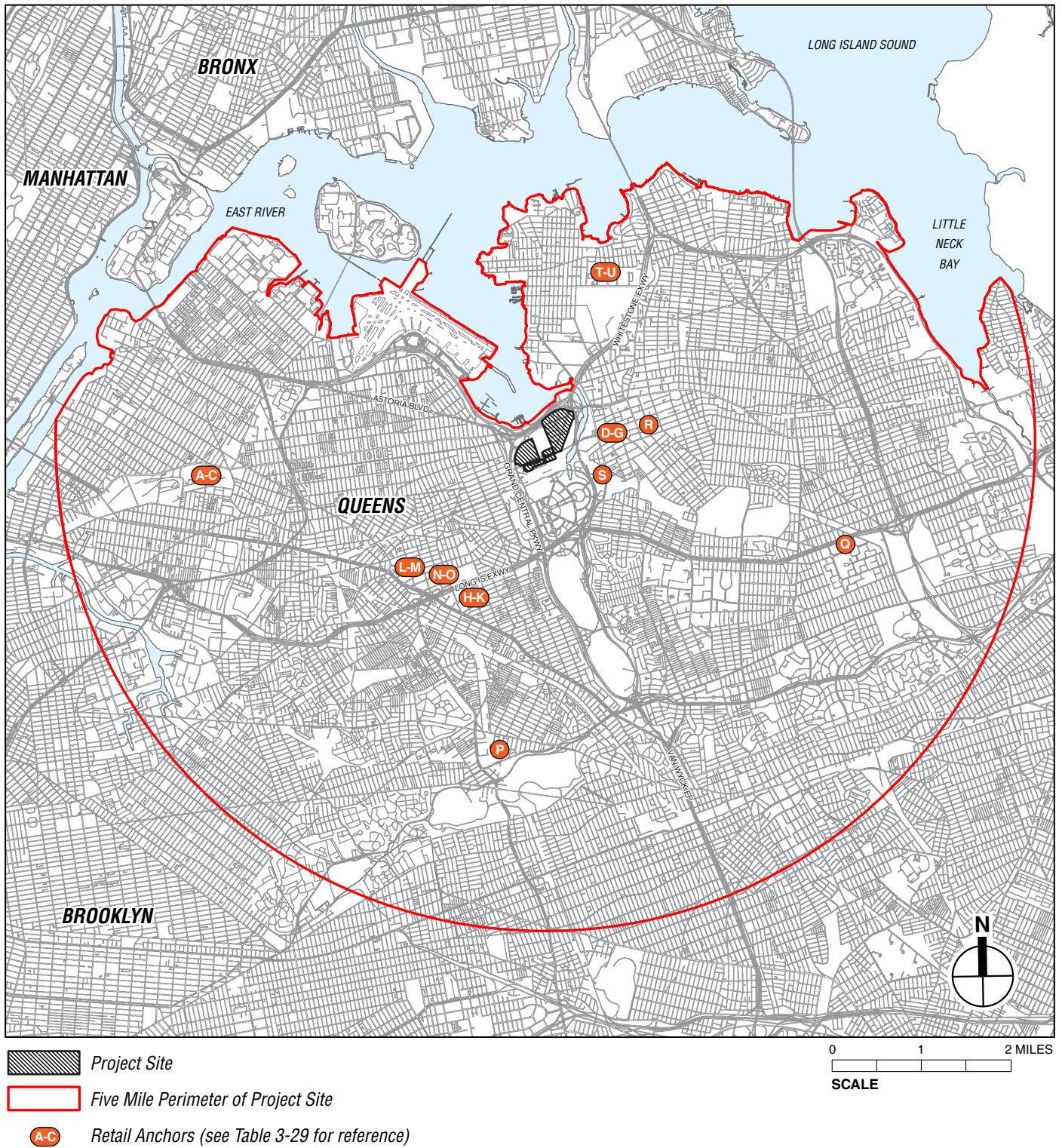
Many individual supermarkets in the adjacent retail corridors are not critical to the survival of local retail concentrations.

The potential for significant adverse impacts due to retail market saturation exists only if proposed stores have the potential to affect neighborhood character by affecting the viability of neighborhood shopping areas. The adjacent retail corridors contain approximately 27 supermarkets, several of which might serve as anchors of their respective retail concentrations. Smaller supermarkets, such as Met Food and C-Town, typically with less than 10,000 sf of space, primarily serve the convenience shopping needs of local residents, and so they would not directly compete with a supermarket at the project site. Even though one or more of these smaller grocery stores may be present on a local shopping street, they do not typically anchor the commercial mix and are not critical to the survival of surrounding stores, and so would not adversely alter neighborhood character even if they were to be negatively affected by competition.

POTENTIAL IMPACTS ON SHOPPING CENTER ANCHORS

Within the 5-mile Primary Trade Area, there are number of retail clusters that serve a customer base that extends beyond their immediate neighborhoods. In contrast to the local retail corridors, where supermarkets tend to function as anchors, these clusters are characterized by large-format anchor stores that sell shopping goods attracting customers from a broader region. The anchor stores of these retail clusters tend to draw traffic not only to the anchor store, but also to the smaller stores collocated with the anchor. Given this dynamic, if an anchor would be adversely impacted due to competition from the proposed project, the remaining stores in the cluster could also be affected.

Within the 5-mile Primary Trade Area there are shopping centers of varying size and character that contain anchor stores with trade areas and retail offerings that could overlap with the proposed project. **Table 3-29** identifies selected anchors of regional shopping centers within the Primary Trade Area, and their locations are illustrated in **Figure 3-6**.



Selected Anchors in Regional Shopping Centers
Figure 3-6

Table 3-29
Selected Anchors in Regional Shopping Centers

Map No.	Name	Address/Location
A	Sports Authority	Northern Boulevard, Woodside
B	Home Depot	Northern Boulevard, Woodside
C	Best Buy	Northern Boulevard, Woodside
D	Target	Sky View Center (at Sky View Parc), Flushing
E	BJ's	Sky View Center (at Sky View Parc), Flushing
F	Best Buy	Sky View Center (at Sky View Parc), Flushing
G	Marshall's	Sky View Center (at Sky View Parc), Flushing
H	Kohl's	Rego Center, Elmhurst
I	Sears	Rego Center, Elmhurst
J	Costco	Rego Center, Elmhurst
K	Century 21	Rego Center, Elmhurst
L	Target	Queens Place, Elmhurst
M	Best Buy	Queens Place, Elmhurst
N	JC Penney	Queens Center, Elmhurst
O	Macy's	Queens Center, Elmhurst
P	Home Depot	Woodhaven Boulevard, Forrest Hills
Q	Kohl's	Fresh Meadows Shopping Center, Fresh Meadows
R	Macy's	Roosevelt Avenue, Flushing
S	Home Depot	Avery Avenue, Flushing
T	Target	College Point Shopping Center, College Point
U	BJ's Wholesale Club	College Point Shopping Center, College Point
Sources: AKRF field surveys, December 2012		

For the reasons outlined below, with the proposed project, the competitive effects of the proposed project on anchor stores at shopping centers is expected to be minimal, is not anticipated to jeopardize the viability of any shopping centers, is not expected to diminish the level of services provided and, therefore, is not anticipated to result in significant adverse impacts due to retail market saturation.

The Primary Trade Area is not saturated by retail.

The presence of numerous retail anchors within close proximity of the project site shows that the Primary Trade Area is a robust market capable of supporting such stores in a variety of retail formats. So while there are a number of shopping centers within the Primary Trade Area that could potentially compete with the proposed project for customers, the expenditure analysis conducted for the preliminary assessment shows that Queens, and the 5-mile Primary Trade Area in particular, are currently under-retailed; Queens is capturing only 57 percent of the total retail expenditure potential of its residential population, while in the future without the proposed project, the Primary Trade Area will be capturing an estimated 66 percent of its residents' retail expenditure potential. Shopper's goods retailers will be capturing an estimated 67 percent of expenditures, while department stores, a subset of the shoppers goods category and in many instances an anchor of shopping centers, is predicted to capture only 41 percent of the Primary Trade Area residents' expenditure potential in the future without the proposed project (see **Table 3-13**).

Even with the proposed project, only approximately 77 percent of the study area's expenditure potential would be captured. The remaining 23 percent of potential expenditures (approximately

\$2.3 billion) would continue to not be captured by stores within the Primary Trade Area and would be spent in other parts of New York City and adjacent counties.

Although the proposed project could potentially increase competition among shopping centers and their anchors, the remaining significant leakage of expenditures into areas adjacent to study area is an indication that available expenditures are sufficient in size to absorb additional retail development and are not expected to cause substantial competitive effects.

Smaller retail centers will continue to draw from local consumer bases.

Many of the major retail centers within the Primary Trade Area—in particular, the retail clusters in Woodside, College Point, Woodhaven, and Fresh Meadows—have only one or two anchors and serve smaller trade areas, so that their respective trade areas would only partially overlap with that of the proposed project. Woodside, Woodhaven, and Fresh Meadows are also at the fringe of the Primary Trade Area and are expected to draw a significant amount of their customers from outside of the Primary Trade Area. The composition of retailers at these clusters also suggests that the draw is more local in character. Anchor Stores such as Home Depot, Sports Authority or Michaels, present at Woodside and Woodhaven, tend to have smaller trade areas and are less likely to compete with stores in the proposed project.

Larger retail centers will continue to draw from a regional customer base

Sky View Center together with Downtown Flushing, the shopping centers at Queens Center, and Downtown Jamaica offer a critical mass and a diverse range of retail products that attract customers from local neighborhoods but also from well beyond the local trade area. The shops at Skyview Center in Downtown Flushing cater mainly to the existing community. The center takes advantage of the foot traffic in Downtown Flushing and targets primarily Asian residents and visitors, who come from as far New Jersey and Long Island. Stores such as the Fay Da Bakery and Sky Food within the center offer products and services specifically tailored to Asian shoppers. Because of these segment specific offerings and the close proximity to Downtown Flushing, with its ethnic restaurants and food stores, many shoppers are expected to continue to frequent stores in the Skyview Center.

Although Downtown Jamaica has, similar to the project site, access to the subway system and the Long Island Rail Road, its character and distance from the proposed development are expected to minimize potential adverse effects from competition. Downtown Jamaica is characterized by many small retail stores, mainly along Jamaica Avenue, interspersed with a few large-format department and apparel stores. Downtown Jamaica's unique retail corridor environment, paired with good access to public transportation access and its abundance of value retailers, make downtown Jamaica a preferred location for urban shoppers primarily from east Brooklyn south Queens.

Overall, only the shopping centers at Queens Center, i.e., Queens Center Mall, Rego Park and Queens Place, offer a critical mass of products and services, similar location characteristics, and a larger number of anchors similar to the proposed project. Because of these attributes and their proximity to the proposed development, the shopping centers at Queens Center are expected to have a trade area that will overlap with that of retailers at the proposed development and therefore compete for customers. However, these retail centers will continue to be viable because they have an established customer base (Queens Center Mall is consistently ranked as

one of the country's highest grossing shopping centers in terms of sales per square foot)¹, they are easily accessible by transit (via the nearby Woodhaven Boulevard station on the M and R subway lines) or by car (via Queens Boulevard or the Long Island Expressway), and in the future with the proposed project there will still be unmet expenditure potential within the trade area for these types of retail offerings.

POTENTIAL IMPACTS ON MOVIE THEATERS

The proposed project would introduce an approximately 80,000-gsf movie theatre, which could increase competitive pressure on some existing movie theaters within the Primary Trade Area. Therefore, this analysis examines whether the proposed movie theater is likely to exert competitive pressure on existing theaters, and whether such pressure could lead to vacancies affecting the economic viability of the neighborhoods in which they area located.

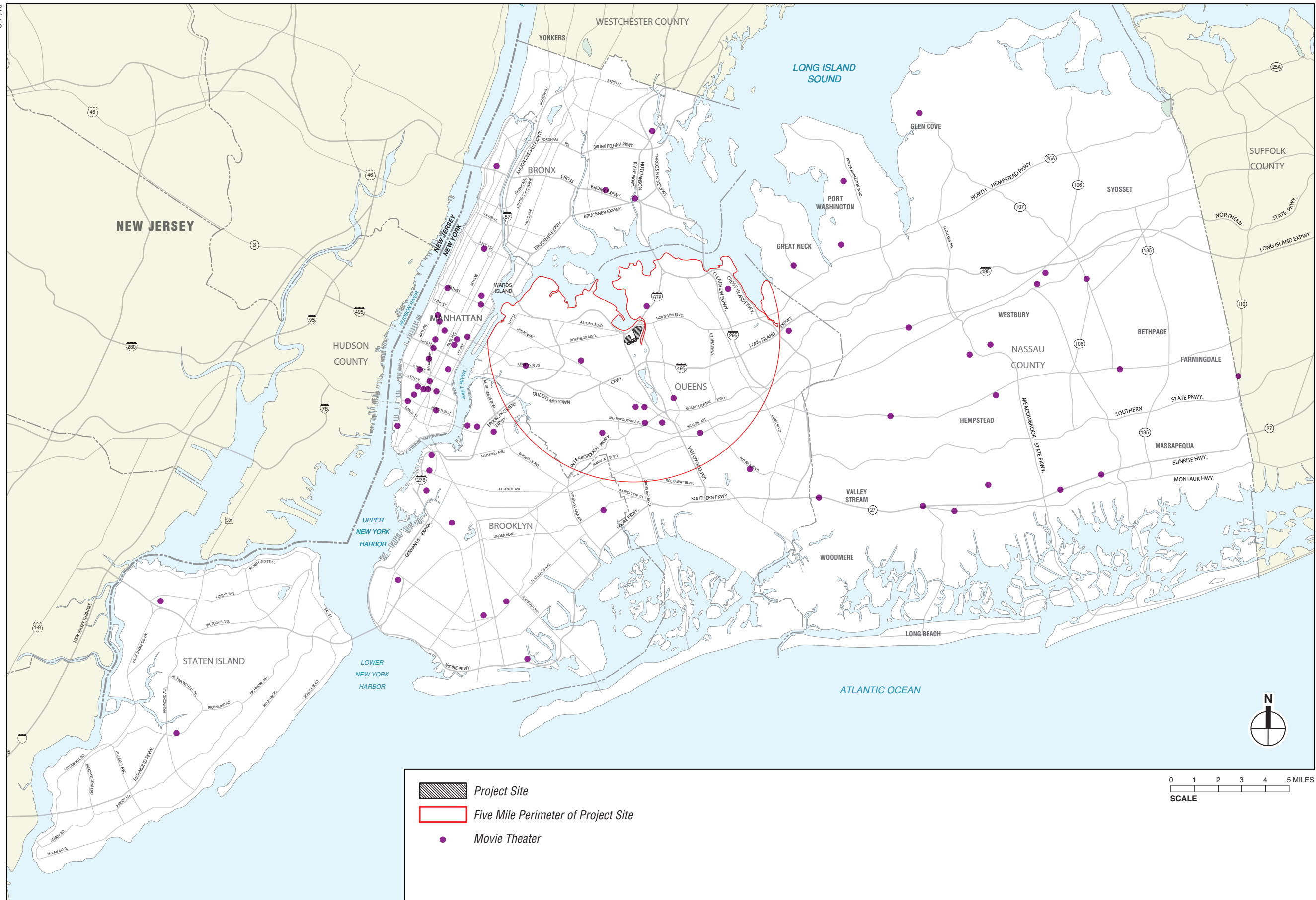
The proposed project theater would be a megaplex.² Megaplex theaters typically show new release movies with widespread appeal. For the proposed project theater, the area of potential overlap within the Primary Trade Area would be other large multiplex theaters—theaters that also focus on new release movies with mass appeal (see **Figure 3-7**). A substantial number of the movie theaters located in the Primary Trade Area are small-scale theaters that would not directly compete with the proposed movie theater. Many of the small-scale theaters in the Primary Trade Area, such as Fair Theatre in East Elmhurst (single-screen) and Jackson Heights Cinema in Jackson Heights (three-screen) show second-run, international, and/or independent films. These theaters tend to cater to a distinct audience and would not compete regularly with the proposed project's megaplex theater. While many small-scale movie theaters both within the Primary Trade Area and well beyond are struggling financially as their facilities age and new technologies and services make it easier for movie-watchers to access movies from home, these theaters would not be vulnerable to indirect business displacement due to competition from the proposed project's theater.

The multiplex theaters located in closest proximity to the proposed project site are in College Point (12-screen College Point Multiplex Cinema) and Forest Hills (nine-screen United Artists Midway Stadium 9 Theater). ESRI, the data provider utilized for the retail capture rate analysis presented earlier in this chapter, does not provide sales and household expenditure data for entertainment uses such as movie theaters. However, based on a review of business and search engine sites such as manta.com and google.com, the spatial distribution of movie theaters within the Primary Trade Area suggests that there is a potential market for a movie theater in the Willets Point area such that the planned movie theater would not have competitive effects on existing theaters. In fact, many areas appear to have greater concentrations of movie theaters than what exists in the Primary Trade Area. This is particularly evident when comparing the Primary Trade Area with Nassau County, which has about one quarter the population density of Queens but appears to have a comparable number of movie theaters.

While available information indicates that the existing market for multiplex movie theaters in the Primary Trade Area is unlikely to be saturated, if the proposed project were to have competitive

¹ In 2009 U.S. News reported that Queens Center was one of the 10 most profitable malls in the United States, with 98 percent of retail space occupied and sales of \$876 per square foot.

² A megaplex is a large multiplex theater, typically housing 16 or more movie theaters. (Merriam-Webster)



Movie Theaters in New York City
and Nassau County
Figure 3-7

effects on existing theaters, this would not be expected to lead to significant adverse neighborhood character impacts. The multiplex movie theaters that are located within the Primary Trade Area—those that would be most likely to compete with the proposed project’s megaplex—do not tend to anchor neighborhood retail concentrations. For example, College Point Multiplex Cinema on Ulmer Street is co-located with a Toys R Us and an Office Depot in a stand-alone building just off of Whitestone Boulevard. The three uses jointly anchor the building, which is surrounded by parking and disconnected from other retail businesses in College Point. In comparison, United Artists Midway Stadium 9 Theater in Forest Hills is located in a more densely retailed context, on Queens Boulevard in Forest Hills. However, this theater shares its block with a bank, a post office, and one restaurant. Banks and post offices rely more on concentrations of residential and office uses for customers rather than foot traffic generated by retail stores. Thus while the United Artists Midway Stadium 9 Theater is located along a more continuous retail corridor compared with the College Point Multiplex Cinema, it does not anchor a retail concentration. A third multiplex movie theater in the Primary Trade Area is the seven-screen AMC Fresh Meadows 7 on Horace Harding Expressway in Fresh Meadows. AMC Fresh Meadows is located in the Fresh Meadows Shopping Center, which includes a variety of stores and restaurants including Kohl’s, Filene’s Basement, Radio Shack, The Children’s Place, Applebee’s, and Starbucks. While the movie theater functions as a complementary use to the retail stores and restaurants, it does not anchor the shopping center.

Overall, the proposed project’s megaplex is not expected to lead to the indirect displacement of existing movie theaters in the Primary Trade Area. Many of the existing movie theaters differ from the proposed project theater in size and focus and therefore would not directly compete with the proposed megaplex. Existing multiplex theaters that may be more likely to compete with the proposed megaplex do not anchor retail concentrations and therefore even if limited displacement were to occur, this would not be expected to lead to prolonged vacancies that could affect neighborhood economic viability.

POTENTIAL IMPACTS ON RESTAURANTS

Individual restaurants do not tend to anchor neighborhood commercial concentrations. However, groups of restaurants can be important to the economic vitality of certain neighborhood retail areas. Since the proposed project would introduce up to 215,000 square feet of eating and drinking establishments, this analysis evaluates the potential for indirect displacement of eating and drinking establishments due to competition with the proposed project.

As indicated in the preliminary assessment of business displacement due to retail market saturation, the retail capture rate for eating and drinking establishments in the Primary Trade Area is estimated to be 56 percent in the future without the proposed project. Even with the addition of 215,000 square feet of proposed project eating and drinking space, the capture rate would be 65 percent in the future with the proposed project. This indicates that there is ample household demand to support both existing and proposed project eating and drinking establishments.

Eating and drinking establishments located in closest proximity to the proposed project site—in Downtown Flushing and in the eastern part of North Corona—may be more likely than others in the Primary Trade Area to experience competitive pressure from proposed project establishments because residents who currently frequent those restaurants would be within walking distance or very short distance by car or public transit from the proposed project site. However, the potential for indirect displacement of groups of restaurants in both of these areas is limited. Downtown Flushing (Number 5 on **Figure 3-3**) has a unique shopping and dining

environment dominated by retail stores and restaurants that cater to Asian populations. This downtown area would retain its unique character and appeal with or without the addition of new eating and drinking establishments at the proposed project site. Retail concentrations in the eastern portion of North Corona (Number 1 on **Figure 3-3** and Numbers 3e and 3f on **Figure 3-4**) contain a mix of shoppers' goods stores, convenience goods stores, eating and drinking establishments, as well as industrial and commercial supply businesses. The eating and drinking establishments in this area are distributed across the commercial concentrations rather than clustered together in a way that would form a collective anchor. Most are small-scale restaurants and many are limited-service, which cater to the immediately surrounding residential communities, particularly the Hispanic community. Therefore it is unlikely that substantial numbers of existing restaurants in eastern North Corona would lose a meaningful proportion of retail sales to proposed project eating and drinking establishments.

Overall, existing restaurants in the immediate vicinity of the proposed project site distinguish themselves in different ways (e.g., a focus on ethnic populations, quick-serve limited-service, an established customer base, downtown setting). Many eating and drinking establishments in the area would likely benefit from the increased foot traffic resulting from the new proposed project residents, workers, and visitors, and local restaurants would not be significantly impacted by new eating and drinking establishments introduced as part of the proposed project. *

A. INTRODUCTION

This chapter examines the potential effects of the proposed project on community facilities in and around the project site. The 2012 *City Environmental Quality Review (CEQR) Technical Manual* defines community facilities as public or publicly funded facilities, including schools, health care, day care, libraries, and fire and police protection services. CEQR methodology focuses on direct impacts on community facilities and services and on increased demand for community facilities and services generated by new users, such as the population that would occupy a proposed residential development.

As described in Chapter 1, “Project Description,” Phases 1B and 2 of the proposed project would include a new public school with capacity that would meet the project-generated demand for school seats. The proposed project would not physically displace or alter an existing community facility. However, the project would introduce a substantial new residential population which could result in increased demand for community facilities and services.

The analysis updates changes in background conditions since the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda and assesses whether any changed background conditions and the differences in program elements between the proposed development program and those assessed during prior environmental review would result in any significant adverse impacts on community facilities and services that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

PRINCIPAL CONCLUSIONS

The analysis provided below regarding potential indirect effects to health care facilities and police and fire protection facilities concludes that—consistent with the conclusions of the 2008 FGEIS—the proposed project would not result in any significant adverse impacts on these community facilities and services.

The analysis of potential indirect effects on elementary, intermediate, and high schools finds that the proposed project would not result in any significant adverse impacts on high schools. In order to accommodate all of the project-generated elementary and intermediate school students, thereby avoiding any significant adverse impacts, the Queens Development Group, LLC (QDG) would coordinate with the School Construction Authority (SCA) to determine whether the public school space currently planned as part of Phase 1B would be sufficient to accommodate all of the school children generated by the proposed project by 2028. Provision of the school in Phase 1B would be ensured through a contractual agreement. If necessary, the school spaces would be expanded, and corresponding reductions in square footage would be made elsewhere in the development program. For Phase 2, the New York City Economic Development Corporation (EDC) would require as part of the developer’s agreement that the designated developer similarly coordinate with SCA.

The analysis of potential indirect effects on library services finds that the holdings per resident ratio for the combined study area would decrease from 3.03 under the No Action condition to 2.80 with the proposed project in 2032. This ratio would decrease to 5.02 for the Flushing Library and to 0.69 for the Corona Library. For both the Flushing Library and Corona Library, the catchment area population increase would exceed five percent, which may represent a significant adverse impact on library services according to the *CEQR Technical Manual*. However, as noted above, many of the residents in the catchment areas also reside within the catchment areas for other nearby libraries and would also be served by these libraries, residents of the study area would have access to the entire Queens Library system through the inter-library loan system, and would also have access to libraries near their places of work. In consideration of the above, the lead agency, in consultation with the Queens Public Library, has determined that the additional population introduced by the proposed project would impair the delivery of library services in the study area in 2032. Therefore, Phase 2 of the proposed project would result in a significant adverse impact on library services. To mitigate this impact, adequate space¹ within the 125,000 square feet of as-yet-unprogrammed community facility space in the program for Phase 2 could potentially would be made available to be utilized as a branch library or auxiliary facility for the Queens Library system, or additional volumes or programs to accommodate new users could be provided if adequate space in nearby branches exists. Although no developer has yet been designated for Phase 2, the provision of additional library space in Phase 2 would be based on further consultation with Queens Public Library and the lead agency.

The analysis of indirect effects on child care facilities finds that the proposed project may result in significant adverse impacts on publicly funded child care facilities in 2028. Therefore, consistent with the conclusions of the 2008 FGEIS, to mitigate the potential impact on child care facilities that could occur by 2028, the QDG (i) would consult with the New York City Administration for Child Services (ACS) to determine whether adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site is the appropriate way to meet demand for child care services generated by the proposed project; and (ii) would, as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site. EDC would require, as part of the developer's agreement, that the designated developer of Phase 2 similarly consult with ACS to determine the appropriate way to meet demand for child care services generated by development in the District by 2032 and would as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS analyzed potential impacts on police services, fire services, and public elementary, intermediate, and high schools resulting from the development of the 2008 proposed Willets Point Development Plan and No Convention Center Scenario. The analysis of potential impacts to public schools considered elementary and middle schools within Zone 2 of Community School District 25 (CSD 25) as well as within a one-mile radius surrounding the District. The analysis of high schools considered the impact on the entire Borough of Queens. The analysis for libraries considered the 2008 proposed Willets Point Development Plan's

¹ In other projects, 15,000–20,000 square feet of community facility space has been adequate for the operation of a branch library.

impact on Flushing Library, the only library within a ¾-mile radius of the District. The analysis of health care facilities considered the 2008 proposed Willets Point Development Plan's impacts on Flushing Hospital Medical Center and the New York Hospital Center of Queens. The day care center analysis considered the 2008 proposed Willets Point Development Plan's impact on the nine publicly funded day care facilities within a one-mile radius of the District. An analysis of police and fire services considered the adequacy of emergency response times to the District.

The 2008 FGEIS found that the proposed Willets Point Development Plan would not result in any significant adverse impacts on public schools, libraries, health care facilities, or police or fire services. The analysis found that significant adverse impacts to day care centers could occur in 2017 as a result of either the Willets Point Development Plan or the No Convention Center Scenario. The 2008 FGEIS indicated that to mitigate the potential impact on day care facilities, EDC would require, as part of the developer's agreement, that a future developer consult with ACS to determine the appropriate way to meet demand for day care services generated by development in the District.

Subsequent technical memoranda revisited the analyses and findings from the 2008 FGEIS to determine whether project modifications, changes to background conditions, and changes in methodology for the analysis of potential impacts to community facilities would result in any significant adverse impacts that were not identified in the FGEIS. Key updates to data and methodology included: updated school enrollment and enrollment projections from the SCA (with Technical Memorandum #4 relying on school enrollment for the 2009-2010 school year and projections for the 2017-2018 school year); a shift in study areas used for analysis of public elementary and middle schools from the CSD level (used in the FGEIS) to the sub-district level (used in Technical Memorandum #4); updated CEQR generation rates for school-age children and child care-eligible children; updated enrollment and capacity information from ACS for child care facilities and Head Start programs (with Technical Memorandum #4 relying on data current as of October 2010); a shift in study areas used for the analysis of child care facilities from 1-mile (used in the 2008 FGEIS) to 1.5 miles (used in Technical Memorandum #4); and an expanded discussion of police, fire, and emergency services, per 2010 *CEQR Technical Manual* guidelines for projects that would result in the introduction of a sizeable new neighborhood.

The technical memoranda concluded that such changes would not result in any additional significant adverse impacts on any community facilities or services.

C. PRELIMINARY SCREENING

This analysis of community facilities has been conducted in accordance with 2012 *CEQR Technical Manual* guidelines and the latest data and guidance from agencies such as the New York City Department of Education (DOE), the New York Public Library (NYPL), and the New York City Department of City Planning (DCP).

The purpose of the preliminary screening is to determine whether a community facilities assessment is required. As recommended by the *CEQR Technical Manual*, a community facilities assessment is warranted if a project has the potential to result in either direct or indirect effects on community facilities. If a project would physically alter a community facility, whether by displacement of the facility or other physical change, this "direct" effect triggers the need to assess the service delivery of the facility and the potential effect that the physical change may have on that service delivery. New population added to an area as a result of a project would use existing services, which may result in potential "indirect" effects on service delivery. Depending

on the size, income characteristics, and age distribution of the new population, there may be effects on public schools, libraries, or child care centers.

DIRECT EFFECTS

The proposed project would not displace or otherwise directly affect any public schools, libraries, child care centers, health care facilities, or police and fire protection service facilities. Therefore an analysis of direct effects is not warranted.

INDIRECT EFFECTS

The *CEQR Technical Manual* provides thresholds for guidance in making an initial determination of whether a detailed analysis is necessary to determine potential impacts. **Table 4-1** lists those *CEQR Technical Manual* thresholds for each community facility analysis. If a proposal exceeds the threshold for a specific facility, a more detailed analysis is warranted. A preliminary screening analysis was conducted to determine if the proposed project would exceed established *CEQR Technical Manual* thresholds warranting further analysis. Based on that screening, a detailed analysis was undertaken for: public elementary, intermediate, and high schools; libraries; child care facilities; health care facilities; and police and fire protection services.

Table 4-1
Preliminary Screening Analysis Criteria

Community Facility	Threshold For Detailed Analysis
Public schools	More than 50 elementary/intermediate school or 150 high school students
Libraries	Greater than 5 percent increase in ratio of residential units to libraries in borough
Health care facilities (outpatient)	Introduction of sizeable new neighborhood where none existed before ¹
Child care centers (publicly funded)	More than 20 eligible children based on number of low- and low/moderate-income units by borough
Fire protection	Introduction of sizeable new neighborhood where none existed before ¹
Police protection	Introduction of sizeable new neighborhood where none existed before ¹
Notes: ¹ The <i>CEQR Technical Manual</i> cites the Hunter's Point South project as an example of a project that would introduce a sizeable new neighborhood where none existed before. The Hunter's Point South project would introduce approximately 6,650 new residential units to the Hunter's Point South waterfront in Long Island City, Queens.	
Source: <i>CEQR Technical Manual</i> .	

PUBLIC SCHOOLS

The *CEQR Technical Manual* recommends conducting a detailed analysis of public schools if a proposed action would generate more than 50 elementary/intermediate school students and/or more than 150 high school students. Based on the development of up to 5,850 residential units and the student generation rates provided by the *CEQR Technical Manual* (0.28 elementary, 0.12 intermediate, and 0.14 high school students per housing unit in Queens), the proposed project would generate approximately 3,159 total students—with approximately 1,638 elementary school students, 702 intermediate school students, and 819 high school students. This number of students warrants a detailed analysis of the proposed project's potential effects on elementary, intermediate, and high schools.

LIBRARIES

Potential impacts on libraries can result from an increased user population. According to the *CEQR Technical Manual*, a proposed action in Queens that generates a 5 percent increase in the average number of residential units served per branch (622 residential units in Queens) may cause a significant impact on library services and require further analysis. With up to 5,850 units, the proposed project exceeds this threshold, and a detailed analysis of libraries is warranted.

CHILD CARE CENTERS

According to the *CEQR Technical Manual*, if a proposed action would add more than 20 children eligible for publicly funded child care to the study area's child care facilities, a detailed analysis of its impact on publicly funded child care facilities is warranted. This threshold is based on the number of low-income and low/moderate-income units introduced by a proposed action.¹ In Queens, projects introducing 139 or more low- to moderate-income units would introduce 20 or more children eligible for publicly funded child care services. Because the proposed project is anticipated to introduce approximately 2,048 affordable housing units, a detailed child care analysis is warranted.

HEALTH CARE FACILITIES

Health care facilities include public, proprietary, and nonprofit facilities that accept government funds (usually in the form of Medicare and Medicaid reimbursements) and that are available to any member of the community. Examples of these types of facilities include hospitals, nursing homes, clinics, and other facilities providing outpatient health services.

According to the *CEQR Technical Manual*, if a proposed action would create a sizeable new neighborhood where none existed before, there may be increased demand on local public health care facilities, which may warrant further analysis of the potential for indirect impacts on outpatient health care facilities. The proposed project would result in the creation of a sizeable new neighborhood where none existed before. Therefore a detailed analysis of indirect effects on health care facilities is warranted.

POLICE AND FIRE SERVICES

The *CEQR Technical Manual* recommends detailed analyses of impacts on police and fire service in cases where a proposed action would affect the physical operations of, or direct access to and from, a precinct house or fire station, or where a proposed action would create a sizeable new neighborhood where none existed before. The proposed project would not result in these direct effects on either police or fire services, however it would create a sizeable new neighborhood where none existed before; therefore, a detailed analysis of indirect effects on police and fire services is warranted.

¹ Low-income and low/moderate-income are the affordability levels used in the *CEQR Technical Manual*. They are intended to approximate the financial eligibility criteria established by ACS, which generally corresponds to 200 percent of the Federal Poverty Level or 80 percent of area median income.

D. INDIRECT EFFECTS ON PUBLIC ELEMENTARY, INTERMEDIATE, AND HIGH SCHOOLS

METHODOLOGY

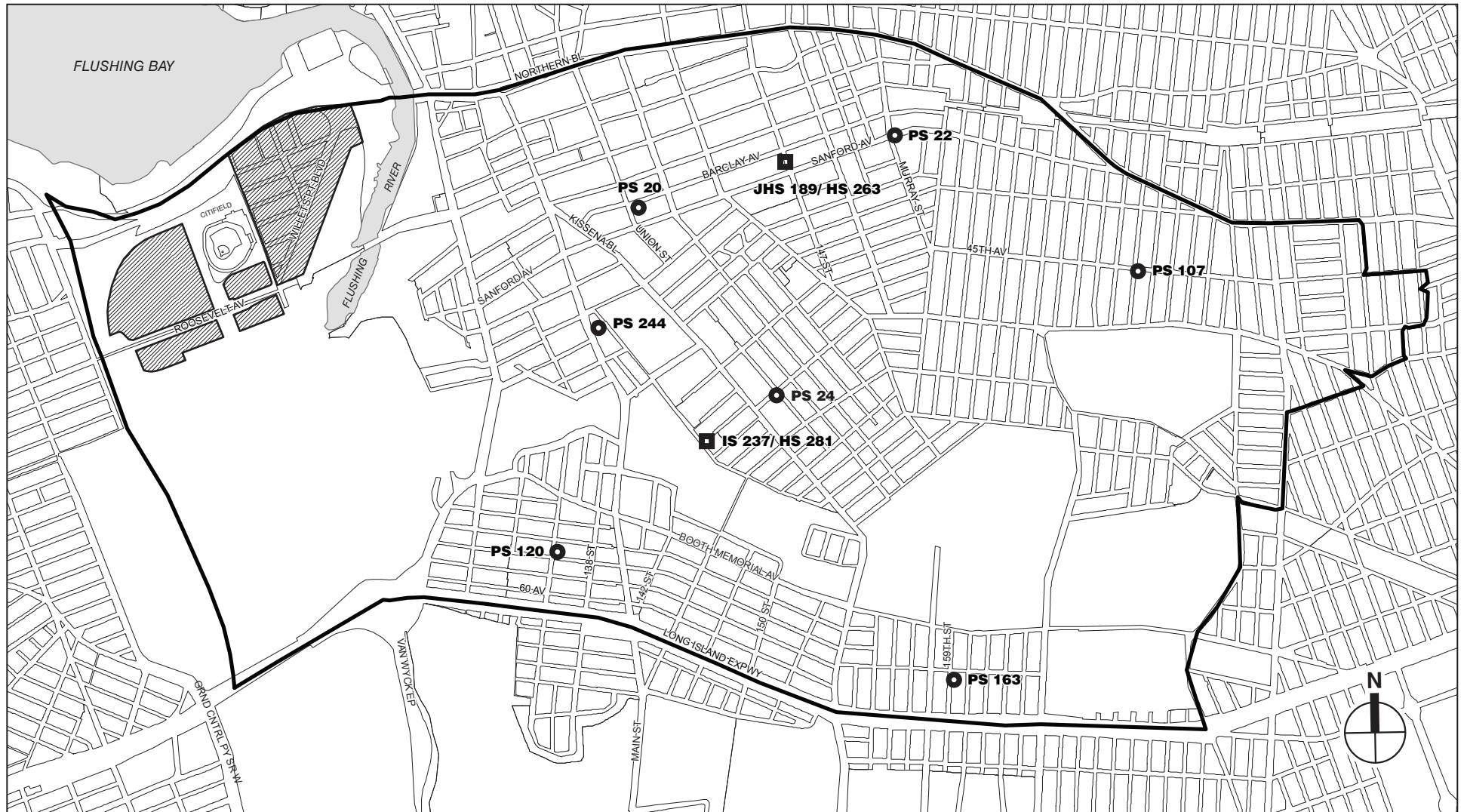
This analysis assesses the potential effects of the proposed project on public elementary, intermediate, and high schools serving the project site. Following methodologies in the *CEQR Technical Manual*, the study area for the analysis of elementary and intermediate schools is the school districts' "sub-district" (also known as "regions" or "school planning zones") in which the project is located. The proposed project site is located in Sub-district 2 of CSD 25 (see **Figure 4-1**). High school students routinely travel outside their neighborhoods for school; therefore, the *CEQR Technical Manual* provides for environmental review on a borough-wide basis.

As required by CEQR, this schools analysis uses the most recent DOE data on school capacity, enrollment, and utilization rates for elementary and intermediate schools in the sub-district study area and SCA projections of future enrollment. Specifically, the existing conditions analysis uses data provided in the DOE's *Utilization Profiles: Enrollment/Capacity/Utilization, 2011-2012* edition. Future conditions are then predicted based on SCA enrollment projections and data obtained from SCA's Capital Planning Division on the number of new housing units and students expected at the sub-district and borough levels. The future utilization rate for school facilities is calculated by adding the estimated enrollment from proposed residential developments in the schools' study area to DOE's projected enrollment, and then comparing that number with projected school capacity. DOE does not include charter school enrollment in its enrollment projections. DOE's enrollment projections for years 2009 through 2018, the most recent data currently available, are posted on the SCA website.¹ The latest available enrollment projections to 2018 have been used in this analysis to project student enrollment to 2032. These enrollment projections are based on broad demographic trends and do not explicitly account for discrete new residential developments planned for the study area. Therefore, the estimated student population from the other new development projects expected to be completed within the study area have been obtained from SCA's Capital Planning Division and are added to the projected enrollment to ensure a more conservative prediction of future enrollment and utilization. In addition, any new school projects identified in the DOE Five-Year Capital Plan are included if construction has begun.

The effect of the new students introduced by the proposed project on the capacity of schools within the study areas is then evaluated. According to the *CEQR Technical Manual*, a significant adverse impact may occur if a proposed action would result in both of the following conditions:

1. A utilization rate of the elementary and/or intermediate schools in the sub-district study area, or high schools in the borough study area, that is equal to or greater than 100 percent in the With Action condition; and
2. An increase of five percentage points or more in the collective utilization rate between the No Action and With Action conditions.

¹ Schools.nyc.gov. Enrollment projections by the Grier Partnership were used.



- Project Site
- Community School District 25,
Subdistrict 2 Boundary
- Elementary School
- Middle School/ High School

0 2000 FEET
SCALE

EXISTING CONDITIONS*ELEMENTARY SCHOOLS*

As shown in **Figure 4-1**, seven elementary schools serve CSD 25/Sub-District 2. As shown in **Table 4-2**, this sub-district has a total enrollment of 5,780 students, or 108 percent of capacity, with a shortage of 433 seats according to DOE's 2011-2012 school year enrollment figures, which are the most recent data currently available.

Table 4-2
Public Schools Serving the Special Willets Point District,
CSD 25 Sub-District 2 Enrollment and Capacity Data,
2010-2011 School Year

Name	Address	Enrollment	Capacity	Available Seats	Utilization
Elementary Schools					
PS 20 John Bowne School	142-30 Barclay Ave	1,462	1,338	-124	109%
PS 244	137-20 Franklin Ave	373	292	-81	128%
PS 22 Thomas Jefferson School	153-01 Sanford Ave	694	666	-28	104%
PS 22 Transportable	153-01 Sanford Ave	56	56	0	100%
PS 24 Andrew Jackson School	141-11 Holly Ave	741	615	-126	120%
PS 24 Transportable	141-11 Holly Ave	102	64	-38	159%
PS 107 Thomas A Dooley	167-02 45 Ave	934	898	-36	104%
PS 120 Queens School	58-01 136 St	873	938	65	93%
PS 163 Flushing Heights School	159-01 59 Ave	478	451	-27	106%
PS 163 Transportable	159-01 59 Ave	99	61	-38	162%
Sub-District 2 Total		5,780	5,406	-433	108%
Intermediate Schools					
East-West School Of International Studies (IS Organization)	46-21 Colden St	253	232	-21	109%
IS 237	46-21 Colden St	1188	1123	-65	106%
JHS 189 Daniel Carter Beard School	144-80 Barclay Ave	814	804	-10	101%
Sub-District 2 Total		2,240	2,165	-96	104%
High Schools					
East-West School Of International Studies (HS Organization)	46-21 Colden St	363	333	-30.09	109%
Flushing International High School	144-80 Barclay Ave	422	462	40	91%
Sub-District 2 Total		785	795	10	99%
Queens Total		84,225	76,524	-7,701	110%
Notes: 1. See Figure 4-1 . 2. Capacity is the Target Capacity (assumes 20 children per class for grades K-3, 28 children per class for grades 4-8 and 30 children per class for grades 9-12). 3. Utilization rate equals school enrollment divided by capacity. Sources: SCA Utilization Profiles: Enrollment/Capacity/Utilization, 2011-2012.					

INTERMEDIATE SCHOOLS

As shown in **Figure 4-1** and **Table 4-2**, three intermediate schools serve CSD 25/Sub-District 2. Total enrollment at these intermediate schools is 2,240 students, or 104 percent of capacity, with a shortage of 96 seats.

HIGH SCHOOLS

High school students may attend any of the schools within any borough of the city, based on seating availability and admissions criteria.

Willets Point Development

Throughout Queens, total high school enrollment for the 2011–2012 school year was approximately 84,225 students, with an overall utilization rate of 110 percent, and a shortage of 7,701 seats. There are two high schools located within CSD 25/Sub-District 2, which are listed below in **Table 4-2** and shown in **Figure 4-1** for informational purposes.

THE FUTURE WITHOUT THE PROPOSED PROJECT

ENROLLMENT PROJECTIONS

As required by CEQR, the assessment of No Action conditions uses SCA enrollment projections. SCA provides future enrollment projections by district for up to 10 years. The latest available enrollment projections to 2018 have been used in this analysis to project student enrollment for the proposed project's three build years (2018, 2028, and 2032). SCA projects that elementary enrollment will increase by 54 percent in CSD 25/Sub-District 2. Intermediate enrollment in the sub-district will increase by 6 percent, and high school enrollment in Queens will decrease by 14 percent.

These enrollment projections focus on the natural growth of the city's student population (through births and grade retention) and do not account for new residential developments planned for the sub-district study areas (No Action projects). Therefore, the future utilization rate for school facilities is calculated by adding the estimated enrollment from proposed residential developments in the school study areas (as provided by SCA's Capital Planning Division) to SCA's projected enrollment, and then comparing that number with projected school capacity.

Table 4-3 outlines the estimated number of new public elementary, intermediate, and high school students generated as a result of development in the No Action condition, which has been provided by SCA, and is based on student generation rates listed in Table 6-1a of the *CEQR Technical Manual* (0.28 elementary students, 0.12 intermediate school students, and 0.14 high school students per residential unit in Queens).

Table 4-3
Projected Estimated Number of New Students
Introduced by Development in the No Action Condition

Study Area	Projected New Students		
	Elementary	Intermediate	High School
Sub-district 2 of CSD 25	783	336	N/A
Borough of Queens	N/A	N/A	4,310 ⁽¹⁾
Notes: ⁽¹⁾ Does not include Halletts Point Rezoning, which would introduce 2,573 housing units (estimated 360 high school students) to Astoria, Queens.			
Source: SCA Capital Planning Division.			

PROJECTED SCHOOL CAPACITY

According to the DOE *Proposed 2010-2014 Five-Year Capital Plan—February 2013 Amendment*, there is no new school capacity under construction within the study area. However, future capital plans may include additional schools, if needed, to service the area.

ANALYSIS

The most current DOE enrollment projections extend to 2018, and the most current DOE capital plan extends to 2014. Therefore, these 2014 and 2018 figures are used as the basis for No Build conditions for all three of the proposed project's build years—2018, 2028, and 2032. For the

analysis of high schools, estimated enrollment from the planned Halletts Point rezoning was added to the base figures from DOE. The Halletts Point rezoning project is anticipated to introduce approximately 2,573 housing units (an estimated 360 high school students) to the Astoria neighborhood of Queens and is not included in DOE's estimation of future enrollment.

Elementary Schools

As shown in **Table 4-4**, elementary schools in CSD 25/Sub-District 2 will be over capacity in the No Action condition in 2018, 2028, and 2032. The sub-district will operate at 188 percent utilization, with a deficit of 4,554 seats.

Table 4-4
Estimated Public School Enrollment, Capacity, and Utilization:
No Action Condition (2018, 2028, and 2032)

Study Area	Projected Enrollment ¹	Students Introduced by Residential Development in No Action	Total No Action Enrollment	Capacity	Available Seats	Utilization
Elementary Schools (2018, 2028, and 2032)						
Sub-district 2 of CSD 25	8,969	783 ⁽²⁾	9,752	5,198	-4,554	188%
Intermediate Schools (2018, 2028, and 2032)						
Sub-district 2 of CSD 25	2,397	336 ⁽²⁾	2,733	2,159	-575	127%
High Schools (2018)						
Borough of Queens	72,053	4,310 ⁽³⁾	76,363	77,997 ⁽⁴⁾	1,634	98%
High Schools (2028 and 2032)						
Borough of Queens	72,053	4,670 ⁽⁵⁾	76,724	77,997 ⁽⁴⁾	1,273	98%
Notes: ¹ Elementary and intermediate school enrollment in each sub-district study area was calculated by applying SCA supplied percentages for each sub-district to the relevant district enrollment projections. For CSD 25/Sub-District 2, the district's 2018 elementary projection of 24,220 was multiplied by 37.03 percent. The sub-district's intermediate projection of 8,207 was multiplied by 29.21 percent. High school enrollment utilizes the 2018 projection of 72,053. ² Based on the number of additional students expected within the sub-district in the future without the proposed project (obtained from SCA). ³ Based on enrollment estimates for projected housing starts in CSD 24-30 (from SCA's <i>Projected New Housing Starts as Used in 2009-2018 Enrollment Projection</i>). ⁴ High school capacity for Queens includes 1,473 high school seats in construction or completed in Queens according to the 2010–2014 Capital Plan, which includes projected high school capacity in IS/HS 404. ⁵ Includes 360 high school students anticipated as a result of the Halletts Point Rezoning project, which would introduce approximately 2,576 housing units to Astoria, Queens. Sources: DOE <i>Enrollment Projections 2009-2018 by the Grier Partnership</i> ; DOE, <i>Utilization Profiles: Enrollment/Capacity/Utilization, 2011-2012</i> ; DOE 2010-2014 <i>Five-Year Capital Plan, Amendment</i> , February 2013; School Construction Authority.						

Intermediate Schools

As shown in **Table 4-4**, intermediate schools in CSD 25/Sub-District 2 will be over capacity in the No Action condition in 2018, 2028, and 2032. The sub-district will operate at 127 percent utilization, with a deficit of 575 seats.

High Schools

As shown in **Table 4-4**, high schools in Queens will be operating at approximately 98 percent capacity in 2018, 2028, and 2032, with a surplus of 1,634 seats in 2018, and a surplus of 1,273 seats in 2028 and 2032.

PROBABLE IMPACTS OF THE PROPOSED PROJECT

The proposed project would develop a total of 5,850 residential units, with 2,490 to be completed by 2028 and another 3,360 to be completed by 2032. Student generation and school utilization levels are discussed below for each of the proposed project's three build years.

Willets Point Development

PHASE IA (2018)

The proposed project would not result in any new residential development by 2018; therefore utilization rates would remain the same as in the No Action condition.

PHASE IB (2028)

By 2028, the proposed project would add approximately 2,490 residential units to the study area. Based on the CEQR student generation rates, the proposed project would introduce approximately 697 elementary school students, 299 intermediate school students, and 349 high school students into the study area by 2028 (see **Table 4-5**).

Table 4-5
Estimated Number of Students Introduced in Sub-district 2 of CSD 25:
With Action Condition, 2018, 2028, 2032

Development Phase (Year)	Housing Units	Elementary Students	Intermediate Students	High School Students
Phase IA (2018)	0	0	0	0
Phase IB (2028)	2,490	697	299	349
Phase 2 (2032)	3,360	941	403	470
Total	5,850	1,638	702	819

Sources: CEQR Technical Manual, Table 6-1a.

As described in Chapter 1, “Project Description,” Phase 1B of the proposed project would include a public school (grades kindergarten through eighth) of approximately 105,000 square feet, subject to approvals and requirements of SCA. Provision of the school in Phase 1B would be ensured through a contractual agreement. Preliminary discussions have been held among QDG, EDC, and SCA with regard to the development terms of a new K-Grade 8 facility that would address the Phase 1B project-generated school seat demand. It is expected that at a minimum QDG will provide the core and shell of the building and may provide additional fit-out of the facility. If SCA must provide some or all of the costs of the fit-out of the school, funds would need to be provided from the SCA capital budget. QDG would coordinate with SCA to determine whether the school as currently planned would accommodate all of the project-generated elementary and intermediate students (996 students). If necessary, the school would be expanded, and corresponding reductions in square footage would be made elsewhere in the development program. Therefore, the Phase 1B school would accommodate all project-generated demand for elementary and intermediate school seats.

Elementary Schools

In 2028 with the proposed project, 10,449 students would be enrolled at elementary schools within Sub-district 2 of CSD 25. Phase 1B of the proposed project includes the development of a new public school (serving kindergarten through eighth grades) that would accommodate the elementary school students generated by the proposed project. Taking into account both the project-generated elementary students and the proposed project school, elementary schools within Sub-district 2 of CSD 25 would have capacity for 5,895 students and operate at 177 percent, with a shortfall of 4,554 seats.

As noted above, a significant adverse impact may occur if a proposed action would result in both of the following conditions: (1) a utilization rate of the elementary schools in the sub-district study area that is equal to or greater than 100 percent in the future without the proposed action;

and (2) an increase of five percentage points or more in the collective utilization rate between the future without the proposed action and future with the proposed action conditions. With the development of the proposed public school in the District, the proposed project would introduce enough capacity to accommodate all Phase 1B project-generated elementary school students. As a result, the proposed project would decrease the elementary school utilization rate by 11 percentage points (from 188 percent in the No Action condition to 177 percent with the proposed project). Because the proposed project would not increase the elementary school utilization rate, the proposed project would not result in a significant adverse impact on elementary schools in the study area in 2028.

Intermediate Schools

In 2028 with the proposed project, 3,032 students would be enrolled at intermediate schools within Sub-district 2 of CSD 25. As indicated above, Phase 1B of the proposed project includes the development of a new public school that would accommodate the intermediate school students generated by the proposed project. Taking into account the project-generated students and new seats, intermediate schools within Sub-district 2 of CSD 25 would have capacity for 2,458 students and operate at 123 percent, with a shortfall of 575 seats (see **Table 4-6**).

Table 4-6
Estimated Public School Enrollment, Capacity, and Utilization:
With Action Condition, 2028

Study Area	No Action Enrollment	Students Introduced by Phase 1B	Total With Action Enrollment	Capacity	Available Seats	Utilization	Change in Utilization Compared with No Action
Elementary Schools							
Sub-district 2 of CSD 25	9,752	697	10,449	5,895	-4,554	177%	-11%
Intermediate Schools							
Sub-district 2 of CSD 25	2,733	299	3,032	2,458	-575	123%	-4%
High Schools							
Borough of Queens	76,724	349	77,073	77,997	924	98%	0%
Sources: DOE Enrollment Projections 2009-2018 by the Grier Partnership; DOE, Utilization Profiles: Enrollment/Capacity/Utilization, 2011-2012; DOE 2010-2014 Five-Year Capital Plan, Amendment, February 2013; School Construction Authority.							

With the development of the proposed public school in the District, the proposed project would introduce enough capacity to accommodate all Phase 1B project-generated intermediate school students. As a result, the proposed project would decrease the intermediate school utilization rate by four percentage points (from 127 percent in the No Action condition to 123 percent with the proposed project). Because the proposed project would not increase the intermediate school utilization rate, the proposed project would not result in a significant adverse impact on intermediate schools in the study area in 2028.

High Schools

In the 2028 With Action condition, the total enrollment of high school students in Queens would increase by 349 students to 77,073 (98 percent utilization), resulting in a surplus of 924 seats. The new high school students introduced by the proposed project would increase utilization in the borough by less than one percent over the No Action condition (see **Table 4-6**). As the proposed project would not increase the utilization rate by 5 percent at the borough level, it would not result in a significant adverse impact on high schools in 2028.

Willels Point Development

PHASE 2 (2032)

Phase 2 of the proposed project would add another approximately 3,360 residential units to the District, bringing the total number of proposed project units to 5,850. Based on the CEQR student generation rates, the proposed project would introduce approximately 941 elementary school students, 403 intermediate school students, and 470 high school students into the study area during Phase 2, bringing the total number of project-generated students to 1,638 elementary students, 702 intermediate students, and 819 high school students (see **Table 4-7**).

Table 4-7

**Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization:
With Action Condition, 2032**

Study Area	No Action Enrollment	Students Introduced by Phase 2	Total With Action Enrollment	Capacity	Available Seats	Utilization	Change in Utilization Compared with No Action
Elementary Schools							
Sub-district 2 of CSD 25	9,752	1,638	11,390	6,836	-4,554	167%	-22%
Intermediate Schools							
Sub-district 2 of CSD 25	2,733	702	3,435	2,861	-575	120%	-7%
High Schools							
Borough of Queens	76,724	819	77,543	77,997	454	99%	1%
Sources: DOE Enrollment Projections 2009-2018 by the Grier Partnership; DOE, Utilization Profiles: Enrollment/Capacity/Utilization, 2011-2012; DOE 2010-2014 Five-Year Capital Plan, Amendment, February 2013; School Construction Authority.							

As described in Chapter 1, “Project Description,” Phase 2 of the proposed project would include a school of approximately 125,000 square feet, separate from the 105,000 square foot public school to be developed within the District during Phase 1B. Provision of the school would be ensured through contractual agreement with the future designated developer for Phase 2. The designated developer for Phase 2 would be required by EDC to coordinate with SCA to determine whether the school as currently planned would accommodate all of the Phase 2 project-generated elementary and intermediate students. Therefore, the schools developed in Phase 1B and Phase 2 would accommodate all project-generated demand for elementary and intermediate school seats.

Elementary Schools

In 2032 with the proposed project, 11,390 students would be enrolled at elementary schools within Sub-district 2 of CSD 25. As described above, Phase 2 of the proposed project would add another school, separate from the public school built during Phase 1B, accommodating the additional elementary school students that would be generated by Phase 2 of the project. Accounting for both the project-generated elementary students and the proposed project Phase 2 school addition, elementary schools within Sub-district 2 of CSD 25 would have capacity for 6,836 students and operate at 167 percent, with a shortfall of 4,554 seats.

Because the proposed project would introduce enough capacity to accommodate all Phase 2 project-generated elementary school students, the proposed project would decrease the intermediate school utilization rate by 21 percentage points (from 188 percent in the No Action condition to 166 percent with the proposed project). Because the proposed project would not increase the elementary school utilization rate, the proposed project would not result in a significant adverse impact on elementary schools in the study area in 2032.

Intermediate Schools

In 2032 with the proposed project, 3,435 students would be enrolled at intermediate schools within Sub-district 2 of CSD 25. The Phase 2 proposed school would accommodate the intermediate school students generated by Phase 2 of the proposed project. Taking into account the project-generated students and new seats, intermediate schools within Sub-district 2 of CSD 25 would have capacity for 2,861 students and operate at 120 percent, with a shortfall of 575 seats (see **Table 4-7**).

With the development of the proposed public school in the District, the proposed project would introduce enough capacity to accommodate all Phase 2 project-generated intermediate school students. As a result, the proposed project would decrease the intermediate school utilization rate by seven percentage points (from 127 percent in the No Action condition to 120 percent with the proposed project). Because the proposed project would not increase the intermediate school utilization rate, the proposed project would not result in a significant adverse impact on intermediate schools in the study area in 2032.

High Schools

Phase 2 of the proposed project would generate an additional 470 high school students, bringing the total enrollment of high school students in Queens to 77,543 (99% utilization) in 2032, resulting in a surplus of 454 seats. The new high school students introduced by the proposed project would increase utilization in the borough by one percent over the No Action condition (see **Table 4-7**). As the proposed project would not increase the utilization rate by 5 percent at the borough level, it would not result in a significant adverse impact on high schools in 2032.

E. INDIRECT EFFECTS ON LIBRARIES

METHODOLOGY

According to the *CEQR Technical Manual*, service areas for neighborhood branch libraries are based on the distance that residents would travel to use library services, typically not more than $\frac{3}{4}$ mile (this is referred to as the library's "catchment area"). This libraries analysis compares the population generated by the proposed project with the catchment area population of libraries available within an approximately $\frac{3}{4}$ -mile area around the project site.

To determine the existing population of each library's catchment area, 2010 U.S. Census data were assembled for all census tracts that fall primarily within $\frac{3}{4}$ -mile of each library. The catchment area population in the No Action condition was estimated by multiplying the number of new residential units in No Action projects located within the $\frac{3}{4}$ -mile catchment area by an average household size of 2.82 persons.¹ The catchment area population in the With Action condition was estimated by adding the anticipated population that would result from development on the project site.

New population in the No Action and With Action conditions was added to the existing catchment area population. According to the *CEQR Technical Manual*, if a proposed project would increase the libraries' catchment area population by 5 percent or more, and this increase would impair the delivery of library services in the study area, a significant impact could occur.

¹ Census 2000, average household size for Queens.

EXISTING CONDITIONS

The project site is served by the Queens Library system, which serves all of Queens. The Queens Library is an autonomous library system, guided by a 19-member Board of Trustees appointed by the Mayor of the City of New York and the Queens Borough President. The system serves a population of 2.3 million from 62 locations and seven Adult Learning Centers. It circulates among the highest numbers of books and other library materials in the country.

The Flushing Library and the Corona Library are the two branches of the Queens Library system located within ¾-mile of the project site (see **Table 4-8** and **Figure 4-2**).

Table 4-8
Public Libraries Serving the Project Site

Map No. ⁽¹⁾	Library Name	Address	Holdings	Catchment Area Population	Holdings per Resident
1	Flushing Library	41-17 Main Street	530,000	80,493	6.58
2	Corona Library	38-23 104th	91,613	115,148	0.80
Total:			621,613	195,641	3.18
3	Mitchell-Linden Library	29-42 Union Street	85,161	26,160	3.26

Notes:
⁽¹⁾ Please refer to **Figure 4-2** for library locations. Mitchell-Linden Library is located outside of the study area boundary.
⁽²⁾ The catchment area population for each library includes the area within ¾-mile of the library.

Sources: Queens Library; U.S. Census Bureau, 2010 Census, NYC DCP Selected Facilities and Program Sites.

The Flushing Library is located to the east of the project site, near downtown Flushing, at the intersection of Kissena Boulevard and Main Street. In addition to a wide selection of fiction and nonfiction books, periodicals, and audio-visual media, the Flushing Library has a job information center, an international language collection that includes 12 languages ranging from French to Urdu, and 60 computers for public Internet access. Users of the Flushing Library can request a volume from any of the other libraries in the Queens Library system through inter-library loan.

The Corona Library is located west of the project site, on 104th Street in North Corona. It offers a range of books, periodicals, and audio-visual media, and offers free computer classes, as do all branches of the Queens Library.

Table 4-8 above provides the catchment area population for the Flushing and Corona Libraries and the total catchment area population served by the two libraries. Combined, the two libraries in the study area have a total of approximately 621,613 holdings. With a catchment area population of 195,641, the combined catchment area has a holdings-to-resident ratio of 3.18.

In addition, the Mitchell-Linden Library is located just beyond the study area boundary (see **Figure 4-2**). Residents in the northeastern portion of the study area would be likely to use this branch in addition to the services provided by the Flushing Library. The Mitchell-Linden Library has approximately 85,161 holdings. With a catchment area population of 26,160, the Mitchell-Linden Library has a holdings-to-resident ratio of 3.26.

THE FUTURE WITHOUT THE PROPOSED PROJECT

In the No Action condition, the two existing libraries will continue to serve the study area. No changes to the holdings of these facilities are expected for the purpose of this analysis.

The catchment area population of each library will increase as a result of development projects completed in the No Action condition, all of which are expected to be complete by 2018.



Overall, new residential units will introduce approximately 9,814 new residents to the catchment areas by 2018, increasing the catchment area population to 205,455. As shown in **Table 4-9**, the holdings-per-resident ratio will decrease by approximately 0.63 for the Flushing Library and 0.01 for the Corona Library. Overall, the holdings-per-resident ratio for both catchment areas combined will decrease from 3.18 to 3.03.

Table 4-9
No Action Condition (2018, 2028, and 2032):
Catchment Area Population

Library Name	Existing Catchment Area Population	New Residents in the No Action Condition	New Catchment Area Population	New Holdings per Resident in the No Action Condition
Flushing Library	80,493	8,590	89,083	5.95
Corona Library	115,148	1,224	116,372	0.79
TOTAL	195,641	9,814	205,455	3.03
Note: ¹ The catchment area population for each library includes the area within ¼ mile of the library.				
Sources: Queens Library; U.S. Census Bureau, 2010 Census, AKRF, Inc.				

PROBABLE IMPACTS OF THE PROPOSED PROJECT

According to the *CEQR Technical Manual*, if a proposed project increases the study area population by 5 percent or more as compared with the No Action condition, this increase may impair the delivery of library services in the study area, and a significant adverse impact could occur.

PHASE 1A (2018)

The proposed project would not result in any new residential development by 2018; therefore the holdings-per-resident ratios would remain the same as in the No Action condition.

PHASE 1B (2028)

By 2028, Phase 1B of the proposed project would introduce a total of 2,490 residential units, which would add approximately 7,022 residents to the library study area. **Table 4-10** provides the population increase and the change in the holding-per-resident ratio for the Flushing Library and Corona Library catchment areas and the combined catchment area for the two libraries. The figures presented for each of the individual libraries conservatively add the entire proposed project population to the catchment area population for that particular library. The figures presented as totals add the proposed project population to the population for the combined catchment area population for the two libraries, resulting in a lower percent increase in population.

Table 4-10
Phase 1B (2028) With Action Condition: Catchment Area Population

Library Name	Catchment Area Population – No Action Condition	Population Increase due to the Proposed Project	Catchment Area Population – With Action Condition	Population Increase	Holdings per Resident – With Action Condition
Flushing Library	89,083	7,022	96,105	7.9%	5.51
Corona Library	116,372	7,022	123,394	6.0%	0.74
TOTAL	205,455	7,022	212,476	3.4%	2.93
Note: The catchment area population for each library includes the area within ¼ mile of the library.					
Sources: Queens Library; U.S. Census Bureau, 2010 Census, AKRF, Inc.					

Willels Point Development

With this additional population, the Flushing Library would serve 96,105 residents (a 7.9 percent increase) and the Corona Library would serve 123,394 residents (a 6.0 percent increase). The population of the combined catchment area would increase 3.4 percent to 212,476.

Overall, the holdings per resident ratio for the combined study area would decrease from 3.03 under the No Action condition to 2.93 with the proposed project in 2028. This ratio would decrease to 5.51 for the Flushing Library and to 0.74 for the Corona Library. For both the Flushing Library and Corona Library, the catchment area population increase would exceed 5 percent, which may represent a significant adverse impact on library services according to the *CEQR Technical Manual*. However, many of the residents in the catchment areas also reside within the catchment areas for other nearby libraries, such as the Langston Hughes Library (which is approximately 0.5 miles from the Corona Library) and the Mitchell Linden Library (which is approximately 0.8 miles from the Flushing Library), and would also be served by these libraries. Residents of the study area would have access to the entire Queens Library system through the inter-library loan system and could have volumes delivered directly to their nearest library branch. In addition, residents would also have access to libraries near their place of work. Lastly, the program for Phase 1B provides for 25,000 square feet of as-yet-unprogrammed community facility space which could potentially be utilized as a branch library or auxiliary facility for the Queens Library system. Therefore, the population introduced by the proposed project would not impair the delivery of library services in the study area, and the proposed project would not result in any significant adverse impacts on public libraries in 2028.

PHASE 2 (2032)

By 2032, the proposed project would introduce a total of 5,850 residential units, which would add approximately 16,497 residents to the library study area. **Table 4-11** provides the population increase and the change in the holding-per-resident ratio for the Flushing Library and Corona Library catchment areas and the combined catchment area for the two libraries. The figures presented for each of the individual libraries conservatively add the entire proposed project population to the catchment area population for that particular library. The figures presented as totals add the proposed project population to the population for the combined catchment area population for the two libraries, resulting in a lower percent increase in population.

Table 4-11
Phase 2 (2032) With Action Condition: Catchment Area Population

Library Name	Catchment Area Population – No Action Condition	Population Increase due to the Proposed Project	Catchment Area Population – With Action Condition	Population Increase	Holdings per Resident – With Action Condition
Flushing Library	89,083	16,497	105,580	18.5%	5.02
Corona Library	116,372	16,497	132,869	14.2%	0.69
TOTAL	205,455	16,497	221,952	8.0%	2.80
Note: The catchment area population for each library includes the area within ¼ mile of the library.					
Sources: Queens Library; U.S. Census Bureau, 2010 Census, AKRF, Inc.					

With this additional population, the Flushing Library would serve 105,580 residents (an 18.5 percent increase) and the Corona Library would serve 132,869 residents (a 14.2 percent increase). The population of the combined catchment area would increase 8.0 percent to 221,952.

Overall, the holdings per resident ratio for the combined study area would decrease from 3.03 under the No Action condition to 2.80 with the proposed project in 2032. This ratio would decrease to 5.02 for the Flushing Library and to 0.69 for the Corona Library. For both the Flushing Library and Corona Library, the catchment area population increase would exceed five percent, which may represent a significant adverse impact on library services according to the *CEQR Technical Manual*. However, as noted above, many of the residents in the catchment areas also reside within the catchment areas for other nearby libraries and would also be served by these libraries, residents of the study area would have access to the entire Queens Library system through the inter-library loan system, and would also have access to libraries near their places of work. In consideration of the above, the lead agency, in consultation with the Queens Public Library, has determined that the additional population introduced by the proposed project would impair the delivery of library services in the study area in 2032. Therefore, Phase 2 of the proposed project would result in a significant adverse impact on library services. To mitigate this impact, adequate space¹ within the 125,000 square feet of as-yet-unprogrammed community facility space in the program for Phase 2 ~~would be made available to could potentially~~ be utilized as a branch library or auxiliary facility for the Queens Library system, or additional volumes or programs to accommodate new users could be provided if adequate space in nearby branches exists. Although no developer has yet been designated for Phase 2, the provision of additional library space in Phase 2 would be based on further consultation with Queens Public Library and the lead agency.

F. INDIRECT EFFECTS ON CHILD CARE SERVICES

METHODOLOGY

ACS provides subsidized child care services through center-based group child care, family-based child care, informal child care, and Head Start. Publicly-financed child care services are available for income-eligible children up to the age of 12. In order for a family to receive subsidized child care services, the family must meet specific financial and social eligibility criteria that are determined by federal, state, and local regulations. In general, children in families that have incomes at or below 200 percent of the Federal Poverty Level (FPL), depending on family size, are financially eligible, although in some cases eligibility can go up to 275 percent FPL. The family must also have an approved “reason for care,” such as involvement in a child welfare case or participation in a “welfare-to-work” program. Head Start is a federally-funded child care program that provides children with half-day or full-day early childhood education; program eligibility is limited to families with incomes 130 percent or less of the FPL.

Most children are served through contract with private and nonprofit organizations that operate child care programs throughout the city. Registered or licensed providers can offer family-based child care in their homes. Informal child care can be provided by a relative or neighbor for no more than two children. Children aged two months through 12 years old can be cared for either in group child care centers licensed by the Department of Health (DOH) or in homes of registered child care providers. ACS also issues vouchers to eligible families, which may be used by parents to pay for child care from any legal child care provider in the City.

Publicly-financed child care centers, under the auspices of the New York City Division for Child Care and Head Start (CCHS) within ACS, provide care for the children of income-eligible households. Space for one child in such child care centers is termed a “slot.” These slots may be in group child care

¹ In other projects, 15,000–20,000 square feet of community facility space has been adequate for the operation of a branch library.

or Head Start centers, or they may be in the form of family-based child care in which 7 to 12 children are placed under the care of a licensed provider and an assistant in a home setting.

Since there are no locational requirements for enrollment in child care centers, and some parents or guardians choose a child care center close to their employment rather than their residence, the service areas of these facilities can be quite large and are not subject to strict delineation in order to identify a study area. However, according to the current methodology for child care analyses in the *CEQR Technical Manual*, the locations of publicly funded group child care centers within 1½ miles or so of the project site should be shown, reflecting the fact that the centers closest to the project site are more likely to be subject to increased demand. Current enrollment data for the child care and Head Start centers closest to the project site was gathered from ACS.

The child care enrollment in the No Action condition was estimated by multiplying the number of new low-income and low/moderate-income housing units expected in the 1½-mile study area by the *CEQR Technical Manual* multipliers for estimating the number of children under age six eligible for publicly funded child care services (Table 6-1b). For Queens, the multiplier estimates 0.140 public child care-eligible children under age six per low- and low/moderate-income household.¹ The estimate of new public child care-eligible children was added to the existing child care enrollment to estimate enrollment in the No Action condition.

The child care-eligible population introduced by the proposed project was also estimated using the *CEQR Technical Manual* child care multipliers. The population of children under age six eligible for publicly funded child care was then added to the child care enrollment calculated in the No Action condition. According to the *CEQR Technical Manual*, if a proposed action would result in a demand for slots greater than remaining capacity of child care centers, and if that demand constitutes an increase of 5 percent or more of the collective capacity of the child care centers serving the area of the proposed action, a significant adverse impact may result.

EXISTING CONDITIONS

There are seven publicly funded group child care facilities and five Head Start facilities within the study area (see **Figure 4-3**). The child care and Head Start facilities have a total capacity of 837 slots and have 21 available slots (97 percent utilization). **Table 4-12** shows the current capacity and enrollment for these facilities. Family-based child care facilities and informal care arrangements provide additional slots in the study area, but these slots are not included in the quantitative analysis.

THE FUTURE WITHOUT THE PROPOSED PROJECT

In the No Action condition, known planned or proposed development projects will introduce approximately 543 new affordable housing units, all of which are expected to be complete by 2018.² Based on the CEQR generation rates for the projection of children eligible for publicly funded child care multipliers, this amount of development would introduce approximately 76 new children under the age of six who would be eligible for publicly funded child care programs.

¹ Low-income and low/moderate-income are the affordability levels used in the *CEQR Technical Manual*. They are intended to approximate the financial eligibility criteria established by ACS, which generally corresponds to 200 percent of FPL or 80 percent of AMI.

² Assumes that 20 percent of units in developments of 20 or more units would be occupied by low- or low/moderate-income households meeting the financial and social criteria for publicly funded child care. Excludes the Sky View Parc project, which will include luxury condominiums.

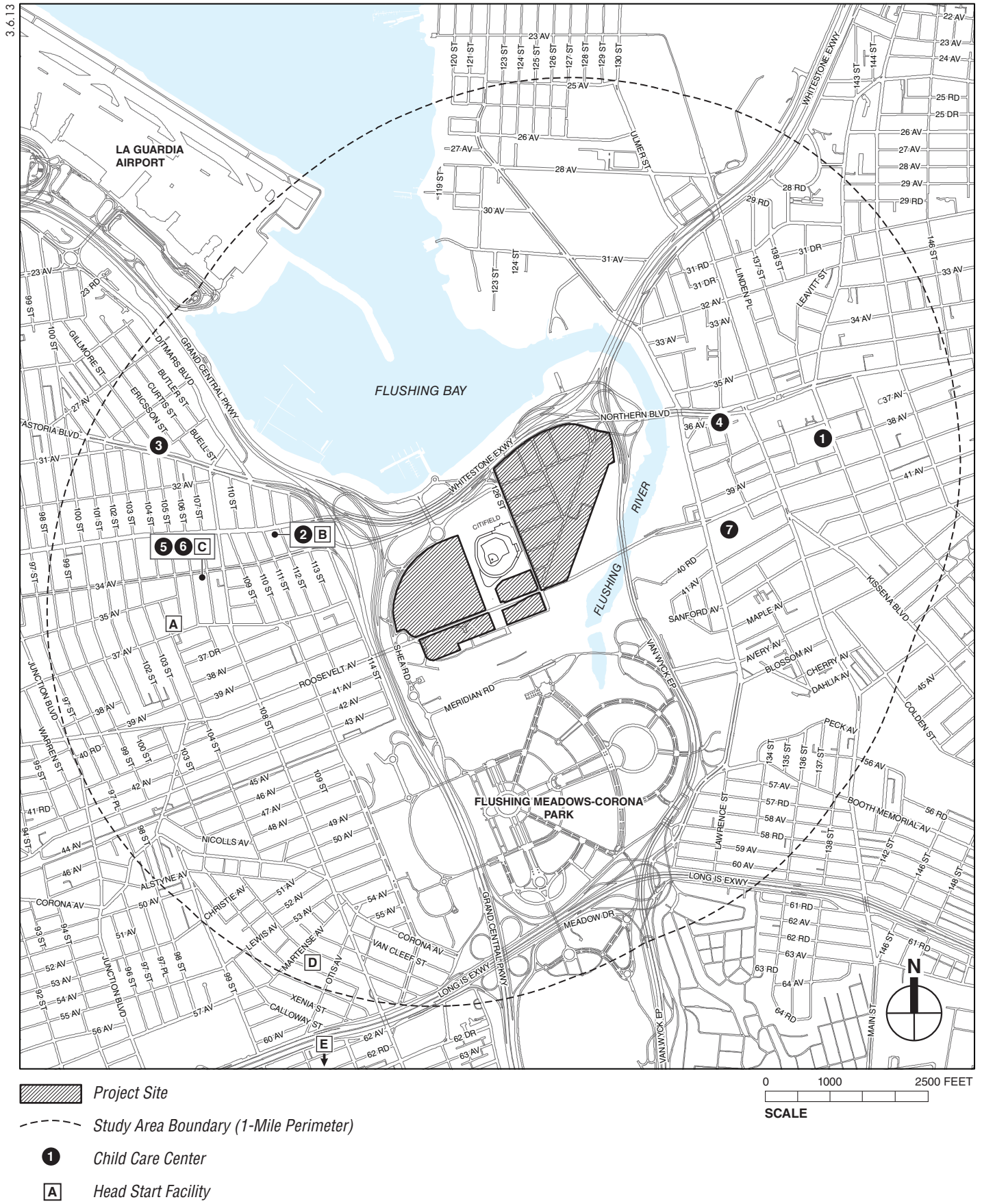


Table 4-12
Publicly Funded Child Care Facilities Serving the Study Area

Map ID	Name	Address	Enrollment	Capacity	Available Slots	Utilization Rate
Child Care						
1	Martin L. King, Jr. Memorial Day Care Center	36-06 Prince St	35	35	0	100%
2	Malcolm X Day Care Center	111-12 Northern Blvd	114	120	6	95%
3	Jerome Hardeman Sr. Child Care Center	29-49 Gillmore St	60	60	0	100%
4	Macedonia Child Development Center	37-22 Union St	35	35	0	100%
5	Better Community Life Day Care Center #1	34-10 108 St	74	80	6	93%
6	The Child Care Center of New York	34-10 108 St	55	58	3	95%
7	Better Community Life li Day Care Center	133-16 Roosevelt Ave	52	59	7	88%
	Child Care Total		425	447	22	95%
Head Start						
A	Catholic Charities	35-34 105 St	90	90	0	100%
B	The Child Center of New York	111-12 Northern Blvd	68	68	0	100%
C	The Child Center of New York	34-10 108th St	58	57	-1	102%
D	B'Above/International Children's Center	57-27 Penrod Street	102	102	0	100%
E	B'Above/Forest Park Nursery & Kindergarten	102-35 63rd Road	73	73	0	100%
	Head Start Total		391	390	-1	100%
	Grand Total		816	837	21	97%
Source: ACS, June 2012.						

Based on these assumptions, the number of available slots in the 2018 No Action condition would decrease, and utilization would increase to 107 percent, with a shortfall of 55 slots. No development projects or changes to the existing inventory of child care facilities are known to be planned in the study area after 2018. Therefore, the utilization rate for publicly funded child care facilities serving the study area is assumed to remain at 107 percent in the 2028 and 2032 No Action conditions.

PROBABLE IMPACTS OF THE PROPOSED PROJECT

PHASE 1A (2018)

The proposed project would not result in any new residential development by 2018; therefore, the child care facility utilization rate would remain the same as in the No Action condition (105 percent).

PHASE 1B (2028)

By 2028, Phase 1B of the proposed project would introduce a total of approximately 2,490 residential units, of which 872 units (35 percent) would be affordable. Based on the CEQR generation rates for the projection of children eligible for publicly funded child care, these new units would introduce approximately 122 new children under the age of six who would be eligible for publicly funded child care programs.

Willeys Point Development

As noted above, the *CEQR Technical Manual* guidelines indicate that a demand for slots greater than the remaining capacity of child care facilities and an increase in demand of 5 percent of the study area capacity could result in a significant adverse impact. With the addition of 122 children from the proposed development in the District, child care facilities in the study area would operate at 121 percent utilization, with a deficit of 177 slots. Total enrollment in the study area would increase to 1,014 children, compared with a capacity of 837 slots, which represents an increase in the utilization rate of 15 percentage points over the No Action condition.

Therefore, the proposed project could result in significant adverse impacts on publicly funded day care centers in the study area by 2028.

To mitigate this impact, QDG would consult with ACS to determine whether adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site is the appropriate way to meet demand for child care services generated by development on the project site by 2028. At this point, however, it is not possible to know exactly which type of mitigation would be most appropriate and when, because several factors may limit the number of children in need of publicly funded child care slots. Families in the study area could make use of alternatives to publicly funded child care facilities, such as homes licensed to provide family child care which families of eligible children could elect to use instead of a public child care center. As noted above, these facilities provide additional slots in the study area but are not included in the quantitative analysis. In addition, parents of eligible children may use ACS vouchers to finance care at private child care centers either within the study area or could use facilities outside of study area.

PHASE 2 (2032)

By 2032, the proposed project would introduce a total of approximately 5,850 residential units, of which 2,048 units (35 percent) would be affordable. Based on the CEQR generation rates for the projection of children eligible for publicly funded child care, these units would introduce approximately 287 new children under the age of six who would be eligible for publicly funded child care programs.

With the addition of 287 children from the proposed development in the District, child care facilities in the study area would operate at 141 percent utilization, with a deficit of 342 slots. Total enrollment in the study area would increase to 1,179 children, compared with a capacity of 837 slots, which represents an increase in the utilization rate of 34 percentage points over the No Action condition. Therefore, the proposed project could result in significant adverse impacts on publicly funded child care centers in the study area. Should this occur, the proposed project would require mitigation for the impact. Possible mitigation measures include adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site. As discussed above, it is not possible to know exactly which type of mitigation would be most appropriate and when, because several factors may limit the number of children in need of publicly funded child care slots. Furthermore, as described in Chapter 1, "Project Description," a developer for Phase 2 has not yet been selected. QDG may or may not be selected as the designated developer for Phase 2. Therefore, consistent with the conclusions of the 2008 FGEIS, it is anticipated that to mitigate the potential impact on child care facilities that could occur by 2032, EDC would require, as part of the developer's agreement, that the designated developer of Phase 2 consult with ACS to determine the appropriate way to meet demand for child care services generated by development in the District by 2032.

G. HEALTH CARE FACILITIES

METHODOLOGY

The *CEQR Technical Manual* recommends detailed analyses of impacts on health care facilities in cases where a proposed action would affect the physical operations of, or direct access to and from, a hospital or a public health clinic, or where a proposed action would create a sizeable new neighborhood where none existed before. As stated above, the proposed project would not result in direct effects on any health care facility; however, the proposed project would result in the creation of a new neighborhood with residential uses where the demand for hospital and public health clinic services could increase with the addition of approximately 16,029 new residents as well as new workers and visitors. This section assesses the proposed project's potential impacts on health care facilities. The assessment identifies health care facilities within approximately one mile of the proposed project site.

EXISTING CONDITIONS

Health care facilities include public, proprietary, and non-profit facilities that accept public funds (usually in the form of Medicare and Medicaid reimbursements) and are available to any member of the community. Examples of these types of facilities include hospitals, nursing homes, clinics, and other facilities providing outpatient health services. The health care assessment focuses on emergency and outpatient ambulatory services that could be affected by the introduction of a large low-income residential population which may rely heavily on nearby hospital emergency rooms and other public outpatient ambulatory services.

HOSPITALS AND EMERGENCY ROOMS

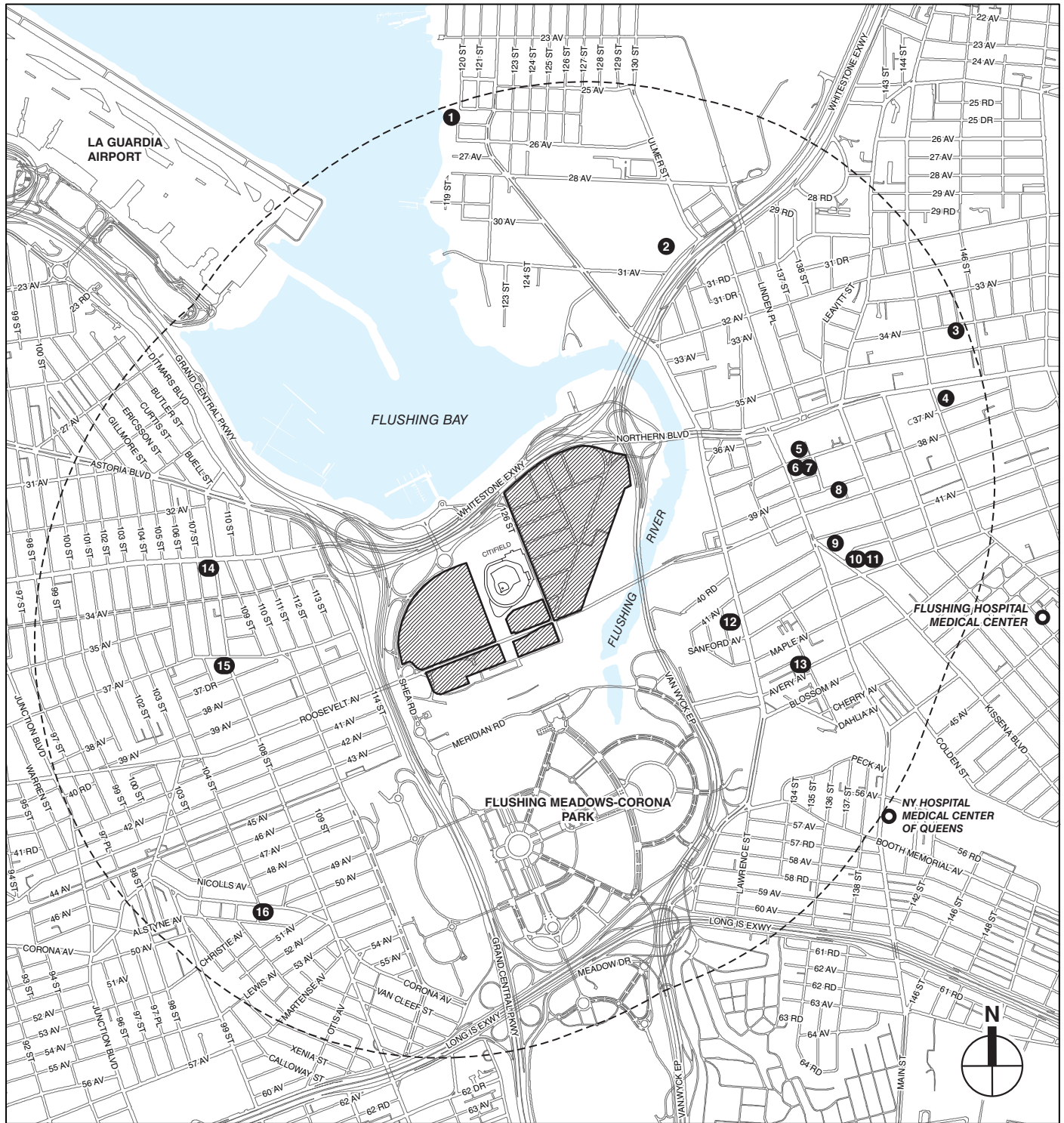
There are no hospitals within a one-mile radius of the project site; however, the Flushing Hospital Medical Center and the New York Hospital Medical Center of Queens, both in Flushing, are located a few blocks from the one-mile study area boundary (see **Table 4-13** and **Figure 4-4**). As the *CEQR Technical Manual* guidelines do not specify a specific study area boundary, the Flushing Hospital Medical Center and the New York Hospital Medical Center of Queens were included in the analysis due to their proximity to the project site.





Table 4-13

Hospitals and Emergency Rooms within One Mile of Project Site

Hospital	Address	Outpatient Department Visits (2011)	Emergency Room Visits (2011)	Beds
Flushing Hospital Medical Center	4500 Parsons Boulevard	40,774	43,847	293
New York Hospital Medical Center of Queens	56-45 Main Street	141,264	121,466	519
Total		182,038	165,313	812
Sources: Flushing Hospital Medical Center 2012 Fact Sheet; New York Hospital Medical Center of Queens web site and Annual Report 2010-2011.				

The Flushing Hospital Medical Center is located at 4500 Parsons Boulevard. It provides a wide range of clinical services. According the hospital's 2012 Fact Sheet (posted on its web site), Flushing Hospital Medical Center had 293 beds, 40,744 outpatient department visits and 43,847 emergency room visits in 2011. As of 2011, the New York Hospital Medical Center of Queens,



-  Project Site
-  Study Area Boundary (1-Mile Perimeter)
-  Hospital
-  Outpatient Health Service Facility

NOTE: See Table 5-14 for reference

Health Care Facilities
Figure 4-4

Willels Point Development

located at 56-45 Main Street, had 519 beds, 141,264 outpatient visits, and 121,466 emergency room visits.

OTHER OUTPATIENT SERVICES

Table 4-14 and **Figure 4-4** show the inventory of the sixteen specific outpatient locations within one mile of the proposed project site (as inventoried in the *New York City Department of City Planning Selected Facilities and Program Sites in New York City, 2011 Edition*). These outpatient locations cover the entire area with a full range of ambulatory care facilities.

Table 4-14
Outpatient Health Care Facilities within the One-Mile Study Area

Map No.	Facility Name	Address	Facility Type
1	Cliffside Renal Dialysis	119-19 Graham Court	Health Center
2	Association for Neurologically Impaired Brain Injured Children, Inc.	30-56 Whitestone Expressway	Day Training
3	Rego Park ADHCP	145-18 34th Avenue	Adult Day Health Care Center
4	Flushing Manor Dialysis Center, LLC	36-17 Parsons Blvd	Health Center
5	Main Street Radiology at Bayside	136-25 37th Avenue	Health Center Extension Clinic
6	Asian Health Center of Flushing	136-26 37th Avenue	Health Center Extension Clinic
7	Chinese American Planning Council	136-26 37th Avenue	Senior Citizen/Geriatric Service
8	Family Health Center	13656 39th Avenue	Hospital Extension Clinic
9	Queens Child Guidance Center	41-25 Kissena Blvd	Clinic Treatment
10	Visiting Nurse Service of New York	41-61 Kissena Blvd	Clinic Treatment
11	The Child Center of NY – Flushing Clinic	140-15 Sanford Avenue	Day Treatment
12	Franklin Center for Rehab & Nursg ADHCP	41-23 Haight Street	Adult Day Health Care Center
13	Rego Park ADHCP	42-34 Saull Street	Adult Day Health Care Center
14	Elmcor Y/A Activities - Outpatient	107-20 Northern Blvd	Outpatient Clinic
15	Urban Health Plan Extension Clinic	37-12 108th Street	Health Center Extension Clinic
16	Corona Child Health Clinic	104-04 Corona Avenue	Hospital Extension Clinic
Note: Please refer to Figure 4-4 for location of outpatient facilities.			
Source: DCP, <i>Selected Facilities and Program Sites, 2011 Edition</i> .			

THE FUTURE WITHOUT THE PROPOSED PROJECT

There are no known capacity changes planned for the Flushing Hospital Medical Center or the New York Hospital Medical Center of Queens.

In the No Action condition, known planned or proposed development projects will introduce approximately 3,542 housing units, all of which are expected to be complete by 2018. In most cases, the projects that are planned or under construction in the study area are market-rate construction projects. However, for the purpose of this analysis, it is conservatively assumed that 20 percent of units in developments of 20 or more units within the one-mile study area will be occupied by low-to moderate-income residents (with the exception of Sky View Parc, which is being developed as luxury condominiums). Therefore, absent the proposed project, the low- to moderate-income population of the study area is expected to increase by 1,530 persons (543 new low- to moderate-income units multiplied by the average household size for Queens) as a result of the planned residential developments identified. All of this additional population will be added by 2018.

It is not expected that the increase in the study area population in the future without the proposed project will adversely affect the overall provision of health care services. Based on data from the U.S. Department of Health and Human Services, 30.6 percent of adults 18 years and over with incomes below poverty level had at least one emergency department visit in 2010, and 14.9 percent had two or more emergency department visits. For children living below poverty level, 13.4 percent had two or more emergency department visits in 2010.¹

Assuming the national averages cited above would apply to the new residents introduced to the study area in the No Action condition, and assuming two adults per household, approximately 332 of the new low- to moderate-income adults would have at least one emergency department visit, 162 would have at least two emergency department visits, and 60 children would have at least two emergency department visits per year. These incremental changes are small compared to the 165,313 emergency department visits experienced by Flushing Hospital Medical Center and New York Hospital Medical Center of Queens in 2011.

PROBABLE IMPACTS OF THE PROPOSED PROJECT

According to the *CEQR Technical Manual*, health service impacts can occur if a proposed project results in an increase of 5 percent or more in the demand for services compared with conditions in the future without the proposed project, or if a project results in a facility exceeding its capacity.

PHASE IA (2018)

The proposed project would not result in any new residential development by 2018, therefore the ability for Flushing Hospital Medical Center and New York Hospital Medical Center of Queens to serve the study area would remain the same as in the No Action condition.

PHASE IB (2028)

By 2028, Phase 1B of the proposed project would introduce approximately 2,490 residential units, of which 872 units (35 percent) would be affordable. These 872 units would introduce approximately 2,459 low-income persons to the study area by 2028 (872 affordable housing units multiplied by the average household size for Queens). Based on the national averages and household composition assumptions cited above under the Future Without the Proposed Project, the proposed project could introduce approximately 534 low- and moderate-income adults with one or more emergency department visits per year, approximately 260 adults with two or more emergency department visits per year, and approximately 96 children with two or more emergency department visits per year. It is not possible based on currently available statistics to develop a precise estimate for incremental project-generated emergency department visits. However, given the thousands of emergency department visits in the study area currently (165,313 in 2011), the additional affordable housing population would generate a minimal change in demand over the No Action condition. This increase would be less than the *CEQR Technical Manual's* general threshold of 5 percent and would not result in a significant adverse impact on hospitals and emergency rooms.

¹ National Center for Health Statistics. *Health, United States, 2011: With Special Feature on Socioeconomic Status and Health*. Hyattsville, MD. 2012. Tables 93 and 94.

PHASE 2 (2032)

By 2032, Phase 2 of the proposed project would introduce a total of approximately 5,850 residential units, of which 2,048 units (35 percent) would be affordable. These units would introduce a total of approximately 5,775 low-income persons to the study area by 2032 (2,048 units multiplied by the average household size for Queens). Based on annual statistics and household composition assumptions described above, the new population would introduce approximately 1,253 low- and moderate-income adults with one or more emergency department visits per year, approximately 610 adults with two or more emergency department visits per year, and approximately 225 children with two or more emergency department visits per year. This represents a minimal increase in demand over the No Action condition, and would be less than the *CEQR Technical Manual's* general 5 percent threshold. As with the proposed project in 2028, the proposed project at full build-out would not result in a significant adverse impact on hospitals and emergency rooms.

H. POLICE AND FIRE PROTECTION SERVICES

The *CEQR Technical Manual* recommends detailed analyses of impacts on police and fire service in cases where a proposed action would affect the physical operations of, or direct access to and from, a precinct house or fire station, or where a proposed action would create a sizeable new neighborhood where none existed before. As stated above, the proposed project would not result in these direct effects on either police or fire services; however, the proposed project would result in the creation of a new neighborhood with residential uses where the demand for police, fire, and emergency services could increase with the addition of approximately 16,029 new residents as well as new workers and visitors. This section assesses the proposed project's potential impacts on police, fire, and emergency medical services.

POLICE PROTECTION SERVICES

As shown in **Table 4-15** and **Figure 4-5**, the proposed project site is served by the 110th Precinct of the New York City Police Department (NYPD). The 110th Precinct is located at 94-41 43rd Avenue in Elmhurst. The District—the portion of the project site where the residential uses would be located—is also close to the 109th Precinct, located at 37-05 Union Street in Flushing.

Table 4-15
Police Protection Facilities

Map No.	Police Facility	Address	Communities Served
P1	109th Precinct	37-05 Union Street, Flushing	Downtown Flushing, East Flushing, Queensboro Hill, College Point, Malba, Whitestone, Beechhurst, Bay Terrace
P2	110th Precinct	94-41 43rd Avenue, Elmhurst	Elmhurst, Corona
Note: See Figure 4-5 .			
Source: Selected Facilities and Program Sites, NYC DCP.			

The 110th Precinct is located on 43rd Avenue in the Elmhurst neighborhood of Queens. The precinct serves an area bounded roughly by the Flushing River, the Long Island Expressway, 74th Street, and Roosevelt Avenue. As noted above, this precinct includes the District and also serves the communities of Corona and Elmhurst. Apart from the existing industrial uses in the



District, the precinct is mainly a residential/commercial community consisting of multiple dwelling buildings.

NYPD average response time to all crimes-in-progress calls have increased citywide from fiscal year (FY) 2007 to FY 2011. During this time, NYPD response time to all crimes-in-progress increased from 6.9 minutes in FY 2007 to 8.4 minutes in FY 2011, and response times to critical crimes-in-progress increased from 4.2 minutes in FY 2007 to 4.6 minutes in FY 2011.^{1, 2}

In the 110th Precinct, the average response time to all critical crimes-in-progress was 4.4 minutes in FY 2010 (the most recent year for which data for the 110th Precinct is available). This was equivalent to the citywide average response time to critical crimes in progress, also 4.4 minutes in FY 2010. During FY 2007 and 2008, response times to critical crimes-in-progress in the 110th Precinct were shorter than in 2010, 3.7 and 3.8 minutes for FY 2007 and FY 2008, respectively.³

The 109th Precinct is located on Union Street in downtown Flushing. The precinct's service area is bounded roughly by the Long Island Sound, Flushing Meadows-Corona Park, the Long Island Expressway, and Utopia Parkway. The precinct serves the neighborhoods of Downtown Flushing, East Flushing, Queensboro Hill, College Point, Malba, Whitestone, Beechhurst and Bay Terrace.

The 109th Precinct's average response time to critical crimes-in-progress was 4.6 minutes in FY 2010. This response time was comparable to the citywide average of 4.4 minutes but slightly higher than response times in the precinct from FY 2007 through FY 2008, which were 4.2 and 4.1 minutes, respectively.⁴

The proposed project would generate additional traffic on roads throughout the area, including the possible routes used by NYPD vehicles to access the project site. Traffic at certain intersections near the project site may result in slower access for NYPD vehicles. However, when responding to emergencies, NYPD vehicles are not bound by standard traffic controls or rules and are capable of adjusting to congestion encountered en route to their destinations and are therefore less affected than other vehicles by such congestion. In addition, NYPD vehicles have access to enhanced sirens and lights that enable them to safely navigate through congested areas. These vehicles would be able to access the project site as they do other areas throughout New York City, including the most congested areas of Downtown Flushing.

By 2018, the new worker and visitor populations introduced by the proposed project could increase the demand for police protection services. This demand would increase in 2028 and 2032 as additional worker and residential populations are introduced to the project site. Per ongoing practice, NYPD will continue to evaluate its staffing and resource needs over time

¹ Mayor's Management Report, FY 2011, NYPD, p. 133.

² Critical crimes in progress include crimes such as shots fired, robbery, and assault with a weapon. All crimes in progress data also includes response times for serious (such as larceny from a person, assault not involving a weapon, larceny of an auto) and non-critical crimes (those crimes not involving an imminent threat of personal injury).

³ My Neighborhood Statistics web page at NYC.gov (<http://gis.nyc.gov/ops/mmr/address.jsp?app=MMR>). Response time data for critical crimes in progress in Precinct 110 in FY 2009 is not available.

⁴ My Neighborhood Statistics web page at NYC.gov (<http://gis.nyc.gov/ops/mmr/address.jsp?app=MMR>). Response time data for critical crimes in progress in Precinct 109 in FY 2009 is not available.

based on a variety of factors, including projected population increases and demographic shifts. Because the NYPD would continue to reevaluate its staffing and resource needs and would continue to have the ability to adjust to congestion en route to emergencies, response times are not expected to dramatically change in such a way as to result in a significant adverse impact. Therefore, the proposed project would not result in any significant adverse impacts to police protection in 2018, 2028, or 2032 that were not addressed in the 2008 FGEIS.

FIRE PROTECTION SERVICES

At structural fires citywide, New York City Fire Department (FDNY) engine companies perform fire suppression efforts, while ladder companies provide search, rescue, and building ventilation functions. Rescue and squad companies specifically respond to fires or emergencies in support of the other units and can perform any specialized tasks or functions as necessary. In addition, FDNY operates the City's emergency medical services (EMS) system.

Units responding to a fire are not limited to ones closest to it. Normally, a total of three engine companies and two ladder companies respond to each call. Each FDNY squad company is capable of operating as an engine, ladder, or technical rescue company, making them versatile for incident commanders. Each squad is also part of the FDNY HazMat Response Group and has HazMat Tech Unit capabilities. FDNY can call on units in other parts of the City as needed.

Table 4-16 lists the fire companies that may be called on to respond to a fire or other emergency at the project site (see **Figure 4-5**). Engine Company 273/Ladder Company 129 on Union Street in Flushing are the units located closest to the District, with Engine Company 289/Ladder Company 138 on 43rd Avenue in Corona second closest. The other FDNY facilities listed are also in a position to respond promptly to the project and provide response capabilities from every direction. In the area surrounding the project site, the FDNY is experienced with the logistical issues of providing support for single and simultaneous events occurring at CitiField, Flushing-Meadows Corona Park, and the USTA National Tennis Center.

Table 4-16
Fire Protection Facilities

Map No.	Fire Facility	Address	Facility Type
F1	Engine 273 Ladder 129	40-18 Union Street	Fire House
F2	Engine 289 Ladder 138	97-28 43rd Avenue	Fire House
F3	Engine 297 Ladder 130	119-11 14th Road	Fire House
F4	Engine 316	27-12 Kearney Street	Fire House
F5	Engine 324 Satellite 4 Division	108-01 Horace Harding Expressway	Fire House
Note: See Figure 4-5 .			
Sources: Selected Facilities and Program Sites, DCP.			

In 2011, the average response time to structural fires for all fires was 4 minutes 23 seconds in Queens, compared to 4 minutes 3 seconds citywide. These response times represent a modest increase compared to 2010, when the average structural fire response times in Queens and citywide were 4 minutes 20 seconds and 3 minutes 59 seconds, respectively.¹

There are two types of ambulances in the City—911 providers and those providing inter-facility transport. Municipal FDNY and hospital-based ambulances are the sole providers of 911 services, and they operate that system under contract with FDNY. (Inter-facility transports are carried out

¹ New York City Mayor's Management Report.

by private contractors and do not participate in the 911 system.) All hospital-based ambulances which operate in the New York City 911 System do so by contractual agreement with FDNY's EMS Command. All ambulances in the 911 system are dispatched by FDNY under the same computer-based system, regardless of hospital affiliation. All EMS units are assigned a permanent cross-street location where they await a service call; units return to this location once service is complete. These locations are determined by FDNY and based on historical call volumes by location and time of day. In addition to FDNY ambulances, the project site is served by ambulances operated by Flushing Hospital and the New York Hospital of Queens.

Medical response times increased in FY 2011 compared to FY 2010, with the citywide response time to life-threatening medical emergencies by fire units increasing by 3 seconds from 4 minutes and 17 seconds to 4 minutes and 20 seconds and the response by ambulance units increasing by 19 seconds from 6 minutes and 41 seconds in FY 2010 to 7 minutes in 2011. According to the New York City Mayor's Management Report, this increase is primarily due to the two-day blizzard in December 2010 and its aftermath. Between FY 2007 and FY 2010, the combined response time to life-threatening medical emergencies by fire units and ambulance units citywide remained more constant, increasing by 4 seconds.¹

The new residential, worker, and visitor populations introduced by the proposed project could increase the demand for FDNY and EMS services. Fire protection throughout the city is normally provided by multiple fire companies and fire protection in the study area will continue to be provided as per established standard FDNY operating procedures.

The proposed development would meet all relevant New York City fire safety standards. In addition, the proposed project includes significant infrastructure improvements for the District, including road grading and paving, as well as improvements to City water service, including fire hydrants. As such, the proposed project would result in significant improvements to on-site infrastructure that would bolster FDNY's firefighting ability within the District portion of the project site.

The proposed project would generate additional traffic on roads throughout the area, including the possible routes used by FDNY and EMS vehicles to access the project site. Traffic at certain intersections near the project site may result in slower access for FDNY and EMS vehicles. However, FDNY and EMS vehicles, when responding to emergencies, are not bound by standard traffic controls or rules and are capable of adjusting to congestion encountered en route to their destinations and are therefore less affected than other vehicles by such congestion. FDNY vehicles are also equipped with enhanced sirens and emergency lights that assist them in safely navigating through congested areas. These vehicles would be able to access the project site as they do other areas throughout New York City, including the most congested areas of Downtown Flushing.

As noted above, EMS units are assigned a permanent cross-street location where they await a service call. If warranted by demand, the FDNY could assign an EMS unit within the District to provide services to the new population.

Overall, the proposed project would not result in any significant adverse impacts to fire protection or emergency services in 2018, 2028, or 2032 that were not addressed in the FGEIS and subsequent technical memoranda. *

¹ NYC Mayor's Management Report, p 144.

A. INTRODUCTION

This chapter assesses the potential of the proposed project to affect open space resources. The analysis updates changes to the proposed project and background conditions since the 2008 Final Generic Environmental Impact Statement (FGEIS) and assesses whether any changed background conditions or the differences between the reasonable worst-case development scenario (RWCDS) and the program assessed in the 2008 FGEIS and subsequent technical memoranda would result in any significant adverse impacts on open space that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

PRINCIPAL CONCLUSIONS

This analysis finds that the RWCDS would not result in significant adverse open space impacts that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

DIRECT EFFECTS

By 2018, the Willets West portion of the proposed project would be constructed upon 30.7 acres of the surface parking lot west of CitiField, and one the CitiField parking lots along Roosevelt Avenue (South Lot) would also be developed. While this land is mapped as parkland, it does not function as recreational open space. The land was occupied by Shea Stadium and associated parking and circulation space until it was replaced by CitiField in 2009, and it is now occupied exclusively by surface parking. There is one event—the Major League Wheelchair Softball Tournament—that is held in this area; however, this is not an event that provides open space on a constant and regular basis for designated daily periods. This use is therefore not considered a public open space use as defined under City Environmental Quality Review (CEQR). Furthermore, the Major League Wheelchair Softball Tournament would be relocated to the Special Willets Point District in Phase 1A of the proposed project. Therefore, developing this mapped parkland has no direct effect on the adequacy of open space for the study area residential and non-residential populations.

The proposed project would activate the Willets West area, making the area more appealing to residential and non-residential populations and improving connections between the study area populations and the Flushing Bay Promenade. It is anticipated that some of the trees within the Willets West portion of the project site would require removal during construction, as would trees within the Lot B area. Tree removal and replacement would be conducted in conformance with New York City Department of Parks and Recreation (DPR) requirements, including approval from DPR's Queens forestry division. The portions of the project to be constructed by 2028 and 2032 also would have no direct effect on the adequacy of open space for the study area residential and non-residential populations.

The proposed project would not have any adverse impacts on existing open space in terms of air quality, noise, or shadows (see Chapter 6, “Shadows,” Chapter 15, “Air Quality,” and Chapter 17, “Noise” for additional information). The World’s Fair Marina Park, which was predicted in the 2008 FGEIS to experience a significant adverse noise impact during the Saturday midday time period, is no longer expected to experience a significant adverse impact.

The proposed project would add to the inventory of open space in the study area. During Phase 1A of the proposed project, the parking area within the Special Willets Point District would be converted to active recreational use a minimum of six months per year. Permanent publicly accessible open space would be built as part of Phase 1B and Phase 2, in accordance with the District’s zoning requirements as residential populations are introduced. Phase 1B would include approximately six acres of new publicly accessible open space, approximately 3.5 of which would subsequently be developed with new structures in Phase 2. Phase 2 would create another 5.5 acres of open space, for a total of 8 acres of publicly accessible open space at the conclusion of the development of the proposed project.

INDIRECT EFFECTS

Although the development of the proposed project would include the creation of publicly accessible open space, because it would also introduce demand from a new population the RWCDs would result in a decrease in total, active, and passive open space ratios in the residential study area and a decrease in total and passive open space ratios in the non-residential study area. These decreases would not result in a significant adverse open space impact. Open space ratios would remain near or above the recommended City guidelines, with the exception of the active open space ratio, which would decrease from 1.80 acres per 1,000 residents in the 2018 No Action condition to 1.54 in the 2028 With Action condition and 1.31 in the 2032 With Action condition. The total open space ratio would remain above the recommended City guideline until 2032, when it would decrease to 2.46, falling slightly below the guideline of 2.5 acres per 1,000 residents. The amount of active open space available in the study area during Phase 1A would be higher than indicated by the ratios, due to the presence of the interim active recreational use to be provided within the District, which was not considered in the open space ratios. Upon completion, the RWCDs would include a minimum of 8 acres of publicly accessible open space, including an approximately two-acre park developed with primarily active recreational uses.

The RWCDs would not result in a significant adverse open space impact during any of the three analysis years. The proposed project would introduce substantial new open space, and study area residents would continue to have access to the portions of Flushing Meadows-Corona Park and the Flushing Bay Promenade that fall just outside of the residential study area’s boundaries. Further, Queens Development Group, LLC (QDG) would work to incorporate ground-level, active open space and other recreational resources such as rooftop and interior programming of recreational amenities into the project design for Phase 1B, and the New York City Economic Development Corporation (EDC) would encourage through its formal RFP process the future developer of Phase 2 to incorporate similar features into the Phase 2 development. While these recreational amenities may be available only to tenants and residents of the site—and thus have not been included in the quantitative analysis—these amenities would help offset the burden on public active and passive resources resulting from the introduction of new users on the project site.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS and subsequent technical memoranda analyzed the potential for impacts on open space resulting from the development of the Willets Point Development Plan and the No Convention Center Scenario, as well as the potential development of Lots B and D. The 2008 FGEIS assessed potential impacts on open space within a ¼-mile radius of the Special Willets Point District for passive open space and a ½-mile radius for active open space.

The 2008 FGEIS and subsequent technical memoranda concluded that in the future with the proposed Plan, the area surrounding the District would continue to have adequate active and passive open space resources. Open space ratios would continue to be well above City guidelines, except for the active open space ratio per 1,000 residents and the passive open space ratio per 1,000 workers, which would be below the recommended ratios. The open space ratios indicated that workers and residents would continue to have adequate open space to meet their needs in the future with the proposed Plan or the No Convention Center Scenario. Furthermore, the 2008 FGEIS noted that these quantitative analyses did not consider the extensive open space resources just beyond the study area boundaries, particularly the numerous active recreational amenities in the remaining portions of Flushing Meadows-Corona Park. The 2008 FGEIS concluded that neither the proposed Plan nor the No Convention Center Scenario, nor the potential development of Lots B and D, would be expected to result in significant adverse impacts on study area open spaces.

C. METHODOLOGY

This chapter examines the potential impacts on open space resources from the RWCDs in accordance with the guidelines of the 2012 *CEQR Technical Manual*. The chapter examines potential direct effects of the RWCDs on nearby publicly accessible open spaces (e.g., addition or reduction in open space, shadows, noise increases) as well as indirect effects created by changes in demand for and use of the area's open spaces. The analysis inventories the conditions and use of open spaces within a ¼-mile radius of the project site for passive open space and a ½-mile radius of the project site for active open space and addresses impacts on these facilities both qualitatively and quantitatively.

ANALYSIS APPROACH

As discussed in Chapter 1, “Project Description,” the analyses in this Supplemental EIS (SEIS) compare conditions in the future without the proposed project (No Action condition) to conditions in the future with the proposed project (With Action condition). The No Action condition in all technical areas assumes that none of the discretionary actions now being sought by QDG are approved. Absent those approvals, it is assumed for the purposes of a conservative analysis that in each No Action scenario, no change would be made to any portion of the project site, and the existing uses on the project site would be maintained.

DIRECT EFFECTS ANALYSIS

According to the *CEQR Technical Manual*, a proposed project would directly affect open space conditions if it causes the loss of public open space, changes the use of an open space so that it no longer serves the same user population, limits public access to an open space, or results in increased noise or air pollutant emissions, odors, or shadows that would temporarily or

permanently affect the usefulness of a public open space. This chapter uses information from Chapter 6, “Shadows,” Chapter 15, “Air Quality,” and Chapter 17, “Noise,” to determine whether the RWCDS would directly affect any open spaces near the project site. A proposed project can also directly affect an open space by enhancing its design or increasing its accessibility to the public. The direct effects analysis is included below in “Probable Impacts of the Proposed Project.”

INDIRECT EFFECTS ANALYSIS

As described in the *CEQR Technical Manual*, open space can be indirectly affected by a proposed action if the project would add enough population, either residents or non-residents, to noticeably diminish the capacity of open space in an area to serve the future population. Typically, an assessment of indirect effects is conducted when a project would introduce 200 or more residents or 500 or more workers to an area; however, the thresholds for assessment are slightly different for areas of the City that have been identified as either underserved or well served by open space. Because the project site is not located within an area that has been identified as either underserved or well served, the 200 resident and 500 worker thresholds were applied in this analysis.

At full build out (Phase 2), the proposed project would introduce approximately 5,850 new residential units, with an estimated residential population of 16,029, and 9,666 workers. An additional 1,581 workers would be added by the potential development of Lot B by 2032. Because the RWCDS would generate more than 200 residents and 500 workers, an open space assessment is warranted.

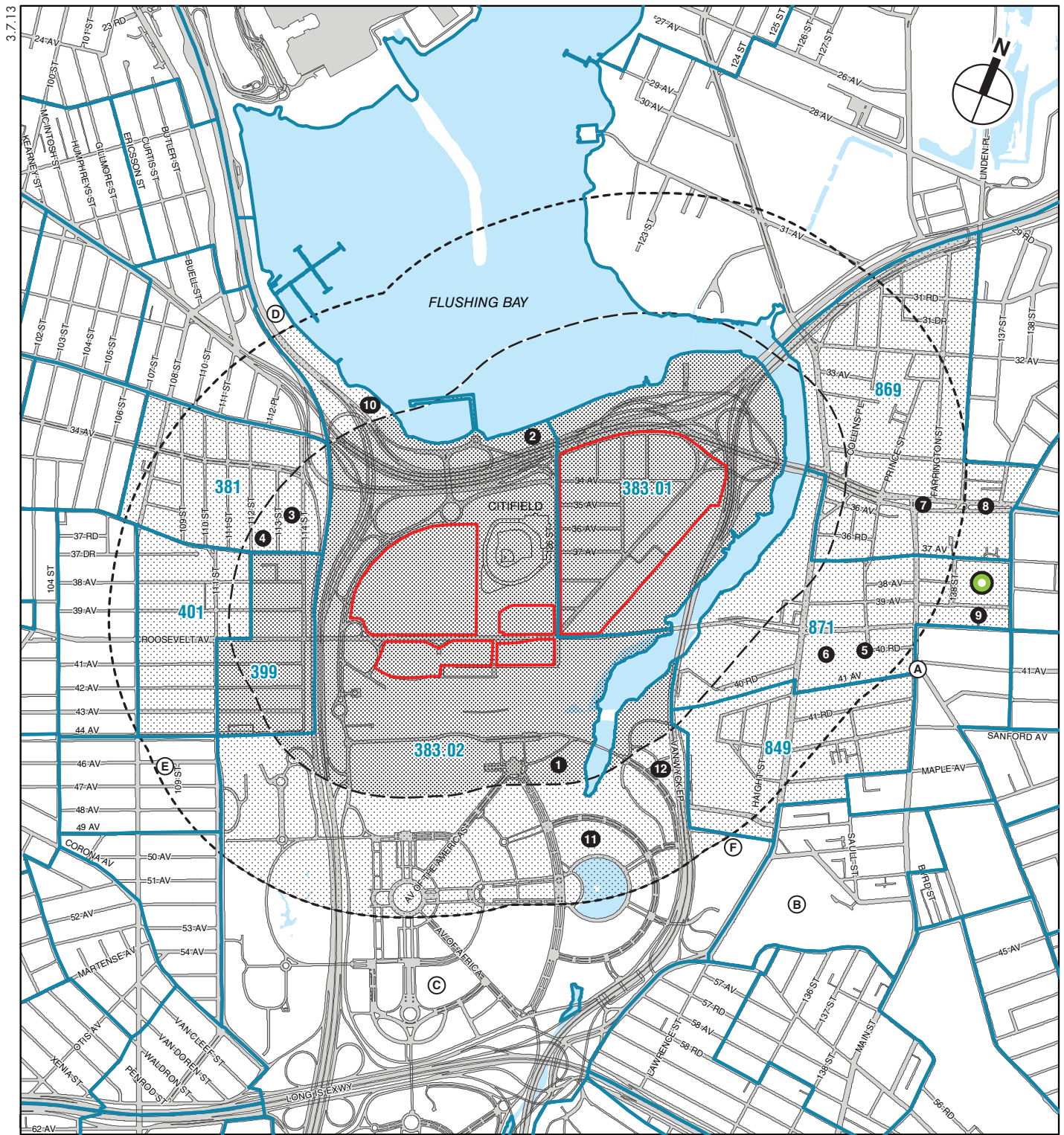
The *CEQR Technical Manual* suggests that a detailed open space analysis is necessary if a project displaces a highly utilized open space or introduces a large population in an area with low existing open space ratios. While the proposed project is located in an area with open space ratios that are currently above the City’s planning goals, a preliminary analysis indicated that the project would result in a decrease in open space ratios of substantially over 5 percent due to the sizable residential and non-residential populations that would be introduced by the project. Therefore, a detailed open space analysis was conducted, as described below.

STUDY AREAS

The *CEQR Technical Manual* recommends establishing a study area or areas as the first step in an open space assessment. The study areas are based on the distance that the respective users—residents and workers—are likely to walk to an open space. According to the *CEQR Technical Manual*, workers are assumed to walk approximately 10 minutes, or ¼ mile from their place of work to an open space, while residents are assumed to walk approximately 20 minutes, or ½ mile to an open space.

Because the RWCDS would introduce new residential and worker populations to the area, the adequacy of open space resources was assessed for both the ¼-mile (non-residential) and ½-mile (residential) study areas. These two study areas were adjusted to include all census tracts with at least 50 percent of their area within the ¼- or ½-mile boundary. In this way, the study area allows analysis of both the open spaces in the area as well as population data.

As shown in **Figure 5-1**, the ¼-mile non-residential study area is generally bounded by Flushing Bay to the north; the Van Wyck Expressway to the east; the USTA National Tennis Center (NTC) in Flushing Meadows-Corona Park to the south; and between 11th Street and the Grand Central Parkway to the west. The non-residential study area includes census tracts 383.01,



- | | |
|---|---|
| — Project Site Boundary | — Census Tract Boundary |
| - - - 1/4-Mile Study Area Boundary | 383.02 Census Tract Number |
| - - - 1/2-Mile Study Area Boundary | ❶ Open Space within Study Area (see Table 5-4) |
| 1/4-Mile Open Space Study Area (Commercial Study Area) | Ⓐ Open Space outside Study Area (see Table 5-4) |
| 1/2-Mile Open Space Study Area (Residential Study Area) | 🟢 Planned Flushing Commons Project (1.52 Acres of Open Space) |

0 1000 2000 FEET
SCALE

383.02, and 399. While the portion of census tract 383.02 that falls within the non-residential study area covers less than 50 percent of the census tract, the tract was included in the study area because it includes Willets West and those portions of the project site that are south of Roosevelt Avenue. Census tract 383.02 covers all of Flushing Meadows-Corona Park as well as a strip of land that runs along the Grand Central Parkway and Ditmars Boulevard toward LaGuardia Airport. To ensure a conservative quantitative analysis, only the portions of the open spaces within a ¼-mile radius of the District were included, but the tract's entire worker and resident populations were included.

The residential study area is generally bounded by Flushing Bay and the Van Wyck Expressway to the north; Linden Place, Union Street, and Main Street to the east; Flushing Meadows-Corona Park to the south; and 108th and 11th Streets to the west. The residential study area includes all the census tracts identified within the non-residential study area as well as census tracts 381, 401, 849, 869, and 871. While the boundaries of census tract 383.02 cover the entire Flushing Meadows-Corona Park and extend from Northern Boulevard to the Van Wyck Expressway, to ensure a conservative analysis the residential study area includes only the open space acreage within the park that falls within a ½-mile radius of the project site. As such, the residential study area's southern boundary is located north of Perimeter Road within Flushing Meadows-Corona Park and does not extend to the southern edge of tract 383.02. Although the analysis includes only the open spaces within a ½-mile radius of the project site, the quantitative analysis conservatively includes the tract's entire worker and resident populations.

STUDY AREA POPULATIONS

EXISTING CONDITIONS

The residential population in the study areas was estimated using 2010 Census data. The non-residential worker population was estimated using 2012 employment data from ESRI, Inc., a commercial data provider.

THE FUTURE WITHOUT THE PROPOSED PROJECT

As described in detail in Chapter 2, "Land Use, Zoning, and Public Policy," there are several developments expected to be completed in the ¼- and ½-mile study areas by 2032 in the No Action condition. The residential population in the No Action condition was estimated by applying the average household size for Queens (2.82 as of the 2010 Census) to the number of dwelling units added by the expected developments in the study areas. The number of workers added in the No Action condition was estimated using standard employment density ratios.

THE FUTURE WITH THE PROPOSED PROJECT

The population introduced by the RWCDS was estimated by applying the average household size for Queens (2.82) to the number of dwelling units that would be introduced by the RWCDS. The number of workers introduced by the RWCDS was estimated using standard employment density ratios.

INVENTORY OF OPEN SPACE RESOURCES

The *CEQR Technical Manual* defines public open space as open space that is publicly or privately owned and is accessible to the public on a regular basis, either constantly or for designated daily periods of time. Open spaces that are only available for limited users or are not

available to the public on a regular or constant basis are not considered public open space, but are considered in a qualitative assessment of open space impacts.

All publicly accessible open space resources in the non-residential and residential study areas were inventoried through field visits conducted in August 2012. Additional data were obtained from DPR, and other available sources.

Information was gathered about the types of facilities, levels of utilization, accessibility, and condition of each of the open space resources. According to CEQR guidelines, open spaces were also described in terms of the amount of active and passive facilities present. Active open space is used for exercise, sports, or active play, and is usually part of a recreational facility. Examples of active open space include playground equipment, athletic fields or courts, pools, and greenways. Passive open spaces encourage activities such as strolling, reading, sunbathing, people watching, and other forms of relaxation. Examples of passive open space include plazas, paths, gardens, and certain lawns with restricted uses. Open space may be characterized as passive, active, or a mixture of active and passive. Esplanades are an example of open space that may be used for active uses like running or passive dog walking.

In addition to the open spaces located in the study areas, open spaces located just outside of the study areas were considered in the qualitative analysis as they may be used by the worker or resident populations.

New open space that would be created in the No Action and With Action conditions was accounted for in the analysis.

ADEQUACY OF OPEN SPACE RESOURCES

COMPARISON TO CITY GUIDELINES

The adequacy of open space in the study area was quantitatively and qualitatively assessed for existing conditions, the future No Action condition, and the With Action condition. According to CEQR guidelines, the quantitative assessment is based on ratios of usable open space acreage to the study area populations (the “open space ratios”). These ratios were then compared with the City’s open space guidelines for residential and non-residential populations. The following guidelines are used in this type of analysis:

- For non-residential populations, 0.15 acres of passive open space per 1,000 non-residents is typically considered adequate.
- For residential populations, there is a Citywide median open space ratio of 1.5 acres per 1,000 residents, which is used as a guideline. In addition to this median ratio, the City has set an open space ratio planning goal of 2.5 acres per 1,000 residents. This second ratio includes 0.50 acres of passive space and 2.0 acres of active space, and serves as an ideal benchmark.

Because these ratios may not be attainable for all areas of the City, they are considered benchmarks for comparison rather than policy or thresholds for determining impacts.

IMPACT ASSESSMENT

Impacts are based on how a project would change the open space ratios in the study area. According to the *CEQR Technical Manual*, a project may result in significant adverse impacts to open space if there would be direct displacement or alteration of an open space that would

significantly impact the existing users; or, if the project would reduce open space ratios by more than 5 percent in an area that is currently below the City's median open space ratio. In areas that are extremely lacking in open space, a reduction as small as 1 percent may be considered significant, depending on the area of the City. In areas that are well served by open space, a greater change in the open space ratio may be tolerated.

The *CEQR Technical Manual* recommends that the quantitative open space analysis described above be supplemented by an examination of qualitative factors, as the significance of any changes to open space depends on the context of the proposed action, including the location, quality and quantity of open space in the With Action condition. These qualitative considerations include the availability of nearby destination resources, the connectivity of open space, the effects of new open space provided by the project, and the comparison of projected open space ratios with established City guidelines. It is recognized that the open space ratios of the City guidelines described above are not feasible for many areas of the City, and they are not considered impact thresholds on their own. Rather, they are benchmarks that indicate how well an area is served by open space.

D. EXISTING CONDITIONS

STUDY AREA POPULATION

Based on 2011 employment data obtained from ESRI, Inc. and District employment information provided by EDC, the non-residential study area has a worker population of 4,406 people (See Table 5-1).

Table 5-1
2012 Population in the 1/4-Mile Non-Residential Study Area

Census Tract	Worker Population
383.01	1,353
383.02	2,739
399	314
Total	4,406
Sources: Worker population for Tract 383.01, which encompasses the District, obtained from EDC. Worker population for remaining tracts obtained from ESRI Business Analyst Inc, Business Summary Report.	

Based on 2010 Census data, the residential study area has a population of 30,048 residents (see Table 5-2).

Table 5-2
2010 Population in the 1/2-Mile Residential Study Area

Census Tract	Residential Population
381	6,808
383.01	0
383.02	56
399	4,132
401	7,527
849	7,642
869	2,131
871	1,752
Total	30,048
Source: U.S. Census 2010	

AGE DISTRIBUTION

The age distribution of a residential population has open space implications in terms of the types of facilities that are in highest demand and how open spaces are used. As described in the *CEQR Technical Manual*, children 4 years or younger typically use traditional playgrounds with play equipment for toddlers and preschool children. Children ages 5 through 9 tend to use traditional playgrounds with play equipment suitable for school-age children, as well as open spaces with grass or hard surfaces for active play. Children ages 10 through 14 also tend to use playground equipment, as well as courts and ball fields. Teenagers and young adults between the ages of 15 and 19 typically use courts and active fields. Adults use facilities for sports and active fields as well as individualized recreation that utilizes paths. Senior citizens tend to utilize facilities for active recreation like handball, tennis, and swimming, as well as passive recreational facilities.

Table 5-3 summarizes the residential age distributions in the study areas and compares them with the distributions in Queens and New York City.

Table 5-3
Residential Population Age Distribution

Age Category	Residential (½-Mile) Study Area		Queens		New York City	
	Persons	Percent	Persons	Percent	Persons	Percent
4 and younger	2,318	7.7	132,464	5.9	517,724	6.3
5 to 9	1,892	6.3	123,766	5.5	473,159	5.8
10 to 14	1,525	5.1	123,406	5.5	468,154	5.7
15 to 19	1,855	6.2	139,096	6.2	535,833	6.6
20 to 64	20,446	68.0	1,425,844	63.9	5,187,105	63.45
65 and over	2,012	6.7	286,146	12.8	993,158	12.1
Total	30,048	100.0	2,230,722	100.0	8,175,133	100.0

Source: U.S. Census 2010.

As compared with Queens and New York City as a whole, the residential study area has a higher proportion of young children (ages 4 and younger, and 5 to 9) and working age population (ages 20 to 64). The residential study area has a lower proportion of senior residents (6.7 percent) compared to Queens (12.8 percent) and New York City (12.1 percent).

STUDY AREA OPEN SPACES

NON-RESIDENTIAL (¼-MILE) STUDY AREA

Portions of two open spaces, Flushing Meadows-Corona Park and the Flushing Bay Promenade, fall within the non-residential study area (see **Figure 5-1** and **Table 5-4**). For the purposes of a conservative analysis, only the publicly accessible portions of each park within the non-residential study area were included in the analysis. The analysis of the non-residential study area's open spaces did not include CitiField and its associated parking areas as open space resources because this land does not meet the *CEQR Technical Manual* definition for publicly accessible open space. While Hinton Park and Louis Armstrong Playground also fall within a ¼-mile of the proposed project site, they are not located in a census tract with at least 50 percent of its area in the ¼-mile radius, and therefore were included in the residential study area rather than the non-residential study area.

Table 5-4
Open Space Inventory

Map Number	Name	Owner	Features	Size (acres)	Acres of Active Open Space	Acres of Passive Open Space	Condition/ Utilization
Non-Residential Study Area							
1	Flushing Meadows-Corona Park	DPR	Benches, paved walkway, tennis courts, golf course	15.46	7.73	7.73	Fair/ Heavy
2	Flushing Bay Promenade	DPR	Benches, paved walkway	6.65	3.33	3.33	Good/ Moderate
Non-Residential Study Area Total				22.11	11.06	11.06	
Residential Study Area							
3	Hinton Park	DPR	Game tables, benches, baseball diamonds, play areas	3.73	3.36	0.37	Very Good/ Moderate
4	Louis Armstrong Playground	DPR	Play areas, basketball courts	1.9	1.9	0.0	Very Good/ Moderate
5	Bland Playground	DPR	Basketball courts, handball courts, benches, swings, jungle gyms, fountain (for children's play)	0.55	0.5	0.05	Good/ Heavy
6	Daniel Carter Beard Mall	DPR	Benches	0.66	0.0	0.66	Fair/ Light
7	Lippman Arcade	NYC	Trees, seating	0.1	0.0	0.1	Good/ Heavy
8	Flushing Bay Promenade	DPR	Benches, paved walkway	9.24	4.62	4.62	Good/ Moderate
9	Flushing Meadows-Corona Park	DPR	Benches, paved walkway, tennis courts, golf course, soccer fields	117.17	58.59	58.59	Fair/ Heavy
10	Flushing Meadows- Corona Park Aquatic Center	DPR	Pool, ice rink	4.56	4.56	0.0	Excellent/ Heavy
Residential Study Area Total				137.91	73.53	64.39	
Outside Residential Study Area (Not Included in Quantitative Analysis)							
A	Flushing Branch Library	Queens Library	Stairway (suitable for sitting)	0.02	0.0	0.02	Good/ Heavy
B	Kissena Corridor West	DPR	Wide variety of active and passive amenities	100.0	50.0	50.0	Good/ Moderate
C	Flushing Meadows-Corona Park	DPR	Benches, paved walkway, playfield, golf course, tennis court	781.0	390.0	390.0	Fair/Heavy
D	Flushing Bay Promenade	DPR	Benches, paved walkway	3.92	1.96	1.96	Good/Moderate
E	Corona Golf Playground	DPR	Basketball courts, fitness equipment, handball courts, swings, jungle gyms, fountain (for children's play)	1.70	1.70	0.0	Excellent/ Heavy
F	Al Oerter Recreation Center	DPR	Indoor track, handball court, gym, fitness room, basketball court	0.46	0.46	0.0	Excellent/ Heavy
Notes: See Figure 5-1 for location of open spaces. The open space inventory presented in the 2008 FGEIS included 1.74 acres of open space associated with the New York City Housing Authority's James A. Bland Houses and 0.42 acres of open space at Flushing Greens. These two open spaces were excluded from the SEIS analysis per direction from the NYC Department of Parks and Recreation.							
Sources: New York City Department of Parks and Recreation open space database; AKRF, Inc. field surveys, August 2012.							

Willeys Point Development

At 898 acres, Flushing Meadows-Corona Park is Queens' largest park and one of the largest in New York City. The non-residential study area covers a small portion of the park that falls within ¼ mile of the District and is publicly accessible. As a result, 15.46 acres of open space within Flushing Meadows-Corona Park were included in the analysis. Given the significant size of Flushing Meadows-Corona Park, the precise breakdown of active versus passive open space is unknown. This analysis assumes that approximately half of Flushing Meadows-Corona Park is for active recreation and half is dedicated to passive recreation. Therefore, in the non-residential study area, approximately 7.73 acres is assumed to be active open space, and the remaining 7.73 acres is for passive open space uses. As described above, CitiField and its associated parking areas are not included in the Flushing Meadows-Corona Park acreage for this analysis.

The Flushing Bay Promenade is a 1.4-mile greenway that runs along Flushing Bay from LaGuardia Airport to Flushing Meadows-Corona Park. The promenade was built in 2001 and includes an asphalt biking and walking path, benches, and lighting. Shea Road and Northern Boulevard provide access to the promenade, but the Grand Central Parkway and Northern Boulevard largely isolate the promenade from adjacent residential uses. The portion of the promenade within the non-residential study area includes a biking/walking path and seating, as well as the World's Fair Marina. The World's Fair Marina is a commercial marina facility and, therefore, was not included in the quantitative analysis. As a result, 6.65 acres of the promenade, half of which is considered active space and half of which is considered passive open space, are included in the non-residential study area.

Overall, the non-residential study area includes 22.11 acres of open space, with 11.06 acres of active open space and 11.06 acres of passive use.

RESIDENTIAL (½-MILE) STUDY AREA

The residential study area has eight public open spaces, which total 137.91 acres. Of this total, approximately 73.53 acres are active space and 64.39 acres are passive. Portions of Flushing Meadows-Corona Park and the Flushing Bay Promenade fall within the residential study area. These areas include the USTA National Tennis Center, which is open to the public free of charge for 11 months out of the year and offers below-market court rentals to the public, as well soccer fields, a portion of the pitch and putt golf course, and a large field for passive and active uses. In addition to these resources, the Flushing Meadows-Corona Park Aquatic Center is located within ½-mile study area. This recreational resource includes a public Olympic-sized indoor pool, which operates as a standard DPR recreation facility, and an NHL-standard indoor ice hockey rink. The pool is open to any member of the general public with a standard annual membership at all times except during swimming meets and other special events. The facility is free for youths under 18. The ice rink is open daily to any member of the general public for a \$5 admission fee on weekdays and an \$8 admission fee on weekends.

Other open space resources in the residential study area that are under DPR jurisdiction include Hinton Park, Louis Armstrong Playground, Bland Playground, the Daniel Carter Beard Mall, and additional portions of the Flushing Bay Promenade. Hinton Park is a 3.73-acre park that includes game tables and sitting areas, baseball diamonds, and other play areas. The Louis Armstrong Playground is a 1.9-acre park that includes a basketball court and play areas. The Bland Playground is located on the same block as the New York City Housing Authority (NYCHA)'s James A. Bland Houses. The playground covers 0.55 acres and includes 0.50 acres of active uses, such as basketball and handball courts, swings, and jungle gyms, as well as 0.05

acres of passive uses, such as benches. The Daniel Carter Beard Mall is a 0.66-acre passive open space with benches available for sitting.

The residential study area also includes one open space that is not under DPR jurisdiction—the Lippman Arcade, which spans the block between Roosevelt Avenue and 39th Avenue and features bench seating. The Arcade is 0.10 acres.

QUALITATIVE DISCUSSION

Six additional open spaces are located just beyond the residential study area boundary (see **Figure 5-1** and **Table 5-4**). First, the Corona Golf Playground is located within a ½-mile radius of the proposed project site, but outside of the census tract-defined study area used for the quantitative open space analysis. The Corona Golf Playground was reconstructed in 2009 and features a water play area, basketball courts, a volleyball court, and fitness equipment. Second, the Flushing Branch Library is across the street from the residential study area boundary. Residents can sit on benches outside of the library or on the library's steps. Third, Kissena Corridor West is located just east of Flushing Meadows-Corona Park and the residential study area boundary. Kissena Corridor West is the western portion of the 100-acre Kissena Corridor Park that links Flushing Meadows-Corona Park to Kissena Park. Kissena Corridor West also includes the Queens Botanical Gardens, as well as active and passive open space resources. Fourth, approximately 781 acres of Flushing Meadows-Corona Park are located beyond the study area boundary. Recreational resources within the portion of Flushing Meadows-Corona Park outside of the study area boundary include tennis courts, soccer fields, sitting areas, and other active and passive resources, including the Al Oerter Recreation Center, a 20,000 square foot recreation center that opened in 2007 and includes an indoor track, racquetball and basketball courts, as well as cardiovascular and strength equipment, in addition to afterschool, teen, and senior programmatic activities. While these remaining acres may be outside of the study area boundary, they are entirely contiguous with the portions of the park within the study area and provide a number of active and passive recreational resources for study area residents. Finally, approximately 3.92 acres of the Flushing Bay Promenade is located outside of the study area boundary; however, the remainder of the Promenade is contiguous with the portion within the study area and would be easily accessible to study area residents.

Given that these resources are located outside of the study area, they are not included in the quantitative analysis. However, it is likely that study area residents take advantage of these parks, particularly the portions of Flushing Meadows-Corona Park and the Flushing Bay Promenade that are located just beyond the study area boundary.

ADEQUACY OF OPEN SPACES

QUANTIFIED ASSESSMENT

Non-residential (¼-Mile) Study Area

As described above, the analysis of the non-residential (¼-mile) study area focuses on passive open spaces that may be used by workers and students in the area. **Table 5-5** compares the existing ratio of acres of open space per 1,000 non-residents with the City's guideline ratio of 0.15 acres per 1,000 non-residents. The passive open space ratio for the non-residential study area is 2.51 acres of passive open space per 1,000 workers, which far exceeds the City's guideline of 0.15.

Table 5-5
Existing Conditions: Adequacy of Open Space Resources

Total Population		Open Space Acreage			Open Space Ratios (Acres per 1,000 People)			City Open Space Guidelines		
		Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
Non-residential (¼-Mile) Study Area										
Workers	4,406	22.11	11.06	11.06	N/A	N/A	2.51	N/A	N/A	0.15
Residential (½-Mile) Study Area										
Residents	30,048	140.07	73.97	66.11	4.66	2.46	2.14	2.5	2.0	0.5

Residential (½-Mile) Study Area

The quantitative assessment of the adequacy of open space resources within the residential (½-mile) study area considers the ratios of active, passive, and total open space acreage per 1,000 residents. The residential study area has a total of approximately 137.91 acres of open space, including 73.53 acres of active space and 64.39 acres of passive space. With an estimated residential population of 30,048, the residential study area has a total open space ratio of 4.59 acres per 1,000 residents. This is substantially higher than the City's planning goal of 2.5 total active and passive acres per 1,000 residents and also much higher than the City's median of 1.5 total acres per 1,000 residents.

The residential study area has a passive open space ratio of 2.14 acres of passive open space per 1,000 residents, which is above the City's benchmark of 0.5 acres of passive space per 1,000 residents. The area's active open space ratio is 2.45 acres per 1,000 residents, which exceeds the City's planning goal of 2.0 acres per 1,000 residents.

QUALITATIVE DISCUSSION

The resources described above that are located just beyond the residential study area boundary are likely utilized by residents and workers within the residential study area. This is particularly true for Flushing Meadows-Corona Park, a flagship park that draws people from throughout the City. The park's resources that were not included in the quantitative analysis include soccer fields and tennis courts, open fields that could be used for both passive and active use, and the Al Oerter Recreation Center. Even though these resources are located just beyond the study area boundary, residents would be able to easily utilize them due to their proximity to the study area and direct connection to the portion of the park located within the study area boundaries.

As shown in **Table 5-3** above, children ages 4 and younger in the residential study area comprise approximately 7.7 percent of the residential population. This proportion is higher than that of Queens (5.9 percent) and New York City (6.3 percent). Children in this cohort typically use traditional playgrounds that have play equipment for toddlers and preschool-aged children. Facilities in the study area offering such amenities include Bland Playground and Louis Armstrong Playground.

Children between the ages of 5 and 9 account for approximately 6.3 percent of the residential population in the residential study area (see **Table 5-3** above). This percentage is higher than the percentage for this age cohort in Queens (5.5 percent) and New York City (5.8 percent). Children ages 5 to 9 use traditional playgrounds with play equipment suitable for school-aged children, as well as grassy and hard-surfaced open spaces which are important for ball playing, running, skipping rope, and other active play. Within the study area, playgrounds such as Bland Playground and Louis Armstrong Playground, and other park and recreation spaces including

Flushing Meadows-Corona Park, Flushing Bay Promenade, and Flushing Meadows-Corona Park Aquatic Center include amenities appropriate for this age cohort.

Approximately 5.1 percent of residents in the residential study area are children between the ages 10 and 14 (see **Table 5-3** above). This proportion is less than the percentage represented by this age cohort in Queens (5.5 percent) and New York City (5.7 percent). Children between the ages of 10 and 14 tend to use playground equipment, court spaces, little league fields, and ball fields. Facilities in the study area offering such amenities include Bland Playground, Louis Armstrong Playground, Flushing Meadows-Corona Park, Flushing Bay Promenade, and Flushing Meadows-Corona Park Aquatic Center.

Teenagers and young adults between the ages of 15 and 19 account for approximately 6.2 percent of the residential study area population, a proportion that matches the proportion in Queens (6.2 percent) and is slightly lower than New York City (6.6 percent). Teenagers and young adults tend to utilize court facilities and active fields. Within the study area, Flushing Meadows-Corona Park, Flushing Bay Promenade, and Flushing Meadows-Corona Park Aquatic Center serve this age cohort.

The working-age population (ages 20 to 64) accounts for the largest percentage of the population in the residential study area (approximately 68.0 percent). This is a higher proportion than that for this age cohort in Queens (63.9 percent) and New York City (63.5 percent). This age cohort tends to use facilities for sports and active fields, as well as paths and other facilities that encourage individualized recreation. The facilities mentioned above as serving teenagers and young adults would also serve the working-age population.

The senior population (ages 65 and above) comprises approximately 6.7 percent of the residential study area's population. This represents almost half of the percentages for Queens (12.8 percent) and New York City (12.1 percent). Senior citizens tend to utilize facilities for active recreation like handball, tennis, gardening, and swimming, as well as passive recreational facilities. Within the study area, the senior population is served by various facilities for active recreation as well as facilities for passive use, including the Daniel Carter Beard Mall and Lippman Arcade.

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

The assessment of the No Action condition examines conditions that are expected to occur in the study area by 2018, 2028, and 2032, absent the proposed project. The capacity of open space resources to serve future populations in the study area is examined using quantitative and qualitative factors.

2018

STUDY AREA POPULATION

Non-residential (1/4-Mile) Study Area

Absent the proposed project, the non-residential study area will continue to experience residential, commercial, and institutional development. As described in detail in Chapter 2, "Land Use, Zoning, and Public Policy," by 2018, several No Action projects will be built in the non-residential study area. These projects are listed in Table 2-2 and their locations are shown in Figure 2-4.

Willeys Point Development

The known development projects will result in an estimated total of 246 new workers in the non-residential study area by 2018.¹ Based on these projects and the existing populations, the non-residential study area would have an estimated 4,652 workers in 2018.

Residential (1/2-Mile) Study Area

New development in the residential study area will introduce a total of 3,684 residential units, adding an estimated 10,389 residents.² The residential population in the residential study area in the No Action condition is estimated to be 40,437.

No substantial changes to the age distribution of the residential population are expected by 2018. Therefore, the estimated number of residents in each age cohort as shown in **Table 5-6** is based on the percent share for that age cohort at the time of the 2010 U.S. Census.

Table 5-6
2018 No Action Condition: Residential Population Age Distribution

Age Category	Persons	Percent
4 and younger	3,119	7.7%
5 to 9	2,546	6.3%
10 to 14	2,052	5.1%
15 to 19	2,496	6.2%
20 to 64	27,515	68.0%
65 and over	2,708	6.7%
Total	40,437	100.0%
Source: U.S. Census 2010, AKRF, Inc.		

STUDY AREA OPEN SPACES

Non-residential (1/4-Mile) Study Area

In the No Action condition, no notable changes are expected to the portions of Flushing Meadows-Corona Park that would be directly affected by the proposed project (i.e., the surface parking lots surrounding CitiField, which are mapped parkland).

There are no known planned or proposed open space projects in the non-residential study area. The New York City Department of Transportation is considering potential bicycle path and pedestrian access improvements to the Flushing Bay Promenade from Flushing, and some City capital funding has been allocated for streetscape improvements on Roosevelt Avenue west into Corona; however, there are no specific designs or timeline for implementation for either proposal.

¹ For all planned projects with the exception of the Major League Soccer (MLS) stadium, employment density ratios were applied to the expected square footage for each use to estimate future employment. The ratios used assume one worker each per: 25 residential units; 400 sf of retail space; 3.11 hotel rooms; 250 sf of general office space; 450 sf of medical office space; 1,000 sf of community facility space; 1,000 sf of industrial space or other commercial space (not retail or office); 11 school seats; and 50 parking spaces. Estimated full-time employment at the MLS stadium (165) was provided by EDC. An additional estimated 700 part-time stadium workers were not included in this analysis, as part-time workers would be present only on event days.

² Estimate of new residents based on an average household size of 2.82 for Queens (2010 Census).

Residential (1/2-Mile) Study Area

Within Flushing Meadows-Corona Park, there is a proposal to construct a new stadium for professional soccer purposes on the present site of the Fountain of the Planets and land surrounding the fountain. As currently contemplated, a 25,000-seat capacity stadium with the ability to be expanded to 35,000 seats would be constructed on an area of between 10 and 13 acres. In addition to the fountain, the stadium would displace four existing soccer fields, a basketball court, landscaped areas, and pathways, which would be relocated to other locations within the park. Both New York State alienation legislation and Land and Water Conservation Fund Act considerations will require the provision of replacement park land for this project. Approximately 7.37 acres of the MLS stadium site is located within the proposed project's 1/2-mile study area. Of that, 0.59 acres are currently occupied by active open space (soccer fields) and 6.78 acres are occupied by passive open space (Industry Pond and paved walkways).

Also within Flushing Meadows-Corona Park, a series of recreational improvements will be implemented as part of DPR's ongoing capital projects program. Overall, four soccer fields are anticipated to be improved, new volleyball courts are expected to be created, and DPR has identified repair and resurfacing of Porpoise Bridge, including repair of its tide gates, as a priority project.

*ADEQUACY OF OPEN SPACES**Quantitative Assessment**Non-residential (1/4-Mile) Study Area*

Absent the proposed project, by 2018, the number of workers in the non-residential study area is expected to increase to 4,652 and the total amount of open space is expected to remain at 22.11 acres, including 11.06 acres of passive open space. With the addition of new worker population in the No Action condition, the passive open space ratio for the non-residential study area would decrease from 2.51 to 2.38 acres per 1,000 non-residents (see **Table 5-7**). This would remain well above the City's guideline for this ratio of 0.15 acres per 1,000 non-residents.

Table 5-7
2018 No Action Condition: Adequacy of Open Space Resources

Total Population		Open Space Acreage			Open Space Ratios (Acres per 1,000 People)			City Open Space Guidelines		
		Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
Non-residential (1/4-Mile) Study Area										
Workers	4,652	22.11	11.06	11.06	N/A	N/A	2.38	N/A	N/A	0.15
Residential (1/2-Mile) Study Area										
Residents	40,437	130.54	72.94	57.61	3.23	1.80	1.42	2.5	2.0	0.5

Residential (1/2-Mile) Study Area

In the No Action condition, the increase in residents would decrease the total open space ratio from 4.59 to 3.23 acres per 1,000 residents. The active open space ratio would decrease from 2.45 to 1.80 acres per 1,000 residents, and the passive open space ratio would decrease from 2.14 to 1.42 acres per 1,000 residents. All three ratios would remain above the City's goals.

Qualitative Assessment

In the future without the proposed project, residents and workers will continue to be well served by open space. Park improvements implemented as part of DPR's ongoing capital projects

program will enhance the appearance and functionality of several spaces within Flushing Meadows-Corona Park, and study area residents will continue to have access to open spaces just outside the study area.

2028

STUDY AREA POPULATION

There are no known projects or open space improvements planned or proposed for completion by 2028 in the non-residential or residential study areas.

STUDY AREA OPEN SPACES

Non-residential (¼-Mile) Study Area

In the No Action condition, no notable changes are expected to the portions of Flushing Meadows-Corona Park that would be directly affected by the proposed project (i.e., the surface parking lots surrounding CitiField, which are mapped parkland).

There are no known planned or proposed open space projects in the non-residential study area.

Residential (½-Mile) Study Area

There are two open space improvements in the residential study area planned for completion by 2028. The first is 1.52 acres of passive open space planned as part of the Flushing Commons development in downtown Flushing (location shown in **Figure 5-1**). The second is the USTA National Tennis Center Strategic Vision. By 2019, this project would improve the NTC site plan, circulation, visitor amenities, and landscaping, and also would construct two new stadiums to replace the existing Louis Armstrong Stadium and Grandstand Stadium. The proposed project would also include modifications to tournament courts and ancillary buildings, possible improvements to Arthur Ashe Stadium, the construction of two new parking garages, the relocation of a connector road, and pedestrian enhancements. To accommodate the NTC Strategic Vision project, up to ~~1.02~~ 0.94 acres of land would be added to the NTC site, including 0.68-acres of park land that would be alienated, and 0.26-acres of previously alienated park land that is ~~outside the current~~ currently not included in the lease. Improvements to active recreation features in Flushing Meadows-Corona Park would also be provided. The project would add approximately 100 workers during the U.S. Open; however, employment would remain unchanged during the other eleven months of the year. The project is expected to be completed by 2019. Although the NTC Strategic Vision project would involve alienation of 0.68 acres of park land and reconfiguration of existing stadium and court space, the land utilized by the NTC would remain mapped parkland and would remain publicly accessible in the same way the rest of the NTC is publicly accessible, and replacement park land in two parcels totaling 1.56 acres would be surrendered from within the current boundaries of the NTC in connection with the alienation of the 0.68-acre parcel. Therefore, the NTC Strategic Vision project is not included below in the quantitative assessment of the adequacy of open spaces.

Aside from Flushing Commons and the NTC Strategic Vision project, there are no known open space improvements or development projects planned or proposed for completion by 2028 in the non-residential or residential study areas.

ADEQUACY OF OPEN SPACES

Quantitative Assessment

Non-residential (1/4-Mile) Study Area

Population and open space ratios would remain the same in the 2028 No Action condition as described for the 2018 No Action condition (see **Table 5-8**).

Table 5-8
2028 No Action Condition: Adequacy of Open Space Resources

Total Population		Open Space Acreage			Open Space Ratios (Acres per 1,000 People)			City Open Space Guidelines		
		Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
Non-residential (¼-Mile) Study Area										
Workers	4,652	22.11	11.06	11.06	N/A	N/A	2.38	N/A	N/A	0.15
Residential (½-Mile) Study Area										
Residents	40,437	132.06	72.94	59.13	3.27	1.80	1.16	2.5	2.0	0.5

Residential (1/2-Mile) Study Area

In the No Action condition, the increase in passive open space at Flushing Commons would increase the total open space ratio from 3.23 to 3.27 acres per 1,000 residents. The active open space ratio would remain the same at 1.80 acres per 1,000 residents, and the passive open space ratio would increase from 1.42 to 1.46 acres per 1,000 residents. All three ratios would remain above the City's goals.

Qualitative Assessment

In the future without the proposed project, residents and workers will continue to be well served by open space.

2032

There are no known projects or open space improvements planned or proposed for completion by 2032 in the non-residential or residential study areas. Therefore, population and open space estimates and open space ratios would remain the same in the 2032 No Action condition as described for the 2028 No Action condition.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

The assessment of the With Action condition examines conditions that are expected to occur as a result of the RWCDs by each of the three analysis years (2018, 2028, and 2032). The capacity of open space resources to serve future populations in the study area is examined using quantitative and qualitative factors. The potential for direct effects on open space is also considered.

DIRECT EFFECTS

As described above, direct adverse effects on an open space occur when a proposed action would cause the physical loss of public open space; change the use of an open space so that it no longer serves the same user population; limit public access to an open space; or cause increased noise or air pollutant emissions, odors, or shadows that would affect its usefulness, whether on a permanent or temporary basis.

Willets Point Development

The proposed project would not have any adverse impacts on existing open space in terms of air quality, noise, or shadows in any of the three build years analyzed (see Chapter 6, “Shadows,” Chapter 15, “Air Quality,” and Chapter 17, “Noise,” for additional information). Noise associated with traffic generated by the proposed project and its associated parking facilities would not be expected to result in any significant increases in noise levels, including at World’s Fair Marina Park, which was predicted to experience a significant adverse noise impact in the 2008 FGEIS during the Saturday midday time period. Noise levels in the newly created open spaces would be greater than prescribed by CEQR criteria, but would be comparable to other parks around New York City and would not constitute a significant adverse impact. The Willets West development would cast new shadows of very limited extent and duration on nearby landscaped traffic islands and a portion of an area containing trees in the winter only, and these would not cause significant adverse shadow impacts. The proposed project would not cause increased noise or air pollutant emissions or odors that would affect the usefulness of existing or newly created open spaces.

PHASE 1A (2018)

Phase 1A of the proposed project (Willets West) would build upon 30.7 acres west of surface parking located west of CitiField. While this land is mapped as parkland, it does not function as recreational open space. The land was occupied by Shea Stadium and associated parking and circulation space until it was replaced by CitiField in 2009, and it is now occupied exclusively by surface parking. There is one event—the Major League Wheelchair Softball Tournament—that is held in this area; however, this is not an event that provides open space on a constant and regular basis for designated daily periods. This use is therefore not considered a public open space use as defined under CEQR. Furthermore, the Major League Wheelchair Softball Tournament would be relocated to the Special Willets Point District in Phase 1A of the proposed project. Therefore, developing this mapped parkland has no effect on the adequacy of open space for the study area residential and non-residential populations.

The Willets West portion of the project site contains traffic islands within and around the perimeter of the surface parking area, which are currently planted with trees. It is anticipated that some of these trees would require removal for construction of the proposed project. Likewise, it is anticipated that trees located on the westernmost CitiField surface parking lot south of Roosevelt Avenue would be removed for construction of a structured parking facility for CitiField. Tree removal and replacement would be conducted in conformance with DPR requirements, including approval from DPR’s Queens forestry division.

PHASE 1B (2028)

Phase 1B of the proposed project would not directly displace any public open spaces. It is anticipated that trees located within traffic islands on portions of the CitiField leasehold along Roosevelt Avenue (South Lot and Lot D) would need to be removed for construction of structured parking. Tree removal and replacement would be conducted in conformance with DPR requirements, including approval from DPR’s Queens forestry division.

PHASE 2 (2032)

Phase 2 of the proposed project would not directly displace any public open spaces. By 2032, it is assumed that Lot B would also be developed for office, retail, and parking uses. While this land is mapped as parkland, it does not function as recreational open space. The land has been

occupied by Shea Stadium- and CitiField-associated parking and circulation space since approximately 1964. Therefore, developing this mapped parkland has no effect on the adequacy of open space for the study area residential and non-residential populations.

All phases of project would provide pedestrian access from 126th Street to the MTA-owned sites along Flushing Creek, should they be developed with public open space in the future. For Phase 1A of the project, an 8-foot corridor would be provided between the parking lot and Roosevelt Avenue to provide potential future pedestrian access between 126th Street and the MTA parcels. For Phases 1B and 2 of the project, in compliance with the regulations of the Special Willets Point District, a 40-foot pedestrian amenity corridor between 126th Street and the MTA parcels would replace the 8-foot corridor, providing for continuous access to the MTA parcels.

INDIRECT EFFECTS

STUDY AREA POPULATION

Phase 1A (2018)

Non-Residential (1/4-Mile) Study Area

The proposed project would introduce approximately 3,671 workers to the non-residential study area by 2018. At the same time, as described in Chapter 3, “Socioeconomic Conditions,” the project would displace approximately 122 existing businesses by 2018. These businesses employ an estimated 530 workers. Accounting for new and displaced employees, the non-residential study area worker population would increase to 7,793 by 2018.

Residential (1/2-Mile) Study Area

The proposed project would not introduce any residential population by 2018. The estimated residential study area residential population would remain at 40,437.

Phase 1B (2028)

Non-Residential (1/4-Mile) Study Area

The proposed project would introduce a total of 8,237 new workers by 2028 (4,566 new workers during Phase 1B). At the same time, the remaining 98 businesses currently located on the project site would be displaced. These businesses employ an estimated 823 workers. Accounting for new and displaced employees, the non-residential study area worker population would increase to 11,583 by 2028.

Residential (1/2-Mile) Study Area

Phase 1B of the proposed project would introduce 2,490 dwelling units, with an estimated 7,022 residents, by 2028. With the addition of these new residents, the residential study area residential population would increase to 47,459 in 2028.

Phase 2 (2032)

Non-Residential (1/4-Mile) Study Area

The proposed project would introduce a total of 9,666 new workers by 2032 (1,448 new workers during Phase 2), and an additional 1,581 workers would be added in the RWCDs by the development of Lot B. With these additional workers, the non-residential study area worker population would increase to 14,602 in 2032.

Willets Point Development

Residential (1/2-Mile) Study Area

By 2032, the proposed project would introduce a total of 5,850 dwelling units, with an estimated 16,497 residents. With the addition of these new residents, the residential study area residential population would increase to 56,934 in 2032.

The age distribution of the residential population is not expected to substantially change as a result of the proposed project. **Table 5-9** shows the estimated number of residents in each age cohort, based on the percent share for that age cohort at the time of the 2010 Census.

Table 5-9
With Action Condition (2032): Residential Population Age Distribution

Age Category	Persons	Percent
4 and younger	4,392	7.7%
5 to 9	3,585	6.3%
10 to 14	2,890	5.1%
15 to 19	3,515	6.2%
20 to 64	38,740	68.0%
65 and over	3,812	6.7%
Total	56,934	100.0%
Source: U.S. Census 2010.		

STUDY AREA OPEN SPACES

Phase 1A (2018)

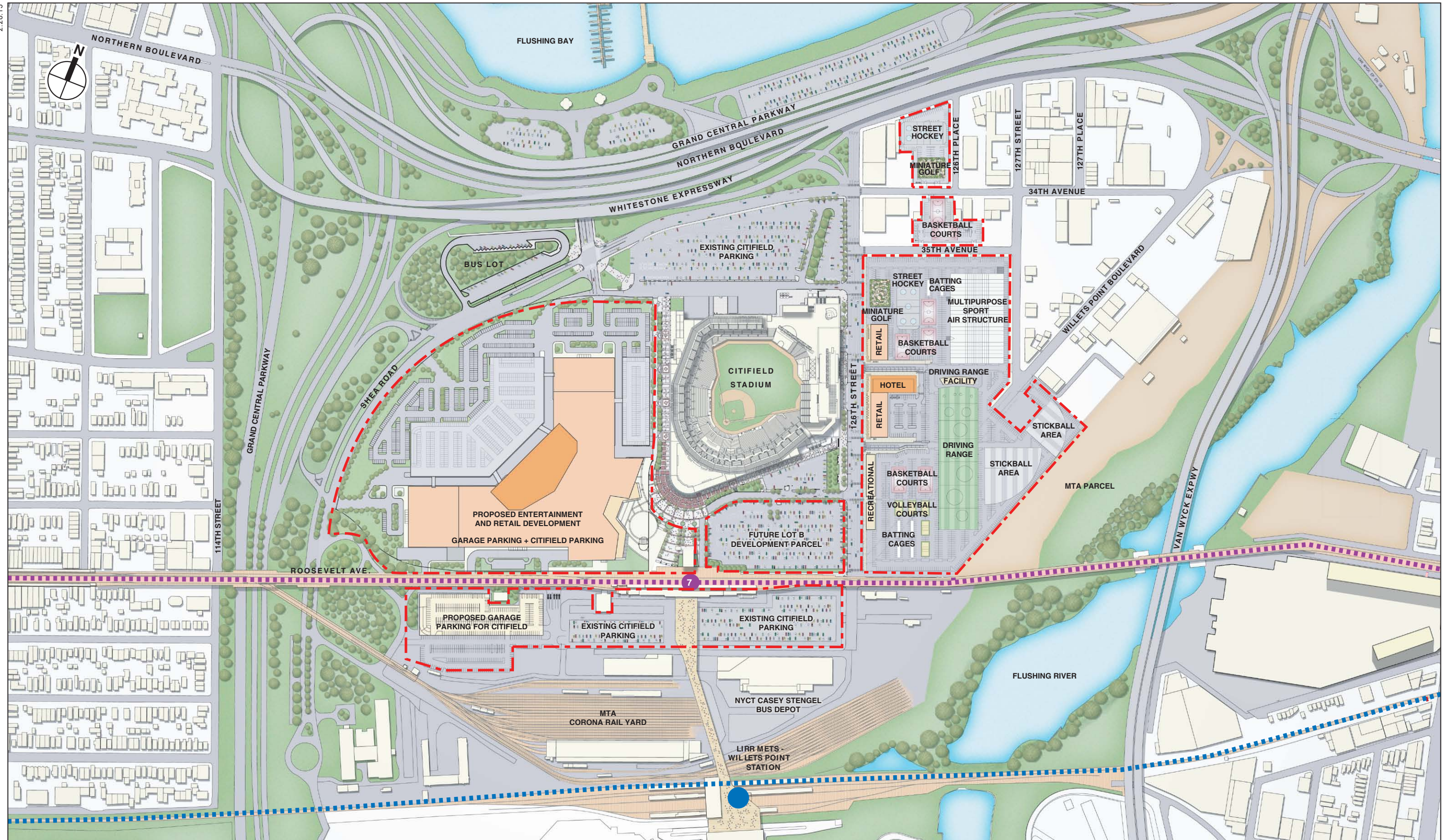
During Phase 1A of the proposed project, the parking area within the Special Willets Point District would be converted to active recreational use a minimum of six months per year. **Figure 5-2** shows an illustrative site plan for the recreational uses that could be provided during Phase 1A. As this interim parking/recreational space would only be available half the year, it is not included in the quantitative assessment of the adequacy of open space presented below. The total amount of passive open space in the non-residential study area would remain at 11.06 acres. The residential study area would continue to have a total of 130.54 acres of open space, comprised of 72.94 acres of active space and 57.61 acres of passive space.

Phase 1B (2028)

Phase 1B of the proposed project would include the development of 6 acres of privately owned, publicly accessible open space. The programming of the Phase 1B open space is currently conceptual; however, for the purposes of this analysis, it is considered to be comprised of entirely passive uses. A more detailed description of the proposed project's open space is presented below under Phase 2. With this open space, the total amount of passive open space in the non-residential study area would increase to 16.06 acres by 2028. The residential study area would have a total of 137.06 acres of open space, comprised of 72.94 acres of active space and 64.13 acres of passive space.

Phase 2 (2032)

By 2032, the proposed project would add a minimum of eight acres of privately owned, publicly accessible open space to the study area. As described in the 2008 FGEIS and per the regulations of the District, this would include an approximately two-acre park, which is assumed to be developed with primarily active recreational uses. The park would be centrally located within the residential community in the eastern part of the District. While portions of this park may



Illustrative Site Plan, Phase 1A - Recreation Plan
Figure 5-2

contain play equipment, fields, or courts used exclusively by the students of the proposed school during school hours, these recreational facilities would be publicly accessible during the remainder of the day and are therefore included in the quantitative assessment. The remaining open space within the District would be programmed primarily for passive use. The regulations of the District prescribe design standards for these publicly accessible areas and also require pedestrian amenity areas or open landscaped areas, and specify minimum dimensions of these public access areas, at various locations along the perimeter of the District. The regulations ensure that public access areas are developed in conjunction with the surrounding development by stipulating the dimensions of public access areas that must be provided along with certain developments (i.e., with developments or enlargements at least 100,000 sf in size and on zoning lots at least 200,000 sf).

Consistent with the assumptions of the 2008 FGEIS, this analysis assumes that approximately 20 percent of the approximately 8 acres of new open space (1.6 acres) to be developed within the District would be for active uses, and the remaining 80 percent (6.4 acres) would be programmed for passive use. With the proposed project, the amount of open space in the non-residential and residential study areas would increase to approximately 30.11 and 140.06 acres, respectively. The non-residential study area would have 17.46 acres of passive open space and 12.66 acres of active open space. The residential study area would have 65.53 acres of passive open space and 74.54 acres of active open space.

ADEQUACY OF OPEN SPACES

Quantitative Assessment

Phase 1A (2018): Non-Residential (¼-Mile) Study Area

In the 2018 With Action condition, the ratio of passive open space acreage per 1,000 workers would decrease compared with the 2018 No Action condition, from 2.38 to 1.42 in 2018 (see **Table 5-10**). This ratio would continue to well exceed the recommended City guideline of 0.15 acres per 1,000 non-residents.

Table 5-10
With Action Condition: Adequacy of Open Space Resources

Build Year	Total Population	Open Space Acreage				Open Space Ratios Acres per 1,000 Population			City Open Space Guidelines		
		Total	Active	Passive	Total	Active	Passive	Total	Active	Passive	
Non-residential (¼-Mile) Study Area											
2018	Workers	7,793	22.11	11.06	11.06	N/A	N/A	1.42	N/A	N/A	0.15
2028	Workers	11,538	27.11	11.06	16.06	N/A	N/A	1.39	N/A	N/A	0.15
2032	Workers	14,602	30.11	12.66	17.46	N/A	N/A	1.20	N/A	N/A	0.15
Residential (½-Mile Study Area											
2018	Residents	40,437	130.54	72.94	57.61	3.23	1.80	1.42	2.5	2.0	0.5
2028	Residents	47,459	137.06	72.94	64.13	2.89	1.54	1.35	2.5	2.0	0.5
2032	Residents	56,934	140.06	74.54	65.53	2.46	1.31	1.15	2.5	2.0	0.5

Phase 1A (2018): Residential (½-Mile) Study Area

The open space ratios for the residential study area would not change in 2018 with the project as compared to the No Action condition. The total and passive open space ratios would remain well above City guidelines, at 3.23 and 1.42 acres per 1,000 residents, respectively (see **Table 5-10**).

Willeys Point Development

The active open space ratio, at 1.80 acres per 1,000 residents, would be below the City's planning goal of 2.0.

Phase 1B (2028): Non-Residential (1/4-Mile) Study Area

In 2028, the ratio of passive open space acreage per 1,000 workers would decrease compared with the No Action condition, from 2.38 to 1.39 in 2028. This ratio would continue to well exceed the recommended City guideline of 0.15 acres per 1,000 non-residents.

Phase 1B (2028): Residential (1/2-Mile) Study Area

In 2028, the total open space ratio for the residential study area would decrease from 3.27 acres per 1,000 residents in the No Action condition to 2.89 acres per 1,000 residents in the With Action condition. The ratio would remain above City's planning goal of 2.5 acres per 1,000 residents. The active open space ratio would decrease from 1.80 to 1.55 acres per 1,000 residents, which would fall below the City's goal of 2.0. The passive open space ratio would decrease from 1.46 to 1.35, but would remain well above the goal of 0.5 acres per 1,000 residents.

Phase 2 (2032): Non-Residential (1/4-Mile) Study Area

In 2032, with the addition of proposed project and Lot B new worker populations and new proposed project passive open space, the ratio of passive open space acreage per 1,000 workers would decrease to 1.20 acres per 1,000 residents (see **Table 5-10**). This ratio would continue to well exceed the recommended City guideline of 0.15 acres per 1,000 non-residents.

Phase 2 (2032): Residential (1/2-Mile) Study Area

The total open space ratio for the residential study area would decrease in 2032 from 3.27 acres per 1,000 residents in the No Action condition to 2.46 acres per 1,000 residents in the With Action condition (see **Table 5-10**). The ratio would be just below the City's planning goal of 2.5 acres per 1,000 residents. The active open space ratio would decrease from 1.80 acres per 1,000 residents in the No Action condition to 1.31 acres per 1,000 residents in the With Action condition, which is below the City's goal of 2.0. The passive open space ratio would decrease from 1.46 to 1.15, but would remain above the goal of 0.5 acres per 1,000 residents.

Qualitative Assessment

As indicated above, the passive open space ratio would remain above City guidelines in all three of the analysis years. The total open space ratio would remain above City guidelines in 2018 and 2028. In 2032, the total open space ratio would be 2.46 acres per 1,000 residents, which would be slightly below the City guideline of 2.5. Although the active open space ratio would fall below the City's planning goal in the 2028 and 2032 With Action analysis years, the total open space ratio would remain above the Citywide median of 1.5 acres per 1,000 residents, and residents in the study area would have access to parks just outside of the study area, including Corona Golf Playground, and areas of Flushing Meadows-Corona Park and the Flushing Bay Promenade that fall outside of the study area. Both Flushing Meadows-Corona Park and the Flushing Bay Promenade would draw residents from beyond a 1/2-mile. The Flushing Meadows-Corona Park in particular serves as a destination and would draw residents from beyond a 1/2-mile to utilize the variety of passive and active open spaces that it offers.

As shown in **Table 5-3**, the study area population has a somewhat higher proportion of young children and children (ages 4 and younger and ages 5 to 9) as compared with Queens and New York City. Children in these age brackets tend to use traditional playgrounds with play equipment suitable for preschool and school age children, as well as grassy and hard-surfaced open spaces which are important for ball playing, running, skipping rope, and other active play.

Demand for these types of facilities is served within the residential study area by several playgrounds and active spaces including Bland Playground, Louis Armstrong Playground, Hinton Park, Flushing Meadows-Corona Park, Flushing Bay Promenade, and Flushing Meadows-Corona Park Aquatic Center. By 2032, the proposed project would introduce a 2-acre park in the District, which would be programmed primarily for active use and would help serve both new and existing study area children.

IMPACT SIGNIFICANCE

According to the *CEQR Technical Manual*, the significance of a project's effects on open space is assessed using both qualitative and quantitative factors. These effects are compared with those that would occur in the No Action condition to determine the effects attributable to the proposed action.

According to the *CEQR Technical Manual*, if the decrease in the open space ratio approaches or exceeds 5 percent, it is generally considered a substantial change warranting a more detailed analysis. However, the change in the open space ratio should be balanced against how well served an area is by open space. If the study area exhibits a low open space ratio, even a small decrease may warrant a detailed analysis. Likewise, if the study area exhibits an open space ratio that approaches or exceeds the planning goal of 2.5 acres, a greater percentage of change in the ratio may be acceptable.

DIRECT EFFECTS

The proposed development of the Willets West and Roosevelt Avenue portions of the project, as well as the potential development of Lot B, on land that is mapped as parkland would not constitute a significant adverse open space impact. As noted earlier, this land is occupied by paved surface parking for CitiField and does not function as either active or passive recreational open space. There is one event—the Major League Wheelchair Softball Tournament—that is held in this area; however, this is not an event that provides open space on a constant and regular basis for designated daily periods. This use is therefore not considered a public open space use as defined under CEQR. Furthermore, the Major League Wheelchair Softball Tournament would be relocated to the Special Willets Point District in Phase 1A of the proposed project. The proposed project would not result in significant adverse shadow, noise, or air quality impacts on any of the open spaces in the study area. The proposed project would activate the Willets West area, making it more appealing to residential and non-residential populations and improving connections between the study area populations and the Flushing Bay Promenade.

NON-RESIDENTIAL (1/4-MILE) STUDY AREA

As shown in **Table 5-11**, while the passive open space ratio for workers would decrease by approximately 41 and 50 percent as compared to the No Action condition in 2028 and 2032, respectively, the ratio in 2032 would be 1.20 acres of passive open space per 1,000 workers, which well exceeds the City's guideline of 0.15. Therefore, the RWCDS would not result in any significant adverse impacts to open space resources in the non-residential study area.

Table 5-11
With Action Condition: Open Space Ratios Summary

Ratio	City Guideline	Open Space Ratios (acres per 1,000 people)			Percent Change, No Action to With Action Condition
		Existing Conditions	No Action Condition	With Action Condition	
Phase 1A (2018)					
Non-Residential (¼-Mile) Study Area					
Passive/Workers	0.15	2.51	2.38	1.42	-40%
Residential (½-Mile) Study Area					
Total/Residents	2.5	4.59	3.23	3.23	0%
Active/Residents	2.0	2.45	1.80	1.80	0%
Passive/Residents	0.5	2.14	1.42	1.42	0%
Phase 1B (2028)					
Non-Residential (¼-Mile) Study Area					
Passive/Workers	0.15	2.51	2.38	1.39	-41%
Residential (½-Mile) Study Area					
Total/Residents	2.5	4.59	3.23	2.89	-11%
Active/Residents	2.0	2.45	1.80	1.54	-15%
Passive/Residents	0.5	2.14	1.42	1.35	-5%
Phase 2 (2032)					
Non-Residential (¼-Mile) Study Area					
Passive/Workers	0.15	2.51	2.38	1.20	-50%
Residential (½-Mile) Study Area					
Total/Residents	2.5	4.59	3.23	2.46	-24%
Active/Residents	2.0	2.45	1.80	1.31	-27%
Passive/Residents	0.5	2.14	1.42	1.15	-19%

RESIDENTIAL (½-MILE) STUDY AREA

No change to the open space ratios for the residential study area would take place by 2018. In the 2028 analysis year, the ratios for active, passive, and total open space in the residential study area would decrease in the With Action condition by 15 percent, 5 percent, and 11 percent, respectively. By 2032, these ratios would decrease in the With Action condition by between 19 and 27 percent (see **Table 5-11**).

Although the ratio of total open space to residents would decrease by 24 percent by 2032, at 2.46, it would still approach the City's planning goal of 2.5 acres per 1,000 residents. The population in the residential study area would continue to be well served by a mix of passive and active open space in the future with the proposed project, and therefore the RWCDS would not result in any significant adverse impacts to the total open space ratio in the residential study area.

Similarly, although the ratio of passive open space to residents would decrease by 19 percent by 2032, it would remain well above the City's planning goal of 0.5 acres per 1,000 residents, at 1.15. Therefore the RWCDS would not result in any significant adverse impacts to the passive open space ratio in the residential study area.

In contrast, the ratio for active open space in the residential study area would decrease by 15 and 27 percent compared to the 2028 and 2032 No Action conditions, respectively, and, at 1.54 and 1.31 acres per 1,000 residents, respectively, would fall below the City's planning goal of 2.0.

Although the declines in the active open space ratio between the No Action and With Action conditions in 2028 and 2032 suggest that a significant adverse impact could result, there are a number of important factors not addressed in the quantitative analysis.

First, QDG would work to incorporate ground-level, active open space and other recreational resources such as rooftop and interior programming of recreational amenities into the project design

for Phase 1B, and EDC would encourage through its formal RFP process the future developer of Phase 2 to incorporate similar features into the Phase 2 development. While these recreational amenities may be available only to tenants and residents of the site—and thus have not been included in the quantitative analysis—these amenities would help offset the burden on public active and passive resources resulting from the introduction of new users on the project site.

Second, the remainder of the most significant open space in Queens—the 898-acre Flushing Meadows-Corona Park—is not included in the quantitative analysis. This park is one of the flagship parks in the DPR inventory and draws residents from throughout the City. Residents could utilize the park’s active open space amenities and recreational facilities that are just beyond the residential study area boundary and thus were not included in the quantitative analysis. As described above, these include soccer fields and tennis courts, open fields that could be used for both passive and active use, and the Al Oerter Recreation Center.

Bicycle lanes would be required on connector streets within the redeveloped District. The bicycle lanes in the District would connect to the area-wide bicycle and greenway network, and indoor accessory bicycle parking would be required for all new residential, office, and retail uses developed in the District. Together, these measures would improve connectivity between Willets Point and surrounding areas, and provide new active recreational opportunities for area residents and visitors.

Finally, the Kissena Corridor West portion of the 100-acre Kissena Corridor Park is located just outside the residential study area to the east. This large destination park would provide additional active and passive open space resources to residents in the District.

Therefore, the RWCDs would not result in any significant adverse impacts to open space resources in the residential study area that were not previously identified in the 2008 FGEIS and subsequent technical memoranda. *

A. INTRODUCTION

This chapter assesses the potential of the proposed project to cast new shadows on surrounding public open space or other sunlight-sensitive resources. The analysis updates changes to the proposed project and background conditions since the 2008 Final Generic Environmental Impact Statement (FGEIS) and assesses whether any changed background conditions or differences in elements between the proposed project and the development program analyzed in the 2008 FGEIS and subsequent technical memoranda would result in significant adverse shadow impacts on publicly accessible open spaces, sunlight-sensitive features of historic and cultural resources, or important natural resources that were not addressed in the 2008 FGEIS or subsequent technical memoranda.

PRINCIPAL CONCLUSIONS

The analysis concluded that the proposed parking structure in the South Lot would cast new shadows early in the mornings in all seasons onto adjacent traffic islands and a portion of an area containing trees, but that the shadows would be limited in extent and duration and would not cause significant adverse shadow impacts to these sections of Flushing Meadows-Corona Park. The Willets West development would cast new shadows of very limited extent and duration on nearby landscaped traffic islands in the winter only, and these would not cause significant adverse shadow impacts. Therefore, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in any significant adverse shadows impacts.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS analyzed the potential of proposed development within the Special Willets Point District and on Lots B and D on Roosevelt Avenue to have significant adverse shadow impacts on sunlight-sensitive resources. The 2008 FGEIS concluded that development in the District could cast some incremental shadow onto Flushing Bay, the Flushing Bay Promenade, and the Flushing River in some seasons, but the extent and duration of such incremental shadow would not be large or long enough to cause a significant adverse impact on any of these resources. In addition, the 2008 FGEIS concluded that potential future development on Lots B and D would not cause a significant adverse impact on any sunlight-sensitive resources. The subsequent technical memoranda also concluded that the proposed revisions to the Willets Point Development Plan would not have significant adverse shadow impacts.

C. DEFINITIONS AND METHODOLOGY

This analysis has been prepared in accordance with New York City Environmental Quality Review (CEQR) procedures and follows the guidelines of the 2012 *CEQR Technical Manual*.

DEFINITIONS

Incremental shadow is the additional, or new, shadow that a structure resulting from a proposed project would cast on a sunlight-sensitive resource.

Sunlight-sensitive resources are those resources that depend on sunlight or for which direct sunlight is necessary to maintain the resource's usability or architectural integrity. Such resources generally include:

- *Public open space* (e.g., parks, beaches, playgrounds, plazas, schoolyards, greenways, landscaped medians with seating). Planted areas within unused portions of roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources.
- *Features of architectural resources that depend on sunlight for their enjoyment by the public*. Only the sunlight-sensitive features need be considered, as opposed to the entire resource. Such sunlight-sensitive features might include: design elements that depend on the contrast between light and dark (e.g., recessed balconies, arcades, deep window reveals); elaborate, highly carved ornamentation; stained glass windows; historic landscapes and scenic landmarks; and features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as a historic landmark.
- *Natural resources* where the introduction of shadows could alter the resource's condition or microclimate. Such resources could include surface water bodies, wetlands, or designated resources such as coastal fish and wildlife habitats.

Non-sunlight-sensitive resources include, for the purposes of CEQR:

- *City streets and sidewalks* (except Greenstreets);
- *Private open space* (e.g., front and back yards, stoops, vacant lots, and any private, non-publicly accessible open space);
- *Project-generated open space* cannot experience a significant adverse shadow impact from the project, according to CEQR, because without the project the open space would not exist. However, a qualitative discussion of shadows on the project-generated open space should be included in the analysis.

A **significant adverse shadow impact** occurs when the incremental shadow added by a proposed project falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources. Each case must be considered on its own merits based on the extent and duration of new shadow and an analysis of the resource's sensitivity to reduced sunlight.

METHODOLOGY

Following the guidelines of the *CEQR Technical Manual*, a preliminary screening assessment must first be conducted to ascertain whether a project's shadow could reach any sunlight-sensitive resources at any time of year. The preliminary screening assessment consists of three tiers of analysis. The first tier determines a simple radius around the proposed building

representing the longest shadow that could be cast. If there are sunlight-sensitive resources within this radius, the analysis proceeds to the second tier, which reduces the area that could be affected by project shadow by accounting for the fact that shadows can never be cast between a certain range of angles south of the project site due to the path of the sun through the sky at the latitude of New York City.

If the second tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a third tier of screening analysis further refines the area that could be reached by project shadow by looking at specific representative days in each season and determining the maximum extent of shadow over the course of each representative day.

If the third tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a detailed shadow analysis is required to determine the extent and duration of the incremental shadow resulting from the project. The detailed analysis provides the data needed to assess the shadow impacts. The effects of the new shadows on the sunlight-sensitive resources are described, and their degree of significance is considered. The results of the analysis and assessment are documented with graphics, a table of incremental shadow durations, and narrative text.

ANALYSIS FRAMEWORK

Due to its proximity to LaGuardia Airport, the Special Willets Point District is subject to height restrictions established by the Federal Aviation Administration (FAA) and the Port Authority of New York and New Jersey (PANY/NJ). Therefore, the 2008 FGEIS and subsequent technical memoranda conservatively analyzed the entire District at the maximum building envelope height allowed under these restrictions. The structures contemplated for the District in the current proposed project, including Phases 1A, 1B, and 2, fall well within the maximum building envelope height previously analyzed and approved. In addition, there have been no substantive changes to background conditions relevant to the analysis; in other words, there have been no changes to the inventory of sunlight-sensitive resources or new intervening structures. Consequently, the District does not require further analysis.

Similarly, in the 2008 FGEIS and subsequent technical memoranda the shadow screening analysis conservatively considered a maximum building envelope for the potential future development on Lot B that would be no higher than the CitiField stadium, which was approved by the FAA for 218 feet above ground level, or 232 feet above mean sea level (AMSL). This Supplemental Environmental Impact Statement (SEIS) conservatively assumes that the potential future development on Lot B would not be any taller than that which was considered for this site in the 2008 FGEIS. Therefore, no additional analysis is warranted for the Lot B structure.

The 2008 FGEIS analyzed the Lot D development as a five-story structure. As currently contemplated, the parking structure to be developed on Lot D would be 63 feet in height, similar to the parking structures on the South Lot. Therefore, this analysis conservatively included the 63-foot structure in the analysis.

The proposed “Willets West” development on the surface parking lot west of the CitiField stadium is a new element of the project since the 2008 FGEIS. This proposed structure would reach a maximum height of 104.67 feet and therefore requires a shadows assessment. The proposed South Lot parking facilities are also new to the project since the 2008 FGEIS. These two structures would reach a maximum height of 63 feet and consequently also require a shadows assessment.

D. PRELIMINARY SCREENING ASSESSMENT

A base map was developed using Geographic Information Systems (GIS)¹ showing the location of the proposed structures and the surrounding street and park layout (see **Figure 6-1**). In coordination with the open space, historic and cultural resources, and natural resources assessments presented in other chapters of this EIS, potential sunlight-sensitive resources were identified and shown on the map.

TIER 1 SCREENING ASSESSMENT

For the Tier 1 assessment, the longest shadow that a proposed structure could cast is calculated, and, using this length as the radius, a perimeter is drawn around the structure. Anything outside this perimeter representing the longest possible shadow could never be affected by project generated shadow, while anything inside the perimeter needs additional assessment.

Figure 6-1 shows the proposed structures for analysis with their heights. Most of the Willets West structure to be developed in Phase 1A (2018) would have a height of 73.67 feet, with lower elements in the northwest and northeast portions at 51 and 40 feet respectively, and a central element at 104.67 feet. The two parking structures in the South Lot, and the parking structure in Lot D, would each be 63 feet in height. These structures would be developed in Phases 1A (2018) and 1B (2028).

Within the CEQR analysis framework, the longest shadow a structure can cast occurs on December 21 at the start of the analysis day at 8:51 AM, and its length is equal to 4.3 times the structure's height. Diagram A on **Figure 6-1** shows the longest shadow study area for each structure, or in the case of Willets West, each structure part that has a consistent roof height. For example, the longest shadow study areas for each of the three 63-foot-high structures in the South Lot and Lot D would be a perimeter around each structure with a radius of 270.9 feet (63' x 4.3). For Willets West, the longest shadow that the tallest portion in the center of the proposed structure could cast would be 450 feet, and a perimeter with a radius of 450 feet is delineated around that portion of the structure. The portion of Willets West that is 73.67 feet high would have a longest shadow study area with a radius of 316.8 feet, and the shorter portions of Willets West would have longest shadow study areas with radii of 204 and 172 feet.

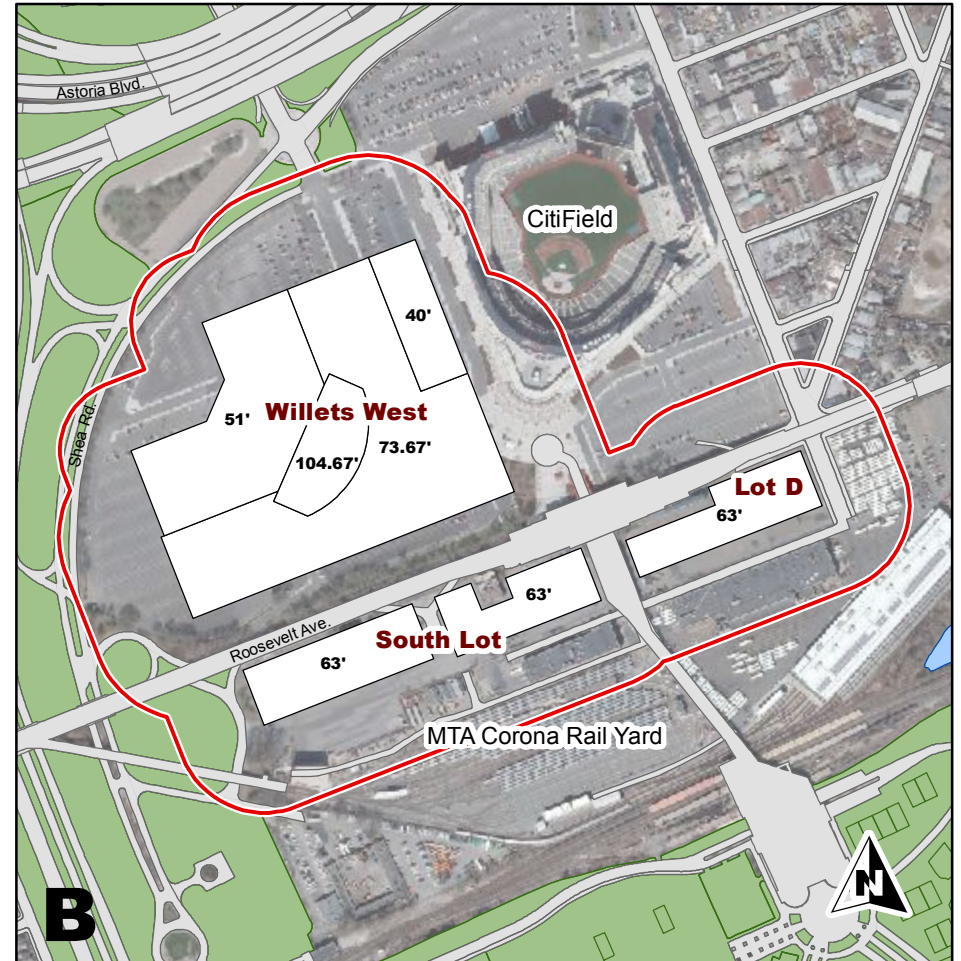
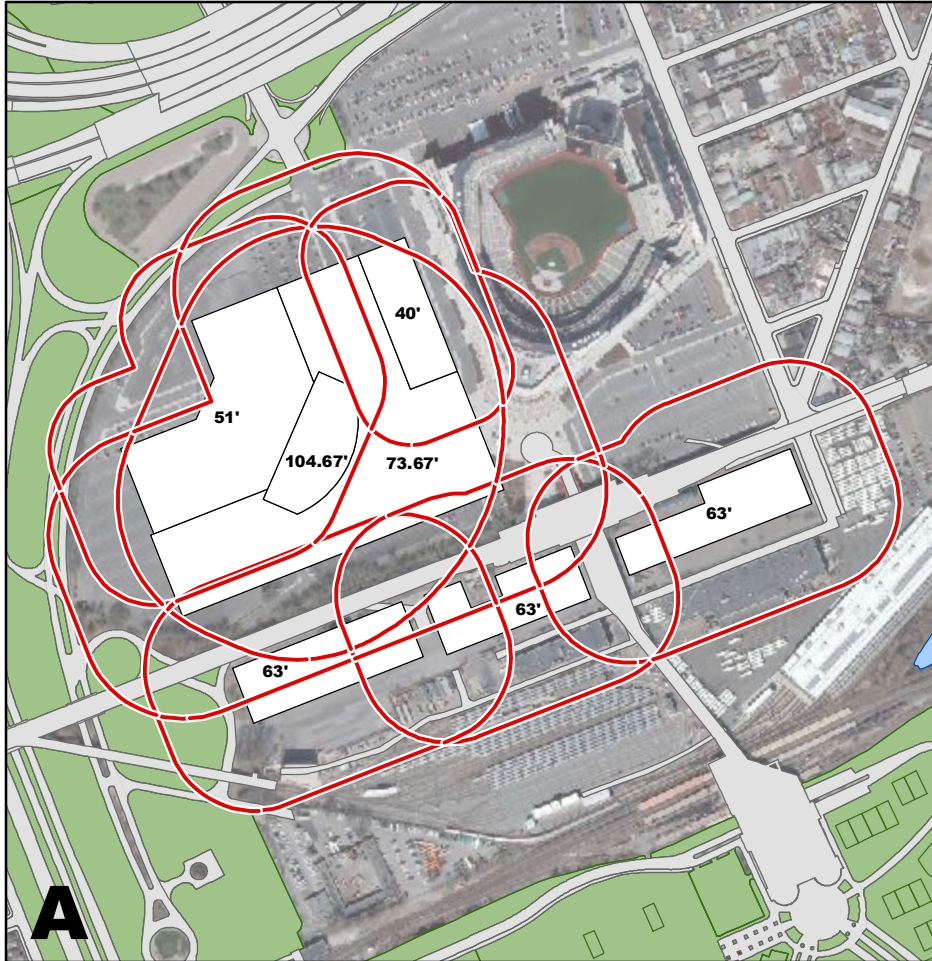
Diagram B on **Figure 6-1** shows the combined perimeters that together form the longest shadow study area for the proposed structures for analysis.

Small portions of traffic islands and an area containing trees, located between Shea Road, Roosevelt Avenue, and the access roads connecting them, are within the longest shadow study area. Therefore, the next tier of assessment was conducted.

TIER 2 SCREENING ASSESSMENT

Because of the path that the sun travels across the sky in the northern hemisphere, no shadow can be cast in a triangular area south of any given structure. In New York City this area lies between -108 and +108 degrees from true north. The complementing area north, east, and west of each structure within the longest shadow study area represents the remaining area that could potentially experience new project-generated shadow.

¹ Software: Esri ArcGIS 10.1; Data: New York City Department of Information Technology and Telecommunications (DoITT) and other City agencies, and AKRF site visits.



- Proposed structures for analysis (labeled with roof heights)
- Publicly-accessible open space or landscaped medians (outside project site boundary)
- Longest shadow study area boundary

0 200 400 600 800 1,000 Feet

Diagrams A and B, above, show the proposed structures for analysis with their heights: most of the Willets West development would have a height of 73.67 feet, with lower elements in the northwest and northeast portions at 51 and 40 feet respectively, and a central element at 104.67 feet. The two parking structures in the South Lot, and the parking structure in Lot D, would each be 63 feet in height.

Within the CEQR analysis framework, the longest shadow a structure can cast occurs on December 21 at the start of the analysis day at 8:51 AM, and its length is equal to 4.3 times the structure's height. Diagram A shows the longest shadow study area for each structure, or in the case of Willets West, each structure part that has a consistent roof height. For example, the longest shadow study areas for each of the three 63' high structures in the South Lot and Lot D would be a perimeter around each structure with a radius of 270.9 feet (63×4.3). For Willets West, the longest shadow that the tallest portion in the center of the proposed development could cast would be 450 feet, and a perimeter with a radius of 450 feet is delineated around that portion of the structure. The portion of Willets West that is 73.67 feet high would have a longest shadow study area with a radius of 316.8 feet, and the shorter portions of Willets West would have longest shadow study areas with radii of 204 and 172 feet.

Diagram B shows the combined perimeters that together form the longest shadow study area for the proposed structures for analysis.

The Tier 2 assessment only eliminated the possibility of new shadows on a very small portion of the traffic island between the South Lot and Shea Road, south of Roosevelt Avenue. The remaining longest shadow study area still contained small portions of landscaped traffic islands adjacent to Shea Road and Roosevelt Avenue. Therefore, a Tier 3 assessment was required.

TIER 3 SCREENING ASSESSMENT

The direction and length of shadows vary throughout the course of the day and also differ depending on the season. In order to determine whether project-generated shadow could fall on a sunlight-sensitive resource, three-dimensional (3D) computer mapping software² is used in the Tier 3 assessment to calculate and display the proposed project's shadows on individual representative days of the year. A computer model was developed containing three-dimensional representations of the elements in the base map used in the preceding assessments, the topographic information of the study area, and a reasonable worst-case three-dimensional representation of the proposed project.

REPRESENTATIVE DAYS FOR ANALYSIS

Following the guidance of the *CEQR Technical Manual*, shadows on the summer solstice (June 21), winter solstice (December 21) and spring and fall equinoxes (March 21 and September 21, which are approximately the same in terms of shadow patterns) are modeled, to represent the range of shadows over the course of the year. An additional representative day during the growing season is also modeled, generally the day halfway between the summer solstice and the equinoxes, i.e. May 6 or August 6, which have approximately the same shadow patterns.

TIMEFRAME WINDOW OF ANALYSIS

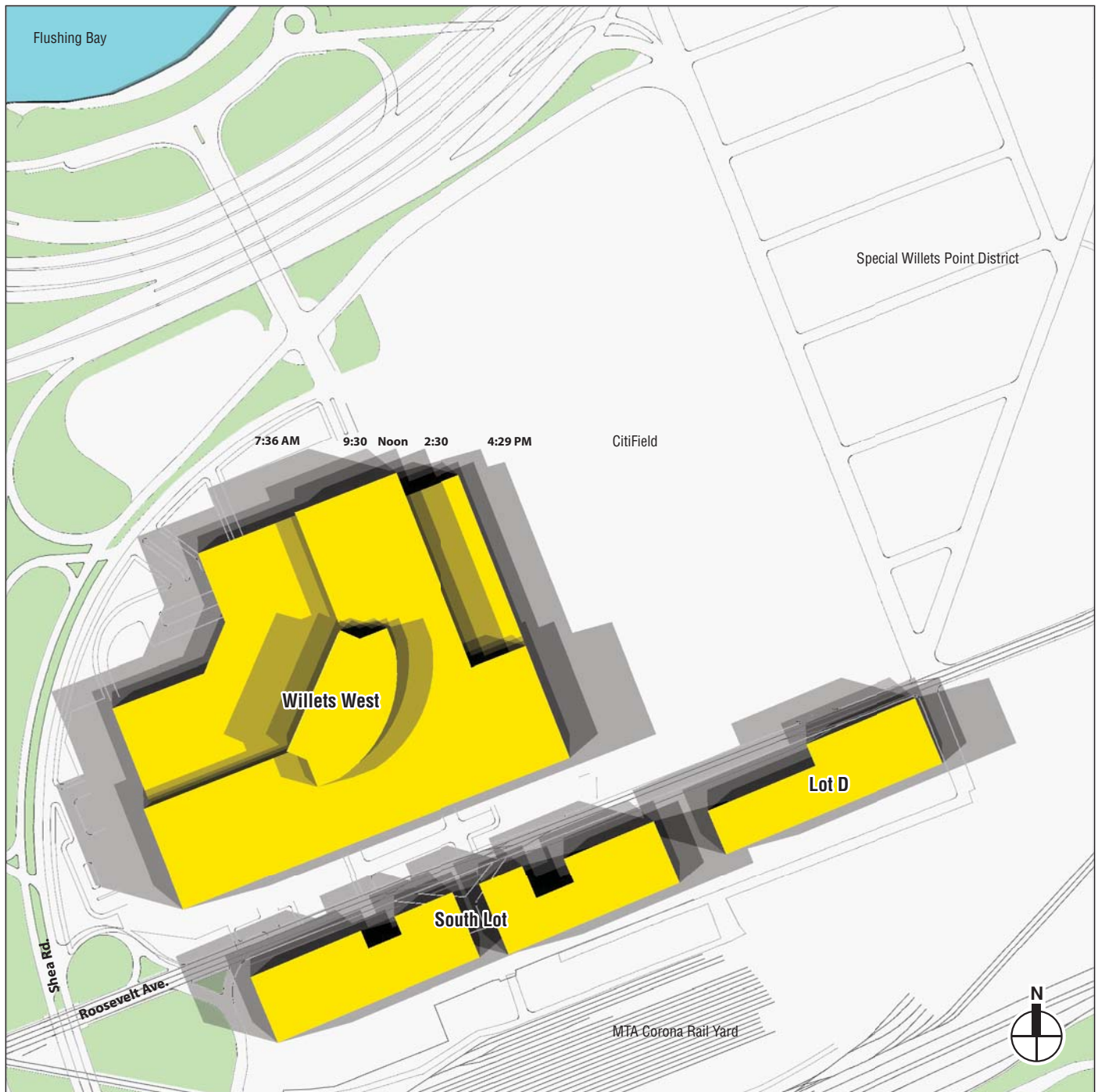
The shadow assessment considers shadows occurring between one and a half hours after sunrise and one and a half hours before sunset. At times earlier or later than this timeframe window of analysis, the sun is down near the horizon and the sun's rays reach the earth at very tangential angles, diminishing the amount of solar energy and producing shadows that are very long, move fast, and generally blend with shadows from existing structures until the sun reaches the horizon and sets. Consequently, shadows occurring outside the timeframe window of analysis are not considered significant under CEQR, and their assessment is not required.

TIER 3 SCREENING ASSESSMENT RESULTS

Figures 6-2 through 6-5 illustrate the range of shadows that would occur, in the absence of intervening buildings, from the proposed Willets West, South Lot and Lot D structures on the four representative days for analysis. As they move east and clockwise over the landscape, the shadows are shown occurring approximately every two hours from the start of the analysis day (one and a half hours after sunrise) to the end of the analysis day (one and a half hours before sunset).

The Tier 3 assessment showed that shadows from the Willets West structure would not fall on any sunlight-sensitive areas on the three analysis days of the growing season. On the December 21 analysis day, small incremental shadows would fall on portions of the adjacent landscaped

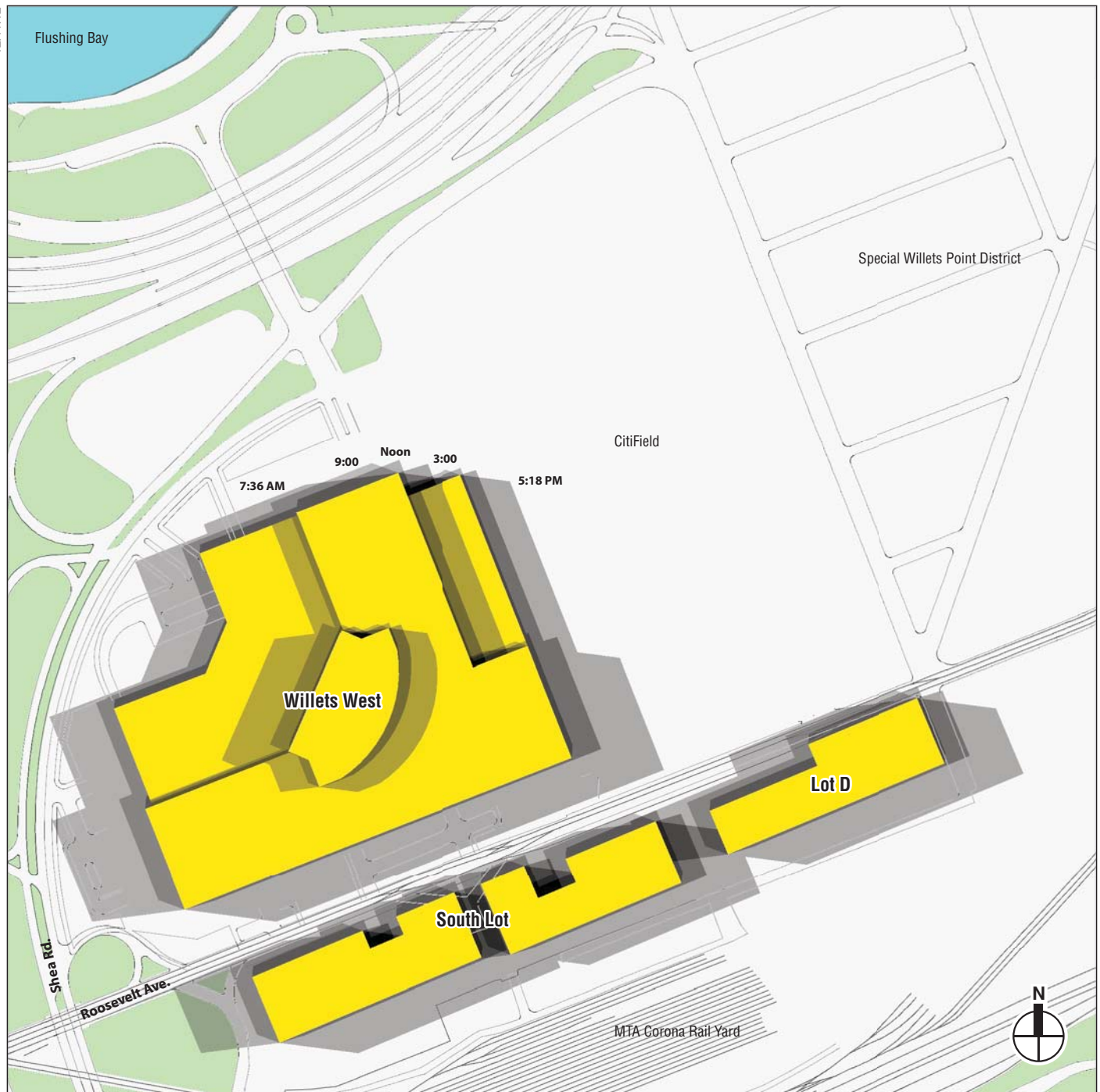
² MicroStation V8i (SELECTSeries 3).



Note: Daylight Saving Time not used.

- Proposed Buildings for Analysis*
- Publicly-Accessible Open Space or Landscaped Traffic Islands*
- Shadow*

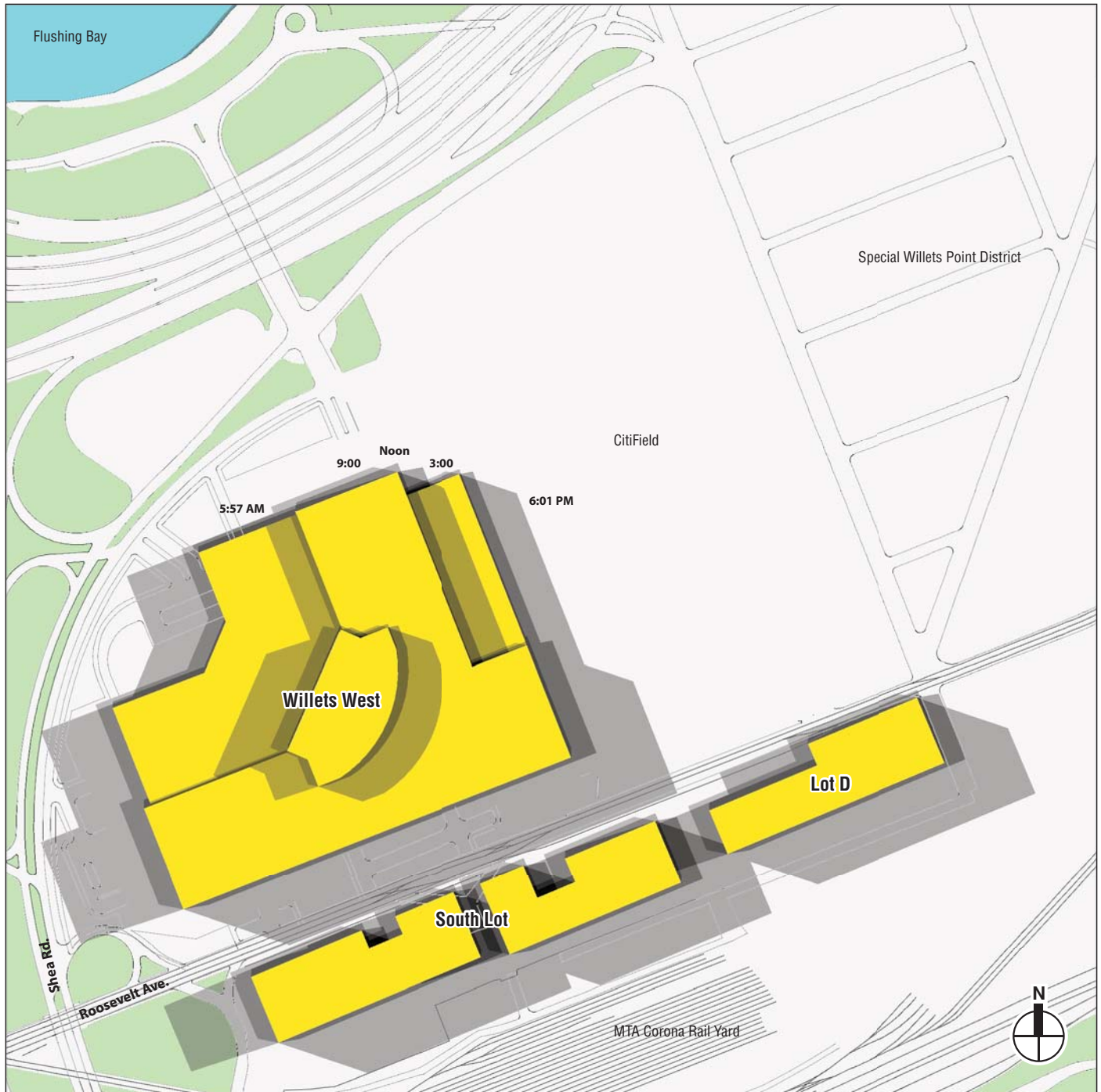
This figure illustrates the range of shadows that would occur, absent intervening structures, from the proposed building on this representative day. The shadows are shown occurring approximately every two to three hours from the start of the analysis day (one and a half hours after sunrise) to the end of the analysis day (one and a half hours before sunset). The Tier 3 assessment serves to illustrate the daily path or "sweep" of the proposed building's shadow across the landscape, indicating which resources could potentially be affected on that analysis day, absent intervening buildings, by project-generated shadow.



Note: Daylight Saving Time not used.

- Proposed Buildings for Analysis*
- Publicly-Accessible Open Space or Landscaped Traffic Islands*
- Shadow*

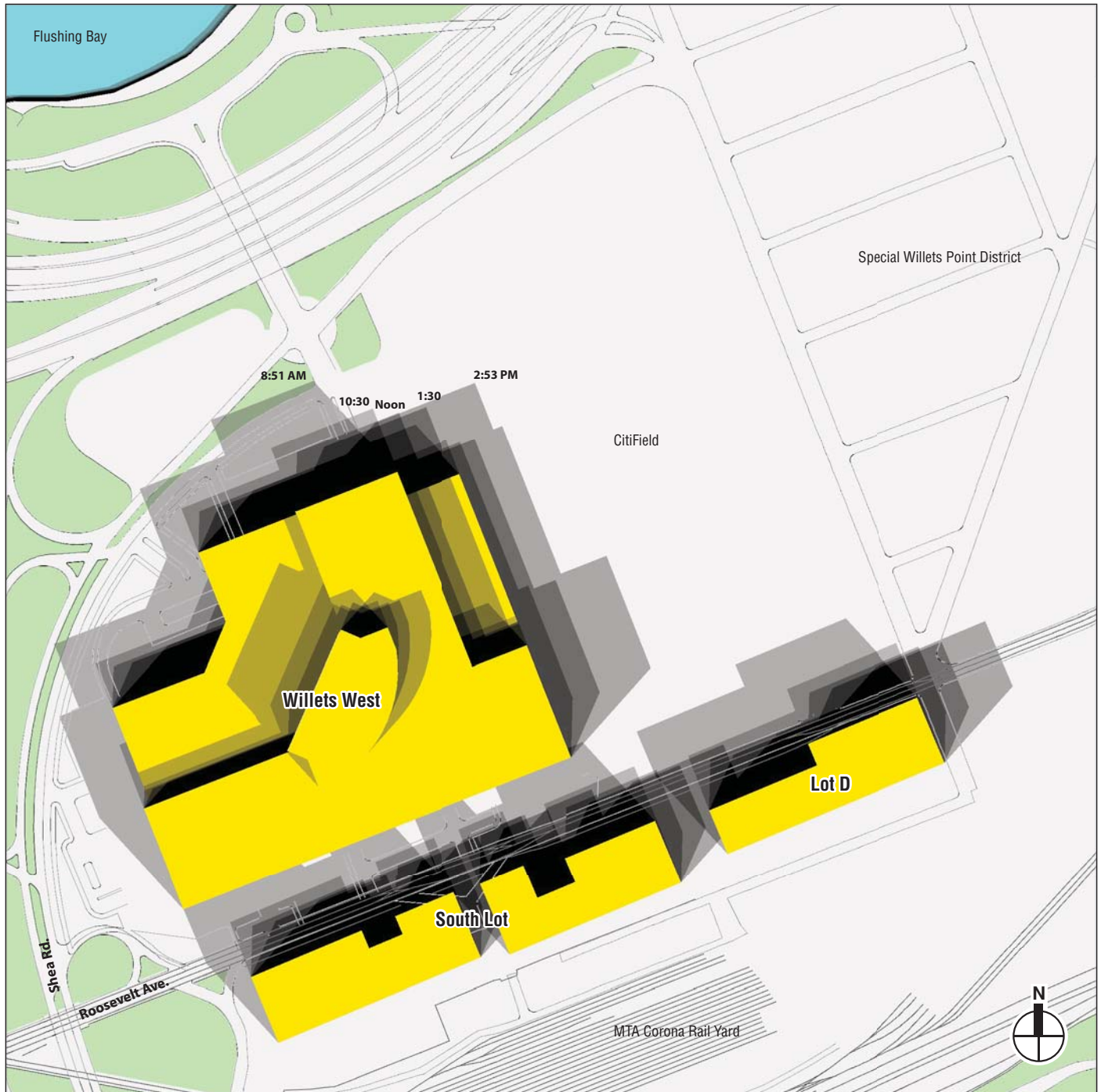
This figure illustrates the range of shadows that would occur, absent intervening structures, from the proposed building on this representative day. The shadows are shown occurring approximately every two to three hours from the start of the analysis day (one and a half hours after sunrise) to the end of the analysis day (one and a half hours before sunset). The Tier 3 assessment serves to illustrate the daily path or "sweep" of the proposed building's shadow across the landscape, indicating which resources could potentially be affected on that analysis day, absent intervening buildings, by project-generated shadow.



Note: Daylight Saving Time not used.

- Proposed Buildings for Analysis*
- Publicly-Accessible Open Space or Landscaped Traffic Islands*
- Shadow*

This figure illustrates the range of shadows that would occur, absent intervening structures, from the proposed building on this representative day. The shadows are shown occurring approximately every two to three hours from the start of the analysis day (one and a half hours after sunrise) to the end of the analysis day (one and a half hours before sunset). The Tier 3 assessment serves to illustrate the daily path or "sweep" of the proposed building's shadow across the landscape, indicating which resources could potentially be affected on that analysis day, absent intervening buildings, by project-generated shadow.



Note: Daylight Saving Time not used.

- Proposed Buildings for Analysis*
- Publicly-Accessible Open Space or Landscaped Traffic Islands*
- Shadow*

This figure illustrates the range of shadows that would occur, absent intervening structures, from the proposed building on this representative day. The shadows are shown occurring approximately every two to three hours from the start of the analysis day (one and a half hours after sunrise) to the end of the analysis day (one and a half hours before sunset). The Tier 3 assessment serves to illustrate the daily path or "sweep" of the proposed building's shadow across the landscape, indicating which resources could potentially be affected on that analysis day, absent intervening buildings, by project-generated shadow.

traffic islands at the start of the analysis day. However, per CEQR guidelines, these landscaped features would be only minimally sensitive to sun and shadows in the winter.

The western of the two proposed parking structures on the South Lot would cast new shadow on the adjacent areas of the park to its immediate west in the morning on all four analysis days.

The proposed parking structure on Lot D would not cast shadows on any sunlight-sensitive resources at any time of year.

A detailed analysis was consequently warranted to determine the duration and extent of new shadows from the South Lot parking structure on the four analysis days, and from the Willets West structure on December 21.

E. DETAILED SHADOW ANALYSIS

The purpose of the detailed analysis is to determine the extent and duration of new incremental shadows that fall on sunlight-sensitive resources as a result of the project, and to assess their effects. A baseline or future No Action condition is established, containing existing buildings and sunlight-sensitive resources and any future developments planned in the area, to illustrate the baseline shadows from buildings and other structures in the study area defined in the preliminary assessment. The future condition with the proposed project and its shadows can then be compared to the shadows from the No Action condition, to determine the incremental shadows that would result with the proposed project.

Three-dimensional representations of the existing buildings in the study area were developed and added to the three-dimensional model used in the Tier 3 assessment.

Shadows are in constant movement. The computer simulation software produces an animation showing the movement of shadows over the course of each analysis period. The analysis determines the time when incremental shadow would enter each resource, and the time it would exit. Shadow analyses were performed for each of the representative days and analysis periods indicated in the Tier 3 assessment.

Table 6-1 summarizes the entry and exit times and total duration of incremental shadows on each affected sunlight-sensitive resource. The extent and duration of incremental shadows are described for each analysis day below. Because there are no intervening structures between the Willets West and South Lot developments and the landscaped traffic islands onto which they would cast new shadow, **Figures 6-2** to **6-5** serve to show the extent and movement of incremental shadows that would occur.

Table 6-1
Incremental Shadow Durations

Analysis Day and Timeframe Window	March 21 / Sept. 21 7:36 AM-4:29 PM	May 6 / August 6 6:27 AM-5:18 PM	June 21 5:57 AM-6:01 PM	December 21 8:51 AM-2:53 PM
Traffic islands and parkland west of South Lot	7:36 AM-8:50 AM Total: 1 hr 14 min	6:27 AM-8:25 AM Total: 1 hr 58 min	5:57 AM-8:15 AM Total: 2 hr 17 min	8:51 AM-9:00 AM Total: 9 min
Landscaped traffic islands adjacent to Shea Road north of Roosevelt Avenue	—	—	—	8:51 AM-9:10 AM Total: 19 min
Notes: Table indicates entry and exit times and total duration of incremental shadow for each sunlight-sensitive resource. Per <i>CEQR Technical Manual</i> guidelines, daylight saving time is not used; times are Eastern Standard Time. However, as Eastern Daylight Time is in effect for the March/September, May/August and June analysis periods, add one hour to the given times to determine the actual clock time.				

MARCH 21/SEPTEMBER 21

At the start of the March 21/September 21 analysis day at 7:36 AM, incremental shadow from the South Lot structure would fall to the west on a small area of parkland containing grass and trees. The incremental shadow would move east, exiting the larger section of parkland, located a bit further west and south, 34 minutes later at 8:10 AM and the smaller traffic island at 8:50 AM (see **Figure 6-2**).

MAY 6/AUGUST 6

At the start of the May 6/August 6 analysis day at 6:27 AM, incremental shadow from the South Lot structure would fall to the west on the same two areas of the park, the small traffic island to the northwest and the larger area of grass and trees to the west. The incremental shadow would move east, exiting the larger area at 7:25 AM and the small traffic island at 8:25 AM (see **Figure 6-3**).

JUNE 21

At the start of the June 21 analysis day at 5:57 AM, incremental shadow from the South Lot structure would fall to the west on the same two portions of adjacent parkland. The incremental shadow would move east, exiting the larger area at 7:15 AM and the small traffic island at 8:15 AM (see **Figure 6-4**).

DECEMBER 21

Shadow from the Willets West structure would fall on small portions of the landscaped traffic islands along Shea Road to the northwest for the first nine minutes of the analysis day.

Shadow from the South Lot structure would fall on a small portion of a landscaped traffic island for the first 19 minutes of the analysis day.

F. CONCLUSIONS

The areas of parkland west and northwest of the South Lot parking structure would receive new shadows during the months of the growing season, ranging between an hour and a quarter in early spring and early fall, to two and a quarter hours on June 21. The new shadows would be small in extent, and would move, affecting different plants at different times during the affected period. These areas of parkland would continue to get more than seven hours of direct sun even in March and September, because there are no structures to their south and west. Consequently, the new shadows from the proposed project would not cause significant adverse shadow impacts to these areas of Flushing Meadows-Corona Park. The nine minutes of new shadow in the winter that would be cast by the Willets West structure would not cause a significant adverse impact to the traffic islands along Shea Road north of Roosevelt Avenue. Therefore, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in any significant adverse shadows impacts. *

A. INTRODUCTION

This chapter assesses the potential of the proposed project to affect historic and cultural resources. The analysis updates changes to the proposed project and background conditions since the 2008 FGEIS and assesses whether any changed background conditions or differences in elements between the development program analyzed in the 2008 FGEIS and the proposed project would result in significant adverse impacts on historic and cultural resources that were not addressed in the 2008 FGEIS or subsequent technical memoranda.

This chapter provides an assessment of existing and future conditions without and with the proposed project for the project site and a study area surrounding the site, which are described in detail below.

As part of the 2008 FGEIS and the 2001 *Shea Stadium Redevelopment FEIS*, the project site was reviewed for its potential archaeological sensitivity by the New York City Landmarks Preservation Commission (LPC) and the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) (Special Willets Point District only). LPC and OPRHP have determined that the project site is not sensitive for archaeological resources (see **Appendix B**, “Agency Correspondence”). Thus, this analysis focuses on standing structures only.

PRINCIPAL CONCLUSIONS

This analysis finds that the proposed project would not result in significant adverse impacts related to historic and cultural resources that were not addressed in the 2008 FGEIS or subsequent technical memoranda. Consistent with the findings in the 2008 FGEIS, the development that would occur within the Special Willets Point District during Phase 2 of the proposed project would have a significant adverse effect on the former Empire Millwork Corporation Building.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS analyzed the potential of proposed development within the Special Willets Point District and on Lots B and D on Roosevelt Avenue to have significant adverse effects on historic and cultural resources. The 2008 FGEIS concluded that the Willets Point Development Plan would require the demolition of the former Empire Millwork Corporation Building, which has been determined eligible for listing on the State and National Registers of Historic Places, and thus would have a significant adverse impact on historic resources. The 2008 FGEIS documented substantial challenges inherent in retaining the historic building and incorporating it into the proposed plan. The FGEIS recommended consulting with OPRHP to develop mitigation measures, such as recording the building through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative.

No other architectural resources were identified within the District or Lots B and D on Roosevelt Avenue.

C. METHODOLOGY

Study areas for architectural resources are determined based on an area of potential effect for construction-period impacts, such as groundborne vibrations, and on the area of potential effect for visual or contextual effects, which is usually a larger area. The study area has been defined as the project site and the area within 400 feet of the project site's boundaries (see **Figure 7-1**). This study area is consistent with 2012 *CEQR Technical Manual* methodology in developing study areas to assess an action's potential impacts on architectural resources, which sets forth that the size of the study area should be directly related to the anticipated extent of the action's impacts.

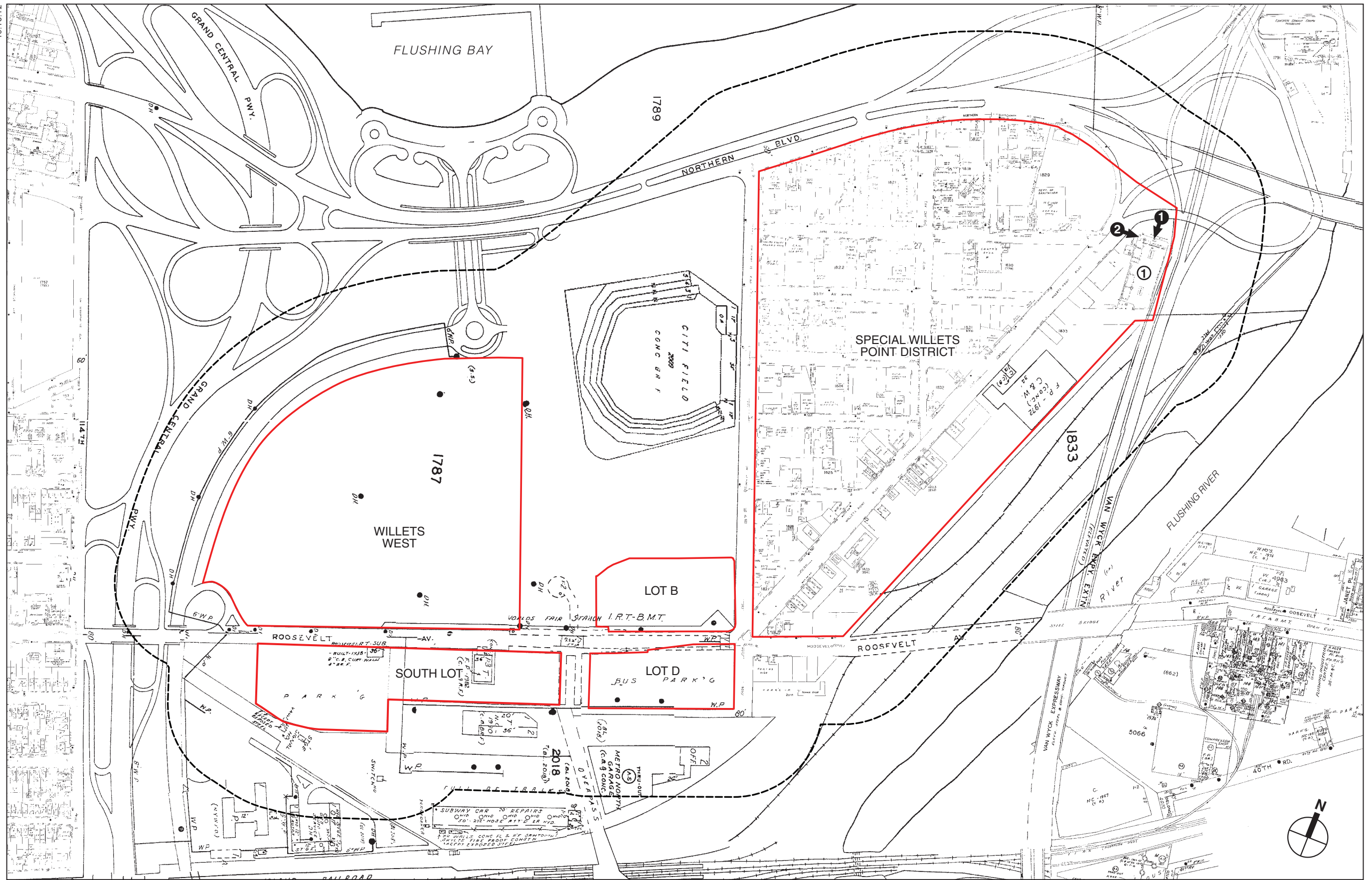
To assess the potential impacts of the proposed project, an inventory of architectural resources in the study area was compiled. In accordance with CEQR guidelines, the inventory includes all officially recognized architectural resources. These resources ("known architectural resources") are defined as National Historic Landmarks (NHLs); properties or districts listed on the State and National Registers of Historic Places (S/NR), or previously determined to be eligible for such listing; New York City Landmarks (NYCLs) and Historic Districts (NYCHDs); and properties that have been considered for designation ("heard") by the New York City Landmarks Preservation Commission (LPC) at a public hearing, calendared for consideration at such a hearing ("pending" NYCLs), or found by LPC to appear eligible for designation.

In addition to identifying known architectural resources, an evaluation of the study area was undertaken to identify any "potential architectural resources"; that is, other buildings in the study area that could warrant recognition as architectural resources (properties that could be eligible for S/NR listing or NYCL designation). Properties were evaluated based on site visits by an architectural historian and the review of prior studies of the study area.

Once the architectural resources in the study area were identified, the proposed project was assessed for its potential to have direct, physical impacts and/or indirect visual or contextual impacts on architectural resources. Direct impacts include demolition of a resource, and alterations to a resource that cause it to become a different visual entity. A resource could also be physically damaged from adjacent construction, either from vibration (i.e., from construction blasting or pile driving), or from falling objects, subsidence, collapse, or damage from construction machinery. Adjacent construction is defined as any construction activity that would occur within 90 feet of an architectural resource, as defined in the New York City Department of Building's (DOC) *Technical Policy and Procedure Notice (TPPN) #10/88*.

Indirect impacts are contextual or visual impacts that could result from project construction or operation. As described in the 2012 *CEQR Technical Manual*, indirect impacts could result from blocking significant public views of a resource; isolating a resource from its setting or relationship to the streetscape; altering the setting of a resource; introducing incompatible visual, audible, or atmospheric elements to a resource's setting; or introducing shadows over a historic landscape or an architectural resource with sun-sensitive features that contribute to that resource's significance (e.g., a church with stained-glass windows).

The setting of each architectural resource, including its visual prominence and significance in publicly accessible views, whether it has sun-sensitive features, and its visual and architectural relationship to other architectural resources, was taken into consideration for this analysis.



- Project Site
- Study Area Boundary (400-Foot Perimeter)
- Photograph View Direction and Reference Number
- Former Empire Mill Works Building (S/NR Eligible)

D. EXISTING CONDITIONS

PROJECT SITE

The project site is composed of three discrete areas, roughly bounded by Shea Road and Northern Boulevard to the north, the Van Wyck Expressway to the east, the MTA Corona Rail Yard to the south, and Shea Road to the west (see **Figure 7-1**). The three portions of the project site are defined as the Special Willets Point District, Willets West, and Roosevelt Avenue. The Special Willets Point District is the triangular area bounded by 126th Street, Northern Boulevard, and the Van Wyck Expressway. The Willets West portion of the project site is a 30.7-acre section of the surface parking field west-adjacent to CitiField. The Roosevelt Avenue portion of the site consists of three CitiField-related surface parking lots along Roosevelt Avenue, South Lot and Lots B and D.

There are no known or potential architectural resources within the Willets West and Roosevelt Avenue portions of the project site.

The 2008 FGEIS identified one architectural resource within the Special Willets Point District: the former Empire Millwork Corporation Building at 128-150 Willets Point Boulevard (see **Figure 7-2**). As part of the 2008 FGEIS, the structure was determined S/NR-eligible by OPRHP as a significant early 20th century commercial and industrial building.

The former Empire Millwork Corporation Building, built in 1938 prior to the Van Wyck Expressway and facing Flushing Bay, has a large landscaped lawn in front. It was constructed from plans by Sugarman & Berger, Stanford D. Rossin, and Arthur Hamburger. Hamburger, an industrial engineer, was president of Wheeler Engineering Company, which built the building. The building was constructed for the D. Ginsberg and Sons Company, a millwork company which was started in 1921 by Hyman Ginsberg. The company later became the Empire Millwork Corporation and then the Empire National Corporation.

The two-story, Georgian Revival-style building has a symmetrical red brick façade with flanking bays, which terminate with gently curving sections. The front section was originally used as an office space for the company, and the exterior decorations are a reflection of the millwork business. The central bay projects slightly and features a center doorway topped with arched transom windows and a broken pediment. Above the door is a large Palladian window with a circular clock under the central arch. The central bay is topped with a large front gable with a wood denticulated cornice and cornice returns. Small octagonal windows decorate either side of the central entryway. The flanking sections are five bays wide. Each bay has arched wood windows with tracery on the first level and 6-over-6 double-hung wood windows on the upper level. A denticulated cornice line runs the length of the bays. Both bays end with curved sections; these sections have large 12-over-12 double-hung windows separated by double height wood pilasters. The side bays have small, double-hung and octagon-shaped windows. A short parapet runs along the flanking bays and sides. The remainder of the building is a two-story warehouse structure which extends back approximately 300 feet. It has large factory-style, multi-pane glass windows.

There are no other known or potential architectural resources located within the Special Willets Point District portion of the project site.



Former Empire Millwork Corporation Building, front facade 1



Former Empire Millwork Corporation Building, view southeast 2

STUDY AREA

There are no known or potential architectural resources located within the 400-foot study area. A portion of the Olmsted Center in Flushing Meadows-Corona Park falls within the study area boundary. While this one-story modular building was built as the 1964–65 World's Fair Corporation's administrative offices, it is not considered to be a potential architectural resource.

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

PROJECT SITE

Without the proposed project, in all three analysis years it is expected that the former Empire Millwork Corporation Building will continue in its present use.

STUDY AREA

Absent the proposed project, two projects are expected to be built within the study area by 2018. One is a one-story guard/monitoring booth for the industrial site located at 32-11 Harper Street. The second, located at 39-14 114th Street, is development that will contain 23 dwelling units, 18,638 square feet of commercial space, 4,794 square feet of community facility space, and 31 parking spaces. No additional projects are anticipated to be built within the study area by 2028 or 2032. As described above, there are no known or potential architectural resources within the study area.

Changes to the architectural resource identified above or to its setting could occur irrespective of the proposed project. The S/NR-eligible architectural resource could be listed on the Registers, or determined eligible and designated as a NYCL. Future projects could also affect the setting of the architectural resource. It is possible that the architectural resource could deteriorate, or could be restored. In addition, future projects could accidentally damage the architectural resource through adjacent construction.

Historic resources that are listed on the S/NR or that have been found eligible for listing are given a measure of protection under Section 106 of the National Historic Preservation Act from the effects of projects sponsored, assisted, or approved by federal agencies. Although preservation is not mandated, federal agencies must attempt to avoid adverse effects on such resources through a notice, review, and consultation process. Properties listed on the Registers are similarly protected against effects resulting from projects sponsored, assisted, or approved by state agencies under the State Historic Preservation Act. However, private owners of properties eligible for, or even listed on, the Registers using private funds may alter or demolish their properties without such a review process, assuming no state or federal approvals are required. Privately owned properties that are NYCLs and in NYCHDs are protected under the New York City Landmarks Law, which requires LPC review and approval before any alteration or demolition permits can be issued, regardless of whether the project is publicly or privately funded. Publicly owned resources are also subject to review by LPC before the start of a project. However, LPC's role in projects sponsored by other city or state agencies generally is advisory only.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

PROJECT SITE

As described above, there are no architectural resources located within the Willets West or Roosevelt Avenue portions of the project site. Therefore, there would be no impacts to architectural resources from the development of these areas in Phases 1A, 1B, or 2 of the proposed project.

Phases 1A and 1B of the proposed project would not impact, physically or contextually, the former Empire Millwork Corporation Building. The new development that would occur in these phases in the western half of the District would alter the context of this resource, but the new development is anticipated to improve the physical environment and thus surrounding views. Views to the resource from 34th Avenue and Willets Point Boulevard would not be obstructed. The anticipated Van Wyck Expressway ramp configuration—which would be constructed by 2028—would not adversely affect the building.

In Phase 2 of the proposed project, it is anticipated that the former Empire Millwork Corporation Building would be demolished, consistent with the 2008 FGEIS. Demolition of this historic resource would constitute a significant adverse impact on architectural resources.

The development in the District in Phase 2 would be guided by the special district regulations and the Willets Point Urban Renewal Plan (URP) adopted in 2008. One of the key aspects of the special district regulations and the URP is to allow for flexibility of uses and building locations within the District. Retaining the former Empire Millwork Corporation Building would limit this flexibility. In addition, retaining the former Empire Millwork Corporation Building would be challenging from a site grading and engineering perspective. The District is below the Federal Emergency Management Agency (FEMA) 100-year floodplain level of 14 feet above mean sea level (AMSL), and up to seven feet of fill would be required in some locations to grade and raise the entire District to an elevation of between 14 and 17 feet AMSL. If the City were to provide new infrastructure—including new roadways, sidewalks, and storm and sanitary sewer lines—at the existing grade, potential future development could be subject to flooding on the lower floors. As such, the City plans to raise the District and require that any new development be raised above the 100-year floodplain level. The site of the former Empire Millwork Corporation Building would require up to 3.4 feet of fill to conform to the future grade of the District.

As the former Empire Millwork Corporation Building is at the District's existing grade and located near the Flushing Bay inlet, it is presumed that it is subject to flooding on the lower floors and would remain so in the future without the proposed project. If the former Empire Millwork Corporation Building were not raised it would be significantly more vulnerable to flooding, both because it is below AMSL, and because the surrounding topography would be raised, directing water runoff into lower areas. Raising the grade in a majority of the District while maintaining the existing grade on the former Empire Millwork Corporation Building site would require special engineering measures to protect the building during site preparation and construction to prevent future flooding on the site, and to visually and functionally integrate the building with the rest of the District despite the differences in grade.

In a letter dated May 30, 2008, OPRHP stated that the demolition of the former Empire Millwork Corporation Building would constitute an adverse impact, and that all alternatives to demolition have not been explored. The substantial challenges inherent in retaining the former Empire Millwork Corporation Building as part of the proposed project are detailed above.

Willets Point Development

Furthermore, retention of the structure would not advance the goals and objectives of the approved Willets Point Development Plan, including the improvement of environmental conditions and the development of affordable housing, community facilities, and public open space.

A developer for Phase 2 has not yet been selected, and the Queens Development Group, LLC (QDG) may or may not be selected as the designated developer for Phase 2. Before the development of Phase 2, the selected developer will consult with OPRHP and LPC to evaluate any remaining potential alternatives to demolition. If none are identified, measures to fully or partially mitigate this adverse impact have been developed, as discussed in Chapter 21, "Mitigation." As discussed in the 2008 FGEIS, these would include consultation with OPRHP to develop mitigation measures, such as recording the building through a HABS-level photographic documentation and accompanying narrative.

STUDY AREA

As there are no architectural resources in the study area, there would be no impacts on such resources in the future with the proposed project.

In summary, this analysis finds that the proposed project would not result in any significant adverse impacts related to historic and cultural resources that were not addressed in the 2008 FGEIS. *

A. INTRODUCTION

This chapter assesses the potential of the proposed project to affect urban design and visual resources. The analysis updates changes to the proposed project and background conditions since the 2008 Final Generic Environmental Impact Statement (FGEIS) and assesses whether any changed background conditions or differences in elements between the development program analyzed in the 2008 FGEIS and the proposed project would result in significant adverse impacts on urban design and visual resources that were not addressed in the 2008 FGEIS.

Under the 2012 *City Environmental Quality Review (CEQR) Technical Manual*, urban design is defined as the totality of components that may affect a pedestrian's experience of public space. These components include streets, buildings, visual resources, open spaces, natural resources, and wind. An urban design assessment under CEQR must consider whether and how a project may change the experience of a pedestrian in a project area. The *CEQR Technical Manual* guidelines recommend the preparation of a preliminary assessment of urban design and visual resources, followed by a detailed analysis if warranted based on the conclusions of the preliminary assessment. The analysis provided below addresses urban design characteristics and visual resources for existing conditions, the future without the proposed actions, and the probable impacts of the proposed project.

PRINCIPAL CONCLUSIONS

This analysis finds that the proposed project would not result in significant adverse impacts related to urban design and visual resources that were not addressed in the 2008 FGEIS. Overall, this analysis concludes that the proposed project would not have any significant adverse impacts related to urban design and visual resources, consistent with the findings of the 2008 FGEIS and subsequent technical memoranda.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS concluded that the Willets Point Development Plan would add new uses and vitality to the site and would greatly improve the appearance of the Special Willets Point District. While the Plan would significantly alter the urban design of the District, it would ultimately have a beneficial impact on the overall appearance and feel of the District. The Plan would transform the underdeveloped District into a vibrant, mixed-use urban environment. The buildings that would result from the Plan were found to be cohesive in design and varied in use to create a new destination and entertainment location. The Plan also would have integrated the District into the surrounding area by creating a new pedestrian-scaled street network with wide connector streets as well as smaller, retail and residential streets. In addition, the Plan would have added new publicly accessible open spaces to the District.

The 2008 FGEIS concluded that the new mixed-use development resulting from the Plan would have increased the vitality of the District; increased pedestrian traffic to the District and the surrounding area; and improved the appearance of the District by providing new streets and streetscape elements, such as street trees and lighting. The new buildings would be set back at a consistent distance and built to a similar height to create new, continuous streetwalls. The Plan also would not adversely affect any visual resources in the surrounding area, including Flushing Bay, the Flushing Bay Promenade, Flushing Meadows-Corona Park, and the 1964–65 World’s Fair structures.

C. PRELIMINARY ASSESSMENT

Based on the *CEQR Technical Manual*, a preliminary assessment of urban design and visual resources is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning. Examples include projects that permit the modification of yard, height, and setback requirements, and projects that result in an increase in built floor area beyond what would be allowed “as of right” in the future without the proposed actions.

To facilitate the redevelopment of the project site, several discretionary actions would be required, including a zoning special permit to allow surface parking/open and enclosed privately-operated recreation uses for Phase 1A within the Special Willets Point District. While the proposed actions do not constitute an upzoning, they would be expected to result in physical alterations within the District beyond those allowed by existing zoning, and thus would meet the threshold for a preliminary assessment of urban design and visual resources.

The *CEQR Technical Manual* guidelines state that if the preliminary assessment shows that changes to the pedestrian environment are sufficiently significant to require greater explanation and further study, then a detailed analysis is appropriate. Examples include projects that would potentially obstruct view corridors, compete with icons in the skyline, or make substantial alterations to the streetscape of a neighborhood by noticeably changing the scale of buildings. Detailed analyses also are generally appropriate for areawide rezonings that include an increase in permitted floor area or changes in height and setback requirements, large-scale general developments (LSGDs), or projects that would result in substantial changes to the built environment of a historic district or components of a historic building that contribute to the resource’s historic significance. Conditions that merit consideration for further analysis of visual resources include when the project partially or totally blocks a view corridor or a natural or built visual resource that is rare in the area or considered a defining feature of the neighborhood; or when the project changes urban design features so that the context of a natural or built visual resource is altered (i.e., if the project alters the street grid so that the approach to the resource changes; if the project changes the scale of surrounding buildings so that the context changes; or if the project removes lawns or other open areas that serve as a setting for the resource).

The proposed project would involve changes to Willets West and Roosevelt Avenue portions of the project site, which were not previously analyzed as part of the 2008 FGEIS or subsequent technical memoranda. These changes would noticeably alter the scale of buildings on these portions of the project site, compared to the future without the proposed project. These portions of the project site would go from being developed with surface parking lots to being occupied by structures ranging in height from approximately 63 to 105 feet tall. Therefore, the proposed project would meet the threshold for a detailed assessment of urban design and visual resources. This analysis is provided below.

D. METHODOLOGY

This analysis has been prepared in accordance with CEQR procedures and follows the guidelines of the 2012 *CEQR Technical Manual*.

As defined in the *CEQR Technical Manual*, urban design is the totality of components that may affect a pedestrian's experience of public space. This detailed assessment considers the effects of the proposed actions on the experience of a pedestrian in the study area. The assessment focuses on those project elements that have the potential to alter the built environment, or urban design, of the project area, which is collectively formed by the following components:

- Streets—the arrangement and orientation of streets define location, flow of activity, street views, and create blocks on which buildings and open spaces are arranged. Other elements including sidewalks, plantings, street lights, curb cuts, and street furniture also contribute to an area's streetscape.
- Buildings—a building's size, shape, setbacks, pedestrian and vehicular entrances, lot coverage and orientation to the street are important urban design components that define the appearance of the built environment.
- Visual Resources—visual resources include significant natural or built features, including important views corridors, public parks, landmarks structures or districts, or otherwise distinct buildings.
- Open Space—open space includes public and private areas that do not include structures, including parks and other landscaped areas, cemeteries, and parking lots.
- Natural Features—natural features include vegetation and geologic and aquatic features that are natural to the area.

The *CEQR Technical Manual* recommends an analysis of pedestrian wind conditions for projects that would result in the construction of large buildings at locations that experience high wind conditions (such as along the waterfront, or other location where winds from the waterfront are not attenuated by buildings or natural features), which may result in an exacerbation of wind conditions due to “channelization” or “downwash” effects that may affect pedestrian safety. While the project site is near the Flushing Bay waterfront, the proposed buildings would be limited in height by Federal Aviation Administration regulations, due to the proximity of the LaGuardia Airport. Furthermore, the project site is separated from the waterfront by elevated roadways, which reduce local wind conditions. Therefore, a pedestrian wind conditions analysis has not been prepared.

The study area for the urban design and visual resources analysis is consistent with that of the primary study area for the analysis of land use, zoning and public policy. This study area extends roughly from Flushing Bay to the north; Linden Place, Parsons Boulevard, and College Point Boulevard to the east; United Nations Avenue North within Flushing Meadows-Corona Park to the south; and 108th and 111th Streets on the west (see **Figure 8-1**).

As detailed in the Staged Acquisition Alternative of the FGEIS and subsequent technical memoranda, since development would occur more incrementally in the District under the proposed project, and there would not be an open space area buffering eastern portions of the Phase 1A and 1B development from the industrial uses that would remain in the eastern portions of the District to be developed later (as previously analyzed), for Phases 1A and 1B the Supplemental Environmental Impact Statement (SEIS) will consider the contrast between the redeveloped portion of the District and the area that would remain largely industrial in nature.

Study Area Map

Figure 8-1

E. EXISTING CONDITIONS

URBAN DESIGN

PROJECT SITE

The project site is composed of three discrete areas, roughly bounded by Shea Road and Northern Boulevard to the north, the Van Wyck Expressway to the east, the Metropolitan Transportation Authority (MTA) Corona Rail Yard to the south, and Shea Road to the west (see **Figures 8-1** and **8-2**). The three portions of the project site are defined as the Special Willets Point District, Willets West, and Roosevelt Avenue.

The Special Willets Point District is a triangular area roughly bounded by 126th Street to the west, Northern Boulevard to the north, the Van Wyck Expressway to the east, and Roosevelt Avenue to the south. This District is approximately 61.4 acres in size. The District is partially developed in a street grid, with 34th through 39th Avenues running east-west, and with 127th Street running north-south between Northern Boulevard and 37th Avenue. Short north-south streets—126th Place, 127th Street, and 127th Place—extend between Northern Boulevard and 34th Avenue. Willets Point Boulevard is the main thoroughfare through the District. Starting at 126th Street, it runs on a diagonal that extends northeast to the entrance of the Van Wyck Expressway. There are no streets south of Willets Point Boulevard in the District. 126th Street forms the western boundary of the District, running parallel to 127th Street and extending between Northern Boulevard and Roosevelt Avenue.

Due to the diagonal trajectory of Willets Point Boulevard and the curve of Northern Boulevard, the majority of the 14 blocks within the District are irregular in shape. The blocks on 34th Avenue curve to conform to the shape of Northern Boulevard. Triangular and trapezoidal blocks are created by Willets Point Boulevard's diagonal path. The three blocks located between 34th and 37th Avenues, and 126th and 127th Streets are the only rectangular-shaped blocks in the District. The majority of the buildings within the District are small, temporary metal structures, metal Quonset huts, and brick buildings with small footprints and large, projecting advertising signs (see Views 1-3 of **Figures 8-3** and **8-4**). These structures house automotive repair shops, wholesale auto parts stores, and other auto-related uses. Most of the buildings in the District are attached or located close together. In contrast, in the northeast section of the District there are a number of freestanding buildings that are larger and boxier in form. These include the Tully Construction site, which contains a three-story, boxy red brick building and is surrounded by a metal chain-link fence topped with barbed wire. Large trucks and other manufacturing equipment are stored on the site. Another notable building in this portion of the District is the historic former Empire Millwork Corporation Building (see Chapter 7, "Historic and Cultural Resources"). This two-story, Georgian Revival-style red brick building is located near the intersection of Willets Point Boulevard and the Van Wyck Expressway (see View 4 of **Figure 8-4**).

The streetscape of the District is industrial in character. Most of the streets are flanked by paved sidewalks, which are in poor condition. The sidewalks have wide curb cuts and are only slightly elevated; in some parts, the sidewalks are almost flush with the streets. The sidewalks are also used for car parking, auto parts storage, and waste storage. The streets in the District also are in various states of disrepair. Most are partially paved and riddled with potholes. The only streets with designated or marked traffic lanes are 126th Street and Willets Point Boulevard. There are few sidewalk crossings or stop signs. Mature sycamore trees line 126th Street; they are the only





Special Willets Point District, view north on Willets Point Boulevard

1



Special Willets Point District, view south on Willets Point Boulevard

2

Views of Special Willets Point District



Special Willets Point District, view from 35th Avenue **3**



Former Empire Millwork Corporation Building **4**

Views of Special Willets Point District

vegetation in the District. Streetscape elements are limited to cobra-head lights and utility poles with wires strung between them; the streets lack traditional streetscape elements such as trees, fire hydrants, and other street furniture. In some areas, the streetscape is broken up by lots surrounded by chain-link fencing or sheets of corrugated metal, which are used for parking and storage of used cars and other auto parts.

The boundaries of the District portion of the project site are the same as the Special Willets Point District—a special zoning district that is coterminous with a C4-4 zoning district—and the Willets Point Urban Renewal Plan (URP) (see Figure 2-2 in Chapter 2, “Land Use, Zoning and Public Policy”). The District was created in 2008 to allow for the redevelopment of this area consistent with the Willets Point Development Plan. Within the District, the zoning allows a range of maximum FARs, from 2.0 to 5.0. To create an appropriate scale and density within its boundaries, the special zoning district regulates a number of urban design elements, including the number of intersections along 126th Street, building heights and setbacks, street hierarchies, streetscape design, and basic site planning and design provisions. The URP, also adopted in 2008, established maximum square footage development envelopes in accordance with the City’s redevelopment goals. The overall maximum permitted floor area in the District was defined as 8.94 million square feet of zoning floor area (zsf), with maximum permitted floor areas for residential and commercial uses (5,850,000 zsf of residential use, 3,160,000 zsf of commercial use). The URP, as well as the special district regulations, also requires the creation of a minimum of eight acres of open space in the District and a minimum 650-seat school.

The Willets West portion of the project site is an approximately 30.7-acre section of the paved surface parking field west-adjacent to CitiField. This portion of the site is mapped as parkland; however, it does not function as open space. The land was occupied by Shea Stadium and associated parking and circulation space until it was replaced by CitiField in 2009, and it is now occupied exclusively by surface parking (see Views 5 and 6 of **Figure 8-5**). The area is lit by tall floodlights and there are traffic islands within and around the perimeter of the surface parking area, which are currently planted with trees. There are no structures on this portion of the project site.

The Roosevelt Avenue portion of the site consists of three CitiField-related, paved surface parking lots along Roosevelt Avenue, South Lot and Lots B and D (see Views 7 and 8 of **Figure 8-6**). The South Lot and Lot D are located between Roosevelt Avenue and the MTA Corona Rail Yard, and are separated by the elevated Passerelle Ramp, which extends south from the Mets-Willets Point subway station and comes to grade adjacent to the USTA National Tennis Center. There are two small station-related structures fronting on Roosevelt Avenue around the South Lot, but these are not included in this portion of the project site.

The South Lot and Lot D are collectively approximately 12.1 acres in size. Lot B is located on the north side of Roosevelt Avenue, west of 126th Street; this paved surface parking lot currently serves as VIP/ADA parking for CitiField (see View 9 of Figure 9-7). Lot B is approximately 4.7 acres in size. The parking areas each include a small number of trees at the site perimeter and are lit by tall floodlights. Lot B is surrounded by a decorative metal fence; the South Lot and Lot D are surrounded by chain link fencing. As with Willets West, the South Lot and Lots D and B are mapped as parkland but do not function as open space. There are no structures on this portion of the project site, except for small temporary structures related to the parking use.

Overall, the project site has no natural features, and its topography is relatively flat.



Willets West, view from No. 7 train platform **5**



Willets West, view from Roosevelt Avenue **6**

Views of Willets West Project Area



South Lot, view from Roosevelt Avenue 7



Lot D, view from Roosevelt Avenue and 126th Street 8

Views of Roosevelt Avenue Project Areas

STUDY AREA

As with the project site, the study area comprises several discrete areas. These are: the remaining portions of the Willets Point peninsula that lie outside the boundaries of the District; Flushing Meadows-Corona Park; to the east, Downtown Flushing and the greater Flushing area, which are separated from the Willets Point peninsula by the Flushing River; and to the west of the project site and the western boundary of Flushing Meadows-Corona Park, portions of the neighborhood of Corona.

Directly southeast of the District on the Willets Point peninsula, along the Flushing River waterfront, is a large undeveloped MTA property that is currently in use by a construction and demolition debris recycling operation. The site contains shipping containers, heavy equipment, and piles of aggregate materials.

Directly north of the District on the Willets Point peninsula is a New York City Department of Transportation (NYCDOT) maintenance and repair facility. This site contains seven freestanding buildings, one and two stories in height and constructed of brick and steel with minimal exterior details; in addition, the site has a large paved area used for parking and vehicle storage. Most of the site is surrounded by a metal chain-link fence. Between Northern Boulevard and the Van Wyck Expressway is an asphalt plant. This industrial site is surrounded by a high concrete wall and jersey barriers. The site includes a one- and two-story metal and concrete building, a boxy one-story metal storage building, and a large industrial structure with metal silos and connecting ramps. The site is paved, with piles of asphalt and heavy industrial equipment located across it. The MTA, NYCDOT, and asphalt plant properties are all zoned M3-1, which allows development of up to 2.0 FAR.

Separating the District from the NYCDOT and asphalt plant sites is Northern Boulevard and the elevated connector between the Van Wyck Expressway—which runs along the eastern edge of the District—and the Grand Central Parkway. This elevated connector, approximately 40 feet in height, carries traffic over Northern Boulevard and is also supported by tall T-shaped concrete piers (see View 10 of **Figure 8-7**). Near the District, Northern Boulevard has numerous exit and entrance ramps. Streetscape features on Northern Boulevard and the Van Wyck Expressway include tall highway signs, tall metal fencing, cobra-head lighting fixtures, and low guardrails. The area under the elevated connector is used for car parking. There is little pedestrian activity in this portion of the study area.

The portions of the 900-acre Flushing Meadows-Corona Park that fall within the study area extend north to Flushing Bay, west to 111th and 114th Streets, south to the southern boundary of the USTA NTC site, and east to Van Wyck Expressway. The park area between the Willets West and District portions of the project site is occupied by CitiField, the baseball stadium for the Mets that opened in 2009. The stadium is clad in red brick, and its principal entrance is oriented toward Roosevelt Avenue; this southwest corner of the building is rounded, evoking Ebbets Field (see View 11 of **Figure 8-8**). A paved plaza with landscaping links the stadium with the stairway leading to the elevated Mets-Willets Point subway station. The elevated train line runs above Roosevelt Avenue on a steel viaduct structure and spans the entire width of Roosevelt Avenue, casting the street in shadow (see View 12 of **Figure 8-8**). The station platforms are constructed in concrete and bordered by corrugated metal walls with overhangs that partially shade the platforms.

To the north of Northern Boulevard is the Flushing Bay Promenade, which winds along Flushing Bay for approximately 1.4 miles from LaGuardia Airport to the Willets Point peninsula. The



Lot B, view from No. 7 train platform 9



View south from Flushing Bay Promenade 10

Views of Project Site

Figure 8-7



CitiField, view from No. 7 train platform 11



View east on Roosevelt Avenue near Grand Central Parkway 12

Views of Study Area

promenade has decorative paving and contains many sitting areas, with a landscaped buffer between the walkway and the Northern Boulevard access road; it provides access to the World's Fair Marina and a restaurant located northeast of CitiField (see View 13 of **Figure 8-9**). There are more than 1,000 parking spaces located to the east and west of the marina, which are also available for parking on Mets game days. The marina hosts small recreational boats; ferries and other larger vessels dock at the World's Fair Pier. When not in use, public access to the pier is blocked by a chain-link gate. The Candela Structures, two open-air, expressionistic modern structures that provide shade and originally served as bus shelters for the 1964–65 World's Fair are located along the Promenade just north of CitiField.

Directly south of the Roosevelt Avenue portion of the project site is the 23-acre MTA Corona Rail Yard. The rail yard, which is not part of Flushing Meadows-Corona Park and is zoned M1-1, is primarily used for the storage and maintenance of subway trains, but also includes surface parking areas and a few brick utilitarian structures (see View 14 of **Figure 8-9**). The rail yard is lighted by tall posts with flood lights and bounded by chain link fencing. There is a Long Island Rail Road (LIRR) Mets-Willets Point station within the rail yard, which operates on CitiField game days and during the US Open.

The New York City Transit (NYCT) Casey Stengel Bus Depot is adjacent to the east of the MTA Corona Rail Yard. The bus depot comprises two buildings located on a large lot south of Roosevelt Avenue and west of 126th Street. These long, narrow buildings are two and three stories in height, with large footprints, and are clad in alternating bands of light and dark concrete (View 15 of **Figure 8-10**).

The elevated No. 7 train station (and the LIRR station when operational) is accessed by the Passerelle Ramp, a pedestrian bridge which extends above the rail yard and connects the station with Flushing Meadows-Corona Park. The ramp is an elevated boardwalk-style structure with low metal railings and reproduction gaslights (see View 16 of **Figure 8-10**). The Passerelle Building, which consists of two tan brick, one-story pavilions separated by a central ramp, comprises the southern end of the Passerelle ramp. The Passerelle Building contains offices and support facilities for the park. The terrace area on the roof of the Passerelle Building, which is covered by fixed canopies, originally provided a viewing area from which visitors to the 1964–65 World's Fair could look across the fairgrounds. The entrance to Flushing Meadows-Corona Park off the Passerelle Ramp is surrounded by flagposts and has a decorative pavement, including mosaics depicting significant scenes and structures from the World's Fairs.

To the west of the rail yard is the Olmsted Center, a one-story modular building built as the 1964–65 World's Fair Corporation's administrative offices that currently contains offices for the design and construction supervision divisions of the New York City Department of Parks and Recreation (DPR) (see View 17 of **Figure 8-11**). Meridian Road is directly south of the rail yard; it provides access to various uses within the park, and the USTA NTC.

The USTA NTC site includes surface parking lots at the northwest and northeast corners of the site; three stadiums along the northern side of the site, decreasing in size from west to east; surface tournament courts along the western and southern edges of the site, some of which have bleacher-style seating; and a smaller stadium and the ±245,000 gross square foot (gsf), 60-foot-tall Indoor Training Center at the southeast corner of the site (see Views 18 and 19 of **Figures 8-11** and **8-12**). The stadiums on the site include, from west to east, the ±362,000-gsf, 120-foot-tall Arthur Ashe Stadium; Louis Armstrong Stadium; and the Grandstand Stadium (both of which are approximately 70 feet tall and collectively comprise approximately 117,000-gsf of enclosed space, approximately 280,000-gsf total). There is a tennis bubble at the northwest



Flushing Bay Promenade 13



MTA Corona Rail Yard from Passerelle Ramp 14

Views of Study Area
Figure 8-9



Casey Stengel Bus Depot from Passerelle Ramp 15



View north on Passerelle Ramp 16

Views of Study Area from Passerelle Ramp



Olmsted Center 17



USTA National Tennis Center, east side 18

View of Flushing Meadows-Corona Park

Figure 8-11



View north to USTA National Tennis Center 19



View along Avenue of the Americas, to Unisphere 20

View of Flushing Meadows-Corona Park

Figure 8-12

corner of the site. The project site also includes food, beverage, and retail kiosks, temporary trailers for broadcast use during the US Open, and pedestrian plazas, including South Plaza and the Food Village. South Plaza serves as the focal point of the site during the US Open, and contains two fountains, seating, and retail/informational kiosks. East of South Plaza is the Food Village, which contains tables and seating, and kiosks for food sales during the US Open. Trees, landscaping, and seating are found throughout the site. Loading dock entrances are located at the rear (north) side of the site along Meridian Road and to the southeast along Path of the Americas. The perimeter of the USTA NTC site is mostly defined by chain link fencing, some of which is screened with hedges (and vinyl wind screening during the US Open).

An overpass for United Nations Avenue North provides vehicular and pedestrian access between the east and west sides of Flushing Meadows-Corona Park, which are separated by the Grand Central Parkway. East of the Grand Central Parkway, the pedestrian pathways in Flushing Meadows-Corona Park generally have a geometric, Beaux-Arts plan composed of main spokes radiating out from a central point, the location of the Unisphere just south of the study area (see View 20 of **Figure 8-12**). West of the Grand Central Parkway, the plan of Flushing Meadows-Corona Park is less geometric. Pedestrian pathways wind around the major park uses in this area, which within the study area boundaries include the New York Hall of Science. The original Hall of Science structure is an undulating form composed of precast concrete panels with stained glass; subsequent additions have added a new rotunda entrance and other elements (see View 21 of **Figure 8-13**). Surrounding the Hall of Science is a playground, sculpture, and Mercury-Atlas and Gemini-Titan rockets. There is a large (500-space) parking lot adjacent to the museum.

East of the Passerelle Ramp, the park contains a pitch and putt golf center, tennis courts, playgrounds, playing fields, broad lawn areas, Industry Pond, and trees, pathways, and sitting areas. The Flushing Meadows-Corona Park Pool and Rink is also located in this area. Built in 2008, the structure has curtain wall facades and 130-foot-high twin masts that act as the structural anchor to hold the cable-stayed roof (see View 22 of **Figure 8-13**). At the far-east side of the park south of Roosevelt Avenue and near the Van Wyck Expressway is the Ground Crews Building, a one-story concrete structure that is used as offices and storage for park employees. There is perpendicular street parking adjacent to the tennis courts along Meridian Road east of the Passerelle Ramp, but no sidewalks or pedestrian paths along this portion of the street. Because of the narrow sidewalks near the USTA NTC and lack of pedestrian paths or sidewalks elsewhere, there is little pedestrian traffic along Meridian Road within the study area. The topography within the park is generally flat, with some gentle rises and falls, particularly surrounding the Grand Central Parkway. Within the Flushing Meadows-Corona Park portion of the study area, there are few non-parkland streets or regular city blocks. The streets within the park are winding and landscaped. In some areas there are narrow landscaped medians with tall trees.

East of the elevated Van Wyck Expressway, the Flushing River is traversed by the Roosevelt Avenue Bridge—a single-truss bridge supported by large square piers and surrounded by a high metal fence—as well as by bridges carrying Northern Boulevard and the Whitestone/Van Wyck Expressway. College Point Boulevard, which runs north-south, is the major thoroughfare east of the Flushing River. The portion of the study area between College Point Boulevard and the Flushing River is characterized by large, irregularly shaped parcels and large-footprint, low-scale industrial and commercial structures, including a Home Depot with a large surface parking lot, an asphalt plant, and a lumberyard and processing site. The most prominent buildings on College Point Boulevard are a U-Haul storage facility near 36th Road and the new SkyView Parc mixed use development (see Views 23 and 24 of **Figure 8-14**). The U-Haul structure is a T-



New York Hall of Science 21



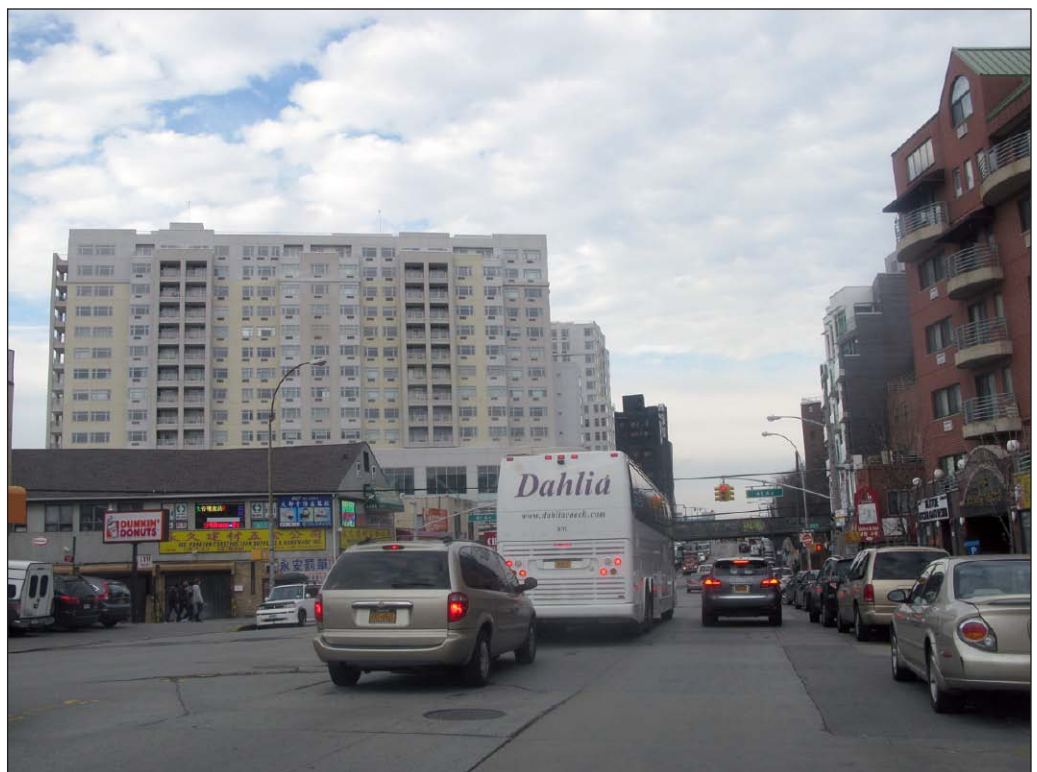
Flushing Meadows-Corona Park Pool and Rink 22

View of Flushing Meadows-Corona Park

Figure 8-13



U-Haul facility, view from College Point Boulevard 23



SkyView Parc, view north on College Point Boulevard 24

Study Area Views from College Point Boulevard

shaped concrete building, five stories in height and topped with a two-story, square tower. Capped by a cupola, the tower has a clock on each face. SkyView Parc/SkyView Center, just south of Roosevelt Avenue, has two 18-story towers rising above a large footprint. Along the east side of College Point Boulevard, the buildings are built to the lot line and form a fairly consistent streetwall. College Point Boulevard and the surrounding streets are urban and industrial in character; the sidewalks are wide, with numerous curb cuts. The east side streetscape consists of large industrial buildings, built to the street line and interspersed with large paved parking lots. Along the west side of College Point Boulevard, breaks in the streetscape occur with recessed building entrances and buildings with loading docks set back from the sidewalk line. East of College Point Boulevard are smaller, one-way streets that generally run perpendicular to College Point Boulevard, except north of the Whitestone Expressway. The street grid in this area is discontinuous, creating mostly rectangular but irregularly sized blocks.

East of the College Point Boulevard area is Downtown Flushing. The urban design of already-dense Downtown Flushing has been changing in recent years, as more high-density residential and large-scale mixed-use developments have been constructed or are planned throughout the area. Two large mixed-use development projects, Queens Crossing (recently completed) and Flushing Commons (planned), will be located between Main and Union Streets, north of 39th Avenue. This area is very densely developed, with most buildings occupying most of their lot and extending to the street line (see Views 25 and 26 of **Figure 8-15**). Most of this area's residential uses are located east of Union Street and include 6- to 10-story apartment buildings and three-story rowhouses. The New York City Housing Authority (NYCHA) Bland Houses are located at the southeast corner of Roosevelt Avenue and College Point Boulevard. The Bland Houses complex comprises five irregularly shaped, 10-story unornamented red brick buildings surrounded by 1.7 acres of publicly accessible open space, with amenities such as basketball courts, playground equipment, walkways, and benches. This open space and the approximately half-acre Bland Park are the only publicly accessible open spaces in this portion of the study area. Most streets in the area are lined with retail. The downtown Flushing area includes several surface parking lots, including most prominently Municipal Lot No. 1, located between Union Street, 138th Street, and 37th and 39th Avenues. Municipal Lot No. 1 contains approximately 1,020 public parking spaces, and is the site of the proposed mixed-use development known as Flushing Commons. Several of the area's main community facilities are located close to one another on Northern Avenue, including the Flushing Armory, Friends Meeting House, and Flushing High School; these are also all historic resources. The No. 7 subway line has a terminal station in Downtown Flushing, at Roosevelt Avenue and Main Street.

The study area west of Flushing Meadows-Corona Park includes a portion of the neighborhood of North Corona. The buildings in this area are generally two- and three-story detached, semi-detached and attached houses, and small apartment buildings of up to three stories (see Views 27 and 28 of **Figure 8-16**). They set back slightly from the lot line and are faced in brick or aluminum/vinyl siding. Neighborhood retail uses are primarily located along Roosevelt Avenue; other non-residential uses include gas stations, car washes, and vehicle repair shops. A few auto-related uses are located on Northern Boulevard. Some light manufacturing uses are located on 111th Street between Northern Boulevard and Astoria Boulevard, including a live chicken wholesale warehouse and storage warehouse. A construction material distribution warehouse and a few auto-related uses are also located on Roosevelt Avenue. Hinton Park is located directly west of Flushing Meadows-Corona Park and the Grand Central Expressway; it is a 3.7-



Roosevelt Avenue, view east from Prince Street 25



View north on Union Street near 38th Avenue 26

Views of Study Area - Flushing



View west on 38th Avenue from 112th Street 27



108th Street, view north near 38th Avenue 28

Views of Study Area - Corona

Figure 8-16

acre park that stretches from 34th to 37th Avenues between 113th and 114th Streets and features game tables, benches, baseball diamonds, and play areas (see View 29 of **Figure 8-17**).

This portion of the study area contains rectangular blocks and thus a regular street pattern, with one-way traffic. The blocks south of 37th Avenue are generally oriented east-west; the blocks to the north are generally oriented north-south. Power lines run overhead and sidewalks are lined with street trees. While buildings in this area are generally older, there are also some new structures in the area, including the 8-story, dark brick Holiday Inn just south of Hinton Park. The right-of-way for the LIRR Port Washington Line runs parallel with 44th Avenue in this portion of the study area, before it extends east into Flushing Meadows-Corona Park and then into Flushing, running just north of 41st Avenue (see View 30 of **Figure 8-17**).

VISUAL RESOURCES

PROJECT SITE

There are no visual resources within the District portion of the project site, nor are any visible from its sidewalks and streets. Views to the west are blocked by CitiField. Natural features surrounding the District, including those in Flushing Meadows-Corona Park, Flushing Bay, and the Flushing River, are not visually accessible primarily due to the elevated transportation structures to the north, south, and east of the District.

There are no visual resources within the Willets West or Roosevelt Avenue portions of the project site. The elevated viaduct for the No. 7 train and the MTA Corona Rail Yard create a visual and physical barrier between these portions of the project site and areas to the south. Views to the north are limited by Northern Boulevard and the elevated Grand Central Parkway connector. The Grand Central Parkway, which runs in a north-south direction through the study area, also creates a visual and physical barrier between the project site and areas to the west, as the Flushing River and Van Wyck Expressway do to the east.

STUDY AREA

There are a number of visual resources in or visible from the study area, including: the landscaping, trees, and open lawns of Flushing Meadows-Corona Park; its structures and sculpture associated with the 1964–65 World’s Fair, most prominently the Unisphere and the multi-level towers of the New York State Pavilion; and waterfront views from the Flushing Bay Promenade.

Views from the Promenade are long across Flushing Bay (see View 31 of **Figure 8-18**). To the north, these views mostly contain the commercial and industrial buildings of the College Point Industrial Park; LaGuardia Airport and the Whitestone Bridge are also visible in the distance. Views to the south from the Promenade include CitiField, above the elevated Grand Central Parkway connector.

The Unisphere and the New York State Pavilion are visible from a variety of vantage points within the study area. Though they have limited visibility except from nearby locations, the various sculptures within Flushing Meadows-Corona Park also contribute to its visual environment and are considered to be visual resources. The long allees of mature trees along Flushing Meadow Corona Park’s main axes—including the Path of the Americas between the Unisphere and the park entrance at the Passarelle Ramp, the Avenue of Commerce leading south from this park entrance, and the Herbert Hoover and Dwight Eisenhower Promenades between



Hinton Park, view north from 37th Avenue **29**



111th Street, view north from 46th Avenue **30**

Views of Study Area - Corona



View north from Flushing Bay Promenade 31



Avenue of the Americas, view south in Flushing Meadows-Corona Park 32

Views of Study Area

Figure 8-18

the Unisphere and Industry Pond—are also considered to be visual resources (see View 32 of **Figure 8-18**). Views from the Passarelle Ramp itself are long and include the project site as well as most of the study area; however, the primary views from the ramp are south toward Flushing Meadows-Corona Park, rather than north to the project site. Visual resources that can be seen from the ramp include the landscaping of Flushing Meadows-Corona Park, the Unisphere, and the New York State Pavilion. Arthur Ashe Stadium and CitiField are also notable elements in views from the Passarelle Ramp as well as elsewhere in the study area (see Views 33-35 of **Figures 8-19** and **8-20**).

The perspectives of the No. 7 train itself and the elevated roadways surrounding the project site provide fleeting views of the resources noted above.

The twin masts of the Flushing Meadows-Corona Park Pool and Rink are also notable in fleeting views from the Van Wyck Expressway, as well as from nearby portions of the park. In Downtown Flushing, several historic resources located close together on Northern Boulevard are visual resources—specifically the Friends Meeting House, the Flushing Municipal Courthouse, and Flushing High School—but these can only be viewed from immediately adjacent streets.

F. THE FUTURE WITHOUT THE PROPOSED PROJECT

PROJECT SITE

As described in Chapter 1, “Project Description,” for the purposes of a conservative analysis, this EIS assumes that no changes occur on the project site in the future without the proposed project for the three analysis years (2018, 2028, and 2032). Therefore, no changes are anticipated to the site’s urban design or views to surrounding visual resources.

STUDY AREA

In the future without the proposed project in 2018, 2028, and 2032, the remainder of the Willets Point peninsula, including the undeveloped MTA property to the east of the District, is also expected to remain unchanged.

As described in detail in Chapter 2, “Land Use, Zoning, and Public Policy,” and mapped on Figure 2-4, approximately 37 development projects are either under construction or proposed for the study area, all but two of which are anticipated to be complete by 2018. Most of these projects are within the Flushing portion of the study area, including several large-scale, mixed-use redevelopments along the waterfront; however, there is also a cluster of projects in North Corona between Astoria and Northern Boulevards related to the recent rezoning of this area. If developed, those projects would bring new residential units to the area, along with some retail and community facility uses, a hotel, and a public school. There also several significant efforts to be undertaken within Flushing Meadows-Corona Park itself, as described below. No other development projects have been identified for completion between 2018 and 2032 in the study area.

With these projects, the east side of the Flushing River will continue to be transformed from an industrial area to an area characterized by higher-scale, mixed-use developments. The projects along the river will include waterfront esplanades, as required; together with initiatives proposed to improve connections between Downtown Flushing and the waterfront, it is anticipated that pedestrian activity and the visual environment along the Flushing River waterfront will continue to be enhanced. Other large-scale mixed-use developments are either under construction or planned for Downtown Flushing as well as Flushing north of Northern Boulevard. Collectively,



View east along 37th Avenue in Corona 33



View east from Flushing Bay Promenade access point 34

Views to Project Site from Study Area



View west to project site from Roosevelt Avenue at College Point Boulevard 35

Views to Project Site from Study Area

these projects are anticipated to increase the density of and bring new activity to these portions of the study area. In Corona, the bulk and use of projects to be completed by 2018 are anticipated to be consistent with the new zoning of this area. Some City capital funding has been allocated for streetscape improvements on Roosevelt Avenue west into Corona; however, there are no specific designs or timeline for implementation for this proposal. The reconstruction of the Roosevelt Avenue Bridge by NYCDOT is underway. It will involve the rehabilitation of the structure as well as improvements to the sidewalk.

Within Flushing Meadows-Corona Park, there would be incremental increases in height and bulk related to the proposed new stadiums and parking facilities at the USTA NTC site, but these would be modest relative to the existing facilities, and would not be inconsistent with the surrounding park context. With the exception of a modest change to park land acreage, the elimination of one lane of United Nations Avenue North, and the relocated connector roadway, the USTA NTC project would not result in any changes to natural features, open spaces, or streets in the study area.

The City, through DPR, is currently in discussions with a private entity for a lease covering the construction and operation of a new stadium for professional soccer purposes in an approximately 13-acre area within the northern portion of Flushing Meadows-Corona Park south of Roosevelt Avenue and eastward of the USTA NTC, just outside of the study area. As currently contemplated, a 25,000-seat stadium (with the ability to be expanded to 35,000 seats) would be constructed by 2016 on the present site of the Fountain of the Planets and land surrounding the fountain. In addition to the fountain, the stadium would displace four existing soccer fields, a basketball court, landscaped areas, and pathways, which would be relocated to other locations within the park.

Elsewhere in Flushing Meadows-Corona Park, ongoing capital improvement projects are being carried out by DPR to provide for up to date recreational facilities, including renovations and repairs to soccer fields and the creation of new volleyball courts. Although it is currently unfunded, DPR has identified repair of the tide gates within Flushing Meadows-Corona Park to improve drainage flow that affects existing park facilities as a priority project.

By replacing the Fountain of the Planets and surrounding pathways, the soccer stadium project would be anticipated to change the urban design of that portion of Flushing Meadows-Corona Park, and thus the pedestrian's experience of that portion of the study area. It is possible that the other capital improvement projects also could affect the urban design of the park, or views to visual resources.

G. PROBABLE IMPACTS OF THE PROPOSED PROJECT

URBAN DESIGN

2018 (PHASE 1A)

Project Site

In the future with the proposed project, by 2018 the Willets West portion of the project site would be developed with an entertainment and retail center of approximately 1.4 million gross square feet (see Figures 1-3a, 1-3b, and 1-5 of Chapter 1, "Project Description"). The new entertainment and retail structure would be oriented with its main entrance facing CitiField, creating a visual connection between the two buildings. The Willets West building would be

between approximately 40 and 105 feet tall, with the shortest portion of the building facing CitiField and the tallest portion at the center of the structure. It would have a footprint larger than the adjacent CitiField; however, while not yet fully designed, the treatment of the façade is anticipated to visually break up this bulk into smaller elements.

A six-level, approximately 63-foot-tall structured parking facility would be constructed on the western portion of the South Lot to accommodate a portion of the parking displaced from the Willets West area, replacing the existing surface parking on that portion of the lot. Within the District, an approximately 200-room (approximately 170-foot-tall) hotel and approximately 30,000 square feet of retail space would be constructed along the east side of 126th Street, along with a 20-foot-wide public esplanade.¹ A large surface parking area would be developed within the District east of the retail and hotel uses. A majority of this parking area would be converted to active recreational use a minimum of 6 months per year. Some of the potential recreational uses include street hockey, stickball, basketball and volleyball courts, a driving range, and batting cages.

The redevelopment of the District and the creation of the Willets West entertainment and retail complex in Phase 1A would considerably alter/transform the urban design of these portions of the project site, replacing a surface parking field and low-density auto-related, manufacturing, warehousing and distribution uses with new retail, hotel, entertainment, and recreational uses in new structures anticipated to be of contemporary design. The density of the project site would increase considerably, in particular on the Willets West site. As the Willets West and Roosevelt Avenue portions of the project site are not zoned, an FAR comparison of the future without and with the proposed project cannot be made; however, the Willets West development would be built to the FAR regulations of a C4-4 district, per the terms of the developer's contract with the City. For the District, the proposed development in Phase 1A would be less than what is allowed under the urban renewal plan. For Phase 1A, a special permit would be required to allow for the surface parking and open and enclosed privately operated recreational uses that are proposed for this phase of the project, as well as to address other sections of the Zoning Resolution. As described below, the development that would replace these uses in Phase 1B would comply with the District's zoning and special district regulations.

The proposed project—in particular the Willets West center, the proposed hotel, and the off-season recreational uses—would be anticipated to bring much more activity to the project site and enhance the pedestrian experience surrounding CitiField. The new uses at Willets West would complement existing retail and entertainment uses around the project site in the Flushing and Corona neighborhoods, as well as the CitiField and USTA NTC uses within Flushing Meadows-Corona Park.

Study Area

Phase 1A of the proposed project would not result in any changes to streets, buildings, natural features, or open spaces in the study area. If the traffic-related mitigation described in Chapter 21, "Mitigation" is implemented, however, the intersection of Northern Boulevard and 126th Street would be altered to include quick-curb and traffic signal louvers.

¹ The height of the hotel could be less than 170 feet in Phase 1A; however, this height is assumed for the purposes of a conservative analysis.

Willets Point Development

As described above, most of the no action projects that have been identified within the study area are anticipated to be complete by 2018. This would continue to change the visual appearance of the Flushing River waterfront, increase the density of the study area, particularly along the river; and bring notable changes to Flushing Meadows-Corona Park. Within this changing context, the scale of the retail, entertainment, hotel, and parking uses that would be developed in Willets West, the District, and the South Lot in Phase 1A would be consistent with those found within the study area, particularly within the dense commercial center of Downtown Flushing and developing waterfront area (as illustrated in View 35 of **Figure 8-20**). The proposed uses also would be more compatible with these adjacent neighborhoods than the existing industrial and auto-related uses. The entertainment and retail uses proposed for Willets West and the height and bulk of this structure would also be compatible with the adjacent CitiField stadium and other cultural facilities located within the boundaries of Flushing Meadows-Corona Park. The closest passive open spaces within the Flushing Meadows-Corona Park are located approximately ¼ mile south of Willets West, creating a substantial buffer between the two uses.

It is expected that the MTA property adjacent to the District would continue to be undeveloped in 2018, as well as 2028 and 2032, and would contain industrial uses that are the same as or similar to the construction and demolition debris recycling operation that exists there today. Although the recreational uses to be developed in the District would not be compatible with the industrial activities permitted on the nearby MTA property, the times during which the two uses would be proximate would be limited. Furthermore, the recreational uses would be consistent with the nearby portions of Flushing Meadows-Corona Park.

2028 (PHASE 1B)

Project Site

In Phase 1B, anticipated to be complete by 2028, the interim surface parking lot/recreational space created during Phase 1A within the District would be developed into a new neighborhood (see Figures 1-4 and 1-5 in Chapter 1, “Project Description”). The program for this development would be consistent with the District’s zoning and would include approximately 4.23 million square feet of development, including residential, retail, hotel, office, parking, and community facility uses, in addition to a public school and approximately six acres of open space.¹ This development is anticipated to be developed block by block, substantially as envisioned in the 2008 FGEIS. Specifically, six blocks and one superblock would be created, as well as their surrounding streets; the superblock would be divided by a landscaped pedestrian path along the current alignment of Willets Point Boulevard. In addition, two six-level (approximately 63-foot-tall) structured parking facilities would be constructed on the eastern portion of the South Lot and Lot D to replace the CitiField parking spaces located within the District in Phase 1A. Overall, the density of development on the project site would continue to increase. The Roosevelt Avenue portion of the project site is not zoned, and thus FAR comparison of the future without and with the proposed project cannot be made; however, the development on this portion of the project site would be built to the FAR regulations of a C4-4 district, per the terms of the developer’s contract with the City. For the District, the proposed development in Phase 1B

¹ It is possible that the hotel use developed in Phase 1B would be as an addition to the hotel developed in Phase 1A; in this scenario, the Phase 1B addition would bring the overall height of the structure to the 170 feet assumed in this analysis.

would be less than what is allowed under the urban renewal plan, but would be consistent with the approved zoning and special district's regulations.

Within the District, the previously-approved special district regulations would determine the placement of uses, building heights and setbacks, street hierarchies, maximum block dimensions, streetscape design, and basic site planning and design provisions within the District, as well as the general layout of the principal streets. Therefore, as contemplated in the 2008 FGEIS, the special district regulations would establish the basic form of the District, encouraging a pedestrian-friendly neighborhood environment, and ensuring that the new uses in the District are integrated into a cohesive site design. The uses proposed in Phase 1B would be consistent with and support the uses developed in the Willets West portion of the project site in Phase 1A, and would encourage pedestrian movement and activity between these two areas and surrounding CitiField.

Along 126th Street and adjacent streets, retail uses would line the ground-floor spaces and would generate new pedestrian activity at the site. The residential development would increase the use of the site and create a vibrant new community. The open spaces and landscaped sidewalks would create an attractive new development and, combined with the retail corridors, would create a pedestrian-friendly environment. Finally, the proposed development would complement CitiField by increasing retail and entertainment in the area.

The urban design of the redeveloped portion of the District in Phase 1B would differ substantially from that of the undeveloped portion of the District, where no changes would be made to the street grid, streetscape elements, grade, buildings, blocks, or uses. The buffer area between the developed and undeveloped portions of the District analyzed in the Staged Acquisition Alternative of the 2008 FGEIS and subsequent technical memoranda is not part of the proposed project; however, because streets in the undeveloped portion of the District would generally remain at their existing grade through Phase 1B, streets in the redeveloped portion of the District would be graded to slope down to the existing streets to the east, forming a physical barrier between the Phase 1B development and existing uses in the undeveloped portion of the District. There is anticipated to be some regrading in the street beds of the District to meet the grade of the new Van Wyck Expressway access ramps, which would be operational prior to the occupancy of the Phase 1B buildings. Any grade changes that would exist in Phase 1B would serve to provide a degree of visual and physical separation between the undeveloped and redeveloped portions of the District. Additionally, although there is no designated buffer area between the Phase 1B development and the adjacent undeveloped area, the new public open spaces to be provided east of Willets Point Boulevard and north of 35th Avenue also would serve to provide a visual buffer for the new residential and community facility uses from nearby auto-related uses.

Study Area

Phase 1B of the proposed project would not result in any changes to buildings, natural features, open spaces, or streets in the study area. Rather, the District as developed by 2028 would be more consistent with the urban design of neighboring Flushing than the existing buildings and uses in the District. Additionally, the bulk and type of uses proposed within the District in Phase 1B would be consistent with the ongoing development trends occurring along the Flushing River waterfront described above, including higher-density and mixed-use development.

The new open spaces to be developed in the District in Phase 1B would complement Flushing Meadows-Corona Park to the south and the Flushing Bay Promenade to the north, and would

Willels Point Development

provide an amenity for new residents and workers of the District and Willets West. The structured parking facilities proposed to be constructed on South Lot and Lot D also would be consistent with parking uses in Downtown Flushing and the portions of Corona in the study area, as well as at the adjacent Casey Stengel Bus Depot.

While the residential, school, commercial office, and community facility uses to be developed in the District in Phase 1B would not be compatible with the industrial activities permitted on the nearby MTA property, the District's regulations require the development of an eastern perimeter street, as well as a landscaped open space between 8 and 15 feet wide, which would provide a visual buffer between the redeveloped District and the adjacent MTA property. As described above, because streets in the undeveloped portion of the District would generally remain at their existing grade through Phase 1B, streets in the redeveloped portion of the District would be graded to slope down to the existing streets to the east, forming a physical barrier between the Phase 1B development and existing uses in the rest of the Willets Point peninsula, including the MTA property.

2032 (PHASE 2/RWCDS)

Project Site

In Phase 2, anticipated to be complete by 2032, the remainder of the District would be built out consistent with the area's previously-approved zoning and substantially as anticipated in the 2008 FGEIS (see Figure 1-6 in Chapter 1, "Project Description"). Upon completion of Phase 2, the District is anticipated to include: up to 5.85 million gross square feet of residential use; up to 1.25 million gsf of retail; approximately 500,000 gsf of office; up to 400,000 gsf of convention center use; up to 560,000 gsf of hotel use; up to 150,000 gsf of community facility use; approximately 230,000 gsf of public school use; and a minimum of 8 acres of publicly accessible open space. The number of proposed parking spaces within the District would be determined based on project-generated demand, but is anticipated to be no more than the 6,700 spaces identified in the 2008 FGEIS.

As described above, for the RWCDS, it also is anticipated that by 2032 Lot B could be developed with a one-story retail structure and a 10-story office building containing 184,500 sf of retail use and 280,000 sf of commercial use with associated parking.

The proposed project would implement the new street network through the District as analyzed in the 2008 FGEIS and consistent with the requirements of the URP and the Special Willets Point District. The proposed project would also result in the building uses, heights, arrangements, and block forms and open spaces anticipated in the 2008 FGEIS for the District.

As described in the 2008 FGEIS, due to the project site's proximity to LaGuardia airport, building heights within the District are set by height limits related to aerial runway approach "surfaces" which limit building heights to approximately 100 feet at the northern edge of the District, 150 feet on the southern edge of the District, and 218 feet on the west side of the District. The special district regulations also require that residential buildings above 120 feet follow additional guidelines in terms of bulk, orientation, and massing, and residential buildings are required to have interior courtyards with a minimum width of 60 feet. In order to maintain the pedestrian nature of the area, all off-street parking would be fully enclosed, either below grade or within the residential buildings, except along parts of Northern Boulevard and the eastern perimeter street where parking would be required to be screened within a structure.

Consistent with the special district's regulations, the proposed project also would develop a minimum of eight acres of publicly accessible open space by 2032. The open spaces would contain a combination of both active and passive uses. The central public open space would be on a triangular-shaped block along Willets Point Boulevard, near the center of the District. In addition to this central public open space, wide public access areas would surround the District and would be located along 126th Street, the south side of Northern Boulevard, the north side of Roosevelt Avenue, and the east side of the eastern perimeter street. These public access areas would include wide sidewalks, pedestrian amenity zones, or open areas with landscaping and plantings.

Overall, consistent with the conclusions of the 2008 FGEIS, the RWCDs would significantly alter the urban design of the project site, replacing predominantly low-density auto-related, manufacturing, warehousing and distribution uses with a new mixed-use neighborhood in the District. While the proposed project would significantly alter the urban design of the District, the proposed project would ultimately have a beneficial impact on the overall appearance and feel of the District. The new development that would result from the proposed project would enliven the area by creating new, usable streets. Along 126th Street and adjacent streets, retail uses would line the ground-floor spaces and would generate new pedestrian activity at the site. The residential development would increase the use of the site and create a vibrant new community. The open spaces and landscaped sidewalks would create an attractive new development and, combined with the retail corridors, would create a pedestrian-friendly environment. Finally, the proposed development would complement CitiField by increasing retail and entertainment spaces in the area. The build-out of the District also would be consistent with and support the development in the Willets West and Roosevelt Avenue portions of the project site, created in Phase 1A and Phase 1B. The RWCDs would create pedestrian-oriented developments on either side of CitiField, creating a dynamic, new, mixed-use neighborhood with pedestrian-scaled streetscapes and new entertainment and retail attractions and amenities to integrate this area with uses in neighboring Flushing and Corona.

Development on Lot B would convert a surface parking lot into a new, actively used location and would increase pedestrian activity to the area. In addition, the retail space would further the transformation of 126th Street into a pedestrian-friendly, retail-oriented destination. The office space would be in keeping with the office space that would be located in the District.

Study Area

The proposed project would introduce new building uses, bulk, arrangements, and types to the project site, which would complement existing development and projects currently under construction in the surrounding area. The proposed project would enhance the vitality of streets in the study area by introducing a variety of new uses that would increase pedestrian activity to the project site. The proposed project would also improve the appearance of the study area's streetscape by adding street lighting, signage, and general landscaping.

The proposed project would not result in any changes to buildings, natural features, open spaces, or streets in the study area. As noted in the 2008 FGEIS, the project would extend some study area streets into the District, including 34th Avenue and the access roadways along the northern and southern edges of CitiField. These new streets would be similar in width to those that exist in the study area and would travel on a similar trajectory as the existing streets. The newly created streets would link the District to the surrounding area and create new connector streets in the study area. The anticipated new connections to the Van Wyck Expressway would be designed in a manner similar to the existing connectors in the study area.

Overall, the RWCDs as developed by 2032 would have a positive effect on the urban design of the study area.

VISUAL RESOURCES

2018 (PHASE 1A)

Project Site

As described above, there are no visual resources on the project site, and thus no on-site resources would be affected by the proposed project in 2018. The development of the Willets West structure would limit views through that portion of the project site north to Flushing Bay; however, as noted above, these views are already constrained by the elevated Grand Central Parkway connector.

Study Area

Figures 8-21 through 8-25 provide an illustrative comparison of existing/2018 No Action conditions to 2018 With Action conditions from viewpoints within the study area. As illustrated in these figures, the development of the Willets West structure and the structured parking facility on the South Lot would alter views north from the Passerelle Ramp toward CitiField. From this location, the parking facility and the Willets West structure would be visible, but not prominent, beyond the utilitarian structures on the MTA Corona Rail Yard. The proposed hotel within the District would also be visible from this viewpoint, but would be consistent with the heights anticipated for this area in the 2008 FGEIS. CitiField and Arthur Ashe Stadium would remain notable elements in views from the ramp, and southward views to the Unisphere and the New York State Pavilion would not be altered. In views from North Corona, CitiField would be less prominent behind the Willets West development; however, the stadium, at approximately 265 feet tall, would be taller than the proposed retail and entertainment center and thus would still be visible. From the Flushing Bay Promenade, the new development would be visible, but as noted above, the elevated Grand Central Parkway connector already limits views from this location. Views to the Bay itself from the Promenade would not be disturbed. The proposed project would not alter or obstruct any views to visual resources in Downtown Flushing, or to the Flushing Meadows-Corona Park Pool and Rink. The proposed project also would improve the view corridor of 126th street by replacing the existing buildings with new development and beginning to create a pedestrian corridor, make the east side of the street more consistent with the west. Views along the other major street near the project site, Roosevelt Avenue, would not change substantially because of the view-constraining effects of the train viaduct overhead.

2028 (PHASE 1B)

Project Site

As described above, there are no visual resources on the project site, and thus no on-site resources would be affected by the proposed project in 2028.

Study Area

Figures 8-26 through 8-28 provide an illustrative comparison of existing/2028 No Action conditions to 2028 With Action conditions from viewpoints within the study area. As illustrated in these figures, the development of additional structured parking facilities on the South Lot and Lot D, and the build-out of the Phase 1A parking/recreational areas within the District, would



Existing Condition



With Action Condition

Existing vs. 2018 With Action Condition,
Illustrative Rendering from CitiField Plaza



Existing Condition



With Action Condition

Existing vs. 2018 With Action Condition,
Illustrative Rendering from Northern Boulevard



Existing Condition



With Action Condition

Existing vs. 2018 With Action Condition,
Illustrative Rendering South along 126th Street



Existing Condition



With Action Condition

Existing vs. 2018 With Action Condition,
Illustrative Rendering North along 126th Street



Existing Condition

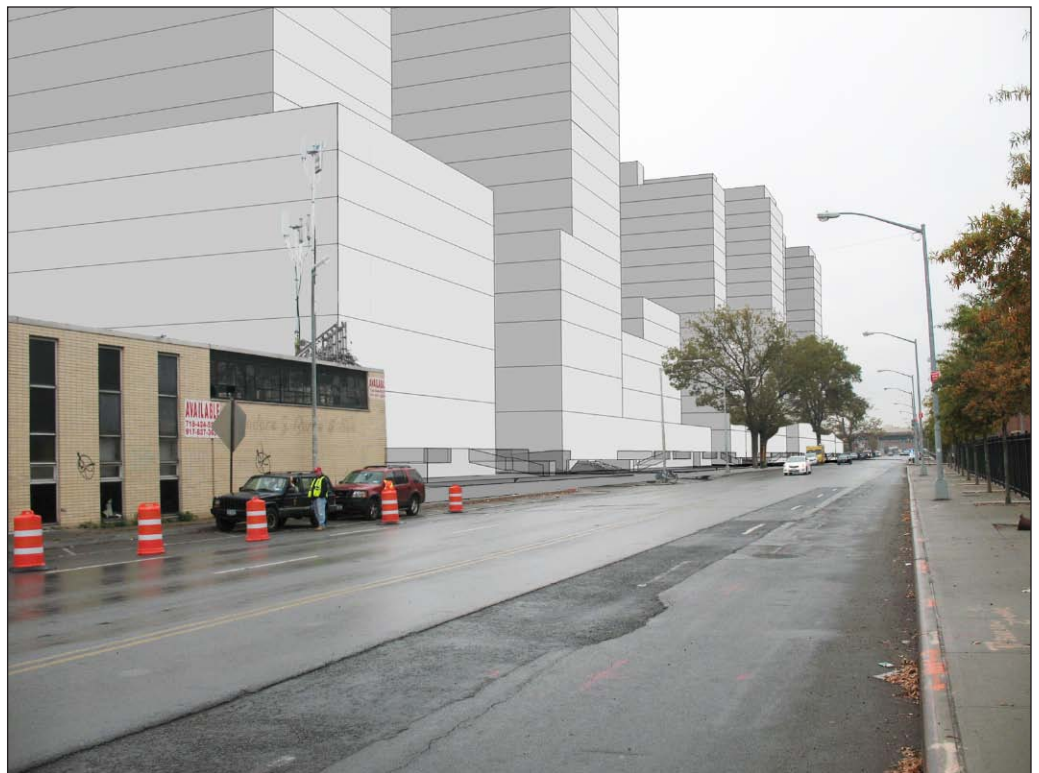


With Action Condition

Existing vs. 2018 With Action Condition,
Illustrative Rendering from Passerelle Ramp



Existing Condition

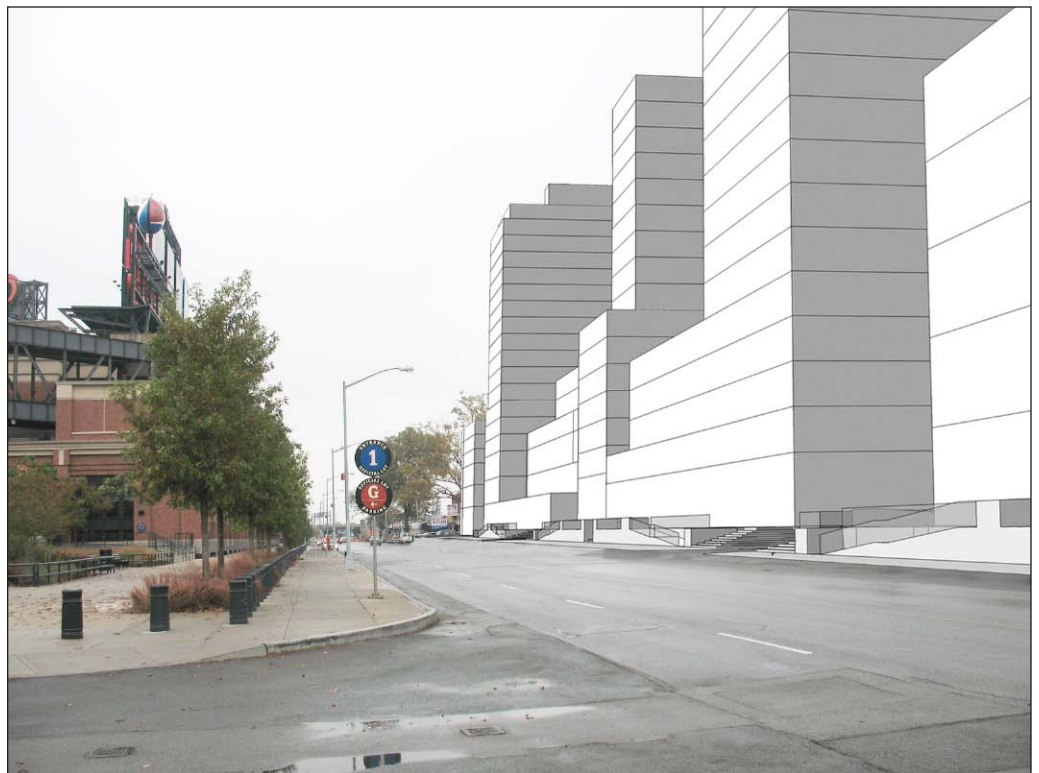


With Action Condition

Existing vs. 2028 With Action Condition,
Illustrative Rendering South along 126th Street



Existing Condition



With Action Condition

Existing vs. 2028 With Action Condition,
Illustrative Rendering North along 126th Street



Existing Condition



With Action Condition

Existing vs. 2028 With Action Condition,
Illustrative Rendering from Passerelle Ramp

alter views north from the Passerelle Ramp. From this location, the various project site buildings would be visible beyond the utilitarian structures on the MTA Corona Rail Yard and adjacent to CitiField. The proposed hotel within the District would also be visible from this viewpoint, but would be consistent with the heights anticipated for this area in the 2008 FGEIS. CitiField and Arthur Ashe Stadium would remain notable elements in views from the ramp, and southward views to the Unisphere and the New York State Pavilion would not be altered. In views from North Corona, CitiField would be less prominent behind the Willets West development and with the backdrop of new development within the District; however, the stadium, at approximately 265 feet tall, would be taller than the proposed retail and entertainment center and thus would still be visible. From the Flushing Bay Promenade, the new development would be visible, but as noted above, the elevated Grand Central Parkway connector already limits views from this location. Views to the Bay itself from the Promenade would not be disturbed. The proposed project would not alter or obstruct any views to visual resources in Downtown Flushing, or to the Flushing Meadows-Corona Park Pool and Rink. The proposed project also would improve the view corridor of 126th street by replacing the existing buildings with new development and beginning to create a pedestrian corridor, make the east side of the street more consistent with the west. Views along the other major street near the project site, Roosevelt Avenue, would not change substantially because of the view-constraining effects of the train viaduct overhead.

2032 (PHASE 2/RWCDS)

Project Site

As described above, there are no visual resources on the project site, and thus no on-site resources would be affected by the RWCDS in 2032.

Study Area

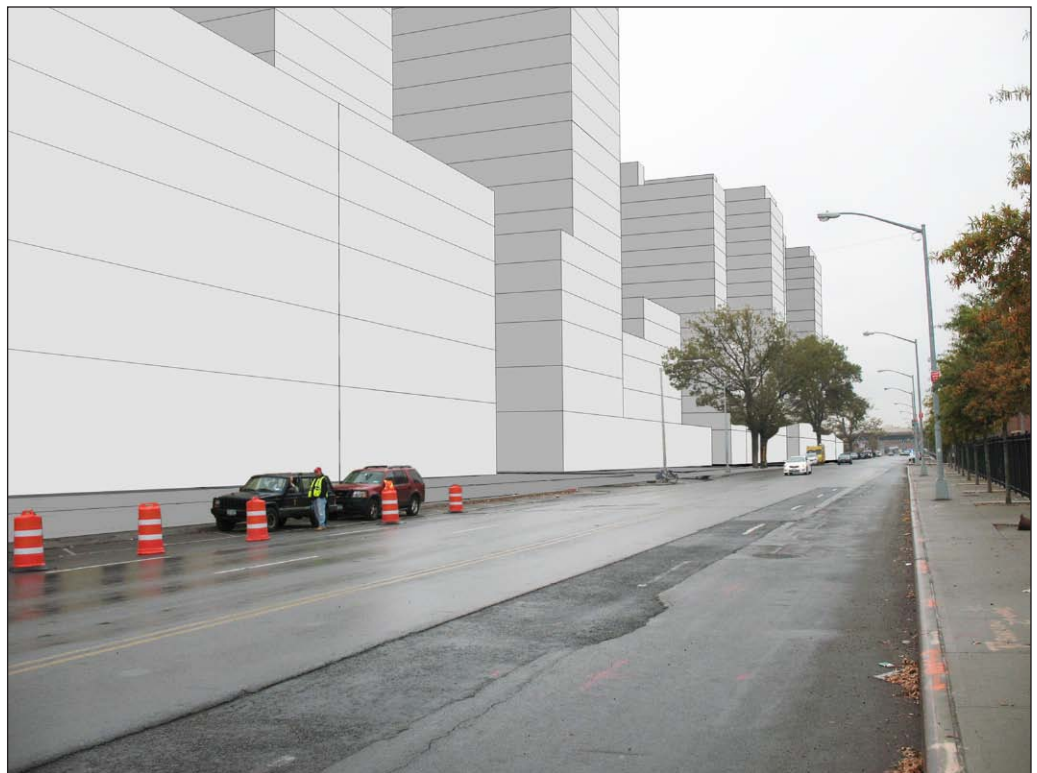
Figures 8-29 through 8-32 provide an illustrative comparison of existing/2032 No Action conditions to 2032 With Action conditions from viewpoints within the study area.

The buildings resulting from the proposed project as well as the potential future development on Lot B would be visible from sections of Flushing Meadows-Corona Park; however, the MTA Corona Yards and Casey Stengel Bus Depot would block most views. The new structures on the project site would not detract from the visual appreciation of the park or the landscaping, trees, and open lawns that make the park a visual resource. As illustrated in **Figure 8-22**, the new buildings also would be visible in views from the Passerelle Ramp; however, as described above, the primary views from the ramp are south toward Flushing Meadows-Corona Park, and would not be obstructed by the structures that would result from the proposed project.

The proposed project and the potential future development on Lot B would not affect views to or from Flushing Bay, the Flushing Bay Promenade, or views to the 1964–65 World’s Fair structures in Flushing Meadows-Corona Park. The new development on the project site would be visible in views south from the Promenade, however this is not the primary view from this location, and the buildings would be partially obscured by the elevated transportation structures and by the new CitiField. The proposed project would not alter or obstruct any views to visual resources in Downtown Flushing, or to the Flushing Meadows-Corona Park Pool and Rink. The proposed project also would improve the view corridor of 126th street by replacing the existing buildings with new development and creating a pedestrian corridor, making the east side of the street more consistent with the west. Views along the other major street near the project site,



Existing Condition

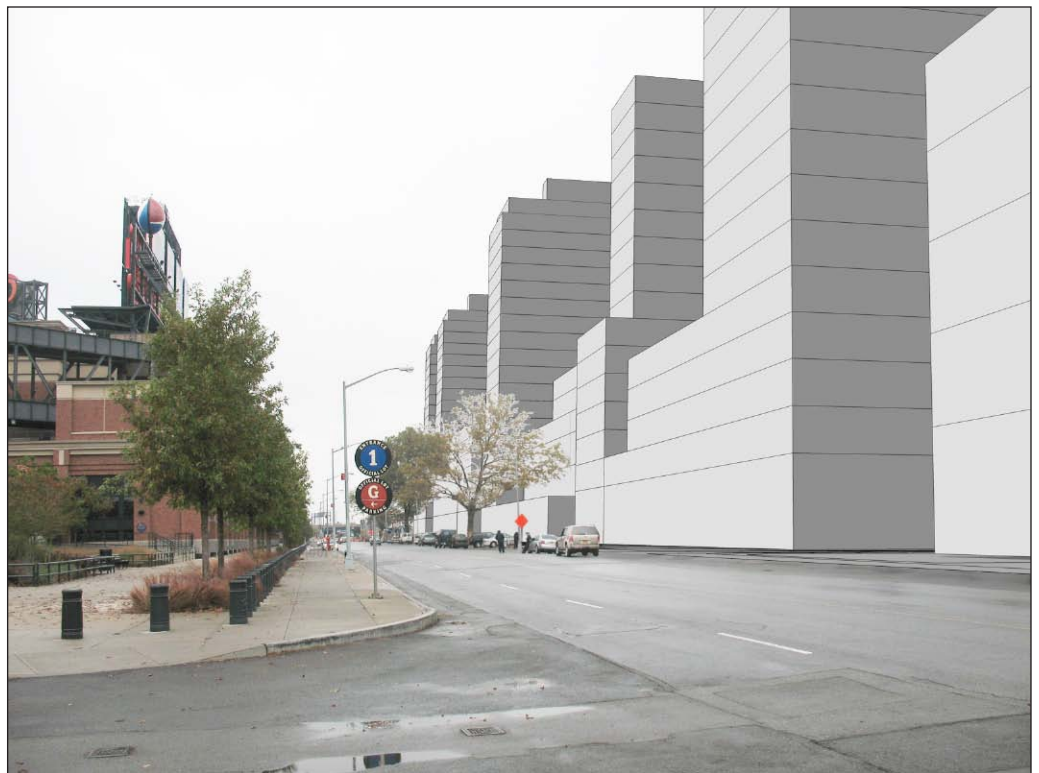


With Action Condition

Existing vs. 2032 With Action Condition,
Illustrative Rendering South along 126th Street

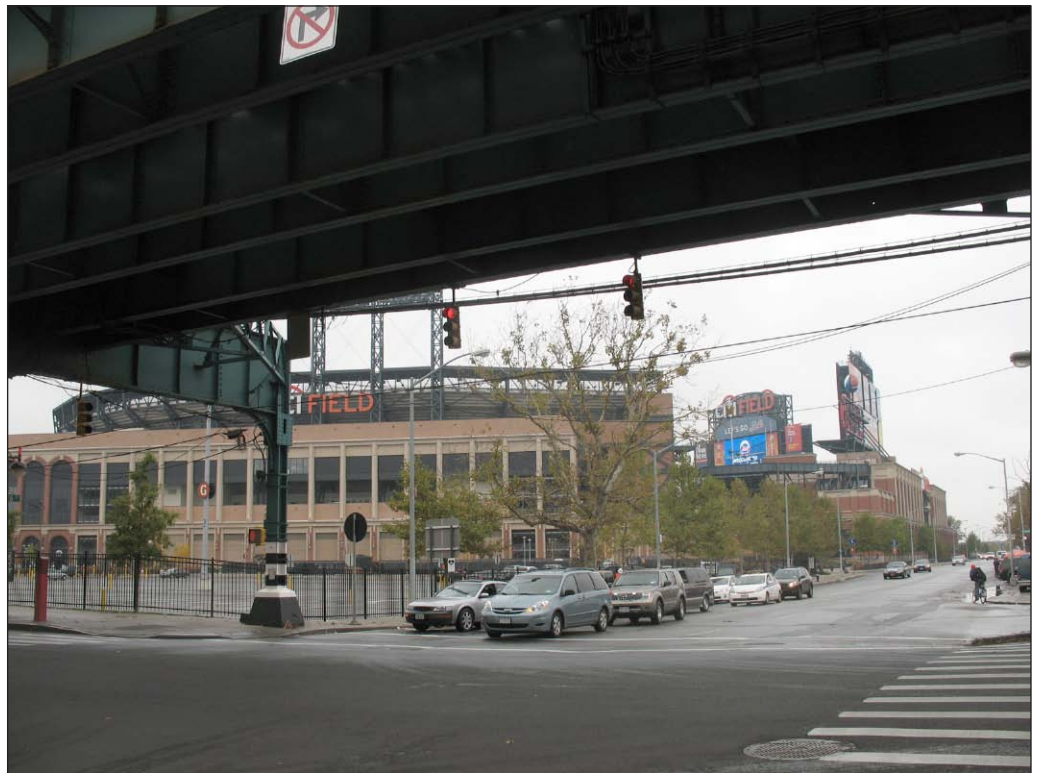


Existing Condition

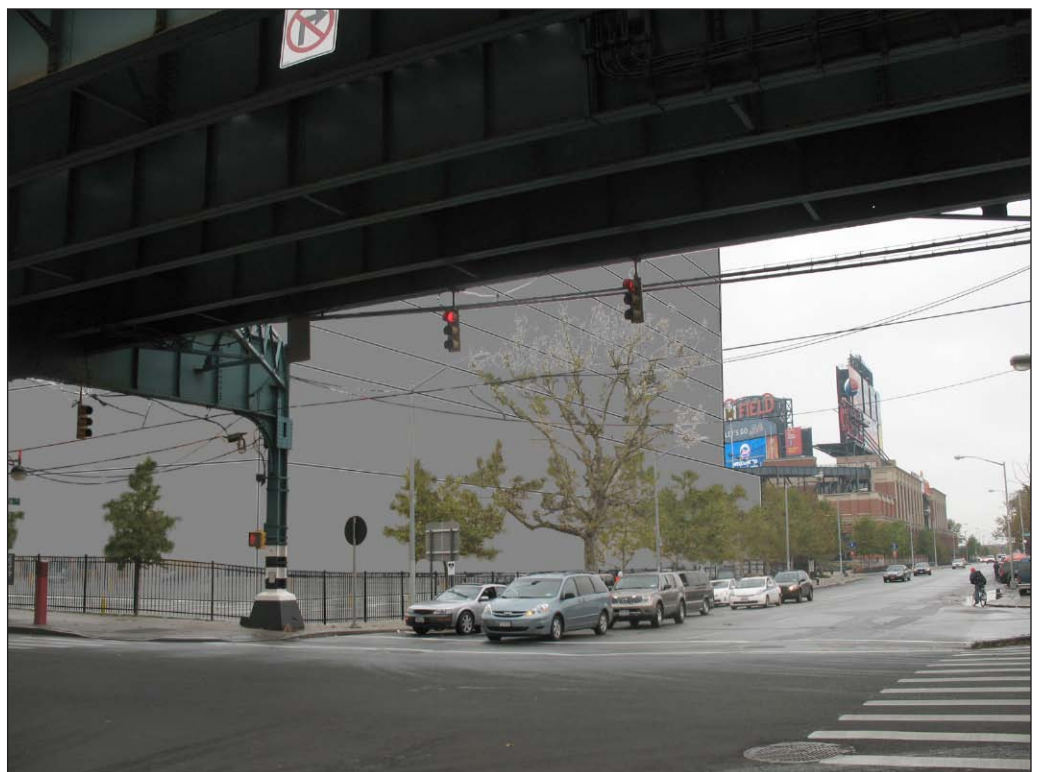


With Action Condition

Existing vs. 2032 With Action Condition,
Illustrative Rendering North along 126th Street



Existing Condition



With Action Condition

Existing vs. 2032 RWCDs,
Illustrative Rendering of Lot B



Existing Condition



With Action Condition

Existing vs. 2032 With Action Condition,
Illustrative Rendering from Passerelle Ramp

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Roosevelt Avenue, would not change substantially because of the view-constraining effects of the train viaduct overhead.

In summary, this analysis finds that the proposed project would not result in any significant adverse impacts related to historic and cultural resources that were not addressed in the 2008 FGEIS. *

A. INTRODUCTION

This chapter assesses whether the reasonable worst-case development scenario (RWCDS) for the proposed project would result in any significant adverse impacts on natural resources that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

PRINCIPAL CONCLUSIONS

This analysis finds that the RWCDS would not result in significant adverse impacts on floodplains, wetlands, sediments, groundwater, terrestrial resources, aquatic resources, endangered, threatened species, or species of special concern and rare ecological communities, and Essential Fish Habitat (EFH) that were not addressed in the 2008 FGEIS and subsequent memoranda.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS and subsequent technical memoranda analyzed the potential for impacts on natural resources resulting from the Willets Point Development Plan. The 2008 FGEIS and subsequent technical memoranda concluded that the proposed Plan would not result in significant adverse impacts on natural resources within the study area.

C. METHODOLOGY

The natural resources assessment has been prepared in accordance with the 2012 *City Environmental Quality Review (CEQR) Technical Manual*. The project site comprises five areas: the Special Willets Point District (the “District”), Willets West, the South Lot, and Lots B and D. Because the Willets West, South Lot, and Lots B and D are all paved surface parking lots, and the District is also developed, the study area for the assessment of potential impacts to floodplains, wetlands, groundwater, and terrestrial natural resources comprises the project site and the areas immediately adjacent to it. An exception was made for the identification of threatened or endangered species, which were evaluated for a distance of at least 0.5 miles from the project site.

The study area for water quality and aquatic resources includes the aquatic resources within Flushing Bay and Flushing Creek.

Existing conditions within the study area were summarized from the following:

- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) and Best Available Flood Hazard Data (BAFHD);
- New York State Department of Environmental Conservation (NYSDEC) Tidal Wetlands Maps and Nature Explorer data;

Willets Point Development

- New York City Department of Environmental Protection (DEP) 2010 New York Harbor Water Quality Report;
- Draft Ecological Communities of New York State (Edinger et al. 2002);
- United States Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps and Information, Planning and Conservation (IPaC) system list of Endangered, Threatened, Candidate, and Proposed species for Queens County, NY; and
- National Oceanic Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) EFH maps and data.

Due to the developed condition of the project site and study area, there would be minimal difference in the potential for effects to natural resources for the three project phases (i.e., 2018, 2028, and 2032). Therefore, the evaluation of potential impacts from the construction and operation of these phases considers the potential impacts from the RWCDS for the year 2032, the full build out of the proposed project.

THE FUTURE WITHOUT THE PROPOSED PROJECT

In the future condition without the proposed project (the “No Action” condition), the District would continue to have the existing industrial and auto-related uses, and Willets West, the South Lot, and Lots B and D would continue to serve the parking needs of CitiField. It is assumed that the project site, which comprises the study area for the floodplains, wetlands, groundwater and terrestrial resources assessment, is assumed to would remain in its current condition for the three analysis years (i.e., 2018, 2028, and 2032), with the exception that climate change is projected to result in sea-level rise and associated changes in floodplain elevations, and that in the long term the City would undertake citywide efforts to improve resiliency, which would likely include measures to protect the area of Queens that includes Willets Point.

The assessment of water quality and aquatic resources for the No Action condition considered ongoing and proposed projects in the vicinity of the project site, including:

- Water quality and sediment quality improvements expected to occur as a result of regional and local programs; and
- Habitat enhancement or restoration activities associated with the New York/New Jersey Harbor Estuary Program (HEP) or Hudson-Raritan Estuary Ecosystem Restoration Project (HRE).

POTENTIAL IMPACTS FROM THE PROPOSED PROJECT

In the future with the proposed project, potential impacts on the floodplain, wetlands, groundwater, aquatic, and terrestrial resources from the RWCDS for the proposed project were assessed by considering the following:

- The existing water quality and aquatic resources of Flushing Bay and Flushing River in the vicinity of the project site;
- The existing natural resources within the project site; and
- The permanent and direct effects to these resources due to construction and operation of the proposed project (e.g., land disturbance and tree removal, and discharge of stormwater), and temporary indirect effects such as noise disturbances to wildlife during project construction and operation.

D. EXISTING CONDITIONS

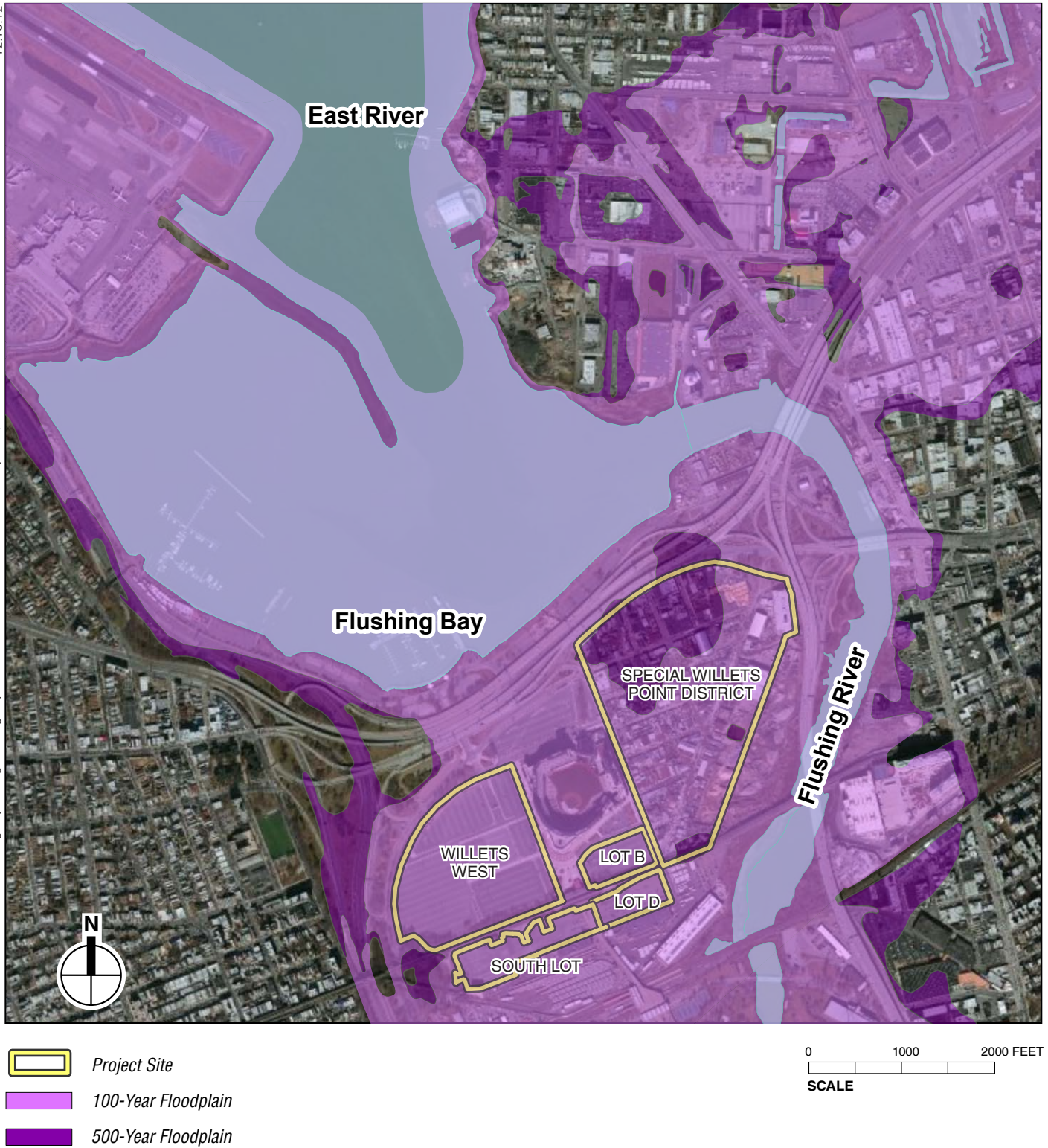
FLOODPLAINS

New York City is affected by local flooding (e.g., flooding of inland portions of the city from short-term, high-intensity rain events in areas with poor drainage), fluvial flooding (e.g., rivers and streams overflowing their banks), and coastal flooding (e.g., long and short wave surges that affect the shores of the Atlantic Ocean, bays such as Upper New York Bay, and tidally influenced rivers such as the Hudson River and East River, streams, and inlets [FEMA 2007]). Because the East River is tidal, its water level and that of Flushing Bay is controlled by the tidal conditions within the New York Bay, Long Island Sound, and the Atlantic Ocean. Within New York City, tidal flooding is the primary cause of flood damage. Coastal floodplains such as those present within the study area are influenced by astronomic tide and meteorological forces (e.g., northeasters and hurricanes), and not by fluvial flooding (FEMA 2007).

Figure 9-1 presents the 100-year floodplain boundary (Zone AE; the area with a 1 percent probability of flooding each year) and the 500-year floodplain boundary (Zone X; the area with a 0.2 percent probability of flooding each year) for the project site based on FEMA Flood Insurance Rate Maps (FIRMs) currently in effect. The 100-year flood elevation is at 14 feet National Geodetic Vertical Datum of 1929 (NGVD29), or approximately 13 feet when referenced to the North American Vertical Datum of 1988 (NAVD88). Willets West, the South Lot, and Lots B and D are within the 100-year floodplain. Most of the District is also within the 100 year floodplain, with the exception of three areas located in the northwest, along the eastern border and along Roosevelt Avenue that are within the 500-year floodplain. The portion of the District within the 500 year floodplain along Roosevelt Avenue was indicated as being within the 100-year floodplain in the 2008 FGEIS but is now within the 500-year floodplain on the basis of the updated FEMA FIRM for this portion of the project site.

Floodplain boundaries based on existing FIRMs are currently the only regulatory standard relating to elevations of new developments. On July 2, 2013, FEMA released the latest version of Best Available Flood Hazard Data (BAFHD)—a draft product preceding the publication of new FIRMs. FEMA encourages communities to use the BAFHD when making decisions about floodplain management and post-Hurricane Sandy recovery efforts, and these levels have been adopted by New York City for zoning purposes, allowing projects to account for higher base flood elevations for height and other zoning requirements. The 100-year floodplain elevations are the same as those in the currently effective FIRM in the northern portion of the District, north of 37th Avenue, and are one foot lower in all other areas of the proposed project.

On February 25, 2013, FEMA released Advisory Base Flood Elevation maps for areas in New York City, including the project site. The 100 year flood ABFE for Willets West and portions of the project site to the south of 37th Avenue is 12 feet NAVD88 or 13 feet NGVD 1929 (approximately 1 foot lower than the currently effective FIRM elevation). Within the District, for most of the area to the North of 37th Avenue, the 100 year ABFE is 13 feet NAVD88 or 14 feet NGVD29 (the same as the currently effective FIRM elevation), with the exception of an area mostly to the north of 34th Avenue, which is outside of the advisory 100 year floodplain. Although the ABFE is subject to further review, if it is adopted into the FIRM, the proposed project elements in Willets West and portions of the project site to the south of 37th Avenue where the ABFE differs from the existing FIRM elevation would comply with the updated flood elevation as required by the New York City Building Code.



U.S. Federal Emergency Management Agency
Flood Hazard Areas
Figure 9-1

WETLANDS

The boundaries and classifications of the NWI- and NYSDEC-mapped wetlands that are known to occur in the vicinity of the District and Lot B and Lot D, are as described in the 2008 FGEIS. NYSDEC and NWI-mapped wetlands are not present on or adjacent to Willets West or the South Lot (see **Figures 9-2** and **9-3**). Willets West and the South Lot are paved surface parking lots and do not contain wetlands. The areas immediately adjacent to the project site are also developed and do not contain wetlands.

TERRESTRIAL RESOURCES

Since the publication of the 2008 FGEIS, development has occurred within the immediate vicinity of the District, Willets West, the South Lot, and Lots B and D, including the construction of CitiField, an associated parking lot, and the Department of Sanitation New York (DSNY) North Shore Marine Transfer Station. In addition, in December 2011, the City began construction on new sanitary and storm water mains to support the redevelopment of the District and adjacent areas. These projects did not include any new open space, and did not change the existing amount of vegetation, or natural habitat available to terrestrial wildlife within the immediate area of the project sites.

The ecological communities within the District and Lots B and D are unchanged from those described in the 2008 FGEIS, comprising industrial and auto-related uses and paved surface parking. These areas of the project site, as well as the paved surface parking of the South Lot and Willets West, including the new development described above, could be described as “Terrestrial Cultural” communities by Edinger et al. (2002). These are communities that are “either created and maintained by human activities, or are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community is substantially different from the character of the substrate or community as it existed prior to human influence (Edinger et al. 2002).” For Willets West and the South Lot, dominant vegetation is limited to street trees that are located within parking lot medians of Willets West and around Willets West in the vicinity of Roosevelt Avenue and the northern part of the site along Shea Road.

WILDLIFE

The wildlife expected to occur within the District and Lots B and D would remain unchanged from the existing conditions presented in the 2008 FGEIS. These same urban-adapted species (e.g., Norway rat [*Rattus norvegicus*], rock pigeon [*Columba livia*], European starling [*Sturnus vulgaris*]) would be expected to occur in the vicinity of Willets West and the South Lot.

GEOLOGY AND SOILS

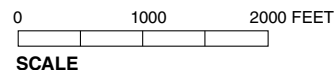
As described in the 2008 FGEIS, the Willets Point peninsula, where the District, Willets West, the South Lot, and Lot B and Lot D are located, is situated near the westernmost end of Long Island. Soils on the site consist primarily of fill material. The regional stratigraphy of Long Island, including the aquifers and confining layers, was formed from glacial tills and outwash sands of the Pleistocene Epoch. These layers lie unconformably over older deposits of the Cretaceous Period. The Cretaceous deposits lie over an impermeable bedrock surface dipping to the southeast. The bedrock consists of crystalline metamorphic rock of the lower Paleozoic Era.

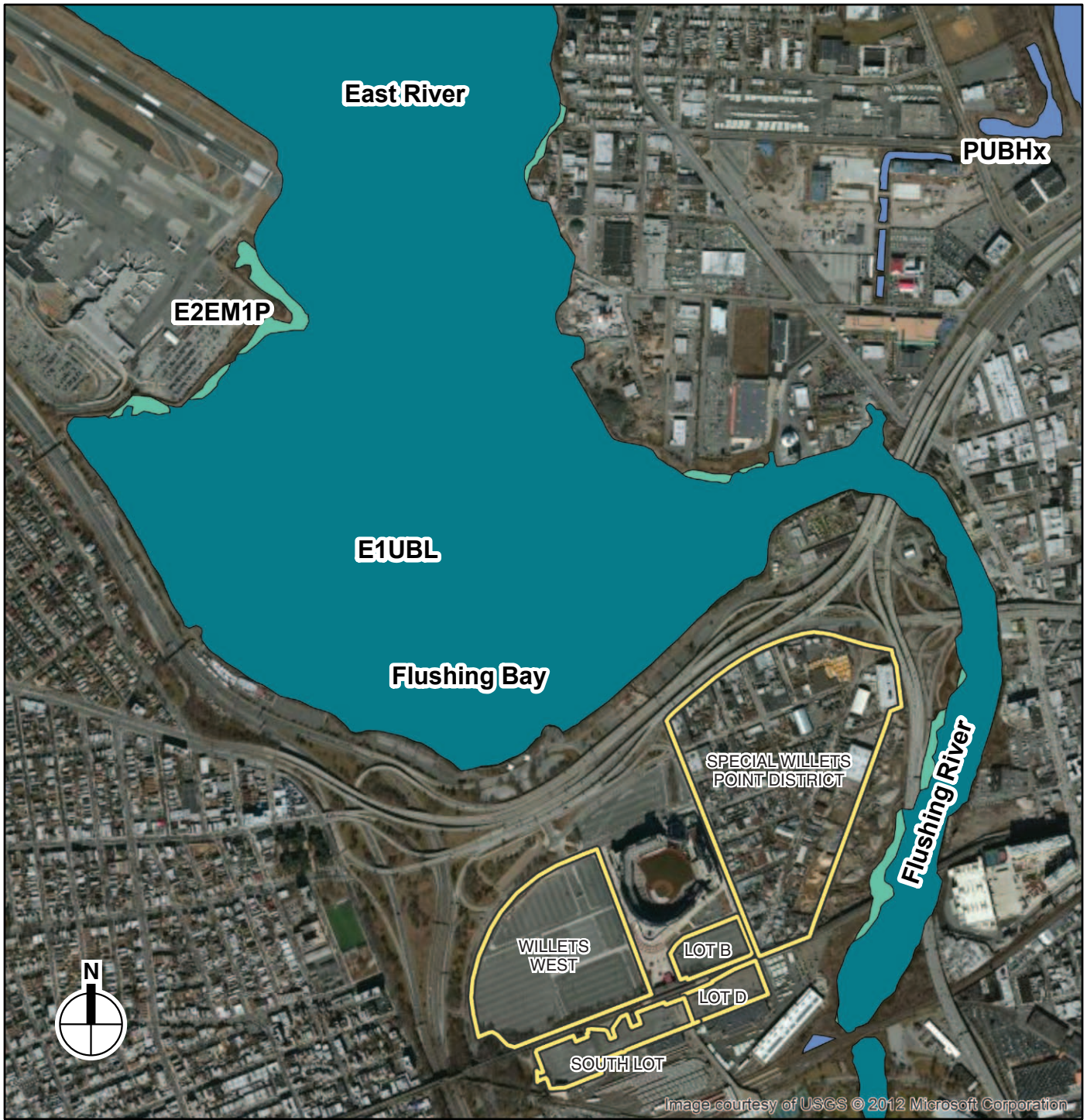


- Project Site**
- Formerly Connected Marsh**
- High Marsh**
- Intertidal Marsh**
- Littoral Zone**
- Coastal Shoals**
- State-Regulated Freshwater Wetlands**

Wetlands Data Source:
 New York State Department of Environmental Conservation (NYSDEC).
 Publication date 1999 Albany, NY
<http://cugir.mannlib.cornell.edu/datatheme.jsp?id=111>

Notes:
 This map is for informational purposes only. It uses the most current data available and is deemed accurate, but is not guaranteed.





- Project Site*
- Estuarine and Marine Deepwater*
- Estuarine and Marine*
- Freshwater Pond*

Wetlands Data Source:
 U. S. Fish and Wildlife Service. Publication date April 1, 2012.
 National Wetlands Inventory website. U.S. Department of the
 Interior, Fish and Wildlife Service, Washington, D.C.
<http://www.fws.gov/wetlands/>

Notes:
 This map is for general reference only. It uses the most current data
 available and is deemed accurate, but is not guaranteed.

0 1000 2000 FEET

 SCALE

GROUNDWATER

As described in the 2008 FGEIS, testing shows that contamination of the groundwater of the District and adjacent properties is typical to industrial areas and is likely limited to areas with shallow groundwater. As described in Chapter 10, “Hazardous Materials, conditions in the District, Lot B, and Lot D are not expected to have changed significantly from those summarized in the 2008 FGEIS. With respect to a new assessment of Willets West and the South Lot and a reassessment of Lots B and D, as described in Chapter 10, “Hazardous Materials,” evidence of a potential underground storage tank was observed on Lot D, though the Phase I ESA found no registered historical or current petroleum storage tanks. Similarly, the groundwater sampling of Lot B identified some substances (generally metals) at levels above the most stringent (drinking water) standards, but these were consistent with fill. The Willets West and the South Lot were found to be part of an “ash dump.” However, a Phase I ESA conducted on these sites found no evidence of historical or current petroleum storage tanks or other historical uses of concern.

AQUATIC RESOURCES

WATER QUALITY

As described in the 2008 FGEIS, the District is located along the western shore of Flushing Bay and the Flushing River. Willets West, the South Lot, and Lot B, and Lot D do not contain any surface waterbodies and do not border Flushing Bay or Flushing River.

The Flushing River and Flushing Bay are classified by NYSDEC as Use Classification I. Recommended uses for Class I waters are for secondary contact recreation and fishing, and water quality should be suitable for fish propagation and survival.

The DEP monitors water quality in New York Harbor, including Flushing Bay and the Flushing River, through its annual Harbor Survey. The results of recent surveys show that water quality in New York Harbor has improved significantly as a result of measures undertaken by the City. These measures include infrastructure improvements, the elimination of 99 percent of raw dry-weather sewage discharges, the reduction of illegal discharges, the increased capture of wet-weather-related floatables, and the reduction of toxic metals loadings from industrial sources by 95 percent (DEP 2002).

In the Upper East River–Western Long Island Sound survey region of the DEP Harbor Survey (which includes Flushing Bay and Flushing Creek) fecal coliform concentrations (an indicator of untreated sewage discharge) have demonstrated a downward trend over the last 20 years. Data collected in this region in 2009 and 2010, are consistent with this trend, with all but one station (located in Flushing Creek) meeting the Class I standards (DEP 2010). Average dissolved oxygen (DO)¹ concentrations also met the Use Classification I standards in 2009 and 2010 in both surface and bottom waters. Average chlorophyll-*a* concentrations² were not indicative of high nutrient concentrations in most

¹ DO in the water column is necessary for respiration by aquatic biota. The bacterial breakdown of high organic loads can deplete DO and result in low DO levels. Persistently low DO can degrade habitat and affect aquatic biota. Consequently, DO is one of the most universal indicators of overall water quality in aquatic systems.

² High levels of nutrients can lead to excessive plant growth (a sign of eutrophication) and depletion of DO. Concentrations of the plant pigment chlorophyll-*a* in water can be used to estimate productivity and the abundance of phytoplankton. Chlorophyll-*a* concentrations greater than 20 micrograms per liter (µg/L) are considered suggestive of eutrophic conditions (DEP 2010).

locations although confined areas such as the heads of Flushing Bay and Flushing River showed eutrophic conditions, particularly in mid-summer (DEP 2010). Secchi transparency¹ during 2010 was indicative of decreased water clarity, particularly in constricted waterways, likely due to high suspended solid concentrations of surface waters (DEP 2010).

AQUATIC BIOTA

The aquatic biota existing conditions remain unchanged from those described in the 2008 FGEIS. The composition of aquatic biota within Flushing Bay is expected to remain unchanged from the 2008 FGEIS conditions, even though water quality within the Upper East River-Western Long Island Sound continues to improve. As long as the substrate within Flushing Bay is dominated by fine grain material, many invertebrate species will continue to be excluded, limiting the diversity of the benthic macroinvertebrate community (even though the macroinvertebrate organisms can be abundant). Because of this lack of diversity in the benthic macroinvertebrate community, many fishes will make limited use of the habitat due to lack of preferred prey (NYCDEP 2011).

As discussed in the 2008 FGEIS, a 2003 field program found that the most abundant species were Atlantic silverside (*Menidia menidia*) and Atlantic sea herring (*Clupea harengus*), the latter as identified as a species with EFH in the study area. In addition, finfish sampling was conducted during August through October 2001 and July, September and October 2002 at the mouth of Flushing Bay and the inner Bay region. A total of 13 finfish species and 3 crab species were collected during the surveys. The primary fish collected were weakfish (41 percent), winter flounder (36 percent), Atlantic menhaden (9 percent) and striped bass (*Morone saxatilis*) (8 percent) (DEP 2012). The most abundant finfish eggs collected in the 2003 field program were cunner (*Tautoglabrus adspersus*) and Atlantic menhaden (*Brevoortia tyrannus*). The most abundant finfish larvae collected in the 2003 field program were herring (*Clupea* spp.), Atlantic menhaden, anchovy (*Anchoa* spp.), winter flounder, and goby (*Gobiosoma* spp.) (DSNY 2005). The most abundant macroinvertebrate species collected in 2003 were sevenspine bay shrimp (*Crangon septemspinosa*) and grass shrimp (*Palaemonetes vulgaris*). During the 2001 and 2002 field programs, three species of crabs were also collected including blue crab (*Callinectes sapidus*), Atlantic rock crab (*Cancer irroratus*) and green crab (*Carcinus maenas*) (DEP 2012). With respect to benthic habitats, data collected (1995 and 2012) in the bay show high abundances of pollution-tolerant species (e.g., *Oligochaeta*, *Leitoscoloplos robustus*) suggesting that the habitat quality is poor in this bay (Iocco et al. 2000; DEP 2012).

SEDIMENT QUALITY

The sediment existing conditions remain unchanged from those described in the 2008 FGEIS. Even with continued improvements in water quality, the substrates of Flushing Bay consist of fine silts and, as a result, the benthic community remains limited to pollution tolerant species (NYCDEP 2011). As discussed in the 2008 FGEIS, New York Harbor Estuary sediments,

¹ Secchi transparency is a measure of the clarity of surface waters. Transparency greater than 5 feet (1.5 meters) indicates relatively clear water. Decreased clarity can be caused by high suspended solid concentrations or blooms of plankton. Secchi transparencies less than 3 feet (0.9 meters) may be considered indicative of poor water quality conditions. Average Secchi readings in the Inner Harbor area have remained relatively consistent since measurement of this parameter began in 1986, ranging between approximately 3.3 and 6.1 feet (1.0 to 1.9 meters) (DEP 2010).

including the upper East River/Flushing Bay, are contaminated due to a history of industrial uses in the area. Backwaters such as Flushing Bay tend to be sediment traps; fine silts tend to accumulate in areas where tidal current velocities are reduced. The benthic habitat of Flushing Bay has been classified as soft silt or as silt with infauna. Some areas are presence of “stressed silt,” or silt with methane gas voids. Deeper collections near the confluence with the East River were characterized as azoic (silty bottoms without epifauna, infauna, or bacterial mats). The sediments in Flushing Bay are indicative of recently accumulated material that has limited potential to support a diverse benthic faunal community (Iocco et al. 2000; NYCDEP 2011).

THREATENED, ENDANGERED, RARE, AND SPECIAL CONCERN SPECIES AND SIGNIFICANT ECOLOGICAL COMMUNITIES

Requests for federally and state-listed species and ecological communities information were made to the USFWS, New York Natural Heritage Program (NYNHP), New York Department of State (NYSDOS), and National Marine Fisheries Service (NMFS) in preparation of the 2008 FGEIS. Responses from these agencies indicate that federally or state-listed species are not known to occur within the study area. Furthermore, the 2008 FGEIS concluded that habitat is not present for federally and state-listed species.

The USFWS’s IPaC system (accessed July 17, 2013) ~~“Queens County Federally Listed Endangered and Threatened Species and Candidate Species” list~~ (accessed November 5, 2012) ~~indicate lists~~ three federally listed species as occurring in Queens County: the piping plover (*Charadrius melodus*), roseate tern (*Sterna dougallii dougallii*), and seabeach amaranth (*Amaranthus pumilus*) (USFWS 2013²).¹ The study area comprises developed land that does not provide habitat for these species and they are not expected to occur within the project site. NYSDEC’s Nature Explorer database (accessed November 5, 2012) does not indicate any known occurrences of state-listed plant species or wildlife within an approximate 0.5-mile radius of the study area (NYSDEC 2012). Therefore, state-listed species are not expected to occur within the study area.

ESSENTIAL FISH HABITAT (EFH)

Table 9-1 lists the species and designated life stages identified as having EFH within the study area. This list is unchanged from the 2008 FGEIS with the exception of the addition of the dusky shark larval stage. Two EFH-designated species were identified during the 2003 sampling: the Atlantic sea herring was found to be abundant during the 2003 sampling event, as described above. In addition, the winter flounder (*Pleuronectes americanus*) was also collected during the 2003 survey.

¹ These species were not identified in the 2008 FGEIS.

Table 9-1

Essential Fish Habitat Designated Species for the Upper East River

Species	Eggs	Larvae	Juveniles	Adults
Pollock (<i>Pollachius virens</i>)			X	X
Red hake (<i>Urophycis chuss</i>)		X	X	X
Winter flounder (<i>Pseudopleuronectes americanus</i>)	X	X	X	X
Windowpane flounder (<i>Scophthalmus aquosus</i>)	X	X	X	X
Atlantic sea herring (<i>Clupea harengus</i>)		X	X	X
Bluefish (<i>Pomatomus saltatrix</i>)			X	X
Atlantic butterfish (<i>Peprilus triacanthus</i>)		X	X	X
Atlantic mackerel (<i>Scomber scombrus</i>)			X	X
Summer flounder (<i>Paralichthys dentatus</i>)		X	X	X
Scup (<i>Stenotomus chrysops</i>)	X	X	X	X
Black sea bass (<i>Centropristis striata</i>)			X	X
King mackerel (<i>Scomberomorus cavalla</i>)	X	X	X	X
Spanish mackerel (<i>Scomberomorus maculatus</i>)	X	X	X	X
Cobia (<i>Rachycentron canadum</i>)	X	X	X	X
Sand tiger shark (<i>Carcharias taurus</i>)		X ⁽¹⁾		
Dusky shark (<i>Carcharhinus obscurus</i>)		X ⁽¹⁾		
Sandbar shark (<i>Carcharhinus plumbeus</i>)		X ⁽¹⁾		X
Notes: ⁽¹⁾ This species does not have a free-swimming larval stage; rather it is a live bearer that gives birth to fully formed juveniles. For the purposes of this table, "larvae" for the sand tiger shark refers to neonates and early juveniles.				
Sources: http://www.nero.noaa.gov/hcd/STATES4/conn_li_ny/40407350.html				

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

FLOODPLAINS

Floodplain elevations in the project site will change as a result of climate change and associated rises in sea level. As discussed in Chapter 16, "Greenhouse Gas Emissions and Climate Change," the New York City Panel on Climate Change (NPCC) projects that the 100-year floodplain elevation will increase 11 to 24 inches by the middle of the century (2050s middle range, 25th to 75th percentile), with a possible increase as high as 31 inches (high estimate, 90th percentile)¹. The NPCC predicts that intense hurricanes are "more likely than not" to increase in intensity and/or frequency, while possible changes in other large storms (e.g., Nor'easters) are uncertain. Regardless of storm frequency, the frequency of flooding events would increase because the sea level rise would result in flooding due to lesser storms, such that the current flood with a 1 percent chance of occurring in any given year would have a 5 percent chance of occurring in any given year by mid-century, and higher by the end of the century.

TERRESTRIAL RESOURCES

In the future without the proposed project, there would be no change to the terrestrial ~~resources~~ habitats, vegetation, or wildlife (i.e., ~~habitats and wildlife~~) of the District, Willets West, the South Lot, Lot B, and Lot D or adjacent properties (e.g., CitiField). These sites would remain as terrestrial cultural ecological communities with limited wildlife habitat.

¹ New York City Panel on Climate Change, *Climate Risk Information 2013*, June 2013.

AQUATIC RESOURCES

As described in the 2008 FGEIS, there are several proposed and ongoing projects aimed at improving water quality and aquatic resources in New York that have the potential to result in water quality and aquatic habitat improvements in the Flushing Bay and Flushing River. These projects are independent of the proposed project. The project descriptions provided below include updates since the 2008 FGEIS.

NEW YORK/NEW JERSEY HARBOR ESTUARY PROGRAM (HEP)

The New York/New Jersey Harbor Estuary Program (HEP) improvement projects as described in the 2008 FGEIS would occur without the proposed project and would continue through the proposed construction in 2018 to full operation of the project in 2032.

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

As described in the 2008 FGEIS, DEP has taken several steps in recent years to mitigate discharges from combined sewer overflows (CSOs). In combination with improvements that have been made to Wastewater Pollution Control Plants (WPCPs), and the on-going Comprehensive City-Wide Floatables Abatement Plan,¹ the CSO improvements are expected to result in future improvements in coliform, dissolved oxygen, and floatables levels in the New York Harbor area. The improvements are expected to continue through the proposed construction in 2018 to the full operation of the project in 2032.

As required by EPA's CSO Control Policy, DEP initiated the development of the Long Term Control Plan (LTCP) Project in 2004. The LTCP Project is integrating CSO Facility Planning Projects and the Comprehensive City-Wide Floatables Abatement Plan, incorporating ongoing Use and Standards Attainment Program (USA) Project work, and developing Waterbody/Watershed Facility Plan Reports and the LTCP for each waterbody area, including Flushing Bay. As of 2011, DEP continues its development of the LTCP. The LTCP incorporates several cost-effective engineering solutions to address water quality issues of Flushing Bay, including increases in DO concentrations, decreases in coliform concentrations, and reductions in nuisance odors and floatables that are a consequence of CSO discharges. The Flushing Bay Waterbody/Watershed Facility Plan includes measures to maximize the wet weather capacity of Bower Bay WPCP, incorporates passive floatables controls, and plans for dredging five feet below mean lower low water (MLLW) to remove existing sediments of Flushing Bay to reduce odors. Following dredging it is anticipated that the bottom two feet would be capped to cover any exposed sediments, although the final design would be developed during the design and permitting phases.

NYCDEP has developed a "Green Infrastructure Plan" that provides a framework for CSO reduction strategies and investments over the next 20 years. The primary goal of the green infrastructure component is to manage runoff from 10 percent of the impervious surfaces in combined sewer watersheds through various detention and infiltration source controls such as rain barrels, swales, and green roofs. This plan includes green infrastructure for the drainage areas of Flushing River and Flushing Bay.

¹ New York City Department of Environmental Protection. 1999. Comprehensive Planning for Control of CSO Floatables and Settleable Solids in New York City. Available: <http://www.hydroqual.com/Papers/wmcmillin/02/Small/index.htm>.

UNITED STATES ARMY CORPS OF ENGINEERS

In addition to the dredging proposed by DEP, the United States Army Corps of Engineers (USACE) is developing engineering and design plans for the maintenance dredging of the Flushing Bay and Flushing River navigational channel.

OTHER PROJECTS

As part of ongoing infrastructure work to better manage stormwater within the Willets Point District, the New York City Economic Development Corporation (EDC) received authorization from the USACE in December 2010 and from NYSDEC in February 2011. The new 126th Street outfall combined with re-use of the existing 127th Street outfall would contribute to improved water quality conditions within Flushing Bay and would be operational by 2018.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

Due to the developed condition of the project site and study area, there would be minimal difference in the potential for effects to natural resources for the three project phases (i.e., 2018, 2028 and 2032). Therefore, the evaluation of potential impacts from the construction and operation of these phases considers the potential impacts from the RWCDS for the year 2032, the full build out of the proposed project.

FLOODPLAINS

On the basis of the currently effective FEMA FIRM, Willets West, the South Lot, and Lots B and D are within the 100-year floodplain. Most of the District is also within the 100-year floodplain, with the exception of three areas located in the northwest, along the eastern border and along Roosevelt Avenue that are within the 500-year floodplain. Thus, in some locations, particularly within the District, new fill would be required to grade and raise the project site structures above the 100-year flood elevation, consistent with the New York City Building Code¹ and any future revisions to these requirements that may be made on the basis of FEMA ABFEs, BAFHD and eventually updated FIRMs. According to the BAFHD, the 100-year floodplain elevations are the same as the current FIRM in the northern portion of the District, north of 37th Avenue, and are one foot lower in all other areas of the proposed project. Factoring in recently updated (June 2013) New York City Panel on Climate Change projections of sea-level rise, it is expected that the 100-year floodplain elevation will increase 11 to 24 inches by the middle of the century (2050s middle range, 25th to 75th percentile), with a possible increase up to 31 inches (high estimate, 90th percentile) (see Chapter 16, “Greenhouse Gas Emissions and Climate Change”).

Under the current plan, the District portion of the project site and Willets West would be graded and elevated one foot above the current FIRM floodplain (which is two feet above the BAFHD for all project areas except a portion of the District north of 37th Avenue) such that the occupiable floors would be at an elevation of 14 feet (NAVD88) and would meet the requirements of the New York City Building Code. Therefore, the proposed design would

¹ As specified in Appendix G: “Flood Resistant Construction” of the *New York City Building Code* ¹ for the applicable building category (see Table 1604.5 of the *New York City Building Code* or Table 1-1 of Appendix G to the *New York City Building Code*), and revisions to these requirements prior to construction.

reduce the vulnerability to flood damage as compared with existing conditions, as well as offer resilience to the 1 to 2 feet of sea-level rise expected to occur by mid-century (2050s). To account for climate change, the occupiable floors of the proposed buildings are designed to be at an elevation of 1 to 2 feet above the ABFE to provide resilience to the 1 to 2 foot rise in future sea level that is projected by the New York City Panel on Climate Change. Changes to the grade elevation are expected would likely to occur in phases. During Phase 1A, the majority of the project site would remain at the existing grade and only the hotel and commercial spaces would be built at a higher grade above the floodplain elevation. No internal, private streets would be built during Phase 1A. The remainder of the extent of Phase 1A and 1B would be raised above the 100-year flood elevation prior to completion of the development of Phase 1B in 2028. Those grade changes would either occur through new fill and retaining walls or by building atop basements that raise the finished floor height above the floodplain elevation. Grade transitions would be created between the new streets in Phase 1B and the existing street grades that would remain in the Phase 2 area until that area is raised prior to completion of Phase 2 development in 2032.

As discussed in further detail in Chapter 16, “Greenhouse Gas Emissions and Climate Change,” further measures will be investigated and implemented within the proposed project site to the extent practicable. Prior to commencement of construction for each phase of the project, the project sponsor will work with the Mayor’s Office of Environmental Coordination (MOEC) to develop a plan for resilience of the proposed area to be developed in that phase from future flood levels, considering the types of uses proposed; the plan will be designed with the goal of making the project area resilient to end-of-century flood levels in residential areas, and mid-century in other areas. This may be achieved via a combination of practicable measures within the project, potentially including grade change, protection of critical infrastructure, and design elevations, and storm surge protection measures if those are practicable and relevant within the area to be developed in that phase, along with areawide or waterfront measures to be undertaken by the City outside of the project area, as appropriate. While the plan for each phase may not identify all details necessary for the long-term implementation, it will identify the practicable measures needed for that phase of the project and conceptual measures being considered or undertaken by the City beyond the project site. The plan will be consistent with the City’s citywide coastal protection policy as described in *A Stronger, More Resilient New York* through the 2050s.

For sea level rise beyond the 1 to 2 feet projected for mid-century, the most practicable solutions to increase resiliency may include areawide and/or waterfront solutions, which may need to be implemented off-site by the City. While the City has not yet undertaken the studies needed to select the most effective measure to offer flood protection to the area of Queens that includes Willets Point, some measures that may be undertaken by City agencies in the future include:

- Coastal edge elevation measures;
- The City’s tide gate repair study at Flushing Meadows, if relevant; and
- Integrated flood protection and storm surge barriers.

The City would also have the authority to require an increase in the proposed grade of the District at the time of such future development via changes to the New York City Building Code, by incorporating changes to the flood level provisions, or via other New York City Executive Orders, rules, or regulations, as may be issued at that time.

By striving to incorporate reasonable strategies that would increase resilience to the likely projected effects of climate change through the 2050s, the proposed project would go beyond the

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legal requirements to address the potential effects of climate change on a project and would be consistent with the City's Special Initiative for Rebuilding and Resiliency policy. As part of citywide efforts to improve coastal resiliency, it is anticipated that solutions for protecting the area over a longer time horizon will be developed before sea levels rise beyond 1 to 2 feet.

Because the 100-year floodplain within and adjacent to the study area is affected by coastal flooding (rather than local or fluvial flooding) as a result of astronomic tides and meteorological forces, flooding conditions in the project site and surrounding area would not be affected by construction or regrading/filling that would occur for the proposed project.

~~Therefore, the design for the structures for the RWCDs would minimize the potential for public and private losses due to flood damage under current flood conditions, and no significant adverse impacts are expected. Because the 100 year floodplain within and adjacent to the study area is affected by coastal flooding (rather than local or fluvial flooding) as a result of astronomic tides and meteorological forces, flooding conditions in the project site and surrounding area would not be affected by construction or regrading/filling that would occur as part of the RWCDs.~~

WETLANDS

As described in the 2008 FGEIS, NYSDEC and NWI-mapped wetlands would not be impacted as a result of the proposed project within the District, and Lots B and D. Similarly, because there are no wetlands present within Willets West or the South Lot, the RWCDs would not adversely affect wetland resources.

TERRESTRIAL RESOURCES

ECOLOGICAL COMMUNITIES

The ecological communities of the study area are developed with buildings, streets, and parking lots. Vegetated areas are limited to successional urban-tolerant species of little ecological value. As described in the 2008 FGEIS, the proposed project would not have a significant adverse impact on ecological communities in the District and Lots B and D. Willets West and the South Lot are paved parking lots. Within Willets West, vegetation is limited to street trees located along the perimeter of the property and in the parking lot. Tree replacement and protection would comply with the New York City Department of Parks and Recreation's (NYCDPR) applicable rules and regulations. Trees under the jurisdiction of NYCDPR may not be removed without a permit pursuant to Title 18 of the Administrative Code of the City of New York. Chapter 5 of Title 56 of the Rules of the City of New York establishes rules for valuing trees that are approved for removal to determine the appropriate number of replacement trees. A method to calculate the number of replacement trees as per the New York City tree replacement code, such as the caliper replacement method, would most likely be used to quantify the size and number of trees that would be required to replace those removed from the project sites. Measures to protect existing trees would include protection plans to minimize impacts to the critical root zones, trunks, and canopies. The potential loss of trees and the existing "terrestrial cultural" ecological communities within the project site, which are common to the New York metropolitan area, would not result in significant adverse impacts to vegetation resources within the region.

WILDLIFE

Potential impacts to wildlife from construction activities for the project generally include noise and visual disturbances. Site preparation activities and construction of the RWCDS would generate noise and anthropogenic activity. However, impacts to wildlife would be minimal because wildlife within the study area consists of urban-adapted, highly disturbance-tolerant species. The species of wildlife in the area are ubiquitous throughout the city and commonly inhabit areas with extensive levels of human disturbance and degraded habitat conditions. Wildlife occurring in the area would not be expected to be significantly impacted by the noise and other anthropogenic disturbances generated by project construction.

The RWCDS for the proposed project would create conditions for wildlife that would be similar to those currently present within the project site, and would thus support wildlife species similar to those currently using the project site. Landscaped areas resulting from the RWCDS for the proposed project would have the potential to improve on the quality of the habitat available for urban tolerant wildlife species currently present within the study area, and would improve the suitability of the project site as migratory bird stopover habitat.

The increased human activity that would occur as a result of the RWCDS for the proposed project, when compared to the future without the proposed project in 2032 would not be expected to adversely affect disturbance-tolerant wildlife using the limited habitats within the study area. Operation of the RWCDS for the proposed project in 2032 would result in more buildings with windows in the area with which birds would have the potential to collide, and thus daytime bird collision risk would be slightly greater than under the existing conditions. Although birds are known to collide with tall artificial structures at night, the overwhelming majority of bird collisions with buildings occur during the daytime when lower story windows reflect images of nearby trees and other vegetation, and sky (Gelb and Delecretaz 2006, 2009; Klem et al. 2009).

The additional buildings and glass coverage that would occur in the area by 2032 would not be expected to increase the likelihood of nighttime bird strikes, which is considered to be extremely low due to the limited height of the proposed buildings. Nighttime collisions of birds with artificial structures are often strongly related to structure height (Kerlinger 2000). Most birds migrate at altitudes of 656 to 2,461 feet (Able 1970, Mabee et al. 2006) and rarely fly below 295 feet (Mabee and Cooper 2004). Heights of the proposed buildings would be low, ranging from 63 to 218 feet. As such, none of the proposed buildings would extend into air space commonly used by migrating birds, and nighttime collisions of birds would be rare.

Daytime collision potential would be highly dependent on the building designs and the surrounding landscaping. The landscaped habitat that would be available within the project site by 2032 would be used most likely by common, resident bird species, such as house sparrows and European starlings, which rarely collide with windows (O'Connell 2001). Therefore, consistent with the conclusions in the 2008 FGEIS, the construction and operation of the RWCDS would not result in direct or indirect significant adverse impacts on wildlife.

GEOLOGY AND SOILS

As discussed in Chapter 10, "Hazardous Materials," management of wastes generated in the cleanup and redevelopment of the project site will be conducted in accordance with applicable federal, state, and local regulatory requirements and with oversight of NYC regulatory agencies. As a result, the proposed project would have the potential to have a direct benefit to soils of the

study area. Therefore, consistent with the conclusions in the 2008 FGEIS the RWCDs would not result in direct or indirect adverse impacts to soils of the study area.

GROUNDWATER

As discussed in Chapter 10, “Hazardous Materials,” a construction health and safety plan (CHASP) and Site Management Plan (SMP) for site remediation, excavation, and redevelopment would be developed and would include detailed procedures for managing known contamination issues (e.g., tank removal, and soil and groundwater remediation of existing petroleum spills, excavation, and removal of existing septic tanks or fields, floor drains, and historic fill), as well as any unexpectedly encountered contamination issues. As a result, the proposed project would have the potential to result in a net benefit to groundwater of the study area. In addition, as discussed in Chapter 10, “Hazardous Materials,” pile driving for new construction would not be anticipated to significantly change the overall groundwater flow regime. Thus, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to groundwater quality.

AQUATIC RESOURCES

WATER QUALITY AND AQUATIC BIOTA

No in-water construction activities would result from the construction of the RWCDs. Soil disturbing activities associated with construction all phases of the RWCDs would be conducted in accordance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001). Erosion and sediment control measures to be implemented during construction activities would be specified in the stormwater pollution prevention plan (SWPPP). With the implementation of these measures, stormwater discharged through the existing stormwater outfalls would not result in significant adverse impacts to water quality and aquatic biota of Flushing Bay. Additionally, with implementation of the proposed site remediation (detailed in Chapter 10, “Hazardous Materials”) construction and operation of the RWCDs would reduce the potential for contaminants to enter Flushing Bay and the Flushing River, thereby having the potential to improve the water quality of these waterbodies.

As discussed in Chapter 11, “Water and Sewer Infrastructure”, all phases of the RWCDs would be consistent with the City’s goal to reduce CSO events by requiring construction and maintenance of a separate storm and sanitary sewer system. The new sanitary sewer infrastructure would connect to the Bowery Bay Wastewater Treatment Plant (WWTP) via the City’s sewer system and would not cause the plant to exceed its capacity or SPDES permit limit of 150 million gallons per day (mgd). As such, there would be no impacts to water quality of the East River. Water quality of the East River in the vicinity of the Bowery Bay WPCP would continue to meet the Use Class I water quality standards. The 2008 FGEIS found that there would be no significant increase in the frequency of CSO events as a result of the Willets Point Development Plan because CSOs primarily relate to stormwater inputs, which greatly exceed sanitary flow rates during storm events. As a result of this conclusion, it is anticipated that the sanitary flow from the RWCDs, (lower than projected in the 2008 FGEIS) would not significantly affect the number of annual CSO events. Moreover, water conservation measures and low-flow fixtures as required by New York City Plumbing Code (Local Law 33 of 2007) would be employed to minimize sanitary sewage flow to the existing combined sewer system.

Stormwater runoff from the project site during all phases of the RWCDS would be treated in accordance with the SWPPP, and conveyed to Flushing Bay through a separate storm sewer system in accordance with an ADP that would be developed by the Queens Development Group, LLC (QDG) and approved by DEP.

Given that the District currently lacks sewer infrastructure and stormwater from the existing industrial uses flows heavily into Flushing Bay, discharges from the proposed system in the future with the RWCDS in 2018, 2028, and 2032 would be a substantial improvement over current conditions. Further, the proposed project would be consistent with the goals of DEP's NYC Green Infrastructure Plan by managing stormwater at the site. Overall, implementation of the new system is expected to improve stormwater quality and, in turn, improve water quality in Flushing Bay by addressing existing chronic flooding, improving the quality of the soil substrate of the site, providing direct drainage to storm sewers, and incorporating sustainable design features, where feasible, to reduce discharge volume and increase the quality of stormwater discharges. Therefore, consistent with the conclusions of the 2008 FGEIS, the construction and operation of the RWCDS would not result in significant adverse impacts to water quality and aquatic biota of Flushing Bay and the Flushing River.

SEDIMENT QUALITY

No in-water construction would take place in Flushing Creek and Flushing Bay as a result of the RWCDS. Therefore, the sediments of Flushing Creek and Flushing Bay would not be impacted during the construction or operation of the proposed project. Furthermore, the dredging plans for Flushing Bay, as proposed by DEP and as part of USACE's navigational channel clearance maintenance, would not be impacted by the construction or operation of the proposed project.

THREATENED, ENDANGERED, RARE, AND SPECIAL CONCERN SPECIES AND SIGNIFICANT ECOLOGICAL COMMUNITIES

As discussed in the 2008 FGEIS and above under "Existing Conditions," federally and state-listed species and ecological communities are not known to occur within the study area nor is habitat present. Therefore, consistent with the conclusions of the 2008 FGEIS, the RWCDS would not result in adverse impacts to federally and state-listed species.

ESSENTIAL FISH HABITAT

As discussed above, no significant adverse impacts to aquatic biota are expected as a result of the proposed project. Construction would not occur within Flushing Bay or Flushing Creek. Therefore, consistent with the conclusions of the 2008 FGEIS, the RWCDS would not result in significant adverse impacts to EFH.

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A. INTRODUCTION

This chapter assesses the potential for the presence of hazardous materials at the site of the proposed project. The analysis includes updates to the proposed project and background conditions since the 2008 FGEIS and assesses whether any changed background conditions or differences in elements between the proposed project and the development program analyzed in the 2008 FGEIS and subsequent technical memoranda would result in significant adverse impacts related to hazardous materials.

Consistent with the Staged Acquisition Alternative analyzed in the 2008 FGEIS as well as the Adjusted Plan and Updated Plan analyzed in subsequent technical memoranda, the proposed project would phase remediation and redevelopment of the Special Willets Point District. In the proposed project, Phase 1A (2018) would commence with the remediation to standards appropriate for multi-family residences of an approximately 23-acre portion of the District and development of this area with hotel, retail, and interim surface parking/recreational uses. These interim uses would be developed on an impermeable surface. Remediation of areas to be developed in Phase 1A would be completed prior to 2018. In Phase 1B (2028), the interim parking/recreational space created during Phase 1A within the District would be redeveloped with residential, retail, office, hotel, community facility, public school, and public open space uses. Remediation of the portion of the District not already developed in Phases 1A and 1B to standards appropriate for multi-family residences is assumed to be completed prior to 2028, and thus before the commencement of the Phase 2 development.

The analysis provided below considers the Willets West and South Lot portions of the project site, which were not assessed in the 2008 FGEIS, and reassesses the previously analyzed District, Lot B, and Lot D portions of the project site.

PRINCIPAL CONCLUSIONS

This analysis finds that, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials.

As described below, Phase I Environmental Site Assessments (ESA) have been performed for the entire project site. These identified the potential for contamination due to current and past usage:

- **Special Willets Point District:** sampling undertaken as part of previous Phase II ESAs confirmed that contamination is present and is expected to be widespread.
- **Lot D:** Tires and apparently empty 35-gallon drums were present on Lot D. Evidence of a potential underground storage tank was observed. However, the Phase I ESA found no registered historical or current petroleum storage tanks, which indicates that the tank may have been installed/operated prior to tank registration requirements or may have been of too small a capacity to require registration. Prior to development, a Phase II ESA would be

performed for Lot D to assess potential contamination and assist in preparation of any necessary remedial plans and health and safety procedures.

- **Lot B:** Subsurface sampling identified fill material (including cinders, wood, brick, metal, and asphalt) overlying marsh deposits. This was consistent with historical information regarding prior conditions and uses. The soil sampling did not identify significant contamination (the results were consistent with those usually found in historical fill materials in New York City). Similarly, the shallow groundwater sampling identified some levels (generally of metals) above the most stringent (drinking water) standards but these were consistent with the levels of metals found in the soil samples of the fill material. The soil gas sampling found elevated levels of methane (potentially attributable to the marsh deposits).
- **Willets West and South Lot:** The Phase I ESA indicated that these portions of the project site were also part of the much larger “ash dump” in the early part of the 20th century. Around 1950, Willets West was paved and used for parking until 1964, when Shea Stadium opened on the property. The South Lot has been used for parking since the mid 1960s. In 2009, Shea Stadium was demolished and has since been used for parking with multiple small ticketing structures. The Phase I ESA found no evidence of historical or current petroleum storage tanks or other historical uses of concern. Prior to development, a Phase II ESA would be performed for the Willets West and South Lot areas to assess potential contamination and assist in preparation of remedial plans, if necessary, and health and safety procedures to be implemented during construction.

By implementing investigation and remediation measures including appropriate engineering/institutional controls into the development, as well as incorporating health and safety procedures into the construction, it is expected that no potential exposure or significant adverse impacts related to hazardous materials would occur during or after construction of the proposed project. Construction of the proposed project would involve both demolition of all existing structures (some of which are believed to contain asbestos containing materials, lead-based paint, and polychlorinated biphenyls containing electrical components) and a variety of earthmoving/excavating activities that would encounter subsurface contamination (e.g., petroleum, solvents, polychlorinated biphenyls, or other contaminants associated with the area's historical filling), particularly within the District. To avoid the potential for significant adverse impacts related to hazardous materials the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and comprehensive investigative/remedial measures (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) that would be undertaken in conjunction with the excavation and disturbance of fill material. Understanding that the entire area includes ash fill and that within the project site fill material would remain, residual soil and groundwater contamination would need to be accounted for in any new development. Engineering controls to address the residual contamination can include a variety of measures including but not limited to capping surfaces, groundwater controls to prevent migration, and systems beneath buildings to prevent infiltration of soil vapor.

While development of the District is contemplated to occur in phases, Phase 1A will incorporate a comprehensive site investigation and associated remedial action that will remove areas of significant contamination and prepare the site for development. When subsequent development takes place over or adjacent to these areas, measures will be undertaken to prevent human exposure. These will include stringent measures for dust control, procedures for dewatering, proper handling and disposal or backfill of excavated material and prevention of stormwater pollution from runoff. Additional measures (e.g., the mandatory implementation of appropriate

health and safety procedures) will be undertaken to prevent exposure following development during intrusive work and subsurface utility repairs at developed sites.

Institutional controls would be used to ensure that the various measures outlined above would be implemented, all lots in the project site would have restrictions placed on them. Specifically, for the District, these restrictions include the (E) designations already placed following the 2008 FGEIS and potentially State of New York Brownfield Cleanup Program (BCP) requirements, should any developments enter into this (voluntary) program. For lots outside of the District, the restrictions would be incorporated into the development agreements and/or amended leases for each lot. These lots are and would remain in City ownership.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS and subsequent technical memoranda identified the likelihood of hazardous materials presence at the project site from: placement of historical ash fill (approximately 10 to 12 feet thick), beginning in the mid- to late 1800s, and continuing through the early 20th century; and releases of petroleum products and chemicals from existing and historic commercial and industrial facilities (especially within the District).

In addition to contamination from releases to soil, contamination of groundwater was also identified. Groundwater was encountered at relatively shallow depths of between 4 to 9 feet below grade, generally within the fill material. Although groundwater flow varies and may be tidally influenced in some areas, the overall flow was expected to be toward Flushing Bay and Flushing River to the north and east of the District.

Existing structures at the project site were known or suspected to include asbestos containing materials (ACM), lead-based paint (LBP) and polychlorinated biphenyls (PCB) containing equipment.

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A February 2005 District-wide Phase I ESA (and additional individual Phase I ESAs completed subsequently on selected parcels when access was obtained) assessed the potential for hazardous materials based on: a reconnaissance from public rights-of-way (but generally no access to private property); a review of historical maps; federal and state regulatory records; and topographic and geologic/hydrogeologic data.

Overall, based on the general conditions noted during the public right-of-way evaluation, the majority of the sites operating in the District were believed to contain potential concerns over waste discharge and other issues related to individual site conditions. Historical uses included metal wholesaling, recycling, various automotive body and mechanical repair operations and scrap parts sale and distribution. During the reconnaissance, metal construction debris and other recyclable metal was observed in addition to all types of car parts (e.g., radiators, gas tanks and batteries). Contamination typical for this land use includes automotive wastes (e.g., waste oil, gasoline and radiator fluids), PCB-contaminated wastes and oils, solvents, heavy metals and lead acid batteries. Since there are no municipal sewer systems servicing the area, wastewater discharge to leach fields, septic tanks and underground tanks would represent a potential direct pathway for contaminants to reach the subsurface and shallow groundwater.

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The regulatory databases searched as a part of the Phase I ESA identified numerous registered active petroleum storage tanks (and based upon the time period that the site has been occupied by these types of businesses, it is possible that other unregistered tanks are also present), as well as a limited number of open-status petroleum spills (though other spills may have occurred and not been reported to the State).

Based on the findings of the District-wide Phase I ESA, a subsurface investigation (Phase II ESA) was conducted. The Phase II investigation included collection and laboratory analysis of soil and groundwater samples, however, similar to the Phase I, sampling and access was limited to public-rights-of-way, along street and sidewalk areas for the area-wide Phase II. Permission was subsequently obtained for access to one private parcel to perform a limited Phase II ESA. The soil sampling within the streets and public rights of way identified detectable concentrations of VOCs in 20 of the 22 soil samples analyzed. Only two of these exceeded the then-used New York State Department of Environmental Conservation (NYSDEC)-Recommended Soil Cleanup Objectives (RSCOs), specifically for gasoline-related VOCs. Detectable levels of SVOCs were found in all samples, generally below or within one order of magnitude above the RSCOs. The compounds and levels detected were typical of urban fill material though contributions from petroleum or other on-site sources could not be ruled out. The metals analyses showed several metals at concentrations above the RSCOs including samples with arsenic, barium, nickel, copper, and zinc at more than one order of magnitude above the RSCOs. Lead concentrations ranged up to 3,310 parts per million (ppm), but only three samples exceeded 400 ppm (the level typically used in situations where children could be exposed to surface soils). Pesticides were detected in 12 of the samples but none exceeded RSCOs. Eight samples had detectable concentrations of PCBs but none exceeded NYSDEC RSCOs (1 ppm). Ethylene glycol (the most common antifreeze ingredient) was not detected.

Groundwater sampling within the streets and public rights of way showed levels above drinking water standards (results were compared to these standards even though groundwater is not used as a source of drinking water). Four of the seven samples had levels of VOCs typically associated with gasoline above these standards. SVOC levels exceeded the drinking water standards in two samples but the compounds detected could have been petroleum or fill-related.

Soil and groundwater contamination consistent with petroleum was identified at the private parcel. Given these results and the findings of the Phase I ESA, petroleum and other contamination is expected to be widespread on private properties within the District.

To avoid the potential for significant adverse effects, the 2008 FGEIS outlined a variety of presumptive remedial measures as well as accompanying engineering controls that would be implemented prior to and during construction. These included:

- Procedures for pre-demolition removal of asbestos and appropriate management of LBP and PCB-containing equipment.
- Additional subsurface investigation, both of development sites and areas within the current roadways, to further assess and remediate conditions.
- Development of a construction health and safety plan (CHASP), Remedial Action Plan (RAP) and Site Management Plan (SMP) for site remediation, excavation, redevelopment, and post development. These plans will include detailed procedures for managing both known contamination issues (e.g., tank removal, and soil and groundwater remediation of existing petroleum spills, excavation, and removal of existing septic tanks or fields, floor drains, and

historic fill) and any unexpectedly encountered contamination issues. The CHASP will also include monitoring necessary to ensure that dust control procedures are effective.

- Requirements for vapor barriers and sub-slab venting systems in new buildings, where remaining subsurface contamination could otherwise lead to unacceptable exposure inside buildings, would also be incorporated into the overall development program.

The (E) designations that were previously placed on lots in the District (and, potentially, BCP requirements, should the developer choose to participate in the BCP), would serve as institutional controls to ensure implementation of the above measures and any necessary post-construction measures, e.g., Site Management Plans that describe health and safety procedures during subsurface utility repair.

LOT D AND LOT B

Lot D is a paved parking lot with a small fenced area for trash collection. Tires and empty 35-gallon drums were noted. Evidence of a potential underground storage tank was observed (an apparent fill and vent pipe). The August 2008 Phase I ESA found no historic or current petroleum storage tanks registered on the site. The overall site was not listed on any of the reviewed federal, state or local regulatory databases. Prior to development of Lot D, a Phase II ESA would be performed to assess potential contamination and assist in preparation of any necessary remedial plan and construction health and safety procedures.

Information on Lot B was based on a subsurface investigation conducted in 1998 and on subsequent environmental investigations relating to the development of CitiField. In 2006, two soil borings (retrofitted with groundwater monitoring wells) and 12 soil gas (methane) samples were collected. Fill material included coarse-to-fine sand and gravel, silt, mica, cinders, wood, roots, glass, brick, metal, and asphalt overlying marsh deposits. The soil sampling did not identify significant contamination (the results were consistent with those generally found in historical fill materials in New York City). Similarly, the groundwater sampling identified some levels (generally of metals) above the most stringent (drinking water) standards but these were consistent with the fill. The soil gas sampling found elevated levels of methane (most likely attributable to the marsh deposits and potentially material placed during the filling).

To avoid the potential for significant adverse effects at Lots D and B, the 2008 FGEIS outlined the RAP/CHASP procedures that would be followed prior to and during construction including:

- Proper handling and disposal of all materials requiring off-site disposal, including historic fill materials and any unexpectedly encountered contaminated materials.
- Monitoring of all excavation for the presence of tanks, drums, or soil that shows evidence of potential contamination.
- Air monitoring (for volatile organics, methane, and particulates) during construction.
- Protocols for reporting spills or other concerns to relevant governmental agencies.
- Contingency and emergency response plans.
- Dust control measures would be implemented during all earth-disturbing operations. Water would be available on-site for sprinkling/wetting to suppress dust in dry weather or as necessary. Water would be used to suppress dust on haul roads and to wet equipment and excavation faces if that was found to be an issue. Stockpiled excavated material would be securely covered with tarps or plastic sheeting to prevent dust or run-off.
- SWPPPs to address the control of erosion and stormwater runoff from construction.

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- Installation of appropriate systems to prevent the migration of vapors into any newly constructed buildings.

Institutional controls, specifically development agreements and/or modification of the existing leases for these lots, would ensure implementation of the above measures and any necessary post-construction measures, e.g., Site Management Plans that describe health and safety procedures during subsurface utility repair.

C. METHODOLOGY

The information used in this chapter included the information gathered for the District as part of the 2008 FGEIS, available additional data from one additional subsurface investigation within the District (at Block 1822, Lot 17) and a review of an updated (February 2013) regulatory database for the District. It is anticipated that no substantive changes within the District have occurred since the 2008 FGEIS. Although various businesses have closed since the 2008 FGEIS, no extensive cleanup has occurred, and subsurface conditions are not expected to have changed significantly. In December 2012, a Phase I ESA was prepared by Integral Consulting, Inc. addressing the Willets West and South Lot portions of the project site. A February 2006 *Phase II Subsurface Investigation*, prepared by AKRF Inc. for the Shea Stadium Redevelopment project, included the results of soil analyses and soil gas sampling within the footprint of the Willets West project area. A March 2011 *Site Investigation Findings Report* (related to potential project infrastructure improvements) conducted by Environmental Planning & Management, Inc. (EPM) included three additional locations with soil, groundwater and/or soil gas sampling within the footprint of the Willets West project area.

D. EXISTING CONDITIONS

As noted above, existing conditions at the District, Lot B, and Lot D portions of the project site are not expected to have changed significantly from those summarized in the 2008 FGEIS. Consistent with the earlier findings, the Phase II ESA conducted at Block 1822, Lot 17 identified soil and groundwater contamination in proximity to the location of former underground fuel and gasoline tanks, and consistent with contamination usually found in fill materials. Polychlorinated biphenyls (PCBs) were found in one of the soil samples; these compounds can be associated with automotive wrecking as well as electrical transformers. It is possible that all or some portion of the District would be entered into the BCP. Review of the updated regulatory database for the District identified concerns similar to those noted in the 2005 Phase I ESA, including automotive repair shops, wrecking and salvage facilities, junk yards and waste processing facilities with numerous past or present petroleum storage tanks. One minor active-status spill was reported to NYSDEC within the District in 2012. More than 200 spills were reported to NYSDEC within the District and assigned a closed status. The spill listings noted that some remediation of the individual releases had been conducted, but residual contamination may remain, and that subsurface contamination exists throughout the District.

The December 2012 Phase I ESA performed for the Willets West and South Lot portions of the project site identified that these properties were part of the much larger “ash dump” in the early part of the 20th century. As described above, the Willets West area was paved around 1950 and used for parking until 1964, when Shea Stadium opened on the property. The South Lot has been used as for parking since the mid 1960s. In 2009, Shea Stadium was demolished, the site was paved, and the Willets West area has since been used for parking with multiple small ticketing structures. The Phase I ESA found no evidence of historical or current petroleum storage tanks

or other on-site historical uses of concern. Nearby uses include an MTA rail yard. The February 2006 Phase II Subsurface Investigation included four soil borings and five soil gas samples within the Willets West footprint. The eight-foot-deep soil borings all encountered fill material throughout their depth. Laboratory results of soil samples were consistent with historical fill materials, with no evidence of petroleum contamination. Three out of the five soil gas samples had elevated methane levels. The March 2011 Site Investigation Findings Report indicated similar soil results. The one soil gas sample showed both elevated levels of methane and some low levels of volatile organic compounds. Groundwater laboratory analysis results were consistent with typical urban fill sites with no evidence of petroleum contamination; however, the groundwater at one location was noted to have a petroleum sheen and odor.

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

Without the proposed project, neither the District nor the other properties comprising the project site are anticipated to experience substantial change. In the event that projects independent of the proposed project were to occur, such development would not be expected to result in significant adverse impacts with respect to hazardous materials. In the No Action scenario, the Special Willets Point District portion of the project site would have both continued NYSDEC involvement (related to spill cleanup and enforcement actions) and New York City Office of Environmental Remediation (OER) involvement related to the existing (E) designations. For portions of the sites outside of the District, any future development would be subject to new City leases and/or disposition agreements which would set forth hazardous materials requirements, similar to those associated with the proposed project (see Section F, “Probable Impacts of The Proposed Project”), but tailored to the development (e.g., extent of proposed soil disturbance and land use).

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

Construction of the proposed project would involve demolition of all existing structures on the project site (some of which are believed to contain LBP, ACMs, and PCB-containing electrical components) and a variety of earthmoving/excavating activities that would encounter subsurface contamination (e.g., petroleum, solvents or PCBs), particularly within the District. The project site is within the Federal Emergency Management Agency (FEMA) 100-year floodplain, and thus in some locations, particularly within the District, new fill would be required to grade and raise the project site structures above the 100-year floodplain level, consistent with the New York City Building Code. Changes to the grade elevation are expected to occur in phases. During Phase 1A the majority of the project site will remain at the existing grade and only the hotel and commercial spaces would be built at a higher grade above the floodplain elevation. The remainder of the extent of Phase 1A and 1B would be raised above the floodplain elevation prior to completion of the development of Phase 1B in 2028. Those grade changes will either occur through new fill and retaining walls or by building atop basements that raise the finished floor height above the floodplain elevation. Grade transitions would be created between the new streets in Phase 1B and the existing street grades that would remain in the Phase 2 area until that area is raised prior to completion of Phase 2 development in 2032.

To avoid the potential for significant adverse impacts related to hazardous materials, the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and investigative/remedial (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) measures that would precede or

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govern both demolition and soil disturbance activities. These measures would be conducted in compliance with all applicable laws and regulations and would conform to appropriate engineering practices. Also, given that some subsurface contamination would likely remain after completion of construction (e.g., historical fill materials underlying the development area) and in nearby areas that would not be cleaned up until a subsequent phase of development, new development would require engineering controls, which could include capping to prevent exposure to underlying soils, groundwater controls at construction site boundaries (pile driving for new construction would not be anticipated to significantly change the overall groundwater flow regime), and vapor barriers with active or passive sub-slab depressurization systems beneath enclosed or occupied buildings (e.g., not open parking structures). As development of the District is contemplated to occur in phases, excavation and cleanup during Phase 1B and Phase 2 would occur near already developed buildings and uses, requiring stringent controls on construction dust and other potential sources of contaminant migration. The same issues were addressed (albeit for a slightly smaller initial development area) and the same conclusions reached (i.e., significant adverse impacts would be avoided) in Technical Memorandum #4 which assumed an undeveloped “buffer area” adjacent to the initial development area. Institutional controls would be used to ensure the investigations and remedial measures would be implemented along with requirements to prevent future exposure during intrusive work and subsurface utility repairs at developed sites. Specifically, these institutional controls would be the existing (E) designations (possibly supplemented by additional requirements should the developer choose to participate in the BCP for any lots) for the District, and restrictions added to the proposed lease amendment for the remainder of the project site.

The institutional controls would require the project sponsor, prior to seeking or obtaining DOB permits associated with redevelopment, conduct Phase I and Phase II ESAs (to the extent they have not already been conducted), necessary remediation (with appropriate construction-related HASPs) either prior to or as a part of site development, to the satisfaction of (for the District) the OER or (for lots outside of the District) the New York City Department of Environmental Protection (DEP)¹. A Phase II Subsurface Investigation Work Plan and a Health and Safety Plan (HASP) ~~were have been~~ prepared for the Willets West portion of the project site in February 2013 and submitted to DEP for review and approval. The Phase II Work Plan and HASP were revised and resubmitted to DEP in June 2013 based on a DEP letter requiring additional testing (dated March 27, 2013), and the revised Work Plan and HASP were approved by DEP in a letter dated July 31, 2013. Should all or portions of the District be entered into the BCP, this State program would entail similar requirements to OER’s (which would not be superseded). The BCP is a voluntary program in which a property owner/developer enters into an agreement with the State to conduct investigation and remediation in accordance with a variety of requirements, including public participation. Following the cleanup, with, if required, the implementation of deed restrictions to ensure the performance of institutional and engineering controls, the State issues a Certificate of Completion indicating cleanup has been achieved consistent with the proposed site use. It is not anticipated that cleanup requirements of the State and City would differ substantively. Likely components of site remediation and other measures to avoid impacts are essentially unchanged from those described in Chapter 12 of the 2008 FGEIS, i.e., they may include:

¹ The project sponsor does not currently have site control of Willets West and South Lot; prior to commencement of construction, project sponsor will perform appropriate testing on these sites as required.

- Procedures for pre-demolition removal of asbestos and appropriate management of LBP and PCB-containing equipment.
- Additional subsurface investigation, both within the District and of areas not yet investigated, to better characterize soils to be removed for excavation.
- Development of a CHASP and SMP for site remediation, excavation, and redevelopment that would include detailed procedures for managing both known contamination issues (e.g., tank removal, and soil and groundwater remediation of existing petroleum spills, excavation, and removal of existing septic tanks or fields, floor drains, and historic fill) and any unexpectedly encountered contamination issues. The CHASP would also include procedures for avoiding the generation of dust that could affect the surrounding community (especially at later-phase sites neighboring already developed sites), as well as the monitoring necessary to ensure that no such impacts occur.
- Prevention of contaminant migration to a particular development site from other properties might entail the use of various forms of groundwater flow controls at construction site boundaries and/or vapor barriers and sub-slab venting systems could be incorporated into the foundations of new buildings to prevent remaining subsurface contaminated vapors from entering buildings. Procedures that are instituted would be consistent with applicable laws and regulations.
- A cap of imported clean soil may be placed uppermost in landscaped areas and other areas not covered by buildings, paving or other impermeable surfaces.

Institutional controls (specifically, [E] designations, restrictions added to leases, or BCP requirements, should the developer choose to enroll in the BCP) would be used to ensure required post-development procedures (e.g., implementation of health and safety procedures during subsurface utility repair) would be implemented. Methods for guaranteeing the continued effectiveness of these controls would include periodic (e.g., annual) certification and reporting requirements.

CONCLUSIONS

Contamination in the subsurface (including petroleum contamination) within the District has been identified through limited Phase II ESAs. This contamination is likely related primarily to the District's current and historical automotive-related businesses. Although detailed investigations have not yet been performed at the other portions of the project site, less extensive contamination has been found and is anticipated to be encountered, with levels (including elevated methane levels) expected to be consistent with the area's historical ash filling. In addition to subsurface contamination, asbestos-, LBP-, and PCB-containing equipment are likely to be present inside existing buildings.

With the implementation of the variety of measures described above, not only would no significant adverse impacts related to hazardous materials be expected to occur as a result of construction or operation of the proposed project, but the proposed project, with its associated extensive cleanup which would otherwise likely not occur at all or only much more slowly, would result in significant potential benefits to public health and the environment. To ensure the various required measures would be implemented, they would be made binding on all site developers through (E) designations and conditions in the development agreements and/or amended leases. The provisions of the development agreements and/or amended lease agreements, relating to the substance and enforceability of these commitments, would be subject to approval by the lead agency in consultation with DEP. Although some hazardous materials

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would likely remain in the subsurface following construction of the proposed project, with the building vapor control measures outlined above, there would be no exposure pathways and thus no further potential for significant adverse impacts. Thus, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials. *

A. INTRODUCTION

This chapter assesses whether any changed background conditions or the differences between the reasonable worst-case development scenario (RWCDS) and the program assessed in the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda would result in any significant adverse impacts on water and sewer infrastructure that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

PRINCIPAL CONCLUSIONS

This analysis finds that the proposed project would not result in significant adverse impacts to water and sewer infrastructure that were not addressed in the 2008 FGEIS and subsequent technical memoranda. Infrastructure improvements would be required for various phases of the project, as detailed in this section:

PHASE 1A

New 12-inch water mains in 35th Avenue, 126th Street, 127th Street, and Willets Point Boulevard would be constructed as necessary to support the proposed development. For Willets West, a new on-site water loop would be required to tie into existing water main in Roosevelt Avenue.

Sanitary sewer infrastructure, either existing or being built by the New York City Economic Development Corporation (EDC), would be adequate to accommodate the Phase 1A development. A 36-inch sanitary sewer, as well two stubbed connections in 126th Street: one 24-inch and one 16-inch, is currently being constructed by EDC. As a part of the proposed project, the 16-inch connection would be extended south along 126th Street by the Queens Development Group, LLC (QDG). Based on current estimates, the 36-inch sanitary sewer under construction, the 24-inch sewer downstream from it, and the 37th Avenue pump station would have sufficient capacity to accommodate the development proposed under Phase 1A. As part of the Phase 1A DEP approval process, QDG would work with the New York City Department of Environmental Protection (DEP) to assess the operations of the existing pump station. Based on this assessment, QDG would replace or upgrade components identified as requiring such work as a result of the additional flows associated with the Phase 1A development. Based on measured existing flow to the Bowery Bay Water Pollution Treatment Plant (WPTP) and the projected sanitary flow from the proposed development in Phase 1A, the WPTP would have sufficient capacity to accommodate the proposed project flow.

A 7.5-by-5-foot box storm sewer currently under construction by EDC would be extended south along 126th Street by QDG as part of the proposed project to accommodate Phase 1A development within the Special Willets Point District. For Willets West and the other sites, existing infrastructure would be sufficient to convey stormwater runoff.

PHASE 1B

Consultation with DEP would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required to support the Phase 1B development. As assumed in the 2008 FGEIS, the existing 72-inch water main within Willets Point Boulevard would remain in place and a permanent easement, mapped on the City map, would be provided to enable DEP access to this water main. A grade change and replacement of portions of the water main, contemplated in Technical Memorandum #4 would not be required.

Based on current estimates, the 36-inch sanitary sewer currently under construction would have sufficient capacity to accommodate the development proposed under Phase 1B. Upgrades to the 37th Avenue pump station and its force main would likely be required for Phase 1B development. If needed to support Phase 1B development, QDG would fund the 37th Avenue pump station upgrade, at the time when the need arises. It is anticipated that the upgrade would occur within the existing city land or rights-of-way. Verification of this requirement by DEP will be obtained prior to Phase 1B development. Based on measured existing flow to the Bowery Bay WTP and the projected sanitary flow from the proposed development through Phase 1B, the WTP would have sufficient capacity to accommodate the proposed project flow.

Stormwater and sanitary sewer infrastructure constructed would be sized in accordance with the DEP-approved amended drainage plan (ADP) prepared by QDG.

PHASE 2

For the District, consultation with DEP would be required to determine water supply requirements for Phase 2 of the proposed project. Additional internal water service would likely be required to support the proposed development in 2032. Additionally, consultation with DEP would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required to support the Phase 2 development, if not already constructed in a prior phase. For all other sites, water service would remain as constructed.

For the District, new sanitary sewer trunk mains would be required in Northern Boulevard 126th Street, and Roosevelt Avenue. These sewers would be sized in accordance with the ADP that would be developed. Based on current estimates, the 36-inch sanitary sewer currently under construction would have sufficient capacity to accommodate the development proposed with the full development through Phase 2. Per the draft ADP, upgrades to the 37th Avenue pump station and its force main would be required for Phase 2. Specifically, the operating capacity of the 37th Avenue pump station (currently 3,450 gpm) would need to be upgraded to 8,400 gpm. If not previously performed upgrades to the 24-inch sewer under the Grand Central Parkway, the 37th Avenue pump station and its associated downstream force main would be required, and would be funded by the developer of Phase 2. These upgrades would be in conformance with the DEP approved ADP. Based on measured existing flow to the Bowery Bay WTP and the projected sanitary flow from the proposed development through Phase 2, the WTP would have sufficient capacity to accommodate the proposed project flow.

For the District, new storm sewers would be required in Northern Boulevard, 126th Street, and Roosevelt Avenue. These sewers would be sized in accordance with the ADP developed for Phase 2. In addition, a 60-inch outfall would be required in 127th Street for Phase 2.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS found that although the Willets Point Development Plan would have generated new demands on infrastructure, the municipal systems serving the District and surrounding area, as enhanced as part of the Willets Point Development Plan, would have adequate capacity to meet the needs of the Willets Point Development Plan as well as the potential future development on Lots B and D. These conclusions did not change in subsequent technical memoranda, although the specific enhancements were modified based on further analysis and discussion with DEP.

WATER SUPPLY

The 2008 FGEIS and subsequent technical memoranda assumed that new local water supply distribution lines would be provided by the developer(s) to the blocks in the southwestern portion of the District, and uses in the eastern portion of the District would continue to be served by existing supply lines. This infrastructure would be built as private infrastructure, constructed to meet DEP standards.

The 2008 FGEIS assumed that the existing 72-inch pre-stressed reinforced concrete pipe (PRCP) water main within Willets Point Boulevard would remain in place and that the developer(s) would provide a permanent easement mapped on the City map in order to provide acceptable access to the existing main. The width and designation of this easement was to be determined in consultation with DEP and in accordance with DEP requirements. In Technical Memorandum #4, as a result of discussions with DEP, this assumption was revisited and the memorandum examined the potential replacement of portions or all of the 72-inch water main. In this scenario, Willets Point Boulevard would have been raised to flood plain elevation and the water main would have been repositioned higher in the street bed. The analysis provided in Technical Memorandum #4 found that there would be no interruptions in service and no significant adverse impacts would result from the potential water main replacement.

The 2008 FGEIS estimated that the Willets Point Development Plan and the potential future development on Lots B and D would increase water demand by approximately 4.36 million gallons of water per day (mgd) and concluded that this additional demand would not result in a significant adverse impact on the City's water supply system. Subsequent memoranda recalculated water demand, and found that the effects would be the same as described in the 2008 FGEIS.

SANITARY SEWAGE

The 2008 FGEIS and subsequent technical memoranda describe how the District has no connection to the City's sanitary sewer system. It was assumed that under the Willets Point Development Plan, the District would be connected to the City's sanitary sewer system, to eliminate the District's reliance on septic tanks. Improvements would include new sewers and new connections to the existing 96-inch-diameter combined sewer in 108th Street. The 2008 FGEIS and Technical Memoranda #1 through #3 assumed construction of a new pump station (most likely to be located within the District) and force main to make this connection; As a result of DEP guidance, a gravity flow system was used instead. Technical Memorandum #4 incorporates those changes.

The 2008 FGEIS and subsequent technical memoranda also considered potential effects on the 37th Avenue pump station, and determined that the pump station does not have adequate

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capacity for the full build out of the District. In 2010, EDC commissioned a study to assess the adequacy of the pump station for development of Phase 1 (the program for Phase 1 at the time was different in extent and use from the currently proposed Phase 1A and Phase 1B). The study also considered existing sanitary flows from CitiField and the residential district tributary to the pump station. The study concluded that the pump station did have sufficient capacity to accommodate the Phase 1 development, and DEP concurred with the conclusion.¹

The 2008 FGEIS estimated that the Willets Point Development Plan and the potential future development on Lots B and D would have resulted in an increase of sanitary flow to the Bowery Bay Wastewater Treatment Plant (WWTP) of approximately 2.8 mgd and concluded that the Bowery Bay WWTP would have adequate capacity to meet the increased demand associated with the Willets Point Development Plan. Subsequent memoranda (Technical Memoranda #3 and #4) also calculated increases in sanitary flow and resulted in the same conclusions related to the Bowery Bay WWTP.

STORMWATER

The 2008 FGEIS and subsequent technical memoranda identified the need for the following, related to stormwater:

- Prior to redevelopment of the site, an ADP would be prepared by the developer to comprehensively address all the surface stormwater runoff and separate handling of the dry weather flow that would be generated as a result of the Willets Point Development Plan, and drainage features to be included in the development of the District. The approved ADP would accommodate the City's current drainage plan for the area, and easements associated with highway drainage, and would be subject to prior review and approval by DEP.
- The 2008 FGEIS found that the overall stormwater runoff in the future with the Willets Point Development Plan would have remained largely unchanged from the then existing runoff volume of 366 cubic feet per second (cfs) as there would be no substantial change in surface coverage on the site. The 2008 FGEIS also identified the need for a new stormwater conveyance system to address inadequate stormwater management conveyance systems within the District, as follows: a lack of detention prior to discharge at two outfalls on 126th and 127th Streets; stormwater runoff greater than the allowable flow per the current drainage plan at the two outfalls; and inadequate sizing of the conveyance system, resulting in uncontrolled and untreated runoff and street flooding during storm events. To eliminate these stormwater management issues, the Willets Point Development Plan indicated a need for the construction of a new stormwater conveyance system, including piping, sustainable design features, and an adequately sized detention tank, or other equivalent means to accommodate the stormwater that would be beyond the discharge capacity of the two stormwater outfalls serving the District. The 2008 FGEIS also identified a potential need to construct a new outfall to augment the then-existing system. As part of the ongoing infrastructure work in support of development within the District, planning and construction has progressed to increase the capacity of the stormwater outfall at 126th Street (see "Existing Conditions," below).

¹ Memorandum regarding Willets Point Development 37th Ave Pumping Station from DEP, dated December 20, 2010, and signed by Stella Rozelman, P.E., Chief of Division of Collection Facilities, Engineering Analysis and Planning.

- In Technical Memoranda #3 and #4, which examined development of in phases, it was concluded that flooding would continue in the undeveloped portions of the District until the District-wide stormwater management features were implemented.
- The stormwater management plan would be reviewed and approved by DEP and would specify Best Management Practices (BMPs) and sustainable design features that the project would include. Technical Memoranda #3 and #4 identified that the stormwater management plan would be implemented in stages.
- The 2008 FGEIS identified the need for stormwater to be pre-treated prior to discharge to Flushing Bay, which is a regulated water body, to ensure that applicable discharge criteria would be met after construction is completed. Stormwater discharge to Flushing Bay will be treated in accordance with New York State Department of Environmental Conservation (NYSDEC) and DEP regulations.
- The 2008 FGEIS concluded that implementation of the Willets Point Development Plan would require approval pursuant to the State Pollutant Discharge Elimination System (SPDES) general permit program for stormwater discharges from construction activities, as well as post construction (Build) conditions. Prior to initiation of construction activities, a Stormwater Pollution Prevention Plan (SWPPP) would be developed pursuant to the requirements of the general permit and would be enforced throughout the sequence of construction activities and after construction is complete.

COMBINED SEWER OVERFLOWS

The 2008 FGEIS anticipated that development within the District would provide separate storm sewers. Therefore, stormwater runoff would not contribute to flow being directed to the Bowery Bay WWTP. However, since an increase in sanitary flow could impact Combined Sewer Overflow (CSO) discharges, the effect of an increase in sanitary flow to the combined sewer/regulator system within the Bowery Bay WWTP service area was investigated using Wallingford Software's InfoWorks model. Based on the simulations, the 2008 FGEIS and subsequent technical memoranda concluded that there would be no significant increase in the volume or frequency of CSO events as a result of the Willets Point Development Plan, and no significant effect on the water quality.

C. METHODOLOGY

This chapter has been prepared in accordance with the guidelines of the 2012 *CEQR Technical Manual*. It describes existing conditions and future conditions without the proposed project, and analyzes the probable impacts that the proposed project may have on water and sewer infrastructure. This analysis assesses future conditions in 2018, 2028, and 2032, when completion of Phase 1A, Phase 1B, and Phase 2 (full buildout) of the proposed project are anticipated, respectively.

D. EXISTING CONDITIONS

Information in this section is based on the 2008 FGEIS, subsequent technical memoranda, and information provided by Langan Engineering, Environmental, Surveying, and Landscape Architecture, D.P.C. (Langan), the engineer for Phase 1A of the proposed project. It also describes infrastructure improvements currently under construction within the District and surrounding area. In general, these improvements consist of new sanitary and stormwater mains that will provide new public sanitary sewer service to the existing uses as well as to support the redevelopment of the District and adjacent areas, and replace an inadequately-sized stormwater

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sewer and outfall to help alleviate chronic flooding that occurs in the District and adjacent areas. Sizing for the sewer improvements is based on a draft ADP developed by EDC. EDC broke ground on these improvements in December 2011.

WATER SUPPLY

SPECIAL WILLETS POINT DISTRICT¹

The District and adjoining streets currently have a complete, interconnected grid of water distribution mains along Northern Boulevard, 34th Avenue, 126th Street, 126th Place, 127th Street, and Willets Point Boulevard. This gravity distribution system is fed by City Water Tunnel No. 2.

Existing demands within the District are generally limited to the current on-site uses and met by two 12-inch water mains that pass under the Grand Central Parkway. There is an existing 72-inch water main that passes through the site along Willets Point Boulevard that supplies water to a substantial portion of northeast Queens. There are no connections to the 72-inch water main within the Willets Point District.

As planning for the District has evolved since the 2008 FGEIS, modifications with respect to some of the proposed infrastructure elements have been considered (see discussion above). It is currently assumed that the existing 72-inch water main beneath Willets Point Boulevard would remain in place.

EDC is also upgrading a portion of the water main in 126th Street between Northern Boulevard to a point just south of 35th Avenue. This work is a part of the EDC contract to construct a new storm sewer in 126th Street.

WILLETS WEST

The Willets West portion of the project site comprises an approximately 30.7-acre section of the surface parking field adjacent to CitiField.

A 12-inch water main runs east-west within Roosevelt Avenue to the south of the Willets West portion of the project site; another 12-inch water main runs east-west just north of Shea Road, to the north of the Willets West portion of the project site. CitiField currently maintains a series of 8-inch water mains on site that run to the east of the Willets West portion of the project site and to the north of Lot B and connect to the existing water mains in Shea Road and Roosevelt Avenue.

SOUTH LOT AND LOT D

The South Lot and Lot D parking lots are collectively approximately 12.1 acres in area. Lot D and the South Lot are used for commuter parking and parking for United States Tennis Association (USTA) National Tennis Center (NTC) events when baseball games are not in progress.

¹ The Special Willets Point District is within the boundary of the federally designated Brooklyn-Queens sole source aquifer. This designation was made pursuant to Section 1424 (e) of the Safe Drinking Water Act (SDWA), in recognition of the importance of the aquifer's vulnerability to contamination. As discussed in the 2008 FGEIS, the area's reliance on septic disposal inherently conflicts with SDWA goals. The aquifer is currently not used as a potable water source.

According to DEP maps, South Lot and Lot D are served by the 12-inch water main in Roosevelt Avenue and an 8-inch water main that runs through the site. The 72-inch water main runs along the southern property line of the two lots.

LOT B

Lot B, which is approximately 4.7 acres in area, is used for VIP/ADA parking by CitiField. There is water service around Lot B, including the 12-inch water main in Roosevelt Avenue and additional water service along the north of Lot B.

WATER DEMAND

Currently, the only water usage on the project site is within the District, with a demand of 159,964 gallons per day (gpd) of water (see **Table 11-1**).

Table 11-1
Existing Water Demand

Use	Size	Demand Type	Rate	Consumption (gallons per day)
Residential	1 (person)	Domestic	100 gpd/person	100
		Air Conditioning	N/A	0
Commercial/Office	194,567 sf	Domestic	0.10 gpd/sf	19,458
		Air Conditioning	0.17 gpd/sf	33,076
Retail	39,230 sf	Domestic	0.24 gpd/sf	9,415
		Air Conditioning	0.17 gpd/sf	6,669
Industrial ¹	337,949 sf	Domestic	0.10 gpd/sf	33,795
		Air Conditioning	0.17 gpd/sf	57,451
Total				159,964
Note: 1. No rate provided in <i>CEQR Technical Manual</i> for Industrial uses therefore Commercial/Office rate was used. Source: Rates from the 2012 <i>CEQR Technical Manual</i> .				

SANITARY SEWAGE

New York City's sewer system includes an extensive grid of sewers beneath the streets that convey wastewater to 14 WWTPs. Together, these plants, which are operated by DEP, treat approximately 1.7 billion gallons of sewage per day. Most of the sewer systems within New York City are combined sewer systems, which carry both sanitary sewage from buildings and stormwater collected in catch basins and storm drains. However, some areas of the City, primarily in Queens and Staten Island, have separate systems for sanitary sewage and stormwater. In addition, small areas of Staten Island, Brooklyn, and Queens, including the District, use septic systems to dispose of sanitary sewage.

The project site is within the service area of the Bowery Bay WWTP, which is located on the East River in Astoria, Queens. The Bowery Bay WWTP treats sanitary wastewater to secondary treatment standards prior to discharge to the East River. The existing sewer system within the Bowery Bay WWTP service area is a combined sewer system that collects both sanitary sewage and stormwater runoff. Discharges from this plant are regulated by NYSDEC through a SPDES permit. At the plant, water is treated through a variety of physical and biological processes that remove solid contaminants so that the water discharged into the City's waterways does not adversely affect water quality. During dry weather, combined sewers function as sanitary sewers, conveying all flows to the WWTP for treatment. During wet weather, however, stormwater entering the combined sewer/regulator system can exceed the capacity of the regulator and the treatment plant and trigger a CSO event into the City's waterways. The

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purpose of a regulator is to divert sanitary flow from the existing combined sewers to the intercepting sewer during normal flow periods (dry weather), and limit the flow to the intercepting sewer to twice the dry weather flow during storm periods (wet weather). During a significant storm event, CSOs within the Bowery Bay WWTP service area discharge to the East River and Flushing Bay. See “Combined Sewer Overflows,” below.

The combined sewer/regulator system within the Bowery Bay WWTP service area is designed to deliver twice the mean dry weather, or sanitary, flow to the Bowery Bay WWTP for treatment. While the total hydraulic capacity of the Bowery Bay WWTP is 300 mgd, it can only provide treatment to secondary levels for 150 mgd. Flow records for the plant are maintained by DEP and are reported to NYSDEC. The Bowery Bay WWTP, which has a permitted design capacity of 150 mgd, experienced flows of 112 mgd in October 2012 with a 12-month running average flow of 111 mgd.

SPECIAL WILLETS POINT DISTRICT

As described above, the District is located within the service area of the Bowery Bay WWTP; however, as detailed in the 2008 FGEIS, the Willets Point area is not connected to the New York City sanitary sewer system and relies entirely on septic systems as the means of sewage disposal.

Currently, the 24-inch gravity sewer that runs underneath the Grand Central Parkway is the nearest DEP sewer network connection to the District. The farthest eastern extent of this network is a manhole located approximately 100 feet to the west of CitiField’s western property line. The 24-inch sewer drains to the 37th Avenue pump station. As detailed in the 2008 FGEIS, this pump station has the capacity to pump up to 5 mgd into a 20-inch force main, which discharges into a 36-inch gravity sewer at the intersection of 37th Avenue and 111th Street. The 36-inch sewer drains to the 96-inch combined sewer in 108th Street (see **Figure 11-1**).

Since the issuance of the 2008 FGEIS, EDC has funded the construction of a 36-inch PRCP gravity sewer that is currently being built across the breadth of CitiField’s northern and western parking lots. The 36-inch sewer was designed to accept flow from the District. Once this work is completed, the District could be connected to the DEP sewer network. This connection would be made to the existing 24-inch gravity sewer which crosses beneath the Grand Central Parkway and would convey flow to the existing 37th Avenue pump station.

In connection with this new sanitary sewer, a new 24-inch Class III PRCP sanitary sewer stub is also under construction on 126th Street extending from the 36-inch gravity sewer north towards 34th Avenue, as is a short 16-inch sanitary sewer stub south along 126th Street.

WILLETS WEST

The Willets West portion of the project site is located within the service area of the Bowery Bay WWTP and is served by sanitary sewers. The nearest connection to the City sanitary sewer network is the 24-inch sewer that is located west of Citi Field, beyond the perimeter of the park road system.

CitiField currently maintains a 12-inch sanitary force main that connects to this 24-inch sewer, which drains to the 37th Avenue pump station. This pump station has a rated capacity of 3,460 gallons per minute (gpm) and drains to a 20-inch force main. Sanitary flow from the 37th Avenue pump station drains to the Bowery Bay WWTP through the CSO network in 108th Street.



SOUTH LOT AND LOT D

The South Lot and Lot D portions of the project site are located within the service area of the Bowery Bay WWTP; however, there does not appear to be any existing sanitary sewer service within the public roadways surrounding the site. The MTA station drains to an on-site individual subsurface sewage treatment system (septic) that is located in Lot D.

LOT B

The Lot B portion of the project site is located within the service area of the Bowery Bay WWTP. The existing CitiField sanitary force main is located near Lot B. The MTA station drains to an on-site individual subsurface sewage treatment system (septic) that is located in Lot B.

SANITARY SEWAGE CALCULATION

For the purposes of this analysis, the amount of sanitary sewage is conservatively estimated as all water demand from the project site except that used by air conditioning, which is typically not discharged to the sewer system. Current uses within the District generate an estimated 62,767 gpd of sanitary sewage, which is discharged to septic systems (all other portions of the project site do not generate any sanitary sewage).

STORMWATER

Stormwater runoff volumes and rates of discharge vary depending upon the type of land, cover, and slope.

SPECIAL WILLETS POINT DISTRICT

As described in the 2008 FGEIS, stormwater runoff generated in the District is discharged into Flushing Bay via two 60-inch outfalls on 126th Street and 127th Street without detention, resulting in surcharge and flooding conditions. The maximum capacity for each outfall is 74 cfs. The 2008 FGEIS identified that the runoff generated in existing conditions is greater than the allowable flow tributary to the two outfalls (148 cfs), indicating that the stormwater discharge infrastructure is inadequate. In addition, there is only minimal stormwater conveyance infrastructure, and a portion of the District is below a sufficient grade to allow for gravity conveyance of stormwater toward the outfalls. Since the area lacks an adequate drainage system, much of the runoff flows as overland flow and ponds, causing area streets to flood during storm events. Furthermore, runoff from the many facilities in the area is neither controlled nor treated prior to entering the storm drains that convey this stormwater to the outfalls.

As part of the ongoing infrastructure work in support of the redevelopment of the District, planning has progressed to increase the capacity of the stormwater outfall at 126th Street, construct a new 7.5-by-5-foot storm sewer in a portion of 126th Street, and to better manage stormwater within the District. A Joint Application for Permits was submitted to NYSDEC and the United States Army Corps of Engineers (USACE) on November 4, 2010 for the replacement of the 126th Street storm sewer outfall. The USACE issued authorization to EDC for the replacement of the 126th Street outfall in December 2010. A NYSDEC permit for construction of the outfall improvements was issued on February 3, 2011. The improvements consist of the replacement of the storm sewer water-ward of the concrete cut-off wall under the existing New York City Department of Parks and Recreation's (DPR) esplanade along Flushing Bay. The new 126th Street outfall, combined with the re-use of the existing 127th Street outfall, will provide

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sufficient capacity to manage stormwater runoff from the District, when redeveloped, as indicated in the permit application for the Willets Point Off-site Sewer Improvement Project.

The new 7.5-by-5-foot storm sewer in 126th Street is currently under construction and will discharge to Flushing Bay via the new storm outfall that is also under construction. This storm sewer will extend along 126th Street from the outfall, south to between 34th and 35th Avenues.

WILLETS WEST

A 72-inch New York State Department of Transportation (NYSDOT)/DPR storm sewer, which drains to Flushing Bay (see **Figure 11-1**), is present in the Willets West portion of the project site. The outfall to Flushing Bay is not associated with the DEP stormwater outfalls in 126th and 127th Streets. The parking lots west of CitiField (including the Willets West area), the perimeter roadway (Shea Road), and a majority of the stadium drain to this 72-inch sewer. The majority of the runoff tributary to this storm sewer is treated via subsurface BMPs. Some areas discharge untreated stormwater and are in violation of current NYSDEC regulations; however, no detention is provided or needed for discharge to a NYSDOT sewer.

SOUTH LOT AND LOT D

Stormwater from the eastern portions of Lot D currently drains to a 54-inch storm sewer in 126th Street before being discharged into Flushing Bay via a 60-inch outfall on 126th Street.

Stormwater from the South Lot and possibly from the western portion of Lot D drains to a NYSDOT and DPR storm sewer network that drains to two 22-foot by 10-foot DEP CSOs that discharge directly to Flushing Bay via outfall BB006. Based on discussions with DPR, surface ponding of stormwater runoff is prevalent on South Lot and Lot D after rain events.

LOT B

Stormwater runoff from the Lot B portion of the project site currently is detained, treated, and directed to the 54-inch DEP storm sewer in 126th Street before being discharged into Flushing Bay via a new 60-inch outfall on 126th Street.

STORMWATER CALCULATIONS

Table 11-2 provides information on the surface-type distribution of the project site. The weighted runoff coefficient is also calculated for each of the subcatchment areas and is listed in **Table 11-2**. These numbers correspond to the percentage of precipitation that becomes surface runoff.

COMBINED SEWER OVERFLOWS

As discussed above, during significant storm events CSOs within the Bowery Bay WWTP service area discharge to the East River and Flushing Bay.

The 2008 FGEIS estimated that the CSO outfalls, which may potentially be affected by development within the District and on Lots B and D, discharged 5,711.68 million gallons per year to area waterways. The 2008 FGEIS concluded that generally, the impact of CSO events on local water quality is short-term at most locations, due principally to the mixing caused by tidal currents of the receiving waters and the fact that sanitary flows are diluted by runoff.

Table 11-2
Existing Surface Coverage

Portion of Project Site	Surface Type	Surface Areas (sf)	Percent Coverage	Discharge Method	Weighted Runoff Coefficient
Special Willets Point District	Building Roofs	822,456	31%	Separate Sewer	
	Paved Surfaces	1,773,138	67%	Separate Sewer	
	Grass/Softscape	41,071	2%	Separate Sewer/Infiltration	
	Total	2,636,665	100%		0.89
Willets West	Paved Surfaces	1,318,507	90%	Separate Sewer	
	Grass/Softscape	152,697	10%	Separate Sewer/Infiltration	
	Total	1,471,204	100%		0.78
South Lot and Lot D	Paved Surfaces	486,784	100%	Separate Sewer	
	Total	486,784	100%		0.85
Lot B	Building Roofs	1,207	1%	Separate Sewer	
	Paved Surfaces	179,539	93%	Separate Sewer	
	Grass/Softscape	12,543	6%	Separate Sewer/Infiltration	
	Total	193,289	100%		0.81
Sources: Langan.					

In September 2010, New York City released its NYC Green Infrastructure Plan which outlines strategies to achieve better water quality and sustainability benefits than a traditional “all-grey” strategy. Goals of the plan relate to reductions in CSO volume, the capture of rainfall from impervious surfaces, and the provision of quantifiable sustainability benefits. The plan has five key components: 1) build cost-effective grey infrastructure, 2) optimize the existing wastewater system, 3) control runoff from 10 percent of impervious surfaces through green infrastructure, 4) institutionalize adaptive management, model impacts, measure CSOs, and monitor water quality, and 5) engage and enlist stakeholders. An update to the plan was released in 2011.

Flushing Bay and Flushing Creek are identified in the plan as individual watersheds where CSO reductions will have the greatest impact. The plan identifies opportunities within each watershed.

Since the project site does not have a combined sewer system, it is not included in the boundaries of either the Flushing Bay or Flushing Creek identified as an “opportunity” in either drainage area.

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the proposed project in 2018, 2028, and 2032, it is assumed that no changes will occur on any portion of the project site with regard to development of new buildings or uses. Therefore, it is expected that the District will continue to contain its existing industrial and auto-related uses, and that the Willets West, South Lot, Lot D, and Lot B portions of the project site will continue to serve the parking needs of CitiField. These uses will be able to connect to and make use of the municipal infrastructure improvements currently under construction.

WATER SUPPLY

With no changes on the project site, it is expected that existing water demand will remain unchanged in the future without the proposed project; therefore, future water demand is estimated at 159,964 gpd for 2018, 2028, and 2032.

It is expected that the improvements undertaken by EDC (i.e., the replacement of a 12-inch water main along 126th Street between Northern Boulevard to a point between 35th and 36th Avenues) will be complete by 2018.

SANITARY SEWAGE

With no changes on the project site, it is expected that existing sanitary sewage generated will remain unchanged in the future without the proposed project; therefore, future sanitary sewage generation is estimated at 62,767 gpd for 2018, 2028, and 2032. This flow will likely continue to be directed to the existing septic system. A limited volume may be directed to the new infrastructure currently under construction, once completed.

It is expected that the improvements undertaken by EDC (i.e., the new 36-inch gravity sanitary sewer running west from 126th Street and the 16-inch and 24-inch segments on 126th Street) will be complete by 2018.

STORMWATER

It is expected that the improvements undertaken by EDC (i.e., the 7.5-by-5-foot outfall in 126th Street, the 7.5-by-5-foot storm sewer in 126th Street, and the 60-inch stub sewer connection in 34th Avenue) will be complete by 2018. As it is assumed that land use would remain the same, no changes to the runoff coefficient would occur in 2018, 2028, or 2032.

COMBINED SEWER OVERFLOWS

DEP is working to reduce CSOs in specific areas through construction projects that include upgrades at WWTP, storm sewer expansions, and CSO retention tanks. DEP also has a citywide effort to better manage stormwater using green infrastructure, consistent with its *NYC Green Infrastructure Plan*, updated in 2011. These green infrastructure measures include source controls, or the detention or retention of stormwater runoff through capture and controlled release, infiltration into the ground, vegetative uptake, and evapotranspiration. DEP will continue to implement a range of measures to control CSOs.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

PHASE 1A (2018)

The first phase of the project (Phase 1A) would consist of the remediation and development of an approximately 23-acre portion of the Special Willets Point District and the development of “Willets West” on the existing parking lot west of CitiField. Development within the District would consist of a hotel with approximately 200 rooms and approximately 30,000 square feet of retail space along the east side of 126th Street, a 20-foot-wide public esplanade, and an approximately 2,800-space surface parking area that would also be used for active recreation for a portion of the year.

Willets West—an entertainment and retail center of approximately 1.4 million gross square feet (approximately one million sf of gross leasable area)—would be developed on a portion of the surface parking lot west of CitiField. The complex would include retail stores, movie theaters, restaurant and food hall spaces, and entertainment venues. Surface parking and a parking structure also would be developed in this location, including 2,500 new spaces for the entertainment/retail center and 400 spaces of replacement parking for use by the Mets.

In addition, the westernmost CitiField surface parking lot south of Roosevelt Avenue (a portion of the South Lot) would be redeveloped as a structured parking facility, to replace a portion of the CitiField parking spaces formerly located on the Willets West portion of the project site.

The project site is within the Federal Emergency Management Agency (FEMA) 100-year floodplain.¹ FEMA and New York City Building Code flood resistant design requirements must therefore be taken into account within the design, while complying with the Special Willets Point District zoning elevation requirements. During Phase 1A, the majority of the project site is anticipated to remain at the existing grade, with the hotel and commercial space finished floor elevations being elevated to comply with the design flood elevation. It is anticipated that the remainder of the extent of Phase 1A would be raised above the floodplain elevation or otherwise designed to comply with FEMA and New York City Building Code requirements prior to completion of the development of Phase 1B in 2028.²

WATER SUPPLY

Proposed Improvements

Special Willets Point District

Water service within the District would be supplied from a new water main network, to be constructed by the developer. Existing DEP water mains in the developed area (35th Avenue south to Willets Point Boulevard, 126th Street east to 127th Street) would be demolished or abandoned as required. New 12-inch ductile iron pipe (DIP) water mains would be constructed in 35th Avenue, 126th Street, 127th Street, and Willets Point Boulevard. The buildings to be constructed in Phase 1A would tie directly into these new water mains.

An easement would be established over the new 12-inch DIP water main and the existing 72-inch PRCP water main in Willets Point Boulevard in the portion of the street that would be demapped prior to Phase 1A construction.

Willets West

A new on-site water service loop is proposed to connect to the existing 12-inch water main within Roosevelt Avenue at the southwest corner of the Willets West portion of the project site and to the existing 8-inch water main that serves CitiField. Some existing segments of CitiField's water supply system would be demolished as they would no longer be needed once the new water service loop is constructed. This new water service would serve the proposed Willets West development while maintaining CitiField's water network.

South Lot and Lot D

Service to the parking structure proposed for the South Lot would be provided by a lateral connection to the 12-inch water main within Roosevelt Avenue.

¹ On February 25, 2013, FEMA released Advisory Base Flood Elevation (ABFE) maps for areas in New York City, including the project site. More recently, FEMA released preliminary work map data for the area, replacing the ABFE information as the best available flood hazard data. Although the preliminary work maps are subject to further review, when they are ~~Although the ABFE is subject to further review, if it is adopted~~ as part of a future updated Flood Insurance Rate Map, the proposed project would comply with these flood elevations as required by the New York City Building Code.

² As discussed in Chapter 16, "Greenhouse Gas Emissions and Climate Change," prior to the placement of fill, the project sponsor would submit to the Mayor's Office of Environmental Coordination an assessment of the appropriate grade for the District in light of all available information concerning potential sea level rise due to climate change.

Willets Point Development

Lot B

No development is projected for Lot B by 2018, and thus no new water service would be required.

Water Demand

In the 2018 analysis year, the project site is projected to result in a demand for 661,500 gpd of water (see **Table 11-3**), which is an increase of 501,536 gpd over the No Action condition.

Table 11-3
2018 Projected Water Demand

Proposed Use	Size	Demand Type	Rate	Phase 1A Consumption (gallons per day)
Retail	1,430,000 sf	Domestic	0.24 gpd/sf	343,200
		Air Conditioning	0.17 gpd/sf	243,100
Hotel ¹	200 (rooms)	Domestic	120 gpd/occupant	48,000
	160,000 sf	Air Conditioning	0.17 gpd/sf	27,200
Total	1,590,000		NA	661,500
Increase from the Future Without the Proposed Project				501,536
Note: 1. Assumes 2 occupants per room.				
Source: Rates from 2012 <i>CEQR Technical Manual</i> .				

The 2008 FGEIS projected a demand for water of 4.36 million gallons per day (mgd) for the full development of the District and concluded that the infrastructure was sufficient to meet that demand. The Phase 1A water demand would be substantially lower than 4.36 mgd. Therefore, based on the FGEIS conclusion, the infrastructure is sufficient to supply the Phase 1A projected water demand.

SANITARY SEWAGE

Proposed Improvements

As part of the development of Phase 1A, QDG would develop and submit a DEP-approved ADP reflecting Phase 1A street demapping.

Special Willets Point District

Sanitary sewage from the District would be directed to the 36-inch PRCP sanitary sewer currently being constructed by EDC across CitiField's northern and western parking lots. This sewer will provide two stubbed connections in 126th Street: one 24-inch and one 16-inch. The 16-inch connection would be partially extended south along 126th Street by QDG, in accordance with the ADP to be developed for the proposed project. Buildings developed within the District as part of Phase 1A would discharge to this new sewer extension.

Willets West

Sanitary sewage from the development of Willets West would be directed to the 36-inch gravity sewer currently being constructed across CitiField's northern and western parking lots. Based on current estimates, the 36-inch sewer currently under construction has adequate capacity to support the sanitary flow from the Willets West development.

South Lot and Lot D

No sanitary sewage connection would be provided for South Lot and Lot D, as these areas would be developed as parking facilities.

Lot B

No development is projected for Lot B by 2018. Therefore, no sanitary sewage connection would be provided for Lot B.

Sanitary Sewage Calculation

In the 2018 analysis year, the project site would result in 391,200 gpd of sanitary sewage, an increase of 328,433 gpd over the No Action condition.

Based on current estimates and the previous EDC studies, the 37th Avenue pump station, the 36-inch sewer currently under construction, and the 24-inch sewer downstream from it, would have sufficient capacity to accommodate the development proposed under Phase 1A. QDG would work with DEP to assess the operations of the existing pump station. Based on this assessment, QDG would replace or upgrade components identified as requiring such work as a result of the additional flows associated with the Phase 1A development.

The 2008 FGEIS projected an increase of sanitary flow to the Bowery Bay WWTP of approximately 2.8 mgd for the full development of the District; the Phase 1A sanitary sewage generation would be substantially lower than this number. The 2008 FGEIS concluded that the WWTP would have sufficient capacity to accommodate a flow increase of 2.8 mgd. Therefore, it is expected that the Bowery Bay WWTP would have adequate capacity to accommodate the Phase 1A development.

*STORMWATER**Proposed Improvements*

As part of the development of Phase 1A, QDG would develop and submit a DEP-approved ADP that would reflect the Phase 1A street demapping.

Special Willets Point District

As described above, the development within the District in Phase 1A would be predominately surface parking and hardscape, with retail uses and a 200-bed hotel along 126th Street.

As discussed above, the stormwater outfall at 126th Street is being improved by EDC, and a 7.5-by-5-foot box storm sewer is currently under construction in 126th Street by EDC. This new sewer will discharge to Flushing Bay and will extend south to a point between 34th and 35th Avenues. During construction of Phase 1A, the box storm sewer would be partially extended south along 126th Street by QDG. The extension would comply with the ADP to be developed and filed by QDG. Per the draft ADP, stormwater runoff tributary to the new box storm sewer would be restricted to a surface runoff coefficient of 0.85. Stormwater runoff discharging to the box storm sewer in 126th Street would be treated to comply with NYSDEC regulations. A NYSDEC SPDES GP-010-001 permit would be obtained, which requires the implementation of a SWPPP.

Willets West

As described above, the Willets West development would include a retail/entertainment space with parking garages, surface parking, hardscaping, and landscaping.

Stormwater runoff from the Willets West development would continue to drain to the on-site 72-inch NYSDOT storm sewer that discharges to Flushing Bay. To meet NYSDOT requirements, existing stormwater runoff amounts tributary to the 72-inch sewer would be maintained. The design will be coordinated with the NYSDOT during the design phase.

Willets Point Development

South Lot and Lot D

Stormwater management for the area would maintain existing conditions by discharging runoff to the existing NYSDOT/DPR sewer network in the western portion of the site. Drainage to this network will need to be treated to comply with NYSDEC regulations. Detention requirements will be verified with DEP during the design phase.

Lot B

No development is projected for Lot B by 2018. Therefore, stormwater runoff from Lot B would continue to be detained, treated, and directed to the 54-inch DEP storm sewer in 126th Street before being discharged into Flushing Bay via the 60-inch outfall on 126th currently under construction.

Stormwater Calculation

Table 11-4 presents the stormwater calculations for the Phase 1A development.

Table 11-4
2018 Proposed Surface Coverage

Portion of Project Site	Surface Type	Surface Areas (sf)	Percent Coverage	Discharge Method	Weighted Runoff Coefficient	Existing Weighted Runoff Coefficient	Incremental Change in Runoff Coefficient
Special Willets Point District	Building Roofs	600,294	23%	Separate Sewer			
	Paved Surfaces	2,011,957	76%	Separate Sewer			
	Grass/Softscape	24,414	1%	Separate Sewer/Infiltration			
	Total	2,636,665	100%		0.88	0.89	-0.01
Willets West	Building Roofs	709,200	48%	Separate Sewer			
	Paved Surfaces	553,935	38%	Separate Sewer			
	Grass/Softscape	208,069	14%	Separate Sewer/Infiltration			
	Total	1,471,204	100%		0.83	0.78	+0.05
South Lot and Lot D	Building Roofs	136,580	28%	Separate Sewer			
	Paved Surfaces	350,204	72%	Separate Sewer			
	Total	486,784	100%		0.89	0.85	+0.04
Lot B ¹	Building Roofs	1,207	1%	Separate Sewer			
	Paved Surfaces	179,539	93%	Separate Sewer			
	Grass/Softscape	12,543	6%	Separate Sewer/Infiltration			
	Total	193,289	100%		0.81	0.81	No Change
Notes: ¹ No change in use or surface coverage between existing and 2018 No Action conditions.							
Sources: Langan.							

COMBINED SEWER OVERFLOWS

Using the existing site plan and the proposed site plan for each site, the DEP Flow Volume Calculation Matrix was completed for the existing and With Action conditions. The calculations from the Flow Volume Calculation Matrix help to determine the change in wastewater volumes to the combined sewer system from existing conditions to the future with the proposed project. Runoff volumes were calculated for four rainfall volume scenarios with varying durations. The summary tables, taken from the DEP Flow Volume Calculation Matrix, are included in **Table 11-5**.

Table 11-5
DEP Flow Volume Calculation Matrix:
2018 Existing and With Action Volume Comparison

Rainfall Volume (in.)	Rainfall Duration (hr.)	Runoff Volume Direct Drainage (MG)	Runoff Volume To CSS (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)	Runoff Volume To River (MG)	Runoff Volume To CSS (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)
Special Willets Point District¹		Existing				With Action (2018)			
		2,636,665 sf / 60.53 Acres				2,636,665 sf / 60.53 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
0.40	3.80	0.58	0.00	0.00	0.00	0.58	0.00	0.01	0.01
1.20	11.30	1.75	0.00	0.00	0.00	1.73	0.00	0.03	0.03
2.50	19.50	3.64	0.00	0.00	0.00	3.61	0.00	0.04	0.04
Willets West		Existing				With Action (2018)			
		1,471,205 sf / 33.77 Acres				1,471,205 sf / 33.77 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05
0.40	3.80	0.29	0.00	0.00	0.00	0.30	0.00	0.05	0.05
1.20	11.30	0.86	0.00	0.00	0.00	0.91	0.00	0.16	0.16
2.50	19.50	1.79	0.00	0.00	0.00	1.90	0.00	0.27	0.27
South Lot and Lot D		Existing				With Action (2018)			
		486,784 sf / 11.18 Acres				486,784 sf / 11.18 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	3.80	0.10	0.00	0.00	0.00	0.11	0.00	0.00	0.00
1.20	11.30	0.31	0.00	0.00	0.00	0.32	0.00	0.00	0.00
2.50	19.50	0.65	0.00	0.00	0.00	0.68	0.00	0.00	0.00
Lot B²		Existing				With Action (2018)			
		193,289 sf / 4.44 Acres				193,289 sf / 4.44 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	3.80	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00
1.20	11.30	0.12	0.00	0.00	0.00	0.12	0.00	0.00	0.00
2.50	19.50	0.24	0.00	0.00	0.00	0.24	0.00	0.00	0.00
Notes:									
¹ In the existing condition, sanitary flow from the District is conveyed to septic systems and is not conveyed to the combined sewer system.									
² No change in use or surface coverage between existing and 2018 No Action conditions.									
CSS=combined sewer system; MG=million gallons									

The calculations from the flow volume calculation matrix determine the wastewater volumes to the downstream sewer system from the existing and With Action conditions. Runoff volumes are calculated for four rainfall volume scenarios with varying durations; all stormwater runoff would continue to be directly discharged to Flushing Bay. The increases in sanitary sewer discharge from the project site for the above rainfall volume-duration scenarios from the Phase 1A flows, in comparison to the existing condition range from:

- Special Willets Point District: 0.01 to 0.04 MGD
- Willets West: 0.05 to 0.27 MGD
- South Lot and Lot D: No change
- Lot B: No change

Phase 1A would be consistent with the City's goal to reduce CSO events by requiring construction and maintenance of a separate storm and sanitary sewer system. The 2008 FGEIS found that there would be no significant increase in frequency or volume of CSO events as a result of the Willets Point Development Plan, since CSOs primarily relate to stormwater inputs, which greatly exceed sanitary flow rates during storm events. As a result of this conclusion, it is

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anticipated that the sanitary flow from the proposed project in 2018, which is less than the sanitary flow projected in the 2008 FGEIS, would not significantly affect the number of annual CSO events. In addition, water conservation measures and low-flow fixtures as required by New York City Plumbing Code (Local Law 33 of 2007) would be employed to minimize sanitary sewage flow to the existing combined sewer system. Stormwater runoff from the project site in 2018 would be treated in accordance with the project SWPPP, and conveyed to Flushing Bay through a separate storm sewer system in accordance with an ADP to be developed by QDG and approved by DEP.

PHASE 1B (2028)

In Phase 1B, the interim surface parking lot/recreational space created during Phase 1A within the Special Willets Point District would be developed with: approximately 2.49 million sf of residential use (2,490 units), 875,000 sf of retail, 500,000 sf of office use, approximately 235,000 sf of hotel use (290 rooms), 25,000 sf of community facility use, and a 105,000 sf public school, along with parking and more than five acres of new public open space. In addition, new structured parking facilities would be constructed on South Lot and Lot D to replace the CitiField parking spaces formerly located within the District. The 75 accessory parking spaces created in Phase 1A for the hotel would remain in the District.

Construction of the new Van Wyck Expressway access ramps—which was anticipated in the 2008 FGEIS and for which the City has received approval from the Federal Highway Administration—is slated to be completed in 2024.

As discussed previously, the project site is within the FEMA 100-year floodplain. FEMA and New York City Building Code flood resistant design requirements along with the Special Willets Point District zoning elevation requirements would need to be taken into consideration for the Phase 1B development. It is anticipated that prior to the completion of the Phase 1B development, site grades within the Phase 1A/Phase 1B portion of the District would be raised to levels at or above the floodplain elevation. This change in grade may be achieved through the placement of fill and/or construction of structured platforms. Grade transitions between the new streets constructed in Phase 1B and the existing street grades that would remain in the Phase 2 area would be required until Phase 2 development is completed in 2032.

WATER SUPPLY

Proposed Improvements

For Phase 1B, water service for Willets West and the District would remain as constructed in Phase 1A. For South Lot and Lot D, the proposed parking structures would be directly connected to the 12-inch DEP water main in Roosevelt Avenue. No new development is projected for Lot B by 2028, and thus no new water service would be required. Consultation with DEP prior to Phase 1B development would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required.

Water Demand

In the 2028 analysis year, the proposed development is projected to result in a demand for 1,763,360 gpd of water (see **Table 11-6**), which, when combined with demand from Phase 1A of the project, would be an increase of 2,264,896 gpd over the No Action condition.

Table 11-6
2028 Projected Water Demand

Proposed Use	Size	Demand Type	Rate	Phase 1B Consumption (gpd)	Overall (Phase 1A and 1B) (gpd)
Residential	7,022 people ¹	Domestic	100 gpd/person	702,200	702,200
	2,490,000 sf	Air Conditioning	0.17 gpd/sf	423,300	423,300
Commercial/Office	525,000 sf	Domestic	0.10 gpd/sf	52,500	52,500
		Air Conditioning	0.17 gpd/sf	89,250	89,250
Retail	875,000 sf	Domestic	0.24 gpd/sf	210,000	553,200
		Air Conditioning	0.17 gpd/sf	148,750	391,850
Hotel ²	290 rooms	Domestic	120 gpd/occupant	69,600	117,600
	235,000 sf	Air Conditioning	0.17 gpd/sf	39,950	67,150
School	996 (seats)	Domestic	10 gpd/seat	9,960	9,960
	105,000 sf	Air Conditioning	0.17 gpd/sf	17,850	17,850
Total	4,230,000 sf		NA	1,763,360	2,424,860
Increase from the Future Without the Proposed Project				1,603,396	2,264,896
Notes: 1. The number of residents was calculated based on 2,490 units constructed in Phase 1B, which is based on the average household size of 2.82 residents per unit in Queens. 2. Assumes 2 occupants per room. Source: Rates from 2012 <i>CEQR Technical Manual</i> .					

It is anticipated that the water supply system would have adequate capacity to accommodate the Phase 1B.

SANITARY SEWAGE

Proposed Improvements

As part of the development of Phase 1B, QDG would develop and submit a DEP-approved ADP reflecting the Phase 1B street demapping.

For the District, an on-site sanitary sewer network would be constructed, as needed, by QDG to serve the Phase 1B development. This network would be located along the alignment of proposed private streets and would discharge to the off-site 16-inch DEP sanitary sewer in 126th Street.

For the Willets West portion of the project site, the sanitary sewage system would remain as constructed in Phase 1A.

No sanitary sewage connection would be provided for South Lot and Lot D, as these areas would be developed as parking facilities.

No development is projected for Lot B by 2028. Therefore, no sanitary sewage connection would be provided for Lot B.

Sanitary Sewage Generation

In the 2028 analysis year, the project site is projected to result in a sanitary sewage generation of 1,044,260 gpd which, when combined with demand from Phase 1A of the project, would result in 1,435,460 gpd and an increase of 1,372,693 gpd over the 2028 No Action condition.

It is expected that the 36-inch sewer currently under construction would have adequate capacity to accommodate the Phase 1B development. However, upgrades to the 24-inch sewer under the Grand Central Parkway, the 37th Avenue pump station and its associated downstream force main would likely be required. If needed to support Phase 1B development, QDG would fund

Willets Point Development

the 37th Avenue pump station upgrade, at the time when the need arises. It is anticipated that the upgrade would occur within the existing city land or rights-of-way. These upgrades would be in conformance with the DEP-approved ADP.

The 2008 FGEIS projected an increase of sanitary flow to the Bowery Bay WWTP of approximately 2.8 mgd for the full development of the District; the Phase 1B sanitary sewage generation would be substantially lower than this number. The 2008 FGEIS concluded that the WWTP would have sufficient capacity to accommodate a flow increase of 2.8 mgd. Therefore, it is expected that the Bowery Bay WWTP would have adequate capacity to accommodate the Phase 1B development.

STORMWATER

Proposed Improvements

As noted above, as part of development of Phase 1B, QDG would develop and submit a DEP-approved ADP reflecting the Phase 1B street demapping. Any existing DEP stormwater sewers in newly demapped roads would be abandoned by the City and turned over to the property owner, or would require the establishment of easements to allow for DEP access and maintenance. Stormwater detention and BMPs installed in Phase 1A will be supplemented or replaced as required to accommodate Phase 1B development.

Stormwater runoff discharging to Flushing Bay will be treated to comply with NYSDEC regulations. A SPDES permit would be obtained and a SWPPP would be implemented.

Phase 1B development within the District would primarily consist of retail/residential buildings with hardscape, landscape, and open spaces scattered throughout. Stormwater runoff would discharge to the 7.5-by-5-foot box storm sewer constructed by the EDC. Alternatively, the developer may seek to construct new storm sewers, per the ADP to be developed. Stormwater detention and BMPs would be installed to meet DEP and NYSDEC regulations. The design team would explore options for reuse of stormwater, including the possibility of collection and treatment of stormwater for on-site irrigation.

No new development would occur in the Willets West area in Phase 1B. Therefore, for the Willets West area, the stormwater management system would remain as constructed in Phase 1A.

For South Lot and Lot D, the Phase 1B development would include the construction of two new parking garages along with additional surface parking. Stormwater management implemented in Phase 1A would be maintained. Stormwater runoff from new development would be discharged to the existing NYSDOT and DPR storm sewer network. Runoff would be detained to maintain existing flow rates to the existing sewer system. Alternatively, QDG may seek to construct new storm sewers in Roosevelt Avenue and 126th Street in accordance with the ADP to be developed.

No development is projected for Lot B by 2028. Therefore, stormwater runoff from Lot B would continue to be detained, treated, and directed to the 54-inch DEP storm sewer in 126th Street before being discharged into Flushing Bay via the new storm outfall, currently under construction by the EDC.

Stormwater Calculation

Based on the proposed Phase 1B site plan, the proposed surface coverages and weighted runoff coefficients for each site is included in **Table 11-7**. For the roof courtyard area it is assumed that the area will be comprised of 50 percent pervious surfaces (due to plants/grass in the courtyard) and 50 percent impervious surfaces resulting in a weighted runoff coefficient of 0.76 for the roof courtyard.

Table 11-7
2028 Proposed Surface Coverage

Site	Surface Type	Surface Areas (sf)	Percent Coverage	Discharge Method	Weighted Runoff Coefficient	Existing Weighted Runoff Coefficient	Incremental Change in Runoff Coefficient
Special Willets Point District	Building Roofs	949,654	36%	Separate Sewer			
	Paved Surfaces	1,370,366	52%	Separate Sewer			
	Roof Courtyard Area	63,899	2%	Separate Sewer/Infiltration			
	Grass/Softscape	252,746	10%	Separate Sewer/Infiltration			
	Total	2,636,665	100%		0.84	0.89	-0.05
Willets West	Building Roofs	709,200	48%	Separate Sewer			
	Paved Surfaces	553,935	38%	Separate Sewer			
	Grass/Softscape	208,069	14%	Separate Sewer/Infiltration			
	Total	1,471,204	100%		0.83	0.78	+0.05
South Lot and Lot D	Building Roofs	268,771	55%	Separate Sewer			
	Paved Surfaces	218,013	45%	Separate Sewer			
	Total	486,784	100%		0.93	0.85	+0.08
Lot B ¹	Building Roofs	1,207	1%	Separate Sewer			
	Paved Surfaces	179,539	93%	Separate Sewer			
	Grass/Softscape	12,543	6%	Separate Sewer/Infiltration			
	Total	193,289	100%		0.81	0.81	No Change
Note: No change in use or surface coverage between existing and 2028 No Action conditions.							
Sources: Langan Engineering and Environmental Services, Inc							

COMBINED SEWER OVERFLOWS

The DEP Flow Volume Calculation Matrix was completed for the existing and With Action conditions and is summarized in **Table 11-8**.

Table 11-8
DEP Flow Volume Calculation Matrix:
2028 Existing and With Action Volume Comparison

Rainfall Volume (in.)	Rainfall Duration (hr.)	Runoff Volume Direct Drainage (MG)	Runoff Volume To CSS (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)	Runoff Volume To River (MG)	Runoff Volume To CSS** (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)
Special Willets Point District¹						Existing			
						With Action (2028)			
						2,636,665 sf / 60.53 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.17
0.40	3.80	0.58	0.00	0.00	0.00	0.55	0.00	0.17	0.17
1.20	11.30	1.75	0.00	0.00	0.00	1.66	0.00	0.52	0.52
2.50	19.50	3.64	0.00	0.00	0.00	3.45	0.00	0.89	0.89
Willets West						Existing			
						With Action (2028)			
						1,471,205 sf / 33.77 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05
0.40	3.80	0.29	0.00	0.00	0.00	0.30	0.00	0.05	0.05
1.20	11.30	0.86	0.00	0.00	0.00	0.91	0.00	0.16	0.16
2.50	19.50	1.79	0.00	0.00	0.00	1.90	0.00	0.27	0.27
South Lot and Lot D						Existing			
						With Action (2028)			
						486,784 sf / 11.18 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	3.80	0.10	0.00	0.00	0.00	0.11	0.00	0.00	0.00
1.20	11.30	0.31	0.00	0.00	0.00	0.34	0.00	0.00	0.00
2.50	19.50	0.65	0.00	0.00	0.00	0.71	0.00	0.00	0.00
Lot B²						Existing			
						With Action (2028)			
						193,289 sf / 4.44 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	3.80	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00
1.20	11.30	0.12	0.00	0.00	0.00	0.12	0.00	0.00	0.00
2.50	19.50	0.24	0.00	0.00	0.00	0.24	0.00	0.00	0.00
Notes: CSS=Combined Sewer System MG=Million gallons									
¹ In the existing condition, sanitary flow from the District is conveyed to septic systems and is not conveyed to the combined sewer system.									
² No change in use or surface coverage between existing and 2028 No Action conditions.									

Willets Point Development

The calculations from the flow volume matrix determine the wastewater volumes to the downstream sewer system from the existing and With Action (Phase 1A and 1B) conditions. Runoff volumes are calculated for four rainfall volume scenarios with varying durations; all stormwater runoff would continue to be directly discharged to Flushing Bay. The increase in sanitary sewer discharge from the project site for the above rainfall volume-duration scenarios from the Phase 1A and 1B flows, in comparison to the existing condition range from:

- Special Willets Point District: 0.17 to 0.89 MGD
- Willets West: 0.05 to 0.27 MGD
- South Lot and Lot D: No change
- Lot B: No change

Like Phase 1A, Phase 1B would be consistent with the City's goal to reduce CSO events by requiring construction and maintenance of a separate storm and sanitary sewer system. The 2008 FGEIS found that there would be no increase in frequency of CSO events as a result of the Willets Point Development Plan, since CSOs primarily relate to stormwater inputs, which greatly exceed sanitary flow rates during storm events. As a result of this conclusion, it is anticipated that the sanitary flow from the proposed project in 2028, which would be less than projected in the 2008 FGEIS, would not affect the number of annual CSO events. In addition, water conservation measures and low-flow fixtures as required by New York City Plumbing Code (Local Law 33 of 2007) would be employed to minimize sanitary sewage flow to the existing combined sewer system. Stormwater runoff from the project site in 2028 would be treated in accordance with the project SWPPP, and conveyed to Flushing Bay through a separate storm sewer system in accordance with an ADP to be developed by QDG and approved by DEP.

PHASE 2 (2032)

By 2032, the Phase 2 of the proposed project would result in a total development of 2.65 million sf of retail use, 5.85 million sf of residential development (5,850 units; 16,497 total residents), 230,000 sf of school space; approximately 500,000 gsf of office; up to 400,000 gsf of convention center use; up to 560,000 gsf of hotel use (approximately 700 rooms); up to 150,000 gsf of community facility use; approximately 230,000 gsf of public school use; and a minimum of 8 acres of publicly-accessible open space. In addition, by 2032 Lot B is projected to be developed with 184,500 sf of retail use and 280,000 sf of office use.

As discussed previously, the project site is within the FEMA 100-year floodplain. FEMA and New York City Building Code flood resistant design requirements along with the special district zoning elevation requirements would need to be taken into consideration for the Phase 2 development. It is anticipated that prior to completion of the Phase 2 development, the site grades within the Phase 2 portion of the District would be raised to levels at or above the floodplain elevation. This change in grade may be achieved through the placement of fill and/or construction of structured platforms.

WATER SUPPLY

Proposed Improvements

For the District, consultation with DEP would be required to determine water supply requirements for Phase 2 of the proposed project. Additional internal water services would likely be required to support the proposed development in 2032.

Consultation with DEP would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required to support Phase 2 development, if not already constructed in a prior phase. Replacement of the water main may also be triggered by any substantive grade change over the main.

All existing streets in the District would be demapped before the construction of Phase 2. Any existing DEP water mains located within newly demapped streets would either be abandoned by the City and turned over to the property owner or would require the establishment of easements to allow for DEP access and maintenance.

No new development would occur in the Willets West area in Phase 2. For Willets West, water service would remain as constructed in Phase 1A.

No new development would occur on the South Lot or Lot D in Phase 2. Therefore, for this portion of the project site, water service would remain as constructed in Phase 1B.

For Lot B, no new water infrastructure would be required.

Water Demand

In the 2032 analysis year, the project would result in a demand for 2,066,285 gpd of water (see **Table 11-9**), which, when combined with demand from Phases 1A and 1B of the project, would be an increase of 4,331,181 gpd over the No Action condition.

Table 11-9
2032 Projected Water Demand

Proposed Use	Size		Rate	Phase 2 Consumption (gpd)	Overall (Phase 1A, 1B and 2) (gpd)
Residential	9,475 (people) ¹	Domestic	100 gpd/person	947,500	1,649,700
	3,360,000 sf	Air Conditioning	0.17 gpd/sf	571,200	994,500
Commercial/Office	405,000 sf	Domestic	0.10 gpd/sf	40,500	93,000
		Air Conditioning	0.17 gpd/sf	68,850	158,100
Retail	529,500 sf	Domestic	0.24 gpd/sf	127,080	680,280
		Air Conditioning	0.17 gpd/sf	90,015	481,865
Hotel ²	210 (rooms)	Domestic	120 gpd/occupant	50,400	168,000
	165,000 sf	Air Conditioning	0.17 gpd/sf	28,050	95,200
School	1,344 (seats)	Domestic	10 gpd/seat	13,440	23,400
	125,000 sf	Air Conditioning	0.17 gpd/sf	21,250	39,100
Convention Center ³	400,000 sf	Domestic	0.10 gpd/sf	40,000	40,000
		Air Conditioning	0.17 gpd/sf	68,000	68,000
Total	4,984,500 sf		NA	2,066,285	4,491,145
Total Compared to No Action				1,906,321	4,331,181
Notes: 1. The number of residents was calculated based on 3,360 units constructed in Phase 2, which is based on the average household size of 2.82 residents per unit in Queens. 2. Assumes 2 occupants per room. 3. No rate provided in <i>CEQR Technical Manual</i> for Convention Center therefore Commercial/Office rate was used. Source: Rates from 2012 <i>CEQR Technical Manual</i> .					

As stated above, the 2008 FGEIS projected a demand for water of 4.36 mgd. The water demand for the proposed project in 2032, at 4.49 mgd, would be a 3.0 percent increase over the projected FGEIS water demand; therefore, it is anticipated that the water supply system would have adequate capacity to accommodate the full build-out of the project site.

SANITARY SEWAGE

Proposed Improvements

For the District, new sanitary-sewer trunk mains are anticipated in Northern Boulevard, , 126th Street, Willets Point Boulevard, and Roosevelt Avenue consistent with the DEP-approved ADP. The current draft ADP shows the largest sewer to be 24-inch diameter DIP. An ADP specific to the proposed project would have to be developed and filed by the designated developer of Phase 2 and would need to reflect the latest street demapping. The entirety of the streets in the District would be demapped before Phase 2 construction; this demapping will be reflected in a revised ADP to be developed by QDG.

Sanitary flow would be collected locally and directed to the sewer-main network before eventually discharging to the 36-inch gravity-sewer connection at the intersection of 126th Street and the former 34th Avenue. This 36-inch sewer was sized to accept sanitary sewage from the full development of the District, as analyzed in the 2008 FGEIS.

No new development is proposed for the Willets West area in 2032. Therefore, for Willets West, sanitary sewerage would remain as constructed in Phase 1A.

No new development is proposed for the South Lot and Lot D in 2032. As per Phase 1B development, no sanitary sewerage would be provided for the South Lot and Lot D in Phase 2 because these sites would be developed as parking facilities.

For Lot B, a sanitary sewage connection would be made to the surrounding CitiField or Willets West on-site sanitary infrastructure.

Sanitary Sewage Generation

In 2032, the proposed development would generate 1,218,920 gpd of sanitary sewage, which, when combined with demand from Phases 1A and 1B, would result in 2,654,380 gpd and an increase of 2,591,613 gpd over the 2032 No Action condition.

Per the draft ADP, upgrades to the 37th Avenue pump station and its force main would be required for Phase 2. Specifically, the operating capacity of the 37th Avenue pump station (currently 3,450 gpm) would need to be upgraded to 8,400 gpm. If not upgraded to support Phase 1B, upgrades to the 24-inch sewer under the Grand Central Parkway, the 37th Avenue pump station and its associated downstream force main would be required and would be funded by the developer of Phase 2. These upgrades would be in conformance with the DEP approved ADP.

The 2008 FGEIS projected an increase of sanitary flow to the Bowery Bay WWTP of approximately 2.8 mgd; the sanitary sewage generation of the proposed project in 2032 would be lower than this number. The approximate sanitary sewage generated is slightly lower due to changes in CEQR methodology. The 2001 *CEQR Technical Manual* specified a rate of 112 gpd/person for residential uses; however, this rate was reduced to 100 gpd/person in the 2010 *CEQR Technical Manual*, which was the basis for Technical Memorandum #4 flow estimates, as well as the 2012 *CEQR Technical Manual*, which is the basis for flow calculations presented here.

STORMWATER

Proposed Improvements

For the District, the Phase 2 development would consist of a retail/residential community with hotels, offices, open spaces, and a convention center. Per the draft ADP, DEP storm sewers would be required in 126th and 127th Streets, with ancillary sewers required in Northern Boulevard, 34th Avenue, Willets Point Boulevard, and Roosevelt Avenue. Storm sewers would be reinforced concrete to meet DEP standards. An ADP specific to the proposed project would have to be developed and filed by the designated developer of Phase 2 and would need to reflect the latest street demapping.

Stormwater runoff would be collected locally, treated using NYSDEC-approved methods, and directed to the stormwater outfalls in Flushing Bay. The draft ADP addresses the need for two outfalls: one in 126th Street currently being constructed by the EDC and one in 127th Street. A 60-inch outfall would be required in 127th Street for Phase 2.

Similar to the 2008 FGEIS, stormwater detention and BMPs would be required and installed to meet DEP and NYSDEC regulations within the District. Stormwater management within the District would be implemented through the use of selected BMPs which could include:

- On-site detention facilities (roof detention, underground storage tanks or tanks within the buildings);
- Increased quantity, density, and diversity of trees;
- Sustainable irrigation and landscaping practices;
- Graywater recycling for individual building sites;
- Integration of vegetated swales;
- Green roofs;
- Inline pipe storage;
- Decorative wet ponds;
- Detention dry ponds;
- Proprietary pre-treatment structures (e.g., Stormceptor, Vortechinics);
- Bioengineered and structural practices to reduce and control runoff;
- Stormwater recycling facilities (reuse for toilet flushing, custodial work, landscape irrigation, and other uses to reduce demand for potable water);
- Optimized right-of-way drainage;
- Vegetated filters and buffer strips;
- Water quality inlets including oil and grit separators, media filters, and high-volume treatment proprietary devices;
- Surface, perimeter, and/or underground sand filters;
- Infiltration trenches, with under-drain and overflow to a control structure connection to a storm sewer;
- Bioretention-shallow swales, with under-drain and overflow to a control structure connection to a storm sewer; and
- Other low-impact, effective measures.

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The entirety of the streets in the District would be demapped before the construction of Phase 2; this demapping would be reflected in a revised ADP to be developed. Any existing DEP storm sewers present in newly demapped streets would be abandoned by the City and turned over to the property owner or would require the establishment of easements to allow for DEP access and maintenance. A SPDES permit would be obtained for any discharge to the Flushing Bay outfalls and a project SWPPP would be implemented.

No new development is proposed for the Willets West area in 2032. Therefore, for Willets West, the stormwater management system would remain as implemented in Phase 1A.

No new development is proposed for the South Lot or Lot D in 2032. Therefore, for South Lot and Lot D, the stormwater management system would remain as implemented in Phase 1B.

It is anticipated that stormwater runoff from Lot B would continue to be detained, treated, and directed to the 54-inch DEP storm sewer in 126th Street before being discharged into Flushing Bay via the 60-inch outfall on 126th, currently under construction.

Stormwater Calculation

Based on the proposed Phase 2 site plan, the proposed surface coverages and weighted runoff coefficients for each site is included in **Table 11-10**. For the roof courtyard area it is assumed that the area will be comprised of 50 percent pervious surfaces (due to plants/grass in the courtyard) and 50 percent impervious surfaces resulting in a weighted runoff coefficient of 0.76 for the roof courtyard.

Table 11-10
2032 Proposed Surface Coverage

Site	Surface Type	Surface Areas (sf)	Percent Coverage	Discharge Method	Weighted Runoff Coefficient	Existing Weighted Runoff Coefficient	Incremental Change in Runoff Coefficient
Special Willets Point District	Building Roofs	1,233,909	47%	Separate Sewer			
	Paved Surfaces	963,096	37%	Separate Sewer			
	Roof Courtyard Area	169,991	6%	Separate Sewer/Infiltration			
	Grass/Softscape	269,669	10%	Separate Sewer/Infiltration			
	Total	2,636,665	100%		0.85	0.89	-0.04
Willets West	Building Roofs	709,200	48%	Separate Sewer			
	Paved Surfaces	553,935	38%	Separate Sewer			
	Grass/Softscape	208,069	14%	Separate Sewer/Infiltration			
	Total	1,471,204	100%		0.83	0.78	+0.05
South Lot and Lot D	Building Roofs	268,771	55%	Separate Sewer			
	Paved Surfaces	218,013	45%	Separate Sewer			
	Total	486,784	100%		0.93	0.85	+0.08
Lot B	Building Roofs	118,207	61%	Separate Sewer			
	Paved Surfaces	44,587	23%	Separate Sewer			
	Grass/Softscape	30,495	16%	Separate Sewer/Infiltration			
	Total	193,289	100%		0.84	0.81	+0.03
Sources: Langan.							

COMBINED SEWER OVERFLOWS

The DEP Flow Volume Calculation Matrix was completed for the existing and overall (Phase 1A, 1B and 2) conditions and is summarized in **Table 11-11**.

Table 11-11
DEP Flow Volume Matrix:
2032 Existing and With-Action Volume Comparison

Rainfall Volume (in.)	Rainfall Duration (hr.)	Runoff Volume Direct Drainage (MG)	Runoff Volume To CSS (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)	Runoff Volume To River (MG)	Runoff Volume To CSS (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)
Special Willets Point District¹		Existing				With Action (2032)			
		2,636,665 sf / 60.53 Acres				2,636,665 sf / 60.53 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36
0.40	3.80	0.58	0.00	0.00	0.00	0.56	0.00	0.36	0.36
1.20	11.30	1.75	0.00	0.00	0.00	1.67	0.00	1.06	1.06
2.50	19.50	3.64	0.00	0.00	0.00	3.48	0.00	1.82	1.82
Willets West		Existing				With Action (2032)			
		1,471,205 sf / 33.77 Acres				1,471,205 sf / 33.77 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05
0.40	3.80	0.29	0.00	0.00	0.00	0.30	0.00	0.05	0.05
1.20	11.30	0.86	0.00	0.00	0.00	0.91	0.00	0.16	0.16
2.50	19.50	1.79	0.00	0.00	0.00	1.90	0.00	0.27	0.27
South Lot and Lot D		Existing				With Action (2032)			
		486,784 sf / 11.18 Acres				486,784 sf / 11.18 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	3.80	0.10	0.00	0.00	0.00	0.11	0.00	0.00	0.00
1.20	11.30	0.31	0.00	0.00	0.00	0.34	0.00	0.00	0.00
2.50	19.50	0.65	0.00	0.00	0.00	0.71	0.00	0.00	0.00
Lot B		Existing				With Action (2032)			
		193,289 sf / 4.44 Acres				193,289 sf / 4.44 Acres			
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
0.40	3.80	0.04	0.00	0.00	0.00	0.04	0.00	0.01	0.01
1.20	11.30	0.12	0.00	0.00	0.00	0.12	0.00	0.03	0.03
2.50	19.50	0.24	0.00	0.00	0.00	0.24	0.00	0.06	0.06
Notes: ¹ In the existing condition, sanitary flow from the District is conveyed to septic systems and is not conveyed to the combined sewer system. CSS=combined sewer system; MG=million gallons									

The calculations from the flow volume matrix determine the wastewater volumes to the downstream sewer system from the existing and With Action (Phase 1A, 1B and 2) conditions. Runoff volumes are calculated for four rainfall volume scenarios with varying durations; all stormwater runoff would continue to be directly discharged to Flushing Bay. The increase in sanitary sewer discharge from the project site for the above rainfall volume-duration scenarios from the overall cumulative flows, in comparison to the existing condition range from:

- Special Willets Point District: 0.36 to 1.82 MGD
- Willets West: 0.05 to 0.27 MGD
- South Lot and Lot D: No change
- Lot B: 0.01 to 0.06 MGD

Phase 2 of the proposed project would be consistent with the City's goal to reduce CSO events by requiring construction and maintenance of a separate storm and sanitary sewer system. The 2008 FGEIS found that there would be no significant increase in frequency or volume of CSO events as a result of the Willets Point Development Plan, since CSOs primarily relate to stormwater inputs, which greatly exceed sanitary flow rates during storm events. As a result of this conclusion, it is anticipated that the sanitary flow from the RWCDs, which would be less than projected in the 2008 FGEIS, would not significantly affect the number of annual CSO events. In addition, water conservation measures and low-flow fixtures as required by New York

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City Plumbing Code (Local Law 33 of 2007) would be employed to minimize sanitary sewage flow to the existing combined sewer system. Stormwater runoff from the project site during all phases of the RWCDS would be treated in accordance with the project SWPPP, and conveyed to Flushing Bay through a separate storm sewer system in accordance with an ADP that would be developed by QDG and approved by DEP. *

A. INTRODUCTION

This chapter describes existing and future New York City solid waste disposal practices, and assesses the impacts of the reasonable worst-case development scenario's (RWCDS) solid waste generation on the City's collection needs and disposal capacity in comparison to the conclusions of the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda. The proposed project's consistency with the City's Solid Waste Management Plan is also assessed.

PRINCIPAL CONCLUSIONS

This analysis finds that the RWCDS would not result in significant adverse impacts to solid waste and sanitation that were not addressed in the 2008 FGEIS or subsequent technical memoranda.

While the RWCDS would create new demands on solid waste and sanitation services, the municipal systems serving the project site area have adequate capacity to meet the projected increases in demand. The New York City Department of Sanitation (DSNY), which collects solid waste and recyclables, is anticipated to provide municipal solid waste and sanitation services to the District. Private carters currently and will continue to provide these services to non-residential users. The RWCDS would cumulatively increase the volumes of solid waste and recyclables, but would not affect the delivery of these services, nor place a significant burden on the City's solid waste management services (public or private) or require any amendments to the City's solid waste management objectives as stated in the SWMP. As disclosed in the 2008 FGEIS, the RWCDS would displace waste transfer businesses from the District by 2032, but this displacement would not have a significant adverse impact on the waste and sanitation services in Queens or in New York City.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS concluded that, although the Willets Point Development Plan and anticipated development on Lots B and D would cumulatively increase the volumes of solid waste and recyclables, but would not affect the delivery of these services, nor place a significant burden on the City's solid waste management services (public or private). The 2008 FGEIS noted that the Willets Point Development Plan would displace two waste transfer businesses from the District, but that this displacement would not have a significant adverse impact on waste and sanitation services in Queens or in New York City. Therefore, the 2008 FGEIS concluded that no significant adverse impacts on solid waste and sanitation services would result from the Willets Point Development Plan and the anticipated development on Lots B and D. Subsequent technical memoranda approved on September 23, 2008, November 13, 2008, November 18, 2009, and

February 10, 2011 also concluded that proposed revisions to the Willets Point Development Plan would not have significant adverse impacts on solid waste and sanitation services.

C. METHODOLOGY

According to the 2012 *CEQR Technical Manual*, a solid waste and sanitation services assessment should be conducted if a project would generate solid waste or enacts regulatory changes affecting the management of the City's waste, or if the action involves the construction, operation, or closing of any type of solid waste management facility. The manual also states that projects with a generation rate of less than 100,000 pounds per week are not considered large and do not warrant detailed analysis.

To assess the potential impacts on solid waste and sanitation services from the RWCDs, this chapter:

- Describes the existing solid waste management services in the project site area, and using solid waste generation rates for typical land uses and activities provided in the 2012 *CEQR Technical Manual*, assesses current levels of solid waste generation for all portions of the project site (Willets West, the Special Willets Point District, and the Roosevelt Avenue parking areas) as well as Lot B;
- Assesses the effect of the potential displacement of one existing waste transfer business in the District;
- Determines future solid waste demands with the RWCDs; and
- Assesses the effects of this incremental demand on municipal and private sanitation services.

D. EXISTING CONDITIONS

SANITATION SERVICES

In the City of New York, residential and institutional refuse is handled by DSNY, while solid waste from commercial and manufacturing uses is collected by private carters.

Commercial carters pick up solid waste from businesses, manufacturers, and offices and take the waste materials to transfer stations where the recyclable materials are separated from the solid waste. The solid waste is consolidated into larger trucks for transport and disposal in landfills outside of New York City. The recyclable materials are sold and transported to manufacturing facilities. Private carters handle about 14,830 tons per week of recyclables and solid waste. In addition, private carters handle about 19,070 tons per day (tpd) of construction debris and excavated materials.¹ DSNY collects approximately 16,500 tpd of refuse and recyclables, of which approximately 5,000 tons are recycled.

The City's solid waste management services are undertaken in accordance with the existing Solid Waste Management Plan (SWMP) (September 2006), which is the responsibility of DSNY. The existing SWMP, which modified the City's previously approved 1992 plan (as amended in 1996 and 2000), was approved for submission to the New York State Department of Environmental Conservation (NYSDEC) by a resolution of the City Council on July 19, 2006.

¹ The DSNY SWMP anticipates and provides for a projected increase in solid waste generation citywide over the 20-year plan period as a result of population growth and non-specific development. By 2020, the SWMP anticipates a daily increase of 2,145 tons, or 12.7 percent.

The City adopted the existing plan on July 27, 2006. The SWMP was approved by NYSDEC in a letter received by DSNY on October 27, 2006.

The SWMP establishes a hierarchy of preferred solid waste management methods to reduce and process solid waste generated within the City. The objectives of the SWMP are, in order of importance: waste minimization; reuse, recycling, or composting; and export for out-of-city disposal. The SWMP mandates that solid waste be transferred to solid waste management facilities located in each borough, including special (hazardous materials) waste collection sites, composting facilities, and bulk residential waste sites. Local Law 19 of 1989 requires that DSNY and private carters collect recyclable materials and deliver them to material recovery facilities. New York City residents are required to separate aluminum foil, glass, plastic, and metal containers, and newspapers and other paper wastes from household waste for separate collection. Under the law, commercial establishments are also subject to recycling requirements. Businesses must source-separate certain types of paper wastes, cardboard, metal items, and construction wastes. Food and beverage establishments must recycle metal, glass, and plastic containers, and aluminum foil, in addition to meeting the commercial recycling requirements.

The new SWMP includes a Long Term Export Program for residential waste. The City's Long Term Export Program is anticipated to be implemented through: the development of four converted marine transfer stations; the award of up to five contracts with private transfer stations for barge or rail export of DSNY-managed waste for disposal; and an intergovernmental agreement to dispose of a portion of Manhattan's DSNY-managed waste at a Port Authority waste-to-energy facility in New Jersey. The new SWMP includes the use of up to nine converted marine transfer station (MTS) facilities and private transfer stations within the five boroughs at which solid waste will be consolidated, containerized, and barged or railed out of the City. The barges used at MTS facilities would transport sealed intermodal containers capable of being transported on barge or rail. The four converted MTS facilities would be designed to each process at least 4,290 tpd and accommodate 30 collection vehicles per hour. In the interim, pending implementation of each Long Term Export Program element, DSNY-managed municipal solid waste would be trucked out of the City.¹

The new SWMP also proposes three broad categories of action to address traffic issues associated with commercial waste handling as follows: improve conditions at and around transfer stations; facilitate a transition from a network heavily reliant on trucks to one that relies primarily on barge and rail; and redistribute private transfer capacity from a small number of communities that have the largest proportion of the system's impacts.

SOLID WASTE GENERATION

The District portion of the project site currently has a number of active uses that generate solid waste. Waste generated by the single existing occupied dwelling unit in the District is assumed to be negligible. The solid waste generated by the portions of the project site currently used for parking—Willets West, South Lot, and Lot D—as well as Lot B, which is also currently used for parking, is assumed to be minimal and therefore has not been included in the calculations provided below.

Table 14-1 of the *CEQR Technical Manual* provides solid waste generation rates for various categories of land use. These rates were utilized in this analysis. Table 14-1 provides generation

¹ DSNY, *Comprehensive Solid Waste Management Plan*, September 2006.

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rates for two categories of industrial uses. The average of the two rates, estimated at 183 pounds per week per employee, is utilized in this analysis as representative of construction, manufacturing, and auto uses (not including auto wholesale and auto retail). The waste generated by waste management and remediation businesses was assumed to be the waste generated by employees and was approximated with the office use solid waste generation rate of 13 pounds per week per employee.

Based on these assumptions, the project site's current uses generate a total of approximately 165,310 pounds (about 12 tpd) of solid waste per week (see **Table 12-1**). These private business uses are served by commercial solid waste and recycling management companies.

Table 12-1
Existing Solid Waste Generation in the Project Site

Existing Use	Number of Businesses	Number of Employees	Solid Waste Rate lbs/wk/employee	Total lbs/week
Auto Businesses (not including wholesale and retail)	158	469	183 ¹	85,827
Construction	6	147	183 ¹	26,901
Manufacturing	5	72	183 ¹	13,176
Wholesale Trade (including auto wholesale)	11	265	66	17,490
Retail Trade (including auto retail)	31	210	79	16,590
Administrative & Support, Waste Management and Remediation ²	5	178	13	2,314
Accommodation and Food	4	12	251	3,012
Total				165,310
Notes: ¹ Assumed to be the average of two industrial use generation rates in the 2012 <i>CEQR Technical Manual</i> . ² Assumed that the only waste generated by the waste management businesses was that of employees, approximated with the office use generation rate from the <i>CEQR Technical Manual</i> . ³ Based on the general retail use waste generation rate from the <i>CEQR Technical Manual</i> .				

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

As described in Chapter 1, "Project Description," for the purposes of a conservative analysis, the RWCDS for this EIS assumes that no changes to land use occur on the project site by 2032. Thus, no changes with respect to solid waste generation from the project site are expected to occur by 2032. As described in Chapter 2, "Land Use, Zoning, and Public Policy," a number of development projects are anticipated to be constructed in the surrounding area by 2032. There would also be some changes in the City's waste management services. The existing North Shore MTS, which serves the project site, has been demolished, and a new MTS is under construction on the same site in College Point. The new MTS is expected to be completed in the near future, by June 2013. The new MTS will receive and allow for containerization of solid waste. Containerized solid waste will then be exported from the new MTS by barge. The new MTS will have the capacity to handle up to 3,672 tpd of solid waste under normal conditions. Under upset conditions as a result of an event that reduces processing capacity of one or more elements of DSNY's waste management system—such as fire or equipment outages—thereby requiring a temporary reallocation of municipal solid waste from other wastesheds to this transfer station for a period of a few days duration, allowable capacity of the new MTS will be 4,290 tpd of solid waste. In the event of a public emergency event affecting the entire or large part of DSNY's waste management system, thereby requiring DSNY—acting on the basis of protecting the public health—to use the maximum design capacity of the North Shore MTS, 5,280 tpd of solid

waste will be allowed. However, the average daily throughput is expected to be 2,200 tons of DSNY waste and 1,000 tons of commercial waste.¹

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

RWCDS

Consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the RWCDS is anticipated to result in the displacement of two waste transfer businesses currently operating in the District (Tully Environmental and Crown Container). It is anticipated that the businesses would be able to continue operations through Phases 1A and 1B, but would be displaced upon completion of Phase 2 of the proposed project. Crown Container is authorized to process construction and demolition debris. The permitted capacity of Crown Container is small, and the waste generated at that facility could be absorbed at other facilities in Queens or other boroughs. Tully Environmental currently processes putrescible municipal (DSNY) waste under a contract with the City, and is permitted to handle up to 1,375 tpd.² The North Shore MTS, when completed, will have the capacity to process the municipal waste currently handled by Tully. Until it is displaced by Phase 2, Tully could still maintain handling of waste generated by the private sector, per its permitted capacity.

The proposed project would place additional demands on the solid waste and sanitation services in the area. To determine future solid waste volumes, solid waste generation rates from the 2012 *CEQR Technical Manual* and from published environmental impact statements were applied to the RWCDS. **Table 12-2** presents the cumulative solid waste volumes expected under the RWCDS using these assumptions. As shown in the table, it is estimated that the RWCDS would generate approximately 924,486 pounds of solid waste per week (66 tpd) in 2032.³ This daily demand would result in a 54 tpd increase in 2032 over the existing demand and is the equivalent of 0.4 percent of the total amount of solid waste currently handled each day in New York City. This is not a significant increase in the City's solid waste stream.

While most of the existing solid waste generated by the project site is from non-residential uses and is therefore collected by private carting companies, in 2032 an estimated 251,589 pounds (18 tpd) per week of solid waste generated by the proposed project would be from residential, school, and community facility uses. This residential and public solid waste would be collected by DSNY. According to the 2012 *CEQR Technical Manual* guidelines, the typical DSNY collection truck has a capacity of 12.5 tons. Therefore, the proposed project would be expected to generate solid waste for DSNY collection that would require up to two added truckloads per day in 2032. This is not a significant impact on solid waste services for DSNY.

¹ North Shore Marine Transfer Station Waste Containerization Facility Part 360 Permit Application, January 2007.

² <http://www.tullyconstruction.com/company/affiliates/> (October 2012).

³ The solid waste generated by the portions of the project site currently used for parking—Willets West, South Lot, and Lot D—as well as Lot B, which is also currently used for parking, is assumed to be minimal and therefore has not been included in the calculations in Table 12-2.

Table 12-2
Solid Waste Generation of the RWCDS in 2032

Use	Size (gsf)	Individuals	Solid Waste Rates (lbs/week)	Total (lbs/week)
Residential	5,850,000 (5,850 units)	16,029 residents ¹	41 per resident	239,850
Retail	2,834,500	7,086 employees	79 per employee	559,814
Office	780,000	3,120 employees	13 per employee	40,560
Convention Center	400,000	160 employees	13 per employee ²	2,080
Hotel	560,000 (625 rooms)	259 employees	75 per employee	19,444
Community Facility	150,000	150 employees	13 per employee ³	1,950
School	230,000 (2,340 seats)	2,340 pupils 213 employees	3 per pupil 13 per employee	9,789
Total				873,487
Lot B Retail	184,500	461 employees	79 per employee	36,439
Lot B Commercial	280,000	1,120 employees	13 per employee	14,560
RWCDS⁴				924,486
Notes: ¹ Based on the average household size of 2.74 for Community District 7 in 2010 Census data. ² Based on solid waste generation rate used in the <i>Atlantic Yards Arena and Redevelopment Project FEIS</i> . ³ Based on the solid waste generation rate used in the <i>West Harlem Rezoning and Academic Mixed-Use Development FEIS</i> . ⁴ As discussed in Chapter 1, "Project Description," the RWCDS includes the potential future development on Lot B as analyzed in the 2008 FGEIS, as well as the proposed project.				

The non-residential solid waste (retail, office, convention center, and hotel uses) would be collected by private contractors. The total amount of this waste would be 672,897 pounds (48 tpd) per week in 2032. Given that the typical collection truck averages a 12.5-ton capacity, the RWCDS would require up to four private contractor truckloads per day. This is not a significant increase in demand and would be met by private-sector response to the increase in service needs.

In summary, this analysis finds that the RWCDS would not result in any significant adverse impacts related to solid waste and sanitation that were not addressed in the 2008 FGEIS and subsequent technical memoranda. Additionally, the proposed project would not conflict with or require any amendments to the City's solid waste management objectives as stated in the SWMP. *

A. INTRODUCTION

This chapter discusses the energy demand and energy efficiency measures anticipated with the reasonable worst-case development scenario (RWCDS), and assesses whether the RWCDS would result in any significant adverse impacts on energy transmission and generation that were not addressed in the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda.

PRINCIPAL CONCLUSIONS

Consistent with the findings of the 2008 FGEIS and subsequent technical memoranda, this analysis concludes that the proposed project would not result in significant adverse impacts on energy demand and infrastructure. The cumulative annual energy consumption that would result from the RWCDS, including the potential future development on Lot B, would be 1,952,503 million British thermal units (BTUs). Phase 1A and 1B are subject to Local Law 86 of 2005 (see New York City Charter section 224.1) and the project sponsor would comply with the requirements thereof. To the extent Local Law 86 of 2005 applies to any portion of Phase 2, the City would further ensure that the sponsor for Phase 2 complies with the requirements thereof. Accordingly, in Phase 1A, the retail buildings, including the proposed development on the Willets West site, will be designed and constructed to achieve Leadership in Energy and Environmental Design (LEED) silver certification for core and shell (LEED-CS), and the hotel building will be designed and constructed to achieve LEED silver certification for new construction (LEED-NC). In Phases 1B and 2, as set forth in the FGEIS and reiterated in Technical Memorandum #4, all portions of the project within the Willets Point Special District will be required to achieve LEED for neighborhood development (LEED-ND) certification. Phase 1B buildings will also comply with all the applicable requirements of Local Law 86 of 2005. Specifically, retail, hotel, community facility and office buildings will be designed and constructed to achieve LEED silver certification pursuant to the LEED rating system that is most appropriate under Local Law 86 (see Section 10-02 of chapter 10 of title 43 of the Rules of the City of New York). To meet the requirements of LEED and the energy cost reduction requirements of Local Law 86 of 2005 that are applicable to the project under NYC Charter section 224.1(b)(2)(ii), energy efficiency measures would be incorporated into building designs, as described in this chapter. The requirements of Local Law 86 of 2005 and the commitments set forth in this chapter would be incorporated into the development agreements and/or amended lease agreements. The provisions of the development agreements and/or amended lease agreements, relating to substance and enforceability of these commitments, would be subject to approval by Mayor's Office of Environmental Coordination.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The annual energy consumption projected in the 2008 FGEIS for the development proposed within the Special Willels Point District and the anticipated potential future development on Lots B and D was 1,176,686 million BTUs. To account for the 2010 revisions of the *City Environmental Quality Review (CEQR) Technical Manual*, Technical Memorandum #4 (TM4) projected the annual energy consumption for these same uses, with the updated energy consumption rates. With the updated rates, the annual energy consumption was projected to be 1,576,095 million BTUs. Although a number of energy efficiency and sustainability measures to reduce energy consumption were proposed in the 2008 FGEIS, the beneficial effect of these measures was not quantified.

C. METHODOLOGY

As discussed below, this chapter:

- Presents data on the existing energy distribution system and estimated energy usage for existing conditions;
- Determines future energy demands with the RWCDS for each development phase, using energy consumption rates for typical land uses provided in the 2012 *CEQR Technical Manual* and the 2001 *CEQR Technical Manual* energy consumption rate for parking (for which a consumption rate is not available in the 2012 *CEQR Technical Manual*).
- Assesses the effect of this incremental energy demand on the local distribution system and regional energy supplies; and
- Describes features that may be incorporated into the project design for the purposes of minimizing project demands on energy infrastructure and services.

D. EXISTING CONDITIONS

ENERGY SUPPLY AND TRANSMISSION

Within New York City, electricity is generated and delivered to most users by Consolidated Edison (Con Edison) as well as a number of independent power companies. Electrical energy in New York City is drawn from a variety of sources that originate both within and outside the City. These include non-renewable sources, such as oil, natural gas, and coal fuel; and renewable sources, such as hydroelectricity and, to a much lesser extent, biomass fuels, solar power, and wind power. Electricity consumed in New York City is generated in various locations, including sites within New York City, locations across the Northeast, and places as far away as Canada.

Con Edison distributes power throughout the City and Westchester County. Transmission substations receive electricity from the regional high voltage transmission system and reduce the voltage to a level that can be delivered to area substations. Area substations further reduce the voltage to a level that can be delivered to the distribution system, or the street “grid.” Within the grid, voltage is further reduced for delivery to customers.

In 2011, approximately 58 billion kilowatt hours (KWH), or 198 trillion BTUs were delivered in Con Edison’s service area. In addition, Con Edison supplied approximately 129 trillion BTUs of natural gas and approximately 22 billion pounds of steam, which is equivalent to approximately

26 trillion BTUs.¹ Overall, approximately 353 trillion BTUs of energy are consumed within Con Edison's New York City and Westchester County service area annually.

According to the Con Edison *2011 Annual Report*, the peak electrical demand for New York City in summer 2010 was 13,189 megawatts (MW). Typically, electricity generated within the City is sufficient to satisfy demand. However, during the summer peak demand period, this electricity is often supplemented by the Northeast transmission grid. As a result, there is an ongoing service and distribution improvement program for infrastructure that upgrades high demand zones.

ENERGY INITIATIVES

The New York State Energy Planning Board was created by a 2009 law that calls on the Board to complete a new State Energy Plan on or before March 15, 2013. The State Energy Plan will focus on reliably meeting projected future energy demands, while balancing economic development, climate change, environmental quality, health, safety and welfare, transportation, and consumer energy cost objectives. New York State also has goals to reduce electricity consumption by 15 percent and to provide 30 percent of the electricity used in the state from renewable resources by 2015.

In New York City, one of the nation's first green building laws was adopted in 2005 (Local Law 86). Local Law 86 of 2005 requires new buildings, additions, and substantial building reconstruction work in capital projects that receive city funds to be built in accordance with the rigorous standards of the LEED® green building rating systems developed by the U.S. Green Building Council (USGBC). It also requires that most of this work, as well as larger lighting, boiler, HVAC controls, and plumbing upgrade work, be designed to reduce the use of both energy and potable water well beyond that required by the current NYC building code.

Additionally, in New York City, the Greener, Greater Building Plan program was implemented through local legislation to target energy efficiency in large existing buildings. The program consists of four local laws that require that large buildings annually benchmark their energy performance (Local Law 84 of 2009); that a local energy code be adopted (Local Law 85 of 2009); that every 10 years these buildings conduct an energy audit and retro-commissioning (Local Law 87 of 2009); and that by 2025, the lighting in non-residential spaces be upgraded to meet code and large commercial tenants be provided with sub-meters (Local Law 88 of 2009). Together, these initiatives would help improve energy efficiency and reduce energy consumption.

EXISTING DEMAND

To estimate the existing annual energy consumption for the project site, the following rates (in 1,000 BTU per square foot), provided in Table 15-1 of the *2012 CEQR Technical Manual*, were used:

- **Commercial** (Office, Retail, and Other, including miscellaneous auto uses, a residence, a deli, and a private club): 216.3; and
- **Industrial** (storage, recycling uses, non-retail auto uses, transportation, consumption, distribution and manufacturing): 554.3.

¹ Consolidated Edison Annual Report, 2011.

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As no consumption rate is listed for parking garages in the 2012 *CEQR Technical Manual*, a rate of 27,400 BTU per square foot was used based on 2001 *CEQR Technical Manual* Table 3N-1.

Based on these rates, current annual energy use for the project site is estimated to be approximately 211,633 million BTUs, as shown in **Table 13-1**.

Table 13-1
Existing Annual Energy Consumption
for the Project Site

Existing Use	Square Feet (sf)	Million BTU
Office	69,293	14,988
Industrial	228,214	126,499
Retail	46,230	10,000
Parking Garage	262,019	7,179
Other	244,879	52,967
Total		211,633
Sources: New York City Department of Finance Real Property Assessment Database (RPAD) 2012 and business information provided by the New York City Economic Development Corporation for the floor area by use group.		

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

Without the proposed project, it is conservatively assumed that the uses currently within the project site would remain, although it is possible that within the District, some properties that are currently vacant would be reused and that some limited development could occur. Therefore, in the future without the proposed project, it is assumed that the project site's energy demand would be consistent with existing conditions. The peak summer demand is projected to grow at an annual rate of 0.84 percent until 2021. While projections beyond 2021 are not available at this time, it is likely that the rate of demand growth would continue to increase, as population grows. To some extent, the demand growth would be slowed down by increases in energy efficiency. It is expected that measures will be taken to provide adequate electrical capacity to the New York City metropolitan area through 2032 and beyond. It is also assumed that Con Edison would continue to implement its electrical distribution improvement programs in Queens. In the future, it is expected that the existing trend toward sustainability would lead to greater energy efficiency in the City.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

To provide the energy service needed for the RWCDs to the project site, upgrades to electrical and gas transmission lines and additional facilities serving the area would be needed. Within the Special Willets Point District and adjoining streets, gas mains, service lines, and metering would need to be reconstructed as part of the proposed project. Improvements to the local distribution grid would also be required, and coordination with Con Edison is under way to determine the nature and timing of the needed improvements. The District's zoning regulations allow for the provision of a new cogeneration facility and/or substation within that portion of the project site, provided they would primarily serve the District. Such facilities are not currently proposed as part of Phases 1A and 1B but may be included as part of Phase 2. Any such facilities, if proposed or needed at a future time, would require further study and additional approvals. Such

studies would require information on the facility location, size, and design that is not presently available. If proposed as part of Phase 2, these uses would be subject to separate environmental and public review processes.

As described in the 2008 FGEIS, the Willets Point Development Plan had been accepted as a pilot LEED-ND project by USGBC. Phase 1A and 1B are subject to Local Law 86 of 2005 (see New York City Charter section 224.1) and the project sponsor would comply with the requirements thereof. To the extent Local Law 86 of 2005 applies to any portion of Phase 2, the City would further ensure that the sponsor for Phase 2 complies with the requirements thereof. Accordingly, in Phase 1A, the retail buildings, including the proposed development on the Willets West site, will be designed and constructed to achieve LEED silver certification for core and shell (LEED-CS), and the hotel building will be designed and constructed to achieve LEED silver certification for new construction (LEED-NC). In Phases 1B and 2, as set forth in the FGEIS and reiterated in Technical Memorandum #4, all portions of the project within the Willets Point Special District will be required to achieve LEED for Neighborhood Development (LEED-ND) certification. Phase 1B buildings will also comply with all the applicable requirements of Local Law 86 of 2005. Specifically, retail, hotel, community facility and office buildings will be designed and constructed to achieve LEED silver certification pursuant to the LEED rating system that is most appropriate under Local Law 86 (see Section 10-02 of chapter 10 of title 43 of the Rules of the City of New York). The requirements of Local Law 86 of 2005 and the commitments set forth in this chapter would be incorporated into the development agreements and/or amended lease agreements. The provisions of the development agreements and/or amended lease agreements, relating to substance and enforceability of these commitments, would be subject to approval by the Mayor's Office of Environmental Coordination. To meet the requirements of LEED and the energy cost reduction requirements of Local Law 86 of 2005 a number of features that would lead to energy savings would be considered. The following measures would likely be included or considered, on a building-by-building basis: building orientation to minimize energy use; energy efficient building envelope to reduce heating and cooling demand; high efficiency heating, ventilation and air conditioning (HVAC) systems; highly reflecting roofing materials that would reduce air conditioning needs in the summer and help mitigate the urban heat island effect¹; window glazing to optimize daylighting, heat loss and solar heat gain; motion sensors and lighting and climate controls; efficient lighting and elevators, and appliances; efficient, directed exterior lighting; and third party building commissioning to ensure energy performance.

In addition, the proposed school in the District would be built according to the New York City School Construction Authority's *New York City Green Schools Guide*, as revised in May 2009. The *Green Schools Guide* addresses the sustainable design, construction, and operation of new schools, modernizing projects, and school renovations in New York City.

The specific energy-saving and sustainable design measures that would be implemented as part of the development that would occur in Phase 2, or on Lot B, would be defined at the time when the developer for those areas is selected. It is expected that the measures would be similar to

¹ The urban heat island effect refers to the temperature difference between urban areas and surrounding suburban or rural areas. Much of this temperature difference is attributed to the prevalence of dark roofs and dark colored pavement, which absorb more heat than lighter surfaces, as well as the declining presence of vegetation in cities.

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those described above for Phases 1A and 1B. Any future development on Lot B, which is under lease to the Queens Baseball Company (QBC), would require an amendment to the current lease agreement and discretionary approval by the New York City Industrial Development Agency (IDA), acting through the New York City Department of Parks and Recreation (DPR), which administers the IDA lease. This action would be the subject of a separate environmental review process subject to CEQR. Based on the anticipated size of the potential future development on Lot B, it is likely that a determination of consistency with PlaNYC would be required in this separate environmental review process. The demonstration of consistency with PlaNYC would require implementation of sustainable design measures that are likely to be similar to those for the proposed project.

Although the proposed project would implement the sustainable design measures discussed above, for the purposes of a conservative analysis the resulting energy savings were not accounted for in the calculation of energy demand.

ENERGY DEMAND WITH THE PROPOSED PROJECT

The annual energy consumption was projected for each project phase, use type, and location (i.e. Special Willeys Point District, Willeys West, and South Lot/Lot D), as well as for Lot B. The following energy consumption rates (in 1,000 BTU per square foot) from 2012 *CEQR Technical Manual* Table 15-1 were used:

- **Commercial** (Retail, Hotel, Community Facility, Office, Convention Center): 216.3;
- **Institutional** (School): 250.7; and
- **Large Residential** (Residential): 126.7.

For parking uses, as described under “Existing Conditions,” a factor of 27,400 BTU per square foot was used (based on 2001 *CEQR Technical Manual* Table 3N-1). It was assumed that the proposed parking facilities would average 340 sf per parking spot, consistent with the assumption made in the 2008 FGEIS.

As shown in **Table 13-2**, the proposed project’s energy demand in 2032 would be approximately 1,846,461 million BTUs. The energy demand of the RWCDS in 2032 (including the potential development of Lot B) would be approximately 1,952,503 million BTUs. Coordination with the utilities is underway to ensure that the needed infrastructure to supply the projected demand would be in place to serve the development in each project phase.

The improvements in local connections that are necessary to provide energy services to the proposed project would not adversely impact the local system. Therefore, the RWCDS would not have any significant adverse impacts on energy systems. In addition, as described above, the proposed project would include a number of energy conservation measures, which would decrease the overall energy demand presented above.

In summary, this analysis finds that the RWCDS would not result in any significant adverse impacts related to energy that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

Table 13-2
Annual Energy Consumption for RWCDs, by Phase

Use	Project Area	Phase 1A (2018)	Phase 1B (2028)	Phase 2 (2032)	Totals by Use
Retail	SWPD	6,489	189,263	74,624	270,375
	WW	302,820	0	0	302,820
Hotel	SWPD	34,608	50,831	35,690	121,128
Residential	SWPD	0	315,483	425,712	741,195
Parking	SWPD	25,386	24,455	37,264	87,105
	WW	3,726	0	0	3,726
	Lot D/South Lot	9,949	25,386	0	35,336
School	SWPD	0	26,324	31,338	57,661
Community Facility	SWPD	0	5,408	27,038	32,445
Office	SWPD	0	108,150	0	108,150
Convention Center	SWPD	0	0	86,520	86,520
Proposed Project Total	All	382,979	745,298	718,184	1,846,461
Retail	Lot B	0	0	39,907	39,907
Office	Lot B	0	0	60,564	60,564
Parking	Lot B	0	0	5,571	5,571
RWCDS Total¹	All	382,979	745,298	824,226	1,952,503
Notes: All figures above shown in million BTUs. Until completion of Phase 2, some of the existing uses within the District may remain. The energy use for existing businesses during Phase 1A/1B would be lower than the total energy for existing uses shown in Table 13-1 . SWPD = Special Willets Point District WW = Willets West ¹ The RWCDs includes the potential future development on Lot B as analyzed in the 2008 FGEIS.					

*

A. INTRODUCTION

This chapter assesses whether any changed background conditions or the differences between the reasonable worst-case development scenario (RWCDS) and the program assessed in the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda would result in any significant adverse impacts on transportation that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

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

The proposed project, with its mix of uses, would replace the existing approximately 4,100-space surface parking lot adjacent to the west side of CitiField and lower-density uses currently within the District and, thus, would generate significantly more traffic on the adjacent local street and highway network. This would be developed over the course of three continuous phases: Phase 1A; Phase 1B; and Phase 2. In addition, the demapping and subsequent reconstruction 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 between Phases 1A and 1B, would further modify travel patterns in the study area.

This chapter addresses the potential traffic, parking, transit, and pedestrian impacts of the proposed project for each phase of development. 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 Willets West and the District. Transit facilities include the Met-Willets Point subway station and area bus routes and primary pedestrian corridors are situated along 126th Street and Roosevelt Avenue. In accordance with the approach outlined in Chapter 1, “Project Description,” this chapter analyzes the impact of trips generated by all three phases of the proposed project.

PRINCIPAL CONCLUSIONS

TRAFFIC AND PARKING

As was found in the FGEIS, the proposed project is expected to be a significant traffic generator on both the highways surrounding the project site—including the Grand Central Parkway, the Van Wyck Expressway, and the Whitestone Expressway—and the local street network over the course of its three buildout phases. The With Action volume increments generated by the proposed project would be as follows:

Phase 1A of the project is expected to generate 883 vehicles per hour (vph) in the AM peak hour, 2,517 vph in the midday peak hour, 2,618 vph in the PM peak hour on a typical weekday without a Mets home game, and 3,132 vph in the Saturday midday peak hour on a non-game weekend. For peak hours with a Mets home game, the proposed project is expected to generate 2,324 vph in the weekday PM (evening) pre-game peak hour, 2,313 vph in the Saturday afternoon pre-game peak hour, and 2,063 vph in the Saturday evening post-game peak hour.

With the completion of Phase 1B, 2,649 vehicles per hour (vph) would be generated in the AM peak hour, 5,152 vph in the midday peak hour, 5,420 vph in the PM peak hour on a typical weekday without a Mets home game, and 5,855 vph in the Saturday midday peak hour on a non-game weekend. For peak hours with a Mets home game, the proposed project is expected to generate 4,194 vph in the weekday PM (evening) pre-game peak hour, 4,576 vph in the Saturday afternoon pre-game peak hour, and 4,037 vph in the Saturday evening post-game peak hour.

With full buildout at the completion of Phase 2, including the potential future development of Lot B, 4,533 vehicles per hour (vph) would be generated in the AM peak hour, 7,551 vph in the midday peak hour, 8,361 vph in the PM peak hour on a typical weekday without a Mets home game, and 8,740 vph in the Saturday midday peak hour on a non-game weekend. For peak hours with a Mets home game, the proposed project is expected to generate 6,339 vph in the weekday PM (evening) pre-game peak hour, 6,981 vph in the Saturday afternoon pre-game peak hour, and 6,445 vph in the Saturday evening post-game peak hour. This includes volume increment generated by the proposed project and the Lot B development.

Future baseline (future No Action) volumes, to which the traffic generated by the proposed project and Lot B would be added, and future levels of service are expected to be significantly worse than existing conditions due to background traffic growth plus traffic generated from additional background development projects. Traffic generated by the proposed project 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.

As a result, by Phase 1A, the proposed project is expected to have significant traffic impacts at 15 of the ~~29~~ 32 intersections analyzed¹, both signalized and unsignalized, for the future With Action condition in the weekday AM peak hour, ~~17~~ 16 of ~~29~~ 32 in the weekday midday peak hour, and 20 of ~~29~~ 32 in the weekday PM and Saturday midday non-game peak hour. On game days, ~~21~~ 23 of ~~29~~ 32 intersections analyzed would have significant traffic impacts during the PM pre-game weekday peak hour, ~~17~~ 19 of ~~29~~ 32 intersections analyzed would have significant traffic impacts during the Saturday pre-game peak hour and ~~19~~ 21 of ~~29~~ 32 intersections analyzed would have significant impacts during the Saturday post-game peak hour.

In Phase 1B, the proposed project is expected to have significant traffic impacts at 19 of the ~~30~~ 33 intersections analyzed in the weekday AM peak hour, ~~20~~ 21 of ~~30~~ 33 in the weekday midday peak hour, ~~22~~ 21 of ~~30~~ 33 in the weekday PM peak hour, and ~~25~~ 24 of ~~30~~ 33 in the non-game-Saturday midday peak hour. On game days, 22 of ~~30~~ 33 intersections analyzed would have significant traffic impacts during the PM pre-game weekday peak hour, ~~20~~ 21 of ~~30~~ 33 intersections analyzed would have significant traffic impacts during the Saturday pre-game peak hour and ~~21~~ 23 of ~~30~~ 33 intersections analyzed would have significant impacts during the Saturday post-game peak hour.

By full buildout in Phase 2, including the potential future development of Lot B, the proposed project is expected to have significant traffic impacts at ~~22~~ 23 of the ~~31~~ 34 intersections analyzed in the weekday AM peak hour, ~~and 26~~ 28 of ~~31~~ 34 in the weekday midday peak hour, ~~29 of 34 in the weekday PM peak hour~~, and ~~27 of 34 in the~~ Saturday midday non-game peak hours. During the PM pre-game weekday peak hour, ~~25~~ 28 of ~~31~~ 34 intersections analyzed would have significant traffic impacts, and during the Saturday pre-game and post-game peak hours, ~~23~~ 25 of ~~31~~ 34 intersections analyzed would have significant impacts. Potential measures to mitigate these projected significant adverse impacts are described in Chapter 21, “Mitigation.”

Although the proposed project’s analyses include new access ramps to and from the Van Wyck Expressway at the northeastern corner of the District that would be completed around 2024 in advance of Phase 1B of the proposed project, it is projected that in each proposed buildout phase (both before and after the construction of the ramps) some sections of the highway mainlines and critical ramp junctions would incur level of service degradations and be significantly impacted. By Phase 1A, ~~three~~ five of the seven highway mainline locations analyzed (including the westbound Grand Central Parkway and the southbound Whitestone Expressway) and five of the 12 ramp locations would be significantly impacted during at least one of the seven peak analysis hours. The new access ramps are expected to reduce the use by project-generated traffic of certain local streets to access the project site; however, project generated traffic would also cause significant traffic increases and level of service degradations on the highway network in Phases 1B and 2 with the proposed ramps in place. By Phase 1B, five of the seven highway mainline locations analyzed (including both directions of the Grand Central Parkway and Whitestone and Van Wyck Expressways) and seven of the 12 ramp locations would be significantly impacted during at least one peak hour. By Phase 2, ~~five~~ four of the ~~six~~ seven highway mainline locations analyzed (including the westbound Grand Central Parkway, and both directions of the Whitestone and Van Wyck Expressways) and ~~eight~~ seven of the 12 ramp locations would be significantly impacted during at least one peak hour.

¹ Three study area intersections were added for the analysis between completion of the Draft SEIS and completion of this Final SEIS.

Willets Point Development

By its full buildout in Phase 2, the proposed project would provide sufficient new off-street and on-street parking as part of the development to service its peak demand of 5,850 spaces. The redevelopment of the 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. The proposed project's expected parking needs would be provided within the immediate area by full buildout, and it is not expected that project-generated traffic would have to seek parking opportunities outside of the area. In all phases, Willets West's proposed 2,500 accessory parking spaces would be sufficient to meet parking demands generated by the development at Willets West. Under Phase 1A, all project-generated parking demand within the District would be satisfied by accessory parking provided as part of the proposed project. Under Phase 1B, the 2,700 accessory parking spaces that would accompany development in the District would fully satisfy project demand in 2028 except from 2 to 4 PM on Saturday where there would be a shortfall of up to approximately 45 spaces. However, this demand is expected to be fully satisfied by available on-street spaces within the District and off-street spaces in facilities within walking distance of the District.

In addition to providing accessory parking for project demand, the proposed project would also replace the 4,100 Mets parking spaces in the main CitiField lots to the west of the stadium that would be displaced by the Willets West development. These replacement spaces would be distributed amongst an interim parking facility in the District (2,750 spaces, used as recreational space in the off-season), Lot D/South Lot (950 spaces), and the Willets West development (400 spaces) in Phase 1A, and between Lot D/South Lot (5,495 spaces) and the Willets West development (400 spaces) in Phases 1B and 2. Therefore, Mets parking needs would be accommodated.

TRANSIT AND PEDESTRIANS

Significant adverse transit impacts were identified for the street-level stairways and mezzanine stairway on the north side of Roosevelt Avenue at the Mets-Willets Point subway station, line-haul conditions on the No. 7 subway line, ~~train~~ and the Q19, Q48, and Q66 bus routes. In addition, if NYCT reverts back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, which would take place independent of the proposed project, additional interagency coordination is expected to take place to develop the appropriate game-day management strategies. However, additional impacts for the station's street-level connections and the unpaid zone passageway could occur during game days with this reconfiguration. Between Draft and Final Supplemental Environmental Impact Statements (SEIS), no changes to operating plans were announced by NYCT; therefore, Hence, any potential changes that may be considered for future implementation will be addressed outside of this environmental review. Significant pedestrian impacts were identified for the east crosswalk at the intersection of Northern Boulevard and 126th Street; the north and west crosswalks at the intersection of Roosevelt Avenue and 126th Street; the north, south, and east crosswalks at the intersection of 34th Avenue and 126th Street; ~~the south crosswalk at the intersection of New Willets Point Boulevard and 126th Street;~~ the north and south crosswalks at the intersection of 37th Avenue and 126th Street; and the north crosswalk at the newly signalized intersection of Roosevelt Avenue and the Lot B driveway. Potential measures to mitigate these projected significant adverse impacts are described in Chapter 21, ~~"Mitigation."~~

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS concluded that, of the 29 intersections analyzed, the proposed project and Lot B development were expected to have significant traffic impacts at 21 intersections in the weekday AM peak hour, 17 in the weekday midday peak hour, 23 in the weekday PM peak hour, and 21 in the Saturday midday peak hour on non-game days. During the PM pre-game weekday peak hour there would be significant traffic impacts at 24 intersections and during the Saturday pre-game and post-game peak hours there would be significant impacts at 23 intersections. The subsequent Technical Memoranda concluded that even with changed conditions, new assumptions and new guidance from the *2010 CEQR Technical Manual*, the overall findings of the 2008 FGEIS with regard to significant traffic impacts would remain substantially the same.

Under Phase 2 for the proposed project—representing full buildout conditions—the number of significantly impacted intersections would be approximately the same or somewhat higher as compared to the 2008 FGEIS. The magnitude of delays experienced would be higher at many locations as compared to the 2008 FGEIS. Under Phase 2 for the proposed project, the number of significantly impacted highway sections and ramps, and the magnitude of delays, would generally be higher as compared to the 2008 FGEIS.

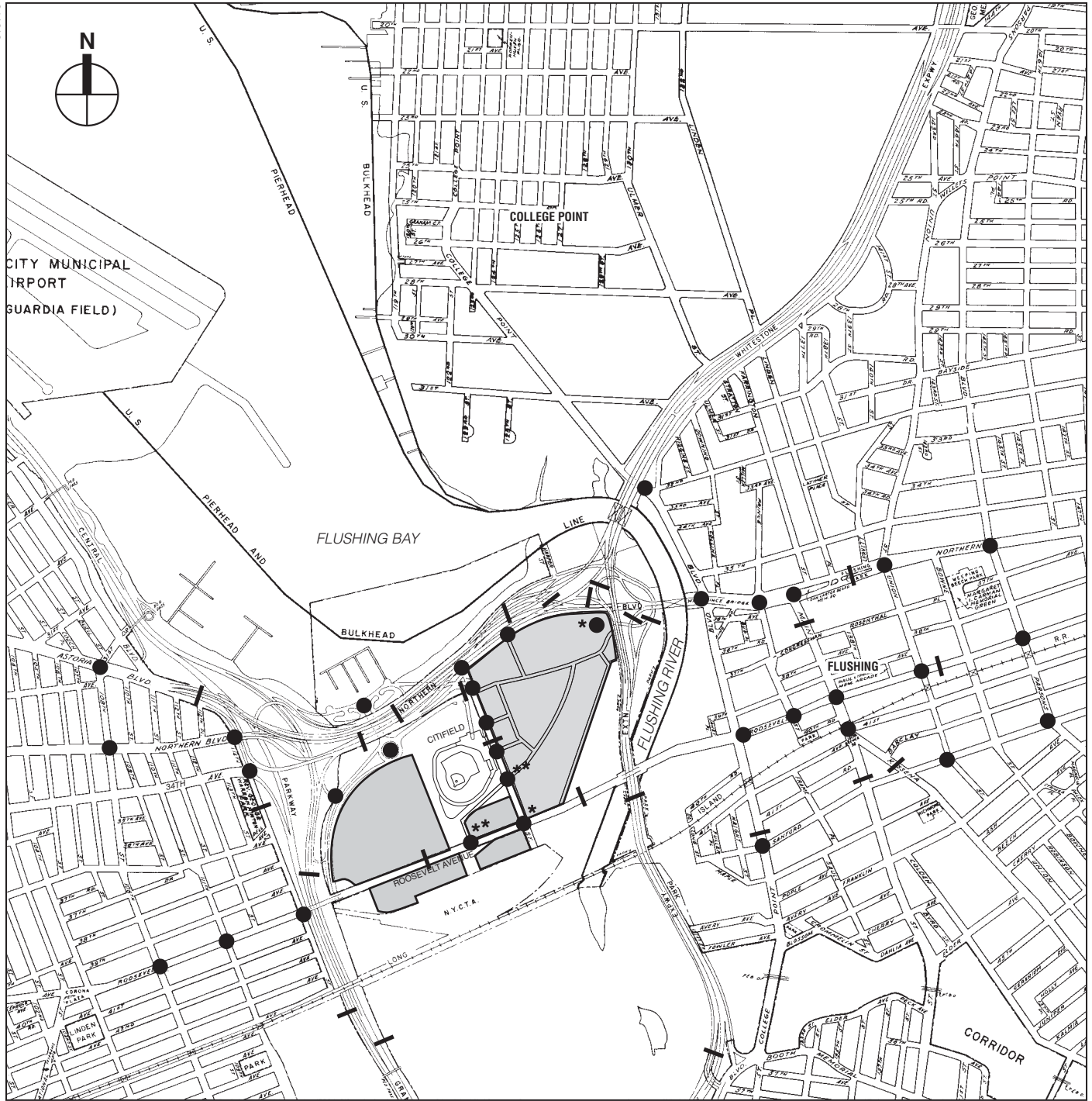
Under Phase 2 for the proposed project, the amount of parking to be provided plus available on-street parking would be sufficient to accommodate the needs of all phases of buildout. The same finding was concluded for the originally proposed project analyzed in the 2008 FGEIS.

For transit and pedestrians, significant adverse impacts were identified in the 2008 FGEIS and subsequent technical memoranda for the Mets-Willets Point subway station, area bus routes, and pedestrian elements adjacent to the District. Similar or greater impacts have been identified for Phase 2 of the proposed project. In addition, the previous analyses did not identify the significant adverse subway line-haul impact or the additional station impacts associated with potential station reconfiguration by NYCT that had been identified with the current proposed project.

C. SCOPE OF ANALYSIS (TRAFFIC AND PARKING)

The traffic and parking analyses cover a large study area encompassing 26 existing signalized intersections and ~~five~~ eight existing unsignalized intersections, ~~plus~~ Of the eight existing unsignalized intersections, two intersections would be signalized in Phase 1A along the District's western boundary at 126th Street and 36th Avenue and 126th Street and 37th Avenue. In Phase 1B, one new signalized another intersection that would be created and signalized, created in Phase 1B along the District's western boundary at 126th Street and Willets Point Boulevard, and another new ~~In Phase 2, the signalized intersection of that would be created in Phase 2 at Roosevelt Avenue and the CitiField/Lot B Internal Street is added for analysis.~~ Key segments of the Grand Central Parkway, Van Wyck Expressway, and Whitestone Expressway, including interchange ramps, have also been studied (see **Figure 14-1**).

The analyses begin with an assessment of existing traffic and parking conditions in the study area, and proceeds to an analysis of conditions in the future without the proposed project (the future No Action condition) for each year of the proposed phased buildout—Phase 1A in 2018, Phase 1B in 2028, and Phase 2 in 2032. The existing and future 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 8:00-9:00 AM weekday morning, 1:00-2:00 PM weekday midday, 5:00-6:00 PM weekday evening, and 1:30-2:30 PM Saturday midday peak hours. Also, three game-day peak hours are analyzed, including the 5:30-6:30 PM pre-game weekday evening, 3:15-4:15 PM pre-game Saturday midday and 7:15-8:15 PM post-game Saturday PM peak hours (i.e., before and after 4 PM Met games). Post-game conditions are not analyzed for a weekday evening game, since project-generated traffic expected during that peak hour would not be significant. All of the analyses of local intersection conditions are based on *2000 Highway Capacity Manual (HCM)* procedures, in accordance with 2012 *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 project in each the three future With Action analysis years and an assessment of future traffic and parking conditions with the proposed project in place (With Action condition). Like the No Action condition, the With Action condition analyzes roadway conditions with and without Mets games, on weekdays, and the weekend. The With Action year analyses identify the locations and extent of significant impacts potentially generated by the proposed project. Traffic improvements that would be needed to mitigate these impacts are identified and evaluated in Chapter 21, “~~Mitigation~~.” The parking analysis addresses the ability of the proposed project to accommodate the parking demands in the With Action years. In addition to the analysis findings presented in this chapter, detailed traffic impact analyses are presented at the end of this chapter and traffic volume maps are presented in **Appendix C**.

D. EXISTING CONDITIONS (TRAFFIC AND PARKING)

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 Special Willets Point District and Willets West portions of the project site.

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 a merge with westbound

Northern Boulevard between 126th Place and 126th Street. Because there are no left-turn opportunities from westbound Northern Boulevard past that point, traffic from the northbound Van Wyck Expressway and southbound Whitestone Expressway does not currently have direct access to the project site.

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. The ramp/roadway extending south then east from Exit 9E is joined by a single-lane on-ramp to the eastbound Grand Central Parkway from Astoria Boulevard/114th Street and 34th Avenue.

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 Willets Point area. 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 RFK/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 the CitiField parking lots. 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 intersection at Boat Basin Road, West Park Loop/Stadium Shea Road has two lanes in each direction, divided by a landscaped median; the roadway is undivided to the east 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 through the downtown area.
- 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 blocks between 112th Street 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 CitiField and the Special Willets Point 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 southern end of 126th Street at Roosevelt Avenue also serves as the entrance/exit to the Casey Stengel bus depot and the Corona subway yard, where bus and employee access to these facilities are provided.

The traffic study area developed for this ~~Final SEIS Supplemental Environmental Impact Statement (SEIS)~~ includes the following 34 ~~34~~ intersections, which are also shown in **Figure 14-1** (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

Willets Point Development

- 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
- College Point Boulevard at Northern Boulevard Service Road
- Boat Basin Road at Stadium Road
- Northern Boulevard at 126th Place (unsignalized)
- 126th Street at 36th Avenue (unsignalized)
- 126th Street at 37th Avenue (unsignalized)
- Willets Point Boulevard at 126th Street (unsignalized)
- Boat Basin Road at World's Fair Marina (unsignalized)
- Willets Point Boulevard at Northern Boulevard (unsignalized)
- Boat Basin Road at Stadium Road/CitiField Entrance 8 (unsignalized)
- Grand Central Parkway westbound exit ramp at West Park Loop/Stadium Road (unsignalized).

One additional intersection created by the design of the proposed project along 126th Street (New Willets Point Boulevard at 126th Street) is analyzed under the With Action condition for Phases 1B and 2, and ~~another one additional~~ intersection created along Roosevelt Avenue (CitiField/Lot B Internal Street at Roosevelt Avenue) is analyzed under Phase 2 only. ~~In addition to the study locations listed above, the intersections of 126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place are expected to carry a significant amount of project-generated trips in all three buildout phases of the proposed project. These three unsignalized intersections were not analyzed for this Draft SEIS since the majority of project-generated trips from the District were assigned to the adjacent analyzed intersections.~~

However, as further discussed in Chapter 21, “Mitigation,” because impacts have been identified for these adjacent intersections, the three intersections listed above will be analyzed for the Final SEIS to determine if they would similarly experience significant adverse impacts. For this Final SEIS, the intersections of 126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place were analyzed since they are expected to carry a significant amount of project-generated trips in all three buildout phases. The intersections of 126th Street at 36th Avenue and 126th Street at 37th Avenue would be signalized under all three phases of the proposed project.

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

Two additional ramps to and from the Van Wyck Expressway proposed at the northern end of Willets Point Boulevard are analyzed reflected under With Action conditions (for Phases 1B and 2).

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 May 5 to May 20, 2012. 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 4:05 PM (on May 5, 2012), and the weeknight game began at 7:10 PM (on May 16, 2012). The Mets game attendance on the weeknight and weekend afternoon that traffic volumes were collected was 22,659 and 30,253, respectively, which is lower than that of a typical game day. In order to adjust volumes to account for more typical game days, attendance data were

collected for all games from the previous two seasons (2010 and 2011). The 85th percentile attendance for weekday games for the 2010 and 2011 seasons combined was 35,914 attendees; the 85th percentile attendance for weekend games for the 2010 and 2011 seasons combined was 37,577 attendees. The differences in attendees were developed into additional vehicle trips and assigned through the study network based on modal split, temporal distribution, and vehicle occupancy factors, and trip assignment assumptions from the *Shea Stadium Redevelopment FEIS* (2001). The resulting volumes together with the turning movement counts were used to develop existing game day traffic volumes. This methodology was approved by the New York City Department of Transportation (NYCDOT). The existing volumes were used, along with observations of actual traffic conditions, to determine the seven peak traffic analysis hours. **Tables 14-1** and **14-2** summarize the analysis time periods.

Table 14-1
Traffic Study Peak Hours—Without Mets Game

Day	Time	Peak Hour
Weekday	8:00-9:00 AM	Non-game AM
	1:00-2:00 PM	Non-game midday
	5:00-6:00 PM	Non-game PM
Saturday	1:30-2:30 PM	Non-game midday

Table 14-2
Traffic Study Peak Hours—With Mets Game

Day	Time	Peak Hour
Weekday	5:30-6:30 PM	Pre-game PM arrival peak
Saturday	3:15-4:15 PM	Pre-game afternoon arrival peak
	7:15-8:15 PM	Post-game PM departure peak

Without a Mets home game at CitiField:

- Weekday AM peak hour (8:00 AM – 9:00 AM)
- Weekday midday peak hour (1:00 PM – 2:00 PM)
- Weekday PM peak hour (5:00 PM – 6:00 PM)
- Saturday midday peak hour (1:30 PM – 2:30 PM).

With a Mets home game at CitiField:

- Weekday PM peak hour pre-game arrivals (5:30 PM – 6:30 PM)
- Weekend midday peak hour pre-game arrivals (3:15 PM – 4:15 PM)
- Weekend late afternoon peak hour post-game departures (7:15 PM – 8:15 PM).

The operation of all of the signalized and unsignalized intersection analysis locations were assessed using methodologies presented in the *2000 Highway Capacity Manual (HCM)* using the *Highway Capacity Software (HCS+ 5.5)*, which is the analysis methodology approved for use by NYCDOT. The *HCM* procedure evaluates the levels of service (LOS) for signalized and unsignalized intersections using average stop control delay, in seconds per vehicle, as described below.

SIGNALIZED INTERSECTIONS

The average control delay per vehicle is the basis for determining levels of service for individual lane groups (grouping of movements in one or more travel lanes), the overall approaches to each intersection, and the overall intersection itself. Levels of service are defined in **Table 14-3**.

LOS A describes operations with low delays, i.e., an average control delay of 10.0 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.

Table 14-3
LOS Criteria for Signalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	>10.0 and ≤ 20.0 seconds
C	>20.0 and ≤ 35.0 seconds
D	>35.0 and ≤ 55.0 seconds
E	>55.0 and ≤ 80.0 seconds
F	>80.0 seconds
Source: Transportation Research Board. <i>Highway Capacity Manual</i> , 2000.	

LOS B describes operations with delays in excess of 10.0 seconds up to 20.0 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 excess of 20.0 seconds up to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is noticeable at this level, although many still pass through the intersection without stopping.

LOS D describes operations with delays in excess of 35.0 seconds up to 55.0 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.

LOS E describes operations with delays in excess of 55.0 seconds up to 80.0 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 80.0 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.

Based on *CEQR Technical Manual* guidelines, LOS A, B, and C are considered acceptable, LOS D is considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections) and unacceptable above mid-LOS D, and LOS E and F indicate congestion. These guidelines are applicable to individual traffic movements and overall intersection levels of service.

UNSIGNALIZED INTERSECTIONS

For unsignalized intersections, the average control delay is defined as the total elapsed time from which a vehicle stops at the end of the queue until the vehicle departs from the stop line. The level of service criteria for unsignalized intersections are summarized in **Table 14-4**.

For unsignalized intersections, LOS E is considered the limit of acceptable delay, while LOS F is considered unacceptable to most drivers. LOS F conditions exist when there are insufficient gaps of suitable size in a major vehicular traffic stream to allow side street traffic to cross safely.

Table 14-4
LOS Criteria for Unsignalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	> 10.0 and ≤ 15.0 seconds
C	> 15.0 and ≤ 25.0 seconds
D	> 25.0 and ≤ 35.0 seconds
E	> 35.0 and ≤ 50.0 seconds
F	> 50.0 seconds
Source: Transportation Research Board. <i>Highway Capacity Manual</i> , 2000.	

Tables 14-5 and **14-6** 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:

- All 26 signalized intersections operate at overall LOS D or better during all seven peak hours. “Overall” LOS E or F would mean 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).
- During the non-game weekday AM peak hour, four signalized intersections operate at overall LOS D. Thirteen specific lane groups (e.g., a shared left turn-through-right turn, an exclusive left turn lane, etc.) out of approximately 127 total lane groups analyzed are at LOS E or F conditions.
- In the non-game weekday midday peak hour, three signalized intersections operate at overall LOS D. Eight lane groups operate at LOS E.
- In the non-game weekday PM peak hour four signalized intersections operate at overall LOS D. Thirteen lane groups have overall unacceptable LOS E.
- In the non-game Saturday midday peak hour, four signalized intersections operate at overall LOS D. Eleven lane groups operate at LOS E.
- In the pre-game weekday PM arrival peak hour, six signalized intersections operate at overall LOS D. Sixteen lane groups operate at LOS E or F.
- In the pre-game Saturday midday arrival peak hour, six signalized intersections operate at overall LOS D. Eighteen lane groups operate at LOS E or F.
- In the post-game Saturday weekend PM departure peak hour, five signalized intersections operate at overall LOS D. Sixteen lane groups operate at LOS E or F.

- Generally, the five eight 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, Boat Basin Road at Stadium Road/CitiField Entrance, operates at overall unacceptable LOS E, with one lane group at LOS F. During the weekend post-game departure peak, the intersection of Boat Basin Road at World's Fair Marina, operates at overall unacceptable LOS E (with one lane group at LOS F), and the intersection of Boat Basin Road at Stadium Road/CitiField Entrance operates at overall LOS F (with two lane groups at LOS E or F).

Table 14-5

Existing Overall Intersection Level of Service Summary

Signalized Intersections (26 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	22	23	22	22	20	20	21
Overall Intersection LOS D	4	3	4	4	6	6	5
Overall Intersection LOS E	0	0	0	0	0	0	0
Overall Intersection LOS F	0	0	0	0	0	0	0
Note: During the non-game and weekday pre-game peak hours, all <u>five eight</u> unsignalized intersections operate at overall LOS A, B, C, or D; during the weekend pre-game peak hour, Boat Basin Road at Stadium Road/CitiField Entrance 8 operates at LOS E; during the weekend post-game peak period, Boat Basin Road at World's Fair Marina operates at overall LOS E and Boat Basin Road at Stadium Road/CitiField Entrance 8 operates at LOS F.							

Table 14-6

Existing Traffic Lane Group Level of Service Summary

Signalized Lane Groups (Approx. 127 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	80	97	86	88	76	90	89
Number of Lane Groups at LOS D	34	24	30	30	37	21	25
Number of Lane Groups at LOS E	10	8	13	11	15	16	15
Number of Lane Groups at LOS F	3	0	0	0	1	2	1
Note: During the non-game peak hours, all unsignalized lane groups operate at LOS A, B, C or D; during the weekday pre-game peak hour, northbound left turns from Boat Basin Road onto World's Fair Marina operate at LOS E; during the weekend pre-game peak period, the eastbound left-through movement of Boat Basin Road at Stadium Road operates at LOS F; during the weekend post-game period, northbound left turns from Boat Basin Road onto World's Fair Marina operate at LOS F, eastbound Stadium Road at Boat Basin Road operates at LOS F, westbound CitiField Entrance 8 at Boat Basin Road operates at LOS E, and eastbound left turns from the GCP off-ramp onto Stadium Road operates at LOS E.							

A more detailed presentation of traffic volumes and levels of service by corridor are provided below. (Detailed level of service analysis results, including results for every traffic lane group at each of the intersections analyzed, appear at the end of this chapter. Detailed traffic volume maps are presented in **Appendix C**).

NORTHERN BOULEVARD

Through Downtown Flushing, Northern Boulevard is traveled by approximately 800–1,550 vehicles per hour (vph) in the eastbound direction and 1,675–2,325 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 Special Willets Point District and Willets West portions of the project site, Northern Boulevard carries approximately 325–1,025 vph and 950–2,075 vph in the eastbound and westbound directions, respectively. At the intersection with 126th Street, 1,050 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and 625 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 900 and 2,000 vph, respectively.

During the weekday midday peak hour on non-game days, there are approximately 950–1,600 vph in the eastbound direction and 1,050–1,825 vph in the westbound direction on Northern Boulevard through Downtown Flushing. Northern Boulevard carries approximately 425–1,150 vph and 425–1,300 vph in the eastbound and westbound directions, respectively, adjacent to the project site. At the intersection with 126th Street, approximately 700 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and about 600 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 1,000 and 1,125 vph, respectively.

During the weekday PM peak hour on a non-game day, Northern Boulevard is traveled by approximately 1,400–2,050 vph in the eastbound direction and 1,150–1,675 vph in the westbound direction through Downtown Flushing. Adjacent to the project site, Northern Boulevard carries approximately 600–1,525 vph and 575–1,575 vph in the eastbound and westbound directions, respectively. At the intersection with 126th Street, approximately 830 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and approximately 800 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 1,525 vph, respectively.

During the Saturday midday peak hour on a non-game day, there are approximately 1075–1,800 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 475–1,250 vph and 450–1,425 vph in the eastbound and westbound directions, respectively, adjacent to the Special Willets Point District and CitiField. At the intersection with 126th Street, 750 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and approximately 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 1,125 and 1,775 vph, respectively.

During the weekday PM pre-game arrival peak hour, eastbound volumes on Northern Boulevard are approximately 1,400–2,075 vph through Downtown Flushing, generally similar to those on

non-game days. Westbound volumes are approximately 1,300–1,750 vph, slightly higher than on non-game days, which is expected due to increased traffic toward CitiField. Adjacent to the project site in the vicinity of 126th Street, Northern Boulevard eastbound volumes are approximately 575–1,675 vph; westbound volumes are approximately 725–2,525 vph. At the intersection with 126th Street, approximately 1,570 vph enter westbound Northern Boulevard from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway, and about 950 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 and the adjacent lane (right lane) of Northern Boulevard 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 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 1,750 and 1,625 vph, respectively.

During the weekend afternoon pre-game arrival peak hour, there are approximately 1,150–1,800 vph in the eastbound direction and 1,250–1,925 vph in the westbound direction on Northern Boulevard through Downtown Flushing. Northern Boulevard carries approximately 300–1,175 vph and 525–2,175 vph in the eastbound and westbound directions, respectively, adjacent to the project site. At the intersection with 126th Street, approximately 1,350 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 1,250 and 1,500 vph, respectively.

During the weekend PM post-game departure peak hour, there are approximately 1,250–1,875 vph in the eastbound direction and 1,150–1,700 vph westbound direction on Northern Boulevard through Downtown Flushing. Northern Boulevard carries approximately 350–1,275 vph and 450–1,650 vph in the eastbound and westbound directions, respectively, adjacent to the project site. The significant volume sources to westbound Northern Boulevard during this time period is 126th Street, carrying about 800 vph of departure traffic from CitiField parking lots, and the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway carrying about 600 vph. In the eastbound direction, the ramp from the Grand Central Parkway/Astoria Boulevard adds approximately 980 vph onto Northern Boulevard. Volumes along Northern Boulevard in the vicinity of 108th and 114th Streets are approximately 1,125 vph in the eastbound direction and 1,475 vph traveling westbound.

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 126th Street from the ramp connection from the southbound Whitestone Expressway and northbound Van Wyck Expressway; eastbound and westbound mainline left turns at Prince Street; eastbound right turns at Main Street; and the westbound through/right turn movement at Parsons Boulevard. These movements sometimes experience significant delays, including unacceptable LOS D (delays above mid-D), 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 108th Street operates at overall marginally acceptable LOS D during the Saturday midday peak hour. Overall, Northern Boulevard at its intersections with Main Street, Prince Street, Union Street and Parsons Boulevard operate at marginally acceptable LOS D or better. Northern Boulevard at Parsons Boulevard operates at overall marginally unacceptable LOS D during the Saturday midday peak hour.

For game-day conditions, all Northern Boulevard intersections in the vicinity of the project site and to the west operate at overall LOS C or better. As mentioned above, NYPD traffic demand management at the intersection of Northern Boulevard and 126th Street allows 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. This generally helps process traffic from the ramp improving the overall traffic flow around the project site and CitiField.

All Northern Boulevard intersections in Downtown Flushing operate at overall LOS C or marginally acceptable LOS D (delays below mid-D) during the three game-day peak hours.

ROOSEVELT AVENUE

Through Downtown Flushing, Roosevelt Avenue is traveled by approximately 150–650 vph in the eastbound direction and 200–450 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 project site, in the vicinity of 126th Street to 114th Street, eastbound volumes on Roosevelt Avenue are approximately 425–750 vph, while the westbound flow is approximately 450–800 vph for non-game day conditions. Between 108th and 114th Streets, volumes are approximately 300–475 vph eastbound and 375–600 vph westbound.

During the game-day peak hours, there are approximately 150–675 vph per direction on Roosevelt Avenue through Downtown Flushing. Adjacent to the project site, in the vicinity of 126th Street to 114th Street, eastbound volumes on Roosevelt Avenue are approximately 500–850 vph, while westbound volumes are approximately 725–1,150 vph for the pre-game conditions. Weekend post-game volumes along the same section of Roosevelt Avenue are approximately 450–750 vph eastbound and 450–950 vph westbound. Also during the weekend PM post-game departure peak hour, there are up to 975 vph on eastbound Roosevelt Avenue approaching College Point Boulevard, much of this as departing game traffic. Between 108th and 114th Streets, volumes are approximately 400–600 vph per direction during pre-game peak hours, and approximately 350–500 vph per direction during the post-game peak hour.

For non-game conditions, overall intersection levels of service along Roosevelt Avenue are at acceptable LOS C or better except at the intersections of Roosevelt Avenue at College Point Boulevard and Roosevelt Avenue and Main Street which operate at overall marginally acceptable LOS D during the weekday PM peak hour, and at the intersection of Roosevelt Avenue at Parsons Boulevard which operates at marginally acceptable LOS D during the weekday AM peak hour. All individual traffic movements along Roosevelt Avenue operate at

acceptable or marginally acceptable levels of service (below mid-D) except at Main Street where westbound Roosevelt Avenue operates at unacceptable LOS D in the weekday AM peak hour and westbound and eastbound Roosevelt Avenue operate at LOS E in weekday PM peak hour. Traffic conditions 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.

During game-day conditions, all intersections along Roosevelt Avenue within the vicinity of the project site operate at overall marginally acceptable LOS D or better during all peak hours. Also, all individual lane groups on Roosevelt Avenue operate at acceptable LOS C or better. The increase in volumes along Roosevelt Avenue during game-day peak hours due to traffic demand to CitiField is managed by NYPD to optimize traffic flow. At the intersection of Roosevelt Avenue and 126th Street, effective green times are adjusted, with preference to the eastbound left-turn movement (toward the CitiField parking lots north of Roosevelt Avenue) and to the southbound right-turn movement (towards the south parking lots). 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 these lots. Overall, the post-game demand management along Roosevelt Avenue adjacent to CitiField and the project site is effective.

Concurrently, the Roosevelt Avenue intersections through Downtown Flushing all operate at overall acceptable LOS C and marginally acceptable LOS D except for Roosevelt Avenue at College Point Boulevard which operates at overall unacceptable LOS D during the weekday pre-game peak hour. The Roosevelt Avenue eastbound shared through-right movement at this intersection operates at unacceptable LOS D or LOS E during pre-game and post-game peak hours. The only other traffic movement which operates at unacceptable levels of service during game day peak hours is eastbound Roosevelt Avenue approaching Main Street which operates at LOS E during the weekday pre-game peak hour.

KISSENA BOULEVARD

Kissena Boulevard, in the vicinity of Main Street, is traveled by approximately 200–350 vph per direction during all non-game and game day peak hours. Kissena Boulevard also carries significant bus traffic along seven bus routes to and from Main Street, with up to approximately 65 buses per hour per direction. The intersection of Kissena Boulevard and Main Street operates at overall acceptable LOS C during all non-game and game day peak hours. The Kissena Boulevard approach at Main Street operates at marginally acceptable LOS D (below mid-D) or better during all analysis periods, both for non-game and game conditions.

SANFORD AVENUE

Analysis locations along Sanford Avenue are located within Downtown Flushing, where traffic volumes are approximately 175–275 vph in the eastbound direction and 275–475 vph in the westbound direction during the non-game day peak hours. During the game-day peak hours, there are approximately 175–275 vph and 300–675 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 Special Willets Point District, 34th Avenue is traveled by only approximately 50–150 vph in each direction during all non-game and game day peak hours. West of 114th Street, 34th Avenue serves as an access route to the Grand Central Parkway eastbound on-ramp, where it carries approximately 350–525 vph eastbound and 50–125 vph westbound.

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 southbound Grand Central Parkway ramp to allow for two lanes. During the weekend post-game peak hour, NYPD traffic management includes the deactivation of the traffic signal.

Both 34th Avenue analysis locations operate at overall acceptable levels of service or marginally acceptable LOS D during all non-game peak hours. During game-day peak hours, the intersection of 34th Avenue and 114th Street operates at similar overall levels of service, while the intersection of the 126th Street/GCP Ramp at 34th Avenue operates at overall marginally unacceptable LOS D during all game-day peak hours. The only individual movement on 34th Avenue that operates at unacceptable levels of service is westbound 34th Avenue approaching 126th Street which operates at marginally unacceptable LOS D during all non-game peak hours and at LOS E during the Saturday pre-game peak hour.

Levels of service for both 34th Avenue analysis locations operate at overall acceptable levels of service and marginally acceptable LOS D during all non-game peak hours. During game-day peak hours, the intersection of 34th Avenue and 114th Street operates at similar overall levels of service, while the intersection of 126th Street/GCP Ramp at 34 Avenue operates at overall marginally unacceptable LOS D during all game-day peak hours. The only individual movement on 34th Avenue that operates at unacceptable levels of service is westbound 34th Avenue approaching 126th Street which operates at marginally unacceptable LOS D during all non-game peak hours and at LOS E during the Saturday pre-game peak hour.

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 850 vph during the AM peak hour, which increases to approximately 2,225 vph during the PM peak hour. Conversely, the westbound direction carries approximately 1,925 vph during the AM peak hour, which decreases to approximately 850 vph during the PM peak hour. The weekday midday and Saturday midday traffic volumes are in the range of 925–1,000 vph eastbound and 650–750 westbound. Weeknight pre-game peak hour volumes on Astoria Boulevard are approximately 2,650 vph eastbound and 800 vph westbound. Weekend pre- and post-game peak hour volumes range from approximately 825–1,000 vph eastbound and 700–750 vph westbound. The analyzed intersection at 108th Street operates at overall LOS B or C during all 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 per direction during weekday and Saturday non-game peak hours. 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 CitiField parking lots. Weekday and weekend pre-game arrival volumes are approximately 150–650 vph per direction. A large portion of post-game traffic travels westbound along West Park Loop/Stadium Road—from the north exits of the CitiField lots at Boat Basin Road—toward the Grand Central Parkway on-ramp. Westbound volumes along this short segment are as high as 1,500 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 100 vph.

The intersection of West Park Loop/Stadium Road at Boat Basin Road operates at overall acceptable LOS C during all the non-game peak hours. During post-game conditions, NYPD deploys an officer to control the intersection to give preference to the northbound approach (traffic exiting the CitiField parking lots). During this time, NYPD converts the two southbound receiving lanes into northbound exclusive left turn lanes, and uses cones to divert all southbound traffic to westbound Stadium Road (so all southbound traffic must turn right). This typically lasts for the first 60 minutes after a game after which the intersection reverts back to normal operations.

COLLEGE POINT BOULEVARD

Along the western boundary of Downtown Flushing between Sanford Avenue and Roosevelt Avenue, College Point Boulevard carries approximately 550–1,000 vph per direction during the non-game peak hours. Through Northern Boulevard, College Point Boulevard is traveled by approximately 550–750 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 750–1,200 vph in the northbound direction and 900–1,000 vph in the southbound direction. Through Northern Boulevard, College Point Boulevard is traveled by approximately 650–750 vph northbound and 400–700 vph southbound, during the game-day peak hours.

Overall levels of service along College Point Boulevard are generally at acceptable LOS B or C except for the intersection of College Point Boulevard and Roosevelt Avenue which operates at marginally acceptable LOS D during the weekday non-game PM, and weekend pre-game and post-game peak hours, and 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 F, due to increased traffic toward CitiField. The College Point Boulevard northbound left turn also operates at unacceptable LOS D during the weekday PM non-game peak hour.

MAIN STREET

Main Street carries approximately 500–650 vph northbound and 350–800 vph southbound, during the non-game and game day peak hours. Between Kissena Boulevard and Northern

Boulevard, Main Street also supports up to nine bus lines, with volumes as high as approximately 90 buses per hour per direction near Roosevelt Avenue.

All intersections analyzed along Main Street operate at overall acceptable levels of service (marginally acceptable LOS D or better). In order to address traffic congestion at its intersection with Roosevelt Avenue caused by the volume of buses and potential conflicts between vehicles and pedestrians, in addition to generally high traffic volumes, Main Street approaches are restricted to through movements only. However, there are some critical movements along Main Street that operate at unacceptable levels of service. At the intersection with Main Street/41st Avenue, the northbound left turn movement onto 41st Street operates at unacceptable LOS D during the non-game Saturday midday peak hour, and the southbound left turn movement onto Kissena Boulevard operates at marginally unacceptable LOS D during the weekday PM non-game and Saturday pre-game peak hours. At the intersection of Main Street at Northern Boulevard, the northbound right turn movement onto Northern Boulevard operates at marginally unacceptable LOS D during the non-game weekday AM and Saturday midday peak hours and during the weekday pre-game peak hour. This movement also operates at unacceptable LOS E during the weekday PM non-game and Saturday pre-game peak hours.

UNION STREET

Northbound volumes on Union Street are lower between Sanford Avenue and 41st Avenue (approximately 75–225 vph) than between 41st Avenue and Northern Boulevard (approximately 300–500 vph). In the southbound direction, Union Street is traveled by approximately 400–875 vph between Northern Boulevard and the Municipal Parking Lot entrance just north of 39th Street. South of the parking lot, southbound volumes are 325–525 vph. At Sanford Avenue, a substantial amount of Union Street's southbound traffic turns either left or right onto Sanford Avenue, and southbound traffic volumes diminish to 175–275 vph south of Sanford Avenue. Union Street also carries bus traffic for a number of transit routes.

Overall levels of service at Union Street intersections operate at marginally acceptable LOS D or better during all non-game and game day peak hours. All individual movements along Union Street also operate at acceptable levels of service during all peak hours.

PARSONS BOULEVARD

Through eastern Downtown Flushing, Parsons Boulevard is traveled by approximately 250–400 vph northbound and 225–475 vph southbound, during all non-game and game day peak hours. Parsons Boulevard typically has acceptable overall levels of service at the intersections analyzed, except for Parsons Boulevard at Northern Boulevard which operates at overall marginally unacceptable LOS D during the Saturday midday non-game peak hour. The northbound left turn and southbound shared left-through-right movements operate at unacceptable LOS D or E during most peak hours. Other individual movements along Parsons Boulevard that operate at unacceptable levels of service during at least one peak hour include the northbound approach at Roosevelt Avenue (unacceptable LOS D during the weekday AM non-game peak hour) and the northbound approach at Sanford Avenue (unacceptable LOS D during the weekday AM and midday non-game peak hours).

108TH STREET

108th Street carries approximately 150–325 vph in the northbound direction and 50–450 vph in the southbound direction during the non-game and game day peak hours. Overall intersection levels of service at analyzed 108th Street intersections are acceptable LOS D or better; however,

several 108th Street movements at these intersections operate at unacceptable levels of service. This includes the northbound *de facto* left turn movement at Astoria Boulevard (LOS mid-D during the weekday AM non-game peak hour) and the northbound and southbound approaches at Northern Boulevard and at Roosevelt Avenue (unacceptable LOS mid-D or E on both approaches at both intersections during all peak hours).

PRINCE STREET

Prince Street volumes are approximately 175–350 vph per direction during non-game and game day peak hours with the majority of southbound traffic at Northern Boulevard turning onto the westbound Northern Boulevard viaduct during most peak hours. 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 at all times except during the weekday AM non-game peak hour where it operates at unacceptable LOS D. Prince Street at Roosevelt Avenue operates at acceptable levels of service during all peak hours.

111TH STREET

During all analysis peak hours, 111th Street northbound approaching Roosevelt Avenue is traveled by approximately 175–325 vph. Northbound 111th Street, which is the only approach to Roosevelt Avenue, since the street is one-way, operates at marginally unacceptable LOS D or LOS E during the non-game peak hours and at unacceptable LOS E during game day analysis peak hours.

114TH STREET

Northbound volumes on 114th Street are approximately 175–300 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 225–300 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 450–675 vph, but downstream, approaching Roosevelt Avenue, volumes are 125–250 vph.

Pre-game volumes on 114th Street northbound are approximately 200–325 vph (similar to non-game), and southbound volumes approaching 34th Avenue range between 700–800 vph. Approaching Roosevelt Avenue, volumes are approximately 250–425 vph, which are higher than non-game conditions due to increased left turns toward CitiField.

Northbound and southbound 114th Street at Roosevelt Avenue operate at unacceptable LOS D or E during all analysis periods. The southbound 114th Street left turn movement at 34th Avenue operates at marginally unacceptable LOS D or unacceptable LOS E during all game day peak hours. At Northern Boulevard, southbound 114th operates at marginally unacceptable LOS D during all peak hours except for the weekday and Saturday midday non-game peak hours which operate at marginally acceptable LOS D.

126TH STREET

126th Street between Roosevelt Avenue and 34th Avenue carries approximately 190–300 vph in the northbound direction and 200–360 vph in the southbound direction during the non-game analysis peak hours. Pre-game volumes on 126th Street in the northbound direction are

approximately 300–575 vph and southbound volumes are approximately 600–880 vph. Post-game volumes on 126th Street in the northbound direction are approximately 380–540 vph and southbound volumes are approximately 450–580 vph. Overall levels of service along 126th Street at 36th Avenue and at 37th Avenue are generally at acceptable LOS A, B, or C.

PARKING

OFF-STREET PARKING

An inventory of public parking lots was conducted within the area generally bounded by College Point Boulevard to the east, West Park Loop/Stadium Road and the Grand Central Parkway to the west, Flushing Bay to the north, and Perimeter Road in Flushing Meadows-Corona Park to the south. This study area constitutes a region within approximately ¼ mile from the boundary of the project site and encompasses the various parking lots used by the Mets and game-day attendees.

As shown in **Tables 14-7** and **14-8**, an inventory 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 (Tuesday, May 22, 2012), and 11:00 AM–2:00 PM on Saturday without a Mets home game (Saturday, June 9, 2012). For periods with a Mets home game, parking surveys were conducted from 4:30 PM to 7:30 PM (Tuesday, May 29, 2012) for the weekday PM pre-game arrival period and from 2:00 PM to 5:00 PM and 6:00 PM to 9:00 PM (Saturday, June 2, 2012) for the weekend pre- and post-game periods (see **Tables 14-9** and **14-10**). Similar to the traffic volumes, game day parking occupancies were conservatively adjusted upward to reflect an 85th percentile attendance at CitiField based on the 2010 and 2011 seasons since game attendance during the parking and traffic data collection was relatively low. On-street parking utilization was not adjusted since most Mets game attendees park in off-street facilities.

Table 14-7

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	11 AM -12PM	12-1 PM	1-2 PM	4-5 PM	5-6 PM	6-7 PM
South Lot and Lot D ²	1,795	13%	20%	30%	32%	32%	31%	25%	21%	13%
Marina East	590	4%	4%	4%	6%	5%	5%	2%	1%	1%
Marina West	263	3%	6%	5%	9%	11%	14%	13%	13%	17%
Boat Basin East	75	4%	12%	13%	24%	25%	24%	15%	19%	37%
Boat Basin West	75	0%	0%	0%	0%	1%	0%	0%	0%	0%
Stadium View	471	3%	3%	3%	3%	4%	3%	1%	1%	1%
Northern Blvd. Median ¹	501	13%	14%	14%	15%	15%	16%	15%	10%	6%
Municipal Lot No. 4	53	23%	34%	53%	92%	119%	109%	98%	87%	60%
TOTAL	3,823	10%	14%	20%	22%	23%	22%	18%	15%	11%
Notes: ¹ Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street. ² South Lot and Lot D is currently striped as 1,556 parking spaces, but the surface lot has a higher capacity due to optimization of parking spaces by parking attendants.										

Table 14-8

Hourly Parking Occupancy by Percentage of Spaces Occupied per Facility
Off-Street Parking Survey—Saturday Non-Game Day

Parking Facility	Capacity	11 AM to 12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
South Lot and Lot D ²	1,795	4%	4%	3%	3%	3%	3%	3%	2%
Marina East	590	2%	3%	3%	6%	5%	4%	3%	3%
Marina West	263	6%	7%	8%	8%	10%	11%	12%	20%
Boat Basin East	75	49%	51%	35%	24%	17%	12%	43%	101%
Boat Basin West	75	64%	43%	28%	17%	13%	9%	19%	44%
Stadium View	471	1%	1%	1%	1%	2%	1%	0%	0%
Northern Blvd. Median ¹	501	6%	6%	6%	4%	4%	3%	4%	4%
Municipal Lot No. 4	53	79%	83%	91%	83%	79%	74%	43%	32%
TOTAL	3,823	7%	7%	6%	6%	5%	5%	5%	7%

Notes: ¹ Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street.
² South Lot and Lot D is currently striped as 1,556 parking spaces, but the surface lot has a higher capacity due to optimization of parking spaces by parking attendants.

Table 14-9

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 ²	1,795	37%	37%	44%
Marina East	590	4%	2%	1%
Marina West	263	21%	29%	41%
Boat Basin East	75	17%	32%	57%
Boat Basin West	75	3%	13%	35%
Stadium View	471	9%	8%	10%
Northern Blvd. Median ¹	501	100%	100%	100%
Municipal Lot No. 4	53	92%	70%	45%
TOTAL	3,823	3836%	3937%	4845%

Notes: ¹ Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street.
² South Lot and Lot D is currently striped as 1,556 parking spaces, but the surface lot has a higher capacity due to optimization of parking spaces by parking attendants.

Table 14-10

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		
		2-3 PM	3-4 PM	4-5 PM	6-7 PM	7-8 PM	8-9 PM
South Lot and Lot D ²	1,795	5%	23%	28%	21%	10%	1%
Marina East	590	7%	23%	47%	49%	27%	6%
Marina West	263	47%	54%	74%	81%	91%	87%
Boat Basin East	75	100%	100%	100%	87%	100%	97%
Boat Basin West	75	29%	43%	52%	65%	96%	91%
Stadium View	471	10%	20%	53%	51%	25%	1%
Northern Blvd. Median ¹	501	73%	83%	86%	89%	67%	18%
Municipal Lot No. 4	53	96%	100%	74%	26%	19%	13%
TOTAL	3,823	23-21%	38-36%	51-47%	47-44%	33-31%	15-14%
Notes: ¹ Capacity includes the median between eastbound and westbound Northern Boulevard, both east and west of 126th Street. ² South Lot and Lot D is currently striped as 1,556 parking spaces, but the surface lot has a higher capacity due to optimization of parking spaces by parking attendants.							

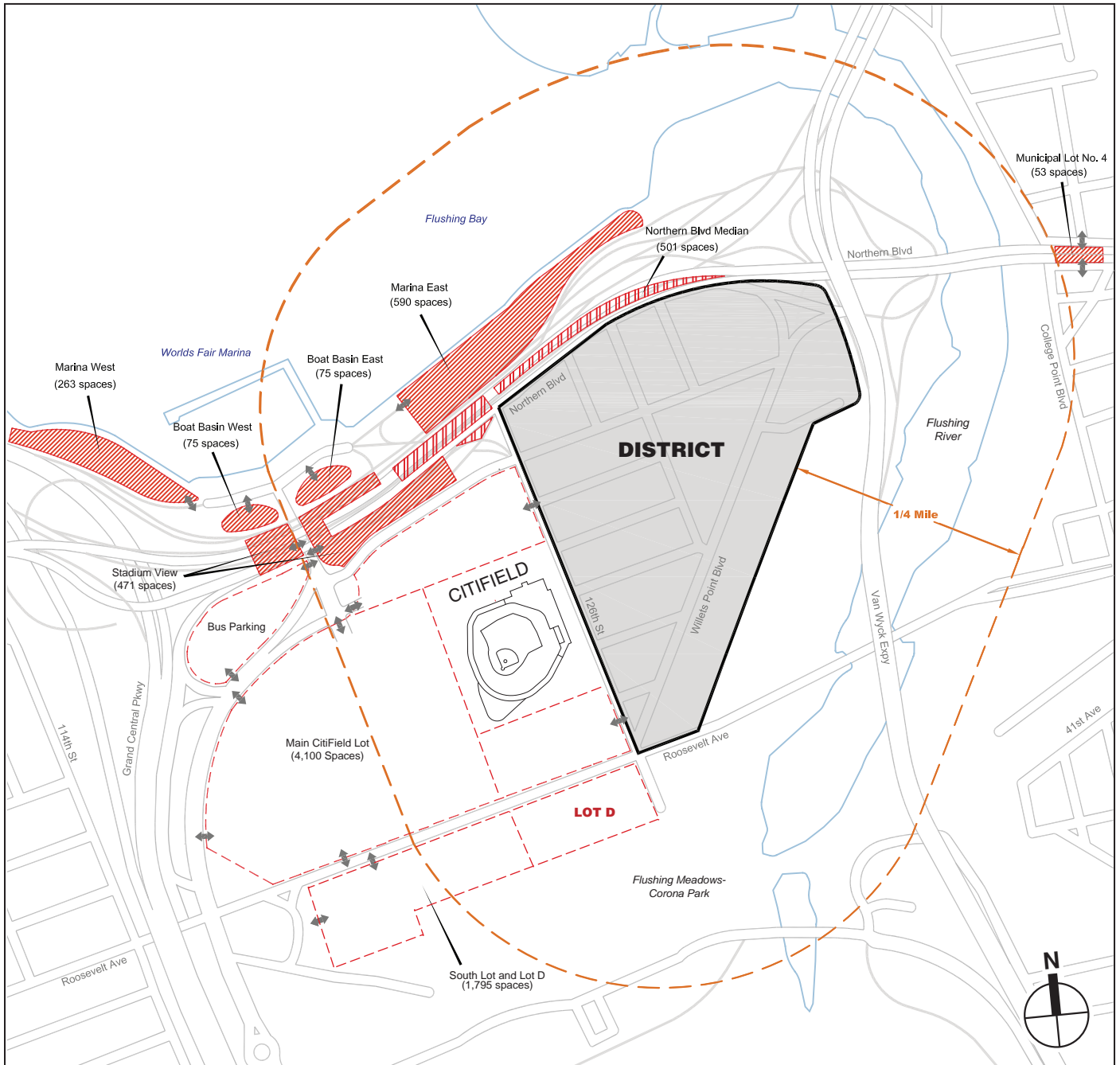
Overall, there is a mix of controlled and uncontrolled public parking lots as well as undesignated parking areas, including space on roadway shoulders and medians, which are typically used only during periods of high parking demand, such as during a Mets game (see **Figure 14-2**). The controlled lots include: the “main” CitiField lots (generally bounded by Roosevelt Avenue to the south, Shea Road to the north and west, and 126th Street to the east), which serve game and official stadium parking only on both game and non-game days; South Lot and Lot D¹, which serves as a pay park-and-ride lot for commuters on typical weekdays and weekends, and is a pay lot for CitiField during game periods; Marina East and Marina West, which are also pay lots for CitiField 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 CitiField during game periods, but is free on non-game weekdays and weekends. Occupancy surveys of the main CitiField lots were not conducted since they serve only official CitiField and NYPD vehicles on typical weekdays and weekends, and official and attendee parking during game periods, so they would not regularly be publicly accessible.

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 have significantly higher usage during Mets game periods; and Municipal Lot No. 4, which is under the Northern Boulevard viaduct in Downtown Flushing. These parking lots are not part of CitiField’s pay parking facilities and, excluding Municipal Lot No. 4, are only partially used during typical weekdays and weekends 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 14-7**, there are eight surveyed parking facilities open to public use on non-game days, containing approximately 3,823 spaces. During non-game days, all off-street parking facilities are less than 40 percent occupied throughout the day except for Municipal Lot Number 4 which is located at the western end of Downtown Flushing. This facility reaches capacity by 11 AM and remains at or near capacity until the 5-6 PM hour. CitiField’s South Lot/Lot D is by

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



- Special Willets Point District
- Parking Facility
- Parking Median
- CitiField Controlled Parking
- 1/4 Mile Perimeter
- Directional Entrance/Exit

0 1000 Feet
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far the largest inventoried parking facility in the area. This primary commuter (pay) lot near the District has a capacity of 1,795¹, does not exceed 32 percent occupancy during the weekdays without a Mets game, and drops to about 13 percent occupancy outside of the 8 AM to 6 PM period. 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. Overall, during weekday non-game peak hours, off-street parking occupancies within the parking study area range between ~~10 and 23~~ 9 and 21 percent, resulting in a parking availability of ~~2,760 to 3,225~~ 3,020 to 3,475 spaces.

As shown in **Table 14-8**, the occupancy level ranges between ~~5~~ 4 and 7 percent between the hours of 11 AM and 6 PM on a typical Saturday without a Mets game. Therefore, there are approximately ~~3,335 to 3,400~~ 3,555 to 3,670 unoccupied spaces available within the off-street lots.

Game Day Parking

On game days, CitiField's South Lot and Lot D are used for 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 42 to 51 percent. As shown in **Table 14-9**, 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 and has a consistent occupancy of 37 percent until 6:30 PM, and has a subsequent increase to 44 percent by the start of the game. Other lots, such as Stadium View and Marina West, which are controlled for game traffic on game days only, increase in occupancy approaching the start of the game, but do not reach more than about 57 percent capacity. The available free parking on the Northern Boulevard median, which is frequently used for parking by Mets attendees, reaches 100 percent of its approximately 500-space capacity. The Marina East and Stadium View lots were nearly unutilized during the surveyed weekday Mets game. Overall, within the parking study area, off-street parking utilization ranges between ~~38 and 48~~ 36 and 45 percent during the 4:30 to 7:30 PM hours, resulting in a parking availability of approximately ~~1,860 to 2,225~~ 2,100 to 2,445 spaces.

Table 14-10 shows off-street parking inventories preceding and following a weekend Mets game with a 4:10 PM start. Only four of the off-street parking facilities are near or above 75 percent of capacity in the hours leading up to the game, and one of them, Municipal Lot 4, likely has few if any game attendees parking there. Boat Basin East is the only parking facility that reaches capacity during the weekend game day parking period, and it only has a capacity of 75 spaces. Overall, off-street parking utilization during weekend game days peaks at around 50 percent, leaving approximately 1,800 available spaces during that period, and demand tapers down after game time. By 8 PM, parking utilization in the study area is only at approximately one-third of the total capacity, and by 9 PM utilization drops to about ~~45~~ 14 percent.

ON-STREET PARKING

On-street parking inventories were conducted for a study area that generally covers the area within a ¼-mile radius of the Special Willets Point District and Willets West portions of the project site. This includes the area bounded by Northern Boulevard to the north, Willets Point Boulevard/Roosevelt Avenue to the south, College Point Boulevard to the east and 126th Street

¹ South Lot and Lot D is currently striped as 1,556 parking spaces, but the lot has a higher capacity due to optimization of parking spaces by parking attendants.

to the west. The inventory along College Point Boulevard extended further north to 32nd Avenue, which is slightly beyond the ¼-mile radius but still within walking distance.

Since much of the existing roadway network within the District is in general disrepair, there are few blocks with defined sidewalks, curbs, and designated on-street parking space, and much of the block lengths are comprised of garage entrances and extensions of the abutting land uses and are not adequately built and maintained for any type of on-street parking. The small number of regulated spaces within or adjacent to this area 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 accommodate 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 235–270 legal spaces available on-street (depending on time of day and prevailing regulations), including the unregulated blocks discussed above. 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 14-11**, the number of parked vehicles counted for the AM, midday, and PM periods on a typical weekday (Tuesday, May 22, 2012) is near or above the total on-street capacity. This is primarily due to illegally parked vehicles along 126th Street between Roosevelt Avenue and Northern Boulevard. Some of the other surveyed blocks are also parked over capacity, with a number of trucks and other delivery vehicles double parked near the warehouses and industrial land uses in the area. Within the 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.

On-street parking usage is generally lower during non-game weekend periods. Based on the data collected during a Saturday non-game survey, most streets have parking utilization that is below overall parking capacity during surveyed hours; however, substantial illegal parking still occurs along 126th Street.

On days with a Mets game, on-street parking usage is generally lower during pre-game and post-game periods. The overall number of parked vehicles remains below capacity for the hours surveyed during a typical weekday (Tuesday, May 29, 2012) and Saturday with a Mets game (June 2, 2012). 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.

Table 14-11
Existing Hourly On-Street Parking

		Without Mets Game						With Mets Game					
		Weekday			Weekend			Weekday			Weekend		
		Capacity	Legal Occupancy	Illegal Occupancy	Capacity	Legal Occupancy	Illegal Occupancy	Capacity	Legal Occupancy	Illegal Occupancy	Capacity	Legal Occupancy	Illegal Occupancy
7:00–8:00 AM	126th Street	0	0	7									
	Northern Boulevard	22	17	0									
	College Point Boulevard	108	97	0									
	Other	106	92	0									
8:00–9:00 AM	126th Street	0	0	13									
	Northern Boulevard	22	20	0									
	College Point Boulevard	108	108	0									
	Other	106	103	0									
9:00–10:00 AM	126th Street	0	0	18									
	Northern Boulevard	22	18	0									
	College Point Boulevard	140	116	0									
	Other	106	106	11									
11:00 AM–12:00 PM	126th Street	0	0	26	0	0	14						
	Northern Boulevard	22	19	0	22	18	0						
	College Point Boulevard	140	140	1	140	140	1						
	Other	106	106	2	106	94	0						
12:00–1:00 PM	126th Street	0	0	35	0	0	24						
	Northern Boulevard	22	17	0	22	18	0						
	College Point Boulevard	140	140	9	140	132	0						
	Other	106	106	5	106	98	0						
1:00–2:00 PM	126th Street	0	0	34	0	0	24						
	Northern Boulevard	22	22	0	22	20	0						
	College Point Boulevard	140	137	0	140	136	0						
	Other	106	106	16	106	93	0						
2:00–3:00 PM	126th Street				0	0	28				0	0	1
	Northern Boulevard				22	20	0				22	21	0
	College Point Boulevard				140	127	0				140	140	8
	Other				106	90	0				106	92	0
3:00–4:00 PM	126th Street				0	0	25				0	0	1
	Northern Boulevard				22	12	0				22	18	0
	College Point Boulevard				140	121	0				140	126	0
	Other				106	75	0				106	88	0
4:00–5:00 PM	126th Street	0	0	36	0	0	27				0	0	2
	Northern Boulevard	0	0	15	22	16	0				22	22	2
	College Point Boulevard	140	137	0	140	109	0				140	117	0
	Other	106	91	0	106	76	0				106	79	0
4:30–5:30 PM	126th Street							0	0	7			
	Northern Boulevard							22	11	0			
	College Point Boulevard							140	140	4			
	Other							106	81	0			
5:00–6:00 PM	126th Street	0	0	24	0	0	25						
	Northern Boulevard	0	0	10	22	16	0						
	College Point Boulevard	140	119	0	140	87	0						
	Other	106	70	0	106	57	0						
5:30–6:30 PM	126th Street							0	0	2			
	Northern Boulevard							22	10	0			
	College Point Boulevard							140	122	0			
	Other							106	68	0			
6:00–7:00 PM	126th Street	0	0	18	0	0	15				0	0	13
	Northern Boulevard	0	0	5	22	14	0				22	18	0
	College Point Boulevard	140	90	0	140	77	0				140	83	0
	Other	106	47	0	106	52	0				106	59	0
6:30–7:30 PM	126th Street							0	0	5			
	Northern Boulevard							22	15	0			
	College Point Boulevard							140	66	0			
	Other							106	57	0			
7:00–8:00 PM	126th Street										0	0	3
	Northern Boulevard										22	11	0
	College Point Boulevard										140	79	0
	Other										106	43	0
8:00–9:00 PM	126th Street										0	0	10
	Northern Boulevard										22	9	0
	College Point Boulevard										140	74	0
	Other										106	44	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 246 at 4:00 PM due to a 4:00–7:00 PM parking restriction along a section of Northern Boulevard (The number of spaces include those within approximately ¼ mile of the District.)

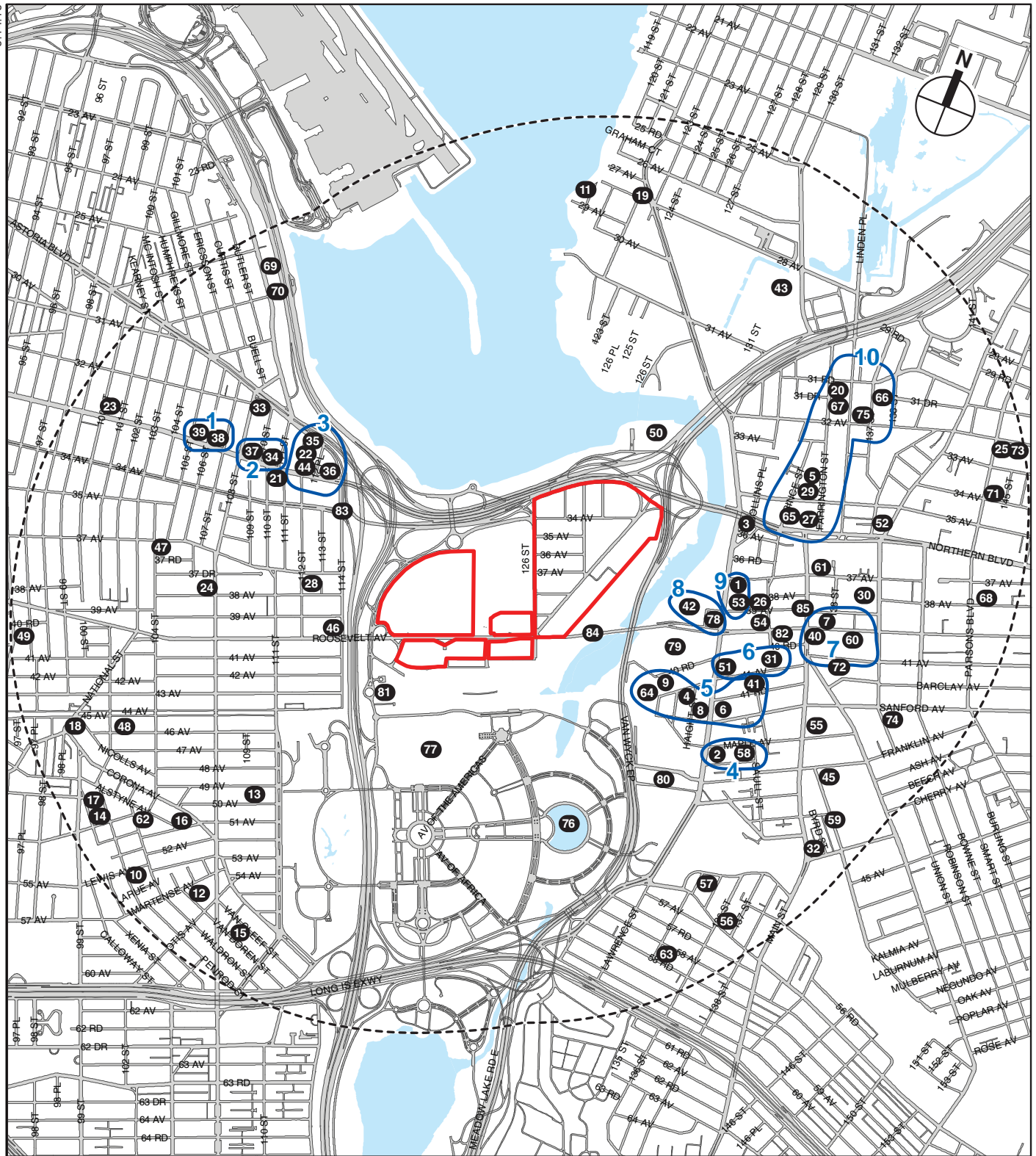
E. THE FUTURE WITHOUT THE PROPOSED PROJECT (TRAFFIC AND PARKING)

Future conditions without the proposed project (the No Action condition) are established in order to provide the baseline against which the impacts of the proposed project can be compared and to account for changes in traffic conditions between existing conditions and the future analysis years. Future year conditions were analyzed for each phase of the project: 2018 for Phase 1A; 2028 for Phase 1B; and 2032 for Phase 2. Future No Action traffic volumes for each phase were developed by applying a background traffic growth rate of 0.5 percent per year for the first five years and 0.25 percent per year for each additional 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 each respective Build ~~buildout~~ year.

NO ACTION BACKGROUND PROJECTS

Trip generation and specific traffic assignments for anticipated development projects were taken directly from their respective Environmental Impact Statements (EIS) or Environmental Assessment Statements (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 2018 No Action condition would include a large number of development projects within an area approximately up to and including one mile of the project site. (See **Table 14-12** for a complete list of No Action projects in the one-mile study area and corresponding **Figure 14-3**). One additional No Action project within the one-mile study area would be completed by 2019; however, this project would not generate significant new person or vehicle trips during peak analysis hours.



- Project Site Boundary
- 1-Mile Study Area
- 76 No Action Projects
- 3 Cluster

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Transportation Analysis
No Action Projects
Figure 14-3

Table 14-12
No Action Projects in the Traffic Study Area

Map No.	Project Name/Address	Development Proposal/Program	Analysis Year	Transportation Notes
1	133-12 37 Ave	10 DU; 22,336 sf commercial; 1,971 sf community facility	2018	Cluster 9
2	132-08 Pople Ave	22 DU; 4,500 sf community facility; 12 parking spaces	2018	Cluster 4
3	35-19 College Point	35,580 sf manufacturing; 11 parking spaces	2018	Individually Assigned
4	41-09-15 Haight St	28 DU; 12,584 sf community facility	2018	Cluster 5
5	33-39 Prince St	6,396 sf manufacturing	2018	Cluster 10
6	132-18 41 Rd	10 DU (16,538); 4,095 sf community facility	2018	Cluster 5
7	136-13 Roosevelt Ave	2,800 sf commercial	2018	Cluster 7
8	41-38 College Point Boulevard	8 DU; 1,577 sf commercial; 1,646 sf community facility	2018	Cluster 5
9	131-10-14 40 Rd	5,795 sf commercial	2018	Cluster 5
10	102-06-10 Lewis Ave	14 DU; 8 parking spaces	2018	Background Growth
11	28-35 119 St	5,000 sf manufacturing (warehouse); 4 parking spaces	2018	Background Growth
12	105-10-12 Martense Ave	6 DU; 2 parking space	2018	Background Growth
13	108-30 49th Avenue	3 DU	2018	Background Growth
14	50-30-32 102 St	8 DU; 4 parking spaces	2018	Background Growth
15	57-37 Van Doren St	4 DU; 1 parking space	2018	Background Growth
16	104-24-28 Corona Ave	4 DU; 1,144 sf commercial sf	2018	Background Growth
17	50-08-10 102 St	6 DU	2018	Background Growth
18	99-21 Corona Ave	6 DU; 280 sf community facility	2018	Background Growth
19	27-24 College Point	5,082 sf commercial	2018	Background Growth
20	31-16 Linden Pl	24 DU; 6,085 sf commercial; 2,021 sf community facility	2018	Cluster 10
21	P.S. 287 - 110-08 Northern Blvd	49,471 sf public school	2016	Individually Assigned
22	32-29-33 112 Street	2 DU	2018	Cluster 3
23	32-56 101 Street	11,407 sf commercial	2016	Background Growth
24	37-56 108 Street	4 DU; 1,785 sf commercial	2018	Background Growth
25	32-05 Parsons Blvd	149,778 sf church	2018	Background Growth
26	133-47 39th Avenue	12,270 sf office; 11,420 sf retail; 9,755 sf medical office	2018	Individually Assigned
27	RKO Keith Theater - 135-27 Northern Boulevard	357 DU; 17,000 sf retail; 12,500 sf community facility; 385 parking spaces	2015	Cluster 10
28	37-06 112th Street	3 DU	2013	Background Growth
29	New Millennium - 134-03 35th Avenue	84 DU; 33,600 sf community facility; 3,600 sf retail; 222 parking spaces	2016	Cluster 10
30	Flushing Commons (Municipal Parking Lot 1) and Macedonia Plaza - 138th Street, 37th Avenue, 39th Avenue, and Union Street	Flushing Commons: 620 DU; 275,000 sf of retail; 110,000 sf of office; 98,000 sf of community facility space; 1,600 parking spaces; including 700 accessory spaces; and either 250 hotel rooms or an additional 124,000 sf of office Macedonia Plaza: 142 affordable residential units; 10,000 sf community facility space; 25,000 sf retail space	2018	Individually Assigned
31	Flushing Municipal Lot 3	120 DU; 23,000 sf commercial; 10,000 sf community facility; 200 parking spaces	2015	Cluster 6
32	43-57 Main Street	2,085 sf office; retail	2018	Background Growth
33	108-04, 14, 16 Astoria Blvd	84 DU; 34,965 sf community facility	2018	Individually Assigned
34	110-09 Northern Boulevard	31 DU; 15,500 sf of commercial use	2018	Cluster 2
35	112-12, 18, 24 Astoria Blvd	38 DU; 16,034 sf community facility	2018	Cluster 3
36	Block bounded by Astoria Blvd, Northern Blvd, and 112th Place	147 DU; 73,329 sf of commercial use	2018	Cluster 3
37	108-09 Northern Boulevard	18 DU; 8,970 sf commercial	2016	Cluster 2
38	106-15 Northern Boulevard	11 DU; 5,502 sf commercial	2016	Cluster 1
39	32-56 106th Street	14 DU; 7,144 commercial	2016	Cluster 1
40	Caldor Site - 136-20 Roosevelt Avenue	155,000 sf retail	2016	Cluster 7
41	132-27 to 132-61 41st Road	37 DU	2018	Cluster 5

Table 14-12 (cont'd)
No Action Projects in the Traffic Study Area

Map No.	Project Name/Address	Development Proposal/Program	Analysis Year	Transportation Notes
42	River Park Place - 39-08 Janet Place	475 DU; 10,200 sf retail; 1,500 sf community facility; 251,000 sf office; 175 hotel rooms	2018	Cluster 8
43	College Point Police Academy - 129-05 31st Avenue	2.4 million sf program; including 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; 2,000 parking spaces	2018	No trips during peak hours
44	112-15 Northern Boulevard	163-room hotel	2013	Cluster 3
45	P.S. 244 - 137-20 Franklin Avenue	425-seat primary school; enrollment of 373 in 2012	2016	Individually Assigned
46	39-14 114th Street	23 DU; 18,638 commercial; 4,794 community facility; 38 parking spaces	2018	Background Growth
47	37-19 104th Street	2 DU; 1,100 sf community facility	2018	Background Growth
48	102-12-14 45th Avenue	8 DU; 2 parking space	2018	Background Growth
49	40-53 Junction Boulevard	7 DU; 1,458 sf community facility	2018	Background Growth
50	32-11 Harper Street	137 sf commercial	2018	Background Growth
51	132-15 41st Avenue	25 DU; 5,933 sf community facility; 8 parking spaces	2018	Cluster 6
52	35-01-05 Leavitt Street	12 DU; 6 parking spaces	2018	Individually Assigned
53	37-19 College Point Boulevard	1 residential unit; 56,595 sf commercial; 1,000 sf community facility; 31 parking spaces	2018	Cluster 9
54	One Fulton Square	88 DU; 142,180 sf office; 168 hotel rooms; 16,722 community facility; 283 parking spaces	2018	Individually Assigned
55	42-33 Main Street	79 DU	2018	Individually Assigned
56	56-40 137th Street	3 DU; 4,401 sf community facility	2018	Background Growth
57	56-18 135th Street	2 DU	2018	Background Growth
58	132-29 Pople Avenue	9 DU; 560 sf community facility	2018	Cluster 4
59	43-02 Colden Street	7 DU; 2,298 sf office; 3 parking spaces	2018	Background Growth
60	136-68 Roosevelt Avenue	29,124 sf commercial; 14,279 sf community facility; 34 parking spaces	2018	Cluster 7
61	136-33 37th Avenue	116,894 sf office; 97 parking spaces	2018	Individually Assigned
62	50-15 103rd Street	1 residential unit	2018	Background Growth
63	134-06 58th Avenue	Addition of 1 residential unit	2018	Background Growth
64	131-08 40 Road	4,548 commercial sf	2018	Cluster 5
65	135-17 Northern Boulevard	28 DU; 8,465 commercial sf; 2,867 community facility sf; 45 parking spaces	2018	Cluster 10
66	31-13 137 St	6 DU	2018	Cluster 10
67	31-39 Farrington St	5,937 sf commercial (Con Ed)	2018	Cluster 10
68	143-21 38th Avenue	25 DU	2018	Background Growth
69	106-47 Ditmars Boulevard	2 DU; 1 parking space	2018	Background Growth
70	106-57 Ditmars Boulevard	2 DU; 1 parking space	2018	Background Growth
71	33-25 Parsons Boulevard	13,417 sf community facility; 38 parking spaces	2018	Background Growth
72	154-32 Barclay Avenue	18 DU; 5,950 sf community facility	2018	Background Growth
73	144-18 32nd Avenue	Rectory with 1 residential unit (5,400 sf)	2018	Background Growth
74	42-15 Union Street	16,848 sf community	2018	Background Growth
75	31-53 Linden Place	16 DU; 3,746 sf community facility; 8 parking spaces	2018	Cluster 10
76	Flushing Meadows Corona Park	Major League Soccer stadium, 25,000 seats	2016	Not included in Trip Assignments; See Section Q.N below.
77	USTA Billie Jean King National Tennis Center Strategic Vision	Additional 6,500 seats; 80,000 sf of retail/office; 493 parking spaces	2019	USTA Site, no new vehicle trips generated
78	39-16 College Point Boulevard	7-room hotel; 15 parking spaces	2013	Cluster 8
79	Sky View Parc - Phase II	Approximately 600 DU	2018	Individually Assigned
80	Flushing Meadows East Rezoning	376 DU	2014	Individually Assigned
81	Flushing Meadows Corona Park	Annex to Olmsted Center	2013	Background Growth
82	135-15 40th Road	4,000 sf community facility; 4,100 sf retail/restaurant; 4,100 sf office	2018	Background Growth
83	34th Avenue & 114th Street	DOT's bicycle and pedestrian connection to CitiField project	2013	Roadway Improvements
84	Roosevelt Avenue Bridge Reconstruction	Roadway unchanged; bike/pedestrian space improvements	2018	Roadway Improvements
85	Main Street Reconstruction	Sidewalk/roadway improvements between 38th and 41st Aves.	2015	Roadway Improvements

Notes: DU = Dwelling units; sf = Square feet

#76 – As detailed in Section Q.N, MLS trip-making is expected to be comparable to the Mets and occur on different days; therefore it is not analyzed as a separate No Action project.

#83 & #85 – Analysis revisions, if necessary, will be undertaken in coordination with DOT between Draft and Final SEIS.

After reviewing the development programs for each of the No Action projects, it was determined that background growth will address the increase in traffic and pedestrian levels for 33 of the small projects in the study area. These small projects are dispersed throughout the study area and are not clustered together on a single block. As a result, these sites would not add a noticeable amount of traffic to any single block and have been screened out; they are considered as part of the general background growth rate. Additionally, one No Action project would not generate significant new person or vehicle trips during peak analysis hours. Person and vehicle trips generated by the remaining 46 projects were then determined. Ten clusters were created, grouping nearby projects that would have similar assignment routes based on their location. The clusters and corresponding No Action project numbers are presented in **Table 14-13**.

Table 14-13
No Action Project Clusters

Cluster ID No.	No Action Projects (Refer to Figure 14-3)
1	38, 39
2	34, 37
3	22, 35, 36, 44
4	2, 58
5	4, 6, 8, 9, 41, 64
6	31, 51
7	7, 40, 60
8	42, 78
9	1, 53
10	5, 20, 27, 29, 65, 66, 67

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; RKO Keith Plaza; Flushing Commons; and P.S. 287. For the College Point Boulevard Police Academy, most trips are expected to be generated during hours outside of this SEIS's analysis peak hours for the proposed project. A summary of all No Action project-generated vehicle trips is presented in **Table 14-14** for non-game-day peak hours and in **Table 14-15** for game-day peak hours.

As shown in **Table 14-14**, 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 2,325 to 3,150 vehicle trips, with the lowest increment expected during the weekday AM peak hour and highest during the PM peak hour. As shown in **Table 14-15**, 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 1,950 to 2,375 vehicle trips.

PHASE 1A (2018) NO ACTION 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 14-14** and **Table 14-15** traffic volumes assigned to the study area's networks, but do not include the general annual growth rate (0.5 percent per year for the first five years and 0.025 percent per year each additional year per CEQR guidelines) that has been separately applied to existing traffic volumes, which would add just under three percent more traffic to all streets. However, the annual increase is included in the 2018 No Action volume totals. Because of background growth and No Action developments, substantial increases in traffic volumes can be expected under the 2018 No Action condition, independent from those that the proposed project would add.

Table 14-14

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
35-19 College Point	30	7	7	7	5	30	5	5
P.S. 287 (110-08 Northern Blvd)	42	27	0	0	0	2	0	0
133-47 39th Avenue	16	5	21	21	10	22	14	14
Flushing Commons	366	255	521	474	338	442	386	360
108-04, 14, 16 Astoria Blvd	9	8	7	8	11	9	17	14
35-01-05 Leavitt Street	0	2	1	1	1	1	0	0
One Fulton Square	182	71	154	113	222	99	89	72
42-33 Main Street	3	11	3	3	10	5	8	6
136-33 37th Avenue	111	6	36	39	9	127	21	14
Sky View Parc - Phase II	42	88	30	29	77	43	65	50
Flushing Meadows East Rezoning	15	61	0	0	57	29	0	0
Cluster 1	2	4	14	14	9	9	12	9
Cluster 2	6	10	29	29	16	19	25	19
Cluster 3	61	82	179	143	134	112	128	107
Cluster 4	4	4	1	2	4	3	4	4
Cluster 5	8	13	17	17	18	18	21	19
Cluster 6	13	24	33	33	33	25	35	28
Cluster 7	79	53	229	198	185	204	250	238
Cluster 8	307	143	215	181	169	379	160	123
Cluster 9	15	16	87	87	47	47	60	48
Cluster 10	49	81	71	71	91	77	96	75
TOTAL TRIPS ASSIGNED TO NO ACTION	1,360	971	1,655	1,470	1,446	1,702	1,396	1,205

Table 14-15

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
35-19 College Point	1	1	5	5	4	4
P.S. 287 (110-08 Northern Blvd)	0	0	0	0	0	0
133-47 39th Avenue	10	11	14	16	15	15
Flushing Commons	338	442	424	390	382	414
108-04, 14, 16 Astoria Blvd	9	6	14	14	15	16
35-01-05 Leavitt Street	1	1	1	1	1	1
One Fulton Square	59	47	60	49	74	62
42-33 Main Street	8	3	6	6	6	6
136-33 37th Avenue	2	7	6	27	18	12
Sky View Parc - Phase II	63	23	50	50	50	50
Flushing Meadows East Rezoning	43	17	0	0	0	0
Cluster 1	7	5	11	9	9	11
Cluster 2	25	17	22	19	19	22
Cluster 3	26	18	112	99	101	88
Cluster 4	3	1	4	4	4	4
Cluster 5	16	10	19	18	18	19
Cluster 6	26	18	30	27	28	31
Cluster 7	165	165	195	171	136	150
Cluster 8	108	71	102	141	113	132
Cluster 9	35	35	57	47	47	57
Cluster 10	73	43	80	77	77	82
TOTAL TRIPS ASSIGNED TO NO ACTION	1,018	941	1,212	1,170	1,117	1,176

The more substantial traffic increases between existing and No Action conditions would occur along the primary streets in the study area network, including Northern Boulevard, Roosevelt Avenue, Astoria Boulevard, and College Point Boulevard. Below is a detailed description of the projected traffic increases expected throughout the study area as a result of the No Action development projects.

Northern Boulevard volumes through Downtown Flushing between Parsons Boulevard and Union Street can be expected to increase by about 75 to 175 vph during the seven peak analysis hours. Westbound Northern Boulevard volumes between Main Street and Union Street would increase by about 60 to 115 vph, while eastbound Northern Boulevard volumes along the same section would increase by about 285 to 455 vph during the seven peak hours. At Prince Street and farther west, adjacent to the Special Willets Point District and Willets West, Northern Boulevard volumes can be expected to increase by approximately 75 to 670 vph per direction during all of the peak hours. Northern Boulevard volumes in the vicinity of 108th and 114th Street can be expected to increase by about 100 to 235 vph per direction during the seven peak analysis hours.

Traffic volumes on Roosevelt Avenue through Downtown Flushing between Parsons Boulevard and College Point Boulevard can be expected to increase by about 10 to 215 vph per direction during all of the peak analysis hours. Adjacent to the project site, Roosevelt Avenue volumes can be expected to increase by approximately 65 to 315 vph per direction during the seven peak analysis hours. Roosevelt Avenue volumes in the vicinity of 108th, 111th, and 114th Street can be expected to increase by about 55 to 145 vph per direction during all of the peak analysis hours.

Sanford Avenue volumes through Downtown Flushing between Parsons Boulevard and College Point Boulevard can be expected to increase by about 10 to 55 vph per direction during the seven peak analysis hours.

On the west side of the study area, in the vicinity of 114th Street, and also within the Special Willets Point District, volumes on 34th Avenue can be expected to increase by up to 10 vph during the weekday non-game AM and PM peak analysis hours.

Astoria Boulevard volumes in the vicinity of 108th and 114th Streets can be expected to increase by about 30 to 95 vph per direction during the peak analysis hours.

Volumes along West Park Loop/Stadium Road can be expected to increase by up to about 50 vph during the peak analysis hours.

College Point Boulevard volumes between Sanford Avenue and 32nd Avenue can be expected to increase by about 60 to 320 vph per direction during all the seven peak analysis hours except during the weekday non-game PM peak hour when volumes are expected to increase by about 90 to 505 vph per direction.

Main Street volumes from Kissena Boulevard to Roosevelt Avenue can be expected to increase by up to 40 vph during the seven peak analysis hours. Between Roosevelt Avenue and Northern Boulevard, northbound Main Street volumes would increase by up to 450 vph and southbound volumes would increase by up to 185 vph during the peak analysis hours.

Union Street volumes between Sanford Avenue and Northern Boulevard can be expected to increase by approximately 35 to 75 vph in the northbound direction and by approximately 10 to 235 vph in the southbound direction during the peak analysis hours.

Parsons Boulevard volumes between Northern Boulevard and Sanford Avenue can be expected to increase by up to 20 vph per direction during the peak analysis hours.

Traffic 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 50 vph per direction during the seven peak analysis hours.

Prince Street volumes at Northern Boulevard and Roosevelt Avenue can be expected to increase by up to 30 vph per direction during the peak analysis hours.

Willetts Point Development

Traffic volumes along 111th and 114th Street in the vicinity of Roosevelt Avenue can be expected to increase by up to 5 vph per direction during the seven peak analysis hours. 114th Street volumes at 34th Avenue can be expected to increase by approximately 10 to 45 vph per direction during the peak analysis hours.

126th Street volumes between Northern Boulevard and Roosevelt Avenue can be expected to increase by approximately 35 to 95 vph per direction during the peak analysis hours.

Traffic volumes along westbound World's Fair Marina at Stadium Road can be expected to increase by up to 10 vph during the peak analysis hours.

Based on these projected traffic volume changes, 2018 No Action traffic levels of service were determined for the 31 No Action analysis locations within the study area. **Tables 14-16 and 14-17** show comparisons of overall intersection and individual movement levels of service, respectively, for existing and 2018 No Action conditions for non-game-day peak hours, and **Tables 14-18 and 14-19** show the comparisons for the game-day peak hours. 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 2018 No Action condition than in existing conditions due to the substantial additional volumes generated by the expected background developments superimposed on top of a background growth rate of 2.8 percent.

Table 14-16

**Overall Intersection Level of Service Summary Comparison
Existing vs. Phase 1A (2018) No Action Conditions—Non-Game Day**

Signalized Intersections	Existing Conditions				Phase 1A (2018) No Action Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				26 Signalized Intersections ^[1]			
Overall Intersection LOS A/B/C	22	23	22	22	13 <u>14</u>	15	13 <u>12</u>	15
Overall Intersection LOS D	4	3	4	4	5 <u>4</u>	6	7 <u>8</u>	3
Overall Intersection LOS E	0	0	0	0	8	2	4	6
Overall Intersection LOS F	0	0	0	0	0	3	2	2
Note: ¹ Under Phase 1A (2018) No Action conditions, all five eight unsignalized intersections would operate at overall LOS A, B or C.								

Table 14-17

**Traffic Lane Group Level of Service Summary Comparison
Existing vs. Phase 1A (2018) No Action Conditions—Non-Game Day**

Signalized Movements	Existing Conditions				Phase 1A (2018) No Action Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				26 Signalized Intersections ^[1]			
No. of Lane Groups at LOS A/B/C	80	97	86	88	62	76 <u>77</u>	63	74
No. of Lane Groups at LOS D	34	24	30	30	35 <u>37</u>	28	32 <u>34</u>	23 <u>25</u>
No. of Lane Groups at LOS E	10	8	13	11	15 <u>13</u>	9	12 <u>11</u>	13 <u>12</u>
No. of Lane Groups at LOS F	3	0	0	0	17 <u>18</u>	17	22	20
Note: ¹ Under Phase 1A (2018) No Action conditions, all but one unsignalized lane group (northbound left turn movement of Boat Basin Road at World's Fair Marina during the weekday AM non-game peak hour) would operate at overall LOS A, B or C.								

Table 14-18
Overall Intersection Level of Service Summary Comparison
Existing vs. Phase 1A (2018) No Action Conditions—Game Day

Signalized Intersections	Existing Conditions			Phase 1A (2018) No Action Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 Signalized Intersections ^[1]		
Overall Intersection LOS A/B/C	20	20	21	14 <u>10</u>	13	10
Overall Intersection LOS D	6	6	5	7 <u>8</u>	4	5
Overall Intersection LOS E	0	0	0	6	5	8
Overall Intersection LOS F	0	0	0	2	4	3
Notes: ¹ Under Phase 1A (2018) No Action conditions during game day peak hours, none of the five <u>eight</u> unsignalized intersections would operate at overall LOS E or F (all five <u>eight</u> would operate at overall LOS D or better) during the weekday pre-game peak hour; one intersection would operate at overall LOS E during the Saturday pre-game peak hour; and two intersections would operate at overall LOS E and one intersection would operate at LOS F during the Saturday post-game peak hour.						

Table 14-19
Traffic Lane Group Level of Service Summary Comparison
Existing vs. Phase 1A (2018) No Action Conditions—Game Day

Signalized Lane Groups	Existing Conditions			Phase 1A (2018) No Action Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 Signalized Intersections ^[1]		
No. of Lane Groups at LOS A/B/C	76	90	89	61 <u>60</u>	72 <u>73</u>	72 <u>73</u>
No. of Lane Groups at LOS D	37	21	25	37 <u>40</u>	25	20 <u>21</u>
No. of Lane Groups at LOS E	15	16	15	11 <u>10</u>	8	9 <u>8</u>
No. of Lane Groups at LOS F	1	2	1	21	25	29
Notes: ¹ Under Phase 1A (2018) No Action conditions during game day peak hours, eight <u>13</u> of about 42 <u>17</u> unsignalized lane groups operate at LOS A, B, C or D during all peak hours. Four movements would operate at LOS E or F during at least one peak hour including: northbound left turns from Boat Basin Road onto World's Fair Marina (LOS E during weekday pregame and Saturday pregame peak hours and LOS F during the Saturday post game peak hour); the eastbound left-through movement on Stadium Road at Boat Basin Road (LOS F during Saturday pre- and post-game peak hours); westbound CitiField Entrance 9 at Boat Basin Road (LOS F during the Saturday post-game peak hour); and eastbound left turns from the GCP off-ramp onto Stadium Road (LOS E during the Saturday post-game peak hour).						

The summary overview of the Phase 1A (2018) No Action condition without a Mets game indicates that:

- In the weekday AM peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to eight under the Phase 1A No Action condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 13 to 32 31.
- 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 five, while the number of traffic lane groups at LOS E or F would increase from eight to 26.
- In the weekday PM peak hour, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to six under Phase

1A No Action conditions. The number of lane groups projected to operate at LOS E or F would increase from 13 to ~~34~~ 33.

- In the Saturday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from zero to eight, while the number of lane groups at LOS E or F would increase from 11 to ~~33~~ 32.
- Most of the projected LOS E or F intersections would be located in Downtown Flushing.

The summary overview of the Phase 1A No Action condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at LOS E or F would increase from zero under existing conditions to eight under the Phase 1A No Action condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 16 to ~~32~~ 31.
- In the Saturday afternoon 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 nine under the Phase 1A No Action condition. The number of lane groups projected to operate at LOS E or F would increase from 18 to 33. The unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS E.
- 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 zero under existing conditions to 11 under the Phase 1A No Action conditions. The number of lane groups projected to operate at LOS E or F would increase from 16 to ~~38~~ 37. The unsignalized intersections of Boat Basin Road at World's Fair Marina and Grand Central Parkway Ramp at West Park Loop/Stadium Road would operate at LOS E, and the unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.

PHASE 1A (2018) NO ACTION PARKING CONDITIONS

Based on a background traffic growth rate of 2.8 percent to 2018, demand for off-street parking facilities and on-street parking in the area during the Phase 1A No Action condition 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 percent or less of total capacity in 2018 from the existing occupancy level range of 9 to 21 percent on a typical weekday without a Mets game. One facility, Municipal Lot 4, would reach capacity during the 4-5 PM hour under the Phase 1A No Action condition as compared to 98 percent occupancy under existing conditions. On a typical Saturday without a Mets game, the maximum occupancy level for parking facilities would increase by about one percent or less of total capacity in 2018 from the existing occupancy level range of 4 to 7 percent.

On a typical weeknight with a Mets game, the maximum occupancy which occurs between 6:30-7:30 PM would peak at about 46 percent in 2018 (excluding the main CitiField lots), compared to approximately 45 percent under existing conditions. On a typical weekend game day, the maximum occupancy (peaking at 4-5 PM) would increase by two percent, from 47 to 49 percent in 2018. 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 background increases.

Because the existing on-street parking occupancy is at or exceeds the legal capacity during most of the AM, midday, and PM periods (non-game and pre-game), and Saturday midday periods, the on-street parking utilization is assumed to continue to peak near or above 100 percent after increasing the existing on-street parking demand by the 2.8 percent background growth rate. On weekends

with a Mets game, total on-street parking occupancy would reach capacity during the 2-3 PM hour of the pre-game period during the Phase 1A 2018 No Action condition as compared to 98 percent under existing conditions. During the rest of the pre-game period (3-5 PM) on-street occupancies would increase slightly from a range of 83 to 87 percent overall under existing conditions to 85 to 89 percent in 2018. During the post-game period on-street parking occupancies would increase by about one percent from the existing usage range of 51 to 65 percent.

PHASE 1B (2028) NO ACTION TRAFFIC CONDITIONS

No additional No Action projects were identified beyond those projected for 2018 (detailed above); therefore, the peak hour volumes for the Phase 1B (2028) No Action condition consist of the same No Action project increments as Phase 1A plus the annual background growth for 16 years (2012 to 2028) which amounts to almost 5.5 percent. The increase in traffic volumes between Phase 1A (2018) and Phase 1B (2028) is relatively minor since background growth between the two phases is only about 2.5 percent overall and, as mentioned, both No Action years include the same No Action project vehicle trip increments.

Traffic volumes maps for Phase 1B are and detailed levels of service results are provided at the end of this chapter. Level of service summaries are provided in **Tables 14-20 to 14-23** and described in detail below.

Table 14-20

**Overall Intersection Level of Service Summary Comparison
Existing vs. Phase 1B (2018) No Action Conditions—Non-Game Day**

Signalized Intersections	Existing Conditions				Phase 1B (2028) No Action Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				26 Signalized Intersections ^[1]			
Overall Intersection LOS A/B/C	22	23	22	22	11	15	42 <u>11</u>	14
Overall Intersection LOS D	4	3	4	4	7	5	5 <u>7</u>	3
Overall Intersection LOS E	0	0	0	0	8 <u>7</u>	2	7 <u>6</u>	6
Overall Intersection LOS F	0	0	0	0	0 <u>1</u>	4	2	3

Notes: ¹ Under Phase 1B (2028) No Action conditions, all five eight unsignalized intersections would operate at overall LOS A, B or C.

Table 14-21

**Traffic Lane Group Level of Service Summary Comparison
Existing vs. Phase 1B (2028) No Action Conditions—Non-Game Day**

Signalized Movements	Existing Conditions				Phase 1B (2028) No Action Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				26 Signalized Intersections ^[1]			
No. of Lane Groups at LOS A/B/C	80	97	86	88	58	72 <u>74</u>	59 <u>60</u>	74 <u>72</u>
No. of Lane Groups at LOS D	34	24	30	30	38 <u>41</u>	34 <u>32</u>	35 <u>36</u>	22 <u>25</u>
No. of Lane Groups at LOS E	10	8	13	11	42 <u>11</u>	9 <u>8</u>	44 <u>12</u>	47 <u>16</u>
No. of Lane Groups at LOS F	3	0	0	0	24 <u>22</u>	48 <u>19</u>	24	20

Note: ¹ Under Phase 1B (2028) No Action conditions, all but one unsignalized lane group (northbound left turn movement of Boat Basin Road at World's Fair Marina during the weekday AM non-game peak hour) would operate at overall LOS A, B or C.

Table 14-22

Overall Intersection Level of Service Summary Comparison
Existing vs. Phase 1B (2028) No Action Conditions—Game Day

Signalized Intersections	Existing Conditions			Phase 1B (2028) No Action Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 Signalized Intersections ⁽¹⁾		
Overall Intersection LOS A/B/C	20	20	21	14 <u>10</u>	13	10
Overall Intersection LOS D	6	6	5	7 <u>8</u>	2	3
Overall Intersection LOS E	0	0	0	5	7	6
Overall Intersection LOS F	0	0	0	3	4	7
Note: ¹ Under Phase 1B (2028) No Action conditions during game day peak hours, none of the five <u>eight</u> unsignalized intersections would operate at overall LOS E or F (all five <u>eight</u> would operate at overall LOS D or better) during the weekday pre-game peak hour; one intersection would operate at overall LOS F during the Saturday pre-game peak hour; and one intersection would operate at overall LOS E and two intersections would operate at LOS F during the Saturday post-game peak hour.						

Table 14-23

Traffic Lane Group Level of Service Summary Comparison
Existing vs. Phase 1B (2028) No Action Conditions—Game Day

Signalized Lane Groups	Existing Conditions			Phase 1B (2028) No Action Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 Signalized Intersections ⁽¹⁾		
No. of Lane Groups at LOS A/B/C	76	90	89	59	68 <u>70</u>	69 <u>70</u>
No. of Lane Groups at LOS D	37	21	25	34 <u>36</u>	27 <u>28</u>	24 <u>27</u>
No. of Lane Groups at LOS E	15	16	15	16 <u>17</u>	7	9 <u>8</u>
No. of Lane Groups at LOS F	1	2	1	21	28	29
Note: ¹ Under Phase 1B (2028) No Action conditions during game day peak hours, seven <u>12</u> of about 42 <u>17</u> unsignalized lane groups operate at LOS A, B, C or D during all peak hours. Five movements would operate at LOS E or F during at least one peak hour including: northbound left turns from Boat Basin Road onto World's Fair Marina (LOS E during the Saturday pregame peak hour and LOS F during the weekday pregame and Saturday post game peak hours); the eastbound left-through movement of Stadium Road at Boat Basin Road (LOS F during Saturday pre- and post-game peak hours); the eastbound through-right movement of Stadium Road at Boat Basin Road (LOS E during the Saturday pre-game peak hour); westbound CitiField Entrance 9 at Boat Basin Road (LOS F during the Saturday post-game peak hour); and eastbound left turns from the GCP off-ramp onto Stadium Road (LOS F during the Saturday post-game peak hour).						

The summary overview of the Phase 1B (2028) No Action condition without a Mets game indicates that:

- In the weekday AM peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to eight under the Phase 1B No Action condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 13 to 33.
- 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 six, while the number of traffic lane groups at LOS E or F would increase from eight to 27.
- In the weekday PM peak hour, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to ~~nine~~ eight under Phase 1B No Action conditions. The number of lane groups projected to operate at LOS E or F would increase from 13 to ~~35~~ 36.

- In the Saturday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from zero to nine, while the number of lane groups at LOS E or F would increase from 11 to ~~37~~ 36.
- Most of the projected LOS E or F intersections would be located in Downtown Flushing.

The summary overview of the Phase 1B No Action condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at LOS E or F would increase from zero under existing conditions to eight under the Phase 1B No Action condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 16 to ~~37~~ 38.
- In the Saturday afternoon 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 11 under the Phase 1B No Action condition. The number of lane groups projected to operate at LOS E or F would increase from 18 to 35. The unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.
- 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 zero under existing conditions to 13 under the Phase 1A No Action conditions. The number of lane groups projected to operate at LOS E or F would increase from 16 to ~~38~~ 37. The unsignalized intersection of Grand Central Parkway Ramp at West Park Loop/Stadium Road would operate at LOS E, and the unsignalized intersections of Boat Basin Road at World's Fair Marina and Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.

PHASE 1B (2028) NO ACTION PARKING CONDITIONS

Based on a background traffic growth rate of almost 5.5 percent to 2028, demand for off-street parking facilities and on-street parking in the area during the Phase 1B No Action condition 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 percent or less of total capacity in 2028 from the existing occupancy level range of 9 to 21 percent on a typical weekday without a Mets game. One facility, Municipal Lot 4, would reach full capacity during the 4-5 PM hour under the Phase 1B No Action condition as compared to 98 percent occupancy under existing conditions. On a typical Saturday without a Mets game, the maximum occupancy level for parking facilities would also increase by about one percent or less of total capacity in 2028 from the existing occupancy level range of 4 to 7 percent.

On a typical weeknight with a Mets game, the maximum occupancy which occurs between 6:30-7:30 PM would peak at about 48 percent in 2028 (excluding the main CitiField lots), compared to approximately 45 percent under existing conditions. On a typical weekend game day, the maximum occupancy (peaking at 4-5 PM) would increase by approximately three percent (from 47 percent to 50 percent) in 2028 as compared to existing conditions. 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 background increases.

Because the existing on-street parking occupancy is near or exceeds the legal capacity during most of the AM, midday, and PM periods (non-game and pre-game), and Saturday midday periods, the on-street parking utilization is assumed to continue to peak near or above 100 percent after increasing the existing on-street parking demand by the background growth rate. On weekends with a Mets game, total on-street parking occupancy would reach capacity during

the 2-3 PM hour of the pre-game period during the Phase 1B (2028) No Action condition as compared to 98 percent under existing conditions. During the rest of the pre-game period (3-5 PM), on-street occupancies would increase slightly from a range of 83 to 87 percent overall under existing conditions to 87 to 92 percent in 2028. During the post-game period, on-street parking occupancies would increase by three percent, from a range of 51 to 65 percent under existing conditions to a range of 54 to 68 percent in the Phase 1B (2028) No Action condition.

PHASE 2 (2032) NO ACTION TRAFFIC CONDITIONS

As mentioned previously, no additional No Action projects were identified beyond those projected for 2018 (detailed above in the Phase 1A No Action discussion); therefore, the peak hour volumes for the Phase 2 (2032) No Action condition consist of the same No Action project increments as Phase 1A plus the annual background growth for 20 years (2012 to 2032) which amounts to almost 6.5 percent. As with Phase 1B, the increase in traffic volumes under Phase 2 is relatively minor as compared to Phase 1A since background growth between Phase 1A (2018) and Phase 2 (2032) is only about 3.5 percent overall. Traffic volume maps for the Phase 2 No Action condition and detailed levels of service results are provided in traffic appendices at the end of this chapter. Level of service summaries are provided in **Tables 14-24 to 14-27** and discussed below.

Table 14-24
Overall Intersection Level of Service Summary Comparison
Existing vs. Phase 2 (2032) No Action Conditions—Non-Game Day

Signalized Intersections	Existing Conditions				Phase 2 (2032) No Action Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				26 Signalized Intersections ^[1]			
Overall Intersection LOS A/B/C	22	23	22	22	11	15	42 <u>11</u>	14
Overall Intersection LOS D	4	3	4	4	7	4	5 <u>7</u>	2
Overall Intersection LOS E	0	0	0	0	7	3	7 <u>6</u>	7
Overall Intersection LOS F	0	0	0	0	1	4	2	3
Note: ¹ Under Phase 2 (2032) No Action conditions, all five <u>eight</u> unsignalized intersections would operate at overall LOS A, B or C.								

Table 14-25
Traffic Lane Group Level of Service Summary Comparison
Existing vs. Phase 2 (2032) No Action Conditions—Non-Game Day

Signalized Movements	Existing Conditions				Phase 2 (2032) No Action Conditions			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				26 Signalized Intersections ^[1]			
No. of Lane Groups at LOS A/B/C	80	97	86	88	56	72 <u>74</u>	57 <u>58</u>	69 <u>70</u>
No. of Lane Groups at LOS D	34	24	30	30	38 <u>41</u>	30 <u>31</u>	38 <u>39</u>	24 <u>27</u>
No. of Lane Groups at LOS E	10	8	13	11	13	40 <u>9</u>	9 <u>11</u>	46 <u>15</u>
No. of Lane Groups at LOS F	3	0	0	0	22	48 <u>19</u>	25 <u>24</u>	21
Note: ¹ Under Phase 2 (2032) No Action conditions, all but one unsignalized lane group (northbound left turn movement of Boat Basin Road at World's Fair Marina during the weekday AM non-game peak hour) would operate at overall LOS A, B or C.								

Table 14-26

Overall Intersection Level of Service Summary Comparison
Existing vs. Phase 2 (2032) No Action Conditions—Game Day

Signalized Intersections	Existing Conditions			Phase 2 (2032) No Action Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 Signalized Intersections ^[1]		
Overall Intersection LOS A/B/C	20	20	21	8 <u>7</u>	12	10
Overall Intersection LOS D	6	6	5	10 <u>11</u>	2	2
Overall Intersection LOS E	0	0	0	5 <u>4</u>	7	7
Overall Intersection LOS F	0	0	0	3 <u>4</u>	5	7
Note: ¹ Under Phase 2 (2032) No Action conditions during game day peak hours, none of the five eight unsignalized intersections would operate at overall LOS E or F (all five eight would operate at overall LOS D or better) during the weekday pre-game peak hour; one intersection would operate at overall LOS F during the Saturday pre-game peak hour; and one intersection would operate at overall LOS E and two intersections would operate at LOS F during the Saturday post-game peak hour.						

Table 14-27

Traffic Lane Group Level of Service Summary Comparison
Existing vs. Phase 2 (2032) No Action Conditions—Game Day

Signalized Lane Groups	Existing Conditions			Phase 2 (2032) No Action Conditions		
	Weekday Pre-game	Saturday Pre-game	Saturday Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 Signalized Intersections ^[1]		
No. of Lane Groups at LOS A/B/C	76	90	89	57	64 <u>66</u>	69 <u>70</u>
No. of Lane Groups at LOS D	37	21	25	34 <u>36</u>	28 <u>29</u>	23 <u>26</u>
No. of Lane Groups at LOS E	15	16	15	16 <u>17</u>	7	6 <u>5</u>
No. of Lane Groups at LOS F	1	2	1	23	31	32
Note: ¹ Under Phase 2 (2032) No Action conditions during game day peak hours, seven 12 of about 42 17 unsignalized lane groups operate at LOS A, B, C or D during all peak hours. Five movements would operate at LOS E or F during at least one peak hour including: northbound left turns from Boat Basin Road onto World's Fair Marina (LOS E during the Saturday pregame peak hour and LOS F during the weekday pregame and Saturday post-game peak hours; the eastbound left-through movement of Stadium Road at Boat Basin Road (LOS F during Saturday pre- and post-game peak hours); the eastbound through-right movement of Stadium Road at Boat Basin Road (LOS E during the Saturday pre-game peak hour); westbound CitiField Entrance 9 at Boat Basin Road (LOS F during the Saturday post-game peak hour); and eastbound left turns from the GCP off-ramp onto Stadium Road (LOS E during the weekday and Saturday pre-game peak hours, and LOS F during the Saturday post-game peak hour).						

The summary overview of the Phase 2 (2032) No Action condition without a Mets game indicates that:

- In the weekday AM peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to eight under the Phase 2 No Action condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 13 to 35.
- 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 seven, while the number of traffic lane groups at LOS E or F would increase from eight to 28.
- In the weekday PM peak hour, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to ~~nine~~ eight under

Phase 2 No Action conditions. The number of lane groups projected to operate at LOS E or F would increase from 13 to ~~34~~ 35.

- In the Saturday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from zero to ten, while the number of lane groups at LOS E or F would increase from 11 to ~~37~~ 36.
- Most of the projected LOS E or F intersections would be located in Downtown Flushing.

The summary overview of the Phase 2 No Action condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at LOS E or F would increase from zero under existing conditions to eight under the Phase 2 No Action condition. The number of traffic lane groups projected to operate at LOS E or F would increase from 16 to ~~39~~ 40.
- 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 12 under the Phase 2 No Action condition. The number of lane groups projected to operate at LOS E or F would increase from 18 to 38. The unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.
- 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 zero under existing conditions to 14 under the Phase 2 No Action conditions. The number of lane groups projected to operate at LOS E or F would increase from 16 to ~~38~~ 37. The unsignalized intersection of Grand Central Parkway Ramp at West Park Loop/Stadium Road would operate at LOS E, and the unsignalized intersections of Boat Basin Road at World's Fair Marina and Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.

PHASE 2 (2032) NO ACTION PARKING CONDITIONS

Based on a background traffic growth rate of almost 6.5 percent to 2032, demand for off-street parking facilities and on-street parking in the area during the Phase 2 No Action condition can generally be expected to increase by the same rate. The maximum occupancy level for parking facilities on non-game days would increase by two percent or less of total capacity in 2032 from the existing occupancy level range of 9 to 21 percent on a typical weekday without a Mets game. One facility, Municipal Lot 4, would reach full capacity during the 4-5 PM hour under the Phase 2 No Action condition as compared to 98 percent occupancy under existing conditions. On a typical Saturday without a Mets game, the maximum occupancy level for parking facilities would increase by about one percent or less of total capacity in 2032 from the existing occupancy level range of 4 to 7 percent.

On a typical weeknight with a Mets game, the maximum occupancy which occurs between 6:30-7:30 PM would peak at about 48 percent in 2032 (excluding the main CitiField lots), compared to approximately 45 percent under existing conditions. On a typical weekend game day, the maximum occupancy (peaking at 4-5 PM) would increase by approximately four percent (from 47 percent to 51 percent) in 2032 as compared to existing conditions. 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 background increases.

Because the existing on-street parking occupancy is at or exceeds the legal capacity during most of the AM, midday, and PM periods (non-game and pre-game), and Saturday midday periods, the on-street parking utilization is assumed to continue to peak near or above 100 percent after

increasing the existing on-street parking demand by the background growth rate. On weekends with a Mets game, total on-street parking occupancy would exceed capacity during the 2-3 PM hour of the pre-game period during the Phase 2 (2032) No Action condition as compared to 98 percent under existing conditions. During the rest of the pre-game period (3-5 PM) on-street occupancies would increase by approximately five percent from a range of 83 to 87 percent overall under existing conditions to 88 to 93 percent in 2032. During the post-game period, on-street parking occupancies would increase by approximately three percent, from a range of 51 to 65 percent under existing conditions to a range of 54 to 69 percent in the Phase 2 (2032) No Action condition.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT (TRAFFIC AND PARKING)

The proposed project would redevelop the Willets Point/CitiField area with a mix of uses over a 18-year period. As mentioned, this development would occur in three continuous phases. Therefore, three separate Build years were analyzed corresponding to each phase: Phase 1A (2018); Phase 1B (2028); and Phase 2 (2032). Proposed development under each phase is as follows:

- By 2018 (Phase 1A), the development of an approximately 23-acre portion of the Special Willets Point District (the “District”) with a 200-room hotel, approximately 30,000 square feet of retail space, an approximately 2,825-space surface parking area/off-season public recreation space, and the development of the parking field west of CitiField with “Willets West”—a retail and entertainment center of approximately 1.4 million square feet (1 million square feet of leaseable area) and a 2,900-space parking garage (including 2,500 spaces for the Willets West retail/entertainment center and 400 spaces as replacement parking to be used for the Mets); and the development of a structured parking facility on the westernmost CitiField surface parking lot south of Roosevelt Avenue (South Lot);
- By 2028 (Phase 1B), the replacement of the interim surface parking area/off-season recreation space (the parking spaces would be relocated to two new structured parking facilities on the CitiField surface parking lots south of Roosevelt Avenue [South Lot/Lot D]) and the creation of approximately 4.23 million square feet of residential, retail, office, hotel, public school, community facility, enclosed parking, and public open space uses within the District; and
- By 2032 (Phase 2), the full build-out of the Special Willets Point District substantially as anticipated in the 2008 FGEIS, and the development of retail, and office uses on portions of the CitiField leasehold north of Roosevelt Avenue (Lot B).

Table 14-28 identifies the development program analyzed for the full buildout of the proposed project, including development in the District and Willets West, as well as the potential future development of Lot B. The proposed program development for each of the interim phases is summarized in detail later in the chapter (**Tables 14-42** and **14-52**).

**Table 14-28
Full Buildout Development Program for Analysis**

Use		Size
Willels West ⁽¹⁾	Destination Retail	915,000 SF
	Movie Theater	4,000 Seats (80,000 SF) ⁽²⁾
Special Willels Point District	Residential	5,850 DU
	Destination Retail	657,000 SF
	Local Retail	593,000 SF
	Office	500,000 SF
	Convention Center	400,000 SF
	Hotel	700 Rooms
	Community Facility	150,000 SF
Lot B Development	Public School (K-8)	1,463 Seats
	Destination Retail	184,500 SF
Total	Office	280,000 SF
Total	Residential	5,850 DU
	Destination Retail	1,756,500 SF
	Movie Theater	4,000 Seats
	Local Retail	593,000 SF
	Office	780,000 SF
	Convention Center	400,000 SF
	Hotel	700 Rooms
	Community Facility	150,000 SF
	Public School (K-8)	1,463 Seats
Notes:		
(1) Willels West would contain approximately 1.4 million sf of development, including 400,000 sf of non-leasable common area. This ancillary space is not considered for trip generation purposes.		
(2) Willels Point Development Plan FGEIS (2008) assumption of 20 sf per seat.		
SF = square feet		
DU = dwelling unit		

TRIP GENERATION AND MODAL SPLIT

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. To the extent possible, the travel demand assumptions previously used in the 2008 FGEIS were applied. The specific travel demand factors for the SEIS are shown in **Table 14-29** and **Table 14-30** and are described in detail below.

Chapter 14: Transportation

Table 14-29
Weekday Trip Generation Factors

Rates	Residential				Office				Destination Retail				Local Retail				Convention/Expo Facility				Movie Theater			
Person Trips																								
Daily Trip Rate	8.075 / DU (1)				18.0 / 1,000 SF (1)				78.2 / 1,000 SF (1)				205.0 / 1,000 SF (1)				46.2 / 1,000 SF (3)				3.26 / Seat (1)			
Linkage Trip Credit													(3) 25%											
Modal Split	(2)				(3, 4)				(3)				(3)				(3)				(3)			
Auto	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Taxi	26.0%	26.0%	26.0%	26.0%	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%	56.0%	56.0%	56.0%	56.0%
Subway	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%	7.0%	7.0%	7.0%	7.0%
Bus	52.0%	52.0%	52.0%	52.0%	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%	18.0%	18.0%	18.0%	18.0%
Walk Only	10.0%	10.0%	10.0%	10.0%	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%	8.0%	8.0%	8.0%	8.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Vehicle Occupancy	(2)	(2)	(2)	(2)	(4)	(4)	(4)	(4)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Auto	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Taxi	1.39	1.39	1.39	1.39	1.14	1.14	1.14	1.14	2.05	2.05	2.05	2.05	2.00	2.00	2.00	2.00	2.30	2.30	2.30	2.30	2.52	2.52	2.52	2.52
Temporal Distribution	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(3)	(3)	(3)	(3)	(1)	(1)	(1)	(3)
Percent In/Out	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(1)	(1)	(1)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
In	20.0%	51.0%	65.0%	70.0%	96.2%	48.0%	5.0%	20.0%	61.0%	55.0%	47.0%	50.0%	50.0%	50.0%	50.0%	50.0%	100.0%	73.0%	3.0%	1.0%	95.0%	62.0%	54.0%	53.0%
Out	80.0%	49.0%	35.0%	30.0%	3.8%	52.0%	95.0%	80.0%	39.0%	45.0%	53.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%	27.0%	97.0%	99.0%	5.0%	38.0%	46.0%	47.0%
Delivery Trips																								
Daily Trip Rate	0.06 / DU (1)				0.32 / 1,000 SF (1)				0.35 / 1,000 SF (1)				0.35 / 1,000 SF (1)				0.70 / 1,000 SF (3)				0.02 / Seat (3)			
Temporal Distribution	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Percent In/Out	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
In	50%	50%	50%	50%	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%	50%	50%	50%	50%
Rates	Hotel				Community Facility				PS/IS - Students				PS/IS - Faculty				Recreational Uses							
Person Trips																								
Daily Trip Rate	9.4 / Room (1)				34.0 / 1,000 SF (3)				2.0 / Seat (3)				2.0 / Staff (3)				190.3 / Acre (5)							
Linkage Trip Credit																	(6) 25%							
Modal Split	(3)				(2, 3)				(3)				(3)				(7)							
Auto	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Taxi	70.0%	70.0%	70.0%	70.0%	13.0%	13.0%	13.0%	13.0%	15.0%	15.0%	15.0%	15.0%	50.0%	50.0%	50.0%	50.0%	59.0%	59.0%	59.0%	59.0%	3.0%	3.0%	3.0%	3.0%
Subway	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%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Bus	5.0%	5.0%	5.0%	5.0%	26.0%	26.0%	26.0%	26.0%	15.0%	15.0%	15.0%	15.0%	50.0%	50.0%	50.0%	50.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Walk Only	5.0%	5.0%	5.0%	5.0%	55.5%	55.5%	55.5%	55.5%	60.0%	60.0%	60.0%	60.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Vehicle Occupancy	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(7)	(7)	(7)	(7)	(7)	(7)	(7)	(7)
Auto	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE	AM	MD	PM	EVE
Taxi	1.40	1.40	1.40	1.40	1.50	1.50	1.50	1.50	1.30	1.30	1.30	1.30	1.20	1.20	1.20	1.20	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
Temporal Distribution	(1)	(1)	(1)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(5)	(5)	(5)	(5)	(8)	(8)	(8)	(8)
Percent In/Out	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(9)	(9)	(9)	(9)	(8)	(8)	(8)	(8)
In	41.0%	68.0%	59.0%	60.0%	94.0%	45.0%	42.0%	50.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	50.0%	57.0%	49.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Out	59.0%	32.0%	41.0%	40.0%	6.0%	55.0%	58.0%	50.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	50.0%	43.0%	51.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Delivery Trips																								
Daily Trip Rate	0.24 / Room (3)				0.38 / 1,000 SF (3)				0.04 / Seat (3)				N/A N/A				3.48 / Acre (9)							
Temporal Distribution	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(9)	(9)	(9)	(9)	(8)	(8)	(8)	(8)
Percent In/Out	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(9)	(9)	(9)	(9)	(8)	(8)	(8)	(8)
In	50%	50%	50%	50%	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%	50%	50%	50%	50%
Sources:	(1) New York City Mayor's Office of Environmental Coordination, City Environmental Quality Review Technical Manual (2012) (2) U.S. Census Bureau 2006-2010 American Community Survey 5-Year Estimates. Journey to Work Data. (3) Willert Point Development Plan FEIS (2008) (4) U.S. Department of Commerce, Bureau of the Census, Census 2000. Reverse Journey to Work Data. (5) Institute of Transportation Engineers, Trip Generation Manual, 8th Edition (2008), Land Use 435 (Multipurpose Recreational Facility). Temporal distribution based on the ratio of peak hour of generator trip rates versus the total daily trip rates. Weekday midday temporal distribution assumed the same as weekday PM. (6) Linkage accounts for synergy with recreational uses in adjacent Flushing Corona Meadows Park (7) Assumed the same as the destination retail land use (8) The recreational uses component would only be in use during non-game days and the off-season, it would not generate any trips during game day related peak hours. (9) Coney Island Rezoning FEIS (2009) - Amusement Park Use. Delivery trip rate converted from per 1,000 square feet to per acre.																							

Table 14-30
Saturday Trip Generation Factors

Rates	Residential			Office			Destination Retail			Local Retail			Convention/Expo Facility		
Person Trips															
Daily Trip Rate	9.6 / DU (1)			3.9 / 1,000 SF (1)			92.5 / 1,000 SF (1)			240 / 1,000 SF (1)			46.2 / 1,000 SF (3)		
Linkage Trip Credit										(3) 25%					
Modal Split	(2,3)			(4)			(3)			(3)			(3)		
Auto	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Taxi	34.0%	34.0%	34.0%	51.0%	51.0%	51.0%	59.0%	59.0%	59.0%	15.0%	15.0%	15.0%	70.0%	70.0%	70.0%
Subway	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	6.0%	6.0%	6.0%
Bus	32.0%	32.0%	32.0%	16.0%	16.0%	16.0%	13.0%	13.0%	13.0%	5.0%	5.0%	5.0%	12.0%	12.0%	12.0%
Walk Only	3.0%	3.0%	3.0%	14.0%	14.0%	14.0%	18.0%	18.0%	18.0%	10.0%	10.0%	10.0%	2.0%	2.0%	2.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Vehicle Occupancy	(2)	(2)	(2)	(4)	(4)	(4)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Auto	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Taxi	1.39	1.39	1.39	1.14	1.14	1.14	2.49	2.49	2.49	2.00	2.00	2.00	2.60	2.60	2.60
Temporal Distribution	(1)	(3)	(3)	(1)	(3)	(3)	(1)	(3)	(3)	(1)	(3)	(3)	(3)	(3)	(3)
	Non-Game	Pre-Game	Post-Game	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%	7.0%	7.2%	17.0%	15.0%	15.0%	11.0%	8.0%	6.0%	10.0%	9.5%	9.5%	14.4%	12.0%	13.8%
Percent In/Out	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
In	57.0%	50.0%	50.0%	60.0%	15.0%	60.0%	51.0%	53.6%	47.5%	55.0%	55.0%	45.0%	50.0%	64.0%	41.0%
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%	50.0%	36.0%	59.0%
Delivery Trips															
Daily Trip Rate	0.02 / DU (1)			0.01 / 1,000 SF (1)			0.04 / 1,000 SF (1)			0.04 / 1,000 SF (1)			0.04 / 1,000 SF (3)		
Temporal Distribution	(1)	(3)	(3)	(1)	(3)	(3)	(1)	(3)	(3)	(1)	(3)	(3)	(3)	(3)	(3)
	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
	9.0%	9.0%	2.0%	11.0%	11.0%	3.0%	11.0%	11.0%	2.0%	11.0%	11.0%	2.0%	14.7%	14.7%	1.1%
Percent In/Out	(1)	(3)	(3)	(1)	(3)	(3)	(1)	(3)	(3)	(1)	(3)	(3)	(3)	(3)	(3)
In	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Out	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Rates															
Person Trips															
Daily Trip Rate	6.25 / Seat (1)			9.4 / Room (1)			34.0 / 1,000 SF (3)			205.5 / Acre (5)					
Linkage Trip Credit										(6) 25%					
Modal Split	(3)			(3)			(2,3)			(7)					
Auto	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game
Taxi	56.0%	56.0%	56.0%	70.0%	70.0%	70.0%	13.0%	13.0%	13.0%	59.0%	59.0%	59.0%			
Subway	7.0%	7.0%	7.0%	15.0%	15.0%	15.0%	0.5%	0.5%	0.5%	5.0%	5.0%	5.0%			
Bus	18.0%	18.0%	18.0%	5.0%	5.0%	5.0%	26.0%	26.0%	26.0%	13.0%	13.0%	13.0%			
Walk Only	8.0%	8.0%	8.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	18.0%	18.0%	18.0%			
Total	11.0%	11.0%	11.0%	5.0%	5.0%	5.0%	55.5%	55.5%	55.5%	5.0%	5.0%	5.0%			
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			
Vehicle Occupancy	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(7)	(7)	(7)			
Auto	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game			
Taxi	2.52	2.52	2.52	1.60	1.60	1.60	1.50	1.50	1.50	2.49	2.49	2.49			
	2.30	2.30	2.30	1.40	1.40	1.40	1.50	1.50	1.50	2.49	2.49	2.49			
Temporal Distribution	(1)	(3)	(3)	(1)	(3)	(3)	(3)	(3)	(3)	(5)	(8)	(8)			
	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game			
	5.0%	5.0%	8.0%	9.0%	7.5%	7.5%	14.1%	14.1%	14.1%	12.6%	0.0%	0.0%			
Percent In/Out	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(9)	(8)	(8)			
In	62.0%	62.0%	38.0%	56.0%	56.0%	56.0%	49.0%	49.0%	48.0%	58.0%	50.0%	50.0%			
Out	38.0%	38.0%	62.0%	44.0%	44.0%	44.0%	51.0%	51.0%	52.0%	42.0%	50.0%	50.0%			
Delivery Trips															
Daily Trip Rate	0.00 / Seat (3)			0.08 / Room (3)			0.00 / 1,000 SF (3)			1.74 / Acre (9)					
Temporal Distribution	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(9)	(8)	(8)			
	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game	Non-Game	Pre-Game	Post-Game			
	0.0%	0.0%	0.0%	9.0%	9.0%	0.0%	0.0%	0.0%	0.0%	9.0%	0.0%	0.0%			
Percent In/Out	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(9)	(8)	(8)			
In	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%			
Out	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%			
Sources:															
(1) New York City Mayor's Office of Environmental Coordination, <i>City Environmental Quality Review Technical Manual</i> (2012)															
(2) U.S. Census Bureau 2006-2010 American Community Survey 5-Year Estimates. Journey to Work Data.															
(3) <i>Willets Point Development Plan FGEIS</i> (2008)															
(4) U.S. Department of Commerce, Bureau of the Census, <i>Census 2000</i> . Reverse Journey to Work Data.															
(5) Institute of Transportation Engineers, <i>Trip Generation Manual, 8th Edition</i> (2008), Land Use 435 (Multipurpose Recreational Facility). Temporal distribution based on the ratio of peak hour of generator trip rates versus the total daily trip rates.															
(6) Linkage accounts for synergy with recreational uses in adjacent Flushing Corona Meadows Park															
(7) Assumed the same as the destination retail land use															
(8) The recreational uses component would only be in use during non-game days and the off-season, it would not generate any trips during game day related peak hours.															
(9) <i>Coney Island Re-zoning FEIS</i> (2009) - Amusement Park Use. Delivery trip rate converted from per 1,000 square feet to per acre.															

RESIDENTIAL

For the residential component, the weekday and Saturday person and delivery trip generation rates are from the 2012 *CEQR Technical Manual*.

For the SEIS, the latest U.S. Census American Community Survey (ACS) 2006-2010 journey-to-work data were used to develop the modal split for the weekday AM, midday, PM, and

evening peak hours based on data for the following census tracts in Queens County (based on 2010 U.S. Census tract boundaries): 381, 383.01, 383.02, 399, 401, 403, 415, 849, 853, 855, 857, 865, 869, and 871. These tracts covered approximately the same areas studied in the 2008 FGEIS with the 2000 Census data. Census Tracts 383.01 and 383.02, which encompass the project site, are large tracts 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 peak hours. The vehicle occupancy for auto trips was applied to taxi trips.

For the weekday AM, midday, and PM peak hours, the temporal distributions are from the 2012 *CEQR Technical Manual* and the directional distributions are from the 2008 FGEIS. For the weekday evening peak hour, the temporal and directional distributions are from the 2008 FGEIS. For the Saturday non-game midday peak, the temporal and directional distributions are from the 2012 *CEQR Technical Manual* and 2008 FGEIS, respectively. The Saturday pre-game and post-game temporal and directional distributions are from the 2008 FGEIS.

The weekday AM, midday, and PM and Saturday non-game midday peak hour delivery trip temporal and directional distributions are from the 2012 *CEQR Technical Manual*. The weekday evening and the Saturday pre-game and post-game delivery trip temporal and directional distributions are from the 2008 FGEIS.

OFFICE

The trip generation analysis for the office component used daily trip generation rates reported in the 2012 *CEQR Technical Manual* for the weekday and Saturday trip generation. The weekday and Saturday delivery trip generation rates are also based on the 2012 *CEQR Technical Manual*.

Census 2000 (U.S. Department of Commerce Bureau of the Census, 2000) reverse journey-to-work data (for the Queens County census tracts 851, 853, 855, 857, 865, 867, 871, and 875, based on 2000 U.S. Census tract boundaries) were used to develop the modal split and vehicle occupancies for the AM, PM, evening, and Saturday peak hours. The weekday midday peak hour modal splits and vehicle occupancies are based on the 2008 FGEIS. As presented in the 2008 FGEIS, 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 AM, midday, and PM and the Saturday non-game midday/afternoon peak hour temporal and directional distributions are from the 2012 *CEQR Technical Manual* and the 2008 FGEIS, respectively. The weekday evening and the Saturday pre-game and post-game temporal and directional distribution rates are from the 2008 FGEIS.

The weekday AM, midday, and PM and Saturday non-game midday/afternoon peak hour delivery trip temporal and directional distributions are from the 2012 *CEQR Technical Manual*. The weekday evening and the Saturday pre-game and post-game delivery trip temporal and directional distributions are from the 2008 FGEIS.

DESTINATION RETAIL

The weekday and Saturday person and delivery trip generation rates for the project's destination retail component are from the 2012 *CEQR Technical Manual*. The weekday AM, midday, and PM and the Saturday non-game midday/afternoon peak hour temporal and directional

distributions are from the 2012 *CEQR Technical Manual* and the 2008 FGEIS, respectively. The weekday evening and the Saturday pre-game and post-game temporal and directional distribution rates are from the 2008 FGEIS. Because it is expected that some of the retail trips will be made by the project's residents and workers en route to or from their homes or offices on the project site, some internalization of trip-making is expected.

The weekday and Saturday modal splits and vehicle occupancies for the destination retail component are from the 2008 FGEIS. The weekday AM, midday, and PM and Saturday non-game midday/afternoon peak hour delivery trip temporal and directional distributions are from the 2012 *CEQR Technical Manual*. The weekday evening and the Saturday pre-game and post-game delivery trip temporal and directional distributions are from the 2008 FGEIS.

LOCAL RETAIL

The weekday and Saturday daily trip generation and delivery vehicle trip generation rates for the project's local neighborhood retail component are from the 2012 *CEQR Technical Manual*. A 25 percent linked trip credit was applied to the local retail trip generation estimates. The modal splits and vehicle occupancies are from the 2008 FGEIS.

Weekday AM, midday, and PM and Saturday non-game midday peak hour person and delivery trip temporal and directional distributions are from the 2012 *CEQR Technical Manual* and the 2008 FGEIS, respectively. The weekday evening and the Saturday pre-game and post-game person and delivery trip temporal and directional distributions are from the 2008 FGEIS.

CONVENTION / EXPO FACILITY

The weekday and Saturday travel demand assumptions for the project's convention/expo facility component are all based on the 2008 FGEIS.

MOVIE THEATER

The weekday and Saturday person daily trip generation rates for the project's movie theater component were from rates presented in the 2012 *CEQR Technical Manual*. The modal splits and auto and taxi occupancy rates are from the 2008 FGEIS. The weekday AM, midday, and PM and Saturday non-game midday/afternoon peak hour person trip temporal distributions are from the 2012 *CEQR Technical Manual*. The weekday evening and the Saturday pre-game and post-game person trip temporal distributions are from the 2008 FGEIS. The weekday and Saturday directional distributions are from the 2008 FGEIS. Weekday and Saturday delivery trip generation rates and the temporal and directional distributions are from the 2008 FGEIS.

HOTEL

The weekday and Saturday daily trip generation rates are from the 2012 *CEQR Technical Manual*. The weekday AM, midday, and PM and the Saturday non-game midday/afternoon peak hour person trip temporal distributions are also from the 2012 *CEQR Technical Manual*. The weekday evening and Saturday pre-game and post-game person trip temporal distributions are from the 2008 FGEIS. The modal splits, vehicle occupancies, and directional distributions are from the 2008 FGEIS. The weekday and Saturday delivery trip generation rates and temporal and directional distributions are from the 2008 FGEIS.

COMMUNITY FACILITY

The weekday and Saturday travel demand assumptions for the project's community facility component are all based on the 2008 FGEIS. The modal split for the community facility use was

similarly adjusted like the FGEIS based on the latest 2006-2010 ACS journey-to-work data. 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 is predicated on a majority of the community facility trips being made by the project's residents, same as in the FGEIS.

SCHOOL

The weekday and Saturday travel demand assumptions for the project's school component are all based on the 2008 FGEIS.

RECREATIONAL USES (PHASE 1A ONLY)

The weekday and Saturday trip generation rates for the non-game day/off-season recreational uses (which may include a driving range, miniature golf, batting cages, and basketball/volleyball courts among other activities for approximately six months of the year) were derived from factors presented in the *Trip Generation Manual, 8th Edition* (ITE, 2008) for Land Use 435, "Multipurpose Recreational Facility." The recreational uses are likely to have a similar patron draw as the destination retail component described above; therefore, the destination retail modal splits and vehicle occupancies were also assumed for this land use. Accordingly, with these uses' proximity to nearby hotel and retail uses, including the Willets West retail development, and synergy with recreational uses in the adjacent Flushing Corona Meadows Park, a 25 percent linked trip credit was assumed and applied to the trip generation estimates.

Because these recreational uses would only be available on non-game days at CitiField, they would not generate any trips during the weekday pre-game, Saturday pre-game, and Saturday post-game analysis peak hours. The weekday AM and PM and Saturday non-game temporal distributions are based on the ratio of the peak hour of generator trip rates as compared to the total daily trip rates presented in the *Trip Generation Manual, 8th Edition* (ITE, 2008) for Land Use 435, "Multipurpose Recreational Facility." The weekday midday temporal distribution was assumed to be the same as the weekday PM temporal distribution. The weekday and Saturday peak hour directional distributions are based on factors presented in the *Coney Island Rezoning Final Environmental Impact Statement* (2009) for the amusement park land use. The weekday and Saturday delivery trip generation rates and temporal distributions are based on the factors presented in the *Coney Island Rezoning FEIS* for the amusement park land use, converted from per 1,000 square feet to per acre.

These travel demand assumptions were used to calculate the number of person and vehicle trips expected to be generated by development component during each of the proposed project's buildout phases.

PROPOSED ROADWAY IMPROVEMENTS

Over the course of the buildout of the proposed project, there would be several changes to the roadway network within the District occurring in each of the three phases. The roadway changes that would occur in each phase of development are summarized as follows:

- By Phase 1A (2018), 36th, 37th, 38th and 39th Avenues would be closed within the District, and Willets Point Boulevard would be closed between 127th and 126th Streets. These closures would be made to accommodate CitiField parking (2,750 spaces) displaced by the proposed Willets West development and would be used as recreational space in the off-season. In the Willets West area, at its intersection with Boat Basin Road, the eastbound approach of Stadium Road would be reconstructed so that it no longer intersects Boat Basin Road as an unsignalized intersection at the CitiField main parking lot entrance (Entrance 8), and instead intersects Boat Basin Road with the rest of Stadium Road, just to the north.

Additionally, a primary entrance to the proposed Willets West development would be created at the intersection of the GCP Off-Ramp at West Park Loop Road/Stadium Road. The Willets West entrance would become the east leg of this intersection.

- Between Phase 1A (2018) and Phase 1B (2028), 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 its 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 via a new connection with the existing westbound Northern Boulevard ramp to the southbound Van Wyck 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. They would also continue to provide access to the eastbound and westbound Grand Central Parkway via the existing ramp that connects to the southbound Whitestone Expressway which travels west along the northern edge of the District. Also, Willets Point Boulevard would be extended southwest to where it currently meets 38th Avenue and then west to intersect with 126th Street (along what is currently 38th Avenue). Additionally, two new east-west retail streets would be created in the District along 36th and 37th Avenues and would intersect 126th Street—one at the CitiField entrance center line, and one near CitiField's northern edge. A third retail street running north-south between 35th Avenue and the current 38th Avenue (Willets Point Boulevard extension in the proposed project), would intersect those connector streets. A short segment of another proposed new north-south street that would traverse the eastern border of the District (adjacent to the abutting MTA lot) would be created. This segment would span the distance of approximately one block, starting from just north of Roosevelt Avenue, and then turn west where it would intersect Willets Point Boulevard.
- Between Phase 1B (2028) and Phase 2 (2032), the District's new internal street network would be completed. The proposed north-south street along the eastern border of the District would be fully extended to the northern end of the District, and would generally run parallel to Willets Point Boulevard. Additional east-west streets would be added to service new development parcels. Additionally, 35th Avenue would be demapped and closed within the District to accommodate new development parcels in the northwest section of the District. It is anticipated that these parcels would be surrounded by new internal roadways as well. Additionally, a new intersection would be created along Roosevelt Avenue at the entrance to Lot B to accommodate proposed development that would occur there.

TRIP DISTRIBUTION AND ASSIGNMENT TO THE ROADWAY NETWORK

The project site lies within a major highway system in north-central Queens, between the Grand Central Parkway (GCP), the Long Island Expressway (LIE), the Van Wyck Expressway, and the Whitestone Expressway. As mentioned, two new ramps are proposed which would provide inbound access to the sites from the northbound Van Wyck Expressway and outbound access from the sites to the southbound Van Wyck Expressway, and would continue access to the eastbound and westbound Grand Central Parkway, currently available via the existing ramp.

The volume of vehicular traffic generated by the proposed project during each phase of development was assigned to the highway and roadway networks using regional and local origin/destination patterns attributed to the proposed land use types. Trips generated by the proposed land uses within the District were assigned to its primary access points. The route assignments for vehicular trips generated by the proposed project under each phase of buildout

assume only those ramp access improvements and street network changes that would be in place within the District by that Build year. However, while site access patterns would vary to a degree under each phase, overall origin-destination assignments would be similar. Similar to the travel demand assumptions, vehicle trip assignments generally reflect those used in the 2008 FGEIS.

OFFICE TRIPS

For office auto trips, 16 percent were assigned to the eastbound GCP, 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.

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 project site 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 GCP, 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 project site 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 GCP, 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 project site 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 project site 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 GCP, 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 was 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/RECREATIONAL TRIPS

The community facility and recreational facilities are 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 was assigned to Northern Boulevard.

DELIVERIES

Trucks were assigned along NYCDOT-designated truck routes, including the Van Wyck and Whitestone Expressways, the LIE, Northern Boulevard, Astoria Boulevard, Roosevelt Avenue, and College Point Boulevard (trucks are not allowed on the GCP). 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.

GAME DAY CIRCULATION CHANGES

In 2018, the proposed Phase 1A development would displace approximately 4,100 parking spaces from the main CitiField parking lot to make way for the proposed Willets West development. For

the Phase 1A With Action scenario, the displaced parking spaces would be replaced by approximately 2,750 parking spaces provided in a new interim lot located on the east side of 126th Street between Roosevelt Avenue and 35th Avenue, and an additional 950 parking spaces in a new garage located on the South Lot (south side of Roosevelt Avenue between west of 126th Street). The remaining 400 parking spaces would be located within the new Willets West parking facilities. For Phase 1A, game traffic that currently parks at the main CitiField parking lot was reassigned to each of the proposed new CitiField lots. During pre-game conditions, it is expected that fans would originate from the same areas and access the study area via the same highways as in existing conditions. However, due to the proximity of the proposed new South Lot parking garage to the westbound Grand Central Parkway off-ramps, a portion of fans that currently use the northbound Van Wyck Expressway to access the stadium were reassigned from the northbound Van Wyck Expressway to the westbound Grand Central Parkway via Exit 10 (south of the Long Island Expressway). The remaining fans that currently use the northbound Van Wyck Expressway would continue to access CitiField parking via the westbound Northern Boulevard exit and through the World's Fair Marina and local roadway network. In addition, a portion of fans that arrive at the stadium via the westbound Grand Central Parkway ramps to 126th Street are expected to exit the highway further south at Exit 9P or via the ramp to West Park Loop/Stadium Road and proceed to the proposed parking facilities. The remaining fans are expected to continue using the same access points as in existing conditions, but have been locally re-routed to the proposed new parking facilities via the most direct routes. During the post-game conditions under Phase 1A, it is expected that fans would travel the same outbound routes as in existing conditions, but would use alternate ramps depending on their proximity to the new parking lots.

By Phase 1B in 2028 and thereafter, the proposed new ramps linking the northbound and southbound Van Wyck Expressway with the District would be operational, and the temporary CitiField parking lot within the District in Phase 1A would be removed. All CitiField parking spaces that were displaced in Phase 1A would be replaced in three parking garages located on South Lot and Lot D. For Phase 1B and Phase 2, game traffic using the main CitiField parking lot in existing conditions was diverted to the proposed new CitiField parking facilities. During pre-game conditions, the same portion of game traffic that was reassigned from the northbound Van Wyck Expressway to the westbound Grand Central Parkway in Phase 1A would continue to use the westbound Grand Central Parkway since it is the most direct route to the proposed new garages. The portion of game traffic that would continue to use the northbound Van Wyck Expressway was reassigned to the proposed new ramp into the District and to the proposed new parking garages via local streets. As in Phase 1A, a portion of fans that arrive at the stadium via the westbound Grand Central Parkway ramps to 126th Street are expected to exit the highway further south at Exit 9P or via the ramp to West Park Loop/Stadium Road and proceed to the proposed parking facilities. A portion of fans that currently access the stadium via Astoria Boulevard and Northern Boulevard ramps to 126th Street were reassigned to the proposed new garages via southbound 114th Street to Roosevelt Avenue. During the post-game conditions, it is expected that fans would travel the same outbound routes as in existing conditions, but would use alternate ramps depending on their proximity to the new parking lots.

TRAFFIC LEVELS OF SERVICE AND SIGNIFICANT IMPACT CRITERIA

The assessment of potential significant traffic impacts of the proposed project is based on significant impact criteria defined in the *CEQR Technical Manual*. No Action LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future With Action conditions are considered a significant traffic impact. For future No Action 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 Action LOS D, an increase of delay by five or more seconds in the With Action condition is considered a significant impact if the With Action condition delay meets or exceeds 45.0 seconds. For a No Action LOS E, the threshold is a four second increase in With Action condition delay; for a No Action LOS F, a three second increase in delay in the With Action condition is significant. For unsignalized intersections, for the minor street to generate a significant impact, 90 passenger car equivalents (PCEs) must be identified in the With Action condition in any peak hour.

Detailed summaries of traffic levels of service for analyzed intersections and identification of significant traffic impacts for conditions in the future with the proposed project under each phase of buildout are presented in the sections below.

PHASE 1A (2018) TRAFFIC ANALYSIS RESULTS

This section includes a determination of the volume of vehicle trips generated under the Phase 1A 2018 With Action 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 21.

TRAVEL DEMAND ANALYSIS

As mentioned earlier, proposed development expected to be built out under Phase 1A includes a substantial amount of destination retail including a movie theater and a parking garage (2,900 spaces) on the Willetts West site and a smaller amount of hotel and local retail uses, and a surface parking lot (2,825 spaces)/off-season recreational space in the Special Willetts Point District. This program is detailed in **Table 14-31**.

Table 14-31
Phase 1A (2018) Buildout Development Program for Analysis

Use	Size
Willetts West ⁽¹⁾	
Destination Retail Movie Theater	915,000 SF 4,000 Seats (80,000 SF) ⁽²⁾
Special Willetts Point District	
Local Retail Hotel Recreational Uses ⁽³⁾	30,000 SF 200 Rooms 20 Acres
Total	
Destination Retail Movie Theater Local Retail Hotel Recreational Uses	915,000 SF 4,000 Seats 30,000 SF 200 Rooms 20 Acres
Notes:	
(1) Willetts West would contain approximately 1.4 million sf of development, including 400,000 sf of non-leasable common area. This ancillary space is not considered for trip generation purposes.	
(2) <i>Willetts Point Development Plan FGEIS</i> (2008) assumption of 20 sf per seat.	
(3) Temporary use. Would be replaced by 2028 with other uses. Programmed only during non-game days and the off-season.	
SF = square feet; DU = dwelling unit	

The volume of person trips and vehicle trips expected to be generated under Phase 1A of the proposed project would be substantial. **Table 14-32** presents the person trips generated by the

proposed project, and shows that it would generate an estimated 2,658, 8,336, 8,554, and 11,657 person trips during the weekday AM, midday, PM, and Saturday midday (non-game day) peak hours, respectively. On game days, the proposed project would generate an estimated 7,751 person trips during the weekday PM pre-game peak hour and 8,675 and 7,732 person trips in the Saturday pre-game and post-game hours, respectively.

Table 14-33 presents the vehicle trip estimates for the proposed project. The project would generate a total of 883, 2,517, 2,618, and 3,132 vehicle (auto, taxi, and delivery) trips during the weekday AM, midday, PM, and Saturday midday (non-game day) peak hours, respectively. On game days, the project would generate an estimated 2,324 vehicle trips during the weekday PM pre-game peak hour and 2,313 and 2,063 vehicle trips in the Saturday pre-game and post-game hours, respectively. The proposed project's taxi trips were adjusted based on the assumption that 25 percent of the arriving taxis would depart with a fare, per *CEQR Technical Manual* guidelines for this area.

TRAFFIC VOLUMES AND LEVELS OF SERVICE

Vehicle trips generated in Phase 1A were assigned through the study area based on the trip assignments discussed earlier, and produced specific roadway-by-roadway and intersection-by-intersection traffic volume projections within the study area. An overview of this is provided below, and specific and intersection-by-intersection generated volume projections are provided in detail in the technical appendices at the end of this chapter.

In 2018, the Phase 1A generated traffic volume increments would make up approximately 4 percent of the overall traffic volumes in the AM peak hour, 11 percent in the midday peak hour, 9 percent in the PM peak hour, and 11 percent in the Saturday midday peak hour, without a Mets game, when comparing these volume increments to overall Phase 1A With Action traffic volumes entering and exiting the traffic study area's local street network. For conditions with a Mets game, the proposed project's traffic increments would make up about 8 percent of the overall traffic volumes during all peak hours.

Northern Boulevard volumes can be expected to increase by about 20 to 115 vph per direction during the peak analysis hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the project site, Northern Boulevard volumes can be expected to increase by approximately 25 to 515 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 20 to 125 vph per direction during the peak analysis hours.

Roosevelt Avenue volumes can be expected to increase by about 10 to 55 vph per direction during the non-game and game peak hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the project site, Roosevelt Avenue volumes can be expected to increase by approximately 15 to 150 vph per direction during the peak hours without a Mets game—with the highest increment due mostly to retail trips during the Saturday midday peak hour, and by about 55 to 115 vph per direction during the peak hours with a Mets game. Roosevelt Avenue volumes in the vicinity of 108th, 111th, and 114th Streets can be expected to increase by about 20 to 150 vph per direction during the peak analysis hours.

Table 14-32
Phase 1A (2018) Program
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 NON-GAME AM PEAK PERIOD													
Destination Retail	772	494	39	25	196	126	236	151	66	41	1,309	837	2,146
Local Retail	10	10	0	0	3	3	7	7	49	49	69	69	138
Movie Theater	69	4	9	0	22	1	10	1	14	1	124	7	131
Hotel	43	62	9	13	3	4	3	4	4	6	62	89	151
Recreational Uses	27	27	1	1	7	7	8	8	3	3	46	46	92
Total	921	597	58	39	231	141	264	171	136	100	1,610	1,048	2,658
WEEKDAY NON-GAME MIDDAY PEAK HOUR													
Destination Retail	2,090	1,710	106	87	531	435	638	522	177	144	3,542	2,898	6,440
Local Retail	66	66	0	0	22	22	44	44	306	306	438	438	876
Movie Theater	136	83	17	10	44	27	19	12	27	17	243	149	392
Hotel	125	59	27	13	9	4	9	4	9	4	179	84	263
Recreational Uses	123	93	6	5	31	24	37	28	11	7	208	157	365
Total	2,540	2,011	156	115	637	512	747	610	530	478	4,610	3,726	8,336
WEEKDAY NON-GAME PM PEAK HOUR													
Destination Retail	1,786	2,014	91	102	454	512	545	614	151	171	3,027	3,413	6,440
Local Retail	35	35	0	0	12	12	23	23	161	161	231	231	462
Movie Theater	315	269	39	34	101	86	45	38	63	53	563	480	1,043
Hotel	101	70	22	15	7	5	7	5	7	5	144	100	244
Recreational Uses	106	110	5	6	27	28	32	33	9	9	179	186	365
Total	2,343	2,498	157	157	601	643	652	713	391	399	4,144	4,410	8,554
SATURDAY NON-GAME MIDDAY PEAK HOUR													
Destination Retail	2,801	2,692	237	228	617	593	855	821	238	228	4,748	4,562	9,310
Local Retail	45	36	0	0	15	12	30	24	207	171	297	243	540
Movie Theater	434	266	54	33	140	86	62	38	85	52	775	475	1,250
Hotel	67	52	14	11	5	4	5	4	4	3	95	74	169
Recreational Uses	133	96	11	8	29	21	41	29	11	9	225	163	388
Total	3,480	3,142	316	280	806	716	993	916	545	463	6,140	5,517	11,657
WEEKDAY EVENING PRE-GAME PEAK HOUR													
Destination Retail	1,647	1,647	84	84	419	419	502	502	139	139	2,791	2,791	5,582
Local Retail	26	26	0	0	9	9	18	18	122	122	175	175	350
Movie Theater	503	446	63	56	162	143	72	64	98	88	898	797	1,695
Hotel	52	35	11	8	4	3	4	3	3	1	74	50	124
Recreational Uses	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,228	2,154	158	148	594	574	596	587	362	350	3,938	3,813	7,751
SATURDAY PRE-GAME PEAK HOUR													
Destination Retail	2,141	1,854	181	157	472	408	653	566	182	157	3,629	3,142	6,771
Local Retail	42	35	0	0	14	12	28	23	198	161	282	231	513
Movie Theater	434	266	54	33	140	86	62	38	85	52	775	475	1,250
Hotel	55	43	12	9	4	3	4	3	4	4	79	62	141
Recreational Uses	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,672	2,198	247	199	630	509	747	630	469	374	4,765	3,910	8,675
SATURDAY POST-GAME PEAK HOUR													
Destination Retail	1,423	1,573	121	133	314	347	434	480	120	133	2,412	2,666	5,078
Local Retail	35	42	0	0	12	14	23	28	161	198	231	282	513
Movie Theater	426	694	53	87	137	223	61	99	83	137	760	1,240	2,000
Hotel	55	43	12	9	4	3	4	3	4	4	79	62	141
Recreational Uses	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,939	2,352	186	229	467	587	522	610	368	472	3,482	4,250	7,732

Table 14-33
Phase 1A (2018) Program
Vehicle Trips by Type

Use	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY NON-GAME AM PEAK PERIOD									
Destination Retail	377	241			13	13	390	254	644
Local Retail	5	5			0	0	5	5	10
Movie Theater	27	2			5	5	32	7	39
Hotel	27	39			3	3	30	42	72
Recreational Uses	13	13			4	4	17	17	34
Total	449	300	42	42	25	25	516	367	883
WEEKDAY NON-GAME MIDDAY PEAK HOUR									
Destination Retail	1,020	834			18	18	1,038	852	1,890
Local Retail	33	33			1	1	34	34	68
Movie Theater	54	33			4	4	58	37	95
Hotel	78	37			2	2	80	39	119
Recreational Uses	60	45			3	3	63	48	111
Total	1,245	982	117	117	28	28	1,390	1,127	2,517
WEEKDAY NON-GAME PM PEAK HOUR									
Destination Retail	871	982			3	3	874	985	1,859
Local Retail	18	18			0	0	18	18	36
Movie Theater	125	107			0	0	125	107	232
Hotel	63	44			0	0	63	44	107
Recreational Uses	52	54			1	1	53	55	108
Total	1,129	1,205	138	138	4	4	1,271	1,347	2,618
SATURDAY MIDDAY NON-GAME PEAK HOUR									
Destination Retail	1,125	1,081			2	2	1,127	1,083	2,210
Local Retail	23	18			0	0	23	18	41
Movie Theater	172	106			0	0	172	106	278
Hotel	42	33			1	1	43	34	77
Recreational Uses	53	39			2	2	55	41	96
Total	1,415	1,277	215	215	5	5	1,635	1,497	3,132
WEEKDAY EVENING PRE-GAME PEAK HOUR									
Destination Retail	803	803			2	2	805	805	1,610
Local Retail	13	13			0	0	13	13	26
Movie Theater	200	177			0	0	200	177	377
Hotel	33	22			0	0	33	22	55
Recreational Uses	0	0			0	0	0	0	0
Total	1,049	1,015	128	128	2	2	1,179	1,145	2,324
SATURDAY PRE-GAME PEAK HOUR									
Destination Retail	860	745			2	2	862	747	1,609
Local Retail	21	18			0	0	21	18	39
Movie Theater	172	106			0	0	172	106	278
Hotel	34	27			1	1	35	28	63
Recreational Uses	0	0			0	0	0	0	0
Total	1,087	896	162	162	3	3	1,252	1,061	2,313
SATURDAY POST-GAME PEAK HOUR									
Destination Retail	571	632			0	0	571	632	1,203
Local Retail	18	21			0	0	18	21	39
Movie Theater	169	275			0	0	169	275	444
Hotel	34	27			0	0	34	27	61
Recreational Uses	0	0			0	0	0	0	0
Total	792	955	158	158	0	0	950	1,113	2,063

Sanford Avenue volumes through Downtown Flushing between Parsons Boulevard and College Point Boulevard can be expected to increase by about 4 to 45 vph per direction during the peak analysis hours.

Astoria Boulevard volumes in the vicinity of 108th and 114th Streets can be expected to increase by about 50 to 95 vph per direction during the peak analysis hours.

Volumes on 34th Avenue from the District at the intersection with 126th Street are not expected to increase. However, volumes along West Park Loop/Stadium Road at the intersection with 126th

Willets Point Development

Street can be expected to increase by approximately 70 to 390 vph per direction during the peak hours without a Mets game, and by 170 to 315 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 50 to 150 vph per direction during the peak analysis hours. In the vicinity of Roosevelt Avenue, 126th Street volumes can be expected to increase by about 15 to 65 vph per direction during the peak analysis hours.

College Point Boulevard volumes can be expected to increase by about 5 to 60 vph per direction during the peak analysis hours.

Volumes along 114th Street in the vicinity of Roosevelt Avenue can be expected to increase by approximately 25 to 225 vph per direction during the peak analysis hours. Projected volume increments on the other north-south streets, including 108th Street, Main Street, Union Street, and Parsons Boulevard can be expected to 40 vph per direction or less during all of the peak hours.

The remainder of this section provides an overview of significant traffic impacts that would be generated under the With Action conditions. Detailed volume-to-capacity (v/c) ratios, average vehicle delays, and levels of service movement-by-movement at each intersection under the Phase 1A (2018) With Action condition are presented at the end of this chapter. Project-generated traffic volume increment maps and total With Action volume maps are provided within **Appendix C**.

Using the previously discussed volume increases, the levels of service for the Phase 1A With Action condition were determined for ~~29~~ 32 of the ~~34~~ 34 intersections (both signalized and unsignalized) analyzed under the No Action condition. Two unsignalized intersections, Willets Point Boulevard at 126th Street and Boat Basin Road at Stadium Road, analyzed under the No Action condition, would be eliminated due to street demapping and intersection improvements in the proposed project under Phase 1A. Future traffic levels of service under the With Action condition are shown in **Tables 14-34** through **14-37**.

Table 14-34
Overall Intersection Level of Service Summary Comparison
Phase 1A (2018) No Action vs. With Action Conditions—Non-Game Day

	Phase 1A No Action Condition				Phase 1A With Action Condition			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
Signalized Intersections	26 Signalized Intersections				26 28 Signalized Intersections			
Overall Intersection LOS A/B/C	13 <u>14</u>	15	13 <u>12</u>	15	14 <u>13</u>	12 <u>14</u>	14 <u>12</u>	14 <u>12</u>
Overall Intersection LOS D	5 <u>4</u>	6	7 <u>8</u>	3	6 <u>5</u>	4	4 <u>5</u>	4
Overall Intersection LOS E	8	2	4	6	9 <u>10</u>	4	7	1
Overall Intersection LOS F	0	3	2	2	0	6	4	10 <u>11</u>
No. of Locations with Significant Impacts	--	--	--	--	14	15 <u>14</u>	19	18
Notes: During the non-game peak hours in the Phase 1A With Action condition, one of the three <u>four</u> unsignalized intersections analyzed would be significantly impacted in the weekday AM and PM peak hours, and two unsignalized intersections would be impacted during the weekday and Saturday midday peak hours.								

Table 14-35

Traffic Lane Group Level of Service Summary Comparison
Phase 1A (2018) No Action vs. With Action Conditions—Non-Game Day

Signalized Movements	Phase 1A No Action Condition				Phase 1A With Action Condition			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				26 28 Signalized Intersections			
No. of Lane Groups at LOS A/B/C	62	76 77	63	74	62 69	70 78	57 65	64 72
No. of Lane Groups at LOS D	35 37	28	32 34	23 25	35 39	28 31	36	34 33
No. of Lane Groups at LOS E	15 13	9	12 11	13 12	14 13	13 12	11	14 10
No. of Lane Groups at LOS F	47 18	17	22	20	20 21	22 23	29 32	28 30
Notes: During the non-game peak hours in the Phase 1A With Action conditions, one of the ten 11 unsignalized lane groups analyzed would operate at LOS F in the weekday AM peak hour, three lane groups would operate at LOS F in the midday and PM peak hours, and four lane groups would operate at LOS F in the Saturday midday peak hour. All other unsignalized lane groups would operate at LOS D or better during non-game peak hours.								

Table 14-36

Overall Intersection Level of Service Summary Comparison
Phase 1A (2018) No Action vs. With Action Conditions—Game Day

Signalized Intersections	Phase 1A No Action Condition			Phase 1A With Action Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 28 Signalized Intersections		
Overall Intersection LOS A/B/C	11 10	13	10	9 8	12 11	9
Overall Intersection LOS D	7 8	4	5	7 9	4 2	4
Overall Intersection LOS E	6	5	8	5 4	4 5	3
Overall Intersection LOS F	2	4	3	5 7	9 10	10 12
No. of Locations with Significant Impacts	--	--	--	49 21	45 17	48 20
Notes: During the game day peak hours in the Phase 1A With Action condition, two of the three <u>four</u> unsignalized intersections analyzed would be significantly impacted in the weekday and Saturday pre-game peak hours, and one unsignalized intersection would be impacted during the weekday Saturday post-game peak hour.						

Table 14-37

Traffic Lane Group Level of Service Summary Comparison
Phase 1A (2018) No Action vs. With Action Conditions—Game Day

Signalized Movements	Phase 1A No Action Condition			Phase 1A With Action Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			26 28 Signalized Intersections		
No. of Lane Groups at LOS A/B/C	61 60	72 73	72 73	53 56	65 69	70 73
No. of Lane Groups at LOS D	37 40	25	20 21	36 40	31 34	47 19
No. of Lane Groups at LOS E	44 10	8	9 8	46 19	8 9	13
No. of Lane Groups at LOS F	21	25	29	26 29	28 33	32 38
Notes: During the game day peak hours in the Phase 1A With Action conditions, one of the ten 11 unsignalized lane groups analyzed would operate at LOS F and one lane group would operate at LOS E in the weekday pre-game peak hour, and three lane groups would operate at LOS F and one lane group would operate at LOS E in the Saturday pre- and post-game peak hours. All other unsignalized lane groups would operate at LOS A, <u>or</u> B, <u>or</u> C during game day peak hours.						

The addition of the proposed project's generated traffic for Phase 1A to the already poor future baseline (2018 No Action) conditions would result in relatively few new intersections or lane groups operating at unacceptable levels of service; however, it would cause several already sensitive locations to be significantly impacted. As a result, Phase 1A of the proposed project would have significant traffic impacts at 14 of the ~~26~~ 28 signalized intersections analyzed in the weekday AM peak hour, ~~45~~ 14 of ~~26~~ 28 in the weekday midday peak hour, 19 of ~~26~~ 28 in the

weekday PM peak hour, and 18 of ~~26~~ 28 in the non-game Saturday midday peak hour. During the weekday pre-game peak hour, ~~49~~ 21 of ~~26~~ 28 signalized intersections analyzed would have significant traffic impacts, during the Saturday pre-game peak hour ~~15~~ 17 of ~~26~~ 28 signalized intersections analyzed would have significant impacts, and during the Saturday post-game peak hour ~~18~~ 20 of ~~26~~ 28 signalized intersections analyzed would have significant impacts. Of the ~~three~~ four unsignalized intersections analyzed, one (World's Fair Marina at Boat Basin Road) would be significantly impacted in each of the peak analysis hours.

The summary overview of the Phase 1A With Action condition without a Mets game indicates that:

- In the weekday AM peak hour, ~~9~~ 10 of the ~~26~~ 28 analyzed signalized intersections are projected to operate at overall LOS E or F, which is ~~one~~ two more than under the No Action condition. Fourteen 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 ~~32~~ 31 to 34.
- In the weekday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from five under the No Action condition to ten under the With Action condition, and there would be significant impacts at ~~15~~ 14 of the ~~26~~ 28 signalized intersections. The number of individual lane groups that would operate at LOS E or F would increase from 26 to 35.
- In the weekday PM peak hour, the number of intersections that are projected to operate at overall LOS E or F would increase from 6 to 11 under the With Action condition, with 19 signalized intersections significantly impacted. The number of individual lane groups that would operate at LOS E or F would increase from ~~34~~ 33 to ~~40~~ 43.
- In the Saturday midday peak hour, the number of signalized intersections projected to operate at LOS E or F would increase from 8 under the No Action condition to ~~11~~ 12 under the With Action condition. Eighteen signalized intersections would be significantly impacted. The number of lane groups at LOS E or F would increase from ~~33~~ 32 to ~~39~~ 40.
- Two of the ~~three~~ four unsignalized intersections would be significantly impacted during at least one peak hour. World's Fair Marina at Boat Basin Road would consistently have a traffic lane group (northbound Boat Basin Road left turn movement) 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. Also, Stadium Road/West Loop Road at the Grand Central Parkway exit ramp—which would be reconfigured with a new west leg that would serve as an entrance/exit in and out of the proposed Willets West retail development—would have several movements that operate at unacceptable levels of service, one of which (the eastbound left turn movement from the GCP off-ramp) would be significantly impacted during the weekday and Saturday midday peak hours.

The summary overview of the Phase 1A With Action condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, ~~10~~ 11 out of ~~26~~ 28 signalized intersections would operate at LOS E or F under the With Action condition, which is an increase from eight signalized intersections at LOS E or F under the No Action condition. There would be significant impacts at ~~19~~ 21 of the ~~26~~ 28 signalized intersections. The number of lane groups that would operate at LOS E or F would increase from ~~32~~ 31 to ~~42~~ 48.

- 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 9 to ~~13~~ 15 under the With Action condition, with ~~15~~ 17 signalized intersections significantly impacted. The number of lane groups at LOS E or F would increase from 33 to ~~36~~ 42.
- In the Saturday PM post-game peak hour, the number of locations that would operate at LOS E or F would increase from 11 to ~~13~~ 15 under the With Action condition. ~~Eighteen~~ Twenty signalized intersections would be significantly impacted. The number of lane groups that would operate at LOS E or F would increase from ~~38~~ 37 to ~~45~~ 51.

Two of the ~~three~~ four unsignalized intersections would be significantly impacted during at least one peak hour. At World's Fair Marina at Boat Basin Road, the northbound Boat Basin Road left turn movement would consistently operate at LOS F during all game day peak hours, and would be significantly impacted. At the reconfigured intersection of Stadium Road/West Loop Road at the Grand Central Parkway exit ramp, the eastbound left turn movement from the GCP off-ramp would operate at LOS E during all peak hours and would be significantly impacted during the weekday and Saturday pre-game peak hours. Additionally, two intersections that were unsignalized in the No Action condition would be significantly impacted as signalized intersections in the With Action condition during all game peak hours.

Table 14-38 shows the locations and time periods where significant impacts would occur in the Phase 1A (2018) With Action condition. Mitigation measures for significantly impacted locations are discussed in Chapter 21, ~~"Mitigation."~~

PHASE 1A (2018) WITH ACTION PARKING

In Phase 1A, the proposed project would provide approximately 2,500 off-street accessory parking spaces to satisfy the projected parking demand due to the development in Willets West and 75 accessory spaces for project demand in the District.¹ As shown in **Table 14-39**, the projected weekday and Saturday peak parking demands for Willets West (1,127 and 2,238 spaces, respectively) is anticipated to be satisfied entirely by the off-street parking facility provided within the site.

¹ Additional parking spaces may be provided for off-season recreation uses within the District if they are warranted.

Table 14-38

Phase 1A (2018) With Action 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		x
Northern Boulevard at 108th Street	x	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
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		x	x	x	x	x	x
34th Avenue at 126th Street	x	x	x	x	x	x	x
Roosevelt Avenue at 108th Street		x	x	x	x	x	x
Roosevelt Avenue at 111th Street			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				
Roosevelt Avenue at Main Street	x	x	x	x	x	x	x
Roosevelt Avenue at Union Street	x	x	x	x	x	x	x
Roosevelt Avenue at Parsons Boulevard	x			x	x		
Kissena Boulevard at Main Street				x			
Sanford Avenue at College Point Boulevard							
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard		x					
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard							
Boat Basin Road at Stadium Road			x	x	x	x	x
Boat Basin Road at World's Fair Marina	x	x	x	x	x	x	x
Stadium Road at Grand Central Parkway		x		x	x	x	
Willetts Point Boulevard at Northern Boulevard							
Northern Boulevard at 126th Place							
126th Street at 36th Avenue					x	x	x
126th Street at 37th Avenue					x	x	x

Notes: "x" means the intersection would be significantly impacted.

Table 14-39
Willets West Phase 1A (2018)
Weekday and Saturday Parking Accumulation

Time Begin	Weekday							Saturday						
	Destination Retail			Movie Theater			Total	Destination Retail			Movie Theater			Total
	In	Out	Acc.	In	Out	Acc.		In	Out	Acc.	In	Out	Acc.	
Midnight	0	0	0	0	14	14	14	0	0	0	0	28	28	28
1 AM	0	0	0	0	14	0	0	0	0	0	0	28	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	0	0	0	0
7 AM	62	62	0	14	0	14	14	100	0	100	28	0	28	128
8 AM	377	241	136	27	2	39	175	191	10	281	53	3	78	359
9 AM	292	120	308	32	6	65	373	180	20	441	94	17	155	596
10 AM	393	184	517	58	14	109	626	321	80	682	111	28	238	920
11 AM	591	439	669	55	23	141	810	1,263	541	1,404	108	58	288	1,692
Noon	1,020	834	855	54	33	162	1,017	881	763	1,522	172	106	354	1,876
1 PM	1,581	1,549	887	70	46	186	1,073	1,125	1,081	1,566	172	106	420	1,986
2 PM	1,008	1,114	781	101	73	214	995	1,074	992	1,648	183	150	453	2,101
3 PM	939	832	888	114	89	239	1,127	1,043	963	1,728	214	175	492	2,220
4 PM	855	937	806	143	117	265	1,071	579	625	1,682	153	125	520	2,202
5 PM	871	982	695	125	107	283	978	902	902	1,682	240	204	556	2,238
6 PM	896	1,040	551	188	160	311	862	812	993	1,501	360	307	609	2,110
7 PM	803	803	551	200	177	334	885	632	1,173	960	376	347	638	1,598
8 PM	436	533	454	178	257	255	709	562	1,042	480	342	492	488	968
9 PM	175	629	0	59	145	169	169	361	841	0	113	276	325	325
10 PM	0	0	0	23	94	98	98	0	0	0	44	179	190	190
11 PM	0	0	0	9	79	28	28	0	0	0	17	151	56	56
Total	10,299	10,299		1,450	1,450			10,026	10,026		2,780	2,780		
Note: Acc = Accumulation														
Source: Based on travel demand estimates														

As shown in **Tables 14-40** and **14-41**, parking demand from development within the District would not be fully accommodated by the 75 accessory spaces on weekdays or on Saturdays. During the Mets off-season, there would be an additional parking demand of 5 to 131 spaces on weekdays and Saturdays. During the off-season when the recreational uses would be in place, the additional recreational accessory parking demand, if needed, would be provided in Lot B, the north lot, or within the Willets Point District property itself to satisfy this demand.

During the Mets season, the weekday and Saturday parking shortfalls would be substantially lower since there would be no parking demand generated by the recreational uses. On weekdays, there would be a slight overnight shortfall (between 10 PM and 8 AM) of 5 to 17 spaces, and a midday shortfall of 3 to 37 spaces. On Saturday, there would be a slight shortfall during most of the day ranging from 4 to 33 spaces. It is expected that this shortfall would be fully absorbed by publicly available on- and off-street spaces within and near the District.

In addition to providing accessory parking for project demand, the proposed Phase 1A program would also include the in-kind replacement of 4,100 Mets parking spaces in the main CitiField lots that would be displaced by the Willets West development. These replacement spaces would be distributed amongst a new parking facility in the District (2,750 spaces, used as recreational space in the off-season), Lot D/South Lot (950 spaces) and the Willets West development (400 spaces).

Table 14-40
Special Willetts Point District Phase 1A (2018)
Weekday Parking Accumulation

Time Begin	Local Retail			Hotel			Recreational Uses			Total Acc.
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Midnight	0	0	0	3	1	88	0	0	0	88
1 AM	0	0	0	4	0	92	0	0	0	92
2 AM	0	0	0	0	0	92	0	0	0	92
3 AM	0	0	0	0	0	92	0	0	0	92
4 AM	0	0	0	0	0	92	0	0	0	92
5 AM	0	0	0	0	0	92	0	0	0	92
6 AM	0	0	0	0	0	92	4	4	0	92
7 AM	1	0	1	2	3	91	4	4	0	92
8 AM	5	5	1	27	39	79	13	13	0	80
9 AM	2	2	1	13	24	68	31	10	21	90
10 AM	6	4	3	14	14	68	33	11	43	114
11 AM	9	9	3	19	19	68	37	12	68	139
Noon	33	33	3	78	37	109	60	45	83	195
1 PM	26	27	2	13	31	91	58	28	113	206
2 PM	17	18	1	10	24	77	41	50	104	182
3 PM	15	15	1	10	24	63	41	50	95	159
4 PM	15	16	0	12	29	46	38	45	88	134
5 PM	18	18	0	63	44	65	52	54	86	151
6 PM	13	13	0	39	59	45	0	86	0	45
7 PM	13	13	0	33	22	56	0	0	0	56
8 PM	0	0	0	29	24	61	0	0	0	61
9 PM	0	0	0	19	10	70	0	0	0	70
10 PM	0	0	0	14	4	80	0	0	0	80
11 PM	0	0	0	7	1	86	0	0	0	86
Total	173	173		409	409		412	412		
Note: Acc. = Accumulation Source: Based on travel demand estimates										

Table 14-41
Special Willetts Point District Phase 1A (2018)
Saturday Parking Accumulation

Time Begin	Local Retail			Hotel			Recreational Uses			Total Acc.
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Midnight	0	0	0	3	1	88	0	4	4	92
1 AM	0	0	0	4	0	92	0	4	0	92
2 AM	0	0	0	0	0	92	0	0	0	92
3 AM	0	0	0	0	0	92	0	0	0	92
4 AM	0	0	0	0	0	92	0	0	0	92
5 AM	0	0	0	0	0	92	0	0	0	92
6 AM	0	0	0	0	0	92	0	0	0	92
7 AM	0	0	0	7	10	89	4	0	4	93
8 AM	2	0	2	22	32	79	7	0	11	92
9 AM	4	0	6	22	32	69	12	3	20	95
10 AM	16	4	18	29	28	70	13	5	28	116
11 AM	19	19	18	29	28	71	26	11	43	132
Noon	21	17	22	29	28	72	39	21	61	155
1 PM	23	18	27	42	33	81	53	39	75	183
2 PM	21	17	31	10	23	68	36	32	79	178
3 PM	21	17	35	17	41	44	34	32	81	160
4 PM	16	20	31	31	31	44	49	60	70	145
5 PM	16	16	31	32	32	44	30	36	64	139
6 PM	15	18	28	41	41	44	23	28	59	131
7 PM	14	18	24	33	22	55	16	20	55	134
8 PM	10	19	15	25	16	64	12	18	49	128
9 PM	5	20	0	16	7	73	9	20	38	111
10 PM	0	0	0	11	3	81	2	20	20	101
11 PM	0	0	0	6	1	86	1	13	8	94
Total	203	203		409	409		366	366		
Note: Acc. = Accumulation Source: Based on travel demand estimates										

PHASE 1B (2028) TRAFFIC ANALYSIS RESULTS

This section includes a determination of the volume of vehicle trips generated under the Phase 1B 2028 With Action 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 21.

TRAVEL DEMAND ANALYSIS

The proposed development expected to be built out under Phase 1B includes the Willets West development (as built by Phase 1A) consisting of destination retail with a movie theater and a parking garage (2,900 spaces), and a substantial amount of the total proposed development in the Special Willets Point District. This includes residential, retail, office, hotel, and community facility uses which would replace the interim surface parking/recreational space developed under the Phase 1A program (parking would be relocated to the lot south of Roosevelt Avenue - the "South Lot"). This program is detailed in **Table 14-42**.

Table 14-42
Phase 1B (2028) Buildout Development Program for Analysis

Use		Size
Willets West ⁽¹⁾	Destination Retail	915,000 SF
	Movie Theater	4,000 Seats (80,000 SF) ⁽²⁾
Special Willets Point District	Residential	2,490 DU
	Destination Retail	588,300 SF
	Local Retail	316,700 SF
	Office	500,000 SF
	Hotel	490 Rooms
	Community Facility	25,000 SF
	Public School (K-8)	623 Seats
Total	Residential	2,490 DU
	Destination Retail	1,503,300 SF
	Movie Theater	4,000 Seats
	Local Retail	316,700 SF
	Office	500,000 SF
	Hotel	490 Rooms
	Community Facility	25,000 SF
	Public School (K-8)	623 Seats
Notes:		
(1) Willets West would contain approximately 1.4 million sf of development, including 400,000 sf of non-leasable common area. This ancillary space is not considered for trip generation purposes.		
(2) Willets Point Development Plan FGEIS (2008) assumption of 20 sf per seat.		
SF = square feet		
DU = dwelling unit		

The volume of person trips and vehicle trips expected to be generated under Phase 1B of the proposed project would be substantial. **Table 14-43** presents the person trips generated by the proposed project, and shows that Phases 1A and 1B together would generate an estimated 9,812, 23,284, 20,826, and 25,024 person trips during the weekday AM, midday, PM, and Saturday midday (non-game days) peak hours, respectively. On game days, the proposed project would generate an estimated 16,673 person trips during the weekday PM pre-game peak hour and 20,222 and 18,239 person trips in the Saturday pre-game and post-game hours, respectively.

Table 14-43
Phase 1B (2028) Program
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 NON-GAME AM PEAK HOUR													
Residential	105	418	4	16	209	837	40	161	44	177	402	1,609	2,011
Office	530	21	10	0	166	7	145	6	188	7	1,039	41	1,080
Destination Retail	1,269	811	64	41	322	207	388	248	108	68	2,151	1,375	3,526
Local Retail	110	110	0	0	37	37	73	73	510	510	730	730	1,460
Movie Theater	69	4	9	0	22	1	10	1	14	1	124	7	131
Hotel	106	152	23	33	8	11	8	11	6	10	151	217	368
Community Facility	8	1	0	0	15	1	3	0	32	2	58	4	62
School	110	84	0	0	110	84	56	56	337	337	613	561	1,174
Total	2,307	1,601	110	90	889	1,185	723	556	1,239	1,112	5,268	4,544	9,812
WEEKDAY NON-GAME MIDDAY PEAK HOUR													
Residential	133	128	5	5	267	256	51	49	57	55	513	493	1,006
Office	165	179	3	4	52	56	45	49	383	414	648	702	1,350
Destination Retail	3,433	2,809	174	143	873	714	1,048	857	291	238	5,819	4,761	10,580
Local Retail	694	694	0	0	231	231	463	463	3,238	3,238	4,626	4,626	9,252
Movie Theater	136	83	17	10	44	27	19	12	27	17	243	149	392
Hotel	307	144	66	31	22	10	22	10	21	11	438	206	644
Community Facility	4	4	0	0	7	9	1	2	15	18	27	33	60
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,872	4,041	265	193	1,496	1,303	1,649	1,442	4,032	3,991	12,314	10,970	23,284
WEEKDAY NON-GAME PM PEAK HOUR													
Residential	374	201	14	8	748	402	144	77	158	86	1,438	774	2,212
Office	32	610	1	12	10	192	9	168	11	215	63	1,197	1,260
Destination Retail	2,934	3,308	149	168	746	841	895	1,009	249	281	4,973	5,607	10,580
Local Retail	365	365	0	0	122	122	244	244	1,704	1,704	2,435	2,435	4,870
Movie Theater	315	269	39	34	101	86	45	38	63	53	563	480	1,043
Hotel	247	172	53	37	18	12	18	12	17	12	353	245	598
Community Facility	4	5	0	0	8	11	2	16	23	30	41	71	122
School	14	17	0	0	14	17	9	9	56	56	93	99	192
Total	4,285	4,947	256	259	1,767	1,683	1,366	1,559	2,274	2,430	9,948	10,878	20,826
SATURDAY NON-GAME MIDDAY PEAK HOUR													
Residential	371	279	11	8	349	263	33	25	326	247	1,090	822	1,912
Office	101	68	2	1	32	21	28	19	36	24	199	133	332
Destination Retail	4,602	4,422	390	375	1,014	974	1,405	1,349	390	375	7,801	7,495	15,296
Local Retail	470	385	0	0	157	128	314	257	2,194	1,795	3,135	2,565	5,700
Movie Theater	434	266	54	33	140	86	62	38	85	52	775	475	1,250
Hotel	162	127	35	27	12	9	12	9	11	10	232	182	414
Community Facility	8	8	0	0	15	16	3	3	33	34	59	61	120
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,929	3,681	240	218	1,569	1,208	1,211	1,140	1,777	1,700	8,726	7,947	16,673
WEEKDAY EVENING PRE-GAME PEAK HOUR													
Residential	304	130	12	5	607	261	117	50	128	55	1,168	501	1,669
Office	8	33	0	1	3	10	2	9	3	12	16	65	81
Destination Retail	2,705	2,705	138	138	688	688	825	825	229	229	4,585	4,585	9,170
Local Retail	278	278	0	0	93	93	185	185	1,294	1,294	1,850	1,850	3,700
Movie Theater	503	446	63	56	162	143	72	64	98	88	898	797	1,695
Hotel	127	85	27	18	9	6	9	6	10	7	182	122	304
Community Facility	4	4	0	0	7	7	1	1	15	15	27	27	54
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,929	3,681	240	218	1,569	1,208	1,211	1,140	1,777	1,700	8,726	7,947	16,673
SATURDAY PRE-GAME PEAK HOUR													
Residential	285	285	8	8	268	268	25	25	251	251	837	837	1,674
Office	22	127	0	2	7	40	6	35	9	45	44	249	293
Destination Retail	3,517	3,046	298	258	775	671	1,073	930	299	257	5,962	5,162	11,124
Local Retail	447	366	0	0	149	122	298	244	2,085	1,705	2,979	2,437	5,416
Movie Theater	434	266	54	33	140	86	62	38	85	52	775	475	1,250
Hotel	135	106	29	23	10	8	10	8	9	7	193	152	345
Community Facility	8	8	0	0	15	16	3	3	33	34	59	61	120
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,848	4,204	389	324	1,364	1,211	1,477	1,283	2,771	2,351	10,849	9,373	20,222
SATURDAY POST-GAME PEAK HOUR													
Residential	293	293	9	9	276	276	26	26	257	257	861	861	1,722
Office	90	60	2	1	28	19	25	16	31	21	176	117	293
Destination Retail	2,338	2,584	199	219	516	570	713	789	197	218	3,963	4,380	8,343
Local Retail	366	447	0	0	122	149	244	298	1,705	2,085	2,437	2,979	5,416
Movie Theater	426	694	53	87	137	223	61	99	83	137	760	1,240	2,000
Hotel	135	106	29	23	10	8	10	8	9	7	193	152	345
Community Facility	8	8	0	0	15	16	3	3	32	35	58	62	120
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,656	4,192	292	339	1,104	1,261	1,082	1,239	2,314	2,760	8,448	9,791	18,239

Table 14-44 presents the vehicle trip estimates for the proposed project. The project would generate a total of 2,649, 5,152, 5,420, and 5,855 vehicle (auto, taxi, and delivery) trips during the weekday AM, midday, PM, and Saturday midday (non-game day) peak hours, respectively. On game days, the project would generate an estimated 4,194 vehicle trips during the weekday PM pre-game peak hour and 4,576 and 4,037 vehicle trips in the Saturday pre-game and post-game hours, respectively. The proposed project's taxi trips were adjusted based on the assumption that 25 percent of the arriving taxis would depart with a fare, per *CEQR Technical Manual* guidelines for this area.

TRAFFIC VOLUMES AND LEVELS OF SERVICE

Vehicle trips generated under Phase 1B buildout conditions were assigned through the study area based on the trip assignments discussed earlier, and produced specific roadway-by-roadway and intersection-by-intersection traffic volume projections within the study area. An overview of this is provided below, and specific intersection-by-intersection generated volume projections are provided in detail in the technical appendices at the end of this chapter.

In 2028, generated traffic volume increments would make up approximately 10 percent of the overall traffic volumes in the AM peak hour, 20 percent in the midday peak hour, 18 percent in the PM peak hour, and 20 percent in the Saturday midday peak hour, without a Mets game, when comparing these volume increments to overall Phase 1B With Action traffic volumes entering and exiting the traffic study area's local street network. For peak hours with a Mets game, the proposed project's traffic increments would make up about 13 percent and 15 percent of the overall traffic volumes during the weekday PM and Saturday midday pre-game peak hours, and about 14 percent during the Saturday PM post-game peak hour.

Northern Boulevard volumes can be expected to increase by about 50 to 200 vph per direction during the peak analysis hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the project site, Northern Boulevard volumes can be expected to increase by approximately 20 to 225 vph in the eastbound direction and 50 to 875 vph in the westbound direction during the peak analysis 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 80 to 235 vph per direction during the peak analysis hours.

Roosevelt Avenue volumes can be expected to increase by about 25 to 90 vph per direction during the non-game and game peak hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the project site, Roosevelt Avenue volumes can be expected to increase by approximately 75 to 330 vph per direction during the peak hours without a Mets game and by about 115 to 275 vph per direction during the peak hours with a Mets game. Roosevelt Avenue volumes in the vicinity of 108th, 111th, and 114th Streets can be expected to increase by about 45 to 130 vph per direction during the peak analysis hours.

Sanford Avenue volumes through Downtown Flushing between Parsons Boulevard and College Point Boulevard can be expected to increase by up to 15 vph in the eastbound direction and 15 to 70 vph in the westbound direction during the peak analysis hours.

Astoria Boulevard volumes in the vicinity of 108th and 114th Streets can be expected to increase by about 45 to 160 vph per direction during the peak analysis hours.

Table 14-44
Phase 1B (2028) Program
Vehicle Trips by Type

Use	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY NON-GAME AM PEAK HOUR									
Residential	76	301			9	9	85	310	395
Office	465	18			8	8	473	26	499
Destination Retail	619	396			21	21	640	417	1,057
Local Retail	55	55			4	4	59	59	118
Movie Theater	27	2			5	5	32	7	39
Hotel	66	95			7	7	73	102	175
Community Facility	5	1			0	0	5	1	6
School	87	65			1	1	88	66	154
Total	1,400	933	103	103	55	55	1,558	1,091	2,649
WEEKDAY NON-GAME MIDDAY PEAK HOUR									
Residential	96	92			7	7	103	99	202
Office	145	157			9	9	154	166	320
Destination Retail	1,675	1,370			29	29	1,704	1,399	3,103
Local Retail	347	347			6	6	353	353	706
Movie Theater	54	33			4	4	58	37	95
Hotel	192	90			5	5	197	95	292
Community Facility	3	3			1	1	4	4	8
School	0	0			1	1	1	1	2
Total	2,512	2,092	212	212	62	62	2,786	2,366	5,152
WEEKDAY NON-GAME PM PEAK HOUR									
Residential	269	145			1	1	270	146	416
Office	28	535			2	2	30	537	567
Destination Retail	1,431	1,613			5	5	1,436	1,618	3,054
Local Retail	183	183			1	1	184	184	368
Movie Theater	125	107			0	0	125	107	232
Hotel	154	108			0	0	154	108	262
Community Facility	3	3			0	0	3	3	6
School	11	14			1	1	12	15	27
Total	2,204	2,708	244	244	10	10	2,458	2,962	5,420
SATURDAY NON-GAME MIDDAY PEAK HOUR									
Residential	267	201			2	2	269	203	472
Office	89	60			0	0	89	60	149
Destination Retail	1,848	1,776			3	3	1,851	1,779	3,630
Local Retail	235	193			1	1	236	194	430
Movie Theater	172	106			0	0	172	106	278
Hotel	101	79			2	2	103	81	184
Community Facility	5	5			0	0	5	5	10
School	0	0			0	0	0	0	0
Total	2,717	2,420	351	351	8	8	3,076	2,779	5,855
WEEKDAY EVENING PRE-GAME PEAK HOUR									
Residential	219	94			1	1	220	95	315
Office	7	29			2	2	9	31	40
Destination Retail	1,319	1,319			3	3	1,322	1,322	2,644
Local Retail	139	139			1	1	140	140	280
Movie Theater	200	177			0	0	200	177	377
Hotel	79	53			0	0	79	53	132
Community Facility	3	3			0	0	3	3	6
School	0	0			0	0	0	0	0
Total	1,966	1,814	200	200	7	7	2,173	2,021	4,194
SATURDAY PRE-GAME PEAK HOUR									
Residential	205	205			2	2	207	207	414
Office	19	111			0	0	19	111	130
Destination Retail	1,413	1,224			3	3	1,416	1,227	2,643
Local Retail	224	183			1	1	225	184	409
Movie Theater	172	106			0	0	172	106	278
Hotel	84	66			2	2	86	68	154
Community Facility	5	5			0	0	5	5	10
School	0	0			0	0	0	0	0
Total	2,122	1,900	269	269	8	8	2,399	2,177	4,576
SATURDAY POST-GAME PEAK HOUR									
Residential	211	211			0	0	211	211	422
Office	79	53			0	0	79	53	132
Destination Retail	938	1,038			0	0	938	1,038	1,976
Local Retail	183	224			0	0	183	224	407
Movie Theater	169	275			0	0	169	275	444
Hotel	84	66			0	0	84	66	150
Community Facility	5	5			0	0	5	5	10
School	0	0			0	0	0	0	0
Total	1,669	1,872	248	248	0	0	1,917	2,120	4,037

Volumes on 34th Avenue to/from the District at the intersection with 126th Street are expected to increase by 150 to 350 vph during all seven peak hours, and volumes along West Park Loop/Stadium Road at the intersection with 126th Street can be expected to increase by approximately 150 to 635 vph per direction during the peak analysis hours.

Volumes along 126th Street in the vicinity of 34th Avenue can be expected to increase by approximately 255 to 410 vph per direction during non-game peak hours, and 170 to 635 vph during game day peak hours. In the vicinity of Roosevelt Avenue, 126th Street volumes can be expected to increase by about 100 to 300 vph per direction during the peak analysis hours.

College Point Boulevard volumes can be expected to increase by about 10 to 110 vph per direction during the peak analysis hours.

Volumes along 114th Street in the vicinity of Roosevelt Avenue can be expected to increase by approximately 50 to 280 vph in the northbound direction and 15 to 40 vph in the southbound direction during the peak analysis hours. Projected volume increments on the other north-south streets, including 108th Street, Main Street, Union Street, and Parsons Boulevard can be expected to 60 vph per direction or less during the peak analysis hours.

The remainder of this section provides an overview of significant traffic impacts that would be generated under 2028 With Action conditions. Detailed volume-to-capacity (v/c) ratios, average vehicle delay, and levels of service movement-by-movement at each intersection under the 2028 With Action conditions are provided at the end of this chapter. Project-generated traffic volume increment maps and total With Action volume maps are provided in **Appendix C**.

Levels of service for 2028 With Action conditions were determined for 29 of the 31 intersections (both signalized and unsignalized) analyzed under the No Action condition. Two unsignalized intersections, Willets Point Boulevard at 126th Street and Boat Basin Road at Stadium Road, analyzed under the No Action condition, would be eliminated due to street demapping and intersection improvements, and one new signalized intersection—126th Street at New Willets Point Boulevard—would be created as part of the proposed project under Phase 1B. Future traffic levels of service under the With Action condition are shown in **Tables 14-45** through **14-48**.

The addition of the proposed project's generated traffic for Phase 1B to the already poor future baseline (2028 No Action) conditions would cause several already sensitive locations to be significantly impacted. As a result, Phase 1B of the proposed project would have significant traffic impacts at 18 of the ~~27~~ 29 signalized intersections analyzed in the weekday AM peak hour, ~~18~~ 19 of ~~27~~ 29 in the weekday midday peak hour, 19 of ~~27~~ 29 in the weekday PM peak hour, and 22 of ~~27~~ 29 in the non-game Saturday midday peak hour. During the weekday pre-game peak hour, 20 of ~~27~~ 29 signalized intersections analyzed would have significant traffic impacts, during the Saturday pre-game peak hour ~~18~~ 19 of ~~27~~ 29 signalized intersections analyzed would have significant impacts, and during the Saturday post-game peak hour ~~18~~ 20 of ~~27~~ 29 signalized intersections analyzed would have significant impacts. Of the ~~three~~ four unsignalized intersections analyzed, one (World's Fair Marina at Boat Basin Road) would be significantly impacted in each of the peak analysis hours.

Table 14-45

**Overall Intersection Level of Service Summary Comparison
Phase 1B (2028) No Action vs. With Action Conditions—Non-Game Day**

Signalized Intersections	Phase 1B No Action Condition				Phase 1B With Action Condition			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				27 29 Signalized Intersections			
Overall Intersection LOS A/B/C	11	15	12 11	14	10 12	11 13	8 10	6 8
Overall Intersection LOS D	7	5	5 7	3	6 5	4 3	4 3	8 7
Overall Intersection LOS E	8 7	2	7 6	6	4	4	3 4	3 2
Overall Intersection LOS F	0 1	4	2	3	7 8	8 9	12	10 12
No. of Locations with Significant Impacts	--	--	--	--	18	18 19	19	22
Notes: During the non-game peak hours in the Phase 1B With Action condition, one of the three <u>four</u> unsignalized intersections analyzed would be significantly impacted in the weekday AM peak hour, and all three <u>two of the four</u> unsignalized intersections would be impacted during the weekday midday and PM peak hours and during the Saturday midday peak hour.								

Table 14-46

**Traffic Lane Group Level of Service Summary Comparison
Phase 1B (2028) No Action vs. With Action Conditions—Non-Game Day**

Signalized Movements	Phase 1B No Action Condition				Phase 1B With Action Condition			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				27 29 Signalized Intersections			
No. of Lane Groups at LOS A/B/C	58	72 74	59 60	71 72	63 70	65 71	51 57	59 66
No. of Lane Groups at LOS D	38 41	31 32	35 36	22 25	32 36	29 35	38 41	26 28
No. of Lane Groups at LOS E	12 11	9 8	11 12	17 16	15 13	14 12	9 7	17
No. of Lane Groups at LOS F	21 22	18 19	24	20	27 30	33 36	40 44	38 40
Notes: During the non-game peak hours in the Phase 1B With Action conditions, one of the ten <u>eleven</u> unsignalized lane groups analyzed would operate at LOS F in the weekday AM peak hour, four lane groups would operate at LOS F in the weekday midday peak hour , one lane group would operate at LOS E and four <u>three</u> lane groups would operate at LOS F in the weekday midday and PM peak hours, and five <u>four</u> lane groups would operate at LOS F during the Saturday midday peak hour. All other unsignalized lane groups would operate at LOS C or better during non-game peak hours.								

Table 14-47

**Overall Intersection Level of Service Summary Comparison
Phase 1B (2028) No Action vs. With Action Conditions—Game Day**

Signalized Intersections	Phase 1B No Action Condition			Phase 1B With Action Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			27 29 Signalized Intersections		
Overall Intersection LOS A/B/C	11 10	13	10	8 9	12 11	7 8
Overall Intersection LOS D	7 8	2	3	5 6	2 4	3 4
Overall Intersection LOS E	5	7	6	3 2	2	4
Overall Intersection LOS F	3	4	7	11 12	11 12	13
No. of Locations with Significant Impacts	--	--	--	20	18 19	18 20
Notes: During the game day peak hours in the Phase 1B With Action condition, two of the three <u>four</u> unsignalized intersections analyzed would be significantly impacted in the weekday and Saturday pre-game peak hours, and one <u>three</u> unsignalized intersections would be impacted during the weekday <u>Saturday</u> post-game peak hour.						

Table 14-48

Traffic Lane Group Level of Service Summary Comparison
Phase 1B (2028) No Action vs. With Action Conditions—Game Day

Signalized Movements	Phase 1B No Action Condition			Phase 1B With Action Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			27 29 Signalized Intersections		
No. of Lane Groups at LOS A/B/C	59	68 <u>70</u>	69 <u>70</u>	48 <u>52</u>	60 <u>63</u>	61 <u>65</u>
No. of Lane Groups at LOS D	34 <u>36</u>	27 <u>28</u>	24 <u>27</u>	33 <u>37</u>	27 <u>34</u>	26 <u>31</u>
No. of Lane Groups at LOS E	46 <u>17</u>	7	9 <u>8</u>	46 <u>17</u>	40 <u>9</u>	42 <u>14</u>
No. of Lane Groups at LOS F	21	28	29	39 <u>40</u>	39 <u>40</u>	38
Notes: During the game day peak hours in the Phase 1B With Action conditions, five of the ten <u>eleven</u> unsignalized lane groups analyzed would operate at LOS F in all three <u>game day peak hours</u> the <u>weekday and Saturday pre-game peak hours</u> , and one lane group would operate at LOS E and four lane groups would operate at LOS F during the <u>Saturday post-game peak hour</u> . All other unsignalized lane groups would operate at LOS C or better during game day peak hours.						

The summary overview of the Phase 1B With Action condition without a Mets game indicates that:

- In the weekday AM peak hour, ~~44~~ 12 of the ~~27~~ 29 analyzed signalized intersections are projected to operate at overall LOS E or F, which is ~~three~~ four more than under the No Action condition. Eighteen 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 33 to ~~42~~ 43.
- In the weekday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from six under the No Action condition to ~~12~~ 13 under the With Action condition, and there would be significant impacts at ~~48~~ 19 of the ~~27~~ 29 signalized intersections. The number of individual lane groups that would operate at LOS E or F would increase from 27 to ~~47~~ 48.
- In the weekday PM peak hour, the number of intersections that are projected to operate at overall LOS E or F would increase from ~~9~~ 8 to ~~45~~ 16 under the With Action condition, with 19 signalized intersections significantly impacted. The number of individual lane groups that would operate at LOS E or F would increase from ~~35~~ 36 to ~~49~~ 51.
- In the Saturday midday peak hour, the number of signalized intersections projected to operate at LOS E or F would increase from 9 under the No Action condition to ~~43~~ 14 under the With Action condition. Twenty-two signalized intersections would be significantly impacted. The number of lane groups at LOS E or F would increase from ~~37~~ 36 to ~~55~~ 57.
- ~~All three~~ Two of the four analyzed unsignalized intersections would be significantly impacted during at least one peak hour. World's Fair Marina at Boat Basin Road would consistently have a traffic lane group (northbound Boat Basin Road left turn movement) 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. Also, Stadium Road/West Loop Road at the Grand Central Parkway exit ramp—which would be reconfigured with a new west leg that would serve as an entrance/exit in and out of the proposed Willets West retail development—would have several movements that operate at unacceptable levels of service, ~~two~~ one of which (the eastbound left turn movement ~~and right turn movement~~ from the GCP off-ramp) would be significantly impacted during at least one peak hour. ~~At the intersection of Northern Boulevard and Willets Point Boulevard, northbound Willets Point Boulevard would operate at LOS F and be significantly impacted during the weekday midday, PM, and Saturday midday peak hours. Additionally, one~~

intersection that was unsignalized in the No Action condition would be significantly impacted as a signalized intersection in the With Action condition during the weekday midday peak hour.

The summary overview of the Phase 1B With Action condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, 14 out of ~~27~~ 29 signalized intersections would operate at LOS E or F under the With Action condition, which is an increase from eight signalized intersections at LOS E or F under the No Action condition. There would be significant impacts at 20 of the ~~27~~ 29 signalized intersections. The number of lane groups that would operate at LOS E or F would increase from ~~37~~ 38 to ~~55~~ 57.
- 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 11 to ~~13~~ 14 under the With Action condition, with ~~48~~ 19 signalized intersections significantly impacted. The number of lane groups at LOS E or F would increase from 35 to 49.
- In the Saturday PM post-game peak hour, the number of locations that would operate at LOS E or F would increase from 13 to 17 under the With Action condition. ~~Eighteen~~ Twenty signalized intersections would be significantly impacted. The number of lane groups that would operate at LOS E or F would increase from ~~38~~ 37 to ~~50~~ 52.
- ~~All three~~ Three of the four analyzed unsignalized intersections would be significantly impacted during at least one peak hour. At World's Fair Marina at Boat Basin Road, the northbound Boat Basin Road left turn movement would consistently operate at LOS F during the weekday pre-game and Saturday pre-game and post-game peak hours and would be significantly impacted. Stadium Road/West Loop Road at the Grand Central Parkway exit ramp would have multiple movements operate at unacceptable levels of service and would be significantly impacted during at least one peak hour. At the intersection of Northern Boulevard and Willetts Point Boulevard, ~~northbound Willetts Point Boulevard~~ eastbound Northern Boulevard service road would operate at LOS ~~EE~~ and be significantly impacted during the Saturday post-game peak hour. Additionally, one intersection that was unsignalized in the No Action condition would be significantly impacted as a signalized intersection in the With Action condition during the Saturday pre-game peak hour and two would be impacted during the Saturday post-game peak hour.

Table 14-49 shows the locations and time periods where significant impacts would occur in the Phase 1B (2028) With Action condition. Mitigation measures for significantly impacted locations are discussed in Chapter 21, ~~“Mitigation.”~~

PHASE 1B (2028) WITH ACTION PARKING

Under the proposed Phase 1B (2028) buildout, a total of 2,700 accessory off-street parking spaces would be provided to accommodate parking demand generated by proposed development within the District. It is also anticipated that on-street parking would be provided on existing and new streets expected to be in place within the District by 2028. As detailed street configurations and curbside parking regulations have not yet been defined, 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 hotel, community facilities, or along primary delivery routes. Specific regulations would be determined at a later date.

Table 14-49

Phase 1B (2028) With Action 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	x	x	x
Northern Boulevard at 108th Street	x	x	x	x	x	x	x
Northern Boulevard at 114th Street	x		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	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		x	x	x	x	x	x
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
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				
Roosevelt Avenue at Main Street	x	x	x	x	x	x	x
Roosevelt Avenue at Union Street	x	x	x	x	x	x	x
Roosevelt Avenue at Parsons Boulevard	x			x	x		
Kissena Boulevard at Main Street				x			
Sanford Avenue at College Point Boulevard							
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard	x	x		x	x		
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard	x	x		x			
Boat Basin Road at Stadium Road		x	x	x	x	x	x
Boat Basin Road at World's Fair Marina	x	x	x	x	x	x	x
Stadium Road at Grand Central Parkway		x	x	x	x	x	x
Willets Point Boulevard at Northern Boulevard		-x	-x	-x			x
New Willets Point Boulevard at 126th Street	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<u>Northern Boulevard at 126th Place</u>							
<u>126th Street at 36th Avenue</u>						x	x
<u>126th Street at 37th Avenue</u>		x					x
Notes: "x" means the intersection would be significantly impacted. n/a means the intersection is new for With Action conditions.							

As was done in the 2008 FGEIS, project parking for residential use was separated from the other proposed uses. **Table 14-50** shows a peak residential parking demand of 1,320 spaces occurring overnight. Assuming 10 percent of residential trips would park on-street (as was assumed in the 2008 FGEIS), 1,188 of the parking spaces proposed within the District would be needed to satisfy the residential parking demand. 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.

Table 14-50
Special Willetts Point District Phase 1B (2028)
Weekday Parking Accumulation

Time Begin	Residential			Office			Destination Retail			Local Retail			
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Midnight	28	28	1,320	0	0	0	0	0	0	0	0	0	
1 AM	13	13	1,320	0	0	0	0	0	0	0	0	0	
2 AM	8	8	1,320	0	0	0	0	0	0	0	0	0	
3 AM	6	6	1,320	0	0	0	0	0	0	0	0	0	
4 AM	6	6	1,320	0	0	0	0	0	0	0	0	0	
5 AM	6	6	1,320	0	0	0	0	0	0	0	0	0	
6 AM	11	11	1,320	0	0	0	0	0	0	0	0	0	
7 AM	15	132	1,203	41	3	38	40	40	0	14	1	13	
8 AM	76	301	978	465	18	485	242	155	87	55	55	13	
9 AM	50	199	829	395	68	812	188	77	198	24	16	21	
10 AM	47	141	735	85	68	829	252	118	332	63	43	41	
11 AM	66	99	702	34	97	766	380	282	430	91	95	37	
Noon	96	92	706	145	157	754	655	536	549	347	347	37	
1 PM	87	87	706	172	104	822	1,016	996	569	274	285	26	
2 PM	79	79	706	89	56	855	648	716	501	183	190	19	
3 PM	104	100	710	63	77	841	604	535	570	156	162	13	
4 PM	162	108	764	48	295	594	549	602	517	157	164	6	
5 PM	269	145	888	28	535	87	560	631	446	183	183	6	
6 PM	249	105	1,032	14	79	22	576	669	353	141	147	0	
7 PM	219	94	1,157	7	29	0	516	516	353	139	139	0	
8 PM	95	41	1,211	0	0	0	280	342	291	0	0	0	
9 PM	76	33	1,254	0	0	0	113	404	0	0	0	0	
10 PM	63	27	1,290	0	0	0	0	0	0	0	0	0	
11 PM	53	23	1,320	0	0	0	0	0	0	0	0	0	
Total	1,884	1,884		1,586	1,586		6,619	6,619		1,827	1,827		
Time Begin	Hotel			Community Facility			School – Students			School – Staff			Total Acc.
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Midnight	9	2	214	0	0	0	0	0	0	0	0	0	1,534
1 AM	9	1	222	0	0	0	0	0	0	0	0	0	1,542
2 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
3 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
4 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
5 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
6 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
7 AM	6	8	220	3	0	3	4	4	0	2	0	2	1,479
8 AM	66	95	191	5	1	7	65	65	0	22	0	24	1,785
9 AM	32	59	164	4	2	9	4	4	0	0	0	24	2,057
10 AM	35	35	164	3	2	10	0	0	0	0	0	24	2,135
11 AM	45	45	164	2	3	9	0	0	0	0	0	24	2,132
Noon	192	90	266	3	3	9	0	0	0	0	0	24	2,345
1 PM	33	76	223	2	3	8	0	0	0	0	0	24	2,378
2 PM	26	60	189	2	2	8	0	0	0	0	0	24	2,302
3 PM	26	60	155	2	3	7	54	54	0	0	19	5	2,301
4 PM	30	71	114	3	4	6	8	8	0	0	2	3	2,004
5 PM	154	108	160	3	3	6	11	11	0	0	3	0	1,593
6 PM	96	144	112	3	4	5	0	0	0	0	0	0	1,524
7 PM	79	53	138	3	3	5	0	0	0	0	0	0	1,653
8 PM	72	59	151	1	4	2	0	0	0	0	0	0	1,655
9 PM	46	25	172	0	2	0	0	0	0	0	0	0	1,426
10 PM	35	13	194	0	0	0	0	0	0	0	0	0	1,484
11 PM	16	3	207	0	0	0	0	0	0	0	0	0	1,527
Total	1,007	1,007		39	39		0	0	0	24	24		
Note: Acc. = Accumulation													
Source: Based on travel demand estimates													

The remaining 1,512 spaces would be available for the other uses—destination retail, local retail, and hotel. Based on the total accumulation for these uses shown in **Tables 14-50** and **14-51**, there would be enough parking to satisfy demand for these uses on a weekday, but there would be an additional need for up to approximately 45 spaces on Saturday during the midday hours 2 to 4 PM. However, it is expected that this could be accommodated by available on-street spaces or by vacant residential parking spaces within the District should such shared parking arrangements be made. Alternatively, this could be satisfied by available spaces in off-street facilities within an approximate quarter-mile radius of the District.

Parking demand and supply in Willets West would be the same as in Phase 1A; as detailed in the Phase 1A (2018) Parking section (in **Table 14-39**), the 2,500 parking spaces provided would accommodate weekday and Saturday peak parking demands.

As in Phase 1A, all Mets parking displaced by the proposed project in Phase 1B (2028), would be replaced. There would continue to be 400 spaces in Willets West; however, the 2,750 interim spaces provided in the District under Phase 1A would be relocated to Lot D/South Lot in addition to the 950 spaces already provided there. In total, including the 1,795 existing spaces, there would be 5,495 parking spaces in Lot D/South Lot under Phase 1B.

PHASE 2 (2032) TRAFFIC ANALYSIS RESULTS

This section includes a determination of the volume of vehicle trips generated under the Phase 2 2032 With Action 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 21.

TRAVEL DEMAND ANALYSIS

The proposed project is expected to be built out in its entirety under Phase 2. This cumulative development program includes the full Willets West development which would be built under Phase 1A in 2018, development proposed within the Special Willets Point District that would be developed within Phases 1A, 1B, and 2, and the proposed Lot B development (which assumes the same office/retail projected in the 2008 FGEIS). This program is detailed in **Table 14-52**.

The volume of person trips and vehicle trips expected to be generated under Phase 2 (full buildout) of the proposed project would be substantial. **Table 14-53** presents the person trips generated by the proposed project, and shows that it would generate an estimated 18,060, 37,141, 33,764, and 38,780 person trips during the weekday AM, midday, PM, and Saturday midday (non-game day) peak hours, respectively. On game days, the fully built-out proposed project would generate an estimated 26,312 person trips during the weekday PM pre-game peak hour and 32,206 and 30,152 person trips in the Saturday pre-game and post-game hours, respectively.

Table 14-54 presents the vehicle trip estimates for the proposed project. The project would generate a total of 4,533, 7,551, 8,361, and 8,740 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 project would generate an estimated 6,339 vehicle trips during the weekday PM pre-game peak hour and 6,981 and 6,445 vehicle trips in the Saturday pre-game and post-game hours, respectively. The proposed project's taxi trips were adjusted based on the assumption that 25 percent of the arriving taxis would depart with a fare, per the *CEQR Technical Manual* guidelines for this area.

Table 14-51
Special Willetts Point District Phase 1B (2028)
Saturday Parking Accumulation

Time Begin	Residential			Office			Destination Retail			Local Retail			
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Midnight	15	15	1,320	0	0	0	0	0	0	0	0	0	
1 AM	15	15	1,320	0	0	0	0	0	0	0	0	0	
2 AM	0	0	1,320	0	0	0	0	0	0	0	0	0	
3 AM	0	0	1,320	0	0	0	0	0	0	0	0	0	
4 AM	0	0	1,320	0	0	0	0	0	0	0	0	0	
5 AM	29	29	1,320	0	0	0	0	0	0	0	0	0	
6 AM	15	44	1,291	0	0	0	0	0	0	0	0	0	
7 AM	47	140	1,198	7	2	5	64	0	64	0	0	0	
8 AM	58	175	1,081	17	9	13	122	6	180	19	2	17	
9 AM	73	219	935	29	19	23	116	13	283	38	4	51	
10 AM	88	263	760	39	26	36	206	52	437	171	43	179	
11 AM	95	285	570	65	44	57	812	348	901	203	203	179	
Noon	102	307	365	65	44	78	567	491	977	223	183	219	
1 PM	267	201	431	89	60	107	723	695	1,005	235	193	261	
2 PM	248	173	506	49	60	96	691	637	1,059	223	183	301	
3 PM	249	166	589	38	71	63	670	619	1,110	223	183	341	
4 PM	246	164	671	22	52	33	372	402	1,080	173	212	302	
5 PM	246	164	753	9	26	16	580	580	1,080	171	171	302	
6 PM	266	143	876	4	16	4	522	638	964	154	188	268	
7 PM	287	123	1,040	2	6	0	406	753	617	144	175	237	
8 PM	246	105	1,181	0	0	0	361	669	309	107	191	153	
9 PM	216	77	1,320	0	0	0	232	541	0	51	204	0	
10 PM	88	88	1,320	0	0	0	0	0	0	0	0	0	
11 PM	29	29	1,320	0	0	0	0	0	0	0	0	0	
Total	2,925	2,925		435	435		6,444	6,444		2,135	2,135		
Time Begin	Hotel			Community Facility			School – Students			School – Staff			Total Acc.
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	
Midnight	9	2	214	0	0	0	0	0	0	0	0	0	1,534
1 AM	9	1	222	0	0	0	0	0	0	0	0	0	1,542
2 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
3 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
4 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
5 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,542
6 AM	0	0	222	0	0	0	0	0	0	0	0	0	1,513
7 AM	17	24	215	0	0	0	0	0	0	0	0	0	1,482
8 AM	55	78	192	0	0	0	0	0	0	0	0	0	1,483
9 AM	55	78	169	3	1	2	0	0	0	0	0	0	1,463
10 AM	72	69	172	3	1	4	0	0	0	0	0	0	1,588
11 AM	72	69	175	2	2	4	0	0	0	0	0	0	1,886
Noon	72	69	178	5	5	4	0	0	0	0	0	0	1,821
1 PM	101	79	200	5	5	4	0	0	0	0	0	0	2,008
2 PM	23	57	166	5	5	4	0	0	0	0	0	0	2,132
3 PM	41	100	107	5	5	4	0	0	0	0	0	0	2,214
4 PM	76	76	107	5	5	4	0	0	0	0	0	0	2,197
5 PM	78	78	107	2	3	3	0	0	0	0	0	0	2,261
6 PM	101	101	107	2	3	2	0	0	0	0	0	0	2,221
7 PM	80	53	134	2	4	0	0	0	0	0	0	0	2,028
8 PM	60	40	154	0	0	0	0	0	0	0	0	0	1,797
9 PM	42	18	178	0	0	0	0	0	0	0	0	0	1,498
10 PM	29	10	197	0	0	0	0	0	0	0	0	0	1,517
11 PM	15	5	207	0	0	0	0	0	0	0	0	0	1,527
Total	1,007	1,007		39	39		0	0		0	0		
Note: Acc. = Accumulation Source: Based on travel demand estimates													

Table 14-52
Phase 2 (2032) Buildout Development Program for Analysis

Use	Size
Willets West ⁽¹⁾	Destination Retail Movie Theater 915,000 SF 4,000 Seats (80,000 SF) ⁽²⁾
Special Willets Point District	Residential Destination Retail Local Retail Office Convention Center Hotel Community Facility Public School (K-8) 5,850 DU 657,000 SF 593,000 SF 500,000 SF 400,000 SF 700 Rooms 150,000 SF 1,463 Seats
Lot B Development	Destination Retail Office 184,500 SF 280,000 SF
Total	Residential Destination Retail Movie Theater Local Retail Office Hotel Community Facility Public School (K-8) 5,850 DU 1,756,500 SF 4,000 Seats 593,000 SF 780,000 SF 700 Rooms 150,000 SF 1,463 Seats
Notes:	
(1) Willets West would contain approximately 1.4 million sf of development, including 400,000 sf of non-leasable common area. This ancillary space is not considered for trip generation purposes.	
(2) Willets Point Development Plan FGEIS (2008) assumption of 20 sf per seat.	
SF = square feet	
DU = dwelling unit	

Table 14-53
Phase 2 (2032) Program
Person Trips by Type

Use	Auto		Taxi		Subway		Bus		Walk Only		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY NON-GAME AM PEAK HOUR													
Residential	246	983	9	38	491	1,965	95	378	104	415	945	3,779	4,724
Office	827	33	16	0	259	11	226	9	293	11	1,621	64	1,685
Destination Retail	1,483	949	75	48	377	241	453	289	125	80	2,513	1,607	4,120
Local Retail	205	205	0	0	68	68	137	137	958	958	1,368	1,368	2,736
Movie Theater	69	4	9	0	22	1	10	1	14	1	124	7	131
Hotel	151	218	32	47	11	16	11	16	11	14	216	311	527
Convention/Expo	691	0	81	0	122	0	20	0	102	0	1,016	0	1,016
Community Facility	45	3	2	0	90	6	17	1	191	12	345	22	367
School	258	198	0	0	258	198	132	132	789	789	1,437	1,317	2,754
Total	3,975	2,593	224	133	1,698	2,506	1,101	963	2,587	2,280	9,585	8,475	18,060
WEEKDAY NON-GAME MIDDAY PEAK HOUR													
Residential	313	301	12	12	627	602	121	116	132	126	1,205	1,157	2,362
Office	258	279	5	6	81	87	70	77	597	646	1,011	1,095	2,106
Destination Retail	4,011	3,283	203	167	1,019	835	1,225	1,002	341	276	6,799	5,563	12,362
Local Retail	1,299	1,299	0	0	433	433	866	866	6,064	6,064	8,662	8,662	17,324
Movie Theater	136	83	17	10	44	27	19	12	27	17	243	149	392
Hotel	438	207	94	44	31	15	31	15	32	14	626	295	921
Convention/Expo	651	241	77	28	115	42	19	7	96	36	958	354	1,312
Community Facility	21	26	1	1	42	52	8	10	91	110	163	199	362
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7,127	5,719	409	268	2,392	2,093	2,359	2,105	7,380	7,289	19,667	17,474	37,141

Table 14-53 (cont'd)
Phase 2 (2032) Program
Person Trips by Type

Use	Auto		Taxi		Subway		Bus		Walk Only		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY NON-GAME PM PEAK HOUR													
Residential	878	473	34	18	1,757	946	338	182	371	200	3,378	1,819	5,197
Office	50	952	1	19	16	299	14	262	17	335	98	1,867	1,965
Destination Retail	3,428	3,866	174	197	872	983	1,046	1,179	290	327	5,810	6,552	12,362
Local Retail	684	684	0	0	228	228	456	456	3,191	3,191	4,559	4,559	9,118
Movie Theater	315	269	39	34	101	86	45	38	63	53	563	480	1,043
Hotel	354	246	76	53	25	18	25	18	25	16	505	351	856
Convention/Expo	48	1,548	6	182	8	273	1	46	7	228	70	2,277	2,347
Community Facility	23	32	1	1	46	64	9	12	99	137	178	246	424
School	33	40	0	0	33	40	22	22	131	131	219	233	452
Total	5,813	8,110	331	504	3,086	2,937	1,956	2,215	4,194	4,618	15,380	18,384	33,764
SATURDAY NON-GAME MIDDAY PEAK HOUR													
Residential	871	657	26	19	820	618	77	58	767	580	2,561	1,932	4,493
Office	158	106	3	2	50	33	44	29	55	37	310	207	517
Destination Retail	5,377	5,168	455	438	1,184	1,139	1,641	1,577	457	436	9,114	8,758	17,872
Local Retail	881	720	0	0	294	240	587	480	4,109	3,363	5,871	4,803	10,674
Movie Theater	434	266	54	33	140	86	62	38	85	52	775	475	1,250
Hotel	232	183	50	39	17	13	17	13	16	13	332	261	593
Convention/Expo	932	932	80	80	160	160	27	27	132	132	1,331	1,331	2,662
Community Facility	46	48	2	2	92	95	18	18	194	204	352	367	719
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	8,931	8,080	670	613	2,757	2,384	2,473	2,240	5,815	4,817	20,646	18,134	38,780
WEEKDAY EVENING PRE-GAME PEAK HOUR													
Residential	714	306	27	12	1,427	612	275	118	302	128	2,745	1,176	3,921
Office	13	51	0	1	4	16	3	14	5	19	25	101	126
Destination Retail	3,161	3,161	161	161	804	804	964	964	268	268	5,358	5,358	10,716
Local Retail	520	520	0	0	173	173	347	347	2,425	2,425	3,465	3,465	6,930
Movie Theater	503	446	63	56	162	143	72	64	98	88	898	797	1,695
Hotel	183	122	39	26	13	9	13	9	13	8	261	174	435
Convention/Expo	15	1,456	2	171	3	257	0	43	2	214	22	2,141	2,163
Community Facility	21	21	1	1	42	42	8	8	91	91	163	163	326
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5,130	6,083	293	428	2,628	2,056	1,682	1,567	3,204	3,241	12,937	13,375	26,312
SATURDAY PRE-GAME PEAK HOUR													
Residential	668	668	20	20	629	629	59	59	590	590	1,966	1,966	3,932
Office	35	198	0	3	11	62	10	54	13	71	69	388	457
Destination Retail	4,111	3,558	348	302	906	783	1,254	1,086	348	302	6,967	6,031	12,998
Local Retail	837	684	0	0	279	228	558	456	3,903	3,195	5,577	4,563	10,140
Movie Theater	434	266	54	33	140	86	62	38	85	52	775	475	1,250
Hotel	193	152	41	33	14	11	14	11	14	10	276	217	493
Convention/Expo	993	559	85	48	170	96	28	16	143	79	1,419	798	2,217
Community Facility	46	48	2	2	92	95	18	18	194	204	352	367	719
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7,317	6,133	550	441	2,241	1,990	2,003	1,738	5,290	4,503	17,401	14,805	32,206
SATURDAY POST-GAME PEAK HOUR													
Residential	687	687	20	20	647	647	61	61	607	607	2,022	2,022	4,044
Office	140	94	3	2	44	30	39	25	48	32	274	183	457
Destination Retail	2,732	3,019	232	256	602	666	833	922	231	255	4,630	5,118	9,748
Local Retail	684	837	0	0	228	279	456	558	3,195	3,903	4,563	5,577	10,140
Movie Theater	426	694	53	87	137	223	61	99	83	137	760	1,240	2,000
Hotel	193	152	41	33	14	11	14	11	14	10	276	217	493
Convention/Expo	732	1,054	63	90	126	181	21	30	104	150	1,046	1,505	2,551
Community Facility	45	49	2	2	90	97	17	19	191	207	345	374	719
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5,639	6,586	414	490	1,888	2,134	1,502	1,725	4,473	5,301	13,916	16,236	30,152

Table 14-54
Phase 2 (2032) Program
Vehicle Trips by Type

Use	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
WEEKDAY NON-GAME AM PEAK HOUR									
Residential	177	707			21	21	198	728	926
Office	726	29			12	12	738	41	779
Destination Retail	724	463			25	25	749	488	1,237
Local Retail	103	103			8	8	111	111	222
Movie Theater	27	2			5	5	32	7	39
Hotel	94	136			10	10	104	146	250
Convention/Expo	300	0			11	11	311	11	322
Community Facility	30	2			2	2	32	4	36
School	202	152			3	3	205	155	360
Total	2,383	1,594	181	181	97	97	2,661	1,872	4,533
WEEKDAY NON-GAME MIDDAY PEAK HOUR									
Residential	225	217			16	16	241	233	474
Office	227	245			14	14	241	259	500
Destination Retail	1,957	1,601			35	35	1,992	1,636	3,628
Local Retail	650	650			11	11	661	661	1,322
Movie Theater	54	33			4	4	58	37	95
Hotel	274	129			8	8	282	137	419
Convention/Expo	283	105			21	21	304	126	430
Community Facility	14	17			3	3	17	20	37
School	0	0			2	2	2	2	4
Total	3,684	2,997	321	321	114	114	4,119	3,432	7,551
WEEKDAY NON-GAME PM PEAK HOUR									
Residential	632	340			4	4	636	344	980
Office	44	835			3	3	47	838	885
Destination Retail	1,672	1,885			6	6	1,678	1,891	3,569
Local Retail	342	342			2	2	344	344	688
Movie Theater	125	107			0	0	125	107	232
Hotel	221	154			0	0	221	154	375
Convention/Expo	21	673			2	2	23	675	698
Community Facility	15	21			0	0	15	21	36
School	25	31			1	1	26	32	58
Total	3,097	4,388	420	420	18	18	3,535	4,826	8,361
SATURDAY NON-GAME MIDDAY PEAK HOUR									
Residential	627	473			5	5	632	478	1,110
Office	139	93			0	0	139	93	232
Destination Retail	2,160	2,075			3	3	2,163	2,078	4,241
Local Retail	441	360			1	1	442	361	803
Movie Theater	172	106			0	0	172	106	278
Hotel	145	114			3	3	148	117	265
Convention/Expo	358	358			1	1	359	359	718
Community Facility	31	32			0	0	31	32	63
School	0	0			0	0	0	0	0
Total	4,073	3,611	515	515	13	13	4,601	4,139	8,740
WEEKDAY EVENING PRE-GAME PEAK HOUR									
Residential	514	220			4	4	518	224	742
Office	11	45			3	3	14	48	62
Destination Retail	1,542	1,542			3	3	1,545	1,545	3,090
Local Retail	260	260			1	1	261	261	522
Movie Theater	200	177			0	0	200	177	377
Hotel	114	76			0	0	114	76	190
Convention/Expo	7	633			2	2	9	635	644
Community Facility	14	14			0	0	14	14	28
School	0	0			0	0	0	0	0
Total	2,662	2,967	342	342	13	13	3,017	3,322	6,339

Table 14-54 (cont'd)
Phase 2 (2032) Program
Vehicle Trips by Type

Use	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
SATURDAY PRE-GAME PEAK HOUR									
Residential	481	481			5	5	486	486	972
Office	30	173			0	0	30	173	203
Destination Retail	1,651	1,430			3	3	1,654	1,433	3,087
Local Retail	419	342			1	1	420	343	763
Movie Theater	172	106			0	0	172	106	278
Hotel	121	95			3	3	124	98	222
Convention/Expo	382	215			1	1	383	216	599
Community Facility	31	32			0	0	31	32	63
School	0	0			0	0	0	0	0
Total	3,287	2,874	397	397	13	13	3,697	3,284	6,981
SATURDAY POST-GAME PEAK HOUR									
Residential	494	494			1	1	495	495	990
Office	123	83			0	0	123	83	206
Destination Retail	1,096	1,212			0	0	1,096	1,212	2,308
Local Retail	342	419			0	0	342	419	761
Movie Theater	169	275			0	0	169	275	444
Hotel	121	95			0	0	121	95	216
Convention/Expo	282	405			0	0	282	405	687
Community Facility	30	33			0	0	30	33	63
School	0	0			0	0	0	0	0
Total	2,657	3,016	385	385	1	1	3,043	3,402	6,445

TRAFFIC VOLUMES AND LEVELS OF SERVICE

Vehicle trips generated under full buildout conditions were assigned through the study area based on the trip assignments discussed earlier, and produced specific roadway-by-roadway and intersection-by-intersection traffic volume projections within the study area. An overview of this is provided below, and specific intersection-by-intersection generated volume projections are provided in detail in the technical appendices at the end of this chapter.

In 2032, project-generated traffic volume increments would make up approximately 17 percent of the overall traffic volumes in the AM peak hour, 29 percent in the midday peak hour, 26 percent in the PM peak hour, and 29 percent in the Saturday midday peak hour, without a Mets game, when comparing these volume increments to overall Phase 2 With Action traffic volumes entering and exiting the traffic study area's local street network. For peak hours with a Mets game, the proposed project's traffic increments would make up about 19 percent of the overall traffic volumes during the weekday PM pre-game peak hour, 22 percent during the Saturday midday pre-game peak hour, and about 21 percent during the Saturday PM post-game peak hour.

Northern Boulevard volumes can be expected to increase by about 90 to 300 vph per direction during the peak analysis hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the project site, Northern Boulevard volumes can be expected to increase by approximately 30 to 440 vph in the eastbound direction and 90 to 1,300 vph in the westbound direction during the peak analysis 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 150 to 340 vph per direction during the seven peak hours.

Roosevelt Avenue volumes can be expected to increase by about 30 to 125 vph per direction during the non-game and game peak hours through Downtown Flushing between Parsons Boulevard and College Point Boulevard. Adjacent to the project site, Roosevelt Avenue volumes

can be expected to increase by approximately 125 to 500 vph per direction during the peak hours without a Mets game and by about 150 to 415 vph per direction during the peak hours with a Mets game. Roosevelt Avenue volumes in the vicinity of 108th, 111th, and 114th Streets can be expected to increase by about 75 to 200 vph per direction during the peak analysis hours.

Sanford Avenue volumes through Downtown Flushing between Parsons Boulevard and College Point Boulevard can be expected to increase by up to 15 vph in the eastbound direction and 25 to 90 vph in the westbound direction during the peak analysis hours.

Astoria Boulevard volumes in the vicinity of 108th and 114th Streets can be expected to increase by about 7 to 215 vph per direction during the peak analysis hours.

Volumes on 34th Avenue to/from the District at the intersection with 126th Street are expected to increase by 275 to 650 vph during all seven peak hours, and volumes along West Park Loop/Stadium Road at the intersection with 126th Street can be expected to increase by approximately 175 to 975 vph per direction during the peak analysis hours.

Volumes along 126th Street in the vicinity of 34th Avenue can be expected to increase by approximately 300 to 1,050 vph per direction during non-game peak hours, and 500 to 675 vph during game day peak hours. In the vicinity of Roosevelt Avenue, 126th Street volumes can be expected to increase by about 335 to 710 vph per direction during non-game peak hours, and 400 to 525 vph per direction during game day peak hours.

College Point Boulevard volumes can be expected to increase by about 28 to 185 vph per direction during the peak analysis hours.

Volumes along 114th Street in the vicinity of Roosevelt Avenue can be expected to increase by approximately 65 to 450 vph in the northbound direction and 25 to 45 vph in the southbound direction during the peak analysis hours. Projected volume increments on the other north-south streets, including 108th Street, Main Street, Union Street, and Parsons Boulevard can be expected to be 65 vph per direction or less during the peak analysis hours.

The remainder of this section provides an overview of significant traffic impacts that would be generated under 2032 full buildout With Action conditions. Detailed volume-to-capacity (v/c) ratios, average vehicle delay, and levels of service movement-by-movement at each intersection under the 2032 With Action condition are provided at the end of this chapter. Project-generated traffic volume increment maps and total With Action volume maps are provided in **Appendix C**.

Levels of service for the 2032 With Action condition were determined for 29 of the 31 intersections (both signalized and unsignalized) analyzed under the No Action condition. Two unsignalized intersections, Willets Point Boulevard at 126th Street and Boat Basin Road at Stadium Road, analyzed under the No Action condition, would be eliminated due to street demapping and intersection improvements, and two new signalized intersections, 126th Street at New Willets Point Boulevard and CitiField/Lot B Internal Street at Roosevelt Avenue, would be created as part of the proposed project under Phase 2. Future traffic levels of service under the With Action condition are shown in **Tables 14-55 through 14-58**.

Table 14-55

Overall Intersection Level of Service Summary Comparison
Phase 2 (2032) No Action vs. With Action Conditions—Non-Game Day

Signalized Intersections	Phase 2 No Action Condition				Phase 2 With Action Condition			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				28 30 Signalized Intersections			
Overall Intersection LOS A/B/C	11	15	12 11	14	9 11	8	6 8	6 8
Overall Intersection LOS D	7	4	5 7	2	6 5	3 5	5	4 3
Overall Intersection LOS E	7	3	7 6	7	4 5	5 4	2 1	5
Overall Intersection LOS F	1	4	2	3	9	12 13	15 16	13 14
No. of Locations with Significant Impacts	--	--	--	--	20 22	23 25	23 25	23 24
Note: During the non-game peak hours in the Phase 2 With Action condition, <u>two one</u> of the three <u>four</u> unsignalized intersections analyzed would be significantly impacted in the weekday AM peak hour, and all three <u>four</u> unsignalized intersections would be impacted during the weekday midday and PM peak hours, and <u>three unsignalized intersections would be impacted</u> during the <u>weekday and</u> Saturday midday peak hours.								

Table 14-56

Traffic Lane Group Level of Service Summary Comparison
Phase 2 (2032) No Action vs. With Action Conditions—Non-Game Day

Signalized Movements	Phase 2 No Action Condition				Phase 2 With Action Condition			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
	26 Signalized Intersections				28 30 Signalized Intersections			
No. of Lane Groups at LOS A/B/C	56	72 74	57 58	69 70	58 63	57 60	47 51	55 59
No. of Lane Groups at LOS D	38 41	30 31	38 39	24 27	33 39	26 30	36 41	21 25
No. of Lane Groups at LOS E	13	10 9	9 11	16 15	11 10	17 18	12 11	17 18
No. of Lane Groups at LOS F	22	18 19	25 24	21	37 39	43 48	47 52	54 54
Note: During the non-game peak hours in the Phase 2 With Action conditions, <u>two one</u> of the ten <u>eleven</u> unsignalized lane groups analyzed would operate at LOS F in the weekday AM peak hour, and five lane groups would operate at LOS F during the weekday midday, weekday PM, and Saturday midday peak hours, and <u>one lane group would operate at LOS E and five lane groups would operate at LOS F during the weekday PM peak hour</u> . One lane group would operate at LOS D during the weekday AM and Saturday midday peak hours, and all other movements would operate at LOS C or better during all peak hours.								

Table 14-57

Overall Intersection Level of Service Summary Comparison
Phase 2 (2032) No Action vs. With Action Conditions—Game Day

Signalized Intersections	Phase 2 No Action Condition			Phase 2 With Action Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			28 30 Signalized Intersections		
Overall Intersection LOS A/B/C	8 7	12	10	7 6	8	7
Overall Intersection LOS D	10 11	2	2	4 6	7 6	3
Overall Intersection LOS E	5 4	7	7	4 5	1	2 4
Overall Intersection LOS F	3 4	5	7	13	12 15	16
No. of Locations with Significant Impacts	--	--	--	22 24	20 22	20 22
Note: During the game day peak hours in the Phase 2 With Action condition, all three <u>four</u> unsignalized intersections analyzed would be significantly impacted in-game day during the <u>weekday pre-game</u> peak hours, and <u>three unsignalized intersections would be significantly impacted during the Saturday pre- and post-game peak hours</u> .						

Table 14-58

Traffic Lane Group Level of Service Summary Comparison
Phase 2 (2032) No Action vs. With Action Conditions—Game Day

Signalized Movements	Phase 2 No Action Condition			Phase 2 With Action Condition		
	Weekday Pre-game	Weekend Pre-game	Weekend Post-game	Weekday Pre-game	Saturday Pre-game	Saturday Post-game
	26 Signalized Intersections			28 30 Signalized Intersections		
No. of Lane Groups at LOS A/B/C	57	64 66	69 70	48 51	54 57	58 60
No. of Lane Groups at LOS D	34 36	28 29	23 26	32 35	27 28	25 28
No. of Lane Groups at LOS E	46 17	7	6 5	43 14	44 18	6 10
No. of Lane Groups at LOS F	23	31	32	47 50	44 46	51 53

Note: During the game day peak hours in the Phase 2 With Action conditions, six of the ~~ten~~ eleven unsignalized lane groups analyzed would operate at LOS F during the weekday and Saturday pre-game peak hours. Five of the ~~ten~~ eleven unsignalized lane groups would operate at LOS F during the Saturday post-game peak hour. One unsignalized lane group would operate at LOS D during the weekday pre-game and Saturday post-game peak hours. All other unsignalized lane groups would operate at LOS C or better during game day peak hours.

The addition of the proposed project's generated traffic under full buildout conditions to the already poor future baseline (2032 No Action) conditions would cause the majority of locations to be significantly impacted. During non-game peak hours, full buildout of the proposed project would have significant traffic impacts at ~~20 22~~ 22 of the ~~28 30~~ 28 30 signalized intersections analyzed in the weekday AM peak hour, ~~and 23 25~~ 23 25 of ~~28 30~~ 28 30 in the weekday midday, ~~and~~ and weekday PM peak hours, and ~~24 of 30 in the~~ 24 of 30 in the Saturday midday peak hours. During the weekday pre-game peak hour, ~~22 24~~ 22 24 of ~~28 30~~ 28 30 signalized intersections analyzed would have significant traffic impacts, and during the Saturday pre-game and post-game peak hours ~~20 22~~ 20 22 of ~~28 30~~ 28 30 signalized intersections analyzed would have significant impacts. ~~Two of the three unsignalized intersections analyzed would be significantly impacted during the weekday AM peak hour, and all three unsignalized intersections would be impacted during the other six peak analysis hours.~~ One of the four unsignalized intersections analyzed would have significant impacts during the weekday AM peak hour, all four unsignalized intersections would have significant impacts during the weekday PM and weekday pre-game peak hours, and three of the four unsignalized intersections would be impacted during the other four peak analysis hours.

The summary overview of the Phase 2 With Action condition without a Mets game indicates that:

- In the weekday AM peak hour, ~~43 14~~ 43 14 of the ~~28 30~~ 28 30 analyzed signalized intersections are projected to operate at overall LOS E or F, which is ~~five~~ six more than under the No Action condition (Note: there would be ~~two~~ four more intersections in the Phase 2 With Action condition as compared to the No Action condition). ~~Twenty~~ Twenty-two 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 35 to ~~48~~ 49.
- In the weekday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from seven under the No Action condition to 17 under the With Action condition, and there would be significant impacts at ~~23 25~~ 23 25 of the ~~28 30~~ 28 30 signalized intersections. The number of individual lane groups that would operate at LOS E or F would increase from 28 to ~~60~~ 66.
- In the weekday PM peak hour, the number of intersections that are projected to operate at overall LOS E or F would increase from ~~9~~ 8 to 17 under the With Action condition, with ~~23 25~~ 23 25 signalized intersections significantly impacted. The number of individual lane groups that would operate at LOS E or F would increase from ~~34 35~~ 34 35 to ~~59~~ 63.
- In the Saturday midday peak hour, the number of signalized intersections projected to operate at LOS E or F would increase from 10 under the No Action condition to ~~48~~ 19 under

the With Action condition. ~~Twenty-three~~ Twenty-four signalized intersections would be significantly impacted. The number of lane groups at LOS E or F would increase from ~~37~~ 36 to ~~68~~ 72.

- ~~All three~~ Three of the four unsignalized intersections would operate at overall LOS F and would be significantly impacted during all four non-game peak hours with the exception of the Grand Central Parkway exit ramp at West Park Loop/Stadium Road and Willeys Point Boulevard at Northern Boulevard, both of which would operate at LOS C during the weekday AM peak hour and would not be significantly impacted. The fourth unsignalized intersection would operate at LOS E during the weekday PM peak hour and would be significantly impacted. ~~Two~~ One of the ~~ten~~ eleven unsignalized lane groups analyzed would operate at LOS F in the weekday AM peak hour and five lane groups would operate at LOS F during the weekday midday, ~~weekday PM,~~ and Saturday midday peak hours. One unsignalized lane group would operate at LOS E and five lane groups would operate at LOS F during the weekday PM peak hour. Additionally, one intersection that was unsignalized in the No Action condition would be significantly impacted as a signalized intersection in the With Action condition during all non-game peak hours and one would be impacted during the weekday midday and PM peak hours.

The summary overview of the Phase 2 With Action condition with a Mets game indicates that:

- In the weekday PM pre-game peak hour, ~~17~~ 18 out of ~~28~~ 30 signalized intersections would operate at LOS E or F under the With Action condition, which is an increase from eight signalized intersections at LOS E or F under the No Action condition. There would be significant impacts at ~~22~~ 24 of the ~~28~~ 30 signalized intersections. The number of lane groups that would operate at LOS E or F would increase from ~~39~~ 40 to ~~60~~ 64.
- 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 12 to ~~13~~ 16 under the With Action condition, with ~~20~~ 22 signalized intersections significantly impacted. The number of lane groups at LOS E or F would increase from 38 to ~~58~~ 64.
- In the Saturday PM post-game peak hour, the number of locations that would operate at LOS E or F would increase from 14 to ~~18~~ 20 under the With Action condition. ~~Twenty~~ Twenty-two signalized intersections would be significantly impacted. The number of lane groups that would operate at LOS E or F would increase from ~~38~~ 37 to ~~57~~ 63.
- ~~All three~~ Three of the four unsignalized intersections would operate at overall LOS F and would be significantly impacted during all gameday peak hours. The fourth unsignalized intersection would operate at LOS D and would be significantly impacted during the weekday pre-game peak hour. Six of the ~~ten~~ eleven unsignalized lane groups analyzed would operate at LOS F during the weekday and Saturday pre-game peak hours and five of the ~~ten~~ eleven unsignalized lane groups would operate at LOS F during the Saturday post-game peak hour. Additionally, two intersections that were unsignalized in the No Action condition would be significantly impacted as signalized intersections in the With Action condition during all game peak hours.

Table 14-59 shows the locations and time periods where significant impacts would occur in the Phase 2 (2032) With Action condition. Mitigation measures for significantly impacted locations are discussed in Chapter 21, ~~“Mitigation.”~~

Table 14-59

Phase 2 (2032) With Action 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	x	x	x	x	x
Northern Boulevard at 108th Street	x	x	x	x	x	x	x
Northern Boulevard at 114th Street	x	x	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	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		x	x	x	x	x	x
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		
Roosevelt Avenue at Main Street	x	x	x	x	x	x	x
Roosevelt Avenue at Union Street	x	x	x	x	x	x	x
Roosevelt Avenue at Parsons Boulevard	x	x	x	x	x		x
Kissena Boulevard at Main Street		x		x		x	
Sanford Avenue at College Point Boulevard			x	x			
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard	x	x	x	x	x		x
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard	x	x	x	x	x	x	
Boat Basin Road at Stadium Road	x	x	x	x	x	x	x
Boat Basin Road at World's Fair Marina	x	x	x	x	x	x	x
Stadium Road at Grand Central Parkway		x	x	x	x	x	x
Willets Point Boulevard at Northern Boulevard	-x	x	x	x	x	x	x
New Willets Point Boulevard at 126th Street	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Roosevelt Avenue at CitiField / Lot B	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Northern Boulevard at 126th Place			x		x		
126th Street at 36th Avenue	x	x	x	x	x	x	x
126th Street at 37th Avenue		x	x		x	x	x

Notes: "x" means the intersection would be significantly impacted. n/a means the intersection is new for With Action conditions.

PHASE 2 (2032) WITH ACTION PARKING

Under Phase 2, the remainder of the District would be built out. The number of parking spaces provided under the full buildout would be based on project demand. It is anticipated that sufficient off-street and on-street parking would be provided to satisfy these demands under the full buildout. As detailed street configurations and curbside parking regulations have not yet been defined for existing and new streets 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. Specific regulations would be determined at a later date.

Parking demand for the proposed residential component would be satisfied through on-street and off-street parking opportunities. As in the 2008 FGEIS, 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 300 spaces. Given the anticipated residential demand of 3,101 spaces, approximately 2,800 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 convention center space—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 3,050 spaces and 2,900 spaces, respectively. These accumulations by land use are detailed in **Tables 14-60** and **14-61**. The parking supply in the District would be provided to accommodate the highest demand, 3,047 spaces, which would be expected to occur on a weekday. 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 could also be used to accommodate office, community, and primary school parking demands, and further reduce the overall parking demand. In total, 5,850 parking spaces would be provided in the full buildout under Phase 2.

As detailed in the Phase 1A and Phase 1B Parking sections, parking provided for the Willets West development would fully satisfy its demand.

The CitiField Lot B development project is anticipated to be in place in Phase 2. The existing VIP/ADA parking spaces on Lot B are assumed to be replaced on site; however, accessory parking for the Lot B development is anticipated to be satisfied within a new parking structure on Lot D, located on the south side of Roosevelt Avenue. **Table 14-62** shows the projected parking accumulation by hour for the proposed Lot B development on a weekday and on a Saturday, and indicates a peak parking demand of 648 spaces on a weekday and 389 spaces on Saturday. Most of the weekday demand would be generated by office space and overall parking demand would decrease to less than 200 spaces by the 5-6 PM hour when Mets game attendees would begin to arrive. Within the footprint of the new South Lot/Lot D structures, a total of 5,495 spaces would be constructed, which would provide Mets parking and would continue to accommodate existing usage. Based on game day parking occupancy rates under the No Action conditions, there would be enough available parking spaces to also satisfy all of Lot B's parking demand.

Table 14-60
Phase 2 (2032) Special Willets Point District
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.
Midnight	66	66	3,101	0	0	0	0	0	0	0	0	0	0	0	0
1 AM	31	31	3,101	0	0	0	0	0	0	0	0	0	0	0	0
2 AM	18	18	3,101	0	0	0	0	0	0	0	0	0	0	0	0
3 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
4 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
5 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
6 AM	27	27	3,101	0	0	0	0	0	0	0	0	0	27	0	27
7 AM	34	310	2,825	41	3	38	44	44	0	26	1	25	191	0	218
8 AM	177	707	2,295	465	18	485	271	173	98	103	103	25	300	0	518
9 AM	117	467	1,945	395	68	812	210	86	222	45	30	40	696	14	1,200
10 AM	110	331	1,724	85	68	829	282	132	372	118	81	77	418	74	1,544
11 AM	156	233	1,647	34	97	766	424	315	481	171	178	70	350	87	1,807
Noon	225	217	1,655	145	157	754	732	599	614	650	650	70	283	105	1,985
1 PM	203	203	1,655	172	104	822	1,135	1,113	636	513	534	49	264	310	1,939
2 PM	186	186	1,655	89	56	855	723	800	559	342	356	35	44	146	1,837
3 PM	243	234	1,664	63	77	841	674	598	635	292	303	24	68	308	1,597
4 PM	382	254	1,792	48	295	594	614	673	576	295	307	12	61	347	1,311
5 PM	632	340	2,084	28	535	87	625	705	496	342	342	12	21	673	659
6 PM	585	246	2,423	14	79	22	644	746	394	265	277	0	7	633	33
7 PM	514	220	2,717	7	29	0	577	577	394	260	260	0	0	33	0
8 PM	223	95	2,845	0	0	0	313	382	325	0	0	0	0	0	0
9 PM	179	77	2,947	0	0	0	126	451	0	0	0	0	0	0	0
10 PM	148	64	3,031	0	0	0	0	0	0	0	0	0	0	0	0
11 PM	124	54	3,101	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,419	4,419		1,586	1,586		7,394	7,394		3,422	3,422		2,730	2,730	
Time Begin	Hotel			Community Facility			School – Students			School – Staff			Total Acc.		
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.			
Midnight	12	2	306	0	0	0	0	0	0	0	0	0		3,407	
1 AM	13	1	318	0	0	0	0	0	0	0	0	0		3,419	
2 AM	0	0	318	0	0	0	0	0	0	0	0	0		3,419	
3 AM	0	0	318	0	0	0	0	0	0	0	0	0		3,419	
4 AM	0	0	318	0	0	0	0	0	0	0	0	0		3,419	
5 AM	0	0	318	0	0	0	0	0	0	0	0	0		3,419	
6 AM	0	0	318	0	0	0	0	0	0	0	0	0		3,446	
7 AM	8	12	314	17	1	16	8	8	0	6	0	6		3,442	
8 AM	94	136	272	30	2	44	152	152	0	50	0	56		3,793	
9 AM	45	84	233	22	9	57	8	8	0	0	0	56		4,565	
10 AM	50	50	233	19	12	64	0	0	0	0	0	56		4,899	
11 AM	65	65	233	14	17	61	0	0	0	0	0	56		5,121	
Noon	274	129	378	14	17	58	0	0	0	0	0	56		5,570	
1 PM	47	109	316	11	15	54	0	0	0	0	0	56		5,527	
2 PM	37	86	267	9	13	50	0	0	0	0	0	56		5,314	
3 PM	37	86	218	15	21	44	127	127	0	0	44	12		5,035	
4 PM	43	101	160	17	23	38	16	16	0	0	6	6		4,489	
5 PM	221	154	227	15	21	32	25	25	0	0	6	0		3,597	
6 PM	137	206	158	19	26	25	0	0	0	0	0	0		3,055	
7 PM	114	76	196	14	14	25	0	0	0	0	0	0		3,332	
8 PM	103	84	215	4	18	11	0	0	0	0	0	0		3,396	
9 PM	65	34	246	1	12	0	0	0	0	0	0	0		3,193	
10 PM	50	18	278	0	0	0	0	0	0	0	0	0		3,309	
11 PM	23	5	296	0	0	0	0	0	0	0	0	0		3,397	
Total	1,438	1,438		221	221		336	336		56	56				
Note: Acc. = Accumulation															
Source: Based on travel demand estimates															

Table 14-61
Phase 2 (2032) Special Willetts Point District
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.
Midnight	34	34	3,101	0	0	0	0	0	0	0	0	0	0	0	0
1 AM	34	34	3,101	0	0	0	0	0	0	0	0	0	0	0	0
2 AM	0	0	3,101	0	0	0	0	0	0	0	0	0	0	0	0
3 AM	0	0	3,101	0	0	0	0	0	0	0	0	0	0	0	0
4 AM	0	0	3,101	0	0	0	0	0	0	0	0	0	0	0	0
5 AM	69	69	3,101	0	0	0	0	0	0	0	0	0	0	0	0
6 AM	34	103	3,032	0	0	0	0	0	0	0	0	0	0	0	0
7 AM	110	330	2,812	7	2	5	72	0	72	0	0	0	0	0	0
8 AM	137	412	2,537	17	9	13	137	7	202	36	4	32	0	0	0
9 AM	172	515	2,194	29	19	23	130	14	318	72	8	96	129	0	129
10 AM	206	618	1,782	39	26	36	230	58	490	320	80	336	468	29	568
11 AM	223	670	1,335	65	44	57	907	389	1,008	380	380	336	522	174	916
Noon	240	721	854	65	44	78	633	548	1,093	418	342	412	348	348	916
1 PM	627	473	1,008	89	60	107	808	776	1,125	441	360	493	358	358	916
2 PM	584	406	1,186	49	60	96	771	712	1,184	418	342	569	348	347	917
3 PM	585	390	1,381	38	71	63	749	691	1,242	418	342	645	174	521	570
4 PM	577	385	1,573	22	52	33	416	448	1,210	324	396	573	124	372	322
5 PM	577	385	1,765	9	26	16	648	648	1,210	320	320	573	12	235	99
6 PM	625	336	2,054	4	16	4	583	713	1,080	288	352	509	0	99	0
7 PM	673	287	2,440	2	6	0	454	842	692	270	330	449	0	0	0
8 PM	577	246	2,771	0	0	0	403	749	346	200	360	289	0	0	0
9 PM	508	178	3,101	0	0	0	259	605	0	96	385	0	0	0	0
10 PM	206	206	3,101	0	0	0	0	0	0	0	0	0	0	0	0
11 PM	69	69	3,101	0	0	0	0	0	0	0	0	0	0	0	0
Total	6,867	6,867		435	435		7,200	7,200		4,001	4,001		2,483	2,483	
Time Begin	Hotel			Community Facility			School – Students			School – Staff			Total Acc.		
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.			
Midnight	12	2	306	0	0	0	0	0	0	0	0	0	3,407		
1 AM	13	1	318	0	0	0	0	0	0	0	0	0	3,419		
2 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
3 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
4 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
5 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
6 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,350		
7 AM	24	34	308	0	0	0	0	0	0	0	0	0	3,197		
8 AM	78	112	274	0	0	0	0	0	0	0	0	0	3,058		
9 AM	78	112	240	18	4	14	0	0	0	0	0	0	3,014		
10 AM	103	99	244	18	4	28	0	0	0	0	0	0	3,484		
11 AM	103	99	248	11	11	28	0	0	0	0	0	0	3,928		
Noon	103	99	252	31	32	27	0	0	0	0	0	0	3,632		
1 PM	145	114	283	31	32	26	0	0	0	0	0	0	3,958		
2 PM	33	82	234	30	32	24	0	0	0	0	0	0	4,210		
3 PM	58	143	149	30	32	22	0	0	0	0	0	0	4,072		
4 PM	108	108	149	30	32	20	0	0	0	0	0	0	3,880		
5 PM	111	111	149	10	12	18	0	0	0	0	0	0	3,830		
6 PM	144	144	149	7	15	10	0	0	0	0	0	0	3,806		
7 PM	114	76	187	5	15	0	0	0	0	0	0	0	3,768		
8 PM	86	58	215	0	0	0	0	0	0	0	0	0	3,621		
9 PM	60	26	249	0	0	0	0	0	0	0	0	0	3,350		
10 PM	43	13	279	0	0	0	0	0	0	0	0	0	3,380		
11 PM	22	5	296	0	0	0	0	0	0	0	0	0	3,397		
Total	1,438	1,438		221	221		0	0		0	0				
Note: Acc. = Accumulation															
Source: Based on travel demand estimates															

Table 14-62
Lot B Weekday and Saturday Parking Accumulation

Time Begin	Weekday							Saturday						
	Office			Destination Retail			Total	Office			Destination Retail			Total Acc.
	In	Out	Acc.	In	Out	Acc.		In	Out	Acc.	In	Out	Acc.	
Midnight	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	0	0	0	0
7 AM	22	2	20	12	12	0	20	4	1	3	20	0	20	23
8 AM	261	11	270	76	49	27	297	10	5	8	38	2	56	64
9 AM	220	38	452	59	24	62	514	16	11	13	36	4	88	101
10 AM	47	38	461	79	37	104	565	22	15	20	65	16	137	157
11 AM	18	54	425	119	88	135	560	37	24	33	255	109	283	316
Noon	82	88	419	205	168	172	591	37	24	46	178	154	307	353
1 PM	97	58	458	319	312	179	637	50	33	63	227	218	316	379
2 PM	50	31	477	203	225	157	634	27	34	56	217	200	333	389
3 PM	36	43	470	189	168	178	648	21	40	37	210	194	349	386
4 PM	27	165	332	172	189	161	493	12	29	20	117	126	340	360
5 PM	16	300	48	176	198	139	187	5	14	11	182	182	340	351
6 PM	8	44	12	181	210	110	122	2	10	3	164	200	304	307
7 PM	4	16	0	162	162	110	110	1	4	0	127	237	194	194
8 PM	0	0	0	88	107	91	91	0	0	0	113	210	97	97
9 PM	0	0	0	36	127	0	0	0	0	0	73	170	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	888	888		1,765	1,765			101	101		1,730	1,730		
Note: Acc. = Accumulation Source: Based on travel demand estimates.														

G. HIGHWAY NETWORK ANALYSIS

INTRODUCTION AND METHODOLOGY

Because of the proximity of the project site 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

Willeys Point Development

- 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 with the CORSIM model (Version 6.2) was used instead (as was done for the 2008 FGEIS and 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 games at CitiField.

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 Action and With Action conditions when No Action LOS is in the D, E, or F range. The following significant impact criteria are used in the With Action analyses to assess potential impacts of the proposed development on the highway network:

- For No Action LOS D to With Action LOS D: Since the starting value of LOS D is 28 pc/mi/ln and the highest value of LOS D 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 Action and With Action conditions is considered a significant impact.
- For No Action LOS D to With Action 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 Action and With Action is considered a significant impact.
- For No Action LOS E to With Action LOS F: The same criteria as No Action LOS D to With Action 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 2,650–4,050 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 3,900–4,800 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 District from the eastbound mainline, carries approximately 2,250–3,750 vph during the non-game analysis periods and 2,750–4,400 vph during game periods. South of the diverge, the Grand Central Parkway receives approximately 450–800 vph from the ramp from the Whitestone Expressway and westbound Northern Boulevard during the non-game periods and 600–750 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 800–1,055 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 4,800–6,250 vph during the non-game analysis time periods, and 6,100–6,550 vph for game conditions.

Traffic volumes on the Grand Central Parkway westbound mainline just north of the ramps from the LIE range from 4,350–5,800 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 5,300–5,850 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 1,900–2,500 vph and 2,400–3,050 vph during the non-game and game peak hours, respectively. The west half of the mainline carries approximately 2,500–3,350 vph and 2,700–2,900 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 CitiField and the District from the westbound mainline, carries approximately 250–350 vph during the non-game analysis periods and 350–1,050 vph during game periods. The ramp to westbound Northern Boulevard (Exit 9W) carries approximately 700–1,150 vph during the non-game analysis periods and 700–1,250 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 2,000–2,450 vph and 1,450–2,500 vph during the non-game and game peak hours, respectively.

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 3,500–5,100 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 3,700–4,150 vph during game conditions. The northbound diverge toward Northern Boulevard (Exit 13) carries approximately 1,100–1,450 vph and 1,050–1,200 vph during the non-game and game analysis periods, respectively. Of the total volumes during all of the analysis peak hours, approximately 600–700 vph take Exit 13E toward Downtown Flushing, while 250–450 vph take Exit 13W toward westbound Northern Boulevard, the Grand Central Parkway and access to CitiField. North of the District, the continuation of I-678 northbound, the Whitestone Expressway, is traveled by approximately 4,350–6,900 vph and 5,350–7,150 vph during non-game and game analysis periods, respectively.

North of the District, the southbound Whitestone Expressway 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 3,900–5,700 vph and 4,000–5,500 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 550–800 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 450–950 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 2,750–3,650 vph during typical non-game weekday AM, midday, PM and Saturday midday peak hours, and from 3,250–3,700 vph during game conditions.

EXISTING LEVELS OF SERVICE

NON-GAME DAY CONDITIONS

Table 14-63 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 35 and 50 miles per hour (mph) during the AM peak hour, except for the southbound Whitestone Expressway, which has an average travel speed of approximately 27 mph. Average travel speeds on the highway mainlines during the weekday midday, PM, and Saturday midday peak hours generally range from 32 to 46 mph.

Table 14-63

Existing 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)	37.1	36.9	E	37.5	31.3	D	33.0	43.5	E	37.3	42.0	E
Grand Central Parkway WB Mainline (East Side) (Between Roosevelt Ave & Long Island Expwy)	49.1	20.8	C	43.2	17.9	B	37.8	23.6	C	38.3	26.0	C
Grand Central Parkway WB Mainline (West Side) (Between Roosevelt Ave & Long Island Expwy)	44.4	35.4	E	45.4	26.0	C	44.6	31.4	D	44.1	35.5	E
Van Wyck Expressway NB Mainline (Between Roosevelt Ave & Long Island Expwy)	35.0	44.9	E	39.2	27.5	C	33.8	37.2	E	38.8	32.6	D
Van Wyck Expressway SB Mainline (Between Roosevelt Ave & Long Island Expwy)	39.6	24.1	C	38.8	22.9	C	39	29.1	D	41.1	26.8	C
Whitestone Expressway NB Mainline (Between Northern Boulevard & Linden Place)	45.2	22.3	C	45.5	19.5	B	35.1	48.0	F	37.1	26.7	C
Whitestone Expressway SB Mainline (Between Northern Boulevard & Linden Place)	26.7	43.6	E	34.4	23.2	C	32.0	33.9	D	33.1	29.2	D
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.2	18.4	B	34.4	15.6	B	34.1	18.7	B	34.2	19.4	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.9	26.5	C	23.9	24.9	C	24.1	22.0	C	23.7	26.2	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.2	31.3	D	23.5	22.8	C	24.3	19.2	B	25.9	16.7	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.6	12.9	B	45.4	10.2	B	39.5	19.9	B	43.4	13.0	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.8	23.8	C	28.8	23.6	C	28.9	20.7	C	28.4	29.4	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.6	4.9	A	41.4	6.3	A	39.2	18.4	B	40.2	6.1	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.5	30.3	D	33.7	26.1	C	33.3	31.8	D	33.4	30.7	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.3	16.0	B	27.6	9.6	A	31.2	14.9	B	30.5	10.5	B
Ramp from Northern Boulevard WB & Whitestone Expressway SB to Astoria Boulevard WB	30.1	21.9	C	31.4	7.8	A	32.1	9.1	A	39.7	6.9	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.5	18.4	B	32.2	18.9	B	34.8	25.0	C	29.6	24.0	C
Ramp from Grand Central Parkway WB toward Stadium Road & Whitestone Expressway NB	44.6	6.7	A	42.3	6.2	A	41.5	4.3	A	43.4	6.0	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	23.4	30.7	D	30.7	12.9	B	30.4	18.4	B	30.6	17.8	B
Note: "n/a" signifies not available												

For the highway mainline sections, unacceptable LOS E or F conditions occur along the eastbound and west side of the westbound Grand Central Parkway mainline split, northbound Van Wyck Expressway, and southbound Whitestone Expressway during the AM peak hour, and along the eastbound Grand Central Parkway, northbound Van Wyck Expressway, and northbound Whitestone Expressway during the PM peak hour. The other mainline sections generally operate at LOS B, C, or D during the weekday AM and PM peak hours. During the weekday midday peak hours, all analyzed highway mainline sections operate at acceptable LOS B, C or D. During the Saturday midday peak hour, the eastbound and west side of the westbound Grand Central Parkway mainline split generally operates at unacceptable LOS E; the other mainline sections generally operate at a LOS C or D.

The ramp from the southbound Whitestone Expressway to the westbound Grand Central Parkway operates at unacceptable LOS D during the weekday PM peak hour. All other ramps operate at acceptable levels of service during all non-game day peak hours.

GAME DAY CONDITIONS

Table 14-64 presents existing speeds, densities, and levels of service for the 19 sections or ramps of the highway network during the game-day peak hours. Pre-game traffic to CitiField 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, southbound Van Wyck 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 Flushing Meadow Park internal roads (United Nations Avenue and Avenue of Science).

Weekday PM and weekend midday pre-game average travel speeds on the highway mainlines generally range between approximately 35 and 47 mph except for the southbound Whitestone Expressway whose travel speed is approximately 13 mph during the weekday PM pre-game peak hour, due to spillback from the exit ramp to westbound Northern Boulevard. That ramp operates with a travel speed of about 6 mph during the weekday PM pre-game peak hour.

Pre-game highway traffic toward CitiField and its surrounding lots causes unacceptable LOS E or F conditions on the northbound and southbound Whitestone Expressway mainline during the weekday pre-game peak hour. The eastbound and west side of the westbound Grand Central Parkway mainline split, and northbound Van Wyck Expressway operate at unacceptable LOS D or E during both the weekday PM and Saturday midday pre-game peak hours. The other highway mainlines generally operate at LOS C and acceptable D 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 ramps and highway mainlines. As a result, post-game peak hour average travel speeds generally range between 23 and 47 mph. The eastbound and west side of the westbound Grand Central Parkway mainline split as well as the northbound Van Wyck Expressway and northbound Whitestone Expressway experience unacceptable LOS D, E or F conditions. The southbound Van Wyck Expressway and the southbound Whitestone Expressway operate at LOS C.

The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard experiences LOS E/F conditions during the weekday and Saturday pre-game periods. All other ramp locations operate at acceptable levels of service during the pre-game and post-game peak hours.

Table 14-64

Existing Highway Levels of Service Summary—Game Day

	Weekday Pregame			Saturday Pregame			Saturday Postgame		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	38.2	37.4	E	35.3	43.6	E	29.2	55.5	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.5	24.9	C	35.7	31.5	D	35.8	26.9	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.7	32.3	D	44.3	31.8	D	44.1	32.7	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.7	32.9	D	35.8	35.9	E	35.1	32.7	D
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	38.4	30.4	D	46.8	23.5	C	47.4	21.7	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.1	42.8	E	39.0	27.5	C	38.7	35.5	E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	13.1	80.3	F	34.0	28.7	D	29.4	27.8	C
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.5	15.7	B	34.8	12.8	B	33.4	26.0	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.7	24.2	C	23.7	27.1	C	23.6	26.5	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	25.0	19.2	B	31.2	15.3	B	31.4	10.8	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	39.3	19.5	B	35.7	14.2	B	26.4	31.2	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	29.1	19.0	B	28.6	29.5	D	29.0	22.7	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.7	24.5	C	39.8	7.8	A	39.8	6.5	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.9	24.8	C	33.3	17.3	B	32.9	25.9	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.4	10.6	B	26.8	15.8	B	24.9	17.9	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0	8.9	A	39.3	6.0	A	38.0	7.9	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	38.1	22.8	C	35.2	23.9	C	35.0	28.7	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.7	10.5	B	43.9	13.9	B	42.0	8.4	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	6.5	173.4	F	26.0	41.9	E	30.6	14.1	B
Note: "n/a" signifies not available									

THE FUTURE WITHOUT THE PROPOSED PROJECT

This section details the expected traffic volume increases, levels of service, density and speeds along the highway network for each year of buildout: Phase 1A in 2018; Phase 1B in 2028; and Phase 2 in 2032. Overall, highway conditions generally deteriorated or remained the same under the Phase 1A, Phase 1B and Phase 2 No Action conditions as compared to existing conditions; however, in some instances, speeds and levels of service improved slightly between the existing and No Action conditions due to saturation of one analyzed mainline or ramp, which causes a metering of vehicles arriving at (and consequential improvement of) downstream analysis locations. Signal phasing and timing changes proposed by NYCDOT at the intersection of Northern Boulevard and 126th Street were incorporated in the Final SEIS analysis.

PHASE 1A (2018) NO ACTION CONDITION

Traffic volumes on the analyzed sections of the highway network are expected to increase by a background growth rate of 0.5 percent per year for the first five years (between 2012 and 2017) and 0.25 percent per year for every year beyond that (between 2017 and 2018), plus traffic expected to be generated by other projected No Action development projects. In the Phase 1A No Action condition, traffic volumes along the Grand Central Parkway eastbound mainline would increase by about 250 to 375 vph. In the westbound direction along the Grand Central Parkway, volumes would increase by approximately 110 to 150 vph on the east side split and by 110 to 135 vph on the west side split. Traffic volumes along the northbound mainline of the Van Wyck Expressway would increase by 260 to 315 vph, and by 200 to 320 vph along the southbound mainline. Traffic volumes along the Whitestone Expressway would increase by 135 to 210 vph in the northbound direction and by 125 to 165 vph in the southbound direction.

HIGHWAY LEVELS OF SERVICE

Under the Phase 1A No Action conditions, increased vehicular volumes would result in higher densities and lower speeds on several ramps and highway sections. In a few instances, conditions improved slightly between existing and Phase 1A No Action conditions. This is primarily a result of congested ramps and merges having a “metering” effect on adjacent downstream segments of the highway network.

Non-Game Day

Table 14-65 presents the projected No Action Phase 1A levels of service, speeds, and densities for the 19 sections of the highway network analyzed during the non-game day peak hours.

Mainlines

The eastbound Grand Central Parkway mainline would deteriorate from an acceptable LOS D to unacceptable LOS D during the weekday midday peak hour and would deteriorate from an unacceptable LOS E to unacceptable LOS F in the weekday PM peak hour, and would continue to operate with average speeds of approximately 33 to 37 mph. The west side of the westbound Grand Central Parkway mainline split would deteriorate from an acceptable LOS D to an unacceptable LOS D during the weekday PM peak hour and would continue to operate with average speeds of approximately 45 mph.

The northbound Van Wyck Expressway mainline would deteriorate from unacceptable LOS E to unacceptable LOS F during the weekday AM peak hour, and would deteriorate from an unacceptable LOS D to unacceptable LOS E during the Saturday midday peak hour, but would continue to operate with similar average speeds as under existing conditions during all time periods. The southbound Van Wyck Expressway mainline would deteriorate from an acceptable LOS D to an unacceptable LOS D during the weekday PM peak hour and would ~~deteriorate in average speed from 39 mph to 36~~ continue to operate with an average speed of approximately 39 mph. The southbound Whitestone Expressway mainline would deteriorate from LOS E to LOS F during the weekday AM peak hour but would continue to operate with average speeds around ~~27~~ 26 mph.

Table 14-65

Phase 1A (2018) No Action Highway Levels of Service Summary
Non-Game Day

	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines												
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.0 36.7	38.7 39.4	E	37.2 34.6	34.7 34.6	D	33.0 32.9	45.5 45.9	F	37.1 44.2	44.2 43.9	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.8 49.0	22.1 21.8	C	43.0 43.1	19.2	B	37.7 25.0	25.1 25.0	C	38.1 38.0	27.0 27.5	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.5 44.2	36.2 36.7	E	45.2 45.3	27.1 27.3	C	44.5 44.7	32.6	D	43.8 43.9	37.8 37.3	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.6 34.5	48.1 48.4	F	38.9 38.6	30.2 30.3	D	33.6 39.8	39.9 39.8	E	38.5 38.6	35.5 35.4	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	39.4 39.5	25.2	C	38.6 24.9	25.1 24.9	C	35.5 39.1	34.9 31.6	D	40.9 40.8	28.7 28.9	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.2	23.4 22.9	C	46.4 45.6	20.3	C	35.1 49.4	49.4 49.5	F	37.1 27.1	27.1 27.4	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	26.6 26.0	45.0 46.0	F	34.3 24.0	24.0	C	31.9 34.9	34.9	D	33.1 30.1	30.1	D
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.2	18.9 19.0	B	34.4 16.6	16.5 16.6	B	34.1 34.0	19.5 19.6	B	34.0 33.9	20.4	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.7 23.8	33.4 33.2	D	23.5 23.4	33.8 34.5	D	23.5 23.3	30.2 30.1	D	23.4 36.2	36.2 36.7	E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.2 23.1	33.6 34.4	D	23.5 23.4	24.2 24.7	C	24.2 20.9	20.8 20.9	C	26.0 17.9	17.7 17.9	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.5 33.6	13.1	B	45.3 45.2	10.7 10.2	B	39.3 39.5	19.8 20.2	B C	43.4 13.3	13.4 13.3	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.7	26.3	C	28.5 28.4	30.4	D	28.4	29.2	D	28.1	36.6	E
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	5.6 5.5	A	41.5 41.6	7.1 7.2	A	39.1	20.0	C	40.2	7.0 6.9	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.5 33.4	30.4 30.7	D	33.7 27.9	27.6 27.9	C	33.1 33.3	33.2 33.3	D	33.3	32.2	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.5 29.6	17.1 17.3	B	28.8 28.6	11.5 11.1	B	31.7	16.9 17.2	B	31.3	11.7	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.8	28.4 28.2	D	31.2 10.1	9.9 10.1	A B	32.0	11.0	B	39.3 39.2	9.1	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.4 37.3	20.3 20.0	C B	32.1 32.2	20.5	C	34.7 34.6	25.8 26.1	C	29.7 29.6	25.4 25.6	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.5 44.6	7.7	A	42.3 7.7	7.2 7.7	A	41.3 41.5	5.6 5.3	A	43.5 43.4	6.9 7.2	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	13.2 15.2	60.3 48.6	F	30.5 30.4	14.4 14.5	B	30.4	20.4 20.3	C	30.0	20.5 19.8	C B

Ramps

The ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard would deteriorate from acceptable LOS C to unacceptable LOS D during the weekday AM and midday peak hours and from LOS C to LOS E during the Saturday midday peak hour. The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from an acceptable LOS D to unacceptable LOS D during the weekday AM peak hour. The ramp from the southbound Whitestone Expressway to the westbound Grand Central Parkway would deteriorate from an acceptable LOS D to unacceptable LOS D during the Saturday midday peak hour. However, none of these ramps would experience a drop in average speed. The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would deteriorate from an acceptable LOS D to an unacceptable LOS F during the weekday AM peak hour and would experience a drop in average speed from approximately 23 mph to ~~13~~ 15 mph.

Game Day

The Phase 1A No Action levels of service, speeds, and densities for the analyzed sections during the game day peak hours are shown in **Table 14-66** and are summarized below.

Mainlines

The eastbound Grand Central Parkway would continue to operate at unacceptable LOS E or F during all peak hours with similar speeds. The east side of the westbound Grand Central Parkway would deteriorate from an acceptable LOS D to an unacceptable LOS ~~F~~ D during the Saturday pre-game peak hour and would ~~incur a drop in average travel speed from~~ continue to operate at approximately 36 mph to 19 mph. The northbound Van Wyck Expressway would deteriorate from an unacceptable LOS D to an unacceptable LOS E in both the weekday pre-game and Saturday post-game peak hours but would continue to operate with similar travel speeds. The southbound Van Wyck Expressway would deteriorate from an acceptable LOS D to an unacceptable LOS E during the weekday pre-game peak hour and would incur a drop in average travel speed from 38 mph to 33 mph. The northbound Whitestone Expressway would deteriorate from an unacceptable LOS E to unacceptable LOS F during the weekday pre-game peak hour and would deteriorate from an acceptable LOS C to unacceptable LOS D in the Saturday pre-game peak hour, and would continue to operate with average speeds of 39 to 40 mph. The rest of the mainline segments would operate at similar levels of service to existing conditions.

Ramps

The ramp from northbound Van Wyck Expressway to eastbound Northern Boulevard would deteriorate from LOS C to LOS D during the Saturday pre-game and post-game peak hours but would maintain similar average travel speeds. Along the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway, levels of service would deteriorate from LOS D to LOS E during the Saturday pre-game peak hour yet travel speeds would remain similar to existing conditions. The ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard would deteriorate from LOS C to LOS F during the weekday pre-game and Saturday pre-game peak hours. The ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway would ~~deteriorate from LOS B to LOS F during the Saturday pre-game peak hour and travel speeds would drop correspondingly from an average of approximately 44 mph to 5 mph.~~ operate at similar levels of service to existing conditions. The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would deteriorate from LOS E to LOS F during the Saturday pre-game peak hour and would experience a reduction in average travel speed from 26 mph to ~~16~~ 21 mph.

Table 14-66
Phase 1A (2018) No Action 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)	38.4 38.0	37.6 38.9	E	35.6 35.4	40.0 43.6	E	29.0 29.1	58.4 58.5	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.3 39.2	26.2 26.1	C	49.4 35.6	50.8 32.9	F D	35.7	28.4 28.6	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.4 44.3	33.9	D	44.1	33.6 33.4	D	42.9 42.8	34.9 34.7	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.4	35.5	E	35.6	38.7 38.6	E	34.9 35.0	35.4 35.2	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	39.3 32.9	31.3 37.2	D E	46.9 46.8	24.7 25.6	C	47.3 47.4	22.9 23.0	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.0 39.9	42.4 45.3	E F	39.0 38.8	25.2 31.9	C D	38.8	34.3 34.9	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	8.6 9.1	149.5 113.3	F	34.0	29.5	D	29.4	28.6	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.5 34.4	15.7	B	34.8	13.5	B	33.4 33.5	24.2 24.4	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.5	30.6 30.4	D	23.5	33.5	D	23.3 23.4	33.2 32.1	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	25.4 25.0	20.2 20.7	C	31.3 31.2	45.8 16.0	B	31.3	41.5 11.9	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	38.8 39.3	49.8 21.1	B C	35.3 35.1	43.2 16.7	B	26.5	29.7 31.0	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.8 28.9	24.5 24.4	C	28.2	36.2 36.1	E	28.6 28.8	27.4 27.2	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.4 38.6	25.5 25.6	C	39.6 39.7	9.0	A	39.8 39.6	7.4 7.7	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7	23.7 23.9	C	33.2 33.3	18.5	B	32.8 32.9	27.2 27.5	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.3 31.7	40.4 11.1	B	27.2	17.7	B	25.0 25.1	49.4 19.2	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0	8.8	A	38.9	9.4 9.6	A	38.1	6.6 6.4	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	9.0 13.9	88.5 73.7	F	5.2 8.9	120.4 104.9	F	35.5 35.2	28.4 28.4	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.4 41.5	11.4	B	4.7 43.5	103.6 15.1	F B	44.8 41.9	9.7 9.6	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	6.4 6.0	180.3 180.2	F	15.7 20.9	72.7 55.2	F	30.8	44.9 14.8	B

PHASE 1B (2028) NO ACTION CONDITION

Traffic volumes on the analyzed sections of the highway network are expected to increase by a background growth rate of 0.5 percent per year for the first five years (between 2012 and 2017) and 0.25 percent per year for every year beyond that (between 2017 and 2028), plus traffic expected to be generated by other projected No Action development projects. In the Phase 1B No Action condition, traffic volumes along the Grand Central Parkway eastbound mainline

would increase by about 425 to 640 vph. In the westbound direction along the Grand Central Parkway, volumes would increase by approximately 170 to 230 vph on the east side split and by 185 to 225 vph on the west side split. Traffic volumes along the northbound mainline of the Van Wyck Expressway would increase by 355 to 435 vph, and by 275 to 415 vph along the southbound mainline. Traffic volumes along the Whitestone Expressway would increase by 245 to 390 vph in the northbound direction and by 225 to 305 vph in the southbound direction.

HIGHWAY LEVELS OF SERVICE

Under the Phase 1B No Action conditions, increased vehicular volumes would result in higher densities and lower speeds on several ramps and highway sections. In a few instances, conditions improved slightly between existing and Phase 1B No Action conditions. This is primarily a result of congested ramps and merges having a “metering” effect on adjacent downstream segments of the highway network.

Non-Game Day

Table 14-67 presents the projected No Action Phase 1B levels of service, speeds, and densities for the 19 sections of the highway network analyzed during the non-game day peak hours.

Mainlines

The eastbound Grand Central Parkway mainline would deteriorate from an acceptable LOS D to unacceptable LOS ~~E~~ D during the weekday midday peak hour and would deteriorate from an unacceptable LOS E to unacceptable LOS F in the weekday PM peak hour, and would continue to operate with average speeds of 33 to 37 mph. The west side of the westbound Grand Central Parkway mainline split would deteriorate from an acceptable LOS D to an unacceptable LOS D during the weekday PM peak hour and would continue to operate with average speeds of approximately 45 mph. This segment would continue to operate at LOS E during the Saturday midday peak hour and maintain a similar average speed.

The northbound Van Wyck Expressway mainline would deteriorate from unacceptable LOS E to unacceptable LOS F during the weekday AM peak hour dropping slightly in average speed from 35 mph to 34 mph, and would also deteriorate from an unacceptable LOS D to unacceptable LOS E during the Saturday midday peak hour, but would continue to operate with similar average speeds as under existing conditions during all time periods. The southbound Van Wyck Expressway mainline would deteriorate from an acceptable LOS D to unacceptable LOS ~~D~~ F during the weekday PM peak hour and average speeds would continue to operate with average speeds of approximately ~~deteriorate from 39 mph to 25 mph.~~ This segment would also deteriorate from an acceptable LOS C to an unacceptable LOS D during the Saturday midday peak hour with average speeds that would deteriorate from 41 mph to 38 mph.

The southbound Whitestone Expressway mainline would deteriorate from LOS E to LOS F during the weekday AM peak hour and from LOS D to LOS E during the ~~Saturday midday~~ weekday PM peak hour but would continue to operate with similar average speeds as in existing conditions.

Table 14-67

Phase 1B (2028) No Action Highway Levels of Service Summary
Non-Game Day

	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines												
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	36.6 36.5	40.2	E	37.2 34.9	35.2 34.9	E D	33.0	45.4	F	37.1 44.0	44.4 44.0	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.9 48.7	22.4 22.5	C	43.0	19.7	B	37.6 25.5 25.7		C	38.1 27.7 28.2		G D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1 43.9	37.7	E	45.1 45.3	28.1 28.0	D C	44.5 33.8 33.6		D	43.6 43.9	39.1 38.3	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.3 34.4	49.8 49.6	F	38.9	30.9	D	33.6 33.5	41.1 41.2	E	38.5 36.4 36.3		E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	37.9 39.3	28.5 27.6	D C	38.4	27.1	C	25.1 38.5	48.9 33.5	F D	40.7 37.7	30.3 32.6	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.0 45.1	24.1 23.9	C	45.4	20.9 21.6	C	35.0 35.1	60.4 49.9	F	37.1	27.3	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	26.6 25.6	46.2 47.7	F	34.3	24.5 24.6	C	31.9 31.8	35.9	E	33.1 33.0	30.8 30.9	D
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.1 34.2	19.5 19.7	B	34.5 16.5	16.7 16.5	B	33.9 20.1	20.2 20.1	C	33.9 20.9	20.8 20.9	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	25.9	26.8 26.5	C	23.6	27.3 28.1	C D	23.4 23.1	23.9 25.2	C	22.3 22.2	30.1 30.5	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.3 23.2	32.5 33.2	D	23.6 23.7	20.4 19.8	C B	24.3 19.3	17.6 19.3	B	26.0 26.1	16.2 15.9	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.6 33.5	14.1 14.2	B	44.9	11.1 11.0	B	38.8 39.0	20.6 21.1	C	43.5 13.5	13.3 13.5	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.5 28.6	22.8	C	28.4	24.7	C	28.4 22.9	23.4 22.9	C	28.0	29.0	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	5.7	A	41.5 41.6	7.2	A	38.9 39.0	20.8	C	40.1 7.0	6.9 7.0	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3	31.7 32.1	D	33.7	28.1 27.9	D C	33.0 33.1	34.4 34.0	D	33.2 33.4	33.0 32.8	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.7 29.6	18.0 17.7	B	28.8 28.7	11.3	B	31.7 16.8	16.7 16.8	B	31.4	11.7	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.7	29.1 28.9	D	31.3	9.9 9.8	A	32.0 31.9	11.1 11.0	B	39.5 39.1	9.1 9.3	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.5 37.3	20.7 20.9	C	32.1 31.9	21.6 22.1	C	34.6 34.5	26.0 26.3	C	29.6	25.9	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.6	7.7	A	42.4 42.3	7.7 7.8	A	41.4 5.5	6.4 5.5	A	43.4 43.3	7.1 7.3	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	9.6 6.1	80.0 120.7	F	30.8 30.6	14.0 14.5	B	30.4 30.1	20.8 21.2	C	30.0 30.2	20.7 20.3	C

Ramps

The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from an acceptable LOS D to unacceptable LOS D during the weekday AM peak hour. The ramp from the southbound Whitestone Expressway to the westbound Grand Central Parkway would deteriorate from an acceptable LOS D to unacceptable LOS D during the weekday AM and Saturday midday peak hours. However, these ramps would not experience a

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drop in average speed. The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would deteriorate from an acceptable LOS D to an unacceptable LOS F during the weekday AM peak hour and would experience a drop in average speed from approximately 23 mph to 40 6 mph.

Game Day

The Phase 1B No Action levels of service, speeds, and densities for the analyzed sections during the game day peak hours are shown in **Table 14-68** and are summarized below.

Table 14-68
Phase 1B (2028) No Action Highway Levels of Service Summary
Game Day

Mainlines	Weekday Pregame			Saturday Pregame			Saturday Postgame		
	Speed (mph)	Density (pc/mi/n)	LOS	Speed (mph)	Density (pc/mi/n)	LOS	Speed (mph)	Density (pc/mi/n)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	38.3 38.0	35.3 38.4	E	35.8 35.3	37.4 43.1	E	29.2 57.1	56.8 57.1	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.2 39.3	27.0	C	15.5 35.6	63.6 33.7	F D	35.7 29.2	29.5 29.2	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.4	34.7 34.6	D	44.0 44.2	36.9 34.4	E D	43.0 42.6	35.7 36.2	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.4	36.3 36.4	E	35.5	39.7	E	34.8 34.9	36.2	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	23.4 33.5	52.3 35.2	F E	46.8 46.7	25.2 26.5	C	47.2 23.6	23.4 23.6	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.0 39.9	41.6 47.1	E E	39.1 38.6	23.0 31.6	G D	38.8 35.0	34.8 35.0	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	8.7 7.8	120.0 121.1	F	34.0 33.9	30.2 30.3	D	29.4 29.3	29.3	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.3 34.5	45.5 15.4	B	34.9 34.7	13.7	B	33.3 33.4	25.2 25.0	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.1	26.0 25.2	C	24.7 21.8	28.9 29.3	G D	24.9 22.0	28.5 27.8	D C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	25.0 25.1	19.9	B	31.4	14.9	B	31.4 31.5	40.8 10.4	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	38.3 38.8	49.6 21.4	B C	35.5 35.3	44.3 16.5	B	26.4 30.9 31.1	30.9 31.1	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	27.9 28.9	49.9 19.4	B	28.2 28.0	28.1 28.2	D	28.7 21.0	21.4 21.0	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.6 38.5	26.2 26.4	C	39.7 39.6	9.3 9.1	A	39.7 7.4	7.3 7.4	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7 33.9	23.8 23.2	C	33.3 33.2	18.6	B	32.8 27.7	28.0 27.7	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	34.4 31.5	40.6 10.8	B	27.3 27.2	47.7 18.2	B	25.4 25.0	49.3 19.4	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	34.0 31.1	9.5 8.8	A	38.9 38.7	9.5	A	38.2 38.1	6.8 6.6	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	5.7 10.6	120.8 92.2	F	4.5 6.4	119.4 128.4	F	35.4 28.5	28.3 28.5	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.4 41.2	42.4 11.9	B	2.7 43.3	146.7 15.6	F B	41.9 9.6	9.9 9.6	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	6.4 3.9	179.2 189.6	F	14.3 16.8	84.7 70.1	F	30.8 30.7	15.3	B

Mainlines

The eastbound Grand Central Parkway would continue to operate at unacceptable LOS E or F during all peak hours with similar speeds. The east side of the westbound Grand Central Parkway would deteriorate from an acceptable LOS D to an unacceptable LOS ~~F~~ D during the Saturday pre-game peak hour ~~and would incur a drop in average travel speed from 36 mph to 16 mph, but would continue to operate with a similar average speed as in existing conditions.~~ The northbound Van Wyck Expressway would deteriorate from an unacceptable LOS D to an unacceptable LOS E in both the weekday pre-game and Saturday post-game peak hours but would continue to operate with similar travel speeds, while the southbound Van Wyck Expressway would deteriorate from LOS D to LOS ~~F~~ E during the weekday pre-game peak hour and would experience a drop in average travel speed from approximately 38 mph to ~~23~~ 34 mph. The northbound Whitestone Expressway would deteriorate from an acceptable LOS C to an unacceptable LOS D during the Saturday pre-game peak hour but would continue to operate with a similar average speed as in existing conditions. The rest of the mainline segments would operate at similar levels of service to existing conditions.

Ramps

The ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard would deteriorate from LOS C to LOS F during the weekday and Saturday pre-game peak hours and would experience a drop in average speeds from 35-38 mph to ~~5-6~~ 6-11 mph. ~~The ramp from the westbound Grand Central Parkway towards Stadium Road and the northbound Whitestone Expressway would deteriorate from LOS B to LOS F during the Saturday pre-game peak hour and would experience a corresponding reduction in average travel speed from 44 mph to 3 mph.~~ The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would continue to operate at LOS F during the weekday pre-game peak hour, and would deteriorate from LOS E to LOS F in the Saturday pre-game peak hour where it would also experience a drop in average travel speed from about 26 mph to ~~14~~ 17 mph.

PHASE 2 (2032) NO ACTION CONDITION

Traffic volumes on the analyzed sections of the highway network are expected to increase by a background growth rate of 0.5 percent per year for the first five years (between 2012 and 2017) and 0.25 percent per year for every year beyond that (between 2017 and 2032), or approximately 6.5 percent overall, plus traffic expected to be generated by other projected No Action development projects. In the Phase 2 No Action condition, traffic volumes along the Grand Central Parkway eastbound mainline would increase by about 460 to 600 vph. In the westbound direction along the Grand Central Parkway, volumes would increase by approximately 195 to 260 vph on the east side split and by 210 to 260 vph on the west side split. Traffic volumes along the northbound mainline of the Van Wyck Expressway would increase by 265 to 490 vph, and by 225 to 410 vph along the southbound mainline. Traffic volumes along the Whitestone Expressway would increase by 150 to 470 vph in the northbound direction and by 250 to 375 vph in the southbound direction.

HIGHWAY LEVELS OF SERVICE

Under the Phase 2 No Action conditions, increased vehicular volumes would result in higher densities and lower speeds on several ramps and highway sections. In a few instances, conditions improved slightly between existing and Phase 2 No Action conditions. This is primarily a result of congested ramps and merges having a “metering” effect on adjacent downstream segments of the highway network.

Non-Game Day

Table 14-69 presents the projected No Action Phase 2 levels of service, speeds, and densities for the 19 sections of the highway network analyzed during the non-game day peak hours.

Mainlines

The eastbound Grand Central Parkway mainline would deteriorate from an acceptable LOS D to unacceptable LOS E during the weekday midday peak hour ~~and would deteriorate from an unacceptable LOS E to unacceptable LOS F in the weekday PM peak hour~~, and would continue to operate with an average speeds of ~~33 to~~ 37 mph. The west side of the westbound Grand Central Parkway mainline split would deteriorate from an acceptable LOS D to an unacceptable LOS D during the weekday PM peak hour and would continue to operate with average speeds of approximately ~~45~~ 44 mph. This segment would continue to operate at LOS E during the Saturday midday peak hour and maintain a similar average speed as for existing conditions.

The northbound Van Wyck Expressway mainline would deteriorate from unacceptable LOS E to unacceptable LOS F during the weekday AM peak hour dropping slightly in average speed from 35 mph to 34 mph. The southbound Van Wyck Expressway mainline would deteriorate from an acceptable LOS D to LOS F during the weekday PM peak hour and would deteriorate in average speed from 39 mph to ~~47~~ 11 mph, and from LOS C to LOS E during the Saturday midday peak hour with a drop in average speed from about 41 mph to ~~32~~ 29 mph.

The southbound Whitestone Expressway mainline would deteriorate from LOS E to LOS F during the weekday AM peak hour and from LOS D to LOS E during the ~~Saturday midday~~ weekday PM peak hour but would continue to operate with similar average speeds as in existing conditions.

Ramps

The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from an acceptable LOS D to unacceptable LOS D during the weekday AM peak hour. The ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway would deteriorate from LOS B to LOS ~~E~~ F during the weekday PM peak hour and would drop in average speed from approximately 40 mph to ~~20~~ 9 mph. The ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway would deteriorate from LOS C to LOS ~~E~~ F during the weekday PM peak hour and would experience a drop in average speed, from 29 mph to ~~45~~ 6 mph. The ramp from the southbound Whitestone Expressway to the westbound Grand Central Parkway would deteriorate from an acceptable LOS D to unacceptable LOS D during the weekday AM, weekday PM and Saturday midday peak hours. However, these ramps would not experience a drop in average speed. The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would deteriorate from an acceptable LOS D to an unacceptable LOS F during the weekday AM peak hour and would experience a drop in average speed, from approximately 23 mph to ~~6~~ 9 mph.

In a few instances, conditions improved slightly between existing and Phase 2 No Action. This is primarily a result of congested ramps and merges having a “metering” effect on adjacent downstream segments of the highway network.

Table 14-69

Phase 2 (2032) No Action Highway Levels of Service Summary
Non-Game Day

	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines												
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	36.5 40.6	40.5 40.6	E	37.2 35.0	35.2 35.0	E	33.0 45.0	45.4 45.0	F F	37.1 44.1	44.5 44.1	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.8 22.8	22.7 22.8	C	43.0 42.9	19.9 19.7	B	37.7 37.6	25.8 25.6	C	38.1 38.0	28.4 28.5	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1 44.0	38.1 37.9	E	45.1 28.6	28.3 28.6	D	44.2 44.1	34.1 34.4	D	43.4 39.0	39.0	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.3 34.2	50.1 50.3	F	38.8 31.4	31.4 D	D	33.7 33.6	39.8	E	38.8 32.6	32.6	D
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	38.8 39.3	28.6 27.8	D C	38.5 26.8	26.8 C	C	17.3 10.6	69.7 107.4	F F	31.8 29.4	38.2 41.0	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.1 44.9	24.7 24.6	C	45.4 21.9	21.9 C	C	35.1 35.0	50.1 50.5	F F	37.0 37.1	27.8	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	26.3 26.6	47.2 46.7	F	34.3 24.8	24.8 C	C	31.8 36.2	36.2 E	E	33.1 33.0	31.2	D
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.2 34.1	19.7 19.9	B	34.4 16.8	16.8 B	B	34.1 19.4	20.0 19.4	B B	33.8 21.4	21.4 C	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	25.0 25.8	26.5 26.2	C	23.5 23.6	28.5 27.8	D C	23.8 23.6	19.1 21.1	B C	22.6 22.4	24.2 27.3	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.3 23.2	31.8 32.8	D	23.6 20.0	20.0 B C	B C	24.3 24.4	18.1 15.3	B B	26.1 13.5	13.5 13.4	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.6 14.0	14.1 14.0	B	45.0 45.2	11.0 11.1	B	19.5 8.9	40.5 83.8	E F	43.5 43.2	13.3 13.6	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.4 23.0	23.1 23.0	C	28.4 28.3	24.3 C	C	14.9 6.1	41.2 84.2	E F	28.1 27.4	29.2 29.8	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.7	5.8 5.7	A	41.5 7.3	7.4 7.3	A	38.9 38.8	21.0	C	40.1 7.0 7.1	7.0 7.1	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.4 33.3	31.8 32.0	D	33.7 28.4	28.2 28.4	D	33.1 32.7	33.9 32.7	D	33.3 33.5	32.7 33.5	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.6 18.0	18.1 18.0	B	28.7 28.5	11.4 11.1	B	31.8 32.0	16.9 16.6	B	31.4 31.3	11.7	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.7 29.2	28.9 29.2	D	31.2 31.3	10.0 10.2	B	32.0 10.6	11.1 10.6	B	39.3 39.0	8.9 9.1	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.2 21.0	21.1 21.0	C	32.0 22.2	22.1 22.2	C	34.8 31.7	25.8 28.7	C D	29.6 26.2	25.9 26.2	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.2 44.6	7.8	A	42.4 42.3	7.6	A	41.4 5.4 5.5	5.4 5.5	A	43.3 7.3 7.5	7.3 7.5	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	6.0 9.3	128.1 85.8	F	30.9 30.3	14.5	B	30.4 21.6	20.9 21.6	C	30.4 30.3	21.0 20.9	C

Game Day

The Phase 2 No Action levels of service, speeds, and densities for the analyzed sections during the game day peak hours are shown in **Table 14-70** and are summarized below.

Mainlines

The east side of the westbound Grand Central Parkway would deteriorate from an acceptable LOS D to an unacceptable LOS ~~F~~ D during the Saturday pre-game peak hour ~~and would incur a drop in average travel speed from 36 mph to 3 mph but would continue to operate with a similar average speed as in existing conditions~~, and the west side of the westbound Grand Central Parkway would deteriorate from unacceptable LOS D during both the Saturday pre- and post-game peak hours to LOS ~~F~~ E during the Saturday pre-game ~~peak hour and LOS E during the Saturday and~~ post-game peak hours. The average travel speeds would ~~reduce from approximately~~ maintain the same average speed of 44 mph as in the existing conditions during to 39 mph in the Saturday pre-game peak hour and would decrease from 44 to 43 mph in the post-game peak hour. The northbound Van Wyck Expressway would deteriorate from an unacceptable LOS D to an unacceptable LOS ~~F~~ E during the weekday pre-game peak hour and would maintain the same average speed of ~~drop in average speed from 38 mph to 22 mph as in the existing conditions~~. This segment would also deteriorate from LOS D to LOS E in the Saturday post-game peak hour but would maintain similar average speeds to existing conditions. The southbound Van Wyck Expressway would deteriorate from acceptable LOS D to unacceptable LOS D during the weekday pre-game peak hour and would ~~experience a drop in average travel speed from approximately 38 mph to 32 mph. continue to operate with a similar average speed as existing conditions~~. The rest of the mainline segments would operate at similar levels of service to existing conditions.

Ramps

~~The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from LOS B to LOS F during the weekday pre game peak hour and would experience a drop in average speed from approximately 25 mph to 4 mph. The ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard would deteriorate from LOS C to LOS F during the weekday and Saturday pre-game peak hours and would experience a drop in average speeds from 35-38 mph to 4-5-11 mph. The ramp from westbound Grand Central Parkway towards Stadium Road and the northbound Whitestone Expressway would deteriorate from LOS B to LOS F during the weekday and Saturday pre game peak hours and would experience a corresponding reduction in average travel spend from about 42 mph to 3 mph in the weekday pre game peak hour and from 44 mph to 1 mph in the Saturday pre game peak hour. The ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would continue to operate at LOS F during the weekday pre-game peak hour, and would deteriorate from LOS E to LOS F in the Saturday pre-game peak hour where it would also experience a drop in average travel speed from about 26 mph to 47 16 mph.~~

Table 14-70
Phase 2 (2032) No Action 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)	38.4 38.0	33.1 38.9	D E	36.0 35.8	33.0 36.4	D E	29.0 29.2	59.3 57.1	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.4 39.2	27.5 27.4	C	3.4 35.5	141.4 34.0	F D	35.7 35.6	29.2 29.0	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.4	34.8 34.9	D	38.6 43.7	45.9 35.3	F E	42.8 43.0	36.7 36.5	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	22.3 38.4	49.6 36.7	F E	35.5	40.2 40.1	E	35.0 34.8	36.5 36.6	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	32.4 39.6	34.1 31.6	D	46.9 46.8	25.2 25.9	C	47.2 47.3	23.6 23.8	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.4 39.8	39.8 48.3	E F	39.2 38.8	20.8 26.6	C	38.8 38.7	34.5 34.9	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	5.9 8.2	111.5 121.7	F	33.9	30.7	D	29.4 29.3	29.7 29.6	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.6 34.4	45.4 15.3	B	34.6 34.8	41.3 13.7	B	33.4 33.5	24.6 21.9	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.0 22.1	23.8 26.1	C	21.7 21.6	29.9	D	22.0 21.9	28.7 25.4	D C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	4.0 25.0	54.0 20.3	F C	31.6	45.3 14.9	B	31.4	41.4 10.8	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	39.2 31.6	17.7 26.6	B C	35.8 35.3	10.6 13.8	B	26.4 26.5	30.3 29.7	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.8 28.9	19.1 19.4	B	28.2	28.3 28.4	D	28.7 28.4	21.3 19.3	C B
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.3 38.5	26.0 26.6	C	39.6	9.4 9.3	A	39.6 39.7	7.5 7.4	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7 33.8	22.2 22.4	C	33.3 33.2	48.7 19.1	B	32.8	28.6 22.8	D C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	30.2 31.6	10.3 10.8	B	23.2 27.3	20.5 17.7	C B	25.0 25.1	19.8	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0	8.4 9.9	A	38.8	9.6 9.8	A	38.1 38.2	6.3 5.9	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	4.6 10.6	126.3 95.1	F	3.6 4.3	122.8 142.1	F	35.5 35.4	28.1 28.4	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	5.1 41.6	51.9 12.1	F B	0.9 32.3	191.5 20.1	F C	41.9 41.7	9.7	A
Ramp from Whitestone Expressway SB to Northern Boulevard WB	1.3 6.2	191.4 177.4	F	16.7 15.8	71.4 75.1	F	30.8 29.4	45.4 14.6	B

PROBABLE IMPACTS OF THE PROPOSED PROJECT

The proposed project 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. Overall, highway conditions would generally deteriorate or remain the same under the Phase 1A, Phase 1B and Phase

2 With Action conditions as compared to the No Action condition; however, in some instances, speeds and levels of service improved slightly between the No Action and With Action conditions. The two reasons for these improvements are: (1) the diversion of Mets fans to alternate ramps which are more convenient to the newly relocated Mets fan parking facilities (during game day peak hours), and (2) the saturation of one analyzed mainline or ramp, which causes a metering of vehicles arriving at (and consequential improvement of) downstream analysis locations.

The following sections provide a description of expected highway volume increments, resulting levels of service, and the identification of significant adverse highway impacts for each of the three buildout phases.

PHASE 1A (2018) WITH ACTION CONDITIONS

The Phase 1A With Action volumes on the eastbound mainline of the Grand Central Parkway north of Roosevelt Avenue would increase by approximately 450 to 1,000 vehicles during all seven peak hours, a roughly 14 to 29 percent increase compared to 2018 No Action volumes; the east side of the westbound Grand Central Parkway split would increase by 185 to 570 vph, a 7 to 23 percent increase. The Whitestone Expressway would experience volume increases of approximately 50 to 205 vph in the northbound and southbound directions, an approximate 1 to 4 percent increase per direction compared with the No Action volumes. The Van Wyck Expressway volumes would increase by about 50 to 100 vph in the northbound direction during non-game and post-game peak hours and an overall net decrease by 205 to 225 vph during game day peak hours (due to the game day circulation changes resulting from relocated CitiField parking facilities), and would range between a 5 percent decrease and a 5 percent increase compared to the No Action volume during peak hours. Volumes along the southbound Van Wyck Expressway would increase by 120 to 450 during all peak hours, which is an increase of about 4 to 12 percent over the No Action volumes.

NON-GAME DAY

Table 14-71 shows the Phase 1A With Action levels of service, speeds and densities for the highway sections and ramps analyzed during the non-game-day peak hours. A discussion of these conditions and identification of significant impacts is provided below.

Mainlines

Under the Phase 1A With Action condition, the east side of the westbound Grand Central Parkway mainline split would deteriorate ~~from LOS B to LOS E during the weekday midday peak hour (density increase of approximately 25 pc/mi/ln), from LOS C to unacceptable LOS D during the weekday PM peak hour (density increase of 8 pc/mi/ln), and from LOS C to unacceptable LOS F D~~ (density increase of ~~80~~ 5 pc/mi/ln) during the Saturday midday peak hour and would be significantly impacted. The west side of the westbound Grand Central Parkway mainline split would deteriorate ~~from within LOS E to LOS F during the Saturday midday peak hour (density increase of 44~~ 3 pc/mi/ln) and would be significantly impacted. The southbound Van Wyck Expressway would deteriorate from LOS D to LOS E (density increase of 9 pc/mi/ln) during the weekday PM peak hour and would be significantly impacted. The northbound Whitestone Expressway would deteriorate within LOS F (density increase of 4 pc/mi/ln) during the weekday PM peak hour and would be significantly impacted. The southbound Whitestone Expressway would operate at LOS F (as in the No Action) during the weekday AM peak hour and would be significantly impacted (density increase of ~~24~~ 21 pc/mi/ln), and would deteriorate from LOS D to LOS E during the Saturday midday peak hour (density increase of ~~9~~ 5 pc/mi/ln). Average speeds along the significantly impacted segments would decrease by 1 to ~~33~~ 8 mph, the most significant of

which would occur on the ~~east side of the westbound Grand Central Parkway mainline split southbound Whitestone Expressway~~ during the ~~Saturday midday Weekday AM~~ peak hour.

Table 14-71
Phase 1A (2018) With Action 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)	36.8 36.7	38.9 39.1	E	37.2 36.0	34.9 36.0	D	33.0 32.9	46.0 46.4	F	37.6 37.4	36.9 41.4	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.7	23.2 23.0	C	18.5 42.6	44.0 22.9	E	30.9 37.5	33.4 28.3	D	4.9 37.6	107.0 32.1	F
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1 44.3	37.2 37.4	E	45.0 45.1	29.1 28.8	D	44.2 44.3	34.1 34.6	D	37.7 43.2	48.4 39.8	F
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.5 34.6	48.6 48.5	F	38.8 31.1	31.0 31.1	D	33.6 40.8	41.0 40.8	E	38.4 38.5	36.4 36.3	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	39.2 38.6	28.4 29.1	D	38.5 38.8	27.0 28.9	C	38.7 33.3	34.6 40.1	D	40.8 40.6	30.1 31.8	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.1	24.3 23.6	C	45.4 45.3	18.5 23.8	B	35.4 34.9	48.6 53.1	F	37.3 36.9	20.6 27.8	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	17.0 17.5	68.5 67.2	F	33.1 34.3	25.8 25.0	C	31.9 31.8	35.9 36.0	E	26.0 28.5	39.1 35.5	E
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.3	18.5 18.3	B	34.3 34.4	17.8 17.7	B	33.8 33.7	21.2 21.7	C	33.8 33.6	19.8 22.0	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.7	33.4 35.4	D	23.5 23.6	35.2 33.5	E	23.6 29.7	29.1 29.7	D	23.4 35.6	35.7	E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.1 23.2	36.2 33.8	E	23.3 28.4	27.6 28.4	C	24.2 24.1	23.5 24.4	C	21.5 25.7	25.8 21.0	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.3 33.4	17.1 16.8	B	43.5 43.4	15.6 20.2	B	37.5 37.2	29.8 32.3	D	42.3 41.5	16.3 22.8	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.7	26.5 26.9	C	28.4 30.5	30.2 30.5	D	28.4 28.3	28.9 29.2	D	28.1 28.0	36.6 36.0	E
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	5.8 5.7	A	41.4 41.5	7.7 7.5	A	39.0 39.0	20.4 20.4	C	39.7 39.9	7.3	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.6 33.5	29.0 28.9	D	33.6 33.7	27.5 27.3	C	33.1 33.5	33.0 33.5	D	33.3 32.4	31.9 32.4	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.4 29.3	16.4 16.1	B	28.6 28.7	11.0 11.3	B	31.8 31.7	17.6 17.4	B	31.2 23.6	11.5 14.0	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.9 29.8	26.1 26.3	C	31.3 10.7	40.0 10.7	B	32.0 11.5	40.8 11.5	B	39.6 39.1	8.4 9.0	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.3 37.1	21.6 21.4	C	4.6 7.1	123.3 119.5	F	9.0 9.3	104.9 118.7	F	3.7 5.4	134.0 143.4	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.1 44.0	11.2 11.1	B	2.3 40.2	165.3 19.4	F	5.8 39.8	71.7 18.8	F	0.9 26.6	198.6 24.8	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	3.6 4.5	199.6 169.9	F	3.1 5.2	191.3 123.4	F	14.2 13.3	59.7 65.3	F	-4.1 4.7	160.5 163.5	F
Note: Highlight indicates a significant impact												

Ramps

The ramp from the northbound Van Wyck Expressway to ~~westbound~~ eastbound Northern Boulevard would deteriorate from marginally unacceptable LOS D to unacceptable LOS E during

the non-game weekday AM peak hour and would be significantly impacted (density increase of 32 pc/l/mi). The ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway would deteriorate from LOS C to unacceptable LOS D during the weekday PM peak hour and would be significantly impacted (density increase of 12 pc/mi/l/mi). The ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard would deteriorate from an acceptable LOS C to unacceptable LOS F during the weekday midday, weekday PM, and Saturday midday peak hours where average travel speeds would drop from 30-35 mph to 4-9 mph, and would be significantly impacted (density increases of approximately 100-110 120 pc/l/mi). ~~Similarly, the ramp from the westbound Grand Central Parkway toward Stadium Road and the Northbound Whitestone Expressway would deteriorate from LOS A to LOS F during the weekday midday, weekday PM, and Saturday midday peak hours where average travel speeds would drop from 41-44 mph to less than 6 mph, and would be significantly impacted (density increases ranging from approximately 65-190 pc/l/mi).~~ Also, the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would continue to operate at LOS F during the weekday AM peak hour and would deteriorate from LOS B to LOS F during the weekday midday and Saturday midday peak hours and would deteriorate from LOS C to LOS F during the ~~other two~~ weekday PM peak hours, and would be significantly impacted during all non-game peak hours (density increases of 40 ~~approximately 45~~ to 145 ~~175~~ pc/l/mi). Average speeds at this ramp would drop from 15-30 ~~43~~ mph to 3-14 ~~4-13~~ mph during non-game peak hours.

GAME DAY

Table 14-72 shows the Phase 1A With Action levels of service, speeds and densities for the highway sections and ramps analyzed during the game day peak hours. A discussion of these conditions and identification of significant impacts is provided below.

Mainlines

Under the Phase 1A With Action condition, ~~the east side of the westbound Grand Central Parkway mainline split would continue to operate at LOS F during the Saturday pre-game peak hour (density increase of 61 pc/mi/l/mi) and would be significantly impacted. The southbound Whitestone Expressway would continue to operate at LOS F during the weekday pre-game peak hour and would deteriorate from LOS D to LOS F during the Saturday pre-game peak hour and would be significantly impacted (with a density increases of about 20 and 76 55 pc/mi/l/mi, respectively).~~ Average speeds along ~~the impacted segments~~ this segment would decrease by 4 ~~to 24 25~~ mph, ~~the most significant of which would occur on the southbound Whitestone Expressway mainline during the Saturday pre-game peak hour.~~

Table 14-72
Phase 1A (2018) With Action 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)	38.3 38.0	34.8 39.6	D E	35.8 35.4	36.2 43.2	E	29.3	56.2 54.7	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.2 39.3	28.0 27.8	D C	3.4 35.2	444.4 33.4	F D	35.6 34.3	34.4 32.0	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.5	33.8 34.3	D	43.4 43.9	30.7 33.5	D	43.4 42.8	35.5 36.1	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.0 38.6	34.0 33.4	D	35.8 35.7	36.7 36.8	E	35.0	35.9	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	41.4 36.7	25.7 37.5	G E	46.9 46.8	22.7 25.8	C	47.3 47.0	24.1 25.7	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.2 39.9	40.1 46.7	E F	39.0 38.8	22.8 32.2	C D	38.9 38.7	34.7 35.9	D E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	4.5 21.4	140.4 53.0	F	6.3 9.5	105.8 84.0	F	29.4 29.3	29.4 29.5	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.7 34.0	15.0 19.2	B	34.8 34.9	11.2 13.2	B	33.6 33.5	24.3 23.2	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.7 23.5	29.7 28.7	D	23.2 23.4	35.4 34.0	E D	23.5	33.2 29.1	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	3.6 25.3	39.5 15.2	E B	12.9 31.5	30.2 10.4	D B	34.2 31.1	13.3 13.8	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	38.1 37.5	24.6 31.2	C D	34.7 34.0	17.8 26.3	B C	25.4 25.3	39.8 44.0	E
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.7 28.9	24.8 25.1	C	28.4 27.7	36.5 37.5	E	28.4 28.5	27.5 24.7	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.5 38.4	26.0 26.5	C	39.7	9.4	A	39.7	7.4	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.8 33.3	18.8 30.1	B D	33.4 33.3	15.2 16.0	B	32.9	27.2 22.0	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.7 32.5	8.8 12.5	A B	26.6 26.9	15.2 15.8	B	25.0 25.1	19.7 19.9	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0 30.9	6.5 10.0	A B	38.9 38.8	6.4 7.9	A	38.2 38.1	5.7 6.0	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	6.8 13.3	120.7 85.6	F	4.6 10.5	122.4 101.7	F	8.7 8.1	103.8 130.3	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	4.0 41.0	126.7 17.3	F B	0.8 42.1	226.2 21.1	F C	3.9 5.9	120.5 97.7	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	1.6 9.0	223.3 153.1	F	2.4 5.3	208.5 151.7	F	30.0 26.3	19.9 20.3	B C
Note: Highlight indicates a significant impact									

Ramps

The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from LOS C to unacceptable LOS E during the weekday pre-game peak hour and would be significantly impacted (density increase of 19.3 pc/ln/mi). The ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway would deteriorate from LOS D to LOS E during the Saturday post-game peak hour and would be significantly impacted (density increase of 10.4 13.0 pc/ln/mi). The ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard would continue to operate at LOS F during the weekday and Saturday pre-game peak hours and would deteriorate from an acceptable LOS D to unacceptable LOS F during the Saturday post-game peak hour and would be significantly impacted (density increases of approximately 22 pc/ln/mi during both pre-game peak hours and about 75 102 pc/ln/mi during

the Saturday post-game peak hour). The ramp from the westbound Grand Central Parkway toward Stadium Road and the ~~N~~orthbound Whitestone Expressway would deteriorate from LOS A/B to LOS F during the ~~weekday pre-game and~~ Saturday post-game peak hours ~~and would continue to operate at LOS F during the Saturday pre-game peak hour~~, and would be significantly impacted ~~during all game day peak hours~~ (density increases ~~from~~ of approximately ~~115-123~~ 88 pc/l/mi). Also, the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would continue to operate at LOS F during the ~~weekday and~~ Saturday pre-game peak hours, and would be significantly impacted (density increases of ~~about 43 to 135.8~~ 97 pc/l/mi, respectively). Average speeds at the significantly impacted ramp locations would drop to 9 mph or less except for the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway which would continue to operate at around 25 mph compared to the Phase 1A No Action condition.

Mitigation measures to improve overall highway network conditions are discussed in Chapter 21; ~~“Mitigation.”~~

PHASE 1B (2028) WITH ACTION CONDITIONS

The Phase 1B With Action volumes on the eastbound mainline of the Grand Central Parkway north of Roosevelt Avenue would increase by approximately 450 to 1,550 vehicles during all seven peak hours, a roughly 10 to 45 percent increase compared to 2028 No Action volumes; the east side of the westbound Grand Central Parkway split would increase by 340 to 750 vph, a 13 to 30 percent increase. The Whitestone Expressway would experience volume increases of approximately 110 to 365 vph in the northbound and southbound directions, an approximate 2 to 6 percent increase per direction compared with the No Action volumes. The Van Wyck Expressway volumes would increase by about 370 to 600 vph in the northbound direction during non-game and post-game peak hours and by 235 to 390 vph during game day peak hours, which are slightly lower due to the game day diversions of CitiField trips to the relocated parking lots. These increments represent a 5 to 15 percent increase compared to the No Action volume during all peak hours. Volumes along the southbound Van Wyck Expressway would increase by 385 to 965 during all peak hours, which is an increase of about 12 to 25 percent over the No Action 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 District.

NON-GAME DAY

Table 14-73 shows the Phase 1B With Action levels of service, speeds and densities for the highway sections and ramps analyzed during the non-game-day peak hours. A discussion of these conditions and identification of significant impacts is provided below.

Table 14-73
Phase 1B (2028) With Action 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)	37.2 36.9	32.4 36.7	D E	37.5 37.3	30.3 32.7	D	33.5 33.3	35.3 41.6	E	38.1 37.9	29.4 33.4	D
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.2	25.0 24.9	C	0.4 5.5	160.4 98.4	F	1.7 17.5	152.0 53.8	F	0.5 4.2	184.0 113.8	F
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	43.9 43.7	39.0 38.8	E	40.7 44.5	36.9 34.2	E D	34.4 43.2	51.2 37.4	F E	33.1 39.3	56.2 45.7	F
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	31.4 32.6	58.3 56.2	F	20.5 37.9	53.4 36.6	F E	33.0	46.5	F	37.7	42.0 41.9	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	35.4 35.6	36.3	E	38.3 38.2	30.7 31.9	D	29.0 38.2	48.9 39.5	F E	40.5 40.3	32.7 34.9	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.1 44.7	18.8 26.2	B C	45.8 45.3	16.1 21.2	B C	35.4 35.0	31.4 48.3	D E	37.5 37.2	17.6 22.6	B C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	8.9 8.6	126.7 125.4	F	12.2 16.0	67.5 53.3	F	20.3 26.7	56.0 43.7	F	7.6 7.9	116.5 115.8	F
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.5 34.4	18.4 17.1	B	34.0 17.9	15.4 17.9	B	33.4 33.1	20.8 24.9	C	33.9 33.8	15.7 18.8	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	26.8 26.4	30.2 27.8	D C	25.6 24.5	28.1 29.7	D	25.5 24.2	28.6 26.0	D C	24.8 23.4	34.5 31.9	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.3 23.1	35.7 36.3	E	3.9 23.3	111.8 29.5	F D	13.2 24.1	48.7 27.2	F C	17.5 18.3	35.6 35.2	E
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.4 32.8	12.2 17.7	B	44.7 43.5	11.7 16.3	B	47.0 34.0	69.4 28.7	F D	42.2 37.3	12.6 18.9	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.3 28.4	24.7 23.4	C	28.0 27.9	26.9 27.8	C	26.3 22.2	30.5 33.9	D	25.9 26.5	34.7 34.1	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	6.2 6.3	A	41.5 8.1	7.7 8.1	A	3.1 39.0	58.9 20.6	F C	39.8 39.7	8.1 7.8	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7	25.6 23.7	C	33.7	26.1 10.8	C B	33.0	35.0 35.4	E	33.6 33.5	26.2 27.2	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.1 13.9	15.3 22.3	B C	28.8 29.1	11.7 12.1	B	31.7 31.8	16.8 17.3	B	5.7 30.3	23.7 10.4	C B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.9	23.3 23.7	C	31.2	8.1 10.8	A B	32.0	10.5 12.3	B	39.3 39.0	7.6 8.3	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	4.1 5.9	124.7 133.3	F	3.0 4.3	134.2 145.6	F	1.9 6.0	137.9 143.3	F	2.9 3.7	126.6 146.5	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	1.1 27.3	193.6 20.4	F C	0.1 1.5	247.0 209.3	F	0.1 2.2	224.7 192.5	F	0.2 0.7	235.2 227.5	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	4.0 3.9	195.4 197.3	F	1.6 3.4	208.0 202.3	F	3.9 6.5	195.3 143.5	F	3.5 3.0	200.2 207.9	F
Note: Highlight indicates a significant impact												

Mainlines

Because of the increase in volume on the highway network, most analyzed highway mainline locations would operate at LOS D, E or F during most of the non-game day peak hours, with the exception of the northbound Whitestone Expressway which would operate at LOS ~~B~~ C during the weekday AM, weekday midday, and Saturday midday peak hours, and the east side of the westbound Grand Central Parkway split which would operate at LOS C during the weekday

AM peak hour. Under the Phase 1B With Action condition, the east side of the westbound Grand Central Parkway mainline split would deteriorate from acceptable LOS B₂ and C₂ and D to LOS F during the weekday midday, weekday PM, and Saturday midday peak hours (density increases of approximately ~~127 to 156~~ 28 to 86 pc/mi/ln) compared to the Phase 1B No Action condition and would be significantly impacted. Average travel speeds along this segment would decrease from around 40 mph to 2 18 mph or less during these peak hours. The west side of the westbound Grand Central Parkway mainline split would deteriorate from LOS C₂, D and E to LOS D₂, E₂ and F during the weekday midday, weekday PM and Saturday midday peak hours and would be significantly impacted (density increases of about ~~9 to 17~~ 4 to 7 pc/mi/ln). Average travel speeds along this segment would drop approximately ~~5 to 10~~ 1 to 5 mph (to the ~~33 to 40~~ 40 to 45 mph range) during these peak hours. The northbound Van Wyck Expressway would deteriorate to LOS E or F during all non-game peak hours and would be significantly impacted. Density increases along this segment would range from approximately 5 to ~~23~~ 7 pc/mi/ln and average travel speeds would drop by 1 to ~~18~~ 2 mph, ~~the most significant of which would occur during the weekday midday peak hour.~~ The southbound Van Wyck Expressway mainline would deteriorate from LOS ~~D~~ C to LOS E in the weekday AM peak hour; LOS C to unacceptable LOS D in the weekday midday peak hour; and unacceptable LOS D to LOS E in the weekday PM peak hour, and would be significantly impacted (density increase of about ~~8~~ 5 to 9 pc/mi/ln). The southbound Whitestone Expressway would operate at LOS F during all non-game day peak hours and would be significantly impacted (density increases of ~~20 to 86~~ 8 to 85 pc/mi/ln). Average speeds along this segment would decrease by ~~12~~ 5 to 26 mph.

Ramps

~~The ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard would deteriorate from marginally acceptable LOS D to unacceptable LOS D during the Saturday midday peak hour and would be significantly impacted (density increase of 11 pc/ln/mi).~~ The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from LOS B₂, C₂ and D to LOS E and F during weekday AM, midday, and PM, and Saturday midday peak hours, and would be significantly impacted (density increases of 3 to ~~94~~ 20 pc/ln/mi). Average travel speeds on this ramp would drop by ~~10 to 20~~ 8 mph or less during these peak hours. ~~The ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway would deteriorate from LOS C to LOS F during the weekday PM peak hour and would be significantly impacted (density increase of 49 pc/ln/mi), and would experience an 8 mph drop in average travel speed (from 55 mph to 47 mph).~~ The ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway would deteriorate from acceptable LOS C₂ and D to unacceptable LOS D during the weekday PM and Saturday midday peak hours and would be significantly impacted (density increase of ~~6~~ 5 to 11 pc/ln/mi). Three ramps, from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard, from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway, and from the southbound Whitestone Expressway to westbound Northern Boulevard, would all deteriorate from mostly LOS A, B and C to LOS F during all non-game peak hours with the exception of the ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway during the weekday AM peak hour, and would be significantly impacted (density increases of ~~97 to 239~~ 76 to 221 pc/ln/mi). Average travel speeds along these ramps would drop by ~~6~~ 2 to 44 mph, and all impacted ramps would experience average speeds of 4 7 mph or less.

GAME DAY

Table 14-74 shows the Phase 1B With Action levels of service, speeds and densities for the highway sections and ramps analyzed during the game day peak hours. A discussion of these conditions and identification of significant impacts is provided below.

Mainlines

Under Phase 1B With Action conditions on a day with a Mets game, most analyzed highway mainline locations would operate at LOS D, E or F during pre-game and post-game peak hours. The east side of the westbound Grand Central Parkway mainline split ~~would continue to operate at LOS F during the Saturday pre-game peak hour and~~ would deteriorate from LOS D to LOS F ~~and during the Saturday post-game pre-game peak hour and~~ would be significantly impacted (with ~~density increases of 59 and 17~~ a density increase of 16 pc/mi/ln, ~~respectively~~). Average speeds along the impacted segments would decrease by ~~44 to 44~~ approximately 12 mph. The west side of the westbound Grand Central Parkway mainline split would operate at LOS E during all game day peak hours and would be significantly impacted during the Saturday post-game peak hour (density increase of approximately 3 2 pc/mi/ln). The northbound Van Wyck Expressway would continue to operate at LOS E during all game day peak hours (density increases of 2 to 4 pc/mi/ln) and would be significantly impacted. The southbound Van Wyck Expressway would continue to operate at LOS E during the weekday pre-game peak hour and would be significantly impacted (density increase of approximately 6 pc/mi/ln). ~~The northbound Whitestone Expressway would continue to operate at LOS E during the weekday pre-game peak hour (density increase of 2 pc/mi/ln) and would be significantly impacted.~~ The southbound Whitestone Expressway would deteriorate from LOS D to LOS ~~F~~ E during the Saturday pre-game peak hour and would be significantly impacted (density increases of ~~34~~ 11 pc/mi/ln). The average travel speed along this segment would decrease by about ~~49~~ 9 mph (from 34 mph to ~~45~~ 25 mph).

Ramps

The ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard would deteriorate from ~~LOS C acceptable~~ LOS D to unacceptable LOS D during the Saturday pre-game peak hour and would be significantly impacted (density increase of 5 pc/ln/mi). The ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway would deteriorate from LOS ~~B C~~ to LOS ~~F~~ E during the ~~Saturday weekday~~ Saturday pre-game peak hour and would be significantly impacted (density increase of ~~49~~ about 22 pc/ln/mi). The average travel speed at this ramp would decrease by ~~33~~ 15 mph (~~to 2 mph~~) during the impacted peak hour. The ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway would deteriorate from marginally acceptable LOS D to unacceptable LOS ~~D~~ E during the Saturday pre-game peak hour and would be significantly impacted (density increase of 7 about 16 pc/ln/mi).

Table 14-74

Phase 1B (2028) With Action Highway Level of Service Summary

Game Day

	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
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	38.2 38.0	37.1 39.5	E	36.9 35.5	34.4 40.8	D F	29.2 29.3	56.7	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	38.8	30.9 31.0	D	4.4 23.7	422.7 49.7	F	21.4 35.3	46.9 33.0	F D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1 44.2	36.4 36.3	E	40.5 43.3	36.4 36.2	E	42.2 41.6	38.6 38.4	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.2	38.6 38.5	E	35.2 35.0	42.4 42.5	E	34.5	40.0 40.2	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	32.8 35.6	43.7 41.1	E	46.7 46.6	27.3 30.8	G D	47.4 46.9	24.3 25.0	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	39.9	43.7 45.7	E	39.0 38.7	19.8 31.9	B D	38.8 38.7	29.9 36.0	D E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	9.8	116.4 114.6	F	14.8 24.9	61.2 41.0	F	29.3	30.9	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.3 34.1	17.9 18.0	B	34.6	12.6 15.4	B	33.5 33.2	24.5 27.1	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.0	26.1 28.1	G D	32.5 22.2	34.1 34.7	D	22.8 22.9	29.6 29.0	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	25.3	14.2 13.8	B	28.9 31.0	12.0 11.4	B	30.5 30.6	19.5 19.4	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	36.6 23.9	26.5 43.0	C E	2.3 33.0	60.0 24.7	F C	26.4 26.0	27.2 32.1	C D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	27.1 21.5	23.0 28.4	C D	26.4 19.6	34.8 43.9	D E	27.8 27.3	23.3	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.3	26.8 27.0	C	40.7 39.6	27.5 10.3	C B	39.7 39.6	8.0 8.2	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.5 33.6	25.3 25.6	C	33.2 33.1	17.9 18.5	B	32.8	28.7 28.8	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	18.5 32.2	17.2 11.8	B	27.1 27.3	17.7 19.0	B	25.3 25.1	23.0 23.9	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	30.9 30.8	10.0 10.2	B	38.8 38.7	8.4 9.4	A	38.2	6.5 7.2	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	6.9 18.5	114.1 59.0	F	3.5 6.4	128.2 127.0	F	6.9 9.5	114.7 109.3	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	15.7 35.0	49.8 23.9	F C	1.5 14.1	205.7 61.9	F	1.3 2.6	189.3 170.8	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	8.7	159.1 157.8	F	6.5 10.2	136.7 124.9	F	22.1 25.2	31.6 29.8	D
Note: Highlight indicates a significant impact									

Three ramps providing direct access to the District would be significantly impacted during all game day peak hours; however, they would generally be impacted to a lesser degree as compared to Phase 1A. This is because the Mets game-generated traffic that would use these ramps to access interim parking within the district would be diverted to the replacement parking facilities south of Roosevelt Avenue under Phases 1B and 2, and thus would no longer use these ramps. The ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard would continue to operate at LOS F during the weekday and Saturday pregame peak hour, and would deteriorate from marginally acceptable LOS D to unacceptable LOS F during the Saturday post-game peak hour and would be significantly impacted (density increases of approximately 7 to 9 pc/ln/mi during both pre-game peak hours and about 86 of approximately 81 pc/ln/mi during the Saturday post-game peak hour). The average travel speed at this ramp would decrease by 29 26 mph

during the Saturday post-game peak hour and would operate with average speeds of ~~4 to 7~~ 6 to 19 mph during game day peak hours. The ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway would deteriorate from LOS A and B to LOS F during the ~~weekday~~ Saturday pre-game and Saturday post-game peak hours ~~and would continue to operate at LOS F during the Saturday pre-game peak hour~~, and would be significantly impacted ~~during all game day peak hours~~ (density increases ranging from approximately ~~38-180~~ 46 to 162 pc/ln/mi). Average travel speeds during these two peak hours at this location would range from ~~1 to 16~~ 2 to 14 mph (decreasing by ~~26 mph during weekday pre-game and 41~~ 39 mph during Saturday post-game conditions). Also, the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would continue to operate at LOS F during the Saturday pre-game peak hour ~~and would deteriorate from LOS B to unacceptable LOS D during the Saturday post-game peak hour~~, and would be significantly impacted during the Saturday pre-game ~~and post-game~~ peak hours (density increases of ~~7 to~~ 55 pc/ln/mi).

Mitigation measures to improve overall highway network conditions are discussed in Chapter 21, “~~Mitigation~~.”

PHASE 2 (2032) WITH ACTION CONDITIONS

The Phase 2 With Action condition encompasses the entire proposed development program and Lot B development trips. As a result, volumes on the eastbound mainline of the Grand Central Parkway north of Roosevelt Avenue would increase by approximately 950 to 2,100 vehicles during all seven peak hours, a roughly 17 to 52 percent increase compared to 2032 No Action conditions; the east side of the westbound Grand Central Parkway split would increase by 500 to 950 vph, a 19 to 40 percent increase. The Whitestone Expressway would experience volume increases of approximately 175 to 600 vph in the northbound and southbound directions, an approximate 3 to 11 percent increase per direction compared with the No Action volumes. The Van Wyck Expressway volumes would increase by about 700 to 1,100 vph in the northbound direction during non-game and post-game peak hours and by 500 to 750 vph during game day peak hours, which are slightly lower due to the game day diversions of CitiField trips to the relocated parking lots. These increments represent an 11 to 27 percent increase compared to the No Action volume during all peak hours. Volumes along the southbound Van Wyck Expressway would increase by 650 to 1,600 vph during all peak hours, which is an increase of about 21 to 41 percent over the No Action 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 District.

NON-GAME DAY

Table 14-75 shows the Phase 2 With Action levels of service, speeds and densities for the highway sections and ramps analyzed during the non-game-day peak hours. A discussion of these conditions and identification of significant impacts is provided below.

Table 14-75

Phase 2 (2032) With Action 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)	37.8 37.5	28.8 32.1	D	38.0 37.8	20.2 24.9	C	33.6 33.2	35.8 41.2	E	38.3 38.3	26.2 25.5	C
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	6.7 48.0	71.6 26.1	F C	0.0 1.4	191.1 140.9	F	0.4 3.0	194.9 137.1	F	0.0 0.9	200.2 158.0	F
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	41.2 43.5	39.7 40.3	E	33.0 38.2	45.9 43.1	F E	35.3 39.8	54.0 42.8	F E	31.2 27.6	48.8 56.1	F
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	17.1 17.3	94.6 94.1	F	9.2 14.3	110.8 77.5	F	22.4 32.7	67.9 49.2	F	12.0 28.6	105.7 56.1	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	35.4 37.0	33.2 30.4	D	38.3 38.4	27.5 29.1	G D	38.9 38.9	36.4 35.6	E	34.8 40.9	33.8 28.3	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.3 44.7	15.5 23.7	B C	46.0 45.3	12.1 15.5	B	35.5 35.1	36.4 46.3	E F	37.6 37.3	15.0 16.1	B
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	20.3 5.2	57.9 144.1	F	5.7 4.8	110.9 131.1	F	11.2 17.4	89.6 66.4	F	4.1 4.3	147.2 149.1	F
Ramps												
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.2 34.6	20.4 16.9	G B	34.0 34.2	12.8	B	33.3 33.4	18.3 20.3	B C	34.0 34.1	13.6 14.4	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	26.5 26.8	27.2 26.1	C	9.8 24.8	53.6 28.0	F C	10.4 24.6	44.1 23.1	F C	7.2 28.6	59.2 33.9	F D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	11.6 14.8	54.1 53.2	F	2.9 120.5	93.4 120.5	F	7.2 8.1	58.7 39.2	F E	4.7 7.5	77.9 80.6	F
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.6 32.8	9.8 15.1	A B	44.8 44.1	8.5 13.2	A B	38.6 7.2	19.9 76.0	B E	43.4 43.0	9.5 11.9	A B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	27.9 28.0	27.5 25.9	C	27.5 26.7	27.7 29.0	G D	24.6 6.6	29.2 115.9	D E	24.2 25.7	40.5 35.7	E
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5	6.7	A	41.5	8.3 8.5	A	38.9 38.8	20.2 20.8	C	39.8 39.7	7.9 8.5	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3 33.8	30.9 21.0	D C	33.6 33.7	20.7 18.2	G B	33.1 33.2	30.3 29.7	D	33.7 33.8	22.7 20.6	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	30.3 28.7	19.6 13.9	B	0.1 57.2	48.0 57.2	F	31.7 31.5	17.8 17.5	B	30.6 30.1	40.8 10.1	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	30.0	24.6 17.5	C B	31.3 31.2	6.2 6.9	A	32.1 32.0	8.7 10.3	A B	39.6 39.4	5.2 6.5	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	2.7 4.7	132.3 143.3	F	1.5 1.7	144.0 150.4	F	3.1 4.3	138.6 151.6	F	1.8 2.1	141.2 135.5	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	0.1 4.8	225.6 108.8	F	0.0 0.5	241.6 226.8	F	0.0 1.0	235.0 227.5	F	0.0 0.4	243.5 234.4	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	5.2 2.0	106.4 217.9	F	1.2 1.4	226.5 221.6	F	3.0 2.6	204.6 213.4	F	1.5 2.0	214.8 212.6	F
Note: Highlight indicates a significant impact												

Mainlines

Because of the increase in volume on the highway network under the Phase 2 With Action, most analyzed highway mainline locations would operate at LOS D, E or F during most of the non-game day peak hours, with the exception of the northbound Whitestone Expressway which would operate at LOS B and C during the weekday AM, weekday midday, and Saturday midday peak hours, and the eastbound Grand Central Parkway split which would operate at LOS C

during the weekday and Saturday midday peak hours, and the east side of the westbound Grand Central Parkway mainline split which would operate at LOS C during the weekday AM peak hour, and the southbound Van Wyck Expressway mainline which would operate at LOS C during the weekday midday peak hour.

The east side of the westbound Grand Central Parkway mainline split would deteriorate from LOS B, C, or D to LOS F during ~~all the weekday midday, PM, and Saturday midday non-game peak hours~~ (density increases of approximately ~~49 to 172~~ 112 to 130 pc/mi/lane) compared to the Phase 2 No Action condition and would be significantly impacted. Average travel speeds along this segment would decrease from the ~~40-50~~ 35 to 45 mph range to ~~6-4~~ mph or less during the weekday midday, PM, and Saturday midday peak hours. The west side of the westbound Grand Central Parkway mainline split would deteriorate from LOS D and E to LOS E and F during ~~the weekday midday, weekday PM and Saturday midday peak hour~~ all non-game peak hours and would be significantly impacted (density increases of about ~~10 to 20~~ 2 to 17 pc/mi/lane). Average travel speeds along this segment would drop approximately ~~9 to 12~~ 1 to 16 mph (to the ~~30-35~~ 25 to 45 mph range) during these peak hours. The northbound Van Wyck Expressway would deteriorate to LOS F during all non-game peak hours and would be significantly impacted. Density increases along this segment would range from approximately ~~28 to 80~~ 9 to 44 pc/mi/lane and average travel speeds would drop by ~~11 to 30~~ 1 to 25 mph and would operate with speeds of ~~10 to 22~~ 14 to 33 mph, the most significant of which would occur during the weekday midday peak hour. ~~The southbound Van Wyck Expressway mainline would deteriorate from marginally acceptable LOS D to unacceptable LOS D in the weekday AM peak hour and would be significantly impacted (density increase of about 5 pc/mi/lane).~~ The southbound Whitestone Expressway would operate at LOS F during all non-game day peak hours and would be significantly impacted (density increases of ~~10 to 116~~ 30 to 118 pc/mi/lane). Average speeds along this segment would decrease by ~~6 to 29~~ 14 to 30 mph.

Ramps

The ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard would deteriorate from ~~LOS B, C or marginally acceptable LOS D during the non-game weekday midday, weekday PM and Saturday midday peak hours~~ LOS C to unacceptable LOS D during the Saturday midday peak hour and would be significantly impacted (density increases of ~~25 to 35~~ about 7 pc/lane/mile), ~~with average travel speeds decreasing (by about 15 mph) to the 7-10 mph range.~~ The ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from LOS ~~B, C~~ and D to LOS F during ~~all the weekday AM, midday, and Saturday midday peak hours~~ and to LOS E during the weekday PM peak hour, and would be significantly impacted (density increases of ~~23 to 73~~ 20 to 101 pc/lane/mile). Average travel speeds on this ramp would drop by about ~~10-8~~ to 20 mph during these peak hours, and would experience travel speeds of about ~~3 to 12~~ 15 mph. The ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway would deteriorate from marginally acceptable LOS D to LOS E during the Saturday midday peak hour and would be significantly impacted (density increase of ~~44~~ 6 pc/lane/mile). The ramp from the southbound Whitestone Expressway to the eastbound Grand Central Parkway would deteriorate from LOS B to LOS F during the weekday midday peak hour and would be significantly impacted (density increase of ~~37~~ 46 pc/lane/mile) with the average travel speed also decreasing to less than 1 mph.

Three ramps leading into the District—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 ~~N~~ northbound Whitestone Expressway, and the ramp from the southbound Whitestone

Expressway to westbound Northern Boulevard would deteriorate from LOS A, B, and C, or D to LOS F or would continue to operate at LOS F during all non-game peak hours and would be significantly impacted (density increases of 97 to 239 101 to 226 pc/l/mi) ~~except at the ramp from the southbound Whitestone Expressway to Northern Boulevard during the weekday AM peak hour (which would continue to operate at LOS F but would not be impacted).~~ Average travel speeds along these ramps would drop by 6 to 44 2 to 43 mph, and all ramps would experience average speeds of 4 5 mph or less.

GAME DAY

Table 14-76 shows the Phase 2 With Action levels of service, speeds and densities for the highway sections and ramps analyzed during the game day peak hours. A discussion of these conditions and identification of significant impacts is provided below.

Mainlines

Under the Phase 2 With Action condition on a day with a Mets game, most analyzed highway mainline locations would operate at LOS D, E or F during pre-game and post-game peak hours. ~~The eastbound Grand Central Parkway mainline would deteriorate from LOS D to LOS E during the weekday pre-game peak hour and would be significantly impacted (density increase of about 2 pc/mi/l/mi).~~ The east side of the westbound Grand Central Parkway mainline split would operate at ~~LOS E or F unacceptable LOS D or LOS F during all game day the weekday pre-game and Saturday post-game~~ peak hours (density increases of about 45 5 pc/mi/l/mi during the weekday ~~and Saturday~~ pre-game peak hours and of 450 70 pc/mi/l/mi during the Saturday post-game peak hour) and would be significantly impacted. ~~Average travel speeds along this segment would decrease to less than 1 mph during Saturday pre-game and post-game peak hours.~~ The west side of the westbound Grand Central Parkway mainline split would deteriorate from LOS D to LOS E during the weekday pre-game peak hour and from LOS E to LOS F during the Saturday post-game peak hour and would be significantly impacted (density increases of 3 2 to 46 10 pc/mi/l/mi).

The northbound Van Wyck Expressway would continue to operate at LOS E or F during all game day peak hours and would be significantly impacted during ~~the Saturday pre-game and post-game~~ all game day peak hours (density increases of 9 to 52 5 to 8 pc/mi/l/mi). ~~The northbound Whitestone Expressway would continue to operate at LOS E during the weekday pre-game peak hour (density increase of 3 pc/mi/l/mi) and would be significantly impacted.~~ The southbound Whitestone Expressway would deteriorate to LOS F during all game day peak hours and would be significantly impacted (density increases of 49 18 to 23 34 pc/mi/l/mi). The average travel speed along this segment would decrease by about 0.5 4 mph during the weekday pre-game peak hour and 13-16 13-20 mph during the Saturday pre-game and post-game peak hours.

Table 14-76
Phase 2 (2032) With Action Highway Level of Service Summary
Game Day

Mainlines	Weekday Pregame			Saturday Pregame			Saturday Postgame		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	38.3 38.2	35.4 37.7	E	36.2 36.0	29.3 33.3	D	29.9 29.5	42.6 50.6	E F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	26.2 38.7	42.5 32.0	E D	0.7 23.9	167.7 32.5	F D	0.4 6.3	179.4 98.5	F
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1	37.7 37.3	E	42.2 43.4	28.6 36.4	D E	39.2 39.4	52.7 45.8	F
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	37.7 37.5	41.6 42.0	E	42.3 34.4	92.8 47.8	F	33.6 33.8	45.0 44.7	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	41.5	29.9 31.8	D	46.7 27.7	28.4 C	D C	47.2 47.0	24.4 25.2	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.0	42.6	E	38.9	46.8	B	39.3	24.4	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	39.8	48.2	F	38.6	22.2	C	38.5	32.1	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	6.3 4.7	130.7 141.0	F	48.4 13.9	50.4 64.4	F	46.8 15.9	52.7 52.3	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.3 34.1	17.7 18.0	B	34.5 34.6	41.5 14.5	B	33.4 33.2	18.6 23.4	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.8	33.6	D	7.4 22.6	60.2 37.7	F E	49.7 23.0	35.3 31.9	E D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	22.4 13.6	16.6 27.6	B C	28.5 27.7	40.0 13.8	A B	14.4 12.1	44.7 27.4	E C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	37.4 36.9	25.2 28.9	C D	39.8 30.9	67.0 21.1	F C	27.2 26.4	46.4 24.1	B C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	27.2 27.1	25.2 24.3	C	44.8 10.8	70.3 77.0	F	27.3 26.3	26.6 26.9	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.2 38.4	27.4 27.2	C	2.7 39.7	46.0 10.2	F B	39.6 39.7	9.0 8.5	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7	20.9 20.6	C	33.2	47.7 17.6	B	32.9 32.8	29.0 28.5	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.6 31.1	11.8 11.1	B	14.4 27.4	28.4 19.9	D B	25.3 25.2	23.5 23.1	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0 30.9	7.0 5.3	A	38.9	8.2 7.9	A	38.2	5.4 5.5	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	6.4 12.5	149.6 87.5	F	4.2 4.5	133.4 141.9	F	3.2 5.0	129.3 146.3	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	7.6 37.0	89.2 22.9	F C	0.2 5.0	235.7 127.6	F	0.0 1.1	227.9 199.2	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	2.9 1.3	205.3 221.0	F	8.4 6.7	98.0 116.8	F	3.7 3.8	132.4 131.8	F

Note: Highlight indicates a significant impact

Ramps

The ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard would deteriorate from LOS C and marginally acceptable LOS D to unacceptable LOS D, or E or F during the three game day peak hours and would be significantly impacted (density increases of 7 to 30 6 to 8 pc/in/mi). The ramp from northbound Van Wyck Expressway to westbound Northern Boulevard would deteriorate from LOS B to LOS E during the Saturday post game peak hour and would be significantly impacted (density increase of 33 pc/in/mi), and would also decrease to an average travel speed of 11 mph. The ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway would deteriorate from LOS B to LOS F during the Saturday pre game peak hour and would be significantly impacted (density increase of 56 pc/in/mi). The ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway would deteriorate from marginally acceptable LOS D to unacceptable LOS F during

the Saturday pre-game peak hour and would be significantly impacted (density increase of ~~42~~ 49 pc/l/mi). The average travel speed along this ramp would also decrease to 11 mph during this peak hour. ~~The ramp from eastbound Astoria Boulevard and eastbound Northern Boulevard to the northbound Whitestone Expressway would deteriorate from LOS A to LOS F during the Saturday pre-game peak hour (density increase of 37 pc/l/mi and would be significantly impacted). This ramp would experience a reduction in travel speed from 40 mph to 3 mph.~~ The ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard ~~would continue to operate at LOS F during the Saturday pre-game peak hour and~~ would deteriorate from marginally acceptable LOS D to unacceptable LOS F during the Saturday post-game peak hour and would be significantly impacted (density increases of ~~10~~ 104 pc/l/mi during the Saturday pre-game peak hour and 118 pc/l/mi during the Saturday post-game peak hour). The average travel speed at this ramp would decrease to ~~4 to 6~~ 5 mph during ~~all game-day peak hours~~ the Saturday post-game peak hour. The ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway would deteriorate from LOS A to LOS F during the Saturday post-game peak hour and would ~~continue to operate at~~ deteriorate from LOS C to LOS F during the ~~weekday and~~ Saturday pre-game peak hours, and would be significantly impacted during ~~all game-day these~~ these peak hours (density increases ranging approximately ~~37 to 218~~ 108 to 190 pc/l/mi). Average travel speeds at this location would be ~~7~~ 5 mph or less during ~~all the Saturday pre-game and post-game~~ the Saturday pre-game and post-game time periods. Also, the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard would continue to operate at LOS F during the weekday and Saturday pre-game peak hours and would deteriorate from LOS B to LOS F during the Saturday post-game peak hour, and would be significantly impacted (density increases of ~~44 to 117~~ 42 to 118 pc/l/mi). The average travel speed at this location would decrease to ~~8~~ 7 mph or less during game day peak hours.

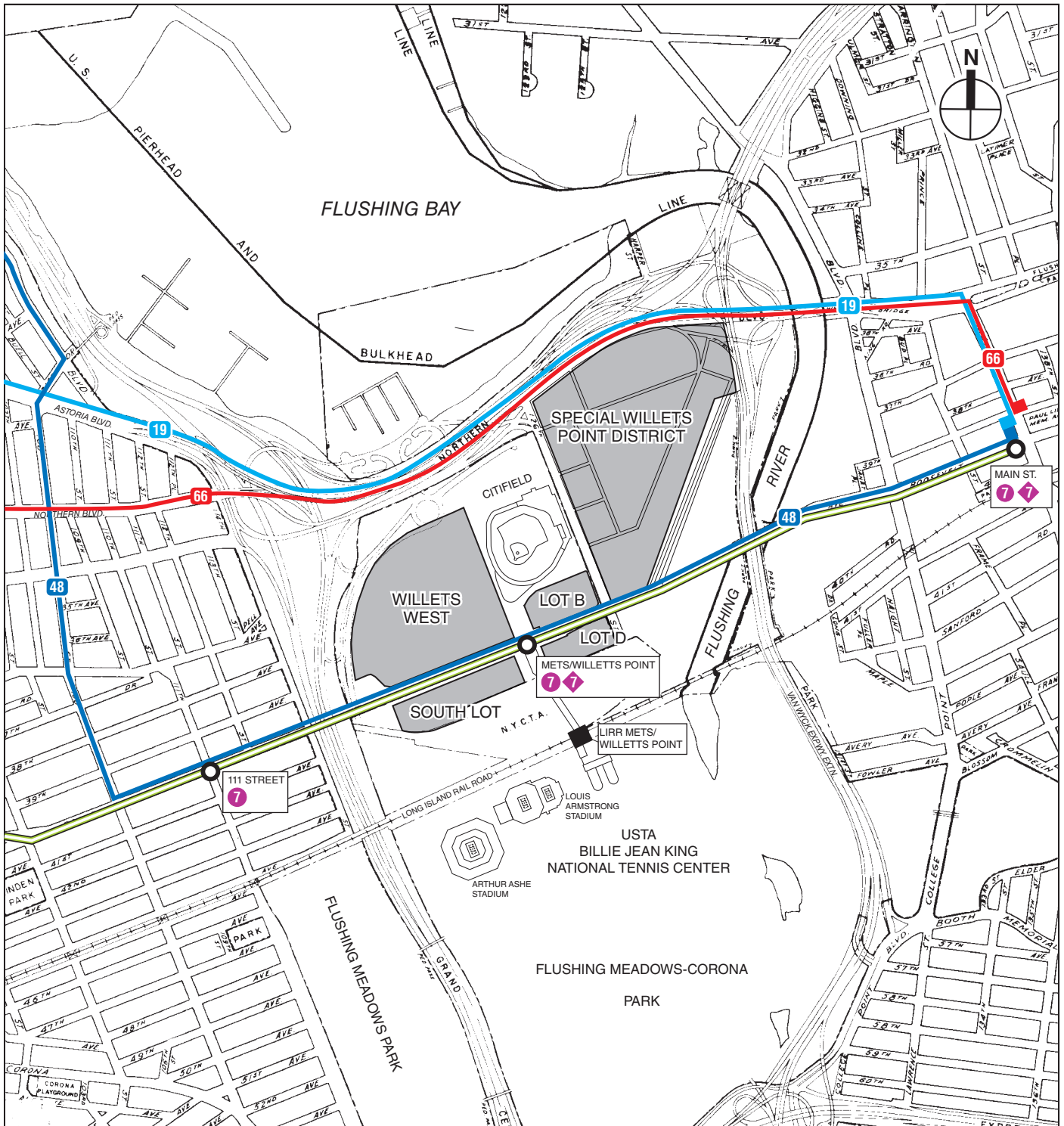
Mitigation measures to improve overall highway network conditions are discussed in Chapter 21, “Mitigation.”

H. SCOPE OF ANALYSIS (TRANSIT AND PEDESTRIANS)

As described in the “Traffic and Parking” section, a travel demand projection was developed to identify the transportation elements likely to be affected by the proposed project. Because the number of peak hour transit and pedestrian trips generated by the proposed project would exceed the 200 trip per hour threshold specified in the 2012 *City Environmental Quality Review (CEQR) Technical Manual*, quantified transit and pedestrian analyses are required.

TRANSIT AND PEDESTRIAN STUDY AREAS

Mass transit options serving the project site include the Metropolitan Transportation Authority (MTA) New York City Transit (NYCT) No. 7 subway line, which operates above Roosevelt Avenue with a stop at the Mets-Willets Point subway station; the MTA Bus Company Q19 and Q66, and NYCT Q48 bus routes, which travel along the northern and southern boundaries of CitiField and the District; and the MTA Long Island Rail Road (LIRR) at the Mets-Willets Point LIRR station (game-day service only), which is accessible just south of the project site (see **Figure 14-4**). The transit analyses include a quantified assessment of control areas and circulation elements at the No. 7 Mets-Willets Point subway station, a ridership and peak period train loading analysis for the No. 7 subway line, and a line-haul analysis for the Q19, Q48, and Q66 bus routes, which includes assessments of conditions at peak load points and at nearby bus stops. In addition, because NYCT expects that there would be notable transfer activities between



- Project Site
- Local Bus Route
- Local Bus Route Number
- Subway Route and Station

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SCALE

the No. 7 line and the N/Q lines at the Queensboro Plaza subway station (across the platform transfers), a detailed examination of line-haul conditions on the N/Q lines ~~will be~~ was prepared, in coordination with NYCT, ~~as part of this for the~~ Final SEIS. During the preparation of the 2008 FGEIS, the City had consulted with the MTA on extending regular LIRR service to the Mets-Willets Point station when the actual demand shows ~~that such~~ service improvement is warranted; ~~h-~~ However, because LIRR service is currently available only on game days at CitiField and at the United States Tennis Association (USTA) National Tennis Center (NTC) during the US Open, no quantified impact analysis was conducted for this transportation mode. The evaluation of pedestrian flow includes an analysis of the sidewalks, corner reservoirs, and crosswalks adjacent to CitiField and the District, along 114th Street, 126th Street, Northern Boulevard, and Roosevelt Avenue (see **Figure 14-5**). In addition, related pedestrian analyses ~~were~~ will be prepared for the three intersections (126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place) where additional traffic analyses ~~were~~ will also be conducted and ~~are~~ are presented in ~~this e~~ this Final SEIS.

SUBWAY SERVICE

No. 7 line

The No. 7 subway line operates primarily along Roosevelt Avenue between Flushing, Queens, and midtown Manhattan. Local service is available 24 hours a day, and express service is available during the weekday AM peak period for travel to Manhattan and during the weekday PM peak period for travel to Flushing. Unscheduled express service is also supplemented during game days at CitiField and during the US Open. From 6:21 AM to 9:55 AM, the No. 7 train operates express service every 2 to 5 minutes and local service every 4 to 6 minutes to Manhattan. Flushing-bound, the No. 7 operates local every 3 to 6 minutes from 6:30 AM to 2:50 PM. The Flushing-bound express service begins at 2:55 PM and ends at 9:38 PM. Between 4:03 PM and 8:45 PM, the Flushing-bound No. 7 train operates express service every 2 to 5 minutes and local service every 5 to 8 minutes. When games occur on weekday evenings, there is express service to Manhattan for an hour after the end of the game. On Saturdays, there is local service every 4 to 6 minutes in both directions. On Sundays, the No. 7 train operates every 8 minutes during the morning and every 6 minutes during the afternoon in both directions.

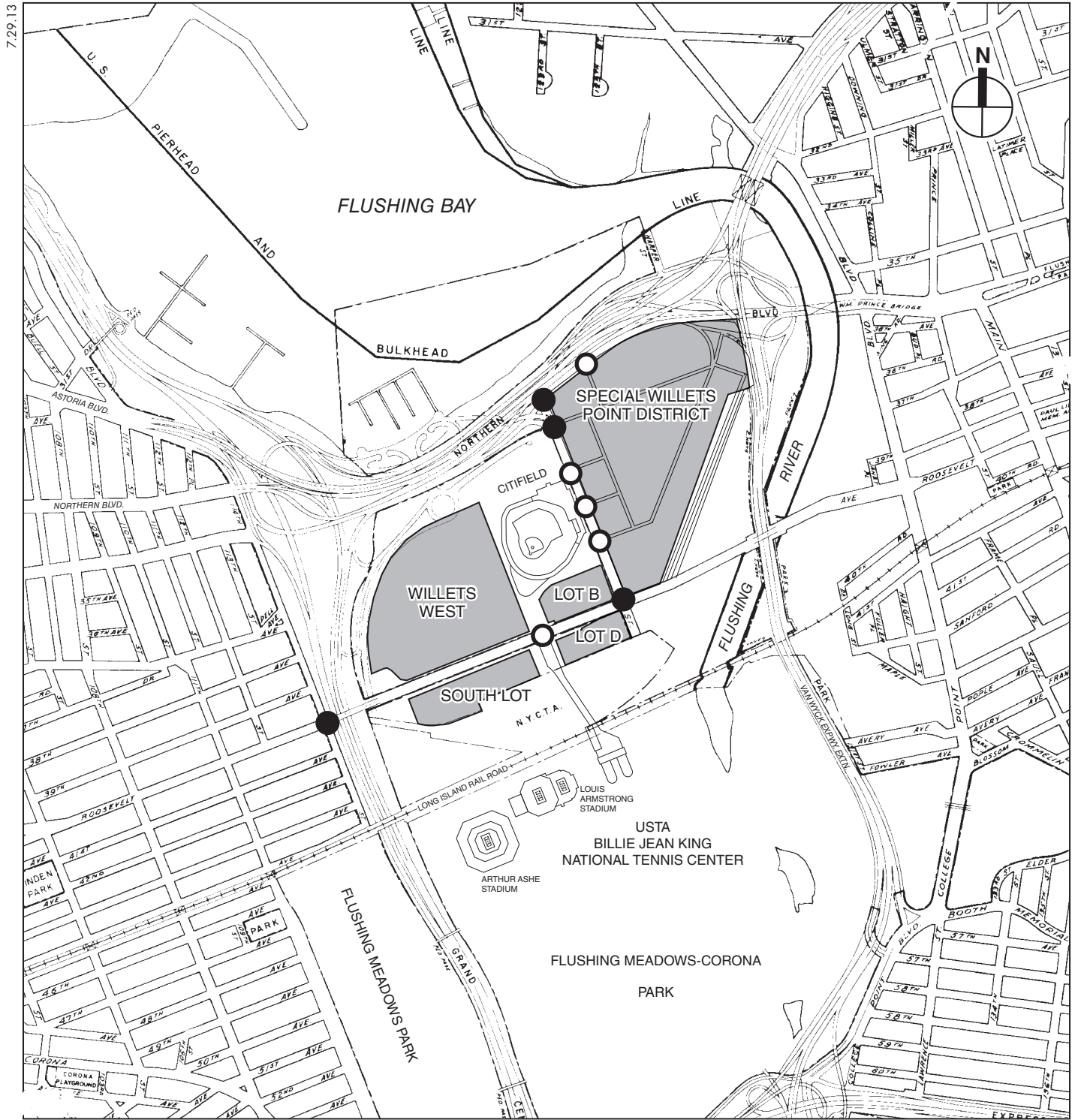
N/Q lines

The N subway line operates between Ditmars Boulevard, Queens, and Stillwell Avenue, Brooklyn at all times. It operates local in Queens and Manhattan and either express or local in Brooklyn depending on the time of day. During AM and PM commuter peak hours it operates with 6 to 8 minute headways.

The Q subway line operates between 57th Street/Seventh Avenue, Manhattan, and Stillwell Avenue, Brooklyn at all times, except weekdays from about approximately 6 AM to 11 PM when the route extends to operate between Astoria, Queens, and Stilwell Avenue, Brooklyn. The Q line operates express via Broadway to Canal Street. During AM and PM commuter peak hours it operates with 10 to 12 minute headways.

BUS SERVICE

There are three study area bus routes, Q48 operated by NYCT, and Q19 and Q66 operated by the MTA Bus Company. The Q48 operates between Flushing and LaGuardia Airport and makes stops in both eastbound and westbound directions within the study area along Roosevelt Avenue. The Q19 operates between Flushing and Astoria and the Q66 operates between Flushing and Long Island City and stops within the study area along Northern Boulevard. While the Q66



- Project Site
- Study Area Intersections Analyzed
- Intersections Added for Analysis under the future with the Proposed Project

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Willets Point Development

makes stops in both eastbound and westbound directions, the Q19 makes stops in the eastbound direction only within the study area. All of these routes use standard buses with a guideline capacity of 54 passengers per bus. **Table 14-77** provides a summary of the weekday and weekend service headways of these bus routes.

Table 14-77
Local Bus Routes Serving the Study Area

Bus Route	Start Point	End Point	Routing	Frequency of Bus Service (Headway in Minutes)				
				AM	Midday	PM	Pre-game Weekend	Post-game Weekend
Q19 (EB/WB)	Flushing	Astoria	via Northern Boulevard/ Astoria Boulevard	(20/20)	(20/20)	(20/20)	(30/30)	(30/30)
Q48 (EB/WB)	Flushing	LaGuardia Airport	via Roosevelt Avenue/ Ditmars Boulevard	(15-20/15)	(20/20)	(15/20)	(20/20)	(20/20)
Q66 (EB/WB)	Flushing	Long Island City	via Northern Boulevard	(12/6)	(12/10)	(15/7-8)	(12/12)	(10/10)
Q66 (EB/WB)	Flushing	Woodside	via Northern Boulevard	(4-6/6)	(12/10)	(6/7-8)	(12/12)	(10/10)
Source: New York City Transit Bus Schedule(2011/2012)								

LIRR SERVICE

The Port Washington Branch of the LIRR operates regular weekday local and express service, and weekend local only service between Port Washington and Penn Station. On game days at CitiField and during the US Open, it makes stops at the Mets-Willets Point LIRR station to accommodate event patrons.

PEDESTRIAN ELEMENTS

Numerous sidewalks, corner reservoirs, and crosswalks surrounding the project site were identified for analysis. These pedestrian elements, representing locations where most of the project-generated trips would be anticipated, are situated primarily along 126th Street between Roosevelt Avenue and Northern Boulevard and along Roosevelt Avenue between 114th and 126th Streets. Where appropriate, new pedestrian elements contemplated as part of the proposed project were incorporated into the analysis of probable impacts of the proposed project.

OPERATIONAL ANALYSIS METHODOLOGY

SUBWAY STATION ELEMENTS

The methodology for assessing station circulation (stairs, escalators, and passageways) and fare control (regular turnstiles, high entry/exit turnstiles, and high exit turnstiles) elements compares the user volume with the analyzed element's design capacity, resulting in a volume-to-capacity (v/c) ratio.

For stairs, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction or counter-flow between upward and downward pedestrians (up to 10 percent capacity reduction is applied to account for counter-flow friction), surging of exiting pedestrians (up to 25 percent capacity reduction is applied to account for detaining surges near platforms), and the average area required for circulation. For passageways, similar considerations are made. For escalators and turnstiles, capacities are measured by the number and width of an element and the NYCT optimum capacity per element,

also account for the potential for surging of exiting pedestrians. In the analysis for each of these elements, volumes and capacities are presented for 15-minute intervals.

The estimated v/c ratio is compared with NYCT criteria to determine a level of service (LOS) for the operation of an element, as summarized in **Table 14-78**.

Table 14-78
Level of Service Criteria for Subway Station Elements

LOS	V/C Ratio
A	0.00 to 0.45
B	0.45 to 0.70
C	0.70 to 1.00
D	1.00 to 1.33
E	1.33 to 1.67
F	Above 1.67
Source: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> (January 2012 edition).	

At LOS A (“free flow”) and B (“fluid flow”), there is sufficient area to allow pedestrians to freely select their walking speed and bypass slower pedestrians. When cross and reverse flow movement exists, only minor conflicts may occur. At LOS C (“fluid, somewhat restricted”), movement is fluid although somewhat restricted. While there is sufficient room for standing without personal contact, circulation through queuing areas may require adjustments to walking speed. At LOS D (“crowded, walking speed restricted”), walking speed is restricted and reduced. Reverse and cross flow movement is severely restricted because of congestion and the difficult passage of slower moving pedestrians. At LOS E (“congested, some shuffling and queuing”) and F (“severely congested, queued”), walking speed is restricted. There is also insufficient area to bypass others, and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

Significant Impact Criteria

The determination of significant impacts for station elements varies based on their type and use. For stairs and passageways, significant impacts are defined in term of width increment threshold (WIT) based on the minimum amount of additional capacity that would be required either to mitigate the location to its service conditions (LOS) under the No Action levels, or to bring it to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Significant impacts are typically considered to occur once the WITs in **Table 14-79** are reached or exceeded.

Table 14-79
Significant Impact Guidance for Stairs and Passageways

With Action V/C Ratio	WIT for Significant Impact (inches)	
	Stairway	Passageway
1.00 to 1.09	8.0	13.0
1.10 to 1.19	7.0	11.5
1.20 to 1.29	6.0	10.0
1.30 to 1.39	5.0	8.5
1.40 to 1.49	4.0	6.0
1.50 to 1.59	3.0	4.5
1.60 and up	2.0	3.0
Notes: WIT = Width Increment Threshold		
Sources: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> (January 2012 edition).		

For escalators and control area elements, impacts are significant if the proposed action causes a v/c ratio to increase from below 1.00 to 1.00 or greater. Where a facility is already at or above its capacity (a v/c of 1.00 or greater) in the No Action condition, a 0.01 increase in v/c ratio is also significant.

SUBWAY AND BUS LINE HAUL CAPACITIES

As per the *CEQR Technical Manual*, line-haul capacities are evaluated when a proposed action is anticipated to generate a perceptible number of passengers on particular subway and bus routes. For subways, if a subway line is expected to incur 200 or more passengers in one direction of travel during the commuter peak hours, a detailed review of ridership level at its maximum load point and/or other project-specific load points would be required to determine if the route's guideline (or practical) capacity would be exceeded. NYCT operates six different types of subway cars with different seating and guideline capacities. The peak period guideline capacity of a subway car, which ranges from 110 to 175 passengers, is compared with ridership levels to determine the acceptability of conditions.

Bus line-haul capacities are evaluated when a proposed action is anticipated to generate 50 or more bus passengers to a single bus line in one direction. The assessment of bus line-haul conditions involves analyzing bus routes at their peak load points and, if necessary, also their bus stops closest to the project site to identify the potential for the analyzed routes to exceed their guideline (or practical) capacities. NYCT and the MTA Bus Company operate three types of buses: standard and articulated buses, and over-the-road coaches. During peak hours, standard buses operate with up to 54 passengers per bus, articulated buses operate with up to 85 passengers per bus, and over-the-road coaches operate with up to 55 passengers per bus.

Significant Impact Criteria

For subways, projected increases from the No Action condition within guideline capacity to a With Action condition that exceeds guideline capacity may be a significant impact if the proposed project is generating five more transit riders per car. Since there are constraints on what service improvements are available to NYCT, significant line-haul capacity impacts on subway routes are generally disclosed but would usually remain unmitigated. For buses, an increase in bus load levels greater than the maximum capacity at any load point is defined as a potential significant adverse impact. While subject to operational and fiscal constraints, bus impacts can typically be mitigated by increasing service frequency. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, crosswalks, and corner reservoir capacities in relation to the demand imposed on them is evaluated based on the methodologies presented in the 2010 HCM, pursuant to procedures detailed in the *CEQR Technical Manual*.

Sidewalks are analyzed in terms of pedestrian flow. The calculation of the average pedestrians per minute per foot (PMF) of effective walkway width is the basis for a sidewalk level of service (LOS) analysis. The determination of walkway LOS is also dependent on whether the pedestrian flow being analyzed is best described as "non-platoon" or "platoon." Non-platoon flow occurs when pedestrian volume within the peak 15-minute period is relatively uniform, whereas, platoon flow occurs when pedestrian volumes vary significantly with the peak 15-minute period. Such variation typically occurs near bus stops, subway stations, and/or where adjacent crosswalks account for much of the walkway's pedestrian volume. In addition to the pedestrian

flow, effective sidewalk width (i.e., part of the sidewalk that could be effectively used by pedestrians free of any obstructions) is another important parameter used in the analysis. In calculating the effective sidewalk width, the “shy distances” (i.e., the space left between pedestrians and building façades/curbs) are also taken into account.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of traffic signals. Street corners must be able to provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the street or moving around the corner). The HCM methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians.

The total “time-space” available for these activities, expressed in square feet-second, is calculated by multiplying the net area of the corner (in square feet) by the signal’s cycle length. ~~The analysis then determines the total circulation time for all pedestrian movements at the corner per signal cycle (expressed as pedestrians per second).~~ The total pedestrian occupancy time (pedestrian-seconds, or “ped-sec”) at the corner is then calculated for the same signal cycle. The ratio of net time-space divided by the pedestrian occupancy time ~~total pedestrian circulation volume per signal cycle~~ provides the LOS measurement of square feet per pedestrian (SFP).

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the width of the street) and the permitted crossing time. This measure is expressed in square feet-second. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the total crosswalk pedestrian occupancy time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for vehicular turning movements that traverse the crosswalk. The LOS standards for sidewalks, corner reservoirs, and crosswalks are summarized in **Table 14-80**. The *CEQR Technical Manual* specifies acceptable LOS in Central Business District (CBD) areas is mid-LOS D or better, while acceptable LOS in non-CBD areas is within LOS C. Consistent with the traffic analysis, the CBD criteria were used in the pedestrian analyses.

Table 14-80
Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks		Corner Reservoirs and Crosswalks
	Non-Platoon Flow	Platoon Flow	
A	≤ 5 PMF	≤ 0.5 PMF	> 60 SFP
B	> 5 and ≤ 7 PMF	> 0.5 and ≤ 3 PMF	> 40 and ≤ 60 SFP
C	> 7 and ≤ 10 PMF	> 3 and ≤ 6 PMF	> 24 and ≤ 40 SFP
D	> 10 and ≤ 15 PMF	> 6 and ≤ 11 PMF	> 15 and ≤ 24 SFP
E	> 15 and ≤ 23 PMF	> 11 and ≤ 18 PMF	> 8 and ≤ 15 SFP
F	> 23 PMF	> 18 PMF	≤ 8 SFP
Notes: PMF = pedestrians per minute per foot; SFP = square feet per pedestrian.			
Source: New York City Mayor’s Office of Environmental Coordination, <i>CEQR Technical Manual</i> (January 2012 edition).			

SIGNIFICANT IMPACT CRITERIA

The determination of significant pedestrian impacts considers the level of predicted deterioration in pedestrian flow or decrease in pedestrian space between the No Action and Action conditions. For different pedestrian elements, flow conditions, and area types, the CEQR procedure for impact determination corresponds with various sliding-scale formulas, as further detailed below.

Sidewalks

There are two sliding-scale formulas for determining significant sidewalk impacts. For non-platoon flow, the increase in average pedestrian flow rate (Y) in PMF needs to be greater or equal to 3.5 minus X divided by 8.0 (where X is the No Action pedestrian flow rate in PMF [$Y \geq 3.5 - X/8.0$]) for it to be a significant impact. For platoon flow, the sliding-scale formula is $Y \geq 3.03 - X/8.0$. Since deterioration in pedestrian flow within acceptable levels would not constitute a significant impact, these formulas would apply only if the With Action pedestrian flow exceeds LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table 14-81** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Table 14-81
Significant Impact Guidance for Sidewalks

Non-Platoon Flow				Platoon Flow			
Sliding Scale Formula: $Y \geq 3.5 - X/8.0$				Sliding Scale Formula: $Y \geq 3.03 - X/8.0$			
Non-CBD Areas		CBD Areas		Non-CBD Areas		CBD Areas	
No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)	No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)	No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)	No Action Ped. Flow (X, PMF)	Action Ped. Flow Incr. (Y, PMF)
7.5 to 7.8	≥ 2.6	—	—	3.5 to 3.8	≥ 2.6	—	—
7.9 to 8.6	≥ 2.5	—	—	3.9 to 4.6	≥ 2.5	—	—
8.7 to 9.4	≥ 2.4	—	—	4.7 to 5.4	≥ 2.4	—	—
9.5 to 10.2	≥ 2.3	—	—	5.5 to 6.2	≥ 2.3	—	—
10.3 to 11.0	≥ 2.2	10.4 to 11.0	≥ 2.2	6.3 to 7.0	≥ 2.2	6.4 to 7.0	≥ 2.2
11.1 to 11.8	≥ 2.1	11.1 to 11.8	≥ 2.1	7.1 to 7.8	≥ 2.1	7.1 to 7.8	≥ 2.1
11.9 to 12.6	≥ 2.0	11.9 to 12.6	≥ 2.0	7.9 to 8.6	≥ 2.0	7.9 to 8.6	≥ 2.0
12.7 to 13.4	≥ 1.9	12.7 to 13.4	≥ 1.9	8.7 to 9.4	≥ 1.9	8.7 to 9.4	≥ 1.9
13.5 to 14.2	≥ 1.8	13.5 to 14.2	≥ 1.8	9.5 to 10.2	≥ 1.8	9.5 to 10.2	≥ 1.8
14.3 to 15.0	≥ 1.7	14.3 to 15.0	≥ 1.7	10. to 11.0	≥ 1.7	10. to 11.0	≥ 1.7
15.1 to 15.8	≥ 1.6	15.1 to 15.8	≥ 1.6	11.1 to 11.8	≥ 1.6	11.1 to 11.8	≥ 1.6
15.9 to 16.6	≥ 1.5	15.9 to 16.6	≥ 1.5	11.9 to 12.6	≥ 1.5	11.9 to 12.6	≥ 1.5
16.7 to 17.4	≥ 1.4	16.7 to 17.4	≥ 1.4	12.7 to 13.4	≥ 1.4	12.7 to 13.4	≥ 1.4
17.5 to 18.2	≥ 1.3	17.5 to 18.2	≥ 1.3	13.5 to 14.2	≥ 1.3	13.5 to 14.2	≥ 1.3
18.3 to 19.0	≥ 1.2	18.3 to 19.0	≥ 1.2	14.3 to 15.0	≥ 1.2	14.3 to 15.0	≥ 1.2
19.1 to 19.8	≥ 1.1	19.1 to 19.8	≥ 1.1	15.1 to 15.8	≥ 1.1	15.1 to 15.8	≥ 1.1
19.9 to 20.6	≥ 1.0	19.9 to 20.6	≥ 1.0	15.9 to 16.6	≥ 1.0	15.9 to 16.6	≥ 1.0
20.7 to 21.4	≥ 0.9	20.7 to 21.4	≥ 0.9	16.7 to 17.4	≥ 0.9	16.7 to 17.4	≥ 0.9
21.5 to 22.2	≥ 0.8	21.5 to 22.2	≥ 0.8	17.5 to 18.2	≥ 0.8	17.5 to 18.2	≥ 0.8
22.3 to 23.0	≥ 0.7	22.3 to 23.0	≥ 0.7	18.3 to 19.0	≥ 0.7	18.3 to 19.0	≥ 0.7
> 23.0	≥ 0.6	> 23.0	≥ 0.6	> 19.0	≥ 0.6	> 19.0	≥ 0.6
Notes: PMF = pedestrians per minute per foot; Y = increase in average pedestrian flow rate in PMF; X = No Action pedestrian flow rate in PMF.							
Sources: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> (January 2012 edition).							

Corner Reservoirs and Crosswalks

The determination of significant corner and crosswalk impacts is also based on a sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, this formula would apply only if the Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas.

Table 14-82 summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir and crosswalk impacts.

Table 14-82**Significant Impact Guidance for Corners and Crosswalks**

Sliding Scale Formula: $Y \geq X/9.0 - 0.31$			
Non-CBD Areas		CBD Areas	
No Action Pedestrian Space (X, SFP)	Action Pedestrian Space Reduction (Y, SFP)	No Action Pedestrian Space (X, SFP)	Action Pedestrian Space Reduction (Y, SFP)
25.8 to 26.6	≥ 2.6	—	—
24.9 to 25.7	≥ 2.5	—	—
24.0 to 24.8	≥ 2.4	—	—
23.1 to 23.9	≥ 2.3	—	—
22.2 to 23.0	≥ 2.2	—	—
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2	< 5.1	≥ 0.2
Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No Action pedestrian space in SFP. Sources: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> (January 2012 edition).			

I. EXISTING CONDITIONS (TRANSIT AND PEDESTRIANS)

Existing conditions for the analysis of subway station elements are based upon field surveys conducted on May 5, May 16, June 5, and June 9, 2012. Bus ridership data for the Q19, Q48, and Q66 bus routes were obtained from NYCT and the MTA Bus Company, as well as field surveys conducted on May 8, 2012. Subway ridership data were obtained from NYCT. Existing pedestrian levels are based on field surveys conducted in May and June 2012. As per the 2012 *CEQR Technical Manual*, crosswalk counts at all study area intersections were collected for one additional weekday and one additional weekend day during the representative peak periods to validate the pedestrian count data.

To determine peak conditions for transit elements and pedestrian facilities, weekday counts were conducted during the 7:00 to 9:30 AM, 11:00 AM to 1:00 PM, and 4:00 to 7:00 PM time periods for the non-game condition and 4:30 to 7:30 PM for the weekday pre-game condition. Weekend non-game counts were conducted during the 12:00 to 6:00 PM time period and weekend pre-game and post-game counts were conducted during the 2:00 to 5:00 PM and 6:00 to 8:30 PM time periods, respectively. Peak hours were determined by comparing rolling hourly averages and the highest 15-minute volumes within the selected peak hours were selected for analysis.

To determine peak conditions for bus line-haul, the most recent line-haul data were acquired for the Q48 (from NYCT), Q19 (from MTA Bus Company), and the Q66 (from MTA Bus Company)

bus routes for 2009, 2011, and 2010, respectively. A 0.5 percent annual growth rate was applied to generate the existing 2012 peak load point volumes. A ridership field survey was also conducted at the Northern Boulevard and 126th Street stop (Q19 Eastbound and Q66 Eastbound) and at the Roosevelt Avenue and 126th Street stop (Q48 Eastbound and Westbound) in May 2012. The highest hourly volumes for each route were selected for analysis.

To determine peak conditions for the subway line-haul, the 2011 subway line-haul data for the No. 7 line at the peak load points were obtained from NYCT for Manhattan-bound (40th Street-local service and Woodside and 61st Street-express service) during the AM peak hour and Flushing-bound (Queens borough Plaza-local and express service) during the PM peak hour. In order to account for the transfer of riders between the No. 7 line and the N and Q lines, a detailed line haul analysis of the N and Q lines was also conducted. Subway line-haul data for the N and Q lines at the peak load points were obtained from NYCT. The Manhattan-bound peak load point data were collected at the Queensboro Plaza station during the AM peak hour and the Queens-bound peak load point data was collected at the 59th Street/Lexington Avenue station during the PM peak hour in 2011. For a conservative estimate, maximum peak load point volumes at the 59th Street/Lexington Avenue station were applied to the Queensboro Plaza station during the PM peak hour. A 0.5 percent annual growth rate was applied to the 2011 data to generate the existing 2012 peak load point volumes for analysis. As discussed above, a detailed examination of line haul conditions on the N/Q lines will be prepared, in coordination with NYCT, for the Final EIS.

The Mets attendances on the days that the transit and pedestrian counts were performed varied; hence, adjustments of the collected data were adjusted to arrive at representative game day baseline levels for both the weekday and weekend day. On the weeknight that the transit data and the first day of pedestrian data were collected (Wednesday May 16th), Mets game attendance was 22,659, as compared to 32,587 on the second day that pedestrian crosswalk data were collected (Tuesday June 19th). The weekend game day transit data and the majority of the day one pedestrian data were collected on Saturday May 5th with the remaining day one pedestrian data collected on Saturday June 2nd. The Mets attendances on May 5th and June 2nd were 30,253 and 27,914, respectively. The second day of pedestrian crosswalk data was collected on Sunday June 17th and had a game attendance of 40,134. The second day of pedestrian crosswalk data was counted on a Sunday because there were no other Saturday 4 PM home games prior to the summer data collection moratorium and this was the only remaining applicable weekend home game. The Sunday game was a 1 PM start time and the data collection peak periods were shifted three hours earlier than the 4 PM game in order to collect comparable data with similar travel patterns.

In order to adjust existing transit and pedestrian volumes to account for conservatively representative game days, attendance data were compiled for all games from the previous two seasons (2010 and 2011). The 85th percentile attendance for weekday games for the 2010 and 2011 seasons combined was approximately 35,914 attendees and the 85th percentile attendance for weekend games for the 2010 and 2011 seasons combined was 37,577 attendees. Consistent with the traffic analysis, the first day of pedestrian and transit data were used as the baseline existing volumes prior to the 85th percentile adjustments. To adjust the existing transit and pedestrian volumes upward to the 85th percentile attendance levels, the two days of pedestrian data were compared to one another as well as the 85th percentile game day attendance numbers to determine the correlation between the increase in attendance and the increase in pedestrian volumes. As a result, a uniform growth percentage was determined per game day time period, and applied for all transit and pedestrian elements included as part of the analysis to reflect a conservatively representative 85th percentile attendance in the existing conditions. Correspondingly, the collected

transit and pedestrian volumes were grown by 33, 18, and 45 percent during the weekday pre-game, weekend pre-game, and weekend post-game peak hours, respectively.

SUBWAY STATION OPERATIONS

Since the Mets-Willets Point subway station has multiple entrances, the quantified analysis was limited to the elements that would most likely be used by riders traveling to and from Willets West, the District, and Lot B. Based on the travel demand estimates detailed in the “Traffic and Parking” section, it was determined that quantified analyses would be required for the street-level and mezzanine stairways and mezzanine ramps serving trips generated by the proposed project, as well as control areas within the subway station.

Street-level stairways on the north and south sides of Roosevelt Avenue connect to the main control area across from the station agent’s booth on the mezzanine level. Because all project-generated trips would be expected to use the street-level and street-mezzanine stairways on the north side of Roosevelt Avenue, those on the south side of Roosevelt Avenue were not analyzed. On the mezzanine level, the main control area, containing five turnstiles and one emergency exit gate, provides separation between the free and fare zones of the station. Within the fare zone, two ramps and four stairways provide access to the Manhattan-bound and Flushing-bound platforms, respectively.

On a typical day, access to and egress from the Mets-Willets Point subway station occur at the main control area. However, during several hours on game days, the main control area is disabled and the entire mezzanine level becomes a free zone to provide access to and from the passerelle, which connects the southern end of the station to the LIRR and parking south of Roosevelt Avenue, and on the north end of the station, a 42-foot wide stairway (replacing the Stadium rotunda when CitiField was completed in 2009) connects to a pedestrian plaza on the north side of Roosevelt Avenue. When this operation is in place, access to the No. 7 train is made through four individual control areas, with six to eight turnstiles each, connecting to the six platform ramps and stairways. Hence, game-day station analysis considers the condition at these four control areas instead of the main station control area.

As described in the previous section, surveys were conducted in May and June 2012 to determine peak hour pedestrian volumes at the street level stairway, mezzanine stairways and ramps, and control areas within the station and were adjusted to account for conservatively representative 85th percentile attendance. Typically, subway station elements would be evaluated for only the AM and PM commuter peak hours. However, to address worst-case game-day conditions at the Mets-Willets Point subway station, the weekday pre-game, and weekend pre-game and post-game conditions were also included for analysis.

As shown in **Tables 14-83** and **14-84**, all analyzed stairways and ramps and control areas currently operate at acceptable levels during all peak hours.

Table 14-83

2012 Existing Conditions: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday AM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	12	25	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	7	15	0.90	0.90	0.03	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	19	40	0.90	0.90	0.04	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	1	34	0.75	1.00	0.04	A
Flushing-bound West P10 Stair	9.6	8.3	1	31	0.75	1.00	0.03	A
Flushing-bound East P4 Stair	9.9	8.7	1	37	0.75	1.00	0.04	A
Flushing-bound East P2 Stair	10.1	8.8	3	32	0.75	0.90	0.04	A
Manhattan-bound West Ramp Passageway	17.6	15.6	63	6	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	31	10	0.75	0.90	0.01	A
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	23	20	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	21	14	0.90	0.90	0.04	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	44	34	0.90	0.90	0.05	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	43	0.75	1.00	0.05	A
Flushing-bound West P10 Stair	9.6	8.3	1	40	0.75	1.00	0.04	A
Flushing-bound East P4 Stair	9.9	8.7	3	52	0.75	0.90	0.06	A
Flushing-bound East P2 Stair	10.1	8.8	8	44	0.75	0.90	0.06	A
Manhattan-bound West Ramp Passageway	17.6	15.6	68	4	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	21	6	0.75	0.90	0.01	A
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	9	204	0.90	1.00	0.24	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	9	9	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	18	213	0.90	0.90	0.16	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	4	408	0.75	1.00	0.43	A
Flushing-bound West P10 Stair	9.6	8.3	3	435	0.75	1.00	0.47	B
Flushing-bound East P4 Stair	9.9	8.7	4	379	0.75	1.00	0.39	A
Flushing-bound East P2 Stair	10.1	8.8	6	247	0.75	1.00	0.25	A
Manhattan-bound West Ramp Passageway	17.6	15.6	59	19	0.75	0.90	0.03	A
Manhattan-bound East Ramp Passageway	19.6	17.6	24	22	0.75	0.90	0.01	A
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	9	302	0.90	1.00	0.35	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	2	6	0.90	0.90	0.01	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	11	308	0.90	1.00	0.20	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	274	0.75	1.00	0.29	A
Flushing-bound West P10 Stair	9.6	8.3	0	267	0.75	1.00	0.28	A
Flushing-bound East P4 Stair	9.9	8.7	2	421	0.75	1.00	0.43	A
Flushing-bound East P2 Stair	10.1	8.8	6	260	0.75	1.00	0.27	A
Manhattan-bound West Ramp Passageway	17.6	15.6	49	19	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	18	49	0.75	0.90	0.02	A

Table 14-83 (cont'd)
2012 Existing Conditions: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekend Post-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	128	14	0.90	0.90	0.16	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	14	3	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	142	17	0.90	0.90	0.10	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	372	12	0.75	1.00	0.30	A
Flushing-bound West P10 Stair	9.6	8.3	298	20	0.75	0.90	0.29	A
Flushing-bound East P4 Stair	9.9	8.7	342	14	0.75	1.00	0.28	A
Flushing-bound East P2 Stair	10.1	8.8	558	9	0.75	1.00	0.43	A
Manhattan-bound West Ramp Passageway	17.6	15.6	682	4	0.75	1.00	0.20	A
Manhattan-bound East Ramp Passageway	19.6	17.6	374	8	0.75	1.00	0.10	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>). $V/C \text{ Stairway} = [V_{in} / (150 * W_e * S_f * F_f)] + [V_x / (150 * W_e * S_f * F_f)]$ $V/C \text{ Passageway} = [V_{in} / (225 * W_e * S_f * F_f)] + [V_x / (225 * W_e * S_f * F_f)]$ Where Vin = Peak 15-minute entering passenger volume Vx = Peak 15-minute exiting passenger volume We = Effective width of stairs/passageways Sf = Surging factor (if applicable) Ff = Friction factor (if applicable)								

Table 14-84
2012 Existing Conditions: Subway Station Control Area Analysis

Mets-Willets Point No. 7 Train Station Control Area Elements	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
Weekday AM Non-Game							
Main Control Area Turnstiles (R532)	5	85	117	0.80	0.90	0.10	A
Weekday PM Non-Game							
Main Control Area Turnstiles (R532)	5	84	159	0.80	0.90	0.11	A
Weekday Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	24	22	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	59	19	0.75	0.90	0.03	A
Flushing-bound East Stair Turnstiles	8	10	626	0.80	1.00	0.15	A
Flushing-bound West Stair Turnstiles	6	7	843	0.80	1.00	0.28	A
Weekend Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	18	49	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	49	19	0.75	0.90	0.03	A
Flushing-bound East Stair Turnstiles	8	8	681	0.80	1.00	0.17	A
Flushing-bound West Stair Turnstiles	6	2	541	0.80	1.00	0.18	A
Weekend Post-Game							
Manhattan-bound East Ramp Turnstiles	7	374	8	0.75	1.00	0.13	A
Manhattan-bound West Ramp Turnstiles	6	682	4	0.75	1.00	0.27	A
Flushing-bound East Stair Turnstiles	8	900	23	0.80	1.00	0.27	A
Flushing-bound West Stair Turnstiles	6	670	32	0.80	1.00	0.28	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff) Vin = Peak 15 Min Entering Passenger Volume Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers Vx = Peak 15- Minute Exiting Passenger Cx = Total 15-minute Capacity of all turnstile for exiting Passengers Sf = Surging Factor Ff = Friction Factor							

SUBWAY LINE HAUL LEVELS

A subway line-haul analysis typically considers the weekday commuter period leave load levels at the analysis routes' peak load points. Because peak travel to and from the project site is expected to be westbound in the morning and eastbound in the afternoon, a line-haul capacity analysis was conducted for the No. 7 Manhattan-bound express line at the Woodside-61st Street subway station and for the No. 7 Manhattan-bound local line at the 40th Street station for the AM peak period and for the Flushing-bound trains at the Queensboro Plaza subway station for the PM peak period. In addition, based on the NYCT transit model run results, it was estimated that the transfer trips from the No.7 line to the N and the Q lines would exceed the line-haul analysis threshold of 200 riders per line per direction. Therefore, a line-haul analysis for the N and the Q lines was also prepared in accordance with 2012 CEQR Technical Manual analysis guidelines. The No. 7 subway line operates 11-car trains with a capacity of 110 passengers per car, while the N and the Q lines operate with 10-car trains with capacities of 145 passengers per car. The guideline capacity of these cars is 110 passengers each. However, crush loads could reach as many as 165 passengers per car. The 2011 Manhattan-bound and Flushing Queens-bound peak load point passenger volumes and the number of peak period trains were obtained from NYCT for No. 7 line and the N and the Q lines. Subsequent to the certification of the DSEIS, NYCT has refined the peak load point numbers (i.e., ridership volume and trains per hour) and the revised numbers have been incorporated into this Final SEIS analysis. A 0.5 percent annual growth rate was applied to generate the existing 2012 peak load point volumes. As shown in **Table 14-85**, all analyzed lines operate below guideline capacity with the exception of the No. 7 train currently operates below guideline capacity during the weekday AM commuter peak period for the Manhattan-bound local service and during the weekday PM commuter peak period for the Flushing-bound service. However, the Manhattan-bound No. 7 express service exceeds the guideline capacity during the weekday AM peak period. Between the Draft SEIS and Final SEIS, a detailed examination of line haul conditions on the N/Q lines will also be prepared, in coordination with NYCT.

Table 14-85
2012 Existing Conditions: Peak Hour Subway Line Haul

<u>Subway lines</u> Direction of Travel	Station	Trains/ Hour	Volume	Leave Load		Available Capacity
				Guideline Capacity	V/C Ratio	
AM Peak Period						
<u>No. 7</u> Manhattan-bound Express	Woodside–61st Street	44 <u>13</u>	48,172 <u>16,063</u>	46,940 <u>15,730</u>	1.07 <u>1.02</u>	-1,232 <u>-333</u>
<u>No. 7</u> Manhattan-bound Local	40th Street	13	44,683 <u>12,936</u>	15,730	0.93 <u>0.82</u>	1,047 <u>2,794</u>
<u>N line: Manhattan-bound</u>	<u>Queensboro Plaza</u>	<u>8</u>	<u>11,219</u>	<u>11,600</u>	<u>0.97</u>	<u>4,511</u>
<u>Q line: Manhattan-bound</u>	<u>Queensboro Plaza</u>	<u>8</u>	<u>10,611</u>	<u>11,600</u>	<u>0.91</u>	<u>5,119</u>
PM Peak Period						
<u>No. 7</u> Flushing-bound Express + Local	Queensboro Plaza	24 23	20,499 <u>20,074</u>	25,410 <u>27,830</u>	0.81 <u>0.72</u>	4,911 <u>7,756</u>
<u>N line: Queens-bound</u>	<u>Queensboro Plaza¹</u>	<u>7</u>	<u>6,496</u>	<u>10,150</u>	<u>0.64</u>	<u>21,334</u>
<u>Q line: Queens-bound</u>	<u>Queensboro Plaza¹</u>	<u>7</u>	<u>5,499</u>	<u>10,150</u>	<u>0.54</u>	<u>22,331</u>
Sources: New York City Transit						
Notes:						
For the AM peak hour, although transit data show that a total of 27 trains traverse the respective express and local peak load points, the total number of scheduled trains during this hour is 26 trains.						
¹ For a conservative estimate, maximum peak load point volumes at 59th Street and Lexington Avenue station were applied to the Queensboro Plaza station.						

BUS LINE HAUL LEVELS

To assess the potential impacts on the study area bus routes, the most recent ridership data were acquired from NYCT and the MTA Bus Company. As shown in **Table 14-86**, all three routes presently operate within guideline capacities (54 passengers per bus) at their respective maximum load points. In addition, existing load levels at bus stops serving CitiField and the Willets Point area were surveyed. The Q48 makes stops along Roosevelt Avenue at 114th Street, the Mets-Willets Point subway station, and 126th Street both eastbound and westbound. The Q19 and Q66 have a stop along eastbound Northern Boulevard between 126th Street and 126th Place but no Q66 buses made stops during the field surveys. In the westbound direction, there is not a marked bus stop. However, according to the MTA Bus Company, the Q66 currently makes stops westbound at the Northern Boulevard intersection with 126th Street while the Q19 bypasses the area. The survey data summarized in **Table 14-87** show that the eastbound Q19 and Q66 passenger loads at the Northern Boulevard and 126th Street stop are lower than those at the two routes' respective maximum load points. Therefore, load levels at the area wide maximum load points shown in **Table 14-86** were conservatively used for the analysis of the Q19 and Q66 routes. For the Q48, because the incremental bus passenger volumes generated by the proposed project are expected to shift the route's maximum load points to the Mets-Willets Point subway station bus stops even though the existing passenger loads at the Roosevelt Avenue and 126th Street stops are lower than those at the route's maximum load points during peak hours, the future conditions analyses for this route would consider changes only at the bus stops serving the project site.

Table 14-86

2012 Existing Conditions: Bus Line Haul at NYCT Maximum Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Max Load Point	AP		Max Load Point	AP
Q19	AM	3	Astoria Blvd/ 102nd St	41	3	Astoria Blvd/ 77th St	42
	PM	3	Astoria Blvd/ 94th St	27	3	Astoria Blvd/Humphrey St	31
Q48	AM	4	Roosevelt Ave/108th St & Roosevelt Ave/ Main Street	53	3	Roosevelt Ave/108th St & Roosevelt Ave/ Main Street	22
	PM	4	Roosevelt Ave/108th St & Roosevelt Ave/ Main Street	22	4	Roosevelt Ave/108th St & Roosevelt Ave/ Main Street	23
Q66	AM	15	Northern Blvd/ 110th St	45	14	Northern Blvd/ 72nd St	45
	PM	10	Northern Blvd/ 110th St	20	10	Northern Blvd/ 106th St	20

Note: AP = average passengers per bus; (#) = exceeds NYCT guideline capacity
Source: Q48 ridership data provided by NYCT; Q19 and Q66 ridership data provided by the MTA Bus Company; Q19 and Q66 number of buses/hour is based on NYCT bus schedule (2011/2012)

Table 14-87

2012 Existing Conditions: Bus Line Haul at District Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Load Point	AP		Load Point	AP
Q19	AM	4	Northern Blvd/ 126th St	16	N/A	N/A	N/A
	PM	4	Northern Blvd/ 126th St	13	N/A	N/A	N/A
Q48	AM	5	Roosevelt Avenue/ 126th St	32	5	Roosevelt Avenue/ 126th St	9
	PM	3	Roosevelt Avenue/ 126th St	20	5	Roosevelt Avenue/ 126th St	22
Q66	AM	13	Northern Blvd/ 126th St	20*	N/A	N/A	N/A
	PM	9	Northern Blvd/ 126th St	16*	N/A	N/A	N/A

Note:
 * Buses do not make a stop. Passenger volumes were approximated based on observations of passing buses.
 AP = average passengers per bus; (#) = exceeds NYCT guideline capacity
Source: AKRF survey, May 2012

STREET-LEVEL PEDESTRIAN OPERATIONS

The study area sidewalks, corner reservoirs, and crosswalks were assessed for the weekday AM, midday, PM, and pre-game peak periods, as well as, the weekend midday non-game, pre-game, and post-game peak periods. As discussed earlier, in accordance with the 2012 *CEQR Technical Manual*, a second day of count data was collected for all the crosswalks included in the pedestrian analysis for all time periods to develop the existing peak hour pedestrian volumes. The existing peak hour pedestrian volumes are shown in **Appendix D**.

As shown in **Tables 14-88** through **14-92**, all sidewalk, corner reservoir, and crosswalk analysis locations operate at acceptable levels (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except at the following locations:

- The north crosswalk of 34th Avenue and 126th Street, which operates at LOS F with 5.3 SFP during the weekend post-game peak 15-minute period.
- The south crosswalk of 34th Avenue and 126th Street, which operates at LOS E with 11.4 SFP during the weekend post-game peak 15-minute period.

Table 14-88

2012 Existing Conditions: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday AM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	42	0.81	0.09	A
	West	6.0	0	0.80	0.00	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	40	0.91	0.05	A
	South	12.5	30	0.80	0.05	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	82	0.80	0.14	A
	South	11.5	41	0.80	0.07	A
34th Avenue between 126th Street and 126th Place	North	11.5	3	0.80	0.01	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	38	0.80	0.32	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	19	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	63	0.80	0.19	A
	South	8.5	88	0.80	0.22	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	81	0.80	0.14	A
	South	13.0	80	0.83	0.12	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	58	0.80	0.24	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	14	0.80	0.05	A
Weekday Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	29	0.80	0.06	A
	West	6.0	3	0.80	0.01	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	34	0.80	0.05	A
	South	12.5	44	0.80	0.07	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	52	0.80	0.09	A
	South	11.5	33	0.80	0.06	A
34th Avenue between 126th Street and 126th Place	North	11.5	2	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	29	0.80	0.24	A
	West	8.0	1	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	19	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	55	0.80	0.16	A
	South	8.5	34	0.80	0.08	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	63	0.80	0.11	A
	South	13.0	37	0.80	0.06	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	75	0.80	0.31	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	11	0.80	0.04	A

Table 14-88 (cont'd)

2012 Existing Conditions: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday PM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	15	0.80	0.03	A
	West	6.0	8	0.80	0.03	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	21	0.80	0.03	A
	South	12.5	43	0.80	0.07	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	54	0.80	0.09	A
	South	11.5	40	0.80	0.07	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	57	0.80	0.48	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	19	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	41	0.80	0.12	A
	South	8.5	46	0.80	0.11	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	78	0.80	0.13	A
	South	13.0	48	0.80	0.08	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	50	0.80	0.21	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	26	0.80	0.09	A
Weekday Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	141	0.80	0.31	A
	West	6.0	185	0.83	0.62	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	93	0.88	0.11	A
	South	12.5	82	0.80	0.14	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	123	0.80	0.21	A
	South	11.5	65	0.82	0.12	A
34th Avenue between 126th Street and 126th Place	North	11.5	82	0.80	0.15	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	134	0.80	1.12	B
	West	8.0	28	0.80	0.07	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	194	0.80	0.43	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	335	0.80	1.00	B
	South	8.5	189	0.80	0.46	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	236	0.82	0.38	A
	South	13.0	76	0.80	0.12	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	201	0.86	0.78	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	139	0.80	0.48	A
Note: PMF = pedestrians per minute per foot.						

Table 14-89

2012 Existing Conditions: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	33	0.80	0.07	A
	West	6.0	7	0.80	0.02	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	70	0.80	0.09	A
	South	12.5	60	0.80	0.10	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	122	0.82	0.20	A
	South	11.5	42	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	19	0.80	0.03	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	41	0.80	0.34	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	27	0.80	0.06	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	119	0.85	0.33	A
	South	8.5	156	0.80	0.38	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	110	0.89	0.17	A
	South	13.0	104	0.80	0.17	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	77	0.80	0.32	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	34	0.80	0.12	A
Weekend Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	93	0.80	0.20	A
	West	6.0	266	0.80	0.84	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	95	0.80	0.13	A
	South	12.5	157	0.80	0.26	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	125	0.85	0.19	A
	South	11.5	105	0.80	0.19	A
34th Avenue between 126th Street and 126th Place	North	11.5	24	0.80	0.04	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	256	0.80	2.13	B
	West	8.0	24	0.80	0.06	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	162	0.93	0.31	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	307	0.87	0.84	B
	South	8.5	246	0.80	0.60	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	146	0.86	0.23	A
	South	13.0	83	0.80	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	229	0.80	0.95	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	59	0.80	0.20	A
Weekend Post-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	431	0.80	0.95	B
	West	6.0	824	0.80	2.86	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	133	0.80	0.18	A
	South	12.5	153	0.80	0.26	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	157	0.80	0.26	A
	South	11.5	148	0.80	0.27	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	556	0.80	4.63	C
	West	8.0	33	0.80	0.09	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	488	0.80	1.07	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	628	0.80	1.87	B
	South	8.5	245	0.80	0.60	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	244	0.80	0.41	A
	South	13.0	61	0.80	0.10	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	390	0.80	1.63	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	119	0.80	0.41	A
Note: PMF = pedestrians per minute per foot.						

Table 14-90
2012 Existing Conditions: Pedestrian LOS Analysis for Corners

Location	Corner	Weekday								Weekend					
		AM		Midday		PM		Pre-Game		Midday Non-Game		Pre-Game		Post-Game	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Roosevelt Avenue and 126th Street	Northwest	1698.3	A	2398.1	A	3000.8	A	890.6	A	1538.9	A	945.8	A	598.0	A
	Northeast	1315.7	A	1383.3	A	2714.8	A	534.0	A	1128.7	A	609.9	A	354.0	A
Roosevelt Avenue and 114th Street	Northwest	1740.2	A	1533.1	A	1785.4	A	376.5	A	1031.4	A	458.3	A	230.4	A
	Southwest	1271.5	A	1612.2	A	1170.0	A	368.7	A	544.9	A	451.0	A	375.2	A

Note: SFP = square feet per pedestrian.

Table 14-91
2012 Existing Conditions: Weekday Pedestrian LOS Analysis for Crosswalks

Location	Cross walk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles											
				Weekday AM			Weekday Midday			Weekday PM			Weekday Pre-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	45	1748.4	A	40	1798.8	A	23	3044.6	A	112	706.4	A
	East	43.0	14.0	4	4406.3	A	7	2437.2	A	2	8064.4	A	6	2642.6	A
	South	50.0	13.0	22	2811.0	A	37	1653.1	A	27	2292.0	A	82	757.5	A
	West	43.0	13.5	6	2844.8	A	10	1591.0	A	8	2066.6	A	42	179.9	A
34th Avenue and 126th Street	North	81.0	12.5	3	3152.9	A	0	N/A	A	4	2158.2	A	15	516.9	A
	East	30.0	7.0	10	2041.8	A	13	1507.1	A	20	986.6	A	218	82.5	A
	South	61.0	10.5	2	3020.6	A	1	5913.9	A	2	3207.8	A	134	46.8	B
	West	47.5	12.5	0	N/A	A	0	N/A	A	2	19187.0	A	40	955.4	A
Northern Boulevard and 126th Street	East	43.5	14.0	2	6504.2	A	2	5828.2	A	2	5685.0	A	17	637.7	A
	South	51.0	15.0	7	11652.5	A	1	81604.6	A	3	27198.9	A	27	3011.1	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	56	1183.6	A	58	1022.8	A	48	1317.8	A	312	167.6	A
	East	44.0	11.0	8	1302.2	A	4	3015.5	A	7	1211.4	A	26	356.3	A
	South	32.5	12.0	66	849.1	A	40	1299.4	A	55	871.9	A	189	245.1	A
	West	43.0	13.0	13	1466.4	A	18	1178.9	A	20	970.6	A	52	353.2	A

Notes: SFP = square feet per pedestrian.

N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

Table 14-92
2012 Existing Conditions: Weekend Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles								
				Weekend Midday Non-Game			Weekend Pre-Game			Weekend Post-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	55	1280.5	A	86	776.3	A	129	588.3	A
	East	43.0	14.0	5	3274.5	A	11	1602.5	A	22	506.3	A
	South	50.0	13.0	63	983.3	A	160	383.8	A	154	403.3	A
	West	43.0	13.5	14	1168.9	A	64	119.8	A	70	202.6	A
34th Avenue and 126th Street	North	81.0	12.5	4	2728.3	A	204	39.8	C	554	5.3	F
	East	30.0	7.0	24	821.2	A	2	9937.0	A	0	N/A	A
	South	61.0	10.5	5	1230.7	A	181	24.2	C	326	11.4	E
	West	47.5	12.5	4	9830.2	A	28	1255.1	A	170	203.2	A
Northern Boulevard and 126th Street	East	43.5	14.0	8	1739.8	A	10	1123.9	A	66	144.8	A
	South	51.0	15.0	3	27198.9	A	10	8152.0	A	7	11647.7	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	105	508.6	A	225	223.4	A	557	75.7	A
	East	44.0	11.0	13	633.3	A	35	181.9	A	41	230.7	A
	South	32.5	12.0	134	355.0	A	137	340.4	A	141	335.1	A
	West	43.0	13.0	32	596.5	A	63	275.9	A	89	196.7	A

Notes: SFP = square feet per pedestrian.

N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

J. THE FUTURE WITHOUT THE PROPOSED PROJECT (TRANSIT AND PEDESTRIANS)

Transit and pedestrian conditions in the future without the proposed project were assessed to establish future baseline conditions or the “No Action” condition against which to evaluate the potential project impacts. The No Action analyses, prepared for the 2018, 2028, and 2032 analysis years, incorporate background growth, new trips associated with nearby developments, and changes in the transportation environment that would affect transit service and pedestrian movements in the study area.

2018 NO ACTION CONDITION

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Estimates of peak hour transit and pedestrian volumes in the No Action condition were developed by applying the CEQR-recommended 0.50 percent annual background growth rate for the first five years (year 2012 to year 2017) and then 0.25 percent for the remaining year (year 2017 to year 2018) onto existing transit and pedestrian volumes and by adding the estimated transit and pedestrian volumes generated by projects within and near the study area that would be completed independent of the proposed project.

As discussed in Chapter 2, “Land Use, Zoning, and Public Policy,” numerous projects located near the project site are expected to be completed by 2018 independent of the proposed project. The transit and pedestrian analysis considers projects expected to be developed in the future without the proposed project, as shown in **Figure 14-3**. However, because the project site is geographically separated from these No Action projects by the adjacent highway network, new trips associated with these projects would have limited effects on most of the study area transit and pedestrian elements. Therefore, as detailed further below, these trips are accounted for differently in each of the specific analyses.

SUBWAY STATION OPERATIONS

The same station elements previously analyzed for existing conditions were analyzed under the 2018 No Action condition. Pedestrian volumes were adjusted to 2018 levels using an annual background growth rate of 0.50 percent for the first five years and then 0.25 for the remaining year for an overall compounded growth rate of approximately 2.8 percent by 2018. Because all No Action projects are not in the immediate vicinity of the project site, they are not expected to generate trips within the project site or using the Mets-Willeys Point subway station. **Table 14-93** details the operating conditions for stairways and ramps while **Table 14-94** details operating conditions at control areas within the station in the future 2028 No Action condition. As shown, all analyzed stairways and ramps and control areas would continue to operate at acceptable levels during all peak hours.

Table 14-93

2018 No Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday AM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	12	26	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	7	15	0.90	0.90	0.03	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	19	41	0.90	0.90	0.04	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	1	35	0.75	1.00	0.04	A
Flushing-bound West P10 Stair	9.6	8.3	1	32	0.75	1.00	0.03	A
Flushing-bound East P4 Stair	9.9	8.7	1	38	0.75	1.00	0.04	A
Flushing-bound East P2 Stair	10.1	8.8	3	33	0.75	0.90	0.04	A
Manhattan-bound West Ramp Passageway	17.6	15.6	65	6	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	32	10	0.75	0.90	0.01	A
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	24	21	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	22	14	0.90	0.90	0.04	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	46	35	0.90	0.90	0.05	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	44	0.75	1.00	0.05	A
Flushing-bound West P10 Stair	9.6	8.3	1	41	0.75	1.00	0.04	A
Flushing-bound East P4 Stair	9.9	8.7	3	53	0.75	0.90	0.06	A
Flushing-bound East P2 Stair	10.1	8.8	8	45	0.75	0.90	0.06	A
Manhattan-bound West Ramp Passageway	17.6	15.6	70	4	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	22	6	0.75	0.90	0.01	A
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	9	210	0.90	1.00	0.25	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	9	9	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	18	219	0.90	0.90	0.17	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	4	419	0.75	1.00	0.44	A
Flushing-bound West P10 Stair	9.6	8.3	3	447	0.75	1.00	0.48	B
Flushing-bound East P4 Stair	9.9	8.7	4	390	0.75	1.00	0.40	A
Flushing-bound East P2 Stair	10.1	8.8	6	254	0.75	1.00	0.26	A
Manhattan-bound West Ramp Passageway	17.6	15.6	61	20	0.75	0.90	0.03	A
Manhattan-bound East Ramp Passageway	19.6	17.6	25	23	0.75	0.90	0.02	A
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	9	310	0.90	1.00	0.36	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	2	6	0.90	0.90	0.01	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	11	316	0.90	1.00	0.21	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	282	0.75	1.00	0.29	A
Flushing-bound West P10 Stair	9.6	8.3	0	274	0.75	1.00	0.29	A
Flushing-bound East P4 Stair	9.9	8.7	2	433	0.75	1.00	0.45	A
Flushing-bound East P2 Stair	10.1	8.8	6	267	0.75	1.00	0.27	A
Manhattan-bound West Ramp Passageway	17.6	15.6	50	20	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	19	50	0.75	0.90	0.02	A

Table 14-93 (cont'd)

2018 No Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekend Post-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	132	14	0.90	0.90	0.17	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	14	3	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	146	17	0.90	0.90	0.11	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	382	12	0.75	1.00	0.31	A
Flushing-bound West P10 Stair	9.6	8.3	306	21	0.75	0.90	0.30	A
Flushing-bound East P4 Stair	9.9	8.7	352	14	0.75	1.00	0.29	A
Flushing-bound East P2 Stair	10.1	8.8	574	9	0.75	1.00	0.44	A
Manhattan-bound West Ramp Passageway	17.6	15.6	701	4	0.75	1.00	0.20	A
Manhattan-bound East Ramp Passageway	19.6	17.6	384	8	0.75	1.00	0.10	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>). $V/C \text{ Stairway} = [V_{in} / (150 * We * Sf * Ff)] + [Vx / (150 * We * Sf * Ff)]$ $V/C \text{ Passageway} = [V_{in} / (225 * We * Sf * Ff)] + [Vx / (225 * We * Sf * Ff)]$ Where V_{in} = Peak 15-minute entering passenger volume Vx = Peak 15-minute exiting passenger volume We = Effective width of stairs/passageways Sf = Surging factor (if applicable) Ff = Friction factor (if applicable)								

Table 14-94

2018 No Action Condition: Subway Station Control Area Analysis

Mets-Willets Point No. 7 Train Station Control Area Elements	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
Weekday AM Non-Game							
Main Control Area Turnstiles (R532)	5	87	120	0.80	0.90	0.10	A
Weekday PM Non-Game							
Main Control Area Turnstiles (R532)	5	86	163	0.80	0.90	0.12	A
Weekday Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	25	23	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	61	20	0.75	0.90	0.03	A
Flushing-bound East Stair Turnstiles	8	10	643	0.80	1.00	0.16	A
Flushing-bound West Stair Turnstiles	6	7	867	0.80	1.00	0.28	A
Weekend Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	19	50	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	50	20	0.75	0.90	0.03	A
Flushing-bound East Stair Turnstiles	8	8	700	0.80	1.00	0.17	A
Flushing-bound West Stair Turnstiles	6	2	556	0.80	1.00	0.18	A
Weekend Post-Game							
Manhattan-bound East Ramp Turnstiles	7	384	8	0.75	1.00	0.13	A
Manhattan-bound West Ramp Turnstiles	6	701	4	0.75	1.00	0.28	A
Flushing-bound East Stair Turnstiles	8	925	24	0.80	1.00	0.28	A
Flushing-bound West Stair Turnstiles	6	689	33	0.80	1.00	0.28	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). V/C = Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff) Vin = Peak 15 Min Entering Passenger Volume Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers Vx = Peak 15- Minute Exiting Passenger Cx = Total 15-minute Capacity of all turnstile for exiting Passengers Sf = Surging Factor Ff = Friction Factor							

SUBWAY LINE HAUL LEVELS

Subway ridership numbers were also adjusted to 2018 levels using an annual background growth rate of 0.50 percent for the first five years and then 0.25 percent for the remaining year.

No. 7 Line

~~Furthermore, trips associated with major new developments along the No. 7 subway line were superimposed onto~~ added to the 2018 background line-haul volumes to generate No Action peak period volumes for the No. 7 line subway line-haul analysis. Subway trips generated by No Action projects in Corona and Flushing were distributed directionally in a similar manner as subway trips generated by the proposed project due to the proximity of these neighborhoods to the project site. Because the Flushing-Main Street subway station is the No. 7 subway line's eastern terminus, all trips generated by No Action projects in that area were assigned to the Manhattan-bound direction in the AM peak period and the Flushing-bound direction in the PM peak period. These trips include several large and small projects planned for the Flushing area. Although a small number of trips from the No Action projects in Corona could travel in the off-peak direction, to/from Flushing, it was conservatively assumed that all of these trips would also travel in the peak direction during both the AM and PM peak periods.

In addition, NYCT plans to add two trains to the peak direction for both the AM and PM peak periods. Compared with the 2012 existing conditions, the 2018 No Action subway line-haul volumes are expected to increase by approximately 5 percent in the Manhattan-bound direction during the AM peak hour and 6 percent in the Flushing-bound direction during the PM peak hour. As shown in **Table 14-95**, assuming that planned service improvements are implemented, the No. 7 line would operate within guideline capacity during the weekday AM peak period for the Manhattan-bound local service and during the weekday PM peak period for the Flushing-bound service. However, the Manhattan-bound express service would continue to exceed the guideline capacity during the weekday AM peak period under the 2018 No Action condition. ~~Between the Draft SEIS and Final SEIS, a detailed examination of line-haul conditions on the N/Q lines will also prepared, in coordination with NYCT.~~

N and Q Lines

Based on NYCT transit demand model estimates, approximately 19 percent of the No Action project generated subway riders who take the No.7 train to/from Queens would make a transfer to the N and the Q lines at the Queensboro Plaza station.

According to NYCT's estimate, the N and Q lines' ridership levels would increase by approximately 19.5 percent from 2011 to 2033 largely due to the planned developments in Astoria, Queens. Although this growth rate accounts for the 22 years of background growth, this rate was applied to the 2018 No Action condition and carried forward for the 2028 and 2032 No Action conditions to conservatively estimate the No Action ridership. Additionally, after the completion of Phase 1 of the Second Avenue subway, the Q line will be rerouted to serve the 2nd Avenue line and an alternate service will be provided to replace the service in Astoria (tentatively assigned as the "W" line). As mentioned above, approximately 19 percent of the No.7 line riders to/from Queens would transfer to the N and Q lines at the Queensboro Plaza station. These transfer riders would be added to the each of the No Action baseline volumes (2018, 2028, and 2032) on the N and Q lines. It was assumed that the transfer riders would be equally distributed on the N and the Q lines. As shown in **Table 14-95**, while the N and Q lines would continue to operate within the guideline capacity during the PM peak hour for Queens-bound service, both lines would exceed the guideline capacity during the AM peak hour for Manhattan-bound service.

Table 14-95
2018 No Action Condition: Peak Hour Subway Line Haul

Subway lines Direction of Travel	Station	Trains/ Hour	Volume	Leave Load		Available Capacity
				Guideline Capacity	V/C Ratio	
AM Peak Period						
No.7 Manhattan-bound Express	Woodside–61st Street	15 14	49,428 17,260	48,150 16,940	1.07 1.02	-4,278 -320
No.7 Manhattan-bound Local	40th Street	14	45,246 13,420	16,940	0.90 0.79	4,724 3,520
N Manhattan-bound	Queensboro Plaza	8	13,504	11,600	1.16	-1,904
Q (W) Manhattan-bound ¹	Queensboro Plaza	8	12,777	11,600	1.10	-1,177
PM Peak Period						
No.7 Queens-bound Express + Local	Queensboro Plaza	23 25	22,017 21,580	27,830 30,250	0.79 0.71	5,813 8,670
N Queens-bound	Queensboro Plaza	7	7,869	10,150	0.78	2,281
Q (W) Queens-bound ¹	Queensboro Plaza	7	6,677	10,150	0.66	3,473
Notes: For the AM peak hour, while a total of 29 trains would be expected to traverse the respective express and local peak load points, the total number of scheduled trains during this hour would be 28 trains. ¹ <u>W</u> is a tentative designation for a line that would replace the Q service in Queens. Source: New York City Transit						

BUS LINE HAUL LEVELS

The 2018 No Action condition analysis of bus line-haul levels incorporates annual growth rates on the three study area bus routes as mentioned above by applying a 0.50 percent for the first five years and a 0.25 percent for the remaining year. Since there is an abundance of bus routes serving the many development projects planned for the Flushing area, the incorporation of only the background growth is expected to be adequate in accounting for potential increases in ridership on the three study area bus routes absent the proposed project. The No Action analysis results are presented in **Table 14-96**. As shown, all three bus routes would continue to operate within the guideline capacity during the AM and PM peak periods.

Table 14-96
2018 No Action Condition: Bus Line Haul at NYCT Maximum and District Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Load Point	AP		Load Point	AP
Q19	AM	3	Astoria Blvd/ 102nd St	42	3	Astoria Blvd/ 77th St	44
	PM	3	Astoria Blvd/ 94th St	28	3	Astoria Blvd/Humphrey St	32
Q48	AM	5	Roosevelt at 126th	33	3	Roosevelt at 126th	9
	PM	5	Roosevelt at 126th	21	5	Roosevelt at 126th	22
Q66 (to Woodside and LIC)	AM	15	Northern Blvd/ 110th St	46	14	Northern Blvd/ 72nd St	46
	PM	10	Northern Blvd/ 110th St	20	10	Northern Blvd/ 106th St	21
Note: AP = average passengers per bus; (#) = exceeds NYCT guideline capacity Source: Q48 ridership data provided by NYCT; Q19 and Q66 ridership data provided by the MTA Bus Company							

STREET-LEVEL PEDESTRIAN OPERATIONS

Since new trips associated with the No Action projects are not expected to traverse the study area analysis locations, the 2018 No Action pedestrian volumes incorporate only an annual background growth rate of 0.50 percent for the first five years and 0.25 for the remaining year for an overall compounded growth rate of approximately 2.8 percent. The 2018 No Action peak hour pedestrian volumes are shown in **Appendix D**. As shown in **Tables 14-97** through **14-101**, all sidewalk, corner reservoir, and crosswalk analysis locations would continue to operate at acceptable

Willeys Point Development

levels (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except at the following locations:

- The north crosswalk of 34th Avenue and 126th Street, which would operate at LOS F with 4.9 SFP during the weekend post-game peak 15-minute period.
- The south crosswalk of 34th Avenue and 126th Street, which would operate at LOS E with 10.8 SFP during the weekend post-game peak 15-minute period.

Table 14-97

2018 No Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday AM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	43	0.81	0.09	A
	West	6.0	0	0.80	0.00	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	41	0.91	0.05	A
	South	12.5	31	0.80	0.05	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	84	0.80	0.14	A
	South	11.5	42	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	3	0.80	0.01	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	39	0.80	0.33	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	19	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	64	0.80	0.19	A
	South	8.5	90	0.80	0.22	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	84	0.80	0.14	A
	South	13.0	82	0.83	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	59	0.80	0.25	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	14	0.80	0.05	A
Weekday Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	29	0.80	0.06	A
	West	6.0	3	0.80	0.01	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	35	0.80	0.05	A
	South	12.5	46	0.80	0.08	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	54	0.80	0.09	A
	South	11.5	34	0.80	0.06	A
34th Avenue between 126th Street and 126th Place	North	11.5	2	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	29	0.80	0.24	A
	West	8.0	1	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	19	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	56	0.80	0.17	A
	South	8.5	35	0.80	0.09	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	65	0.80	0.11	A
	South	13.0	38	0.80	0.06	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	77	0.80	0.32	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	11	0.80	0.04	A
Weekday PM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	15	0.80	0.03	A
	West	6.0	8	0.80	0.03	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	21	0.80	0.03	A
	South	12.5	44	0.80	0.07	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	55	0.80	0.09	A
	South	11.5	41	0.80	0.07	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	59	0.80	0.49	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	19	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	42	0.80	0.13	A
	South	8.5	47	0.80	0.12	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	80	0.80	0.13	A
	South	13.0	49	0.80	0.08	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	51	0.80	0.21	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	27	0.80	0.09	A

Table 14-97 (cont'd)

2018 No Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	145	0.80	0.32	A
	West	6.0	190	0.83	0.64	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	96	0.88	0.12	A
	South	12.5	84	0.80	0.14	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	126	0.80	0.21	A
	South	11.5	67	0.82	0.12	A
34th Avenue between 126th Street and 126th Place	North	11.5	84	0.80	0.15	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	137	0.80	1.14	B
	West	8.0	29	0.80	0.08	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	199	0.80	0.44	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	345	0.80	1.03	B
	South	8.5	195	0.80	0.48	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	242	0.82	0.39	A
	South	13.0	78	0.80	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	207	0.86	0.80	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	143	0.80	0.50	A
Note: PMF = pedestrians per minute per foot.						

Table 14-98

2018 No Action Condition: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	34	0.80	0.07	A
	West	6.0	7	0.80	0.02	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	72	0.80	0.10	A
	South	12.5	62	0.80	0.10	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	125	0.82	0.20	A
	South	11.5	43	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	19	0.80	0.03	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	43	0.80	0.36	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	27	0.80	0.06	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	122	0.85	0.34	A
	South	8.5	161	0.80	0.39	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	113	0.89	0.17	A
	South	13.0	107	0.80	0.17	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	79	0.80	0.33	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	35	0.80	0.12	A
Weekend Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	96	0.80	0.21	A
	West	6.0	274	0.80	0.87	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	98	0.80	0.13	A
	South	12.5	162	0.80	0.27	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	128	0.85	0.20	A
	South	11.5	108	0.80	0.20	A
34th Avenue between 126th Street and 126th Place	North	11.5	24	0.80	0.04	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	263	0.80	2.19	B
	West	8.0	25	0.80	0.07	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	166	0.93	0.31	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	315	0.87	0.87	B
	South	8.5	253	0.80	0.62	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	150	0.86	0.23	A
	South	13.0	85	0.80	0.14	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	235	0.80	0.98	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	60	0.80	0.21	A
Weekend Post-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	443	0.80	0.97	B
	West	6.0	847	0.80	2.94	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	137	0.80	0.18	A
	South	12.5	157	0.80	0.26	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	161	0.80	0.27	A
	South	11.5	152	0.80	0.28	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	571	0.80	4.76	C
	West	8.0	34	0.80	0.09	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	502	0.80	1.10	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	645	0.80	1.92	B
	South	8.5	252	0.80	0.62	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	250	0.80	0.42	A
	South	13.0	63	0.80	0.10	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	401	0.80	1.67	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	123	0.80	0.43	A
Note: PMF = pedestrians per minute per foot.						

Note: PMF = pedestrians per minute per foot.

Table 14-99

2018 No Action Condition: Pedestrian LOS Analysis for Corners

Location	Corner	Weekday								Weekend					
		AM		Midday		PM		Pre-Game		Midday Non-Game		Pre-Game		Post-Game	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Roosevelt Avenue and 126th Street	Northwest	1666.3	A	2331.3	A	2948.1	A	869.3	A	1497.6	A	914.9	A	582.9	A
	Northeast	1292.5	A	1355.7	A	2714.8	A	518.7	A	1092.1	A	593.5	A	344.6	A
Roosevelt Avenue and 114th Street	Northwest	1705.3	A	1491.6	A	1748.7	A	365.6	A	1011.5	A	446.2	A	224.4	A
	Southwest	1242.2	A	1559.1	A	1141.8	A	357.0	A	532.5	A	439.9	A	364.7	A

Note: SFP = square feet per pedestrian.

Table 14-100

2018 No Action Condition: Weekday Pedestrian LOS Analysis for Crosswalks

Location	Cross walk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles											
				Weekday AM			Weekday Midday			Weekday PM			Weekday Pre-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	46	1672.3	A	41	1706.5	A	23	2927.1	A	115	676.5	A
	East	43.0	14.0	4	3755.9	A	7	2032.9	A	2	6821.0	A	6	2363.3	A
	South	50.0	13.0	23	2686.2	A	39	1566.2	A	27	2291.1	A	84	739.4	A
	West	43.0	13.5	6	2830.9	A	10	1577.1	A	8	2052.7	A	43	167.4	A
34th Avenue and 126th Street	North	81.0	12.5	3	3142.8	A	0	N/A	A	4	2146.9	A	15	512.9	A
	East	30.0	7.0	10	2039.8	A	13	1505.6	A	20	985.6	A	224	80.0	A
	South	61.0	10.5	2	2988.1	A	1	5848.7	A	2	3183.4	A	138	45.1	B
	West	47.5	12.5	0	N/A	A	0	N/A	A	2	19163.1	A	41	930.7	A
Northern Boulevard and 126th Street	East	43.5	14.0	2	6432.5	A	2	5699.3	A	2	5584.8	A	17	625.9	A
	South	51.0	15.0	7	11652.5	A	1	81604.6	A	3	27198.9	A	28	2903.2	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	57	1157.2	A	60	981.9	A	49	1280.6	A	321	161.8	A
	East	44.0	11.0	8	1274.4	A	4	2982.0	A	7	1179.6	A	26	348.7	A
	South	32.5	12.0	68	817.6	A	42	1235.0	A	57	837.3	A	195	236.3	A
	West	43.0	13.0	13	1464.4	A	18	1177.3	A	20	969.2	A	54	339.0	A

Notes: SFP = square feet per pedestrian.

N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

Table 14-101

2018 No Action Condition: Weekend Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles								
				Weekend Midday Non-Game			Weekend Pre-Game			Weekend Post-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	57	1204.7	A	89	729.1	A	132	563.1	A
	East	43.0	14.0	5	2795.0	A	11	1437.2	A	23	394.2	A
	South	50.0	13.0	65	952.5	A	165	371.8	A	158	392.9	A
	West	43.0	13.5	14	1159.0	A	66	110.5	A	72	194.6	A
34th Avenue and 126th Street	North	81.0	12.5	4	2714.0	A	209	38.6	C	569	4.9	F
	East	30.0	7.0	24	820.4	A	2	9927.5	A	0	N/A	A
	South	61.0	10.5	5	1217.7	A	186	23.0	D	335	10.8	E
	West	47.5	12.5	4	9824.3	A	29	1206.5	A	175	196.5	A
Northern Boulevard and 126th Street	East	43.5	14.0	8	1695.1	A	10	1095.3	A	68	136.4	A
	South	51.0	15.0	3	27198.9	A	10	8152.0	A	7	11647.7	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	108	490.8	A	231	215.9	A	572	72.7	A
	East	44.0	11.0	13	614.2	A	36	168.9	A	42	220.5	A
	South	32.5	12.0	138	343.0	A	140	331.4	A	145	324.3	A
	West	43.0	13.0	32	596.5	A	65	266.5	A	91	191.7	A

Notes: SFP = square feet per pedestrian.

N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

2028 NO ACTION CONDITION

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Estimates of peak hour transit and pedestrian volumes in the No Action condition were developed by applying the CEQR-recommended 0.50 percent annual background growth rate for the first five years (year 2012 to year 2017) and then 0.25 percent for the remaining eleven years (year 2017 to year 2028) onto existing transit and pedestrian volumes and by adding the estimated transit and pedestrian volumes generated by projects within and near the study area that would be completed independent of the proposed project, as described above under “2018 No Action Condition.”

SUBWAY STATION OPERATIONS

The same station elements previously analyzed for existing conditions were analyzed under the 2028 No Action condition. Pedestrian volumes were adjusted to 2028 levels using an annual background growth rate of 0.50 percent for the first five years and then 0.25 for the remaining years for an overall compounded growth rate of approximately 5.4 percent by 2028. **Table 14-102** details the operating conditions for stairways and ramps while **Table 14-103** details operating conditions at control areas within the station in the future 2028 No Action condition. As shown, all analyzed stairways and ramps and control areas would continue to operate at acceptable levels during all peak hours.

Table 14-102

2028 No Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday AM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	13	26	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	7	16	0.90	0.90	0.03	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	20	42	0.90	0.90	0.04	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	1	36	0.75	1.00	0.04	A
Flushing-bound West P10 Stair	9.6	8.3	1	33	0.75	1.00	0.04	A
Flushing-bound East P4 Stair	9.9	8.7	1	39	0.75	1.00	0.04	A
Flushing-bound East P2 Stair	10.1	8.8	3	34	0.75	0.90	0.04	A
Manhattan-bound West Ramp Passageway	17.6	15.6	66	6	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	33	11	0.75	0.90	0.01	A
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	24	21	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	22	15	0.90	0.90	0.04	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	46	36	0.90	0.90	0.06	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	45	0.75	1.00	0.05	A
Flushing-bound West P10 Stair	9.6	8.3	1	42	0.75	1.00	0.05	A
Flushing-bound East P4 Stair	9.9	8.7	3	55	0.75	0.90	0.07	A
Flushing-bound East P2 Stair	10.1	8.8	8	46	0.75	0.90	0.06	A
Manhattan-bound West Ramp Passageway	17.6	15.6	72	4	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	22	6	0.75	0.90	0.01	A

Table 14-102 (cont'd)
2028 No Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	9	215	0.90	1.00	0.25	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	9	9	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	18	224	0.90	0.90	0.17	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	4	430	0.75	1.00	0.45	A
Flushing-bound West P10 Stair	9.6	8.3	3	458	0.75	1.00	0.49	B
Flushing-bound East P4 Stair	9.9	8.7	4	399	0.75	1.00	0.41	A
Flushing-bound East P2 Stair	10.1	8.8	6	260	0.75	1.00	0.27	A
Manhattan-bound West Ramp Passageway	17.6	15.6	62	20	0.75	0.90	0.03	A
Manhattan-bound East Ramp Passageway	19.6	17.6	25	23	0.75	0.90	0.02	A
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	9	318	0.90	1.00	0.37	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	2	6	0.90	0.90	0.01	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	11	324	0.90	1.00	0.22	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	289	0.75	1.00	0.30	A
Flushing-bound West P10 Stair	9.6	8.3	0	281	0.75	1.00	0.30	A
Flushing-bound East P4 Stair	9.9	8.7	2	444	0.75	1.00	0.46	B
Flushing-bound East P2 Stair	10.1	8.8	6	274	0.75	1.00	0.28	A
Manhattan-bound West Ramp Passageway	17.6	15.6	52	20	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	19	52	0.75	0.90	0.02	A
Weekend Post-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	135	15	0.90	0.90	0.17	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	15	3	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	150	18	0.90	0.90	0.11	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	392	13	0.75	1.00	0.32	A
Flushing-bound West P10 Stair	9.6	8.3	314	21	0.75	0.90	0.30	A
Flushing-bound East P4 Stair	9.9	8.7	360	15	0.75	1.00	0.29	A
Flushing-bound East P2 Stair	10.1	8.8	588	9	0.75	1.00	0.45	B
Manhattan-bound West Ramp Passageway	17.6	15.6	719	4	0.75	1.00	0.21	A
Manhattan-bound East Ramp Passageway	19.6	17.6	394	8	0.75	1.00	0.10	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>). $V/C \text{ Stairway} = [V_{in} / (150 * W_e * S_f * F_f)] + [V_x / (150 * W_e * S_f * F_f)]$ $V/C \text{ Passageway} = [V_{in} / (225 * W_e * S_f * F_f)] + [V_x / (225 * W_e * S_f * F_f)]$ Where V_{in} = Peak 15-minute entering passenger volume V_x = Peak 15-minute exiting passenger volume W_e = Effective width of stairs/passageways S_f = Surging factor (if applicable) F_f = Friction factor (if applicable)								

Table 14-103

2028 No Action Condition: Subway Station Control Area Analysis

Mets-Willets Point No. 7 Train Station Control Area Elements	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
Weekday AM Non-Game							
Main Control Area Turnstiles (R532)	5	90	123	0.80	0.90	0.10	A
Weekday PM Non-Game							
Main Control Area Turnstiles (R532)	5	89	168	0.80	0.90	0.12	A
Weekday Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	25	23	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	62	20	0.75	0.90	0.03	A
Flushing-bound East Stair Turnstiles	8	11	660	0.80	1.00	0.16	A
Flushing-bound West Stair Turnstiles	6	7	888	0.80	1.00	0.29	A
Weekend Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	19	52	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	52	20	0.75	0.90	0.03	A
Flushing-bound East Stair Turnstiles	8	8	718	0.80	1.00	0.18	A
Flushing-bound West Stair Turnstiles	6	2	570	0.80	1.00	0.18	A
Weekend Post-Game							
Manhattan-bound East Ramp Turnstiles	7	394	8	0.75	1.00	0.14	A
Manhattan-bound West Ramp Turnstiles	6	719	4	0.75	1.00	0.29	A
Flushing-bound East Stair Turnstiles	8	949	24	0.80	1.00	0.29	A
Flushing-bound West Stair Turnstiles	6	706	34	0.80	1.00	0.29	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff) Vin = Peak 15 Min Entering Passenger Volume Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers Vx = Peak 15- Minute Exiting Passenger Cx = Total 15-minute Capacity of all turnstile for exiting Passengers Sf = Surging Factor Ff = Friction Factor							

SUBWAY LINE HAUL LEVELS

The No. 7 line subway ridership numbers were also adjusted to 2028 levels using an annual background growth rate of 0.50 percent for the first five years and then 0.25 for the remaining years, and incorporating trips associated with projected No Action projects, as described under “2018 No Action Condition.” As shown in **Table 14-104**, the No. 7 line would operate within guideline capacity during the weekday AM peak period for the Manhattan-bound local service and during the PM peak period for the Flushing-bound service. However, the No. 7 Manhattan-bound express service would continue to exceed the guideline capacity during the weekday AM peak period under the 2028 No Action condition. ~~Between the Draft SEIS and Final SEIS, a detailed examination of line haul conditions on the N/Q lines will also prepared, in coordination with NYCT. As described under “2018 No Action Condition,” the estimated 19.5 percent background growth was applied to the 2028 No Action analysis to account for the No Action project generated subway riders on the N and Q lines. As shown in Table 14-104, the N and Q lines would continue to operate within the guideline capacity during the PM peak hour for Queens-bound service while both lines would continue to exceed the guideline capacity during the AM peak hour for Manhattan-bound service.~~

Table 14-104

2028 No Action Condition: Peak Hour Subway Line Haul

<u>Subway lines</u> Direction of Travel	Station	Trains/ Hour	Volume	Leave Load		Available Capacity
				Guideline Capacity	V/C Ratio	
AM Peak Period						
<u>No. 7</u> Manhattan-bound Express	Woodside–61st Street	45 14	49,900 17,677	48,450 16,930	1.10 1.04	-1,750 -737
<u>No. 7</u> Manhattan-bound Local	40th Street	14	45,598 13,757	16,940	0.92 0.81	1,342 3,183
<u>N</u> Manhattan-bound	<u>Queensboro Plaza</u>	8	13,504	11,600	1.16	-1,904
<u>Q (W)</u> Manhattan-bound ¹	<u>Queensboro Plaza</u>	8	12,777	11,600	1.10	-1,177
PM Peak Period						
<u>No. 7</u> <u>Queens</u> -bound Express + Local	Queensboro Plaza	23 25	22,550 22,102	27,830 30,250	0.81 0.73	5,280 8,148
<u>N</u> <u>Queens</u> -bound	<u>Queensboro Plaza</u>	7	7,869	10,150	0.78	2,281
<u>Q (W)</u> <u>Queens</u> -bound ¹	<u>Queensboro Plaza</u>	7	6,677	10,150	0.66	3,473
Notes: For the AM peak hour, while a total of 29 trains would be expected to traverse the respective express and local peak load points, the total number of scheduled trains during this hour would be 28 trains. ¹ <u>W</u> is a tentative designation for a line that would replace the Q service in Queens.						
Sources: New York City Transit						

BUS LINE HAUL LEVELS

The 2028 No Action condition analysis of bus line-haul levels incorporates annual growth rates on the three study area bus routes as mentioned above by applying a 0.50 percent for the first-5 five years and a 0.25 percent for the remaining years. The No Action analysis results are presented in **Table 14-105**. As shown, all three bus routes would continue to operate within the guideline capacity during the AM and PM Peak periods.

Table 14-105

2028 No Action Condition: Bus Line Haul at NYCT Maximum and District Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Load Point	AP		Load Point	AP
Q19	AM	3	Astoria Blvd/ 102nd St	43	3	Astoria Blvd/ 77th St	45
	PM	3	Astoria Blvd/ 94th St	28	3	Astoria Blvd/Humphrey St	33
Q48	AM	5	Roosevelt at 126th	34	3	Roosevelt at 126th	9
	PM	5	Roosevelt at 126th	22	5	Roosevelt at 126th	23
Q66 (to Woodside and LIC)	AM	15	Northern Blvd/ 110th St	48	14	Northern Blvd/ 72nd St	47
	PM	10	Northern Blvd/ 110th St	21	10	Northern Blvd/ 106th St	21
Note: AP = average passengers per bus; (#) = exceeds NYCT guideline capacity Source: Q48 ridership data provided by NYCT; Q19 and Q66 ridership data provided by the MTA Bus Company							

STREET-LEVEL PEDESTRIAN OPERATIONS

As described above under “2018 No Action Condition,” since new trips associated with the No Action projects are not expected to traverse the study area analysis locations, the 2028 No Action pedestrian volumes incorporate only an annual background growth rate of 0.50 percent for the first five years and 0.25 percent for the remaining years for an overall compounded growth rate of approximately 5.4 percent. The 2028 No Action peak hour pedestrian volumes are shown in **Appendix D**. As shown in **Tables 14-106** through **14-110**, all sidewalk, corner reservoir, and crosswalk analysis locations would continue to operate at acceptable levels (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except at the following locations:

Willeys Point Development

- The north crosswalk of 34th Avenue and 126th Street, which operates at LOS F with 4.5 SFP during the weekend post-game peak 15-minute period.
- The south crosswalk of 34th Avenue and 126th Street, which operates at LOS E with 10.2 SFP during the weekend post-game peak 15-minute period.

Table 14-106

2028 No Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday AM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	45	0.81	0.10	A
	West	6.0	0	0.80	0.00	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	42	0.91	0.05	A
	South	12.5	31	0.80	0.05	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	87	0.80	0.15	A
	South	11.5	43	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	3	0.80	0.01	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	40	0.80	0.33	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	20	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	67	0.80	0.20	A
	South	8.5	92	0.80	0.23	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	85	0.80	0.14	A
	South	13.0	85	0.83	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	61	0.80	0.25	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	14	0.80	0.05	A
Weekday Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	31	0.80	0.07	A
	West	6.0	3	0.80	0.01	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	36	0.80	0.05	A
	South	12.5	46	0.80	0.08	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	54	0.80	0.09	A
	South	11.5	35	0.80	0.06	A
34th Avenue between 126th Street and 126th Place	North	11.5	2	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	31	0.80	0.26	A
	West	8.0	1	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	20	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	58	0.80	0.17	A
	South	8.5	35	0.80	0.09	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	66	0.80	0.11	A
	South	13.0	39	0.80	0.06	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	79	0.80	0.33	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	11	0.80	0.04	A
Weekday PM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	16	0.80	0.04	A
	West	6.0	8	0.80	0.03	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	22	0.80	0.03	A
	South	12.5	45	0.80	0.08	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	57	0.80	0.10	A
	South	11.5	42	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	60	0.80	0.50	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	20	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	43	0.80	0.13	A
	South	8.5	49	0.80	0.12	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	82	0.80	0.14	A
	South	13.0	51	0.80	0.08	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	53	0.80	0.22	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	27	0.80	0.09	A

Table 14-106 (cont'd)

2028 No Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	149	0.80	0.33	A
	West	6.0	195	0.83	0.65	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	98	0.88	0.12	A
	South	12.5	87	0.80	0.15	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	129	0.80	0.22	A
	South	11.5	69	0.82	0.12	A
34th Avenue between 126th Street and 126th Place	North	11.5	86	0.80	0.16	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	141	0.80	1.18	B
	West	8.0	30	0.80	0.08	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	205	0.80	0.45	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	353	0.80	1.05	B
	South	8.5	199	0.80	0.49	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	249	0.82	0.41	A
	South	13.0	80	0.80	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	212	0.86	0.82	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	147	0.80	0.51	B
Note: PMF = pedestrians per minute per foot.						

Table 14-107

2028 No Action Condition: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	35	0.80	0.08	A
	West	6.0	7	0.80	0.02	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	74	0.80	0.10	A
	South	12.5	63	0.80	0.11	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	128	0.82	0.21	A
	South	11.5	44	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	20	0.80	0.04	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	43	0.80	0.36	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	29	0.80	0.06	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	126	0.85	0.35	A
	South	8.5	165	0.80	0.40	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	116	0.89	0.17	A
	South	13.0	110	0.80	0.18	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	81	0.80	0.34	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	36	0.80	0.13	A
Weekend Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	98	0.80	0.21	A
	West	6.0	280	0.80	0.88	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	100	0.80	0.13	A
	South	12.5	165	0.80	0.28	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	132	0.85	0.21	A
	South	11.5	111	0.80	0.20	A
34th Avenue between 126th Street and 126th Place	North	11.5	26	0.80	0.05	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	270	0.80	2.25	B
	West	8.0	25	0.80	0.07	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	171	0.93	0.32	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	324	0.87	0.89	B
	South	8.5	260	0.80	0.64	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	154	0.86	0.24	A
	South	13.0	87	0.80	0.14	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	242	0.80	1.01	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	62	0.80	0.22	A
Weekend Post-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	455	0.80	1.00	B
	West	6.0	869	0.80	3.02	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	141	0.80	0.19	A
	South	12.5	162	0.80	0.27	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	165	0.80	0.28	A
	South	11.5	156	0.80	0.28	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	585	0.80	4.88	C
	West	8.0	35	0.80	0.09	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	514	0.80	1.13	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	662	0.80	1.97	B
	South	8.5	258	0.80	0.63	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	257	0.80	0.43	A
	South	13.0	64	0.80	0.10	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	411	0.80	1.71	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	125	0.80	0.43	A
Note: PMF = pedestrians per minute per foot.						

Note: PMF = pedestrians per minute per foot.

Table 14-108
2028 No Action Condition: Pedestrian LOS Analysis for Corners

Location	Corner	Weekday								Weekend					
		AM		Midday		PM		Pre-Game		Midday Non-Game		Pre-Game		Post-Game	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Roosevelt Avenue and 126th Street	Northwest	1620.2	A	2299.4	A	2848.0	A	840.1	A	1458.4	A	895.5	A	566.7	A
	Northeast	1270.2	A	1328.8	A	2513.2	A	508.2	A	1074.7	A	578.0	A	336.1	A
Roosevelt Avenue and 114th Street	Northwest	1656.7	A	1452.5	A	1662.7	A	357.1	A	973.9	A	434.8	A	218.7	A
	Southwest	1214.3	A	1536.7	A	1102.5	A	350.1	A	517.5	A	427.4	A	357.5	A

Note: SFP = square feet per pedestrian.

Table 14-109
2028 No Action Condition: Weekday Pedestrian LOS Analysis for Crosswalks

Location	Cross walk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles											
				Weekday AM			Weekday Midday			Weekday PM			Weekday Pre-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	47	1633.3	A	42	1660.5	A	25	2683.6	A	118	656.5	A
	East	43.0	14.0	4	3734.2	A	7	2016.4	A	2	6763.1	A	6	2334.4	A
	South	50.0	13.0	23	2685.2	A	39	1565.5	A	29	2131.1	A	87	713.1	A
	West	43.0	13.5	6	2812.3	A	10	1565.9	A	8	2038.8	A	45	152.5	A
34th Avenue and 126th Street	North	81.0	12.5	3	3142.8	A	0	N/A	A	4	2139.3	A	16	476.0	A
	East	30.0	7.0	10	2035.8	A	13	1502.7	A	21	937.3	A	229	78.0	A
	South	61.0	10.5	2	2963.7	A	1	5783.6	A	2	3158.9	A	141	43.8	B
	West	47.5	12.5	0	N/A	A	0	N/A	A	2	19115.5	A	42	907.1	A
Northern Boulevard and 126th Street	East	43.5	14.0	2	6403.9	A	2	5656.4	A	2	5527.5	A	18	584.6	A
	South	51.0	15.0	7	11652.5	A	1	81604.6	A	3	27198.9	A	28	2903.2	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	59	1116.0	A	61	963.3	A	51	1227.2	A	329	157.3	A
	East	44.0	11.0	8	1252.2	A	4	2954.1	A	7	1144.7	A	28	316.5	A
	South	32.5	12.0	70	791.6	A	42	1232.8	A	58	820.1	A	199	230.3	A
	West	43.0	13.0	13	1462.3	A	19	1113.4	A	22	878.2	A	54	338.5	A

Notes: SFP = square feet per pedestrian.
N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

Table 14-110
2028 No Action Condition: Weekend Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles								
				Weekend Midday Non-Game			Weekend Pre-Game			Weekend Post-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	58	1181.0	A	91	709.9	A	136	545.7	A
	East	43.0	14.0	5	2771.9	A	11	1424.1	A	23	383.0	A
	South	50.0	13.0	67	923.2	A	168	364.9	A	163	380.7	A
	West	43.0	13.5	15	1075.8	A	67	103.2	A	74	187.1	A
34th Avenue and 126th Street	North	81.0	12.5	4	2704.6	A	215	37.3	C	584	4.5	F
	East	30.0	7.0	26	756.1	A	2	9927.5	A	0	N/A	A
	South	61.0	10.5	5	1207.9	A	191	21.9	D	343	10.2	E
	West	47.5	12.5	4	9812.4	A	29	1201.6	A	179	191.2	A
Northern Boulevard and 126th Street	East	43.5	14.0	8	1681.7	A	10	1086.8	A	70	130.4	A
	South	51.0	15.0	3	27198.9	A	10	8152.0	A	7	11647.7	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	111	476.0	A	237	209.2	A	587	70.1	A
	East	44.0	11.0	14	554.0	A	37	157.1	A	43	210.7	A
	South	32.5	12.0	141	334.5	A	145	318.3	A	148	316.5	A
	West	43.0	13.0	34	559.6	A	66	261.2	A	93	186.9	A

Notes: SFP = square feet per pedestrian.
N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

2032 NO ACTION CONDITION

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Estimates of peak hour transit and pedestrian volumes in the No Action condition were developed by applying the CEQR-recommended 0.50 percent annual background growth rate for the first five years (year 2012 to year 2017) and then 0.25 percent for the remaining fifteen years (year 2017 to year 2032) onto existing transit and pedestrian volumes and by adding the estimated transit and pedestrian volumes generated by projects within and near the study area that would be completed independent of the proposed project, as described above under “2018 No Action Condition.”

SUBWAY STATION OPERATIONS

The same station elements previously analyzed for existing conditions were analyzed under the 2032 No Action condition. Pedestrian volumes were adjusted to 2032 levels using an annual background growth rate of 0.50 percent for the first five years and then 0.25 percent for the remaining years for an overall compounded growth rate of approximately 6.4 percent by 2032. **Table 14-111** details the operating conditions for stairways and ramps while **Table 14-112** details operating conditions at control areas within the station in the future 2032 No Action condition. As shown, all analyzed stairways and ramps and control areas would continue to operate at acceptable levels during all peak hours.

Table 14-111

2032 No Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday AM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	13	27	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	7	16	0.90	0.90	0.03	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	20	43	0.90	0.90	0.04	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	1	36	0.75	1.00	0.04	A
Flushing-bound West P10 Stair	9.6	8.3	1	33	0.75	1.00	0.04	A
Flushing-bound East P4 Stair	9.9	8.7	1	39	0.75	1.00	0.04	A
Flushing-bound East P2 Stair	10.1	8.8	3	34	0.75	0.90	0.04	A
Manhattan-bound West Ramp Passageway	17.6	15.6	67	6	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	33	11	0.75	0.90	0.01	A
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	24	21	0.90	0.90	0.05	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	22	15	0.90	0.90	0.04	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	46	36	0.90	0.90	0.06	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	46	0.75	1.00	0.05	A
Flushing-bound West P10 Stair	9.6	8.3	1	43	0.75	1.00	0.05	A
Flushing-bound East P4 Stair	9.9	8.7	3	55	0.75	0.90	0.07	A
Flushing-bound East P2 Stair	10.1	8.8	9	47	0.75	0.90	0.06	A
Manhattan-bound West Ramp Passageway	17.6	15.6	72	4	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	22	6	0.75	0.90	0.01	A

Table 14-111 (cont'd)

2032 No Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	10	217	0.90	1.00	0.26	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	10	10	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	20	227	0.90	0.90	0.18	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	4	434	0.75	1.00	0.45	A
Flushing-bound West P10 Stair	9.6	8.3	3	463	0.75	1.00	0.50	B
Flushing-bound East P4 Stair	9.9	8.7	4	403	0.75	1.00	0.42	A
Flushing-bound East P2 Stair	10.1	8.8	6	263	0.75	1.00	0.27	A
Manhattan-bound West Ramp Passageway	17.6	15.6	63	20	0.75	0.90	0.03	A
Manhattan-bound East Ramp Passageway	19.6	17.6	26	23	0.75	0.90	0.02	A
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	10	321	0.90	1.00	0.38	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	2	6	0.90	0.90	0.01	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	12	327	0.90	1.00	0.22	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	2	292	0.75	1.00	0.30	A
Flushing-bound West P10 Stair	9.6	8.3	0	284	0.75	1.00	0.30	A
Flushing-bound East P4 Stair	9.9	8.7	2	448	0.75	1.00	0.46	B
Flushing-bound East P2 Stair	10.1	8.8	6	277	0.75	1.00	0.28	A
Manhattan-bound West Ramp Passageway	17.6	15.6	52	20	0.75	0.90	0.02	A
Manhattan-bound East Ramp Passageway	19.6	17.6	19	52	0.75	0.90	0.02	A
Weekend Post-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	136	15	0.90	0.90	0.17	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	15	3	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	151	18	0.90	0.90	0.11	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	396	13	0.75	1.00	0.32	A
Flushing-bound West P10 Stair	9.6	8.3	317	21	0.75	0.90	0.31	A
Flushing-bound East P4 Stair	9.9	8.7	364	15	0.75	1.00	0.30	A
Flushing-bound East P2 Stair	10.1	8.8	594	10	0.75	1.00	0.46	B
Manhattan-bound West Ramp Passageway	17.6	15.6	726	4	0.75	1.00	0.21	A
Manhattan-bound East Ramp Passageway	19.6	17.6	398	9	0.75	1.00	0.10	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>). $V/C \text{ Stairway} = [V_{in} / (150 * W_e * S_f * F_f)] + [V_x / (150 * W_e * S_f * F_f)]$ $V/C \text{ Passageway} = [V_{in} / (225 * W_e * S_f * F_f)] + [V_x / (225 * W_e * S_f * F_f)]$ Where V_{in} = Peak 15-minute entering passenger volume V_x = Peak 15-minute exiting passenger volume W_e = Effective width of stairs/passageways S_f = Surging factor (if applicable) F_f = Friction factor (if applicable)								

Table 14-112

2032 No Action Condition: Subway Station Control Area Analysis

Mets-Willetts Point No. 7 Train Station Control Area Elements	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
Weekday AM Non-Game							
Main Control Area Turnstiles (R532)	5	90	125	0.80	0.90	0.10	A
Weekday PM Non-Game							
Main Control Area Turnstiles (R532)	5	89	169	0.80	0.90	0.12	A
Weekday Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	26	23	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	63	20	0.75	0.90	0.04	A
Flushing-bound East Stair Turnstiles	8	11	666	0.80	1.00	0.16	A
Flushing-bound West Stair Turnstiles	6	7	897	0.80	1.00	0.29	A
Weekend Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	19	52	0.75	0.90	0.02	A
Manhattan-bound West Ramp Turnstiles	6	52	20	0.75	0.90	0.03	A
Flushing-bound East Stair Turnstiles	8	9	725	0.80	1.00	0.18	A
Flushing-bound West Stair Turnstiles	6	2	576	0.80	1.00	0.19	A
Weekend Post-Game							
Manhattan-bound East Ramp Turnstiles	7	398	9	0.75	1.00	0.14	A
Manhattan-bound West Ramp Turnstiles	6	726	4	0.75	1.00	0.29	A
Flushing-bound East Stair Turnstiles	8	958	24	0.80	1.00	0.29	A
Flushing-bound West Stair Turnstiles	6	713	34	0.80	1.00	0.29	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). V/C = Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff) Vin = Peak 15 Min Entering Passenger Volume Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers Vx = Peak 15-Minute Exiting Passenger Cx = Total 15-minute Capacity of all turnstile for exiting Passengers Sf = Surging Factor Ff = Friction Factor							

SUBWAY LINE HAUL LEVELS

The No.7 line subway ridership numbers were also adjusted to 2032 levels using an annual background growth rate of 0.50 percent for the first five years and then 0.25 percent for the remaining years, and incorporating trips associated with projected No Action projects, as described under “2018 No Action Condition.” As shown in **Table 14-113**, the No. 7 line would operate within guideline capacity during the weekday AM peak period for the Manhattan-bound local service and during the PM peak period for the Flushing-bound service. However, the Manhattan-bound express service would continue to exceed the guideline capacity during the weekday AM peak period under the 2032 No Action condition. ~~Between the Draft SEIS and Final SEIS, a detailed examination of line-haul conditions on the N/Q lines will also prepared, in coordination with NYCT.~~

As described under “2018 No Action Condition,” the estimated 19.5 percent background growth rate was applied to the 2032 No Action analysis to account for the No Action project generated subway riders on the N and Q lines. As shown in Table 14-113, the N and Q lines would continue to operate within the guideline capacity during the PM peak hour for Queens-bound service while both lines would continue to exceed the guideline capacity during the AM peak hour for Manhattan-bound service.

Table 14-113

2032 No Action Condition: Peak Hour Subway Line Haul

Subway Lines Direction of Travel	Station	Trains/ Hour	Volume	Leave Load		Available Capacity
				Guideline Capacity	V/C Ratio	
AM Peak Period						
<u>No. 7</u> Manhattan-bound Express	Woodside–61st Street	15 <u>14</u>	20,082 <u>17,838</u>	18,150 <u>16,940</u>	1.11 <u>1.05</u>	-1,932 <u>-898</u>
<u>No. 7</u> Manhattan-bound Local	40th Street	14	15,745 <u>13,886</u>	16,940	0.93 <u>0.82</u>	1,195 <u>3,054</u>
<u>N</u> Manhattan-bound	<u>Queensboro Plaza</u>	<u>8</u>	<u>13,504</u>	<u>11,600</u>	<u>1.16</u>	<u>-1,904</u>
<u>Q (W)</u> Manhattan-bound ¹	<u>Queensboro Plaza</u>	<u>8</u>	<u>12,777</u>	<u>11,600</u>	<u>1.10</u>	<u>-1,177</u>
PM Peak Period						
<u>No. 7</u> Flushing-bound Express + Local	Queensboro Plaza	23 <u>25</u>	22,755 <u>22,303</u>	27,830 <u>30,250</u>	0.82 <u>0.74</u>	5,075 <u>7,947</u>
<u>N</u> Queens-bound	<u>Queensboro Plaza</u>	<u>7</u>	<u>7,869</u>	<u>10,150</u>	<u>0.78</u>	<u>2,281</u>
<u>Q (W)</u> Queens-bound ¹	<u>Queensboro Plaza</u>	<u>7</u>	<u>6,677</u>	<u>10,150</u>	<u>0.66</u>	<u>3,473</u>
Sources: New York City Transit						
Notes:						
For the AM peak hour, while a total of 29 trains would be expected to traverse the respective express and local peak load points, the total number of scheduled trains during this hour would be 28 trains.						
¹ <u>W</u> is a tentative designation for a line that would replace the Q service in Queens.						

BUS LINE HAUL LEVELS

The 2032 No Action condition analysis of bus line-haul levels incorporates annual growth rates on the three study area bus routes as mentioned above by applying a 0.50 percent for the first-5 five years and a 0.25 percent for the remaining years. The No Action analysis results are presented in **Table 14-114**. As shown, all three bus routes would continue to operate within the guideline capacity during the AM and PM peak periods.

Table 14-114

2032 No Action Condition: Bus Line Haul at NYCT Maximum and District Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Load Point	AP		Load Point	AP
Q19	AM	3	Astoria Blvd/ 102nd St	44	3	Astoria Blvd/ 77th St	45
	PM	3	Astoria Blvd/ 94th St	29	3	Astoria Blvd/Humphrey St	33
Q48	AM	5	Roosevelt at 126th	34	3	Roosevelt at 126th	9
	PM	5	Roosevelt at 126th	22	5	Roosevelt at 126th	23
Q66 (to Woodside and LIC)	AM	15	Northern Blvd/ 110th St	48	14	Northern Blvd/ 72nd St	48
	PM	10	Northern Blvd/ 110th St	21	10	Northern Blvd/ 106th St	21
Note: AP = average passengers per bus; (#) = exceeds NYCT guideline capacity Source: Q48 ridership data provided by NYCT; Q19 and Q66 ridership data provided by the MTA Bus Company							

STREET-LEVEL PEDESTRIAN OPERATIONS

As described above under “2018 No Action Condition,” since new trips associated with the No Action projects are not expected to traverse the study area analysis locations, the 2032 No Action pedestrian volumes incorporate only an annual background growth rate of 0.50 percent for the first five years and 0.25 percent for the remaining years for an overall compounded growth rate of approximately 6.4 percent. The 2032 No Action peak hour pedestrian volumes are shown in **Appendix D**. As shown in **Tables 14-115** through **14-119**, all sidewalk, corner reservoir,

Willeys Point Development

and crosswalk analysis locations would continue to operate at acceptable levels (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks), except at the following locations:

- The north crosswalk of 34th Avenue and 126th Street, which operates at LOS F with 4.4 SFP during the weekend post-game peak 15-minute period.
- The south crosswalk of 34th Avenue and 126th Street, which operates at LOS E with 10.0 SFP during the weekend post-game peak 15-minute period.

Table 14-115

2032 No Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday AM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	45	0.81	0.10	A
	West	6.0	0	0.80	0.00	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	43	0.91	0.05	A
	South	12.5	32	0.80	0.05	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	88	0.80	0.15	A
	South	11.5	43	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	3	0.80	0.01	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	41	0.80	0.34	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	20	0.80	0.04	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	67	0.80	0.20	A
	South	8.5	94	0.80	0.23	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	87	0.80	0.15	A
	South	13.0	86	0.83	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	62	0.80	0.26	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	15	0.80	0.05	A
Weekday Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	31	0.80	0.07	A
	West	6.0	3	0.80	0.01	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	36	0.80	0.05	A
	South	12.5	47	0.80	0.08	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	56	0.80	0.09	A
	South	11.5	35	0.80	0.06	A
34th Avenue between 126th Street and 126th Place	North	11.5	2	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	31	0.80	0.26	A
	West	8.0	1	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	21	0.80	0.05	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	58	0.80	0.17	A
	South	8.5	37	0.80	0.09	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	67	0.80	0.11	A
	South	13.0	40	0.80	0.06	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	80	0.80	0.33	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	12	0.80	0.04	A
Weekday PM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	16	0.80	0.04	A
	West	6.0	8	0.80	0.03	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	22	0.80	0.03	A
	South	12.5	46	0.80	0.08	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	57	0.80	0.10	A
	South	11.5	43	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	61	0.80	0.51	B
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	21	0.80	0.05	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	43	0.80	0.13	A
	South	8.5	49	0.80	0.12	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	83	0.80	0.14	A
	South	13.0	51	0.80	0.08	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	53	0.80	0.22	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	28	0.80	0.10	A

Table 14-115 (Cont'd)

2032 No Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	150	0.80	0.33	A
	West	6.0	196	0.83	0.66	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	99	0.88	0.12	A
	South	12.5	87	0.80	0.15	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	131	0.80	0.22	A
	South	11.5	69	0.82	0.12	A
34th Avenue between 126th Street and 126th Place	North	11.5	87	0.80	0.16	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	143	0.80	1.19	B
	West	8.0	30	0.80	0.08	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	206	0.80	0.45	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	357	0.80	1.06	B
	South	8.5	201	0.80	0.49	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	251	0.82	0.41	A
	South	13.0	81	0.80	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	214	0.86	0.83	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	148	0.80	0.51	B
Note: PMF = pedestrians per minute per foot.						

Table 14-116

2032 No Action Condition: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	35	0.80	0.08	A
	West	6.0	7	0.80	0.02	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	75	0.80	0.10	A
	South	12.5	64	0.80	0.11	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	130	0.82	0.21	A
	South	11.5	45	0.80	0.08	A
34th Avenue between 126th Street and 126th Place	North	11.5	20	0.80	0.04	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	43	0.80	0.36	A
	West	8.0	0	0.80	0.00	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	29	0.80	0.06	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	126	0.85	0.35	A
	South	8.5	166	0.80	0.41	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	117	0.89	0.18	A
	South	13.0	111	0.80	0.18	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	82	0.80	0.34	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	36	0.80	0.13	A
Weekend Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	99	0.80	0.22	A
	West	6.0	283	0.80	0.89	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	101	0.80	0.14	A
	South	12.5	167	0.80	0.28	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	133	0.85	0.21	A
	South	11.5	112	0.80	0.20	A
34th Avenue between 126th Street and 126th Place	North	11.5	26	0.80	0.05	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	272	0.80	2.27	B
	West	8.0	25	0.80	0.07	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	173	0.93	0.33	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	327	0.87	0.90	B
	South	8.5	262	0.80	0.64	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	156	0.86	0.24	A
	South	13.0	89	0.80	0.14	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	243	0.80	1.01	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	63	0.80	0.22	A
Weekend Post-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	9.5	459	0.80	1.01	B
	West	6.0	877	0.80	3.05	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	142	0.80	0.19	A
	South	12.5	163	0.80	0.27	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	167	0.80	0.28	A
	South	11.5	158	0.80	0.29	A
34th Avenue between 126th Street and 126th Place	North	11.5	0	0.80	0.00	A
126th Street between Northern Boulevard and 34th Avenue	East	2.5	592	0.80	4.93	C
	West	8.0	35	0.80	0.09	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	519	0.80	1.14	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	668	0.80	1.99	B
	South	8.5	260	0.80	0.64	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	260	0.80	0.43	A
	South	13.0	65	0.80	0.10	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	415	0.80	1.73	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	126	0.80	0.44	A
Note: PMF = pedestrians per minute per foot.						

Note: PMF = pedestrians per minute per foot.

Table 14-117

2032 No Action Condition: Pedestrian LOS Analysis for Corners

Location	Corner	Weekday								Weekend					
		AM		Midday		PM		Pre-Game		Midday Non-Game		Pre-Game		Post-Game	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Roosevelt Avenue and 126th Street	Northwest	1620.2	A	2268.2	A	2800.5	A	836.4	A	1433.5	A	886.2	A	558.9	A
	Northeast	1270.2	A	1303.3	A	2513.2	A	504.7	A	1057.7	A	573.0	A	331.1	A
Roosevelt Avenue and 114th Street	Northwest	1642.0	A	1428.6	A	1662.7	A	352.9	A	967.9	A	431.0	A	216.5	A
	Southwest	1200.8	A	1514.3	A	1102.5	A	343.4	A	511.8	A	425.4	A	352.0	A

Note: SFP = square feet per pedestrian.

Table 14-118

2032 No Action Condition: Weekday Pedestrian LOS Analysis for Crosswalks

Location	Cross walk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles											
				Weekday AM			Weekday Midday			Weekday PM			Weekday Pre-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	47	1630.7	A	43	1621.1	A	25	2680.2	A	119	650.3	A
	East	43.0	14.0	4	3727.0	A	7	2012.3	A	2	6748.7	A	6	2329.5	A
	South	50.0	13.0	23	2684.1	A	39	1564.3	A	29	2131.1	A	87	713.1	A
	West	43.0	13.5	6	2807.7	A	10	1560.4	A	8	2031.8	A	45	149.4	A
34th Avenue and 126th Street	North	81.0	12.5	3	3137.7	A	0	N/A	A	4	2131.7	A	16	475.0	A
	East	30.0	7.0	10	2035.8	A	14	1394.7	A	21	937.3	A	232	76.9	A
	South	61.0	10.5	2	2947.4	A	1	5767.3	A	2	3150.8	A	142	43.4	B
	West	47.5	12.5	0	N/A	A	0	N/A	A	2	19103.5	A	43	885.2	A
Northern Boulevard and 126th Street	East	43.5	14.0	2	6403.9	A	2	5642.1	A	2	5513.2	A	18	583.0	A
	South	51.0	15.0	7	11652.5	A	1	81604.6	A	3	27198.9	A	29	2802.6	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	60	1096.4	A	62	946.7	A	51	1226.0	A	332	155.5	A
	East	44.0	11.0	8	1243.8	A	4	2937.4	A	7	1135.1	A	28	313.3	A
	South	32.5	12.0	71	779.3	A	42	1232.1	A	58	818.5	A	202	226.5	A
	West	43.0	13.0	13	1462.3	A	20	1057.6	A	22	878.2	A	56	326.3	A

Notes: SFP = square feet per pedestrian.

N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

Table 14-119

2032 No Action Condition: Weekend Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles								
				Weekend Midday Non-Game			Weekend Pre-Game			Weekend Post-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	59	1158.5	A	92	700.6	A	138	537.3	A
	East	43.0	14.0	5	2760.3	A	11	1421.5	A	23	379.2	A
	South	50.0	13.0	67	923.2	A	170	360.6	A	164	378.3	A
	West	43.0	13.5	15	1072.1	A	68	99.5	A	75	183.4	A
34th Avenue and 126th Street	North	81.0	12.5	4	2699.8	A	217	36.8	C	590	4.4	F
	East	30.0	7.0	26	755.4	A	2	9908.5	A	0	N/A	A
	South	61.0	10.5	5	1204.7	A	193	21.4	D	347	10.0	E
	West	47.5	12.5	4	9806.4	A	30	1159.6	A	181	188.9	A
Northern Boulevard and 126th Street	East	43.5	14.0	8	1672.8	A	10	1083.9	A	70	129.6	A
	South	51.0	15.0	3	27198.9	A	11	7409.9	A	7	11647.7	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	112	471.0	A	239	207.1	A	592	69.2	A
	East	44.0	11.0	14	547.5	A	37	154.1	A	44	204.3	A
	South	32.5	12.0	143	329.1	A	145	317.7	A	150	311.5	A
	West	43.0	13.0	34	559.6	A	67	256.9	A	95	182.6	A

Notes: SFP = square feet per pedestrian.

N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

K. PROBABLE IMPACTS OF THE PROPOSED PROJECT (TRANSIT AND PEDESTRIANS)

The future with the proposed project or the “With Action” condition would result in increased transit and pedestrian volumes within the study area. This section describes the projected travel patterns of the site-related trips and assesses their potential impacts on nearby transit and pedestrian facilities for the 2018, 2028, and 2032 analysis years. Where significant adverse impacts are identified, measures to mitigate the impacts are described in Chapter 21, “Mitigation.”

2018 WITH ACTION CONDITION

TRIP DISTRIBUTION AND ASSIGNMENT

Transit and pedestrian volumes for the With Action condition were estimated by overlaying peak hour volumes derived from the trip generation estimates presented in the “Traffic and Parking” section, onto the No Action analysis networks. These volumes were then assigned to the transit and pedestrian analysis locations based on the following assumptions.

- Automobile and taxi person trips associated with the District are expected to have a negligible effect on the pedestrian network, since both would be dispersed throughout the District east of 126th Street, and the associated pedestrian trips, which would mostly occur in the District itself, would traverse a limited number of the pedestrian elements included for analysis. The Willets West development would have an on-site parking garage for autos and a designated taxi drop-off/pick-up area, and therefore, no auto and taxi trips associated with Willets West would traverse any of the pedestrian elements included for analysis. As part of the Willets West development, approximately 3,700 existing CitiField parking spaces would be displaced from the current CitiField parking lot. Specific to Phase 1A, 2,750 of the displaced spaces would be constructed in an interim surface parking lot within the District, with the remaining displaced spaces to be replaced in a new CitiField garage, south of Roosevelt Avenue, within the current “South Lot.” The CitiField patrons who in Phase 1A would park in the District’s interim parking lot would then need to cross 126th Street to access the stadium. It was assumed that half of the patrons would cross 126th Street at 37th Avenue with the other half would cross at 38th Avenue. The patrons who would park in the new South Lot garage would connect with CitiField via the Mets-Willets Point subway station, as they do currently during game days, and would not traverse any of the pedestrian elements included for analysis. It should be noted that NYCT may ultimately decide to revert back to its pre-CitiField station operating plan. Under this operating plan, the station would function during Met games as it would on non-game days—the wider portion of the mezzanine, which is within the paid zone on most occasions but currently is converted to an unpaid zone during games would be kept as a part of the paid zone at all times. The unpaid corridor at the western end of the mezzanine would remain unpaid at all times and thus could serve as a means of crossing Roosevelt Avenue through the station. If this plan is implemented, NYCT would reposition the agent booth in the unpaid zone to provide added circulation space in the corridor.
- Subway trips were assigned to the Mets-Willets Point subway station. The assignments to specific stairways were based on logical patterns between the subway station and Willets West and the District.

- Based on existing ridership patterns, bus trips were assigned to the study area bus routes as follows: 15 percent to the Q19, 70 percent to the Q66, and 15 percent to the Q48 bus routes. Assignments on these bus routes were made with logical origins and destinations. This allocation of projected bus trips conservatively does not assume other service improvements, such as new bus routes or extension of existing bus routes, that are typical with areas undergoing substantial growth in ridership from new developments. As stated in the FGEIS, discussions were initiated with the MTA to explore opportunities to extend existing bus routes from adjacent neighborhoods (e.g., downtown Flushing) and/or creating new bus routes. Potential bus service improvements discussed include: 1) increasing service frequency on the Q19 and providing westbound stop/loop service to Willets Point; 2) extending some or all bus routes that currently terminate in downtown Flushing to Willets Point, including the Q12, Q13, Q15/Q15A, Q16, Q26, and Q28; and 3) possibly extending the limited Q50 along Roosevelt Avenue through Willets Point. These potential service improvements would require new bus stops and layover areas in and around the project site. Between the Draft and Final SEIS, additional discussions were initiated with MTA NYCT regarding the potential bus service improvements discussed above. MTA NYCT considered the Q19 westbound loop to serve Willets West and the District to be unfavorable due to its circuitous routing. The MTA Bus Company would consider extending the Q50 and NYCT would consider extending one of the current bus routes terminating in downtown Flushing to Willets West and the District initially. Additional bus route extensions to Willets West and the District would be considered based on future demand. In addition, several conceptual bus routing options were explored to provide the necessary layover areas and stop locations for the potential bus route extensions. MTA NYCT has found the conceptual bus routing options to be generally reasonable and feasible. While no definitive plans have been made at this time, the City and the applicant will continue to collaborate with the MTA NYCT during and after this environmental review process to ensure that adequate bus service improvements would be implemented, no definitive plans have been made at this time.
- Walk-only trips, primarily within the District, were evenly distributed to the surrounding street network. Even though the majority of the future uses within the District would not be developed yet in Phase 1A, the walk only trips were conservatively distributed to the street network, assuming a higher percentage of trips originating from Corona and Flushing. As part of the later phases, a higher percentage of walk only trips would be generated by other uses within the District, resulting in an increased internal trip capture percentage and a lower percentage of trips originating from Corona and Flushing. As a result of the increased internal capture percentage, a high number of walk only trips generated by uses within the District would not appear on any of the pedestrian elements included for analysis. As for the walk-only trips that would be generated by the Willets West development, all were distributed to the street network, including a portion assumed to originate from or destined to future uses in the District, and no internal capture was assumed. Since the Willets West development would already be developed in Phase 1A and included in the two subsequent phases, the trip distribution remained consistent for all phases. Unlike the uses within the District, however, the percentage of walk-only trips originating from Corona and Flushing would be consistent for all three phases.

CHANGES IN THE PEDESTRIAN ENVIRONMENT

The 2018 With Action condition pedestrian analysis reflects geometric changes to crosswalk lengths, sidewalk widths, and corner dimensions consistent with those outlined in the FGEIS. Specific geometric changes affecting the analysis elements include:

- Modifying 126th Street to serve as the main entryway to the District, resulting in enlarged pedestrian circulation areas on sidewalks on the east side of the street and a new bicycle path on both sides of the street;
- Constructing new streets within the District, resulting in different crossing distances and sidewalk widths from the No Action condition; and
- As part of the project's overall plan of developing Willets West and moving the majority of Mets parking to the south side of Roosevelt Avenue, pedestrian plazas would form within what are currently enclosed parking areas for the Mets. These pedestrian plazas would provide additional means of pedestrian circulation adjacent to Willets West and CitiField.

SUBWAY STATION OPERATIONS

The same station elements previously analyzed for the existing and No Action conditions were analyzed under the With Action condition. Project-generated subway trips were added to the 2018 No Action volumes to generate the 2018 With Action volumes for the analysis of station operations. It was assumed that all incremental subway trips would access the Mets-Willets Point subway station via the street-level and street-mezzanine stairways on the north side of Roosevelt Avenue. Once inside the station, these trips were distributed to the Manhattan-bound and Flushing-bound platforms using the directional split developed for the subway line-haul analysis, as detailed in the next sub-section. Passenger movements between the mezzanine and platform levels were distributed based on existing flow patterns during the various analysis time periods.

As shown in **Tables 14-120** and **14-121**, all analyzed stairways and ramps and control areas would continue to operate at acceptable levels. Therefore, the proposed project would not result in any significant adverse subway station impacts under the 2018 With Action condition. However, as described above, if NYCT reverts back to its pre-CitiField station operating plan, whereby passage through the station between parking in South Lot/Lot D and the north side of Roosevelt Avenue could be made only within the unpaid zone, additional impacts for the station's street-level connections and the unpaid zone passageway could occur during game days. Because game-day conditions occur on average only approximately 80 ~~40 to 50~~ times a year and are subject to game-day traffic and pedestrian management, such impacts would be intermittent and may not require permanent mitigation measures. Furthermore, since the planning and design of this station reconfiguration has not yet taken place, the specific nature of the potential game-day impacts cannot be ascertained and any mitigation measures that may be deemed feasible to address the potential game-day impacts also cannot be identified at this time. If NYCT decides to proceed with this station reconfiguration, which would take place independent of the proposed project, additional interagency coordination is expected to take place to develop the appropriate game-day management strategies. For purposes of disclosure in this Final Draft SEIS, any impacts that may be attributed to future passage of a reconfigured Mets-Willets Point subway station may potentially be deemed unmitigatable.

Table 14-120

2018 With Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday AM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	52	94	0.90	0.90	0.18	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	11	19	0.90	0.90	0.04	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	63	113	0.90	0.90	0.12	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	1	52	0.75	1.00	0.05	A
Flushing-bound West P10 Stair	9.6	8.3	2	48	0.75	1.00	0.05	A
Flushing-bound East P4 Stair	9.9	8.7	1	57	0.75	1.00	0.06	A
Flushing-bound East P2 Stair	10.1	8.8	4	49	0.75	0.90	0.06	A
Manhattan-bound West Ramp Passageway	17.6	15.6	89	7	0.75	0.90	0.03	A
Manhattan-bound East Ramp Passageway	19.6	17.6	46	12	0.75	0.90	0.02	A
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	212	196	0.90	0.90	0.49	B
Roosevelt Avenue (North) S2 Stair	8.0	6.8	35	27	0.90	0.90	0.07	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	247	223	0.90	0.90	0.32	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	3	84	0.75	1.00	0.09	A
Flushing-bound West P10 Stair	9.6	8.3	2	78	0.75	1.00	0.08	A
Flushing-bound East P4 Stair	9.9	8.7	5	105	0.75	1.00	0.11	A
Flushing-bound East P2 Stair	10.1	8.8	14	89	0.75	0.90	0.11	A
Manhattan-bound West Ramp Passageway	17.6	15.6	200	7	0.75	1.00	0.06	A
Manhattan-bound East Ramp Passageway	19.6	17.6	66	12	0.75	0.90	0.02	A
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	161	367	0.90	0.90	0.65	B
Roosevelt Avenue (North) S2 Stair	8.0	6.8	12	12	0.90	0.90	0.03	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	173	379	0.90	0.90	0.38	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	6	465	0.75	1.00	0.49	A
Flushing-bound West P10 Stair	9.6	8.3	4	494	0.75	1.00	0.53	B
Flushing-bound East P4 Stair	9.9	8.7	6	435	0.75	1.00	0.45	B
Flushing-bound East P2 Stair	10.1	8.8	9	280	0.75	1.00	0.29	A
Manhattan-bound West Ramp Passageway	17.6	15.6	173	23	0.75	0.90	0.06	A
Manhattan-bound East Ramp Passageway	19.6	17.6	73	29	0.75	0.90	0.03	A
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	146	479	0.90	0.90	0.77	C
Roosevelt Avenue (North) S2 Stair	8.0	6.8	6	10	0.90	0.90	0.02	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	152	489	0.90	0.90	0.45	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	4	324	0.75	1.00	0.34	A
Flushing-bound West P10 Stair	9.6	8.3	0	313	0.75	1.00	0.33	A
Flushing-bound East P4 Stair	9.9	8.7	4	498	0.75	1.00	0.51	B
Flushing-bound East P2 Stair	10.1	8.8	11	306	0.75	1.00	0.32	A
Manhattan-bound West Ramp Passageway	17.6	15.6	162	22	0.75	0.90	0.06	A
Manhattan-bound East Ramp Passageway	19.6	17.6	59	58	0.75	0.90	0.04	A

Table 14-120 (cont'd)

2018 With Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekend Post-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	311	156	0.90	0.90	0.55	B
Roosevelt Avenue (North) S2 Stair	8.0	6.8	18	7	0.90	0.90	0.03	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	329	163	0.90	0.90	0.33	A
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	384	43	0.75	0.90	0.38	A
Flushing-bound West P10 Stair	9.6	8.3	308	72	0.75	0.90	0.36	A
Flushing-bound East P4 Stair	9.9	8.7	354	49	0.75	0.90	0.36	A
Flushing-bound East P2 Stair	10.1	8.8	577	31	0.75	0.90	0.52	B
Manhattan-bound West Ramp Passageway	17.6	15.6	814	7	0.75	1.00	0.23	A
Manhattan-bound East Ramp Passageway	19.6	17.6	445	12	0.75	1.00	0.12	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>). $V/C \text{ Stairway} = [V_{in} / (150 * W_e * S_f * F_f)] + [V_x / (150 * W_e * S_f * F_f)]$ $V/C \text{ Passageway} = [V_{in} / (225 * W_e * S_f * F_f)] + [V_x / (225 * W_e * S_f * F_f)]$ Where Vin = Peak 15-minute entering passenger volume Vx = Peak 15-minute exiting passenger volume We = Effective width of stairs/passageways Sf = Surging factor (if applicable) Ff = Friction factor (if applicable)								

Table 14-121

2018 With Action Condition: Subway Station Control Area Analysis

Mets-Willets Point No. 7 Train Station Control Area Elements	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
Weekday AM Non-Game							
Main Control Area Turnstiles (R532)	5	128	186	0.80	0.90	0.15	A
Weekday PM Non-Game							
Main Control Area Turnstiles (R532)	5	282	346	0.80	0.90	0.30	A
Weekday Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	73	29	0.75	0.90	0.04	A
Manhattan-bound West Ramp Turnstiles	6	173	23	0.75	0.90	0.09	A
Flushing-bound East Stair Turnstiles	8	15	715	0.80	1.00	0.18	A
Flushing-bound West Stair Turnstiles	6	10	953	0.80	1.00	0.31	A
Weekend Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	59	58	0.75	0.90	0.04	A
Manhattan-bound West Ramp Turnstiles	6	162	22	0.75	0.90	0.08	A
Flushing-bound East Stair Turnstiles	8	14	794	0.80	1.00	0.20	A
Flushing-bound West Stair Turnstiles	6	3	625	0.80	1.00	0.20	A
Weekend Post-Game							
Manhattan-bound East Ramp Turnstiles	7	445	12	0.75	1.00	0.15	A
Manhattan-bound West Ramp Turnstiles	6	814	7	0.75	1.00	0.33	A
Flushing-bound East Stair Turnstiles	8	931	81	0.80	0.90	0.33	A
Flushing-bound West Stair Turnstiles	6	693	115	0.80	0.90	0.35	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff) Vin = Peak 15 Min Entering Passenger Volume Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers Vx = Peak 15- Minute Exiting Passenger Cx = Total 15-minute Capacity of all turnstile for exiting Passengers Sf = Surging Factor Ff = Friction Factor							

SUBWAY LINE HAUL LEVELS

Trips associated with the proposed project were ~~superimposed onto~~ added to the No Action line-haul volumes to generate the With Action peak period volumes for the subway line-haul analysis. Census data were reviewed to estimate directional travel patterns between Willets Point and Flushing and with various locations to the west. Ratios and trip distribution patterns of current subway trips originating in the area near the project site were developed based on information provided by NYCT, as summarized in **Table 14-122**. Although there are various uses planned for the District and Willets West, subway trip-making patterns during the commuter peak hours are likely to be similar for all uses. Hence, this set of trip distribution patterns was used for assigning all AM and PM peak hour project-generated subway trips to different segments of the No. 7 subway line.

Table 14-122
Distribution of Willets West and District Subway Trips

No. 7 Train Load	Percent of Total Trips
<i>Westbound Trips (from District)</i>	
Transfer to E/F/M/R	6%
Express Line-Haul @ Woodside	73%
Local Line-Haul @ 40th Street	12%
Transfer to SB N/Q @ Queensboro Plaza	19%
Transfer to SB 4/5 @ Grand Central	10%
Transfer to SB 6 @ Grand Central	6%
<i>Eastbound Trips (to District)</i>	
Transfer from NB 6 @ Grand Central	6%
Transfer from NB 4/5 @ Grand Central	10%
Transfer from NB N/Q @ Queensboro Plaza	19%
Combined Line-Haul East of Queensboro Plaza	85%
Transfer from E/F/M/R	6%
Sources: NYCT	

The projected peak hour subway trip increments at the peak load points for the No. 7, ~~the N, and the Q~~ subway lines, were superimposed onto added to the respective No Action line-haul volumes. As shown in **Table 14-123**, ~~with the overlay of these project-generated trips,~~ the No. 7 subway line would continue to operate within guideline capacity during the AM peak period for the Manhattan-bound local service and during the PM peak period for the Flushing-bound service. As with the 2018 No Action condition, the Manhattan-bound express service would continue to exceed the guideline capacity during the weekday AM peak period under the 2018 With Action condition. On average, the project-generated subway trips would add one passenger per car to the Manhattan-bound express line at the peak load point during the AM peak period, which is less than the *CEQR Technical Manual* impact threshold of five passengers per car. Hence, Phase 1A of the proposed project would not result in a significant adverse line-haul impact on the No. 7 line.

~~In addition, because NYCT expects that there would be notable transfer activities between the No. 7 line and the N/Q lines at the Queensboro Plaza subway station (across the platform transfers), a detailed examination of line-haul conditions on the N/Q lines will be prepared, in coordination with NYCT, for the Final EIS. However, since the estimated Phase 1A project-generated increments would be fewer than 5 persons per subway car (up to 108 passengers in 120 to 130 train cars) on the N/Q trains, Phase 1A of the proposed project would similarly not result in a significant adverse line-haul impact on the N/Q lines.~~

The N and the Q lines would continue to operate within guideline capacity during the PM peak hour. As with 2018 No Action condition, the N and the Q lines would continue to exceed the guideline

capacity during the weekday AM peak period under the 2018 With Action condition. On average, the project-generated subway trips would add one passenger per car to each of the N and the Q lines at the peak load point during the AM peak period, which is fewer than the *CEQR Technical Manual* impact threshold of five passengers per car. Therefore, Phase 1A (2018) of the proposed project would not result in a significant adverse line-haul impact on the N and the Q lines.

Table 14-123
2018 With Action Condition: Peak Hour Subway Line Haul

<u>Subway Lines</u> Direction of Travel	Station	Trains /Hour	Volume	Leave Load		Available Capacity
				Guideline Capacity	V/C Ratio	
AM Peak Period						
<u>No. 7</u> Manhattan-bound Express	Woodside–61st Street	15 14	19,526 17,358	18,150 16,940	1.08 1.02	-1,376 -418
<u>No. 7</u> Manhattan-bound Local	40th Street	14	15,232 13,436	16,940	0.90 0.79	1,708 3,504
<u>N</u> Manhattan-bound	<u>Queensboro Plaza</u>	8	13,515	11,600	1.17	-1,915
<u>Q (W)</u> Manhattan-bound ¹	<u>Queensboro Plaza</u>	8	12,788	11,600	1.10	-1,188
PM Peak Period						
<u>No. 7</u> Flushing-bound Express + Local	Queensboro Plaza	23 25	22,503 22,066	27,830 30,250	0.81 0.73	5,327 8,184
<u>N</u> Queens-bound	<u>Queensboro Plaza</u>	7	7,923	10,150	0.78	2,227
<u>Q (W)</u> Queens-bound ¹	<u>Queensboro Plaza</u>	7	6,731	10,150	0.66	3,419
Sources: New York City Transit						
Notes:						
For the AM peak hour, while a total of 29 trains would be expected to traverse the respective express and local peak load points, the total number of scheduled trains during this hour would be 28 trains.						
¹ W is a tentative designation for a line that would replace the Q service in Queens.						

BUS LINE HAUL LEVELS

As discussed above, although there would potentially be other bus routes serving the project site once development components of the proposed project are completed and occupied, the 2018 With Action analysis of potential bus line-haul impacts considers only the bus routes and stops that exist currently. Peak hour bus ridership levels were estimated by adding the incremental trips associated with the proposed project to bus stop locations along Roosevelt Avenue at 126th Street for the Q48 and to maximum load points along the Q19 and Q66. It was estimated that 40 to 60 percent of the bus trips would originate from Corona and the remaining 40 to 60 percent from Flushing. Bus trip assignments were divided into trips coming into and departing from Willets West and the District as follows:

- Into the project site traveling eastbound from Corona
 - 45 to 50 percent would take the Q48 along Roosevelt Avenue;
 - 45 to 50 percent would take the Q19 along Northern Boulevard; and
 - 70 to 75 percent would take the Q66 along Northern Boulevard.
- Into the project site traveling westbound from Flushing
 - 45 to 50 percent would take the Q48 along Roosevelt Avenue; and
 - 85 to 90 percent would take the Q66 along Northern Boulevard (As discussed, according to the MTA Bus Company, the westbound Q19 does not make a stop within the study area; therefore, no westbound trips were assigned to this route.).
- Out from the project site traveling westbound to Corona

- 18 percent would take Q48 along Roosevelt Avenue (this includes 9 percent that would transfer to Q19 outside the study area); and
- 42 percent would take Q66 along Northern Boulevard.
- Out from the project site traveling eastbound to Flushing
 - 6 percent would take Q48 along Roosevelt Avenue;
 - 28 percent would take Q66 along Northern Boulevard; and
 - 6 percent would take Q19 along Northern Boulevard.

As described above, impacts to bus line-haul levels would be considered significant if a proposed action would result in operating conditions above guideline capacities. As shown in **Table 14-124**, all three bus routes would continue to operate within guideline capacity (54 passengers per bus) during the AM and PM peak period under the 2018 With Action condition. Hence, Phase 1A of the proposed project would not result in a significant adverse impact on bus line-haul conditions.

Table 14-124

2018 With Action Condition: Bus Line Haul at NYCT Maximum and District Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Load Point	AP		Load Point	AP
Q19	AM	3	Astoria Blvd/ 102nd St	50	3	Astoria Blvd/ 77th St	49
	PM	3	Astoria Blvd/ 94th St	47	3	Astoria Blvd/Humphrey St	54
Q48	AM	5	Roosevelt at 126th	38	3	Roosevelt at 126th	15
	PM	5	Roosevelt at 126th	41	5	Roosevelt at 126th	48
Q66 (to Woodside and LIC)	AM	15	Northern Blvd/ 110th St	54	14	Northern Blvd/ 72nd St	51
	PM	10	Northern Blvd/ 110th St	48	10	Northern Blvd/ 106th St	50
Note: AP = average passengers per bus; (#) = exceeds NYCT guideline capacity Source: Q48 ridership data provided by NYCT; Q19 and Q66 ridership data provided by the MTA Bus Company							

STREET-LEVEL PEDESTRIAN OPERATIONS

As described above under “Changes in the Pedestrian Environment,” the east side of 126th Street would be developed with larger pedestrian circulation areas. In accordance with the District’s design guidelines, the at-grade sidewalks would be at least 15 feet wide. Adjacent to these sidewalks would be plazas of 20 to 35 feet wide. These plazas would provide additional outdoor activity areas and serve as transitions to the building façade and entrances located several feet above grade. Based on current illustrative designs of these pedestrian circulation areas, the at-grade sidewalks are expected to provide a minimum clear path of 10 feet while the elevated plazas would provide a minimum clear path of 8 feet. Since pedestrians are expected to use both pedestrian areas to traverse the east side of 126th Street, the analyses presented herein conservatively accounted for an effective “sidewalk” width of 10 feet within the cumulative 18 feet of clear path.

In addition, related pedestrian analyses were prepared for the three intersections (126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place) where additional traffic analyses were conducted and presented in this Final SEIS.

The study area sidewalks, corner reservoirs, and crosswalks were assessed for the weekday AM, midday, PM, and pre-game peak periods, as well as, the weekend midday non-game, pre-game, and post-game peak periods by superimposing project-generated trips onto the No Action pedestrian analysis networks. The 2018 With Action peak hour pedestrian volumes are shown in

Appendix D. As shown in **Tables 14-125** through **14-127**, all sidewalks and corner reservoirs would continue to operate at acceptable levels (within mid-LOS D, with a maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners) or incur degradations that, when compared to the No Action condition, do not exceed the *CEQR Technical Manual* sliding scale impact thresholds (See **Tables 14-81** and **14-82**). However, as shown in **Tables 14-128** and **14-129**, several study area crosswalks would operate beyond mid-LOS D (less than 19.5 SFP) and incur degradations that, when compared to the No Action condition, would exceed the *CEQR Technical Manual* sliding scale impact thresholds. These significant adverse pedestrian impacts are detailed below. Measures that can potentially mitigate these impacts are discussed in Chapter 21; “Mitigation.”

Northern Boulevard and 126th Street

- The east crosswalk would deteriorate to beyond mid-LOS D (15.6 SFP) from a No Action LOS A (5699.3 SFP), LOS E (14.0 SFP) from a No Action LOS A (5584.8 SFP), beyond mid-LOS D (16.1 SFP) from a No Action LOS A (625.9 SFP), LOS E (11.7 SFP) from a No Action LOS A (1695.1 SFP), LOS E (14.7 SFP) from a No Action LOS A (1095.3 SFP), and to LOS E (10.7 SFP) from a No Action LOS A (136.4 SFP) during the weekday midday, weekday PM, weekday pre-game, weekend midday non-game, weekend pre-game, and weekend post-game peak periods, respectively.

Roosevelt Avenue and 126th Street

- The west crosswalk would deteriorate to LOS F (-67.6 SFP) from a No Action LOS A (194.6 SFP) during the weekend post-game peak period.

34th Avenue and 126th Street

- The north crosswalk would deteriorate to beyond mid-LOS D (17.9 SFP) from a No Action LOS A (2714.0 SFP) during the weekend non-game peak period.
- The south crosswalk would deteriorate to beyond mid-LOS D (16.5 SFP) from a No Action LOS A (5848.7 SFP), beyond mid-LOS D (18.1 SFP) from a No Action LOS A (3183.4 SFP), LOS E (11.8 SFP) from a No Action LOS A (1217.7 SFP), and to LOS E (14.1 SFP) from a No Action LOS D (23.0 SFP) during the weekday midday, weekday PM, weekend midday non-game, and weekend pre-game peak periods, respectively.
- The east crosswalk would deteriorate to LOS E (10.4 SFP) from a No Action LOS A (80.0 SFP), LOS E (14.3 SFP) from a No Action LOS A (820.4 SFP), and to LOS E (11.4 SFP) from a No Action LOS A (9927.5 SFP) during the weekday pre-game, weekend midday non-game, and weekend pre-game peak periods, respectively.

37th Avenue and 126th Street

- The north crosswalk would operate at LOS E (8.2 SFP), LOS E (8.6 SFP), and LOS D (18.4 SFP) during the weekday pre-game, weekend pre-game, and weekend post-game peak periods, respectively.
- The south crosswalk would operate at LOS E (8.6 SFP) and LOS E (9.3 SFP) during the weekday pre-game and weekend pre-game peak periods, respectively.

The significant adverse pedestrian impacts detailed above for the 2018 analysis year are summarized in **Table 14-130**.

Table 14-125

2018 With Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday AM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	94	0.81	0.19	A
	West	6.0	3	0.80	0.01	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	62	0.91	0.07	A
	South	12.5	40	0.80	0.07	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	136	0.80	0.23	A
	South	11.5	85	0.80	0.15	A
34th Avenue between 126th Street and 126th Place	North	11.5	9	0.80	0.02	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	395	0.80	0.82	B
	West	8.0	6	0.80	0.02	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	218	0.80	0.48	A
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	91	0.80	0.27	A
	South	8.5	95	0.80	0.23	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	91	0.80	0.15	A
	South	13.0	89	0.83	0.14	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	66	0.80	0.28	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	21	0.80	0.07	A
Weekday Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	260	0.80	0.54	B
	West	6.0	10	0.80	0.03	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	124	0.80	0.17	A
	South	12.5	97	0.80	0.16	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	250	0.80	0.42	A
	South	11.5	164	0.80	0.30	A
34th Avenue between 126th Street and 126th Place	North	11.5	23	0.80	0.04	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1126	0.80	2.35	B
	West	8.0	19	0.80	0.05	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	626	0.80	1.37	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	132	0.80	0.39	A
	South	8.5	42	0.80	0.10	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	87	0.80	0.15	A
	South	13.0	60	0.80	0.10	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	98	0.80	0.41	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	32	0.80	0.11	A
Weekday PM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	191	0.80	0.40	A
	West	6.0	13	0.80	0.05	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	99	0.80	0.13	A
	South	12.5	79	0.80	0.13	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	237	0.80	0.40	A
	South	11.5	168	0.80	0.30	A
34th Avenue between 126th Street and 126th Place	North	11.5	28	0.80	0.05	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1155	0.80	2.41	B
	West	8.0	23	0.80	0.06	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	617	0.80	1.35	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	125	0.80	0.37	A
	South	8.5	55	0.80	0.13	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	105	0.80	0.18	A
	South	13.0	74	0.80	0.12	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	74	0.80	0.31	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	50	0.80	0.17	A

Table 14-125 (cont'd)

2018 With Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

(Location)	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	200	0.80	0.42	A
	West	6.0	194	0.83	0.65	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	169	0.88	0.21	A
	South	12.5	110	0.80	0.18	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	212	0.80	0.35	A
	South	11.5	171	0.82	0.30	A
34th Avenue between 126th Street and 126th Place	North	11.5	117	0.80	0.21	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1090	0.80	2.27	B
	West	8.0	52	0.80	0.14	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	726	0.80	1.59	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	422	0.80	1.26	B
	South	8.5	197	0.80	0.48	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	263	0.82	0.43	A
	South	13.0	99	0.80	0.16	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	226	0.86	0.88	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	162	0.80	0.56	B
Note: PMF = pedestrians per minute per foot.						

Table 14-126

2018 With Action Condition: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	214	0.80	0.45	A
	West	6.0	11	0.80	0.04	A
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	179	0.80	0.24	A
	South	12.5	108	0.80	0.18	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	326	0.82	0.53	B
	South	11.5	220	0.80	0.40	A
34th Avenue between 126th Street and 126th Place	North	11.5	56	0.80	0.10	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1584	0.80	3.30	C
	West	8.0	30	0.80	0.08	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	876	0.80	1.92	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	236	0.85	0.66	B
	South	8.5	167	0.80	0.41	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	145	0.89	0.22	A
	South	13.0	139	0.80	0.22	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	109	0.80	0.45	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	65	0.80	0.23	A
Weekend Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	173	0.80	0.36	A
	West	6.0	278	0.80	0.88	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	182	0.80	0.24	A
	South	12.5	198	0.80	0.33	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	228	0.85	0.36	A
	South	11.5	232	0.80	0.42	A
34th Avenue between 126th Street and 126th Place	North	11.5	55	0.80	0.10	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1376	0.80	2.87	B
	West	8.0	49	0.80	0.13	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	785	0.93	1.49	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	398	0.87	1.09	B
	South	8.5	255	0.80	0.63	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	174	0.86	0.27	A
	South	13.0	109	0.80	0.17	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	257	0.80	1.07	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	82	0.80	0.28	A
Weekend Post-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	520	0.80	1.08	B
	West	6.0	852	0.80	2.96	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	216	0.80	0.29	A
	South	12.5	189	0.80	0.32	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	256	0.80	0.43	A
	South	11.5	249	0.80	0.45	A
34th Avenue between 126th Street and 126th Place	North	11.5	35	0.80	0.06	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1478	0.80	3.08	C
	West	8.0	58	0.80	0.15	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1000	0.80	2.19	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	720	0.80	2.14	B
	South	8.5	254	0.80	0.62	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	271	0.80	0.45	A
	South	13.0	84	0.80	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	421	0.80	1.75	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	143	0.80	0.50	A
Note: PMF = pedestrians per minute per foot.						

Table 14-127

2018 With Action Condition: Pedestrian LOS Analysis for Corners

Location	Corner	Weekday								Weekend					
		AM		Midday		PM		Pre-Game		Midday Non-Game		Pre-Game		Post-Game	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Roosevelt Avenue and 126th Street	Northwest	1110.3	A	616.9	A	689.6	A	616.1	A	528.3	A	585.0	A	434.0	A
	Northeast	1487.0	A	508.2	A	648.3	A	729.0	A	559.4	A	666.2	A	518.4	A
Roosevelt Avenue and 114th Street	Northwest	1473.1	A	1093.5	A	1213.0	A	334.4	A	728.9	A	396.6	A	212.6	A
	Southwest	1039.0	A	929.8	A	733.4	A	309.7	A	396.2	A	364.5	A	316.9	A

Note: SFP = square feet per pedestrian.

Table 14-128

2018 With Action Condition: Weekday Pedestrian LOS Analysis for Crosswalks

Location	Cross walk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles											
				Weekday AM			Weekday Midday			Weekday PM			Weekday Pre-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	96	<u>794.4</u> <u>793.7</u>	A	232	<u>289.3</u> <u>288.8</u>	A	203	<u>319.7</u> <u>319.2</u>	A	200	<u>261.4</u> <u>261.1</u>	A
	East	43.0	14.0	14	1054.4	A	63	211.5	A	38	336.7	A	22	638.4	A
	South	50.0	13.0	33	1870.9	A	76	800.7	A	61	1010.6	A	102	607.9	A
	West	43.0	13.5	8	2084.0	A	12	1230.3	A	10	1530.2	A	44	334.7	A
34th Avenue and 126th Street	North	81.0	12.5	89	98.1	A	259	25.8	C	280	21.4	D	275	67.9	A
	East	43.0	7.0	286	74.3	A	872	20.8	D	867	21.2	D	948	10.4	E+
	South	61.0	10.5	88	60.9	A	260	16.5	D+	278	18.1	D+	398	23.8	D
Northern Boulevard and 126th Street	West	47.5	12.5	6	6444.5	A	18	2047.8	A	25	1431.8	A	64	325.7	A
	East	43.5	14.0	162	71.0	A	512	15.6	D+	523	14.0	E+	466	16.1	D+
Roosevelt Avenue and 114th Street	South	51.0	15.0	13	6272.3	A	19	4289.6	A	26	3133.2	A	51	1592.6	A
	North	41.0	12.5	74	875.4	A	101	546.7	A	95	607.1	A	360	133.2	A
	East	44.0	11.0	20	495.1	A	38	291.9	A	45	166.6	A	63	131.4	A
	South	32.5	12.0	85	652.9	A	83	621.2	A	103	460.5	A	234	196.0	A
37th Avenue and 126th Street	West	43.0	13.0	13	1464.4	A	18	1177.3	A	20	969.2	A	54	339.0	A
	North	<u>50.0</u>	<u>15.0</u>	<u>38</u>	<u>610.5</u>	A	<u>115</u>	<u>184.6</u>	A	<u>125</u>	<u>179.3</u>	A	<u>1181</u>	<u>8.2</u>	<u>E+</u>
36th Avenue and 126th Street	South	<u>50.0</u>	<u>15.0</u>	<u>38</u>	<u>592.9</u>	A	<u>109</u>	<u>214.1</u>	A	<u>117</u>	<u>199.4</u>	A	<u>1175</u>	<u>8.6</u>	<u>E+</u>
	North	<u>50.0</u>	<u>15.0</u>	<u>35</u>	<u>1053.4</u>	A	<u>103</u>	<u>349.7</u>	A	<u>113</u>	<u>304.5</u>	A	<u>109</u>	<u>168.3</u>	A
36th Avenue and 126th Street	South	<u>50.0</u>	<u>15.0</u>	<u>34</u>	<u>1101.6</u>	A	<u>99</u>	<u>369.7</u>	A	<u>106</u>	<u>345.3</u>	A	<u>105</u>	<u>181.7</u>	A

Notes: SFP = square feet per pedestrian.

+ Denotes a significant adverse impact.

Table 14-129

2018 With Action Condition: Weekend Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles								
				Weekend Midday Non-Game			Weekend Pre-Game			Weekend Post-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	255	258.8 258.4	A	186	267.2 266.9	A	224	327.6 327.4	A
	East	43.0	14.0	47	282.6	A	36	433.7	A	47	178.2	A
	South	50.0	13.0	107	576.2	A	188	325.7	A	177	350.1	A
	West	43.0	13.5	16	887.0	A	68	161.2	A	74	-67.6	F+
34th Avenue and 126th Street	North	81.0	12.5	397	17.9	D+	504	34.1	C	820	6.9	F
	East	43.0	7.0	1209	14.3	E+	850	11.4	E+	692	31.4	C
	South	61.0	10.5	398	11.8	E+	481	14.1	E+	586	9.95	E
	West	47.5	12.5	34	1068.0	A	53	366.1	A	199	128.0	A
Northern Boulevard and 126th Street	East	43.5	14.0	731	11.6 11.7	E+	529	14.7	E+	503	10.7	E+
	South	51.0	15.0	33	2467.3	A	34	2394.1	A	31	2626.2	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	168	284.4	A	274	168.6	A	610	62.3	A
	East	44.0	11.0	67	104.4	A	77	69.0	A	78	111.6	A
	South	32.5	12.0	198	237.1	A	183	252.1	A	183	256.3	A
	West	43.0	13.0	32	596.5	A	65	266.5	A	91	191.7	A
37th Avenue and 126th Street	North	50.0	15.0	176	122.5	A	1112	8.6	E+	1765	18.4	D+
	South	50.0	15.0	166	139.2	A	1107	9.3	E+	1757	22.8	D
36th Avenue and 126th Street	North	50.0	15.0	159	220.0	A	120	106.9	A	105	358.3	A
	South	50.0	15.0	152	239.0	A	117	119.6	A	101	470.6	A

Notes: SFP = square feet per pedestrian.
+ Denotes a significant adverse impact.

Table 14-130

Summary of 2018 Significant Adverse Transit and Pedestrian Impacts

Analysis Element		Analysis Time Period						
		Weekday				Weekend		
		AM	Midday	PM	Pre-Game	Midday	Pre-Game	Post-Game
Pedestrian Impacts								
Northern Blvd & 126th St	E Crosswalk		X	X	X	X	X	X
Roosevelt Ave & 126th St	W Crosswalk							X
34th Ave & 126th St	N Crosswalk					X		
	S Crosswalk		X	X		X	X	
	E Crosswalk				X	X	X	
37th Avenue & 126th Street	N Crosswalk				X		X	X
	S Crosswalk				X		X	

Notes: X = Significantly Impacted

2028 WITH ACTION CONDITION

TRIP DISTRIBUTION AND ASSIGNMENT

Transit and pedestrian volumes for the 2028 With Action condition were estimated by overlaying peak hour volumes derived from the trip generation estimates presented in the “Traffic and Parking” section onto the No Action analysis networks. These volumes were then assigned to the transit and pedestrian analysis locations based on the following assumptions.

- As detailed above under “2018 With Action Condition,” automobile and taxi person trips associated with the District are expected to have a negligible effect on the pedestrian network, since both would be dispersed throughout the District east of 126th Street, and the associated pedestrian trips, which would mostly occur in the District itself, would traverse a

limited number of the pedestrian elements included for analysis. The Willets West development would have an on-site parking garage for autos and a designated taxi drop-off/pick-up area, and therefore, no auto and taxi trips associated with Willets West would traverse any of the pedestrian elements included for analysis. Prior to or during the development of Phase 1B uses in the District, the 2,750-space interim surface parking lot constructed in Phase 1A would be eliminated and replaced by two additional CitiField parking garages south of Roosevelt Avenue, within the current South Lot and Lot D. Therefore, the CitiField patrons who would park within the interim surface parking lot in the District in Phase 1A would instead park within South Lot/Lot D and no longer need to traverse the pedestrian study area in Phase 1B. As in Phase 1A, CitiField patrons who park in the new South Lot/Lot D garages would connect with CitiField via the Met-Willets Point subway station, as they do currently during game days, and would not traverse any of the pedestrian elements included for analysis. As noted for the 2018 With Action analysis, NYCT may ultimately decide to revert back to its pre-CitiField station operating plan. Under this operating plan, the station would function during Met games as it would on non-game days—the wider portion of the mezzanine, which is within the paid zone on most occasions but currently is converted to an unpaid zone during games would be kept as a part of the paid zone at all times. The unpaid corridor at the western end of the mezzanine would remain unpaid at all times and thus could serve as a means of crossing Roosevelt Avenue through the station. If this plan is implemented, NYCT would reposition the agent booth in the unpaid zone to provide added circulation space in the corridor.

- Subway trips were assigned to the Mets-Willets Point subway station. The assignments to specific stairways were based on logical patterns of travel to/from the subway station and Willets West and the District.
- Based on existing ridership patterns, bus trips were assigned to the study area bus routes as follows: 15 percent to the Q19, 70 percent to the Q66, and 15 percent to the Q48 bus routes. Assignments on these bus routes were made with logical origins and destinations. As with the analysis prepared for Phase 1A, the allocation of projected bus trips conservatively does not assume other potential service improvements, such as new bus routes or extension of existing bus routes.
- Walk-only trips, primarily within the District, were evenly distributed to the surrounding street network. As detailed above under “2018 With Action Condition,” a higher percentage of walk only trips in Phase 1B would be generated by other uses within the District, resulting in an increased internal trip capture percentage and a lower percentage of trips originating from Corona and Flushing. As a result of the increased internal capture percentage, a high number of walk-only trips generated by uses in the District would not appear on any of the pedestrian elements included for analysis. The walk-only trip assignments for Willets West during Phase 1B would be the same as those described for Phase 1A.

CHANGES IN THE PEDESTRIAN ENVIRONMENT

In addition to the geometric changes identified above under “2018 With Action Condition” and the completion of numerous internal roadways within the District to serve the future Phase 1B uses, Willets Point Boulevard would be realigned and change its intersection with 126th Street from its existing location at Roosevelt Avenue to a new location further north at approximately the same location as existing 38th Avenue. This change, along with the build-out of Phase 1B’s southern development components, would also necessitate the reconfiguration of the Roosevelt Avenue and 126th Street intersection’s northeast corner.

SUBWAY STATION OPERATIONS

Phase 1B project-generated subway trips were added to the 2028 No Action volumes in the same manner as described for Phase 1A. As shown in **Tables 14-131** and **14-132**, all analyzed stairways and ramps and control areas would continue to operate at acceptable levels. Therefore, the proposed project would not result in any significant adverse subway station impacts under the 2028 With Action condition. However, as with the 2018 With Action condition, if NYCT decides to proceed with the reconfiguration of the Mets-Willets Point subway station, which

Table 14-131

2028 With Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday AM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	182	153	0.90	0.90	0.40	A
Roosevelt Avenue (North) S2 Stair	8.0	6.8	209	167	0.90	0.90	0.43	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	391	320	0.90	0.90	0.48	B
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	5	103	0.75	1.00	0.11	A
Flushing-bound West P10 Stair	9.6	8.3	5	94	0.75	0.90	0.12	A
Flushing-bound East P4 Stair	9.9	8.7	4	111	0.75	1.00	0.12	A
Flushing-bound East P2 Stair	10.1	8.8	11	97	0.75	0.90	0.12	A
Manhattan-bound West Ramp Passageway	17.6	15.6	270	11	0.75	1.00	0.08	A
Manhattan-bound East Ramp Passageway	19.6	17.6	148	19	0.75	0.90	0.05	A
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	313	337	0.90	0.90	0.78	C
Roosevelt Avenue (North) S2 Stair	8.0	6.8	259	252	0.90	0.90	0.59	B
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	572	589	0.90	0.90	0.79	C
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	5	162	0.75	1.00	0.17	A
Flushing-bound West P10 Stair	9.6	8.3	3	152	0.75	1.00	0.16	A
Flushing-bound East P4 Stair	9.9	8.7	9	207	0.75	1.00	0.22	A
Flushing-bound East P2 Stair	10.1	8.8	23	176	0.75	0.90	0.22	A
Manhattan-bound West Ramp Passageway	17.6	15.6	413	14	0.75	1.00	0.12	A
Manhattan-bound East Ramp Passageway	19.6	17.6	138	23	0.75	0.90	0.05	A
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	222	471	0.90	0.90	0.85	C
Roosevelt Avenue (North) S2 Stair	8.0	6.8	139	202	0.90	0.90	0.40	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	361	673	0.90	0.90	0.71	C
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	8	550	0.75	1.00	0.58	B
Flushing-bound West P10 Stair	9.6	8.3	6	584	0.75	1.00	0.63	B
Flushing-bound East P4 Stair	9.9	8.7	8	519	0.75	1.00	0.54	B
Flushing-bound East P2 Stair	10.1	8.8	12	327	0.75	1.00	0.34	A
Manhattan-bound West Ramp Passageway	17.6	15.6	298	29	0.75	0.90	0.11	A
Manhattan-bound East Ramp Passageway	19.6	17.6	127	38	0.75	0.90	0.05	A
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	213	561	0.90	0.90	0.95	C
Roosevelt Avenue (North) S2 Stair	8.0	6.8	147	154	0.90	0.90	0.35	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	360	715	0.90	0.90	0.74	C
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	6	380	0.75	1.00	0.40	A
Flushing-bound West P10 Stair	9.6	8.3	0	365	0.75	1.00	0.39	A
Flushing-bound East P4 Stair	9.9	8.7	6	584	0.75	1.00	0.60	B
Flushing-bound East P2 Stair	10.1	8.8	17	359	0.75	1.00	0.37	A
Manhattan-bound West Ramp Passageway	17.6	15.6	317	24	0.75	0.90	0.11	A
Manhattan-bound East Ramp Passageway	19.6	17.6	114	69	0.75	0.90	0.06	A

Table 14-131 (cont'd)

2028 With Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekend Post-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	392	229	0.90	0.90	0.74	C
Roosevelt Avenue (North) S2 Stair	8.0	6.8	153	134	0.90	0.90	0.33	A
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	545	363	0.90	0.90	0.61	B
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	396	86	0.75	0.90	0.44	A
Flushing-bound West P10 Stair	9.6	8.3	317	141	0.75	0.90	0.45	A
Flushing-bound East P4 Stair	9.9	8.7	364	97	0.75	0.90	0.42	A
Flushing-bound East P2 Stair	10.1	8.8	595	62	0.75	0.90	0.57	B
Manhattan-bound West Ramp Passageway	17.6	15.6	964	11	0.75	1.00	0.28	A
Manhattan-bound East Ramp Passageway	19.6	17.6	524	18	0.75	1.00	0.14	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>). $V/C \text{ Stairway} = [V_{in} / (150 * W_e * S_f * F_f)] + [V_x / (150 * W_e * S_f * F_f)]$ $V/C \text{ Passageway} = [V_{in} / (225 * W_e * S_f * F_f)] + [V_x / (225 * W_e * S_f * F_f)]$ Where Vin = Peak 15-minute entering passenger volume Vx = Peak 15-minute exiting passenger volume We = Effective width of stairs/passageways Sf = Surging factor (if applicable) Ff = Friction factor (if applicable)								

Table 14-132

2028 With Action Condition: Subway Station Control Area Analysis

Mets-Willels Point No. 7 Train Station Control Area Elements	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
Weekday AM Non-Game							
Main Control Area Turnstiles (R532)	5	431	378	0.80	0.90	0.39	A
Weekday PM Non-Game							
Main Control Area Turnstiles (R532)	5	602	707	0.80	0.90	0.62	B
Weekday Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	127	38	0.75	0.90	0.06	A
Manhattan-bound West Ramp Turnstiles	6	298	29	0.75	0.90	0.14	A
Flushing-bound East Stair Turnstiles	8	22	849	0.80	1.00	0.21	A
Flushing-bound West Stair Turnstiles	6	13	1115	0.80	1.00	0.37	A
Weekend Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	114	69	0.75	0.90	0.07	A
Manhattan-bound West Ramp Turnstiles	6	317	24	0.75	0.90	0.15	A
Flushing-bound East Stair Turnstiles	8	21	921	0.80	1.00	0.23	A
Flushing-bound West Stair Turnstiles	6	5	719	0.80	1.00	0.23	A
Weekend Post-Game							
Manhattan-bound East Ramp Turnstiles	7	524	18	0.75	1.00	0.18	A
Manhattan-bound West Ramp Turnstiles	6	963	11	0.75	1.00	0.39	A
Flushing-bound East Stair Turnstiles	8	961	159	0.80	0.90	0.36	A
Flushing-bound West Stair Turnstiles	6	714	227	0.80	0.90	0.40	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). V/C =Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff) Vin = Peak 15 Min Entering Passenger Volume Cin= Total 15-Minute Capacity of all turnstiles for entering Passengers Vx = Peak 15- Minute Exiting Passenger Cx = Total 15-minute Capacity of all turnstile for exiting Passengers Sf = Surging Factor Ff= Friction Factor							

would take place independent of the proposed project, additional interagency coordination is expected to take place to develop the appropriate game-day management strategies. For purposes of disclosure in this Draft SEIS, any impacts that may be attributed to future passage of the reconfigured station may potentially be deemed unmitigatable.

SUBWAY LINE HAUL LEVELS

As described for the 2018 With Action condition, the projected peak hour subway trip increments were distributed to the peak load points on the No.7, the N, and the Q subway lines based on information provided by NYCT and ~~superimposed onto~~ added to the respective No Action line-haul volumes. As shown in **Table 14-133**, ~~with the overlay of these project-generated trips~~, the No. 7 subway line would continue to operate within guideline capacity during the AM peak period for the Manhattan-bound local service and during the PM peak period for the Flushing-bound service. As with the 2028 No Action condition, the Manhattan-bound express service would continue to exceed the guideline capacity during the weekday AM peak period under the 2028 With Action condition. On average, the project-generated subway trips would add just ~~under over~~ five passengers per car to the Manhattan-bound express line at the peak load point during the AM peak period, which is ~~less~~ more than the *CEQR Technical Manual* impact threshold of five passengers per car. Hence, Phase 1B of the proposed project would ~~not~~ result in a significant adverse line-haul impact on the No. 7 line.

It should be noted that in the event NYCT is able to process one additional express train Manhattan-bound during the AM peak hour, as assumed in the DSEIS, the above significant adverse line-haul impact on the No. 7 line would not occur. Also as discussed, the City had consulted with the MTA on extending regular LIRR service to Willets Point when the actual demand shows that such service improvement is warranted. The addition of regular LIRR service to Willets Point would provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent additional train service or the introduction of new LIRR service to the area.

~~In addition, because NYCT expects that there would be notable transfer activities between the No. 7 line and the N/Q lines at the Queensboro Plaza subway station (across the platform transfers), a detailed examination of line-haul conditions on the N/Q lines will be prepared, in coordination with NYCT, for the Final EIS. However, since the estimated Phase 1B project-generated increments would be fewer than 5 persons per subway car (up to 319 passengers in 120 to 130 train cars) on the N/Q trains, Phase 1B of the proposed project would similarly not result in a significant adverse line-haul impact on the N/Q lines.~~

Similar to the 2028 No Action condition, the N and the Q lines would continue to operate within guideline capacity during the PM peak hour and exceed the guideline capacity during the weekday AM peak period under the 2028 With Action condition. On average, the project-generated subway trips would add two passengers per car to each of the N and the Q lines at the peak load point during the AM peak period, which is fewer than the *CEQR Technical Manual* impact threshold of five passengers per car. Therefore, Phase 1B (2028) of the proposed project would not result in a significant adverse line-haul impact on the N and the Q lines.

Table 14-133

2028 With Action Condition: Peak Hour Subway Line Haul

Subway Lines Direction of Travel	Station	Trains/ Hour	Volume	Leave Load		Available Capacity
				Guideline Capacity	V/C Ratio	
AM Peak Period						
No. 7 Manhattan-bound Express	Woodside–61st Street	45 14	20,723 18,500	48,150 16,940	1.14 1.09	-2,573 -1,560
No. 7 Manhattan-bound Local	40th Street	14	45,732 13,891	16,940	0.93 0.82	1,208 3,049
N Manhattan-bound	Queensboro Plaza	8	13,611	11,600	1.17	-2,011
Q (W) Manhattan-bound ¹	Queensboro Plaza	8	12,884	11,600	1.11	-1,284
PM Peak Period						
No. 7 Flushing-bound Express + Local	Queensboro Plaza	23 25	23,977 23,529	27,830 30,250	0.86 0.78	3,853 6,721
N Queens-bound	Queensboro Plaza	7	8,029	10,150	0.79	2,121
Q (W) Queens-bound ¹	Queensboro Plaza	7	6,837	10,150	0.67	3,313
Sources: New York City Transit						
Notes:						
For the AM peak hour, while a total of 29 trains would be expected to traverse the respective express and local peak load points, the total number of scheduled trains during this hour would be 28 trains.						
¹ W is a tentative designation for a line that would replace the Q service in Queens.						

BUS LINE HAUL LEVELS

As with the 2018 With Action condition analysis, no potential new or extended bus routes serving the project site were assumed in the 2028 (Phase 1B) bus line-haul analysis. Peak hour bus ridership levels were estimated by adding the incremental trips associated with the proposed project to bus stop locations along Roosevelt Avenue at 126th Street for the Q48 and to maximum load points along the Q19 and Q66. Impacts to bus line-haul levels would be considered significant if a proposed action would result in operating conditions above guideline capacities. As shown in **Table 14-134**, the eastbound and westbound Q48 would continue to operate within guideline capacity (54 passengers per bus) during the AM peak period but would operate above the guideline capacity during the PM peak period. The eastbound and westbound Q19 and Q66 would operate above guideline capacity during both the AM and PM peak periods. These projected increases in bus ridership beyond guideline capacities constitute significant adverse bus line-haul impacts.

Table 14-134

2028 With Action Condition: Bus Line Haul at NYCT Maximum and District Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Load Point	AP		Load Point	AP
Q19	AM	3	Astoria Blvd/ 102nd St	(65)	3	Astoria Blvd/ 77th St	(61)
	PM	3	Astoria Blvd/ 94th St	(69)	3	Astoria Blvd/Humphrey St	(80)
Q48	AM	5	Roosevelt at 126th	47	3	Roosevelt at 126th	29
	PM	5	Roosevelt at 126th	(63)	5	Roosevelt at 126th	(79)
Q66 (to Woodside and LIC)	AM	15	Northern Blvd/ 110th St	(68)	14	Northern Blvd/ 72nd St	(64)
	PM	10	Northern Blvd/ 110th St	(78)	10	Northern Blvd/ 106th St	(87)
Note: AP = average passengers per bus; (#) = exceeds NYCT guideline capacity Source: Q48 ridership data provided by NYCT; Q19 and Q66 ridership data provided by the MTA Bus Company							

Potential measures to mitigate the significant adverse bus line-haul impacts include scheduling additional buses to increase capacity. NYCT routinely monitors changes in bus ridership and would make the necessary service adjustments where warranted. These service adjustments are

subject to fiscal and operational constraints and, if implemented, are expected to occur over time. These measures are discussed in greater detail in Chapter 21, “Mitigation.”

STREET-LEVEL PEDESTRIAN OPERATIONS

The study area sidewalks, corner reservoirs, and crosswalks were assessed for the weekday AM, midday, PM, and pre-game peak periods, as well as, the weekend midday non-game, pre-game, and post-game peak periods by superimposing project-generated trips onto the No Action pedestrian analysis networks. The 2028 With Action peak hour pedestrian volumes are shown in **Appendix D**. As shown in **Tables 14-135** through **14-137**, all sidewalks and corner reservoirs would continue to operate at acceptable levels (within mid-LOS D, with a maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners) or incur degradations that, when compared to the No Action condition, do not exceed the *CEQR Technical Manual* sliding scale impact thresholds (See **Tables 14-81** and **14-82**). However, as shown in **Tables 14-138** and **14-139**, several study area crosswalks would operate beyond mid-LOS D (less than 19.5 SFP) and incur degradations that, when compared to the No Action condition, would exceed the *CEQR Technical Manual* sliding scale impact thresholds. These significant adverse pedestrian impacts are detailed below. Measures that can potentially mitigate these impacts are discussed in Chapter 21, “Mitigation.”

Northern Boulevard and 126th Street

- The east crosswalk would deteriorate to LOS F (4.9 SFP) from a No Action LOS A (5656.4 SFP), LOS F (4.8 SFP) from a No Action LOS A (5527.5 SFP), LOS F (6.5 SFP) from a No Action LOS A (584.6 SFP), LOS F (4.7 SFP) from a No Action LOS A (1681.7 SFP), LOS F (5.7 SFP) from a No Action LOS A (1086.8 SFP), and to LOS F (-2.7 SFP) from a No Action LOS A (130.4 SFP) during the weekday midday, weekday PM, weekday pre-game, weekend midday non-game, weekend pre-game, and weekend post-game peak periods, respectively.

Roosevelt Avenue and 126th Street

- The west crosswalk would deteriorate to LOS F (-40.9 -22.6 SFP) from a No Action LOS A (152.5 SFP) and to LOS F (-34.7 -22.4 SFP) from a No Action LOS A (103.2 SFP) during the weekday pre-game and weekend pre-game peak periods, respectively.

34th Avenue and 126th Street

- The north crosswalk would deteriorate to beyond mid-LOS D (16.2 SFP) from a No Action LOS A (2139.3 SFP), and to LOS E (13.7 SFP) from a No Action LOS A (2704.6 SFP) during the weekday PM and weekend non-game peak periods, respectively.
- The south crosswalk would deteriorate to LOS E (9.9 SFP) from a No Action LOS A (5783.6 SFP), LOS E (14.7 SFP) from a No Action LOS A (3158.9 SFP), LOS E (8.4 SFP) from a No Action LOS A (1207.9 SFP), and to beyond mid-LOS D (19.1 SFP) from a No Action LOS D (21.9 SFP) during the weekday midday, weekday PM, weekend midday non-game, and weekend pre-game peak periods, respectively.
- The east crosswalk would deteriorate to beyond mid-LOS D (18.8 SFP) from a No Action LOS A (2035.8 SFP), LOS F (6.2 SFP) from a No Action LOS A (1502.7 SFP), LOS F (6.9 SFP) from a No Action LOS A (937.3 SFP), LOS F (3.8 SFP) from a No Action LOS A (78.0 SFP), LOS F (5.3 SFP) from a No Action LOS A (756.1 SFP), LOS F (4.2 SFP) from a No Action LOS A (9927.5 SFP), and to LOS F (5.1 SFP) from a No Action LOS A during the weekday AM, weekday midday, weekday PM, weekday pre-game, weekend midday non-game, weekend pre-game, and weekend post-game peak periods, respectively.

Table 14-135

2028 With Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday AM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	1158	0.81	2.39	B
	West	6.0	184	0.80	0.64	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	705	0.91	0.83	B
	South	12.5	40	0.80	0.07	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	1379	0.80	2.30	B
	South	11.5	169	0.80	0.31	A
34th Avenue between 126th Street and 126th Place	North	11.5	9	0.80	0.02	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1083	0.80	2.26	B
	West	8.0	6	0.80	0.02	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	585	0.80	1.28	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	115	0.80	0.34	A
	South	8.5	117	0.80	0.29	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	104	0.80	0.17	A
	South	13.0	103	0.83	0.16	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	79	0.80	0.33	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	32	0.80	0.11	A
Weekday Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	2065	0.80	4.30	C
	West	6.0	206	0.80	0.72	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1274	0.80	1.71	B
	South	12.5	94	0.80	0.16	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	1577	0.80	2.63	B
	South	11.5	330	0.80	0.60	B
34th Avenue between 126th Street and 126th Place	North	11.5	23	0.80	0.04	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2530	0.80	5.27	C
	West	8.0	19	0.80	0.05	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1371	0.80	3.01	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	173	0.80	0.51	B
	South	8.5	79	0.80	0.19	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	109	0.80	0.18	A
	South	13.0	80	0.80	0.13	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	119	0.80	0.50	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	51	0.80	0.18	A
Weekday PM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	1976	0.80	4.12	C
	West	6.0	253	0.80	0.88	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1280	0.80	1.72	B
	South	12.5	78	0.80	0.13	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	1953	0.80	3.26	C
	South	11.5	322	0.80	0.58	B
34th Avenue between 126th Street and 126th Place	North	11.5	28	0.80	0.05	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2412	0.80	5.03	C
	West	8.0	23	0.80	0.06	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1271	0.80	2.79	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	170	0.80	0.51	B
	South	8.5	100	0.80	0.25	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	128	0.80	0.21	A
	South	13.0	96	0.80	0.15	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	96	0.80	0.40	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	70	0.80	0.24	A

Table 14-135 (cont'd)

2028 With Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	1540	0.80	3.21	C
	West	6.0	381	0.83	1.28	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	991	0.88	1.22	B
	South	12.5	113	0.80	0.19	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	1456	0.80	2.43	B
	South	11.5	300	0.82	0.53	B
34th Avenue between 126th Street and 126th Place	North	11.5	119	0.80	0.22	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2040	0.80	4.25	C
	West	8.0	53	0.80	0.14	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1235	0.80	2.71	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	471	0.80	1.40	B
	South	8.5	240	0.80	0.59	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	291	0.82	0.47	A
	South	13.0	121	0.80	0.19	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	251	0.86	0.98	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	186	0.80	0.65	B
Note: PMF = pedestrians per minute per foot.						

Table 14-136

2028 With Action Condition: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	2090	0.80	4.35	C
	West	6.0	215	0.80	0.75	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1315	0.80	1.77	B
	South	12.5	106	0.80	0.18	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	1734	0.82	2.80	B
	South	11.5	412	0.80	0.75	B
34th Avenue between 126th Street and 126th Place	North	11.5	57	0.80	0.10	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2923	0.80	6.09	D
	West	8.0	30	0.80	0.08	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1587	0.80	3.48	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	311	0.85	0.87	B
	South	8.5	239	0.80	0.59	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	185	0.89	0.28	A
	South	13.0	177	0.80	0.28	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	146	0.80	0.61	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	101	0.80	0.35	A
Weekend Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	1757	0.80	3.66	C
	West	6.0	450	0.80	1.42	B
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1099	0.80	1.48	B
	South	12.5	201	0.80	0.34	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	1431	0.85	2.23	B
	South	11.5	394	0.80	0.71	B
34th Avenue between 126th Street and 126th Place	North	11.5	57	0.80	0.10	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2509	0.80	5.23	C
	West	8.0	49	0.80	0.13	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1386	0.93	2.63	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	465	0.87	1.28	B
	South	8.5	318	0.80	0.78	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	209	0.86	0.32	A
	South	13.0	140	0.80	0.22	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	293	0.80	1.22	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	113	0.80	0.39	A
Weekend Post-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	1897	0.80	3.95	C
	West	6.0	1027	0.80	3.57	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1015	0.80	1.36	B
	South	12.5	194	0.80	0.32	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	1334	0.80	2.22	B
	South	11.5	389	0.80	0.70	B
34th Avenue between 126th Street and 126th Place	North	11.5	35	0.80	0.06	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2454	0.80	5.11	C
	West	8.0	59	0.80	0.15	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1512	0.80	3.32	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	789	0.80	2.35	B
	South	8.5	308	0.80	0.75	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	307	0.80	0.51	B
	South	13.0	110	0.80	0.18	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	456	0.80	1.90	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	170	0.80	0.59	B
Note: PMF = pedestrians per minute per foot.						

Note: PMF = pedestrians per minute per foot.

Table 14-137
2028 With Action Condition: Pedestrian LOS Analysis for Corners

Location	Corner	Weekday								Weekend					
		AM		Midday		PM		Pre-Game		Midday Non-Game		Pre-Game		Post-Game	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Roosevelt Avenue and 126th Street	Northwest	121.9	A	97.6	A	79.1	A	112.7	A	88.4	A	104.0	A	107.0	A
	Northeast	126.2	A	84.4	A	74.3	A	113.0	A	93.4	A	96.8	A	104.8	A
Roosevelt Avenue and 114th Street	Northwest	1234.2	A	858.1	A	911.9	A	300.7	A	535.8	A	337.9	A	193.7	A
	Southwest	857.4	A	676.4	A	539.4	A	269.2	A	301.4	A	291.7	A	267.6	A

Note: SFP = square feet per pedestrian.

Table 14-138
2028 With Action Condition: Weekday Pedestrian LOS Analysis for Crosswalks

Location	Cross walk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles											
				Weekday AM			Weekday Midday			Weekday PM			Weekday Pre-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	1167	57.3 57.2	B	1384	41.1 40.9	B	1703	32.0 31.8	C	1281	54.4 54.3	B
	East	43.0	14.0	87	148.4 152.6	A	205	46.4 52.6	B	167	54.2 63.2	B	129	83.7 93.3	A
	South	50.0	13.0	106	577.8 822.8	A	221	271.1 381.6	A	194	313.3 366.8	A	212	289.1 -22.6	A
	West	43.0	13.5	19	803.8 803.8	A	33	343.0 343.0	A	32	320.1 320.1	A	66	-40.9 -40.9	F+
34th Avenue and 126th Street	North	81.0	12.5	89	80.4 80.4	A	259	22.4 22.4	D	280	16.2 16.2	D+	276	74.5 74.5	A
	East	43.0	7.0	973	18.8 18.8	D+	2274	6.2 6.2	F+	2124	6.9 6.9	F+	1899	3.8 3.8	F+
	South	61.0	10.5	88	35.4 35.4	C	260	9.9 9.9	E+	278	14.7 14.7	E+	401	34.7 34.7	C
Northern Boulevard and 126th Street	West	47.5	12.5	6	6381.0 6381.0	A	18	1914.3 1914.3	A	25	1279.8 1279.8	A	65	273.9 273.9	A
	East	43.5	14.0	483	21.6 21.6	D	1168	4.9 4.9	F+	1124	4.8 4.8	F+	909	6.5 6.5	F+
Roosevelt Avenue and 114th Street	South	51.0	15.0	15	5435.2 5435.2	A	21	3880.5 3880.5	A	29	2808.4 2808.4	A	53	1532.3 1532.3	A
	North	41.0	12.5	97	660.7 660.7	A	141	376.2 376.2	A	141	379.8 379.8	A	409	113.5 113.5	A
	East	44.0	11.0	20	480.7 480.7	A	38	289.0 289.0	A	45	161.2 161.2	A	65	100.9 100.9	A
	South	32.5	12.0	107	516.2 516.2	A	120	426.7 426.7	A	147	319.7 319.7	A	277	163.8 163.8	A
126th Street and New Willets Point Boulevard	West	43.0	13.0	13	1462.3 1462.3	A	19	1113.4 1113.4	A	22	878.2 878.2	A	54	338.5 338.5	A
	North	50.0	15.0	226	99.9 117.0	A	356	52.5 73.4	B	417	40.0 53.4	C	356	57.4 78.2	B
	South	50.0	15.0	233	91.5 107.1	A	375	47.8 66.2	B	427	38.4 52.0	C	365	46.4 64.0	B
				200	107.1 107.1	A	275	66.2 66.2	A	321	52.0 52.0	B	269	64.0 64.0	A
37th Avenue and 126th Street	North	50.0	15.0	170	129.2 129.2	A	283	65.7 65.7	A	319	62.9 62.9	A	270	77.5 77.5	A
36th Avenue and 126th Street	South	50.0	15.0	161	136.3 136.3	A	278	81.1 81.1	A	304	74.1 74.1	A	256	88.8 88.8	A
36th Avenue and 126th Street	North	50.0	15.0	139	124.6 124.6	A	164	94.2 94.2	A	219	64.4 64.4	A	187	86.6 86.6	A
36th Avenue and 126th Street	South	50.0	15.0	126	147.5 147.5	A	156	115.2 115.2	A	200	89.6 89.6	A	173	104.2 104.2	A

Notes: SFP = square feet per pedestrian.
+ Denotes a significant adverse impact.

Table 14-139

2028 With Action Condition: Weekend Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles								
				Weekend Midday Non-Game			Weekend Pre-Game			Weekend Post-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	1494	37.1 37.0	C	1248	47.4 47.3	B	1174	34.2 34.1	C
	East	43.0	14.0	200	46.1 54.4	B	168	70.9 77.9	A	159	75.1 81.3	A
	South	50.0	13.0	264	229.7	A	323	187.1	A	294	208.4	A
	West	43.0	13.5	54	230.4 199.4	A	98	-22.4 -34.7	F+	101	445.4 106.0	A
34th Avenue and 126th Street	North	81.0	12.5	397	13.7	E+	510	33.0	C	835	24.8	C
	East	43.0	7.0	2550	5.3	F+	1976	4.2	F+	1654	5.1	F+
	South	61.0	10.5	398	8.4	E+	486	19.1	D+	594	34.2	C
	West	47.5	12.5	34	1008.7	A	53	381.8	A	203	72.6	A
Northern Boulevard and 126th Street	East	43.5	14.0	1358	4.7	F+	1055	5.7	F+	962	-2.7	F+
	South	51.0	15.0	39	2086.9	A	40	2034.2	A	37	2199.5	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	242	188.3	A	338	131.2	A	677	54.0	B
	East	44.0	11.0	68	99.6	A	78	45.4	B	79	107.4	A
	South	32.5	12.0	269	172.2	A	244	186.6	A	234	198.9	A
	West	43.0	13.0	34	559.6	A	66	261.2	A	93	186.9	A
126th Street and New Willets Point Boulevard	North	50.0	15.0	469 327	41.4 60.8	B A	367 261	52.4 75.0	B A	322 237	64.0 88.1	A
	South	50.0	15.0	478 327	37.5 56.2	C B	377 265	43.8 63.4	B A	333 241	58.6 82.1	B A
37th Avenue and 126th Street	North	50.0	15.0	345	70.0	A	272	64.6	A	243	85.2	A
	South	50.0	15.0	331	82.7	A	266	85.2	A	232	95.2	A
36th Avenue	North	50.0	15.0	221	67.1	A	175	83.7	A	162	74.3	A
and 126th Street	South	50.0	15.0	207	86.4	A	168	107.2	A	152	119.8	A

Notes: SFP = square feet per pedestrian.
+ Denotes a significant adverse impact.

The significant adverse transit and pedestrian impacts detailed above for the 2028 analysis year are summarized in Table 14-140.

Table 14-140

Summary of 2028 Significant Adverse Transit and Pedestrian Impacts

Analysis Element		Analysis Time Period						
		Weekday				Weekend		
		AM	Midday	PM	Pre-Game	Midday	Pre-Game	Post-Game
<i>Subway Line haul impact</i>								
No. 7 Line-Haul	WB	X						
<i>Bus Impacts</i>								
Q19 Bus Route	EB	X		X				
	WB	X		X				
Q48 Bus Route	EB			X				
	WB			X				
Q66 Bus Route	EB	X		X				
	WB	X		X				
<i>Pedestrian Impacts</i>								
Northern Blvd & 126th St	E Crosswalk		X	X	X	X	X	X
Roosevelt Ave & 126th St	W Crosswalk				X		X	
34th Ave & 126th St	N Crosswalk			X		X		
	S Crosswalk		X	X		X	X	
	E Crosswalk	X	X	X	X	X	X	X
Notes: X = Significantly Impacted								

2032 WITH ACTION CONDITION

TRIP DISTRIBUTION AND ASSIGNMENT

Transit and pedestrian volumes for the 2032 With Action condition were estimated by overlaying peak hour volumes derived from the trip generation estimates presented in the “Traffic and Parking” section, onto the No Action analysis networks. These volumes were then assigned to the transit and pedestrian analysis locations based on the same assumptions described above for the 2028 With Action condition. In addition, the reasonable worst-case development scenario assumes that Lot B development would be completed by 2032, with its parking demand accommodated by available parking within the South Lot/Lot D. Therefore, the auto person trips associated with Lot B were assumed to cross Roosevelt Avenue at the Lot B driveway or 126th Street crosswalks to access the development.

CHANGES IN THE PEDESTRIAN ENVIRONMENT

In addition to the geometric changes described above for the 2018 and 2028 With Action conditions, the intersection of Roosevelt Avenue and Lot B driveway, which would incur more notable pedestrian trip-making, was added to the pedestrian study area. This intersection is comprised of three crosswalks, two crosswalks across Roosevelt Avenue and one crosswalk across the Lot B driveway along the north side of Roosevelt Avenue.

SUBWAY STATION OPERATIONS

Project-generated subway trips were added to the 2032 No Action volumes in the same manner as described for Phase 1A. As shown in **Tables 14-141** and **14-142**, all analyzed stairways and ramps and control areas would continue to operate at acceptable levels, except for the north stairway (S-3) on Roosevelt Avenue that faces Willets West, which would operate at LOS D with a v/c ratio of 1.21, 1.14, 1.20, and 1.02 during the weekday PM non-game, weekday pre-game, weekend pre-game, and weekend post-game peak periods, respectively, for the north stairway (S-2) on Roosevelt Avenue that faces the District, which would operate at LOS D with a v/c ratio of 1.1 during the weekday PM non-game peak period, and for the north stairway (M-4) that connects to the mezzanine and street level stairways, which would operate at LOS E with a v/c ratio of 1.34 during the weekday PM non-game peak period and LOS D with a v/c ratio of 1.10 and 1.08 during the weekday pre-game and weekend pre-game peak periods, respectively.

As described above, station stairway impacts are defined in terms of width increment threshold based on the minimum amount of additional capacity that would be required to either mitigate the location to its service conditions (LOS) under the No Action levels, or to bring it to a v/c ratio of 1.00, whichever is greater. Compared to the No Action service levels, the calculated WITs are greater than the *CEQR Technical Manual* WIT impact thresholds for stairway S-3 during the weekday PM non-game, weekday pre-game, and weekend pre-game peak periods, for stairway S-2 during the weekday PM non-game peak period, and for stairway M-4 during the weekday PM non-game, weekday pre-game, and weekend pre-game peak periods. Therefore, the proposed project would be expected to result in significant adverse subway station impacts under the 2032 With Action condition. Measures that can be implemented to mitigate these impacts are discussed in Chapter 21, “~~Mitigation~~.” In addition, as with the 2018 and 2028 With Action conditions, if NYCT decides to proceed with the reconfiguration of the Mets-Willets Point subway station, which would take place independent of the proposed project, additional interagency coordination is expected to take place to develop the appropriate game-day

Willets Point Development

management strategies. For purposes of disclosure in this Draft SEIS, any impacts that may be attributed to future passage of the reconfigured station may potentially be deemed unmitigatable.

Table 14-141
2032 With Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday AM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	384	259	0.90	0.90	0.77	C
Roosevelt Avenue (North) S2 Stair	8.0	6.8	420	314	0.90	0.90	0.84	C
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	804	573	0.90	0.90	0.93	C
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	9	163	0.75	0.90	0.20	A
Flushing-bound West P10 Stair	9.6	8.3	9	150	0.75	0.90	0.19	A
Flushing-bound East P4 Stair	9.9	8.7	7	176	0.75	1.00	0.19	A
Flushing-bound East P2 Stair	10.1	8.8	21	154	0.75	0.90	0.19	A
Manhattan-bound West Ramp Passageway	17.6	15.6	498	15	0.75	1.00	0.15	A
Manhattan-bound East Ramp Passageway	19.6	17.6	276	27	0.75	0.90	0.09	A
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	477	528	0.90	0.90	1.21	D+
Roosevelt Avenue (North) S2 Stair	8.0	6.8	487	473	0.90	0.90	1.11	D+
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	964	1001	0.90	0.90	1.34	E+
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	8	251	0.75	1.00	0.27	A
Flushing-bound West P10 Stair	9.6	8.3	4	235	0.75	1.00	0.25	A
Flushing-bound East P4 Stair	9.9	8.7	13	320	0.75	1.00	0.34	A
Flushing-bound East P2 Stair	10.1	8.8	36	273	0.75	0.90	0.34	A
Manhattan-bound West Ramp Passageway	17.6	15.6	667	21	0.75	1.00	0.20	A
Manhattan-bound East Ramp Passageway	19.6	17.6	224	35	0.75	0.90	0.08	A
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	325	604	0.90	0.90	1.14	D+
Roosevelt Avenue (North) S2 Stair	8.0	6.8	286	382	0.90	0.90	0.78	C
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	611	986	0.90	0.90	1.10	D+
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	11	363	0.75	1.00	0.67	B
Flushing-bound West P10 Stair	9.6	8.3	8	674	0.75	1.00	0.73	C
Flushing-bound East P4 Stair	9.9	8.7	12	603	0.75	1.00	0.63	B
Flushing-bound East P2 Stair	10.1	8.8	16	376	0.75	1.00	0.39	A
Manhattan-bound West Ramp Passageway	17.6	15.6	465	35	0.75	0.90	0.16	A
Manhattan-bound East Ramp Passageway	19.6	17.6	199	48	0.75	0.90	0.07	A
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	306	671	0.90	0.90	1.20	D+
Roosevelt Avenue (North) S2 Stair	8.0	6.8	283	304	0.90	0.90	0.68	B
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	589	975	0.90	0.90	1.08	D+
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	8	442	0.75	1.00	0.46	B
Flushing-bound West P10 Stair	9.6	8.3	0	421	0.75	1.00	0.45	A
Flushing-bound East P4 Stair	9.9	8.7	8	678	0.75	1.00	0.70	C
Flushing-bound East P2 Stair	10.1	8.8	25	416	0.75	0.90	0.49	B
Manhattan-bound West Ramp Passageway	17.6	15.6	487	27	0.75	0.90	0.17	A
Manhattan-bound East Ramp Passageway	19.6	17.6	175	80	0.75	0.90	0.08	A

Table 14-141 (cont'd)

2032 With Action Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekend Post-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	8.0	6.5	516	339	0.90	0.90	1.02	D
Roosevelt Avenue (North) S2 Stair	8.0	6.8	302	269	0.90	0.90	0.66	B
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	818	608	0.90	0.90	0.96	C
Mezzanine to Platform								
Flushing-bound West P12 Stair	9.8	8.6	404	139	0.75	0.90	0.51	B
Flushing-bound West P10 Stair	9.6	8.3	323	226	0.75	0.90	0.55	B
Flushing-bound East P4 Stair	9.9	8.7	372	155	0.75	0.90	0.49	B
Flushing-bound East P2 Stair	10.1	8.8	607	100	0.75	0.90	0.62	B
Manhattan-bound West Ramp Passageway	17.6	15.6	1139	16	0.75	1.00	0.33	A
Manhattan-bound East Ramp Passageway	19.6	17.6	618	27	0.75	1.00	0.17	A
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>). $V/C \text{ Stairway} = [V_{in} / (150 * We * Sf * Ff)] + [Vx / (150 * We * Sf * Ff)]$ $V/C \text{ Passageway} = [V_{in} / (225 * We * Sf * Ff)] + [Vx / (225 * We * Sf * Ff)]$ Where Vin = Peak 15-minute entering passenger volume Vx = Peak 15-minute exiting passenger volume We = Effective width of stairs/passageways Sf = Surging factor (if applicable) Ff = Friction factor (if applicable) + Denotes a significant adverse impact								

Table 14-142

2032 With Action Condition: Subway Station Control Area Analysis

Mets-Willets Point No. 7 Train Station Control Area Elements	Quantity	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
		Into Control Area	Out from Control Area				
Weekday AM Non-Game							
Main Control Area Turnstiles (R532)	5	810	613	0.80	0.90	0.69	B
Weekday PM Non-Game							
Main Control Area Turnstiles (R532)	5	984	1110	0.80	0.90	1.00	C
Weekday Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	199	48	0.75	0.90	0.09	A
Manhattan-bound West Ramp Turnstiles	6	465	35	0.75	0.90	0.22	A
Flushing-bound East Stair Turnstiles	8	30	983	0.80	1.00	0.25	A
Flushing-bound West Stair Turnstiles	6	18	1277	0.80	1.00	0.42	A
Weekend Pre-Game							
Manhattan-bound East Ramp Turnstiles	7	175	80	0.75	0.90	0.09	A
Manhattan-bound West Ramp Turnstiles	6	487	27	0.75	0.90	0.23	A
Flushing-bound East Stair Turnstiles	8	31	1059	0.80	1.00	0.27	A
Flushing-bound West Stair Turnstiles	6	7	821	0.80	1.00	0.27	A
Weekend Post-Game							
Manhattan-bound East Ramp Turnstiles	7	618	27	0.75	1.00	0.22	A
Manhattan-bound West Ramp Turnstiles	6	1139	16	0.75	1.00	0.46	B
Flushing-bound East Stair Turnstiles	8	978	254	0.80	0.90	0.39	A
Flushing-bound West Stair Turnstiles	6	726	364	0.80	0.90	0.45	B
Notes: Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition). V/C = Vin / (Cin x Ff)+ Vx / (Cx x Sf x Ff) Vin = Peak 15 Min Entering Passenger Volume Cin = Total 15-Minute Capacity of all turnstiles for entering Passengers Vx = Peak 15-Minute Exiting Passenger Cx = Total 15-minute Capacity of all turnstile for exiting Passengers Sf = Surging Factor Ff= Friction Factor							

SUBWAY LINE HAUL LEVELS

As described for the 2018 With Action condition, the projected peak hour subway trip increments were distributed to the peak load points on the No.7, the N, and the Q subway lines based on information provided by NYCT and ~~superimposed onto~~ added to the respective No Action line-haul volumes. As shown in **Table 14-143**, ~~with the overlay of these project-generated trips~~, the No. 7 subway line would continue to operate within guideline capacity during the AM peak period for the Manhattan-bound local service and during the PM peak period for the Flushing-bound service. As with the 2032 No Action condition, the Manhattan-bound express service would continue to exceed the guideline capacity during the weekday AM peak period under the 2032 With Action condition. On average, the project-generated subway trips would add 11 passengers per car to the Manhattan-bound express line at the peak load point during the AM peak period, which is more than the *CEQR Technical Manual* impact threshold of five passengers per car. Hence, the proposed project in 2032 would be expected to result in a significant adverse line-haul impact on the No. 7 line. As discussed in the 2028 With Action condition above, the City had consulted with the MTA on extending regular LIRR service to Willets Point when the actual demand shows that such service improvement is warranted. The addition of regular LIRR service to Willets Point would provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent the introduction of new LIRR service to the area.

Table 14-143
2032 With Action Condition: Peak Hour Subway Line Haul

Subway Lines Direction of Travel	Station	Trains/ Hour	Volume	Leave Load		Available Capacity
				Guideline Capacity	V/C Ratio	
AM Peak Period						
<u>No.7</u> Manhattan-bound Express	Woodside–61st Street	45	21,823	48,150	1.20	-3,673
		14	19,579	16,940	1.16	-2,639
<u>No.7</u> Manhattan-bound Local	40th Street	14	16,028	16,940	0.95	912
			14,169		0.84	2,771
<u>N</u> Manhattan-bound	<u>Queensboro Plaza</u>	8	13,730	11,600	1.18	-2,130
<u>Q (W)</u> Manhattan-bound ¹	<u>Queensboro Plaza</u>	8	13,003	11,600	1.12	-1,403
PM Peak Period						
<u>No.7</u> Flushing-bound Express + Local	Queensboro Plaza	23	25,247	27,830	0.91	2,583
		25	24,795	30,250	0.82	5,455
<u>N</u> Queens-bound	<u>Queensboro Plaza</u>	7	8,148	10,150	0.80	2,002
<u>Q (W)</u> Queens-bound ¹	<u>Queensboro Plaza</u>	7	6,956	10,150	0.69	3,194
Sources: New York City Transit						
Notes:						
For the AM peak hour, while a total of 29 trains would be expected to traverse the respective express and local peak load points, the total number of scheduled trains during this hour would be 28 trains.						
¹ W is a tentative designation for a line that would replace the Q service in Queens.						

In addition, because NYCT expects that there would be notable transfer activities between the No. 7 line and the N/Q lines at the Queensboro Plaza subway station (across the platform transfers), a detailed examination of line-haul conditions on the N/Q lines will be prepared, in coordination with NYCT, for the Final EIS. However, since the estimated Phase 2 project-generated increments would be fewer than 5 persons per subway car (up to 557 passengers in 120 to 130 train cars) on the N/Q trains, Phase 2 of the proposed project would not result in a significant adverse line-haul impact on the N/Q lines.

Similar to the 2032 No Action condition, the N and the Q lines would continue to operate within guideline capacity during the PM peak hour and exceed the guideline capacity during the weekday AM peak period under the 2032 With Action condition. On average, the project-generated subway trips would add three passengers per car to each of the N and the Q lines at the peak load point during the AM peak period, which is fewer than the *CEQR Technical Manual* impact threshold of five passengers per car. Therefore, Phase 2 (2032) of the proposed project would not result in a significant adverse line-haul impact on the N and the Q lines.

BUS LINE HAUL LEVELS

As with the 2018 and 2028 With Action condition analyses, no potential new or extended bus routes serving the project site were assumed in the 2032 bus line-haul analysis. Peak hour bus ridership levels were estimated by adding the incremental trips associated with the proposed project to bus stop locations along Roosevelt Avenue at 126th Street for the Q48 and to maximum load points along the Q19 and Q66. Impacts to bus line-haul levels would be considered significant if a proposed action would result in operating conditions above guideline capacities. As shown in **Table 14-144**, the eastbound and westbound Q48 would continue to operate within guideline capacity (54 passengers per bus) during the AM peak period but would operate above the guideline capacity during the PM peak period. The eastbound and westbound Q19 and Q66 would operate above guideline capacity during both the AM and PM peak periods. These projected increases in bus ridership beyond guideline capacities constitute significant adverse bus line-haul impacts.

Table 14-144

2032 With Action Condition: Bus Line Haul at NYCT Maximum and District Load Points

Route	Peak Period	Buses Per Hour	Eastbound		Buses Per Hour	Westbound	
			Load Point	AP		Load Point	AP
Q19	AM	3	Astoria Blvd/ 102nd St	(77)	3	Astoria Blvd/ 77th St	(74)
	PM	3	Astoria Blvd/ 94th St	(87)	3	Astoria Blvd/Humphrey St	(100)
Q48	AM	5	Roosevelt at 126th	54	3	Roosevelt at 126th	44
	PM	5	Roosevelt at 126th	(80)	5	Roosevelt at 126th	(103)
Q66 (to Woodside and LIC)	AM	15	Northern Blvd/ 110th St	(79)	14	Northern Blvd/ 72nd St	(77)
	PM	10	Northern Blvd/ 110th St	(103)	10	Northern Blvd/ 106th St	(114)
Note: AP = average passengers per bus; (#) = exceeds NYCT guideline capacity Source: Q48 ridership data provided by NYCT; Q19 and Q66 ridership data provided by the MTA Bus Company							

Potential measures to mitigate the significant adverse bus line-haul impacts include scheduling additional buses to increase capacity. NYCT routinely monitors changes in bus ridership and would make the necessary service adjustments where warranted. These service adjustments are subject to fiscal and operational constraints and, if implemented, are expected to occur over time. These measures are discussed in greater detail in Chapter 21, “~~Mitigation~~.”

STREET-LEVEL PEDESTRIAN OPERATIONS

The study area sidewalks, corner reservoirs, and crosswalks were assessed for the weekday AM, midday, PM, and pre-game peak periods, as well as, the weekend midday non-game, pre-game, and post-game peak periods by superimposing project-generated trips onto the No Action pedestrian analysis networks. The 2032 With Action peak hour pedestrian volumes are shown in **Appendix D**. As shown in **Tables 14-145** through **14-147**, all sidewalks and corner reservoirs would continue to operate at acceptable levels (within mid-LOS D, with a maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners) or incur degradations that, when

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compared to the No Action condition, do not exceed the *CEQR Technical Manual* sliding scale impact thresholds (See **Tables 14-81 and 14-82**). However, as shown in **Tables 14-148 and 14-149**, several study area crosswalks would operate beyond mid-LOS D (less than 19.5 SFP) and incur degradations that, when compared to the No Action condition, would exceed the *CEQR Technical Manual* sliding scale impact thresholds. These significant adverse pedestrian impacts are detailed below. Measures that can potentially mitigate these impacts are discussed in Chapter 21, “Mitigation.”

Table 14-145

2032 With Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday AM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	1862	0.81	3.84	C
	West	6.0	1010	0.80	3.51	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1127	0.91	1.33	B
	South	12.5	41	0.80	0.07	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	3009	0.80	5.02	C
	South	11.5	810	0.80	1.47	B
34th Avenue between 126th Street and 126th Place	North	11.5	398	0.80	0.72	B
126th Street between Northern Boulevard and 34th Avenue	East	10.0	1366	0.80	2.85	B
	West	8.0	62	0.80	0.16	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1232	0.80	2.70	B
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	166	0.80	0.49	A
	South	8.5	136	0.80	0.33	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	130	0.80	0.22	A
	South	13.0	120	0.83	0.18	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	96	0.80	0.40	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	49	0.80	0.17	A
Weekday Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	3182	0.80	6.63	D
	West	6.0	1659	0.80	5.76	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1908	0.80	2.56	B
	South	12.5	95	0.80	0.16	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	3410	0.80	5.68	C
	South	11.5	1406	0.80	2.55	B
34th Avenue between 126th Street and 126th Place	North	11.5	234	0.80	0.42	A
126th Street between Northern Boulevard and 34th Avenue	East	10.0	3106	0.80	6.47	D
	West	8.0	89	0.80	0.23	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	2229	0.80	4.89	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	316	0.80	0.94	B
	South	8.5	95	0.80	0.23	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	170	0.80	0.28	A
	South	13.0	115	0.80	0.18	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	154	0.80	0.64	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	86	0.80	0.30	A
Weekday PM Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	2991	0.80	6.23	D
	West	6.0	1618	0.80	5.62	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1861	0.80	2.50	B
	South	12.5	79	0.80	0.13	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	4253	0.80	7.09	D
	South	11.5	1562	0.80	2.83	B
34th Avenue between 126th Street and 126th Place	North	11.5	379	0.80	0.69	B
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2930	0.80	6.10	D
	West	8.0	111	0.80	0.29	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	2103	0.80	4.61	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	239	0.80	0.71	B
	South	8.5	119	0.80	0.29	A
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	160	0.80	0.27	A
	South	13.0	116	0.80	0.19	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	116	0.80	0.48	A
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	91	0.80	0.32	A

Table 14-145 (cont'd)

2032 With Action Condition: Weekday Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekday Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	2301	0.80	4.79	C
	West	6.0	1201	0.83	4.03	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1405	0.88	1.73	B
	South	12.5	113	0.80	0.19	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	3034	0.80	5.06	C
	South	11.5	1070	0.82	1.90	B
34th Avenue between 126th Street and 126th Place	North	11.5	397	0.80	0.72	B
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2409	0.80	5.02	C
	West	8.0	111	0.80	0.29	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	1850	0.80	4.06	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	509	0.80	1.51	B
	South	8.5	258	0.80	0.63	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	309	0.82	0.50	B
	South	13.0	133	0.80	0.21	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	264	0.86	1.03	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	198	0.80	0.69	B
Note: PMF = pedestrians per minute per foot.						

Table 14-146

2032 With Action Condition: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Midday Non-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	3081	0.80	6.42	D
	West	6.0	1498	0.80	5.20	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1731	0.80	2.33	B
	South	12.5	107	0.80	0.18	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	3741	0.82	6.05	D
	South	11.5	1743	0.80	3.16	C
34th Avenue between 126th Street and 126th Place	North	11.5	456	0.80	0.83	B
126th Street between Northern Boulevard and 34th Avenue	East	10.0	3502	0.80	7.30	D
	West	8.0	127	0.80	0.33	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	2343	0.80	5.14	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	387	0.85	1.08	B
	South	8.5	280	0.80	0.69	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	223	0.89	0.34	A
	South	13.0	205	0.80	0.33	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	174	0.80	0.73	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	128	0.80	0.44	A
Weekend Pre-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	2629	0.80	5.48	C
	West	6.0	1434	0.80	4.53	C
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1473	0.80	1.98	B
	South	12.5	203	0.80	0.34	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	3053	0.85	4.76	C
	South	11.5	1393	0.80	2.52	B
34th Avenue between 126th Street and 126th Place	North	11.5	411	0.80	0.74	B
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2988	0.80	6.23	D
	West	8.0	125	0.80	0.33	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	2045	0.93	3.88	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	530	0.87	1.46	B
	South	8.5	355	0.80	0.87	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	243	0.86	0.38	A
	South	13.0	165	0.80	0.26	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	317	0.80	1.32	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	137	0.80	0.48	A

Table 14-146 (cont'd)

2032 With Action Condition: Weekend Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	1-Hour Two-Way Volume	Peak Hour Factor (PHF)	Platoon	
					PMF	LOS
Weekend Post-Game						
126th Street between 34th Avenue and Roosevelt Avenue	East	10.0	2763	0.80	5.76	C
	West	6.0	1845	0.80	6.41	D
Roosevelt Avenue between 126th Street and the Van Wyck Expressway	North	15.5	1387	0.80	1.86	B
	South	12.5	195	0.80	0.33	A
Roosevelt Avenue between 126th Street and Grand Central Parkway	North	12.5	2811	0.80	4.69	C
	South	11.5	1179	0.80	2.14	B
34th Avenue between 126th Street and 126th Place	North	11.5	422	0.80	0.76	B
126th Street between Northern Boulevard and 34th Avenue	East	10.0	2894	0.80	6.03	D
	West	8.0	123	0.80	0.32	A
Northern Boulevard between 126th Street and 126th Place	South	9.5	2153	0.80	4.72	C
Roosevelt Avenue between 114th Street and Grand Central Parkway	North	7.0	855	0.80	2.54	B
	South	8.5	345	0.80	0.85	B
Roosevelt Avenue between 114th Street and 112th Street	North	12.5	340	0.80	0.57	B
	South	13.0	133	0.80	0.21	A
114th Street between Roosevelt Avenue and 39th Avenue	West	5.0	482	0.80	2.01	B
114th Street between Roosevelt Avenue and 41st Avenue	West	6.0	193	0.80	0.67	B
Note: PMF = pedestrians per minute per foot.						

Note: PMF = pedestrians per minute per foot.

Table 14-147

2032 With Action Condition: Pedestrian LOS Analysis for Corners

Location	Corner	Weekday								Weekend					
		AM		Midday		PM		Pre-Game		Midday Non-Game		Pre-Game		Post-Game	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Roosevelt Avenue and 126th Street	Northwest	48.3	B	31.8	C	23.3	D	43.1	B	28.2	C	37.7	C	41.6	B
	Northeast	68.2	A	48.6	B	43.4	B	68.8	A	56.0	B	59.7	B	63.2	A
Roosevelt Avenue and 114th Street	Northwest	972.3	A	578.6	A	731.7	A	282.7	A	438.6	A	301.0	A	180.4	A
	Southwest	687.4	A	457.8	A	442.4	A	248.3	A	255.1	A	253.9	A	235.0	A

Note: SFP = square feet per pedestrian.

Table 14-148

2032 With Action Condition: Weekday Pedestrian LOS Analysis for Crosswalks

Location	Cross walk	Street Width (feet)	Cross walk Width (feet)	Conditions with Conflicting Vehicles											
				Weekday AM			Weekday Midday			Weekday PM			Weekday Pre-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	2133	<u>27.6</u> <u>27.5</u>	C	2426	<u>20.2</u> <u>20.1</u>	D	2884	<u>16.4</u> <u>16.3</u>	D+	2135	<u>29.6</u> <u>29.5</u>	C
	East	43.0	14.0	141	<u>80.6</u> <u>83.6</u>	A	292	<u>23.2</u> <u>28.7</u>	D C	248	<u>20.8</u> <u>31.8</u>	D C	189	<u>40.8</u> <u>53.3</u>	B
	South	50.0	13.0	160	374.6	A	308	189.7	A	275	216.9	A	272	222.0	A
	West	43.0	13.5	607	<u>20.4</u> <u>19.7</u>	D	1022	<u>8.9</u> <u>6.7</u>	E+ F+	1191	<u>4.4</u> <u>2.6</u>	F+	775	<u>-4.8</u> <u>-7.4</u>	F+
34th Avenue and 126th Street	North	81.0	12.5	130	39.4	C	302	16.8	D+	337	9.7	E+	315	62.5	A
	East	43.0	7.0	1530	10.6	E+	2786	4.6	F+	2736	4.8	F+	2346	3.0	F+
	South	61.0	10.5	104	13.9	E+	288	1.9	F+	312	6.8	F+	423	29.1	C
	West	47.5	12.5	104	355.0	A	131	237.9	A	168	160.8	A	164	104.4	A
Northern Boulevard and 126th Street	East	43.5	14.0	785	12.0	E+	1686	2.3	F+	1600	2.2	F+	1250	3.5	F+
	South	51.0	15.0	74	1097.0	A	93	871.7	A	120	674.3	A	115	703.1	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	137	463.1	A	234	217.4	A	190	252.8	A	439	99.3	A
	East	44.0	11.0	33	283.4	A	89	121.1	A	64	111.3	A	72	89.4	A
	South	32.5	12.0	138	398.3	A	185	274.1	A	185	252.1	A	303	149.0	A
	West	43.0	13.0	13	1462.3	A	20	1057.6	A	22	878.2	A	56	326.3	A
Roosevelt Avenue and Lot B Driveway	North	30.0	12.5	<u>2720</u> <u>2737</u>	<u>13.7</u> <u>14.8</u>	E+	<u>2949</u> <u>3003</u>	<u>11.8</u> <u>13.3</u>	E+	<u>3819</u> <u>3879</u>	<u>7.3</u> <u>7.9</u>	F+	<u>2624</u> <u>2685</u>	<u>14.3</u> <u>15.3</u>	E+ D+
	East	43.0	12.5	5	<u>4329.2</u> <u>3988.5</u>	A	0	N/A	A	0	N/A	A	0	N/A	A
	West	43.0	12.5	54	<u>398.4</u> <u>362.8</u>	A	141	<u>162.8</u> <u>146.4</u>	A	121	<u>176.6</u> <u>213.3</u>	A	99	<u>216.3</u> <u>196.3</u>	A
126th Street and New Willets Point Boulevard	North	50.0	15.0	<u>539</u> <u>507</u>	<u>47.3</u> <u>50.6</u>	B	<u>621</u> <u>525</u>	<u>33.0</u> <u>39.6</u>	C	<u>786</u> <u>686</u>	<u>22.7</u> <u>26.4</u>	D C	<u>624</u> <u>533</u>	<u>35.4</u> <u>42.1</u>	C B
	South	50.0	15.0	<u>550</u> <u>517</u>	<u>36.8</u> <u>39.3</u>	C	<u>642</u> <u>542</u>	<u>26.0</u> <u>31.2</u>	C	<u>798</u> <u>692</u>	<u>18.7</u> <u>21.9</u>	D+ D	<u>634</u> <u>538</u>	<u>26.2</u> <u>31.3</u>	C
37th Avenue and 126th Street	North	<u>50.0</u>	<u>15.0</u>	<u>330</u>	<u>63.0</u>	A	<u>406</u>	<u>40.6</u>	B	<u>510</u>	<u>35.8</u>	C	<u>413</u>	<u>47.5</u>	B
	South	<u>50.0</u>	<u>15.0</u>	<u>302</u>	<u>70.7</u>	A	<u>393</u>	<u>55.9</u>	B	<u>475</u>	<u>46.0</u>	B	<u>383</u>	<u>58.0</u>	B
36th Avenue and 126th Street	North	<u>50.0</u>	<u>15.0</u>	<u>298</u>	<u>54.5</u>	B	<u>287</u>	<u>46.6</u>	B	<u>408</u>	<u>30.5</u>	C	<u>330</u>	<u>45.4</u>	B
	South	<u>50.0</u>	<u>15.0</u>	<u>267</u>	<u>67.7</u>	A	<u>271</u>	<u>64.4</u>	A	<u>370</u>	<u>46.8</u>	B	<u>300</u>	<u>58.6</u>	B
Notes: SFP = square feet per pedestrian. N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A. + Denotes a significant adverse impact.															

Table 14-149

2032 With Action Condition: Weekend Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Street Width (feet)	Crosswalk Width (feet)	Conditions with Conflicting Vehicles								
				Weekend Midday Non-Game			Weekend Pre-Game			Weekend Post-Game		
				2-way Volume	SFP	LOS	2-way Volume	SFP	LOS	2-way Volume	SFP	LOS
Roosevelt Avenue and 126th Street	North	53.0	16.0	2418	19.8 <u>19.7</u>	D	2046	25.5 <u>25.4</u>	C	1972	17.4 <u>17.3</u>	D+
	East	43.0	14.0	280	21.6 <u>30.3</u>	D <u>C</u>	240	38.7 <u>45.7</u>	C <u>B</u>	228	38.5 <u>46.2</u>	C <u>B</u>
	South	50.0	13.0	344	172.3	A	397	149.7	A	364	165.8	A
	West	43.0	13.5	1306	6.7 <u>4.3</u>	F+ <u>F+</u>	1026	-4.0 <u>-5.4</u>	F+ <u>F+</u>	823	9.6 <u>7.8</u>	E+ <u>F+</u>
34th Avenue and 126th Street	North	81.0	12.5	460	8.0	F+	563	33.5	C	887	8.2	E
	East	30.0	7.0	3233	3.7	F+	2558	3.3	F+	2224	5.4	F+
	South	61.0	10.5	435	3.4	F+	515	20.6	D	619	14.6	E
	West	47.5	12.5	193	161.4	A	180	117.7	A	316	76.0	A
Northern Boulevard and 126th Street	East	43.5	14.0	1799	2.5	F+	1428	3.2	F+	1312	-2.9	F+
	South	51.0	15.0	143	564.9	A	123	657.7	A	109	742.9	A
Roosevelt Avenue and 114th Street	North	41.0	12.5	306	140.6	A	392	108.4	A	733	47.2	B
	East	44.0	11.0	81	81.7	A	88	38.2	C	88	95.2	A
	South	32.5	12.0	324	141.6	A	289	156.3	A	279	165.8	A
	West	43.0	13.0	34	559.6	A	67	256.9	A	95	182.6	A
Roosevelt Avenue and Lot B Driveway	North	30.0	12.5	3228 <u>3312</u>	40.7 <u>11.7</u>	E+ <u>E+</u>	2605 <u>2670</u>	14.2 <u>15.5</u>	E+ <u>D+</u>	2343 <u>2403</u>	16.4 <u>17.7</u>	D+ <u>D+</u>
	East	43.0	12.5	17	1270.9 <u>1167.1</u>	A	0	N/A	A	0	N/A	A
	West	43.0	12.5	183	116.9 <u>103.4</u>	A	118	181.0 <u>163.1</u>	A	91	236.5 <u>213.7</u>	A
126th Street and New Willets Point Boulevard	North	50.0	15.0	736 <u>594</u>	29.4 <u>36.8</u>	C	596 <u>490</u>	36.6 <u>45.2</u>	C <u>B</u>	547 <u>462</u>	41.3 <u>49.5</u>	B
	South	50.0	15.0	747 <u>596</u>	21.9 <u>28.1</u>	D <u>C</u>	607 <u>495</u>	27.0 <u>33.6</u>	C	560 <u>468</u>	33.9 <u>41.1</u>	C <u>B</u>
37th Avenue and 126th Street	North	<u>50.0</u>	<u>15.0</u>	<u>488</u>	<u>36.2</u>	<u>C</u>	<u>399</u>	<u>40.6</u>	<u>B</u>	<u>370</u>	<u>51.8</u>	<u>B</u>
	South	<u>50.0</u>	<u>15.0</u>	<u>461</u>	<u>47.5</u>	<u>B</u>	<u>381</u>	<u>58.2</u>	<u>B</u>	<u>350</u>	<u>61.5</u>	<u>A</u>
36th Avenue and 126th Street	North	<u>50.0</u>	<u>15.0</u>	<u>360</u>	<u>37.0</u>	<u>C</u>	<u>298</u>	<u>44.6</u>	<u>B</u>	<u>287</u>	<u>37.0</u>	<u>C</u>
	South	<u>50.0</u>	<u>15.0</u>	<u>337</u>	<u>51.7</u>	<u>B</u>	<u>283</u>	<u>62.1</u>	<u>A</u>	<u>270</u>	<u>65.6</u>	<u>A</u>

Notes: SFP = square feet per pedestrian.

N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.

+ Denotes a significant adverse impact.

Northern Boulevard and 126th Street

- The east crosswalk would deteriorate to LOS E (12.0 SFP) from a No Action LOS A (6403.9 SFP), LOS F (2.3 SFP) from a No Action LOS A (5642.1 SFP), LOS F (2.2 SFP) from a No Action LOS A (5513.2 SFP), LOS F (3.5 SFP) from a No Action LOS A (583.0 SFP), LOS F (2.5 SFP) from a No Action LOS A (1672.8 SFP), LOS F (3.2 SFP) from a No Action LOS A (1083.9 SFP), and to LOS F (-2.9 SFP) from a No Action LOS A (129.6 SFP) during the weekday AM, weekday midday, weekday PM, weekday pre-game, weekend midday non-game, weekend pre-game, and weekend post-game peak periods, respectively.

Roosevelt Avenue and 126th Street

- The west crosswalk would deteriorate to LOS F ~~E~~ (6.7 ~~8.0~~ SFP) from a No Action LOS A (1560.4 SFP), LOS F (2.6 ~~4.4~~ SFP) from a No Action LOS A (2031.8 SFP), LOS F (-7.4 ~~-4.8~~ SFP) from a No Action LOS A (149.4 SFP), LOS F (4.3 ~~5.7~~ SFP) from a No Action LOS A (1072.1 SFP), LOS F (-5.4 ~~-4.0~~ SFP) from a No Action LOS A (99.5 SFP), and to

LOS ~~E~~ E (7.8 ~~9.6~~ SFP) from a No Action LOS A (183.4 SFP) during the weekday midday, weekday PM, weekday pre-game, weekend non-game, weekend pre-game, and weekend post-game peak periods, respectively.

The north crosswalk would deteriorate to beyond mid-LOS D (16.3 ~~16.4~~ SFP) from a No Action LOS A (2680.2 SFP), and to beyond mid-LOS D (17.3 ~~17.4~~ SFP) from a No Action LOS A (537.3 SFP) during the weekday PM and weekend post-game peak periods, respectively.

34th Avenue and 126th Street

- The north crosswalk would deteriorate to beyond mid-LOS D (16.8 SFP) from a No Action LOS A, LOS E (9.7 SFP) from a No Action LOS A (2131.7 SFP), and to LOS F (8.0 SFP) from a No Action LOS A (2699.8 SFP) during the weekday midday, weekday PM, and weekend midday non-game peak periods, respectively.
- The south crosswalk would deteriorate to LOS E (13.9 SFP) from a No Action LOS A (2947.4 SFP), LOS F (1.9 SFP) from a No Action LOS A (5767.3 SFP), LOS F (6.8 SFP) from a No Action LOS A (3150.8 SFP), and to LOS F (3.4 SFP) from a No Action LOS A (1204.7 SFP) during the weekday AM, weekday midday, weekday PM, and weekend midday non-game peak periods, respectively.
- The east crosswalk would deteriorate to LOS E (10.6 SFP) from a No Action LOS A (2035.8 SFP), LOS F (4.6 SFP) from a No Action LOS A (1394.7 SFP), LOS F (4.8 SFP) from a No Action LOS A (937.3 SFP), LOS F (3.0 SFP) from a No Action LOS A (76.9 SFP), LOS F (3.7 SFP) from a No Action LOS A (755.4 SFP), LOS F (3.3 SFP) from a No Action LOS A (9908.5 SFP), and to LOS F (5.4 SFP) from a No Action LOS A during the weekday AM, weekday midday, weekday PM, weekday pre-game, weekend midday non-game, weekend pre-game, and weekend post-game peak periods, respectively.

Roosevelt Avenue and the Lot B Driveway

- The north crosswalk would operate at LOS E (14.8 ~~13.7~~ SFP), LOS E (13.3 ~~11.8~~ SFP), LOS F (7.9 ~~7.3~~ SFP), LOS ~~D~~ E (15.3 ~~14.3~~ SFP), LOS E (11.7 ~~10.7~~ SFP), LOS ~~D~~ E (15.5 ~~14.2~~ SFP), and LOS D (17.7 ~~16.1~~ SFP) during the weekday AM, weekday midday, weekday PM, weekday pre-game, weekend midday non-game, weekend pre-game, and weekend post-game peak periods, respectively.

~~126th Street and New Willets Point Boulevard~~

- ~~• The south crosswalk would operate at beyond mid-LOS D (18.7 SFP) during the weekday PM peak period.~~

The significant adverse transit and pedestrian impacts detailed above for the 2032 analysis year are summarized in **Table 14-150**.

Table 14-150

Summary of 2032 Significant Adverse Transit and Pedestrian Impacts

Analysis Element		Analysis Time Period						
		Weekday				Weekend		
		AM	Midday	PM	Pre-Game	Midday	Pre-Game	Post-Game
Subway Impacts								
Mets-Willets Point Station	S2 Stairs			X				
	S3 Stairs			X	X		X	
	M4A/4B Stairs			X	X		X	
No. 7 Line-Haul	WB	X						
Bus Impacts								
Q19 Bus Route	EB	X		X				
	WB	X		X				
Q48 Bus Route	EB			X				
	WB			X				
Q66 Bus Route	EB	X		X				
	WB	X		X				
Pedestrian Impacts								
Northern Blvd & 126th St	E Crosswalk	X	X	X	X	X	X	X
	N Crosswalk			X				X
	W Crosswalk		X	X	X	X	X	X
34th Ave & 126th St	N Crosswalk		X	X		X		
	S Crosswalk	X	X	X		X		
	E Crosswalk	X	X	X	X	X	X	X
New-Willets Point Blvd & 126th St	S Crosswalk			X				
Roosevelt Ave & Lot B Driveway	N Crosswalk	X	X	X	X	X	X	X
Notes:		X = Significantly Impacted						

L. VEHICULAR AND PEDESTRIAN SAFETY

Crash data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the time period between January 1, 2009 and December 31, 2011. 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 accident location is one where there were five or more pedestrian/bicyclist-related accidents or 48 or more reportable and non-reportable accidents in any consecutive 12 months within the most recent 3-year period for which data are available.

During the January 1, 2009 to December 31, 2011 3-year period, a total of 709 reportable and non-reportable accidents, 2 fatalities, 697 injuries, and 166 pedestrian/bicyclist-related accidents occurred at the study area intersections. A rolling total of accident data identifies seven study area intersections as high pedestrian accident locations in the 2009 to 2011 period. These locations are 114th Street at Roosevelt Avenue, Main Street at Northern Boulevard, Main Street at Roosevelt Avenue, Main Street at 41st Avenue/Kissena Boulevard, Union Street at Northern Boulevard, Union Street at Roosevelt Avenue and Parsons Boulevard at Northern Boulevard. **Table 14-151** depicts total accident characteristics by intersection during the study period, as well as a breakdown of pedestrian and bicycle accidents by year and location. **Table 14-152** shows a detailed description of each accident at the seven high accident locations during the three year period.

Table 14-151
Accident Summary

Intersection		Study Period					Accidents by Year					
North-South Roadway	East-West Roadway	All Accidents by Year			Total Fatalities	Total Injuries	Pedestrian			Bicycle		
		2009	2010	2011			2009	2010	2011	2009	2010	2011
108th Street	Astoria Blvd	1	8	5	0	20						
108th Street	Northern Blvd	4	10	11	0	31			4			
108th Street	Roosevelt Ave	5	5	6	0	17	2		2	1		1
111th Street	Roosevelt Ave	4	5	1	0	10		4		2		
114th Street	Northern Blvd	16	17	8	0	47						
114th Street	34th Avenue	2	3	2	0	16						
114th Street	Roosevelt Ave	9	12	7	0	25		1		5	2	1
126th Street	Northern Blvd	23	29	25	0	106						
126th Street	34th Avenue	2	3	2	0	9						
126th Street	Roosevelt Ave	8	8	6	0	22				1	3	1
Willeys Point Blvd	Northern Blvd	1	1	0	0	0						
College Point Blvd	32nd Avenue	3	3	2	0	9					1	
College Point Blvd	Northern Blvd	5	1	2	0	8						
College Point Blvd	Roosevelt Ave	16	13	11	0	42	1	1	1		2	1
College Point Blvd	Sanford Ave	4	4	3	0	9	1	1	2	1		
Prince Street	Northern Blvd	15	7	14	0	37						
Prince Street	Roosevelt Ave	13	9	2	0	9	2		1	2		1
Main Street	Northern Blvd	14	11	17	0	29	3	2	3	1		
Main Street	Roosevelt Ave	10	12	7	0	29	6	6	4		4	2
Main Street	41st Avenue	9	6	6	1	16	4	2	4		1	
Union Street	Northern Blvd	40	33	25	1	92	10	15	6	2		
Union Street	Roosevelt Ave	16	5	9	0	19	6		4	2		
Union Street	Sanford Ave	9	12	3	0	11	1	1	1		2	
Parsons Blvd	Northern Blvd	16	20	18	0	56	3	5	6	1		
Parsons Blvd	Roosevelt Ave	4	8	5	0	8	1	2	2			1
Parsons Blvd	Sanford Ave	3	10	5	0	20	1		3			1
Shea Road	CitiField Lot N.	0	0	0	0	0						
Shea Road	GCP On/Off ramp	0	0	0	0	0						

Note: Bold intersections are high pedestrian accident locations.
Source: NYSDOT January 1, 2009 and December 31, 2011 accident data.

Table 14-152
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
114th Street & Roosevelt Avenue	2009	8/27	10:53 AM	X		Unknown	Unknown				Unknown
		9/13	4:10 AM	X		Going straight – East	Crossing against signal		X		Alcohol involvement
		9/18	9:45 AM	x		Merging – East	Crossing				Unknown
		10/27	14:50 PM	X		Going straight – East	Unknown				Unknown
		11/2	7:10 AM	X		Making right turn – East	Crossing with signal	X			
	2010	5/4	14:50 PM	X		Going straight – West	Crossing		X		
		6/27	9:00 AM	X		Going straight – West	Crossing with signal				Following too closely, Failure to yield R.o.W.
		7/25	3:00 AM	X		Going straight – West	Crossing				Unknown
		3/26	18:00 PM	X		Going straight – Unknown	Along highway with traffic				Driver inexperience
	2011										
Main Street & Northern Boulevard	2009	4/24	20:40 PM	x		Making left turn – Northwest	Crossing with signal	X			
		5/9	22:59 PM	X		Unknown	Crossing with signal				Unknown
		8/3	18:20 PM	X		Unknown	Unknown				Unknown
		8/16	8:20 AM	X		Making left turn – South	Crossing	X			
	2010	10/11	11:01 AM	X		Going straight – West	Crossing against signal		X		
		11/25	21:10 PM	X		Going straight – East	Crossing against signal		X		
	2011	1/6	13:05 PM	X		Making right turn – North	Crossing with signal	X			Other electronic device
		2/11	20:00 PM	X		Going straight – West	Unknown				Unknown
		10/7	15:45 PM	X		Backing – West	Crossing with signal				Unknown

Table 14-152 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Main Street & Roosevelt Avenue	2009	6/21	N/A	X		Making left turn – North	Crossing with signal	X			
		9/3	11:50 AM	x		Going straight – North	Crossing against signal		x	X	
		9/17	7:35 AM	X		Going straight – North	Crossing against signal		X		
		9/17	10:15 AM	X		Going straight – Unknown	Crossing against signal		X		
		12/22	8:50 AM	X		Making right turn – East	Crossing with signal	X			
		12/22	8:40 AM	X		Going straight – North	Crossing with signal				Unknown
	2010	1/14	18:35 PM	X		Going straight – West	Crossing against signal		X		
		4/8	15:00 PM	X		Starting from parking – West	Not in roadway		X		
		5/3	7:13 AM	X		Making left turn – North	Crossing against signal	X	X		Oversized vehicle
		5/24	40:45 AM	X		Making U turn – East	Along highway against traffic	X			
		6/27	10:40 AM	X		Making U turn – East	Going straight – South	X			Turning improper
		6/30	20:11 PM	X		Going straight – East	Crossing with signal			X	
		8/30	7:30 AM	X		Stopped in traffic – West	Going straight – West				Unknown
		9/29	14:30 PM	X		Going straight – South	Going straight – East		X		
		11/9	7:50 AM	X		Going straight – East	Crossing		X		
		12/8	16:05 PM	X		Going straight – East	Crossing with signal				Driver inexperience, Traffic control disregarded
	2011	2/11	12:15 PM	X		Backing – Northeast	Other actions in roadway			X	Backing unsafely
		4/8	18:50 PM	X		Going straight – South	Crossing				Unknown
		7/17	11:15 AM	X		Going straight – South	Crossing against signal		X		Failure to yield R.o.W.
		8/5	19:35 PM	X		Starting from parking – East	Along highway with traffic				Unsafe lane change
		8/9	11:10 AM	X		Parked – West	Other actions in roadway		X		
		12/6	10:00 AM	X		Backing – East	Other actions in roadway				Backing unsafely

Table 14-152 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Main Street & 41st Avenue / Kissena Boulevard	2009	1/27	12:06 PM	X		Going straight – South	Other actions in roadway		X		Failure to keep right
		8/4	9:40 AM	X		Going straight – West	Other actions in roadway				Unknown
		12/26	15:07 PM	X		Starting from parking – South	Working in roadway				Aggressive driving / road rage
	2010	2/18	17:10 PM	X		Going straight – North	Crossing				Unknown
		5/23	12:00 PM	X		Making right turn – South	Crossing with signal	X			Unsafe speed, Failure to yield R.o.W.
		7/4	16:48 PM	X		Going straight – South	Crossing				Unknown
		7/16	10:14 AM		X	Going straight – South	Along highway with traffic				Pavement defective
	2011	2/26	8:00 AM	X		Making right turn – North	Crossing with signal	X			Failure to yield R.o.W.
		5/14	9:55 AM	X		Making left turn – West	Crossing with signal	X	X	X	
		8/27	18:30 PM	X		Making right turn – North	Crossing with signal	X			Failure to yield R.o.W.
		12/4	15:50 PM	X		Making left turn – Southwest	Crossing with signal	X			Turning improper, unsafe speed
Union Street & Northern Boulevard	2009	3/9	14:00 PM	X		Making right turn – North	Crossing with signal	X			
		3/26	20:17 PM	X		Making left turn – Northwest	Crossing with signal	X			
		5/1	20:25 PM	X		Making left turn – West	Crossing	X			
		5/14	11:15 AM	X		Going straight – South	Crossing against signal		X		
		5/15	10:00 AM	X		Unknown	Not in roadway				Unknown
		6/3	9:40 AM	X		Going straight – North	Crossing against signal		X		
		6/27	15:30 PM	X		Unknown	Unknown				Unknown
		7/28	13:30 PM	X		Making left turn – Southeast	Crossing with signal	X			
		8/24	18:45 PM	X		Making right turn – South	Crossing with signal	X			
		11/5	19:10 PM	X		Making left turn – West	Crossing with signal	X		X	
		11/9	10:15 AM	X		Making left turn – West	Crossing with signal	X			Failure to yield R.o.W.
		11/21	8:23 AM	X		Making right turn on red – West	Making right turn on red – West	X	X	X	Driver inexperience, Passenger distraction
	2010	2/1	15:45 PM	X		Making left turn – North	Crossing with signal	X			
		2/18	15:32 PM	X		Making left turn – West	Crossing with signal	X	X		
		2/25	13:37 PM	X		Making left turn – Southeast	Crossing with signal	X			
		2/27	23:30 PM	X		Going straight – West	Crossing with signal				Unknown
		3/22	9:15 AM	X		Going straight – South	Unknown		X	X	
		3/23	17:35 PM	X		Making left turn – North	Unknown	X	X		

Table 14-152 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Union Street & Northern Boulevard	2010	5/8	16:50 PM	X		Making left turn – East	Crossing with signal	X			Failure to yield R.o.W.
		6/13	11:10 AM	X		Making left turn – Northwest	Crossing with signal	X			Failure to yield R.o.W.
		6/14	14:20 PM	X		Going straight – North	Crossing				Unknown
		7/28	8:15 AM	X		Making right turn – West	Crossing with signal	X			Failure to yield R.o.W.
		9/22	12:40 PM	X		Going straight – East	Crossing against signal		X		
		10/14	20:00 PM	X		Unknown	Crossing				Unknown
		11/8	21:17 PM		X	Going straight – North	Crossing with signal				Failure to yield R.o.W.
		12/17	9:35 AM	X		Making left turn – East	Crossing with signal	X			Failure to yield R.o.W.
	2011	1/28	23:28 PM	X		Making left turn – Southwest	Crossing with signal	X			Alcohol involvement
		2/16	20:40 PM	X		Making right turn – North	Unknown	X			
		3/24	22:10 PM	X		Going straight – East	Crossing				Unknown
		9/16	14:00 PM	X		Making right turn – West	Crossing with signal	X	X	X	
		9/22	17:15 PM	X		Making right turn – East	Crossing with signal	X			
		10/7	15:00 PM	X		Making right turn – West	Crossing with signal	X			
		11/4	22:30 PM	X		Making right turn – Northeast	Crossing with signal	X			Turning improper
Union Street & Roosevelt Avenue	2009	1/12	14:44 PM	X		Making left turn – West	Crossing with signal	X			Glare
		1/15	14:35 PM	X		Making left turn – South	Crossing with signal	X			
		2/17	10:30 AM	X		Unknown	Unknown				Unknown
		3/12	13:00 PM	X		Making right turn – East	Along highway with traffic	X			
		5/24	13:00 PM	X		Stopped in traffic – West	Crossing with signal				Brakes defective
		8/4	19:00 PM			Starting in traffic – North	Unknown				Aggressive driving / road rage
		12/23	19:45 PM	X		Making left turn – Southeast	Crossing with signal	X			Turning improper
		12/26	22:00 PM	X		Making right turn – North	Crossing with signal	X			
	2011	2/11	10:45 AM	X		Backing - East	Crossing				Backing unsafely
		3/10	10:15 AM	X		Making right turn – Southeast	Child getting on/off school bus	X		X	
		9/24	8:10 AM	X		Going straight – East	Crossing		X		
		11/28	18:00 PM	X		Making right turn – Southeast	Crossing with signal	X			

Table 14-152 (cont'd)
Vehicle and Pedestrian Accident Details

Intersection	Year	Date	Time	Accident Class		Action of Vehicle	Action of Pedestrian	Cause of Accident			
				Injured	Killed			Left / Right Turns	Pedestrian Error/ Confusion	Driver Inattention	Other
Parsons Boulevard & Northern Boulevard	2009	4/17	15:30 PM	X		Making left turn – West	Unknown	X			
		4/22	12:04 PM	X		Making left turn – Southwest	Crossing	X			
		8/4	10:30 AM	X		Making right turn – Southeast	Unknown	X			
		10/22	12:53 PM	X		Going straight – West	Crossing against signal		X	X	Unsafe speed, Failure to yield R.o.W.
	2010	2/2	13:15 PM	X		Going straight – West	Crossing against signal		X		Failure to yield R.o.W.
		7/6	17:25 PM	X		Unknown	Unknown				Unknown
		8/3	21:00 PM	X		Unknown	Unknown				Unknown
		12/24	18:30 PM	X		Going straight – West	Crossing		X		
		2011	1/27	12:45 PM	X		Backing – North	Crossing with signal			
	7/25		18:50 PM	X		Making left turn – Northwest	Crossing with signal	X			
	8/22		13:00 PM	X		Making left turn – West	Crossing with signal	X			Failure to yield R.o.W.
	8/23		14:20 PM	X		Other – Northwest	Not in roadway			X	
	9/28		13:50 PM	X		Making left turn – Southeast	Crossing with signal	X			
	11/2		15:30 PM	X		Unknown	Unknown				Unknown
	Source: NYSDOT January 1, 2009 and December 31, 2011 accident data.										

114TH STREET AND ROOSEVELT AVENUE

Based on the review of the accident history at the intersection of 114th Street and Roosevelt Avenue, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of 114th Street and Roosevelt Avenue is signalized and provides two high-visibility crosswalks and two regular crosswalks. In terms of project-generated activity, the intersection would experience incremental peak-hour volume increases of approximately 810 or fewer vehicle trips and 200 or fewer pedestrian trips at any crosswalks at this intersection during each of the seven analysis peak hours by the 2032 With Action condition. As discussed in the “Traffic and Parking” section, this intersection would be impacted during all seven analysis peak hours under the 2032 With Action condition.

As described in Chapter 21, “~~Mitigation~~,” the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures under the 2018 and 2028 With Action conditions. For the 2032 With Action condition, the predicted impacts at this intersection would be fully mitigated during the non-game analysis peak hours and would be partially mitigated during the game day analysis peak hours. In addition, the Queens Development Group, LLC (QDG), in consultation with the lead agency and NYCDOT, would develop and conduct a detailed traffic monitoring plan at various interim buildout phases of the proposed project to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need and effectiveness of the proposed mitigation measures identified in this SEIS or similar measures identified through the traffic monitoring plan.

Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., “Turning Vehicles Yield to Pedestrians” signs on all approaches), the installation of countdown timers for all crosswalks, and restriping the north and south crosswalks as high-visibility crosswalks, can be implemented to improve pedestrian safety at this intersection.

MAIN STREET AND NORTHERN BOULEVARD

Based on the review of the accident history at the intersection of Main Street and Northern Boulevard, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, Main Street and Northern Boulevard is a signalized, three-way intersection with three high-visibility crosswalks. In addition, countdown timers are installed for all crosswalks at this intersection. In terms of project-generated activity, this intersection is located in the secondary traffic study area and would experience incremental peak-hour volume increases of approximately 580 or fewer vehicle trips (all through) and there would not be any project-generated pedestrian trips at any crosswalks at this intersection during each of the seven analysis peak hours by the 2032 With Action condition. As discussed in the “Traffic and Parking” section, this intersection would be impacted during all seven analysis peak hours under the 2032 With Action condition.

As described in Chapter 21, ~~“Mitigation,”~~ the predicted impacts at this intersection could not be mitigated with standard traffic engineering measures under the 2032 With Action condition. However, as described above, all the proposed project-generated vehicle trips would be through trips at this intersection and there would be a negligible number of project-generated pedestrian trips at any crosswalks at this intersection, while a review of the vehicle and pedestrian accident details presented in **Table 14-152** indicates that the majority of pedestrian-related accidents were caused by pedestrian inattentiveness and driver failure to yield right of way. Since these accidents occurred primarily during vehicles making left and right turning movements, the through vehicle trips generated by the proposed project is not anticipated to result in additional conflicts with normal pedestrian flow. In addition, QDG, in consultation with the lead agency and NYCDOT, would develop and conduct a detailed traffic monitoring plan at various interim buildout phases of the proposed project to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need and effectiveness of the proposed mitigation measures identified in the this SEIS or similar measures identified through the traffic monitoring plan. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., “Turning Vehicles Yield to Pedestrians” signs on all approaches and “Wait for Walk Signal” signs for pedestrians) can be implemented to improve pedestrian safety at this intersection.

MAIN STREET AND ROOSEVELT AVENUE

Based on the review of the accident history at the intersection of Main Street and Roosevelt Avenue, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Main Street and Roosevelt Avenue is signalized and provides four school crosswalks. In addition, countdown timers are installed at all crosswalks at this intersection. Based on the detailed description, half of the pedestrian-related accidents were related to pedestrian error, with pedestrians crossing against the signal listed as a

contributing factor in six of the twenty-two accidents. In terms of project-generated activity, this intersection is located in the secondary traffic study area and would experience incremental peak-hour volume increases of approximately 220 or fewer vehicle trips (all through) and there would not be any project-generated pedestrian trips at any crosswalks at this intersection during each of the seven analysis peak hours by the 2032 With Action condition. As discussed in the “Traffic and Parking” section, this intersection would be impacted during all seven analysis peak hours under the 2032 With Action condition.

As described in Chapter 21, ~~“Mitigation,”~~ the predicted impacts at this intersection could be fully or partially mitigated with standard traffic engineering measures during the weekday AM and weekend midday non-game, weekday and weekend pre-game and weekend post-game peak hours, and could not be mitigated during the weekday midday and PM non-game peak hours under the 2032 With Action condition. However, as described above, all the proposed project-generated vehicle trips would be through trips at this intersection and there would be a negligible number of project-generated pedestrian trips at any crosswalks at this intersection, while a review of the vehicle and pedestrian accident details presented in **Table 14-152** indicates that the majority of pedestrian-related accidents were caused by pedestrian inattentiveness and driver failure to yield right of way. Since these accidents occurred primarily during vehicles making left and right turning movements and pedestrian inattentiveness, the through vehicle trips generated by the proposed project is not anticipated to result in additional conflicts with normal pedestrian flow. In addition, QDG, in consultation with the lead agency and NYCDOT, would develop and conduct a detailed traffic monitoring plan at various interim buildout phases of the proposed project to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need and effectiveness of the proposed mitigation measures identified in the this SEIS or similar measures identified through the traffic monitoring plan. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., “Turning Vehicles Yield to Pedestrians” signs on all approaches and “Wait for Walk Signal” signs for pedestrians) can be implemented to improve pedestrian safety at this intersection.

MAIN STREET AND 41ST AVENUE/KISSENA BOULEVARD

Based on the review of the accident history at the intersection of Main Street and 41st Avenue/Kissena Boulevard, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Main Street and 41st Avenue/Kissena Boulevard is signalized and provides four school crosswalks. In addition, countdown timers are installed at the Kissena Boulevard and Main Street crosswalks. Based on the detailed description, half of the pedestrian-related accidents were related to vehicles making left or right turning movements. In terms of project-generated activity, this intersection is located in the secondary traffic study area and would experience incremental peak-hour volume increases of approximately 10 or fewer vehicle trips and there would be a negligible number of project-generated pedestrian trips at any crosswalks at this intersection during each of the seven analysis peak hours by the 2032 With Action condition. As discussed in the “Traffic and Parking” section, this intersection would be impacted during the weekday and weekend non-game midday peak hours and the weekend pre-game peak hour under the 2032 With Action condition.

As described in Chapter 21, ~~“Mitigation,”~~ the predicted impacts at this intersection could be fully mitigated with standard traffic engineering measures under the 2032 With Action condition. In addition, QDG, in consultation with the lead agency and NYCDOT, would develop and conduct a detailed traffic monitoring plan at various interim buildout phases of the proposed project to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need and effectiveness of the proposed mitigation measures identified in the this SEIS or similar measures identified through the traffic monitoring plan. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., “Turning Vehicles Yield to Pedestrians” signs on all approaches), the installation of countdown timers on the remaining two crosswalks (the east and west crosswalks of 41st Avenue), and restriping a faded crosswalk on the western leg of 41st Avenue, can be implemented to improve pedestrian safety at this intersection.

UNION STREET AND NORTHERN BOULEVARD

Based on the review of the accident history at the intersection of Union Street and Northern Boulevard, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Union Street and Northern Boulevard is signalized and provides three school crosswalks and one regular crosswalk. In addition, countdown timers are installed at all crosswalks at this intersection and School Advance Warning Signs are located at all approaches except to the west. Based on the detailed description, two-thirds of the pedestrian-related accidents were related to vehicles making left or right turning movements. In all of these accidents, pedestrians were crossing with the signal; failure to yield right-of-way was listed as a contributing factor in five. In terms of project-generated activity, this intersection is located in the secondary traffic study area and would experience incremental peak-hour volume increases of approximately 580 or fewer vehicle trips (mostly through) and there would be a negligible number of project-generated pedestrian trips at any crosswalks at this intersection during each of the seven analysis peak hours by the 2032 With Action condition. As discussed in the “Traffic and Parking” section, this intersection would be impacted during all seven analysis peak hours under the 2032 With Action condition.

As described in Chapter 21, ~~“Mitigation,”~~ the predicted impacts at this intersection could be partially mitigated with standard traffic engineering measures during all analysis peak hours except for the weekday AM non-game peak hour where it could not be mitigated under the 2032 With Action condition. However, as described above, most of the proposed project-generated vehicle trips would be through trips at this intersection and there would not be any project-generated pedestrian trips at any crosswalks at this intersection, while a review of the vehicle and pedestrian accident details presented in **Table 14-152** indicates that the majority of pedestrian-related accidents were caused by pedestrian inattentiveness and driver failure to yield right of way. Since these accidents occurred primarily during vehicles making left and right turning movements, the mostly through vehicle trips generated by the proposed project is not anticipated to result in additional conflicts with normal pedestrian flow. In addition, QDG, in consultation with the lead agency and NYCDOT, would develop and conduct a detailed traffic monitoring plan at various interim buildout phases of the proposed project to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need and effectiveness of the proposed mitigation measures identified in the this SEIS or similar measures identified through the traffic monitoring plan. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents.

Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., “Turning Vehicles Yield to Pedestrians” signs on all approaches) and restriping the southern crosswalk as a high-visibility crosswalk, can be implemented to improve pedestrian safety at this intersection.

UNION STREET AND ROOSEVELT AVENUE

Based on the review of the accident history at the intersection of Union Street and Roosevelt Avenue, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Union Street and Roosevelt Avenue is signalized and provides two school crosswalks and two regular crosswalks. Based on the detailed description, half of the pedestrian-related accidents were related to vehicles making left or right turning movements. In all of these accidents, pedestrians were crossing with the signal. In terms of project-generated activity, this intersection is located in the secondary traffic study area and would experience incremental peak-hour volume increases of approximately 220 or fewer vehicle trips (mostly through) and there would be a negligible number of project-generated pedestrian trips at any crosswalks at this intersection during each of the seven analysis peak hours by the 2032 With Action condition. As discussed in the “Traffic and Parking” section, this intersection would be impacted during all seven analysis peak hours under the 2032 With Action condition.

As described in Chapter 21, ~~“Mitigation,”~~ the predicted impacts at this intersection could not be mitigated with standard traffic engineering measures under the 2032 With Action condition. However, as described above, most of the proposed project-generated vehicle trips would be through trips at this intersection and there would not be any project-generated pedestrian trips at any crosswalks at this intersection, while a review of the vehicle and pedestrian accident details presented in **Table 14-152** indicates that the majority of pedestrian-related accidents were caused by driver failure to yield right of way. Since these accidents occurred primarily during vehicles making left and right turning movements, the mostly through vehicle trips generated by the proposed project is not anticipated to result in additional conflicts with normal pedestrian flow. In addition, QDG, in consultation with the lead agency and NYCDOT, would develop and conduct a detailed traffic monitoring plan at various interim buildout phases of the proposed project to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need and effectiveness of the proposed mitigation measures identified in the this SEIS or similar measures identified through the traffic monitoring plan. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., “Turning Vehicles Yield to Pedestrians” signs on all approaches), the installation of countdown timers on all crosswalks, and restriping the north and south crosswalks as high-visibility crosswalks, can be implemented to improve pedestrian safety at this intersection.

PARSONS BOULEVARD AND NORTHERN BOULEVARD

Based on the review of the accident history at the intersection of Parsons Boulevard and Northern Boulevard, no prevailing trends with regard to geometric deficiencies were identified as the primary causes of recorded accidents. With respect to geometric deficiencies that could potentially cause safety hazards, the intersection of Parsons Boulevard and Northern Boulevard is signalized and provides four high-visibility crosswalks. In addition, countdown timers are installed at the north and south crosswalks at this intersection. Based on the detailed description,

half of the pedestrian-related accidents were related to vehicles making left or right turning movements. In terms of project-generated activity, this intersection is located in the secondary traffic study area and would experience incremental peak-hour volume increases of approximately 580 or fewer vehicle trips (mostly through) and there would be a negligible number of project-generated pedestrian trips at any crosswalks at this intersection during each of the seven analysis peak hours by the 2032 With Action condition. As discussed in the “Traffic and Parking” section, this intersection would be impacted during all seven analysis peak hours under the 2032 With Action condition.

As described in Chapter 21, ~~“Mitigation,”~~ the predicted impacts at this intersection could be fully or partially mitigated with standard traffic engineering measures during all analysis peak hours under the 2032 With Action condition. However, as described above, most of the proposed project-generated vehicle trips would be through trips at this intersection and there would not be any project-generated pedestrian trips at any crosswalks at this intersection, while a review of the vehicle and pedestrian accident details presented in **Table 14-152** indicates that the majority of pedestrian-related accidents were caused by pedestrian inattentiveness and driver failure to yield right of way. Since these accidents occurred primarily during vehicles making left and right turning movements, the mostly through vehicle trips generated by the proposed project is not anticipated to result in additional conflicts with normal pedestrian flow. In addition, QDG, in consultation with the lead agency and NYCDOT, would develop and conduct a detailed traffic monitoring plan at various interim buildout phases of the proposed project to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need and effectiveness of the proposed mitigation measures identified in the this SEIS or similar measures identified through the traffic monitoring plan. Therefore, the proposed project is not anticipated to exacerbate any of the current causes of pedestrian-related accidents. Nonetheless, additional safety measures, such as the installation of pedestrian safety signs (i.e., “Turning Vehicles Yield to Pedestrians” signs on all approaches), the installation of countdown timers on the remaining two crosswalks, can be implemented to improve pedestrian safety at this intersection.

M. DUAL EVENT CONDITIONS WITH U.S. TENNIS OPEN

Met home games and the US Tennis Open event occur during the same two-week period in late August/early September every other year. The 2008 FGEIS stated that the proposed Willets Point Development Plan “would add significant traffic volumes to the surrounding highway network and key local roadways, such as Northern Boulevard and Roosevelt Avenue,” and that the Dual Event Condition with a Met game and the US Open “would experience worsened delays and additional queuing compared with the No Action condition,” and that “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 Development Plan,” but that “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 Development Plan”. These conclusions vis-à-vis the US Open would again apply to conditions with the newly-proposed Development Plan that is the subject of this SEIS.

N. POTENTIAL MAJOR LEAGUE SOCCER STADIUM

TRAFFIC AND PARKING

Major League Soccer (MLS) is considering a number of existing venues or potential future development sites in the City to house its newly-created New York team. Major League Soccer

(MLS) is proposing to build a stadium. One of these sites is within the eastern section of Flushing Meadows-Corona Park on Industry Pond. While there has been no definitive decision as to where a new stadium might be sited, this Final SEIS continues to consider a stadium on Industry Pond in Flushing Meadows-Corona Park as a possible site and continues to make reasonable assumptions as to the playing schedule and impacts that such a project may generate, as was discussed in the Draft SEIS.

The stadium plans currently call for an initial 25,000-seat stadium that can be expanded to accommodate 10,000 more seats—to a total of 35,000 seats—in the future. The planned year would be 2016, with the expectation that the stadium would be expanded approximately ten years later, in or about 2026. It is possible that the full stadium shell could be built by 2016 with the initial 25,000 seats ready for use at that time, with the additional seating added ten years or so later. MLS games are expected to occur on approximately 17 to 20 days of the year (17 pre-season and regular season games, plus up to three playoff games should the team advance to and through the playoffs). Scheduling of Met and soccer games would avoid any concurrency or overlap in trips between games at the two stadiums. Similarly, off-season events that may take place at CitiField and the MLS stadium would be coordinated to avoid any concurrency or overlap in scheduling. Since a Met game and an MLS game would be representative worst-case events at the respective venues, these other off-season events are expected to generate relatively smaller attendances and trip-making. Thus, the discussion below focuses on a comparison of trip-making characteristics between a Met game and an MLS game.

The expectation is that the vast majority of MLS games (approximately 85 percent) would be played on a Saturday night and the remainder would be played on a weekday night (15 percent). MLS parking would occur primarily within parking facilities used by Met fans and would be supplemented by parking spaces to be provided within the park, likely under a section of the Van Wyck Expressway or other parking lots within Flushing Meadows-Corona Park. While the exact location and number of parking spaces to be provided within the park is not known at this time, the most recent information from MLS on the anticipated parking within the park and its planned use of Mets parking was used in the assessments discussed below.

Because MLS is expecting to start with a stadium with 25,000 seats and expand to one with 35,000 seats—both less than the capacity of CitiField—it is not expected that an MLS game would add more traffic to the roadway network than would a Met game. Traffic analyses being prepared for MLS by others indicate that the attendance would be approximately 90 percent of stadium capacity (22,500 fans for a 25,000 seat stadium; 31,500 fans for a 35,000 seat stadium) on a typical day, which would be within the 85th percentile attendance analyzed for conditions with a Met game. For the purposes of a conservative analysis, the assessments presented below are based on the construction of 35,000 seats in 2016. The auto and taxi share of MLS trips (estimated by MLS based on actual surveys of MLS games to range between 49 and 52 percent) is also expected to be lower than those for Met trips (62 percent per the Shea Stadium Redevelopment FEIS, 2001). For the average number of patrons per vehicle, MLS estimated that it would be the same as the Mets, at 2.7. MLS also estimated based on surveys that 55 percent of the arrivals on weekends and 65 percent of the arrivals on weekdays would occur during the peak arrival hour, as compared to 61 percent for the Met. So overall, an MLS event would generate fewer vehicle trips than would a Met game. Although traffic routes used by MLS fans will be similar to those used by Met fans, it is possible that MLS vehicular trip patterns will be slightly different from those for Met games since trip origins may be somewhat different and since some percentage of MLS fans will take routes to parking within Flushing Meadows-Corona Park that are not used by Met fans.

Although consideration of an MLS event would include less overall vehicular traffic than would a Met game, two sets of traffic assignments were conducted—one for just Met game-generated vehicle trips and the other for just MLS soccer-generated vehicle trips for both types of events for a weeknight arrival peak hour and for a weekend arrival peak hour. This was done so this SEIS could preliminarily identify which, if any, traffic analysis locations could possibly have more vehicle traffic in the baseline (No Action) condition due to differences in traffic routes used to get to each venue, especially since MLS fans driving to a soccer game would, to some degree, park at locations within Flushing Meadows-Corona Park and therefore use routes that Met fans might not use en route to parking at CitiField. These sets of traffic assignments—and the conclusions reached—are preliminary, for the purposes of this SEIS, since they are based on preliminary information available at this time. ~~Follow-up analyses will be conducted if updated information becomes available, potentially during the period between certification of this Draft SEIS and the Final SEIS. There has been no new information since certification of the Draft SEIS; therefore the assessments presented below are based on the information cited above.~~ Based on the assessments presented below, for the majority of the traffic study area intersections, an MLS game would result in fewer vehicle trips than a Met game. However, based on the assessment of information available at this time, it is possible that higher traffic volumes could occur at up to nine study area intersections with an MLS game during peak arrival periods. These intersections could potentially incur worsened significant impacts with an MLS game in the background condition, or it is also possible that the magnitude of significant impacts identified earlier in this chapter would remain the same or could be lower with an MLS game. For those intersections that could operate at somewhat worsened conditions with an MLS event in the background instead of a Met game, it is possible that additional mitigation may be needed or it may be possible that one or more additional intersections could not be mitigated.

WEEKNIGHT PRE-GAME VEHICLE TRAFFIC ARRIVALS

Traffic assignments were prepared for the peak arrival hour for a weeknight Met game and for the peak arrival hour for a weeknight MLS game, and a comparison was made of traffic volumes for each traffic analysis location (intersection analysis locations and highway segments). The Met weeknight pregame traffic arrival peak hour (for a 7 PM start time) is 5:30 to 6:30 PM; the MLS weeknight pregame traffic arrival peak hour (for a 7 PM expected start time) is expected to be somewhat later at 6:15 to 7:15 PM. Overall, Met game vehicle trips are approximately 43 percent higher than MLS vehicle trips. Also, MLS games are only expected to occur on weeknights approximately three times per year. The detailed route-by-route, intersection-by-intersection trip assignments, however, show—in Phase 1A with a fully built 35,000 seat MLS stadium—that there could be up to nine intersections where background volumes for an MLS event are higher than those for a Met game, including the following:

- Northern Boulevard at Parsons Boulevard, Union Street, Main Street, and Prince Street
- Northern Boulevard westbound service road at College Point Boulevard
- Northern Boulevard at 126th Street
- College Point Boulevard at Roosevelt Avenue and at Sanford Avenue
- Roosevelt Avenue at 126th Street

There are three other intersections analyzed along Roosevelt Avenue west of CitiField—at 114th Street, 111th Street, and 108th Street—where the increase in traffic volumes with MLS is just one vehicle trip higher than for Met game nights; it is unlikely that this difference of just one vehicle trip would significantly change level of service, delay or significant traffic impact

conclusions at these three intersections, where such an increase would represent less than 0.1 percent of the existing peak hour traffic volumes at these intersections. At some of the nine intersections cited above, the increase of vehicle trips between Met games and MLS games may occur for one specific traffic movement (e.g., left turns from westbound Roosevelt Avenue onto southbound College Point Boulevard) while the overall volumes through the intersection are higher for Met games than for MLS games. Therefore, the number of intersections with worsened conditions may be fewer than the nine intersections listed above.

As noted above, the preliminary volume comparison is based on the full 35,000 seat MLS stadium being built in 2016 (and is assumed to thus be in place by the proposed project's Phase 1A Build year) even though future MLS updates may confirm that only a 25,000 seat stadium would be in place by Phase 1A, in which case the magnitude of MLS-generated volumes would be lower and its volumes may exceed Met-generated volumes at fewer than the nine intersections listed above. For Phases 1B and 2, with the full 35,000 seat MLS stadium built, the comparison of vehicle trip assignments shows that the same nine intersections cited above could have volumes higher than on Met weeknight games.

Overall, MLS trips that are expected to arrive via the highway network are lower than Met trips arriving from the same origins via the highway network. However, due to the proposed MLS parking facilities located under a section of the Van Wyck Expressway or other parking lots within Flushing Meadows-Corona Park, three highway mainline segments and ramps analyzed for this SEIS would experience volumes higher than for a Met game: the southbound Van Wyck Expressway between Roosevelt Avenue and the LIE; the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway; and the ramp from the southbound Whitestone Expressway to the southbound Van Wyck Expressway. These three highway elements do not carry any Met trips under existing conditions and are not expected to carry any Met trips under No Action or With Action conditions.

WEEKNIGHT POST-GAME VEHICLE TRAFFIC DEPARTURES

The weeknight post-game condition would generally occur much later at night, and only three times per year, when traffic generated by the proposed project would be much lower and background traffic volumes are much lower than in the peak hours analyzed in the FGEIS and in the SEIS. Therefore a weeknight post-game traffic analysis is not needed either for background conditions with an MLS game or with a Met game. As noted above, an MLS game would only occur approximately three times per year on a weeknight.

WEEKEND PRE-GAME VEHICLE TRAFFIC ARRIVALS

Traffic assignments were also prepared for the peak arrival hour for a weekend Met game and for the peak arrival hour for a weekend MLS game, and a comparison was made of traffic volumes for each traffic analysis location (intersection analysis locations and highway segments). Overall, Met game vehicle trips are approximately 47 percent higher than MLS vehicle trips. The detailed route-by-route, intersection-by-intersection trip assignments, however, show—in Phase 1A with a fully built 35,000 seat MLS stadium -- that there could be up to nine intersections where background volumes for an MLS event are higher than those for a Met game; these are the same locations listed above for weeknights.

As noted above for the weeknight pre-game condition, at some of the intersections, the increase of vehicle trips between Met games and MLS games may occur for one specific traffic movement (e.g., left turns from westbound Roosevelt Avenue onto southbound College Point Boulevard) while the overall volumes through the intersection are higher for Met games than for

MLS games. Therefore, the number of intersections with worsened conditions may be less than the nine intersections listed above.

Overall, MLS trips that are expected to arrive via the highway network are lower than Met trips arriving from the same origins via the highway network. However, due to the proposed MLS parking facilities located under a section of the Van Wyck Expressway or other parking lots within Flushing Meadows-Corona Park, three highway mainline segments and ramps analyzed for this SEIS would experience volumes higher than for a Met game: the southbound Van Wyck Expressway between Roosevelt Avenue and the LIE; the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway; and the ramp from the southbound Whitestone Expressway to the southbound Van Wyck Expressway. These three highway elements do not carry any Met trips under existing conditions and are not expected to carry any Met trips under No Action or With Action conditions.

WEEKEND POST-GAME VEHICLE TRAFFIC DEPARTURES

The weekend post-game condition would generally occur much later at night as was noted above for weeknight post-game conditions, when traffic generated by the proposed project would be much lower and background traffic conditions are also much lower than in the peak hours analyzed in the FGEIS and in the SEIS. Therefore a weekend post-game traffic analysis is not needed either for background conditions with an MLS game or with a Met game.

LEVELS OF SERVICE AND THE POTENTIAL FOR ADDITIONAL OR WORSENERD SIGNIFICANT TRAFFIC IMPACTS

For conditions with a Met game, previous sections of this chapter indicate that eight of the nine intersections identified above would be significantly impacted in Phases 1A and 1B of the proposed project; during Phase 2 of the proposed project, all nine would be significantly impacted on Met game nights. These intersections could potentially incur worsened significant impacts with an MLS game in the background condition, or it is also possible that the magnitude of significant impacts identified earlier in this chapter would remain the same or could be lower with an MLS game. As described in Chapter 21, “Mitigation”, several of these intersections can be mitigated using standard traffic capacity improvements such as signal timing changes, parking regulation modifications, lane re-striping, geometric improvements, or other measures for conditions with a Met game as part of the background condition. For those intersections that could operate at somewhat worsened conditions with an MLS event in the background instead of a Met game, it is possible that additional mitigation may be needed or it may be possible that one or more additional intersections could not be mitigated. An updated analysis of these intersections ~~is not needed since new will be conducted if updated~~ MLS information ~~has not become available~~ becomes available, potentially during the period between ~~since~~ certification of this ~~the~~ Draft SEIS, and the Final SEIS. If more information is available, ~~Therefore,~~ the traffic assignments conducted for this ~~the~~ Draft SEIS ~~will be reviewed and do not need to be~~ updated, if necessary, and a full level of service impact analysis ~~is not needed~~ will be conducted for locations where volumes with MLS would significantly exceed those with a Met game, on weekends, to determine whether new impacts or worsened impacts could be expected under future baseline conditions with an MLS stadium. A weeknight pregame traffic level of service analysis ~~would~~ is not be needed since it is expected that MLS will have games on only three weeknights of the year.

TRANSIT AND PEDESTRIANS

For transit use, the current projections prepared for MLS show approximately 45 percent higher peak hour usage of the Mets-Willets Point subway station for weekday and weekend arrival than accounted for Met games in this ~~Draft~~ Final SEIS's transit analysis. At the station's street-level stairways on the north side of Roosevelt Avenue, although significant adverse impacts have been identified, they would not be exacerbated by an MLS event since all of its trip-making through this station would be directed to the south end of the station. The MLS pedestrian movements would be facilitated by the station's southern connection to the passerelle, similar to what would occur during the US Open at the National Tennis Center. However, there would be more projected subway riders at the station elements connecting to the No. 7 train platforms (i.e., stairways, ramps, and control areas) during the peak arrival hour to an MLS game than to a Met game. Based on the impact analysis conducted for these station elements, no significant adverse impacts were identified with Met trips assumed in the future No Action background. It is expected that the higher MLS trips would not result in new impacts on the Manhattan-bound ramps and turnstiles during these peak arrival periods. However, at the Queens-bound stairways and connecting turnstiles, the higher background volumes from the MLS could result in the potential for new significant adverse impacts that would not otherwise occur with the Mets. Since there has not been new ~~Between the Draft and Final SEIS, if more updated information made available on from the MLS study becomes available, it will be used to examine~~ certification of the Draft SEIS and preparation of this Final SEIS, no additional analyses were prepared to ascertain the potential for significant adverse impacts at these station elements or, if necessary, develop. If impacts are identified, improvement measures, such as stairway widenings, will be explored to mitigate these impacts to the extent practicable. Therefore, should the impacts occur, they would be deemed unmitigatable for the purposes of this Final SEIS. If no feasible measures can be identified at that time, these impacts will be disclosed as unmitigatable. In addition, as discussed in Section ~~I H~~, "Scope of Analysis (Transit and Pedestrians)," NYCT's potential future reconfiguration of the Mets-Willets Point subway station to maintain a single set of fare zone condition for game-day and non-game day operations could alter the circulation path of MLS patrons through the station, possibly via more constrained station elements. This potentially more congested background condition overlaid with project-generated trips could result in worse or new significant adverse impacts at the existing and future station elements. Accordingly, potential improvement measures will be explored to mitigate these impacts to the extent practicable. If no feasible measures can be identified at that time, these impacts will likewise be disclosed as unmitigatable. However, no changes to operating plans were announced by NYCT between the Draft and Final Supplemental Environmental Impact Statements; therefore, any potential changes that may be considered for future implementation will be addressed outside of this environmental review.

With regard to pedestrian conditions analyzed in this ~~Draft~~ Final SEIS, an MLS game may also result in increased volumes at some of the study area pedestrian analysis locations. As discussed above, all MLS trips made to the Mets-Willets Point subway station would be directed onto the passerelle and would not affect on-street elements in the pedestrian study area. MLS's projected higher travel by City buses would also have minimal effects (Q48 passengers only along Roosevelt Avenue) since this would still be a very small percentage of MLS's overall trip-making. Its walk-only trips would largely be limited to locations near the MLS stadium, outside of this ~~Draft~~ Final SEIS's pedestrian study area. The only travel that could potentially have an effect on the study area pedestrian elements would be related to auto trips accommodated in Met parking facilities and walking via the passerelle to the MLS stadium. For those parking in

Southfield/Lot D, they would not traverse the study area pedestrian elements. Hence, during Phase 1B and Phase 2 of the proposed project, with all MLS parkers accommodated within parking near the MLS stadium and within parking in Southfield/Lot D, a background condition with a Met game would be conservatively representative for evaluating potential impacts at this ~~Draft~~ Final SEIS's pedestrian study area.

During Phase 1A when approximately 2,750 parking spaces would be provided in the interim parking lots within the District, Met and MLS parkers would need to walk at-grade for part of their trips to CitiField or the MLS stadium. The numbers of vehicles arriving at the District's interim parking lots during the Met weekday pre-game and weekend pre-game peak hours were estimated at approximately 1,500. Based on MLS's current projections, the corresponding numbers of MLS parkers during these arrival periods would be approximately 1,750. At 2.7 persons per vehicle, the Met arrivals during the weekday pre-game and weekend pre-game peak hours would yield approximately 4,000 pedestrians, who would need to cross 126th Street to get to CitiField. The corresponding numbers of MLS pedestrians during these arrival periods, also at 2.7 persons per vehicle, would be approximately 4,700. On Met game days, traffic control officers are present to facilitate vehicular and pedestrian flow and to minimize conflicts at strategic locations. For those parking at the District's interim parking lots during Phase 1A, pedestrians crossing 126th Street between 34th and Roosevelt Avenues are expected to be managed by these traffic control officers. Game-day management of patrons parking at the District's interim parking lots is expected to be comparable on an MLS game day. After crossing over to the west side of 126th Street, however, the MLS patrons would be expected to either use the pedestrian plaza adjacent to CitiField and Willets West or along the north side of Roosevelt Avenue to walk to the grand stairs connecting to the Mets-Willets Point subway station. As with Met game days, crossing Roosevelt Avenue at this location is restricted by traffic control officers. Therefore, these MLS patrons would be expected then to walk up the grand stairs, through the station, and continue south onto the passerelle, or as noted above via other existing or new station circulation elements.

As discussed above, crossing 126th Street between 34th and Roosevelt Avenues would be managed by traffic control officers and the slightly higher pedestrian volumes associated with the MLS parkers would not be expected to materially affect how the game-day management here would take place. However, at Roosevelt Avenue, an MLS game could result in more pedestrian trips at the 126th Street north crosswalk and on the north sidewalk of Roosevelt Avenue between 126th Street and the Mets-Willets Point subway station. Under Phase 1A, neither of these pedestrian elements was determined to incur significant adverse pedestrian impacts. ~~If~~ Since there has not been new information on the MLS project ~~becomes available between~~ since certification of the Draft and Final SEIS regarding the phased construction of the MLS stadium, ~~it will be used~~ there has not been a need to examine if new significant adverse pedestrian impacts could potentially occur at these locations. ~~Where appropriate, mitigation measures similar to those presented in this Draft SEIS will be explored to address these impacts to the extent practicable, and where pedestrian impacts cannot be feasibly mitigated, they will be disclosed as unmitigatable.~~

Detailed Intersection Level of Service Tables

TABLE 1
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2012 EXISTING TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)				
		Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
				Delay	LOS			Delay	LOS			Delay	LOS			Delay	LOS	
SIGNALIZED INTERSECTIONS																		
ASTORIA BOULEVARD																		
108th Street at Astoria Boulevard																		
108th Street	NB	DefL	0.61	47.9	D	DefL	0.32	23.3	C	DefL	0.42	40.7	D	DefL	0.39	24.5	C	
		T	0.19	35.1	D	T	0.09	19.7	B	T	0.17	34.8	C	T	0.16	20.5	C	
	SB	LTR	0.31	37.5	D	LTR	0.13	20.1	C	LTR	0.32	37.6	D	LTR	0.21	21.0	C	
		EB	TR	0.54	24.5	C	TR	0.73	26.1	C	TR	0.84	24.9	C	TR	0.84	28.0	C
	WB	L	0.51	13.0	B	L	0.61	22.7	C	L	0.68	42.8	D	L	0.53	21.9	C	
		TR	0.73	7.3	A	TR	0.29	12.0	B	TR	0.30	9.4	A	TR	0.32	12.2	B	
Overall Intersection		-	0.70	15.9	B	-	0.59	21.2	C	-	0.71	23.8	C	-	0.64	22.3	C	
NORTHERN BOULEVARD																		
108th Street at Northern Boulevard (RT. 25A)																		
108th Street	NB	LTR	1.03	72.6	E	LTR	1.00	62.3	E	LTR	1.00	64.5	E	LTR	0.97	59.9	E	
		SB	LTR	0.82	58.1	E	LTR	0.74	49.9	D	LTR	0.93	58.6	E	LTR	0.76	50.8	D
	Northern Boulevard (Rt. 25A)	EB	L	0.07	16.2	B	L	0.06	16.7	B	L	0.12	22.7	C	L	0.15	29.2	C
		TR	0.65	17.8	B	TR	0.73	22.2	C	TR	0.75	11.9	B	TR	0.81	24.3	C	
	WB	L	0.33	14.8	B	L	0.48	26.2	C	L	0.51	30.9	C	L	0.51	30.8	C	
		TR	0.92	15.5	B	TR	0.81	24.5	C	TR	0.96	26.8	C	TR	1.02	39.3	D	
Overall Intersection		-	0.83	22.2	C	-	0.87	29.1	C	-	0.91	24.7	C	-	0.90	35.9	D	
114th Street at Northern Boulevard (RT. 25A)																		
114th Street	SB	LTR	0.45	47.1	D	LTR	0.37	43.9	D	LTR	0.38	45.5	D	LTR	0.35	43.3	D	
		EB	T	0.70	33.8	C	T	0.63	21.7	C	T	0.99	24.0	C	T	0.58	20.7	C
	Northern Boulevard (Rt. 25A)	R	0.66	34.9	C	R	0.37	18.0	B	R	0.74	15.5	B	R	0.51	20.6	C	
		WB	LT	1.01	25.6	C	DefL	0.40	10.6	B	DefL	0.82	48.7	D	DefL	0.58	12.0	B
		-	-	-	-	T	0.59	9.8	A	T	0.77	11.7	B	T	0.84	14.5	B	
		Overall Intersection		-	0.90	28.8	C	-	0.94	16.2	B	-	1.33	19.9	B	-	1.11	17.6
126th Street at Northern Boulevard (RT. 25A)																		
126th Street	NB	L	0.17	39.6	D	L	0.33	41.8	D	L	0.27	40.9	D	L	0.34	41.9	D	
		R	0.25	40.9	D	R	0.29	41.6	D	R	0.26	40.9	D	R	0.32	41.8	D	
	Northern Boulevard	EB	T	0.17	6.0	A	T	0.25	6.5	A	T	0.30	6.8	A	T	0.24	6.4	A
		WB	T	0.57	9.5	A	T	0.23	6.4	A	T	0.30	6.9	A	T	0.23	6.3	A
	Grand Central Parkway Ramp	EB	T	0.34	7.2	A	T	0.29	6.8	A	T	0.38	7.5	A	T	0.32	7.0	A
	Van Wyck & Whitestone Expressway Ramp	WB	T	1.05	85.4	F	T	0.71	14.3	B	T	0.84	19.9	B	T	0.70	13.6	B
Overall Intersection		-	0.86	34.9	C	-	0.62	13.1	B	-	0.71	13.8	B	-	0.62	13.1	B	
Prince Street at Northern Boulevard (RT. 25A)																		
Prince Street	NB	LTR	1.04	88.7	F	LTR	1.05	73.2	E	LTR	1.05	75.0	E	LTR	1.05	72.2	E	
		SB	LTR	0.75	51.3	D	LTR	0.51	40.6	D	LTR	0.49	41.0	D	LTR	0.44	36.3	D
	Northern Boulevard (Rt. 25A)	EB	L	0.91	83.9	F	L	0.85	67.1	E	L	0.58	44.8	D	L	0.63	48.4	D
		T	0.60	17.4	B	T	0.64	23.6	C	T	0.73	25.4	C	T	0.75	26.0	C	
	WB	L	0.82	72.7	E	L	0.80	76.7	E	L	0.74	65.9	E	L	0.76	60.6	E	
		T	0.96	27.1	C	T	0.79	32.5	C	T	0.79	34.6	C	T	0.86	34.7	C	
Northern Boulevard Service Rd.	EB	TR	0.30	14.2	B	TR	0.39	20.8	C	TR	0.41	21.1	C	TR	0.47	22.1	C	
	WB	TR	0.57	17.2	B	TR	0.60	30.7	C	TR	0.56	31.6	C	TR	0.63	30.7	C	
Overall Intersection		-	0.97	31.0	C	-	0.88	35.3	D	-	0.83	34.5	C	-	0.87	34.9	C	
Main Street at Northern Boulevard (RT. 25A)																		
Main Street	NB	L	0.43	34.5	C	L	0.43	34.4	C	L	0.40	33.9	C	L	0.45	34.8	C	
		R	0.78	47.0	D	R	0.63	36.9	D	R	0.86	55.3	E	R	0.83	53.9	D	
	Northern Boulevard (Rt 25A)	EB	T	0.70	28.2	C	T	0.66	27.1	C	T	0.80	26.2	C	T	0.68	27.3	C
		R	0.81	39.2	D	R	0.87	42.6	D	R	0.85	36.5	D	R	1.03	68.0	E	
	Northern Boulevard (Rt 25A)	WB	L	0.16	26.3	C	L	0.10	25.6	C	L	0.16	26.7	C	L	0.08	25.1	C
		T	0.95	19.8	B	T	0.67	20.5	C	T	0.68	20.7	C	T	0.84	24.5	C	
Overall Intersection		-	0.80	26.5	C	-	0.76	27.8	C	-	0.85	27.7	C	-	0.94	33.2	C	
Union Street at Northern Boulevard (RT. 25A)																		
Union Street	NB	TR	0.59	32.9	C	TR	0.62	33.6	C	TR	0.66	34.4	C	TR	0.62	33.6	C	
		SB	TR	0.83	38.9	D	TR	0.50	31.1	C	TR	0.75	36.5	D	TR	0.59	32.9	C
	Northern Boulevard (Rt. 25A)	EB	L	0.89	53.7	D	L	0.48	19.3	B	L	0.72	33.5	C	L	0.69	30.8	C
		TR	0.88	38.0	D	TR	0.88	38.5	D	TR	0.83	33.3	C	TR	1.01	47.6	D	
	WB	L	0.79	32.9	C	L	0.73	32.3	C	L	0.65	31.4	C	L	0.60	28.3	C	
		TR	0.89	34.5	C	TR	0.74	34.4	C	TR	0.84	36.7	D	TR	0.93	39.2	D	
Overall Intersection		-	0.87	36.6	D	-	0.79	34.7	C	-	0.82	34.8	C	-	0.84	39.8	D	
Parsons Boulevard at Northern Boulevard (RT. 25A)																		
Parsons Boulevard	NB	L	0.85	68.4	E	L	0.61	47.9	D	L	0.74	56.2	E	L	0.71	53.4	D	
		TR	0.53	38.9	D	TR	0.49	38.1	D	TR	0.47	34.7	C	TR	0.57	39.9	D	
	SB	LTR	0.75	43.5	D	LTR	1.02	62.1	E	LTR	1.04	65.3	E	LTR	1.04	67.3	E	
		EB	L	0.50	43.3	D	L	0.64	44.9	D	L	0.40	40.0	D	L	0.44	44.1	D
	Northern Boulevard (Rt. 25A)	TR	0.90	37.6	D	TR	0.86	34.7	C	TR	0.82	27.9	C	TR	0.94	37.2	D	
		WB	L	0.38	30.3	C	L	0.29	27.1	C	L	0.36	33.1	C	L	0.44	37.5	D
		TR	1.02	42.7	D	TR	1.00	42.5	D	TR	0.96	38.3	D	TR	1.03	48.5	D	
Overall Intersection		-	0.97	42.0	D	-	0.98	41.7	D	-	0.94	37.3	D	-	1.05	45.8	D	
34TH AVENUE																		
114th Street at 34th Avenue																		
114th Street	SB	L	0.74	33.5	C	L	0.70	34.6	C	L	0.88	42.7	D	L	0.85	42.7	D	
		T	0.30	24.4	C	T	0.22	23.9	C	T	0.38	25.7	C	T	0.32	25.1	C	
	EB	TR	0.42	11.7	B	TR	0.38	11.2	B	TR	0.36	11.0	B	TR	0.54	13.2	B	
Overall Intersection		-	0.53	21.7	C	-	0.49	22.1	C	-	0.54	27.6	C	-	0.65	25.4	C	

TABLE 1
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2012 EXISTING TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	-	-	-	-	-	-	-	-	DefL	0.31	22.8	C	-	-	-	-
		LTR	0.13	19.4	B	LTR	0.20	20.2	C	TR	0.19	20.2	C	LTR	0.21	20.4	C
Northern Boulevard Ramp	SB	LTR	0.25	21.3	C	LTR	0.30	22.1	C	LTR	0.21	20.8	C	LTR	0.29	22.0	C
GCP Ramp	SB	LTR	0.57	50.1	D	LTR	0.60	51.2	D	LTR	0.55	49.5	D	LTR	0.63	52.4	D
Shea Road	EB	LTR	0.45	42.7	D	LTR	0.53	44.2	D	LTR	0.42	42.1	D	LTR	0.59	45.5	D
34th Avenue	WB	LTR	0.60	51.1	D	LTR	0.60	50.8	D	LTR	0.91	78.3	E	LTR	0.74	59.8	E
Overall Intersection		-	0.41	36.2	D	-	0.44	35.5	D	-	0.52	39.7	D	-	0.49	37.3	D
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	0.91	57.5	E	LTR	0.91	58.8	E	LTR	0.96	59.0	E	LTR	1.03	69.3	E
	SB	LTR	0.95	60.8	E	LTR	1.03	70.1	E	LTR	1.03	67.9	E	LTR	1.00	59.8	E
Roosevelt Avenue	EB	LTR	0.49	11.6	B	LTR	0.54	12.7	B	LTR	0.57	6.4	A	LTR	0.55	12.5	B
	WB	LTR	0.69	7.1	A	LTR	0.63	14.1	B	LTR	0.60	12.0	B	LTR	0.63	12.0	B
Overall Intersection		-	0.76	26.3	C	-	0.74	32.1	C	-	0.71	30.3	C	-	0.74	31.9	C
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	0.94	57.7	E	LTR	0.69	48.9	D	LTR	0.81	52.8	D	LTR	0.99	60.9	E
Roosevelt Avenue	EB	LTR	0.48	11.4	B	LTR	0.48	11.1	B	LTR	0.59	6.4	A	LTR	0.64	14.2	B
	WB	LTR	0.79	9.6	A	LTR	0.65	14.7	B	LTR	0.94	24.9	C	LTR	0.98	27.7	C
Overall Intersection		-	0.83	20.9	C	-	0.66	19.6	B	-	0.90	23.8	C	-	0.98	29.5	C
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	0.96	59.7	E	LTR	0.67	48.7	D	LTR	0.93	54.4	D	LTR	0.96	58.5	E
	SB	LTR	0.98	63.7	E	LTR	0.63	49.4	D	LTR	1.03	68.6	E	LTR	1.04	71.3	E
Roosevelt Avenue	EB	LTR	0.60	14.1	B	LTR	0.61	14.2	B	LTR	0.68	8.2	A	LTR	0.91	24.6	C
	WB	LTR	0.47	4.6	A	LTR	0.36	9.4	A	LTR	0.57	12.0	B	LTR	0.58	12.0	B
Overall Intersection		-	0.71	22.8	C	-	0.62	20.5	C	-	0.78	24.2	C	-	0.95	29.6	C
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	0.21	36.9	D	LTR	0.84	58.4	E	LTR	0.61	50.2	D	LTR	0.33	39.7	D
	SB	DefL	0.70	56.4	E	DefL	0.63	53.8	D	DefL	0.66	49.3	D	DefL	0.72	53.8	D
		TR	0.63	50.9	D	TR	0.60	49.9	D	TR	0.62	46.4	D	TR	0.50	43.0	D
Roosevelt Avenue	EB	LTR	0.40	10.0	A	LTR	0.35	9.4	A	LTR	0.49	4.9	A	LTR	0.50	11.2	B
	WB	LTR	0.47	4.7	A	LTR	0.33	9.1	A	LTR	0.38	9.6	A	LTR	0.36	9.3	A
Overall Intersection		-	0.53	17.6	B	-	0.49	23.0	C	-	0.53	19.2	B	-	0.56	20.3	C
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	0.55	34.6	C	L	0.66	37.0	D	L	0.66	48.6	D	L	0.77	43.7	D
		TR	0.51	22.0	C	TR	0.67	22.5	C	TR	0.60	26.7	C	TR	0.76	24.4	C
	SB	TR	0.58	33.7	C	TR	0.67	30.2	C	TR	0.70	39.1	D	TR	0.69	29.8	C
Roosevelt Avenue	EB	L	0.19	34.7	C	L	0.31	26.4	C	L	0.32	34.0	C	L	0.40	18.9	B
		TR	0.71	33.2	C	TR	0.96	33.6	C	TR	0.96	40.1	D	TR	0.99	36.6	D
	WB	L	0.21	45.0	D	L	0.25	33.0	C	L	0.22	43.2	D	L	0.31	33.8	C
		TR	0.57	40.8	D	TR	0.34	24.8	C	TR	0.32	33.3	C	TR	0.37	24.9	C
Overall Intersection		-	0.73	31.5	C	-	0.90	28.6	C	-	0.90	36.1	D	-	0.95	29.4	C
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.45	29.4	C	LTR	0.66	34.5	C	LTR	0.50	30.1	C	LTR	0.78	38.1	D
Roosevelt Avenue	EB	-	-	-	-	-	-	-	-	DefL	0.49	20.4	C	-	-	-	-
		LTR	0.41	18.2	B	LTR	0.44	9.9	A	TR	0.58	22.0	C	LTR	0.49	10.3	B
	WB	LTR	0.73	24.7	C	LTR	0.38	9.9	A	LTR	0.46	18.4	B	LTR	0.46	10.8	B
Overall Intersection		-	0.61	23.3	C	-	0.51	16.1	B	-	0.54	22.9	C	-	0.58	17.4	B
Main Street at Roosevelt Avenue																	
Main Street	NB	T	0.55	21.2	C	T	0.62	23.3	C	T	0.47	20.3	C	T	0.71	24.9	C
	SB	T	0.41	19.0	B	T	0.48	21.1	C	T	0.50	21.0	C	T	0.61	23.0	C
Roosevelt Avenue	EB	LTR	0.60	37.5	D	LTR	0.75	34.5	C	LTR	0.97	79.1	E	LTR	0.83	38.3	D
	WB	LTR	0.89	48.7	D	LTR	0.72	29.5	C	LTR	0.95	59.4	E	LTR	0.70	26.0	C
Overall Intersection		-	0.69	30.6	C	-	0.68	26.0	C	-	0.69	39.3	D	-	0.77	27.0	C
Union Street at Roosevelt Avenue																	
Union Street	NB	TR	0.53	18.5	B	TR	0.48	17.6	B	TR	0.36	15.9	B	TR	0.49	17.8	B
	SB	LT	0.87	28.5	C	LT	0.65	21.3	C	LT	0.71	22.5	C	LT	0.79	24.5	C
		R	0.33	15.7	B	R	0.43	19.8	B	R	0.49	20.8	C	R	0.45	18.8	B
Roosevelt Avenue	EB	LTR	0.67	26.2	C	LTR	0.61	23.8	C	LTR	0.60	22.6	C	LTR	0.75	27.0	C
	WB	LT	0.87	32.8	C	LT	0.48	22.2	C	LT	0.47	22.2	C	LT	0.45	21.6	C
		R	0.78	34.1	C	R	0.43	24.5	C	R	0.64	35.2	D	R	0.69	41.7	D
Overall Intersection		-	0.87	26.3	C	-	0.63	21.0	C	-	0.68	21.9	C	-	0.77	23.7	C
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.02	51.6	D	LTR	0.55	21.6	C	LTR	0.72	31.4	C	LTR	0.72	25.8	C
	SB	LTR	0.77	32.4	C	LTR	0.61	22.5	C	LTR	0.67	29.2	C	LTR	0.75	25.5	C
Roosevelt Avenue	EB	LTR	0.44	24.4	C	LTR	0.48	20.7	C	LTR	0.42	24.1	C	LTR	0.64	23.9	C
	WB	LTR	0.99	44.0	D	LTR	0.61	23.9	C	LTR	0.65	29.9	C	LTR	0.72	26.9	C
Overall Intersection		-	1.01	39.8	D	-	0.61	22.2	C	-	0.68	29.2	C	-	0.73	25.5	C
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.64	27.7	C	L	0.63	29.4	C	L	0.59	27.0	C	L	0.89	53.5	D
		TR	0.65	23.8	C	TR	0.59	21.3	C	TR	0.55	21.5	C	TR	0.65	22.3	C
	SB	L	0.62	36.7	D	L	0.44	19.9	B	L	0.80	47.1	D	L	0.52	21.3	C
		TR	0.36	18.0	B	TR	0.48	18.8	B	TR	0.42	18.7	B	TR	0.53	19.5	B
Kissena Boulevard	WB	T	0.70	36.5	D	T	0.69	25.6	C	T	0.63	34.2	C	T	0.71	25.6	C
Overall Intersection		-	0.67	26.1	C	-	0.66	21.7	C	-	0.68	27.1	C	-	0.80	24.8	C
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.15	9.0	A	L	0.34	12.6	B	L	0.20	10.7	B	L	0.37	14.4	B
		T	0.43	10.9	B	T	0.46	11.2	B	T	0.43	10.9	B	T	0.56	12.4	B
	SB	TR	0.42	10.9	B	TR	0.56	12.5	B	TR	0.64	13.5	B	TR	0.69	14.3	B
Sanford Avenue	WB	L	0.71	40.1	D	L	0.54	33.6	C	L	0.63	37.2	D	L	0.65	37.1	D
		TR	0.52	29.2	C	TR	0.34	26.5	C	TR	0.33	26.4	C	TR	0.47	28.5	C
Overall Intersection		-	0.52	17.4	B	-	0.55	15.2	B	-	0.63	15.9	B	-	0.68	17.1	B

TABLE 1
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2012 EXISTING TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.64	27.8	C	LTR	0.26	19.5	B	LTR	0.26	19.5	B	LTR	0.34	20.7	C
	SB	LTR	0.55	23.3	C	LTR	0.50	22.0	C	LTR	0.63	24.0	C	LTR	0.64	24.4	C
	EB	DefL	0.48	21.7	C	DefL	0.33	17.0	B	-	-	-	-	DefL	0.38	18.0	B
	TR		0.27	14.4	B	TR	0.17	13.3	B	LTR	0.24	13.9	B	TR	0.30	14.9	B
	WB	LTR	0.82	25.0	C	LTR	0.80	24.4	C	LTR	0.58	19.4	B	LTR	0.79	24.0	C
Overall Intersection		-	0.74	23.4	C	-	0.66	21.5	C	-	0.60	20.3	C	-	0.72	22.1	C
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.05	50.0	D	LTR	1.04	50.7	D	LTR	0.82	28.9	C	LTR	0.85	30.3	C
	SB	LTR	0.90	31.2	C	LTR	0.67	23.9	C	LTR	0.73	25.4	C	LTR	0.80	27.2	C
	EB	LTR	0.60	22.9	C	LTR	0.47	20.3	C	LTR	0.59	22.6	C	LTR	0.63	23.2	C
	WB	LTR	0.74	26.5	C	LTR	0.72	25.5	C	LTR	0.64	23.9	C	LTR	0.75	26.5	C
Overall Intersection		-	0.90	33.7	C	-	0.88	31.3	C	-	0.73	25.4	C	-	0.80	26.9	C
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.41	23.5	C	T	0.71	30.4	C	T	0.44	24.4	C	T	0.33	22.9	C
	TR		0.55	27.2	C	TR	0.55	27.0	C	TR	0.57	27.2	C	TR	0.60	27.9	C
	SB	L	0.48	35.9	D	L	0.71	45.5	D	L	0.46	33.8	C	L	0.50	35.1	D
	T		0.47	11.3	B	T	0.39	10.4	B	T	0.36	10.1	B	T	0.33	9.8	A
	WB	LTR	0.82	40.0	D	LTR	0.74	37.5	D	LTR	0.84	40.3	D	LTR	0.50	31.0	C
Overall Intersection		-	1.37	22.3	C	-	1.26	25.9	C	-	1.12	23.3	C	-	1.03	21.6	C
NORTHERN BOULEVARD SERVICE ROAD																	
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	NB	TR	0.36	11.2	B	TR	0.43	11.9	B	TR	0.43	11.9	B	TR	0.47	12.3	B
	SB	LT	0.68	16.3	B	LT	0.64	15.4	B	LT	0.65	15.6	B	LT	0.61	14.9	B
	WB	LR	0.67	31.7	C	LR	0.66	31.4	C	LR	0.61	30.1	C	LR	0.57	29.0	C
Overall Intersection		-	0.68	17.3	B	-	0.65	16.8	B	-	0.64	16.5	B	-	0.59	16.1	B
STADIUM ROAD																	
Boat Basin Road at Stadium Road																	
Boat Basin Road	NB	LTR	0.08	7.3	A	LTR	0.07	7.2	A	LTR	0.05	7.1	A	LTR	0.08	7.2	A
	SB	-	-	-	-	DefL	0.26	9.1	A	-	-	-	-	DefL	0.19	8.3	A
	LTR		0.37	9.5	A	TR	0.17	8.0	A	LTR	0.21	8.1	A	TR	0.15	7.8	A
	WB	LTR	0.22	25.7	C	LTR	0.18	25.2	C	LTR	0.28	26.2	C	LTR	0.26	26.0	C
Overall Intersection		-	0.32	12.7	B	-	0.23	12.4	B	-	0.24	14.7	B	-	0.21	14.3	B
UNSIGNALIZED INTERSECTIONS																	
Willets Point Boulevard at 126th Street																	
126th Street	SB	LT	-	8.0	A	LT	-	8.0	A	LT	-	8.0	A	LT	-	8.3	A
	WB	LR	-	10.3	B	LR	-	11.0	B	LR	-	12.5	B	LR	-	13.2	B
Overall Intersection		-	-	9.6	A	-	-	9.9	A	-	-	10.7	B	-	-	12.3	B
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	34.7	D	L	-	18.2	C	L	-	15.6	C	L	-	16.1	C
	R		-	8.7	A	R	-	8.4	A	R	-	8.7	A	R	-	8.6	A
	WB	LT	-	8.8	A	LT	-	8.2	A	LT	-	7.8	A	LT	-	7.9	A
Overall Intersection		-	-	9.8	A	-	-	9.3	A	-	-	8.9	A	-	-	9.6	A
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	TR	-	10.2	B	TR	-	10.5	B	TR	-	9.8	A	TR	-	9.1	A
	Overall Intersection	-	-	10.2	B	-	-	10.5	B	-	-	9.8	A	-	-	9.1	A
Boat Basin Road at Stadium Road / Citifield Entrance 8																	
Citifield Entrance 8	NB	T	-	10.5	B	T	-	11.3	B	T	-	10.6	B	T	-	11.9	B
	SB	LT	-	11.3	B	LT	-	11.3	B	LT	-	11.2	B	LT	-	-	-
	EB	LT	-	7.4	A	LT	-	7.4	A	LT	-	7.4	A	LT	-	7.5	A
Overall Intersection		-	-	8.5	A	-	-	8.7	A	-	-	9.1	A	-	-	7.5	A
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Grand Central Parkway Off-Ramp	EB	L	-	11.2	B	L	-	10.1	B	L	-	10.5	B	L	-	11.0	B
	R		-	9.3	A	R	-	8.7	A	R	-	9.3	A	R	-	9.2	A
Overall Intersection		-	-	10.9	B	-	-	9.8	A	-	-	10.0	A	-	-	10.6	B
126th Street at 36th Avenue																	
126th Street	SB	LT	-	8.0	A	LT	-	8.1	A	LT	-	7.9	A	LT	-	8.1	A
	WB	LR	-	12.2	B	LR	-	13.6	B	LR	-	10.8	B	LR	-	12.0	B
Overall Intersection		-	-	8.7	A	-	-	10.0	A	-	-	10.1	B	-	-	10.1	B
126th Street at 37th Avenue																	
126th Street	SB	LT	-	7.7	A	LT	-	8.0	A	LT	-	7.9	A	LT	-	7.9	A
	WB	LR	-	11.1	B	LR	-	11.3	B	LR	-	11.4	B	LR	-	11.0	B
Overall Intersection		-	-	10.6	B	-	-	9.8	A	-	-	10.2	B	-	-	10.2	B
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	12.2	B	R	-	13.1	B	R	-	15.6	C	R	-	13.6	B
	Overall Intersection	-	-	12.2	B	-	-	13.1	B	-	-	15.6	C	-	-	13.6	B

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): This table has been revised for the Final SEIS.

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2012 EXISTING TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)					Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)					
Intersection & Approach	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS		
			Delay				Delay				Delay			
Signalized Intersections														
Astoria Boulevard														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.54	44.7	D	DefL	0.37	24.0	C	DefL	0.42	25.0	C	
		T	0.24	36.1	D	T	0.16	20.5	C	T	0.18	20.7	C	
	SB	LTR	0.29	36.9	D	LTR	0.18	20.7	C	LTR	0.15	20.3	C	
		EB	TR	1.00	30.8	C	TR	0.67	25.0	C	TR	0.61	24.0	C
	WB	L	0.70	46.2	D	L	0.69	26.8	C	L	0.79	32.3	C	
		TR	0.26	9.0	A	TR	0.26	11.6	B	TR	0.27	11.7	B	
Overall Intersection		-	0.84	28.7	C	-	0.58	21.2	C	-	0.55	21.2	C	
Northern Boulevard														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.04	73.1	E	LTR	1.02	64.5	E	LTR	1.04	75.5	E	
		SB	LTR	0.98	62.0	E	LTR	0.92	56.6	E	LTR	0.99	58.7	E
	Northern Boulevard (Rt. 25A)	EB	L	0.15	22.9	C	L	0.08	25.7	C	L	0.11	25.9	C
		TR	0.77	12.3	B	TR	0.85	25.4	C	TR	0.83	25.1	C	
	WB	L	0.60	35.9	D	L	0.61	35.6	D	L	0.74	40.3	D	
		TR	0.93	26.0	C	TR	0.99	31.8	C	TR	0.96	29.6	C	
Overall Intersection		-	0.94	25.6	C	-	0.92	34.5	C	-	0.96	35.0	C	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.73	54.6	D	LTR	0.58	48.5	D	LTR	0.45	45.2	D	
		EB	T	0.88	19.7	B	T	0.63	21.5	C	T	0.55	20.1	C
	Northern Boulevard (Rt. 25A)	R	0.57	13.8	B	R	0.70	25.0	C	R	0.57	21.9	C	
		WB	DefL	0.68	26.8	C	DefL	0.67	16.9	B	DefL	1.04	45.0	D
	T	0.76	11.5	B	T	0.72	11.8	B	T	1.04	39.1	D		
		Overall Intersection		-	1.33	18.0	B	-	1.14	18.9	B	-	1.55	34.3
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.39	42.7	D	L	0.51	44.4	D	L	1.03	68.3	E	
		R	0.36	42.9	D	R	0.30	41.3	D	R	0.59	43.4	D	
	Northern Boulevard	EB	T	0.27	6.6	A	T	0.17	5.9	A	T	0.17	6.0	A
		WB	T	0.67	12.0	B	T	0.52	9.4	A	T	0.23	6.3	A
	Grand Central Parkway Ramp	EB	T	0.47	8.4	A	T	0.35	7.3	A	T	0.38	7.5	A
	Van Wyck & Whitestone Expressway Ramp	WB	T	0.74	13.1	B	T	0.69	11.9	B	T	0.59	11.0	B
Overall Intersection		-	0.66	13.7	B	-	0.65	13.9	B	-	0.69	23.3	C	
Prince Street at Northern Boulevard (RT. 25A)														
Prince Street	NB	LTR	1.05	74.2	E	LTR	1.03	66.4	E	LTR	1.01	62.7	E	
		SB	LTR	0.56	41.5	D	LTR	0.48	37.1	D	LTR	0.38	38.3	D
	Northern Boulevard (Rt. 25A)	EB	L	0.92	64.1	E	L	0.95	73.8	E	L	0.85	61.4	E
		T	0.81	27.3	C	T	0.71	25.1	C	T	0.78	26.6	C	
	WB	L	0.73	64.3	E	L	0.90	85.3	F	L	0.82	78.5	E	
		T	0.82	35.3	D	T	0.85	34.2	C	T	0.72	30.6	C	
Northern Boulevard Service Rd.	EB	TR	0.46	22.0	C	TR	0.36	20.2	C	TR	0.31	19.3	B	
	WB	TR	0.69	36.0	D	TR	0.66	31.8	C	TR	0.47	27.2	C	
Overall Intersection		-	0.91	37.2	D	-	0.93	36.7	D	-	0.85	33.9	C	
Main Street at Northern Boulevard (RT. 25A)														
Main Street	NB	L	0.41	34.1	C	L	0.43	34.3	C	L	0.41	34.1	C	
		R	0.85	54.0	D	R	0.88	57.5	E	R	0.69	39.1	D	
	Northern Boulevard (Rt 25A)	EB	T	0.91	29.8	C	T	0.70	27.9	C	T	0.81	30.6	C
		R	0.89	35.6	D	R	0.97	55.5	E	R	0.84	36.9	D	
	Northern Boulevard (Rt 25A)	WB	L	0.22	27.7	C	L	0.16	26.4	C	L	0.11	25.8	C
		T	0.71	21.3	C	T	0.79	23.1	C	T	0.62	19.5	B	
Overall Intersection		-	0.88	29.1	C	-	0.93	31.7	C	-	0.77	28.3	C	
Union Street at Northern Boulevard (RT. 25A)														
Union Street	NB	TR	0.59	32.9	C	TR	0.59	32.7	C	TR	0.55	32.0	C	
		SB	TR	0.64	33.8	C	TR	0.55	31.9	C	TR	0.62	33.2	C
	Northern Boulevard (Rt. 25A)	EB	L	0.60	28.7	C	L	0.65	31.9	C	L	0.68	23.2	C
		TR	0.91	35.3	D	TR	0.90	38.7	D	TR	0.94	39.7	D	
	WB	L	0.58	26.8	C	L	0.68	30.7	C	L	0.74	41.7	D	
		TR	0.92	40.6	D	TR	0.89	38.3	D	TR	0.77	35.9	D	
Overall Intersection		-	0.78	36.0	D	-	0.77	36.3	D	-	0.81	36.1	D	
Parsons Boulevard at Northern Boulevard (RT. 25A)														
Parsons Boulevard	NB	L	0.75	60.4	E	L	0.56	43.8	D	L	0.64	48.6	D	
		TR	0.55	39.4	D	TR	0.51	38.3	D	TR	0.56	37.5	D	
	SB	LTR	1.05	70.3	E	LTR	1.03	64.0	E	LTR	1.04	66.4	E	
		EB	L	0.46	44.8	D	L	0.34	36.7	D	L	0.37	36.9	D
	Northern Boulevard (Rt. 25A)	TR	0.88	29.2	C	TR	0.98	39.9	D	TR	1.00	42.5	D	
		WB	L	0.46	38.0	D	L	0.40	37.4	D	L	0.50	43.4	D
TR	1.02	44.9	D	TR	0.94	36.7	D	TR	0.99	41.4	D			
Overall Intersection		-	1.03	41.1	D	-	0.93	40.8	D	-	1.02	44.3	D	
34th Avenue														
114th Street at 34th Avenue														
114th Street	SB	L	0.95	54.1	D	L	0.92	47.3	D	L	1.05	70.9	E	
		T	0.51	28.3	C	T	0.51	28.1	C	T	0.33	24.8	C	
34th Avenue	EB	TR	0.54	13.2	B	TR	0.44	11.9	B	TR	0.40	11.4	B	
Overall Intersection		-	0.68	30.7	C	-	0.60	29.4	C	-	0.64	43.3	D	

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2012 EXISTING TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
126th Street/GCP Ramp at 34th Avenue													
126th Street	NB	DefL	0.62	52.3	D	DefL	0.89	69.5	E	DefL	0.82	60.2	E
		TR	0.30	34.5	C	TR	0.40	31.9	C	TR	0.63	40.1	D
Northern Boulevard Ramp	SB	LTR	0.65	44.8	D	LTR	0.47	34.6	C	LTR	0.22	34.1	C
GCP Ramp	SB	LTR	0.99	70.6	E	LTR	0.94	57.1	E	LTR	0.77	65.5	E
Shea Road	EB	DefL	0.60	43.4	D	LTR	0.79	52.1	D	DefL	1.05	79.6	E
		TR	0.37	35.9	D	-	-	-	-	TR	0.59	29.1	C
34th Avenue	WB	LTR	0.36	35.7	D	LTR	0.98	64.9	E	LTR	0.36	25.5	C
Overall Intersection		-	0.74	54.2	D	-	0.93	51.3	D	-	0.93	50.5	D
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	1.02	66.4	E	LTR	1.04	70.4	E	LTR	1.01	62.3	E
		SB	LTR	1.02	66.1	E	LTR	1.02	65.5	E	LTR	1.04	72.8
Roosevelt Avenue	EB	LTR	0.58	6.3	A	LTR	0.63	14.1	B	LTR	0.50	11.8	B
		WB	LTR	0.55	10.7	B	LTR	0.80	15.3	B	LTR	0.75	14.0
Overall Intersection		-	0.70	30.3	C	-	0.87	33.6	C	-	0.83	33.8	C
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	0.99	59.8	E	LTR	1.00	59.1	E	LTR	1.01	61.2	E
		EB	LTR	0.63	6.7	A	LTR	0.69	15.0	B	LTR	0.57	12.9
Roosevelt Avenue	WB	LTR	1.00	31.7	C	LTR	0.99	29.2	C	LTR	1.01	32.1	C
Overall Intersection		-	1.00	27.6	C	-	0.99	29.9	C	-	1.01	33.0	C
114th Street at Roosevelt Avenue													
114th Street	NB	LTR	0.86	53.8	D	LTR	1.03	65.8	E	LTR	0.64	44.4	D
		SB	LTR	1.05	73.6	E	LTR	1.05	70.6	E	LTR	1.05	71.3
Roosevelt Avenue	EB	LTR	0.82	10.4	B	LTR	1.00	31.6	C	LTR	0.99	31.3	C
		WB	LTR	0.60	12.5	B	LTR	0.50	11.1	B	LTR	0.68	13.9
Overall Intersection		-	0.89	25.0	C	-	1.01	36.5	D	-	1.00	30.8	C
126th Street at Roosevelt Avenue													
126th Street	NB	LTR	0.52	50.0	D	LTR	0.61	53.4	D	LTR	0.20	37.0	D
		SB	-	-	-	-	-	-	-	DefL	1.01	80.9	F
		LTR	1.02	61.4	E	LTR	0.99	55.7	E	TR	0.48	29.6	C
		EB	DefL	0.75	17.7	B	DefL	0.80	32.3	C	-	-	-
Roosevelt Avenue	WB	TR	0.60	6.3	A	TR	0.44	10.6	B	LTR	0.47	19.7	B
		LTR	0.52	11.1	B	LTR	0.53	11.2	B	LTR	0.36	17.9	B
Overall Intersection		-	0.82	24.0	C	-	0.85	26.9	C	-	0.70	35.2	D
College Point Boulevard at Roosevelt Avenue													
College Point Boulevard	NB	L	1.04	94.6	F	L	1.04	80.8	F	L	0.53	30.2	C
		TR	0.60	26.6	C	TR	0.70	23.2	C	TR	0.63	22.0	C
	SB	TR	0.68	38.8	D	TR	0.86	34.0	C	TR	0.56	28.3	C
		L	0.40	35.3	D	L	0.36	27.0	C	L	0.45	28.3	C
Roosevelt Avenue	WB	TR	1.05	59.3	E	TR	1.03	46.9	D	TR	1.05	50.7	D
		L	0.29	44.4	D	L	0.26	33.0	C	L	0.22	32.5	C
		TR	0.41	34.7	C	TR	0.44	26.1	C	TR	0.32	24.2	C
Overall Intersection		-	1.04	47.1	D	-	1.03	37.9	D	-	0.91	32.8	C
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	0.46	29.4	C	LTR	0.67	34.7	C	LTR	0.63	33.4	C
Roosevelt Avenue	EB	-	-	-	-	-	-	-	-	-	-	-	-
		LTR	0.58	20.7	C	LTR	0.46	9.9	A	LTR	0.54	10.9	B
	WB	LTR	0.53	19.8	B	LTR	0.52	11.5	B	LTR	0.49	10.7	B
Overall Intersection		-	0.53	22.4	C	-	0.57	16.2	B	-	0.57	15.5	B
Main Street at Roosevelt Avenue													
Main Street	NB	T	0.59	22.6	C	T	0.63	23.3	C	T	0.63	23.3	C
		SB	T	0.50	21.0	C	T	0.59	22.8	C	T	0.50	21.4
Roosevelt Avenue	EB	LTR	0.91	63.3	E	LTR	0.73	32.5	C	LTR	0.92	44.1	D
		WB	LTR	0.87	53.6	D	LTR	0.75	32.5	C	LTR	0.84	35.7
Overall Intersection		-	0.72	35.8	D	-	0.69	26.5	C	-	0.78	30.3	C
Union Street at Roosevelt Avenue													
Union Street	NB	TR	0.47	17.5	B	TR	0.39	16.3	B	TR	0.39	16.3	B
		SB	LT	0.97	31.6	C	LT	0.73	23.6	C	LT	0.86	28.7
		R	0.47	16.9	B	R	0.56	22.1	C	R	0.48	18.4	B
		EB	LTR	0.90	34.9	C	LTR	0.76	29.5	C	LTR	0.90	34.6
Roosevelt Avenue	WB	LT	0.72	28.0	C	LT	0.49	22.3	C	LT	0.62	26.2	C
		R	0.49	25.2	C	R	0.58	34.3	C	R	0.68	40.9	D
Overall Intersection		-	0.94	27.2	C	-	0.74	23.4	C	-	0.88	27.1	C
Parsons Boulevard at Roosevelt Avenue													
Parsons Boulevard	NB	LTR	0.70	31.3	C	LTR	0.61	22.9	C	LTR	0.82	28.4	C
		SB	LTR	0.74	31.4	C	LTR	0.70	24.3	C	LTR	0.72	25.2
Roosevelt Avenue	EB	LTR	0.60	28.4	C	LTR	0.38	18.7	B	LTR	0.61	23.1	C
		WB	LTR	0.80	35.3	D	LTR	0.52	21.3	C	LTR	0.63	24.0
Overall Intersection		-	0.77	31.7	C	-	0.61	22.3	C	-	0.72	25.4	C
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.46	21.9	C	L	0.66	31.3	C	L	0.52	23.9	C
		TR	0.55	21.4	C	TR	0.56	20.6	C	TR	0.63	21.8	C
	SB	L	0.83	48.8	D	L	0.49	20.7	C	L	0.42	19.3	B
		TR	0.35	17.8	B	TR	0.50	19.1	B	TR	0.45	18.4	B
Kissena Boulevard	WB	T	0.69	36.2	D	T	0.62	23.5	C	T	0.62	23.4	C
Overall Intersection		-	0.67	27.5	C	-	0.64	21.5	C	-	0.62	20.8	C
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.27	11.5	B	L	0.32	12.3	B	L	0.15	9.9	A
		T	0.61	13.2	B	T	0.67	14.1	B	T	0.43	10.8	B
	SB	TR	0.64	13.5	B	TR	0.66	13.8	B	TR	0.65	13.6	B
		WB	L	0.69	39.7	D	L	0.82	48.0	D	L	0.54	33.2
Sanford Avenue		TR	0.43	27.8	C	TR	0.47	28.4	C	TR	0.31	26.1	C
Overall Intersection		-	0.65	16.9	B	-	0.72	18.6	B	-	0.61	15.3	B

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2012 EXISTING TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)				
Intersection & Approach			Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue														
Union Street	NB	LTR	0.33	20.6	C	LTR	0.39	22.0	C	LTR	0.37	21.2	C	
	SB	LTR	0.61	23.8	C	LTR	0.81	27.9	C	LTR	0.68	25.2	C	
Sanford Avenue	EB	-	-	-	-	Defl.	0.45	19.7	B	-	-	-	-	
	LTR	0.24	13.8	B	TR	0.27	14.4	B	LTR	0.19	13.3	B		
	WB	LTR	0.80	24.5	C	LTR	0.68	21.2	C	LTR	0.63	20.3	C	
Overall Intersection			-	0.71	21.9	C	-	0.74	23.2	C	-	0.65	21.3	C
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.95	34.3	C	LTR	0.78	27.4	C	LTR	0.85	29.7	C	
	SB	LTR	0.66	23.6	C	LTR	0.69	24.4	C	LTR	0.70	24.5	C	
Sanford Avenue	EB	LTR	0.53	21.4	C	LTR	0.54	21.2	C	LTR	0.70	25.1	C	
	WB	LTR	0.63	23.4	C	LTR	0.73	25.9	C	LTR	0.69	25.2	C	
Overall Intersection			-	0.79	26.4	C	-	0.75	24.9	C	-	0.77	26.2	C
Whitestone Expressway / 32nd Avenue														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.37	23.4	C	T	0.33	22.9	C	T	0.41	23.5	C	
	TR		0.20	21.3	C	TR	0.47	24.3	C	TR	0.27	22.1	C	
	SB	L	0.43	32.8	C	L	0.55	36.9	D	L	0.26	27.2	C	
	T		0.34	10.0	A	T	0.38	10.3	B	T	0.23	9.0	A	
32nd Avenue	WB	LTR	0.71	36.0	D	LTR	0.44	29.6	C	LTR	0.29	26.6	C	
Overall Intersection			-	1.08	20.8	C	-	1.02	21.0	C	-	0.99	19.4	B
Northern Boulevard Service Road														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.42	11.8	B	TR	0.47	12.4	B	TR	0.44	12.0	B	
	SB	LT	0.69	16.2	B	LT	0.73	17.1	B	LT	0.41	12.0	B	
Northern Blvd Service Rd	WB	LR	0.62	30.2	C	LR	0.62	29.8	C	LR	0.47	27.1	C	
Overall Intersection			-	0.66	16.8	B	-	0.69	17.2	B	-	0.45	14.4	B
Stadium Road														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	L	1.01	44.6	D	
	Stadium	LTR	0.51	43.0	D	LTR	0.47	38.8	D	TR	0.77	13.2	B	
Stadium Road	SB	LTR	0.85	31.5	C	LTR	0.90	38.0	D	LTR	0.15	6.2	A	
	WB	LTR	0.83	30.8	C	LTR	0.51	24.5	C	LTR	0.65	34.8	C	
Overall Intersection			-	0.79	32.1	C	-	0.67	34.1	C	-	0.92	25.3	C
Unsignalized Intersections														
Willets Point Boulevard at 126th Street														
126th Street	SB	LT	-	8.0	A	LT	-	8.7	A	LT	-	7.9	A	
Willets Point Boulevard	WB	LR	-	11.8	B	LR	-	10.5	B	LR	-	9.5	A	
Overall Intersection			-	-	11.8	B	-	-	10.5	B	-	-	8.6	A
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	41.1	E	L	-	32.8	D	L	-	63.2	F	
	R	-	8.6	A	R	-	8.7	A	R	-	12.7	B		
Worlds Fair Marina	WB	LT	-	11.5	B	LT	-	10.6	B	LT	-	7.7	A	
Overall Intersection			-	-	12.4	B	-	-	11.3	B	-	-	35.3	E
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.5	A	TR	-	9.1	A	TR	-	9.0	A	
Overall Intersection			-	-	9.5	A	-	-	9.1	A	-	-	9.0	A
Boat Basin Road at Stadium Road / Citifield Entrance 8														
Citifield Entrance 8	NB	-	-	-	-	-	-	-	-	-	-	-	-	
Boat Basin Road	SB	LT	-	8.3	A	LT	-	7.7	A	-	-	-	-	
Stadium Road	EB	LT	-	27.2	D	LT	-	52.7	F	-	-	-	-	
	TR	-	29.9	D	TR	-	27.6	D	LT	-	55.2	F		
Citifield Entrance 9	WB	R	-	10.2	B	R	-	9.3	A	R	-	47.2	E	
Overall Intersection			-	-	27.8	D	-	-	37.3	E	-	-	54.1	F
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Grand Central Parkway Off-Ramp	EB	L	-	28.0	D	L	-	28.1	D	L	-	41.3	E	
	R	-	9.5	A	R	-	9.1	A	R	-	20.3	C		
Overall Intersection			-	-	25.8	D	-	-	26.3	D	-	-	33.7	D
126th Street at 36th Avenue														
126th Street	SB	LT	-	8.1	A	LT	-	9.1	A	LT	-	8.2	A	
	WB	LR	-	15.2	C	LR	-	19.3	C	LR	-	12.1	B	
Overall Intersection			-	-	11.2	B	-	-	14.2	B	-	-	11.8	B
126th Street at 37th Avenue														
126th Street	SB	LT	-	8.1	A	LT	-	8.5	A	LT	-	8.2	A	
	WB	LR	-	14.1	B	LR	-	14.7	B	LR	-	14.4	B	
Overall Intersection			-	-	11.6	B	-	-	12.7	B	-	-	13.5	B
Northern Boulevard at 126th Place														
126th Place	NB	R	-	16.9	C	R	-	13.0	B	R	-	13.8	B	
Overall Intersection			-	-	16.9	C	-	-	13.0	B	-	-	13.8	B

Notes

- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): This table has been revised for the Final SEIS.

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Weekday AM Peak Hour (8:00 - 9:00 AM)					Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)					
INTERSECTION & APPROACH		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
				Delay				Delay				Delay						
SIGNALIZED INTERSECTIONS																		
ASTORIA BOULEVARD																		
108th Street at Astoria Boulevard																		
108th Street	NB	DefL	0.76	59.1	E	DefL	0.47	26.5	C	DefL	0.56	45.8	D	DefL	0.50	27.1	C	
		T	0.21	35.5	D	T	0.13	20.1	C	T	0.21	35.6	D	T	0.20	21.0	C	
	SB	LTR	0.35	38.3	D	LTR	0.17	20.6	C	LTR	0.38	38.9	D	LTR	0.25	21.6	C	
		EB	TR	0.59	25.4	C	TR	0.82	28.6	C	TR	0.88	26.4	C	TR	0.92	31.8	C
	WB	L	0.55	14.3	B	L	0.71	29.8	C	L	0.71	45.3	D	L	0.54	23.2	C	
		TR	0.76	7.8	A	TR	0.33	12.3	B	TR	0.33	9.7	A	TR	0.35	12.5	B	
Overall Intersection		-	0.76	17.6	B	-	0.69	23.3	C	-	0.78	25.2	C	-	0.73	24.6	C	
NORTHERN BOULEVARD																		
108th Street at Northern Boulevard (RT. 25A)																		
108th Street	NB	LTR	1.10	100.2	F	LTR	1.15	119.4	F	LTR	1.12	107.1	F	LTR	1.09	97.2	F	
		SB	LTR	0.96	77.2	E	LTR	0.90	65.7	E	LTR	1.09	102.2	F	LTR	0.89	63.5	E
	Northern Boulevard (Rt. 25A)	EB	L	0.07	20.8	C	L	0.08	22.9	C	L	0.15	33.0	C	L	0.17	37.8	D
		TR	0.74	20.3	C	TR	0.86	27.6	C	TR	0.82	13.5	B	TR	0.92	30.4	C	
	WB	L	0.42	20.3	C	L	0.69	42.9	D	L	0.65	40.5	D	L	0.69	41.3	D	
		TR	1.02	30.5	C	TR	0.99	42.5	D	TR	1.12	81.4	F	TR	1.16	101.1	F	
Overall Intersection		-	0.91	34.2	C	-	0.98	45.0	D	-	1.05	52.4	D	-	1.06	69.5	E	
114th Street at Northern Boulevard (RT. 25A)																		
114th Street	SB	LTR	0.46	47.5	D	LTR	0.38	44.2	D	LTR	0.38	45.6	D	LTR	0.36	43.4	D	
		EB	T	0.86	39.9	D	T	0.79	26.5	C	T	1.12	74.4	E	T	0.70	23.3	C
	Northern Boulevard (Rt. 25A)	R	0.73	37.7	D	R	0.45	19.2	B	R	0.82	17.1	B	R	0.58	22.2	C	
		WB	DefL	0.48	13.6	B	DefL	0.49	15.8	B	DefL	0.85	55.6	E	DefL	0.68	17.8	B
	WB	T	1.16	89.8	F	T	0.73	12.4	B	T	0.90	17.0	B	T	0.97	23.5	C	
		Overall Intersection		-	1.30	67.8	E	-	1.16	19.4	B	-	1.53	41.6	D	-	1.29	23.6
126th Street at Northern Boulevard (RT. 25A)																		
126th Street	NB	L	0.28	41.1	D	L	0.45	43.8	D	L	0.42	43.1	D	L	0.43	43.4	D	
		R	0.27	41.2	D	R	0.32	42.0	D	R	0.27	41.1	D	R	0.34	42.2	D	
	Northern Boulevard	EB	T	0.53	38.0	D	T	0.78	46.0	D	T	1.21	154.8	F	T	0.72	42.8	D
		WB	T	0.64	10.6	B	T	0.33	7.1	A	T	0.39	7.6	A	T	0.30	6.9	A
	Grand Central Parkway Ramp	EB	T	0.82	40.9	D	T	0.77	38.2	D	T	0.73	29.7	C	T	0.83	40.8	D
		Van Wyck & Whitestone Expressway Ramp	WB	T	1.09	101.3	F	T	0.75	15.9	B	T	0.88	23.0	C	T	0.73	14.7
Overall Intersection		-	0.91	48.5	D	-	0.68	29.1	C	-	0.77	48.8	D	-	0.66	29.1	C	
Prince Street at Northern Boulevard (RT. 25A)																		
Prince Street	NB	LTR	1.13	124.0	F	LTR	1.13	107.5	F	LTR	1.17	122.7	F	LTR	1.10	91.6	F	
		SB	LTR	0.78	52.5	D	LTR	0.52	41.0	D	LTR	0.51	41.4	D	LTR	0.45	36.6	D
	Northern Boulevard (Rt. 25A)	EB	L	0.94	89.0	F	L	0.87	69.8	E	L	0.60	45.4	D	L	0.65	49.1	D
		T	0.79	22.0	C	T	0.92	34.0	C	T	0.95	35.7	D	T	1.04	56.8	E	
	WB	L	0.94	88.4	F	L	0.89	88.0	F	L	0.79	70.6	E	L	0.80	63.5	E	
		T	1.13	85.4	F	T	1.11	92.6	F	T	1.12	98.3	F	T	1.14	102.8	F	
Northern Boulevard Service Rd.	EB	TR	0.44	16.5	B	TR	0.60	26.0	C	TR	0.64	27.1	C	TR	0.61	25.5	C	
	WB	TR	0.65	18.8	B	TR	0.69	34.2	C	TR	0.65	34.8	C	TR	0.73	34.3	C	
Overall Intersection		-	1.10	57.2	E	-	1.07	61.2	E	-	1.00	62.0	E	-	1.02	69.7	E	
Main Street at Northern Boulevard (RT. 25A)																		
Main Street	NB	L	0.76	43.1	D	L	0.97	62.8	E	L	0.95	59.2	E	L	0.92	54.6	D	
		R	0.83	52.1	D	R	0.66	38.7	D	R	0.95	71.2	E	R	0.87	58.7	E	
	Northern Boulevard (Rt 25A)	EB	T	0.92	37.9	D	T	0.95	41.3	D	T	1.05	59.7	E	T	0.94	37.8	D
		R	1.14	113.1	F	R	1.25	157.1	F	R	1.16	115.7	F	R	1.34	192.6	F	
	Northern Boulevard (Rt 25A)	WB	L	0.16	26.4	C	L	0.10	25.6	C	L	0.16	26.7	C	L	0.08	25.1	C
		T	1.03	34.9	C	T	0.74	22.3	C	T	0.75	22.5	C	T	0.92	28.1	C	
Overall Intersection		-	0.99	45.0	D	-	1.00	54.3	D	-	1.06	54.5	D	-	1.12	56.8	E	
Union Street at Northern Boulevard (RT. 25A)																		
Union Street	NB	TR	0.66	34.6	C	TR	0.76	38.1	D	TR	0.76	37.8	D	TR	0.75	37.3	D	
		SB	TR	0.87	41.0	D	TR	0.54	32.1	C	TR	0.81	38.7	D	TR	0.63	33.9	C
	Northern Boulevard (Rt. 25A)	EB	L	0.94	61.6	E	L	0.53	21.3	C	L	0.75	41.8	D	L	0.71	32.5	C
		TR	1.20	131.0	F	TR	1.35	198.2	F	TR	1.11	87.6	F	TR	1.43	229.9	F	
	WB	L	1.00	71.7	E	L	1.16	136.0	F	L	0.84	47.5	D	L	0.85	45.5	D	
		TR	0.94	37.3	D	TR	0.81	36.7	D	TR	0.90	39.9	D	TR	1.00	49.3	D	
Overall Intersection		-	1.05	68.1	E	-	1.37	104.5	F	-	0.97	59.2	E	-	1.08	114.1	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)																		
Parsons Boulevard	NB	L	0.91	81.5	F	L	0.70	54.6	D	L	0.81	65.4	E	L	0.81	63.9	E	
		TR	0.55	39.5	D	TR	0.51	38.4	D	TR	0.49	35.0	D	TR	0.58	40.3	D	
	SB	LTR	0.79	45.4	D	LTR	1.11	96.7	F	LTR	1.09	86.3	F	LTR	1.10	89.9	F	
		EB	L	0.52	44.7	D	L	0.78	56.1	E	L	0.42	44.2	D	L	0.49	46.7	D
	Northern Boulevard (Rt. 25A)	TR	1.01	53.4	D	TR	1.02	57.4	E	TR	0.98	42.1	D	TR	1.06	65.4	E	
		WB	L	0.42	35.3	D	L	0.34	34.3	C	L	0.35	38.9	D	L	0.48	43.2	D
Overall Intersection		-	1.00	62.0	E	-	1.12	75.5	E	-	1.05	61.8	E	-	1.07	76.9	E	
34TH AVENUE																		
114th Street at 34th Avenue																		
114th Street	SB	L	0.82	37.5	D	L	0.82	41.7	D	L	0.98	56.6	E	L	0.96	57.2	E	
		T	0.31	24.5	C	T	0.22	23.9	C	T	0.39	25.9	C	T	0.33	25.2	C	
	34th Avenue	EB	T	0.41	11.8	B	T	0.39	11.6	B	T	0.37	11.3	B	T	0.56	13.8	B
		R	0.11	8.8	A	R	0.07	8.5	A	R	0.07	8.5	A	R	0.10	8.7	A	
Overall Intersection		-	0.56	23.2	C	-	0.54	25.9	C	-	0.58	34.5	C	-	0.70	31.3	C	

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Intersection & Approach		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
126th Street/GCP Ramp at 34th Avenue																		
126th Street	NB	-	-	-	-	-	-	-	-	-	DefL	0.35	23.5	C	-	-	-	-
		LTR	0.17	19.9	B	LTR	0.25	20.8	C	TR	0.27	21.1	C	LTR	0.25	20.8	C	
Northern Boulevard Ramp	SB	LTR	0.31	22.3	C	LTR	0.37	23.5	C	LTR	0.27	21.6	C	LTR	0.35	23.0	C	
GCP Ramp	SB	LTR	0.81	64.0	E	LTR	0.88	72.2	E	LTR	0.74	58.6	E	LTR	0.80	62.9	E	
Shea Road	EB	LTR	0.46	43.0	D	LTR	0.54	44.5	D	LTR	0.43	42.4	D	LTR	0.61	46.1	D	
34th Avenue	WB	LTR	0.63	52.9	D	LTR	0.63	52.4	D	LTR	0.95	86.9	F	LTR	0.79	64.3	E	
Overall Intersection	-	0.51	39.8	D	-	0.55	40.8	D	-	0.59	41.8	D	-	0.57	39.7	D		
ROOSEVELT AVENUE																		
108th Street at Roosevelt Avenue																		
108th Street	NB	LTR	0.99	70.3	E	LTR	1.05	90.7	F	LTR	1.06	85.6	F	LTR	1.16	119.5	F	
	SB	LTR	1.05	83.8	F	LTR	1.19	132.5	F	LTR	1.15	114.9	F	LTR	1.11	100.5	F	
	EB	LTR	0.67	15.6	B	LTR	0.74	18.2	B	LTR	0.72	9.3	A	LTR	0.69	15.9	B	
	WB	LTR	0.80	9.7	A	LTR	0.83	21.8	C	LTR	0.82	17.1	B	LTR	0.76	14.5	B	
Overall Intersection	-	0.87	32.5	C	-	0.92	49.7	D	-	0.91	43.2	D	-	0.87	48.1	D		
111th Street at Roosevelt Avenue																		
111th Street	NB	LTR	0.97	63.1	E	LTR	0.71	49.8	D	LTR	0.83	54.4	D	LTR	1.03	69.7	E	
	EB	LTR	0.66	15.1	B	LTR	0.71	16.2	B	LTR	0.77	10.2	B	LTR	0.83	21.6	C	
	WB	LTR	0.91	16.0	B	LTR	0.85	23.7	C	LTR	1.20	113.5	F	LTR	1.17	100.6	F	
Overall Intersection	-	0.92	24.9	C	-	0.81	24.4	C	-	1.10	67.6	E	-	1.13	65.1	E		
114th Street at Roosevelt Avenue																		
114th Street	NB	LTR	1.00	66.8	E	LTR	0.68	49.6	D	LTR	0.95	57.8	E	LTR	0.99	64.4	E	
	SB	LTR	1.07	90.0	F	LTR	0.66	51.1	D	LTR	1.05	77.6	E	LTR	1.06	80.1	F	
	EB	LTR	0.80	21.5	C	LTR	0.85	25.2	C	LTR	0.89	17.4	B	LTR	1.15	93.9	F	
	WB	LTR	0.55	5.3	A	LTR	0.46	10.5	B	LTR	0.72	15.0	B	LTR	0.67	13.9	B	
Overall Intersection	-	0.88	27.7	C	-	0.80	23.5	C	-	0.94	27.6	C	-	1.12	51.4	D		
126th Street at Roosevelt Avenue																		
126th Street	NB	LTR	0.21	36.9	D	LTR	0.87	62.0	E	LTR	0.64	52.2	D	LTR	0.35	40.1	D	
	SB	DefL	1.20	164.2	F	DefL	1.17	159.0	F	DefL	1.01	95.7	F	DefL	1.08	116.7	F	
	TR	0.65	51.6	D	TR	0.61	50.6	D	TR	0.64	47.1	D	TR	0.52	43.4	D		
	EB	LTR	0.55	12.2	B	LTR	0.50	11.3	B	LTR	0.68	7.5	A	LTR	0.66	14.3	B	
	WB	LTR	0.61	5.9	A	LTR	0.49	11.0	B	LTR	0.59	12.4	B	LTR	0.47	10.6	B	
Overall Intersection	-	0.75	32.9	C	-	0.67	35.2	D	-	0.77	26.0	C	-	0.77	30.8	C		
College Point Boulevard at Roosevelt Avenue																		
College Point Boulevard	NB	L	1.38	230.9	F	L	1.34	204.5	F	L	1.22	171.2	F	L	1.27	172.5	F	
	TR	0.72	27.0	C	TR	0.86	29.7	C	TR	0.74	30.5	C	TR	0.91	32.0	C		
	SB	TR	0.84	42.5	D	TR	1.18	119.8	F	TR	1.30	181.6	F	TR	0.99	50.4	D	
	EB	L	0.44	39.9	D	L	0.55	30.2	C	L	0.47	37.0	D	L	0.56	20.7	C	
	TR	0.96	55.8	E	TR	1.23	130.9	F	TR	1.18	115.0	F	TR	1.21	120.9	F		
	WB	L	0.22	45.2	D	L	0.27	33.4	C	L	0.24	43.6	D	L	0.33	34.2	C	
	TR	0.67	44.0	D	TR	0.57	30.1	C	TR	0.44	35.7	D	TR	0.48	26.9	C		
	Overall Intersection	-	1.07	65.2	E	-	1.33	91.2	F	-	1.29	111.6	F	-	1.24	64.2	E	
Prince Street at Roosevelt Avenue																		
Prince Street	SB	LTR	0.50	30.7	C	LTR	0.83	45.0	D	LTR	0.58	32.6	C	LTR	0.94	54.2	D	
	EB	DefL	1.26	165.4	F	DefL	0.93	34.5	C	DefL	1.07	85.6	F	DefL	0.78	19.1	B	
	TR	0.57	22.7	C	TR	0.66	13.9	B	TR	0.67	24.6	C	TR	0.73	15.2	B		
	WB	LTR	0.88	32.0	C	LTR	0.52	11.9	B	LTR	0.59	20.5	C	LTR	0.56	12.4	B	
	Overall Intersection	-	0.94	63.3	E	-	0.90	25.4	C	-	0.86	40.3	D	-	0.83	24.1	C	
Main Street at Roosevelt Avenue																		
Main Street	NB	T	0.58	21.9	C	T	0.65	24.0	C	T	0.50	20.8	C	T	0.74	25.8	C	
	SB	T	0.44	19.5	B	T	0.51	21.7	C	T	0.54	21.9	C	T	0.65	24.0	C	
	EB	L	0.41	43.0	D	L	0.29	21.6	C	L	0.45	40.3	D	L	0.22	19.5	B	
	TR	0.56	35.8	D	TR	0.73	32.5	C	TR	0.87	58.2	E	TR	0.91	47.6	D		
	WB	L	0.10	25.3	C	L	0.13	16.4	B	L	0.19	26.6	C	L	0.03	14.8	B	
	TR	0.97	61.5	E	TR	0.82	34.5	C	TR	0.99	65.1	E	TR	0.84	31.3	C		
Overall Intersection	-	0.74	34.5	C	-	0.73	27.1	C	-	0.72	37.2	D	-	0.82	30.4	C		
Union Street at Roosevelt Avenue																		
Union Street	NB	TR	0.58	19.6	B	TR	0.57	19.2	B	TR	0.40	16.5	B	TR	0.55	18.8	B	
	SB	LT	1.04	59.4	E	LT	0.96	46.3	D	LT	0.88	32.8	C	LT	1.02	56.1	E	
	R	0.83	33.6	C	R	3.00+	1000.0+	F	R	2.48	705.0	F	R	2.75	822.2	F		
	EB	LTR	1.35	196.4	F	LTR	1.99	480.0	F	LTR	1.80	393.4	F	LTR	2.28	607.1	F	
	WB	LT	0.97	44.8	D	LT	0.61	25.4	C	LT	0.55	24.2	C	LT	0.54	23.4	C	
	R	1.08	92.6	F	R	0.91	77.2	E	R	1.11	133.8	F	R	1.29	208.0	F		
	Overall Intersection	-	1.18	69.9	E	-	3.00+	478.6	F	-	2.17	211.2	F	-	2.54	301.8	F	
Parsons Boulevard at Roosevelt Avenue																		
Parsons Boulevard	NB	LTR	1.09	78.0	E	LTR	0.63	23.7	C	LTR	0.82	37.6	D	LTR	0.83	32.2	C	
	SB	LTR	0.79	33.6	C	LTR	0.63	23.0	C	LTR	0.69	29.9	C	LTR	0.77	26.5	C	
	EB	LTR	0.48	25.5	C	LTR	0.57	22.8	C	LTR	0.49	25.7	C	LTR	0.73	27.4	C	
	WB	LTR	1.12	90.5	F	LTR	0.75	29.4	C	LTR	0.74	33.9	C	LTR	0.84	34.3	C	
Overall Intersection	-	1.11	61.8	E	-	0.69	24.8	C	-	0.78	32.3	C	-	0.84	29.9	C		
KISSENA BOULEVARD																		
Main Street at Kissena Boulevard																		
Main Street	NB	L	0.71	31.6	C	L	0.82	45.4	D	L	0.74	36.2	D	L	1.12	114.7	F	
	TR	0.68	24.6	C	TR	0.62	21.9	C	TR	0.57	22.1	C	TR	0.67	22.9	C		
	SB	L	0.63	37.5	D	L	0.45	20.2	C	L	0.82	49.5	D	L	0.53	21.6	C	
	TR	0.38	18.2	B	TR	0.50	19.2	B	TR	0.45	19.2	B	TR	0.56	19.9	B		
Kissena Boulevard	WB	T	0.72	37.5	D	T	0.71	26.3	C	T	0.64	34.9	C	T	0.73	26.4	C	
Overall Intersection	-	0.71	27.1	C	-	0.76	23.8	C	-	0.78	28.7	C	-	0.93	32.3	C		
SANFORD AVENUE																		
College Point Boulevard at Sanford Avenue																		
College Point Boulevard	NB	L	0.20	10.1	B	L	0.53	21.4	C	L	0.51	30.5	C	L	0.57	25.8	C	
	T	0.67	14.7	B	T	0.65	14.1	B	T	0.59	13.0	B	T	0.72	15.4	B		
	SB	TR	0.57	13.0	B	TR	0.75	16.4	B	TR	0.96	29.4	C	TR	0.83	18.3	B	
	WB	L	0.77	43.9	D	L	0.56	34.3	C	L	0.75	44.9	D	L	0.68	38.5	D	
	TR																	

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.68	29.3	C	LTR	0.33	20.5	C	LTR	0.29	20.0	C	LTR	0.38	21.4	C
	SB	LTR	0.59	24.2	C	LTR	0.59	23.8	C	LTR	0.70	25.9	C	LTR	0.72	26.7	C
	EB	DefL	0.55	24.8	C	DefL	0.40	18.8	B	-	-	-	-	DefL	0.46	20.5	C
	TR		0.36	15.7	B	TR	0.20	13.6	B	LTR	0.31	14.6	B	TR	0.34	15.4	B
	WB	LTR	0.86	27.6	C	LTR	0.85	27.3	C	LTR	0.66	21.6	C	LTR	0.85	27.4	C
Overall Intersection		-	0.78	24.9	C	-	0.74	23.4	C	-	0.68	21.8	C	-	0.79	24.3	C
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.08	61.9	E	LTR	1.10	74.4	E	LTR	0.86	31.2	C	LTR	0.88	33.4	C
	SB	LTR	0.93	34.1	C	LTR	0.69	24.7	C	LTR	0.75	26.2	C	LTR	0.82	28.4	C
	EB	LTR	0.71	26.6	C	LTR	0.55	21.9	C	LTR	0.68	25.3	C	LTR	0.71	25.9	C
	WB	LTR	0.80	29.7	C	LTR	0.84	32.2	C	LTR	0.77	28.9	C	LTR	0.88	35.1	D
Overall Intersection		-	0.95	38.8	D	-	0.98	39.8	D	-	0.81	28.0	C	-	0.88	30.7	C
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.43	23.7	C	T	0.71	30.1	C	T	0.49	25.1	C	T	0.35	23.1	C
	TR		0.69	31.2	C	TR	0.79	35.3	D	TR	0.91	44.7	D	TR	0.77	33.5	C
	SB	L	0.49	36.3	D	L	0.73	47.0	D	L	0.47	34.3	C	L	0.51	35.7	D
	T		0.58	12.8	B	T	0.48	11.5	B	T	0.42	10.8	B	T	0.40	10.6	B
	WB	LTR	0.84	42.1	D	LTR	0.76	38.5	D	LTR	0.87	42.4	D	LTR	0.52	31.5	C
Overall Intersection		-	1.38	23.4	C	-	1.28	27.4	C	-	1.14	28.2	C	-	1.04	23.0	C
NORTHERN BOULEVARD SERVICE ROAD																	
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	NB	TR	0.41	11.7	B	TR	0.51	12.9	B	TR	0.54	13.3	B	TR	0.53	13.1	B
	SB	LT	0.85	22.3	C	LT	0.83	21.6	C	LT	0.82	21.4	C	LT	0.76	19.1	B
	WB	LR	0.77	35.8	D	LR	0.77	35.8	D	LR	0.71	33.6	C	LR	0.68	32.0	C
Overall Intersection		-	0.82	21.0	C	-	0.81	20.5	C	-	0.78	19.8	B	-	0.73	18.6	B
STADIUM ROAD																	
Boat Basin Road at Stadium Road																	
Boat Basin Road	NB	LTR	0.08	7.3	A	LTR	0.07	7.2	A	LTR	0.05	7.1	A	LTR	0.08	7.2	A
	SB	-	-	-	-	DefL	0.27	9.2	A	-	-	-	-	DefL	0.20	8.3	A
	LTR		0.38	9.6	A	TR	0.17	8.0	A	LTR	0.22	8.2	A	TR	0.15	7.8	A
	WB	LTR	0.23	25.7	C	LTR	0.18	25.2	C	LTR	0.29	26.3	C	LTR	0.27	26.1	C
Overall Intersection		-	0.33	12.8	B	-	0.24	12.4	B	-	0.24	14.7	B	-	0.22	14.3	B
UNSIGNALIZED INTERSECTIONS																	
Willets Point Boulevard at 126th Street																	
126th Street	SB	LT	-	8.1	A	LT	-	8.3	A	LT	-	8.3	A	LT	-	8.5	A
	WB	LR	-	11.1	B	LR	-	12.1	B	LR	-	14.7	B	LR	-	15.2	C
Overall Intersection		-	-	10.2	B	-	-	10.7	B	-	-	12.1	B	-	-	14.0	B
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	37.4	E	L	-	18.9	C	L	-	16.2	C	L	-	16.7	C
	R		-	8.7	A	R	-	8.4	A	R	-	8.8	A	R	-	8.6	A
	WB	LT	-	8.8	A	LT	-	8.2	A	LT	-	7.8	A	LT	-	7.9	A
Overall Intersection		-	-	9.9	A	-	-	9.4	A	-	-	9.0	A	-	-	9.7	A
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	TR	-	10.3	B	TR	-	10.6	B	TR	-	9.8	A	TR	-	9.2	A
Overall Intersection		-	-	10.3	B	-	-	10.6	B	-	-	9.8	A	-	-	9.2	A
Boat Basin Road at Stadium Road / Citifield Entrance 8																	
Citifield Entrance 8	NB	T	-	10.5	B	T	-	11.3	B	T	-	10.7	B	T	-	12.0	B
	SB	LT	-	11.3	B	LT	-	11.3	B	LT	-	11.3	B	LT	-	-	-
	EB	LT	-	7.4	A	LT	-	7.4	A	LT	-	7.4	A	LT	-	7.5	A
Overall Intersection		-	-	8.5	A	-	-	8.6	A	-	-	9.2	A	-	-	7.5	A
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Grand Central Parkway Off-Ramp	EB	L	-	11.3	B	L	-	10.7	B	L	-	10.6	B	L	-	11.1	B
	R		-	9.3	A	R	-	9.2	A	R	-	9.4	A	R	-	9.3	A
Overall Intersection		-	-	10.8	B	-	-	10.2	B	-	-	10.0	A	-	-	10.6	B
126th Street at 36th Avenue																	
126th Street	SB	LT	-	8.2	A	LT	-	8.4	A	LT	-	8.2	A	LT	-	8.3	A
	WB	LR	-	13.4	B	LR	-	14.9	B	LR	-	11.7	B	LR	-	13.2	B
Overall Intersection		-	-	9.0	A	-	-	10.7	B	-	-	10.9	B	-	-	10.9	B
126th Street at 37th Avenue																	
126th Street	SB	LT	-	7.8	A	LT	-	8.3	A	LT	-	8.2	A	LT	-	8.1	A
	WB	LR	-	12.3	B	LR	-	12.5	B	LR	-	12.5	B	LR	-	11.8	B
Overall Intersection		-	-	11.7	B	-	-	10.6	B	-	-	11.0	B	-	-	10.9	B
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	13.8	B	R	-	15.9	C	R	-	18.7	C	R	-	16.2	C
Overall Intersection		-	-	13.8	B	-	-	15.9	C	-	-	18.7	C	-	-	16.2	C

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
Signalized Intersections													
Astoria Boulevard													
108th Street at Astoria Boulevard													
108th Street	NB	DefL	0.65	50.2	D	DefL	0.45	25.7	C	DefL	0.52	27.3	C
		T	0.27	36.7	D	T	0.19	20.9	C	T	0.21	21.2	C
	SB	LTR	0.34	37.8	D	LTR	0.22	21.4	C	LTR	0.19	20.8	C
		EB	TR	1.04	46.9	D	TR	0.74	26.3	C	TR	0.67	25.0
	WB	L	0.73	49.2	D	L	0.76	33.5	C	L	0.88	44.3	D
		TR	0.28	9.2	A	TR	0.29	11.9	B	TR	0.30	12.0	B
Overall Intersection		-	0.90	40.2	D	-	0.65	22.5	C	-	0.67	23.2	C
Northern Boulevard													
108th Street at Northern Boulevard (RT. 25A)													
108th Street	NB	LTR	1.12	106.6	F	LTR	1.11	99.6	F	LTR	1.14	115.6	F
	SB	LTR	1.09	95.6	F	LTR	1.04	84.0	F	LTR	1.13	109.5	F
Northern Boulevard (Rt. 25A)	EB	L	0.18	30.1	C	L	0.09	34.1	C	L	0.14	35.1	D
		TR	0.84	13.8	B	TR	0.95	32.8	C	TR	0.94	32.3	C
	WB	L	0.71	44.0	D	L	0.79	45.4	D	L	0.95	59.5	E
		TR	1.04	48.7	D	TR	1.14	90.5	F	TR	1.11	78.7	E
Overall Intersection		-	1.01	39.3	D	-	1.08	67.4	E	-	1.10	66.3	E
114th Street at Northern Boulevard (RT. 25A)													
114th Street	SB	LTR	0.75	55.4	E	LTR	0.60	49.0	D	LTR	0.46	45.6	D
	EB	T	0.98	28.3	C	T	0.74	24.2	C	T	0.65	22.2	C
WB		R	0.62	14.6	B	R	0.77	27.9	C	R	0.65	24.2	C
	WB	DefL	0.78	42.8	D	DefL	0.79	31.7	C	DefL	1.22	125.9	F
		T	0.85	14.2	B	T	0.83	15.0	B	T	1.17	96.3	F
Overall Intersection		-	1.47	23.1	C	-	1.28	22.4	C	-	1.82	74.3	E
126th Street at Northern Boulevard (RT. 25A)													
126th Street	NB	L	0.46	43.8	D	L	0.61	46.5	D	L	1.14	112.8	F
		R	0.38	43.3	D	R	0.32	41.7	D	R	0.63	43.9	D
Northern Boulevard	EB	T	1.08	106.8	F	T	0.54	38.0	D	T	0.55	38.2	D
	WB	T	0.79	15.7	B	T	0.67	12.3	B	T	0.31	6.9	A
Grand Central Parkway Ramp	EB	T	0.87	37.2	D	T	0.86	42.9	D	T	0.90	46.3	D
Van Wyck & Whitestone Expressway Ramp	WB	T	0.77	13.9	B	T	0.72	12.5	B	T	0.62	11.6	B
Overall Intersection		-	0.72	35.8	D	-	0.69	26.3	C	-	0.74	45.3	D
Prince Street at Northern Boulevard (RT. 25A)													
Prince Street	NB	LTR	1.10	92.3	F	LTR	1.08	85.5	F	LTR	1.10	93.5	F
	SB	LTR	0.58	42.0	D	LTR	0.50	37.4	D	LTR	0.40	38.5	D
Northern Boulevard (Rt. 25A)	EB	L	0.95	68.2	E	L	0.97	78.9	E	L	0.87	63.3	E
		T	1.02	48.9	D	T	0.95	36.7	D	T	1.01	45.3	D
	WB	L	0.77	67.3	E	L	0.95	94.7	F	L	0.88	86.1	F
		T	1.08	81.6	F	T	1.11	90.1	F	T	0.97	45.8	D
Northern Boulevard Service Rd.	EB	TR	0.58	24.8	C	TR	0.50	22.9	C	TR	0.44	21.7	C
	WB	TR	0.77	40.6	D	TR	0.73	34.7	C	TR	0.53	28.7	C
Overall Intersection		-	1.05	60.6	E	-	1.07	60.3	E	-	0.98	47.5	D
Main Street at Northern Boulevard (RT. 25A)													
Main Street	NB	L	0.89	51.4	D	L	0.85	47.3	D	L	0.84	47.2	D
		R	0.88	58.6	E	R	0.92	64.0	E	R	0.72	40.8	D
Northern Boulevard (Rt 25A)	EB	T	1.12	85.5	F	T	0.94	38.3	D	T	1.03	56.7	E
		R	1.20	124.0	F	R	1.31	177.6	F	R	1.15	112.5	F
Northern Boulevard (Rt 25A)	WB	L	0.22	27.8	C	L	0.16	26.5	C	L	0.11	25.9	C
		T	0.76	22.6	C	T	0.86	25.6	C	T	0.68	20.8	C
Overall Intersection		-	1.05	63.8	E	-	1.13	53.4	D	-	0.95	50.1	D
Union Street at Northern Boulevard (RT. 25A)													
Union Street	NB	TR	0.68	35.3	D	TR	0.68	35.1	D	TR	0.65	34.4	C
	SB	TR	0.68	34.8	C	TR	0.59	32.8	C	TR	0.66	34.3	C
Northern Boulevard (Rt. 25A)	EB	L	0.62	30.4	C	L	0.68	33.9	C	L	0.72	31.5	C
		TR	1.15	104.2	F	TR	1.25	150.1	F	TR	1.21	134.7	F
	WB	L	0.78	40.0	D	L	0.96	63.8	E	L	0.98	75.5	E
		TR	0.97	48.8	D	TR	0.96	43.2	D	TR	0.83	38.0	D
Overall Intersection		-	0.93	67.9	E	-	0.97	80.4	F	-	0.92	76.0	E
Parsons Boulevard at Northern Boulevard (RT. 25A)													
Parsons Boulevard	NB	L	0.85	75.0	E	L	0.66	49.3	D	L	0.72	54.5	D
		TR	0.57	39.9	D	TR	0.53	38.7	D	TR	0.58	38.0	D
Northern Boulevard (Rt. 25A)	SB	LTR	1.15	109.0	F	LTR	1.10	91.0	F	LTR	1.10	88.8	F
	EB	L	0.46	45.3	D	L	0.41	42.8	D	L	0.44	42.9	D
		TR	0.99	41.1	D	TR	1.10	83.3	F	TR	1.13	91.5	F
	WB	L	0.43	40.3	D	L	0.44	43.6	D	L	0.51	45.7	D
		TR	1.13	101.6	F	TR	1.04	59.1	E	TR	1.10	79.8	E
	Overall Intersection		-	1.09	69.9	E	-	1.08	68.1	E	-	1.08	78.9
34th Avenue													
114th Street at 34th Avenue													
114th Street	SB	L	1.03	72.5	E	L	1.01	66.0	E	L	1.15	106.1	F
		T	0.53	28.5	C	T	0.53	28.4	C	T	0.34	24.9	C
34th Avenue	EB	T	0.49	12.8	B	T	0.42	11.9	B	T	0.43	12.1	B
		R	0.16	9.1	A	R	0.11	8.8	A	R	0.06	8.4	A
Overall Intersection		-	0.68	37.5	D	-	0.63	37.5	D	-	0.70	62.5	E

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
126th Street/GCP Ramp at 34th Avenue													
126th Street	NB	DefL	0.69	59.2	E	DefL	1.34	227.6	F	-	-	-	-
		TR	0.35	35.3	D	TR	0.57	40.1	D	LTR	0.44	19.8	B
Northern Boulevard Ramp	SB	LTR	0.72	48.1	D	LTR	0.63	45.1	D	LTR	0.16	16.7	B
GCP Ramp	SB	LTR	1.27	179.6	F	LTR	1.26	171.3	F	LTR	0.96	92.7	F
Shea Road	EB	DefL	0.52	35.7	D	-	-	-	-	DefL	3.00+	1000.0+	F
34th Avenue	WB	TR	0.32	30.5	C	LTR	0.45	32.3	C	TR	1.80	420.2	F
		LTR	0.32	30.4	C	LTR	0.45	31.7	C	LTR	0.86	79.0	E
Overall Intersection	-	0.79	102.0	F	-	0.98	110.2	F	-	1.22	289.6	F	
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	1.11	100.8	F	LTR	1.14	111.7	F	LTR	1.12	104.0	F
		SB	LTR	1.11	101.2	F	LTR	1.14	109.3	F	LTR	1.16	120.9
Roosevelt Avenue	EB	LTR	0.69	8.1	A	LTR	0.76	18.3	B	LTR	0.62	14.4	B
		WB	LTR	0.64	12.0	B	LTR	0.97	25.1	C	LTR	0.91	18.7
Overall Intersection	-	0.81	42.4	D	-	1.02	50.9	D	-	0.97	50.5	D	
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	1.02	67.5	E	LTR	1.03	67.8	E	LTR	1.03	69.2	E
		EB	LTR	0.74	8.9	A	LTR	0.84	21.1	C	LTR	0.72	16.8
Roosevelt Avenue	WB	LTR	1.15	91.2	F	LTR	1.18	101.2	F	LTR	1.19	107.1	F
Overall Intersection	-	1.12	55.0	E	-	1.13	63.4	E	-	1.15	69.8	E	
114th Street at Roosevelt Avenue													
114th Street	NB	LTR	0.89	57.0	E	LTR	1.06	75.7	E	LTR	0.66	45.2	D
		SB	LTR	1.07	83.6	F	LTR	1.08	84.0	F	LTR	1.08	82.8
Roosevelt Avenue	EB	LTR	0.95	20.5	C	LTR	1.20	110.9	F	LTR	1.24	129.7	F
		WB	LTR	0.67	13.9	B	LTR	0.58	12.3	B	LTR	0.77	16.3
Overall Intersection	-	0.99	29.5	C	-	1.16	64.9	E	-	1.19	58.2	E	
126th Street at Roosevelt Avenue													
126th Street	NB	LTR	0.60	56.7	E	LTR	0.73	66.4	E	LTR	0.20	37.0	D
		SB	-	-	-	-	-	-	-	DefL	1.22	153.7	F
Roosevelt Avenue	EB	LTR	1.14	108.5	F	LTR	1.12	101.8	F	TR	0.50	29.9	C
		DefL	0.96	48.6	D	DefL	1.13	116.6	F	-	-	-	-
	WB	TR	0.69	7.7	A	TR	0.54	12.2	B	LTR	0.60	22.5	C
		LTR	0.60	12.4	B	LTR	0.65	13.2	B	LTR	0.49	20.0	B
Overall Intersection	-	1.01	40.6	D	-	1.13	47.4	D	-	0.87	52.7	D	
College Point Boulevard at Roosevelt Avenue													
College Point Boulevard	NB	L	1.26	177.2	F	L	1.29	177.8	F	L	1.00	81.3	F
		TR	0.68	28.5	C	TR	0.81	26.7	C	TR	0.76	25.3	C
Roosevelt Avenue	SB	TR	0.87	46.2	D	TR	1.19	122.2	F	TR	0.87	38.7	D
		L	0.49	37.1	D	L	0.48	28.8	C	L	0.57	30.3	C
	WB	TR	1.22	132.0	F	TR	1.21	122.4	F	TR	1.21	118.3	F
		L	0.31	44.8	D	L	0.28	33.3	C	L	0.24	32.7	C
Overall Intersection	-	1.20	75.5	E	-	1.34	89.7	F	-	1.14	56.8	E	
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	0.51	30.7	C	LTR	0.79	40.5	D	LTR	0.70	36.2	D
		DefL	0.78	30.9	C	DefL	0.76	17.7	B	DefL	0.76	17.9	B
Roosevelt Avenue	WB	TR	0.78	28.0	C	TR	0.63	12.8	B	TR	0.81	17.3	B
		LTR	0.59	21.2	C	LTR	0.61	13.0	B	LTR	0.59	12.1	B
Overall Intersection	-	0.67	27.2	C	-	0.77	19.9	B	-	0.77	19.6	B	
Main Street at Roosevelt Avenue													
Main Street	NB	T	0.62	23.2	C	T	0.66	23.9	C	T	0.66	23.9	C
		SB	T	0.54	21.9	C	T	0.63	23.8	C	T	0.54	22.0
Roosevelt Avenue	EB	L	0.34	35.3	D	L	0.25	20.2	C	L	0.25	19.1	B
		TR	0.91	62.2	E	TR	0.73	31.8	C	TR	0.93	45.6	D
	WB	L	0.19	28.1	C	L	0.07	15.5	B	L	0.19	17.2	B
		TR	0.87	52.8	D	TR	0.83	37.8	D	TR	0.84	34.8	C
Overall Intersection	-	0.73	35.8	D	-	0.74	27.9	C	-	0.80	30.4	C	
Union Street at Roosevelt Avenue													
Union Street	NB	TR	0.53	18.6	B	TR	0.45	17.2	B	TR	0.44	17.1	B
		SB	LT	1.23	128.1	F	LT	0.97	47.8	D	LT	1.17	109.2
Roosevelt Avenue	EB	R	1.87	417.7	F	R	2.58	746.9	F	R	1.85	417.1	F
		LTR	2.26	595.0	F	LTR	1.89	433.8	F	LTR	1.92	446.6	F
	WB	LT	0.79	31.5	C	LT	0.56	24.1	C	LT	0.71	29.8	C
		R	0.78	46.0	D	R	1.19	174.2	F	R	1.41	258.7	F
Overall Intersection	-	2.04	224.7	F	-	2.26	239.8	F	-	1.88	210.1	F	
Parsons Boulevard at Roosevelt Avenue													
Parsons Boulevard	NB	LTR	0.78	35.4	D	LTR	0.71	26.4	C	LTR	0.91	36.6	D
		SB	LTR	0.76	32.5	C	LTR	0.72	25.2	C	LTR	0.74	25.9
Roosevelt Avenue	WB	LTR	0.67	30.7	C	LTR	0.44	19.7	B	LTR	0.69	25.6	C
		LTR	0.90	43.2	D	LTR	0.61	23.6	C	LTR	0.73	27.3	C
Overall Intersection	-	0.84	35.6	D	-	0.67	24.2	C	-	0.82	29.2	C	
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.71	34.5	C	L	0.84	48.5	D	L	0.66	29.8	C
		TR	0.57	21.9	C	TR	0.58	21.1	C	TR	0.65	22.4	C
Kissena Boulevard	WB	L	0.85	51.6	D	L	0.50	21.0	C	L	0.43	19.5	B
		TR	0.49	19.9	B	TR	0.52	19.4	B	TR	0.47	18.7	B
		T	0.71	37.1	D	T	0.64	24.0	C	T	0.64	23.9	C
Overall Intersection	-	0.77	29.1	C	-	0.74	23.6	C	-	0.65	21.7	C	
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.36	14.2	B	L	0.48	19.3	B	L	0.23	12.5	B
		T	0.73	15.6	B	T	0.80	17.4	B	T	0.55	12.4	B
Sanford Avenue	WB	TR	0.73	15.5	B	TR	0.80	17.4	B	TR	0.78	16.7	B
		L	0.79	46.9	D	L	0.85	51.8	D	L	0.56	34.0	C
		TR	0.46	28.3	C	TR	0.50	29.0	C	TR	0.33	26.4	C
Overall Intersection	-	0.75	19.2	B	-	0.82	21.3	C	-	0.71	17.1	B	

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Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)				
Intersection & Approach			Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue														
Union Street	NB	LTR	0.37	21.3	C	LTR	0.45	23.3	C	LTR	0.41	21.9	C	
	SB	LTR	0.68	25.4	C	LTR	0.90	32.6	C	LTR	0.79	28.6	C	
Sanford Avenue	EB	-	-	-	-	Defl	0.55	23.2	C	-	-	-	-	
	LTR	0.28	14.2	B	TR	0.32	15.0	B	LTR	0.23	13.7	B		
	WB	LTR	0.88	29.1	C	LTR	0.73	22.8	C	LTR	0.68	21.7	C	
Overall Intersection			-	0.79	24.2	C	-	0.80	26.0	C	-	0.73	23.3	C
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.98	39.7	D	LTR	0.82	29.6	C	LTR	0.89	32.7	C	
	SB	LTR	0.68	24.2	C	LTR	0.71	25.1	C	LTR	0.72	25.2	C	
Sanford Avenue	EB	LTR	0.60	23.1	C	LTR	0.61	22.9	C	LTR	0.79	28.6	C	
	WB	LTR	0.74	27.3	C	LTR	0.83	31.3	C	LTR	0.79	30.0	C	
Overall Intersection			-	0.86	29.3	C	-	0.82	27.4	C	-	0.84	29.1	C
Whitestone Expressway / 32nd Avenue														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.38	23.6	C	T	0.35	23.2	C	T	0.43	23.8	C	
	TR	0.26	22.0	C	TR	0.57	25.8	C	TR	0.34	22.8	C		
	SB	L	0.44	33.2	C	L	0.57	37.6	D	L	0.27	27.3	C	
	T	0.40	10.5	B	T	0.44	11.0	B	T	0.29	9.5	A		
32nd Avenue	WB	LTR	0.72	36.8	D	LTR	0.45	29.8	C	LTR	0.29	26.7	C	
	Overall Intersection			-	1.09	20.9	C	-	1.03	21.7	C	-	0.85	19.4
Northern Boulevard Service Road														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.48	12.5	B	TR	0.53	13.2	B	TR	0.50	12.7	B	
	SB	LT	0.81	20.2	C	LT	0.88	23.8	C	LT	0.53	13.6	B	
Northern Blvd Service Rd	WB	LR	0.70	33.1	C	LR	0.70	32.3	C	LR	0.55	28.7	C	
Overall Intersection			-	0.77	19.2	B	-	0.81	20.7	C	-	0.53	15.6	B
Stadium Road														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	L	1.76	375.0	F	
	LTR	0.52	43.3	D	LTR	0.66	48.6	D	TR	1.38	202.4	F		
Stadium Road	SB	LTR	0.87	33.0	C	LTR	0.76	25.0	C	LTR	0.29	20.0	C	
	WB	LTR	0.85	31.7	C	LTR	0.93	35.6	D	LTR	0.30	13.6	B	
Overall Intersection			-	0.82	33.2	C	-	0.80	31.3	C	-	0.94	221.9	F
Unsignalized Intersections														
Willets Point Boulevard at 126th Street														
126th Street	SB	LT	-	8.1	A	LT	-	8.8	A	LT	-	8.0	A	
	WB	LR	-	11.9	B	LR	-	10.5	B	LR	-	9.8	A	
Overall Intersection			-	-	11.9	B	-	-	10.7	B	-	-	9.8	A
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	45.9	E	L	-	36.1	E	L	-	79.7	F	
	R	-	8.6	A	R	-	8.7	A	R	-	12.9	B		
Worlds Fair Marina	WB	LT	-	11.8	B	LT	-	10.8	B	LT	-	7.7	A	
Overall Intersection			-	-	12.8	B	-	-	11.6	B	-	-	43.0	E
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.5	A	TR	-	9.1	A	TR	-	9.1	A	
Overall Intersection			-	-	9.5	A	-	-	9.1	A	-	-	9.1	A
Boat Basin Road at Stadium Road / Citifield Entrance 8														
Citifield Entrance 8	NB	-	-	-	-	-	-	-	-	-	-	-	-	
	SB	LT	-	8.3	A	LT	-	7.7	A	-	-	-	-	
Boat Basin Road	EB	LT	-	28.9	D	LT	-	62.2	F	LT	-	64.2	F	
	TR	-	27.8	D	TR	-	30.1	D	-	-	-	-	-	
Citifield Entrance 9	WB	R	-	10.3	B	R	-	9.3	A	R	-	50.9	F	
Overall Intersection			-	-	27.2	D	-	-	42.5	E	-	-	62.4	F
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Grand Central Parkway Off-Ramp	EB	L	-	30.9	D	L	-	30.8	D	L	-	46.3	E	
	R	-	9.6	A	R	-	9.1	A	R	-	21.5	C		
Overall Intersection			-	-	28.3	D	-	-	28.5	D	-	-	36.9	E
126th Street at 36th Avenue														
126th Street	SB	LT	-	8.3	A	LT	-	9.4	A	LT	-	8.4	A	
	WB	LR	-	16.8	C	LR	-	23.4	C	LR	-	12.9	B	
Overall Intersection			-	-	12.0	B	-	-	16.4	C	-	-	12.6	B
126th Street at 37th Avenue														
126th Street	SB	LT	-	8.2	A	LT	-	8.8	A	LT	-	8.4	A	
	WB	LR	-	15.3	C	LR	-	16.7	C	LR	-	16.3	C	
Overall Intersection			-	-	12.3	B	-	-	14.1	B	-	-	15.2	C
Northern Boulevard at 126th Place														
126th Place	NB	R	-	20.1	C	R	-	15.3	C	R	-	16.1	C	
Overall Intersection			-	-	20.1	C	-	-	15.3	C	-	-	16.1	C

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
- (3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
- (4): This table has been revised for the Final SEIS.

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Intersection & Approach		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Signalized Intersections																		
Astoria Boulevard																		
108th Street at Astoria Boulevard																		
108th Street	NB	Defl	0.78	61.4	E	Defl	0.48	26.8	C	Defl	0.57	46.6	D	Defl	0.51	27.4	C	
		T	0.21	35.6	D	T	0.13	20.1	C	T	0.22	35.7	D	T	0.20	21.1	C	
	SB	LTR	0.36	38.5	D	LTR	0.18	20.7	C	LTR	0.40	39.4	D	LTR	0.25	21.7	C	
		EB	TR	0.60	25.7	C	TR	0.84	29.3	C	TR	0.91	27.3	C	TR	0.94	33.6	C
	WB	L	0.57	14.9	B	L	0.74	32.4	C	L	0.72	47.0	D	L	0.56	23.9	C	
TR		0.78	8.1	A	TR	0.34	12.4	B	TR	0.34	9.8	A	TR	0.36	12.6	B		
Overall Intersection		-	0.78	18.0	B	-	0.70	23.9	C	-	0.81	25.9	C	-	0.75	25.6	C	
Northern Boulevard																		
108th Street at Northern Boulevard (RT. 25A)																		
108th Street	NB	LTR	1.14	113.7	F	LTR	1.20	139.0	F	LTR	1.17	129.2	F	LTR	1.12	109.4	F	
		SB	LTR	0.98	81.6	F	LTR	0.93	70.1	E	LTR	1.13	116.0	F	LTR	0.92	67.4	E
	Northern Boulevard (Rt. 25A)	EB	L	0.08	22.6	C	L	0.08	23.9	C	L	0.15	34.4	C	L	0.18	39.5	D
		TR	0.76	20.8	C	TR	0.88	28.8	C	TR	0.84	14.1	B	TR	0.94	32.6	C	
	WB	L	0.44	21.5	C	L	0.72	45.5	D	L	0.67	42.2	D	L	0.71	42.9	D	
TR		1.05	39.0	D	TR	1.02	47.9	D	TR	1.15	92.0	F	TR	1.19	113.2	F		
Overall Intersection		-	0.94	40.3	D	-	1.01	49.7	D	-	1.08	59.1	E	-	1.09	76.9	E	
114th Street at Northern Boulevard (RT. 25A)																		
114th Street	SB	LTR	0.47	47.8	D	LTR	0.40	44.5	D	LTR	0.39	45.8	D	LTR	0.36	43.6	D	
		EB	T	0.87	41.1	D	T	0.81	27.1	C	T	1.15	85.9	F	T	0.71	23.7	C
	Northern Boulevard (Rt. 25A)	R	0.74	38.5	D	R	0.46	19.4	B	R	0.84	17.6	B	R	0.59	22.5	C	
		WB	Defl	0.50	15.4	B	Defl	0.51	16.9	B	Defl	0.87	58.5	E	Defl	0.71	20.6	C
	T	1.19	102.1	F	T	0.75	12.8	B	T	0.92	18.5	B	T	0.99	27.7	C		
Overall Intersection		-	1.31	75.5	E	-	1.18	20.0	B	-	1.56	46.9	D	-	1.31	26.1	C	
126th Street at Northern Boulevard (RT. 25A)																		
126th Street	NB	L	0.28	41.1	D	L	0.46	44.0	D	L	0.42	43.2	D	L	0.44	43.6	D	
		R	0.27	41.3	D	R	0.32	42.1	D	R	0.28	41.2	D	R	0.35	42.4	D	
	Northern Boulevard	EB	T	0.54	38.2	D	T	0.80	46.8	D	T	1.23	165.1	F	T	0.73	43.4	D
		WB	T	0.66	10.9	B	T	0.33	7.1	A	T	0.40	7.7	A	T	0.31	6.9	A
	Grand Central Parkway Ramp	EB	T	0.83	42.0	D	T	0.79	38.8	D	T	0.74	30.3	C	T	0.84	41.8	D
Van Wyck & Whitestone Expressway Ramp		WB	T	1.12	111.2	F	T	0.77	16.7	B	T	0.90	25.2	C	T	0.75	15.3	B
Overall Intersection		-	0.93	51.7	D	-	0.70	29.6	C	-	0.79	51.4	D	-	0.68	29.7	C	
Prince Street at Northern Boulevard (RT. 25A)																		
Prince Street	NB	LTR	1.15	132.8	F	LTR	1.19	129.9	F	LTR	1.23	148.9	F	LTR	1.13	105.2	F	
		SB	LTR	0.80	53.5	D	LTR	0.54	41.3	D	LTR	0.53	41.7	D	LTR	0.47	36.9	D
	Northern Boulevard (Rt. 25A)	EB	L	0.96	94.8	F	L	0.89	72.8	E	L	0.62	45.8	D	L	0.66	49.6	D
		T	0.81	22.5	C	T	0.93	35.6	D	T	0.97	38.1	D	T	1.06	64.0	E	
	WB	L	0.96	92.6	F	L	0.90	91.0	F	L	0.81	72.6	E	L	0.82	65.3	E	
Northern Boulevard Service Rd.	T	1.16	96.2	F	T	1.13	101.0	F	T	1.14	106.9	F	T	1.16	112.3	F		
		EB	TR	0.45	16.7	B	TR	0.62	26.4	C	TR	0.66	27.5	C	TR	0.62	25.8	C
	WB	TR	0.67	19.1	B	TR	0.71	35.1	D	TR	0.66	35.4	D	TR	0.75	35.0	D	
	Overall Intersection		-	1.12	62.5	E	-	1.10	66.1	E	-	1.03	67.1	E	-	1.04	76.4	E
	Main Street at Northern Boulevard (RT. 25A)																	
Main Street	NB	L	0.77	43.7	D	L	0.98	64.9	E	L	0.96	61.0	E	L	0.93	56.1	E	
		R	0.85	55.0	D	R	0.68	39.6	D	R	0.97	76.1	E	R	0.89	62.7	E	
	Northern Boulevard (Rt 25A)	EB	T	0.94	39.8	D	T	0.97	44.1	D	T	1.07	67.4	E	T	0.96	39.9	D
		R	1.17	124.0	F	R	1.28	168.4	F	R	1.19	127.1	F	R	1.38	209.6	F	
	Northern Boulevard (Rt 25A)	WB	L	0.17	26.4	C	L	0.10	25.7	C	L	0.17	26.8	C	L	0.08	25.2	C
T		1.05	44.3	D	T	0.76	22.8	C	T	0.77	23.0	C	T	0.94	29.8	C		
Overall Intersection		-	1.01	50.8	D	-	1.02	57.3	E	-	1.08	59.3	E	-	1.16	60.5	E	
Union Street at Northern Boulevard (RT. 25A)																		
Union Street	NB	TR	0.67	35.0	C	TR	0.78	38.8	D	TR	0.78	38.5	D	TR	0.76	37.9	D	
		SB	TR	0.89	42.3	D	TR	0.56	32.4	C	TR	0.82	39.5	D	TR	0.65	34.4	C
	Northern Boulevard (Rt. 25A)	EB	L	0.96	65.4	E	L	0.55	22.0	C	L	0.77	43.4	D	L	0.73	33.0	C
		TR	1.23	141.8	F	TR	1.38	209.8	F	TR	1.13	97.5	F	TR	1.45	242.3	F	
	WB	L	1.02	78.5	E	L	1.18	142.7	F	L	0.86	49.4	D	L	0.86	46.6	D	
TR	0.96	39.5	D	TR	0.83	37.5	D	TR	0.93	41.4	D	TR	1.03	56.1	E			
Overall Intersection		-	1.12	72.8	E	-	1.42	109.6	F	-	0.98	63.9	E	-	1.10	120.9	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)																		
Parsons Boulevard	NB	L	0.96	92.2	F	L	0.72	57.4	E	L	0.84	70.0	E	L	0.84	68.1	E	
		TR	0.56	39.8	D	TR	0.52	38.8	D	TR	0.50	35.3	D	TR	0.60	40.8	D	
	SB	LTR	0.82	47.6	D	LTR	1.16	118.2	F	LTR	1.12	98.5	F	LTR	1.13	102.6	F	
		EB	L	0.53	45.4	D	L	0.80	57.9	E	L	0.43	44.7	D	L	0.50	47.3	D
	Northern Boulevard (Rt. 25A)	TR	1.03	60.9	E	TR	1.04	64.4	E	TR	1.01	47.4	D	TR	1.08	75.0	E	
WB		L	0.44	36.7	D	L	0.36	35.7	D	L	0.36	39.5	D	L	0.49	44.0	D	
TR	1.12	86.5	F	TR	1.17	113.2	F	TR	1.14	99.2	F	TR	1.16	107.8	F			
Overall Intersection		-	1.02	69.9	E	-	1.19	85.2	F	-	1.06	69.4	E	-	1.09	86.1	F	
34th Avenue																		
114th Street at 34th Avenue																		
114th Street	SB	L	0.84	38.8	D	L	0.84	43.2	D	L	1.00	62.0	E	L	0.98	62.0	E	
		T	0.31	24.6	C	T	0.23	24.0	C	T	0.40	26.1	C	T	0.34	25.3	C	
	34th Avenue	EB	T	0.42	12.0	B	T	0.40	11.7	B	T	0.39	11.5	B	T	0.57	14.0	B
		R	0.11	8.8	A	R	0.07	8.5	A	R	0.07	8.5	A	R	0.11	8.7	A	
Overall Intersection		-	0.57	23.8	C	-	0.55	26.5	C	-	0.60	37.0	D	-	0.71	33.3	C	

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Intersection & Approach		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	-	-	-	-	-	-	-	-	DefL	0.36	23.8	C	-	-	-	-
		LTR	0.17	19.9	B	LTR	0.25	20.9	C	TR	0.27	21.2	C	LTR	0.26	20.9	C
Northern Boulevard Ramp	SB	LTR	0.32	22.4	C	LTR	0.38	23.7	C	LTR	0.28	21.7	C	LTR	0.36	23.1	C
GCP Ramp	SB	LTR	0.82	65.2	E	LTR	0.89	74.3	E	LTR	0.76	59.9	E	LTR	0.81	64.6	E
Shea Road	EB	LTR	0.47	43.1	D	LTR	0.56	45.0	D	LTR	0.44	42.6	D	LTR	0.63	46.6	D
34th Avenue	WB	LTR	0.64	53.4	D	LTR	0.66	54.6	D	LTR	0.99	96.6	F	LTR	0.81	66.8	E
Overall Intersection	-	0.52	40.2	D	-	0.57	41.6	D	-	0.61	43.7	D	-	0.58	40.5	D	
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	1.03	81.3	F	LTR	1.08	100.1	F	LTR	1.11	103.1	F	LTR	1.19	134.9	F
	SB	LTR	1.10	100.9	F	LTR	1.23	150.3	F	LTR	1.18	128.7	F	LTR	1.16	118.8	F
	EB	LTR	0.69	16.3	B	LTR	0.75	18.8	B	LTR	0.74	9.9	A	LTR	0.70	16.4	B
	WB	LTR	0.82	10.6	B	LTR	0.84	22.8	C	LTR	0.83	17.7	B	LTR	0.78	15.0	B
Overall Intersection	-	0.90	37.4	D	-	0.95	54.8	D	-	0.93	48.9	D	-	0.89	54.3	D	
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	1.00	69.6	E	LTR	0.72	50.9	D	LTR	0.86	56.9	E	LTR	1.05	77.4	E
	EB	LTR	0.67	15.4	B	LTR	0.73	16.7	B	LTR	0.79	10.8	B	LTR	0.85	22.9	C
	WB	LTR	0.93	18.7	B	LTR	0.87	25.3	C	LTR	1.24	129.8	F	LTR	1.21	118.3	F
Overall Intersection	-	0.95	27.5	C	-	0.83	25.5	C	-	1.13	76.2	E	-	1.17	74.9	E	
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	1.03	76.1	E	LTR	0.70	50.7	D	LTR	0.98	63.6	E	LTR	1.02	72.1	E
	SB	LTR	1.12	111.0	F	LTR	0.68	52.8	D	LTR	1.08	87.8	F	LTR	1.09	91.5	F
	EB	LTR	0.82	22.7	C	LTR	0.88	28.5	C	LTR	0.91	20.4	C	LTR	1.20	115.0	F
	WB	LTR	0.57	5.4	A	LTR	0.47	10.6	B	LTR	0.74	15.5	B	LTR	0.69	14.3	B
Overall Intersection	-	0.91	31.6	C	-	0.83	25.0	C	-	0.96	30.5	C	-	1.17	60.0	E	
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	0.22	37.1	D	LTR	0.90	65.1	E	LTR	0.67	54.4	D	LTR	0.35	40.3	D
	SB	DefL	1.22	173.6	F	DefL	1.21	171.5	F	DefL	1.03	99.7	F	DefL	1.10	125.2	F
	TR	0.67	52.5	D	TR	0.63	51.1	D	TR	0.65	47.4	D	TR	0.53	43.8	D	
	EB	LTR	0.56	12.5	B	LTR	0.52	11.6	B	LTR	0.69	7.9	A	LTR	0.68	14.8	B
	WB	LTR	0.62	6.1	A	LTR	0.50	11.1	B	LTR	0.60	12.7	B	LTR	0.48	10.8	B
Overall Intersection	-	0.77	34.2	C	-	0.69	37.1	D	-	0.79	26.8	C	-	0.79	32.2	C	
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.41	244.3	F	L	1.35	212.5	F	L	1.24	174.8	F	L	1.29	181.9	F
	TR	0.73	27.4	C	TR	0.88	31.0	C	TR	0.75	31.1	C	TR	0.93	34.4	C	
	SB	TR	0.85	43.4	D	TR	1.20	128.1	F	TR	1.32	190.5	F	TR	1.01	55.4	E
	EB	L	0.44	40.0	D	L	0.56	30.4	C	L	0.48	37.1	D	L	0.57	20.8	C
	TR	0.98	60.1	E	TR	1.26	143.8	F	TR	1.21	128.8	F	TR	1.24	132.8	F	
	WB	L	0.22	45.2	D	L	0.28	33.5	C	L	0.25	43.7	D	L	0.34	34.3	C
	TR	0.68	44.5	D	TR	0.58	30.4	C	TR	0.45	35.9	D	TR	0.49	27.0	C	
	Overall Intersection	-	1.10	67.8	E	-	1.29	97.0	F	-	1.32	117.5	F	-	1.26	69.1	E
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.52	31.0	C	LTR	0.86	47.3	D	LTR	0.60	33.2	C	LTR	0.96	58.3	E
	EB	DefL	1.28	175.3	F	DefL	0.95	37.2	D	DefL	1.09	94.6	F	DefL	0.79	19.8	B
	TR	0.59	23.1	C	TR	0.67	14.3	B	TR	0.69	25.3	C	TR	0.75	15.7	B	
	WB	LTR	0.90	33.9	C	LTR	0.53	12.0	B	LTR	0.60	20.7	C	LTR	0.57	12.6	B
	Overall Intersection	-	0.96	66.2	E	-	0.92	26.7	C	-	0.88	42.8	D	-	0.85	25.4	C
Main Street at Roosevelt Avenue																	
Main Street	NB	T	0.60	22.3	C	T	0.67	24.4	C	T	0.51	21.1	C	T	0.76	26.4	C
	SB	T	0.45	19.7	B	T	0.52	21.9	C	T	0.56	22.2	C	T	0.66	24.4	C
	EB	L	0.43	45.8	D	L	0.31	22.1	C	L	0.48	42.6	D	L	0.22	19.6	B
	TR	0.57	36.2	D	TR	0.74	33.3	C	TR	0.89	61.0	E	TR	0.93	50.1	D	
	WB	L	0.12	25.6	C	L	0.13	16.5	B	L	0.20	26.8	C	L	0.03	14.8	B
	TR	1.00	68.1	E	TR	0.84	35.9	D	TR	1.01	69.7	E	TR	0.86	32.3	C	
Overall Intersection	-	0.77	36.6	D	-	0.75	27.7	C	-	0.74	38.8	D	-	0.84	31.3	C	
Union Street at Roosevelt Avenue																	
Union Street	NB	TR	0.60	20.0	B	TR	0.58	19.4	B	TR	0.42	16.7	B	TR	0.56	19.2	B
	SB	LT	1.09	75.8	E	LT	0.99	52.8	D	LT	0.92	36.8	D	LT	1.07	71.4	E
	R	0.85	35.3	D	R	3.00+	1000.0+	F	R	2.58	751.0	F	R	2.83	856.2	F	
	EB	LTR	1.40	220.7	F	LTR	2.04	503.2	F	LTR	1.84	408.5	F	LTR	2.33	630.2	F
	WB	LT	1.00	51.1	D	LT	0.62	25.8	C	LT	0.56	24.4	C	LT	0.55	23.8	C
	R	1.12	106.5	F	R	0.93	82.4	F	R	1.14	146.0	F	R	1.35	233.5	F	
	Overall Intersection	-	1.23	80.1	F	-	3.00+	492.8	F	-	2.23	222.0	F	-	2.60	315.8	F
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.14	96.6	F	LTR	0.65	24.6	C	LTR	0.85	40.0	D	LTR	0.86	34.8	C
	SB	LTR	0.81	34.6	C	LTR	0.65	23.6	C	LTR	0.71	30.6	C	LTR	0.79	27.2	C
	EB	LTR	0.49	25.8	C	LTR	0.59	23.2	C	LTR	0.50	26.0	C	LTR	0.75	28.3	C
	WB	LTR	1.15	104.6	F	LTR	0.77	30.3	C	LTR	0.75	34.5	C	LTR	0.87	37.2	D
Overall Intersection	-	1.14	71.4	E	-	0.71	25.5	C	-	0.80	33.4	C	-	0.87	31.6	C	
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.75	34.0	C	L	0.86	51.1	D	L	0.77	38.8	D	L	1.18	136.5	F
	TR	0.69	25.1	C	TR	0.63	22.2	C	TR	0.58	22.4	C	TR	0.69	23.4	C	
	SB	L	0.65	38.3	D	L	0.46	20.4	C	L	0.84	51.7	D	L	0.55	21.9	C
	TR	0.39	18.3	B	TR	0.52	19.4	B	TR	0.46	19.3	B	TR	0.57	20.2	C	
Kissena Boulevard	WB	T	0.73	38.3	D	T	0.72	27.1	C	T	0.66	35.5	D	T	0.75	27.2	C
Overall Intersection	-	0.74	27.8	C	-	0.79	24.7	C	-	0.80	29.6	C	-	0.97	35.0	D	
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.21	10.2	B	L	0.56	23.6	C	L	0.52	31.5	C	L	0.63	31.0	C
	T	0.68	14.9	B	T	0.66	14.4	B	T	0.60	13.2	B	T	0.74	15.8	B	
	SB	TR	0.59	13.2	B	TR	0.76	16.8	B	TR	0.98	32.5	C	TR	0.85	19.2	B
	WB	L	0.79	45.6	D	L	0.57	34.8	C	L	0.77	46.6	D	L	0.69	39.1	D

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.70	30.1	C	LTR	0.34	20.8	C	LTR	0.30	20.1	C	LTR	0.39	21.8	C
	SB	LTR	0.61	24.7	C	LTR	0.61	24.2	C	LTR	0.73	26.6	C	LTR	0.74	27.4	C
	EB	DefL	0.57	25.6	C	DefL	0.42	19.5	B	-	-	-	B	DefL	0.48	21.2	C
	TR		0.37	15.8	B	TR	0.21	13.7	B	LTR	0.32	14.7	B	TR	0.35	15.5	B
	WB	LTR	0.88	29.1	C	LTR	0.88	29.3	C	LTR	0.68	22.2	C	LTR	0.87	28.8	C
Overall Intersection		-	0.80	25.7	C	-	0.76	24.4	C	-	0.70	22.3	C	-	0.81	25.1	C
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.10	73.7	E	LTR	1.15	94.1	F	LTR	0.89	33.8	C	LTR	0.92	37.8	D
	SB	LTR	0.96	38.1	D	LTR	0.71	25.1	C	LTR	0.77	27.2	C	LTR	0.85	29.6	C
	EB	LTR	0.72	27.2	C	LTR	0.56	22.2	C	LTR	0.70	26.0	C	LTR	0.73	26.6	C
	WB	LTR	0.82	31.0	C	LTR	0.87	34.4	C	LTR	0.78	29.7	C	LTR	0.91	38.6	D
	Overall Intersection	-	0.97	43.6	D	-	1.01	46.0	D	-	0.84	29.3	C	-	0.92	33.1	C
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.44	23.8	C	T	0.71	30.0	C	T	0.50	25.2	C	T	0.36	23.2	C
	TR		0.71	31.7	C	TR	0.80	36.0	D	TR	0.93	46.9	D	TR	0.79	34.4	C
	SB	L	0.51	36.8	D	L	0.75	48.2	D	L	0.49	34.8	C	L	0.52	36.1	D
	T		0.59	12.9	B	T	0.49	11.6	B	T	0.43	10.9	B	T	0.41	10.7	B
	WB	LTR	0.87	44.3	D	LTR	0.78	39.6	D	LTR	0.89	44.7	D	LTR	0.54	31.9	C
Overall Intersection		-	1.40	23.9	C	-	1.29	27.8	C	-	1.15	29.1	C	-	1.05	23.3	C
NORTHERN BOULEVARD SERVICE ROAD																	
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	NB	TR	0.42	11.8	B	TR	0.53	13.1	B	TR	0.56	13.5	B	TR	0.54	13.3	B
	SB	LT	0.87	23.9	C	LT	0.86	23.5	C	LT	0.86	23.4	C	LT	0.79	20.2	C
	WB	LR	0.79	36.8	D	LR	0.79	37.0	D	LR	0.73	34.2	C	LR	0.69	32.5	C
Overall Intersection		-	0.84	22.0	C	-	0.83	21.6	C	-	0.81	20.7	C	-	0.75	19.2	B
STADIUM ROAD																	
Boat Basin Road at Stadium Road																	
Boat Basin Road	NB	LTR	0.09	7.3	A	LTR	0.07	7.2	A	LTR	0.05	7.1	A	LTR	0.08	7.2	A
	SB	-	-	-	-	DefL	0.27	9.2	A	-	-	-	-	DefL	0.20	8.4	A
	LTR		0.39	9.7	A	TR	0.18	8.1	A	LTR	0.23	8.2	A	TR	0.16	7.9	A
	WB	LTR	0.24	25.8	C	LTR	0.19	25.2	C	LTR	0.30	26.4	C	LTR	0.28	26.2	C
Overall Intersection		-	0.34	12.8	B	-	0.25	12.5	B	-	0.25	14.8	B	-	0.23	14.4	B
UNSIGNALIZED INTERSECTIONS																	
Willets Point Boulevard at 126th Street																	
126th Street	SB	LT	-	8.2	A	LT	-	8.3	A	LT	-	8.3	A	LT	-	8.5	A
	WB	LR	-	11.1	B	LR	-	12.2	B	LR	-	14.9	B	LR	-	15.4	C
Overall Intersection		-	-	10.2	B	-	-	10.7	B	-	-	12.2	B	-	-	14.1	B
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	40.2	E	L	-	19.5	C	L	-	16.6	C	L	-	17.2	C
	R		-	8.7	A	R	-	8.5	A	R	-	8.8	A	R	-	8.6	A
	WB	LT	-	8.9	A	LT	-	8.2	A	LT	-	7.8	A	LT	-	7.9	A
Overall Intersection		-	-	10.2	B	-	-	9.4	A	-	-	9.1	A	-	-	9.9	A
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	TR	-	10.3	B	TR	-	10.6	B	TR	-	9.9	A	TR	-	9.2	A
	Overall Intersection	-	-	10.3	B	-	-	10.6	B	-	-	9.9	A	-	-	9.2	A
Boat Basin Road at Stadium Road / Citifield Entrance 8																	
Citifield Entrance 8	NB	T	-	10.5	B	T	-	11.4	B	T	-	10.7	B	T	-	12.1	B
	SB	LT	-	11.3	B	LT	-	11.4	B	LT	-	11.3	B	-	-	-	-
	EB	LT	-	7.4	A	LT	-	7.4	A	LT	-	7.4	A	LT	-	7.5	A
Overall Intersection		-	-	8.5	A	-	-	8.6	A	-	-	9.1	A	-	-	7.5	A
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Grand Central Parkway Off-Ramp	EB	L	-	11.4	B	L	-	10.7	B	L	-	10.7	B	L	-	11.2	B
	R		-	9.4	A	R	-	9.2	A	R	-	9.4	A	R	-	9.3	A
Overall Intersection		-	-	10.9	B	-	-	10.2	B	-	-	10.0	A	-	-	10.7	B
126th Street at 36th Avenue																	
126th Street	SB	LT	-	8.2	A	LT	-	8.4	A	LT	-	8.2	A	LT	-	8.4	A
	WB	LR	-	13.5	B	LR	-	16.0	C	LR	-	12.1	B	LR	-	13.4	B
Overall Intersection		-	-	9.1	A	-	-	11.1	B	-	-	11.2	B	-	-	11.0	B
126th Street at 37th Avenue																	
126th Street	SB	LT	-	7.8	A	LT	-	8.3	A	LT	-	8.2	A	LT	-	8.1	A
	WB	LR	-	12.5	B	LR	-	12.7	B	LR	-	13.1	B	LR	-	12.0	B
Overall Intersection		-	-	11.8	B	-	-	10.7	B	-	-	11.4	B	-	-	11.0	B
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	14.1	B	R	-	16.2	C	R	-	19.2	C	R	-	16.6	C
	Overall Intersection	-	-	14.1	B	-	-	16.2	C	-	-	19.2	C	-	-	16.6	C

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 6
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
Signalized Intersections													
Astoria Boulevard													
108th Street at Astoria Boulevard													
108th Street	NB	DefL	0.67	51.7	D	DefL	0.46	25.9	C	DefL	0.53	27.6	C
		T	0.28	36.8	D	T	0.20	21.0	C	T	0.21	21.2	C
	SB	LTR	0.35	38.0	D	LTR	0.22	21.4	C	LTR	0.19	20.9	C
		EB	TR	1.07	58.1	E	TR	0.75	26.8	C	TR	0.68	25.4
	WB	L	0.74	51.1	D	L	0.79	37.1	D	L	0.92	51.3	D
		TR	0.28	9.3	A	TR	0.29	11.9	B	TR	0.30	12.0	B
Overall Intersection		-	0.92	48.0	D	-	0.66	23.1	C	-	0.72	24.1	C
Northern Boulevard													
108th Street at Northern Boulevard (RT. 25A)													
108th Street	NB	LTR	1.17	125.0	F	LTR	1.15	117.0	F	LTR	1.18	132.0	F
	SB	LTR	1.12	108.4	F	LTR	1.08	96.6	F	LTR	1.18	129.8	F
Northern Boulevard (Rt. 25A)	EB	L	0.19	32.3	C	L	0.09	35.8	D	L	0.14	36.5	D
		TR	0.86	14.4	B	TR	0.97	36.3	D	TR	0.97	35.5	D
	WB	L	0.73	45.9	D	L	0.83	47.7	D	L	0.99	68.6	E
		TR	1.07	58.3	E	TR	1.16	101.9	F	TR	1.13	89.5	F
Overall Intersection		-	1.04	45.2	D	-	1.11	76.0	E	-	1.13	75.4	E
114th Street at Northern Boulevard (RT. 25A)													
114th Street	SB	LTR	0.77	56.7	E	LTR	0.62	49.6	D	LTR	0.47	45.9	D
	EB	T	1.00	33.3	C	T	0.76	24.7	C	T	0.67	22.6	C
WB		R	0.63	14.9	B	R	0.79	28.8	C	R	0.66	24.6	C
	DefL	0.82	48.9	D	DefL	0.82	36.4	D	DefL	1.27	149.3	F	
	T	0.87	15.1	B	T	0.85	15.8	B	T	1.20	108.6	F	
Overall Intersection		-	1.51	25.7	C	-	1.31	23.4	C	-	1.91	83.5	F
126th Street at Northern Boulevard (RT. 25A)													
126th Street	NB	L	0.47	44.0	D	L	0.62	46.9	D	L	1.17	124.2	F
		R	0.39	43.6	D	R	0.33	41.9	D	R	0.65	44.2	D
Northern Boulevard	EB	T	1.11	115.5	F	T	0.55	38.2	D	T	0.56	38.4	D
	WB	T	0.81	16.5	B	T	0.68	12.6	B	T	0.31	6.9	A
Grand Central Parkway Ramp	EB	T	0.89	38.9	D	T	0.88	44.4	D	T	0.92	48.4	D
Van Wyck & Whitestone Expressway Ramp	WB	T	0.79	14.5	B	T	0.74	12.9	B	T	0.64	11.9	B
Overall Intersection		-	0.73	37.9	D	-	0.71	26.9	C	-	0.76	48.2	D
Prince Street at Northern Boulevard (RT. 25A)													
Prince Street	NB	LTR	1.12	102.0	F	LTR	1.11	98.7	F	LTR	1.13	109.9	F
	SB	LTR	0.59	42.3	D	LTR	0.51	37.7	D	LTR	0.41	38.7	D
Northern Boulevard (Rt. 25A)	EB	L	0.97	73.3	E	L	1.00	84.9	F	L	0.89	66.0	E
		T	1.04	55.8	E	T	0.97	39.4	D	T	1.03	51.1	D
	WB	L	0.78	69.0	E	L	0.97	99.7	F	L	0.90	89.7	F
		T	1.10	89.8	F	T	1.13	99.3	F	T	0.98	49.4	D
Northern Boulevard Service Rd.	EB	TR	0.59	25.1	C	TR	0.51	23.1	C	TR	0.45	21.8	C
	WB	TR	0.79	41.6	D	TR	0.75	35.5	D	TR	0.54	29.1	C
Overall Intersection		-	1.08	66.7	E	-	1.10	65.6	E	-	1.04	52.1	D
Main Street at Northern Boulevard (RT. 25A)													
Main Street	NB	L	0.90	52.7	D	L	0.86	48.1	D	L	0.85	47.9	D
		R	0.91	62.7	E	R	0.95	68.8	E	R	0.74	42.2	D
Northern Boulevard (Rt 25A)	EB	T	1.14	95.9	F	T	0.96	40.5	D	T	1.05	64.2	E
		R	1.23	137.5	F	R	1.34	192.7	F	R	1.18	124.2	F
Northern Boulevard (Rt 25A)	WB	L	0.23	28.0	C	L	0.16	26.6	C	L	0.12	25.9	C
		T	0.78	23.2	C	T	0.88	26.6	C	T	0.70	21.1	C
Overall Intersection		-	1.07	69.8	E	-	1.16	56.6	E	-	0.98	54.6	D
Union Street at Northern Boulevard (RT. 25A)													
Union Street	NB	TR	0.70	35.8	D	TR	0.69	35.6	D	TR	0.66	34.8	C
	SB	TR	0.69	35.3	D	TR	0.60	33.1	C	TR	0.68	34.8	C
Northern Boulevard (Rt. 25A)	EB	L	0.64	31.6	C	L	0.69	34.9	C	L	0.74	34.3	C
		TR	1.18	115.2	F	TR	1.27	160.6	F	TR	1.24	145.9	F
	WB	L	0.79	41.1	D	L	0.98	67.7	E	L	1.00	69.1	E
		TR	1.00	63.2	E	TR	0.98	46.9	D	TR	0.85	38.9	D
Overall Intersection		-	0.95	76.7	E	-	0.99	85.5	F	-	0.97	80.4	F
Parsons Boulevard at Northern Boulevard (RT. 25A)													
Parsons Boulevard	NB	L	0.88	79.4	E	L	0.68	50.8	D	L	0.74	57.2	E
		TR	0.58	40.4	D	TR	0.54	39.1	D	TR	0.59	38.4	D
Northern Boulevard (Rt. 25A)	SB	LTR	1.18	122.9	F	LTR	1.13	103.0	F	LTR	1.13	100.4	F
		L	0.47	45.9	D	L	0.41	43.3	D	L	0.45	43.5	D
	WB	TR	1.01	47.4	D	TR	1.13	94.5	F	TR	1.15	102.7	F
		L	0.44	40.9	D	L	0.44	44.2	D	L	0.52	46.2	D
	TR	1.18	113.9	F	TR	1.07	68.9	E	TR	1.12	91.0	F	
Overall Intersection		-	1.11	78.3	E	-	1.10	77.1	E	-	1.09	88.3	F
34th Avenue													
114th Street at 34th Avenue													
114th Street	SB	L	1.05	79.9	E	L	1.03	72.3	E	L	1.17	117.3	F
		T	0.54	28.9	C	T	0.54	28.6	C	T	0.35	25.1	C
34th Avenue	EB	T	0.50	13.0	B	T	0.43	12.0	B	T	0.45	12.2	B
		R	0.16	9.2	A	R	0.11	8.8	A	R	0.06	8.4	A
Overall Intersection		-	0.70	40.3	D	-	0.64	40.2	D	-	0.72	68.3	E

TABLE 6
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
126th Street/GCP Ramp at 34th Avenue													
126th Street	NB	DefL	0.82	78.7	E	DefL	1.20	168.9	F	DefL	0.89	69.2	E
		TR	0.38	37.3	D	TR	0.53	37.1	D	TR	0.68	39.5	D
Northern Boulevard Ramp	SB	LTR	0.78	54.5	D	LTR	0.59	41.1	D	LTR	0.26	32.5	C
GCP Ramp	SB	LTR	1.35	212.5	F	LTR	1.47	267.9	F	LTR	0.65	47.7	D
Shea Road	EB	DefL	0.50	32.9	C	-	-	-	-	DefL	1.83	419.6	F
		TR	0.31	28.2	C	LTR	0.45	31.6	C	TR	0.97	70.0	E
34th Avenue	WB	LTR	0.30	28.0	C	LTR	0.44	31.0	C	LTR	0.56	40.3	D
Overall Intersection	-	0.82	118.2	F	-	0.98	141.1	F	-	1.17	125.9	F	
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	1.16	119.5	F	LTR	1.18	127.3	F	LTR	1.16	118.2	F
		SB	LTR	1.17	126.6	F	LTR	1.17	125.8	F	LTR	1.21	140.7
Roosevelt Avenue	EB	LTR	0.71	8.4	A	LTR	0.78	19.4	B	LTR	0.64	14.9	B
		WB	LTR	0.66	12.3	B	LTR	1.00	31.3	C	LTR	0.92	19.7
Overall Intersection	-	0.83	50.6	D	-	1.05	58.8	E	-	0.99	57.1	E	
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	1.05	77.5	E	LTR	1.06	76.7	E	LTR	1.06	78.8	E
		EB	LTR	0.76	9.4	A	LTR	0.86	22.9	C	LTR	0.74	17.8
Roosevelt Avenue	WB	LTR	1.19	108.0	F	LTR	1.22	120.1	F	LTR	1.23	124.7	F
Overall Intersection	-	1.15	64.3	E	-	1.17	73.7	E	-	1.18	80.2	F	
114th Street at Roosevelt Avenue													
114th Street	NB	LTR	0.91	59.6	E	LTR	1.09	89.3	F	LTR	0.67	45.8	D
		SB	LTR	1.10	94.4	F	LTR	1.11	96.2	F	LTR	1.11	95.2
Roosevelt Avenue	EB	LTR	0.99	26.8	C	LTR	1.24	130.9	F	LTR	1.29	154.7	F
		WB	LTR	0.69	14.3	B	LTR	0.60	12.6	B	LTR	0.79	17.0
Overall Intersection	-	1.02	33.4	C	-	1.20	75.4	E	-	1.24	66.8	E	
126th Street at Roosevelt Avenue													
126th Street	NB	LTR	0.64	60.2	E	LTR	0.83	80.5	F	LTR	0.22	37.4	D
		SB	-	-	-	-	-	-	-	DefL	1.25	163.9	F
Roosevelt Avenue	EB	LTR	1.17	122.0	F	LTR	1.15	114.7	F	TR	0.51	30.2	C
		DefL	1.02	64.4	E	DefL	1.19	138.6	F	-	-	-	-
	WB	TR	0.71	8.0	A	TR	0.55	12.4	B	LTR	0.61	22.8	C
		LTR	0.62	12.8	B	LTR	0.66	13.6	B	LTR	0.50	20.1	C
Overall Intersection	-	1.06	45.7	D	-	1.18	53.5	D	-	0.89	55.2	E	
College Point Boulevard at Roosevelt Avenue													
College Point Boulevard	NB	L	1.29	188.9	F	L	1.32	190.6	F	L	1.04	91.6	F
		TR	0.69	29.0	C	TR	0.83	27.7	C	TR	0.78	26.0	C
Roosevelt Avenue	SB	TR	0.89	47.6	D	TR	1.22	132.3	F	TR	0.89	39.8	D
	EB	L	0.50	37.4	D	L	0.49	28.9	C	L	0.58	30.5	C
		TR	1.26	147.7	F	TR	1.24	132.9	F	TR	1.24	129.6	F
	WB	L	0.31	44.9	D	L	0.28	33.4	C	L	0.24	32.8	C
		TR	0.48	36.4	D	TR	0.55	28.3	C	TR	0.42	25.8	C
	Overall Intersection	-	1.21	80.6	F	-	1.37	96.2	F	-	1.14	60.9	E
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	0.52	31.0	C	LTR	0.80	41.4	D	LTR	0.72	37.1	D
		DefL	0.81	32.4	C	DefL	0.77	18.3	B	DefL	0.77	18.7	B
Roosevelt Avenue	TR	0.80	29.0	C	TR	0.65	13.1	B	TR	0.83	18.2	B	
		WB	LTR	0.61	21.5	C	LTR	0.61	13.2	B	LTR	0.60	12.3
Overall Intersection	-	0.69	27.9	C	-	0.78	20.3	C	-	0.79	20.3	C	
Main Street at Roosevelt Avenue													
Main Street	NB	T	0.63	23.6	C	T	0.67	24.3	C	T	0.67	24.3	C
		SB	T	0.55	22.2	C	T	0.65	24.1	C	T	0.55	22.3
Roosevelt Avenue	EB	L	0.35	35.9	D	L	0.26	20.4	C	L	0.26	19.4	B
		TR	0.93	65.4	E	TR	0.74	32.7	C	TR	0.95	49.7	D
	WB	L	0.21	28.8	C	L	0.07	15.5	B	L	0.20	17.3	B
		TR	0.90	55.6	E	TR	0.85	40.1	D	TR	0.86	36.2	D
Overall Intersection	-	0.75	37.2	D	-	0.76	28.8	C	-	0.82	31.8	C	
Union Street at Roosevelt Avenue													
Union Street	NB	TR	0.54	18.8	B	TR	0.46	17.3	B	TR	0.45	17.3	B
		SB	LT	1.27	146.5	F	LT	1.01	55.9	E	LT	1.21	127.2
Roosevelt Avenue	R	1.91	437.2	F	R	2.65	781.7	F	R	1.90	439.9	F	
		EB	LTR	2.32	624.7	F	LTR	1.93	450.8	F	LTR	1.97	469.0
	WB	LT	0.81	33.0	C	LT	0.57	24.3	C	LT	0.74	31.0	C
		R	0.82	50.1	D	R	1.27	204.8	F	R	1.49	293.1	F
	Overall Intersection	-	2.10	238.1	F	-	2.31	251.7	F	-	1.93	224.5	F
	Parsons Boulevard at Roosevelt Avenue												
Parsons Boulevard	NB	LTR	0.81	37.3	D	LTR	0.73	27.4	C	LTR	0.95	41.6	D
		SB	LTR	0.78	33.3	C	LTR	0.74	25.8	C	LTR	0.77	26.9
Roosevelt Avenue	EB	LTR	0.69	31.8	C	LTR	0.46	20.0	B	LTR	0.71	26.3	C
		WB	LTR	0.92	47.0	D	LTR	0.63	24.2	C	LTR	0.74	28.1
Overall Intersection	-	0.87	37.4	D	-	0.68	24.9	C	-	0.84	31.1	C	
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.74	37.6	D	L	0.89	56.5	E	L	0.68	31.6	C
		TR	0.59	22.2	C	TR	0.60	21.4	C	TR	0.67	22.8	C
Kissena Boulevard	SB	L	0.87	54.4	D	L	0.52	21.3	C	L	0.44	19.7	B
		TR	0.50	20.1	C	TR	0.54	19.6	B	TR	0.48	18.8	B
	WB	T	0.73	38.0	D	T	0.66	24.5	C	T	0.65	24.4	C
		Overall Intersection	-	0.80	30.1	C	-	0.77	24.6	C	-	0.67	22.1
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.38	15.1	B	L	0.52	21.8	C	L	0.24	12.9	B
		T	0.75	16.0	B	T	0.82	18.0	B	T	0.56	12.6	B
Sanford Avenue	SB	TR	0.75	15.9	B	TR	0.82	18.0	B	TR	0.80	17.2	B
		WB	L	0.81	49.2	D	L	0.87	54.6	D	L	0.58	34.6
	TR	0.47	28.5	C	TR	0.51	29.2	C	TR	0.34	26.5	C	
		Overall Intersection	-	0.77	19.7	B	-	0.84	22.1	C	-	0.73	17.5

TABLE 6
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

INTERSECTION & APPROACH		Weekday Pre-Game (5:30 - 6:30 PM)				Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
Union Street at Sanford Avenue													
Union Street	NB	LTR	0.39	21.7	C	LTR	0.46	23.6	C	LTR	0.42	22.2	C
	SB	LTR	0.70	25.9	C	LTR	0.92	35.0	C	LTR	0.81	29.6	C
	EB	-	-	-	-	Defl.	0.57	24.1	C	-	-	-	-
		LTR	0.29	14.3	B	TR	0.33	15.1	B	LTR	0.24	13.7	B
Sanford Avenue	WB	LTR	0.90	31.4	C	LTR	0.74	23.5	C	LTR	0.70	22.3	C
Overall Intersection		-	0.81	25.2	C	-	0.82	27.3	C	-	0.75	23.8	C
Parsons Boulevard at Sanford Avenue													
Parsons Boulevard	NB	LTR	1.03	51.7	D	LTR	0.85	31.7	C	LTR	0.92	35.9	D
	SB	LTR	0.70	25.0	C	LTR	0.73	25.8	C	LTR	0.74	26.1	C
	EB	LTR	0.61	23.6	C	LTR	0.63	23.4	C	LTR	0.81	29.8	C
	WB	LTR	0.76	28.3	C	LTR	0.85	33.0	C	LTR	0.82	31.5	C
Overall Intersection		-	0.89	33.2	C	-	0.85	28.6	C	-	0.87	30.8	C
WHITESTONE EXPRESSWAY / 32ND AVENUE													
College Point Boulevard at 32nd Avenue													
College Point Boulevard	NB	T	0.39	23.7	C	T	0.36	23.3	C	T	0.44	24.0	C
		TR	0.27	22.0	C	TR	0.59	26.1	C	TR	0.35	22.9	C
	SB	L	0.45	33.5	C	L	0.58	38.1	D	L	0.28	27.7	C
		T	0.41	10.6	B	T	0.45	11.1	B	T	0.30	9.6	A
32nd Avenue	WB	LTR	0.74	37.8	D	LTR	0.46	30.1	C	LTR	0.30	26.8	C
Overall Intersection		-	1.10	21.1	C	-	1.04	21.9	C	-	0.86	19.5	B
NORTHERN BOULEVARD SERVICE ROAD													
College Point Boulevard at Northern Boulevard Service Road													
College Point Boulevard	NB	TR	0.49	12.6	B	TR	0.55	13.3	B	TR	0.51	12.8	B
	SB	LT	0.84	21.6	C	LT	0.91	26.5	C	LT	0.55	14.0	B
	WB	LR	0.72	33.7	C	LR	0.71	32.9	C	LR	0.56	29.0	C
Overall Intersection		-	0.80	19.9	B	-	0.84	22.0	C	-	0.55	15.8	B
STADIUM ROAD													
Boat Basin Road at Stadium Road													
Boat Basin Road	NB	-	-	-	-	-	-	-	-	L	1.82	401.9	F
		LTR	0.54	43.8	D	LTR	0.49	49.3	D	TR	1.42	218.7	F
	SB	LTR	0.89	34.7	C	LTR	0.67	33.0	C	LTR	0.30	20.1	C
	WB	LTR	0.87	32.6	C	LTR	0.87	29.2	C	LTR	0.31	13.7	B
Overall Intersection		-	0.84	34.5	C	-	0.83	32.9	C	-	0.97	238.6	F
UNSIGNALIZED INTERSECTIONS													
Willets Point Boulevard at 126th Street													
126th Street	SB	LT	-	8.1	A	LT	-	8.8	A	LT	-	8.0	A
	WB	LR	-	12.0	B	LR	-	10.6	B	LR	-	9.9	A
Overall Intersection		-	-	12.0	B	-	-	10.6	B	-	-	9.9	A
Boat Basin Road at Worlds Fair Marina													
Boat Basin Road	NB	L	-	52.2	F	L	-	39.3	E	L	-	95.0	F
		R	-	8.6	A	R	-	8.7	A	R	-	13.2	B
	WB	LT	-	12.2	B	LT	-	11.1	B	LT	-	7.7	A
Overall Intersection		-	-	13.4	B	-	-	12.0	B	-	-	50.1	F
Willets Point Boulevard at Northern Boulevard													
Willets Point Boulevard	NB	TR	-	9.5	A	TR	-	9.2	A	TR	-	9.1	A
Overall Intersection		-	-	9.5	A	-	-	9.2	A	-	-	9.1	A
Boat Basin Road at Stadium Road / Citifield Entrance 8													
Citifield Entrance 8	NB	-	-	-	-	-	-	-	-	-	-	-	-
	SB	LT	-	8.4	A	LT	-	7.8	A	-	-	-	-
	EB	LT	-	30.7	D	LT	-	81.8	F	LT	-	77.2	F
		TR	-	29.9	D	TR	-	37.8	E	-	-	-	-
Stadium Road	WB	R	-	10.3	B	R	-	9.3	A	R	-	55.4	F
Overall Intersection		-	-	29.7	D	-	-	55.3	F	-	-	74.3	F
Grand Central Parkway Ramp at West Park Loop/Stadium Road													
Grand Central Parkway Off-Ramp	EB	L	-	34.1	D	L	-	34.2	D	L	-	51.0	F
		R	-	9.6	A	R	-	9.1	A	R	-	22.5	C
Overall Intersection		-	-	31.1	D	-	-	31.5	D	-	-	40.1	E
126th Street at 36th Avenue													
126th Street	SB	LT	-	8.3	A	LT	-	9.5	A	LT	-	8.4	A
	WB	LR	-	17.3	C	LR	-	24.8	C	LR	-	13.2	B
Overall Intersection		-	-	12.2	B	-	-	17.2	C	-	-	12.9	B
126th Street at 37th Avenue													
126th Street	SB	LT	-	8.2	A	LT	-	8.8	A	LT	-	8.4	A
	WB	LR	-	15.7	C	LR	-	17.4	C	LR	-	16.8	C
Overall Intersection		-	-	12.6	B	-	-	14.6	B	-	-	15.6	C
Northern Boulevard at 126th Place													
126th Place	NB	R	-	20.7	C	R	-	15.6	C	R	-	16.4	C
Overall Intersection		-	-	20.7	C	-	-	15.6	C	-	-	16.4	C

Notes

- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Intersection & Approach		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
SIGNALIZED INTERSECTIONS																	
ASTORIA BOULEVARD																	
108th Street at Astoria Boulevard																	
108th Street	NB	Defl	0.79	62.6	E	Defl	0.48	26.9	C	Defl	0.58	47.0	D	Defl	0.52	27.6	C
		T	0.21	35.6	D	T	0.13	20.1	C	T	0.22	35.7	D	T	0.21	21.1	C
	SB	LTR	0.36	38.5	D	LTR	0.18	20.7	C	LTR	0.40	39.4	D	LTR	0.26	21.7	C
		EB	TR	0.61	25.8	C	TR	0.84	29.6	C	TR	0.91	27.7	C	TR	0.95	34.5
	WB	L	0.58	15.3	B	L	0.75	33.5	C	L	0.73	48.0	D	L	0.57	24.3	C
TR		0.79	8.2	A	TR	0.34	12.4	B	TR	0.34	9.8	A	TR	0.37	12.6	B	
Overall Intersection		-	0.79	18.2	B	-	0.71	24.2	C	-	0.81	26.3	C	-	0.75	26.1	C
NORTHERN BOULEVARD																	
108th Street at Northern Boulevard (RT. 25A)																	
108th Street	NB	LTR	1.17	125.6	F	LTR	1.21	144.5	F	LTR	1.19	134.6	F	LTR	1.13	112.4	F
		SB	LTR	1.00	85.5	F	LTR	0.94	71.9	E	LTR	1.15	124.9	F	LTR	0.94	70.3
Northern Boulevard (Rt. 25A)	EB	L	0.08	23.2	C	L	0.08	24.3	C	L	0.15	35.0	C	L	0.18	40.1	D
		TR	0.77	21.0	C	TR	0.89	29.3	C	TR	0.85	14.3	B	TR	0.95	33.6	C
	WB	L	0.45	22.1	C	L	0.73	46.6	D	L	0.67	42.9	D	L	0.72	43.4	D
		TR	1.06	43.2	D	TR	1.03	50.7	D	TR	1.16	97.1	F	TR	1.20	118.1	F
Overall Intersection		-	0.95	43.8	D	-	1.02	51.7	D	-	1.09	62.1	E	-	1.11	79.9	E
114th Street at Northern Boulevard (RT. 25A)																	
114th Street	SB	LTR	0.48	47.9	D	LTR	0.40	44.5	D	LTR	0.40	46.1	D	LTR	0.38	43.8	D
		EB	T	0.88	41.7	D	T	0.82	27.5	C	T	1.16	90.5	F	T	0.72	23.9
Northern Boulevard (Rt. 25A)	R	0.75	38.9	D	R	0.46	19.5	B	R	0.85	17.8	B	R	0.60	22.7	C	
		WB	Defl	0.50	16.0	B	Defl	0.52	17.5	B	Defl	0.88	52.4	D	Defl	0.73	22.1
	T	1.20	107.2	F	T	0.75	13.0	B	T	0.93	19.2	B	T	1.00	30.1	C	
		Overall Intersection		-	1.32	78.8	E	-	1.19	20.2	C	-	1.58	48.7	D	-	1.33
126th Street at Northern Boulevard (RT. 25A)																	
126th Street	NB	L	0.28	41.2	D	L	0.46	44.1	D	L	0.43	43.3	D	L	0.45	43.6	D
		R	0.27	41.3	D	R	0.33	42.2	D	R	0.28	41.2	D	R	0.35	42.4	D
Northern Boulevard	EB	T	0.54	38.3	D	T	0.80	47.3	D	T	1.24	169.6	F	T	0.74	43.7	D
		WB	T	0.66	11.0	B	T	0.33	7.1	A	T	0.41	7.7	A	T	0.31	6.9
Grand Central Parkway Ramp	EB	T	0.84	42.4	D	T	0.79	39.1	D	T	0.75	30.5	C	T	0.85	42.3	D
Van Wyck & Whitestone Expressway Ramp	WB	T	1.13	115.7	F	T	0.78	17.0	B	T	0.91	26.2	C	T	0.75	15.6	B
Overall Intersection		-	0.94	53.2	D	-	0.71	29.8	C	-	0.80	52.6	D	-	0.68	29.9	C
Prince Street at Northern Boulevard (RT. 25A)																	
Prince Street	NB	LTR	1.17	140.0	F	LTR	1.21	141.8	F	LTR	1.25	159.4	F	LTR	1.14	108.9	F
		SB	LTR	0.81	54.1	D	LTR	0.54	41.4	D	LTR	0.53	41.8	D	LTR	0.47	36.9
Northern Boulevard (Rt. 25A)	EB	L	0.97	96.9	F	L	0.90	73.8	E	L	0.62	46.0	D	L	0.67	49.9	D
		T	0.82	22.8	C	T	0.94	36.3	D	T	0.97	39.4	D	T	1.07	67.0	E
	WB	L	0.96	94.1	F	L	0.91	93.1	F	L	0.82	73.7	E	L	0.83	66.0	E
		T	1.17	100.6	F	T	1.14	104.5	F	T	1.15	110.5	F	T	1.17	116.5	F
Northern Boulevard Service Rd.	EB	TR	0.45	16.7	B	TR	0.62	26.5	C	TR	0.66	27.6	C	TR	0.63	26.0	C
		WB	TR	0.67	19.3	B	TR	0.71	35.3	D	TR	0.67	35.7	D	TR	0.76	35.4
Overall Intersection		-	1.13	64.9	E	-	1.11	68.3	E	-	1.05	69.4	E	-	1.05	79.2	E
Main Street at Northern Boulevard (RT. 25A)																	
Main Street	NB	L	0.78	43.8	D	L	0.98	66.1	E	L	0.97	62.1	E	L	0.94	56.9	E
		R	0.86	56.1	E	R	0.69	40.0	D	R	0.99	79.7	E	R	0.90	63.9	E
Northern Boulevard (Rt 25A)	EB	T	0.95	40.7	D	T	0.98	45.5	D	T	1.08	70.7	E	T	0.96	40.9	D
		R	1.18	128.3	F	R	1.29	173.4	F	R	1.20	132.4	F	R	1.40	216.1	F
Northern Boulevard (Rt 25A)	WB	L	0.17	26.5	C	L	0.11	25.7	C	L	0.17	26.9	C	L	0.08	25.2	C
		T	1.06	48.5	D	T	0.77	23.0	C	T	0.78	23.2	C	T	0.95	30.6	C
Overall Intersection		-	1.02	53.3	D	-	1.03	58.7	E	-	1.10	61.5	E	-	1.17	62.1	E
Union Street at Northern Boulevard (RT. 25A)																	
Union Street	NB	TR	0.68	35.2	D	TR	0.79	39.1	D	TR	0.79	38.9	D	TR	0.77	38.2	D
		SB	TR	0.90	43.3	D	TR	0.56	32.5	C	TR	0.83	39.9	D	TR	0.66	34.6
Northern Boulevard (Rt. 25A)	EB	L	0.97	68.6	E	L	0.55	22.2	C	L	0.78	44.3	D	L	0.74	33.5	C
		TR	1.24	145.7	F	TR	1.39	214.5	F	TR	1.14	101.5	F	TR	1.47	247.2	F
	WB	L	1.03	79.7	E	L	1.19	146.1	F	L	0.86	50.4	D	L	0.87	47.0	D
		TR	0.97	40.7	D	TR	0.84	37.8	D	TR	0.94	42.2	D	TR	1.04	59.6	E
Overall Intersection		-	1.13	74.6	E	-	1.44	111.6	F	-	0.99	65.9	E	-	1.10	123.8	F
Parsons Boulevard at Northern Boulevard (RT. 25A)																	
Parsons Boulevard	NB	L	0.97	95.3	F	L	0.74	59.0	E	L	0.86	72.5	E	L	0.86	70.4	E
		TR	0.57	39.9	D	TR	0.53	39.0	D	TR	0.50	35.4	D	TR	0.61	41.1	D
Northern Boulevard (Rt. 25A)	SB	LTR	0.83	48.1	D	LTR	1.19	127.7	F	LTR	1.13	100.8	F	LTR	1.14	108.0	F
		EB	L	0.54	45.6	D	L	0.80	58.0	E	L	0.44	45.0	D	L	0.51	47.6
	WB	TR	1.04	64.3	E	TR	1.06	68.8	E	TR	1.02	50.0	D	TR	1.09	79.2	E
		L	0.44	37.1	D	L	0.36	36.3	D	L	0.37	39.8	D	L	0.50	44.2	D
TR	1.13	91.8	F	TR	1.19	118.2	F	TR	1.15	103.4	F	TR	1.18	113.1	F		
Overall Intersection		-	1.03	73.4	E	-	1.20	89.6	F	-	1.07	72.2	E	-	1.10	90.3	F
34TH AVENUE																	
114th Street at 34th Avenue																	
114th Street	SB	L	0.85	39.3	D	L	0.84	43.9	D	L	1.01	64.3	E	L	0.99	63.9	E
		T	0.32	24.6	C	T	0.23	24.0	C	T	0.41	26.1	C	T	0.35	25.4	C
34th Avenue	EB	T	0.43	12.0	B	T	0.41	11.8	B	T	0.39	11.5	B	T	0.57	14.2	B
		R	0.11	8.8	A	R	0.07	8.5	A	R	0.07	8.5	A	R	0.11	8.8	A
Overall Intersection		-	0.58	24.0	C	-	0.56	26.9	C	-	0.61	38.2	D	-	0.72	34.0	C

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Intersection & Approach		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	-	-	-	-	-	-	-	-	DefL	0.36	23.9	C	-	-	-	-
		LTR	0.17	19.9	B	LTR	0.26	20.9	C	TR	0.27	21.2	C	LTR	0.26	20.9	C
Northern Boulevard Ramp	SB	LTR	0.33	22.5	C	LTR	0.39	23.7	C	LTR	0.28	21.7	C	LTR	0.37	23.3	C
GCP Ramp	SB	LTR	0.83	66.1	E	LTR	0.90	75.7	E	LTR	0.76	60.2	E	LTR	0.82	65.2	E
Shea Road	EB	LTR	0.48	43.4	D	LTR	0.57	45.1	D	LTR	0.45	42.8	D	LTR	0.64	46.9	D
34th Avenue	WB	LTR	0.67	55.9	E	LTR	0.67	54.9	D	LTR	1.00	99.0	F	LTR	0.82	68.5	E
Overall Intersection	-	0.53	40.7	D	-	0.58	42.0	D	-	0.62	44.1	D	-	0.59	40.8	D	
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	1.04	83.4	F	LTR	1.11	109.2	F	LTR	1.13	113.2	F	LTR	1.22	145.5	F
	SB	LTR	1.12	108.7	F	LTR	1.24	157.6	F	LTR	1.20	138.5	F	LTR	1.17	125.0	F
	EB	LTR	0.69	16.3	B	LTR	0.76	19.3	B	LTR	0.75	10.1	B	LTR	0.71	16.8	B
	WB	LTR	0.83	10.8	B	LTR	0.85	23.9	C	LTR	0.84	18.3	B	LTR	0.79	15.1	B
Overall Intersection	-	0.91	39.2	D	-	0.96	58.0	E	-	0.94	52.6	D	-	0.90	57.5	E	
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	1.02	73.8	E	LTR	0.73	51.2	D	LTR	0.86	57.2	E	LTR	1.06	81.0	F
	EB	LTR	0.67	15.6	B	LTR	0.73	16.9	B	LTR	0.79	11.1	B	LTR	0.86	23.7	C
	WB	LTR	0.94	20.2	C	LTR	0.88	26.2	C	LTR	1.25	133.7	F	LTR	1.23	124.6	F
Overall Intersection	-	0.96	29.2	C	-	0.84	26.1	C	-	1.14	78.3	E	-	1.18	78.6	E	
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	1.04	79.3	E	LTR	0.71	51.1	D	LTR	0.99	64.9	E	LTR	1.03	74.0	E
	SB	LTR	1.15	121.3	F	LTR	0.70	53.9	D	LTR	1.09	91.4	F	LTR	1.11	96.6	F
	EB	LTR	0.83	23.4	C	LTR	0.89	29.9	C	LTR	0.93	22.7	C	LTR	1.22	124.1	F
	WB	LTR	0.57	5.5	A	LTR	0.48	10.7	B	LTR	0.74	15.7	B	LTR	0.69	14.4	B
Overall Intersection	-	0.92	33.3	C	-	0.84	25.6	C	-	0.98	31.7	C	-	1.19	63.6	E	
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	0.22	37.1	D	LTR	0.91	67.9	E	LTR	0.68	55.0	D	LTR	0.37	40.7	D
	SB	DefL	1.23	175.4	F	DefL	1.22	176.1	F	DefL	1.03	100.7	F	DefL	1.11	127.6	F
	TR	0.67	52.7	D	TR	0.63	51.4	D	TR	0.66	48.0	D	TR	0.53	44.0	D	
	EB	LTR	0.57	12.6	B	LTR	0.53	11.6	B	LTR	0.70	8.0	A	LTR	0.68	15.0	B
	WB	LTR	0.63	6.2	A	LTR	0.51	11.2	B	LTR	0.60	12.7	B	LTR	0.49	10.8	B
Overall Intersection	-	0.77	34.5	C	-	0.69	37.9	D	-	0.79	27.1	C	-	0.80	32.6	C	
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.43	252.6	F	L	1.37	217.4	F	L	1.25	176.0	F	L	1.30	185.0	F
	TR	0.74	27.7	C	TR	0.89	31.5	C	TR	0.76	31.3	C	TR	0.94	35.6	D	
	SB	TR	0.86	43.8	D	TR	1.20	129.9	F	TR	1.33	193.8	F	TR	1.02	57.0	E
	EB	L	0.44	40.0	D	L	0.56	30.4	C	L	0.48	37.2	D	L	0.57	20.9	C
	TR	0.99	61.8	E	TR	1.27	148.2	F	TR	1.22	133.8	F	TR	1.25	138.1	F	
	WB	L	0.23	45.3	D	L	0.28	33.5	C	L	0.25	43.7	D	L	0.34	34.4	C
	TR	0.69	44.8	D	TR	0.58	30.6	C	TR	0.45	35.9	D	TR	0.49	27.1	C	
	Overall Intersection	-	1.10	69.3	E	-	1.29	98.9	F	-	1.33	119.6	F	-	1.26	71.0	E
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.52	31.1	C	LTR	0.86	47.9	D	LTR	0.61	33.3	C	LTR	0.97	60.6	E
	EB	DefL	1.30	180.6	F	DefL	0.96	38.2	D	DefL	1.10	97.0	F	DefL	0.80	20.3	C
	TR	0.59	23.3	C	TR	0.68	14.4	B	TR	0.69	25.4	C	TR	0.75	15.9	B	
	WB	LTR	0.91	34.7	C	LTR	0.54	12.1	B	LTR	0.61	20.9	C	LTR	0.58	12.8	B
	Overall Intersection	-	0.96	67.7	E	-	0.93	27.1	C	-	0.89	43.4	D	-	0.86	26.1	C
Main Street at Roosevelt Avenue																	
Main Street	NB	T	0.60	22.4	C	T	0.67	24.6	C	T	0.51	21.2	C	T	0.77	26.7	C
	SB	T	0.45	19.8	B	T	0.53	22.1	C	T	0.56	22.3	C	T	0.67	24.5	C
	EB	L	0.44	46.6	D	L	0.31	22.1	C	L	0.48	43.1	D	L	0.22	19.7	B
	TR	0.57	36.4	D	TR	0.76	34.2	C	TR	0.90	61.9	E	TR	0.94	52.8	D	
	WB	L	0.12	25.7	C	L	0.15	16.7	B	L	0.20	26.8	C	L	0.03	14.8	B
	TR	1.01	69.5	E	TR	0.84	36.3	D	TR	1.02	73.9	E	TR	0.86	32.6	C	
Overall Intersection	-	0.77	37.1	D	-	0.76	28.0	C	-	0.75	39.9	D	-	0.85	32.1	C	
Union Street at Roosevelt Avenue																	
Union Street	NB	TR	0.61	20.1	C	TR	0.58	19.5	B	TR	0.42	16.8	B	TR	0.57	19.2	B
	SB	LT	1.10	80.0	E	LT	1.01	59.5	E	LT	0.93	37.9	D	LT	1.08	75.2	E
	R	0.85	35.8	D	R	3.00+	1000.0+	F	R	2.61	765.5	F	R	2.83	856.2	F	
	EB	LTR	1.43	231.1	F	LTR	2.05	505.0	F	LTR	1.86	416.9	F	LTR	2.35	641.1	F
	WB	LT	1.01	53.8	D	LT	0.62	25.9	C	LT	0.57	24.6	C	LT	0.55	23.9	C
	R	1.13	111.6	F	R	0.95	88.1	F	R	1.17	155.3	F	R	1.40	254.6	F	
	Overall Intersection	-	1.25	83.9	F	-	3.00+	496.8	F	-	2.26	226.3	F	-	2.61	319.9	F
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.15	104.8	F	LTR	0.66	24.8	C	LTR	0.86	41.1	D	LTR	0.88	36.2	D
	SB	LTR	0.82	35.1	D	LTR	0.66	23.8	C	LTR	0.71	30.8	C	LTR	0.79	27.6	C
	EB	LTR	0.50	26.0	C	LTR	0.59	23.3	C	LTR	0.50	26.1	C	LTR	0.76	28.8	C
	WB	LTR	1.17	112.5	F	LTR	0.77	30.6	C	LTR	0.76	35.2	D	LTR	0.88	37.9	D
	Overall Intersection	-	1.16	76.1	E	-	0.72	25.7	C	-	0.81	34.0	C	-	0.88	32.4	C
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.75	34.6	C	L	0.88	54.1	D	L	0.78	40.5	D	L	1.21	147.6	F
	TR	0.70	25.4	C	TR	0.64	22.5	C	TR	0.59	22.6	C	TR	0.70	23.6	C	
	SB	L	0.66	38.7	D	L	0.47	20.5	C	L	0.85	52.7	D	L	0.55	22.1	C
	TR	0.39	18.4	B	TR	0.52	19.5	B	TR	0.46	19.4	B	TR	0.58	20.3	C	
Kissena Boulevard	WB	T	0.74	38.9	D	T	0.73	27.4	C	T	0.67	35.8	D	T	0.76	27.4	C
Overall Intersection	-	0.75	28.1	C	-	0.80	25.2	C	-	0.81	30.0	C	-	0.98	36.3	D	
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.22	10.4	B	L	0.57	24.1	C	L	0.54	32.5	C	L	0.64	32.2	C
	T	0.69	15.0	B	T	0.67	14.5	B	T	0.61	13.3	B	T	0.74	15.9	B	
	SB	TR	0.59	13.2	B	TR	0.77	16.9	B	TR	0.99	33.9	C	TR	0.86	19.5	B
	WB	L	0.79	46.2	D	L	0.57	35.0	C	L	0.78	47.6	D	L	0.71	39.93	

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 NO ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.71	31.0	C	LTR	0.34	20.8	C	LTR	0.31	20.3	C	LTR	0.40	21.8	C
	SB	LTR	0.62	24.8	C	LTR	0.61	24.3	C	LTR	0.73	26.8	C	LTR	0.75	27.7	C
	EB	DefL	0.58	26.4	C	DefL	0.43	19.7	B	-	-	-	B	DefL	0.49	21.6	C
	TR		0.37	15.8	B	TR	0.21	13.7	B	LTR	0.32	14.7	B	TR	0.36	15.6	B
	WB	LTR	0.90	30.1	C	LTR	0.89	29.7	C	LTR	0.68	22.4	C	LTR	0.89	29.9	C
Overall Intersection		-	0.81	26.3	C	-	0.76	24.6	C	-	0.71	22.4	C	-	0.83	25.7	C
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.12	79.7	E	LTR	1.17	102.6	F	LTR	0.90	35.5	D	LTR	0.94	40.0	D
	SB	LTR	0.97	39.3	D	LTR	0.72	25.4	C	LTR	0.78	27.5	C	LTR	0.85	30.1	C
	EB	LTR	0.73	27.5	C	LTR	0.56	22.3	C	LTR	0.71	26.3	C	LTR	0.74	26.9	C
	WB	LTR	0.83	31.7	C	LTR	0.87	34.7	C	LTR	0.79	30.0	C	LTR	0.91	39.1	D
	Overall Intersection	-	0.98	45.8	D	-	1.02	48.5	D	-	0.85	30.0	C	-	0.93	34.0	C
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.44	23.9	C	T	0.71	29.9	C	T	0.50	25.3	C	T	0.36	23.3	C
	TR		0.71	31.8	C	TR	0.81	36.4	D	TR	0.93	47.3	D	TR	0.79	34.6	C
	SB	L	0.52	37.2	D	L	0.75	48.8	D	L	0.49	34.9	C	L	0.53	36.4	D
	T		0.60	13.0	B	T	0.50	11.7	B	T	0.44	10.9	B	T	0.42	10.7	B
	WB	LTR	0.88	44.9	D	LTR	0.79	40.6	D	LTR	0.90	45.6	D	LTR	0.54	32.0	C
Overall Intersection		-	1.41	24.0	C	-	1.30	28.1	C	-	1.16	29.4	C	-	1.05	23.4	C
NORTHERN BOULEVARD SERVICE ROAD																	
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	NB	TR	0.42	11.8	B	TR	0.53	13.2	B	TR	0.56	13.6	B	TR	0.55	13.3	B
	SB	LT	0.89	25.0	C	LT	0.87	24.4	C	LT	0.87	24.2	C	LT	0.80	20.8	C
	WB	LR	0.79	37.0	D	LR	0.79	37.3	D	LR	0.74	34.7	C	LR	0.69	32.7	C
Overall Intersection		-	0.85	22.6	C	-	0.84	22.0	C	-	0.82	21.1	C	-	0.76	19.5	B
STADIUM ROAD																	
Boat Basin Road at Stadium Road																	
Boat Basin Road	NB	LTR	0.09	7.3	A	LTR	0.07	7.2	A	LTR	0.05	7.1	A	LTR	0.08	7.2	A
	SB	-	-	-	-	DefL	0.28	9.3	A	-	-	-	-	DefL	0.20	8.4	A
	LTR		0.39	9.8	A	TR	0.18	8.1	A	LTR	0.23	8.2	A	TR	0.16	7.9	A
	WB	LTR	0.24	25.8	C	LTR	0.19	25.3	C	LTR	0.30	26.4	C	LTR	0.28	26.2	C
Overall Intersection		-	0.34	12.8	B	-	0.25	12.5	B	-	0.25	14.8	B	-	0.23	14.4	B
UNSIGNALIZED INTERSECTIONS																	
Willets Point Boulevard at 126th Street																	
126th Street	SB	LT	-	8.2	A	LT	-	8.3	A	LT	-	8.4	A	LT	-	8.5	A
	WB	LR	-	11.2	B	LR	-	12.3	B	LR	-	15.0	B	LR	-	15.6	C
Overall Intersection		-	-	10.3	B	-	-	10.7	B	-	-	12.4	B	-	-	14.3	B
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	41.2	E	L	-	19.7	C	L	-	16.7	C	L	-	17.4	C
	R		-	8.7	A	R	-	8.5	A	R	-	8.8	A	R	-	8.6	A
	WB	LT	-	8.9	A	LT	-	8.2	A	LT	-	7.8	A	LT	-	8.0	A
Overall Intersection		-	-	10.2	B	-	-	9.5	A	-	-	9.1	A	-	-	10.0	A
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	TR	-	10.3	B	TR	-	10.6	B	TR	-	9.9	A	TR	-	9.2	A
	Overall Intersection	-	-	10.3	B	-	-	10.6	B	-	-	9.9	A	-	-	9.2	A
Boat Basin Road at Stadium Road / Citifield Entrance 8																	
Citifield Entrance 8	NB	T	-	10.5	B	T	-	11.4	B	T	-	10.7	B	T	-	12.1	B
	SB	LT	-	11.4	B	LT	-	11.4	B	LT	-	11.4	B	-	-	-	-
	EB	LT	-	7.4	A	LT	-	7.5	A	LT	-	7.4	A	LT	-	7.5	A
Overall Intersection		-	-	8.5	A	-	-	8.8	A	-	-	9.2	A	-	-	7.5	A
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Grand Central Parkway Off-Ramp	EB	L	-	11.5	B	L	-	10.8	B	L	-	10.7	B	L	-	11.2	B
	R		-	9.4	A	R	-	9.2	A	R	-	9.4	A	R	-	9.3	A
Overall Intersection		-	-	10.9	B	-	-	10.3	B	-	-	10.0	A	-	-	10.7	B
126th Street at 36th Avenue																	
126th Street	SB	LT	-	8.2	A	LT	-	8.4	A	LT	-	8.2	A	LT	-	8.4	A
	WB	LR	-	13.6	B	LR	-	16.2	C	LR	-	12.1	B	LR	-	13.5	B
Overall Intersection		-	-	9.1	A	-	-	11.1	B	-	-	11.2	B	-	-	11.1	B
126th Street at 37th Avenue																	
126th Street	SB	LT	-	7.8	A	LT	-	8.3	A	LT	-	8.2	A	LT	-	8.2	A
	WB	LR	-	12.5	B	LR	-	12.7	B	LR	-	13.1	B	LR	-	12.0	B
Overall Intersection		-	-	11.9	B	-	-	10.7	B	-	-	11.4	B	-	-	11.0	B
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	14.1	B	R	-	16.3	C	R	-	19.4	C	R	-	16.6	C
	Overall Intersection	-	-	14.1	B	-	-	16.3	C	-	-	19.4	C	-	-	16.6	C

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
Signalized Intersections													
Astoria Boulevard													
108th Street at Astoria Boulevard													
108th Street	NB	DefL	0.67	51.9	D	DefL	0.46	25.9	C	DefL	0.53	27.8	C
		T	0.28	36.8	D	T	0.20	21.0	C	T	0.22	21.3	C
	SB	LTR	0.35	38.1	D	LTR	0.23	21.4	C	LTR	0.19	20.9	C
		EB	TR	1.08	62.7	E	TR	0.76	27.0	C	TR	0.69	25.5
	WB	L	0.75	49.2	D	L	0.81	39.4	D	L	0.93	54.4	D
		TR	0.29	9.3	A	TR	0.30	12.0	B	TR	0.31	12.1	B
Overall Intersection		-	0.93	51.1	D	-	0.66	23.4	C	-	0.73	24.5	C
Northern Boulevard													
108th Street at Northern Boulevard (RT. 25A)													
108th Street	NB	LTR	1.18	128.9	F	LTR	1.16	121.8	F	LTR	1.19	135.2	F
	SB	LTR	1.14	115.9	F	LTR	1.09	101.6	F	LTR	1.19	134.3	F
Northern Boulevard (Rt. 25A)	EB	L	0.19	32.9	C	L	0.09	36.4	D	L	0.14	37.1	D
		TR	0.87	14.7	B	TR	0.98	38.1	D	TR	0.97	36.9	D
	WB	L	0.74	46.8	D	L	0.84	48.6	D	L	1.01	73.8	E
		TR	1.08	62.9	E	TR	1.17	106.4	F	TR	1.15	94.1	F
Overall Intersection		-	1.07	47.8	D	-	1.12	79.4	E	-	1.14	78.8	E
114th Street at Northern Boulevard (RT. 25A)													
114th Street	SB	LTR	0.78	57.6	E	LTR	0.62	49.9	D	LTR	0.48	46.0	D
	EB	T	1.01	35.8	D	T	0.76	24.9	C	T	0.67	22.7	C
WB		R	0.64	14.9	B	R	0.80	29.3	C	R	0.67	24.9	C
	WB	DefL	0.84	51.2	D	DefL	0.84	39.0	D	DefL	1.29	159.4	F
T		0.87	15.5	B	T	0.86	16.1	B	T	1.21	113.3	F	
Overall Intersection		-	1.52	26.9	C	-	1.32	23.8	C	-	1.95	87.2	F
126th Street at Northern Boulevard (RT. 25A)													
126th Street	NB	L	0.47	44.1	D	L	0.63	47.0	D	L	1.18	129.3	F
		R	0.40	43.6	D	R	0.33	41.9	D	R	0.66	44.3	D
Northern Boulevard	EB	T	1.12	118.9	F	T	0.55	38.3	D	T	0.57	38.6	D
	WB	T	0.82	16.8	B	T	0.68	12.7	B	T	0.32	6.9	A
Grand Central Parkway Ramp	EB	T	0.90	39.6	D	T	0.89	45.0	D	T	0.93	49.4	D
Van Wyck & Whitestone Expressway Ramp	WB	T	0.80	14.8	B	T	0.74	13.1	B	T	0.64	12.1	B
Overall Intersection		-	0.74	38.7	D	-	0.72	27.2	C	-	0.76	49.6	D
Prince Street at Northern Boulevard (RT. 25A)													
Prince Street	NB	LTR	1.13	107.6	F	LTR	1.12	101.5	F	LTR	1.15	115.1	F
	SB	LTR	0.60	42.5	D	LTR	0.51	37.8	D	LTR	0.41	38.7	D
Northern Boulevard (Rt. 25A)	EB	L	0.98	75.2	E	L	1.01	87.7	F	L	0.91	67.7	E
		T	1.05	58.9	E	T	0.98	40.8	D	T	1.03	53.8	D
	WB	L	0.79	69.4	E	L	0.98	102.3	F	L	0.90	90.6	F
		T	1.11	93.3	F	T	1.14	103.1	F	T	0.99	51.1	D
Northern Boulevard Service Rd.	EB	TR	0.59	25.2	C	TR	0.51	23.2	C	TR	0.45	21.9	C
	WB	TR	0.80	42.3	D	TR	0.76	35.9	D	TR	0.55	29.3	C
Overall Intersection		-	1.09	69.4	E	-	1.11	67.8	E	-	1.05	54.1	D
Main Street at Northern Boulevard (RT. 25A)													
Main Street	NB	L	0.91	53.1	D	T	0.87	48.5	D	T	0.86	48.2	D
		R	0.92	64.7	E	R	0.96	71.5	E	R	0.75	42.6	D
Northern Boulevard (Rt 25A)	EB	T	1.15	99.8	F	T	0.96	41.6	D	T	1.06	67.3	E
		R	1.24	143.2	F	R	1.36	200.0	F	R	1.20	131.0	F
Northern Boulevard (Rt 25A)	WB	L	0.23	28.0	C	L	0.17	26.6	C	L	0.12	26.0	C
		T	0.79	23.4	C	T	0.89	27.0	C	T	0.71	21.3	C
Overall Intersection		-	1.08	72.1	E	-	1.17	58.2	E	-	0.99	56.7	E
Union Street at Northern Boulevard (RT. 25A)													
Union Street	NB	TR	0.70	36.0	D	TR	0.70	35.8	D	TR	0.67	34.9	C
	SB	TR	0.70	35.5	D	TR	0.61	33.3	C	TR	0.68	35.0	C
Northern Boulevard (Rt. 25A)	EB	L	0.64	31.9	C	L	0.70	35.5	D	L	0.75	35.7	D
		TR	1.19	119.7	F	TR	1.28	165.0	F	TR	1.25	149.8	F
	WB	L	0.80	41.8	D	L	0.99	69.8	E	L	1.01	69.8	E
		TR	1.01	65.7	E	TR	0.99	48.6	D	TR	0.86	39.4	D
Overall Intersection		-	0.95	79.4	E	-	0.95	87.7	F	-	0.98	82.1	F
Parsons Boulevard at Northern Boulevard (RT. 25A)													
Parsons Boulevard	NB	L	0.90	84.4	F	L	0.69	51.0	D	L	0.76	58.2	E
		TR	0.59	40.4	D	TR	0.54	39.2	D	TR	0.60	38.6	D
	SB	LTR	1.19	129.2	F	LTR	1.14	107.6	F	LTR	1.13	104.3	F
Northern Boulevard (Rt. 25A)	EB	L	0.48	46.2	D	L	0.42	43.5	D	L	0.46	43.7	D
		TR	1.02	50.3	D	TR	1.14	99.2	F	TR	1.16	107.4	F
	WB	L	0.45	41.1	D	L	0.45	44.5	D	L	0.52	46.4	D
		TR	1.19	118.8	F	TR	1.08	72.9	E	TR	1.14	96.4	F
Overall Intersection		-	1.11	81.9	F	-	1.11	80.7	F	-	1.10	92.4	F
34th Avenue													
114th Street at 34th Avenue													
114th Street	SB	L	1.06	83.8	F	L	1.04	74.5	E	L	1.18	121.6	F
		T	0.55	29.0	C	T	0.55	28.8	C	T	0.36	25.1	C
34th Avenue	EB	T	0.51	13.0	B	T	0.43	12.1	B	T	0.45	12.3	B
		R	0.16	9.2	A	R	0.11	8.8	A	R	0.06	8.4	A
Overall Intersection		-	0.70	41.9	D	-	0.65	41.2	D	-	0.72	70.5	E

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)				
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
				Delay				Delay				Delay		
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	DefL	0.74	64.0	E	DefL	1.03	104.7	F	-	-	-	-	
		TR	0.36	35.5	D	TR	0.48	33.4	C	LTR	0.58	29.3	C	
Northern Boulevard Ramp	SB	LTR	0.74	49.8	D	LTR	0.54	36.6	D	LTR	0.20	24.2	C	
GCP Ramp	SB	LTR	1.47	266.5	F	LTR	2.09	545.7	F	LTR	0.94	87.3	F	
Shea Road	EB	DefL	0.50	33.0	C	-	-	-	-	DefL	1.98	488.9	F	
34th Avenue	WB	TR	0.31	28.3	C	LTR	0.41	28.4	F	TR	1.07	99.8	F	
		LTR	0.30	28.1	C	LTR	0.41	28.0	F	LTR	0.60	43.4	D	
Overall Intersection		-	0.82	140.5	F	-	0.97	241.8	F	-	1.15	141.6	F	
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.18	128.0	F	LTR	1.20	137.9	F	LTR	1.18	129.9	F	
		SB	LTR	1.19	132.8	F	LTR	1.20	136.6	F	LTR	1.22	146.9	F
Roosevelt Avenue	EB	LTR	0.71	8.6	A	LTR	0.79	19.6	B	LTR	0.65	15.1	B	
		WB	LTR	0.67	12.4	B	LTR	1.01	33.5	C	LTR	0.94	20.4	C
Overall Intersection		-	0.84	53.3	D	-	1.07	63.3	E	-	1.01	60.5	E	
111th Street at Roosevelt Avenue														
111th Street	NB	LTR	1.05	78.7	E	LTR	1.07	80.2	F	LTR	1.08	85.9	F	
		EB	LTR	0.77	9.7	A	LTR	0.87	23.3	C	LTR	0.75	17.9	B
Roosevelt Avenue	WB	LTR	1.21	115.3	F	LTR	1.23	126.6	F	LTR	1.24	130.2	F	
Overall Intersection		-	1.17	67.8	E	-	1.19	77.3	E	-	1.20	84.4	F	
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	0.91	60.5	E	LTR	1.10	94.5	F	LTR	0.69	46.6	D	
		SB	LTR	1.12	100.8	F	LTR	1.12	100.4	F	LTR	1.11	97.5	F
Roosevelt Avenue	EB	LTR	1.00	31.0	C	LTR	1.26	137.8	F	LTR	1.33	170.5	F	
		WB	LTR	0.69	14.5	B	LTR	0.61	12.7	B	LTR	0.80	17.4	B
Overall Intersection		-	1.04	35.8	D	-	1.22	79.1	E	-	1.26	71.4	E	
126th Street at Roosevelt Avenue														
126th Street	NB	LTR	0.66	61.7	E	LTR	0.84	83.3	F	LTR	0.22	37.4	D	
		SB	-	-	-	-	-	-	-	DefL	1.25	167.0	F	
Roosevelt Avenue	EB	LTR	1.18	126.0	F	LTR	1.16	119.6	F	TR	0.52	30.4	C	
		DefL	1.04	70.9	E	DefL	1.22	150.9	F	-	-	-	-	
	WB	TR	0.71	8.1	A	TR	0.56	12.5	B	LTR	0.62	23.0	C	
		LTR	0.63	12.9	B	LTR	0.67	13.7	B	LTR	0.51	20.2	C	
Overall Intersection		-	1.08	47.4	D	-	1.21	56.0	E	-	0.89	56.0	E	
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.30	194.3	F	L	1.33	195.3	F	L	1.05	93.9	F	
		TR	0.70	29.2	C	TR	0.84	28.1	C	TR	0.78	26.3	C	
Roosevelt Avenue	SB	TR	0.90	48.2	D	TR	1.23	136.8	F	TR	0.89	40.4	D	
	EB	L	0.50	37.4	D	L	0.50	29.0	C	L	0.59	30.5	C	
		TR	1.27	153.5	F	TR	1.25	140.1	F	TR	1.25	134.7	F	
	WB	L	0.31	45.0	D	L	0.29	33.5	C	L	0.25	32.9	C	
		TR	0.49	36.5	D	TR	0.55	28.4	C	TR	0.42	25.8	C	
	Overall Intersection		-	1.23	82.7	F	-	1.38	99.4	F	-	1.14	62.6	E
Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.53	31.2	C	LTR	0.81	42.3	D	LTR	0.73	37.4	D	
		EB	DefL	0.82	33.2	C	DefL	0.78	18.6	B	DefL	0.78	19.0	B
Roosevelt Avenue	WB	TR	0.81	29.4	C	TR	0.66	13.2	B	TR	0.84	18.7	B	
		LTR	0.61	21.6	C	LTR	0.63	13.4	B	LTR	0.60	12.4	B	
Overall Intersection		-	0.70	28.3	C	-	0.79	20.7	C	-	0.80	20.5	C	
Main Street at Roosevelt Avenue														
Main Street	NB	T	0.64	23.7	C	T	0.68	24.5	C	T	0.68	24.5	C	
		SB	T	0.56	22.3	C	T	0.65	24.3	C	T	0.56	22.4	C
Roosevelt Avenue	EB	L	0.35	36.2	D	L	0.28	20.9	C	L	0.26	19.5	B	
		TR	0.94	66.9	E	TR	0.75	33.1	C	TR	0.96	50.8	D	
	WB	L	0.22	28.9	C	L	0.07	15.6	B	L	0.20	17.4	B	
		TR	0.90	56.5	E	TR	0.86	40.9	D	TR	0.87	37.3	D	
Overall Intersection		-	0.76	37.7	D	-	0.77	29.1	C	-	0.82	32.3	C	
Union Street at Roosevelt Avenue														
Union Street	NB	TR	0.55	18.9	B	TR	0.46	17.3	B	TR	0.46	17.4	B	
		SB	LT	1.28	154.0	F	LT	1.01	57.9	E	LT	1.23	134.3	F
		R	1.93	447.1	F	R	2.67	789.3	F	R	1.93	453.3	F	
Roosevelt Avenue	EB	LTR	2.34	633.4	F	LTR	1.95	459.4	F	LTR	2.00	480.3	F	
		WB	LT	0.82	33.3	C	LT	0.58	24.4	C	LT	0.75	31.8	C
			R	0.83	52.0	D	R	1.29	215.3	F	R	1.53	309.9	F
Overall Intersection		-	2.12	242.7	F	-	2.33	255.8	F	-	1.96	231.5	F	
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard	NB	LTR	0.82	38.4	D	LTR	0.74	28.0	C	LTR	0.96	43.7	D	
		SB	LTR	0.80	34.2	C	LTR	0.75	26.1	C	LTR	0.77	27.2	C
Roosevelt Avenue	EB	LTR	0.70	32.1	C	LTR	0.46	20.1	C	LTR	0.72	26.9	C	
		WB	LTR	0.94	49.9	D	LTR	0.64	24.4	C	LTR	0.76	28.8	C
Overall Intersection		-	0.88	38.7	D	-	0.69	25.2	C	-	0.86	32.1	C	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street	NB	L	0.76	38.9	D	L	0.91	60.1	E	L	0.70	32.8	C	
		TR	0.59	22.4	C	TR	0.60	21.5	C	TR	0.68	23.0	C	
Kissena Boulevard	WB	L	0.88	55.5	E	L	0.52	21.4	C	L	0.44	19.8	B	
		TR	0.51	20.2	C	TR	0.54	19.7	B	TR	0.49	18.9	B	
		T	0.73	38.2	D	T	0.66	24.8	C	T	0.66	24.6	C	
Overall Intersection		-	0.81	30.5	C	-	0.79	25.0	C	-	0.68	22.4	C	
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard	NB	L	0.40	15.8	B	L	0.53	22.5	C	L	0.24	13.2	B	
		T	0.76	16.2	B	T	0.83	18.3	B	T	0.57	12.7	B	
Sanford Avenue	WB	TR	0.76	16.1	B	TR	0.83	18.3	B	TR	0.80	17.4	B	
		L	0.82	50.2	D	L	0.88	56.5	E	L	0.58	34.8	C	
		TR	0.48	28.6	C	TR	0.52	29.3	C	TR	0.34	26.6	C	
Overall Intersection		-	0.78	20.0	B	-	0.85	22.6	C	-	0.73	17.6	B	

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 NO ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
Union Street at Sanford Avenue													
Union Street	NB	LTR	0.39	21.7	C	LTR	0.49	24.4	C	LTR	0.42	22.2	C
	SB	LTR	0.71	26.3	C	LTR	0.93	36.0	D	LTR	0.82	30.1	C
Sanford Avenue	EB	-	-	-	-	DefL	0.58	24.6	C	-	-	-	-
	LTR	0.29	14.3	B	TR	0.33	15.1	B	LTR	0.24	13.8	B	
	WB	LTR	0.91	32.4	C	LTR	0.75	23.8	C	LTR	0.70	22.4	C
Overall Intersection		-	0.82	25.7	C	-	0.83	28.0	C	-	0.75	24.1	C
Parsons Boulevard at Sanford Avenue													
Parsons Boulevard	NB	LTR	1.05	58.4	E	LTR	0.86	32.6	C	LTR	0.94	38.6	D
	SB	LTR	0.70	25.1	C	LTR	0.74	26.0	C	LTR	0.75	26.4	C
Sanford Avenue	EB	LTR	0.61	23.6	C	LTR	0.63	23.5	C	LTR	0.81	30.1	C
	WB	LTR	0.76	28.5	C	LTR	0.86	33.3	C	LTR	0.83	32.5	C
Overall Intersection		-	0.90	35.3	D	-	0.86	29.0	C	-	0.88	31.9	C
Whitestone Expressway / 32nd Avenue													
College Point Boulevard at 32nd Avenue													
College Point Boulevard	NB	T	0.40	23.8	C	T	0.37	23.3	C	T	0.45	24.0	C
	TR	0.27	22.0	C	TR	0.59	26.1	C	TR	0.35	22.9	C	
	SB	L	0.45	33.6	C	L	0.58	38.3	D	L	0.28	27.8	C
	T	0.41	10.6	B	T	0.46	11.1	B	T	0.30	9.6	A	
32nd Avenue	WB	LTR	0.75	38.4	D	LTR	0.47	30.3	C	LTR	0.31	26.9	C
	Overall Intersection		-	1.10	21.2	C	-	1.05	21.9	C	-	0.86	19.6
Northern Boulevard Service Road													
College Point Boulevard at Northern Boulevard Service Road													
College Point Boulevard	NB	TR	0.49	12.7	B	TR	0.55	13.4	B	TR	0.51	12.9	B
	SB	LT	0.85	22.5	C	LT	0.92	28.0	C	LT	0.55	14.0	B
Northern Blvd Service Rd	WB	LR	0.72	33.9	C	LR	0.72	33.2	C	LR	0.57	29.2	C
Overall Intersection		-	0.81	20.4	C	-	0.85	22.7	C	-	0.56	15.9	B
Stadium Road													
Boat Basin Road at Stadium Road													
Boat Basin Road	NB	-	-	-	-	-	-	-	-	L	2.39	663.8	F
	LTR	0.54	43.9	D	LTR	0.68	49.6	D	TR	1.90	438.3	F	
Stadium Road	SB	LTR	0.90	35.6	D	LTR	0.77	24.6	C	LTR	0.41	27.7	C
	WB	LTR	0.88	33.1	C	LTR	1.00	45.6	D	LTR	0.27	9.3	A
Overall Intersection		-	0.85	35.2	D	-	0.83	35.1	D	-	0.98	431.4	F
Unsignalized Intersections													
Willets Point Boulevard at 126th Street													
126th Street	SB	LT	-	8.2	A	LT	-	9.0	A	LT	-	8.2	A
	WB	LR	-	12.4	B	LR	-	11.0	B	LR	-	10.1	B
Overall Intersection		-	-	12.3	B	-	-	10.9	B	-	-	8.9	A
Boat Basin Road at Worlds Fair Marina													
Boat Basin Road	NB	L	-	54.8	F	L	-	41.4	E	L	-	103.5	F
	R	-	8.6	A	R	-	8.7	A	R	-	13.4	B	
Worlds Fair Marina	WB	LT	-	12.4	B	LT	-	11.2	B	LT	-	7.8	A
Overall Intersection		-	-	13.7	B	-	-	12.2	B	-	-	54.1	F
Willets Point Boulevard at Northern Boulevard													
Willets Point Boulevard	NB	TR	-	9.6	A	TR	-	9.2	A	TR	-	9.1	A
Overall Intersection		-	-	9.6	A	-	-	9.2	A	-	-	9.1	A
Boat Basin Road at Stadium Road / Citifield Entrance 8													
Citifield Entrance 8	NB	-	-	-	-	-	-	-	-	-	-	-	-
Boat Basin Road	SB	LT	-	8.4	A	LT	-	7.8	A	-	-	-	-
Stadium Road	EB	LT	-	31.4	D	LT	-	88.5	F	LT	-	82.9	F
	TR	-	31.0	D	TR	-	39.9	E	-	-	-	-	-
Citifield Entrance 9	WB	R	-	10.3	B	R	-	9.3	A	R	-	56.1	F
Overall Intersection		-	-	30.0	D	-	-	58.7	F	-	-	79.3	F
Grand Central Parkway Ramp at West Park Loop/Stadium Road													
Grand Central Parkway Off-Ramp	EB	L	-	35.6	E	L	-	35.9	E	L	-	53.2	F
	R	-	9.6	A	R	-	9.2	A	R	-	22.8	C	
Overall Intersection		-	-	32.4	D	-	-	33.1	D	-	-	41.7	E
126th Street at 36th Avenue													
126th Street	SB	LT	-	8.3	A	LT	-	9.5	A	LT	-	8.4	A
	WB	LR	-	17.5	C	LR	-	25.2	D	LR	-	13.3	B
Overall Intersection		-	-	12.3	B	-	-	17.4	C	-	-	13.0	B
126th Street at 37th Avenue													
126th Street	SB	LT	-	8.2	A	LT	-	8.9	A	LT	-	8.4	A
	WB	LR	-	15.9	C	LR	-	17.7	C	LR	-	17.0	C
Overall Intersection		-	-	12.6	B	-	-	14.8	B	-	-	15.7	C
Northern Boulevard at 126th Place													
126th Place	NB	R	-	21.0	C	R	-	15.7	C	R	-	16.6	C
Overall Intersection		-	-	21.0	C	-	-	15.7	C	-	-	16.6	C

Notes

- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 9

CITIFIELD - WILLETS POINT DEVELOPMENT STUDY

2018 PHASE 1A WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Weekday AM Peak Hour (8:00 - 9:00 AM)					Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)				
Intersection & Approach	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
			Delay				Delay				Delay						
Signalized Intersections																	
Astoria Boulevard																	
108th Street at Astoria Boulevard																	
108th Street	NB	DefL	0.80	62.6	E	DefL	0.57	29.6	C	DefL	0.68	52.5	D	DefL	0.62	30.8	C
		T	0.21	35.5	D	T	0.13	20.1	C	T	0.21	35.6	D	T	0.20	21.0	C
	SB	LTR	0.35	38.3	D	LTR	0.17	20.6	C	LTR	0.38	38.9	D	LTR	0.25	21.6	C
		EB	TR	0.61	25.8	C	TR	0.88	31.2	C	TR	0.91	27.5	C	TR	1.00	42.0
	WB	L	0.56	14.8	B	L	0.74	33.8	C	L	0.71	45.6	D	L	0.54	23.9	C
		TR	0.77	7.9	A	TR	0.35	12.6	B	TR	0.35	9.9	A	TR	0.38	12.7	B
Overall Intersection	-	0.78	18.1	B	-	0.76	25.3	C	-	0.84	26.3	C	-	0.81	30.4	C	
Northern Boulevard																	
108th Street at Northern Boulevard (RT. 25A)																	
108th Street	NB	LTR	1.20	139.5	F	LTR	1.47	257.2	F	LTR	1.49	267.6	F	LTR	1.50	274.3	F
	SB	LTR	0.97	79.0	E	LTR	0.92	69.0	E	LTR	1.12	112.7	F	LTR	0.93	69.3	E
Northern Boulevard (Rt. 25A)	EB	L	0.07	21.4	C	L	0.08	25.2	C	L	0.15	36.2	D	L	0.17	41.3	D
		TR	0.77	21.1	C	TR	0.94	34.1	C	TR	0.87	14.8	B	TR	1.01	45.4	D
	WB	L	0.44	21.7	C	L	0.75	50.1	D	L	0.66	43.0	D	L	0.76	46.6	D
		TR	1.03	33.7	C	TR	1.04	57.1	E	TR	1.17	104.6	F	TR	1.22	128.0	F
Overall Intersection	-	0.94	39.0	D	-	1.11	66.9	E	-	1.17	73.9	E	-	1.23	102.9	F	
114th Street at Northern Boulevard (RT. 25A)																	
114th Street	SB	LTR	0.49	48.2	D	LTR	0.44	45.7	D	LTR	0.45	47.2	D	LTR	0.43	45.0	D
		EB	T	0.89	42.1	D	T	0.86	29.9	C	T	1.18	100.1	F	T	0.77	25.6
Northern Boulevard (Rt. 25A)	R	0.74	38.4	D	R	0.48	19.7	B	R	0.85	17.8	B	R	0.62	23.1	C	
		WB	DefL	0.51	16.6	B	DefL	0.64	27.0	C	DefL	1.03	89.8	F	DefL	0.91	43.8
	T	1.17	94.4	F	T	0.76	13.3	B	T	0.94	20.1	C	T	1.01	33.1	C	
Overall Intersection	-	1.32	70.9	E	-	1.24	22.1	C	-	1.61	55.1	E	-	1.32	31.1	C	
126th Street at Northern Boulevard (RT. 25A)																	
126th Street	NB	L	0.37	42.6	D	L	0.66	48.9	D	L	0.62	47.4	D	L	0.65	48.4	D
		R	0.63	53.5	D	R	1.51	305.0	F	R	1.39	251.4	F	R	2.34	670.7	F
Northern Boulevard	EB	T	0.53	38.0	D	T	0.78	46.0	D	T	1.21	154.8	F	T	0.72	42.8	D
		WB	T	0.66	10.9	B	T	0.36	7.3	A	T	0.43	7.9	A	T	0.34	7.2
Grand Central Parkway Ramp	EB	T	0.82	40.9	D	T	0.77	38.2	D	T	0.73	29.7	C	T	0.83	40.8	D
Van Wyck & Whitestone Expressway Ramp	WB	T	1.20	144.9	F	T	1.02	50.4	D	T	1.12	83.0	F	T	1.01	46.9	D
Overall Intersection	-	1.07	63.2	E	-	1.13	54.9	D	-	1.18	74.9	E	-	1.31	83.8	F	
Prince Street at Northern Boulevard (RT. 25A)																	
Prince Street	NB	LTR	1.13	124.0	F	LTR	1.13	107.5	F	LTR	1.17	122.7	F	LTR	1.10	91.6	F
		SB	LTR	0.78	52.5	D	LTR	0.52	41.0	D	LTR	0.51	41.4	D	LTR	0.45	36.6
Northern Boulevard (Rt. 25A)	EB	L	0.94	89.0	F	L	0.87	69.8	E	L	0.60	45.4	D	L	0.65	49.1	D
		T	0.80	22.4	C	T	0.95	37.8	D	T	0.99	42.2	D	T	1.09	77.0	E
	WB	L	0.94	88.4	F	L	0.89	88.0	F	L	0.79	70.6	E	L	0.80	63.5	E
		T	1.15	90.0	F	T	1.15	108.7	F	T	1.16	113.1	F	T	1.19	121.3	F
Northern Boulevard Service Rd.	EB	TR	0.44	16.5	B	TR	0.60	26.0	C	TR	0.64	27.1	C	TR	0.61	25.5	C
		WB	TR	0.67	19.2	B	TR	0.76	37.5	D	TR	0.71	37.6	D	TR	0.81	38.5
Overall Intersection	-	1.10	59.1	E	-	1.09	68.3	E	-	1.02	69.4	E	-	1.05	83.6	F	
Main Street at Northern Boulevard (RT. 25A)																	
Main Street	NB	L	0.76	43.1	D	L	0.97	62.8	E	L	0.95	59.2	E	L	0.92	54.6	D
		R	0.83	52.1	D	R	0.66	38.7	D	R	0.95	71.2	E	R	0.87	58.7	E
Northern Boulevard (Rt 25A)	EB	T	0.94	39.4	D	T	1.00	49.4	D	T	1.10	78.3	E	T	0.99	46.3	D
		R	1.14	113.1	F	R	1.25	157.1	F	R	1.16	115.7	F	R	1.34	192.6	F
Northern Boulevard (Rt 25A)	WB	L	0.16	26.4	C	L	0.10	25.6	C	L	0.16	26.7	C	L	0.08	25.1	C
		T	1.04	40.6	D	T	0.79	23.7	C	T	0.80	23.9	C	T	0.98	34.5	C
Overall Intersection	-	0.99	47.8	D	-	1.00	56.9	E	-	1.06	61.7	E	-	1.12	60.9	E	
Union Street at Northern Boulevard (RT. 25A)																	
Union Street	NB	TR	0.66	34.6	C	TR	0.76	38.1	D	TR	0.76	37.8	D	TR	0.75	37.3	D
		SB	TR	0.87	41.0	D	TR	0.54	32.1	C	TR	0.81	38.7	D	TR	0.63	33.9
Northern Boulevard (Rt. 25A)	EB	L	0.94	61.7	E	L	0.54	22.7	C	L	0.75	42.2	D	L	0.71	32.9	C
		TR	1.22	139.0	F	TR	1.41	223.1	F	TR	1.16	108.1	F	TR	1.50	263.0	F
	WB	L	1.00	71.8	E	L	1.16	136.3	F	L	0.84	47.9	D	L	0.85	45.5	D
		TR	0.96	38.8	D	TR	0.88	39.6	D	TR	0.97	45.8	D	TR	1.08	76.8	E
Overall Intersection	-	1.05	71.2	E	-	1.37	115.3	F	-	0.99	69.4	E	-	1.11	136.3	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)																	
Parsons Boulevard	NB	L	0.91	81.5	F	L	0.71	55.9	E	L	0.83	67.6	E	L	0.84	67.3	E
		TR	0.55	39.5	D	TR	0.51	38.4	D	TR	0.49	35.0	D	TR	0.58	40.3	D
Northern Boulevard (Rt. 25A)	SB	LTR	0.79	45.7	D	LTR	1.14	108.3	F	LTR	1.12	99.9	F	LTR	1.14	106.9	F
		EB	L	0.53	45.1	D	L	0.81	58.6	E	L	0.46	45.9	D	L	0.52	46.4
	TR	L	1.03	60.8	E	TR	1.08	79.0	E	TR	1.03	55.2	E	TR	1.13	97.4	F
		WB	L	0.43	36.4	D	L	0.36	37.5	D	L	0.35	39.7	D	L	0.47	44.5
	TR	1.11	83.5	F	TR	1.22	136.0	F	TR	1.18	118.1	F	TR	1.22	133.2	F	
Overall Intersection	-	1.00	67.9	E	-	1.18	98.2	F	-	1.07	79.2	E	-	1.15	104.5	F	
34th Avenue																	
114th Street at 34th Avenue																	
114th Street	SB	L	0.85	39.1	D	L	0.89	49.2	D	L	1.06	78.2	E	L	1.08	90.1	F
		T	0.33	24.8	C	T	0.31	25.1	C	T	0.47	27.1	C	T	0.42	26.6	C
34th Avenue	EB	T	0.41	11.8	B	T	0.39	11.6	B	T	0.37	11.3	B	T	0.56	13.8	B
		R	0.11	8.8	A	R	0.07	8.5	A	R	0.07	8.5	A	R	0.10	8.7	A
Overall Intersection	-	0.57	24.0	C	-	0.57	29.8	C	-	0.61	45.4	D	-	0.74	45.4	D	

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Weekday AM Peak Hour (8:00 - 9:00 AM)					Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)				
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay					
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	DefL	0.25	22.1	C	DefL	0.47	28.5	C	DefL	0.62	32.5	C	DefL	0.38	25.3	C
		TR	0.23	20.7	C	TR	0.35	22.3	C	TR	0.34	22.1	C	TR	0.35	22.2	C
Northern Boulevard Ramp	SB	LTR	0.39	23.7	C	LTR	0.76	36.3	D	LTR	0.42	24.2	C	LTR	0.64	30.2	C
	SB	LTR	1.22	169.9	F	LTR	2.04	525.7	F	LTR	1.93	475.9	F	LTR	1.94	483.1	F
GCP Ramp	EB	-	-	-	-	-	-	-	-	DefL	2.01	524.7	F	DefL	2.55	759.9	F
		LTR	0.76	54.2	D	LTR	1.66	354.2	F	TR	1.59	335.8	F	TR	2.13	571.0	F
Shea Road	WB	LTR	0.77	65.9	E	LTR	1.15	166.1	F	LTR	1.22	178.5	F	LTR	0.90	82.3	F
		Overall Intersection	-	0.68	73.5	E	-	1.28	255.4	F	-	1.28	253.4	F	-	1.43	330.6
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	1.00	73.7	E	LTR	1.09	103.9	F	LTR	1.10	99.7	F	LTR	1.20	139.1	F
		SB	LTR	1.05	85.2	F	LTR	1.20	136.6	F	LTR	1.16	120.0	F	LTR	1.12	105.3
Roosevelt Avenue	EB	LTR	0.69	16.5	B	LTR	0.80	21.6	C	LTR	0.79	11.4	B	LTR	0.76	18.8	B
	WB	LTR	0.83	10.7	B	LTR	0.92	31.5	C	LTR	0.92	22.6	C	LTR	0.86	17.4	B
Overall Intersection	-	0.89	33.5	C	-	1.00	55.2	E	-	0.98	47.3	D	-	0.95	52.0	D	
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	0.97	63.1	E	LTR	0.71	49.8	D	LTR	0.83	54.4	D	LTR	1.03	69.7	E
		EB	LTR	0.69	15.9	B	LTR	0.79	19.6	B	LTR	0.85	13.5	B	LTR	0.94	32.7
Roosevelt Avenue	WB	LTR	0.93	18.4	B	LTR	0.93	32.3	C	LTR	1.30	156.4	F	LTR	1.30	158.3	F
Overall Intersection	-	0.94	26.0	C	-	0.87	29.4	C	-	1.17	89.5	F	-	1.23	94.6	F	
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	1.02	72.4	E	LTR	0.72	52.2	D	LTR	1.01	71.8	E	LTR	1.10	98.5	F
		SB	LTR	1.20	142.3	F	LTR	0.90	77.5	E	LTR	1.22	144.5	F	LTR	1.27	168.9
Roosevelt Avenue	EB	LTR	0.85	24.7	C	LTR	1.03	58.0	E	LTR	1.07	57.1	E	LTR	1.51	254.0	F
	WB	LTR	0.60	5.7	A	LTR	0.60	12.6	B	LTR	0.88	22.4	C	LTR	0.91	24.6	C
Overall Intersection	-	0.95	34.4	C	-	0.99	36.9	D	-	1.11	49.0	D	-	1.44	111.6	F	
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	0.21	36.9	D	LTR	0.95	75.4	E	LTR	0.71	58.2	E	LTR	0.38	41.3	D
		SB	DefL	1.26	187.0	F	DefL	1.39	247.9	F	DefL	1.16	143.2	F	DefL	1.20	162.9
Roosevelt Avenue	TR	0.69	53.7	D	TR	0.74	57.6	E	TR	0.76	53.4	D	TR	0.66	48.7	D	
	EB	-	-	-	-	-	-	-	DefL	0.75	30.8	C	-	-	-	-	
	LTR	0.58	12.8	B	LTR	0.62	13.5	B	TR	0.65	7.4	A	LTR	0.80	19.5	B	
	WB	LTR	0.64	6.4	A	LTR	0.59	12.7	B	LTR	0.67	14.0	B	LTR	0.59	12.3	B
Overall Intersection	-	0.79	36.2	D	-	0.81	47.7	D	-	0.86	34.6	C	-	0.91	38.8	D	
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.45	258.0	F	L	1.58	310.3	F	L	1.43	254.8	F	L	1.54	288.3	F
		TR	0.72	27.0	C	TR	0.86	29.7	C	TR	0.74	30.5	C	TR	0.91	32.0	C
Roosevelt Avenue	SB	TR	0.86	44.1	D	TR	1.26	155.4	F	TR	1.35	204.5	F	TR	1.07	75.5	E
	EB	L	0.44	39.9	D	L	0.56	30.5	C	L	0.49	37.3	D	L	0.57	20.9	C
	TR	1.01	66.4	E	TR	1.38	197.7	F	TR	1.32	179.5	F	TR	1.39	200.6	F	
	WB	L	0.22	45.2	D	L	0.27	33.4	C	L	0.24	43.6	D	L	0.33	34.2	C
TR	0.69	44.9	D	TR	0.63	31.8	C	TR	0.50	37.1	D	TR	0.55	28.3	C		
Overall Intersection	-	1.12	71.7	E	-	1.50	128.0	F	-	1.43	140.3	F	-	1.39	100.6	F	
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.50	30.7	C	LTR	0.83	45.0	D	LTR	0.58	32.6	C	LTR	0.94	54.2	D
		EB	DefL	1.27	171.0	F	DefL	0.95	37.3	D	DefL	1.10	95.6	F	DefL	0.81	20.5
Roosevelt Avenue	TR	0.59	23.1	C	TR	0.71	15.2	B	TR	0.74	27.2	C	TR	0.79	17.2	B	
	WB	LTR	0.90	33.3	C	LTR	0.56	12.4	B	LTR	0.64	21.4	C	LTR	0.61	13.3	B
Overall Intersection	-	0.94	64.6	E	-	0.91	25.9	C	-	0.88	42.4	D	-	0.85	24.6	C	
Main Street at Roosevelt Avenue																	
Main Street	NB	T	0.58	21.9	C	T	0.65	24.0	C	T	0.50	20.8	C	T	0.74	25.8	C
		SB	T	0.44	19.5	B	T	0.51	21.7	C	T	0.54	21.9	C	T	0.65	24.0
Roosevelt Avenue	EB	L	0.43	45.8	D	L	0.31	22.6	C	L	0.49	44.8	D	L	0.24	20.5	C
	TR	0.58	36.7	D	TR	0.82	38.9	D	TR	1.01	86.5	F	TR	1.04	75.3	E	
	WB	L	0.11	25.4	C	L	0.14	16.7	B	L	0.21	27.1	C	L	0.04	14.9	B
	TR	0.99	66.0	E	TR	0.89	40.7	D	TR	1.07	89.1	F	TR	0.93	38.4	D	
Overall Intersection	-	0.76	36.1	D	-	0.77	30.0	C	-	0.75	48.9	D	-	0.89	38.0	D	
Union Street at Roosevelt Avenue																	
Union Street	NB	TR	0.58	19.6	B	TR	0.57	19.2	B	TR	0.40	16.5	B	TR	0.55	18.8	B
		SB	LT	1.04	59.4	E	LT	0.96	46.3	D	LT	0.88	32.8	C	LT	1.02	56.1
Roosevelt Avenue	R	0.83	33.6	C	R	3.00+	1000.0+	F	R	2.48	705.0	F	R	2.75	822.2	F	
	EB	LTR	1.41	221.2	F	LTR	2.18	566.2	F	LTR	2.01	484.2	F	LTR	2.55	728.2	F
	WB	LT	0.99	49.5	D	LT	0.67	27.4	C	LT	0.61	25.9	C	LT	0.61	25.3	C
	R	1.08	92.6	F	R	0.91	77.2	E	R	1.11	133.8	F	R	1.29	208.0	F	
Overall Intersection	-	1.21	75.7	E	-	3.00+	492.6	F	-	2.26	235.4	F	-	2.66	337.9	F	
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.10	80.2	F	LTR	0.65	24.3	C	LTR	0.85	40.2	D	LTR	0.86	34.6	C
		SB	LTR	0.79	33.6	C	LTR	0.63	23.0	C	LTR	0.69	29.9	C	LTR	0.77	26.5
Roosevelt Avenue	EB	LTR	0.50	26.0	C	LTR	0.65	25.3	C	LTR	0.58	28.4	C	LTR	0.84	34.2	C
	WB	LTR	1.14	98.7	F	LTR	0.80	32.2	C	LTR	0.80	37.5	D	LTR	0.93	45.4	D
Overall Intersection	-	1.12	64.9	E	-	0.72	26.2	C	-	0.83	34.3	C	-	0.90	34.7	C	
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.71	31.8	C	L	0.85	48.4	D	L	0.75	37.1	D	L	1.15	123.2	F
		TR	0.68	24.6	C	TR	0.62	21.9	C	TR	0.57	22.1	C	TR	0.67	22.9	C
Kissena Boulevard																	

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.68	29.3	C	LTR	0.33	20.5	C	LTR	0.29	20.0	C	LTR	0.38	21.5	C
	SB	LTR	0.60	24.3	C	LTR	0.60	24.0	C	LTR	0.72	26.3	C	LTR	0.74	27.2	C
	EB	DefL	0.55	25.0	C	DefL	0.41	19.3	B	-	-	-	-	DefL	0.47	21.1	C
	TR		0.36	15.7	B	TR	0.20	13.6	B	LTR	0.31	14.6	B	TR	0.34	15.4	B
	WB	LTR	0.86	27.6	C	LTR	0.85	27.3	C	LTR	0.69	22.4	C	LTR	0.85	27.4	C
Overall Intersection		-	0.79	25.1	C	-	0.76	24.4	C	-	0.70	22.2	C	-	0.82	25.4	C
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.08	62.9	E	LTR	1.12	81.2	F	LTR	0.87	32.6	C	LTR	0.90	35.1	D
	SB	LTR	0.95	36.2	D	LTR	0.73	26.1	C	LTR	0.82	30.0	C	LTR	0.91	35.8	D
	EB	LTR	0.71	26.8	C	LTR	0.56	22.3	C	LTR	0.70	26.0	C	LTR	0.73	26.7	C
	WB	LTR	0.82	30.5	C	LTR	0.87	34.7	C	LTR	0.80	30.5	C	LTR	0.92	39.6	D
Overall Intersection		-	0.95	39.9	D	-	1.00	42.5	D	-	0.84	29.9	C	-	0.92	34.6	C
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.43	23.7	C	T	0.71	30.0	C	T	0.50	25.2	C	T	0.36	23.2	C
	TR		0.69	31.2	C	TR	0.79	35.3	D	TR	0.91	44.7	D	TR	0.77	33.5	C
	SB	L	0.49	36.3	D	L	0.73	47.0	D	L	0.47	34.3	C	L	0.51	35.7	D
	T		0.58	12.8	B	T	0.49	11.6	B	T	0.43	10.8	B	T	0.41	10.6	B
	WB	LTR	0.84	42.1	D	LTR	0.76	38.5	D	LTR	0.87	42.4	D	LTR	0.52	31.5	C
Overall Intersection		-	1.38	23.3	C	-	1.28	27.4	C	-	1.14	28.1	C	-	1.04	22.9	C
NORTHERN BOULEVARD SERVICE ROAD																	
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	NB	TR	0.41	11.7	B	TR	0.52	13.0	B	TR	0.55	13.4	B	TR	0.53	13.2	B
	SB	LT	0.85	22.5	C	LT	0.84	22.1	C	LT	0.83	22.0	C	LT	0.77	19.5	B
	WB	LR	0.79	37.2	D	LR	0.83	39.8	D	LR	0.77	36.4	D	LR	0.76	35.5	D
	Overall Intersection	-	0.83	21.5	C	-	0.84	21.7	C	-	0.81	20.7	C	-	0.77	19.7	B
STADIUM ROAD																	
Boat Basin Road at Stadium Road																	
Boat Basin Road	NB	LTR	0.04	7.0	A	LTR	0.15	7.7	A	LTR	0.22	8.2	A	LTR	0.22	8.2	A
	SB	LTR	0.55	11.8	B	LTR	0.46	10.6	B	LTR	0.59	12.1	B	LTR	0.54	11.3	B
	EB	-	-	-	-	DefL	0.29	28.3	C	DefL	0.81	79.1	E	DefL	0.73	52.1	D
	TR		0.19	25.3	C	TR	0.36	28.1	C	TR	0.38	28.6	C	TR	0.48	30.5	C
	WB	-	-	-	-	DefL	1.59	311.4	F	-	-	-	-	DefL	2.43	686.4	F
Stadium Road			0.62	32.8	C	TR	0.78	43.1	D	LTR	0.95	54.8	D	TR	1.07	91.1	F
	Overall Intersection	-	0.57	19.0	B	-	0.81	90.1	F	-	0.70	28.4	C	-	1.13	208.2	F
126TH STREET																	
126th Street at 36th Avenue																	
126th Street	NB	TR	0.24	20.2	C	TR	0.36	21.8	C	TR	0.35	21.6	C	TR	0.34	21.6	C
	SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	LT		0.42	16.4	B	LT	0.58	19.3	B	LT	0.46	16.9	B	LT	0.52	18.1	B
	WB	L	0.03	25.1	C	L	0.07	25.6	C	L	0.07	25.6	C	L	0.07	25.6	C
	R		0.07	18.4	B	R	0.11	18.9	B	R	0.23	20.6	C	R	0.17	19.8	B
Overall Intersection		-	0.25	18.1	B	-	0.36	20.5	C	-	0.30	19.4	B	-	0.33	19.8	B
126th Street at 37th Avenue																	
126th Street	NB	TR	0.19	14.3	B	TR	0.26	15.0	B	TR	0.27	15.2	B	TR	0.25	15.0	B
	SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	LT		0.20	7.9	A	LT	0.39	9.9	A	LT	0.34	9.2	A	LT	0.38	9.7	A
	WB	L	0.21	36.9	D	L	0.10	35.1	D	L	0.10	35.1	D	L	0.10	35.1	D
	R		0.11	25.0	C	R	0.29	27.9	C	R	0.17	25.9	C	R	0.25	27.5	C
Overall Intersection		-	0.27	14.3	B	-	0.29	14.5	B	-	0.29	13.6	B	-	0.28	14.0	B
UNSIGNALIZED INTERSECTIONS																	
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	207.2	F	L	-	850.5	F	L	-	571.4	F	L	-	1000.0+	F
	R		-	8.7	A	R	-	8.7	A	R	-	9.1	A	R	-	8.9	A
	WB	LT	-	9.6	A	LT	-	9.7	A	LT	-	8.9	A	LT	-	9.5	A
	Overall Intersection	-	-	25.1	D	-	-	165.4	F	-	-	128.9	F	-	-	284.4	F
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	TR	-	10.3	B	TR	-	10.6	B	TR	-	9.9	A	TR	-	9.2	A
	Overall Intersection	-	-	10.3	B	-	-	10.6	B	-	-	9.9	A	-	-	9.2	A
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Stadium Road	SB	LT	-	7.5	A	LT	-	7.8	A	LT	-	7.8	A	LT	-	8.2	A
	EB	L	-	15.8	C	L	-	31.4	D	L	-	24.6	C	L	-	74.9	F
	T		-	17.1	C	T	-	192.5	F	T	-	105.9	F	T	-	431.0	F
	R		-	9.6	A	R	-	10.2	B	R	-	10.5	B	R	-	10.5	B
	WB	L	-	20.5	C	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F
Willets West Center Exit			-	8.5	A	R	-	8.8	A	R	-	9.0	A	R	-	9.2	A
	Overall Intersection	-	-	15.4	C	-	-	1000.0+	F	-	-	1000.0+	F	-	-	1000.0+	F
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	14.1	B	R	-	16.7	C	R	-	19.9	C	R	-	17.2	C
	Overall Intersection	-	-	14.1	B	-	-	16.7	C	-	-	19.9	C	-	-	17.2	C

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 10
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Intersection & Approach		Weekday Pre-Game (5:30 - 6:30 PM)				Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
Signalized Intersections													
Astoria Boulevard													
108th Street at Astoria Boulevard													
108th Street	NB	Defl	0.77	58.8	E	Defl	0.52	27.5	C	Defl	0.60	30.0	C
		T	0.27	36.7	D	T	0.19	20.9	C	T	0.21	21.2	C
	SB	LTR	0.34	37.8	D	LTR	0.22	21.4	C	LTR	0.19	20.8	C
		EB	TR	1.07	57.4	E	TR	0.78	27.5	C	TR	0.70	25.8
	WB	L	0.73	49.6	D	L	0.80	38.7	D	L	0.92	51.8	D
		TR	0.29	9.3	A	TR	0.30	12.0	B	TR	0.31	12.1	B
Overall Intersection		-	0.95	47.6	D	-	0.70	23.7	C	-	0.74	24.5	C
Northern Boulevard													
108th Street at Northern Boulevard (RT. 25A)													
108th Street	NB	LTR	1.39	223.3	F	LTR	1.37	213.5	F	LTR	1.39	221.9	F
	SB	LTR	1.11	104.9	F	LTR	1.07	92.5	F	LTR	1.17	123.3	F
Northern Boulevard (Rt. 25A)	EB	L	0.18	33.0	C	L	0.09	36.8	D	L	0.14	38.3	D
		TR	0.87	15.0	B	TR	1.01	45.7	D	TR	1.00	43.0	D
	WB	L	0.72	46.3	D	L	0.85	49.9	D	L	1.02	76.3	E
		TR	1.09	66.5	E	TR	1.18	109.0	F	TR	1.16	102.5	F
Overall Intersection		-	1.14	55.4	E	-	1.19	90.8	F	-	1.21	91.2	F
114th Street at Northern Boulevard (RT. 25A)													
114th Street	SB	LTR	0.82	60.2	E	LTR	0.67	51.8	D	LTR	0.50	46.6	D
	EB	T	1.03	39.9	D	T	0.79	25.9	C	T	0.69	23.3	C
Northern Boulevard (Rt. 25A)	WB	R	0.64	15.0	B	R	0.80	29.3	C	R	0.67	24.9	C
		Defl	0.94	66.6	E	Defl	0.95	58.9	E	Defl	1.40	206.2	F
	T	0.87	15.5	B	T	0.86	16.1	B	T	1.21	110.8	F	
		Overall Intersection		-	1.54	29.7	C	-	1.34	26.0	C	-	2.14
126th Street at Northern Boulevard (RT. 25A)													
126th Street	NB	L	0.62	47.3	D	L	0.75	51.2	D	L	2.39	674.7	F
		R	1.32	220.9	F	R	1.32	220.3	F	R	2.20	589.5	F
Northern Boulevard	EB	T	1.08	106.8	F	T	0.54	38.0	D	T	0.55	38.2	D
	WB	T	0.85	18.4	B	T	0.72	13.9	B	T	0.33	7.1	A
Grand Central Parkway Ramp	EB	T	0.87	37.2	D	T	0.86	42.9	D	T	0.90	46.3	D
Van Wyck & Whitestone Expressway Ramp	WB	T	0.73	12.8	B	T	0.70	11.9	B	T	0.82	18.4	B
Overall Intersection		-	0.95	45.4	D	-	0.86	36.9	D	-	1.17	274.2	F
Prince Street at Northern Boulevard (RT. 25A)													
Prince Street	NB	LTR	1.10	92.3	F	LTR	1.08	85.5	F	LTR	1.10	93.5	F
	SB	LTR	0.58	42.0	D	LTR	0.50	37.4	D	LTR	0.40	38.5	D
Northern Boulevard (Rt. 25A)	EB	L	0.95	68.2	E	L	0.97	78.9	E	L	0.87	63.3	E
		T	1.06	61.6	E	T	0.99	42.2	D	T	1.05	58.3	E
	WB	L	0.77	67.3	E	L	0.95	94.7	F	L	0.88	86.1	F
		T	1.12	95.1	F	T	1.14	103.7	F	T	0.99	51.1	D
Northern Boulevard Service Rd.	EB	TR	0.58	24.8	C	TR	0.50	22.9	C	TR	0.44	21.7	C
	WB	TR	0.83	44.6	D	TR	0.79	37.5	D	TR	0.58	30.0	C
Overall Intersection		-	1.07	69.9	E	-	1.09	67.0	E	-	1.04	54.4	D
Main Street at Northern Boulevard (RT. 25A)													
Main Street	NB	L	0.89	51.4	D	L	0.85	47.3	D	L	0.84	47.2	D
		R	0.88	58.6	E	R	0.92	64.0	E	R	0.72	40.8	D
Northern Boulevard (Rt 25A)	EB	T	1.16	103.9	F	T	0.98	43.7	D	T	1.08	74.1	E
		R	1.20	124.0	F	R	1.31	177.6	F	R	1.15	112.5	F
Northern Boulevard (Rt 25A)	WB	L	0.22	27.8	C	L	0.16	26.5	C	L	0.11	25.9	C
		T	0.80	23.9	C	T	0.91	27.9	C	T	0.72	21.5	C
Overall Intersection		-	1.05	71.2	E	-	1.13	55.4	E	-	0.95	57.0	E
Union Street at Northern Boulevard (RT. 25A)													
Union Street	NB	TR	0.68	35.3	D	TR	0.68	35.1	D	TR	0.65	34.4	C
	SB	TR	0.68	34.8	C	TR	0.59	32.8	C	TR	0.66	34.3	C
Northern Boulevard (Rt. 25A)	EB	L	0.62	30.9	C	L	0.68	34.4	C	L	0.72	34.6	C
		TR	1.19	122.4	F	TR	1.29	170.6	F	TR	1.27	158.1	F
	WB	L	0.78	40.4	D	L	0.96	64.1	E	L	0.98	78.1	E
		TR	1.03	73.4	E	TR	1.02	55.0	D	TR	0.88	40.3	D
Overall Intersection		-	0.95	82.9	F	-	0.99	91.9	F	-	0.97	86.5	F
Parsons Boulevard at Northern Boulevard (RT. 25A)													
Parsons Boulevard	NB	L	0.87	77.2	E	L	0.67	49.8	D	L	0.73	55.7	E
		TR	0.57	39.9	D	TR	0.53	38.7	D	TR	0.58	38.0	D
Northern Boulevard (Rt. 25A)	SB	LTR	1.18	123.4	F	LTR	1.13	103.2	F	LTR	1.13	100.6	F
		EB	L	0.50	46.9	D	L	0.42	44.2	D	L	0.49	44.5
	WB	TR	1.03	52.9	D	TR	1.16	108.0	F	TR	1.18	117.7	F
		L	0.43	40.8	D	L	0.43	44.4	D	L	0.51	46.6	D
Overall Intersection		-	1.10	85.9	F	-	1.09	88.6	F	-	1.10	98.8	F
34th Avenue													
114th Street at 34th Avenue													
114th Street	SB	L	1.11	100.4	F	L	1.08	87.6	F	L	1.21	131.0	F
		T	0.61	30.5	C	T	0.61	30.2	C	T	0.41	25.8	C
34th Avenue	EB	T	0.49	12.8	B	T	0.42	11.9	B	T	0.43	12.1	B
		R	0.16	9.1	A	R	0.11	8.8	A	R	0.06	8.4	A
Overall Intersection		-	0.71	49.2	D	-	0.65	47.6	D	-	0.72	75.8	E

TABLE 10
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
126th Street/GCP Ramp at 34th Avenue													
126th Street	NB	-	-	-	-	DefL	1.05	160.2	F	DefL	2.19	571.1	F
		LTR	0.39	35.8	D	TR	0.64	42.2	D	TR	1.48	250.8	F
Northern Boulevard Ramp	SB	LTR	1.14	131.2	F	LTR	1.32	203.4	F	LTR	0.35	19.6	B
GCP Ramp	SB	LTR	1.58	311.2	F	LTR	1.57	307.9	F	LTR	1.95	490.2	F
Shea Road	EB	-	-	-	-	-	-	-	-	DefL	1.56	313.4	F
		LTR	2.50	718.3	F	LTR	1.99	487.6	F	TR	0.74	65.5	E
34th Avenue	WB	LTR	0.72	55.3	E	LTR	0.91	46.5	D	LTR	0.88	81.3	F
Overall Intersection		-	1.80	396.3	F	-	1.65	284.4	F	-	1.98	324.6	F
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	1.14	111.4	F	LTR	1.16	119.9	F	LTR	1.14	113.2	F
		LTR	1.12	104.5	F	LTR	1.14	112.6	F	LTR	1.17	124.3	F
Roosevelt Avenue	EB	LTR	0.75	9.5	A	LTR	0.82	21.3	C	LTR	0.67	15.8	B
		LTR	0.72	13.3	B	LTR	1.07	53.4	D	LTR	0.99	26.6	C
Overall Intersection		-	0.86	43.9	D	-	1.09	63.1	E	-	1.03	54.3	D
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	1.02	67.5	E	LTR	1.03	67.8	E	LTR	1.03	69.2	E
Roosevelt Avenue	EB	LTR	0.81	11.0	B	LTR	0.91	26.8	C	LTR	0.78	19.4	B
		LTR	1.24	131.1	F	LTR	1.26	138.9	F	LTR	1.28	145.8	F
Overall Intersection		-	1.18	73.1	E	-	1.20	81.1	F	-	1.21	88.5	F
114th Street at Roosevelt Avenue													
114th Street	NB	LTR	0.89	57.4	E	LTR	1.09	87.8	F	LTR	0.70	47.8	D
		LTR	1.20	137.3	F	LTR	1.16	119.6	F	LTR	1.19	132.9	F
Roosevelt Avenue	EB	LTR	1.12	71.5	E	LTR	1.43	215.2	F	LTR	1.55	270.4	F
		LTR	0.87	21.9	C	LTR	0.74	16.0	B	LTR	1.12	79.8	E
Overall Intersection		-	1.14	54.5	D	-	1.35	102.6	F	-	1.44	131.8	F
126th Street at Roosevelt Avenue													
126th Street	NB	LTR	0.28	38.6	D	LTR	0.59	51.3	D	LTR	0.60	63.3	E
		SB	DefL	0.88	47.2	D	-	-	-	-	-	-	-
	TR		0.62	40.0	D	LTR	0.93	48.2	D	LTR	1.63	324.4	F
		EB	DefL	3.00+	1000.0+	F	DefL	3.00+	1000.0+	F	-	-	-
Roosevelt Avenue	TR		0.76	9.3	A	TR	0.60	13.5	B	LTR	0.70	25.5	C
		WB	LTR	0.80	17.9	B	LTR	0.77	16.7	B	LTR	0.56	21.3
Overall Intersection		-	2.85	258.4	F	-	2.87	262.4	F	-	1.11	174.6	F
College Point Boulevard at Roosevelt Avenue													
College Point Boulevard	NB	L	1.37	222.9	F	L	1.41	230.4	F	L	1.14	126.1	F
		TR	0.68	28.5	C	TR	0.81	26.7	C	TR	0.76	25.3	C
	SB	TR	0.91	49.1	D	TR	1.24	144.1	F	TR	0.92	43.0	D
		EB	L	0.50	37.4	D	L	0.49	28.9	C	L	0.61	31.0
Roosevelt Avenue	TR		1.33	180.0	F	TR	1.32	171.4	F	TR	1.33	172.1	F
		WB	L	0.31	44.8	D	L	0.28	33.3	C	L	0.24	32.7
	TR		0.53	37.5	D	TR	0.59	29.2	C	TR	0.46	26.4	C
Overall Intersection		-	1.28	94.1	F	-	1.45	112.5	F	-	1.21	76.7	E
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	0.51	30.7	C	LTR	0.79	40.5	D	LTR	0.70	36.2	A
Roosevelt Avenue	EB	DefL	0.80	32.3	C	DefL	0.77	18.4	B	-	-	-	D
		TR	0.85	31.5	C	TR	0.68	13.6	B	LTR	0.78	15.0	B
	WB	LTR	0.63	22.0	C	LTR	0.64	13.6	B	LTR	0.64	13.0	B
Overall Intersection		-	0.70	28.7	C	-	0.78	20.1	C	-	0.76	18.3	B
Main Street at Roosevelt Avenue													
Main Street	NB	T	0.62	23.2	C	T	0.66	23.9	C	T	0.66	23.9	C
		SB	T	0.54	21.9	C	T	0.63	23.9	C	T	0.54	22.0
Roosevelt Avenue	EB	L	0.36	37.2	D	L	0.27	20.9	C	L	0.26	19.6	B
		TR	1.02	85.3	F	TR	0.81	36.9	D	TR	1.02	67.1	E
	WB	L	0.21	29.0	C	L	0.07	15.6	B	L	0.22	18.0	B
		TR	0.94	61.4	E	TR	0.89	43.5	D	TR	0.89	39.2	D
Overall Intersection		-	0.82	42.8	D	-	0.77	30.2	C	-	0.85	37.1	D
Union Street at Roosevelt Avenue													
Union Street	NB	TR	0.53	18.6	B	TR	0.45	17.2	B	TR	0.44	17.1	B
		SB	LT	1.23	128.1	F	LT	0.97	47.8	D	LT	1.17	109.2
	R		1.87	417.7	F	R	2.58	746.9	F	R	1.85	417.1	F
		LTR	2.48	696.8	F	LTR	2.04	500.4	F	LTR	2.09	521.5	F
Roosevelt Avenue	WB	LT	0.85	35.7	D	LT	0.61	25.5	C	LT	0.77	33.0	C
		R	0.78	46.0	D	R	1.19	174.2	F	R	1.41	258.7	F
Overall Intersection		-	2.15	253.7	F	-	2.33	257.7	F	-	1.96	233.8	F
Parsons Boulevard at Roosevelt Avenue													
Parsons Boulevard	NB	LTR	0.79	35.8	D	LTR	0.72	26.8	C	LTR	0.92	37.4	D
		SB	LTR	0.76	32.5	C	LTR	0.72	25.2	C	LTR	0.74	25.9
Roosevelt Avenue	EB	LTR	0.77	35.8	D	LTR	0.51	21.2	C	LTR	0.79	30.5	C
		WB	LTR	0.97	55.5	E	LTR	0.66	25.3	C	LTR	0.78	30.1
Overall Intersection		-	0.88	40.0	D	-	0.69	24.9	C	-	0.85	31.0	C
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.71	34.8	C	L	0.85	49.1	D	L	0.66	30.0	C
		TR	0.57	21.9	C	TR	0.58	21.1	C	TR	0.65	22.4	C
	SB	L	0.85	51.6	D	L	0.50	21.0	C	L	0.43	19.5	B
		TR	0.49	19.9	B	TR	0.52	19.4	B	TR	0.47	18.7	B
Kissena Boulevard	WB	T	0.71	37.1	D	T	0.64	24.0	C	T	0.64	23.9	C
Overall Intersection		-	0.77	29.2	C	-	0.74	23.6	C	-	0.65	21.7	C
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.37	14.9	B	L	0.50	20.5	C	L	0.24	13.1	B
		T	0.74	15.8	B	T	0.81	17.6	B	T	0.56	12.5	B
	SB	TR	0.75	15.8	B	TR	0.82	17.9	B	TR	0.80	17.4	B
		WB	L	0.79	46.9	D	L	0.85	51.8	D	L	0.56	34.0
	TR		0.53	29.5	C	TR	0.55	30.0	C	TR	0.38	27.1	C
Overall Intersection		-	0.76	19.6	B	-	0.83	21.8	C	-	0.72	17.6	B

TABLE 10
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

INTERSECTION & APPROACH		Weekday Pre-Game (5:30 - 6:30 PM)				Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue													
Union Street	NB	LTR	0.37	21.3	C	LTR	0.45	23.3	C	LTR	0.41	21.9	C
	SB	LTR	0.69	25.7	C	LTR	0.91	33.5	C	LTR	0.80	29.1	C
	EB	-	-	-	-	DefL	0.56	23.8	C	-	-	-	-
	WB	LTR	0.28	14.2	B	TR	0.32	15.0	B	LTR	0.23	13.7	B
Sanford Avenue		WB	LTR	0.90	C	LTR	0.75	23.7	C	LTR	0.70	22.4	C
Overall Intersection		-	0.81	25.1	C	-	0.82	26.7	C	-	0.74	23.6	C
Parsons Boulevard at Sanford Avenue													
Parsons Boulevard	NB	LTR	0.99	42.2	D	LTR	0.82	30.1	C	LTR	0.90	33.9	C
	SB	LTR	0.74	26.6	C	LTR	0.78	28.3	C	LTR	0.80	29.2	C
	EB	LTR	0.61	23.5	C	LTR	0.62	23.2	C	LTR	0.79	29.1	C
	WB	LTR	0.77	28.8	C	LTR	0.87	34.0	C	LTR	0.82	31.7	C
Overall Intersection		-	0.88	30.9	C	-	0.85	29.2	C	-	0.86	30.9	C
WHITESTONE EXPRESSWAY / 32ND AVENUE													
College Point Boulevard at 32nd Avenue													
College Point Boulevard	NB	T	0.39	23.7	C	T	0.36	23.2	C	T	0.44	23.9	C
	TR		0.26	22.0	C	TR	0.57	25.8	C	TR	0.36	23.0	C
	SB	L	0.44	33.2	C	L	0.57	37.6	D	L	0.27	27.3	C
	T		0.40	10.5	B	T	0.45	11.0	B	T	0.29	9.5	A
32nd Avenue		WB	LTR	0.72	D	LTR	0.45	29.8	C	LTR	0.29	26.7	C
Overall Intersection		-	1.09	20.9	C	-	1.03	21.6	C	-	0.85	19.5	B
NORTHERN BOULEVARD SERVICE ROAD													
College Point Boulevard at Northern Boulevard Service Road													
College Point Boulevard	NB	TR	0.48	12.5	B	TR	0.54	13.2	B	TR	0.51	12.8	B
	SB	LT	0.82	20.5	C	LT	0.89	24.2	C	LT	0.54	13.7	B
	WB	LR	0.76	35.4	D	LR	0.75	34.3	C	LR	0.59	29.8	C
Northern Blvd Service Rd													
Overall Intersection		-	0.80	19.9	B	-	0.84	21.4	C	-	0.56	16.0	B
STADIUM ROAD													
Boat Basin Road at Stadium Road													
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.86	73.6	E
	LTR		0.97	83.4	F	LTR	0.75	53.0	D	TR	0.27	19.7	B
	SB	LTR	0.98	48.1	D	LTR	1.07	69.3	E	LTR	0.74	27.6	C
	EB	DefL	0.74	57.6	E	DefL	0.85	74.2	E	DefL	1.20	186.4	F
	TR		0.33	24.0	C	TR	0.48	29.7	C	TR	0.18	12.8	B
	WB	LTR	0.88	34.2	C	LTR	0.82	32.2	C	LTR	1.07	63.7	E
Overall Intersection		-	0.94	46.9	D	-	0.95	56.4	E	-	1.06	51.9	D
126TH STREET													
126th Street at 36th Avenue													
126th Street	NB	TR	0.75	37.7	D	TR	1.02	70.5	E	TR	1.32	186.8	F
	SB	DefL	0.99	61.8	E	DefL	0.98	63.2	E	-	-	-	-
	T		1.01	45.7	D	T	1.12	80.8	F	LT	0.60	34.0	C
	WB	L	0.01	37.8	D	L	0.01	41.8	D	L	0.62	22.7	C
36th Avenue		R	0.05	13.1	B	R	0.10	16.2	B	R	1.34	190.6	F
Overall Intersection		-	1.21	46.4	D	-	1.35	73.2	E	-	1.33	144.5	F
126th Street at 37th Avenue													
126th Street	NB	TR	1.28	170.0	F	TR	1.27	165.2	F	TR	1.04	94.3	F
	SB	DefL	1.18	137.4	F	DefL	1.01	80.9	F	-	-	-	-
	T		0.49	7.3	A	T	0.72	11.7	B	LT	1.30	184.6	F
	WB	L	0.02	41.9	D	L	0.01	41.8	D	L	0.58	18.5	B
37th Avenue		R	0.11	16.6	B	R	0.17	17.5	B	R	1.66	322.6	F
Overall Intersection		-	1.82	120.1	F	-	1.22	97.0	F	-	1.61	177.5	F
UNSIGNALIZED INTERSECTIONS													
Boat Basin Road at Worlds Fair Marina													
Boat Basin Road	NB	L	-	145.2	F	L	-	98.9	F	L	-	813.1	F
	R		-	8.9	A	R	-	8.9	A	R	-	9.2	A
	WB	LT	-	11.6	B	LT	-	11.0	B	LT	-	8.4	A
Worlds Fair Marina													
Overall Intersection		-	-	25.6	D	-	-	20.1	C	-	-	370.1	F
Willets Point Boulevard at Northern Boulevard													
Willets Point Boulevard	NB	TR	-	8.9	A	TR	-	8.7	A	TR	-	8.8	A
	Overall Intersection	-	-	8.9	A	-	-	8.7	A	-	-	8.8	A
Grand Central Parkway Ramp at West Park Loop/Stadium Road													
Stadium Road	SB	LT	-	7.8	A	LT	-	9.3	A	LT	-	7.7	A
	EB	L	-	37.9	E	L	-	38.0	E	L	-	49.9	E
	T		-	12.0	B	T	-	288.3	F	T	-	60.6	F
	R		-	9.6	A	R	-	12.5	B	R	-	13.2	B
Willets West Center Exit	WB	L	-	11.1	B	L	-	1000.0+	F	L	-	1000.0+	F
	R		-	8.9	A	R	-	10.3	B	R	-	8.8	A
Overall Intersection		-	-	34.4	D	-	-	1000.0+	F	-	-	1000.0+	F
Northern Boulevard at 126th Place													
126th Place	NB	R	-	19.1	C	R	-	16.0	C	R	-	17.0	C
	Overall Intersection	-	-	19.1	C	-	-	16.0	C	-	-	17.0	C

Notes

- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Intersection & Approach		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)				
		Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
				Delay	LOS			Delay	LOS			Delay	LOS			Delay	LOS	
Signalized Intersections																		
Astoria Boulevard																		
108th Street at Astoria Boulevard																		
108th Street	NB	DefL	0.81	64.8	E	DefL	0.58	29.9	C	DefL	0.70	53.7	D	DefL	0.63	31.2	C	
		T	0.21	35.6	D	T	0.13	20.1	C	T	0.22	35.7	D	T	0.20	21.1	C	
	SB	LTR	0.36	38.5	D	LTR	0.18	20.7	C	LTR	0.40	39.4	D	LTR	0.25	21.7	C	
		EB	TR	0.65	26.6	C	TR	0.95	37.1	D	TR	0.95	30.2	C	TR	1.08	68.0	E
	Astoria Boulevard	WB	L	0.60	16.4	B	L	0.76	37.7	D	L	0.72	47.5	D	L	0.56	25.1	C
TR		0.80	8.4	A	TR	0.40	13.0	B	TR	0.39	10.2	B	TR	0.42	13.2	B		
Overall Intersection		-	0.81	18.8	B	-	0.80	28.5	C	-	0.87	27.9	C	-	0.86	43.9	D	
Northern Boulevard																		
108th Street at Northern Boulevard (RT. 25A)																		
108th Street	NB	LTR	1.23	154.6	F	LTR	1.50	273.2	F	LTR	1.55	294.2	F	LTR	1.54	290.6	F	
		SB	LTR	0.99	83.6	F	LTR	0.95	74.0	E	LTR	1.15	125.9	F	LTR	0.95	73.8	E
	Northern Boulevard (Rt. 25A)	EB	L	0.08	25.5	C	L	0.09	30.3	C	L	0.15	43.1	D	L	0.18	44.2	D
		TR	0.84	24.2	C	TR	1.04	56.7	E	TR	0.93	17.8	B	TR	1.11	81.8	F	
	WB	L	0.49	27.2	C	L	0.85	62.9	E	L	0.67	44.2	D	L	0.77	49.2	D	
TR		1.09	55.7	E	TR	1.14	94.0	F	TR	1.27	147.2	F	TR	1.32	170.7	F		
Overall Intersection		-	1.00	53.2	D	-	1.19	91.5	F	-	1.25	93.9	F	-	1.30	135.8	F	
114th Street at Northern Boulevard (RT. 25A)																		
114th Street	SB	LTR	0.50	48.5	D	LTR	0.46	46.0	D	LTR	0.45	47.3	D	LTR	0.43	45.2	D	
		EB	T	0.99	56.5	E	T	0.97	41.4	D	T	1.27	142.3	F	T	0.86	29.9	C
	Northern Boulevard (Rt. 25A)	R	0.76	39.2	D	R	0.49	19.9	B	R	0.87	18.4	B	R	0.63	23.5	C	
		WB	DefL	0.55	22.8	C	DefL	0.73	42.7	D	DefL	1.05	96.0	F	DefL	1.03	77.7	E
	TR	1.23	121.8	F	T	0.83	15.6	B	T	1.01	34.6	C	T	1.09	60.3	E		
Overall Intersection		-	1.37	90.6	F	-	1.36	28.3	C	-	1.73	77.9	E	-	1.56	48.5	D	
126th Street at Northern Boulevard (RT. 25A)																		
126th Street	NB	L	0.71	51.1	D	L	1.05	97.8	F	L	1.02	87.1	F	L	1.01	85.2	F	
		R	1.16	166.6	F	R	3.00+	1000.0+	F	R	3.00+	1000.0+	F	R	3.00+	1000.0+	F	
	Northern Boulevard	EB	T	0.57	38.9	D	T	0.81	47.5	D	T	1.27	182.1	F	T	0.76	44.6	D
		WB	T	0.69	11.5	B	T	0.38	7.5	A	T	0.45	8.2	A	T	0.36	7.3	A
	Grand Central Parkway Ramp	EB	T	0.85	43.2	D	T	0.80	39.6	D	T	0.78	31.6	C	T	0.89	45.2	D
Van Wyck & Whitestone Expressway Ramp	WB	T	1.35	206.5	F	T	1.16	100.9	F	T	1.24	131.8	F	T	1.15	96.0	F	
Overall Intersection		-	1.30	88.5	F	-	2.44	246.6	F	-	2.29	218.4	F	-	2.47	265.6	F	
Prince Street at Northern Boulevard (RT. 25A)																		
Prince Street	NB	LTR	1.15	132.8	F	LTR	1.19	129.9	F	LTR	1.23	148.9	F	LTR	1.13	105.2	F	
		SB	LTR	0.80	53.5	D	LTR	0.54	41.3	D	LTR	0.53	41.7	D	LTR	0.47	36.9	D
	Northern Boulevard (Rt. 25A)	EB	L	0.96	94.8	F	L	0.89	72.8	E	L	0.62	45.8	D	L	0.66	49.6	D
		T	0.84	23.8	C	T	1.01	49.0	D	T	1.04	57.9	E	T	1.15	103.1	F	
	WB	L	0.96	92.6	F	L	0.90	91.0	F	L	0.81	72.6	E	L	0.82	65.3	E	
Northern Boulevard Service Rd.	T	1.18	106.9	F	T	1.19	126.0	F	T	1.20	129.5	F	T	1.23	138.9	F		
	EB	TR	0.45	16.7	B	TR	0.62	26.4	C	TR	0.66	27.5	C	TR	0.62	25.8	C	
WB	TR	0.76	21.9	C	TR	0.90	49.8	D	TR	0.83	45.8	D	TR	0.95	54.3	D		
Overall Intersection		-	1.14	66.9	E	-	1.13	80.0	E	-	1.06	82.2	F	-	1.09	100.8	F	
Main Street at Northern Boulevard (RT. 25A)																		
Main Street	NB	L	0.77	43.7	D	L	0.98	64.9	E	L	0.96	61.0	E	L	0.93	56.1	E	
		R	0.85	55.0	E	R	0.68	39.6	D	R	0.97	76.1	E	R	0.89	62.7	E	
	Northern Boulevard (Rt 25A)	EB	T	0.98	46.4	D	T	1.06	68.9	E	T	1.16	104.8	F	T	1.05	65.0	E
		R	1.17	124.0	F	R	1.28	168.4	F	R	1.19	127.1	F	R	1.38	209.6	F	
	Northern Boulevard (Rt 25A)	WB	L	0.17	26.4	C	L	0.10	25.7	C	L	0.17	26.8	C	L	0.08	25.2	C
T		1.10	63.8	E	T	0.86	26.3	C	T	0.86	26.2	C	T	1.04	53.4	D		
Overall Intersection		-	1.01	60.8	E	-	1.02	65.7	E	-	1.08	73.9	E	-	1.16	75.7	E	
Union Street at Northern Boulevard (RT. 25A)																		
Union Street	NB	TR	0.67	35.0	C	TR	0.78	38.8	D	TR	0.78	38.5	D	TR	0.76	37.9	D	
		SB	TR	0.90	43.0	D	TR	0.56	32.4	C	TR	0.82	39.5	D	TR	0.65	34.4	C
	Northern Boulevard (Rt. 25A)	EB	L	0.96	65.7	E	L	0.55	27.0	C	L	0.78	44.9	D	L	0.72	34.1	C
		TR	1.28	166.5	F	TR	1.50	262.2	F	TR	1.22	136.8	F	TR	1.58	301.0	F	
	WB	L	1.02	77.6	E	L	1.17	126.0	F	L	0.86	50.2	D	L	0.86	46.6	D	
TR		1.01	49.1	D	TR	0.96	46.9	D	TR	1.04	63.4	E	TR	1.16	113.0	F		
Overall Intersection		-	1.11	84.3	F	-	1.40	132.8	F	-	1.02	86.6	F	-	1.15	163.5	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)																		
Parsons Boulevard	NB	L	0.97	95.4	F	L	0.75	60.0	E	L	0.86	73.5	E	L	0.87	73.0	E	
		TR	0.56	39.8	D	TR	0.52	38.8	D	TR	0.50	35.3	D	TR	0.60	40.8	D	
	Northern Boulevard (Rt. 25A)	SB	LTR	0.84	48.6	D	LTR	1.21	139.4	F	LTR	1.16	116.5	F	LTR	1.18	124.3	F
		EB	L	0.55	46.5	D	L	0.86	63.5	E	L	0.47	46.9	D	L	0.54	48.5	D
	WB	TR	1.11	88.5	F	TR	1.18	117.1	F	TR	1.10	82.0	F	TR	1.22	135.8	F	
L		0.46	39.7	D	L	0.39	41.9	D	L	0.36	41.2	D	L	0.49	46.0	D		
TR	1.18	110.3	F	TR	1.34	185.4	F	TR	1.27	157.9	F	TR	1.31	175.2	F			
Overall Intersection		-	1.03	88.8	F	-	1.28	134.3	F	-	1.13	106.2	F	-	1.19	137.0	F	
34th Avenue																		
114th Street at 34th Avenue																		
114th Street	SB	L	0.87	40.7	D	L	0.91	51.8	D	L	1.08	85.9	F	L	1.10	97.2	F	
		T	0.34	25.0	C	T	0.31	25.3	C	T	0.48	27.3	C	T	0.43	26.7	C	
34th Avenue	EB	T	0.42	12.0	B	T	0.40	11.7	B	T	0.39	11.5	B	T	0.57	14.0	B	
		R	0.12	8.9	A	R	0.07	8.5	A	R	0.07	8.5	A	R	0.11	8.7	A	
Overall Intersection		-	0.58	24.6	C	-	0.58	31.0	C	-	0.63	49.0	D	-	0.75	48.3	D	

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay				Delay	
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	DefL	0.36	24.8	C	DefL	1.17	144.7	F	DefL	1.56	297.0	F	DefL	0.86	58.0	E
		TR	0.33	22.1	C	TR	0.55	25.9	C	TR	0.53	25.4	C	TR	0.53	25.3	C
Northern Boulevard Ramp	SB	LTR	0.54	27.1	C	LTR	1.05	85.0	F	LTR	0.61	29.3	C	LTR	1.02	75.4	E
GCP Ramp	SB	LTR	2.52	738.7	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F
Shea Road	EB	-	-	-	-	DefL	2.90	933.3	F	DefL	3.00+	1000.0+	F	DefL	3.00+	1000.0+	F
		LTR	1.52	291.3	F	TR	3.00+	1000.0+	F	TR	2.31	649.5	F	TR	3.00+	1000.0+	F
34th Avenue	WB	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F
Overall Intersection		-	1.75	468.8	F	-	2.39	793.1	F	-	2.83	787.7	F	-	3.12	938.2	F
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	1.05	88.8	F	LTR	1.14	122.3	F	LTR	1.15	121.5	F	LTR	1.26	163.4	F
	SB	LTR	1.10	104.3	F	LTR	1.25	158.9	F	LTR	1.19	135.8	F	LTR	1.18	127.6	F
Roosevelt Avenue	EB	LTR	0.77	19.3	B	LTR	0.89	28.3	C	LTR	0.86	15.8	B	LTR	0.84	23.5	C
	WB	LTR	0.90	15.1	B	LTR	1.04	57.4	E	LTR	1.01	38.3	D	LTR	0.96	24.7	C
Overall Intersection		-	0.96	40.4	D	-	1.10	71.8	E	-	1.06	59.0	E	-	1.04	61.9	E
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	1.00	69.6	E	LTR	0.72	50.9	D	LTR	0.86	56.9	E	LTR	1.05	77.4	E
Roosevelt Avenue	EB	LTR	0.75	18.1	B	LTR	0.89	26.0	C	LTR	0.93	20.4	C	LTR	1.04	56.6	E
	WB	LTR	1.01	32.4	C	LTR	1.03	55.0	D	LTR	1.42	210.1	F	LTR	1.45	223.5	F
Overall Intersection		-	1.00	34.0	C	-	0.95	42.4	D	-	1.27	118.7	F	-	1.34	134.4	F
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	1.05	83.3	F	LTR	0.74	53.6	D	LTR	1.04	80.2	F	LTR	1.11	101.8	F
	SB	LTR	1.32	196.4	F	LTR	0.92	82.2	F	LTR	1.24	156.6	F	LTR	1.30	179.8	F
Roosevelt Avenue	EB	LTR	0.93	34.6	C	LTR	1.22	130.3	F	LTR	1.27	149.1	F	LTR	1.82	390.6	F
	WB	LTR	0.65	6.4	A	LTR	0.71	15.0	B	LTR	1.04	52.4	D	LTR	1.05	55.9	E
Overall Intersection		-	1.04	43.9	D	-	1.14	60.7	E	-	1.26	89.1	F	-	1.66	165.8	F
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	0.23	37.3	D	LTR	1.36	224.5	F	LTR	1.34	242.5	F	LTR	0.50	46.8	D
	SB	DefL	1.64	351.1	F	DefL	2.11	563.1	F	DefL	1.65	351.9	F	DefL	1.81	425.3	F
		TR	0.93	79.3	E	TR	1.28	193.1	F	TR	1.50	281.7	F	TR	1.08	114.6	F
Roosevelt Avenue	EB	DefL	0.75	29.2	C	DefL	0.78	36.5	D	DefL	1.24	161.9	F	DefL	1.25	163.7	F
		TR	0.55	12.6	B	TR	0.68	15.8	B	TR	0.67	7.7	A	TR	0.71	16.2	B
	WB	LTR	0.79	9.7	A	LTR	0.80	19.2	B	LTR	0.85	21.6	C	LTR	0.78	18.0	B
Overall Intersection		-	1.00	64.4	E	-	1.12	120.3	F	-	1.35	119.5	F	-	1.40	98.7	F
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.61	327.8	F	L	1.78	398.6	F	L	1.55	305.4	F	L	1.72	367.7	F
		TR	0.73	27.4	C	TR	0.88	31.0	C	TR	0.75	31.1	C	TR	0.93	34.4	C
	SB	TR	0.96	55.3	E	TR	1.42	226.4	F	TR	1.45	246.0	F	TR	1.21	132.9	F
Roosevelt Avenue	EB	L	0.47	40.6	D	L	0.59	31.0	C	L	0.51	37.9	D	L	0.60	21.2	C
		TR	1.10	94.9	F	TR	1.55	276.0	F	TR	1.44	232.3	F	TR	1.53	262.2	F
	WB	L	0.22	45.2	D	L	0.28	33.5	C	L	0.25	43.7	D	L	0.34	34.3	C
		TR	0.75	47.4	D	TR	0.70	34.3	C	TR	0.55	38.3	D	TR	0.61	29.7	C
Overall Intersection		-	1.20	90.4	F	-	1.70	177.2	F	-	1.56	170.9	F	-	1.50	139.3	F
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.52	31.0	C	LTR	0.86	47.3	D	LTR	0.60	33.2	C	LTR	0.96	58.3	E
Roosevelt Avenue	EB	DefL	1.32	191.1	F	DefL	0.98	44.9	D	DefL	1.14	112.8	F	DefL	0.83	22.4	C
		TR	0.64	24.5	C	TR	0.79	17.7	B	TR	0.82	31.1	C	TR	0.86	20.1	C
	WB	LTR	0.94	38.8	D	LTR	0.61	13.3	B	LTR	0.68	22.3	C	LTR	0.65	14.2	B
Overall Intersection		-	0.98	70.3	E	-	0.94	28.6	C	-	0.91	46.9	D	-	0.89	26.6	C
Main Street at Roosevelt Avenue																	
Main Street	NB	T	0.60	22.3	C	T	0.67	24.4	C	T	0.51	21.1	C	T	0.76	26.4	C
	SB	T	0.45	19.7	B	T	0.52	21.9	C	T	0.56	22.2	C	T	0.66	24.4	C
Roosevelt Avenue	EB	L	0.47	50.3	D	L	0.35	24.7	C	L	0.57	52.2	D	L	0.26	21.7	C
		TR	0.64	38.9	D	TR	0.94	54.6	D	TR	1.14	127.8	F	TR	1.14	111.3	F
	WB	L	0.13	25.9	C	L	0.16	17.1	B	L	0.24	28.1	C	L	0.04	15.0	B
		TR	1.05	83.4	F	TR	0.98	55.1	E	TR	1.14	115.9	F	TR	1.00	51.4	D
Overall Intersection		-	0.79	41.9	D	-	0.82	37.2	D	-	0.79	64.6	E	-	0.95	49.4	D
Union Street at Roosevelt Avenue																	
Union Street	NB	TR	0.60	20.0	B	TR	0.58	19.4	B	TR	0.42	16.7	B	TR	0.56	19.2	B
	SB	LT	1.09	75.8	E	LT	0.99	52.8	D	LT	0.92	36.8	D	LT	1.07	71.4	E
		R	0.85	35.3	D	R	3.00+	1000.0+	F	R	2.58	751.0	F	R	2.83	856.2	F
Roosevelt Avenue	EB	LTR	1.58	296.9	F	LTR	2.45	683.8	F	LTR	2.19	566.7	F	LTR	2.79	836.4	F
	WB	LT	1.06	69.3	E	LT	0.74	30.6	C	LT	0.66	27.8	C	LT	0.67	27.5	C
		R	1.12	106.5	F	R	0.93	82.4	F	R	1.14	146.0	F	R	1.35	233.5	F
Overall Intersection		-	1.31	99.5	F	-	3.00+	525.6	F	-	2.40	265.8	F	-	2.81	379.3	F
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.14	99.0	F	LTR	0.69	25.8	C	LTR	0.88	43.3	D	LTR	0.90	38.5	D
	SB	LTR	0.81	34.7	C	LTR	0.65	23.6	C	LTR	0.71	30.6	C	LTR	0.79	27.3	C
Roosevelt Avenue	EB	LTR	0.55	27.2	C	LTR	0.77	30.8	C	LTR	0.66	31.4	C	LTR	0.95	49.1	D
	WB	LTR	1.21	130.7	F	LTR	0.88	39.0	D	LTR	0.87	43.3	D	LTR	1.04	70.8	E
Overall Intersection		-	1.18	80.3	F	-	0.78	30.0	C	-	0.87	37.3	D	-	0.97	45.9	D
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.75	34.7	C	L	0.89	54.8	D	L	0.78	39.5	D	L	1.20	144.1	F
		TR	0.69	25.1	C	TR	0.63	22.2	C	TR	0.58	22.4	C	TR	0.69	23.4	C
	SB	L	0.65	38.3	D	L	0.46	20.4	C	L	0.84	51.7	D	L	0.55	21.9	C
		TR	0.39	18.3	B	TR	0.52	19.4	B	TR	0.46	19.3	B	TR	0.57	20.2	C
Kissena Boulevard	WB	T	0.73	38.3	D	T	0.72	27.1	C	T	0.66	35.5	D	T	0.75	27.2	C
Overall Intersection		-	0.75	27.8	C	-	0.80	25.1	C	-	0.81	29.6	C	-	0.98	36.0	D
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.21	10.4	B	L	0.62	28.3	C	L	0.52	31.5	C	L	0.71	42.2	D
		T	0.70	15.2	B	T	0.68	14.8	B	T	0.62	13.5	B	T	0.76	16.4	B
	SB	TR	0.60	13.4	B	TR	0.80	18.1	B	TR	1.02	42.8	D	TR	0.89	21.3	C
Sanford Avenue	WB	L	0.79	45.6	D	L	0.57	34.8	C	L	0.77	46.6	D	L	0.69	39.1	D
		TR	0.62	31.5	C	TR	0.48	28.8	C	TR	0.46	28.4	C	TR	0.65	32.4	C
Overall Intersection		-	0.73	19.6	B	-	0.73	19.3	B	-	0.94	32.5	C	-	0.83	22.4	C

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Weekday AM Peak Hour (8:00 - 9:00 AM)					Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)				
Intersection & Approach		Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control	
				Delay	LOS			Delay	LOS			Delay	LOS			Delay	LOS
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.70	30.3	C	LTR	0.34	20.8	C	LTR	0.30	20.1	C	LTR	0.40	21.8	C
	SB	LTR	0.62	24.9	C	LTR	0.62	24.4	C	LTR	0.74	27.2	C	LTR	0.76	28.0	C
Sanford Avenue	EB	DefL	0.58	26.6	C	DefL	0.45	20.5	C	-	-	-	-	DefL	0.50	22.3	C
	TR		0.37	15.8	B	TR	0.21	13.7	B	LTR	0.32	14.7	B	TR	0.35	15.5	B
	WB	LTR	0.91	31.6	C	LTR	0.93	34.9	C	LTR	0.72	23.8	C	LTR	0.93	34.2	C
Overall Intersection		-	0.82	26.8	C	-	0.79	26.8	C	-	0.73	23.0	C	-	0.85	27.4	C
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.12	78.7	E	LTR	1.18	107.5	F	LTR	0.91	35.9	D	LTR	0.95	41.9	D
	SB	LTR	0.99	43.4	D	LTR	0.80	29.4	C	LTR	0.90	37.5	D	LTR	1.01	54.2	D
Sanford Avenue	EB	LTR	0.73	27.7	C	LTR	0.58	22.8	C	LTR	0.73	27.1	C	LTR	0.75	27.5	C
	WB	LTR	0.86	33.4	C	LTR	0.93	41.4	D	LTR	0.84	33.3	C	LTR	0.98	50.6	D
Overall Intersection		-	0.99	47.0	D	-	1.06	52.2	D	-	0.87	33.7	C	-	1.00	44.6	D
Whitestone Expressway / 32nd Avenue																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.45	24.0	C	T	0.70	29.8	C	T	0.52	25.6	C	T	0.38	23.5	C
	TR		0.71	31.7	C	TR	0.80	36.0	D	TR	0.93	46.9	D	TR	0.79	34.4	C
32nd Avenue	SB	L	0.51	36.8	D	L	0.75	48.2	D	L	0.49	34.8	C	L	0.52	36.1	D
	T		0.60	13.1	B	T	0.50	11.8	B	T	0.44	11.0	B	T	0.42	10.8	B
	WB	LTR	0.87	44.3	D	LTR	0.78	39.6	D	LTR	0.89	44.7	D	LTR	0.54	31.9	C
Overall Intersection		-	1.40	23.9	C	-	1.29	27.8	C	-	1.15	29.1	C	-	1.05	23.3	C
Northern Boulevard Service Road																	
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	NB	TR	0.42	11.8	B	TR	0.54	13.3	B	TR	0.57	13.7	B	TR	0.55	13.4	B
	SB	LT	0.89	25.1	C	LT	0.88	25.1	C	LT	0.88	24.9	C	LT	0.81	21.3	C
Northern Blvd Service Rd	WB	LR	0.90	46.3	D	LR	0.98	59.8	E	LR	0.88	44.8	D	LR	0.90	46.4	D
Overall Intersection		-	0.89	24.9	C	-	0.92	27.7	C	-	0.88	23.8	C	-	0.84	23.3	C
Stadium Road																	
Boat Basin Road at Stadium Road																	
Boat Basin Road	NB	LTR	0.04	7.0	A	LTR	0.15	7.7	A	LTR	0.23	8.3	A	LTR	0.24	8.4	A
	SB	DefL	0.59	14.3	B	DefL	0.75	21.7	C	-	-	-	-	-	-	-	-
Stadium Road	TR		0.68	16.3	B	TR	0.42	10.4	B	LTR	0.74	15.4	B	LTR	0.71	14.8	B
	EB	-	-	-	-	DefL	0.57	42.7	D	DefL	1.06	148.7	F	DefL	1.71	397.1	F
	LTR		0.27	26.3	C	TR	0.40	28.9	C	TR	0.41	29.2	C	TR	0.53	31.6	C
	WB	-	-	-	-	DefL	1.62	325.7	F	-	-	-	-	DefL	2.49	711.0	F
	LTR		0.81	40.4	D	TR	1.41	231.4	F	LTR	1.48	253.5	F	TR	1.69	351.7	F
Overall Intersection		-	0.72	23.7	C	-	1.02	130.1	F	-	0.97	111.7	F	-	1.27	266.8	F
126th Street																	
126th Street at 36th Avenue																	
126th Street	NB	TR	0.27	15.2	B	TR	0.47	17.9	B	TR	0.49	18.3	B	TR	0.43	17.3	B
	SB	DefL	0.72	17.4	B	DefL	0.83	29.3	C	-	-	-	-	-	-	-	-
36th Avenue	T		0.49	9.2	A	T	0.76	15.6	B	LT	0.65	11.8	B	LT	0.76	14.8	B
	WB	L	0.06	38.4	D	L	0.14	39.6	D	L	0.13	39.5	D	L	0.13	39.5	D
	R		0.17	26.0	C	R	0.38	30.3	C	R	0.56	36.2	D	R	0.48	33.2	C
Overall Intersection		-	0.77	14.0	B	-	1.07	19.8	B	-	0.54	17.4	B	-	0.59	17.7	B
126th Street at 37th Avenue																	
126th Street	NB	TR	0.23	14.7	B	TR	0.38	16.5	B	TR	0.44	17.3	B	TR	0.35	16.2	B
	SB	-	-	-	-	DefL	0.90	55.2	E	-	-	-	-	-	-	-	-
37th Avenue	LT		0.44	10.5	B	T	0.58	13.0	B	LT	0.61	13.3	B	LT	0.64	14.0	B
	WB	L	0.22	37.1	D	L	0.11	35.3	D	L	0.10	35.2	D	L	0.10	35.2	D
	R		0.20	26.6	C	R	0.61	38.1	D	R	0.41	31.5	C	R	0.51	34.6	C
Overall Intersection		-	0.36	15.0	B	-	1.00	24.6	C	-	0.48	17.0	B	-	0.54	17.4	B
Unsignalized Intersections																	
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F
	R		-	8.7	A	R	-	8.7	A	R	-	9.1	A	R	-	8.9	A
Worlds Fair Marina	WB	LT	-	11.2	B	LT	-	11.1	B	LT	-	9.6	A	LT	-	10.8	B
Overall Intersection		-	-	987.9	F	-	-	1000.0+	F	-	-	1000.0+	F	-	-	1000.0+	F
Willetts Point Boulevard at Northern Boulevard																	
Willetts Point Boulevard	EB	T	-	12.5	B	T	-	14.6	B	T	-	14.1	B	T	-	14.4	B
Overall Intersection		-	-	12.5	B	-	-	14.6	B	-	-	14.1	B	-	-	14.4	B
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Stadium Road	SB	LT	-	7.5	A	LT	-	7.8	A	LT	-	7.8	A	LT	-	8.2	A
	EB	L	-	19.3	C	L	-	51.6	F	L	-	36.0	E	L	-	177.8	F
Grand Central Parkway Off-Ramp	T		-	17.7	C	T	-	243.2	F	T	-	157.1	F	T	-	516.2	F
	R		-	9.8	A	R	-	10.8	B	R	-	11.6	B	R	-	11.3	B
	WB	L	-	20.9	C	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F
Willetts West Center Exit	R		-	8.5	A	R	-	8.8	A	R	-	9.0	A	R	-	9.2	A
Overall Intersection		-	-	18.0	C	-	-	1000.0+	F	-	-	1000.0+	F	-	-	1000.0+	F
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	15.5	C	R	-	18.5	C	R	-	24.2	C	R	-	20.4	C
Overall Intersection		-	-	15.5	C	-	-	18.5	C	-	-	24.2	C	-	-	20.4	C
New (With Action) Signalized Intersections																	
126th Street at New Willetts Point Boulevard																	
126th Street	NB	TR	0.39	19.5	B	TR	0.60	23.8	C	TR	0.56	22.7	C	TR	0.57	23.0	C
	SB	-	-	-	-	DefL	0.67	18.9	B	DefL	0.54	15.2	B	DefL	0.57	15.7	B
New Willetts Point Boulevard	LT		0.32	9.0	A	T	0.38	9.9	A	T	0.42	10.5	B	T	0.43	10.5	B
	WB	L	0.24	37.3	D	L	0.55	44.6	D	L	0.69	50.0	D	L	0.52	43.4	D
	R		0.12	22.2	C	R	0.50	30.3	C	R	0.67	36.7	D	R	0.36	26.6	C
Overall Intersection		-	0.43	16.6	B	-	0.79	23.2	C	-	0.84	25.1	C	-	0.80	21.4	C

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)					Saturday Pre-Game (3:15 - 4:15 PM)					Saturday Post-Game (7:15 - 8:15 PM)				
Intersection & Approach	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS		
			Delay				Delay				Delay			
Signalized Intersections														
Astoria Boulevard														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.79	61.3	E	DefL	0.53	27.8	C	DefL	0.62	30.4	C	
		T	0.28	36.8	D	T	0.20	21.0	C	T	0.21	21.2	C	
	SB	LTR	0.35	38.0	D	LTR	0.22	21.4	C	LTR	0.19	20.9	C	
		EB	TR	1.11	76.7	E	TR	0.84	29.5	C	TR	0.75	27.0	C
	WB	L	0.74	51.2	D	L	0.82	45.5	D	L	0.99	73.4	E	
		TR	0.32	9.6	A	TR	0.33	12.3	B	TR	0.35	12.4	B	
Overall Intersection		-	0.98	60.6	E	-	0.73	25.1	C	-	0.84	26.9	C	
Northern Boulevard														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.44	245.2	F	LTR	1.42	234.5	F	LTR	1.43	241.2	F	
	SB	LTR	1.15	118.5	F	LTR	1.10	104.9	F	LTR	1.21	144.6	F	
Northern Boulevard (Rt. 25A)	EB	L	0.19	37.0	D	L	0.09	43.4	D	L	0.14	44.3	D	
		TR	0.93	18.0	B	TR	1.10	78.2	E	TR	1.09	72.1	E	
	WB	L	0.73	47.6	D	L	0.88	53.8	D	L	1.06	90.3	F	
		TR	1.15	95.2	F	TR	1.27	148.7	F	TR	1.25	141.1	F	
Overall Intersection		-	1.16	69.1	E	-	1.26	121.8	F	-	1.28	121.1	F	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.91	69.8	E	LTR	0.75	55.8	E	LTR	0.51	46.8	D	
		T	1.10	69.2	E	T	0.88	29.8	C	T	0.76	25.4	C	
Northern Boulevard (Rt. 25A)	R	0.74	17.1	B	R	0.90	37.6	D	R	0.68	25.4	C		
		WB	DefL	0.96	71.8	E	DefL	1.07	96.1	F	DefL	1.55	279.0	F
	T	0.93	19.0	B	T	0.92	20.0	B	T	1.28	144.5	F		
Overall Intersection		-	1.65	42.7	D	-	1.66	32.9	C	-	2.52	116.5	F	
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.96	73.7	E	L	1.10	109.7	F	L	2.45	698.6	F	
		R	3.00+	1000.0+	F	R	3.00+	1000.0+	F	R	3.00+	1000.0+	F	
Northern Boulevard	EB	T	1.14	126.9	F	T	0.57	38.7	D	T	0.58	39.0	D	
		WB	T	0.89	21.2	C	T	0.77	15.4	B	T	0.35	7.2	A
Grand Central Parkway Ramp	EB	T	0.92	41.9	D	T	0.91	47.6	D	T	0.95	53.4	D	
Van Wyck & Whitestone Expressway Ramp	WB	T	0.79	14.5	B	T	0.76	13.6	B	T	0.91	26.5	C	
Overall Intersection		-	1.50	107.5	F	-	1.85	156.0	F	-	3.00+	1000.0+	F	
Prince Street at Northern Boulevard (RT. 25A)														
Prince Street	NB	LTR	1.12	102.0	F	LTR	1.11	98.7	F	LTR	1.13	109.9	F	
		SB	LTR	0.59	42.3	D	LTR	0.51	37.7	D	LTR	0.41	38.7	D
Northern Boulevard (Rt. 25A)	EB	L	0.97	73.3	E	L	1.00	84.9	F	L	0.89	66.0	E	
		T	1.10	81.0	F	T	1.04	57.0	E	T	1.10	80.0	E	
	WB	L	0.78	69.0	E	L	0.97	99.7	F	L	0.90	89.7	F	
		T	1.15	109.8	F	T	1.18	120.4	F	T	1.02	59.5	E	
Northern Boulevard Service Rd.	EB	TR	0.59	25.1	C	TR	0.51	23.1	C	TR	0.45	21.8	C	
	WB	TR	0.94	59.7	E	TR	0.91	48.8	D	TR	0.67	33.1	C	
Overall Intersection		-	1.10	83.5	F	-	1.12	79.4	E	-	1.08	67.1	E	
Main Street at Northern Boulevard (RT. 25A)														
Main Street	NB	L	0.90	52.7	D	L	0.86	48.1	D	L	0.85	47.9	D	
		R	0.91	62.7	E	R	0.95	68.8	E	R	0.74	42.2	D	
Northern Boulevard (Rt 25A)	EB	T	1.22	128.5	F	T	1.03	58.5	E	T	1.14	99.7	F	
		R	1.23	137.5	F	R	1.34	192.7	F	R	1.18	124.2	F	
Northern Boulevard (Rt 25A)	WB	L	0.23	28.0	C	L	0.16	26.6	C	L	0.12	25.9	C	
		T	0.85	25.9	C	T	0.97	34.0	C	T	0.76	22.8	C	
Overall Intersection		-	1.07	83.0	F	-	1.16	64.0	E	-	0.98	68.8	E	
Union Street at Northern Boulevard (RT. 25A)														
Union Street	NB	TR	0.70	35.8	D	TR	0.69	35.6	D	TR	0.66	34.8	C	
		SB	TR	0.69	35.3	D	TR	0.60	33.1	C	TR	0.68	34.8	C
Northern Boulevard (Rt. 25A)	EB	L	0.64	32.5	C	L	0.69	35.8	D	L	0.74	36.0	D	
		TR	1.25	147.1	F	TR	1.36	202.7	F	TR	1.34	189.3	F	
	WB	L	0.79	41.8	D	L	0.98	53.9	D	L	1.00	83.5	F	
		TR	1.11	102.9	F	TR	1.09	84.0	F	TR	0.94	46.4	D	
Overall Intersection		-	0.98	102.5	F	-	1.03	113.2	F	-	0.97	101.2	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)														
Parsons Boulevard	NB	L	0.90	84.6	F	L	0.70	52.2	D	L	0.76	59.1	E	
		TR	0.58	40.4	D	TR	0.54	39.1	D	TR	0.59	38.4	D	
Northern Boulevard (Rt. 25A)	SB	LTR	1.22	142.7	F	LTR	1.18	126.8	F	LTR	1.17	119.2	F	
		EB	L	0.52	47.3	D	L	0.46	46.2	D	L	0.52	46.0	D
	WB	TR	1.09	75.9	E	TR	1.24	145.1	F	TR	1.26	153.0	F	
		L	0.44	41.9	D	L	0.44	45.8	D	L	0.51	43.6	D	
Overall Intersection		TR	1.29	163.9	F	TR	1.20	124.2	F	TR	1.23	139.8	F	
Overall Intersection		-	1.18	109.7	F	-	1.14	119.6	F	-	1.16	127.3	F	
34th Avenue														
114th Street at 34th Avenue														
114th Street	SB	L	1.13	108.9	F	L	1.11	96.4	F	L	1.23	142.7	F	
		T	0.81	38.6	D	T	0.80	37.4	D	T	0.42	26.0	C	
34th Avenue	EB	T	0.50	13.0	B	T	0.43	12.0	B	T	0.45	12.2	B	
		R	0.16	9.2	A	R	0.11	8.8	A	R	0.06	8.4	A	
Overall Intersection		-	0.73	53.2	D	-	0.69	52.0	D	-	0.74	81.8	F	

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay	
126th Street/GCP Ramp at 34th Avenue													
126th Street	NB	DefL	1.41	278.1	F	DefL	1.56	337.1	F	-	-	-	-
		TR	0.65	43.2	D	TR	0.83	48.5	D	LTR	2.32	636.5	F
Northern Boulevard Ramp	SB	LTR	1.73	286.1	F	LTR	1.93	472.7	F	LTR	2.98	957.7	F
	SB	LTR	1.54	295.1	F	LTR	1.71	372.2	F	LTR	2.17	577.3	F
GCP Ramp	EB	DefL	1.73	383.7	F	-	-	-	-	DefL	2.84	876.3	F
		TR	2.20	586.6	F	LTR	1.70	358.7	F	TR	0.92	59.5	E
34th Avenue	WB	LTR	1.43	248.8	F	LTR	2.55	737.7	F	LTR	1.27	186.3	F
		Overall Intersection	-	1.88	317.1	F	-	2.11	361.4	F	-	2.69	602.8
ROOSEVELT AVENUE													
108th Street at Roosevelt Avenue													
108th Street	NB	LTR	1.20	138.7	F	LTR	1.23	149.0	F	LTR	1.20	135.5	F
		SB	LTR	1.19	134.0	F	LTR	1.19	134.5	F	LTR	1.22	146.1
Roosevelt Avenue	EB	LTR	0.82	11.9	B	LTR	0.90	28.3	C	LTR	0.75	18.4	B
	WB	LTR	0.81	15.3	B	LTR	1.18	104.4	F	LTR	1.09	64.8	E
Overall Intersection	-	0.92	53.4	D	-	1.20	92.0	F	-	1.12	75.8	E	
111th Street at Roosevelt Avenue													
111th Street	NB	LTR	1.05	77.5	E	LTR	1.06	76.7	E	LTR	1.06	78.8	E
		EB	LTR	0.88	15.1	B	LTR	1.00	44.5	D	LTR	0.87	24.9
Roosevelt Avenue	WB	LTR	1.36	180.9	F	LTR	1.40	199.0	F	LTR	1.40	199.9	F
	Overall Intersection	-	1.27	98.0	F	-	1.30	115.1	F	-	1.31	117.2	F
114th Street at Roosevelt Avenue													
114th Street	NB	LTR	0.91	60.1	E	LTR	1.12	99.5	F	LTR	0.72	48.8	D
		SB	LTR	1.50	269.0	F	LTR	1.36	206.9	F	LTR	1.23	148.0
Roosevelt Avenue	EB	LTR	1.26	141.5	F	LTR	1.67	321.0	F	LTR	1.82	389.8	F
	WB	LTR	0.98	35.5	D	LTR	0.85	21.1	C	LTR	1.25	137.2	F
Overall Intersection	-	1.33	101.4	F	-	1.58	152.8	F	-	1.64	195.0	F	
126th Street at Roosevelt Avenue													
126th Street	NB	LTR	1.13	186.8	F	LTR	1.76	437.6	F	LTR	0.24	38.1	D
		SB	-	-	-	-	-	-	-	DefL	0.89	57.2	D
Roosevelt Avenue		LTR	1.91	454.5	F	LTR	2.00	497.3	F	TR	0.81	43.5	D
	EB	DefL	1.84	417.4	F	DefL	2.28	616.6	F	DefL	3.00+	1000.0+	F
		TR	0.78	9.9	A	TR	0.62	13.8	B	TR	1.06	75.7	E
	WB	LTR	0.79	17.5	B	LTR	0.83	18.9	B	LTR	0.74	26.5	C
Overall Intersection	-	1.86	191.7	F	-	2.20	241.0	F	-	3.00+	996.9	F	
College Point Boulevard at Roosevelt Avenue													
College Point Boulevard	NB	L	1.48	272.0	F	L	1.55	292.6	F	L	1.32	194.3	F
		TR	0.69	29.0	C	TR	0.83	27.7	C	TR	0.78	26.0	C
Roosevelt Avenue	SB	TR	0.99	62.3	E	TR	1.37	200.7	F	TR	1.03	65.9	E
	EB	L	0.52	37.8	D	L	0.52	29.4	C	L	0.64	31.6	C
		TR	1.45	232.6	F	TR	1.47	235.6	F	TR	1.44	222.7	F
	WB	L	0.31	44.9	D	L	0.28	33.4	C	L	0.24	32.8	C
		TR	0.57	38.6	D	TR	0.65	30.9	C	TR	0.51	27.4	C
	Overall Intersection	-	1.37	116.7	F	-	1.61	150.8	F	-	1.40	102.8	F
Prince Street at Roosevelt Avenue													
Prince Street	SB	LTR	0.52	31.0	C	LTR	0.80	41.4	D	LTR	0.72	37.1	D
		EB	DefL	0.84	35.6	D	DefL	0.80	20.0	B	-	-	-
Roosevelt Avenue		TR	0.91	37.5	D	TR	0.74	14.9	B	LTR	0.82	16.3	B
	WB	LTR	0.67	23.0	C	LTR	0.68	14.6	B	LTR	0.68	13.9	B
Overall Intersection	-	0.75	31.6	C	-	0.80	21.0	C	-	0.79	19.2	B	
Main Street at Roosevelt Avenue													
Main Street	NB	T	0.63	23.6	C	T	0.67	24.3	C	T	0.67	24.3	C
		SB	T	0.55	22.2	C	T	0.65	24.1	C	T	0.55	22.3
Roosevelt Avenue	EB	L	0.40	40.7	D	L	0.29	22.2	C	L	0.29	20.6	C
		TR	1.11	113.0	F	TR	0.91	47.4	D	TR	1.12	97.9	F
	WB	L	0.26	31.0	C	L	0.08	15.8	B	L	0.26	19.3	B
		TR	1.00	74.9	E	TR	0.97	56.6	E	TR	0.95	47.9	D
Overall Intersection	-	0.86	52.1	D	-	0.82	35.7	D	-	0.90	47.5	D	
Union Street at Roosevelt Avenue													
Union Street	NB	TR	0.54	18.8	B	TR	0.46	17.3	B	TR	0.45	17.3	B
		SB	LT	1.27	146.5	F	LT	1.01	55.9	E	LT	1.21	127.2
Roosevelt Avenue		R	1.91	437.2	F	R	2.65	781.7	F	R	1.90	439.9	F
	EB	LTR	2.70	796.8	F	LTR	2.23	586.8	F	LTR	2.29	608.9	F
	WB	LT	0.91	43.0	D	LT	0.67	27.5	C	LT	0.84	38.4	D
		R	0.82	50.1	D	R	1.27	204.8	F	R	1.49	293.1	F
	Overall Intersection	-	2.27	289.0	F	-	2.45	289.8	F	-	2.08	269.2	F
	Parsons Boulevard at Roosevelt Avenue												
Parsons Boulevard	NB	LTR	0.83	39.2	D	LTR	0.76	29.0	C	LTR	0.97	46.2	D
		SB	LTR	0.78	33.4	C	LTR	0.74	25.8	C	LTR	0.77	26.9
Roosevelt Avenue	EB	LTR	0.88	45.0	D	LTR	0.60	23.5	C	LTR	0.88	37.9	D
	WB	LTR	1.05	78.5	E	LTR	0.73	28.1	C	LTR	0.84	34.7	C
Overall Intersection	-	0.94	49.3	D	-	0.75	26.7	C	-	0.93	36.6	D	
KISSENA BOULEVARD													
Main Street at Kissena Boulevard													
Main Street	NB	L	0.75	38.3	D	L	0.90	59.1	E	L	0.70	32.7	C
		TR	0.59	22.2	C	TR	0.60	21.4	C	TR	0.67	22.8	C
Kissena Boulevard	SB	L	0.87	54.4	D	L	0.52	21.3	C	L	0.44	19.7	B
		TR	0.50	20.1	C	TR	0.54	19.6	B	TR	0.48	18.8	B
	WB	T	0.73	38.0	D	T	0.66	24.5	C	T	0.65	24.4	C
	Overall Intersection	-	0.80	30.2	C	-	0.78	24.9	C	-	0.68	22.2	C
SANFORD AVENUE													
College Point Boulevard at Sanford Avenue													
College Point Boulevard	NB	L	0.41	16.4	B	L	0.58	26.0	C	L	0.27	14.4	B
		T	0.76	16.4	B	T	0.84	18.7	B	T	0.58	12.8	B
Sanford Avenue	SB	TR	0.78	16.7	B	TR	0.85	19.3	B	TR	0.84	18.6	B
	WB	L	0.81	49.2	D	L	0.87	54.6	D	L	0.58	34.6	C
		TR	0.58	30.6	C	TR	0.61	31.3	C	TR	0.42	27.8	C
	Overall Intersection	-	0.79	20.6	C	-	0.86	23.3	C	-	0.75	18.5	B

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Weekday AM Peak Hour (8:00 - 9:00 AM)					Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)							
Intersection & Approach			Control		LOS			Control		LOS			Control		LOS			Control		
			Delay					Delay					Delay					Delay		
Signalized Intersections																				
Astoria Boulevard																				
108th Street at Astoria Boulevard																				
108th Street	NB	DefL	0.83	66.7	E	DefL	0.58	30.1	C	DefL	0.71	54.7	D	DefL	0.63	31.5	C			
		T	0.21	35.6	D	T	0.13	20.1	C	T	0.22	35.7	D	T	0.21	21.1	C			
	Astoria Boulevard	SB	LTR	0.36	38.5	D	LTR	0.18	20.7	C	LTR	0.40	39.4	D	LTR	0.26	21.7	C		
		EB	TR	0.68	27.3	C	TR	1.00	45.7	D	TR	0.98	33.2	C	TR	1.13	89.4	F		
		WB	L	0.62	17.7	B	L	0.77	38.5	D	L	0.73	48.7	D	L	0.57	26.0	C		
			TR	0.82	8.8	A	TR	0.43	13.4	B	TR	0.41	10.5	B	TR	0.44	13.5	B		
Overall Intersection	-	0.82	19.4	B	-	0.82	32.8	C	-	0.89	29.8	C	-	0.88	55.1	E				
Northern Boulevard																				
108th Street at Northern Boulevard (RT. 25A)																				
108th Street	NB	LTR	1.26	165.1	F	LTR	1.52	282.2	F	LTR	1.56	302.4	F	LTR	1.55	294.2	F			
		SB	LTR	1.00	86.6	F	LTR	0.96	76.2	E	LTR	1.18	135.2	F	LTR	0.97	77.5	E		
	Northern Boulevard (Rt. 25A)	EB	L	0.08	29.6	C	L	0.09	34.3	C	L	0.15	45.1	D	L	0.18	45.4	D		
		TR	0.90	28.4	C	TR	1.12	87.4	F	TR	0.98	23.2	C	TR	1.20	119.4	F			
		WB	L	0.53	32.6	C	L	0.86	66.4	E	L	0.67	45.1	D	L	0.77	50.6	D		
			TR	1.13	75.0	E	TR	1.22	127.3	F	TR	1.35	183.7	F	TR	1.39	205.0	F		
Overall Intersection	-	1.05	65.8	E	-	1.25	117.4	F	-	1.30	111.6	F	-	1.35	164.9	F				
114th Street at Northern Boulevard (RT. 25A)																				
114th Street	SB	LTR	0.51	48.8	D	LTR	0.46	46.1	D	LTR	0.47	47.9	D	LTR	0.45	45.6	D			
		EB	T	1.08	84.8	F	T	1.06	65.4	E	T	1.35	179.3	F	T	0.95	38.1	D		
	Northern Boulevard (Rt. 25A)	R	0.76	39.5	D	R	0.49	20.0	B	R	0.87	18.6	B	R	0.63	23.7	C			
		WB	DefL	0.57	26.3	C	DefL	0.77	50.8	D	DefL	1.06	100.3	F	DefL	1.13	116.6	F		
			T	1.28	144.2	F	T	0.88	18.3	B	T	1.08	56.5	E	T	1.15	86.0	F		
		Overall Intersection	-	1.41	110.6	F	-	1.46	39.3	D	-	1.78	102.1	F	-	1.93	66.3	E		
126th Street at Northern Boulevard (RT. 25A)																				
126th Street	NB	L	1.09	112.5	F	L	1.43	248.4	F	L	1.41	240.8	F	L	1.38	229.1	F			
		R	2.21	622.0	F	R	3.00+	1000.0+	F	R	3.00+	1000.0+	F	R	3.00+	1000.0+	F			
	Northern Boulevard	EB	T	0.62	40.2	D	T	0.84	49.7	D	T	1.35	214.2	F	T	0.82	47.6	D		
		WB	T	0.72	12.2	B	T	0.41	7.8	A	T	0.47	8.4	A	T	0.39	7.6	A		
		EB	T	0.93	51.4	D	T	0.87	44.0	D	T	0.84	34.9	C	T	1.01	65.9	E		
		WB	T	1.48	265.0	F	T	1.32	166.2	F	T	1.35	179.7	F	T	1.30	159.2	F		
Overall Intersection	-	1.64	133.6	F	-	2.94	367.8	F	-	2.70	317.1	F	-	2.89	366.6	F				
Prince Street at Northern Boulevard (RT. 25A)																				
Prince Street	NB	LTR	1.17	140.0	F	LTR	1.21	141.8	F	LTR	1.25	159.4	F	LTR	1.14	108.9	F			
		SB	LTR	0.81	54.1	D	LTR	0.54	41.4	D	LTR	0.53	41.8	D	LTR	0.47	36.9	D		
	Northern Boulevard (Rt. 25A)	EB	L	0.97	96.9	F	L	0.90	73.8	E	L	0.62	46.0	D	L	0.67	49.9	D		
		T	0.87	25.2	C	T	1.05	63.7	E	T	1.10	81.2	F	T	1.21	128.1	F			
		WB	L	0.96	94.1	F	L	0.91	93.1	F	L	0.82	73.7	E	L	0.83	66.0	E		
			T	1.22	120.8	F	T	1.23	141.1	F	T	1.23	141.9	F	T	1.26	154.3	F		
Northern Boulevard Service Rd.	EB	TR	0.45	16.7	B	TR	0.62	26.5	C	TR	0.66	27.6	C	TR	0.63	26.0	C			
	WB	TR	0.86	26.4	C	TR	1.03	77.1	E	TR	0.93	58.8	E	TR	1.09	91.9	F			
Overall Intersection	-	1.16	73.3	E	-	1.15	92.9	F	-	1.10	96.2	F	-	1.13	118.3	F				
Main Street at Northern Boulevard (RT. 25A)																				
Main Street	NB	L	0.78	43.8	D	T	0.98	66.1	E	T	0.97	62.1	E	T	0.94	56.9	E			
		R	0.86	56.1	E	R	0.69	40.0	D	R	0.99	79.7	E	R	0.90	63.9	E			
	Northern Boulevard (Rt 25A)	EB	T	1.02	55.7	E	T	1.12	90.6	F	T	1.23	135.3	F	T	1.11	87.7	F		
		R	1.18	128.3	F	R	1.29	173.4	F	R	1.20	132.4	F	R	1.40	216.1	F			
		Northern Boulevard (Rt 25A)	WB	L	0.17	26.5	C	L	0.11	25.7	C	L	0.17	26.9	C	L	0.08	25.2	C	
			T	1.15	86.7	F	T	0.91	30.0	C	T	0.90	29.0	C	T	1.11	79.1	E		
Overall Intersection	-	1.02	73.9	E	-	1.03	74.8	E	-	1.10	87.6	F	-	1.17	93.2	F				
Union Street at Northern Boulevard (RT. 25A)																				
Union Street	NB	TR	0.68	35.2	D	TR	0.79	39.1	D	TR	0.79	38.9	D	TR	0.77	38.2	D			
		SB	TR	0.92	44.8	D	TR	0.56	32.5	C	TR	0.83	40.0	D	TR	0.66	34.7	C		
	Northern Boulevard (Rt. 25A)	EB	L	0.97	69.1	E	L	0.56	28.3	C	L	0.79	46.1	D	L	0.74	25.7	C		
		TR	1.33	188.3	F	TR	1.57	294.1	F	TR	1.29	167.3	F	TR	1.66	336.0	F			
		WB	L	1.02	78.9	E	L	1.18	144.3	F	L	0.86	39.9	D	L	0.87	47.0	D		
			TR	1.06	67.3	E	TR	1.03	64.7	E	TR	1.10	86.6	F	TR	1.25	149.3	F		
Overall Intersection	-	1.13	98.4	F	-	1.42	152.0	F	-	1.06	106.3	F	-	1.19	190.0	F				
Parsons Boulevard at Northern Boulevard (RT. 25A)																				
Parsons Boulevard	NB	L	1.00	104.0	F	L	0.78	63.7	E	L	0.88	77.4	E	L	0.90	77.8	E			
		TR	0.57	39.9	D	TR	0.53	39.0	D	TR	0.50	35.4	D	TR	0.61	41.1	D			
	Northern Boulevard (Rt. 25A)	SB	LTR	0.87	51.1	D	LTR	1.27	166.5	F	LTR	1.19	128.1	F	LTR	1.22	140.7	F		
		EB	L	0.57	47.7	D	L	0.91	64.9	E	L	0.50	47.8	D	L	0.58	49.2	D		
		TR	1.17	115.0	F	TR	1.25	151.0	F	TR	1.18	114.1	F	TR	1.30	172.1	F			
		WB	L	0.47	41.9	D	L	0.39	43.1	D	L	0.36	42.8	D	L	0.49	43.9	D		
Overall Intersection	-	1.07	108.6	F	-	1.36	166.7	F	-	1.18	132.0	F	-	1.26	168.2	F				
34th Avenue																				
114th Street at 34th Avenue																				
114th Street	SB	L	0.87	41.3	D	L	0.92	52.8	D	L	1.09	89.3	F	L	1.11	100.9	F			
		T	0.35	25.0	C	T	0.31	25.3	C	T	0.48	27.4	C	T	0.43	26.8	C			
	34th Avenue	EB	T	0.43	12.0	B	T	0.41	11.8	B	T	0.39	11.5	B	T	0.57	14.2	B		
		R	0.14	9.0	A	R	0.07	8.5	A	R	0.07	8.5	A	R	0.11	8.8	A			
Overall Intersection	-	0.58	24.6	C	-	0.59	31.4	C	-	0.63	50.5	D	-	0.76	49.7	D				

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

Weekday AM Peak Hour (8:00 - 9:00 AM)						Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS
				Delay				Delay				Delay					
126th Street/GCP Ramp at 34th Avenue																	
126th Street	NB	DefL	0.59	33.6	C	DefL	2.26	615.4	F	DefL	3.00+	961.3	F	DefL	1.59	317.1	F
		TR	0.46	24.3	C	TR	0.76	32.2	C	TR	0.74	31.1	C	TR	0.72	30.5	C
Northern Boulevard Ramp	SB	LTR	0.68	32.1	C	LTR	1.46	251.0	F	LTR	0.86	45.8	D	LTR	1.72	365.2	F
GCP Ramp	SB	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F
Shea Road	EB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	3.00+	1000.0+	F	DefL	3.00+	1000.0+	F
		LTR	2.46	712.5	F	TR	3.00+	1000.0+	F	TR	3.00+	1000.0+	F	TR	3.00+	1000.0+	F
34th Avenue	WB	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F
Overall Intersection		-	3.00+	1000.0+	F	-	3.00+	1000.0+	F	-	3.00+	1000.0+	F	-	3.00+	1000.0+	F
ROOSEVELT AVENUE																	
108th Street at Roosevelt Avenue																	
108th Street	NB	LTR	1.08	97.3	F	LTR	1.19	140.3	F	LTR	1.19	138.5	F	LTR	1.30	183.3	F
		SB	LTR	1.13	116.0	F	LTR	1.27	170.9	F	LTR	1.22	147.9	F	LTR	1.19	135.8
Roosevelt Avenue	EB	LTR	0.82	22.6	C	LTR	0.96	39.6	D	LTR	0.93	21.9	C	LTR	0.92	30.7	C
		WB	LTR	0.96	21.3	C	LTR	1.14	96.3	F	LTR	1.10	68.9	E	LTR	1.05	48.9
Overall Intersection		-	1.00	45.8	D	-	1.18	93.6	F	-	1.13	75.8	E	-	1.12	75.6	E
111th Street at Roosevelt Avenue																	
111th Street	NB	LTR	1.02	73.8	E	LTR	0.73	51.2	D	LTR	0.86	57.2	E	LTR	1.06	81.0	F
		Roosevelt Avenue	EB	LTR	0.81	21.0	C	LTR	0.96	37.0	D	LTR	0.99	33.0	C	LTR	1.13
	WB	LTR	1.07	51.9	D	LTR	1.11	83.4	F	LTR	1.51	251.7	F	LTR	1.57	277.3	F
Overall Intersection		-	1.05	44.2	D	-	1.01	60.1	E	-	1.33	144.1	F	-	1.43	172.2	F
114th Street at Roosevelt Avenue																	
114th Street	NB	LTR	1.08	94.1	F	LTR	0.82	61.2	E	LTR	1.09	96.1	F	LTR	1.14	116.1	F
		SB	LTR	1.44	246.0	F	LTR	0.98	95.7	F	LTR	1.27	167.8	F	LTR	1.32	191.9
Roosevelt Avenue	EB	LTR	1.01	52.9	D	LTR	1.39	204.3	F	LTR	1.53	265.6	F	LTR	2.15	537.9	F
		WB	LTR	0.70	7.2	A	LTR	0.81	19.0	B	LTR	1.23	130.0	F	LTR	1.21	118.9
Overall Intersection		-	1.13	55.5	E	-	1.28	87.2	F	-	1.45	162.8	F	-	1.90	241.4	F
126th Street at Roosevelt Avenue																	
126th Street	NB	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F
		SB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	3.00+	1000.0+	F	DefL	3.00+	1000.0+
Roosevelt Avenue	EB	LTR	3.00+	1000.0+	F	TR	3.00+	1000.0+	F	TR	3.00+	1000.0+	F	TR	3.00+	1000.0+	F
		DefL	1.13	117.7	F	DefL	1.28	181.8	F	DefL	1.85	425.1	F	DefL	2.02	497.5	F
	WB	TR	0.62	14.1	B	TR	0.74	17.9	B	TR	0.71	8.5	A	TR	0.75	17.9	B
LTR		1.05	45.3	D	LTR	1.09	73.9	E	LTR	1.11	81.6	F	LTR	1.05	58.8	E	
Overall Intersection		-	1.86	479.4	F	-	2.98	831.5	F	-	3.00+	1000.0+	F	-	3.00+	853.2	F
College Point Boulevard at Roosevelt Avenue																	
College Point Boulevard	NB	L	1.79	410.8	F	L	2.01	500.9	F	L	1.70	368.8	F	L	1.93	464.3	F
		TR	0.74	27.7	C	TR	0.89	31.5	C	TR	0.76	31.3	C	TR	0.94	35.6	D
Roosevelt Avenue	SB	TR	1.06	81.2	F	TR	1.57	292.4	F	TR	1.53	284.5	F	TR	1.35	194.4	F
		EB	L	0.49	41.3	D	L	0.61	31.4	C	L	0.53	38.4	D	L	0.63	21.6
	WB	TR	1.19	132.2	F	TR	1.73	355.4	F	TR	1.61	307.1	F	TR	1.69	335.2	F
L		0.23	45.3	D	L	0.28	33.5	C	L	0.25	43.7	D	L	0.34	34.4	C	
	TR	0.81	51.0	D	TR	0.77	38.1	D	TR	0.60	39.7	D	TR	0.67	31.4	C	
Overall Intersection		-	1.37	118.0	F	-	1.90	229.3	F	-	1.71	207.8	F	-	1.78	185.7	F
Prince Street at Roosevelt Avenue																	
Prince Street	SB	LTR	0.52	31.1	C	LTR	0.86	47.9	D	LTR	0.61	33.3	C	LTR	0.97	60.6	E
		Roosevelt Avenue	EB	DefL	1.37	211.9	F	DefL	1.01	52.2	D	DefL	1.18	126.9	F	DefL	0.87
	WB	TR	0.67	25.8	C	TR	0.85	20.9	C	TR	0.89	36.6	D	TR	0.91	23.9	C
LTR		0.99	47.4	D	LTR	0.65	14.2	B	LTR	0.72	23.2	C	LTR	0.70	15.4	B	
Overall Intersection		-	1.01	77.2	E	-	0.96	31.0	C	-	0.93	50.9	D	-	0.93	28.8	C
Main Street at Roosevelt Avenue																	
Main Street	NB	T	0.60	22.4	C	T	0.67	24.6	C	T	0.51	21.2	C	T	0.77	26.7	C
		SB	T	0.45	19.8	B	T	0.53	22.1	C	T	0.56	22.3	C	T	0.67	24.5
Roosevelt Avenue	EB	L	0.47	50.3	D	L	0.39	27.1	C	L	0.63	61.8	E	L	0.29	23.5	C
		TR	0.70	41.3	D	TR	1.06	84.9	F	TR	1.28	181.9	F	TR	1.25	153.9	F
	WB	L	0.14	26.1	C	L	0.19	18.1	B	L	0.29	29.6	C	L	0.05	15.2	B
TR		1.11	101.5	F	TR	1.06	78.5	E	TR	1.22	147.6	F	TR	1.07	73.3	E	
Overall Intersection		-	0.81	48.0	D	-	0.92	50.3	D	-	0.85	85.8	F	-	1.00	65.0	E
Union Street at Roosevelt Avenue																	
Union Street	NB	TR	0.61	20.1	C	TR	0.58	19.5	B	TR	0.42	16.8	B	TR	0.57	19.2	B
		SB	LT	1.10	80.0	F	LT	1.01	59.5	E	LT	0.93	37.9	D	LT	1.08	75.2
Roosevelt Avenue	WB	R	0.85	35.8	D	R	3.00+	1000.0+	F	R	2.61	765.5	F	R	2.83	856.2	F
		LTR	1.75	372.1	F	LTR	2.70	797.9	F	LTR	2.39	657.4	F	LTR	3.00+	941.2	F
	R	LT	1.12	93.7	F	LT	0.82	35.3	D	LT	0.72	30.2	C	LT	0.74	30.1	C
L		1.13	111.6	F	R	0.95	88.1	F	R	1.17	155.3	F	R	1.40	254.6	F	
Overall Intersection		-	1.40	121.8	F	-	3.00+	553.9	F	-	2.51	295.7	F	-	2.92	414.5	F
Parsons Boulevard at Roosevelt Avenue																	
Parsons Boulevard	NB	LTR	1.17	112.0	F	LTR	0.72	27.4	C	LTR	0.92	49.2	D	LTR	0.93	44.3	D
		SB	LTR	0.82	35.1	D	LTR	0.66	23.9	C	LTR	0.71	30.8	C	LTR	0.79	27.6
Roosevelt Avenue	EB	LTR	0.58	28.4	C	LTR	0.88	40.0	D	LTR	0.75	35.8	D	LTR	1.05	73.6	E
		WB	LTR	1.28	161.7	F	LTR	0.95	50.1	D	LTR	0.94	53.3	D	LTR	1.12	99.2
Overall Intersection		-	1.23	94.0	F	-	0.84	36.0	D	-	0.93	42.4	D	-	1.03	61.3	E
KISSENA BOULEVARD																	
Main Street at Kissena Boulevard																	
Main Street	NB	L	0.78	36.7	D	L	0.92	61.0	E	L	0.80	42.4	D	L	1.25	163.4	F
		TR	0.70	25.4	C	TR	0.64	22.5	C	TR	0.59	22.6	C	TR	0.70	23.6	C
Roosevelt Avenue	SB	L	0.66	38.7	D	L	0.47	20.5	C	L	0.85	52.7	D	L	0.55	22.1	C
		TR	0.39	18.4	B	TR	0.52	19.5	B	TR	0.46	19.4	B	TR	0.58	20.3	C
Kissena Boulevard	WB	T	0.74	38.9	D	T	0.73	27.4	C	T	0.67	35.8	D	T	0.76	27.4	C
Overall Intersection		-	0.76	28.4	C	-	0.82	26.0	C	-	0.82	30.3	C	-	1.00	38.5	D
SANFORD AVENUE																	
College Point Boulevard at Sanford Avenue																	
College Point Boulevard	NB	L	0.23	10.7	B	L	0.66	33.1	C	L	0.54	32.5	C	L	0.78	54.4	D
		T	0.71	15.6	B	T	0.70	15.3	B	T	0.63	13.8	B	T	0.78	17.0	B
Sanford Avenue	WB	TR	0.62	13.8	B	TR	0.83	19.2	B	TR	1.06	55.2	E	TR	0.92	23.6	C
		L	0.79	46.2	D	L	0.57	35.0	C	L	0.78	47.6	D	L	0.71	39.9	D
	TR	0.67	33.0	C	TR	0.53	29.9	C	TR	0.50	29.1	C	TR	0.70	34.0	C	

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WITH ACTION TRAFFIC LEVELS OF SERVICE - NON-GAME DAY

INTERSECTION & APPROACH		Weekday AM Peak Hour (8:00 - 9:00 AM)				Weekday Midday Peak Hour (1:00 - 2:00 PM)				Weekday PM Peak Hour (5:00 - 6:00 PM)				Saturday Midday Peak Hour (1:30 - 2:30 PM)			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue																	
Union Street	NB	LTR	0.72	31.5	C	LTR	0.34	20.8	C	LTR	0.31	20.3	C	LTR	0.40	21.8	C
	SB	LTR	0.63	25.3	C	LTR	0.63	24.6	C	LTR	0.75	27.5	C	LTR	0.77	28.6	C
Sanford Avenue	EB	DefL	0.60	28.0	C	DefL	0.46	20.9	C	-	-	-	-	DefL	0.52	23.2	C
	TR		0.37	15.8	B	TR	0.21	13.7	B	LTR	0.32	14.7	B	TR	0.36	15.6	B
	WB	LTR	0.94	35.7	D	LTR	0.96	38.8	D	LTR	0.74	24.5	C	LTR	0.96	38.9	D
Overall Intersection		-	0.84	28.7	C	-	0.81	28.6	C	-	0.75	23.4	C	-	0.88	29.4	C
Parsons Boulevard at Sanford Avenue																	
Parsons Boulevard	NB	LTR	1.14	88.9	F	LTR	1.22	124.5	F	LTR	0.93	39.3	D	LTR	0.98	47.7	D
	SB	LTR	1.00	47.4	D	LTR	0.85	32.9	C	LTR	0.97	49.0	D	LTR	1.07	74.6	E
Sanford Avenue	EB	LTR	0.75	28.5	C	LTR	0.59	23.1	C	LTR	0.74	27.8	C	LTR	0.76	28.1	C
	WB	LTR	0.89	36.1	D	LTR	0.95	45.1	D	LTR	0.87	35.8	D	LTR	1.01	57.2	E
Overall Intersection		-	1.02	51.7	D	-	1.09	58.6	E	-	0.92	38.6	D	-	1.04	54.0	D
WHITESTONE EXPRESSWAY / 32ND AVENUE																	
College Point Boulevard at 32nd Avenue																	
College Point Boulevard	NB	T	0.47	24.2	C	T	0.71	29.7	C	T	0.54	25.9	C	T	0.39	23.6	C
	TR		0.71	31.8	C	TR	0.81	36.4	D	TR	0.93	47.3	D	TR	0.79	34.6	C
32nd Avenue	SB	L	0.52	37.2	D	L	0.75	48.8	D	L	0.49	35.0	C	L	0.53	36.4	D
	T		0.61	13.2	B	T	0.51	11.9	B	T	0.46	11.1	B	T	0.44	10.9	B
	WB	LTR	0.88	44.9	D	LTR	0.79	40.6	D	LTR	0.90	45.6	D	LTR	0.54	32.0	C
Overall Intersection		-	1.41	24.1	C	-	1.30	28.0	C	-	1.16	29.3	C	-	1.05	23.3	C
NORTHERN BOULEVARD SERVICE ROAD																	
College Point Boulevard at Northern Boulevard Service Road																	
College Point Boulevard	NB	TR	0.43	12.0	B	TR	0.55	13.4	B	TR	0.58	13.8	B	TR	0.56	13.6	B
	SB	LT	0.91	27.7	C	LT	0.90	27.2	C	LT	0.90	27.4	C	LT	0.84	22.9	C
Northern Blvd Service Rd	WB	LR	1.01	66.9	E	LR	1.11	98.3	F	LR	0.98	60.6	E	LR	1.04	75.5	E
Overall Intersection		-	0.95	31.1	C	-	0.98	38.2	D	-	0.93	28.4	C	-	0.91	31.4	C
STADIUM ROAD																	
Boat Basin Road at Stadium Road																	
Boat Basin Road	NB	LTR	0.04	7.0	A	LTR	0.15	7.6	A	LTR	0.21	8.1	A	LTR	0.21	8.1	A
	SB	DefL	0.91	32.9	C	DefL	1.12	93.8	F	DefL	0.94	41.1	D	DefL	1.07	73.7	E
Stadium Road	TR		0.69	16.4	B	TR	0.42	10.4	B	TR	0.71	15.6	B	TR	0.63	13.8	B
	EB	-	-	-	-	DefL	1.11	163.7	F	DefL	1.16	179.7	F	DefL	1.83	449.5	F
	LTR		0.37	27.8	C	TR	0.47	30.3	C	TR	0.46	30.0	C	TR	0.63	34.4	C
	WB	-	-	-	-	-	-	-	-	-	-	-	-	DefL	2.72	817.4	F
	LTR		0.97	59.9	E	LTR	2.01	492.1	F	LTR	2.00	487.5	F	TR	2.26	607.5	F
Overall Intersection		-	0.93	35.1	D	-	1.40	247.5	F	-	1.27	231.2	F	-	1.59	356.2	F
126TH STREET																	
126th Street at 36th Avenue																	
126th Street	NB	TR	0.34	16.1	B	TR	0.66	21.8	C	TR	0.74	24.1	C	TR	0.60	20.4	C
	SB	DefL	0.88	45.3	D	DefL	1.24	157.5	F	DefL	0.80	41.9	D	DefL	0.95	56.2	E
36th Avenue	T		0.71	13.7	B	T	1.07	63.9	E	T	0.88	23.4	C	T	0.97	35.7	D
	WB	L	0.06	38.5	D	L	0.16	40.0	D	L	0.14	39.6	D	L	0.14	39.6	D
	R		0.28	28.2	C	R	0.65	40.3	D	R	0.77	49.6	D	R	0.65	40.9	D
Overall Intersection		-	1.08	21.4	C	-	1.79	58.3	E	-	1.21	27.7	C	-	1.34	32.8	C
126th Street at 37th Avenue																	
126th Street	NB	TR	0.29	15.4	B	TR	0.53	18.9	B	TR	0.66	21.6	C	TR	0.50	18.4	B
	SB	-	-	-	-	DefL	1.33	208.7	F	DefL	0.90	51.7	D	-	-	-	-
37th Avenue	LT		0.62	13.6	B	T	0.84	22.8	C	T	0.78	19.1	B	LT	0.94	32.6	C
	WB	L	0.23	37.2	D	L	0.13	35.6	D	L	0.11	35.3	D	L	0.11	35.3	D
	R		0.31	28.9	C	R	0.85	58.0	E	R	0.61	38.9	D	R	0.69	43.6	D
Overall Intersection		-	0.50	16.5	B	-	1.61	53.7	D	-	1.12	25.1	C	-	0.84	28.6	C
UNSIGNALIZED INTERSECTIONS																	
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F
	R		-	8.7	A	R	-	8.7	A	R	-	9.1	A	R	-	8.9	A
Worlds Fair Marina	WB	LT	-	14.6	B	LT	-	14.4	B	LT	-	10.8	B	LT	-	13.9	B
Overall Intersection		-	-	585.7	F	-	-	1000.0+	F	-	-	1000.0+	F	-	-	1000.0+	F
Willets Point Boulevard at Northern Boulevard																	
Northern Boulevard	EB	T	-	21.6	C	T	-	73.0	F	T	-	1000.0+	F	T	-	713.5	F
Overall Intersection		-	-	21.6	C	-	-	73.0	F	-	-	1000.0+	F	-	-	713.5	F
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Stadium Road	SB	LT	-	7.5	A	LT	-	7.8	A	LT	-	7.8	A	LT	-	8.2	A
	EB	L	-	26.6	D	L	-	122.9	F	L	-	68.2	F	L	-	407.6	F
Grand Central Parkway Off-Ramp	T		-	18.5	C	T	-	293.0	F	T	-	235.7	F	T	-	620.9	F
	R		-	10.2	B	R	-	11.6	B	R	-	13.3	B	R	-	12.4	B
Willets West Center Exit	WB	L	-	22.5	C	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F
	R		-	8.5	A	R	-	8.8	A	R	-	9.0	A	R	-	9.2	A
Overall Intersection		-	-	19.7	C	-	-	1000.0+	F	-	-	1000.0+	F	-	-	1000.0+	F
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	18.4	C	R	-	22.2	C	R	-	38.4	E	R	-	29.3	D
Overall Intersection		-	-	18.4	C	-	-	22.2	C	-	-	38.4	E	-	-	29.3	D
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS																	
126th Street at New Willets Point Boulevard																	
126th Street	NB	TR	0.60	23.8	C	TR	1.30	172.2	F	TR	1.28	162.7	F	TR	1.22	138.5	F
	SB	-	-	-	-	DefL	1.33	212.6	F	DefL	1.00	99.2	F	DefL	1.03	103.7	F
New Willets Point Boulevard	LT		0.51	13.8	B	T	0.58	15.7	B	T	0.61	16.4	B	T	0.64	17.0	B
	WB	L	0.63	43.3	D	L	0.96	75.3	E	L	1.08	108.5	F	L	0.96	73.8	E
	R		0.21	23.8	C	R	0.79	46.2	D	R	1.04	92.9	F	R	0.61	34.4	C
Overall Intersection		-	0.72	23.0	C	-	1.48	115.5	F	-	1.53	108.9	F	-	1.47	85.5	F
Citi Field/Lot B at Roosevelt Avenue																	
Citi Field/Lot B	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
	EB	LT	0.43	10.0	B	LT	0.51	11.1	B	LT	0.60	16.5	B	LT	0.60	12.5	B
Roosevelt Avenue	WB	TR	0.48	10.7	B	TR	0.57	11.9	B	TR	0.82	22.9	C	TR	0.63	13.0	B
Overall Intersection		-	0.35	10.5	B	-	0.42	11.7	B	-	0.54	20.3	C	-	0.47	12.9	B

Notes

- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)				
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
				Delay				Delay				Delay		
Signalized Intersections														
Astoria Boulevard														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.79	61.7	E	DefL	0.53	27.8	C	DefL	0.62	30.7	C	
		T	0.28	36.8	D	T	0.20	21.0	C	T	0.22	21.3	C	
	SB	LTR	0.35	38.1	D	LTR	0.23	21.4	C	LTR	0.19	20.9	C	
		EB	TR	1.13	87.2	F	TR	0.88	31.2	C	TR	0.79	28.0	C
	WB	L	0.75	51.5	D	L	0.84	47.7	D	L	1.04	88.4	F	
		TR	0.33	9.7	A	TR	0.36	12.5	B	TR	0.37	12.7	B	
Overall Intersection		-	1.00	67.5	E	-	0.75	26.1	C	-	0.90	28.6	C	
Northern Boulevard														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.45	250.0	F	LTR	1.43	238.6	F	LTR	1.44	247.2	F	
		SB	LTR	1.16	126.3	F	LTR	1.12	110.3	F	LTR	1.23	149.3	F
	Northern Boulevard (Rt. 25A)	EB	L	0.19	40.4	D	L	0.09	44.3	D	L	0.14	44.8	D
		TR	0.97	22.3	C	TR	1.18	109.1	F	TR	1.16	102.8	F	
	WB	L	0.74	48.5	D	L	0.88	54.9	D	L	1.07	95.4	F	
		TR	1.21	119.6	F	TR	1.34	179.4	F	TR	1.33	174.5	F	
Overall Intersection		-	1.20	80.5	F	-	1.30	146.8	F	-	1.33	146.9	F	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.92	72.3	E	LTR	0.76	56.5	E	LTR	0.52	47.1	D	
		EB	T	1.16	94.0	F	T	0.95	36.2	D	T	0.82	27.9	C
	Northern Boulevard (Rt. 25A)	R	0.75	17.4	B	R	0.91	38.6	D	R	0.69	25.6	C	
		WB	DefL	0.97	74.3	E	DefL	1.16	132.3	F	DefL	1.68	342.4	F
	T	0.97	24.2	C	T	0.97	26.1	C	T	1.34	171.6	F		
		Overall Intersection		-	1.72	54.2	D	-	2.05	39.9	D	-	2.98	137.1
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	1.16	134.2	F	L	1.43	249.8	F	L	2.80	859.2	F	
		R	3.00+	1000.0+	F	R	3.00+	1000.0+	F	R	3.00+	1000.0+	F	
	Northern Boulevard	EB	T	1.19	149.3	F	T	0.62	39.9	D	T	0.63	40.2	F
		WB	T	0.92	24.2	C	T	0.81	17.5	B	T	0.37	7.4	A
	Grand Central Parkway Ramp	EB	T	0.98	51.5	D	T	1.02	68.1	E	T	1.05	78.2	E
		Van Wyck & Whitestone Expressway Ramp	WB	T	0.83	16.3	B	T	0.83	16.3	B	T	1.03	50.9
Overall Intersection		-	2.30	217.0	F	-	2.12	216.3	F	-	3.00+	1000.0+	F	
Prince Street at Northern Boulevard (RT. 25A)														
Prince Street	NB	LTR	1.13	107.6	F	LTR	1.12	101.5	F	LTR	1.15	115.1	F	
		SB	LTR	0.60	42.5	D	LTR	0.51	37.8	D	LTR	0.41	38.7	D
	Northern Boulevard (Rt. 25A)	EB	L	0.98	75.2	E	L	1.01	87.7	F	L	0.91	67.7	E
		T	1.15	102.0	F	T	1.08	73.6	E	T	1.15	102.8	F	
	WB	L	0.79	69.4	E	L	0.98	102.3	F	L	0.90	90.6	F	
		T	1.17	119.4	F	T	1.21	134.4	F	T	1.05	68.2	E	
Northern Boulevard Service Rd.	EB	TR	0.59	25.2	C	TR	0.51	23.2	C	TR	0.45	21.9	C	
	WB	TR	1.03	80.6	F	TR	1.03	73.7	E	TR	0.76	37.6	D	
Overall Intersection		-	1.11	96.3	F	-	1.14	92.1	F	-	1.12	79.9	E	
Main Street at Northern Boulevard (RT. 25A)														
Main Street	NB	L	0.91	53.1	D	T	0.87	48.5	D	T	0.86	48.2	D	
		R	0.92	64.7	E	R	0.96	71.5	E	R	0.75	42.6	D	
	Northern Boulevard (Rt 25A)	EB	T	1.28	153.5	F	T	1.08	76.5	E	T	1.20	125.9	F
		R	1.24	143.2	F	R	1.36	200.0	F	R	1.20	131.0	F	
	Northern Boulevard (Rt 25A)	WB	L	0.23	28.0	C	L	0.17	26.6	C	L	0.12	26.0	C
		T	0.89	27.7	C	T	1.02	47.2	D	T	0.81	24.3	C	
Overall Intersection		-	1.08	94.5	F	-	1.17	75.2	E	-	0.99	80.6	F	
Union Street at Northern Boulevard (RT. 25A)														
Union Street	NB	TR	0.70	36.0	D	TR	0.70	35.8	D	TR	0.67	34.9	C	
		SB	TR	0.70	35.5	D	TR	0.61	33.4	C	TR	0.69	35.0	D
	Northern Boulevard (Rt. 25A)	EB	L	0.64	33.5	C	L	0.70	37.2	D	L	0.76	37.5	D
		TR	1.30	172.6	F	TR	1.43	230.1	F	TR	1.40	218.9	F	
	WB	L	0.80	31.9	C	L	0.99	70.1	E	L	1.01	84.6	F	
		TR	1.16	124.9	F	TR	1.17	115.5	F	TR	1.00	68.9	E	
Overall Intersection		-	1.01	120.4	F	-	1.06	135.0	F	-	1.04	120.1	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)														
Parsons Boulevard	NB	L	0.93	91.7	F	L	0.71	53.5	D	L	0.78	62.0	E	
		TR	0.59	40.4	D	TR	0.54	39.2	D	TR	0.60	38.6	D	
	Northern Boulevard (Rt. 25A)	SB	LTR	1.25	155.8	F	LTR	1.23	144.6	F	LTR	1.20	132.9	F
		EB	L	0.54	47.8	D	L	0.48	46.9	D	L	0.56	47.4	D
	WB	TR	1.15	101.6	F	TR	1.32	177.2	F	TR	1.34	187.9	F	
		L	0.44	42.9	D	L	0.45	47.0	D	L	0.51	47.1	D	
Overall Intersection		-	1.22	130.7	F	-	1.20	147.8	F	-	1.22	155.0	F	
34th Avenue														
114th Street at 34th Avenue														
114th Street	SB	L	1.15	113.7	F	L	1.11	99.3	F	L	1.24	147.1	F	
		T	0.81	39.0	D	T	0.80	37.8	D	T	0.42	26.0	C	
		EB	T	0.51	13.0	B	T	0.43	12.1	B	T	0.45	12.3	B
34th Avenue	R	0.16	9.2	A	R	0.12	8.8	A	R	0.06	8.5	A		
		Overall Intersection		-	0.73	55.0	E	-	0.67	53.1	D	-	0.75	84.0

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)				
Intersection & Approach		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	DefL	2.60	790.1	F	DefL	2.12	570.6	F	-	-	-	-	
		TR	0.84	50.3	D	TR	0.97	62.9	E	LTR	2.06	513.6	F	
Northern Boulevard Ramp	SB	LTR	2.47	720.2	F	LTR	2.82	871.0	F	LTR	3.00+	1000.0+	F	
GCP Ramp	SB	LTR	1.99	498.3	F	LTR	3.00+	982.6	F	LTR	3.00+	1000.0+	F	
Shea Road	EB	DefL	2.59	768.4	F	-	-	-	-	DefL	3.00+	1000.0+	F	
		TR	2.63	781.7	F	LTR	1.91	448.9	F	TR	1.66	345.3	F	
34th Avenue	WB	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	
Overall Intersection		-	2.90	656.4	F	-	3.00+	739.1	F	-	3.00+	976.2	F	
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.23	150.8	F	LTR	1.27	165.8	F	LTR	1.23	152.2	F	
		SB	LTR	1.20	140.2	F	LTR	1.22	147.5	F	LTR	1.24	154.2	F
Roosevelt Avenue	EB	LTR	0.86	14.6	B	LTR	0.96	38.0	D	LTR	0.80	21.0	C	
		WB	LTR	0.86	17.0	B	LTR	1.28	149.3	F	LTR	1.18	104.2	F
Overall Intersection		-	0.96	56.5	E	-	1.28	116.6	F	-	1.20	95.1	F	
111th Street at Roosevelt Avenue														
111th Street	NB	LTR	1.05	78.7	E	LTR	1.07	80.2	F	LTR	1.08	85.9	F	
		Roosevelt Avenue	EB	LTR	0.94	20.2	C	LTR	1.07	64.9	E	LTR	0.93	32.0
	WB	LTR	1.43	216.0	F	LTR	1.50	244.9	F	LTR	1.49	242.3	F	
Overall Intersection		-	1.33	115.9	F	-	1.37	143.7	F	-	1.38	140.7	F	
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	0.92	62.1	E	LTR	1.14	109.7	F	LTR	0.74	50.3	D	
		SB	LTR	1.52	280.3	F	LTR	1.38	216.1	F	LTR	1.24	153.3	F
Roosevelt Avenue	EB	LTR	1.42	213.5	F	LTR	1.88	417.9	F	LTR	2.14	534.2	F	
		WB	LTR	1.12	83.5	F	LTR	0.96	33.5	C	LTR	1.39	200.3	F
Overall Intersection		-	1.45	145.1	F	-	1.73	187.4	F	-	1.87	266.7	F	
126th Street at Roosevelt Avenue														
126th Street	NB	LTR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	LTR	2.83	889.5	D	
		SB	DefL	3.00	946.9	F	-	-	-	-	DefL	1.90	456.2	D
Roosevelt Avenue	TR	3.00+	1000.0+	F	LTR	3.00+	1000.0+	F	TR	1.96	476.0	F		
		EB	DefL	2.53	727.5	F	DefL	3.00+	1000.0+	F	DefL	3.00+	1000.0+	F
	WB	TR	0.82	11.3	B	TR	0.65	14.6	B	TR	1.12	95.9	F	
		LTR	0.94	29.4	C	LTR	1.03	48.4	D	LTR	1.01	57.7	E	
Overall Intersection		-	3.00+	1000.0+	F	-	3.00+	1000.0+	F	-	3.00+	1000.0+	F	
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.56	307.3	F	L	1.69	352.9	F	L	1.47	260.9	F	
		TR	0.70	29.2	C	TR	0.84	28.1	C	TR	0.78	26.3	C	
Roosevelt Avenue	SB	TR	1.05	80.1	F	TR	1.49	252.2	F	TR	1.14	105.3	F	
		EB	L	0.53	38.1	D	L	0.55	29.8	C	L	0.67	32.0	C
	TR	1.56	285.5	F	TR	1.60	296.4	F	TR	1.55	272.4	F		
		WB	L	0.31	45.0	D	L	0.29	33.5	C	L	0.25	32.9	C
	TR	0.61	39.8	D	TR	0.71	32.8	C	TR	0.55	28.3	C		
		Overall Intersection		-	1.54	139.3	F	-	1.77	187.7	F	-	1.53	133.7
Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.53	31.2	C	LTR	0.81	42.3	D	LTR	0.73	37.4	D	
		Roosevelt Avenue	EB	DefL	0.87	38.3	D	DefL	0.83	21.7	C	-	-	-
	TR	0.97	45.5	D	TR	0.78	16.3	B	LTR	0.86	17.6	B		
		WB	LTR	0.70	23.8	C	LTR	0.73	15.8	B	LTR	0.72	14.7	B
Overall Intersection		-	0.78	35.2	D	-	0.82	22.0	C	-	0.82	20.1	C	
Main Street at Roosevelt Avenue														
Main Street	NB	T	0.64	23.7	C	T	0.68	24.5	C	T	0.68	24.5	C	
		SB	T	0.56	22.3	C	T	0.65	24.3	C	T	0.56	22.4	C
Roosevelt Avenue	EB	L	0.43	43.7	D	L	0.34	24.6	C	L	0.31	21.6	C	
		TR	1.19	143.2	F	TR	0.98	61.8	E	TR	1.19	127.5	F	
	WB	L	0.29	32.8	C	L	0.09	16.1	B	L	0.32	21.5	C	
		TR	1.04	87.0	F	TR	1.03	72.3	E	TR	1.01	61.7	E	
Overall Intersection		-	0.86	62.1	E	-	0.87	42.6	D	-	0.94	59.3	E	
Union Street at Roosevelt Avenue														
Union Street	NB	TR	0.55	18.9	B	TR	0.46	17.3	B	TR	0.46	17.4	B	
		SB	LT	1.28	154.0	F	LT	1.01	57.9	E	LT	1.23	134.3	F
Roosevelt Avenue	R	1.93	447.1	F	R	2.67	789.3	F	R	1.93	453.3	F		
		EB	LTR	2.88	873.9	F	LTR	2.42	672.2	F	LTR	2.47	690.8	F
	WB	LT	0.96	50.7	D	LT	0.73	29.7	C	LT	0.91	46.5	D	
		R	0.83	52.0	D	R	1.29	215.3	F	R	1.53	309.9	F	
	Overall Intersection		-	2.37	315.8	F	-	2.55	316.9	F	-	2.17	300.2	F
	Parsons Boulevard at Roosevelt Avenue													
Parsons Boulevard	NB	LTR	0.86	42.5	D	LTR	0.80	31.3	C	LTR	1.00	54.3	D	
		SB	LTR	0.80	34.2	C	LTR	0.75	26.1	C	LTR	0.77	27.2	C
Roosevelt Avenue	EB	LTR	0.95	56.6	E	LTR	0.67	25.8	C	LTR	0.96	50.4	D	
		WB	LTR	1.12	103.4	F	LTR	0.78	30.8	C	LTR	0.91	41.8	D
Overall Intersection		-	0.99	59.8	E	-	0.79	28.5	C	-	0.98	43.6	D	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street	NB	L	0.78	41.1	D	L	0.94	65.9	E	L	0.72	34.4	C	
		TR	0.59	22.4	C	TR	0.60	21.5	C	TR	0.68	23.0	C	
	SB	L	0.88	55.5	E	L	0.52	21.4	C	L	0.44	19.8	B	
		TR	0.51	20.2	C	TR	0.54	19.7	B	TR	0.49	18.9	B	
Kissena Boulevard	WB	T	0.73	38.2	D	T	0.66	24.8	C	T	0.66	24.6	C	
		Overall Intersection		-	0.82	30.8	C	-	0.80	25.7	C	-	0.69	22.5
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard	NB	L	0.46	18.9	B	L	0.62	30.3	C	L	0.29	15.8	B	
		T	0.78	16.9	B	T	0.86	19.7	B	T	0.59	13.1	B	
Sanford Avenue	SB	TR	0.80	17.5	B	TR	0.87	20.5	C	TR	0.86	19.9	B	
		WB	L	0.82	50.2	D	L	0.88	56.5	E	L	0.58	34.8	C
	TR	0.61	31.6	C	TR	0.65	32.5	C	TR	0.46	28.5	C		
Overall Intersection		-	0.81	21.3	C	-	0.88	24.5	C	-	0.77	19.4	B	

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WITH ACTION TRAFFIC LEVELS OF SERVICE - GAME DAY

Weekday Pre-Game (5:30 - 6:30 PM)						Saturday Pre-Game (3:15 - 4:15 PM)				Saturday Post-Game (7:15 - 8:15 PM)			
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Union Street at Sanford Avenue													
Union Street	NB	LTR	0.39	21.7	C	LTR	0.49	24.5	C	LTR	0.42	22.2	C
	SB	LTR	0.72	26.7	C	LTR	0.95	38.3	D	LTR	0.83	30.9	C
Sanford Avenue	EB	-	-	-	-	DefL	0.61	26.6	C	-	-	-	-
		LTR	0.29	14.4	B	TR	0.33	15.1	B	LTR	0.24	13.8	B
	WB	LTR	0.97	40.7	D	LTR	0.81	26.5	C	LTR	0.75	24.2	C
Overall Intersection		-	0.86	28.9	C	-	0.87	29.8	C	-	0.79	25.0	C
Parsons Boulevard at Sanford Avenue													
Parsons Boulevard	NB	LTR	1.08	68.6	E	LTR	0.91	37.6	D	LTR	0.97	45.6	D
	SB	LTR	0.85	34.1	C	LTR	0.94	43.9	D	LTR	0.95	44.6	D
Sanford Avenue	EB	LTR	0.63	24.2	C	LTR	0.66	24.2	C	LTR	0.83	31.5	C
	WB	LTR	0.83	32.5	C	LTR	0.93	41.9	D	LTR	0.89	38.3	D
Overall Intersection		-	0.95	41.3	D	-	0.94	37.7	D	-	0.93	40.1	D
WHITESTONE EXPRESSWAY / 32ND AVENUE													
College Point Boulevard at 32nd Avenue													
College Point Boulevard	NB	T	0.42	24.1	C	T	0.39	23.7	C	T	0.48	24.4	C
		TR	0.27	22.0	C	TR	0.59	26.1	C	TR	0.37	23.1	C
	SB	L	0.45	33.6	C	L	0.58	38.3	D	L	0.28	28.0	C
		T	0.42	10.8	B	T	0.47	11.3	B	T	0.31	9.7	A
32nd Avenue	WB	LTR	0.75	38.4	D	LTR	0.47	30.3	C	LTR	0.31	26.9	C
Overall Intersection		-	1.10	21.2	C	-	1.05	21.9	C	-	0.86	19.8	B
NORTHERN BOULEVARD SERVICE ROAD													
College Point Boulevard at Northern Boulevard Service Road													
College Point Boulevard	NB	TR	0.50	12.8	B	TR	0.57	13.6	B	TR	0.54	13.2	B
	SB	LT	0.88	24.3	C	LT	0.96	32.7	C	LT	0.58	14.6	B
Northern Blvd Service Rd	WB	LR	0.95	54.5	D	LR	0.98	59.5	E	LR	0.80	38.3	D
Overall Intersection		-	0.91	26.1	C	-	0.97	30.8	C	-	0.66	18.9	B
STADIUM ROAD													
Boat Basin Road at Stadium Road													
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	1.37	256.3	F
		LTR	0.98	85.0	F	LTR	0.76	53.5	D	TR	0.35	26.3	C
Stadium Road	SB	LTR	1.27	154.9	F	LTR	1.44	225.7	F	LTR	1.75	374.9	F
	EB	DefL	1.35	247.7	F	DefL	1.69	390.8	F	DefL	3.00+	1000.0+	F
		TR	0.38	24.9	C	TR	0.63	34.6	C	TR	0.49	12.2	B
	WB	LTR	1.43	225.2	F	LTR	1.43	227.5	F	LTR	0.81	18.2	B
Overall Intersection		-	1.29	169.0	F	-	1.43	205.0	F	-	2.84	276.7	F
126TH STREET													
126th Street at 36th Avenue													
126th Street	NB	TR	0.45	17.6	B	TR	0.62	23.7	C	TR	1.08	70.3	E
	SB	-	-	-	-	-	-	-	-	DefL	0.89	82.2	F
36th Avenue		LT	1.07	63.4	E	LT	1.30	159.7	F	T	0.71	14.0	B
	WB	L	0.13	39.5	D	L	0.14	39.6	D	L	0.13	39.5	D
		R	0.44	32.4	C	R	0.59	34.0	C	R	1.12	128.9	F
Overall Intersection		-	0.84	48.1	D	-	1.09	107.6	F	-	1.33	62.1	E
126th Street at 37th Avenue													
126th Street	NB	TR	0.41	16.9	B	TR	0.43	17.3	B	TR	1.10	80.8	F
	SB	-	-	-	-	-	-	-	-	DefL	0.89	82.0	F
37th Avenue		LT	1.04	55.7	E	LT	1.19	112.7	F	T	0.64	14.5	B
	WB	L	0.11	35.3	D	L	0.11	35.3	D	L	0.20	36.7	D
		R	0.45	32.6	C	R	0.89	64.0	E	R	0.52	34.7	C
Overall Intersection		-	0.82	43.4	D	-	1.10	81.3	F	-	1.23	61.2	E
UNSIGNALIZED INTERSECTIONS													
Boat Basin Road at Worlds Fair Marina													
Boat Basin Road	NB	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F
		R	-	8.9	A	R	-	9.0	A	R	-	10.7	B
Worlds Fair Marina	WB	LT	-	16.6	C	LT	-	17.8	C	LT	-	9.8	A
Overall Intersection		-	-	420.1	F	-	-	435.9	F	-	-	1000.0+	F
Willets Point Boulevard at Northern Boulevard													
Northern Boulevard	EB	T	-	463.3	F	T	-	83.7	F	T	-	1000.0+	F
Overall Intersection		-	-	463.3	F	-	-	83.7	F	-	-	1000.0+	F
Grand Central Parkway Ramp at West Park Loop/Stadium Road													
Stadium Road	SB	LT	-	9.2	A	LT	-	9.5	A	LT	-	13.1	B
	EB	L	-	326.9	F	L	-	368.4	F	L	-	333.6	F
Grand Central Parkway Off-Ramp		T	-	547.0	F	T	-	592.1	F	T	-	761.5	F
		R	-	334.7	F	R	-	406.7	F	R	-	12.5	B
Willets West Center Exit	WB	L	-	1000.0+	F	L	-	1000.0+	F	L	-	1000.0+	F
		R	-	10.2	B	R	-	10.3	B	R	-	13.4	B
Overall Intersection		-	-	1000.0+	F	-	-	1000.0+	F	-	-	1000.0+	F
Northern Boulevard at 126th Place													
126th Place	NB	R	-	34.5	D	R	-	23.5	C	R	-	26.5	D
Overall Intersection		-	-	34.5	D	-	-	23.5	C	-	-	26.5	D
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS													
126th Street at New Willets Point Boulevard													
126th Street	NB	TR	0.86	36.7	D	TR	0.90	39.8	D	TR	1.34	188.1	F
	SB	-	-	-	-	-	-	-	-	DefL	0.78	69.6	E
New Willets Point Boulevard		LT	0.97	40.6	D	LT	1.03	55.9	E	T	0.63	16.7	B
	WB	L	0.96	75.2	E	L	0.99	81.7	F	L	0.76	49.8	D
		R	0.56	32.4	C	R	0.68	34.7	C	R	0.52	30.9	C
Overall Intersection		-	0.99	44.6	D	-	1.00	53.2	D	-	1.47	119.0	F
Citi Field/Lot B at Roosevelt Avenue													
Citi Field/Lot B	SB	LR	0.01	33.9	C	LR	0.03	34.0	C	LR	0.02	33.9	C
	EB	LT	0.56	11.8	B	LT	0.50	11.0	B	LT	1.07	61.4	E
Roosevelt Avenue	WB	TR	1.02	46.0	D	TR	1.05	56.0	E	TR	0.55	11.6	B
Overall Intersection		-	0.75	34.4	C	-	0.77	42.2	D	-	0.78	43.9	D

Notes

- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
(4): This table has been revised for the Final SEIS.

A. INTRODUCTION

This chapter discusses the potential for air quality impacts associated with the proposed project and the Reasonable Worst Case Development Scenario (RWCDS). The analyses presented account for changes to the proposed project and background conditions since the 2008 Final Generic Environmental Impact Statement (FGEIS) for the Willets Point Development Plan and assesses whether any changed background conditions or differences in elements between the proposed project and the development program analyzed in the 2008 FGEIS and subsequent technical memoranda would result in any significant adverse impacts on air quality that were not addressed previously.

The proposed project would create new sources of air pollutant emissions, both mobile (emissions from vehicle trips generated by the proposed project) and stationary (such as exhaust from fossil fuel-fired heating and hot water systems). The maximum hourly traffic generated by the proposed project would exceed the 2012 *City Environmental Quality Review (CEQR) Technical Manual* carbon monoxide (CO) screening threshold of 170 peak hour vehicle trips at an intersection in the study area. In addition, the particulate matter emission screening threshold discussed in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual* would be exceeded. Therefore, a quantified assessment of the potential impacts on air quality from traffic generated by the proposed project was conducted.

A quantified analysis was also conducted to evaluate potential future CO concentrations in the vicinity of the proposed parking lots, naturally ventilated parking facilities, and ventilation outlets for the proposed parking garages.

The potential for impact on air quality from the heat and hot water systems for the proposed development was analyzed, following the *CEQR Technical Manual* guidance. The proposed project would also introduce new sensitive uses (such as residences and open spaces) near existing sources of emissions. Existing emission sources include existing businesses within the District that emit pollutants of concern. Therefore, the potential for air quality impacts from those existing uses on the proposed uses was evaluated.

PRINCIPAL CONCLUSIONS

Concentrations of carbon monoxide (CO) and fine particulate matter less than 10 microns in diameter (PM₁₀) due to project-generated traffic at intersections near the project site would not result in any violations of National Ambient Air Quality Standards (NAAQS). It was also determined that CO impacts from mobile sources associated with the proposed project would not exceed CEQR *de minimis* criteria. ~~While a Concentration incremental increases in of fine particulate matter less than 2.5 microns in diameter (PM_{2.5}) from mobile sources would be between 2 µg/m³ and 5 µg/m³, were reported in the DSEIS, based on the frequency and magnitude of the concentrations above 2 µg/m³, which will be subject to Since DSEIS certification, further refined analysis was conducted between DSEIS and FSEIS in consultation~~

with DEP. The analysis confirmed that the predicted PM_{2.5} increments from mobile sources associated with the proposed project would not indicate a significant air quality impact. In addition, impacts due to the proposed project's parking facilities were found to result in no significant adverse air quality impacts.

Based on a refined analyses, using conservative assumptions regarding floor area served by a single heating and hot water system stack, there would be no potential for significant adverse air quality impacts from the proposed project's heating and hot water systems (considering buildings proposed for construction in all phases), provided that certain restrictions on the fuel type, placement of heating and hot water system stacks, and use of low-nitrogen oxide (low-NO_x) burners described in Section H, "Probable Impacts of the Proposed Project," are imposed. These restrictions would supersede those identified in the 2008 FGEIS and Technical Memorandum #4. The restrictions reflect the changes to the proposed project since the 2008 FGEIS and subsequent technical memoranda, as well as the promulgation of the 1-hour nitrogen dioxide (NO₂) standard, in 2010. A screening level analysis was conducted to assess whether existing auto, manufacturing, and industrial uses that may remain in the area proposed for development in Phase 2, would have the potential to significantly impact the air quality in the area proposed for development in Phase 1A and Phase 1B, which would be occupied by recreational, residential, hotel, open space, and commercial uses. The results of that analysis show that there would be no potential for significant adverse impact on air quality from these sources on the proposed project. Therefore, there would be no potential for a significant adverse impact from stationary sources.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS considered mobile and stationary sources of air pollutant emissions, including emissions from vehicle trips generated by the Willets Point Development Plan for the District, emissions from vehicles using proposed parking facilities, emissions from fossil fuel use in heating, ventilation, and air conditioning (HVAC) systems, and emissions from existing industrial sources. No potential for air quality impacts was identified, provided that restrictions on HVAC fuel type and stack placement would be implemented. The 2010 update to the *CEQR Technical Manual* included revisions to the HVAC (heating and hot water system) screening analysis procedures. Accordingly, Technical Memorandum #4, included an update to the stack restrictions that resulted in "E-Designations" on the affected properties. In Technical Memorandum #4 the development within the Special Willets Point District was assumed to occur in phases, with the western portion of the District developed first. Technical Memorandum #4 also assumed a "buffer area" between the portion of the District that was to be redeveloped in the initial phase and the rest of the District. This buffer would not be included in the proposed project, and the absence of the buffer would not have the potential to result in significant adverse air quality impacts as described in this chapter.

C. POLLUTANTS FOR ANALYSIS

Ambient air quality is affected by air pollutants produced by both motor vehicles and stationary sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Ambient concentrations of carbon monoxide (CO) are predominantly influenced by mobile source emissions. Particulate matter (PM), volatile organic compounds (VOCs), and nitrogen oxides (NO and NO₂, collectively referred to as NO_x) are emitted from both mobile and stationary sources. Fine PM is also formed when emissions of

NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Emissions of sulfur dioxide (SO₂) are associated mainly with stationary sources, and some sources utilizing non-road diesel, such as large international marine vessels. On-road diesel vehicles currently contribute very little to SO₂ emissions since the sulfur content of on-road diesel fuel, which is federally regulated, is extremely low. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOCs. Ambient concentrations of CO, PM, NO₂, SO₂, and lead are regulated by the U.S. Environmental Protection Agency (USEPA) under the Clean Air Act, and are referred to as “criteria pollutants,” emissions of VOCs, NO_x, and other precursors to criteria pollutants are also regulated by USEPA.

CARBON MONOXIDE

CO, a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In urban areas, approximately 80 to 90 percent of CO emissions are from motor vehicles. Since CO is a reactive gas which does not persist in the atmosphere, CO concentrations can vary greatly over relatively short distances; elevated concentrations are usually limited to locations near crowded intersections, heavily traveled and congested roadways, parking lots, and garages. Consequently, CO concentrations must be predicted on a local, or microscale, basis.

The proposed project would result in changes in traffic patterns and an increase in traffic volumes. Therefore, a mobile source analysis was conducted at critical intersections to evaluate future CO concentrations with and without the proposed project. An analysis was also conducted to evaluate future CO concentrations with the operation of proposed parking facilities.

NITROGEN OXIDES, VOCs, AND OZONE

NO_x are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are advected downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of NO_x and VOC emissions from all sources are therefore generally examined on a regional basis. The contribution of any project to regional emissions of these pollutants would include any added stationary or mobile source emissions. The proposed project would not have a significant effect on the overall volume of vehicular travel in the metropolitan area; therefore, no measurable impact on regional NO_x emissions or on ozone levels is predicted. A regional analysis of emissions of these pollutants from mobile sources associated with the proposed project was therefore not warranted.

In addition to being a precursor to the formation of ozone, NO₂ (one component of NO_x) is also a regulated criteria pollutant. Since NO₂ is mostly formed from the transformation of NO in the atmosphere, it has mostly been of concern further downwind from large stationary point sources, and not a local concern from mobile sources. (NO_x emissions from fuel combustion consist of approximately 90 percent NO and 10 percent NO₂ at the source.) However, with the promulgation of the 2010 1-hour average standard for NO₂, local sources such as vehicular emissions may become of greater concern for this pollutant.

An assessment of NO_x emissions from stationary sources was conducted, following the *CEQR Technical Manual* and USEPA guidance. In order to evaluate the effect of mobile source emissions due to the proposed actions, predicted mobile source pollutant concentrations at affected roadways and intersections must be added to background concentrations. Community-scale monitors currently in operation can be used to represent background NO₂ conditions away

from roadways, but there is substantial uncertainty regarding background concentrations at or near ground-level locations in close proximity to roadways. USEPA estimates that concentrations near roadways may be anywhere from 30 to 100 percent higher than those measured at community-scale monitors. Furthermore, the existing USEPA mobile source models are not capable of assessing the chemical transformation of emitted NO to NO₂ over relatively short distances (e.g., sidewalks, low-floor windows). In addition, existing USEPA mobile source models are designed to provide only peak concentrations, which are not consistent with the statistical format of the 1-hour average NO₂ standard.

Given the current uncertainty regarding background concentrations at specific locations near roadways, and the lack of approved modeling protocols for the prediction of total maximum 1-hour daily 98th percentile NO₂ concentrations, as well as the lack of a benchmark for evaluating the significance of these incremental concentrations, no methodology exists that could provide reasonable predictions about concentrations from mobile sources due to the proposed project on the receptors at or near ground-level locations. The traffic associated with the proposed project is not expected to change NO₂ concentrations appreciably, since the vehicular traffic associated with the proposed project would be a very small percentage of the total number of vehicles in the area. The amount of NO emitted that would rapidly transform to NO₂ in the immediate vicinity of roadways and intersections with project-generated traffic would be very small. It is not known whether conditions in the future condition without the proposed project will be within or in excess of the NAAQS in these near-road areas. Background concentrations are in fact expected to decrease over time and local sources would contribute an incremental amount of NO₂ to those background concentrations. The analysis limitations described above preclude the performance of an accurate quantitative assessment of the significance of the 1-hour NO₂ increments from the increase in traffic resulting from the proposed project.

LEAD

Currently, airborne lead emissions are principally associated with industrial sources. Lead in gasoline has been banned under the Clean Air Act, and is not a pollutant of concern for the proposed project.

RESPIRABLE PARTICULATE MATTER—PM₁₀ AND PM_{2.5}

PM is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a wide variety of sources (both natural and anthropogenic). Natural sources include the condensed and reacted forms of naturally occurring VOCs; salt particles resulting from the evaporation of sea spray; wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and material from live and decaying plant and animal life; particles eroded from beaches, soil, and rock; and particles emitted from volcanic and geothermal eruptions and from forest fires. Naturally occurring PM is generally greater than 2.5 micrometers in diameter. Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines, and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. PM also acts as a substrate for the adsorption of other pollutants, often toxic and some likely carcinogenic compounds.

As described below, PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers, or PM_{2.5}, and particles with an aerodynamic diameter of less than or equal to 10 micrometers, or PM₁₀, which includes the smaller PM_{2.5}. PM_{2.5} has the ability to reach the lower regions of the respiratory tract, delivering with it other

compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. PM_{2.5} is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from an exhaust pipe or stack) or from precursor gases reacting in the atmosphere to form secondary PM.

Diesel-powered vehicles, especially heavy duty trucks and buses, are a significant source of respirable PM, most of which is PM_{2.5}; PM concentrations may, consequently, be locally elevated near roadways with high volumes of heavy diesel powered vehicles. The proposed project would result in traffic exceeding the PM_{2.5} vehicle emission screening analysis thresholds as defined in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*. The proposed project's heating and hot water systems would use natural gas, if operating on fossil fuel. Following the guidance of the *CEQR Technical Manual*, NO₂ is the critical pollutant of concern with the use of natural gas. Therefore, an analysis of PM₁₀ and PM_{2.5} emissions from the heating and hot water systems was not warranted.

SULFUR DIOXIDE

SO₂ emissions are primarily associated with the combustion of sulfur-containing fuels (oil and coal). Monitored SO₂ concentrations in New York City do not exceed national standards. SO₂ is also of concern as a precursor to PM_{2.5} and is regulated as a PM_{2.5} precursor under the New Source Review permitting program for large sources. Due to the federal restrictions on the sulfur content in diesel fuel for on-road and non-road vehicles, no significant quantities are emitted from vehicular sources. Vehicular sources of SO₂ are not significant and therefore, analysis of SO₂ from mobile and non-road sources was not warranted. As part of the proposed project, the only fossil fuel permitted for use in the heating and hot water systems would be natural gas. The sulfur content of natural gas is negligible; therefore, an analysis of future levels of SO₂ from the proposed heating and hot water systems was not warranted.

NONCRITERIA POLLUTANTS

In addition to the criteria pollutants discussed above, noncriteria pollutants may be of concern. Noncriteria pollutants are emitted by a wide range of man-made and naturally occurring sources. These pollutants are sometimes referred to as hazardous air pollutants (HAP) and when emitted from mobile sources, as Mobile Source Air Toxics (MSATs). Emissions of noncriteria pollutants from industries are regulated by USEPA. The existing industrial and auto uses within the proposed project study area were analyzed as potential sources of noncriteria pollutant emissions.

D. AIR QUALITY REGULATIONS, STANDARDS, AND BENCHMARKS

NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the CAA, primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO₂, ozone, respirable PM (both PM_{2.5} and PM₁₀), SO₂, and lead. The primary standards represent levels that are requisite to protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The primary and secondary standards are the same for NO₂ (annual), ozone, lead, PM_{2.5} (24-hr) and PM₁₀, and there is no secondary standard for CO and the 1-hour NO₂ standard. The NAAQS are presented in **Table 15-1**. The NAAQS for CO, annual NO₂, and 3-hour SO₂ have also been adopted as the ambient air quality standards for New York State, but are defined on a running 12-month basis

Table 15-1
National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary		Secondary	
	ppm	µg/m ³	ppm	µg/m ³
Carbon Monoxide (CO)				
8-Hour Average ⁽¹⁾	9	10,000	None	
1-Hour Average ⁽¹⁾	35	40,000		
Lead				
Rolling 3-Month Average ⁽²⁾	NA	0.15	NA	0.15
Nitrogen Dioxide (NO ₂)				
1-Hour Average ⁽³⁾	0.100	188	None	
Annual Average	0.053	100	0.053	100
Ozone (O ₃)				
8-Hour Average ^(4,5)	0.075	150	0.075	150
Respirable Particulate Matter (PM ₁₀)				
24-Hour Average ⁽¹⁾	NA	150	NA	150
Fine Respirable Particulate Matter (PM _{2.5})				
Annual Mean ⁽⁶⁾	NA	12	NA	15
24-Hour Average ⁽⁷⁾	NA	35	NA	35
Sulfur Dioxide (SO ₂) ⁽⁸⁾				
1-Hour Average ⁽⁹⁾	0.075	197	NA	NA
Maximum 3-Hour Average ⁽¹⁾	NA	NA	0.50	1,300
Notes: ppm – parts per million (unit of measure for gases only) µg/m ³ – micrograms per cubic meter (unit of measure for gases and particles, including lead) NA – not applicable All annual periods refer to calendar year. Standards are defined in ppm. Approximately equivalent concentrations in µg/m ³ are presented. ⁽¹⁾ Not to be exceeded more than once a year. ⁽²⁾ USEPA has lowered the NAAQS down from 1.5 µg/m ³ , effective January 12, 2009. ⁽³⁾ 3-year average of the annual 98th percentile daily maximum 1-hr average concentration. Effective April 12, 2010. ⁽⁴⁾ 3-year average of the annual fourth highest daily maximum 8-hr average concentration. ⁽⁵⁾ USEPA has proposed lowering the primary standard further to within the range 0.060-0.070 ppm, and adding a secondary standard measured as a cumulative concentration within the range of 7 to 15 ppm-hours aimed mainly at protecting sensitive vegetation. A final decision on this standard has been postponed but is expected to occur in 2013. ⁽⁶⁾ USEPA has lowered the primary standard from 15 µg/m ³ , effective March 2013. ⁽⁷⁾ Not to be exceeded by the annual 98th percentile when averaged over 3 years. ⁽⁸⁾ USEPA revoked the 24-hour and annual primary standards, replacing them with a 1-hour average standard. Effective August 23, 2010. ⁽⁹⁾ 3-year average of the annual 99th percentile daily maximum 1-hr average concentration. Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.				

rather than for calendar years only. New York State also has standards for total suspended particulate matter (TSP), settleable particles, non-methane hydrocarbons (NMHC), 24-hour and annual SO₂, and ozone which correspond to federal standards that have since been revoked or replaced, and for the noncriteria pollutants beryllium, fluoride, and hydrogen sulfide. USEPA has revised the NAAQS for PM, effective December 18, 2006. The revision included lowering the level of the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³ and retaining the level of the annual standard at 15 µg/m³. The PM₁₀ 24-hour average standard was retained and the annual average PM₁₀ standard was revoked. USEPA recently announced a final decision to lower the primary annual-average standard from 15 µg/m³ to 12 µg/m³, effective March 2013.

USEPA has also revised the 8-hour ozone standard, lowering it from 0.08 to 0.075 parts per million (ppm), effective as of May 2008. On January 6, 2010, USEPA proposed a change in the 2008 ozone NAAQS, lowering the primary NAAQS from the current 0.075 ppm level to within the range of 0.060 to 0.070 ppm. USEPA is also proposing a secondary ozone standard, measured as a cumulative concentration within the range of 7 to 15 ppm-hours aimed mainly at protecting sensitive vegetation. A final decision on this standard has been postponed but is expected to occur in 2013.

USEPA lowered the primary and secondary standards for lead to 0.15 µg/m³, effective January 12, 2009. USEPA revised the averaging time to a rolling 3-month average and the form of the standard to not-to-exceed across a 3-year span.

USEPA established a 1-hour average NO₂ standard of 0.100 ppm, effective April 12, 2010, in addition to the annual standard. The statistical form is the 3-year average of the 98th percentile of daily maximum 1-hour average concentration in a year.

USEPA also established a 1-hour average SO₂ standard of 0.075 ppm, replacing the 24-hour and annual primary standards, effective August 23, 2010. The statistical form is the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour concentrations (the 4th highest daily maximum corresponds approximately to 99th percentile for a year.)

Federal ambient air quality standards do not exist for noncriteria pollutants; however, as mentioned above, the New York State Department of Environmental Conservation (NYSDEC) has issued standards for three noncriteria compounds. NYSDEC has also developed a guidance document DAR-1 (October 2010)¹, which contains a compilation of annual and short term (1-hour) guideline concentrations for numerous other noncriteria compounds. The NYSDEC guidance thresholds represent ambient levels that are considered safe for public exposure.

NAAQS ATTAINMENT STATUS AND STATE IMPLEMENTATION PLANS

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by USEPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the Clean Air Act, followed by a plan for maintaining attainment status once the area is in attainment.

In 2002, USEPA re-designated New York City as in attainment for CO. Under the resulting maintenance plan, New York City is committed to implementing site-specific control measures

¹ New York State Department of Environmental Conservation DAR-1 (Air Guide-1) AGC/SGC Tables, October 2010.

throughout the city to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period.

Manhattan has been designated as a moderate NAA for PM₁₀. On January 30, 2013, New York State requested that USEPA approve its withdrawal of the 1995 SIP and redesignation request for the 1987 PM₁₀ NAAQS, and that USEPA make a clean data finding instead, based on data monitored from 2009-2011 indicating PM₁₀ concentrations well below the 1987 NAAQS. Although not yet a redesignation to attainment status, if approved, this determination would remove further requirements for related SIP submissions.

On December 17, 2004, USEPA took final action designating the five New York City counties and Nassau, Suffolk, Rockland, Westchester, and Orange Counties as a PM_{2.5} non-attainment area under the Clean Air Act due to exceedance of the annual average standard. Based on recent monitoring data (2006-2009), annual average concentrations of PM_{2.5} in New York City no longer exceed the annual standard. USEPA has determined that the area has attained the 1997 annual PM_{2.5} NAAQS, effective December 15, 2010. New York State submitted a redesignation request and maintenance plan to USEPA in February 2013. As stated earlier, USEPA has recently lowered the annual average primary standard to 12 µg/m³. USEPA will make initial attainment designations by December 2014. Based on analysis of 2009–2011 monitoring data, it is likely that the region will be in attainment for the new standard.

As described above, USEPA has revised the 24-hour average PM_{2.5} standard. In November 2009, USEPA designated the New York City Metropolitan Area as nonattainment with the 2006 24-hour PM_{2.5} NAAQS. The nonattainment area includes the same 10-county area originally designated as nonattainment with the 1997 annual PM_{2.5} NAAQS. Based on recent monitoring data (2007–2011), USEPA determined that the area has attained the standard. Although it has not yet been redesignated to attainment status, this determination removes further requirements for related SIP submissions. New York State submitted a redesignation request and maintenance plan to USEPA in February 2013.

The five New York City counties, Nassau, Rockland, Suffolk, Westchester, Lower Orange County Metropolitan Area (LOCMA) had been designated as a severe non-attainment area (the New York-New Jersey-Long Island Nonattainment Area, New York portion) for ozone (1-hour average standard, 0.12 ppm). In November 1998, New York State submitted its *Phase II Alternative Attainment Demonstration for Ozone*, which was finalized and approved by USEPA effective March 6, 2002, addressing attainment of the 1-hour ozone NAAQS by 2007. The 1-hour standard was revoked in 2004 when it was replaced by the 8-hour ozone standard, but certain further requirements remained ('anti-backsliding'). On June 18, 2012, USEPA determined that the New York-New Jersey-Long Island NAA has also attained the standard. Although it has not yet been redesignated to attainment status, this determination removes further requirements under the 1-hour standard.

Effective June 15, 2004, USEPA designated the five New York City counties, Nassau, Rockland, Suffolk, Westchester, Lower Orange County Metropolitan Area (LOCMA) as moderate non-attainment for the 1997 8-hour average ozone standard. On February 8, 2008, NYSDEC submitted final revisions to the SIP to USEPA to address the 1997 8-hour ozone standard. Based on recent monitoring data (2007–2011), USEPA determined that the Poughkeepsie and the NY-NJ-CT areas have attained the 1997 8-hour ozone NAAQS (0.08 ppm). Although it has not yet been redesignated to attainment status, this determination removes further requirements under the 1997 8-hour standard. In March 2008 USEPA strengthened the 8-hour ozone standards. USEPA designated the counties of Suffolk, Nassau, Bronx, Kings, New

York, Queens, Richmond, Rockland, and Westchester (NY portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT NAA) as a marginal non-attainment area for the 2008 ozone NAAQS, effective July 20, 2012. SIPs will be due in 2015.

New York City is currently in attainment of the annual-average NO₂ standard. USEPA has designated the entire state of New York as “unclassifiable/attainment” of the new 1-hour NO₂ standard effective February 29, 2012. Since additional monitoring is required for the 1-hour standard, areas will be reclassified once three years of monitoring data are available (2016 or 2017).

USEPA has established a 1-hour SO₂ standard, replacing the former 24-hour and annual standards, effective August 23, 2010. Based on the available monitoring data, all New York State counties currently meet the 1-hour standard. Additional monitoring will be required. ~~USEPA plans to make final attainment designations in June 2013. SIPs for nonattainment areas will be due by June 2015.~~ Draft attainment designations were published by USEPA in February 2013, indicating that USEPA is deferring action to designate areas in New York and expects to proceed with designations once additional data are gathered.

DETERMINING THE SIGNIFICANCE OF AIR QUALITY IMPACTS

The State Environmental Quality Review Act (SEQRA) regulations and the *CEQR Technical Manual* state that the significance of a predicted consequence of a project (i.e., whether it is material, substantial, large or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected.¹ In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see **Table 15-1**) would be deemed to have a potential significant adverse impact. Similarly, for non-criteria pollutants, predicted exceedance of the DAR-1 guideline concentrations would be considered a potential significant adverse impact.

In addition, in order to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, threshold levels have been defined for certain pollutants; any action predicted to increase the concentrations of these pollutants above the thresholds would be deemed to have a potential significant adverse impact, even in cases where violations of the NAAQS are not predicted.

DE MINIMIS CRITERIA REGARDING CO IMPACTS

New York City has developed *de minimis* criteria to assess the significance of the increase in CO concentrations that would result from the impact of proposed projects or actions on mobile sources, as set forth in the *CEQR Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant environmental impact. Significant increases of CO concentrations in New York City are defined as: (1) an increase of 0.5 ppm or more in the maximum 8-hour average CO concentration at a location where the predicted No Action 8-hour concentration is equal to or between 8 and 9 ppm; or (2) an increase of more than half the difference between baseline (i.e., No Action) concentrations and the 8-hour standard, when No Action concentrations are below 8.0 ppm.

¹ *CEQR Technical Manual*, Chapter 1, section 222, June 2012; and State Environmental Quality Review Regulations, 6 NYCRR § 617.7

~~PM_{2.5} INTERIM GUIDANCE CRITERIA-DE MINIMIS CRITERIA REGARDING PM_{2.5} IMPACTS~~

~~NYSDEC has published a policy to provide interim direction for evaluating PM_{2.5} impacts.¹ This policy applies only to facilities applying for permits or major permit modifications under SEQRA that emit 15 tons of PM₁₀ or more annually. The policy states that such a project will be deemed to have a potentially significant adverse impact if the project's maximum impacts are predicted to increase PM_{2.5} concentrations by more than 0.3 µg/m³ averaged annually or more than 5 µg/m³ on a 24 hour basis. Projects that exceed either the annual or 24 hour threshold will be required to prepare an EIS to assess the severity of the impacts, to evaluate alternatives, and to employ reasonable and necessary mitigation measures to minimize the PM_{2.5} impacts of the source to the maximum extent practicable.~~

~~In addition, The monitored background levels of PM_{2.5} have come down appreciably in recent years. As of June 5, 2013, New York City uses interim guidance the following *de minimis* criteria for evaluating the potential PM_{2.5} impacts for projects subject to CEQR. The *de minimis* criteria supersede the interim guidance criteria currently that were previously in effect. employed to determine the potential for significant adverse PM_{2.5} impacts under CEQR are as follows:~~

- ~~• 24 hour average PM_{2.5} concentration increments which are predicted to be greater than 5 µg/m³ at a discrete receptor location would be considered a significant adverse impact on air quality under operational conditions (i.e., a permanent condition predicted to exist for many years regardless of the frequency of occurrence);~~
- ~~• 24 hour average PM_{2.5} concentration increments which are predicted to be greater than 2 µg/m³ but no greater than 5 µg/m³ would be considered a significant adverse impact on air quality based on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations;~~
- ~~• Predicted increase of more than half the difference between the background concentration and the 24-hour standard; or~~
- ~~• Predicted annual average PM_{2.5} concentration increments which are predicted to be greater than 0.1 µg/m³ at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the average over an area of approximately 1 square kilometer, centered on the location where the maximum ground-level impact is predicted for stationary sources; or at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or~~
- ~~• Predicted annual average PM_{2.5} concentration increments which are predicted to be greater than 0.3 µg/m³ at a discrete receptor location (elevated or ground level).~~

~~Actions under CEQR predicted to increase PM_{2.5} concentrations by more than the above interim guidance *de minimis* criteria will be considered to have a potential significant adverse impact.~~

~~The proposed project's annual emissions of PM₁₀ are estimated to be well below the 15 ton per year threshold under NYSDEC's PM_{2.5} policy guidance. The above interim guidance criteria have been used to evaluate the significance of predicted impacts of the proposed project on PM_{2.5} concentrations.~~

¹ CP33/Assessing and Mitigating Impacts of Fine Particulate Emissions, NYSDEC 12/29/2003.

E. METHODOLOGY FOR PREDICTING POLLUTANT CONCENTRATIONS

INTRODUCTION

This section presents the methodologies, data, and assumptions used to conduct the air quality analyses for the proposed project. The following analyses were conducted.

MOBILE SOURCE ANALYSIS

Assessment of the change in CO and PM concentrations as a result of changes in traffic volumes and geometry due to the proposed project (one intersection in Phase 1A to account for Willets West and development within the District by 2018, prior to completion of Van Wyck ramps; and two intersections in Phase 2 to account for the full program proposed by 2032). As discussed in the DSEIS, and described in the following text, a more refined analysis was conducted for the intersection and time period that resulted in the greatest increase in PM_{2.5} concentrations. The Phase 1B development would occur after the completion of the Van Wyck ramps and would generate less traffic than the full program proposed by 2032. Therefore, Phase 1B would result in fewer mobile source emissions and less potential for an impact on air quality than Phase 2, and a quantified mobile source analysis was not conducted for Phase 1B.

PARKING FACILITIES

Assessment of the potential impacts associated with the proposed parking uses (the Willets West garage for Phase 1A and the proposed convention center garage within the District in Phase 2).

STATIONARY SOURCE ANALYSIS

Assessment of the potential impacts from the fossil fuel-fired heating and hot water systems for the proposed project (as proposed with the completion of Phase 2, in 2032).

Assessment of the potential impacts from existing businesses/industrial sources on the proposed project (business in Phase 2 area that could potentially affect Phase 1A / Phase 1B development).

MOBILE SOURCES

The prediction of vehicle-generated emissions and their dispersion in an urban environment incorporates meteorological phenomena, traffic conditions, and physical configuration. Air pollutant dispersion models mathematically simulate how traffic, meteorology, and physical configuration combine to affect pollutant concentrations. The mathematical expressions and formulations contained in the various models attempt to describe an extremely complex physical phenomenon as closely as possible. However, because all models contain simplifications and approximations of actual conditions and interactions, and since it is necessary to predict the reasonable worst-case condition, most dispersion analyses predict conservatively high concentrations of pollutants, particularly under adverse meteorological conditions.

The mobile source analysis for the proposed project employs a model approved by USEPA that has been widely used for evaluating air quality impacts of projects in New York City, other parts of New York State, and throughout the country. The modeling approach includes a series of conservative assumptions relating to meteorology, traffic, and background concentration levels resulting in a conservatively high estimate of expected pollutant concentrations that could ensue from the proposed project.

VEHICLE EMISSIONS

Engine Emissions

Vehicular CO, PM₁₀, and PM_{2.5} engine emission factors were computed using the USEPA mobile source emissions model, MOVES.¹ This emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway type and grade, number of starts per day, engine soak time, and various other factors that influence emissions, such as inspection maintenance programs. The inputs and use of MOVES incorporate the most current guidance available from USEPA and NYSDEC.

Vehicle classification data were based on field studies obtained as part of the traffic data collections summarized in Chapter 14, "Transportation." Appropriate credits were used to accurately reflect the inspection and maintenance program. The inspection and maintenance programs require inspections of automobiles and light trucks to determine if pollutant emissions from each vehicle exhaust system comply with emission standards. Vehicles failing the emissions test must undergo maintenance and pass a repeat test to be registered in New York State. County-specific hourly temperature and relative humidity data obtained from NYSDEC were used.

Road Dust

The contribution of re-entrained road dust to PM₁₀ concentrations, as presented in the PM₁₀ SIP, is considered to be significant; therefore, the PM₁₀ estimates include both exhaust and road dust. ~~In accordance with the PM_{2.5} interim guidance criteria methodology,~~ PM_{2.5} emission rates were determined with fugitive road dust to account for their impacts in local microscale analyses. However, fugitive road dust was not included in the annual neighborhood scale PM_{2.5} microscale analyses, since the New York Department of Environment Protection (DEP) considers it to have an insignificant contribution on that scale. Road dust emission factors were calculated according to the latest procedure delineated by USEPA² and the 2012 *CEQR Technical Manual*.

DISPERSION MODELS FOR MICROSCALE ANALYSIS

Maximum CO concentrations resulting from vehicular emissions adjacent to the analysis sites were predicted using the CAL3QHC model Version 2.0.³ The CAL3QHC model employs a Gaussian (normal distribution) dispersion assumption and includes an algorithm for estimating vehicular queue lengths at signalized intersections. CAL3QHC predicts emissions and dispersion of CO from idling and moving vehicles. The queuing algorithm includes site-specific traffic parameters, such as signal timing and delay calculations (from the 2000 *Highway Capacity Manual* traffic forecasting model), saturation flow rate, vehicle arrival type, and signal actuation (i.e., pre-timed or actuated signal) characteristics to accurately predict the number of idling vehicles. The CAL3QHC model has been updated with an extended module, CAL3QHCR, which allows for the incorporation of hourly meteorological data into the modeling, instead of

¹ EPA, Motor Vehicle Emission Simulator (MOVES), User Guide for MOVES2010b, June 2012.

² EPA, Compilations of Air Pollutant Emission Factors AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, Ch. 13.2.1, NC, <http://www.epa.gov/ttn/chief/ap42>, January 2011.

³ EPA, User's Guide to CAL3QHC, A Modeling Methodology for Predicted Pollutant Concentrations Near Roadway Intersections, Office of Air Quality, Planning Standards, Research Triangle Park, North Carolina, EPA-454/R-92-006.

worst-case assumptions regarding meteorological parameters. This refined version of the model, CAL3QHCR, can be employed if maximum predicted future CO concentrations are greater than the applicable ambient air quality standards or when *de minimis* thresholds are exceeded using the first level of CAL3QHC modeling and was applied for PM₁₀ and PM_{2.5} concentrations on sidewalks near the project sites. This refined version of the CAL3QHC model can utilize hourly traffic and meteorological data, and is therefore appropriate for calculating the 24-hour and annual average concentrations required to address the timescales of the PM NAAQS.

METEOROLOGY

In general, the transport and concentration of pollutants from vehicular sources are influenced by three principal meteorological factors: wind direction, wind speed, and atmospheric stability. Wind direction influences the direction in which pollutants are dispersed, and atmospheric stability accounts for the effects of vertical mixing in the atmosphere. These factors, therefore, influence the concentration at a particular prediction location (receptor). In applying the CAL3QHC model, the wind angle was varied to determine the wind direction resulting in the maximum concentrations at each receptor. Following the USEPA guidelines,¹ CAL3QHC computations were performed using a wind speed of 1 meter per second, and the neutral stability class D. The 8-hour average CO concentrations were estimated by multiplying the predicted 1-hour average CO concentrations by a factor of 0.70 to account for persistence of meteorological conditions per the 2012 *CEQR Technical Manual* guidance. A surface roughness of 3.21 meters was chosen. At each receptor location, concentrations were calculated for all wind directions, and the highest predicted concentration was reported, regardless of frequency of occurrence. These assumptions ensured that worst-case meteorology was used to estimate impacts.

Using the CAL3QHCR model, hourly concentrations were predicted based on hourly traffic data and five years (2007–2011) of monitored hourly meteorological data. The data consist of surface data collected at LaGuardia Airport and upper air data collected at Brookhaven, New York. All hours were modeled, and the highest resulting concentration for each averaging period is presented.

ANALYSIS YEAR

An analysis was performed for Phase 1A's Build Year of 2018, to account for the construction of Willets West, which was previously not considered, as well as to account for the fact that the construction of the new Van Wyck ramps would not be completed before the operation of Phase 1A. An analysis was also performed to assess the potential for mobile source impacts from the operation of the fully build project as proposed with Phase 2, in 2032. No analysis was conducted for Phase 1B, because the project generated traffic in that phase would be well below that projected for Phase 2, and because the Van Wyck ramps would be completed before the uses constructed by 2028 in Phase 1B would be occupied.

TRAFFIC DATA

Traffic data for the air quality analysis were derived from existing traffic counts, projected future growth in traffic, and other information developed as part of the traffic analysis for the proposed project (see Chapter 14, "Transportation"). Traffic data for the future without and with the proposed project were used in the respective air quality modeling scenarios. The data for the

¹ *Guidelines for Modeling Carbon Monoxide from Roadway Intersections*, EPA Office of Air Quality Planning and Standards, Publication EPA-454/R-92-005.

future with the proposed project accounted for traffic associated with the cumulative development with Lot B. Two peak periods were analyzed to assess the impact of weekend midday peak traffic, with and without a game event at CitiField. The weekend (1:30 PM to 2:30 PM) and weekend pre-game (3:15 PM to 4:15 PM) peak periods were analyzed. The weekend non-game time period was selected for the mobile source analysis because it would result in the maximum anticipated project-generated and total future traffic at signalized intersections and, therefore, have the greatest potential for significant air quality impacts. Of the peak periods with game events, the weekend pre-game peak period was analyzed because it is the game day peak period with the greatest amount of project-generated traffic.

Since the PM analysis requires hourly traffic data over an entire 24-hour period, it was necessary to estimate this information for the non-peak traffic periods. The projected weekend peak traffic volumes in the future without the proposed project were used as a baseline. Traffic volumes for other hours without the proposed project were determined by adjusting the peak period volumes by the 24-hour distributions based on the Automatic Traffic Recorder (ATR) data. Traffic generated by the proposed project over the 24-hour period was similarly determined using the predicted hourly parking accumulation data, obtained from the traffic analysis.

BACKGROUND CONCENTRATIONS

Background concentrations are those pollutant concentrations originating from distant sources that are not directly included in the modeling analysis, which directly accounts for vehicular emissions on the streets within 1,000 feet and in the line of sight of the analysis site. Background concentrations are added to modeling results to obtain total pollutant concentrations at an analysis site. The 1-hour and 8-hour CO background concentrations used in this analysis, which were based on the maximum second-highest concentrations recorded at the NYSDEC Queens College 2 monitoring station from 2007 to 2011, were ~~3.4~~ 3.4 ppm and 2.0 ppm, respectively. The monitoring station at Queens College 2 is the closest monitoring station to the proposed project sites that has available recorded data over a recent 5-year period. The background concentrations used are consistent with the background concentrations provided in the CEQR Technical Manual.

The PM₁₀ 24-hour background concentration of 50 µg/m³ was based on the maximum second-highest concentration, measured over the most recent three-year period at the Queens College 2 monitoring station. PM_{2.5} impacts are assessed on an incremental basis and compared with the PM_{2.5} ~~interim guidance~~ de minimis criteria. ~~Therefore, a PM_{2.5} 24-hour average background concentration of 26 µg/m³ (based on the 2009 to 2011 average of 98th percentile concentrations) was used to establish the de minimis value, consistent with the background concentration provided for Queens in the CEQR Technical Manual. for PM_{2.5} is not included.~~

MOBILE SOURCE ANALYSIS SITES

Two signalized intersection locations (Site 1 and Site 2, shown in **Figure 15-1**) were selected for the microscale CO and PM analysis, for Phase 1A and Phase 2, as shown in **Table 15-2**. These intersections were selected after considering all intersection locations analyzed for the traffic study (see Chapter 14, "Transportation") because they are among the signalized locations where the greatest number of vehicles generated by the proposed project and, therefore, the maximum changes in the concentrations and greatest potential for air quality impacts are expected. Existing traffic volumes, existing and future predicted levels of service, and proximity of the intersections

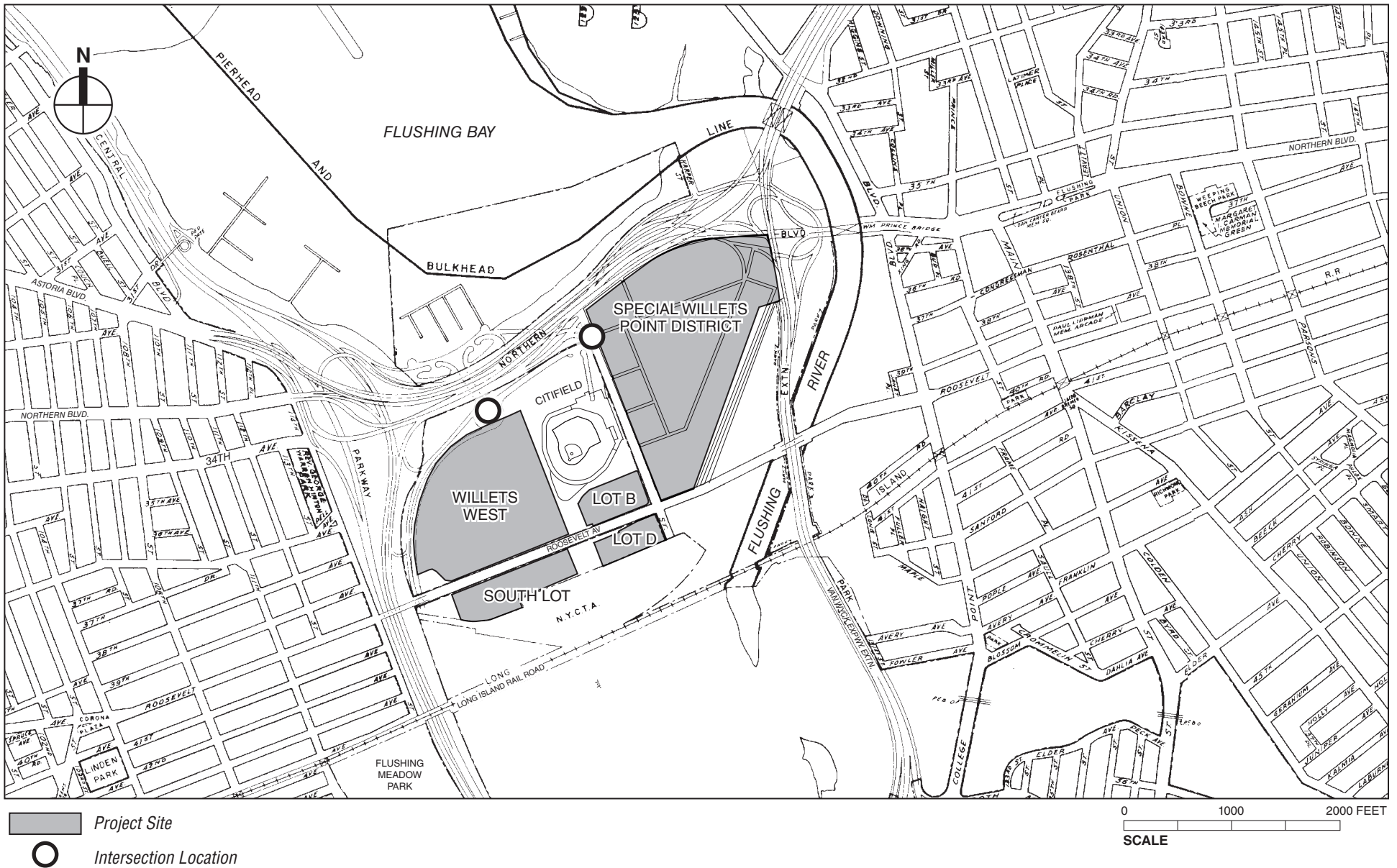


Table 15-2
Mobile Source Analysis Intersection Locations

Analysis Site	Location	Phase	Pollutant
1	34th Avenue and 126th Street	2	CO, PM ₁₀ , PM _{2.5}
2	Boat Basin Road and Shea Road	1A	CO, PM ₁₀ , PM _{2.5}
		2	CO

to pedestrian uses were also considered in the selection of intersections for the air quality analysis. Site 1 was also the location where the highest concentration of CO was predicted as part of the analysis conducted for the 2008 FGEIS. PM impacts were analyzed at Site 1 for Phase 2, as Site 1 would have the greatest number of projected emissions from truck and overall vehicle trips in Phase 2. A more refined analysis of the effect of PM emissions at Site 1 with Phase 2 was performed since the completion of the DSEIS. PM impacts were also analyzed at Site 2 for Phase 1A to assess the effect on PM concentrations from Willets West and development within the District prior to the construction of Van Wyck ramps.

RECEPTOR LOCATIONS

Multiple receptors (i.e., precise locations at which concentrations are predicted) were modeled at each of the selected sites. Receptors were placed along the approach and departure links at spaced intervals. Local model receptors were placed at sidewalk or roadside locations near intersections with continuous public access. Receptors in the annual PM_{2.5} neighborhood scale models were placed at a distance of 15 meters from the nearest moving lane, based on the DEP recommended procedure for neighborhood scale corridor PM_{2.5} modeling.

REFINED MOBILE SOURCE ANALYSIS

As discussed in the DSEIS, the PM_{2.5} emission factors calculated by the MOVES model vary by speed, with higher levels of engine emissions at low travel speeds. As the MOVES model was primarily created and to date used for modeling inventories, there is limited guidance on the use of the model for project-level microscale analysis in urban areas. Refinements that could provide more accurate estimates of emissions on an hour-by-hour basis using project-specific traffic data were mentioned in the DSEIS. Refinements were performed for Site 1, for non-game conditions with Phase 2, to supplement the particulate matter results presented in the DSEIS, which were based on more conservative assumptions. The refinements included use of detailed hourly trip projections and trip assignments which were provided by the Corridor Simulation (CORSIM) traffic simulation model.

CORSIM simulates the movements of vehicles, accounting for the influences of road geometry, traffic control conditions, and driver behavior. Hourly speeds and processed vehicle volumes were produced by CORSIM for a 13-hour period, covering AM, midday, and PM conditions. The speeds and volumes for each hour during the 13-hour period were used to obtain emission rates from the MOVES model and concentrations using CAL3QHCR.

In addition, following USEPA guidance¹, the queuing algorithm in CAL3QHCR was not used with the refined analysis of PM impacts. Accordingly, the hourly speeds developed using traffic

¹ USEPA, Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas, December 2010.

simulation modeling include idling time, and emissions calculated using the MOVES model account for idling emissions, as recommended by USEPA.

PARKING FACILITIES

The proposed project would include parking facilities to provide for new parking demand and replace the CitiField parking that would be displaced from construction of the Willets West portion of the project in Phase 1A. Emissions from vehicles using the parking areas could potentially affect ambient levels of CO.

The proposed parking facility at Willets West was selected for analysis as it is the largest parking facility proposed for development outside of the Special Willets Point District, and would be constructed in the first phase of development (Phase 1A), when the emissions on a per vehicle basis would be highest.

The garage associated with the proposed convention center was analyzed since the convention center would generate the greatest potential parking demand within the District and would result in the highest concentrations of pollutants at nearby receptors. The analysis year for the convention center garage was 2032, as the convention center would be constructed in Phase 2, when the on-street traffic volumes would be greatest.

The analysis of emissions from the proposed parking facilities' outlet vents and their dispersion was performed using the methodology set forth in the *CEQR Technical Manual*. Emissions from vehicles entering, parking, and exiting the parking structures were estimated using the USEPA MOVES mobile source emission model. For all arriving and departing vehicles, an average speed of 5 miles per hour was conservatively assumed for travel within the parking structure. In addition, all departing vehicles were assumed to idle for 1 minute before proceeding to the exit. The concentration of CO within the parking structure was calculated assuming a minimum ventilation rate, based on New York City Building Code requirements, of 1 cubic foot per minute of fresh air per gross square foot of garage area.

To determine pollutant levels in the vicinity of the vents, the exhaust from the parking garages was analyzed as a "virtual point source" using the methodology in USEPA's *Workbook of Atmospheric Dispersion Estimates*, AP-26. This methodology estimates CO concentrations at various distances from the vents by assuming that the concentration in the garage is equal to the concentration leaving the exhaust, and determining the appropriate initial horizontal and vertical dispersion coefficients at the vent faces. Background and on-street CO concentrations were then added to the modeling results to obtain the total ambient levels at each receptor location. The on-street CO concentration was determined using the methodology in Air Quality Appendix 1 of the *CEQR Technical Manual*, utilizing traffic volumes on 34th Avenue approaching 126th Street (mobile source analysis Site 1).

Since there are no specific garage designs for the proposed project, reasonable worst-case assumptions for air quality modeling were made regarding the design of the garages mechanical ventilation systems. The exhaust from each parking garage was assumed to be vented through a single outlet vent with a height of 10 feet. The vent was assumed to exhaust directly onto the street, and a "near" receptor was placed along the sidewalks at a pedestrian height of six feet and at a distance of five feet from the vent. A "far" receptor was placed directly across the street from the assumed vent location, at a distance of 60 feet for the Willets West parking facility and 84 feet for the convention center. The vent at the convention center was also analyzed assuming a sensitive receptor on the building façade located at a height of six feet above the vent. A persistence factor of 0.7 was used to convert the calculated 1-hour average maximum

concentrations to 8-hour averages, accounting for meteorological variability over the average 8-hour period.

STATIONARY SOURCES

HEATING AND HOT WATER SYSTEMS

The only fossil fuel that would be used for heating and hot water systems for the proposed development would be natural gas. For the District, the requirement to use natural gas, if using a fossil fuel, would be implemented through the E-designations that are already in place; the requirements set forth in this SEIS would supersede the requirements previously set forth for the E-designations. For Willets West, the requirement would be incorporated into the development agreements and/or amended leases.

Per the guidance presented in the *CEQR Technical Manual* for natural gas burning sources, NO₂ was the only pollutant considered in the dispersion analysis. Future concentrations of 1-hour average and annual average NO₂ resulting from the proposed heating and hot water system emissions were predicted using the USEPA/AMS AERMOD dispersion model.¹

Dispersion Modeling

AERMOD is a state-of-the-art dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatment of the boundary layer theory, understanding of turbulence and dispersion, and includes handling of the interaction between the plume and terrain.

The AERMOD model calculates pollutant concentrations from one or more points (e.g., exhaust stacks) based on hourly meteorological data, and has the capability to calculate pollutant concentrations at locations where the plume from the exhaust stack is affected by the aerodynamic wakes and eddies (downwash) produced by nearby structures. The analyses of potential impacts from the exhaust stacks were made assuming stack tip downwash, urban dispersion and surface roughness length, with and without building downwash (as recommended in the *CEQR Technical Manual*), and elimination of calms.

The AERMOD model also incorporates the algorithms from the PRIME model, which is designed to predict impacts in the “cavity region” (i.e., the area around a structure which under certain conditions may affect an exhaust plume, causing a portion of the plume to become entrained in a recirculation region). The Building Profile Input Program (BPIP) program for the PRIME model (BPIPRM) was used to determine the projected building dimensions for modeling with the building downwash algorithm enabled. The modeling of plume downwash accounts for all obstructions within a radius equal to five obstruction heights of the stack.

The analysis was performed both with and without downwash in order to assess the worst-case impacts at elevated receptors close to the height of the sources, which would occur without downwash, as well as the worst-case impacts at lower elevations and ground level, which would occur with downwash.

¹ EPA, AERMOD: Description Of Model Formulation, 454/R-03-004, September 2004; and EPA, User's Guide for the AMS/EPA Regulatory Model AERMOD, 454/B-03-001, September 2004 and Addendum December 2006.

For the analysis of the proposed project's effect on 1-hour average NO₂ concentrations, the Plume Volume Molar Ratio Method (PVMRM) module was applied within AERMOD, following USEPA's modeling guidance.¹ PVMRM analyzes chemical transformation of NO emitted from the stack to NO₂. The PVMRM module incorporates hourly background ozone concentrations to estimate NO_x transformation within the source plume. Ozone concentrations were obtained from the NYSDEC Queens College monitoring station, which is the station with recent ozone data nearest to the proposed project sites. An initial NO₂ to NO_x ratio of 10 percent at the source exhaust was assumed for the heating and hot water systems for the proposed buildings. This ratio is appropriate for boilers.²

Meteorological Data

The meteorological data set consisted of five consecutive years of meteorological data: surface data collected at LaGuardia Airport (2007–2011) and concurrent upper air data collected at Brookhaven, New York. The meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevation over the five-year period. These data were processed using the USEPA AERMET program to develop data in a format that can be readily processed by the AERMOD model. The land uses around the site where meteorological surface data were available were classified using categories defined in digital United States Geological Survey (USGS) maps to determine surface parameters used by the AERMET program.

Background Concentrations

To estimate the maximum expected pollutant concentration at a given location (receptor), the predicted impacts must be added to a background value that accounts for existing pollutant concentrations from other sources that are not directly accounted for in the model. To develop background levels, concentrations measured over the latest available 5-year period (2007–2011) at Queens College 2, the nearest NYSDEC ambient monitoring station to the proposed project, were used to determine the annual average NO₂ concentration of 43 µg/m³. The annual background concentration was developed in accordance with the *CEQR Technical Manual* methodology.

Total 1-hour NO₂ concentrations were determined following methodologies that are accepted by the USEPA, and which are considered appropriate and conservative for this review. The methodology used to determine the compliance of total 1-hour NO₂ concentrations from the proposed sources with the 1-hour NO₂ NAAQS³ was based on adding the monitored background to modeled concentrations, as follows: hourly modeled concentrations from proposed sources were first added to the seasonal hourly background monitored concentrations; then the highest combined daily 1-hour NO₂ concentration was determined at each receptor location and the 98th percentile daily 1-hour maximum concentration for each modeled year was calculated within the AERMOD model; finally the 98th percentile concentrations were averaged over the latest five

¹ USEPA, Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard, March 1, 2011.

² MACTEC for Alaska Department of Environmental Conservation, Evaluation of Bias in AERMOD-PVMRM, June 2005 http://www.epa.gov/scram001/7thconf/aermod/pvmrm_bias_eval.pdf; San Joaquin Valley, Recommended In-stack NO₂/NO_x Ratios, http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm

³ http://www.epa.gov/ttn/scram/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf

years. These methodologies are recognized by USEPA and the City and are referenced in USEPA modeling guidance.

Receptor Placement

Discrete receptors (i.e., locations at which concentrations are calculated) were modeled along the facades of buildings nearby each source to represent operable window locations, intake vents, and otherwise accessible locations such as terraces, as well as open spaces, and the CitiField stadium. Rows of receptors were placed in the model at spaced intervals along the proposed building façades, at multiple elevations. Ground level Cartesian grid receptors were also modeled.

Emission Estimates and Stack Parameters

A site-specific heat and hot water system design is not yet available. For heating and hot water, the proposed development may use renewable energy (such as solar) or energy produced offsite (such as electricity or steam from a cogeneration plant, if proposed in the future), as well as natural gas. Other fossil fuels would not be permitted for use in heating and hot water systems. Therefore, the use of natural gas was assumed as the reasonable worst case. The annual average emission rates for the heating and hot water systems operating on natural gas, were developed using the proposed development size (square feet) by use, annual energy intensity data from the Air Quality Appendix of the *CEQR Technical Manual*, and USEPA's *Compilations of Air Pollutant Emission Factors (AP-42)*¹ emission factors (except for emission factors associated with the use of low-NO_x [<30 ppm] burners where required). The 1-hour average emission rate was calculated from the annual emission rate by assuming 100 heating days. The heat and hot water system stacks for the proposed buildings were assumed to be located at the top building tier. This stack placement, needed to avoid the potential for significant adverse impacts on air quality, would be required for the proposed development within the District and Willets West. For the District, the requirement would be implemented through E-designations that are already in place; these requirements would supersede the requirements previously set forth for the E-designations. For Willets West, the requirement would be incorporated into the development agreements and/or amended leases. As discussed in more detail in Section H, "Probable Impacts of the Proposed Project," the requirements regarding the type of fuel use, stack placement, and low-NO_x burners could be amended in the future, as more information becomes available, if it could be demonstrated that there would be no potential for adverse impacts on air quality.

Typical stack parameters for exhaust velocity, diameter, and temperature were determined based on expected heat and hot water system calculated fuel usage rates. Emission rates and stack parameters are provided in **Table 15-3**.

INDUSTRIAL SOURCE ANALYSIS

The industrial source analysis presented in the Air Quality chapter of the 2008 FGEIS did not consider uses within the District because at the time it was assumed that the entire District would be redeveloped in one phase, requiring the existing on-site businesses to relocate before any of the proposed uses became occupied. The Staged Acquisition Alternative, considered in the 2008

¹ EPA, *Compilations of Air Pollutant Emission Factors AP-42*, Fifth Edition, Volume I: Stationary Point and Area Sources, <http://www.epa.gov/ttn/chief/ap42>

Table 15-3

Emission Rates and Stack Parameters for Proposed Sites

Site / Parcel	Total Residential (gsf)	Total Commercial (gsf)	Annual Fuel Use (Mcf)	Annual NO _x Emission Rate (g/s)	1-hour NO _x Emission Rate (g/s)	Stack Diameter (m)	Average Stack Velocity (m/s)	Peak Stack Velocity (m/s)	Stack Height (m)
A1	348,359	749,275	54.25	2.89x10 ⁻²	1.05x10 ⁻¹	0.4572	3.1	11.4	70.1
A2	243,073	341,362	29.65	1.58x10 ⁻²	5.76x10 ⁻²	0.4572	1.7	6.2	69.5
A3	432,257	29,393	26.62	1.42x10 ⁻²	5.17x10 ⁻²	0.3048	3.4	12.5	69.5
A4	440,585	111,719	30.82	1.64x10 ⁻²	5.99x10 ⁻²	0.4572	1.8	6.5	69.5
A5	396,175	142,571	29.62	1.58x10 ⁻²	5.75x10 ⁻²	0.4572	1.7	6.2	67.4
A6	180,397	318,991	24.97	1.33x10 ⁻²	4.85x10 ⁻²	0.3048	3.2	11.8	67.4
A7	312,337	107,693	23.14	1.23x10 ⁻²	4.49x10 ⁻²	0.3048	3.0	10.9	37.5
A8	401,569	136,910	29.68	1.58x10 ⁻²	5.76x10 ⁻²	0.4572	1.7	6.2	69.5
A9	540,875	129,826	37.51	2.00x10 ⁻²	7.28x10 ⁻²	0.4572	2.2	7.9	67.4
A10	352,323	45,331	22.66	1.21x10 ⁻²	4.40x10 ⁻²	0.3048	2.9	10.7	67.4
A11	343,742	112,424	25.19	1.34x10 ⁻²	4.89x10 ⁻²	0.3048	3.3	11.9	69.5
A12	427,789	0	25.03	1.33x10 ⁻²	4.86x10 ⁻²	0.3048	3.2	11.8	42.1
A13	427,814	0	25.03	1.33x10 ⁻²	4.86x10 ⁻²	0.3048	3.2	11.8	42.1
A14	427,811	0	25.03	1.33x10 ⁻²	4.86x10 ⁻²	0.3048	3.2	11.8	42.1
A15	442,524	0	25.89	1.38x10 ⁻²	5.03x10 ⁻²	0.3048	3.3	12.2	36.0
A17	378,741	0	22.16	1.18x10 ⁻²	4.30x10 ⁻²	0.3048	2.9	10.4	36.0
A18	368,640	0	21.57	1.15x10 ⁻²	4.19x10 ⁻²	0.3048	2.8	10.2	36.0
A19	0	400,000	18.08	9.62x10 ⁻³	3.51x10 ⁻²	0.3048	2.3	8.5	25.3
Willeys West	0	1,430,000	64.64	3.44x10 ⁻²	1.26x10 ⁻¹	0.6096	2.1	7.6	34.7
Lot B	0	464,500	21.00	1.12x10 ⁻²	4.08x10 ⁻²	0.3048	2.7	9.9	67.4

Notes:

Parcels A1 through A19 are developments proposed within the Special Willeys Point District.

The uses modeled as residential include residential and hotel uses. The uses modeled as commercial include retail, office, community facility, school, and convention center.

Parcel A16 is not included as it would be developed with open space.

The exhaust temperature modeled for all proposed sites is 300 °F.

Natural gas and low-NO_x burners would be used on all of the proposed development sites.

FGEIS, and the Updated Plan, analyzed in Technical Memorandum #4, considered development in phases and assessed the potential for emissions from existing uses in the District to affect development within 400 feet that was proposed to be built early on. However, the boundaries of the early and later phases of development currently proposed are different from those analyzed previously. Therefore, the analysis was conducted to account for the changes to the boundary of the phasing, as well as any potential changes in the operations and emissions from the existing business.

In addition, a NYSDEC permit search and a search of USEPA's Envirofacts database¹ was performed to obtain information about manufacturing or industrial emissions for larger sources, such as asphalt plants, within 1,000 feet of the proposed project. No new or substantially changed sources of emissions were identified, and no additional analysis was warranted.

Information regarding the release of air contaminants from permitted facilities within and beyond the study area was obtained from DEP's Bureau of Environmental Compliance (BEC). The only uses with a potential to affect the proposed project were identified to be existing uses in the area proposed for development in Phase 2, within 400 feet of the District area proposed for development in Phase 1A and Phase 1B.

¹ http://oaspub.epa.gov/enviro/ef_home2.air

After compiling the information on facilities with manufacturing or process operations in the study area, maximum potential pollutant concentrations from different sources, at various distances from the site, are estimated based on the screening database in the *CEQR Technical Manual*. The database provides factors for estimating maximum concentrations based on emission levels at the source, which were derived from generic AERMOD dispersion modeling for the New York City area. Impact distances selected for each source are the minimum distances between the Phase 1A/Phase 1B boundary and the source site. Predicted worst-case impacts on the proposed project were compared with the short-term guideline concentrations (SGCs) and annual guideline concentrations (AGCs) in NYSDEC's DAR-1 AGC/SGC tables. These guidelines represent levels that are considered safe for inhalation exposure by the public. Predicted concentrations below an SGC or AGC indicate that there is no potential for significant adverse impacts on air quality. Industrial source emissions of criteria pollutants are also considered and the potential for impact is assessed by comparing the predicted pollutant levels to NAAQS.

F. EXISTING CONDITIONS

Representative criteria pollutant concentrations measured in recent years at NYSDEC air quality monitoring stations nearest to the proposed project site are presented in **Table 15-4**. The values presented are consistent with the NAAQS format. For example, the 8-hour ozone concentration shown is the 3-year average of the 4th highest daily maximum 8-hour average concentrations. The concentrations were obtained from the 2011 New York State Ambient Air Quality Report, the most recent report available. The recently monitored levels did not exceed the NAAQS. It should be noted that these values are somewhat different from the background concentrations used in the stationary source and parking facility analyses. The concentrations presented in **Table 15-4** provide a comparison of the air quality in the project area with the NAAQS, while background concentrations are obtained from several years of monitoring data, and represent a conservative estimate of the highest concentrations for future ambient conditions.

Table 15-4
Representative Monitored Ambient Air Quality Data

Pollutant	Location	Units	Averaging Period	Concentration	NAAQS
CO	Queens College 2, Queens	ppm	8-hour	1.4	9
			1-hour	1.9	35
SO ₂	Queens College 2, Queens ¹	µg/m ³	3-hour	78	1,300
			1-hour	79	196
PM ₁₀	Queens College 2, Queens	µg/m ³	24-hour	40	150
PM _{2.5}	P.S. 219, Queens	µg/m ³	Annual	9.9	15 ³
			24-hour	26	35
NO ₂	Queens College 2, Queens ²	µg/m ³	Annual	41	100
			1-hour	126	188
Lead	J.H.S. 126, Brooklyn	µg/m ³	3-month	0.012	0.15
Ozone	Queens College 2, Queens	ppm	8-hour	0.075	0.075
Notes: ⁽¹⁾ The 1-hour value is based on a three-year average (2009-2011) of the 99th percentile of daily maximum 1-hour average concentrations. USEPA replaced the 24-hr and the annual standards with the 1-hour standard. ⁽²⁾ The 1-hour value is based on a three-year average (2009-2011) of the 98th percentile of daily maximum 1-hour average concentrations. ⁽³⁾ The NAAQS shown was that in effect at the time when the monitored data were collected. USEPA has lowered the primary standard to 12 µg/m ³ , effective March 2013. Source: NYSDEC, New York State Ambient Air Quality Report (2011).					

G. THE FUTURE WITHOUT THE PROPOSED PROJECT

MOBILE SOURCES

CARBON MONOXIDE

CO concentrations without the proposed project (No Action) were determined for the 2018 analysis year for Phase 1A, as well as for the 2032 analysis year for Phase 2, using the methodology previously described. **Table 15-5** shows future maximum predicted 8-hour average CO concentrations at the analyzed intersections in 2018 without the proposed project during the peak period when those concentrations were predicted to be greatest. The values shown are the highest predicted concentrations for the receptor locations for both of the time periods analyzed.

Table 15-5
Phase 1A (2018)
8-Hour Average CO Concentrations
Without the Proposed Project

Analysis Site	Location	Time Period	8-Hour Concentration (ppm)
2	Boat Basin Road and Shea Road	Weekend non-game day	2.1
2	Boat Basin Road and Shea Road	Weekend game day	2.3
Note: 8-hour standard (NAAQS) is 9 ppm.			

As shown in **Table 15-5** and **Table 15-6**, the CO concentrations without the proposed project are predicted to be well below the 8-hour CO standard of 9 ppm, in both the Phase 1A and Phase 2 analysis years.

Table 15-6
Phase 2 (2032)
8-Hour Average CO Concentrations
Without the Proposed Project

Analysis Site	Location	Time Period	8-Hour Concentration (ppm)
1	34th Avenue and 126th Street	Weekend non-game day	2.1
1	34th Avenue and 126th Street	Weekend game day	2.2
Note: 8-hour standard (NAAQS) is 9 ppm.			

PARTICULATE MATTER

PM concentrations without the proposed project were determined for 2018, the analysis year for Phase 1A, and for 2032, the analysis year for Phase 2 using the methodology previously described. **Table 15-7** and **Table 15-8** present the future maximum predicted 24-hour concentrations at the analyzed intersections for the Phase 1A analysis year (2018) and Phase 2

Table 15-7
Phase 1A (2018)
24-Hour PM₁₀ Concentrations Without the Proposed Project

Analysis Site	Location	Time Period	Concentration (µg/m ³)
2	Boat Basin Road and Shea Road	Weekend non-game day	57.8
2	Boat Basin Road and Shea Road	Weekend game day	65.9
Note: NAAQS—24-hour average 150 µg/m ³ . The annual average standard was revoked in 2006.			

Table 15-8
Phase 2 (2032)
24-Hour PM₁₀ Concentrations Without the Proposed Project

Analysis Site	Location	Time Period	Concentration (µg/m ³)
1	34th Avenue and 126th Street	Weekend non-game day	62.2
1	34th Avenue and 126th Street	Weekend game day	69.3
Note: NAAQS—24-hour average 150 µg/m ³ . The annual average standard was revoked in 2006.			

analysis year (2032), respectively without the proposed project (No Action). The values shown are the highest predicted concentrations for the receptor locations. As shown in the tables, the 24-hour PM₁₀ concentrations would be below the NAAQS without the proposed project in both the Phase 1A and Phase 2 analysis years.

STATIONARY SOURCES

Without the proposed project, there would likely much less or possibly no development at the proposed sites. Stationary source emissions from existing sources would decrease with the phased implementation of State and local laws to restrict the use of Nos. 6 and 4 fuel oil for heating, and lower the sulfur content of No. 2 fuel oil. With or without the proposed project, vehicle technology would continue to improve, and emission standards for new vehicles would become more stringent. With the improvements in technology and the implementation of New York State and New York City regulations that would require the use of cleaner fuels for heat and hot water, an overall improvement in air quality is anticipated. The auto and manufacturing businesses and associated emissions from those uses within the District would likely remain, as would the contamination in the District.

H. PROBABLE IMPACTS OF THE PROPOSED PROJECT

As discussed, the proposed project would result in increased mobile source emissions in the vicinity of the project sites, emissions at the proposed parking facilities, as well as emissions from fuel combustion in heating and hot water systems. In Phase 1A and Phase 1B, the proposed project would also result in the development of recreational, residential, community facility, and other sensitive uses within 400 feet of existing stationary source noncriteria pollutant emissions sources (auto and manufacturing businesses). The following sections describe the results of the studies performed to analyze the potential air quality impacts from these sources.

MOBILE SOURCES ANALYSIS

PHASE 1A (2018)

Carbon Monoxide

Using the methodology previously described, CO concentrations with the proposed project (With Action) and without the proposed project (No Action) were determined for Phase 1A in 2018, at the signalized traffic intersection that would have the greatest potential for significant adverse impact on air quality. **Table 15-9** shows the future maximum predicted 8-hour average CO concentration with and without the proposed project at the intersection analyzed. (No 1-hour values are shown, since no exceedances of the NAAQS would occur and the *de minimis* criteria are only applicable to 8-hour concentrations; therefore, the 8-hour values are the most critical for impact assessment.) The values shown represent the highest predicted concentrations for any of the receptors analyzed for the peak periods for which the greatest concentrations and/or concentration increments were predicted. The results indicate that the proposed project would not result in any violations of the 8-hour CO standard. In addition, the incremental increases in 8-hour average CO concentrations are very small, and consequently would not result in a violation of the CEQR *de minimis* CO criteria. (The *de minimis* criteria are described above in Section D: “Air Quality Regulations, Standards, and Benchmarks.”)

Table 15-9
Phase 1A (2018) 8-Hour Average CO Concentrations

Analysis Site	Location	Time Period	8-Hour Concentration (ppm)			
			No Action	With Action	Increment	De Minimis
2	Boat Basin Road and Shea Road	Weekend non-game day	2.1	2.3	0.2	3.5
2	Boat Basin Road and Shea Road	Weekend game day	2.3	2.4	0.1	3.4
Notes: 8-hour standard (NAAQS) is 9 ppm.						

PARTICULATE MATTER

PM concentrations with the proposed project (With Action) were determined for the 2018 Phase 1A analysis year using the methodology previously described. **Table 15-10** shows the 2018 maximum predicted 24-hour average PM₁₀ concentrations without and with the proposed project (No Action and With Action).

Table 15-10
Phase 1A (2018) 24-Hour Average PM₁₀ Concentrations

Analysis Site	Location	Time Period	24-Hour Concentration (µg/m ³) ¹	
			No Action	With Action
2	Boat Basin Road and Shea Road	Weekend non-game day	57.8	65.2
2	Boat Basin Road and Shea Road	Weekend game day	65.9	66.4
Note: ¹ NAAQS—24-hour average 150 µg/m ³ .				

The values shown are the highest predicted concentrations for any of the receptors analyzed. The results indicate that the proposed project in Phase 1A would not result in any violations of the PM₁₀ standard at any of the receptor locations analyzed.

Future maximum predicted 24-hour and annual average PM_{2.5} concentrations were determined so that they could be compared with the interim guidance criteria for PM_{2.5}. Consistent with current CEQR guidance, PM_{2.5} concentrations are presented as an incremental change in concentrations with and without the proposed project (With Action and No Action). The maximum predicted localized 24-hour average and neighborhood-scale annual average PM_{2.5} concentration increments are presented in **Tables 15-11** and **15-12**, respectively. The results show that the daily (24-hour) PM_{2.5} and annual increments are predicted to be well below the ~~interim guidance~~ *de minimis* criteria and, therefore, the proposed project would not result in significant PM_{2.5} impacts at the analyzed receptor locations.

Table 15-11

Phase 1A (2018) 24-Hour Average PM_{2.5} Concentration Increments in µg/m³

Analysis Site	Location	Time Period	Increment	<i>De Minimis</i>
2	Boat Basin Road and Shea Road	Weekend non-game day	2.31	<u>4.5</u>
2	Boat Basin Road and Shea Road	Weekend game day	0.93	<u>4.5</u>
Note: <u>The PM_{2.5} <i>de minimis</i> criteria superseded the PM_{2.5} interim guidance criteria on June 5, 2013. The 24-hour average interim guidance criteria for PM_{2.5} were as follows—24-hour average, > 2 µg/m³ (5 µg/m³ not-to-exceed value), based on the magnitude, frequency duration, location, and size of the area of the predicted concentrations. The PM_{2.5} increments shown are less than the <i>de minimis</i> value. These increments were not considered significant when they were compared with the interim guidance criteria in the DSEIS, and are also not significant when compared to the <i>de minimis</i> value.</u>				

Table 15-12

Phase 1A (2018) Neighborhood Scale PM_{2.5} Concentration Increments in µg/m³

Analysis Site	Location	Increment
2	Boat Basin Road and Shea Road	0.03
Note: <u>PM_{2.5} interim guidance <i>de minimis</i> criteria—annual average (neighborhood scale) greater than 0.1 µg/m³. The <i>de minimis</i> criteria superseded the interim guidance criteria that were used for impact assessment in the DSEIS. For annual increments, the <i>de minimis</i> criteria are the same as the superseded interim guidance criteria.</u>		

The maximum 24-hour average incremental PM_{2.5} concentration from mobile source analysis was predicted to be 2.31 µg/m³ (shown in **Table 15-11**) at Site 2, for Phase 1A, for the non-game analysis period. On game days, the 24-hour average incremental PM_{2.5} was predicted to be below 2.0 0.93 µg/m³. These concentration increments would be less than the *de minimis* criterion of 4.5 µg/m³. Throughout the five analysis years, 24-hour average PM_{2.5} concentration increments above 2.0 µg/m³ were predicted to occur only once. Based on the magnitude, extent, and frequency of 24-hour average PM_{2.5} concentrations above 2.0 µg/m³, the proposed project would not result in significant PM_{2.5} impacts at the analyzed receptor location. Furthermore, the maximum predicted 24-hour average concentration is 5.18 µg/m³, which when added to the PM_{2.5} background concentration of 26 µg/m³ would be less than the corresponding NAAQS of 35 µg/m³.

Willets Point Development

Therefore, the predicted PM_{2.5} increments from mobile sources associated with Phase 1A of the proposed project would not result in a significant adverse air quality impact.

PHASE 2 (2032)

CO concentrations with the proposed project were determined for Phase 2, in the 2032 analysis year, at the traffic intersection selected using the methodology previously described. **Table 15-13** shows the future maximum predicted 8-hour average CO concentration with and without the proposed project (With Action and No Action) at the intersection studied. (No 1-hour values are shown, since no exceedances of the NAAQS would occur and the *de minimis* criteria are only applicable to 8-hour concentrations; therefore, the 8-hour values are the most critical for impact assessment.) The values shown represent the highest predicted concentrations for any of the receptors analyzed for the peak periods for which the greatest concentrations and/or concentration increments were predicted. The results indicate that the proposed project would not result in any violations of the 8-hour CO standard. In addition, the incremental increases in 8-hour average CO concentrations are very small, and consequently would not result in a violation of the CEQR *de minimis* CO criteria. (The *de minimis* criteria are described above in Section D: “Air Quality Regulations, Standards, and Benchmarks.”)

Table 15-13
Phase 2 (2032)

8-Hour Average CO Concentrations

Analysis Site	Location	Time Period	8-Hour Concentration (ppm)			
			No Action	With Action	Increment	<i>De Minimis</i>
1	34th Avenue and 126th Street	Weekend non-game day	2.1	2.6	0.5	3.5
1	34th Avenue and 126th Street	Weekend game day	2.2	2.6	0.4	3.4
Note: 8-hour standard (NAAQS) is 9 ppm.						

PARTICULATE MATTER

PM concentrations with the proposed project (With Action) were determined for Phase 2, in the 2032 analysis year. The non-game day PM_{2.5} concentration increments were determined using the refined methodology—previously described. **Table 15-14** shows the future maximum predicted 24-hour average PM₁₀ concentrations without and with the proposed project (No Action and With Action).

Table 15-14
Phase 2 (2032)

24-Hour Average PM₁₀ Concentrations

Analysis Site	Location	Time Period	24-Hour Concentration (µg/m ³) ¹	
			No Action	With Action
1	34th Avenue and 126th Street	Weekend non-game day	62.2	70.6
1	34th Avenue and 126th Street	Weekend game day	69.3	70.1
Note: ¹ NAAQS—24-hour average 150 µg/m ³ .				

The values shown are the highest predicted concentrations for any of the receptors analyzed. The results indicate that the proposed project would not result in any violations of the PM₁₀ standard at any of the receptor locations analyzed.

Future maximum predicted 24-hour and annual average PM_{2.5} concentrations were determined so that they could be compared with the ~~interim guidance~~ *de minimis* criteria for PM_{2.5}. Consistent with current CEQR guidance, PM_{2.5} concentrations are presented as an incremental change in concentrations with and without the proposed project. The maximum predicted localized 24-hour average and neighborhood-scale annual average PM_{2.5} concentration increments are presented in **Tables 15-15** and **15-16**, respectively. The results show that the ~~maximum daily (24-hour) PM_{2.5} increments are predicted to be below~~ would not exceed the applicable *de minimis* criteria, ~~interim guidance criterion of 5 µg/m³, and the maximum annual average PM_{2.5} increments are not predicted to exceed the applicable interim guidance criterion of 0.1 µg/m³.~~

Table 15-15
Phase 2 (2032)

24-Hour Average PM_{2.5} Concentration Increments in µg/m³

Analysis Site	Location	Time Period	Increment	<i>De Minimis</i>
1	34th Avenue and 126th Street	Weekend non-game day	3.50 <u>1.28</u>	<u>4.5</u>
1	34th Avenue and 126th Street	Weekend game day	1.70	<u>4.5</u>

Note:
The CEQR PM_{2.5} *de minimis* criteria superseded the PM_{2.5} interim guidance criteria on June 5, 2013. The 24-hour average interim guidance criteria for PM_{2.5} were as follows —24-hour average, > 2 µg/m³ (5 µg/m³ not-to-exceed value), based on the magnitude, frequency duration, location, and size of the area of the predicted concentrations. The PM_{2.5} increments shown are less than the *de minimis* value. These increments were not considered significant when they were compared with the interim guidance criteria in the DSEIS, and are also not significant when compared to the *de minimis* value.

Table 15-16
Phase 2 (2032)

Neighborhood Scale PM_{2.5} Concentration Increments in µg/m³

Analysis Site	Location	Increment
1	126th Street and Roosevelt Avenue	0.10 <u>0.08</u>

Note:
PM_{2.5} interim guidance *de minimis* criteria—annual average (neighborhood scale) greater than 0.1 µg/m³. The *de minimis* criteria superseded the interim guidance criteria that were used for impact assessment in the DSEIS. For annual increments, the *de minimis* criteria are the same as the superseded interim guidance criteria.

The maximum 24-hour average incremental PM_{2.5} concentration from mobile source analysis at Site 1 was predicted to be ~~3.50~~ 1.28 µg/m³ (shown in **Table 15-15**), in Phase 2, for the non-game analysis period, based on the refined modeling analysis. On game days, the 24-hour average incremental PM_{2.5} was predicted to be ~~below 2.0~~ 1.70 µg/m³. These increments would not exceed the *de minimis* criterion of 4.5 µg/m³. The maximum neighborhood scale annual increment of 0.08 µg/m³ would not exceed the *de minimis* criterion of 0.1 µg/m³.

Therefore, the predicted PM_{2.5} increments from mobile sources associated with Phase 2 of the proposed project would not result in a significant adverse air quality impact.

~~Assuming non game day conditions throughout the five analysis years, 24 hour average PM_{2.5} concentration increments above 2.0 µg/m³ were predicted to occur for at most 10 times in a year, and at an average of 7.4 times per year. Over the five year period, there were only three occurrences per year of concentration increments above 3.0 µg/m³, occurring at most once per year, and at an average of 0.6 times per year. The PM_{2.5} emission factors calculated by the MOVES model vary by speed, with higher levels of engine emissions at low travel speeds. As the MOVES model was primarily created and to date used for modeling inventories, there is limited guidance on the use of the model for project level microscale analysis in urban areas. There are a number of refinements that could provide more accurate estimations of emissions on an hour by hour basis using project specific traffic data instead of the more conservative assumptions used in the analysis. Additional air quality studies will be undertaken between the DSEIS and FSEIS to further refine the mobile source analysis for the Phase 2 analysis year, in consultation with DEP. A sensitivity analysis was performed to assess the potential reductions of predicted PM_{2.5} emissions that would likely occur as a result of the refinements that would be performed between DSEIS and FSEIS. Based on a potential reduction of 12 to 15 percent, developed using the sensitivity analysis, it is anticipated that the maximum frequency of PM_{2.5} concentrations above 2 µg/m³ would be reduced to at most 7 times in any year. In consideration of these factors including effects of vehicle idling and average vehicle speeds, the frequency of occurrence is not considered to be significant. Furthermore, the maximum predicted 24 hour average concentration is 6.73 µg/m³, which when added to the PM_{2.5} background concentration of 26 µg/m³ would be less than the corresponding NAAQS of 35 µg/m³.~~

PARKING FACILITIES

WILLETS WEST PARKING

Using the methodology set forth in the *CEQR Technical Manual*, the CO concentrations from the proposed Willets West parking facility were predicted. In 2018, the completion of Phase 1A, when Willets West would be constructed, the maximum CO concentrations from the parking facility, including ambient background levels and contributions from on-street traffic at sensitive receptors closest to the exhaust would be 8.4 ppm for the 1-hour period, and 5.1 ppm for the 8-hour period. These maximum predicted CO levels would be in compliance with the applicable CO federal ambient air quality standards. The maximum CO concentrations for the 1-hour and 8-hour averaging period for the Willets West parking without the background and on-street contributions (i.e., the concentration increments) would be 5.0 ppm and 3.1 ppm, respectively. The 8-hour average change in CO concentration of 3.1 ppm would be less than the *de minimis* value of 3.5 ppm¹. Since the proposed Willets West parking facility under the worst-case assumptions would not exceed the NAAQS or the *de minimis criteria*, and would therefore not result in significant air quality impacts, it is concluded that other parking facilities that would be constructed outside of the Special Willets Point District, with a smaller capacity, would also not result in significant air quality impacts.

CONVENTION CENTER PARKING

Using the methodology set forth in the *CEQR Technical Manual*, the CO concentrations from a parking garage at the proposed convention center were predicted. The maximum CO concentrations in 2032, the analysis year for Phase 2, in which the convention center would be

¹ The baseline concentration used to compute the *de minimis* value was assumed to be the background CO concentration.

built, including ambient background levels and contributions from on-street traffic at sensitive receptors closest to the exhaust would be 4.9 ppm for the 1-hour period, and 2.9 ppm for the 8-hour period. These maximum predicted CO levels would be in compliance with the applicable CO federal ambient air quality standards. The maximum CO concentrations for the 1-hour and 8-hour averaging period for the convention center parking garage without the background and on-street contributions would be 1.3 ppm and 0.7 ppm, respectively. The 8-hour average change in CO concentration of 0.7 ppm would be less than the *de minimis* value of 3.5 ppm. Since the proposed convention center garage under the worst-case assumptions would not exceed the NAAQS or the *de minimis criteria*, and would therefore not result in significant air quality impacts, it is concluded that other garages that would be constructed within the District, with a smaller capacity would also not result in significant air quality impacts.

STATIONARY SOURCES

HEATING AND HOT WATER SYSTEMS

As described previously, a refined dispersion modeling analysis of heating and hot water systems for the proposed project was performed using the available information regarding the proposed project buildings. It was determined that all proposed buildings would be restricted to using natural gas as the only fossil fuel for heating and hot water systems; fuel oil would be prohibited. To account for a range of possible development sizes and stack locations, very conservative assumptions were made regarding the gross square foot area that would be served by a single heating and hot water system exhaust and stack locations analyzed. Based on the results of the conservative heating and hot water systems refined modeling analysis, a number of measures would be needed to avoid the potential for significant adverse impact on air quality. For the District, these requirements would be implemented through the E-designations that are already in place; these requirements would supersede the requirements previously set forth for the E-designations. For Willets West, the requirements would be incorporated into the development agreements and/or amended leases. The requirements specified in the E-designations or development agreements and/or amended leases would be as follows:

1. Natural gas shall be the only fossil fuel used for heating and hot water equipment on all of the proposed project sites.
2. Any fossil-fuel fired heating and hot water system exhaust stack for the proposed development shall be located at the highest tier of the building that it would serve.
3. Any heating and hot water exhaust stack on Parcel A1 shall be at least 12 feet above the top habitable floor roof. Any fossil-fuel fired heating and hot water system stack exhaust height on Parcels A2, A3, A4, A8, A11, and Willets West shall be at least 10 feet above the top habitable floor roof.
4. Any new development must use low-NO_x (<30 ppm) burners.
5. In lieu of the requirements described above, an analysis may be performed to demonstrate that national and local ambient air quality standards and thresholds would be met using a different fuel type, stack location, stack height, and/or without low-NO_x burners. Such an analysis could consider information regarding emissions from the heating and hot water systems, emission controls, and projected heat and hot water demand specific to the proposed development. It is expected that such site specific information would become available as the mechanical design of the proposed sites progresses.

The cumulative heating and hot water analysis conducted considered the anticipated development on Lot B. The analysis showed that with the use of natural gas, low-NO_x burners and exhaust stack placement at the top building tier, there would be no potential for significant

adverse impact with the development on Lot B. As Lot B would require additional approvals that are not a part of the proposed project, any measures needed to preclude the potential for a significant adverse impact on air quality could be reevaluated and implemented in the future.

With the above requirements in place, the calculated concentrations for NO₂ are presented in **Table 15-17**, along with the relevant background concentrations, the total potential concentrations, and the applicable ambient standards. The annual average NO₂ impacts from the proposed development were conservatively calculated assuming that all of the NO emitted by the heat and hot water systems of the proposed development was fully transformed to NO₂ (100 percent conversion). The highest annual average concentration at any receptor over the 5-year modeling period is reported in **Table 15-17**. For the analysis of 1-hour impacts, the PVMRM module was applied and seasonal hourly background NO₂ data were added within the model. The highest combined daily 1-hour NO₂ concentration was determined at each receptor location for each day. The 8th highest (98th percentile) of the daily 1-hour maximum concentration for each modeled year was then calculated within the model. The 98th percentile concentrations were averaged over five years at each receptor, in accordance with USEPA guidance for addressing the NO₂ 1-hour standard and the maximum 5-year average value at any receptor is reported in **Table 15-17**.

Table 15-17
Potential Future NO₂ Concentrations
From the Heat and Hot Water Systems (µg/m³)

Pollutant	Averaging Period	Project Increment	Background Concentration	Total Concentration	NAAQS
NO ₂	Annual ¹	4.42	43	47	100
	1-hour ²	—	—	182.9	188
Notes: ¹ The annual modeled NO ₂ concentration was conservatively reported to be equal to the NO _x concentration. The increment presented is the highest concentration at any receptor over the five years modeled (2007–2011). ² The 1-Hour NO ₂ background concentration is not presented in the table since the AERMOD model determines the total 98th percentile 1-Hour NO ₂ concentration at each receptor. Total hourly NO ₂ concentrations throughout the modeling period were determined by adding the hourly modeled concentrations to the seasonal hourly ambient NO ₂ concentrations for each corresponding hour. The total 1-hour concentration reported is the five-year average of the annual 98th percentile of the highest combined daily 1-hour NO ₂ concentrations, in accordance with USEPA guidance.					

The maximum potential increase in concentrations associated with the proposed development's heat and hot water systems, when added to background concentrations, would be less than the NAAQS. Therefore, the proposed development's heat and hot water systems would not have the potential for significant adverse impacts on air quality.

With the implementation of the above discussed requirements, there would be no potential for significant adverse impacts on air quality from the proposed project.

INDUSTRIAL SOURCE ANALYSIS

A review of land uses and field survey information was conducted to identify auto, manufacturing and industrial uses within 400 feet of the proposed project, considering the existing uses within the District that would potentially remain until construction of the development proposed under Phase 2. Information was requested from DEP on permitted uses within and beyond the project study area. No existing uses of concern were identified outside of the District. Seven businesses having a DEP air emissions permit were identified within 400 feet

of the uses proposed for development in Phase 1A and Phase 1B. The emission rates specified in the permits and the minimum distance between each of the businesses and the proposed Phase 1A/Phase 1B development were used in the screening analysis.

Predicted worst-case short-term (1-hour average) and long-term (annual) levels of non-criteria pollutants resulting from existing uses that would potentially remain until construction of Phase 2 are shown in **Table 15-18**, along with the applicable guideline concentrations. The results of the screening analysis indicate that the non-criteria pollutant levels at the proposed development that would occur in Phase 1A and Phase 1B would be well below the NYSDEC guideline concentrations.

Table 15-18
Pollutant Concentration Resulting from Businesses with BEC Permits

Potential Contaminants	CAS No.	Estimated Emissions (g/s)	Predicted Short-term Concentrations ($\mu\text{g}/\text{m}^3$)	SGC ¹ ($\mu\text{g}/\text{m}^3$)	Predicted Long-term Concentrations ($\mu\text{g}/\text{m}^3$)	AGC ¹ ($\mu\text{g}/\text{m}^3$)
Butyl Acetate	00123-86-4	0.277	688	95,000	0.79	17,000
Toluene	00108-88-3	0.265	657	37,000	0.76	5,000
Solvents ²	NY998-00-0	0.926	23,288	98,000	148	7,000
Notes: 1) NYSDEC DAR-1 (Air Guide-1) AGC/SGC Tables (October 2010) AGC - Annual Guideline Concentrations SGC - Short-term Guideline Concentrations 2) As "Solvents" do not have an SGC or AGC listed in DAR-1 tables, the SGC and AGC for Isopropyl Alcohol (CAS# 00067-63-0), a common solvent, were used.						

PM₁₀ concentrations resulting from particulate emissions from the identified businesses were also analyzed, using the *CEQR Technical Manual* screening approach. The conservatively predicted maximum PM₁₀ 24-hour average concentration of 97 $\mu\text{g}/\text{m}^3$, when added to the monitored background of 50 $\mu\text{g}/\text{m}^3$ is 147 $\mu\text{g}/\text{m}^3$, which is below the 24-hour NAAQS of 150 $\mu\text{g}/\text{m}^3$. Accordingly, based on the data available on the existing auto, manufacturing, and industrial uses, there would be no potential for significant adverse air quality impacts on the proposed project.

Other Potential Sources

As discussed in the 2008 FGEIS, the Special District regulations allow the development of a wastewater reclamation facility, a cogeneration facility and an electrical utility substation within the District, provided they would primarily serve the District. Such facilities are not currently proposed as part of Phases 1A and 1B but may be included as part of Phase 2. Any such facilities, if proposed or needed at a future time, would require further study and additional approvals. If proposed as part of Phase 2, these uses would be subject to a separate environmental and public review process. The water reclamation facility would require approval by the Board of Standards and Appeals (BSA). The cogeneration facility would require approval by the BSA, as well as air permit approvals from DEP and NYSDEC. The substation would require authorization by the City Planning Commission (CPC). The Special District text requires that reviewing agencies prescribe appropriate conditions to minimize adverse effects on the character of the surrounding area, including emissions limits.

The wastewater reclamation facility and substation would likely have minimal air emissions and therefore would likely not result in any additional air quality impacts. The cogeneration facility may result in additional emissions; however, emissions of some pollutants may be lower due to

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stringent regulatory requirements for gas turbines and reciprocating engines used to generate power, and the availability of advanced air pollution control systems which are effective in minimizing and reducing emissions. Therefore, future environmental review would ensure that any facilities allowed by the Special District regulations incorporate measures to avoid the potential for significant adverse impacts on air quality. *

A. INTRODUCTION

There is general consensus in the scientific community that the global climate is changing as a result of increased concentrations of greenhouse gases (GHGs) in the atmosphere. GHGs are those gaseous constituents of the atmosphere, from both natural and anthropogenic (i.e., resulting from the influence of human beings) emission sources, that absorb infrared radiation (heat) emitted from the earth's surface, the atmosphere, and clouds. This property causes the general warming of the earth's atmosphere, or the "greenhouse effect."

As discussed in the 2012 *CEQR Technical Manual*, climate change could have wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be felt at the local level. Through PlaNYC, the City has established sustainability initiatives and goals for both greatly reducing GHG emissions and adapting to climate change in the City. The goal to reduce citywide GHG emissions 30 percent below 2005 levels by 2030 was codified by Local Law 22 of 2008, known as the New York City Climate Protection Act (the "GHG reduction goal"). See §24-803 of the Administrative Code of the City of New York. Per the 2012 *CEQR Technical Manual*, the City's citywide GHG reduction goal is currently the most appropriate standard by which to analyze a project under CEQR. The City is also engaged in several initiatives related to assessing potential local impacts of global climate change and developing strategies to make existing and proposed infrastructure and development more resilient to potential effects of climate change.

This chapter discusses the projected GHG emissions from the proposed project and the reasonable worst-case development scenario (RWCDS). To achieve the Leadership in Energy and Environmental Design (LEED®) rating by the United States Green Building Council (USGBC), as described in Chapter 13, "Energy" and in more detail in this chapter, a range of sustainable design and energy efficiency measures that would reduce GHG emissions would be considered. Those measures are discussed in this chapter in the context of the GHG reduction goal. Planned improvements, which would increase the resilience of the project to current weather conditions and to ~~some of the~~ potential effects of climate change through the 2050s, are described. Also described are additional strategies for protecting the project infrastructure, which would be implemented if needed based on future regulations and guidance, as well as future efforts that the City may undertake on a larger scale to make coastal areas more resilient to longer-term increases in sea levels, for which projections have not yet been updated.

PRINCIPAL CONCLUSIONS

As discussed in the following sections, the building energy use and vehicle use associated with the full build-out of the proposed project would result in approximately 150,000 metric tons of carbon dioxide equivalent (CO₂e) emissions per year. The RWCDS, which includes the potential future development on Lot B, would result in approximately 161,000 metric tons of CO₂e emissions from building energy consumption and vehicle use. The overall RWCDS emissions

are lower than those presented in Technical Memorandum #4 (TM4), despite the increase in the floor area proposed for development, due to the expected improvement in vehicle efficiency from 2022, the final build year analyzed in TM4; and 2032, the anticipated year of proposed project completion.

The proximity of the proposed development to public transportation, its mixed-use nature, and dense design are all factors that contribute to the energy efficiency. To meet the requirements of LEED® certification, the energy cost reduction requirements of Local Law 86 of 2005, and to comply with the regulations of the Special Willets Point District, specific measures would be incorporated into the proposed project design, which would decrease the potential GHG emissions and further the GHG reduction goal.

As additional detailed local climate change projections become available and are adopted into the City's infrastructure design criteria, such criteria would be incorporated into the development program. In addition, an engineering study would be prepared prior to commencement of construction that would assess the feasibility of implementing strategies to improve resilience to climate change impacts into the design of the development program, in light of the most current climate change projections. Based on that engineering study, practicable strategies to improve resilience to climate change would be implemented.

B. SUMMARY OF FINDINGS, 2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS did not include an analysis of GHG emissions, as the analysis was not required under CEQR at the time. The 2008 FGEIS did, however, address the potential effects of climate change, in Chapter 14, "Water and Sewer Infrastructure," as well as in Chapter 29, "Response to Comments on the DGEIS." Accounting for the 2010 revisions of the *CEQR Technical Manual*, which included guidance on addressing GHG emissions, TM4 included Appendix E, which disclosed the GHG emissions from the full build-out of the Updated Plan, No Convention Center Scenario, and the anticipated development on Lots B and D. The TM4 Appendix also discussed measures to reduce GHG emissions and measures to make the project more resilient to the potential effects of sea level rise.

C. GHG EMISSIONS

POLICY, REGULATIONS, STANDARDS, AND BENCHMARKS FOR REDUCING GHG EMISSIONS

Countries around the world have undertaken efforts to reduce emissions by implementing both global and local measures addressing energy consumption and production, land use, and other sectors. Although the U.S. has not ratified the international agreements which set emissions targets for GHGs, in a step toward the development of national climate change regulation, the U.S. has committed to reducing emissions to 17 percent lower than 2005 levels by 2020 and to 83 percent lower than 2005 levels by 2050 (pending legislation) via the Copenhagen Accord.¹ Without legislation focused on this goal, the U.S. Environmental Protection Agency (USEPA) is required to regulate GHGs under the Clean Air Act (CAA), and has begun preparing regulations addressing newly manufactured vehicles and permitted large stationary sources. In addition, the

¹ Todd Stern, U.S. Special Envoy for Climate Change, letter to Mr. Yvo de Boer, UNFCCC, January 28, 2010.

American Recovery and Reinvestment Act of 2009 (ARRA, “economic stimulus package”) funded actions and research that can lead to reduced GHG emissions, and the Energy Independence and Security Act of 2007 includes provisions for increasing the production of clean renewable fuels, increasing the efficiency of products, buildings, and vehicles, and for promoting research on GHG capture and storage options.

U.S. Department of Transportation (USDOT) and USEPA have also established GHG emission standards and more stringent combined corporate average fuel economy (CAFE) standards for vehicles. These regulations will all serve to reduce vehicular GHG emissions over time.

There are also regional, state, and local efforts to reduce GHG emissions. In 2009, Governor Paterson issued Executive Order No. 24, establishing a goal of reducing GHG emissions in New York by 80 percent, compared to 1990 levels, by 2050, and creating a Climate Action Council tasked with preparing a climate action plan outlining the policies required to attain the GHG reduction goal (that effort is currently under way¹). The 2009 New York State Energy Plan² outlines the state’s energy goals and provides strategies and recommendations for meeting those goals. The state’s goals include:

- Implementing programs to reduce electricity use by 15 percent below 2015 forecasts;
- Updating the energy code and enacting product efficiency standards;
- Reducing vehicle miles traveled by expanding alternative transportation options; and
- Implementing programs to increase the proportion of electricity generated from renewable resources to 30 percent of electricity demand by 2015.

New York State has also developed regulations to cap and reduce CO₂ emissions from power plants to meet its commitment to the Regional Greenhouse Gas Initiative (RGGI). Under the RGGI agreement, the governors of 10 Northeast and Mid-Atlantic states have committed to regulate the amount of CO₂ that power plants are allowed to emit. The regional emissions cap for power plants will be held constant through 2014, and then gradually reduced to 10 percent below the initial cap through 2018. The RGGI states and Pennsylvania have also announced plans to reduce GHG emissions from transportation, through the use of biofuel, alternative fuel, and efficient vehicles.

Many local governments worldwide, including New York City, are participating in the Cities for Climate Protection campaign and have committed to adopting policies and implementing quantifiable measures to reduce local GHG emissions, improve air quality, and enhance urban livability and sustainability. New York City’s long-term sustainability program, PlaNYC 2030, includes GHG emissions reduction goals, specific initiatives that can result in emission reductions and initiatives targeted at adaptation to climate change impacts. For certain projects subject to CEQR, an analysis of the project’s GHG emissions and an assessment of the project’s consistency with the City’s citywide emission reduction goal are required.

In 2005, the New York City Council enacted one of the nation’s first green building laws (Local Law 86 of 2005). Local Law 86 of 2005 requires new buildings, additions, and substantial building reconstruction work in capital projects that receive city funds to be built in accordance with the rigorous standards of the Leadership in Energy and Environmental Design (LEED®) green building rating systems developed by the U.S. Green Building Council (USGBC). It also

¹ <http://www.dec.ny.gov/energy/80930.html>

² New York State, 2009 New York State Energy Plan, December 2009.

requires that most of this work, as well as larger lighting, boiler, HVAC controls, and plumbing upgrade work, be designed to reduce the use of both energy and potable water well beyond that required by the current NYC building code.

In December 2009, the New York City Council enacted four laws addressing energy efficiency in new and existing buildings, in accordance with PlaNYC. The laws require owners of existing buildings larger than 50,000 square feet to conduct energy efficiency audits every 10 years, to optimize building energy efficiency, and to “benchmark” the building energy and water consumption annually, using a USEPA online tool. By 2025, commercial buildings over 50,000 square feet will also require lighting upgrades, including the installation of sensors and controls, more efficient light fixtures, and the installation of sub-meters, so that tenants can be provided with information on their electricity consumption. The legislation also created a New York City Energy Code, which along with the New York State Energy Conservation Code (as revised in 2010), requires equipment installed during a renovation to meet energy efficiency standards.

A number of voluntary rating systems for energy efficiency and green building design have also been developed. For example, LEED[®] system is a benchmark for the design, construction, and operation of high performance green buildings that includes energy efficiency components. It is noteworthy that the proposed project would seek certification under LEED[®], as described in more detail in Chapter 13, “Energy,” and subsequent sections of this chapter.

Another voluntary rating system is USEPA’s *Energy Star*—a labeling program designed to identify and promote the construction of new energy efficient buildings, facilities, and homes and the purchase of energy efficient appliances, heating and cooling systems, office equipment, lighting, home electronics, and building envelopes.

METHODOLOGY

Although the contribution of any single project to global climate change is infinitesimal, the combined GHG emissions from all human activity are believed to have a severe adverse impact on global climate. While the increments of criteria pollutants and toxic air emissions are assessed in the context of health-based standards and local impacts, there are no established thresholds for assessing the significance of a project’s contribution to climate change. Nonetheless, prudent planning dictates that all sectors address GHG emissions by identifying GHG sources and practicable means to reduce them. Therefore, this chapter presents an estimate of the total GHG emissions that would be generated with the proposed project and the RWCDs and identifies the measures that would be implemented and measures that are under consideration to limit the emissions from the proposed project.

The analysis of GHG emissions that would be generated by the proposed project and the RWCDs is based on the methodology presented in the *CEQR Technical Manual*. Emissions of GHGs from the proposed project and the RWCDs have been quantified, including off-site emissions associated with use of electricity on-site, on-site emissions from heat and hot water systems, and emissions from vehicle use attributable to the proposed project and RWCDs. GHG emissions that would result from construction of the proposed project are discussed as well.

It should be noted that the analysis conservatively overestimates the net increase in GHG emissions, as it takes no credit for existing emissions at the project site, or emissions that would be generated if the uses that would be accommodated by the proposed project were to be developed elsewhere. For example, without the development of the District, the demand for residential space would be met elsewhere, generating similar demand for heating, hot water, electricity, and transportation, potentially without the energy efficient building design that would be implemented with the proposed

project. The analysis also does not account for the potential reduction in vehicle miles traveled (VMT) associated with the proposed retail at Willets West, which would provide opportunities for commerce closer to the surrounding community than currently available.

Carbon dioxide (CO₂) is the primary pollutant of concern from anthropogenic emission sources and is accounted for in the analysis of emissions from all development projects. GHG emissions for gases other than CO₂ are included where practicable or in cases where they comprise a substantial portion of overall emissions. The various GHG emissions are added together and presented as metric tons of carbon dioxide equivalent (CO₂e) emissions per year, consistent with the New York City annual inventory.¹ CO₂e is a sum that includes the quantity of each GHG weighted by a factor of its effectiveness as a GHG using CO₂ as a reference. This is achieved by multiplying the quantity of each GHG emitted by a factor called global warming potential (GWP). The GWP accounts for the lifetime and the radiative forcing of each gas over a period of 100 years (e.g., CO₂ has a much shorter atmospheric lifetime than SF₆, and therefore has a much lower GWP). The GWPs for the main GHGs discussed are presented in **Table 16-1**.²

Table 16-1
Global Warming Potential (GWP) for Major GHGs

Compound	100-year Horizon GWP
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	21
Nitrous Oxide (N ₂ O)	310
Hydrofluorocarbons (HFCs)	140 to 11,700
Perfluorocarbons (PFCs)	6,500 to 9,200
Sulfur Hexafluoride (SF ₆)	23,900
Sources: IPCC, Climate Change 1995—The Science of Climate Change: Contribution of Working Group I to the Second Assessment of the Intergovernmental Panel on Climate Change, 1996.	

BUILDING OPERATIONAL EMISSIONS

Emissions due to energy use were developed using carbon intensity factors by building type presented in Table 18-3 of the *CEQR Technical Manual* and the floor area by use. The residential building carbon intensity factor was used to calculate the CO₂ emissions associated with the residential floor area, the institutional building carbon intensity factor was used to calculate the CO₂ emissions associated with the school and community facility floor area, and the commercial building carbon intensity factor was used for all other uses.

MOBILE SOURCE EMISSIONS

The number of annual weekday and weekend vehicle trips by mode (cars, taxis, and trucks) that would be generated by the proposed project and RWCDs was calculated for each analysis year (2018, 2028, and 2032) using the transportation planning assumptions discussed in Chapter 15, “Transportation.” The assumptions used in the calculation include average daily weekday and

¹ City of New York, *Inventory of New York City Greenhouse Gas Emissions*, December 2012, by Jonathan Dickinson, Jamil Khan, Douglas Price, Steven A. Caputo, Jr., and Sergej Mahnovski. Mayor’s Office of Long-Term Planning and Sustainability, New York, 2012.

² Following standard protocol for greenhouse gas inventories, and consistent with New York City’s GHG inventory, the GWP factors from IPCC’s Second Assessment Report (1996) are used. These GWP factors are specified for use for national GHG inventories under the Kyoto Protocol.

weekend person trips and delivery trips by proposed use (residential, office, retail, etc.), the percentage of vehicle trips by mode, and the average vehicle occupancy. Travel distances shown in Table 18-4 of the *CEQR Technical Manual* were used in the calculations of annual vehicle miles traveled by cars. The average one way taxi trip distance of 7.88 miles was obtained from Table 18-5 of the *CEQR Technical Manual*. The average truck trip was assumed to be 38 miles, as per the *CEQR Technical Manual*. Table 18-6 was used to determine the percentage of vehicle miles traveled by road type and the mobile GHG emissions calculator was used to obtain the total estimated mobile source GHG emissions attributable to the proposed project.

EPA estimates that the well-to-pump GHG emissions of gasoline and diesel are approximately 22 percent of the tailpipe emissions.¹ Although upstream emissions (emissions associated with production, processing, and transportation) of all fuels can be substantial and are important to consider when comparing the emissions associated with the consumption of different fuels, they are not considered in the analysis of the proposed project. Accounting for tailpipe emissions but not well-to-pump emissions is in accordance with the *CEQR Technical Manual* guidance and the methodology used in developing the New York City GHG inventory, which is the basis of the GHG reduction goal.

The projected annual vehicle miles traveled, which form the basis for the GHG emissions calculations from mobile sources, are presented in **Table 16-2**.

CONSTRUCTION EMISSIONS

Emissions associated with construction of the proposed project and RWCDs have not been estimated explicitly. GHG emissions from building construction (both direct and emissions embedded in the production of materials, including on-site construction equipment, delivery trucks, and upstream emissions from the production of steel, rebar, aluminum, and cement used for construction) are typically in the range of the total emissions from the operation of the project over approximately 5 to 10 years. As the proposed project would also involve remedial work and construction of new infrastructure, the overall GHG emissions during construction would likely be greater.

EMISSIONS FROM SOLID WASTE MANAGEMENT

As discussed in Chapter 12, “Solid Waste and Sanitation,” the proposed project would not fundamentally change the City’s solid waste management system. Therefore, as per the *CEQR Technical Manual*, the GHG emissions from solid waste generation, transportation, treatment, and disposal are not quantified. Space for storage and collection of recyclables (including paper, corrugated cardboard, glass, plastic, and metals) will be provided.

PROJECTED GHG EMISSIONS WITH THE PROPOSED PROJECT

A summary of GHG emissions by emission source type, along with total annual emissions from the proposed project and the RWCDs is presented in **Table 16-3**. Note that much of these emissions would be associated with similar activity outside of the proposed project area. For

¹ Environmental Protection Agency, *MOVES2004 Energy and Emission Inputs*, Draft Report, EPA420-P-05-003, March 2005.

Table 16-2
Annual Vehicle Miles Traveled (miles per year)

Use	Project Area	2018—Phase 1A			2028—Phase 1B (Cumulative w/Phase 1A)			2032—Phase 2 (Cumulative w/Phases 1A and 1B)		
		Car	Taxi	Truck	Car	Taxi	Truck	Car	Taxi	Truck
Retail	WW	35,178,541	4,986,180	4,114,323	35,178,541	4,986,180	4,114,323	35,178,541	4,986,180	4,114,323
Retail	SWPD	529,639	0	108,881	24,778,254	2,280,160	3,284,589	31,896,835	2,546,430	4,536,725
Hotel	SWPD	1,200,850	579,349	110,838	2,942,083	1,419,405	271,554	4,202,975	2,027,721	387,934
Residential	SWPD	0	0	0	10,285,276	438,439	1,678,559	24,164,204	1,030,066	3,943,602
School	SWPD	0	0	0	140,009	0	174,294	328,267	0	406,948
Community Facility	SWPD	0	0	0	107,553	8,149	94,221	645,320	48,895	565,326
Office	SWPD	0	0	0	9,132,758	2,611,930	1,606,640	9,132,758	2,611,930	1,606,640
Convention Center	SWPD	0	0	0	0	0	0	7,773,813	2,223,740	2,840,272
Recreation Space ¹	SWPD	582,408	68,485	415,234	0	0	0	0	0	0
Retail ²	Lot B	0	0	0	0	0	0	6,017,352	715,093	669,621
Office ²	Lot B	0	0	0	0	0	0	5,114,344	1,462,681	899,718

Notes: While the creation of new public open space is planned for Phase 1B and Phase 2, it would be ancillary to other proposed uses. Therefore, the Recreation Space vehicle miles traveled in Phase 1B and Phase 2 are captured in the VMT for other uses, and are accounted for separately only for Phase 1A.
SWPD = Special Willets Point District
WW = Willets West

¹The annual vehicle miles traveled for the recreation space reflect the use of the space for recreation for 183 days a year.
²As discussed in Chapter 1, "Project Description," the RWCDs includes the potential future development on Lot B as analyzed in the 2008 FGEIS.

Table 16-3
Projected Annual GHG Emissions (metric tons CO_{2e})

Use	Project Area	2018-Phase 1A			2028-Phase 1B (Cumulative w/Phase 1A)			2032-Phase 2 (Cumulative w/Phases 1A and 1B)		
		Buildings	Mobile	Total	Buildings	Mobile	Total	Buildings	Mobile	Total
Retail	WW	13,202	23,658	36,860	13,202	19,633	32,835	13,202	18,827	32,029
Retail	SWPD	283	402	685	8,534	14,024	22,558	11,788	17,673	29,461
Hotel	SWPD	1,509	918	2,427	3,725	1,841	5,566	5,281	2,512	7,793
Residential	SWPD	0	0	0	16,409	6,131	22,540	38,552	13,867	52,418
School	SWPD	0	0	0	1,199	304	1,503	2,627	698	3,325
Community Facility	SWPD	0	0	0	286	178	464	1,713	1,046	2,759
Office	SWPD	0	0	0	4,715	6,294	11,009	4,715	6,052	10,767
Convention Center	SWPD	0	0	0	0	0	0	3,772	7,294	11,066
Recreation Space ¹	SWPD	0	939	939	0	0	0	0	0	0
Proposed Project Total	ALL	14,994	25,916	40,910	48,070	48,405	96,475	81,648	67,969	149,617
Retail	Lot B	0	0	0	0	0	0	1,740	3,131	4,871
Office	Lot B	0	0	0	0	0	0	2,640	3,389	6,029
RWCDS² Total	ALL	14,994	25,916	40,910	48,070	48,405	96,475	86,029	74,489	160,518

Notes: All figures above shown are in metric tons of CO_{2e}.
SWPD = Special Willets Point District
WW = Willets West
¹The annual GHG emissions for the recreation space reflect the use of the space for recreation for 183 days a year.
²As discussed in Chapter 1, "Project Description," the RWCDS includes the potential future development on Lot B as analyzed in the 2008 FGEIS.

example, if buildings were to be constructed elsewhere to accommodate the same number of people as the proposed project, the emissions from the use of electricity, energy for heating and hot water, and vehicle use could exceed those of the proposed project, depending on the location, access to transit, building type, and energy efficiency measures.

As presented above, the estimated energy-related emissions are conservatively high since default rates for city-wide energy consumption by existing buildings from the *CEQR Technical Manual* were applied; new buildings would likely have lower energy demand. Furthermore, to attain the LEED® for Neighborhood Development (LEED®-ND) rating, 90 percent of the floor area to be developed within the District would have to meet an energy efficiency requirement that substantially reduces energy costs compared to the referenced ASHRAE 90.1-2007 standard (equivalent to current New York City energy code). In order to attain LEED® Silver certification and comply with the requirements of Local Law 86, Phases 1A and 1B, including the Willets West portion of the proposed project would include energy efficiency measures that exceed building code requirements. As plans for LEED attainment and energy efficiency measures are at this time not sufficiently specific to quantify the resulting GHG emission reductions, the estimates of emissions from buildings presented in **Table 16-3** are conservatively high.

ELEMENTS OF THE PROPOSED PROJECT THAT WOULD REDUCE GHG EMISSIONS

As described in the 2008 FGEIS, the Willets Point Development Plan had been accepted as a pilot LEED®-ND project by USGBC. Phase 1A and 1B are subject to Local Law 86 of 2005 (see New York City Charter section 224.1) and the project sponsor would comply with the requirements thereof. To the extent Local Law 86 of 2005 applies to any portion of Phase 2, the City would further ensure that the sponsor for Phase 2 complies with the requirements thereof. Accordingly, in Phase 1A, the retail buildings, including the proposed development on the Willets West site, will be designed and constructed to achieve LEED silver certification for core and shell (LEED-CS), and the hotel building will be designed and constructed to achieve LEED silver certification for new construction (LEED-NC). In Phases 1B and 2, as set forth in the FGEIS and reiterated in Technical Memorandum #4, all portions of the project within the Willets Point Special District will be required to achieve LEED-ND certification. Phase 1B buildings will also comply with all the applicable requirements of Local Law 86 of 2005. Specifically, retail, hotel, community facility, and office buildings will be designed and constructed to achieve LEED silver certification pursuant to the LEED rating system that is most appropriate under Local Law 86 (see Section 10-02 of Chapter 10 of Title 43 of the Rules of the City of New York). To meet the requirements of LEED and the energy cost reduction requirements of Local Law 86 of 2005 that are applicable to the project under NYC Charter section 224.1(b)(2)(ii), energy efficiency measures would be incorporated into building designs, as described in this chapter. The requirements of Local Law 86 of 2005 and the commitments set forth in this chapter would be incorporated into the development agreements and/or amended lease agreements. The provisions of the development agreements and/or amended lease agreements, relating to the substance and enforceability of these commitments, would be subject to approval by the Mayor's Office of Environmental Coordination.

The proposed project's dense, mixed-use development and reuse of developed land with access to transit and existing roadways are consistent with sustainable land use planning and smart growth strategies to reduce the carbon footprint of new development. A number of sustainable features that would reduce GHG emissions would be considered in achieving LEED certification and the project's sustainability goals. In addition, the proposed school in the District would be built according to the *New York City Green Schools Guide*,¹ which addresses the sustainable design, construction, and operation of new schools, modernizing projects, and school renovations in New York City. The *Green Schools Guide* and Rating System include strategies that substantially reduce energy costs and water use as compared with buildings constructed to meet code, and require the use of recycled content, and regional materials in construction.

The following text outlines features of the proposed project and measures that would be required by the Special Willets Point District regulations or considered in achieving LEED® certification. The features listed would most directly reduce GHG emissions, addressing the GHG reduction goals as outlined in the *CEQR Technical Manual*.

BUILD EFFICIENT BUILDINGS

- 90 percent of the floor area developed within the District would exceed energy code requirements by at least 10 percent.

¹ New York City School Construction Authority, *New York City Green Schools Guide*, revised May 2009

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- Phase 1A and 1B are subject to Local Law 86 of 2005, which requires non-residential structures to be designed and constructed to exceed energy code requirements.
- Energy efficient building envelopes would be designed to reduce cooling/heating requirements.
- To the extent feasible, towers within the District would be oriented to create favorable conditions for use of passive and active solar energy strategies.
- High efficiency heating, ventilation and air conditioning (HVAC) systems would be specified, as well as high efficiency domestic hot water systems.
- Highly reflecting roofing material would reduce air conditioning needs in the summer and help mitigate the urban heat island effect.¹
- Spectrally-selective window glazing would optimize daylighting, heat loss and solar heat gain.
- Efficient lighting (including high efficacy fluorescent and LED) with advanced controls such as motion sensors and daylight dimming would reduce energy consumption.
- State-of-the-art Building Management Systems would be incorporated to provide comprehensive control over building HVAC and lighting, and to minimize unnecessary energy use.
- Efficient elevators and escalators would be specified where practicable.
- Efficient appliances and equipment (e.g., Energy Star) would be specified where practicable.
- Efficient, directed exterior lighting would be specified.
- Third party building commissioning would be conducted to ensure proper energy performance of the building energy systems.
- Construction and design guidelines to facilitate sustainable design for build-out by tenants.
- Measures to reduce stormwater runoff would be implemented as discussed in Chapter 11, “Water and Sewer Infrastructure.”
- Low-flow plumbing fixtures would be used to reduce hot water consumption and water pumping energy.
- The landscape would be designed for water efficiency.

USE CLEAN POWER

The District’s zoning regulations allow for the provision of a new cogeneration facility within that portion of the project site, provided that it would primarily serve the District. Cogeneration is not currently proposed as part of Phases 1A and 1B. It is possible that a cogeneration facility could be included as part of Phase 2; however, a developer for Phase 2 has not yet been selected. A cogeneration facility, if proposed or needed at a future time, would require further study and additional approvals. Such studies would require information on the facility location, size, and design that is not presently available. The heating and hot water systems would likely use natural

¹ The urban heat island effect refers to the temperature difference between urban areas and surrounding suburban or rural areas. Much of this temperature difference is attributed to the prevalence of dark roofs and dark colored pavement, which absorb more heat than lighter surfaces, as well as the declining presence of vegetation in cities.

gas, which has a lower carbon content per unit of energy than other fuels, and thus its use generates lower GHG emissions.

The use of solar photovoltaic panels will also be considered on a dedicated area of Willets West, as part of Phase 1A. While further study is needed, early assessments indicate that a considerable amount of electricity may be generated using the solar panels.

TRANSIT-ORIENTED DEVELOPMENT AND SUSTAINABLE TRANSPORTATION

The proximity of the proposed project to transit and the diversity of uses proposed would reduce automobile dependence, and therefore GHG emissions from travel. The proposed project's dense development and reuse of developed land with access to transit and existing roadways are consistent with sustainable land use planning and smart growth strategies to reduce the carbon footprint of new development. In addition, the proposed project would feature the following elements:

- Parking within the District would be sized to meet, but not exceed, parking required by zoning.
- A network of bike lanes and bicycle racks would be available within the District. Provision of changing rooms or showers would be considered.
- Design of streets, sidewalks and street planting within the District would encourage walking.
- Roadway improvements would be made to improve traffic flow.
- Traffic signalization and coordination would aim to improve traffic flow and support pedestrian and bicycle safety.

In addition, a marketing/information program that would include posting and distribution of ride sharing and transit information would likely be developed. Although the proposed project already has excellent access to transit, it is anticipated that service may be extended or expanded, in response to the proposed development and other growth, as discussed in the 2008 FGEIS. These potential improvements include provision of regular Long Island Railroad (LIRR) service to the existing Mets-Willets Point station, which is currently serviced only during game events; additional 7 train service; and extension of bus routes to the District. Preferred on-site parking for alternative vehicles (such as hybrids and electric vehicles) would likely be provided to the extent practicable, and the practicability of including on-site charging stations for electric vehicles will be explored. Dedicated carpool spaces for Willets West employees will also be provided. Options for encouraging carpooling and car sharing in the District will be explored.

REDUCE CONSTRUCTION OPERATION EMISSIONS

As described in Chapter 20, "Construction," an extensive diesel emission reduction program will be implemented during project construction. The program will minimize particulate matter emissions; while particulate matter is not included in the list of standard greenhouse gasses ('Kyoto gases'), recent studies have shown that black carbon—a constituent of particulate matter—may play an important role in climate change.

USE BUILDING MATERIALS WITH LOW CARBON INTENSITY

In meeting the requirements for the appropriate LEED® rating, the use of recycled content in infrastructure would be considered. In addition, for individual buildings throughout the project

site to achieve the required LEED[®] rating, a number of GHG reducing strategies would be considered, including:

- Use of materials with recycled content.
- Use of building materials that are extracted and/or manufactured within the region.
- Wood that is locally produced and/or certified in accordance with the Sustainable Forestry Initiative or the Forestry Stewardship Council's Principles and Criteria would be used for commercial buildings and considered for residential buildings.
- Ultra low sulfur diesel would be used for project construction.
- Cement replacements, such as slag, would be used to the extent practicable.
- Construction waste would be diverted from landfill through reuse and recycle efforts.

In addition, the use of cement produced using lower-GHG fuel, concrete produced with optimized cement content, and design that would reduce the need for concrete and steel would be considered.

CONCLUSIONS

As detailed above in **Table 16-3**, the potential GHG emissions associated with the proposed project in 2032 upon completion of Phase 2 (cumulative with Phases 1A and 1B) are projected to be approximately 150,000 metric tons of CO₂e. The GHG emissions resulting from the RWCDs in 2032 would be approximately 161,000 metric tons of CO₂e. The GHG emissions from Phase 1A (2018) and Phase 1B (2028, cumulative with Phase 1A) would be 41,000 metric tons of CO₂e and 96,000 metric tons of CO₂e, respectively.

Measures for reducing GHG emissions that are included in the District's regulations, or would be considered in achieving the LEED[®] ratings have been identified. Overall, the project site's location, the project's dense, mixed-use design, the commitments to achieve energy efficiency, and other measures incorporated in the proposed project would result in lower GHG emissions than would otherwise be achieved by similar residential and commercial uses, and thus would be consistent with the GHG reduction goal. The greenhouse gas reduction measures, LEED rating requirements, and requirements of Local Law 86 of 2005 would be incorporated into the development agreements and/or amended lease agreements.

D. RESILIENCE TO CLIMATE CHANGE

Currently, standards and a framework for analysis of the effects of climate change on a proposed project are not included in CEQR. However, the recently proposed revisions to the Waterfront Revitalization Program (WRP)¹ address climate change and sea level rise. If finalized, the revisions to the WRP would require consideration of climate change and sea level rise in planning and design of waterfront development. As set forth in more detail in the *CEQR Technical Manual*, the provisions of the WRP are applied by the Department of City Planning and other city agencies when conducting environmental review. Since the project site is in the floodplain, the potential effects of global climate change on the proposed project are considered below, and strategies to increase climate resilience and adaptive management are discussed.

¹ City of New York Department of City Planning, The NYC Waterfront Revitalization Program: Proposed Revisions for Public Review, March 2012, http://www.nyc.gov/html/dcp/html/wrp/wrp_revisions.shtml

DEVELOPMENT OF POLICY TO IMPROVE CLIMATE CHANGE RESILIENCE

In recognition of the important role that the federal government has to play to address adaptation to climate change, a federal executive order signed October 5, 2009, charged the Interagency Climate Change Adaptation Task Force, composed of representatives from more than 20 federal agencies, with recommending policies and practices that can reinforce a national climate change adaptation strategy. The 2011 progress report by the Task Force included recommendations to build resilience to climate change in communities by integrating adaptation considerations into national programs that affect communities, facilitating the incorporation of climate change risks into insurance mechanisms, and addressing additional cross-cutting issues, such as strengthening resilience of coastal, ocean, and Great Lakes communities.¹

The New York State Sea Level Rise Task Force was created to assess potential impacts to the state's coastlines from rising seas and increased storm surge. The Task Force has prepared a final report of its findings and recommendations including protective and adaptive measures.² The recommendations are to provide more protective standards for coastal development, wetlands protection, shoreline armoring, and post-storm recovery; to implement adaptive measures for habitats; integrate climate change adaptation strategies into state environmental plans; and amend local and state regulations or statutes to respond to climate change. The Task Force also recommended the formal adoption of projections of sea level rise. The New York State Climate Action Plan will also include strategies for adapting to climate change. The Climate Action Plan Interim Report identified a number of policy options and actions that could increase the climate change resilience of natural systems, the built environment, and key economic sectors—focusing on agriculture, vulnerable coastal zones, ecosystems, water resources, energy infrastructure, public health, telecommunications and information infrastructure, and transportation.³

In New York City, the Climate Change Adaptation Task Force is tasked with securing the city's critical infrastructure against rising seas, higher temperatures, and fluctuating water supplies projected to result from climate change. The Task Force is composed of over 35 New York City and State agencies, public authorities, and companies that operate, regulate, or maintain critical infrastructure in New York City. The approaches suggested for the City to create a city-wide adaptation program include ways to assess risks, prioritize strategies, and examine how standards and regulations may need to be adjusted in response to a changing climate.

To assist the task force, the New York City Panel on Climate Change (NPCC), has prepared a set of climate change projections for the New York City region,⁴ updated in June 2013,⁵ and has suggested approaches to create an effective adaptation program for critical infrastructure.⁶ The NPCC includes leading climatologists, sea-level rise specialists, adaptation experts, and engineers, as well as representatives from the insurance and legal sectors. The climate change

¹ The White House Council on Environmental Quality, Progress Report of the Interagency Climate Change Adaptation Task Force: Federal Actions for a Climate Resilient Nation, October 28, 2011.

² New York State Sea Level Rise Task Force, *Report to the Legislature*, December 2010.

³ NYSERDA, New York State Climate Action Plan Interim Report, November, 2010.

⁴ New York City Panel on Climate Change, *Climate Risk Information*, February 2009.

⁵ New York City Panel on Climate Change, *Climate Risk Information 2013*, June 2013.

⁶ New York City Panel on Climate Change, *Climate Change Adaptation in New York City: Building a Risk Management Response*, Annals of the New York Academy of Sciences, May 2010.

projections include a summary of ~~previously published~~ baseline and projected climate conditions throughout the 21st century including heat waves and cold events, intense precipitation and droughts, sea level rise, and coastal storm levels and frequency. The NPCC projects that sea levels are likely to increase by ~~42~~11 to ~~23~~24 inches by the ~~end~~ middle of the century (2050s middle range, 25th to 75th percentile), with possible increase up to ~~55~~31 inches (high estimate, 90th percentile) ~~in the event of rapid ice melt~~. While the 2013 update did not include 2080s data, based on 2009 NPCC report, sea levels could rise by up to 59 inches by 2080s. Local Law 42 of 2012 requires updates to climate projections at least every three years. In general, the probability of ~~higher~~ sea levels rise is characterized as “extremely likely” (>95 percent probability of occurrence), ~~but there is high uncertainty regarding the probability of a rapid ice melt scenario~~. Intense hurricanes are characterized as “more likely than not” to increase in intensity and/or frequency, and the likelihood of changes in other large storms (“Nor’easters”) are characterized as unknown. Therefore, the projections for future 1-in-100 coastal storm surge levels for New York City include only sea level rise at this time ~~(excluding the rapid ice melt scenario)~~, and do not account for changes in storm frequency. Regardless of the frequency of the storms, the frequency of flooding events would increase because the sea level rise would result in flooding due to lesser storms, such that the current flood with 1 percent chance of occurring in any given year would have a 5 percent chance of occurring in any given year by mid-century, and higher by the end of the century.

In the wake of Hurricane Sandy, Mayor Bloomberg convened the Special Initiative for Rebuilding and Resiliency (SIRR) and charged it with analyzing the impacts of the storm on the City’s buildings, infrastructure, and people; assessing the risks the City faces from climate change; and outlining ambitious, comprehensive, but achievable strategies for increasing resiliency citywide. The Mayor also asked SIRR to develop proposals for rebuilding the areas hardest hit by Sandy—the Brooklyn-Queens Waterfront, the eastern and southern shores of Staten Island, Southern Queens, Southern Brooklyn, and Southern Manhattan. SIRR published the City’s resiliency policy, entitled *A Stronger, More Resilient New York*, in June 2013. Although the plan outlines a general approach for coastal protection throughout the City, the plan does not yet outline specific measures in the area of the proposed project.

~~The New York City Green Code Task force has also recommended strategies for addressing climate change resilience in buildings and for improving stormwater management.⁴ Some of the recommendations call for further study, while others could serve as the basis for revisions to building code requirements. Notably, one recommendation was to develop flood maps that reflect projected sea level rise and increases in coastal flooding through 2080 and to require new developments within the projected future 100 year floodplain to meet the same standards as buildings in the current 100 year flood zone. The City has been working with the Federal Emergency Management Agency (FEMA) to revise the Flood Insurance Rate Maps (FIRMs) using the detailed Light Detection and Ranging (LiDAR) data.~~

The New York City Department of Environmental Protection is evaluating adaptive strategies for City water and wastewater infrastructure. The City has already developed a *New York City Green Infrastructure Plan*², and a *Sustainable Stormwater Management Plan*.¹ Many of the strategies discussed in these plans would improve the City’s resilience to climate change.

¹ New York City Green Codes Task Force, *Recommendations to New York City Building Code*, February 2010.

² New York City, *New York City Green Infrastructure Plan*, September 2010.

Overall, strategies and guidelines for addressing the effects of climate change are rapidly being developed on all levels of government. Currently, standards and a framework for analysis of the effects of climate change on a proposed project are not included in the *CEQR Technical Manual*. While qualitative guidance on addressing the effect of climate change is in the process of being developed at the national, state, and local levels, no specific requirements for development projects are available at this time. Climate change considerations may be incorporated into state and local laws prior to the construction of the proposed project, and any future development would be constructed to meet or exceed the codes in effect at the time of construction. ~~The requirements of Local Law 86 of 2005, which include LEED rating requirements and measures that would reduce greenhouse gas emissions, would be incorporated as applicable into the development agreements and/or amended lease agreements.~~

RESILIENCE OF THE PROPOSED PROJECT TO CLIMATE CHANGE

~~As presented in Figure 9-1, based on the currently in effect Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), Willets West, the South Lot, and Lots B and D are within the 100-year 1-in-100 floodplain, with a flood elevation of 13 feet NAVD88² 14 feet NGVD29 (All elevations in this chapter are presented relative to the NAVD88 datum.) Most of the District is also within the 100-year 1-in-100 floodplain (with flood elevation of 13 feet 14 feet NGVD29) (with the exception of three small areas located in the northwest area of the proposed project, along the eastern border and along Roosevelt Avenue that are within the 500-year 1-in-500 floodplain—these are likely mapping anomalies, and in one case this is an area that is elevated with material stockpiling.) The existing FIRM 100-year floodplain is currently the only regulatory standard relating to elevation of new development. The City has been working with FEMA to revise the FIRMs. On February 25, 2013, FEMA released Advisory Base Flood Elevation maps for areas in New York City, including the project site. The 100-year flood ABFE for Willets West, and portions of the project site to the south of 37th Avenue, is 12 feet NAVD88. Within the District, for most of the area to the North of 37th Avenue, the 100-year ABFE is 13 feet NAVD88, with the exception of an area mostly to the north of 34th Avenue, which is outside of the advisory 100-year floodplain. Although the ABFE is subject to further review, if it is adopted as part of a future updated Flood Insurance Rate Map, the proposed project would comply with these flood elevations as required by the New York City Building Code.~~

~~On July 2, 2013, FEMA released the latest version of the Best Available Flood Hazard Data (BAFHD)—a draft product preceding the publication of new FIRMs. FEMA encourages communities to use the BAFHD when making decisions about floodplain management and post-Sandy recovery efforts, and these levels have been adopted by New York City for zoning purposes, allowing projects to account for higher base flood elevations for height and other zoning requirements. The 1-in-100 levels are the same as the current FIRM in the northern portion of the District, north of 37th Avenue, and are one foot lower in all other areas of the proposed project.~~

~~Given the proposed project location within the 100-year floodplain, the potential effects of global climate change on the proposed project have been considered. As described above, NPCC~~

¹ New York City, Sustainable Stormwater Management Plan, December 2008.

² Elevations in the in effect map are calculated from the NGVD29 datum; current maps use the NAVD88 datum which is 1.1 feet higher. To transform elevations from the old map, Elevation (NAVD88) = Elevation (NGVD29) – 1.1 feet. Note that all FIRM elevations are rounded to the nearest whole foot.

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has published projections for sea level rise and the associated flood elevations throughout the current century, and recently updated projections for 2020s and 2050s. In the proposed project area, based on the BAFHD and NPCC projections, it is expected that the 1-in-100 flood level would range up to an elevation of approximately 18 feet north of 37th Avenue in the District, and 17 feet in other proposed project areas by the end of the century. Under the current plan, the District portion of the project site and Willets West would be graded and elevated one foot above the current FIRM floodplain (which is two feet above the BAFHD for all project areas except a portion of the District north of 37th Avenue) such that the occupiable floors would be at an elevation of 14 feet 15 feet NGVD29—and would meet the requirements of the New York City Building Code. It is anticipated that the ABFE maps would be adopted in the near future. The occupiable floors of the proposed buildings are designed to be at an elevation of one to two feet above the ABFE. Therefore, the proposed design would reduce the vulnerability to flood damage as compared to existing conditions, as well as offer resilience in the event of 1 to 2 feet of future sea level rise (above the ABFE), which is expected to occur by mid-century (2050s). within the likely range of sea level rise projections made by NPCC. To achieve the LEED® ND rating, the District would comply with all LEED® ND prerequisites, including Floodplain Avoidance (Smart Location & Linkage, Prerequisite 6). Therefore, as appropriate, development within the District would reflect any changes to the floodplain elevations.

Given that the projections for sea level rise are changing, further measures will be investigated and implemented within the proposed project site to the extent practicable. Prior to commencement of construction for each phase of the project, the project sponsor will work with the Mayor's Office of Environmental Coordination (MOEC) to develop a plan for resilience of the proposed area to be developed in that phase from future flood levels, considering the types of uses proposed; the plan will be designed with the goal of making the project area resilient to end-of-century flood levels in residential areas, and mid-century in other areas. This may be achieved via a combination of practicable measures within the project, potentially including grade change, protection of critical infrastructure, and design elevations, and storm surge protection measures if those are practicable and relevant within the area to be developed in that phase, along with area-wide or waterfront measures to be undertaken by the City outside of the project area, as appropriate. While the plan for each phase may not identify all details necessary for the long-term implementation, it will identify the practicable measures needed for that phase of the project and conceptual measures being considered or undertaken by the City beyond the project site. The plan will be consistent with the City's citywide coastal protection policy as described in *A Stronger, More Resilient New York* through the 2050s.

For sea level rise beyond the 1 to 2 feet projected for mid-century, the most practicable solutions to increase resiliency may include area-wide and/or waterfront solutions, which may need to be implemented off-site by the City. While the City has not yet undertaken the studies needed to select the most effective measure to offer flood protection to the area of Queens that includes Willets Point, some measures that may be undertaken by City agencies in the future include:

- Coastal edge elevation measures;
- The City's tide gate repair study at Flushing Meadows, if relevant;
- Integrated flood protection and storm surge barriers.

The City would also have the authority to require an increase in the proposed grade of the District at the time of such future development via changes to the New York City Building Code, by incorporating changes to the flood level provisions, application of FEMA Flood

~~Insurance Rate Map data, or such~~ via other New York City Executive Orders, rules, or regulations, as may be issued at that time.

The proposed project would incorporate the most recent building code requirements available at the time of construction and consider any prudent guidance and information available. As described in Chapter 11, “Water and Sewer Infrastructure,” the proposed project would include a number of features, in addition to the requirements of the building code and current Department of Environmental Protection (DEP) drainage standards, designed to absorb or retain stormwater and reduce the potential for flooding. These features would form part of a site stormwater management plan that would be reviewed by DEP in light of the developing understanding of the effects of climate change on infrastructure.

Potential risks related to flooding would be considered in locating critical electrical and mechanical systems, residential living areas, waste storage areas, fuel storage tanks, and other vulnerable features. Other measures to increase resilience to climate change would be considered on a case-by-case basis, accounting for site specific vulnerabilities, as well as costs and benefits. The following potential techniques would be considered and incorporated into project design, as appropriate:

- Opportunities to elevate, encase, or design electrical and mechanical equipment to be submersible.
- Use of flood- and salt-water-resistant materials.
- Elevation of structures and usable space to an appropriate design flood elevation that reduces risk with minimal impacts on public space and urban design. The selection of an appropriate design flood elevation would consider projections of likely flood levels, as may be legally required in the future, as well as the lifespan of the project and other project specific information.
- The raising of land or the placement of fill to elevate the proposed project uses above projected future flood levels, if such levels become legally defined in the future.
- Selection of plantings suited to the current and projected future climate including selection of salt-water-tolerant species.
- Securing hazardous materials from the impacts of flooding and wave action due to storm surge.
- Incorporation of design features that would allow the proposed project to be adapted on an ongoing basis in response to changing climate projections and conditions .

~~As part of the plan, prior to the placement of fill, the project sponsor would submit to the Mayor’s Office of Environmental Coordination (MOEC) an assessment of the appropriate grade for the District in light of all available information concerning potential sea level rise and other changes due to likely effects of climate change, while considering the practicability of making such grade changes and other measures available for flood protection.~~

By striving to incorporate reasonable strategies that would increase resilience to the likely projected effects of climate change through 2050s, the proposed project would go beyond the ~~existing CEQR and other~~ legal requirements to address the potential effects of climate change on a project and would be consistent with the City’s SIRR policy. As part of citywide efforts to improve coastal resiliency, it is anticipated that solutions for protecting the area over a longer time horizon will be developed before sea levels rise beyond 1 to 2 feet. *

A. INTRODUCTION

Noise pollution in an urban area comes from many sources. Some sources are activities essential to the health, safety, and welfare of a city's inhabitants, such as noise from emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other sources, such as traffic, are essential to the viability of a city as a place to live and do business. Although these and other noise-producing activities are necessary to a city, the noise they produce is undesirable. Urban noise detracts from the quality of the living environment, and there is increasing evidence that excessive noise represents a threat to public health.

The proposed project would change traffic patterns and volumes in the general vicinity of the project site. Since traffic is a main source of ambient noise, this could lead to changes in the ambient noise levels. In addition, the proposed project includes new parking facilities, which have the potential to result in changes to noise levels. An analysis was designed and conducted to identify and quantify any such impacts.

The noise analysis for the proposed project consists of the following elements:

- A screening analysis to determine locations where traffic generated by the proposed project would have the potential to cause significant noise impacts;
- A detailed analysis of noise due to traffic at any location where, based on the screening analysis, the traffic generated by the proposed project would have the potential to result in significant adverse noise impacts;
- An assessment of noise generated by the proposed new parking at nearby locations; and
- An analysis to determine the level of building attenuation necessary to ensure that interior noise levels at the proposed buildings would satisfy applicable interior noise criteria.

PRINCIPAL CONCLUSIONS

The analysis concludes that noise associated with traffic generated by the proposed project and its associated parking facilities would not be expected to result in any significant increases in noise levels, including at World's Fair Marina Park, which was predicted to experience a significant adverse noise impact in the 2008 Final Generic Environmental Impact Statement (FGEIS) during the Saturday mid-day (MD) time period. This resulted from slightly less incremental traffic noise generated on streets immediately adjacent to the Park between the No Build and Build scenarios analyzed for the proposed project as compared to the 2008 FGEIS analysis. To meet City Environmental Quality Review (CEQR) interior noise level requirements, the analysis prescribes between 31 and 43 dBA of building attenuation for the proposed project buildings, which is similar to the amount of building attenuation specified in the 2008 FGEIS, except for the buildings included in the proposed project very close to the existing elevated subway tracks along Roosevelt Avenue, which would require greater attenuation than the levels

specified in the 2008 FGEIS analysis. Similar to what was predicted in the 2008 FGEIS, noise levels in the newly created open spaces would be greater than the 55 dBA $L_{10(1)}$ prescribed by CEQR criteria, but would be comparable to other parks around New York City and would not constitute a significant adverse impact.

B. SUMMARY OF FINDINGS, 2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS determined that traffic generated by the proposed Willets Point Development Plan would have the potential to result in a significant increase in noise levels only at the World's Fair Marina Park north of the District and only during the Saturday midday time period, constituting a significant adverse impact under CEQR impact criteria. The 2008 FGEIS concluded that no feasible mitigation was available to reduce noise levels within the park. With regard to building attenuation, the 2008 FGEIS prescribed between 30 and 37 dBA of building attenuation for buildings within the District, which was to be ensured through E-designations and/or subsequent Restrictive Declarations on the District. This would ensure that noise levels within all project buildings would not exceed the 45 dBA $L_{10(1)}$ CEQR interior noise requirement for residences or 50 dBA L_{10} for commercial uses. The subsequent technical memoranda came to the same conclusions and required building attenuation in the same range as the 2008 FGEIS. The fourth technical memorandum issued after the 2008 FGEIS assumed a buffer area within the district between the area to be redeveloped and the surrounding areas. This buffer would not be included in the proposed project, and the absence of the buffer would not have the potential to result in any additional significant adverse noise impacts not found in the 2008 FGEIS as described in the analysis below.

C. NOISE FUNDAMENTALS

Quantitative information on the effects of airborne noise on people is well-documented. If sufficiently loud, noise may interfere with human activities such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Several noise scales and rating methods are used to quantify the effects of noise on people, taking into consideration such factors as loudness, duration, time of occurrence, and changes in noise level with time. However, it must be noted that all the stated effects of noise on people vary greatly with each individual.

“A”-WEIGHTED SOUND LEVEL (dBA)

Noise is typically measured in units called decibels (dB), which are 10 times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared. Because loudness is important in the assessment of the effects of noise on people, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. One of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network, known as “A”-weighting, in the measurement system to simulate the response of the human ear. For most noise assessments, the A-weighted sound pressure level in units of dBA is used in view of its widespread recognition and its close correlation with perception. In the current study, all measured noise levels are reported in dBA. Common noise levels in dBA are shown in **Table 17-1**.

Table 17-1
Common Noise Levels

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	80–90
Busy city street, loud shout	80
Busy traffic intersection	70–80
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas, or residential areas close to industry	50–60
Background noise in an office	50
Suburban areas with medium-density transportation	40–50
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0
Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness. Sources: Cowan, James P. <i>Handbook of Environmental Acoustics</i> , Van Nostrand Reinhold, New York, 1994. Egan, M. David, <i>Architectural Acoustics</i> . McGraw-Hill Book Company, 1988.	

ABILITY TO PERCEIVE CHANGES IN NOISE LEVELS

The average ability of an individual to perceive changes in noise levels is well documented (see **Table 17-2**). Generally, changes in noise levels of less than 3 dBA are barely perceptible to most listeners, whereas changes in noise levels of 10 dBA are normally perceived as doubling (or halving) of noise loudness. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Table 17-2
Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2–3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A "dramatic change"
40	Difference between a faintly audible sound and a very loud sound
Source: Bolt, Beranek and Newman, Inc., <i>Fundamentals and Abatement of Highway Traffic Noise</i> , Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.	

NOISE DESCRIPTORS USED IN IMPACT ASSESSMENT

Because the sound pressure level unit of dBA describes a noise level at just one moment, and because very few noises are constant, other ways of describing noise over more extended periods have been developed. One way is to describe the fluctuating noise heard over a specific period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," L_{eq} , can be computed. L_{eq} is the constant sound level that, in a given situation and period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted by $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors, such as L_1 , L_{10} , L_{50} ,

L_{90} , and L_x , are used to indicate noise levels that are exceeded 1, 10, 50, 90, and x percent of the time, respectively. Discrete event peak levels are given as L_{01} levels.

For purposes of the proposed project, the maximum 1-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in this noise impact evaluation. $L_{eq(1)}$ is the noise descriptor recommended for use in the *CEQR Technical Manual* for vehicular traffic and construction noise impact evaluation, and is used to provide an indication of highest expected sound levels. The 1-hour L_{10} is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines for city environmental impact review classification.

D. NOISE STANDARDS AND CRITERIA

Noise levels associated with the construction and operation of the proposed project would be subject to the emission source provisions of the New York City Noise Control Code and to noise criteria set for the CEQR process. Other standards and guidelines promulgated by federal agencies do not apply to project noise control, but are useful to review in that they establish measures of impacts. Construction equipment is regulated by the Noise Control Act of 1972 and the New York City Noise Control Code.

NEW YORK CITY NOISE CONTROL CODE

The New York City Noise Control Code, amended in December 2005, contains prohibitions regarding unreasonable noise, requirements for noise due to construction activities, circulation devices, and specific noise standards, with some specific noise sources being prohibited from being “plainly audible” within a receiving property.

NEW YORK CEQR NOISE CRITERIA

The *CEQR Technical Manual* contains noise exposure guidelines for use in city environmental impact review, and required attenuation values to achieve acceptable interior noise levels. These values are shown in **Tables 17-3** and **17-4**. Noise exposure is classified into four categories: “acceptable,” “marginally acceptable,” “marginally unacceptable,” and “clearly unacceptable.” The *CEQR Technical Manual* criteria shown in **Table 17-4** are based on maintaining an interior noise level for the worst-case hour L_{10} of less than or equal to 45 A-weighted decibels (dBA) for residential uses.

E. IMPACT DEFINITION

As recommended in the *CEQR Technical Manual*, this study uses the following criteria to define a significant adverse noise impact:

- An increase of 5 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors (including residences, play areas, parks, schools, libraries, and houses of worship) over those calculated for the No Build condition, if the No Build levels are less than or equal to 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase in Build $L_{eq(1)}$ noise levels at sensitive receptors of such that the total Build $L_{eq(1)}$ noise levels would be 65 dBA or greater, if the No Build levels are between 60 and 62 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.

Table 17-3

Noise Exposure Guidelines For Use in City Environmental Impact Review¹

Receptor Type	Time Period	Acceptable General External Exposure	Airport ³ Exposure	Marginally Acceptable General External Exposure	Airport ³ Exposure	Marginally Unacceptable General External Exposure	Airport ³ Exposure	Clearly Unacceptable General External Exposure	Airport ³ Exposure
Outdoor area requiring serenity and quiet ²		$L_{10} \leq 55$ dBA	----- $L_{dn} \leq 60$ dBA -----	NA	NA	NA	NA	NA	NA
Hospital, nursing home		$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 65$ dBA	----- $60 < L_{dn} \leq 65$ dBA -----	$65 < L_{10} \leq 80$ dBA	(i) $70 \leq L_{dn}$ (ii) $65 < L_{dn} \leq 70$ dBA	$L_{10} > 80$ dBA	----- $L_{dn} \leq 75$ dBA -----
Residence, residential hotel, or motel	7 AM to 10 PM	$L_{10} \leq 65$ dBA		$65 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, outpatient public health facility		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)	
Commercial or office		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)	
Industrial, public areas only ⁴	Note 4	Note 4		Note 4		Note 4		Note 4	

Notes:

(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more; (ii) *CEQR Technical Manual* noise criteria for train noise are similar to the above aircraft noise standards: the noise category for train noise is found by taking the L_{dn} value for such train noise to be an L'_{dn} (L_{dn} contour) value.

Table Notes:

¹ Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

² Tracts of land where serenity and quiet are extraordinarily important and serve an important public need, and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and nursing homes.

³ One may use FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

⁴ External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Source: New York City Department of Environmental Protection (adopted policy 1983).

Table 17-4

Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Acceptable				Clearly Unacceptable
Noise Level With Proposed Action	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$L_{10} < 80$
Attenuation*	(I) 28 dB(A)	(II) 31 dB(A)	(III) 33 dB(A)	(IV) 35 dB(A)	$36 + (L_{10} - 80)^B$ dB(A)

Notes:

^A The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.

^B Required attenuation values increase by 1 dB(A) increments for L_{10} values greater than 80 dBA.

Source: New York City Department of Environmental Protection.

- An increase of 3 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No Build condition, if the No Build levels are greater than or equal to 62 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No Build condition, if the analysis period is a nighttime period (defined by the *CEQR Technical Manual* criteria as being between 10 PM and 7 AM).

F. NOISE PREDICTION METHODOLOGY

GENERAL METHODOLOGY

At all of the receptor sites in the vicinity of the project site, the dominant operational noise sources are vehicular traffic on adjacent and nearby streets and roadways, and train traffic from the elevated No. 7 subway line, which runs along Roosevelt Avenue.

Future noise levels were calculated using either a proportional modeling technique or the Federal Highway Administration (FHWA) *Traffic Noise Model* (TNM) Version 2.5. The proportional modeling technique was used as a screening tool to estimate changes in noise levels. At locations where proportional modeling screening indicated the potential for significant adverse noise impacts, the TNM was used to obtain more detailed results. Both the proportional modeling screening technique and the TNM are analysis methodologies recommended for analysis purposes in the *CEQR Technical Manual*.

The noise analysis examined four weekday conditions: AM, MD, PM, pre-game (before a baseball game at CitiField) time periods; and three weekend conditions: MD, pre-game (before a baseball game at CitiField), and post-game (after a baseball game at CitiField). The selected time periods are when the proposed project would have maximum traffic generation and/or the maximum potential for significant adverse noise impacts based on the traffic studies presented in Chapter 14, "Transportation."

The analysis considers each of the three build years separately.

The proportional modeling and TNM procedures used for the analysis are described below.

PROPORTIONAL MODELING

Proportional modeling was used to determine locations which had the potential for having significant noise impacts and to quantify the magnitude of those potential impacts. Proportional modeling is one of the techniques recommended in the *CEQR Technical Manual* for mobile source analysis.

Using this technique, the prediction of future noise levels where traffic is the dominant noise source is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine noise levels in the future without the proposed project (the No Build condition) and with the proposed project (the Build condition). Vehicular traffic volumes are converted into Noise Passenger Car Equivalent (Noise PCE) values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

$$FNL - ENL = 10 * \log_{10} (F PCE / E PCE)$$

where:

FNL = Future Noise Level

ENL = Existing Noise Level

F PCE = Future Noise PCEs

E PCE = Existing Noise PCEs

Sound levels are measured in decibels and therefore increase logarithmically with sound source strength. In this case, the sound source is traffic volumes measured in Noise PCEs. For example, assume that traffic is the dominant noise source at a particular location. If the existing traffic volume on a street is 100 Noise PCE and if the future traffic volume were increased by 50 Noise PCE to a total of 150 Noise PCE, the noise level would increase by 1.8 dBA. Similarly, if the future traffic were increased by 100 Noise PCE, or doubled to a total of 200 Noise PCE, the noise level would increase by 3.0 dBA.

TRAFFIC NOISE MODEL (TNM)

At receptor sites where preliminary modeling studies using the proportional modeling technique indicated that the future traffic may have the potential to cause noticeable increases in noise levels (i.e., sites 3, 6, and 7), a refined analysis was performed using the TNM (described below).

The TNM is a computerized model developed for the FHWA that calculates the noise contribution of each roadway segment to a given noise receptor. The noise from each vehicle type is determined as a function of the reference energy-mean emission level, corrected for vehicle volume, speed, roadway grade, roadway segment length, and source-receptor distance. Further considerations included in modeling the propagation path include identifying the shielding provided by rows of buildings, analyzing the effects of different ground types, identifying source and receptor elevations, and analyzing the effects of any intervening noise barriers.

FTA PARKING LOT/GARAGE ANALYSIS METHODOLOGY

Noise generated by the parking lots and garages associated with the proposed project would contribute to noise levels at nearby noise receptors. Noise due to vehicles accessing and traversing the proposed parking lots and garages were determined using methodologies set forth in the May 2006 version of the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment* guidance manual. Specifically, parking lots were modeled using the techniques described for general noise assessment of a park and ride lot, and parking garages were modeled using the techniques described for general noise assessment of a parking garage.

The general noise assessment methodology consists of determining the project noise exposure at 50 feet from the center of each parking facility based on the maximum number of automobiles expected to enter and exit the facility in a given hour, and adjusting that level for the distance of each receptor from the center of the parking facility.

ANALYSIS PROCEDURE

The following procedure was used in performing the noise analysis:

- Noise monitoring locations (receptor sites) were selected at noise-sensitive land uses (i.e., residential, church, school, etc.) located near the predicted traffic routes that project-generated traffic would use to access and egress the project site or parking facilities associated with the proposed project.
- Noise monitoring locations were selected adjacent to and on the proposed project site to determine the appropriate level of building attenuation required to satisfy CEQR interior noise level criteria and to compare noise levels at the proposed project's newly created open space with CEQR guidelines.
- Existing noise levels were determined at receptor sites listed above, for each analysis time period, by performing field measurements.
- Using the results of the traffic studies presented in Chapter 14, "Transportation," a screening analysis was performed using the proportional model to identify locations that had the potential for a significant increase in noise levels.
- At locations where the screening analysis indicated the potential for a significant increase in noise levels (i.e., Sites 3, 6, and 7), existing traffic noise levels were calculated at each receptor site, for each analysis time period in each build year, using the TNM and traffic data for existing conditions.
- At locations where the screening analysis indicated the potential for a significant increase in noise levels (i.e., Sites 3, 6, and 7), the calculated TNM existing traffic noise level for each analysis time period was subtracted from the measured existing noise level. The difference between the two reflects the contribution of non-traffic noise sources—such as train noise from the nearby elevated No. 7 subway train—to the existing noise levels. This difference was applied as a correction factor to calculated future traffic noise levels to account for non-traffic noise sources.
- At each location during each analysis time period in each build year, noise levels generated by the proposed project's associated parking lots and garages were determined using the FTA analysis guidelines as described above.
- Future noise levels associated with on-road traffic for the No Action and With Action scenarios, for each receptor site and for each analysis time period in each build year, were determined using either the proportional model or the TNM approach described above.
- Total future noise levels for the No Action and With Action scenarios, for each receptor site and for each analysis time period in each build year, were determined by logarithmically adding the noise levels due to traffic and (for the With Action scenario only) noise levels due to the parking lots and garages.
- The level of building attenuation to satisfy CEQR requirements was determined for the proposed buildings on the project site based on the calculated noise levels in the future with the proposed project.

G. EXISTING CONDITIONS

SITE DESCRIPTION

The study area for this analysis is bounded to the east by Main Street, to the south by Roosevelt Avenue and the MTA Corona Rail Yard, to the west by 111th Street, and to the north by Flushing Bay. This area includes the project site and nearby receptors that would experience increases in traffic on adjacent roadways as a result of the proposed project.

SELECTION OF NOISE RECEPTOR LOCATIONS

Eight noise receptor locations were chosen within and around the project site (see **Figure 17-1**). Site 1 is located on Roosevelt Avenue between 111th and 114th Streets. Site 2 is located on Roosevelt Avenue between College Point Boulevard and Prince Street. Site 3 is located in World's Fair Marina Park. Site 4 is located on Northern Boulevard between 127th Street and 127th Place. Site 5 is located on 126th Street between 36th and 37th Avenues. Site 6 is located on Willets Point Boulevard between 34th Avenue and Northern Boulevard. Site 7 is located on 126th Street between 39th and Roosevelt Avenues. Site 8 is located on Roosevelt Avenue between 114th and 126th Streets.

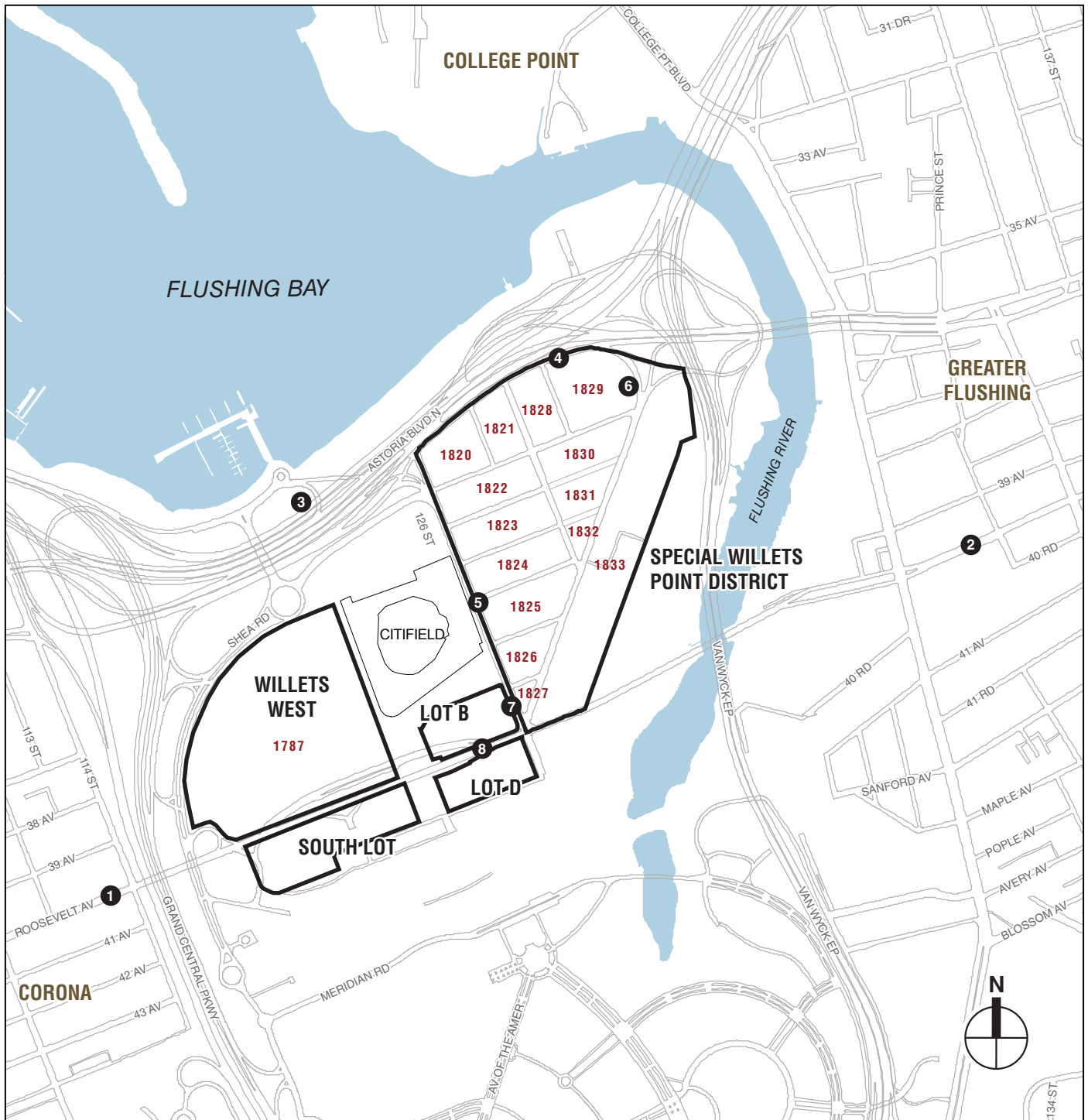
Sites 1–3 were analyzed for impact assessment. These sites are representative of other locations in the immediate area, and are generally the locations where maximum impacts would be expected. These sites were used to assess the potential impacts due to traffic and parking facility noise generated by the proposed and future actions. Sites 4–8 were analyzed to determine the appropriate level of building attenuation for future development.

NOISE MONITORING

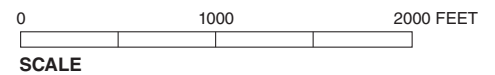
At each receptor site, existing noise levels were determined for each of the seven noise analysis time periods by field measurements. Noise monitoring was performed at all eight sites between September 11, 2012 and October 24, 2012. Twenty-minute spot measurements were taken during the three weekday without-baseball-game periods, one Saturday without-baseball-game period, one weekday with-baseball-game period and two Saturday with-baseball-game periods that reflect peak hours of trip generation: AM weekday (7:45–8:45 AM), midday (MD) weekday (1:00–2:00 PM), PM weekday (5:15–6:15 PM), midday (MD) Saturday (1:00–2:00 PM), PM weekday pre-game (6:00–7:00 PM), midday (MD) Saturday pre-game (12:00–1:00 PM), and PM Saturday post-game (3:45–4:45 PM).

EQUIPMENT USED DURING NOISE MONITORING

Measurements were performed using Brüel & Kjær Sound Level Meters (SLM) Type 2250, 2260, and 2270, Brüel & Kjær ½-inch microphones Type 4189, and Brüel & Kjær Sound Level Calibrators Type 4231. The Brüel & Kjær SLMs are Type 1 instruments according to ANSI Standard S1.4-1983 (R2006). The SLMs had a laboratory calibration date within one year of the time of use. The microphones were mounted at a height of approximately five feet above the ground surface on a tripod and approximately six feet or more away from any large sound-reflecting surface to avoid major interference with sound propagation. The SLMs were field calibrated before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. The data were digitally recorded by the SLMs and displayed at the end of the measurement period in units of dBA. Measured quantities included the L_{eq} , L_1 , L_{10} , L_{50} , L_{90} , and 1/3 octave band data. A windscreen was used during all sound measurements except for calibration. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.



- Project Site
- 1 Noise Receptor Location
- 1825 Block Number



EXISTING NOISE LEVELS AT NOISE RECEPTOR LOCATIONS

MEASURED NOISE LEVELS

Noise monitoring results for the eight receptor locations are summarized in **Tables 17-5** and **17-6**. The elevated No. 7 subway line was the dominant noise source at Sites 1, 7, and 8. Traffic was the dominant noise source at Sites 2–6. Noise levels are generally relatively high, and reflect the level of activity in the area.

Table 17-5
2012 Existing Noise Levels During Non-game Time Periods (in dBA)

Site	Measurement Location	Day	Time	L _{eq}	L ₁	L ₁₀	L ₅₀	L ₉₀
1	Roosevelt Avenue between 114th Street and 111th Street	Weekday	AM	82.0	94.0	85.1	71.9	68.2
		Weekday	MD	77.1	89.0	81.0	67.4	64.5
		Weekday	PM	84.9	96.8	88.6	68.8	61.2
		Saturday	MD	76.4	88.2	79.2	69.2	65.4
2	Roosevelt Avenue between College Point Boulevard and Prince Street	Weekday	AM	67.6	75.0	70.5	66.0	63.2
		Weekday	MD	70.6	80.0	73.1	68.1	65.3
		Weekday	PM	66.0	76.7	68.3	63.0	59.6
		Saturday	MD	65.6	71.8	67.2	64.7	62.4
3	World's Fair Marina Park	Weekday	AM	70.0	78.1	72.2	68.1	65.9
		Weekday	MD	68.4	77.4	70.8	66.0	63.7
		Weekday	PM	68.7	76.9	70.3	67.4	65.7
		Saturday	MD	65.6	71.8	67.2	64.7	62.4
4	Northern Boulevard between 127th Street and 127th Place	Weekday	AM	78.0	86.9	80.0	76.0	72.7
		Weekday	MD	76.7	85.3	79.4	74.7	71.1
		Weekday	PM	77.8	84.0	80.3	77.0	73.1
		Saturday	MD	78.3	84.7	80.7	77.4	74.2
5	126th Street between 36th Avenue and 37th Avenue	Weekday	AM	69.6	78.6	71.8	67.2	64.6
		Weekday	MD	68.6	79.1	71.4	64.8	60.9
		Weekday	PM	70.0	79.1	72.1	67.6	63.4
		Saturday	MD	68.3	75.1	70.4	67.2	64.7
6	Willets Point Boulevard between 34th Avenue and Northern Boulevard	Weekday	AM	73.0	84.8	76.4	64.9	61.3
		Weekday	MD	68.9	79.4	71.1	64.2	61.9
		Weekday	PM	66.5	74.8	67.6	65.4	63.8
		Saturday	MD	69.3	77.1	71.5	68.2	62.0
7	126th Street between 39th Avenue and Roosevelt Avenue	Weekday	AM	71.0	79.8	74.9	67.9	62.8
		Weekday	MD	70.6	80.1	74.5	67.4	62.0
		Weekday	PM	74.0	82.7	77.7	70.2	64.5
		Saturday	MD	68.0	76.4	70.2	65.8	61.9
8	Roosevelt Avenue between 114th Street and 126th Street	Weekday	AM	79.1	89.9	82.5	74.6	66.9
		Weekday	MD	80.3	91.0	84.4	72.2	64.0
		Weekday	PM	82.9	92.7	88.2	75.5	68.5
		Saturday	MD	77.6	91.7	72.5	68.6	62.8

Note: Field measurements were performed by AKRF, Inc. between September 11, 2012 and October 24, 2012.

Table 17-6
2012 Existing Noise Levels During Game Time Periods (in dBA)

Site	Measurement Location	Day	Time	L _{eq}	L ₁	L ₁₀	L ₅₀	L ₉₀
1	Roosevelt Avenue between 114th Street and 111th Street	Weekday	pre-game	84.5	95.1	87.1	71.8	66.6
		Saturday	pre-game	81.3	94.1	81.8	68.9	65.2
		Saturday	post-game	83.0	93.6	88.0	70.3	65.8
2	Roosevelt Avenue between College Point Boulevard and Prince Street	Weekday	pre-game	65.8	74.5	69.3	63.0	60.5
		Saturday	pre-game	66.0	74.0	69.0	63.6	61.1
		Saturday	post-game	66.1	73.1	68.6	64.7	62.1
3	World's Fair Marina Park	Weekday	pre-game	68.6	77.7	69.9	67.2	64.5
		Saturday	pre-game	71.1	79.8	72.5	69.6	68.0
		Saturday	post-game	70.4	77.1	72.1	69.4	67.5
4	Northern Boulevard between 127th Street and 127th Place	Weekday	pre-game	78.7	83.9	80.9	78.0	75.0
		Saturday	pre-game	76.9	83.7	79.4	75.9	72.4
		Saturday	post-game	77.1	82.2	79.5	76.4	73.2
5	126th Street between 36th Avenue and 37th Avenue	Weekday	pre-game	69.5	77.0	71.4	67.6	64.5
		Saturday	pre-game	68.9	75.8	71.0	68.0	65.6
		Saturday	post-game	69.8	76.9	71.8	68.4	64.8
6	Willets Point Boulevard between 34th Avenue and Northern Boulevard	Weekday	pre-game	65.4	74.8	67.6	63.3	61.4
		Saturday	pre-game	68.4	76.5	71.1	66.0	64.1
		Saturday	post-game	71.7	84.3	67.2	65.4	63.7
7	126th Street between 39th and Roosevelt Avenues	Weekday	pre-game	72.8	83.3	76.9	67.5	63.3
		Saturday	pre-game	71.5	80.9	74.8	68.5	65.7
		Saturday	post-game	71.8	82.5	74.4	67.0	63.1
8	Roosevelt Avenue between 114th and 126th Streets	Weekday	pre-game	83.7	94.0	90.2	69.1	64.7
		Saturday	pre-game	78.8	92.2	79.6	69.1	64.3
		Saturday	post-game	79.5	92.5	82.2	68.9	64.2
Note: Field measurements were performed by AKRF, Inc. between September 11, 2012 and October 24, 2012.								

In terms of CEQR noise criteria, noise levels at Sites 2, 3, 5, 6, and 7 are in the “marginally unacceptable” category, and noise levels at Sites 1, 4, and 8 are in the “clearly unacceptable” category.

H. THE FUTURE WITHOUT THE PROPOSED PROJECT

2018 ANALYSIS YEAR

Using the methodology previously described, future noise levels in the 2018 No-Action condition were calculated for Site 1–3 for all seven analysis periods. **Table 17-7** shows the calculated noise levels.

Comparing future 2018 No Action conditions with existing conditions, the maximum increase in L_{eq(1)} noise levels would be less than 2.0 dBA. Increases of this magnitude would be barely perceptible and insignificant under CEQR criteria.

In terms of CEQR noise criteria, noise levels at Sites 2 and 3 would remain in the “marginally unacceptable” category, and Site 1 would remain in the “clearly unacceptable” category.

2028 ANALYSIS YEAR

Using the methodology previously described, future noise levels in the 2028 No-Action condition were calculated for Sites 1–3 for all seven analysis periods. **Table 17-8** shows the calculated noise levels.

Table 17-7
2018 No Action Noise Levels (in dBA)

Site ²	Day	Time	Existing L _{eq(1)}	2018 No Action L _{eq(1)}	Change	2018 No Action L ₁₀₍₁₎
1	Weekday	AM	82.0	83.6	1.6	86.7
	Weekday	MD	77.1	78.9	1.8	82.8
	Weekday	PM	84.9	86.5	1.6	90.2
	Saturday	MD	76.4	77.9	1.5	80.7
	Weekday	pre-game	84.5	85.6	1.1	88.2
	Saturday	pre-game	81.3	82.6	1.3	83.1
	Saturday	post-game	83.0	84.3	1.3	89.3
2	Weekday	AM	67.6	69.1	1.5	72.0
	Weekday	MD	70.6	72.1	1.5	74.6
	Weekday	PM	66.0	67.0	1.0	69.3
	Saturday	MD	65.6	66.7	1.1	69.4
	Weekday	pre-game	65.8	66.5	0.7	70.0
	Saturday	pre-game	66.0	66.9	0.9	69.9
	Saturday	post-game	66.1	67.0	0.9	69.5
3 ¹	Weekday	AM	70.0	70.1	0.1	72.3
	Weekday	MD	68.4	68.5	0.1	70.9
	Weekday	PM	68.7	68.7	0.0	70.3
	Saturday	MD	65.6	65.7	0.1	67.3
	Weekday	pre-game	68.6	68.7	0.1	70.0
	Saturday	pre-game	71.1	71.1	0.0	72.5
	Saturday	post-game	70.4	70.5	0.1	72.2
Notes:						
¹ Future noise levels at this location were calculated using the TNM modeling technique.						
² Sites 4–8 were used solely for the purpose of determining the building attenuation required, and are therefore not presented in the No Action and future with the proposed project scenarios.						

Table 17-8
2028 No Action Noise Levels (in dBA)

Site ²	Day	Time	Existing L _{eq(1)}	2028 No Action L _{eq(1)}	Change	2028 No Action L ₁₀₍₁₎
1	Weekday	AM	82.0	83.7	1.7	86.8
	Weekday	MD	77.1	78.9	1.8	82.8
	Weekday	PM	84.9	86.6	1.7	90.3
	Saturday	MD	76.4	78.0	1.6	80.8
	Weekday	pre-game	84.5	85.7	1.2	88.3
	Saturday	pre-game	81.3	82.7	1.4	83.2
	Saturday	post-game	83.0	84.4	1.4	89.4
2	Weekday	AM	67.6	69.2	1.6	72.1
	Weekday	MD	70.6	72.2	1.6	74.7
	Weekday	PM	66.0	67.1	1.1	69.4
	Saturday	MD	65.6	66.7	1.1	69.4
	Weekday	pre-game	65.8	66.6	0.8	70.1
	Saturday	pre-game	66.0	67.0	1.0	70.0
	Saturday	post-game	66.1	67.0	0.9	69.5
3 ¹	Weekday	AM	70.0	70.1	0.1	72.3
	Weekday	MD	68.4	68.5	0.1	70.9
	Weekday	PM	68.7	68.8	0.1	70.4
	Saturday	MD	65.6	65.8	0.2	67.4
	Weekday	pre-game	68.6	68.8	0.2	70.1
	Saturday	pre-game	71.1	71.2	0.1	72.6
	Saturday	post-game	70.4	70.5	0.1	72.2
Notes:						
¹ Future noise levels at this location were calculated using the TNM modeling technique.						
² Sites 4-8 were used solely for the purpose of determining the building attenuation required, and are therefore not presented in the No Action and future with the proposed project scenarios.						

Comparing future 2028 No Action conditions with existing conditions, the maximum increase in $L_{eq(1)}$ noise levels would be less than 2.0 dBA. Increases of this magnitude would be barely perceptible and insignificant under CEQR criteria.

In terms of CEQR noise criteria, noise levels at Sites 2 and 3 would remain in the “marginally unacceptable” category, and Site 1 would remain in the “clearly unacceptable” category.

2032 ANALYSIS YEAR

Using the methodology previously described, future noise levels in the 2032 No-Action condition were calculated for Sites 1–3 for all seven analysis periods. **Table 17-9** shows the calculated noise levels.

Table 17-9
2032 No Action Noise Levels (in dBA)

Site ²	Day	Time	Existing $L_{eq(1)}$	2032 No Action $L_{eq(1)}$	Change	2032 No Action $L_{10(1)}$
1	Weekday	AM	82.0	83.8	1.8	86.9
	Weekday	MD	77.1	79.0	1.9	82.9
	Weekday	PM	84.9	86.7	1.8	90.4
	Saturday	MD	76.4	78.0	1.6	80.8
	Weekday	pre-game	84.5	85.8	1.3	88.4
	Saturday	pre-game	81.3	82.7	1.4	83.2
	Saturday	post-game	83.0	84.4	1.4	89.4
2	Weekday	AM	67.6	69.2	1.6	72.1
	Weekday	MD	70.6	72.2	1.6	74.7
	Weekday	PM	66.0	67.1	1.1	69.4
	Saturday	MD	65.6	66.8	1.2	69.5
	Weekday	pre-game	65.8	66.6	0.8	70.1
	Saturday	pre-game	66.0	67.0	1.0	70.0
	Saturday	post-game	66.1	67.1	1.0	69.6
3 ¹	Weekday	AM	70.0	70.1	0.1	72.3
	Weekday	MD	68.4	68.6	0.2	71.0
	Weekday	PM	68.7	68.8	0.1	70.4
	Saturday	MD	65.6	65.7	0.1	67.3
	Weekday	pre-game	68.6	68.8	0.2	70.1
	Saturday	pre-game	71.1	71.2	0.1	72.6
	Saturday	post-game	70.4	70.5	0.1	72.2
Notes: ¹ Future noise levels at this location were calculated using the TNM modeling technique. ² Sites 4–8 were used solely for the purpose of determining the building attenuation required, and are therefore not presented in the No Action and With Action scenarios.						

Comparing future 2032 No Action conditions with existing conditions, the maximum increase in $L_{eq(1)}$ noise levels would be less than 2.0 dBA. Increases of this magnitude would be barely perceptible and insignificant under CEQR criteria.

In terms of CEQR noise criteria, noise levels at Sites 2 and 3 would remain in the “marginally unacceptable” category, and Site 1 would remain in the “clearly unacceptable” category.

I. PROBABLE IMPACTS OF THE PROPOSED PROJECT

PHASE 1A (2018)

Using the methodology described above, noise levels in the future with the proposed project (2018) were calculated for Sites 1–3 for all seven analysis periods. **Table 17-10** shows the calculated noise levels.

Table 17-10
2018 With Action Noise Levels (in dBA)

Site ²	Day	Time	2018 No Action L _{eq(1)}	2018 With Action L _{eq(1)}	Change	2018 With Action L ₁₀₍₁₎
1	Weekday	AM	83.6	83.7	0.1	86.8
	Weekday	MD	78.9	79.1	0.2	83.0
	Weekday	PM	86.5	86.8	0.3	90.5
	Saturday	MD	77.9	78.2	0.3	81.0
	Weekday	pre-game	85.6	85.8	0.2	88.4
	Saturday	pre-game	82.6	82.9	0.3	83.4
	Saturday	post-game	84.3	84.5	0.2	89.5
2	Weekday	AM	69.1	69.1	0.0	72.0
	Weekday	MD	72.1	72.2	0.1	74.7
	Weekday	PM	67.0	67.2	0.2	69.5
	Saturday	MD	66.7	66.9	0.2	69.6
	Weekday	pre-game	66.5	66.7	0.2	70.2
	Saturday	pre-game	66.9	67.1	0.2	70.1
	Saturday	post-game	67.0	67.2	0.2	69.7
3 ¹	Weekday	AM	70.1	70.4	0.3	72.6
	Weekday	MD	68.5	69.3	0.8	71.7
	Weekday	PM	68.7	69.3	0.6	70.9
	Saturday	MD	65.7	67.0	1.3	68.6
	Weekday	pre-game	68.7	69.2	0.5	70.5
	Saturday	pre-game	71.1	71.5	0.4	72.9
	Saturday	post-game	70.5	70.8	0.3	72.5
Notes: ¹ Future noise levels at this location were calculated using the TNM modeling technique. ² Sites 4–8 were used solely for the purpose of determining the building attenuation required, and are therefore not presented in the No Action and future with the proposed project scenarios.						

Comparing 2018 With Action conditions with 2018 No Action conditions, the maximum increase in L_{eq(1)} noise levels would be less than 2.0 dBA. Increases of this magnitude would be barely perceptible and insignificant under CEQR criteria.

In terms of CEQR noise criteria, noise levels at Sites 2 and 3 would remain in the “marginally unacceptable” category, and Site 1 would remain in the “clearly unacceptable” category.

PHASE 1B (2028)

Using the methodology described above, noise levels in the future with the proposed project (2028) were calculated for Sites 1–3 for all seven analysis periods. **Table 17-11** shows the calculated noise levels.

Table 17-11
2028 With Action Noise Levels (in dBA)

Site ²	Day	Time	2028 No Action L _{eq(1)}	2028 With Action L _{eq(1)}	Change	2028 With Action L ₁₀₍₁₎
1	Weekday	AM	83.7	84.0	0.3	87.1
	Weekday	MD	78.9	79.3	0.4	83.2
	Weekday	PM	86.6	87.1	0.5	90.8
	Saturday	MD	78.0	78.5	0.5	81.3
	Weekday	pre-game	85.7	86.1	0.4	88.7
	Saturday	pre-game	82.7	83.2	0.5	83.7
	Saturday	post-game	84.4	84.9	0.5	89.9
2	Weekday	AM	69.2	69.3	0.1	72.2
	Weekday	MD	72.2	72.4	0.2	74.9
	Weekday	PM	67.1	67.4	0.3	69.7
	Saturday	MD	66.7	67.1	0.4	69.8
	Weekday	pre-game	66.6	66.8	0.2	70.3
	Saturday	pre-game	67.0	67.3	0.3	70.3
	Saturday	post-game	67.0	67.4	0.4	69.9
3 ¹	Weekday	AM	70.1	70.6	0.5	72.8
	Weekday	MD	68.5	69.6	1.1	72.0
	Weekday	PM	68.8	69.6	0.8	71.2
	Saturday	MD	65.8	67.4	1.6	69.0
	Weekday	pre-game	68.8	69.4	0.6	70.7
	Saturday	pre-game	71.2	71.6	0.4	73.0
	Saturday	post-game	70.5	70.9	0.4	72.6
Notes: ¹ Future noise levels at this location were calculated using the TNM modeling technique. ² Sites 4–8 were used solely for the purpose of determining the building attenuation required, and are therefore not presented in the No Action and future with the proposed project scenarios.						

Comparing future 2028 With Action conditions with 2028 No Action conditions, the maximum increase in L_{eq(1)} noise levels would be less than 2.0 dBA. Increases of this magnitude would be barely perceptible and insignificant under CEQR criteria.

In terms of CEQR noise criteria, noise levels at Sites 2 and 3 would remain in the “marginally unacceptable” category, and Site 1 would remain in the “clearly unacceptable” category.

PHASE 2 (2032)

Using the methodology described above, noise levels in the future with the proposed project (2032) were calculated for Sites 1–3 for all seven analysis periods. **Table 17-12** shows the calculated noise levels.

Comparing 2032 With Action conditions with 2032 No Action conditions, the maximum increase in L_{eq(1)} noise levels would be 2.2 dBA. Increases of this magnitude would be barely perceptible and insignificant under CEQR criteria.

In terms of CEQR noise criteria, noise levels at Sites 2 and 3 would remain in the “marginally unacceptable” category, and Site 1 would remain in the “clearly unacceptable” category.

Table 17-12
2032 With Action Noise Levels (in dBA)

Site ²	Day	Time	2032 No Action L _{eq(1)}	2032 With Action L _{eq(1)}	Change	2032 With Action L ₁₀₍₁₎
1	Weekday	AM	83.8	84.2	0.4	87.3
	Weekday	MD	79.0	79.6	0.6	83.5
	Weekday	PM	86.7	87.3	0.6	91.0
	Saturday	MD	78.0	78.7	0.7	81.5
	Weekday	pre-game	85.8	86.4	0.6	89.0
	Saturday	pre-game	82.7	83.4	0.7	83.9
	Saturday	post-game	84.4	85.1	0.7	90.1
2	Weekday	AM	69.2	69.4	0.2	72.3
	Weekday	MD	72.2	72.5	0.3	75.0
	Weekday	PM	67.1	67.6	0.5	69.9
	Saturday	MD	66.8	67.3	0.5	70.0
	Weekday	pre-game	66.6	66.9	0.3	70.4
	Saturday	pre-game	67.0	67.4	0.4	70.4
	Saturday	post-game	67.1	67.6	0.5	70.1
3 ¹	Weekday	AM	70.1	70.8	0.7	73.0
	Weekday	MD	68.6	70.0	1.4	72.4
	Weekday	PM	68.8	69.8	1.0	71.4
	Saturday	MD	65.7	67.9	2.2	69.5
	Weekday	pre-game	68.8	69.6	0.8	70.9
	Saturday	pre-game	71.2	71.8	0.6	73.2
	Saturday	post-game	70.5	71.1	0.6	72.8
Notes: ¹ Future noise levels at this location were calculated using the TNM modeling technique. ² Sites 4–8 were used solely for the purpose of determining the building attenuation required, and are therefore not presented in the No Action and future with the proposed project scenarios.						

J. BUILDING ATTENUATION FOR PROJECT BUILDINGS

The *CEQR Technical Manual* also requires an analysis of the effect of introducing a sensitive use, such as a residential building, into an urban environment. As shown in **Table 17-4** above, the *CEQR Technical Manual* has set noise attenuation values for new buildings that are to be constructed as part of a proposed action, based on exterior noise levels. Recommended noise attenuation values for residential and school buildings are designed to maintain interior noise levels of 45 dBA L₁₀₍₁₎ (50 dBA L₁₀₍₁₎ for commercial uses) or lower and are determined based on exterior L₁₀₍₁₎ noise levels.

Table 17-13 shows the highest calculated L₁₀₍₁₎ noise levels at the receptor locations in the study area and the building attenuation that would be required to achieve acceptable interior noise levels at each location.

Based on the values shown in **Table 17-13**, required attenuation levels were determined for all building sites. These values are shown in **Table 17-14**.

Table 17- 13
Minimum Building Attenuation to Comply With CEQR Requirements

Site	Location	Maximum L _{10(t)} (dBA)	Required Building Attenuation (dBA) ¹
4	Northern Boulevard between 127th Street and 127th Place	82.5	39
5	126th Street between 36th Avenue and 37th Avenue	75.9	31
6 ²	Willeys Point Boulevard between 34th Avenue and Northern Boulevard	76.6	33
7 ²	126th Street between 39th Avenue and Roosevelt Avenue	79.7	35
8	Roosevelt Avenue between 114th Street and 126th Street	91.4	43 ³
Notes: ¹ Required attenuation values shown are for residential, except where noted. Commercial uses would require 5 dBA less attenuation. ² Future with the proposed project noise levels at these locations were calculated using the TNM modeling technique. ³ The projected land use adjacent to this site are commercial. Should residential or classroom uses be constructed instead, they would require 5 dBA more attenuation.			

Table 17-14
Minimum Building Attenuation to Comply with CEQR Requirements at the Project Site (in dBA)

Block	Façade(s)	Representative Receptor Site	Maximum L _{10(t)} (dBA)	Required Building Attenuation (dBA) ¹
1787	North, West	4	82.5	34 ²
	East	5	75.9	26 ²
	South	8	91.4	43 ²
1820	North	4	82.5	39
	East, West	6	76.6	33
	South	5	75.9	31
1821	North	4	82.5	39
	East, West	6	76.6	33
	South	5	75.9	31
1822	All	5	75.9	31
1823	All	5	75.9	31
1824	All	5	75.9	31
1825	All	5	75.9	31
1826	North, East	5	75.9	31
	South, West	7	79.7	35
1827	All	7	79.7	35
1828	North	4	82.5	39
	East, West	6	76.6	33
	South	5	75.9	31
1829	North	4	82.5	39
	East, West, South	6	76.6	33
1830	North, East, South	6	76.6	33
	West	5	75.9	31
1831	North, South, West	5	75.9	31
	East	6	76.6	33
1832	North, West	5	75.9	31
	East	6	76.6	33
1833	All (north of 38th Avenue)	6	76.6	28 ²
	North, East West (south of 38th Avenue)	7	79.7	30 ²
	South (south of 38th Avenue)	8	91.4	43 ²
Notes: ¹ Required attenuation values shown are for residential uses, except where noted. Commercial uses would require 5 dBA less attenuation. ² The projected land use at these locations are commercial. Should residential or classroom uses be constructed instead, they would require 5 dBA more attenuation.				

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Normally, a building façade is composed of the wall, glazing, and any vents or louvers for HVAC/air conditioning units in various ratios of area. The proposed design for all project buildings includes the use of well-sealed double-glazed windows and air conditioning units. The proposed buildings' façades, including these elements, would be designed to provide a composite Outdoor-Indoor Transmission Class (OITC) rating greater than or equal to the attenuation requirements listed in **Table 17-14**. The OITC classification is defined by the American Society of Testing and Materials (ASTM E1332-90 [Reapproved 2003]) and provides a single-number rating that is used for designing a building façade including walls, doors, glazing, and combinations thereof. The OITC rating is designed to evaluate building elements by their ability to reduce the overall loudness of ground and air transportation noise. By adhering to these design requirements, the proposed buildings will thus provide sufficient attenuation to achieve the CEQR interior noise level guideline of 45 dBA L_{10} for residential uses and 50 dBA L_{10} for commercial uses.

Specifically, the attenuation requirements shown for the District in **Table 17-14** would be implemented through the E-designations that are already in place; these requirements would supersede the requirements previously set forth for the E-designations. For lots outside of the District, the attenuation requirements shown in **Table 17-14** would be incorporated into the development agreements and/or amended leases for each lot. These lots are and would remain in City ownership.

K. NOISE LEVELS AT OPEN SPACE AREAS

As with existing and No Action conditions, noise levels within the new public open spaces to be created within the District as part of the proposed project would be above the 55 dBA $L_{10(1)}$. This exceeds the noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual* noise exposure guidelines (see **Table 17-3**). There are no practical and feasible mitigation measures that could be implemented to reduce noise levels to below the 55 dBA $L_{10(1)}$ guideline within the open space areas. Although noise levels in these new areas would be above the 55 dBA $L_{10(1)}$ guideline noise level, they would be comparable to or lower than noise levels in a number of open space areas that are within range of substantial noise sources (e.g., roadways, aircraft, etc.), including Prospect Park, Brooklyn Bridge Park, and Fort Greene Park. The 55 dBA $L_{10(1)}$ guideline is a worthwhile goal for outdoor areas requiring serenity and quiet. However, due to the level of activity present at most New York City open space areas and parks (except for areas far away from traffic and other typical urban activities), this relatively low noise level is often not achieved.

L. MECHANICAL EQUIPMENT

The building mechanical systems (i.e., heating, ventilation, and air conditioning systems) would be designed to meet all applicable noise regulations (i.e., Subchapter 5, §24-227 of the New York City Noise Control Code addressing circulation devices and the New York City Department of Buildings and Mechanical Codes) to avoid producing levels that would result in any significant increase in ambient noise levels. *

A. INTRODUCTION

The *City Environmental Quality Review (CEQR) Technical Manual* defines as its goal with respect to public health “to determine whether adverse impacts on public health may occur as a result of a proposed project, and if so, to identify measures to mitigate such effects.”

According to the *CEQR Technical Manual*, for most proposed projects, a public health analysis is not necessary. Where no significant unmitigated adverse impact is found in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise, no public health analysis is warranted. If an unmitigated significant adverse impact is identified in one of these analysis areas, the lead agency may determine that a public health assessment is warranted for that specific technical area.

As described in the relevant analyses of this Final Supplemental Environmental Impact Statement (FSEIS), during construction and after completion of construction the proposed project would not result in unmitigated significant adverse impacts in any of the technical areas related to public health. Therefore, a public health analysis is not necessary, as the proposed project would not result in a significant adverse public health impact. *

A. INTRODUCTION

This chapter assesses whether any changed background conditions or the differences between the reasonable worst-case development scenario (RWCDS) and the program assessed in the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda would result in any significant adverse impacts on neighborhood character that were not addressed in the 2008 FGEIS and subsequent technical memoranda.

As defined in the *City Environmental Quality Review (CEQR) Technical Manual*, neighborhood character is an amalgam of various elements that give neighborhoods their distinct “personality.” These elements may include a neighborhood’s land use, urban design, visual resources, historic resources, socioeconomics, traffic, and/or noise. However, not all of these elements affect neighborhood character in all cases; a neighborhood usually draws its character from a few determining elements.

PRINCIPAL CONCLUSIONS

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse impacts to neighborhood character.

As described in detail below, the study area has diverse characteristics owing to the varied land uses surrounding the project site. No one defining feature would be considered critical to the character of the neighborhood; rather all the various localized features contribute to it. Taking into consideration the effects of the proposed project on the contributing features, the proposed project would not have a significant adverse impact on neighborhood character. Rather, the proposed project would result in an improvement in neighborhood character, as it would remediate the area and would represent a significant investment to improve the project area’s infrastructure. The proposed project would allow for a more comprehensive and continuous neighborhood by linking Flushing and Corona, and would transform the area surrounding CitiField into a thriving new neighborhood and regional destination.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS concluded that while the proposed changes to the District would be significant, they would result in an improvement in neighborhood character and would not have a significant adverse impact. The development proposed in the 2008 FGEIS would have dramatically changed neighborhood character in the District, replacing predominantly low-density auto-related, manufacturing, warehousing and distribution, and waste transfer and recycling uses with a new mixed-use neighborhood. The Special Willets Point District regulations were developed to create a dynamic, sustainable community by integrating regional attractions, residential (with

approximately 20 percent affordable housing), retail, and other uses within a network of pedestrian-scaled streetscapes. The 2008 FGEIS also concluded that the proposed convention center and commercial uses would enhance Flushing and Corona's roles as regional economic centers, and would attract visitors to the area. The proposed residential, commercial office, retail, hotel, community facility, open space, and parking uses would be consistent with the uses and character in the surrounding area, particularly those within the dense commercial center of Downtown Flushing. Subsequent technical memoranda also concluded that there would be no significant adverse impacts on neighborhood character.

C. METHODOLOGY

The *CEQR Technical Manual* states that an assessment of neighborhood character is generally needed when a proposed project has the potential to result in significant adverse impacts in any of the following technical areas: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; or noise. Even if a project does not have the potential to result in a significant adverse impact in any of the technical areas listed above, an assessment may be required if the project would result in a combination of moderate effects to several elements that cumulatively may affect neighborhood character. According to the *CEQR Technical Manual*, a "moderate" effect is generally defined as an effect considered reasonably close to the significant adverse impact threshold for a particular technical analysis area.

As described in the relevant chapters of this Final Supplemental Environmental Impact Statement (EISEIS), the proposed project would not result in significant adverse impacts in the areas of land use, zoning, and public policy; socioeconomic conditions; open space; urban design and visual resources; shadows; or noise. It would also not result in effects considered reasonably close to the significant adverse impact thresholds in those technical areas. However, the proposed project would result in significant adverse impacts in the areas of historic and cultural resources, and transportation. Therefore, a preliminary assessment of neighborhood character impacts from the proposed project is provided below.

The analysis of neighborhood character is addressed in two geographical areas: the project site and adjacent neighborhoods located within a ½-mile area from the boundaries of the project site. A larger secondary study area was not considered necessary for the neighborhood character analysis due to natural and man-made barriers (described below). The uses within the larger study area are too distant from the project site to contribute to the existing neighborhood character and would also not experience effects to neighborhood character as a result of the proposed project.

D. PRELIMINARY ASSESSMENT

DEFINING FEATURES

PROJECT SITE

The project site is composed of three discrete areas—the Special Willets Point District (the "District"), Willets West, and the South Lot and Lot D on Roosevelt Avenue—which are roughly bounded by Shea Road and Northern Boulevard to the north, the Van Wyck Expressway to the east, Roosevelt Avenue and the Metropolitan Transportation Authority (MTA) Corona Rail Yard to the south, and Shea Road to the west.

Special Willets Point District

The District portion of the project site comprises approximately 61 acres, approximately 15.8 acres of which are within public street rights-of-way, approximately 0.6 acres of which are owned by MTA, and the remainder of which is a mix of privately owned land and land owned by the City. It covers most of the Willets Point peninsula, which is itself defined by the Flushing River and Flushing Bay. In addition, the neighborhood is surrounded by a network of above-grade roadways, connectors and viaducts (including the Van Wyck Expressway, Northern Boulevard, and the elevated No. 7 subway line) that form a relatively hard-edged boundary. Auto-related services are the most prevalent use in the District. These services consist of auto-body repair, auto glass, car washes and auto detailing, used and new auto part sales, tire sales, and vehicle towing. There are also a number of car junkyards in the District, which support auto salvage businesses. The District also contains some industrial uses, including construction-related services and materials, and waste transfer and recycling. In addition to the auto-related and industrial uses, a few commercial uses exist in the District to cater to businesses in the area. These include a deli and grocery, and a restaurant. The District contains one institutional use, a private, members-only motorcycle club. Although residential uses are not permitted under the existing zoning, there is one residential unit in the District, located on Willets Point Boulevard.

The District is partially developed in a street grid, although due to the diagonal trajectory of Willets Point Boulevard and the curve of Northern Boulevard, the majority of the blocks are irregularly shaped. Willets Point Boulevard is the main thoroughfare through the District. Starting at 126th Street, it runs on a diagonal that extends northeast to the entrance of the Van Wyck Expressway. There are no streets south of Willets Point Boulevard in the District.

The streetscape of the District is industrial in character. Most of the streets are flanked by paved sidewalks, which are in poor condition and are also used for car parking, auto parts storage, and waste storage. The streets in the District also are in various states of disrepair. Most are partially paved and riddled with potholes. The only streets with designated or marked traffic lanes are 126th Street and Willets Point Boulevard. There are few sidewalk crossings or stop signs. Throughout the District, stormwater drainage is a serious problem, as the area lacks an adequate drainage system and much of the stormwater runoff flows as overland flow and ponds, causing area streets to flood during storm events.

The majority of structures in the District are generally small masonry or metal buildings, temporary metal sheds and Quonset huts, or brick buildings with small footprints. Exterior building materials include corrugated metal, concrete block, and brick. The majority of the buildings have large, projecting advertising signs. Most of the buildings in the District are attached or located close together. In contrast, in the northeast section of the District there are a number of freestanding buildings that are larger and boxier in form. These include the Tully Environmental and Crown Container site, which contains a three-story, boxy red brick building and is surrounded by a metal chain-link fence topped with barbed wire. Large trucks and other manufacturing equipment are stored on the site. Also located in the northeastern section of the District is the House of Spices distribution site, which contains an unornamented two-story, boxy concrete building, surrounded by a large paved area and smaller, one-story structures. Another notable building in this portion of the District is the historic former Empire Millwork Corporation Building (see Chapter 7, "Historic and Cultural Resources"). This two-story, Georgian Revival-style red brick building is located near the intersection of Willets Point Boulevard and the Van Wyck Expressway.

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Existing uses and structures in the District are similar to the primarily industrial uses along the Flushing River and Flushing Bay waterfronts from the Whitestone Expressway to approximately 37th Avenue, but contrast sharply with most of the uses and types of development in the nearby communities, such as the higher-density commercial and residential development in Downtown Flushing, and the primarily low- to mid-density residential neighborhood of Corona to the west of CitiField and the Grand Central Parkway. Deteriorated sidewalks, large potholes, corrugated metal building façades, and the widespread use of streets and sidewalks for vehicle parking and storage for adjacent automotive uses contribute to an unappealing streetscape and create uninviting and unsafe pedestrian conditions. Despite its transit-oriented location and proximity to Downtown Flushing and several thriving neighborhoods, Willets Point contains virtually none of the land use characteristics or patterns of its neighbors.

Willets West

The Willets West portion of the project site comprises an approximately 30.7-acre section of the surface parking field adjacent to CitiField, the stadium for the New York Mets. While this portion of the project site is mapped as parkland in Flushing Meadows-Corona Park, it does not function as public open space. The property was first developed as a paved parking lot for the 1939–1940 World’s Fair. A 1943 map of the project site area shows it as a large, paved parking lot punctuated by asphalt islands and floodlights. It was occupied by Shea Stadium and associated parking and circulation space beginning in 1964, until it was replaced by CitiField in 2009, and it is now occupied exclusively by surface parking. The area is lit by tall floodlights and there are traffic islands within and around the perimeter of the surface parking area, which are currently planted with trees. There are no structures on this portion of the project site.

Roosevelt Avenue

The Roosevelt Avenue portion of the project site comprises CitiField-related surface parking lots (South Lot and Lots B and D) along Roosevelt Avenue. The South Lot and Lot D are located between Roosevelt Avenue and the MTA Corona Rail Yard, and are separated by the elevated Passerelle Ramp, which extends south from the Mets-Willets Point subway station and comes to grade adjacent to the USTA National Tennis Center. Lot B is located on the north side of Roosevelt Avenue, west of 126th Street; this paved surface parking lot currently serves as VIP/ADA parking for CitiField. These lots are also mapped as parkland, but are occupied exclusively by surface parking. Lot D and South Lot are used for commuter parking and United States Tennis Association (USTA) National Tennis Center (NTC) events when baseball games are not in progress. The parking areas each include a small number of trees at the site perimeter and are lit by tall floodlights. Lot B is surrounded by a decorative metal fence; the South Lot and Lot D are surrounded by chain link fencing. There are no structures on this portion of the project site, except for small temporary structures related to the parking use.

As described in Chapter 7, “Historic and Cultural Resources,” there are no known or potential architectural resources within the Willets West and Roosevelt Avenue portions of the project site. The 2008 FGEIS identified one architectural resource within the Special Willets Point District: the former Empire Millwork Corporation Building at 128-150 Willets Point Boulevard. It has a red brick front section, which faces onto Willets Point Boulevard, and a large, double-height, multi-paned glass section in the rear. As part of the 2008 FGEIS, the structure was determined S/NR-eligible by the New York State Office of Parks, Recreation & Historic Preservation (OPRHP) as a significant early 20th century commercial and industrial building.

As described in Chapter 8, “Urban Design and Visual Resources,” there are no visual resources within the District portion of the project site, nor are any visible from its sidewalks and streets. Views to the west are blocked by CitiField. Natural features surrounding the District, including those in Flushing Meadows-Corona Park, Flushing Bay, and the Flushing River, are not visually accessible primarily due to the elevated transportation structures to the north, south, and east of the District.

Overall, the project site has no natural features, and its topography is relatively flat. The project site is mostly isolated from the surrounding neighborhoods by several natural and man-made barriers. To the east of the Van Wyck Expressway lies the Flushing River, and beyond that, Downtown Flushing. To the north of Northern Boulevard lies Flushing Bay, with the industrial area of College Point on its northern shore. To the south of the project site are the LIRR tracks for the Port Washington Line, the MTA Corona Rail Yard, and the USTA NTC, and to the west is Grand Central Parkway and the Corona neighborhood.

ADJACENT AREAS

Nearby areas include other parts of the Willets Point peninsula that lie outside the Willets Point Development District, portions of Flushing Meadows-Corona Park, Downtown Flushing, the greater Flushing area, and portions of Corona. Directly east of the District is a large undeveloped MTA property located along the Flushing River waterfront, a majority of which is leased to Tully Environmental, Inc., which operates a construction and demolition debris recycling operation on the site. To the north of the District, across Northern Boulevard, is a New York City Department of Transportation (NYCDOT) maintenance and repair facility, and between Northern Boulevard and the Van Wyck Expressway is an asphalt plant. To the northwest of the District, across Northern Boulevard, is the Flushing Bay Promenade, which is within the boundary of Flushing Meadows-Corona Park and is described below. To the south of the District—south of Roosevelt Avenue, near the LIRR tracks—is the MTA Corona Rail Yard. The Corona Rail Yard, which is not part of Flushing Meadows-Corona Park, contains a storage area for subway cars as well as repair shops. The Casey Stengel Bus Depot is adjacent to the Corona Rail Yard. Taken together, the uses surrounding the District have an industrial character typical of transit infrastructure, manufacturing zones, and working waterfront uses. While they are the geographically closest sites to the District and contain uses compatible with those found in the District, aside from the MTA property these sites are all buffered from the District by intervening raised roadways and the elevated superstructure of the No.7 subway line.

Primarily to the south and west of the District is the portion of Flushing Meadows-Corona Park that extends from Flushing Bay to just south of the USTA NTC. This portion of the park includes CitiField and its surrounding parking fields. The elevated No. 7 subway line serves the primary study area, with the Mets-Willets Point station located adjacent to CitiField above Roosevelt Avenue. The LIRR also has a Mets-Willets Point station adjacent to the Corona Rail Yard, which operates on baseball game and USTA NTC event days. The Passerelle Ramp, which is for pedestrian use, spans the Yards and connects both stations to CitiField and the USTA NTC.

The USTA NTC contains three stadiums and is host to tennis events year-round, including the U.S. Open. The USTA NTC contains the 23,000-seat Arthur Ashe Stadium, 10,000-seat Louis Armstrong Stadium, a smaller 3,500-seat stadium, and 30 additional tennis courts. The courts are open during the year for tennis clinics and camps, as well as for general public use. There is a

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small parking lot located adjacent to the USTA NTC; however, during the U.S. Open, CitiField lots are also used for parking.

East of the USTA NTC, the park contains a pitch and putt golf center, and a large area available for passive and active recreation, with trees, pathways, and sitting areas. West of the USTA NTC and the Grand Central Parkway, the park includes the New York Hall of Science. There is a large (500-space) parking lot adjacent to the museum. The Olmsted Center, located near the LIRR right-of-way immediately west of the USTA NTC, contains offices for the design and construction supervision divisions of DPR. The Passerelle Building, located under the Passerelle Ramp, contains offices and support facilities for the park. The Allied Building, located on the far-east side of the park south of Roosevelt Avenue and near the Van Wyck Expressway, contains DPR offices and storehouses.

Another part of the park near the project site is the Flushing Bay Promenade, which winds along Flushing Bay for approximately 1.4 miles from LaGuardia Airport to the Willets Point peninsula. The promenade contains many sitting areas and provides access to the World's Fair Marina and a restaurant located northeast of CitiField. There are more than 1,000 parking spaces located to the east and west of the marina, which are also available for parking on Mets game days.

In contrast to the underutilization that characterizes much of the District, east of the District and across Flushing River is the vibrant urban core of Downtown Flushing. Flushing is a thriving business and residential area, as well as a center for ethnic goods and culture. Downtown Flushing and the greater Flushing area contain a substantial Asian population, with large Chinese and Korean communities, and there are many specialty food and retail stores, restaurants, and other services that are utilized not only by the local population, but also serve as a destination for people living outside of the community. Downtown Flushing is also a regional transportation and commercial hub for Queens. While most of the commercial and cultural activity is centered along Northern Boulevard, Roosevelt Avenue, and Main Street, the Downtown Flushing study area (Flushing Subarea A) generally extends between the Flushing River to the west, Northern Boulevard to the north, Bowne Street to the east, and the LIRR tracks located south of Roosevelt Avenue to the south. The predominantly industrial areas in Flushing are generally located along the Flushing River within approximately ½ mile of the District, with some commercial and mixed-uses areas south of 37th Avenue. To the south of the LIRR Port Washington Line (Flushing Subarea B), industrial uses are concentrated west of College Point Boulevard. To the north of Northern Boulevard (Flushing Subarea C), a large industrial district extends east of the Flushing River to Linden Place.

The western portion of the study area includes the Corona subarea bounded by 114th Street to the east, 108th Street to the west, Grand Central Parkway to the north, and 44th Avenue to the south. This portion of the study area is predominantly residential in character and contains a variety of housing types, including detached one- and two-family residences on narrow lots, attached row-houses and multi-family dwelling units, and apartment buildings. Other prominent residential uses include the 301-unit Dorie Miller Cooperative housing development located on 114th Street between Northern Boulevard and 34th Avenue, and the 132-unit Meadow Manor housing development located at 113th Street and 34th Avenue. There is a mix of commercial uses and dense neighborhood retail and office uses along Northern Boulevard and Roosevelt Avenue. A few auto-related uses are located on Northern Boulevard, and some light manufacturing uses are located on 111th Street between Northern Boulevard and Astoria Boulevard, including a live chicken wholesale warehouse and storage warehouse. A construction

material distribution warehouse and a few auto-related uses are also located on Roosevelt Avenue. The right-of-way for the LIRR Port Washington Line forms the southern boundary of this subarea, and the Van Wyck Expressway forms the northern boundary. The No. 7 subway line, which is elevated above Roosevelt Avenue, has a station at 111th Street. Notable community facilities in this portion of Corona include the Louis Armstrong School (P.S. 143), Hinton Park, the New York Church of Christ, Mount Horeb Baptist Church, and the Child Center of New York day care center.

As described in Chapter 7, “Historic and Cultural Resources,” there are no known or potential architectural resources located within a 400-foot area surrounding the project site. Beyond the 400-foot historic resources study area, there are a number of known or potential architectural resources, primarily within the Flushing Subarea A, as well as those associated with the 1939–1940 and 1964–1965 World’s Fairs.

As described in Chapter 8, “Urban Design and Visual Resources,” there are a number of visual resources in or visible from the study area, including Flushing Bay and its promenade, Flushing Meadows-Corona Park, and the structures associated with the 1964 World’s Fair.

Noise conditions in the study area are typical of an urban neighborhood adjacent to elevated subway operations and well-trafficked roads. As described in greater detail in Chapter 17, “Noise,” most of the noise affecting the area is from vehicular traffic along area roadways and from the elevated No. 7 subway line that runs above Roosevelt Avenue. Airplane flights from nearby LaGuardia Airport also contribute to background noise levels. Overall noise levels are generally relatively high, and reflect the level of activity in the area.

The project site is 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. In addition, the close proximity of the project sites to CitiField results in significant changes to traffic characteristics and operations on roadways in the area before and after Mets home games. With parking lot entrances located along Roosevelt Avenue, 126th Street, and Stadium Road, access and egress to CitiField during pre- and post-game periods significantly affects traffic conditions on both the highway and local street networks near Willets Point.

Overall, the study area has diverse characteristics and is not defined by one element. The project site is mostly isolated from the surrounding neighborhoods by several natural and man-made barriers. The District portion of the project site is predominantly characterized by auto-related services, with generally small masonry or metal buildings, temporary metal sheds and Quonset huts, or brick buildings with small footprints. Most of the sidewalks are in poor condition the streets in various states of disrepair. The Willets West and Roosevelt Avenue portions of the project site are characterized by surface parking lots. The eastern portion of the study area includes Downton Flushing, a thriving business and residential area, as well as a center for ethnic goods and culture. The western portion of the study area includes the Corona subarea which is predominantly residential in character and contains a variety of housing types, including detached one- and two-family residences on narrow lots, attached row-houses and multi-family dwelling units, and apartment buildings. Other defining uses in the study area

include those within the Flushing Meadows-Corona Park, including Citifield to the west of the District, USTA NTC in the southern portion of the study area, and the Flushing Bay Promenade, which winds along Flushing Bay. The study area is heavily trafficked, with noise levels that are relatively high, reflecting the level of vehicular activity on the adjacent streets, the elevated No. 7 subway line, and airplane flights from nearby LaGuardia Airport. No one defining feature would be considered critical to the character of the neighborhood. Rather, all the various localized features contribute to it.

POTENTIAL TO AFFECT DEFINING FEATURES OF A NEIGHBORHOOD

As mentioned above, significant adverse impacts from the proposed project have been identified in the areas of historic and cultural resources, and transportation.

In Phase 2 of the proposed project, it is anticipated that the former Empire Millwork Corporation Building would be demolished. However, as described in the 2008 FGEIS, for a number of reasons, the building does not meaningfully contribute to neighborhood character. Tucked into the northeast corner of the District, the building's primary façade is not visible from most of the District or from most parts of the study area due to the elevated Van Wyck Expressway—the primary views of the building's façade are when driving past it. The building is not particularly tall and therefore is not highly visible from either the District or the study area, and it is not a defining feature of a view corridor or a visual terminating point. As mentioned above, there are also a number of known or potential architectural resources outside of the project site, within the ½ mile study area. The proposed project would not result in any significant adverse impacts to these resources.

As discussed in detail in Chapter 14, "Traffic and Parking," by the full buildout in Phase 2, the proposed project is expected to have significant traffic impacts at 22 of the 31 intersections analyzed for the future With Action condition in the weekday AM peak hour, and 26 of 31 in the weekday midday, weekday PM and Saturday midday non-game peak hours. During the PM pre-game weekday peak hour, 25 of 31 intersections analyzed would have significant traffic impacts, and during the Saturday pre-game and post-game peak hours, 23 of 31 intersections analyzed would have significant impacts. Also by Phase 2, five of six highway mainline locations analyzed (including the westbound Grand Central Parkway, and both directions of the Whitestone and Van Wyck Expressways) and eight of the 12 ramp locations would be significantly impacted during at least one peak hour. However, traffic congestion in the study area would be present even without the proposed project, as the expected magnitude of background development in the No Action condition would generate substantial traffic volumes in the study area mostly along the primary streets in the study area network (including Northern Boulevard, Roosevelt Avenue, Astoria Boulevard, and College Point Boulevard). While the study area will be heavily trafficked, and the proposed project would generate traffic resulting in significant adverse traffic impacts, traffic conditions are not considered critical to the character of the neighborhood. In addition, significant adverse traffic impacts could be fully or partially mitigated at most of the impacted locations with signal timing adjustments and other measures, as described in Chapter 21, "Mitigation". Therefore, these impacts would not substantially affect the character of the neighborhood.

The proposed project would also result in significant adverse transit and pedestrian impacts. These were identified for the street-level stairways on the north side of Roosevelt Avenue at the Mets-Willets Point subway station, line-haul conditions on the No. 7 train, and the Q19, Q48, and Q66 bus routes. Significant pedestrian impacts were identified for the east crosswalk at the

intersection of Northern Boulevard and 126th Street, the north and west crosswalks at the intersection of Roosevelt Avenue and 126th Street, the north, south, and east crosswalks at the intersection of 34th Avenue and 126th Street, the south crosswalk at the intersection of New Willets Point Boulevard and 126th Street, and the north crosswalk at the newly signalized intersection of Roosevelt Avenue and the Lot B driveway. While these significant adverse impacts are predicted to occur, bus capacity and pedestrian conditions at sidewalk/crosswalk locations are not considered critical to the character of the neighborhood. In addition, the significant adverse transit and pedestrian impacts would be mitigated to the extent practicable, subject to approvals of NYCDOT and the MTA. Therefore, these impacts would not substantially affect the character of the neighborhood.

The transportation conditions and historic elements of the study area surrounding are generally unrelated, and therefore the proposed project's effects on these elements would not individually or in combination result in a significant adverse impact on neighborhood character.

In addition, as described above, the 2012 *CEQR Technical Manual* states that even if a project does not have the potential to result in a significant adverse impact in a certain technical area, the project may have the potential to result in a combination of moderate effects to several elements that cumulatively may affect neighborhood character. A moderate effect is generally defined as an effect considered reasonably close to the significant adverse impact threshold for a particular technical analysis area. The proposed project would not result in significant adverse impacts in the areas of land use, zoning, and public policy; socioeconomic conditions; open space; urban design and visual resources; shadows; or noise nor would it result in moderate effects in these areas as defined by CEQR guidelines. Therefore the proposed project would not have the potential to result in a combination of moderate effects to several elements that cumulatively may affect neighborhood character.

The proposed changes, while significant, would not have a significant adverse impact, but would rather result in an improvement in neighborhood character. As described in Chapter 1, "Project Description," the proposed project is intended to remediate and transform the area surrounding CitiField, which is largely separated from adjoining neighborhoods by major highways, into a thriving new neighborhood and regional destination. Consistent with the 2008 FGEIS, the proposed project represents a critical step in implementing the 2004 Downtown Flushing Development Framework, a land use and economic planning strategy for the growth of Downtown Flushing, the Flushing waterfront, and adjacent areas. The District would be developed pursuant to the zoning regulations approved in 2008, and the proposed project would advance a number of the Framework's fundamental goals, including the creation of a regional destination that would enhance economic growth in Downtown Flushing; improvement of environmental conditions; and integration of new development with surrounding amenities, including the Flushing Bay Promenade, CitiField, Flushing Meadows-Corona Park, and Downtown Flushing. The proposed project would be consistent with and vital to the advancement of several of the goals of PlaNYC, which aim to create a more sustainable New York by the year 2030.

By providing development spanning both sides of the new CitiField, the proposed project would allow for a more comprehensive and continuous neighborhood transformation linking Flushing and Corona. The environmental degradation of the Willets Point district would be remediated. The commercial components of the proposed project would complement the adjacent sports venue and strengthen economic activity in the neighborhood. The new structures and open spaces are intended to create an active streetscape enhancing the pedestrian experience. The

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proposed entertainment and retail destination of Willeys West would complement the anticipated development within the District, and both would connect Flushing to the east with Corona to the west through the creation of an unbroken series of uses along Roosevelt Avenue stretching from east of the Flushing River to west of the Grand Central Parkway. Over 2,000 units of affordable housing would be developed to accommodate a portion of the City's current and future affordable housing needs. The proposed project would represent a significant investment to improve the infrastructure of the project area. Raising the District portion of the project site out of the floodplain would not only minimize the potential loss of life, structures, and natural resources caused by flooding and erosion, but would also protect the new infrastructure investment. By eliminating flooding within the District and improving the quality of the soil substrate, the proposed project would also improve water quality in Flushing Bay. For all of the reasons described above, the proposed project would not result in a significant adverse impact on neighborhood character. *

A. INTRODUCTION

The construction analysis in this chapter updates changes to the proposed project and background conditions since the 2008 FGEIS and assesses whether any changed background conditions or differences in elements between the reasonable worst-case development scenario (RWCDS) and the program assessed in the 2008 FGEIS and subsequent technical memoranda would result in significant adverse construction impacts that were not addressed in the 2008 FGEIS or subsequent technical memoranda. This chapter summarizes the RWCDS and an associated conceptual construction scenario for the proposed project and considers the potential for adverse impacts during construction.

Construction activities, although temporary, can include noticeable and disruptive effects. Determination of the significance of construction impacts and need for mitigation is generally based on the duration and magnitude of the impacts. For construction activities of the scale and duration estimated for the proposed project, the 2012 *City Environmental Quality Review (CEQR) Technical Manual* calls for an assessment of construction-related impacts, with a focus on transportation, air quality, and noise, as well as consideration of other technical areas such as historic and cultural resources, hazardous materials, and open space. The assessment focuses on project construction activities within the project site.

The proposed project is expected to result in the development of new residential, retail, entertainment, community facility, office, convention center, school, structured and surface parking, and open space uses on the project site. Over a period of approximately 19 years, construction would occur as described in detail in Chapter 1, “Project Description,” on the three distinct portions of the project site—the approximately 61-acre “Willetts Point” portion of the project site (the Special Willetts Point District); the approximately 30.7-acre “Willetts West” portion of the project site (a section of the surface parking field west of CitiField); and the approximately 16.8-acre “Roosevelt Avenue” portions of the project site comprising three CitiField-related surface parking lots (South Lot and Lots B and D) along Roosevelt Avenue south and southwest of CitiField.

The proposed project would redevelop the Willetts Point/CitiField area with a mix of uses that is expected to be completed by 2032. The redevelopment would incorporate a development in the Special Willetts Point District substantially as anticipated and analyzed in the 2008 FGEIS and subsequent technical memoranda, as well as a major entertainment/retail component and parking adjacent to CitiField. For analysis purposes, a reasonable worst-case conceptual construction phasing and schedule for the development anticipated to occur under the proposed project was developed to illustrate how the proposed project could occur over approximately 19 years. Under the RWCDS conceptual construction phasing and schedule, construction of the proposed project is anticipated to proceed in the following three sequential phases: Phase 1A construction would commence at the start of 2014 and would last for about 4 years 10 months, with Phase 1A being completed before the end of 2018; Phase 1B construction would commence in mid-2022,

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lasting for about 6 years 1 month, with Phase 1B being completed in mid-2028; finally, it is anticipated that Phase 2 construction activities would begin at the end of 2026 and would last for about 6 years 1 month, with Phase 2 being completed at the end of 2032.

Given that the project's 19 building sites and other proposed area improvements are distributed over the approximately 108.9 acres of the project site, one or more building sites and other portions of the project site would be under construction during each of the three Phases (1A, 1B, and 2) for part or all of approximately 16 years, over the course of the approximately 19 year construction duration anticipated for the full "build out" of the proposed project. As construction activity associated with the proposed project would occur on multiple building sites and other locations within the same geographic area, there is the potential for several construction timelines to overlap.

The reasonable worst-case construction and phasing schedule conservatively accounts for overlapping construction activities and simultaneously operating construction equipment, thus capturing the cumulative nature of construction impacts which would result in the greatest impacts at nearby receptors. The reasonable worst-case conceptual construction phasing and schedule for the proposed project is described in this chapter, followed by the types of activities likely to occur during construction. An assessment of potential impacts of construction activity and the methods that may be employed to avoid or minimize the potential for significant adverse impacts are then presented.

For each of the various technical areas presented below, appropriate construction analysis years were selected to represent reasonable worst-case conditions relevant to that technical area, which can occur at different times for different analyses. For example, the noisiest part of the construction may not be at the same time as the heaviest construction traffic. Therefore, the analysis periods may differ for different analysis areas. Where appropriate, the analysis accounted for the effects of elements of the proposed project that would be completed and operational during the selected construction analysis years.

While the anticipated construction durations have been developed with an experienced New York City construction manager, the discussion is only illustrative as specific means and methods will be chosen at the time of construction. While the Phase 1A and 1B development programs are those being advanced by the developer team (Queens Development Group, LLC [QDG]) selected to undertake this portion of the proposed project, there are no finalized construction programs or designs for the Phase 1A and 1B elements of the proposed project at this time. Furthermore, as the Phase 2 development will be the subject of a future developer solicitation, the Phase 2 development program analyzed in this SEIS generally reflects the development anticipated for this area based on the development program approved in the 2008 FGEIS, as modified in the subsequent technical memoranda. The construction durations have been conservatively chosen to serve as the basis of the analyses in this chapter and are representative of the reasonable worst-case assumptions for determining potential construction period impacts. The conceptual schedule represents a conservative potential timeline for construction, which shows overlapping construction activities and simultaneously operating construction equipment during the three major construction phases, for the proposed project's 19 building sites and other planned project elements (i.e., new open spaces, public park, surface and structured parking, and/or infrastructure improvements) in proximity to one another. Thus, the analysis captures the cumulative nature of construction impacts, which would result in the greatest impacts at nearby receptors.

PRINCIPAL CONCLUSIONS

There would be temporary inconvenience and disruption arising from the construction of the proposed project throughout the Willets Point/CitiField area. As detailed below, construction of the proposed project would result in significant adverse construction impacts related to transportation and historic and cultural resources. Potential mitigation for these significant adverse impacts is discussed in Chapter 21, "Mitigation."

TRANSPORTATION

The construction of the proposed project, from 2014 to 2032, would generate construction worker and truck traffic. Because of the lengthy duration of these activities, an evaluation of construction sequencing and worker/truck projections was undertaken to assess the potential transportation-related impacts. It is expected that the project construction activities would yield considerably less traffic than that projected for the proposed project and that parking and staging needs could be managed primarily within the District, or next to the stadium (for Lot B construction). However, given the high traffic volume in the existing and No Action conditions, and the inclusion of traffic from the project as it is being built out as well as construction traffic, significant adverse traffic impacts could still occur at some of the study area locations during construction. Where impacts during construction may occur, measures recommended to mitigate impacts associated with the proposed project could be implemented early to aid in alleviating congested traffic conditions. At locations where the proposed project is expected to result in unmitigated significant adverse traffic impacts, these impacts could similarly exist during construction.

Construction worker transit trips would occur outside of peak periods of transit ridership and would be distributed and dispersed to the nearby transit facilities, and would not result in any significant adverse transit impacts. However, the significant adverse transit impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition are expected to also address the potential transit impacts during construction. As with the 2028 and 2032 With Action conditions, the projected subway line-haul impact during the weekday AM peak period may remain unmitigated. ~~Additionally, as discussed in more detail in Chapter 14, "Transportation," and Chapter 21, "Mitigation," subway station impacts may remain unmitigated, if mitigation options are found to be infeasible, or if NYCT changes the current game day operation of the station.~~

Pedestrian trips during peak construction in 2031 would primarily be concentrated during off-peak hours (6 to 7 AM and 3 to 4 PM) and would be distributed among numerous pedestrian facilities in the area. Accordingly, there would also not be a potential for significant adverse pedestrian impacts attributable to the projected construction worker pedestrian trips. However, the significant adverse pedestrian impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition are expected to also address the potential pedestrian impacts during construction. At locations where the proposed project is expected to result in unmitigated significant adverse pedestrian impacts, these impacts could similarly exist during construction.

AIR QUALITY

Based on a detailed analysis of construction during Phase 2 and a qualitative evaluation of construction during Phases 1A and 1B, the proposed project would not result in significant

adverse impacts with respect to air quality. A detailed analysis of the combined effects of on-site and on-road emissions, determined that annual-average nitrogen dioxide (NO₂), carbon monoxide (CO), ~~and particulate matter with an aerodynamic diameter less than 10 microns (PM₁₀), and particulate matter with an aerodynamic diameter of less than 2.5 microns (PM_{2.5})~~ concentrations would be below their corresponding National Ambient Air Quality Standards (NAAQS) or de minimis criteria. Therefore, the proposed projects would not cause or contribute to any significant adverse air quality impacts with respect to these standards. ~~Additional air quality studies may be undertaken between the Draft SEIS and Final SEIS to further refine the construction mobile source analysis for the Phase 2 analysis year, in consultation with DEP.~~

~~Dispersion modeling determined that the maximum predicted incremental concentrations of PM_{2.5} (using a worst case emissions scenario) would exceed the City's applicable 24 hour interim guidance criterion of 2 µg/m³ at a few receptor locations on the northeastern façade of parcel A1 during the construction activities at parcel A11 located immediately to the northeast, where the likelihood of prolonged exposure is very low. The maximum predicted incremental concentrations of PM_{2.5} would also exceed at a sidewalk location due to mobile sources on the southeast corner of 34th Avenue and 126th Street. The occurrences of elevated 24 hour average concentrations for PM_{2.5} would be limited in duration, frequency, and magnitude. Therefore, after taking into account the limited duration and extent of these predicted exceedances, and the limited area wide extent of the 24 hour impacts, it is concluded that no significant adverse air quality impacts for PM_{2.5} are expected from the on-site construction sources.~~

Because background concentrations are not known and the analysis methodology for mobile and construction sources have not been developed for the new 1-hour NO₂ NAAQS, exceedances of the 1-hour NO₂ standard resulting from construction activities cannot be ruled out. Therefore, measures including diesel equipment reduction, utilization of newer equipment, and source location and idling restriction, would be implemented by the proposed project to minimize NO_x emissions from construction activities.

NOISE AND VIBRATION

Based on a detailed analysis of construction during Phase 2 and a qualitative evaluation of construction during Phases 1A and 1B, construction activities would not be expected to result in significant noise impacts at any nearby sensitive receptor locations. Proposed buildings that would be completed and occupied before construction is completed at other project building sites would also experience exterior noise levels due to construction activities in the low 70s to mid-80s dBA range. The design of all project buildings would include building façades providing not less than 31-43 dBA of attenuation, and alternate means of ventilation (i.e., air conditioners) that do not degrade the acoustical performance of the façade. During the time period when these proposed buildings would be occupied and loud construction activities would be underway at immediately adjacent building sites (approximately two years according to the conceptual construction schedule on which the construction noise analysis is based), interior noise levels would, during some times, exceed 45 dBA L₁₀₍₁₎ (the CEQR acceptable interior noise level criteria for residential uses). Such exceedances may be intrusive, but would be only temporary and of limited duration. Consequently, they would not result in any significant impacts.

On-site, construction activities would produce L₁₀₍₁₎ noise levels at open space areas up to approximately the mid 70s dBA, which would exceed the levels recommended by CEQR for passive open spaces (55 dBA L₁₀). (Noise levels in these areas exceed CEQR recommended values for existing and No Action conditions.) While this is not desirable, there is no effective

practical mitigation¹ that could be implemented to avoid these levels during construction. Noise levels in many parks and open space areas throughout the city, which are located near heavily trafficked roadways and/or near construction sites, experience comparable and sometimes higher noise levels, and consequently such levels would not be considered a significant adverse impact.

OTHER TECHNICAL AREAS

Consistent with the 2008 FGEIS and subsequent technical memoranda, and as described in greater detail below, construction of the proposed project would not be expected to result in any significant adverse impacts to land use, socioeconomic conditions, community facilities, open space, or natural resources.

Consistent with the findings in the 2008 FGEIS, construction activities related to the development that would occur within the Special Willets Point District during Phase 2 of the proposed project would be anticipated to result in the demolition of the former Empire Millwork Corporation Building, which was found by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) to be eligible for listing on the State and National Registers of Historic Places (S/NR). Demolition of this structure would be considered a significant adverse effect on this architectural resource.

As described in detail in Chapter 10, “Hazardous Materials,” and consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials during construction. To avoid the potential for significant adverse impacts related to hazardous materials, the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and investigative/remedial (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) measures that would precede or govern both demolition and soil disturbance activities. These measures would be conducted in compliance with all applicable laws and regulations and would conform to appropriate engineering practices.

Construction would create major direct benefits resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the direct activity.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 FGEIS concluded that because the Special Willets Point District is isolated from the surrounding neighborhoods, no significant adverse impacts related to land use, zoning, or public policy; neighborhood character; or community facilities were expected on the project site or study areas from construction of the Willets Point Development Plan. Subsequent technical memoranda also concluded that revisions to the Plan would not have resulted in significant adverse impacts on land use, zoning, or public policy; neighborhood character; or community facilities on the project site or study areas from construction of the Willets Point Development Plan.

The 2008 FGEIS concluded that the Willets Point Development Plan would have required the demolition of the former Empire Millwork Corporation Building, which was determined eligible for listing on the State and National Registers of Historic Places, and thus would have had a

¹ Noise barriers would not be practical because of security concerns.

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significant adverse impact on historic resources. The 2008 FGEIS also concluded that the preparation and enforcement of a Health and Safety Plan (HASP) for the Willets Point Development Plan would have been expected to prevent any significant adverse impacts from hazardous materials.

The 2008 FGEIS concluded that the traffic from construction of the Willets Point Development Plan would have been substantially less than traffic generated by the full operation of the Plan at most intersections, with the exception of the intersection of College Point Boulevard at Roosevelt Avenue, 126th Street at Roosevelt Avenue, and 126th Street at ~~24th~~ 34th Avenue. These intersections would have experienced slightly higher traffic volumes due to limited availability of direct highway access to the District, as the new access ramps to/from the Van Wyck Expressway would not yet have been constructed. Impacts at the study locations could have been mitigated with the early implementation of measures discussed in the 2008 FGEIS. However, unmitigatable impacts would have ~~occurred~~ occurred at some of the same locations identified as having unmitigatable impacts during operation of the proposed Plan. Similarly, Technical Memorandum #3 concluded that although the traffic volumes associated with the construction peak for the Adjusted Plan would be lower than under the Approved Plan, significant adverse traffic impacts would still have ~~occurred~~ occurred and the same types of mitigation would have applied.

The 2008 FGEIS concluded that air pollutant emissions from construction equipment and trucks from the Willets Point Development Plan would have been reduced to the extent practicable by the enforcement of Local Law 77 of 2005, which required all City-sponsored construction to reduce construction-related emissions of diesel particulate matter (DPM) by using the best available technology (BAT) to control emissions, and which applied to the 2008 project, and other additional measures listed below. The construction control measures committed to in the FGEIS addressed both the emissions levels, and the location of sources relative to such receptor locations, so as to ensure that significant impacts on air quality during construction would not have occurred. For the Adjusted Plan, Technical Memorandum #3 concluded that the same measures to control air emissions would have been implemented.

The 2008 FGEIS concluded that the Willets Point Development Plan would not have resulted in any long-term significant adverse noise impacts that would have been expected from construction activities. While increases in noise levels exceeding the CEQR impact criteria for a shorter period of time (less than the two consecutive year CEQR threshold) may be noisy and intrusive, they are not considered to be significant adverse noise impacts. The District is large, and much of it is well-removed from any sensitive receptor. In addition, little night work was expected, and any exceedances of the CEQR criteria at sensitive locations would have ~~occurred~~ occurred during the day. For the Adjusted Plan, Technical Memorandum #3 concluded that the same measures to control noise would have been implemented.

Technical Memorandum #4 found that the schedule change with the Updated Plan would not have resulted in any significant adverse construction impacts that were not previously disclosed in the FGEIS or the subsequent technical memoranda. Technical Memorandum #4 assumed a buffer area within the district between the area to be redeveloped and the surrounding areas. This buffer would not be included in the proposed project, and the absence of the buffer would not have the potential to result in any additional significant adverse construction impacts not found in the 2008 FGEIS as described in the analysis below.

C. ANALYSIS APPROACH

The construction analysis presented in this chapter considers the potential impacts of construction activities anticipated to occur throughout the project site as a result of the proposed project. As discussed in Chapter 1, “Project Description,” as part of the reasonable worst-case development scenario (RWCDs), this SEIS also analyzes the potential future development of parking, retail and office uses on Lot B, a portion of the CitiField leasehold along Roosevelt Avenue. For the purposes of the RWCDs, it is assumed that this development would be completed by 2032, and therefore has been included in this assessment. Additionally, while not part of the proposed project, the construction of the new Van Wyck Expressway access ramps—which was anticipated in the 2008 FGEIS and for which the City has received approval from the Federal Highway Administration—and is now slated to be completed in 2024, is also considered in the construction analyses presented in the chapter.

D. METHODOLOGY

This section discusses the level of analysis used to assess the potential for significant adverse impacts in each of the construction-related analysis areas presented in the *CEQR Technical Manual*. For each of the various technical areas presented below, appropriate construction analysis years were selected (as necessary) to represent reasonable worst-case conditions relevant to that technical area, which can occur at different times for different analyses. For example, the noisiest part of the construction may not be at the same time as the heaviest construction traffic. Therefore, the analysis periods may differ for traffic, air quality, and noise. In each section, the methodologies to determine the period of reasonable worst-case conditions for assessing potential impacts are explained. All methodologies used in the impact analyses are in accordance with the *CEQR Technical Manual*. For all construction-related analysis areas, the methodologies used to assess potential construction-related impacts can be found in the chapters for each analysis area addressing potential operational impacts. Additional details relevant only to the construction air quality and noise analysis methodologies are given in their respective analysis sections below.

For the purposes of the construction analyses performed in this SEIS, in the future without the proposed project, the project site is expected to continue to be occupied by existing uses for Phase 1A. For Phase 1B, the Phase 1A uses previously constructed are assumed to be occupied, and the remainder of the Phase 1B portion of the project site is assumed to have been cleared during the demolition and remediation activities that are to take place during Phase 1A. For Phase 2, all of the Phase 1A development is assumed to be completed and occupied, and as Phase 2 commences, most of the Phase 1B development is assumed to be completed and subsequently occupied according to the construction schedule for Phase 1B presented in the next section of this chapter. In addition, the Phase 2 development area is assumed to remain with its existing uses on that portion of the project site until construction of Phase 2 commences.

The next section in this chapter describes the conceptual construction schedule, the construction methods to be used, and city, state, and federal regulations and policies that govern construction. This section also establishes the framework used for the assessment of potential impacts from construction. The construction timeline—determined by the timing of the various major construction stages associated with constructing a building, such as excavation and foundation, core and shell construction, and interior finishing—is described. The types of equipment are discussed, and the number of workers and truck deliveries estimated. The analyses use these data to determine the potential for significant adverse environmental impacts.

E. CONSTRUCTION PHASING AND ACTIVITIES

INTRODUCTION

This section of the chapter first gives an overview of the anticipated conceptual construction phasing and schedule for the proposed project, and then provides a detailed description of each type of major construction activity and the types of equipment typically associated with each. The major construction activities discussed include: abatement and demolition; site preparation and utilities; excavation and foundations; construction of the core and shell of the building; exterior cladding; interior fit-out; and site work, finishing, and open space construction. General construction practices are then presented, including those associated with deliveries and access, hours of work, and sidewalk and lane closures. Finally, the estimated number of workers and truck deliveries for project construction are presented.

CONCEPTUAL CONSTRUCTION PHASING AND SCHEDULE

While the anticipated construction durations described below have been developed with an experienced New York City construction manager (and are commonly used in New York City), the discussion is only illustrative as means and methods may be chosen at the time of construction. The Phase 1A and 1B development programs are those being advanced by QDG selected to undertake this portion of the proposed project; there are no finalized construction programs or designs for the Phase 1A and 1B elements of the proposed project at this time. Furthermore, as the Phase 2 development will be the subject of a future developer solicitation, the Phase 2 development program analyzed in this SEIS generally reflects the development anticipated for this area based on the development program approved in the 2008 FGEIS, as modified in the subsequent technical memoranda.

The described means, methods, and construction durations are conservatively chosen and are representative of the reasonable worst-case for potential impacts. The analyses also account for overlapping construction activities during each phase of construction at the various building sites in proximity to one another to capture the cumulative nature of construction impacts with respect to numbers of workers, trucks, and non-road engines on site at the various building sites within the project site at any given time, within reasonable construction scheduling constraints for the proposed project. The conceptual construction schedule conservatively identifies the first quarter of 2031 (during Phase 2) as the period of peak construction activity as well as the peak for cumulative effects, because it accounts for the cumulative effects of overlapping operational activities (from previously completed phases and building completed earlier in Phase 2) and ongoing construction activities for the proposed project as well as for nearby no build projects, most notably the construction of the development on Lot B assumed as part of the RWCDS.

In this SEIS, the construction of the proposed project is analyzed in three overall phases, which generally represent construction on a portion of the Special Willets Point District, the Willets West site, and the South Lot (Phase 1A), followed by construction on a portion of the District and the remainder of the South Lot and Lot D (Phase 1B), and ending with construction on the remaining portions of the District (Phase 2), and Lot B. Complete build-out of the various project elements and the 19 building sites within the overall project site would occur in the following three distinct sequential phases: Phase 1A would commence at the beginning of 2014 and last for about 4 years 10 months, and be completed before the end of 2018; Phase 1B would commence in mid-2022, last for about 6 years 1 month, and be completed in mid-2028; and Phase 2 would begin at the end of 2026, last for about 6 years 1 month, and be completed at the

end of 2032. If the proposed project is not built, it is expected that the project site would remain in its current condition.

Figures 20-1 through 20-3 graphically depict the conceptual construction sequencing and schedule for the various components of the proposed project's Phase 1A, Phase 1B, and Phase 2 development, respectively. **Figure 20-4** visually represents the overall conceptual construction sequence for the entire construction duration of the proposed project. **Table 20-1** presents the overall conceptual construction sequencing and schedule for the proposed project, by phase and specific development site.

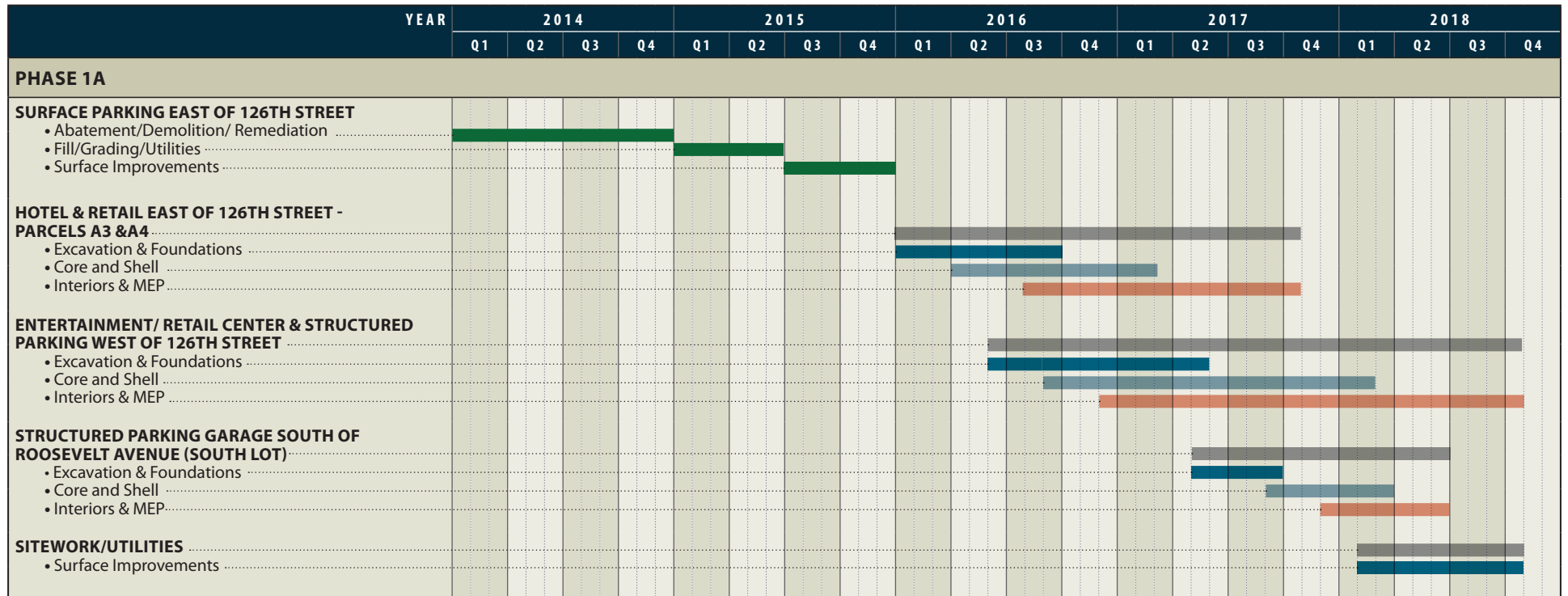
PHASE 1A

Phase 1A involves construction of a hotel and two retail buildings, temporary surface parking, and temporary recreational areas on 11 parcels within the Special Willets Point District (Parcels A1–A11), the entertainment and retail center and associated structured parking west of CitiField on the Willets West site, and structured parking on the western portion of the South Lot, south of Roosevelt Avenue.

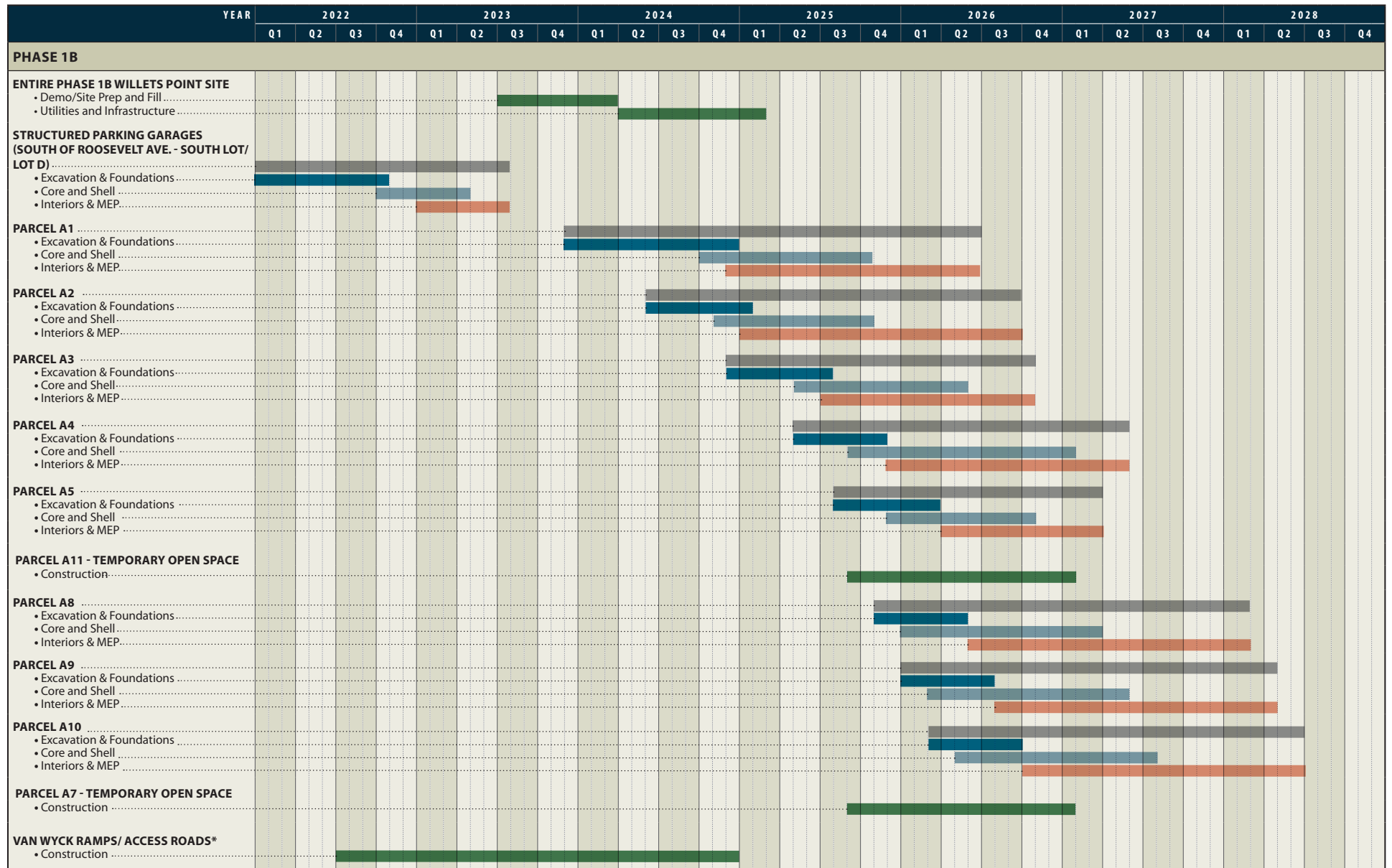
Phase 1A site preparation activities are expected to start in the District during the first quarter of 2014, on the site of the interim surface parking east of 126th Street. For the two years between the start of 2014 and the end of 2015, construction activities would be focused on preparing the site for construction of buildings, including the abatement and demolition of existing structures, followed by remedial action work, site grading and fill, installation of utilities, and surface improvements. This would be followed by construction of the hotel and retail developments east of 126th Street on Parcels A3 and A4, beginning in January 2016. These buildings would take about 22 months to complete, with construction of these buildings ending in the 4th quarter of 2017. Construction of the entertainment and retail center west of 126th Street on the Willets West site would begin during the second quarter of 2015, and would continue for about 29 months, finishing in the fourth quarter of 2018. The structured parking garage on the western portion of the South Lot, south of Roosevelt Avenue, would commence construction during the second quarter of 2017, and would continue for about 14 months, being completed by the end of the second quarter of 2018. Finally, the remaining site work and utilities installation, and associated surface improvements would commence during the first quarter of 2018, lasting for about 9 months, and would be completed in the last quarter of 2018. All Phase 1A construction would be anticipated to be completed by the fourth quarter of 2018, with construction of the entertainment and retail center and associated parking structures on the Willets West site and the final site work on parcels in the District being completed last.

PHASE 1B

Phase 1B involves construction of several mixed use buildings and permanent and temporary public and private open spaces on 10 parcels within the District (Parcels A1-A5, and A7-A11), as well as structured parking on the eastern portion of the South Lot and Lot D, south of Roosevelt Avenue.

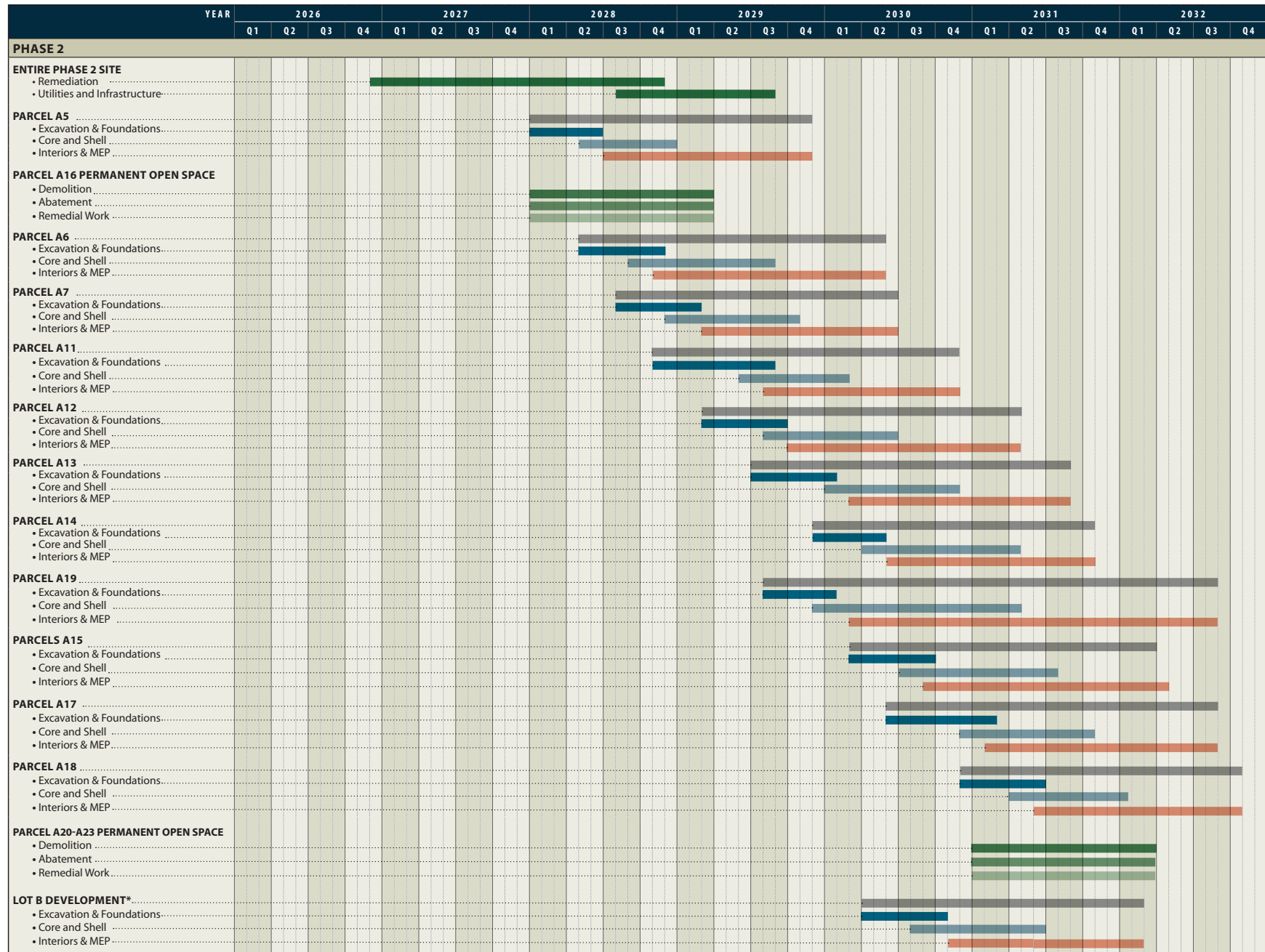


Anticipated Construction Schedule (Phase 1A)
Figure 20-1



NOTE: * = The Van Wyck Access Roads/Ramps is not part of the proposed project, but has been accounted for in the construction analyses; therefore, it is included here to show its relationship to the proposed project.

Anticipated Construction Schedule (Phase 1B)
Figure 20-2



NOTE: * = Lot B Development is not part of the proposed project, but has been accounted for in the construction analyses; therefore, it is included here to show its relationship to the proposed project.

Anticipated Construction Schedule (Phase 2)
Figure 20-3

Table 20-1
Conceptual Construction Schedule

Construction Task	Start Month	Finish Month	Approximate duration (months)
Phase 1A			
Area-wide Site Work/Surface Parking East of 126th Street: Demolition, Abatement, and Remediation, and Fill, Grading, and Utility Activities	January 2014	December 2015	24
Hotel & Retail East of 126th Street (Building Parcels 3A & 4A)	January 2016	October 2017	22
Entertainment/Retail Center & Structured Parking, West of 126th Street (Willets West)	June 2016	October 2018	29
Structured Parking Garage (South of Roosevelt Avenue in the South Lot)	May 2017	June 2018	14
Western Site Work and Utilities/Surface Improvements	February 2018	October 2018	9
Phase 1B			
Structured Parking Garages (South of Roosevelt Avenue - South Lot/Lot D)	June 2022	July 2023	14
Area-wide Site Work: Demolition, Site Preparation, Fill, Grading, and Utility/Infrastructure Activities	July 2023	February 2025	20
Parcel A1 (Office/Residential/Retail)	December 2023	June 2026	31
Parcel A2 (Hotel/Office/Retail/Community)	June 2024	September 2026	28
Parcel A3 (Residential)	December 2024	October 2026	23
Parcel A4 (Residential)	May 2025	May 2027	25
Parcel A5 (Residential/Retail)	August 2025	March 2027	20
Parcel A7 (Temporary Open Space)	January 2027	February 2028	14
Parcel A8 (Residential/School)	November 2025	February 2028	28
Parcel A9 (Residential/Retail)	March 2026	April 2028	26
Parcel A10 (Residential/Retail)	August 2026	June 2028	23
Parcel A11 (Temporary Open Space)	January 2027	February 2028	14
Van Wyck Access Roads/Ramps*	July 2022	December 2024	30
Phase 2			
Area-wide Site Work: Demolition, Abatement and Remediation, Site Preparation, Fill, Grading, and Utility/Infrastructure Activities	December 2026	August 2029	33
Parcel A5 (Residential/Retail)	January 2028	November 2029	23
Parcel A16 (Public Park)	January 2028	February 2029	14
Parcel A6 (School/Hotel/Retail/Community)	May 2028	May 2030	25
Parcel A7 (Residential/Retail)	August 2028	June 2030	23
Parcel A11 (Residential/Retail)	November 2028	November 2030	25
Parcel A12 (Residential)	March 2029	April 2031	26
Parcel A13 (Residential)	July 2029	August 2031	26
Parcel A19 (Convention Center)	August 2029	August 2032	37
Parcel A14 (Residential)	December 2029	January 2032	26
Parcel A15 (Residential)	May 2030	April 2032	24
Parcel A17 (Residential)	August 2030	August 2032	25
Parcel A18 (Residential)	December 2030	October 2032	23
Parcels A20-23 (Open Space)	January 2031	February 2032	14
Lot B Development (Mixed Use)*	April 2030	February 2032	23
Notes: Start date is the first day of the month. Finish date is last day of the month. *The Van Wyck Access Roads/Ramps and Lot B development are not part of the proposed project, but have been accounted for in the construction analyses, as described above. Source: Hunter Roberts Construction Group and QDG.			

Phase 1B construction would begin with the construction of the structured parking garages south of Roosevelt Avenue in the second quarter of 2022. Construction of the garages would take about 14 months, with completion anticipated in the third quarter of 2023. Similar to Phase 1A, Phase 1B would involve extensive site preparation, demolition, abatement, fill, and utility and infrastructure

activities on the parcels to be developed during this phase (excluding Parcels A3 and A4, which were prepared during Phase 1A). These activities would commence in the third quarter of 2023; extending for about 20 months, and would be complete in the first quarter of 2025. Construction of the buildings on Parcel A1 would begin in the fourth quarter of 2023 and take about 31 months to complete. Construction of the buildings on Parcel A2 would take about 28 months, beginning in the second quarter of 2024. The buildings on Parcel A3 would commence construction during the fourth quarter of 2024, and would be completed in about 23 months. Construction of the buildings on Parcel A4 would take about 25 months, beginning in the second quarter of 2025. The building on the southern portion of Parcel A5 would commence construction during the third quarter of 2025, and would be completed in about 20 months. Construction of the buildings on Parcel A8 (including the school) would take about 28 months, beginning in the fourth quarter of 2025. The buildings on Parcel A9 would commence construction during the first quarter of 2026, and would be completed in about 26 months. Construction of the buildings on Parcel A10 would take about 23 months, beginning in the third quarter of 2026. Finally, the construction of the temporary open spaces on Parcels A7 and A11 would both commence in January 2027, and would each take about 14 months to complete, finishing in the first quarter of 2028. All Phase 1B construction would be anticipated to be completed by the middle of 2028, with construction of the buildings on Parcel A10, being completed last.

As mentioned previously, while not part of the proposed project, the construction of the new Van Wyck Expressway access ramps—which was anticipated in the 2008 FGEIS and for which the City has received approval from the Federal Highway Administration—is also considered in this construction analyses. This infrastructure improvement would also be completed within the Phase 1B timeframe, over approximately two years, starting in the third quarter of 2022 and ending in the fourth quarter of 2024. Phase 1B buildings within the District would not be occupied until after the completion of the Van Wyck Expressway improvements.

PHASE 2

Phase 2 involves construction of several mixed use buildings and permanent public and private open spaces on 16 parcels within the District (Parcels A5-A7 and A11-A23), as well as the mixed use development assumed as part of the RWCDS on Lot B, west of 126th Street, between CitiField and Roosevelt Avenue.

Similar to Phase 1B, Phase 2 would involve extensive site preparation, demolition, fill, and utility and infrastructure activities on the parcels in the District to be developed during this phase. These construction activities would commence in the fourth quarter of 2026; extending for about 33 months, and would be complete in the third quarter of 2029. Construction of the Phase 2 buildings and open spaces would then begin in January of 2028, with the simultaneous construction of the new public park (on Parcel A16) and the building on the northern portion of Parcel A5. The park would take about 14 months to build, while the building on Parcel A5 would take about 23 months to complete. Construction of the buildings (including the school) on Parcel A6 would begin in the second quarter of 2028, and take about 25 months to complete. Construction of the building on Parcel A7 would take about 23 months, beginning in the third quarter of 2028. The buildings on Parcel A11 would commence construction during the fourth quarter of 2028, and would be completed in about 25 months. Construction of the buildings on Parcel A12 would take about 26 months, beginning in the first quarter of 2029. The buildings on Parcel A13 would commence construction during the third quarter of 2029, and would be completed in about 26 months. The convention center on Parcel A19 would commence construction during the third quarter of 2029. This building would take the longest to construct, and would be completed in about 37 months, in the third quarter of 2032. Construction of the buildings on Parcel A14 would take about 26 months, beginning in the fourth quarter of 2029.

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Construction of the buildings on Parcel A15 would take about 24 months, beginning in the second quarter of 2030. Construction of the building on Parcel A17 would begin in the third quarter of 2030, and is expected to take about 25 months to complete. The building on Parcel A18 would commence construction during the fourth quarter of 2030, and would be completed in about 23 months. Finally, the construction of the permanent open spaces on Parcels A20-A23 would commence in January 2031, and would collectively take about 14 months to complete, finishing in the first quarter of 2032. All Phase 2 construction would be anticipated to be completed by the fourth quarter of 2032, with construction of the buildings on Parcel A18, being completed last.

While the potential future development on Lot B is not part of the proposed program, and no specific development plans have been proposed, for the purposes of a conservative analysis, a conceptual program for Lot B has been analyzed as part of the RWCDs. Construction of the development on Lot B has been conservatively assumed to commence in the second quarter of 2030, and is anticipated to take about 23 months to construct.

During construction of the proposed project, the highest number of workers and trucks would both be expected to occur in the first quarter of 2031. These peak construction activities during the early part of 2031 reflect the anticipated concurrent construction at seven development parcels in the District (Parcels A12-A15, and A17-A19—which includes the convention center), in addition to overlapping construction of the permanent open spaces on Parcels A20-A23, and the assumed construction of the development on Lot B, south of CitiField, with many of these individual construction sites undergoing labor intensive overlapping construction stages (building core, shell, and finishing) simultaneously during that quarter.

CONSTRUCTION DESCRIPTION

OVERVIEW

Construction of mid-rise or large-scale buildings in New York City typically follows a general pattern. The first task is construction startup, which involves the siting of work trailers, installation of temporary power and communication lines, and the erection of site perimeter fencing. Then, if there is an existing building on the site, any potential hazardous materials (such as asbestos) are abated, and the building is demolished with some of the materials recycled and the debris taken to a licensed disposal facility. For sites requiring new or upgraded public utility connections, these activities are undertaken next (e.g., electrical connections, and installation of new water or sewer lines and hook-ups, etc.). Excavation and removal and/or addition and re-grading of the soils is the next step, followed by construction of building foundations. Specific to this project, as each development phase has several building sites or parcels that will have construction ongoing over the course of each phase, many of the initial site activities will be undertaken for the entire portion of the project site to be developed under the phase all at one time, as described previously. Once the areawide site preparation activities are completed, construction of individual building foundations commences. When the below-grade construction is completed, construction of the core and shell of the new building begins. The core is the central part of the building and is the main part of the structural system. It contains the elevators and the mechanical systems for heating, ventilation, and air conditioning (HVAC). The shell is the outside of the building. As the core and floor decks of the building are being erected, installation of the mechanical and electrical internal networks would start. As the building progresses upward, the exterior cladding is placed, and the interior fit out begins. During the busiest time of building construction, the upper core and structure are built while the mechanical/electrical connections, exterior cladding, and interior finishing progress on lower floors. Finally, site work, including landscaping, and other site work

associated with a particular building site, or in some instances the entire project area being developed during a particular phase, like completing or resurfacing new roadways and sidewalks is undertaken, and individual building or areawide development area site access and protection measures required during construction are removed.

GENERAL CONSTRUCTION PRACTICES

Certain activities would be ongoing throughout the construction period for the proposed project. For the areas in Phases 1A and 1B which are to be developed by QDG, there would be a field representative designated to serve as the contact point for the community and local leaders. The representative would be available to meet and work with the community to resolve concerns or problems that arise during the construction process. This is a fairly standard practice for the construction of large buildings or large-scale area developments in New York City, and it is anticipated that the ultimate developers of the project area for Phase 2, as well as for Lot B, and the Van Wyck access improvements would also designate field representatives to serve as contact points for the community with respect to construction on that site, when it is under construction.

Governmental Coordination and Oversight

The following describes governmental construction oversight agencies and typical construction practices in New York City. In certain instances, specific practices may vary from those described below. However, the typical practices are expected to be used because they have been developed over many years and have been found to be necessary to successfully complete large projects in a confined urban area.

The governmental oversight of construction in New York City is extensive and involves a number of city, state, and federal agencies. **Table 20-2** shows the main agencies involved in construction oversight and the agency's areas of responsibilities. The primary responsibilities lie with New York City agencies. The New York City Department of Buildings (DOB) has the primary responsibility for ensuring that the construction meets the requirements of the Building Code and that the building is structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both the workers and the public. The areas of responsibility include installation and operation of the equipment, such as cranes and lifts, sidewalk shed, and safety netting and scaffolding. The New York City Department of Environmental Protection (DEP) enforces the Noise Code and regulates water disposal into the sewer system. The New York City Fire Department (FDNY) has primary oversight for compliance with the Fire Code and for the installation of tanks containing flammable materials. The New York City Department of Transportation (NYCDOT) reviews and approves any traffic lane and sidewalk closures. New York City Transit (NYCT) is responsible for subway access and, if necessary, bus stop relocations. NYCT also coordinates construction work which could affect the subway system. The New York City Landmarks Preservation Commission (LPC) approves studies and testing to prevent loss of archaeological materials and approves the construction protection plan (CPP) used when the construction is in proximity to historic structures. The New York City Department of Parks and Recreation (DPR) is responsible for the oversight, enforcement, and permitting of the replacement of street trees that are lost due to construction. Section 5-102 et. seq. of the Laws of the City of New York requires a permit to remove any trees and the replacement of the trees as determined by calculating the size, condition, species, and location rating of the tree proposed for removal. New York City maintains a 24-hour-a-day telephone hotline (311) so that concerns can be registered with the city.

Table 20-2
Construction Oversight in New York City

Agency	Areas of Responsibility
New York City:	
Department of Buildings	Primary oversight for Building Code and site safety
Department of Environmental Protection	Noise, hazardous materials, dewatering
Department of Environmental Protection and/or Office of Environmental Remediation	<u>Remedial Action Plans (RAPs)/Construction Health and Safety Plans (CHASPs)</u>
Fire Department	Compliance with Fire Code, tank operation
Department of Transportation	Lane and sidewalk closures
New York City Transit	Subway access, bus stop relocation
Department of Parks & Recreation	Street trees
Landmarks Preservation Commission	Archaeological and architectural resources protection
New York State:	
Department of Labor	Asbestos workers
Department of Environmental Conservation	Dewatering, hazardous materials, tanks, Stormwater Pollution Prevention Plan, Industrial SPDES, if any discharge into the Hudson River
United States:	
Environmental Protection Agency	Air emissions, noise, hazardous materials, toxic substances
Occupational Safety and Health Administration	Worker safety

The New York State Department of Environmental Conservation (NYSDEC) regulates discharge of water into rivers and streams, disposal of hazardous materials, and construction, operation, and removal of bulk petroleum and chemical storage tanks. The New York State Department of Labor (DOL) licenses asbestos workers. On the federal level, the Environmental Protection Agency (EPA) has wide ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons. Much of the responsibility is delegated to the state level. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and the construction equipment.

Deliveries and Access

Although the construction on the project site in the various phases will occupy large tracts of land, because of the numbers of trucks and workers, as well as the volume of materials that will be delivered to the site at any given time, specific construction staging and truck marshaling and laydown areas will be designated during each phase of construction to allow for an orderly and safe working environment at the project site. All deliveries, material removals, and hoist uses have to be tightly scheduled to maintain an orderly work area and to keep the construction on schedule and within budget.

Access to the various construction sites of the proposed project would be controlled. The work areas would be fenced off, and limited access points for workers and trucks would be provided. Private worker vehicles would not be allowed into the construction area. Security guards and flaggers may be posted as necessary, and all persons and trucks would have to pass through security points. Workers or trucks without a need to be on the site would not be allowed entry. After work hours, the gates would be closed and locked. Security guards may patrol the construction sites after work hours and over the weekends to prevent unauthorized access.

Material deliveries to the site would be controlled and scheduled. Unscheduled or haphazard deliveries would be minimized. To aid in adhering to the delivery schedules, as is normal for building construction in New York City, flaggers would be employed at each of the gates. The

flaggers could be supplied by the subcontractor on-site at that time or by the construction manager. The flaggers would control trucks entering and exiting the site, so that they would not interfere with one another. In addition, they would provide an additional traffic aid as the trucks enter and exit the on-street traffic streams.

Hours of Work

Construction activities for the proposed project's various building sites and other project elements would take place in accordance with New York City laws and regulations, which allow construction activities to take place between 7 AM and 6 PM. Construction work would begin at 7 AM on weekdays, with most workers arriving between 6 AM and 7 AM. Typically, work would end at 3:30 PM, but could be extended until 6 PM for such tasks as finishing a concrete pour for a pad, or completing the bolting of a steel frame erected that day. Extended workday activities would not include all construction workers on site, but only those involved in the specific task. Extended workdays would be most likely to occur during foundation and superstructure tasks, and limited extended workdays could occur during other tasks over the course of construction, but would likely be minimized.

At limited times over the course of constructing a building, weekend work could be required to make up for weather delays or other unforeseen circumstances. In such cases, the numbers of workers and pieces of equipment in operation would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. Weekend work requires a permit from DOB and, in certain instances, approval of a noise mitigation plan from the DEP under the City's Noise Code. The New York City Noise Control Code, as amended in December 2005 and effective July 1, 2007, limits construction (other than special circumstances as described below) to weekdays between the hours of 7 AM and 6 PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6 PM and 7 AM and on weekends) may be permitted only to accommodate: (1) emergency conditions; (2) public safety; (3) construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. In such cases, the numbers of workers and pieces of equipment in operation would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. If it were to become necessary, the typical weekend workday would be on Saturday, beginning with worker arrival and site preparation at 7 AM, and ending with site cleanup at 5 PM.

A few tasks may have to be completed without interruption, and the work can extend past 6 PM. In certain situations, concrete must be poured continuously to form one structure without joints. This type of concrete pour is usually associated with foundations and structural slabs at grade, which could require a minimum of 12 hours or more to complete, depending on the size of the area being poured.

Sidewalk and Lane Closures

During the course of construction, traffic lanes and sidewalks would be closed or protected for varying periods of time. Truck movements would be spread throughout the day and would generally occur between the hours of 6:00 AM and 3:00 PM, depending on the stage of construction. No rerouting of traffic is anticipated and moving lanes of traffic are expected to be available at all times. Some street lanes and sidewalks could be continuously closed, and some

lanes and sidewalks would be closed only intermittently to allow for certain construction activities. For construction at the various building sites, any necessary sidewalk and lane closures would maintain pedestrian flow throughout the construction period for each site, and would generally not divert pedestrians to the other side of the street. Pedestrian circulation and access would be maintained through the use of protected sidewalk enclosures, temporary sidewalks or sidewalk bridges. NYCDOT would be consulted to determine the appropriate protective measures for ensuring pedestrian safety surrounding the various building sites; this work would be coordinated with and approved by NYCDOT.

GENERAL CONSTRUCTION TASKS

Abatement, Demolition, Remediation, and Grading

The proposed project would result in the extensive demolition of surface parking and/or loading areas and existing buildings on the project site. As indicated in **Figures 20-1 through 20-3** (see above), all project site-wide demolition activities required for the proposed project during each phase have been assumed would be undertaken at one time, and would be anticipated to last for between 20 and 33 months, depending on the phase of construction (see **Table 20-1**). These areas would be abated of asbestos and any other hazardous materials within the existing buildings and structures, where applicable.

A New York City-certified asbestos investigator would inspect the buildings for asbestos-containing materials (ACMs), and those materials must be removed by a NYCDOL-licensed asbestos abatement contractor prior to interior demolition. Asbestos abatement is strictly regulated by DEP, NYCDOL, EPA, and OSHA to protect the health and safety of construction workers and nearby residents and workers. Depending on the extent and type of ACMs, these agencies would be notified of the asbestos removal project and may inspect the abatement site to ensure that work is being performed in accordance with applicable regulations, including the new February 2, 2011 DEP regulations. These regulations specify abatement methods, including wet removal of ACMs that minimize asbestos fibers from becoming airborne, and containment measures. The areas of the building with ACMs would be isolated from the surrounding area with a containment system and a decontamination system. The types of these systems would depend on the type and quantity of ACMs, and may include hard barriers, isolation barriers, critical barriers, and caution tape. Specially trained and certified workers, wearing personal protective equipment, would remove the ACMs and place them in bags or containers lined with plastic sheeting for disposal at an asbestos-permitted landfill. Depending on the extent and type of ACMs, an independent third-party air-monitoring firm would collect air samples before, during, and after the asbestos abatement. These samples would be analyzed in a laboratory to ensure that regulated fiber levels are not exceeded. After the abatement is completed and the work areas have passed a visual inspection and monitoring, if applicable, the general demolition work can begin.

Any activities with the potential to disturb lead-based paint would be performed in accordance with the applicable OSHA regulation (OSHA 29 CFR 1926.62—*Lead Exposure in Construction*). When conducting demolition (unlike lead abatement work), lead-based paint is generally not stripped from surfaces. Structures may be disassembled or broken apart with most paint still intact. Dust control measures (spraying with water) would be used if necessary. The lead content of any resulting dust is therefore expected to be low. Work zone air monitoring for lead may be performed during certain activities with a high potential for releasing airborne lead-containing particulates in the immediate work zone, such as manual demolition of walls with

lead paint or cutting of steel with lead-containing coatings. Such monitoring would be performed to ensure that workers performing these activities are properly protected against lead exposure.

Any suspected PCB-containing equipment (such as fluorescent light ballasts) that would be disturbed would be evaluated prior to disturbance. Unless labeling or test data indicate that the suspected PCB-containing equipment does not contain PCBs, it would be assumed to contain PCBs and removed and disposed of at properly licensed facilities in accordance with all applicable regulatory requirements.

All of these procedures related to the handling of ACM, lead-based paint, and potential PCB-containing equipment would be contained in the DEP-approved CHASP.

General demolition is the next step, where necessary. Demolition would occur in accordance with DOB guidelines/requirements. In general, the first step is to remove any economically salvageable materials. Then the building is deconstructed using large equipment. Typical demolition requires fencing around the building to prevent accidental dispersal of building materials into areas accessible to the general public. The demolition debris would be sorted prior to being disposed at landfills to maximize recycling opportunities.

The project site is within the Federal Emergency Management Agency (FEMA) 100-year floodplain, and thus in some locations, particularly within the District, new fill would be required to grade and raise the project site structures above the 100-year floodplain level, consistent with the New York City Building Code. Changes to the grade elevation are expected to occur in phases. During Phase 1A the majority of the project site will remain at the existing grade and only the hotel and commercial spaces would be built at a higher grade above the floodplain elevation. The remainder of the extent of Phase 1A and 1B would be raised above the floodplain elevation prior to completion of the development of Phase 1B in 2028. Those grade changes will either occur through new fill and retaining walls or by building atop basements that raise the finished floor height above the floodplain elevation. Grade transitions would be created between the new streets in Phase 1B and the existing street grades that would remain in the Phase 2 area until that area is raised prior to completion of Phase 2 development in 2032.

For the general remediation, demolition, and site grading activities necessary for the proposed project, it is estimated that there would be approximately 59, 71, and 148 workers per day on-site during Phase 1A, Phase 1B and Phase 2, respectively, with a peak of up to about 420 workers per day during Phase 2. Typically approximately 12, 6, and 29 truckloads of debris would be removed per day from the project site during Phase 1A, Phase 1B and Phase 2, respectively, with a peak of up to about 58 trucks per day during Phase 2. The general abatement, remediation, and demolition phase is expected to last approximately two to three months at any given occupied parcel, with the project site-wide demolition activities anticipated lasting between approximately 20 and 33 months, depending on the phase of construction (see **Table 20-1**).

Site Preparation and Utilities—Construction Startup Tasks

The following tasks are considered to be typical startup work to prepare a site for construction. The tasks could include, but are not limited to, the following items. The means and methods and order of completion of these tasks could change as necessary. Startup work generally involves the installation of public safety measures, such as fencing, sidewalk sheds, and Jersey barriers. The site is fenced off, typically with solid fencing to minimize interference between the persons passing by the site and the construction work. Separate gates for workers and for trucks are installed, and sidewalk shed and Jersey barriers are erected. Trailers for the construction engineers and managers

are hauled to the site and installed. These trailers could be placed within the fence line, in the curb lane, or over the sidewalk sheds. Also, portable toilets, dumpsters for trash, and water and fuel tankers are brought to the site and installed. Temporary utilities are connected to the construction trailers. During the startup period, permanent utility connections may be made, especially if the contractor has obtained early electric power for construction use, but utility connections may be made almost any time during the construction sequence.

In addition to the new public infrastructure, the proposed project may need to relocate existing public infrastructure, particularly water and sewer connections, as well as electric, gas, and telephone lines that will be required for the project. Because the development areas will be cleared for each phase in anticipation of construction, it is assumed that there would be no existing uses in the Phase 1A/1B areas while those areas are under construction. Similarly, for Phase 2 construction, that area is also assumed to be clear, with no existing uses on that portion of the project site during Phase 2 construction. Some services (e.g., sanitary sewers) are currently not available in the District; however, during construction of Phase 1A/1B, the services that are currently available in the Phase 2 area (e.g., telephone, electric, water) will be maintained until the construction of that phase.

Installation of new or upgraded utilities would occur during this stage, and are anticipated to take an average of 3 months at each individual building site. However, as with site preparation activities, some of the more involved installation of new infrastructure elements would occur on an areawide basis. For the areawide installation of new utilities and infrastructure, it is estimated that there would be approximately 59, 71, and 272 workers per day on-site during Phase 1A, Phase 1B and Phase 2, respectively. Typically approximately 12, 6, and 29 truckloads of material would be delivered or debris would be removed per day from the project site during Phase 1A, Phase 1B and Phase 2, respectively. The general areawide installation of new utilities and infrastructure phase are anticipated to last between approximately 9 and 13 months, depending on the phase of construction.

New utility connections for any given building can be made at any time during the construction process. The initial investigatory work often occurs early during excavation and foundations, with the actual connections typically occurring once the building mechanical, electrical and plumbing systems are installed.

Sanitary Sewer System

The proposed project would include the development of a sanitary sewer system that would provide a new sanitary collection service to the area and eliminate the existing septic systems. Nearby areas, such as CitiField, direct their sanitary sewage to the 37th Avenue pump station. However, sewage from the Phase 2 construction may require upgrades to this pump station to increase its capacity. New sanitary collection lines within the District would be connected to the City sewer system that conveys sanitary sewage to the Bowery Bay Water Pollution Control Plant (WPCP) for treatment.

Sewer construction work primarily is a “cut-and-cover” technique. A trench would be excavated in the street, and short piles may need to be driven through the bottom of the trench. Concrete cradles would be installed to hold the sewer pipe. The sewer pipe would be installed in short lengths and connected. The trench would then be backfilled and the pavement replaced. While the new sewers are being constructed, temporary flumes may have to be installed to handle the existing sewer flows. DEP regularly performs this task at sites throughout the City. About 20 to 40 workers would be needed to install the sewer line and to control traffic for any portions that

are installed in public streets. Typical equipment includes backhoes, cranes, and front-end loaders. Trucks bring the sewer pipes to the construction, and depending on the suitability of the soil for re-use, trucks may be needed to cart off existing soils and bring suitable soil to the construction site.

In terms of the new utilities and infrastructure that will be required for the proposed project, the following describes the necessary new utilities by Phase (for more detailed discussion and description, please see Chapter 11, “Infrastructure”). The construction of these project elements has been taken into consideration in the construction estimates developed for each phase of the proposed project, and the effects of construction of these project elements are included in the various analyses.

Phase 1A

New 12-inch water mains in 35th Avenue, 126th Street, 127th Street, and Willets Point Boulevard would be constructed. For Willets West, a new on-site water loop would be required to tie into existing water main in Roosevelt Avenue. Sanitary sewer infrastructure, either existing or being built by the New York City Economic Development Corporation (EDC), would be adequate to accommodate the Phase 1A development. As a part of the proposed project, the 16-inch sanitary sewer connection would be extended south along 126th Street. In addition, a 7.5-foot by 5-foot box storm sewer currently under construction by EDC would be extended south along 126th Street as part of the proposed project to accommodate Phase 1A development within the District. No additional infrastructure would be anticipated to be required to support Willets West and the other sites during this phase.

Phase 1B

Consultation with DEP would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required to support the Phase 1B development. As assumed in the 2008 FGEIS, the existing 72-inch water main within Willets Point Boulevard would remain in place and a permanent easement, mapped on the City map, would be provided to enable acceptable access to this water main. Upgrades to the 37th Avenue pump station and its force main would likely be required for Phase 1B development. Verification of this requirement by DEP will be obtained prior to Phase 1B development. Stormwater and sanitary sewer infrastructure constructed as part of Phase 1A will be sized in accordance with the amended drainage plan (ADP), which would be required to be developed by QDG and would include anticipated flows associated with Phase 1B and Phase 2 development.

Phase 2

For the District, consultation with DEP would be required to determine water supply requirements for Phase 2 of the proposed project. At a minimum, DEP water mains would be required in 34th Avenue, 127th Street, and Willets Point Boulevard; these water mains would be extensions of the mains constructed in Phase 1A. Additional internal water service would likely be required to support the proposed development in 2032. Additionally, consultation with DEP would be required to determine if upgrades (including a new regulator and connection) to the 72-inch water main in Willets Point Boulevard would be required to support the Phase 2 development, if not already constructed in a prior phase. For all other sites, water service would remain as constructed.

For the District, new sanitary sewer trunk mains would be required in Northern Boulevard, 34th Avenue, 126th Street, 127th Street, Willets Point Boulevard, and Roosevelt Avenue. These sewers would be sized in accordance with the ADP that would be developed. Upgrades to the

Willets Point Development

37th Avenue pump station and its force main would likely be required for Phase 2 development. Verification of this requirement by DEP will be obtained prior to Phase 2 development. Upgrades to the 37th Avenue pump station and its force main would be required for Phase 2 development, if not already constructed in a prior phase.

For the District, new storm sewers would be required in Northern Boulevard, 34th Avenue, Willets Point Boulevard, and Roosevelt Avenue. These sewers would be sized in accordance with the ADP developed for Phase 2. In addition, a 60-inch outfall would be required in 127th Street for Phase 2.

All other existing utilities in the streets within the project site have sufficient capacity to support the development anticipated as a result of the proposed project. Connections to new buildings would be made from the existing utility lines.

Excavation and Foundation

Soil excavation, supplementation, re-grading, and foundation construction for the various building sites anticipated to be constructed as part of the proposed project has been estimated to take anywhere from 5 to 12 months to complete for buildings in Phase 1A; from 5 to 10 months to complete for buildings in Phase 1B (with an average of around 7.6 months); and anywhere from 5 to 12 months to complete for buildings in Phase 2 (with an average of around 7.6 months), with the exception of the convention center, which would take approximately 13 months (see **Figures 20-1** through **20-3**, for Phases 1A, 1B, and 2, respectively).

Excavators would be used for the task of digging foundations. Any excavated soil to be removed from the project site would be loaded onto dump trucks for transport to a licensed disposal facility. Foundation work could include pile driving and pouring concrete footings and foundation. The excavation/foundation task could involve the use of excavators, cranes, pile drivers, concrete pumps, concrete trucks, generators, and hand tools.

During construction of the Phase 1A buildings, anywhere from 20 to 128 workers would be on-site at each building site, at any given time, with a corresponding number of about 1 to 25 trucks per day are expected at any given building site. During construction of the Phase 1B buildings, anywhere from 38 to 116 workers would be on-site at each building site, at any given time, with a corresponding number of about 3 to 8 trucks per day are expected at any given building site. During construction of the Phase 2 buildings, anywhere from 25 to 121 workers would be on-site at each building site, at any given time, with a corresponding number of about 3 to 12 trucks per day are expected at any given building site.

Below-Grade Hazardous Materials

All construction subsurface soil disturbances would be performed in accordance with an DEP-approved RAP and CHASP. At a minimum, the RAP would provide for the appropriate handling, stockpiling, testing, transportation, and disposal of excavated materials, as well as any unexpectedly encountered tanks, in accordance with all applicable federal, state, and local regulatory requirements. The RAP would also provide for vapor control measures such as vapor barriers, as deemed necessary. The CHASP would ensure that all subsurface disturbances are done in a manner protective of workers, the community, and the environment.

Dewatering

The excavated area at any given site could be subject to accumulating groundwater until the slab-on-grade and/or above-grade portions of buildings are built. In addition to groundwater, rain and snow could collect in the excavation, and that water would have to be removed. If

necessary, the water would be pretreated prior to discharge. The decanted water would then be discharged into the New York City sewer system. Discharge in the sewer system is governed by DEP regulations.

DEP has a formal procedure for issuing a Letter of Approval to discharge into the New York City sewer system. The authorization is issued by the DEP borough office if the discharge is less than 10,000 gallons per day; an additional approval by the Division of Connections & Permitting is needed if the discharge is more than 10,000 gallons per day. All chemical and physical testing of the water has to be done by a laboratory that is certified by the New York State Department of Health (DOH). The design of the pretreatment system has to be signed by a New York State Professional Engineer or Registered Architect. For water discharged into New York City sewers, DEP regulations specify the following maximum concentration of pollutants.

• Petroleum hydrocarbons	50 parts per million (ppm)
• Cadmium	2 ppm
• Hexavalent chromium	5 ppm
• Copper	5 ppm
• Amenable cyanide	0.2 ppm
• Lead	2 ppm
• Mercury	0.05 ppm
• Nickel	3 ppm
• Zinc	5 ppm
• pH	between 5 to 12
• Temperature	less than 150 degrees Fahrenheit (F)
• Flash Point	greater than 140 degrees F
• Benzene	134 parts per billion (ppb)
• Ethylbenzene	380 ppb
• Methyl-Tert-Butyl-Ether (MTBE)	50 ppb
• Naphthalene	47 ppb
• Tetrachloroethylene (perc)	20 ppb
• Toluene	74 ppb
• Xylenes	74 ppb
• PCB	1 ppb
• Total Suspended Solids	350 ppm

Any groundwater discharged in the New York City system would meet these limits. DEP can also impose project-specific limits, depending on the location of the project and contamination that has been found in nearby areas.

Core and Shell

In general, core (superstructure) and shell (exterior fit out) construction of the various buildings anticipated to be constructed as part of the proposed project would depend on the size and type of the building being constructed. For the buildings being constructed in Phase 1A, core and shell construction would be expected to last approximately 7 to 18 months, depending on the size of the building. Phase 1B core and shell construction for the buildings proposed during this phase would be expected to take approximately 11 to 13 months, depending on the size of the building. For the buildings being constructed in Phase 2, depending on the size of the building, core and shell construction would be expected to last approximately 8 to 12 months, with the

convention center taking about 18 months. Construction of the interior structure, or core, of the buildings would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. This phase of work would also include construction of the building's framework (installation of beams and columns), and floor decks. Exterior construction involves the installation of the façade (exterior walls, windows, and cladding) and the roof. Cranes would be used to lift the façade into place, and welding machines and impact wrenches would secure the exterior to the superstructure. These activities would require the use of cranes, delivery trucks, concrete pumps, concrete trowels, welding equipment, and a variety of handheld tools. Temporary construction elevators (hoists) would also be constructed for the delivery of materials and vertical movement of workers during this stage where necessary.

During the core and shell construction of the Phase 1A buildings, anywhere from 54 to 346 workers would be on-site at each building site, at any given time, with a corresponding number of about 1 to 14 trucks per day are expected at any given building site. Core and shell construction would require anywhere from 98 to 382 workers would be on-site at each building site, at any given time, with a corresponding number of about 2 to 14 trucks per day are expected at any given building site, during construction of the Phase 1B buildings. During the core and shell construction of the Phase 2 buildings, anywhere from 98 to 258 workers would be on-site at each building site, at any given time, with a corresponding number of about 3 to 7 trucks per day are expected at any given building site.

Interior Fit-Out

This stage of construction would include the construction of interior partitions, installation of lighting fixtures, interior finishes (flooring, painting, etc.), and mechanical (e.g., installation of elevators) electrical, and plumbing (MEP) work. Mechanical and other interior work at each building would overlap with the building core and shell construction for between 4 and 15 months, partly depending on the size and type of building being constructed. On average the core/shell and interior/MEP work at the various project buildings would overlap for between 8 and 11 months, the largest buildings would have an overlap of up to 15 months. The interior fit-out and MEP work activities would employ a similar number of construction workers as the core and shell work, but would generally have greater numbers of trucks. During MEP and interior construction of the Phase 1A buildings, anywhere from 48 to 349 workers would be on-site at each building site, at any given time, with a corresponding number of about 5 to 25 trucks per day are expected at any given building site. Interior fit-out and MEP work would require anywhere from 64 to 321 workers would be on-site at each building site, at any given time, with a corresponding number of about 5 to 34 trucks per day are expected at any given building site, during construction of the Phase 1B buildings. The interior fit-out and MEP construction of the Phase 2 buildings would have anywhere from 64 to 232 workers on-site at each building at any given time, with a corresponding number of about 5 to 21 trucks per day are expected at any given building site. Equipment used during interior construction would include hoists, delivery trucks, and a variety of small hand-held tools. However, this stage of construction is the quietest, and does not generate fugitive dust.

Site Work and Finishing

This stage of construction would include the final finishing of the building and grounds, including landscaping activities. This is also when the construction protection measures (fencing, sidewalk enclosures, bridges, or temporary sidewalk, remaining scaffolding, etc.)

around the building sites would be removed. This activity would employ the least number of construction workers: with about 5 to 10 workers per day at each building site. In addition, minimal daily truck deliveries would be expected at each building during this stage of construction, with most days having no deliveries. Equipment used during this stage of construction would include hoists, delivery trucks, and a variety of small hand-held tools.

Open Space Areas and Other Surfaces

During construction of the publicly accessible open spaces, top soil may be imported for installation of the grassy areas and landscaping. Concrete sidewalks would be poured, and street furniture, such as benches and tables, would be installed. Dump trucks would bring the soil to the site for spreading by hand. Trees with about a 3- to 4-inch caliper (diameter) and shrubs would be planted. For the active recreation areas, the ground surfaces would be installed, followed by the appropriate amenities (e.g., basketball hoops, volleyball nets, etc.). The majority of this work would be done by hand. For the construction of the open spaces, this phase would require an average of about 45 workers for the construction of the temporary open spaces; about 54 workers for the construction of the new public park on Parcel A16, and about 75 workers for the construction of the open spaces on Parcels A20-A22. For the construction of the open spaces, this phase would require an average of about 3 daily truck deliveries for the construction of the temporary and permanent open spaces and park. Construction of the temporary and permanent open spaces and park are each anticipated to last for about 14 months at each location.

Access Road and Van Wyck Expressway Ramps

A new access ramp from the northbound Van Wyck Expressway would be constructed off 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 ramps would start at grade and rise on columns to the height of the elevated expressway.

To build the ramps, foundations would be excavated and built for the columns, which could be steel or concrete. Lines of columns would be installed and connected with steel girders. The roadway would be built on the girders. Typically, excavators would be used and the foundations formed by concrete. Cranes would be used to place the columns and girders. Cranes would also be used to place the plates on which the roadway is built. At any given time, up to 50 workers could be engaged in building the ramps and access roads. The number of truck deliveries would be expected to average about 25 trucks per day throughout the majority of the construction of the access road and ramps.

NUMBER OF CONSTRUCTION WORKERS AND MATERIAL DELIVERIES

Construction is labor intensive, and the number of workers varies with the general construction task and the size of the building. Likewise, material deliveries generate many truck trips, and the number also varies. **Table 20-3** shows the estimated numbers of workers and deliveries to the project area by calendar quarter for all construction of the proposed project, regardless of construction Phase. The numbers shown in the table below conservatively include construction of the development on Lot B as well as the construction of the Van Wyck access improvements.

Table 20-3
Average Number of Daily Workers and Trucks by Quarter

Year	2014				2015				2016				2017			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	59	59	59	59	59	59	59	59	20	116	345	638	770	767	835	1,036
Trucks	12	12	12	12	12	12	12	12	1	9	30	47	63	72	71	56
Year	2018				2019				2020				2021			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	1,166	610	261	261	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	60	38	26	26	0	0	0	0	0	0	0	0	0	0	0	0
Year	2022				2023				2024				2025			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	0	66	116	273	453	319	188	160	237	257	786	1,012	1,136	1,240	1,300	1,301
Trucks	0	8	33	42	46	37	33	32	36	37	61	82	72	74	87	92
Year	2026				2027				2028				2029			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	1,440	1,624	1,567	1,560	1,702	1,348	1,143	873	813	583	765	1,230	1,278	1,365	1,642	1,406
Trucks	103	108	94	111	119	106	93	85	83	61	70	91	84	89	104	98
Year	2030				2031				2032				Average		Peak	
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th				
Workers	1,673	1,891	1,761	2,115	2,200	2,154	1,594	1,247	940	489	334	164	838		2,200	
Trucks	106	122	107	122	127	128	111	95	79	47	32	14	58		128	
Notes:	Construction assumed to begin in January of 2014.															
Sources:	Hunter Roberts Construction Group and AKRF, Inc.															

The average number of workers would be about 838 per day throughout the construction period. The peak average number of workers would be 2,200 per day in the first quarter of 2031. For truck trips, the average number of trucks would be 58 per day, and the peak average would occur in the second quarter of 2031 with 128 trucks per day (the first quarter of 2031 would have just one less average truck trip per day during that quarter, compared with the peak quarter for trucking activity). Detailed workforce and delivery projections can be found in **Appendix E**.

F. THE FUTURE WITHOUT THE PROPOSED PROJECT

For the purposes of this SEIS, the no action condition generally assumes that the proposed project is not built, and the project site would continue to be occupied by existing uses, and other known background projects in the area, along with specified background growth will have occurred (e.g., traffic analysis). However, for some analysis areas, including air quality and noise, the future without the proposed project includes the completed phases of the project in the background conditions for those analyses. The only changes to the project site that are assumed would be the infrastructure improvements that are currently under construction, related to sewers and stormwater outfalls. Additionally, the construction of the new Van Wyck Expressway access ramps—which was anticipated in the 2008 FGEIS and for which the City has received approval from the Federal Highway Administration—which are slated to be completed in 2024 are also assumed to be in place by that time.

G. PROBABLE IMPACTS OF THE PROPOSED PROJECT

Similar to many large development projects in New York City, construction can be disruptive to the surrounding area for periods of time. While the anticipated construction durations for the proposed project have been developed with an experienced New York City construction manager, the discussion is only illustrative as specific means and methods will be chosen at the time of construction. While the Phase 1A and 1B development programs are those being

advanced by QDG selected to undertake this portion of the proposed project, there are no finalized construction programs or designs for the Phase 1A and 1B elements of the proposed project at this time. Furthermore, as the Phase 2 development will be the subject of a future developer solicitation, the Phase 2 development program analyzed in this SEIS generally reflects the development anticipated for this area based on the development program approved in the 2008 FGEIS, as modified in the subsequent technical memoranda. The construction durations have been conservatively chosen to serve as the basis of the analyses in this chapter and are representative of the reasonable worst-case assumptions for determining potential construction period impacts. The proposed project's conceptual schedule represents a conservative potential timeline for construction, which shows overlapping construction activities and simultaneously operating construction equipment for the proposed project's 19 building sites and other planned project elements (i.e., new park and open spaces, the proposed surface and structured parking, and/or infrastructure improvements) in proximity to one another. Thus, the analysis captures the cumulative nature of construction impacts, which would result in the greatest impacts at nearby receptors.

The following analyses describe the potential impacts that could result from construction of the proposed project, with respect to transportation, air quality, noise and vibration, historic and cultural resources, hazardous materials, open space, socioeconomic conditions, community facilities, natural resources, land use, and rodent control.

TRANSPORTATION

TRAFFIC

The proposed project would be developed in three sequential phases, from 2014 to 2032, and would generate construction worker and truck traffic. Because of the lengthy duration of these activities, an evaluation of construction sequencing and worker/truck projections was undertaken to identify the construction-related peak hour trip-making activities and to assess the potential transportation-related impacts. As described above, it is expected that parking and staging needs would be managed at each construction site and available areas adjacent to CitiField and within the District.

During the construction of Phase 1A, peak construction activities were projected to take place in the fourth quarter of 2017. By this time, only a small portion of the Phase 1A development program would be completed. **Table 20-4** provides a comparison of the cumulative construction and operational trips projected for peak Phase 1A construction to what would be realized upon the full build-out of Phase 1A. During the construction of Phase 1B, peak construction activities were projected to take place in the first quarter of 2027. By this time, the Phase 1A development program would have been in operation along with portions of the Phase 1B development components. **Table 20-5** provides a comparison of the cumulative construction and operational trips projected for peak Phase 1B construction to what would be realized upon the full build-out of Phase 1B. During the construction of Phase 2, peak construction activities were projected to take place in the first quarter of 2031. By this time, the Phase 1A and Phase B development program would have been in operation along with portions of the Phase 2 development components. **Table 20-6** provides a comparison of the cumulative construction and operational trips projected for peak Phase 2 construction to what would be realized upon the full build-out of Phase 2, or the entire proposed project. As demonstrated by these comparisons, the cumulative project-generated trips would be less than what would be realized upon the build-out of each of

Table 20-4

**Comparison of Weekday Vehicle Trip Generation for Peak Phase 1A Construction—
Cumulative Construction and Operational Trips**

Time	Peak Construction in 2017									2018 Phase 1A Full Build-Out Operational Trips in PCEs		
	Incremental Construction Trips in PCEs (Q4 2017)			Incremental Operational Trips from Completed Projects in PCEs			Total PCEs					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6-7 AM	533	28	561	6	6	12	539	34	573	6	6	12
7-8 AM	138	12	150	11	10	21	149	22	171	104	89	193
8-9 AM*	12	12	24	74	86	160	86	98	184	543	394	937
12-1 PM*	12	12	24	214	158	372	226	170	396	1,422	1,159	2,581
3-4 PM	6	511	517	79	103	182	85	614	699	1,243	1,135	2,378
4-5 PM	0	94	94	78	104	182	78	198	276	1,194	1,276	2,470
5-6 PM*	0	0	0	163	146	309	163	146	309	1,276	1,352	2,628
Notes:	Traffic volumes summarized for the 8-9 AM, 12-1 PM, and 5-6 PM account for a conservative overlap of construction-related traffic during these hours and operational trips during the operational analysis peak hours. PCEs = passenger car equivalents where 1 truck trip equals 2 PCEs.											

Table 20-5

**Comparison of Weekday Vehicle Trip Generation for Peak Phase 1B Construction—
Cumulative Construction and Operational Trips**

Time	Peak Construction in 2027									2028 Phase 1B Full Build-Out Operational Trips in PCEs		
	Incremental Construction Trips in PCEs (Q1 2027)			Incremental Operational Trips from Completed Projects in PCEs			Total PCEs					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6-7 AM	889	60	949	2	2	4	891	62	953	15	15	30
7-8 AM	231	24	255	200	168	368	431	192	623	243	293	536
8-9 AM*	24	24	48	1,338	753	2,091	1,362	777	2,139	1,611	1,146	2,757
12-1 PM*	24	24	48	2,412	2,030	4,442	2,436	2,054	4,490	2,855	2,432	5,287
3-4 PM	12	841	853	1,871	1,746	3,617	1,883	2,587	4,470	2,268	2,141	4,409
4-5 PM	0	155	155	1,801	2,171	3,972	1,801	2,326	4,127	2,177	2,532	4,709
5-6 PM*	0	0	0	1,994	2,564	4,558	1,994	2,564	4,558	2,473	2,977	5,450
Notes:	Traffic volumes summarized for the 8-9 AM, 12-1 PM, and 5-6 PM account for a conservative overlap of construction-related traffic during these hours and operational trips during the operational analysis peak hours. PCEs = passenger car equivalents where 1 truck trip equals 2 PCEs.											

Table 20-6

**Comparison of Weekday Vehicle Trip Generation for Peak Phase 2 Construction—
Cumulative Construction and Operational Trips**

Time	Peak Construction in 2031									2032 Phase 2 Full Build-Out Operational Trips in PCEs		
	Incremental Construction Trips in PCEs (Q1 2031)			Incremental Operational Trips from Completed Projects in PCEs			Total PCEs					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6-7 AM	1,135	64	1,199	19	19	38	1,154	83	1,237	64	37	101
7-8 AM	294	26	320	296	362	658	590	388	978	592	562	1,154
8-9 AM*	26	26	52	1,931	1,498	3,429	1,957	1,524	3,481	2,758	1,969	4,727
12-1 PM*	26	26	52	3,423	2,946	6,369	3,449	2,972	6,421	4,233	3,546	7,779
3-4 PM	12	1,083	1,095	2,638	2,549	5,187	2,650	3,632	6,282	3,113	3,246	6,359
4-5 PM	0	201	201	2,500	2,872	5,372	2,500	3,073	5,573	3,013	3,770	6,783
5-6 PM*	0	0	0	2,936	3,391	6,327	2,936	3,391	6,327	3,552	4,843	8,395
Notes:	Traffic volumes summarized for the 8-9 AM, 12-1 PM, and 5-6 PM account for a conservative overlap of construction-related traffic during these hours and operational trips during the operational analysis peak hours. PCEs = passenger car equivalents where 1 truck trip equals 2 PCEs.											

the respective development phases. Therefore, the overall extent of potential traffic impacts during peak construction would be within the envelope of significant adverse traffic impacts identified for the With Action condition in Chapter 14, “Transportation.” For a reasonable worst-case assessment of potential construction traffic impacts, the discussion below focuses on the overall peak construction condition, which as identified above, would take place during the construction of Phase 2 of the proposed project in the first quarter of 2031.

Construction Trip generation

Average daily construction worker and truck activities by quarter were projected for the entire construction period. Construction is anticipated to begin in the first quarter of 2014 and be completed by the end of 2032. Construction worker and truck trip projections were refined to account for worker modal splits and vehicle occupancy, arrival and departure distribution, and passenger car equivalent (PCE) factors for construction truck traffic.¹ These estimates are presented in **Table 20-7**.

Daily Workforce and Truck Deliveries

For a reasonable worst-case analysis of potential transportation-related impacts during construction, the daily workforce and truck trip projections in the peak quarter were used as the basis for estimating peak hour construction trips. Based on a schedule of commencing construction in the beginning of 2014, the combined construction worker and truck traffic peak would occur in the first quarter of 2031. The daily average numbers of construction workers and truck deliveries during this construction peak quarter were estimated at 2,200 workers and 127 truck deliveries per day (see **Appendix E** for details). By the first quarter of 2031, Phase 1A and 1B of the proposed project and the first four buildings of Phase 2 would be completed and would also generate operational traffic. This operational traffic is combined with the construction traffic to assess the worst-case traffic impacts during this period. Estimates of construction activities are further discussed below.

Construction Worker Modal Splits and Vehicle Occupancy

Similar to the FGEIS, approximately 70 percent of construction workers would be expected to travel to the sites by private autos at an average occupancy of 1.15 persons per vehicle. The remaining 30 percent would use public transit.

Peak Hour Construction Worker Vehicle and Truck Trips

Construction activities would mostly take place during the typical construction shift of 7:00 AM to 3:30 PM. While construction truck trips would be made throughout the day (with more trips made during the early morning), most trucks would remain in the area for short durations and construction workers would typically commute during the hours before and after the work shift. For analysis purposes, each worker vehicle was assumed to arrive in the morning and depart in the afternoon or early evening, whereas each truck delivery was assumed to result in two truck trips during the same hour (one “in” and one “out”). Furthermore, in accordance with the 2012 *CEQR Technical Manual*, the traffic analysis assumed that each truck has a PCE of 2.0.

¹ The traffic analysis assumed that each truck has a PCE of 2.0.

Table 20-7
Construction Trip Generation

Vehicle PCEs (Autos + Trucks)	2014				2015				2016				2017				2018			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
6 AM - 7 AM	41	41	41	41	41	41	41	41	10	65	200	359	439	446	479	561	628	337	155	155
7 AM - 8 AM	11	11	11	11	11	11	11	11	2	18	54	98	118	121	130	150	166	90	44	44
8 AM - 9 AM	4	4	4	4	4	4	4	4	0	4	12	20	24	28	28	24	24	16	12	12
9 AM - 10 AM	4	4	4	4	4	4	4	4	0	4	12	20	24	28	28	24	24	16	12	12
10 AM - 11 AM	4	4	4	4	4	4	4	4	0	4	12	20	24	28	28	24	24	16	12	12
11 AM - 12 PM	4	4	4	4	4	4	4	4	0	4	12	20	24	28	28	24	24	16	12	12
12 PM - 1 PM	4	4	4	4	4	4	4	4	0	4	12	20	24	28	28	24	24	16	12	12
1 PM - 2 PM	4	4	4	4	4	4	4	4	0	0	8	8	12	16	16	12	12	8	4	4
2 PM - 3 PM	6	6	6	6	6	6	6	6	1	4	18	27	35	39	41	44	47	27	12	12
3 PM - 4 PM	33	33	33	33	33	33	33	33	10	57	176	319	387	390	423	517	580	305	131	131
4 PM - 5 PM	5	5	5	5	5	5	5	5	1	10	32	59	71	70	76	94	107	55	24	24
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Total	120	120	120	120	120	120	120	120	24	174	548	970	1,182	1,222	1,305	1,498	1,660	902	430	430
Vehicle PCEs (Autos + Trucks)	2019				2020				2021				2022				2023			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
6 AM - 7 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	40	88	173	269	191	124	110
7 AM - 8 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	12	26	49	75	55	35	31
8 AM - 9 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	16	20	16	12	12
9 AM - 10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	16	20	16	12	12
10 AM - 11 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	16	20	16	12	12
11 AM - 12 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	16	20	16	12	12
12 PM - 1 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	16	20	16	12	12
1 PM - 2 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8	8
2 PM - 3 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12	16	22	18	14	13
3 PM - 4 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	32	64	141	229	163	100	86
4 PM - 5 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	10	25	41	29	17	14
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Total	0	0	0	0	0	0	0	0	0	0	0	0	0	112	268	492	744	544	358	322
Vehicle PCEs (Autos + Trucks)	2024				2025				2026				2027				2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
6 AM - 7 AM	151	161	443	573	625	676	721	726	805	899	855	872	949	764	649	509	480	344	440	691
7 AM - 8 AM	45	47	120	155	166	179	194	194	215	242	227	234	255	208	175	138	131	95	121	186
8 AM - 9 AM	16	16	24	32	28	28	36	36	40	44	36	44	48	44	36	32	32	24	28	36
9 AM - 10 AM	16	16	24	32	28	28	36	36	40	44	36	44	48	44	36	32	32	24	28	36
10 AM - 11 AM	16	16	24	32	28	28	36	36	40	44	36	44	48	44	36	32	32	24	28	36
11 AM - 12 PM	16	16	24	32	28	28	36	36	40	44	36	44	48	44	36	32	32	24	28	36
12 PM - 1 PM	16	16	24	32	28	28	36	36	40	44	36	44	48	44	36	32	32	24	28	36
1 PM - 2 PM	8	8	12	16	16	16	16	20	20	20	20	24	24	20	20	16	16	12	12	20
2 PM - 3 PM	15	16	36	47	51	54	56	60	64	69	68	71	76	61	55	43	41	30	35	57
3 PM - 4 PM	123	133	395	509	569	620	649	654	721	811	783	784	853	676	577	441	412	296	384	619
4 PM - 5 PM	22	23	72	92	103	113	118	118	131	149	143	143	155	123	104	79	74	53	70	113
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Total	444	468	1,198	1,552	1,670	1,798	1,934	1,952	2,156	2,410	2,276	2,348	2,552	2,072	1,760	1,386	1,314	950	1,202	1,866
Vehicle PCEs (Autos + Trucks)	2029				2030				2031				2032							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
6 AM - 7 AM	706	753	904	784	919	1,041	966	1,150	1,199	1,177	888	703	538	286	195	92				
7 AM - 8 AM	188	202	240	211	248	278	258	306	320	314	238	188	146	79	53	24				
8 AM - 9 AM	32	36	40	40	44	48	44	48	52	52	44	36	32	20	12	4				
9 AM - 10 AM	32	36	40	40	44	48	44	48	52	52	44	36	32	20	12	4				
10 AM - 11 AM	32	36	40	40	44	48	44	48	52	52	44	36	32	20	12	4				
11 AM - 12 PM	32	36	40	40	44	48	44	48	52	52	44	36	32	20	12	4				
12 PM - 1 PM	32	36	40	40	44	48	44	48	52	52	44	36	32	20	12	4				
1 PM - 2 PM	16	16	20	20	20	24	20	24	24	24	24	20	16	8	8	4				
2 PM - 3 PM	55	58	70	63	71	82	74	88	91	90	73	58	45	23	18	9				
3 PM - 4 PM	638	681	820	704	835	945	878	1,054	1,095	1,073	800	627	474	246	171	84				
4 PM - 5 PM	117	124	150	128	153	172	160	194	201	196	145	114	85	44	31	15				
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Daily Total	1,880	2,014	2,404	2,110	2,466	2,782	2,576	3,056	3,190	3,134	2,388	1,890	1,464	786	536	248				

The estimated daily vehicle trips were distributed throughout the workday based on projected work shift allocations and conventional arrival/departure patterns of construction workers and trucks. For construction workers, the majority (approximately 80 percent) of the arrival and departure trips would take place during the hour before and after each shift. For construction trucks, deliveries would occur throughout the day when the construction site is active. Construction truck deliveries typically peak during the early morning (approximately 25 percent), overlapping with construction worker arrival traffic. The peak construction hourly trip projections are summarized in **Table 20-8**.

Table 20-8
Peak Construction Vehicle Trip Projections

Hour	Auto Trips			Truck Trips			Total					
	Regular Shift			Regular Shift			Vehicle Trips			PCE Trips		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Weekday (1st Quarter of 2031)												
6 AM - 7 AM	1,071	0	1,071	32	32	64	1,103	32	1,135	1,135	64	1,199
7 AM - 8 AM	268	0	268	13	13	26	281	13	294	294	26	320
8 AM - 9 AM	0	0	0	13	13	26	13	13	26	26	26	52
9 AM - 10 AM	0	0	0	13	13	26	13	13	26	26	26	52
10 AM - 11 AM	0	0	0	13	13	26	13	13	26	26	26	52
11 AM - 12 PM	0	0	0	13	13	26	13	13	26	26	26	52
12 PM - 1 PM	0	0	0	13	13	26	13	13	26	26	26	52
1 PM - 2 PM	0	0	0	6	6	12	6	6	12	12	12	24
2 PM - 3 PM	0	67	67	6	6	12	6	73	79	12	79	91
3 PM - 4 PM	0	1,071	1,071	6	6	12	6	1,077	1,083	12	1,083	1,095
4 PM - 5 PM	0	201	201	0	0	0	0	201	201	0	201	201
Daily Total	1,339	1,339	2,678	128	128	256	1,467	1,467	2,934	1,595	1,595	3,190
Notes: Hourly construction worker and truck trips were derived from an estimated quarterly average number of construction workers and truck deliveries per day, with each truck delivery resulting in two daily trips (arrival and departure). Construction peak hours are shaded in this table.												

The projected construction activities in the first quarter of 2031 would result in 1,199 PCEs between 6 and 7 AM and 1,095 PCEs between 3 and 4 PM on weekdays. Since Phase 1A/1B and some components of Phase 2 of the proposed project would have already been completed and occupied, operational traffic generated by those completed components together with the projected construction traffic were considered for the construction traffic impact analysis. The analysis results are presented below.

Construction Traffic Capacity Analysis

Vehicles generated by construction activities were assigned to the street network, and eight key intersections for analysis were identified. These intersections are the same intersections addressed in the FGEIS. These intersections were analyzed from 6-7 AM and 3-4 PM, which correspond to the hours of peak vehicular traffic generated by construction plus operational traffic during the first quarter of 2031. Construction is not expected to take place on any game days or Saturdays. The key study intersections include:

- 126th Street and Northern Boulevard
- 126th Street at 34th Avenue
- 114th Street at Roosevelt Avenue
- 126th Street at Roosevelt Avenue
- College Point Boulevard at Roosevelt Avenue
- College Point Boulevard at the Northern Boulevard service road
- Boat Basin Road at World's Fair Marina

- 126th Street at New Willets Point Boulevard

The operations at these intersections were analyzed using the Highway Capacity Software (HCS+) version 5.5, which is based on the methodologies presented in the *2000 Highway Capacity Manual (HCM)*. A discussion of the analysis methodology can be found in Chapter 14, “Transportation.”

Construction Peak Traffic Volumes and Conditions

The AM peak hour of construction was selected to be 6-7 AM as the number of projected construction trips are significantly higher (1,135 vehicles) compared to the number of construction trips generated (approximately 26 vehicles) during the proposed project weekday non-game AM peak hour of 8-9 AM. The ATR volume comparison showed that 6-7 AM construction peak traffic volumes are 41.5 percent less than the typical 8-9 AM commuter peak hour. Hence, the 6-7 AM volumes were calculated by decreasing the 8-9 AM volumes by 41.5 percent.

The PM peak hour of construction was selected to be 3-4 PM since no construction trips are anticipated during the proposed project weekday non-game PM peak hour of 5-6 PM. The ATR volume comparison showed that 3-4 PM construction peak traffic volumes are approximately 2 percent less than the typical 5-6 PM peak hour. Hence, the 3-4 PM volumes were calculated by decreasing the 5-6 PM volumes by 2 percent.

Future Without Construction of the Proposed Project

The existing AM and PM peak construction hour volumes were increased to year 2031 using a background growth rate of 0.5 percent per year from 2012 to 2017 and 0.25 percent per year from 2017 to 2031, or a 6.2 percent growth in overall traffic volumes. In addition, No Action conditions for the construction analysis account for traffic generated by the anticipated No Action development sites identified in Chapter 14, “Transportation.” Similar to the existing volumes, these No Action increments were decreased by 41.5 percent in the AM and about 2 percent in the PM peak construction hours.

Overall intersection levels of service (LOS) would be at LOS C or better for all intersections during the 6-7 AM peak construction hour. In the 3-4 PM peak construction hour, ~~four~~ five intersections would operate at overall LOS C or better, ~~one~~ two would operate at LOS D and one would operate at LOS F. During the 6-7 AM peak construction hour, of the 35 traffic lane groups at these intersections, 21 would operate at LOS C or better, 13 would operate at LOS D and one would operate at LOS E. During the 3-4 PM peak construction hour, of the 36 traffic lane groups analyzed (there is one more in the PM peak hour), ~~20~~ 19 would operate at LOS C or better, eight would operate at LOS D, and ~~eight~~ nine would operate at LOS E or F.

Future With Construction of the Proposed Project

During the 6-7AM peak construction hour, construction activities would generate 1,071 construction worker auto trips and 64 delivery (in and out) truck trips. During the 3-4 PM peak construction hour, construction activities would generate 1,071 construction worker auto trips and 12 delivery truck trips. Auto trips were assigned along roadways leading to on-site parking facilities, and trucks were assigned to designated NYCDOT truck routes.

Levels of service for the 2031 With Action condition were determined for the eight intersections analyzed under the No Action condition. The unsignalized portion of the intersection of Willets Point Boulevard and 126th Street would be eliminated due to street demapping, while one new intersection—126th Street at New Willets Point Boulevard—would be created as part of the proposed project under Phase ~~2-1B~~. Future traffic levels of service under the 2031 With Action

condition are shown in **Tables 20-9** and **20-10**. Detailed levels of service tables are presented in **Appendix E-2**.

Table 20-9

Overall Intersection Level of Service Summary Comparison
Phase 2 (2031) Construction No Action vs. With Action Conditions – Non-Game Day

Signalized Intersections	Phase 2 No Action Condition		Phase 2 With Action Condition	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
	6 Signalized Intersections		7 Signalized Intersections	
Overall Intersection LOS A/B/C	6	4 <u>3</u>	6	1
Overall Intersection LOS D	0	4 <u>2</u>	0	1
Overall Intersection LOS E	0	0	0	4 <u>0</u>
Overall Intersection LOS F	0	1	1	4 <u>5</u>
No. of Locations with Significant Impacts	—	—	4 <u>2</u>	6
Notes: During the non-game peak hours in the Phase 2 With Action condition, one of the two unsignalized intersections analyzed would be significantly impacted in the weekday AM and PM peak hours.				

Table 20-10

Traffic Lane Group Level of Service Summary Comparison
Phase 2 (2031) Construction No Action vs. With Action Conditions – Non-Game Day

Signalized Intersections	Phase 2 No Action Condition		Phase 2 With Action Condition	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
	6 Signalized Intersections		7 Signalized Intersections	
No. of Lane Groups at LOS A/B/C	16	45 <u>14</u>	20 <u>18</u>	44 <u>13</u>
No. of Lane Groups at LOS D	13	8	11 <u>12</u>	5 <u>4</u>
No. of Lane Groups at LOS E	1	2	4 <u>2</u>	2 <u>1</u>
No. of Lane Groups at LOS F	0	6 <u>7</u>	2	46 <u>19</u>
Notes: <u>All five signalized lane groups would operate at LOS C or better during the non-game peak hours in the Phase 2 No Action condition. During the non-game peak hours in the Phase 2 With Action condition, one of the three unsignalized lane groups analyzed would operate at LOS F in the non-game weekday AM peak hour and one of the three unsignalized lane groups would operate at LOS F in the non-game weekday PM peak hour. of the two unsignalized intersections analyzed would be significantly impacted in the weekday AM and PM peak hours.</u>				

The summary overview of the Phase 2 construction condition indicates that:

- In the 6-7 AM peak construction hour, one of the seven analyzed signalized intersections is projected to operate at overall LOS F, which is one more than that under the No Action condition. (Note: there would be one more signalized intersection in the Phase 2 With Action condition as compared to the No Action condition.) One intersection Two signalized intersections and one unsignalized intersection would be significantly impacted. The number of traffic lane groups expected to operate at LOS E or F would increase from one to ~~three~~ five between the No Action and With Action conditions.
- In the 3-4 PM peak construction hour, five of the seven analyzed signalized intersections are projected to operate at overall LOS E or F, four more than under the No Action condition. Six signalized intersections and one unsignalized intersection would be significantly impacted. The number of traffic lane groups expected to operate at LOS E or F would increase from ~~eight to 18~~ nine to 21 (including 2 unsignalized lane groups not included in Table 20-10) between the No Action and ~~construction~~ With Action conditions.

All significantly impacted intersections could be fully or partially mitigated, the majority of which would require standard mitigation measures typically implemented by NYCDOT. In addition, two locations—126th Street at Northern Boulevard and 126th Street/Grand Central Parkway Ramp at 34th Avenue—would require special more intensive mitigation measures to

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mitigate the significant impacts in the 3–4 PM peak construction hour. The recommended mitigation measures would be similar to those proposed to mitigate the intersection impacts associated with the project's build-out and occupancy. A discussion of the recommended mitigation measures for each of the impacted intersections is provided below.

- *Northern Boulevard at 126th Street*—Impacts on this intersection would occur during the 3–4 PM peak construction hour. The significant impacts expected on the northbound 126th Street approach and on eastbound and westbound Northern Boulevard (leading to the intersection from the Van Wyck and Whitestone Expressway off-ramps) could not be mitigated by applying traditional mitigation measures. Therefore, to fully mitigate significant impacts during the 3–4 PM peak construction hour, this intersection would require cost intensive mitigation measures. These measures include installation of quick-curb (i.e., plastic reflective pylons used for channelizing the traffic) and traffic signal louvers (used on traffic signals to avoid confusion on two closely spaced intersection approaches where approaching motorists may be able to see the signal indication for another approach) on the westbound approach between the right-most lane and the center lane to allow the Van Wyck and Whitestone Expressway ramp traffic to operate as free flow through the intersection, modification of signal timing, widening of the eastbound Northern Boulevard approach to the intersection from two 12-foot-wide lanes to three 10-foot-wide lanes, prohibition of pedestrian crossing in the east crosswalk and diversion of those pedestrians to the west crosswalk of Northern Boulevard at 126th Place, and implementation of signal timing changes needed to coordinate the northbound 126th Street approach with the upstream signal at the intersection of 126th Street and 34th Avenue.
- *34th Avenue at 126th Street*—Significant impacts are expected to occur on the slip ramp from GCP/Astoria Boulevard to 126th Street, eastbound Shea Road approach, and westbound 34th Avenue approach during both the 6–7 AM and 3–4 PM peak construction hours and the northbound de facto left turn movement on the northbound 126th Street approach during the 3–4 PM peak construction hour. The geometric complexity of this intersection, with approaches from two exit ramps in addition to the northbound 126th Street, eastbound Shea Road and westbound 34th Avenue approaches, limits traditional capacity improvement options. Signal timing changes would fully mitigate the significant impacts only during the 6–7 AM peak construction hour. To partially mitigate significant impacts during the 3–4 PM peak construction hour, this intersection would require cost intensive mitigation measures including closing the ramp from eastbound Northern Boulevard to 126th Street and diverting those vehicles to 126th Place and 34th Avenue, reconstructing and merging the Grand Central Parkway and Northern Boulevard ramp approaches to have one 11-foot-wide left turn lane, two 11-foot-wide travel lanes and one 11-foot-wide exclusive right turn lane, a channelized right turn from the Grand Central Parkway ramp to westbound Shea Road, widening the roadway on the east leg of the intersection to ~~40~~ 44 feet to provide two 11-foot-wide westbound approach lanes and two 11-foot-wide eastbound receiving lanes, restriping the northbound 126th Street approach from two 11-foot-wide travel lanes, one 12-foot-wide travel lane, and one 7-foot-wide hatched median to one 12-foot-wide exclusive left turn lane, two 12-foot-wide travel lanes, and one 5-foot-wide Class II bicycle lane, and modifying the signal timing and phasing plan.
- *Roosevelt Avenue at 114th Street*—Significant impacts would occur during the 3–4 PM peak construction hour on ~~the southbound 114th Street approach and the eastbound and westbound Roosevelt Avenue~~ all approaches. These impacts could be mitigated through geometric changes, signal phasing and timing plan changes, limited prohibition of parking,

- and pavement restriping. The centerline on the westbound approach would be shifted 11 feet to the south and the approach would be restriped from two 11-foot-wide travel lanes to one 11-foot-wide exclusive left turn lane, one 11-foot-wide through lane, and one 11-foot-wide exclusive right turn lane. The eastbound approach would be restriped from two 11-foot-wide travel lanes to one 11-foot-wide exclusive left turn lane and one 11-foot-wide travel lane. The centerline on the northbound approach would be shifted three feet to the east and the approach would be restriped from one 16-foot-wide travel lane to one 13-foot-wide travel lane. The centerline on the southbound approach would be shifted two feet to the east. Parking prohibitions at this location include installing “No Standing Anytime” regulations along the east curb of the northbound 114th Street approach 250 feet from the intersection, installing “No Standing Anytime” regulations along the south curb of the eastbound Roosevelt Avenue Street approach 250 feet from the intersection, and installing “No Standing 3–4 PM–7 PM Monday-Friday” regulations along the west curb of the southbound 114th Street approach 150 feet from the intersection to allow for one 12-foot-wide left-through lane and one 10-foot-wide right turn lane. Signal phasing and timing plans would also be modified.
- Roosevelt Avenue at 126th Street*—Significant impacts would occur during the 3–4 PM peak construction hour on the northbound and southbound 126th Street approaches and the eastbound Roosevelt Avenue de facto left turn movement. The intersection could be partially mitigated by reconfiguring the northbound 126th Street approach to have one 10-foot-wide exclusive left turn lane and two 10-foot-wide travel lanes. The centerline on the southbound 126th Street approach would be shifted nine feet to the east and restriped from one 11-foot-wide and one 12-foot-wide travel lane to one 11-foot-wide exclusive left turn lane, one 10-foot-wide through lane, and one 11-foot-wide exclusive right turn lane. The centerline of the eastbound Roosevelt Avenue approach would be shifted one foot to the north and the centerline of the westbound approach would be shifted one foot to the south. The eastbound approach would be restriped from one 10-foot-wide and one 11-foot-wide travel lane to two 11-foot-wide travel lanes and the westbound approach would be restriped from one 11-foot-wide travel lane and one 10-foot-wide travel lane to two 11-foot-wide travel lanes. The signal timing and phasing would also be modified.
 - Roosevelt Avenue at College Point Boulevard*—Significant impacts would occur during the 3–4 PM peak construction hour on the northbound College Point Boulevard left turn movement, the southbound College Point Boulevard approach, and the eastbound Roosevelt Avenue through-right turn movement. The impacts could be partially mitigated by ~~removing the center median on the east leg of Roosevelt Avenue and~~ restriping the westbound Roosevelt Avenue approach from ~~one 22-foot wide center median, one 13-foot-wide travel lane, and one 17-foot-wide travel lane to one 13-foot wide left turn pocket, one 9-foot wide tapered hatched median, one 11-foot wide travel lane and one 19-foot wide travel lane for 80 feet~~ two 15-foot-wide travel lanes. The northbound College Point Boulevard approach would be restriped from one 9-foot-wide exclusive left turn lane, one 13-foot-wide travel lane, and one 18-foot-wide travel lane with parking to two 10-foot-wide exclusive left turn lanes, and two 10-foot-wide travel lanes for 200 feet. The southbound College Point Boulevard approach would be restriped from one 11-foot-wide travel lane and one 19-foot-wide travel lane to three 10-foot-wide travel lanes for 200 feet. The northbound and southbound lanes in the Roosevelt Avenue median would be restriped from one 24-foot-wide travel lane, one 11-foot-wide travel lane, and one 10-foot-wide exclusive left turn lane in the northbound direction and one 10-foot-wide travel lane and one 20-foot-wide travel lane in the southbound direction to one 15-foot-wide travel lane, one 10-foot-wide travel

lane, and two 10-foot-wide exclusive left turn lanes in the northbound direction, and three 10-foot-wide travel lanes in the southbound direction. Parking prohibitions would include installing “No Standing Anytime” regulations along the east curb of the northbound approach of College Point Boulevard for 250 feet and along the west curb of the southbound approach for 200 feet. Southbound right turn traffic on College Point Boulevard would be prohibited and directed to use 39th Avenue and Janet Place and westbound left-turn traffic on Roosevelt Avenue would be prohibited and directed to use Janet Place and 39th Avenue en route back to southbound College Point Boulevard. Additionally, the signal timing and phasing would be modified.

- *College Point Boulevard at Northern Boulevard Service Road*—The westbound approach of the Northern Boulevard service road would be significantly impacted during the 3–4 PM peak construction hour, but could be fully mitigated by modifying the signal timing.
- *Boat Basin Road at World’s Fair Marina*—Significant impacts would occur on the northbound Boat Basin Road left turn movement during the 6–7 AM and 3–4 PM peak construction hours. The intersection would be fully mitigated by installing a traffic signal with a 90 second cycle length, striping the westbound approach as one 11-foot-wide left turn lane and one 11-foot-wide shared left-through lane, and striping the northbound approach as two 10-foot-wide left turn lanes and one 10-foot-wide right turn lane.
- *126th Street at New Willets Point Boulevard*—Significant impacts are not expected during either of the analysis peak hours.

In addition to the above impact and mitigation findings described for peak construction in 2031, the significant adverse traffic impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition are expected to also address the potential traffic impacts during construction. As with the 2032 With Action condition, several of the projected traffic impacts during various analysis peak periods may remain unmitigated.

DELIVERIES

Construction trucks would be required to use NYCDOT-designated truck routes, including the Van Wyck Expressway, the Long Island Expressway (LIE), Northern Boulevard, Roosevelt Avenue, and College Point Boulevard. At the construction site, flaggers would manage the access and movements of trucks. Limited site deliveries may occur along the perimeters of the construction sites within delineated closed-off areas for concrete pour or steel delivery.

CURB LANE CLOSURES AND STAGING

Curb lanes and sidewalks within and adjacent to the project site might be temporarily closed due to construction activities. Sidewalk protection or temporary sidewalks would be provided to maintain pedestrian access. Staging areas would be required from the start of foundation work until cranes and hoists are completely removed at the completion of the core and shell stage. Because the majority of construction activities would be accommodated on-site, construction trucks would be staged primarily at each construction site and available areas adjacent to CitiField and within the District. Maintenance and protection of traffic plans would be developed for all anticipated curb lane and sidewalk closures.

PARKING

The construction activities would generate a maximum daily parking demand of 1,339 spaces in the first quarter of 2031. Parking would be managed within available parking in the South Lot/Lot D and the District, and if necessary, supplemented by the existing parking areas adjacent to the District. As with the 2032 With Action condition, there would not be a parking impact during construction.

TRANSIT

With approximately 70 percent of the construction workers predicted to commute via auto, the remaining 30 percent would travel to and from the construction sites via transit. Based on the peak first quarter 2031 projections (maximum of 2,200 average daily construction workers), this distribution would represent correspondingly up to 660 daily workers traveling by transit. With 80 percent of these workers arriving or departing during the construction peak hours, the estimated number of total peak hour transit trips would be 528. These construction worker trips would occur outside of peak periods of transit ridership and would be distributed and dispersed to the nearby transit facilities, and would not result in any significant adverse transit impacts. However, the significant adverse transit impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition (i.e., stairway widening at the Mets-Willets Point subway station and bus frequency increase) are expected to also address the potential transit impacts during construction. As with the 2028 and 2032 With Action conditions, projected line-haul impacts may remain unmitigated. ~~Additionally, as discussed in more detail in Chapter 14, "Transportation," and Chapter 21, "Mitigation," subway station impacts may remain unmitigated, if mitigation options are found to be infeasible, or if NYCT changes the current game day operation of the station.~~

PEDESTRIANS

Sidewalk protection or temporary sidewalks would be provided in accordance with NYCDOT requirements to maintain pedestrian access for most construction periods. With a maximum of 2,200 average daily construction workers, as shown in **Appendix E**, there would be up to approximately 1,760 workers arriving or departing during the construction peak hours via various modes of transportation. These pedestrian trips would primarily be concentrated during off-peak hours (6 to 7 AM and 3 to 4 PM) and would be distributed among numerous pedestrian facilities (i.e., sidewalks, corner reservoirs, and crosswalks) in the area. Accordingly, there would also not be a potential for significant adverse pedestrian impacts attributable to the projected construction worker pedestrian trips. However, the significant adverse pedestrian impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition (i.e., crosswalk widening) are expected to also address the potential pedestrian impacts during construction. Where mitigation measures may be deemed impractical to mitigate the projected With Action significant adverse pedestrian impacts, those impacts could similarly be unmitigatable during construction.

AIR QUALITY

INTRODUCTION

Emissions from on-site construction equipment and on-road construction-related vehicles, and the effect of construction vehicles on background traffic congestion, have the potential to affect air quality. The analysis of potential impacts of the construction of the proposed project on air quality includes a quantitative analysis of both on-site and on-road sources of air emissions, and the overall combined impact of both sources, where applicable.

In general, most construction engines are diesel-powered, and produce relatively high levels of nitrogen oxides (NO_x) and particulate matter (PM). Construction activities also emit fugitive dust. Although diesel engines emit much lower levels of carbon monoxide (CO) than gasoline engines, the stationary nature of construction emissions and the large quantity of engines could lead to elevated CO concentrations, and impacts on traffic could increase mobile source-related emissions of CO as well. Therefore, the pollutants analyzed for the construction period are nitrogen dioxide (NO_2), particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}), particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($\text{PM}_{2.5}$), and CO. Since ultra-low-sulfur diesel (ULSD) would be used for all diesel engines used in the construction of the proposed project, sulfur oxides (SO_x) emitted from those construction activities would be negligible. For more details on air pollutants, see Chapter 15, “Air Quality.”

Construction activity in general, and large-scale construction in particular, has the potential to adversely affect air quality as a result of diesel emissions. The main component of diesel exhaust that has been identified as having an adverse effect on human health is fine PM. To ensure that the construction of the proposed project results in the lowest practicable diesel particulate matter (DPM) emissions, the project sponsors would implement an emissions reduction program for all construction activities, consisting of the following components:

- *Diesel Equipment Reduction.* Construction of the proposed project would minimize the use of diesel engines and use electric engines, to the extent practicable. QDG would apply for a grid power connection early on so as to ensure the availability of grid power, reducing the need for on-site generators, and require the use of electric engines in lieu of diesel where practicable.
- *Clean Fuel.* Ultra-low sulfur diesel (ULSD) would be used exclusively for all diesel engines throughout the construction sites, to the extent practicable.
- *Best Available Tailpipe Reduction Technologies.* Nonroad diesel engines with a power rating of 50 horsepower (hp) or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project) including but not limited to concrete mixing and pumping trucks, would utilize the best available tailpipe (BAT) technology for reducing DPM emissions. Diesel particle filters (DPFs) have been identified as being the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel nonroad engines rated at 50 hp or greater would utilize DPFs to the extent practicable, either installed on the engine by the original equipment manufacturer (OEM) or a retrofit DPF verified by the EPA or the California Air Resources Board, and

may include active DPFs,¹ if necessary; or other technology proven to ~~reduce DPM by at least 90 percent~~ achieve equivalent emissions reduction. This measure is expected to reduce site-wide tailpipe PM emissions by at least 90 percent.

- *Utilization of Newer Equipment.* EPA's Tier 1 through 4 standards for nonroad engines regulate the emission of criteria pollutants from new engines, including PM, CO, NO_x, and hydrocarbons (HC). All nonroad construction equipment in the proposed project with a power rating of 50 hp or greater would meet at least the Tier 3 emissions standard, to the extent practicable. Tier 3 NO_x emissions range from 40 to 60 percent lower than Tier 1 emissions and considerably lower than uncontrolled engines. All nonroad engines in the project rated less than 50 hp would meet at least the Tier 2 emissions standard.
- *Dust Control.* Fugitive dust control plans would be required as part of contract specifications. For example, stabilized truck exit areas would be established for washing off the wheels of all trucks that exit the construction site. Truck routes within the sites would be either watered as needed or, in cases where such routes would remain in the same place for an extended duration, the routes would be stabilized, covered with gravel, or temporarily paved to avoid the re-suspension of dust. All trucks hauling loose material would be equipped with tight fitting tailgates and their loads securely covered prior to leaving the sites. Chutes would be used for material drops during demolition. Water sprays would be used for all excavation, demolition, and transfer of spoils to ensure that materials are dampened as necessary to avoid the suspension of dust into the air. Loose materials would be watered, stabilized with a biodegradable suppressing agent, or covered. In addition, all necessary measures would be implemented to ensure that the New York City Air Pollution Control Code regulating construction-related dust emissions is followed.
- *Source Location.* In order to reduce the resulting concentration increments, large emissions sources and activities such as concrete trucks and pumps would be located away from residential buildings and publicly accessible open spaces to the extent practicable and feasible.
- *Idle Restriction.* In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time will also be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.

Additional measures may be taken to reduce pollutant emissions during construction of the proposed project in accordance with all applicable laws, regulations, and building codes. Overall, the proposed emission reduction program is expected to significantly reduce DPM emissions consistent with the goals of the currently best available control technologies under New York City Local Law 77, which are required only for publically funded City projects.

As discussed in Chapter 15, "Air Quality," EPA recently established a 1-hour average standard for NO₂. Great uncertainty exists as to 1-hour NO₂ background concentrations at ground level, especially near roadways, since these concentrations have not been measured. In addition, there are no clear methods to predict the rate of transformation of NO to NO₂ at ground-level given

¹ There are two types of DPFs currently in use: passive and active. Most DPFs currently in use are the "passive" type, which means that the heat from the exhaust is used to regenerate (burn off) the PM to eliminate the buildup of PM in the filter. Some engines do not maintain temperatures high enough for passive regeneration. In such cases, "active" DPFs can be used (i.e., DPFs that are heated either by an electrical connection from the engine, by plugging in during periods of inactivity, or by removal of the filter for external regeneration).

the level of existing data and models. Therefore, the significance of predicted construction impacts cannot be determined based on comparison with the new 1-hour NO_2 NAAQS since total 98th percentile values, including local area roadway contributions, cannot be estimated. In addition, methods for accurately predicting 1-hour NO_2 concentrations from construction activities have not been developed. However, exceedances of the 1-hour NO_2 standard resulting from construction activities cannot be ruled out and therefore, as discussed above, non-road diesel-powered vehicles and construction equipment rated Tier 3 or higher would be used during construction to reduce NO_x emissions. The electrification, source location and idling restrictions mentioned above would also reduce NO_x emissions and NO_2 concentration levels.

METHODOLOGY

Chapter 15, “Air Quality,” contains a review of the pollutants for analysis; applicable regulations, standards, and benchmarks; and general methodology for stationary and mobile source air quality analyses. The general methodology for stationary source modeling (regarding model selection, receptor placement, and meteorological data) presented in Chapter 15 was followed for modeling dispersion of pollutants from on-site sources during the construction period. Additional details relevant only to the construction air quality analysis methodology are presented in the following section.

The *CEQR Technical Manual* states that the significance of a likely consequence (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected. In terms of the magnitude of air quality impacts, an action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the NAAQS, or increase the concentration of $\text{PM}_{2.5}$ above the ~~interim guidance thresholds~~ de minimis criteria, could have an adverse impact of significant magnitude. The factors identified above would then be considered in determining the overall significance of the potential impact.

On-Site Construction Activity Assessment

The CitiField Stadium, the home of the New York Mets major league baseball team, is located near the construction sites. However, most of the baseball games would occur during weeknights or weekends when limited construction activities are expected for the proposed project. Therefore, construction activities would not likely impair the enjoyment of stadium users. Since there are no other sensitive residential and open space receptors located near the construction of Phases 1A and 1B, the quantitative analysis focused on Phase 2 construction of the proposed project, which would be built in proximity of residential and open space areas.

To determine which construction periods constitute the worst-case periods for the pollutants of concern (PM , CO , NO_2), construction-related emissions were calculated throughout the duration of construction on an annual and peak day basis for $\text{PM}_{2.5}$. $\text{PM}_{2.5}$ was selected for determining the worst-case periods for all pollutants as analyzed, because the ratio of $\text{PM}_{2.5}$ emissions to impact criteria is higher than for other pollutants. Therefore, initial estimates of $\text{PM}_{2.5}$ emissions throughout the construction years were used for determining the worst-case periods for analysis of all pollutants. Generally, emission patterns of PM_{10} and NO_2 would follow $\text{PM}_{2.5}$ emissions, since they are related to diesel engines by horsepower (hp). CO emissions may have a somewhat different pattern but generally would also be highest during periods when the most activity would occur. Based on the resulting multi-year profiles of annual average and peak day average emissions of $\text{PM}_{2.5}$, and the proximity of the construction activities to residences and publicly

accessible open spaces, a worst-case year and a worst-case short-term period for construction were identified for dispersion modeling of annual and short-term (i.e., 24-hour, 8-hour, and 1-hour) averaging periods. Dispersion of the relevant air pollutants from the sites during these periods was then analyzed, and the highest resulting concentrations are presented in the following sections. Broader conclusions regarding potential concentrations during other periods, which were not modeled, are presented as well, based on the multi-year emissions profiles and the worst-case period results.

The sizes, types, and number of construction equipment were estimated based on the construction activity schedule. Emission factors for NO_x, CO, PM₁₀, and PM_{2.5} from on-site construction engines were developed using the EPA's NONROAD2008 Emission Model (NONROAD). Since emission factors for concrete pumps are not available from either the EPA Motor Vehicle Emission Simulator (MOVES) emissions model or NONROAD, emission factors specifically developed for this type of application were used.¹ With respect to trucks, emission rates for NO_x, CO, PM₁₀, and PM_{2.5} for truck engines were developed using MOVES.

As described in the introduction above, the project sponsors would be committed to a number of measures to reduce air pollutant emissions during construction of the proposed project, with special attention given to DPM. These measures include the exclusive use of ULSD for all construction engines, the use of Tier 3 or newer equipment with DPFs (OEM or the equivalent tailpipe controls to reduce DPM emissions by at least 90 percent compared with normal private construction practices) during construction on all nonroad construction engines with an engine output rating of 50 hp or greater. In addition, controlled truck fleets (i.e., truck fleets under long-term contract, such as concrete trucks) would use trucks equipped with DPFs.

Based on the above commitments, emission factors for the construction of the proposed project were calculated assuming the exclusive use of ULSD, diesel engines of Tier 3 certification, and the application of DPFs on all nonroad diesel engines 50 hp or greater and on concrete delivery and pumping trucks; other trucks were assumed to have emissions consistent with the general truck fleet (all on-road diesel vehicles currently use ULSD, as mandated by federal regulations). PM_{2.5} emission factors for engines retrofit with a DPF (i.e., all nonroad engines with a power output of 50 hp or greater and all concrete delivery trucks) were calculated as 10 percent of the NONROAD Tier 3 emission factors. The emission factors specifically developed for concrete pump trucks were also reduced by 90 percent to account for the DPFs. All personnel/material hoists and small hand tools would be electric and would therefore have no associated emissions.

In addition to engine emissions, fugitive dust emissions from operations (e.g., excavation and loading excavated materials into dump trucks) were calculated based on EPA procedures delineated in AP-42 Table 13.2.3-1. It was estimated that the planned control of fugitive emissions would reduce PM emissions from such processes by 50 percent. A robust watering program would be implemented for all demolition, excavation, and transfer of loose materials to and from trucks.

¹ Concrete pumps are truck mounted and use the truck engine to power the pumps at high load. This application of truck engines is not addressed by the MOVES model, and since it is not a non-road engine, it is not included in the NONROAD model. Emission factors were obtained from a study which developed factors specifically for this type of activity. *FEIS for the Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development*, CPC-NYCDP, November 16, 2007.

The resulting emission factors were used for the emissions and dispersion analyses. Average annual (running 12-month averages) and peak-day $PM_{2.5}$ engine emissions profiles for the entire duration of the construction were prepared by multiplying the above emission rates by the number of engines, the work hours per day, and fraction of the day each engine would be expected to work during each month. The resulting overall peak day and annual average emission profiles are presented in **Figures 20-5** and **20-6**. Based on the $PM_{2.5}$ construction emissions profiles, August 2029 and the year from August 2029 to July 2030 were identified as the worst-case short-term and annual periods, respectively, since the highest project-wide emissions were predicted in these periods, construction activities would occur simultaneously at parcels A6, A7, A11, A12, A13, A14, A15 and A19, and the construction activities would take place in close proximity to completed Phase 1B residential locations and open spaces during these periods.

The dispersion of pollutants during the worst-case short-term and annual periods was then modeled in detail to predict resulting maximum concentration increments from construction activity and total concentrations (including background concentrations) in the surrounding area. Although the modeled results are based on construction scenarios for specific sample periods, conclusions regarding other periods, were derived based on the fact that lower concentration increments from construction would generally be expected during periods with lower construction emissions. As presented in **Figures 20-5** and **20-6**, emissions during other periods would be lower—often much lower—than the peak emissions. However, since the worst-case short-term results may often be indicative of very local impacts, similar maximum local impacts may occur at any stage at various locations but would not persist in any single location, since emission sources would not be located continuously at any single location throughout construction. Equipment would move throughout the site as construction progresses.

For the short-term model scenarios, predicting concentration averages for periods of 24 hours or less, all stationary sources, such as compressors, pumps, or concrete trucks, which idle in a single location while unloading, were simulated as point sources. Other engines, which would move around the site on any given day, were simulated as area sources. For periods of 8 hours or less (less than the length of a shift), it was assumed that all engines would be active simultaneously. All sources would move around the site throughout the year and were therefore simulated as area sources in the annual analyses.

Receptors (locations in the model where concentrations are predicted) were placed along the sidewalks surrounding the construction sites on both sides of the street at locations that would be publicly accessible, at residential and other sensitive uses at both ground-level and elevated locations (e.g., residential windows), at completed and occupied Phase 1B buildings, and at open spaces.

Mobile Source Assessment

The general methodology for mobile source modeling presented in Chapter 15 was followed for intersection modeling during the construction period. The CAL3QHC model was used to perform mobile source CO computations, while CAL3QHCR, a refined version of the CAL3QHC model, was used to determine motor vehicle generated PM concentrations. The intersection selected for CO, PM_{10} and $PM_{2.5}$ modeling is presented in **Table 20-11**. This intersection was selected after considering all intersection locations analyzed for the traffic study because it is a signalized location where the greatest number of cumulative construction and operational vehicles generated by the proposed project and, therefore, the maximum change in the concentrations and greatest potential for air quality impacts is expected.

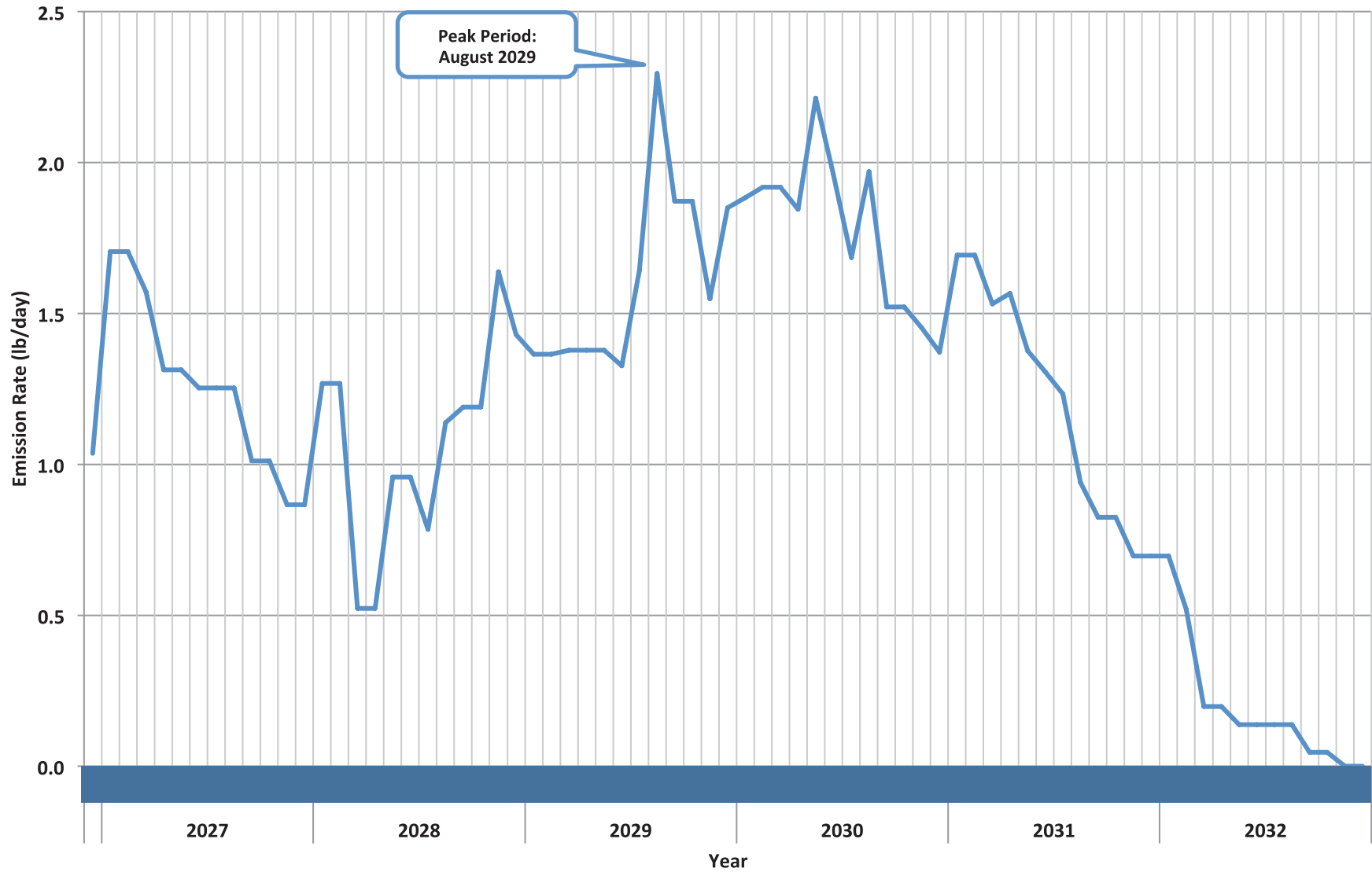
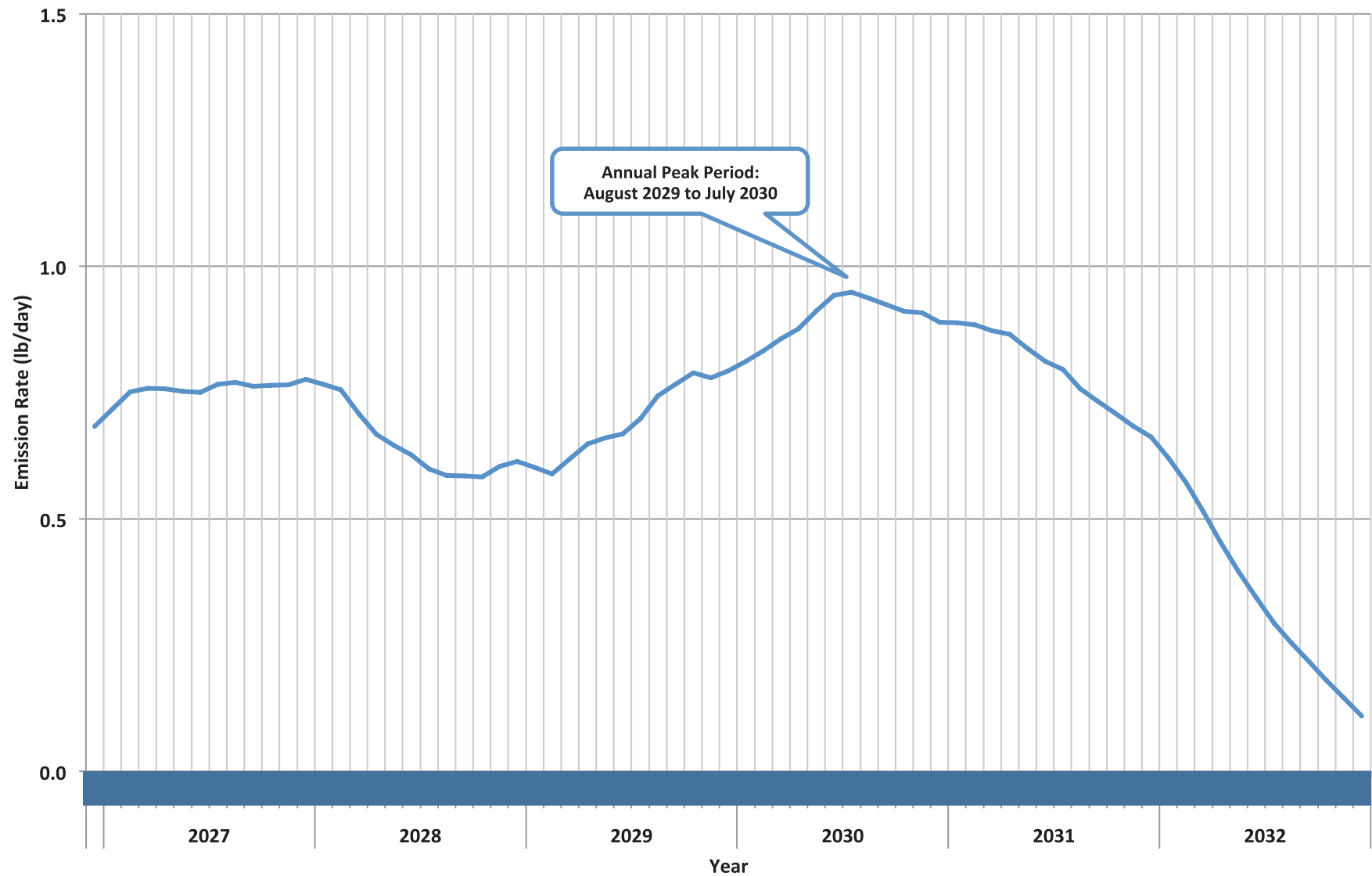
Short-Term (24-Hour Average) PM_{2.5} Construction Emissions Profile

Figure 20-5



Annual (Moving 12-Month Average) PM_{2.5} Construction Emissions Profile
Figure 20-6

Table 20-11
Mobile Source Analysis Intersection Location

Analysis Site	Location	Pollutants Analyzed
1	34th Avenue and 126th Street	CO, PM ₁₀ , PM _{2.5}

Cumulative Assessment

Since emissions from on-site construction equipment and on-road construction-related vehicles may contribute to concentration increments concurrently, a cumulative assessment was undertaken to determine the potential effect of these sources combined. The mobile source and stationary source analyses are performed separately with different dispersion models, as appropriate for the different types of analyses. Total cumulative concentration increments were estimated qualitatively by examining the highest results from the on-site construction analysis to the maximum mobile-source increments from the mobile source site closest to the location of the on-site construction activities. The combination of the results from different models is a conservatively high estimate of potential impacts, since it is likely that the highest results from different sources would occur under different meteorological conditions (e.g., different wind direction and speed) and would not actually occur simultaneously.

FUTURE WITHOUT THE PROPOSED PROJECT

Background Air Quality

In the future without the proposed project, there would likely be much less or possibly no development at the proposed sites. Since air quality regulations mandated by the Clean Air Act are anticipated to maintain or improve air quality in the region, it can be expected that air quality conditions in the future without the proposed project would be similar to or no worse than those that presently exist. However, it should be noted that, without the proposed project, the current auto-related and other industrial uses—as well as the attendant pollutants emitted by those uses—would continue to have an effect on local air quality.

Mobile Source Assessment

CO

CO concentrations without the proposed project were determined using the methodology previously described. **Table 20-12** shows future maximum predicted 8-hour average CO concentrations at the analysis intersections without the proposed project. The values shown are the highest predicted concentrations for the receptor locations for any of the time periods analyzed. As indicated in **Table 20-12**, the predicted 8-hour concentrations of CO, including background, are below the corresponding ambient air quality standard.

Table 20-12
8-Hour Average CO Concentrations
Without the Proposed Project (ppm)

Analysis Site	Location	8-Hour Concentration	NAAQS
1	34th Avenue and 126th Street	2.1	9
Note: An adjusted ambient background concentration of 2.0 ppm is included in the No Action values presented above.			

PM

Concentrations of PM₁₀ and PM_{2.5} from mobile sources without the proposed project were also determined. Concentrations of PM₁₀ included a 24-hour averaging period and PM_{2.5} included the 24-hour and annual averaging periods. As shown in **Table 20-13**, including a background concentration of 50 µg/m³, the maximum PM₁₀ 24-hour No Action concentrations are predicted to be below the applicable NAAQS of 150 µg/m³. Note that PM_{2.5} concentrations for No Action condition are not presented, since impacts are assessed on an incremental basis.

Table 20-13
24-Hour Average PM₁₀ Concentrations
Without the Proposed Project (µg/m³)

Analysis Site	Location	24-Hour Concentration	NAAQS
1	34th Avenue and 126th Street	63.7	150
Note: An adjusted ambient background concentration of 50 µg/m ³ is included in the No Action values presented above.			

FUTURE WITH THE PROPOSED PROJECT

On-Site Construction Activity Assessment

Maximum predicted concentration increments from construction of the proposed project, and overall concentrations including background concentrations, are presented in **Table 20-14**. For PM_{2.5}, monitored concentrations are not added to modeled concentrations from sources, since impacts are determined by comparing the predicted increment from the proposed project as compared to the No Action with the ~~interim guidance~~ *de minimis* criteria. The total maximum combined concentrations, including mobile sources and construction, are presented in the “Cumulative Assessment” section, below.

The maximum predicted total concentrations of PM₁₀, CO, and annual-average NO₂ are not expected to exceed the NAAQS.

From the on-site sources related to the construction, the maximum predicted 24-hour average PM_{2.5} incremental concentration (3.3µg/m³) ~~would occur~~ ~~occurred~~ at a sidewalk receptor location southwest of the construction activities at parcel A11. This maximum predicted 24-hour average PM_{2.5} incremental concentration would not exceed the *de minimis* criterion of 4.5 µg/m³. The maximum predicted neighborhood-scale annual average PM_{2.5} concentration would be 0.001 µg/m³—lower than the *de minimis* criterion of 0.1 µg/m³, and the maximum predicted local annual average PM_{2.5} concentration would be less than the applicable *de minimis* criterion.

The maximum predicted 24-hour average and annual-average PM_{2.5} concentration increments exceeded 2 µg/m³ at a few sensitive residential receptor locations would occur on the northeastern façade of parcel A1 immediately southwest of the construction of parcel A11. As shown in **Table 20-4**, the maximum predicted 24-hour average and annual-average PM_{2.5} incremental concentrations would not exceed the *de minimis* criterion of 4.5 µg/m³ and 0.1 µg/m³ respectively. (See **Figure 1-6** for locations of parcels A1 and A11). At these locations, the maximum predicted frequency ranged from one to four times per year with an annual average frequency of two times per year or less.

Therefore, the predicted concentrations and increments from on-site construction sources associated with the proposed project would not result in any significant adverse air quality impacts.

Table 20-14

Maximum Predicted Pollutant Concentrations from Construction Site Sources
($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	No Action	Proposed Project	Increment	<i>De Minimis</i>	NAAQS
Residence, Academic Buildings or Open Space						
PM _{2.5}	24-hour ¹	—	—	2.7 ³	4.5 ²	35
	Annual Local ¹	—	—	0.19	0.30	15
PM ₁₀	24-hour	50	54.7	4.7	—	150
NO ₂	Annual	43	56.4	13.4	—	100
CO	1-hour	3.4 ppm	4.5 ppm	1.1 ppm	—	35 ppm
	8-hour	2.0 ppm	2.5 ppm	0.5 ppm	—	9 ppm
Sidewalks and Covered Walkways Adjacent to Construction						
PM _{2.5}	24-hour ¹	—	—	3.3 ³	4.5 ²	35
	Annual Local ¹	—	—	0.21	0.30	15
PM ₁₀	24-hour	50	55.5	5.5	—	150
NO ₂	Annual	43	60.6	17.6	—	100
CO	1-hour	3.4 ppm	0.6 ppm	4.0 ppm	—	35 ppm
	8-hour	2.0 ppm	0.3 ppm	2.3 ppm	—	9 ppm
Notes: Results for any other time period would be lower. PM _{2.5} concentration increments were compared with threshold values. Total concentrations were compared with the NAAQS. ¹ Monitored concentrations are not added to modeled PM _{2.5} values. ² NYCDEP is currently applying threshold criteria for assessing the significance of 24-hour average PM _{2.5} impacts. The significance of temporary concentration increments greater than 2 $\mu\text{g}/\text{m}^3$ is assessed in the context of the magnitude, frequency, duration, location and size of area affected by the concentration increment. <u>The PM_{2.5} <i>de minimis</i> criteria superseded the PM_{2.5} interim guidance criteria on June 5, 2013. The 24-hour average interim guidance criteria for PM_{2.5} were as follows: > 2 $\mu\text{g}/\text{m}^3$ (5 $\mu\text{g}/\text{m}^3$ not-to-exceed value), based on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations.</u> ³ This value exceeds the interim guidance threshold level. See text for further discussion. <u>The PM_{2.5} increments shown are less than the <i>de minimis</i> value. These increments were not considered significant when they were compared with the interim guidance criteria in the DSEIS, and are also not significant when compared to the <i>de minimis</i> value.</u>						

The maximum predicted concentrations are probably overstated because the model did not include the effects of the noise reduction wall along the site perimeter that would be between sensitive receptors and the source of the emissions. The location of the maximum 24-hour average increments would vary based on the location of the sources during construction, which would move throughout the site over time. Therefore, continuous daily exposures would not be likely to occur at any one location. Based on the limited duration and extent of these predicted exceedances, the low frequency of occurrence, and the limited potential for exposure, this would not result in significant adverse impacts.

These maximum increments were computed for the peak construction period; for other construction time periods with lesser emissions, the potential 24-hour increments would be less. The maximum predicted neighborhood scale annual average PM_{2.5} concentration would be 0.001 $\mu\text{g}/\text{m}^3$ —lower than the interim guidance threshold level of 0.1 $\mu\text{g}/\text{m}^3$, and the maximum predicted local annual average PM_{2.5} concentration would be less than the applicable interim guidance threshold.

Construction during Phases 1A and 1B of the Proposed Project

Based on the results of the detailed quantitative analysis of construction air quality during Phase 2, the effects of construction during the earlier phases of the proposed project could be

qualitatively evaluated. As described above, besides CitiField Stadium, there are no sensitive residential and open space receptors located near the construction of Phases 1A and 1B of the proposed project. However, most of the baseball games would occur during weeknights or weekends when limited construction activities are expected for the proposed project. Therefore, construction activities would not likely impair the enjoyment of Stadium users. Although Phase 1A construction activities would be nearest to the sensitive receptor locations west of 114th Street, these receptor locations are more than 500 feet away from the Phase 1A construction site. Such distance between the emissions sources and these receptors locations would result in enhanced dispersion of pollutants and therefore potential concentration increments from on-site sources at such locations would be reduced. A review of the surrogate receptors from the detailed analysis performed for Phase 2 construction activities showed that results at 500 feet away from the sources would result in concentrations well below the corresponding standards and thresholds. Therefore, there would be no significant adverse construction air quality impacts at sensitive receptor locations west of 114th Street. Furthermore, Phase 2 would include the most intense construction activities during construction of the proposed project as compared to Phases 1A and 1B. Therefore, since the construction of Phase 2 of the proposed project would not result in significant adverse impacts with respect to air quality, Phases 1A and 1B construction activities would also not result in significant adverse impacts with respect to air quality.

Mobile Source Assessment

A mobile source air quality analysis was conducted for the project during construction activities at the site for the peak construction traffic year of 2030. Localized pollutant impacts from the vehicles queuing at the selected intersection were analyzed for CO for the 8-hour averaging period. PM₁₀ was analyzed for the 24-hour averaging period and PM_{2.5} was analyzed for the 24-hour and annual averaging periods.

CO

CO concentrations with the proposed project were determined using the methodology previously described. **Table 20-15** shows the future maximum predicted 8-hour average CO concentration with the proposed project at the analysis intersections studied. (No 1-hour values are shown, since no exceedances of the NAAQS would occur and the *de minimis* criteria are only applicable to 8-hour concentrations; therefore, the 8-hour values are the most critical for impact assessment.) The values shown are the highest predicted concentrations for the time periods analyzed. In addition, the incremental increases in 8-hour average CO concentration is small, and consequently would not result in a violation of the CEQR *de minimis* CO criteria. Therefore, construction of the proposed project would not result in any significant CO air quality impacts in the With Action condition.

Table 20-15
Maximum Predicted Future No Action and With Action
8-Hour Average CO Concentrations (ppm)

Analysis Site	Location	No Action 8-Hour Concentration	With Action 8-Hour Concentration	Increment	De Minimis	NAAQS
1	34th Avenue and 126th Street	2.1	2.6	0.5	3.4	9
Note: An adjusted ambient background concentration of 2.0 ppm is included in the No Action values presented above.						

PM

Concentrations of PM₁₀ and PM_{2.5} from mobile sources with the proposed project were also determined. **Table 20-16** shows the future maximum predicted 24-hour average PM₁₀

concentrations with the proposed project. The values shown are the highest predicted concentrations for all locations analyzed and include the ambient background concentrations. The results indicate that the construction of the proposed project would not result in any violations of the PM₁₀ standard or any significant adverse impacts on air quality.

Table 20-16
Maximum Predicted Future No Action and With Action
24-Hour Average PM₁₀ Concentrations (µg/m³)

Analysis Site	Location	No Action 24-Hour Concentration	With Action 24-Hour Concentration	NAAQS
1	34th Avenue and 126th Street	63.6	80.3	150
Note: An adjusted ambient background concentration of 50 µg/m ³ is included in the No Action values presented above.				

Future maximum predicted 24-hour and annual average PM_{2.5} concentration increments were calculated so that they could be compared to the ~~interim guidance~~ *de minimis* criteria that would determine the potential significance of any impacts from the proposed project. Based on this analysis, the maximum predicted localized 24-hour average and neighborhood-scale annual average incremental PM_{2.5} concentrations are presented in **Tables 20-17** and **20-18**, respectively. The results show that the maximum daily (24-hour) PM_{2.5} increments are predicted to be below the applicable ~~interim guidance~~ *de minimis* criterion of 54.5 µg/m³, and the maximum annual average PM_{2.5} increments are not predicted to exceed the applicable ~~interim guidance~~ *de minimis* criterion of 0.1 µg/m³. Therefore, the predicted PM_{2.5} increments from mobile sources associated with construction of the proposed project would not result in any significant adverse impacts on air quality.

Table 20-17
Maximum Predicted Future
24-Hour Average PM_{2.5} Concentration Increments (µg/m³)

Analysis Site	Location	Increment	<i>De Minimis</i>
1	34th Avenue and 126th Street	3.1	<u>4.5</u>
Note: The PM _{2.5} <i>de minimis</i> criteria superseded the PM _{2.5} interim guidance criteria on June 5, 2013. The 24-hour average interim guidance criteria for PM _{2.5} were as follows: 24-hour average, ≥ 2 µg/m ³ (5 µg/m ³ not-to-exceed value), based on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations. The PM _{2.5} increments shown are less than the <i>de minimis</i> value. These increments were not considered significant when they were compared with the interim guidance criteria in the DSEIS, and are also not significant when compared to the <i>de minimis</i> value.			

Table 20-18
Maximum Predicted Future
Neighborhood Scale PM_{2.5} Concentrations (µg/m³)

Analysis Site	Location	Increment	<i>De Minimis</i>
1	34th Avenue and 126th Street	0.09	0.1
Note: PM _{2.5} interim guidance <i>de minimis</i> criteria—annual average (neighborhood scale) greater than 0.1 µg/m ³ . The <i>de minimis</i> criteria superseded the interim guidance criteria that were used for impact assessment in the DSEIS. For annual increments, the <i>de minimis</i> criteria are the same as the superseded interim guidance criteria.			

~~The maximum 24 hour average incremental PM_{2.5} concentration from mobile source analysis site 1, 3.1 µg/m³ (shown in **Table 20-17**), was predicted on the southeast corner of 34th Avenue and 126th Street. At this location, PM_{2.5} concentration increments above 2.0 µg/m³ were predicted to occur for at most six times in a year, and at an average of four times per year. At~~

~~other modeled locations, maximum predicted PM_{2.5} increments are predicted to be below the interim guidance criteria. Based on the magnitude, extent, and frequency of 24-hour average PM_{2.5} concentrations above 2.0 µg/m³, the proposed project would not result in significant PM_{2.5} impacts at the analyzed receptor locations. Additional air quality studies may be undertaken between the Draft SEIS and Final SEIS to further refine the construction mobile source analysis for the Phase 2 analysis year, in consultation with DEP.~~

Cumulative Assessment

As described in the cumulative assessment methodology section above, the combination of the highest results from separate analyses performed with different dispersion models are highly conservative, since it is likely that the highest results from different sources would occur under different meteorological conditions (e.g., different wind direction and speed) and would not actually occur simultaneously. In addition, as described above in the methodology section, August 2029 was identified as the worst-case short-term period since the highest project-wide emissions were predicted in these periods, when construction activities would occur simultaneously at parcels A6, A7, A11, A12, A13, A14, A15 and A19 and when construction activities would take place in close proximity to completed Phase 1B residential locations and open spaces. However, most of the activities during this peak period would be away from the intersection (34th Avenue and 126th Street) where the greatest number of cumulative construction and operational vehicles would be generated by the proposed project and away from the proposed school in A8 that would be constructed during Phase 1A.

As described above, from the on-site sources related to the construction, the maximum predicted 24-hour average PM_{2.5} incremental concentration (3.3 µg/m³) occurred at a sidewalk receptor location southwest of the construction activities at parcel A11. It should be noted that the maximum increments, predicted at sidewalks and covered walkways adjacent to construction, are overstated, since they do not include the effect of the solid fence and sidewalk protection on mixing. In addition, sidewalk locations are for transient use and people would not be expected to be present for extended durations. Furthermore, the location of the maximum 24-hour average increments would vary based on the location of the sources, which would move throughout the site over time. Therefore, continuous daily exposures would not be likely to occur at these locations. For PM_{2.5}, although the maximum predicted concentration due to stationary sources only (at a sensitive receptor location) and mobile sources only are 2.7 µg/m³ and 3.1 µg/m³, respectively, the combined effect of these sources ~~would be minimal and~~ would be much less than just adding the highest results, as explained below. ~~Similarly, for short term cumulative CO and PM₁₀ and annual PM_{2.5} concentrations, the combined effect of these sources would also be minimal and would be much less than just adding the highest results. In addition,~~ The peak construction traffic period corresponds to a time when interior fit-out construction work would occur in multiple buildings due to the number of deliveries and construction workers required for this task; however, interior fit-out work would generate the lowest levels of air emissions since most of the large diesel equipment (i.e., excavators, loaders) on-site would no longer be required during this stage of construction. In addition, 38th Avenue (between Buildings A1 and A11 where the maximum 24-hour average PM_{2.5} concentration from on-site construction sources is predicted) is not a major thoroughfare so a substantial percentage of the construction vehicles passing through 34th Avenue and 126th Street would not also pass through the 38th Avenue corridor. Furthermore, the maximum predicted concentrations resulting from stationary sources are likely to be overstated because the model does not include the shielding effects of the noise reduction wall along the site perimeter that would be between sensitive receptors and the source of the emissions. Moreover, the location of the maximum increments would vary based on the

location of the sources, which would move throughout the construction sites over time so continuous daily exposures would not be likely to occur at the same locations. Therefore, based on an analysis of all of the above factors affecting construction emissions and the limited potential for exposure, the combined effects of on-site and on-road construction sources would be minimal and not result in significant adverse impacts. Similarly, for short-term cumulative CO and PM₁₀ and annual PM_{2.5} concentrations, the combined effect of these sources would also be minimal and would be much less than just adding the highest results.

Further examination of the Phase 2 construction plan shows that activities at Buildings A5 and A7 would be located near the completed school within Building A8 and much closer to the intersection of 34th Avenue and 126th Street, where the greatest number of cumulative construction and operational vehicles would be generated by the proposed project, than the Phase 2 peak construction period. In terms of air pollutant emissions, the most intense construction activities are excavation and foundations work when multiple heavy duty diesel equipment (i.e., excavators, loaders etc.) would be used. However, as shown in **Figure 20-3**, the excavation and foundation activities for Buildings A5 and A7 would not coincide: the excavation and foundation activities for Building A5 is expected to occur from January 2028 to June 2028 while the excavation and foundation activities for Building A7 is expected to occur from August 2028 to February 2029. In addition, as shown in **Appendix E**, the peak combined construction emissions for Buildings A5 and A7 are expected to be four times less than that for the peak construction period. Therefore, the maximum 24-hour average PM_{2.5} concentration increments at the school within Building A8 due to construction activities at Buildings A5 and A7 would be much less than the 2.7 µg/m³ predicted during the peak Phase 2 construction period. Similarly, for short-term CO and PM₁₀ and annual PM_{2.5} concentrations, concentration increments at the school within Building A8 due to construction activities at Buildings A5 and A7 would be much less than the 0.5 ppm (8-hour CO), 4.7 µg/m³ (24-hour PM₁₀), and 0.19 µg/m³ (annual PM_{2.5}) predicted during the peak Phase 2 construction period. As explained above, the peak construction traffic period corresponds to a time when interior fit-out construction work would occur in multiple buildings due to the number of deliveries and construction workers required for this task; however, interior fit-out work would generate the lowest levels of air emissions since most of the large diesel equipment (i.e., excavators, loaders) on-site would no longer be required during this stage of construction. As shown in **Appendix E**, the peak construction traffic peak period would occur in the first quarter of 2031 and would generate more traffic than the period when peak on-site construction activities would occur at Buildings A5 and A7 (first quarter of 2028 to 1st quarter of 2029). Furthermore, the construction traffic on 35th Avenue (between Buildings A5 and A7, and the school within Building A8) is not a major thoroughfare such that a substantial percentage of the construction vehicles passing through 34th Avenue and 126th Street would not pass through the 35th Avenue corridor. Hence, the maximum 24-hour average PM_{2.5} concentration increments at the school within Building A8 due to mobile sources would be much less than the 3.1 µg/m³ predicted during the peak construction traffic period at the intersection of 34th Avenue and 126th Street. Similarly, for short-term CO and PM₁₀ and annual PM_{2.5} concentrations, concentration increments at the school within Building A8 due to mobile sources at Buildings A5 and A7 would be much less than the 0.5 ppm (8-hour CO), 30.3 µg/m³ (24-hour PM₁₀), and 0.09 µg/m³ (annual PM_{2.5}) predicted during the peak construction traffic period. Therefore, based on an analysis of all of the above factors affecting construction emissions, the combined effects of on-site and on-road construction sources at the school within Building A8 due to construction activities at Buildings A5 and A7 would also not result in significant adverse air quality impacts.

CONCLUSIONS

A detailed analysis of the combined effects of on-site and on-road emissions determined that annual-average NO₂, CO, ~~and PM₁₀, and PM_{2.5}~~ concentrations would be below their corresponding NAAQS or de minimis criteria. Therefore, the proposed project would not cause or contribute to any significant adverse air quality impacts with respect to these standards.

~~Dispersion modeling determined that the maximum predicted incremental concentrations of PM_{2.5} (using a worst case emissions scenario) would exceed the City's applicable 24 hour interim guidance criterion of 2 µg/m³ at a few receptor locations on the northeastern façade of parcel A1 during the construction activities at parcel A11 located immediately to the northeast, where the likelihood of prolonged exposure is very low. The maximum predicted incremental concentrations of PM_{2.5} would also be exceeded at a sidewalk location due to mobile sources on the southeast corner of 34th Avenue and 126th Street. The occurrences of elevated 24 hour average concentrations for PM_{2.5} would be limited in duration, frequency, and magnitude. Therefore, after taking into account the limited duration and extent of these predicted exceedances, and the limited area wide extent of the 24 hour impacts, it is concluded that no significant adverse air quality impacts for PM_{2.5} are expected from the on site construction sources.~~

Because background concentrations are not known and the analysis methodology for mobile and stationary sources has not been developed for the new 1-hour NO₂ NAAQS, exceedances of the 1-hour NO₂ standard resulting from construction activities cannot be ruled out. Therefore, measures including diesel equipment reduction, utilization of newer equipment, and source location and idling restriction, would be implemented by the proposed project to minimize NO_x emissions from construction

NOISE AND VIBRATION

INTRODUCTION

Potential impacts on community noise levels during construction of a proposed project can result from noise from construction equipment operation and from construction vehicles and delivery vehicles traveling to and from the site. Noise and vibration levels at a given location are dependent on the kind and number of pieces of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating at full power), the distance from the construction site, and any shielding effects (from structures such as buildings, walls, or barriers). Noise levels caused by construction activities would vary widely, depending on the phase of construction and the location of the construction relative to receptor locations. The most significant construction noise sources are expected to be impact equipment such as jackhammers, excavators with ram hoes, drill rigs, rock drills, impact wrenches, tower cranes, and paving breakers, as well as the movements of trucks.

Noise from construction activities and some construction equipment is regulated by the New York City Noise Control Code and by the EPA. The New York City Noise Control Code, as amended December 2005 and effective July 1, 2007, requires the adoption and implementation of a noise mitigation plan for each construction site, limits construction (absent special circumstances as described below) to weekdays between the hours of 7:00 AM and 6:00 PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6:00 PM and 7:00 AM, and on weekends) may be authorized in the following circumstances: (1) emergency conditions; (2) public safety; (3)

construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) where there is a claim of undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. EPA requirements mandate that certain classifications of construction equipment meet specified noise emissions standards.

Given the scope and duration of construction activities for the proposed project, a quantified construction noise analysis was performed for Phase 2 of the proposed project. Based on the results of the detailed construction noise analysis of Phase 2 of the proposed project, construction noise associated with the earlier phases of construction was qualitatively evaluated. The purpose of this analysis was to determine if significant adverse noise impacts would occur during construction, and if so, to examine the feasibility of implementing mitigation measures to reduce or eliminate such impacts.

CONSTRUCTION NOISE IMPACT CRITERIA

Construction noise impact criteria consider the magnitude and the duration. If the magnitude of the noise level increments due to construction are below the impact criteria applied to the proposed project (3-5 dBA), they are not considered to be significant impacts. If the noise level increments due to construction exceed the 3-5 dBA criteria, the duration of the impacts would be also considered. The *CEQR Technical Manual* states that significant noise impacts due to construction would occur “only at sensitive receptors that would be subjected to high construction noise levels for an extensive period of time.” This has been interpreted to mean that such impacts would occur only at sensitive receptors where the activity with the potential to create high noise levels would occur continuously for approximately two years or longer.

In addition, the *CEQR Technical Manual* states that the impact criteria for vehicular sources, using the No Action noise level as the baseline, should be used for assessing construction impacts. As recommended in the *CEQR Technical Manual*, this study uses the following criteria to define a significant adverse noise impact:

- An increase of 5 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors (including residences, play areas, parks, schools, libraries, and houses of worship) over those calculated for the No Build condition, if the No Build levels are less than or equal to 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase in Build $L_{eq(1)}$ noise levels at sensitive receptors of such that the total Build $L_{eq(1)}$ noise levels would be 65 dBA or greater, if the No Build levels are between 60 and 62 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No Build condition, if the No Build levels are greater than or equal to 62 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA, or more, in Build $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No Build condition, if the analysis period is a nighttime period (defined by the *CEQR Technical Manual* criteria as being between 10 PM and 7 AM).

NOISE ANALYSIS METHODOLOGY

Construction activities for the proposed project would be expected to result in increased noise levels as a result of: (1) the operation of construction equipment on-site; and (2) the movement of construction-related vehicles (i.e., worker trips, and material and equipment trips) on the

surrounding roadways. The effect of each of these noise sources was evaluated. The results presented below show the effects of construction activities (i.e., noise due to both on-site construction equipment and construction-related vehicle operation) and the total cumulative impacts due to operational effects (caused by project-generated vehicular trips) and construction effects (as construction proceeds on uncompleted components of the project).

Noise from the operation of construction equipment on-site at a specific receptor location near a construction site is calculated by computing the sum of the noise produced by all pieces of equipment operating at the construction site. For each piece of equipment, the noise level at a receptor site is a function of:

- The noise emission level of the equipment;
- A usage factor, which accounts for the percentage of time the equipment is operating at full power;
- The distance between the piece of equipment and the receptor;
- Topography and ground effects; and
- Shielding.

Similarly, noise levels due to construction-related traffic are a function of:

- The noise emission levels of the type of vehicle (e.g., auto, light-duty truck, heavy-duty truck, bus, etc.);
- Vehicular speed;
- The distance between the roadway and the receptor;
- Topography and ground effects; and
- Shielding.

CONSTRUCTION NOISE MODELING

Noise effects from Phase 2 construction activities were evaluated using the CadnaA model, a computerized model developed by DataKustik for noise prediction and assessment. The model can be used for the analysis of a wide variety of noise sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment), transportation sources (e.g., roads, highways, railroad lines, busways, airports), and other specialized sources (e.g., sporting facilities). The model takes into account the reference sound pressure levels of the noise sources at 50 feet, attenuation with distance, ground contours, reflections from barriers and structures, attenuation due to shielding, etc. The CadnaA model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. This standard is currently under review for adoption by the American National Standards Institute (ANSI) as an American Standard. The CadnaA model is a state-of-the-art tool for noise analysis and is approved for construction noise level prediction by the *CEQR Technical Manual*.

Geographic input data used with the CadnaA model included CAD drawings that defined site work areas, adjacent building footprints and heights, locations of streets, and locations of sensitive receptors. For each analysis period, the geographic location and operational characteristics—including equipment usage rates (percentage of time operating at full power) for each piece of construction equipment operating at the project site, as well as noise control measures—were input to the model. In addition, reflections and shielding by barriers erected on the construction site, and shielding from both adjacent buildings and project buildings as they are constructed, were accounted for in the model. In addition, construction-related vehicles were assigned to the adjacent

roadways. The model produced A-weighted $L_{eq(1)}$ noise levels at each receptor location for each analysis period, as well as the contribution from each noise source.

DETERMINATION OF NO ACTION AND NON-CONSTRUCTION NOISE LEVELS

Noise generated by construction activities is added to noise generated by non-construction traffic on adjacent roadways in order to determine the total noise levels at each receptor location. No Action levels would be expected to be similar to existing noise levels in the study area, because no substantial increases in traffic are predicted to occur in the No Action condition. Consequently, existing noise levels were conservatively used as the baseline noise levels for determining construction-generated noise level increases. Existing noise levels at the analysis receptors were determined by:

- Performing noise measurements at various at-grade locations;
- Calculating noise levels at the receptor sites and measurement locations using the CadnaA model with existing site geometry and existing traffic on adjacent roadways as inputs;
- Determining adjustment factors based on the difference between the measured and calculated existing noise levels at the measurement locations; and
- Applying the adjustment factors to the calculated existing noise levels at the construction noise receptors.

ANALYSIS PERIODS

As described above, construction activities are expected to take place over a period of about 19 years (i.e., from 2014 through 2032). Except for unusual circumstances construction activities would occur on weekdays only. Therefore, construction noise analyses were performed only for the weekday periods.

A qualitative analysis of Phases 1A and 1B was performed, but the quantitative construction noise analysis focused on Phase 2 of the proposed project, lasting from 2028 through 2032, which is the Phase of the project whose construction would be most likely to result in significant construction noise impacts. Anticipated construction schedule and durations for this Phase were developed by Hunter Roberts Construction Group, an experienced New York City construction manager, and are representative of the reasonable worst-case conditions for assessing potential impacts. The schedule included projections of the number of workers, types and number of pieces of equipment, and number of construction vehicles anticipated to be operating during each month of the Phase 2 construction period. An analysis was performed based on this construction schedule to determine the months during the Phase 2 construction period (i.e., 2028-2032) when the maximum potential for significant noise impacts would occur. This analysis conservatively assumed that the worst-case month of each year would represent the entire year, and the year was modeled according to its peak month. In addition, to be conservative, the noise analysis assumed that both peak on-site construction activities and peak construction-related traffic conditions occurred simultaneously.

NOISE REDUCTION MEASURES

Construction at the project site would be required to follow the requirements of the New York City Noise Control Code (NYC Noise Code) for construction noise control measures. Specific noise control measures will be described in a noise mitigation plan required under the NYC Noise Code. These measures could include a variety of source and path controls.

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In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures would be implemented in accordance with the NYC Noise Code:

- Equipment that meets the sound level standards specified in Subchapter 5 of the New York City Noise Control Code would be utilized from the start of construction. **Table 20-19** shows the noise levels for typical construction equipment and the mandated noise levels for the equipment that would be used for construction of the proposed project.

Table 20-19
Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	NYCDEP & FTA Typical Noise Level at 50 feet ¹	Noise Level with Noise Control Measures at 50 feet ²
Compressors	58	
Concrete Pump	82	
Crane (Crawler Cranes)	85	
Cranes (Tower Cranes)	85	
Delivery Trucks	84	
Dump Trucks	84	
Excavator	85	
Generators	82	72
Hand Tool	59	
Hoist	75	
Lift	85	
Pile Driving Rig (Impact)	95	85
Notes:		
¹ Sources: Citywide Construction Noise Mitigation, Chapter 28, Department of Environmental Protection of New York City, 2007. Transit Noise and Vibration Impact Assessment, FTA, May 2006.		
² Path controls include portable noise barriers, enclosures, acoustical panels, and curtains, whichever are feasible and practicable.		
³ Source: Kessler, Frederick M., "Noise Control for Construction Equipment and Construction Sites," report for Hydro Quebec.		

- As early in the construction period as logistics will allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welders, water pumps, bench saws, and table saws (i.e., early electrification) to the extent feasible and practicable.
- Where feasible and practicable, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site based upon New York City Local Law, unless necessary for construction operations.
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.
- A properly secured impact cushion (either a commercially available model or one fabricated from scrap wood, leather, or rubber at the job site) would be installed on top of piles that are being driven by an impact hammer.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures for construction, which go beyond typical construction techniques, would be implemented to the extent feasible and practical:

- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations. Once building foundations are completed, delivery trucks would operate behind construction fence, where possible.
- Noise barriers constructed from plywood or other materials would be utilized to provide shielding (e.g., the construction sites would have a minimum 8-foot barrier during Phase 1A

construction and a minimum 16-foot barrier during Phase 1B and Phase 2 construction, and, where logistics allow, truck deliveries would take place behind these barriers once building foundations are completed).

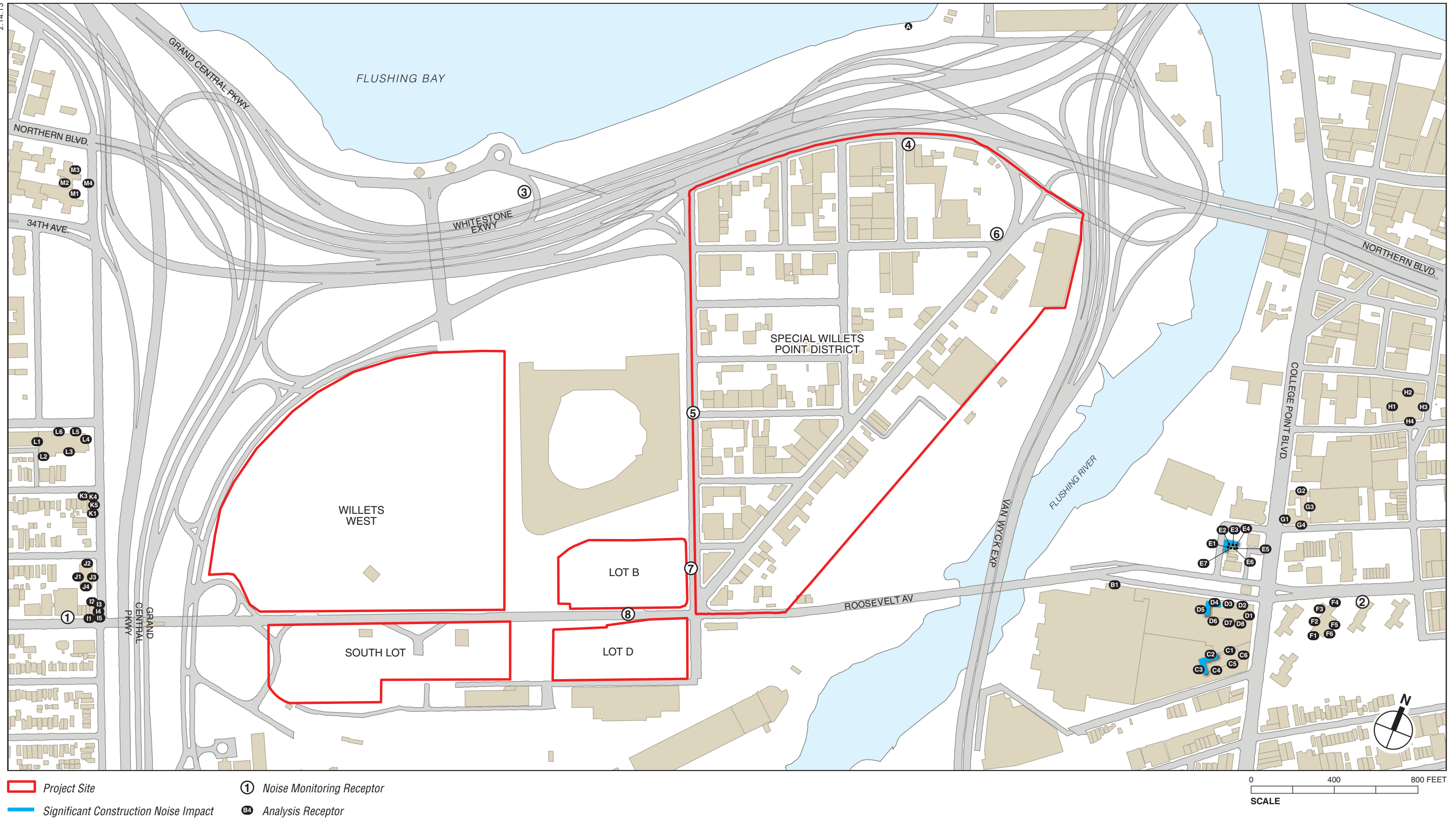
- During Phase 1B and Phase 2 construction, path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) would be used for impact pile drivers and generators used on site. These path control measures were conservatively assumed to offer only a 10 dBA reduction in noise levels for each piece of equipment to which they are applied, as shown in **Table 20-19**. The details to construct portable noise barriers, enclosures, tents, etc. are based upon the instructions of NYCDEP Citywide Construction Noise Mitigation.

RECEPTOR SITES

Eight (8) noise measurement locations (i.e., sites 1 to 8) were selected to determine the baseline existing noise levels, and fourteen (14) receptor locations (i.e., sites 1 to 14) close to the project area were selected as discrete noise receptor sites for the construction noise analysis. These receptors were either located directly adjacent to the project site or streets where construction trucks would pass. Each receptor site was the location of a residence or other noise-sensitive use. At some buildings, multiple building façades were analyzed. At high-rise buildings, noise receptors were selected at multiple elevations. At open space locations, receptors were selected at street level. **Figure 20-7** shows the locations of the 16 noise receptor sites, and **Table 20-20** lists the noise receptor sites and the associated land use at each site. The receptor sites selected for detailed analysis are representative of other noise receptors in the immediate project area and are the locations where maximum project impacts due to construction noise would be expected.

Table 20-20
Noise Receptor Locations

Receptor	Location	Associated Land Use
1	Roosevelt Avenue between 114th Street and 111th Street	Residential/Commercial
2	Roosevelt Avenue between College Point Boulevard and Prince Street	Residential
3	World's Fair Marina Park- Center	Open Space
4	Northern Boulevard between 127th Street and 127th Place	Future Residential/Commercial
5	126th Street between 36th Avenue and 37th Avenue	Future Residential/Commercial
6	Willeys Point Boulevard between 34th Avenue and Northern Boulevard	Future Residential/Commercial
7	126th Street between 39th Avenue and Roosevelt Avenue	Future Commercial
8	Roosevelt Avenue between 114th Street and 126th Street	Future Commercial
A	World's Fair Marina Park- East End	Open Space
B	42-26 College Point Boulevard/131-07 40th Road (floors 1-6)	Retail
C	131-07 40th Road (floors 7-17)	Residential
D	42-26 College Point Boulevard (floors 7-17)	Residential
E	39-15 and 39-17 Janet Place	Residential
F	Southeast corner of College Point Boulevard and Roosevelt Avenue	Residential
G	Northeast corner of College Point Boulevard and 39th Street	Residential
H	Northwest corner of 38th Avenue and Prince Street	Residential/Commercial
I	Northwest corner of Roosevelt Avenue and 114th Street	Residential/Commercial
J	114th Street between Roosevelt Avenue and 39th Avenue	Residential
K	114th Street between 39th Avenue and 38th Avenue	Residential
L	114th Street between 38th Avenue and 37th Avenue	Residential
M	114th Street between Northern Boulevard and 34th Avenue	Residential



Construction Noise Analysis Receptors
Figure 20-7

CONSTRUCTION NOISE ANALYSIS RESULTS

Cumulative Analysis

Using the methodology described above, and considering the noise abatement measures for source and path controls specified above, cumulative noise analyses were performed to determine maximum one-hour equivalent ($L_{eq(1)}$) noise levels that would be expected to occur during each year of construction.

The noise analysis results in **Appendix E** show that predicted noise levels due to construction-related activities would result in increases in noise levels that would exceed the CEQR impact criteria during one or more years at three (3) of the fourteen (14) receptor sites.

The noise analysis results show that predicted noise levels would not exceed the CEQR impact criteria for two or more consecutive years on one or more floors at any of the fourteen (14) receptor sites. (Additional details of the construction analysis are presented in **Appendix E**).

The conceptual schedule on which the noise analysis was based assumes a compressed and conservative potential timeline for construction that tended to show the most construction activity and most construction equipment operating simultaneously, which conditions would result in the largest increase in noise levels at the nearby receptors. Actual construction activities may take place over a longer time period, and result in lower noise levels than those predicted for the worst-case conditions analyzed.

Construction During Phase 1A of the Proposed Project

Phase 1A construction includes construction on parcels within the District as well as the Willets West parcel, and parking lot parcels south of Roosevelt Avenue. However, the construction on each parcel is generally of very short duration. Construction of the retail building on the Willets West parcel would be the longest duration construction of any of the parcels included in Phase 1A. It is also the parcel nearest to the sensitive receptor locations west of 114th Street.

Based on the results of the detailed analysis of Phase 2 construction, the demolition, excavation and foundation phases of the construction period were determined to generate the most noise, especially during the times when pile drivers and excavators would be operating on site. Phase 1A construction does not include the additional noise controls, including higher site-perimeter noise barriers (which would tend to shield excavators from receptors) and additional path controls on impact pile drivers that would be used for Phases 1B and 2. While the full duration of construction on the Willets West parcel is 31 months, the most noise-intensive construction activities (demolition/excavation/foundation work) would last only approximately 16 months (as shown in the conceptual schedule in **Appendix E**).

Based on the results of the detailed analysis of Phase 2 construction, maximum $L_{eq(1h)}$ noise levels at the nearby receptors during this period would be expected to be in the low 70s dBA range, which may result in some exceedances of the *CEQR Technical Manual* noise impact criteria at these locations. However, the duration of these exceedances would be less than 24 consecutive months. So, while the resulting noise level increases may be perceptible and intrusive, they would not be considered “long-term” or significant according to CEQR criteria.

Furthermore, there is a long distance between the Willets West parcel and the receptors west of 114th Street and the Grand Central Parkway, which generates high levels of traffic noise, runs in between the Willets West parcel and the receptors west of 114th Street. Because of these factors, the magnitudes of the noise level increments at the nearby receptors resulting from construction on the Willets West parcel, while they may result in some exceedances of the *CEQR Technical*

Manual noise impact criteria, would not be large enough to disrupt quality of life at these receptors during their limited durations.

Construction at other parcels included in Phase 1A of the proposed project would occur over even shorter durations, and would be located even further from sensitive receptor locations. Consequently, Phase 1A construction in its entirety would not be expected to result in any significant adverse noise impacts.

Construction During Phase 1B of the Proposed Project

Construction of Phase 1B of the proposed project would occur within the District, similarly to the Phase 2 construction. Additionally, Phase 1B construction would utilize all of the same noise control measures included in the detailed analysis of Phase 2 construction, and would include a comparable or smaller amount of construction equipment to that of the Phase 2 construction. Consequently, the conclusions of the detailed analysis of Phase 2 would be applicable to the Phase 1B construction as well, and Phase 1B construction would not be expected to result in any significant adverse noise impacts.

Noise Levels During Construction at Locations Included in the Proposed Project

Proposed buildings that would be completed and occupied before construction is completed at other project building sites, including buildings included in Phase 1B and buildings included in Phase 2 that are completed and occupied before the completion of construction of Phase 2, would also experience elevated exterior noise levels due to ongoing construction activities associated with the proposed project. During the Phase 2 construction periods, these project noise receptors would experience $L_{10(1)}$ noise levels due to construction ranging from 73.4 dBA to 83.6 dBA. These noise levels would result in increments up to 8.6 dBA, comparing noise levels during construction to the noise levels at these receptors without construction. The highest predicted construction noise levels at these receptors are based on the modeling of the worst-case hour of the worst-case quarters of construction and would occur only when the most intense construction activities, such as excavation and foundation work, are underway at immediately adjacent buildings. As shown in **Figure 20-3**, these particularly loud construction tasks at each Phase 2 building parcel would last not longer than six to ten months, and consequently the highest construction noise levels would not be expected to occur at any one building façade for longer than that amount of time. Additionally, the receptors included in the proposed project would include building façades providing not less than 31-43 dBA of attenuation, and alternate means of ventilation (i.e., air conditioners) that do not degrade the acoustical performance of the façade, which would result in acceptable interior noise levels at these receptors during much of the construction period. However, noise levels during construction may exceed 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria for residential uses) when the most intense construction activities (including excavation and foundation work), which could result in noise levels in excess of 80 dBA for limited periods of time, would occur immediately adjacent to buildings whose façades provide 35 dBA or less of attenuation. The predicted noise level increments at these receptors, while in excess of CEQR noise impact thresholds, would be noticeable, but would not necessarily result in disruption to quality of life at these receptors. As a result of the relatively small predicted construction noise increments, the short duration of the most intense construction noise adjacent to any one building façade, and the high levels of attenuation provided by project building facades, proposed buildings that would be completed and occupied before construction is completed at other project building sites, including buildings included in Phase 1B and buildings included in Phase 2 that are completed and occupied before the completion of construction of Phase 2, would experience perceptible noise impacts during ongoing construction of Phase 2, but would not experience significant adverse impacts requiring mitigation.

On-site, construction activities would produce $L_{10(1)}$ noise levels at open space areas up to approximately 70 dBA, which would exceed the levels recommended by CEQR for passive open spaces (55 dBA L_{10}). (Noise levels in these areas exceed CEQR recommended values for existing and No Action conditions.) While this is not desirable, there is no effective practicable mitigation¹ that could be implemented to avoid these levels during construction. Noise levels in many parks and open space areas throughout the city, which are located near heavily trafficked roadways and/or near construction sites, experience comparable and sometimes higher noise levels, and consequently such levels would not be considered a significant adverse impact.

VIBRATION

Introduction

Construction activities have the potential to result in vibration levels that may in turn result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. In general, vibratory levels at a receiver are a function of the source strength (which in turn is dependent upon the construction equipment and methods utilized), the distance between the equipment and the receiver, the characteristics of the transmitting medium, and the construction of the receiver building. Construction equipment operation causes ground vibrations that spread through the ground and decrease in strength with distance. Vehicular traffic, even in locations close to major roadways, typically does not result in perceptible vibration levels unless there are discontinuities in the roadway surface. With the exception of the case of fragile and possibly historically significant structures or buildings, generally construction activities do not reach the levels that can cause architectural or structural damage, but can achieve levels that may be perceptible in buildings close to a construction site. An assessment has been prepared to quantify potential vibration impacts of construction activities on structures and residences near the project site.

Construction Vibration Criteria

For purposes of assessing potential structural or architectural damage, the determination of a significant impact was based on the vibration impact criterion used by LPC of a peak particle velocity (PPV) of 0.50 inches/second. For non-fragile buildings, vibration levels below 0.60 inches/second would not be expected to result in any structural or architectural damage.

For purposes of evaluating potential annoyance or interference with vibration-sensitive activities, vibration levels greater than 65 vibration decibels (VdB) would have the potential to result in significant adverse impacts if they were to occur for a prolonged period of time.

Analysis Methodology

For purposes of assessing potential structural or architectural damage, the following formula was used:

$$PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$$

where: PPV_{equip} is the peak particle velocity in in/sec of the equipment at the receiver location;
 PPV_{ref} is the reference vibration level in in/sec at 25 feet; and
 D is the distance from the equipment to the received location in feet.

¹ Noise barriers would not be practicable because of security concerns.

For purposes of assessing potential annoyance or interference with vibration sensitive activities, the following formula was used:

$$L_v(D) = L_v(\text{ref}) - 30\log(D/25)$$

where: $L_v(D)$ is the vibration level in VdB of the equipment at the receiver location;
 $L_v(\text{ref})$ is the reference vibration level in VdB at 25 feet; and
D is the distance from the equipment to the receiver location in feet.

Table 20-21 shows vibration source levels for typical construction equipment.

Table 20-21
Vibration Source Levels for Construction Equipment

Equipment	PPV _{ref} (in/sec)	Approximate L _v (ref) (VdB)
Pile Driver (Impact)	0.644-1.518	104-112
Pile Driver (Sonic)	0.170-0.734	93-105
Clam Shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall in rock)	0.017	75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Source: <i>Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, May 2006.</i>		

Construction Vibration Analysis Results

The buildings and structures of most concern with regard to the potential for structural or architectural damage due to vibration are the buildings included in the proposed project that would be completed while construction occurs on an adjacent parcel. However, vibration levels at all of these buildings and structures would be well below the 0.50 inches/second PPV limit, and—being new structures—these buildings would not be particularly susceptible to structural or architectural damage due to vibration. At all other locations, the distance between construction equipment and receiving buildings or structures is large enough to avoid vibratory levels that would approach the levels that would have the potential to result in architectural or structural damage.

In terms of potential vibration levels that would be perceptible and annoying, the pieces of equipment that would have the most potential for producing levels that exceed the 65 VdB limit are pile drivers. They would produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within a distance of approximately 230 feet. However, the operation would only occur for limited periods of time at a particular location and, therefore, resulting from the proposed project would not result in any significant adverse impacts. In no case are significant adverse impacts from vibrations expected to occur.

OTHER TECHNICAL AREAS

HISTORIC AND CULTURAL RESOURCES

As described in Chapter 7, consistent with the findings in the 2008 FGEIS, construction activities related to the development that would occur within the District during Phase 2 of the proposed project would be anticipated to result in the demolition of the former Empire Millwork

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Corporation Building, which was found by OPRHP to be eligible for listing on the State and National Registers of Historic Places (S/NR). Demolition of this structure would be considered a significant adverse effect on this architectural resource.

Retaining the former Empire Millwork Corporation Building would be challenging from a site grading and engineering perspective. The District is below the Federal Emergency Management Agency (FEMA) 100-year floodplain level of 14 feet above mean sea level (AMSL), and up to seven feet of fill would be required in some locations to grade and raise the entire District to an elevation of between 14 and 17 feet AMSL. If the City were to provide new infrastructure—including new roadways, sidewalks, and storm and sanitary sewer lines—at the existing grade, potential future development could be subject to flooding on the lower floors. As such, the City plans to raise the District and require that any new development be raised above the 100-year floodplain level. The site of the former Empire Millwork Corporation Building would require up to 3.4 feet of fill to conform to the future grade of the District.

As the former Empire Millwork Corporation Building is at the District's existing grade and located near the Flushing Bay inlet, it is presumed that it is subject to flooding on the lower floors and would remain so in the future without the proposed project. If the former Empire Millwork Corporation Building were not raised it would be significantly more vulnerable to flooding, both because it is below AMSL, and because the surrounding topography would be raised, directing water runoff into lower areas. Raising the grade in a majority of the District while maintaining the existing grade on the former Empire Millwork Corporation Building site would require special engineering measures to protect the building during site preparation and construction to prevent future flooding on the site, and to visually and functionally integrate the building with the rest of the District despite the differences in grade.

In a letter dated May 30, 2008, OPRHP stated that the demolition of the former Empire Millwork Corporation Building would constitute an adverse impact, and that all alternatives to demolition have not been explored. The substantial challenges inherent in retaining the former Empire Millwork Corporation Building as part of the proposed project are detailed above. Furthermore, as the structure would remain under private ownership in the No Action condition, it could be demolished as-of-right in that scenario, and mitigation measures such as photographic documentation would not be required. Retention of the structure also would not advance the goals and objectives of the approved Willets Point Development Plan, including the improvement of environmental conditions and the development of affordable housing, community facilities, and public open space.

A developer for Phase 2 has not yet been selected, and QDG may or may not be selected as the designated developer for Phase 2. Before the development of Phase 2, the selected developer will consult with OPRHP and LPC to evaluate any remaining potential alternatives to demolition. If none are identified, measures to mitigate this adverse impact have been or will be developed, as discussed in Chapter 21, "Mitigation." As discussed in the 2008 FGEIS, these would include consultation with OPRHP to develop mitigation measures, such as recording the building through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative.

HAZARDOUS MATERIALS

Consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials during construction.

Consistent with the Staged Acquisition Alternative analyzed in the 2008 FGEIS as well as the Adjusted Plan and Updated Plan analyzed in subsequent technical memoranda, the proposed project would phase remediation and redevelopment of the District. Construction of Phase 1A of the proposed project would commence with the remediation to standards appropriate for multi-family residences of an approximately 23-acre portion of the District and involve the construction of hotel, retail, and interim surface parking/recreational uses in this area. The interim uses would be developed on an impermeable surface. Remediation of areas to be developed in Phase 1A would be completed prior to 2018. Construction activities involving the remediation of the portion of the District not already redeveloped in Phases 1A and 1B to standards appropriate for multi-family residences is assumed to be completed prior to 2028, and thus before the commencement of construction of the Phase 2 development.

To avoid the potential for significant adverse impacts related to hazardous materials, the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and investigative/remedial (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) measures that would precede or govern both demolition and soil disturbance activities. These measures would be conducted in compliance with all applicable laws and regulations and would conform to appropriate engineering practices. Also, given that some subsurface contamination would likely remain after completion of construction (e.g., historical fill materials underlying the development area) and in nearby areas that would not be cleaned up until a subsequent phase of development, new development would require engineering controls, which could include capping to prevent exposure to underlying soils, groundwater controls at construction site boundaries, and vapor barriers with active or passive sub-slab depressurization systems beneath enclosed or occupied buildings (e.g., not open parking structures). As development of the District is contemplated to occur in phases, excavation and cleanup during Phase 1B and Phase 2 would occur near already developed buildings and uses, requiring stringent controls on construction dust and other potential sources of contaminant migration. Institutional controls would be used to ensure the investigations and remedial measures would be implemented along with requirements to prevent future exposure during intrusive work and subsurface utility repairs at developed sites. Specifically, these institutional controls would be the existing E designations (possibly supplemented by additional requirements should any lots enroll in the BCP) for the District, and restrictions added to the proposed lease amendments or development agreements for the remainder of the project site.

The institutional controls would require the project sponsor, prior to seeking or obtaining DOB permits associated with redevelopment, conduct Phase I and Phase II ESAs (to the extent they have not already been conducted), and complete necessary remediation (with appropriate construction-related HASPs) either prior to or as a part of site development, to the satisfaction of (for the District) the New York City Office of Environmental Remediation (OER) or (for lots outside of the District) DEP. Should all or portions of the District be entered into the BCP, this State program would entail similar requirements to OER's (which would not be superseded). The BCP is a voluntary program in which a property owner/developer enters into an agreement with the State to conduct investigation and remediation in accordance with a variety of requirements, including public participation. Following the cleanup, with, if required, the implementation of deed restrictions to ensure the performance of institutional and engineering controls, the State issues a Certificate of Completion indicating cleanup has been achieved consistent with the proposed site use. It is not anticipated that cleanup requirements of the State and City would differ substantively. Likely components of site remediation and other measures

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to avoid impacts are essentially unchanged from those described in Chapter 12 of the 2008 FGEIS, i.e., they would include:

- Procedures for pre-demolition removal of asbestos and appropriate management of LBP and PCB-containing equipment.
- Additional subsurface investigation, both within the District and of areas not yet investigated, to better characterize soils to be removed for excavation.
- Development of a CHASP and Site Management Plan (SMP) for site remediation, excavation, and redevelopment that would include detailed procedures for managing both known contamination issues (e.g., tank removal, and soil and groundwater remediation of existing petroleum spills, excavation, and removal of existing septic tanks or fields, floor drains, and historic fill) and any unexpectedly encountered contamination issues. The CHASP would also include procedures for avoiding the generation of dust that could affect the surrounding community (especially at later-phase sites neighboring already developed sites), as well as the monitoring necessary to ensure that no such impacts occur.
- Prevention of contaminant migration to a particular development site from other properties might entail the use of various forms of groundwater flow controls at construction site boundaries and/or vapor barriers and sub-slab venting systems could be incorporated into the foundations of new buildings to prevent remaining subsurface contaminated vapors from entering buildings. Procedures that are instituted would be consistent with applicable laws and regulations.

Institutional controls (specifically, E designations, BCP requirements, or restrictions added to leases or development agreements) would be used to ensure required post-development procedures (e.g., implementation of health and safety procedures during subsurface utility repair) would be implemented. Methods for guaranteeing the continued effectiveness of these controls would include periodic (e.g., annual) certification and reporting requirements.

Contamination in the subsurface (including petroleum contamination) within the District has been identified through limited Phase II ESAs. This contamination is likely related primarily to the District's current and historical automotive-related businesses. Although detailed investigations have not yet been performed at the other portions of the project site, less extensive contamination has been found and is anticipated to be encountered, with levels (including elevated methane levels) expected to be consistent with the area's historical ash filling. In addition to subsurface contamination, asbestos-, LBP-, and PCB-containing equipment are likely to be present inside existing buildings.

With the implementation of the variety of measures described above, not only would no significant adverse impacts related to hazardous materials be expected to occur as a result of construction of the proposed project, but the proposed project, with its associated extensive cleanup which would otherwise likely not occur at all or only much more slowly, would result in significant potential benefits to public health and the environment. To ensure the various required measures would be implemented, they would be made binding on all site developers through conditions in the project documents. Although some hazardous materials would likely remain in the subsurface following construction of the proposed project, with the building vapor control measures outlined above, there would be no exposure pathways and thus no further potential for significant adverse impacts. Thus, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials.

OPEN SPACE

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse construction impacts with respect to open space.

Construction of the proposed project would not remove or alter any existing publicly accessible open spaces, and construction of the proposed project would not change the use of any existing publicly accessible open space on the project site or in the study area. Construction of the proposed project also would not limit access to area parks or other publicly accessible open space resources in the vicinity of the proposed project.

Phase 1A construction of the Willets West portion of the proposed project would occupy 30.7 acres of the surface parking lot west of CitiField, as well as one of the CitiField parking lots along Roosevelt Avenue (South Lot). While this land is mapped as parkland, it does not function as open space. The land was formerly occupied by Shea Stadium and associated parking and circulation space until the stadium was replaced by CitiField in 2009, and it is now occupied exclusively by surface parking. Therefore, construction of portions of the proposed project on this mapped parkland would have no direct effect on the use or adequacy of open space for the study area residential and non-residential populations during construction. While it is anticipated that some of the trees within the Willets West portion of the project site would require removal during construction, as would trees within the Lot B area, tree replacement would be conducted in conformance with DPR requirements. Construction of the Phase 1B and Phase 2 portions of the proposed project to be constructed by 2028 and 2032, respectively, also would have no direct effect on the use or adequacy of open space for the study area residential and non-residential populations during construction. Furthermore, throughout the course of the proposed project's construction, substantial new open spaces would be introduced (some temporary), and study area residents would continue to have access to the portions of Flushing Meadows-Corona Park and the Flushing Bay Promenade that are outside of the proposed project's boundaries.

However, because Phase 2 construction activities on Parcels A12, A13, A14, A17, and A18 of the project site would occur immediately adjacent to the new public park on Parcel A16 (anticipated to be complete and open by early 2029), special measures would be taken to prevent construction activities intrusion into this new public park. Similarly, Phase 2 construction activities on Parcels A15, A17, A18, and A19 would occur immediately adjacent to new passive open spaces on Parcels A20, A22, and A23 (anticipated to be completed by early 2032). In each case, a solid fence would be erected along the perimeter of the site that borders the new park or open spaces. The fence would have no openings between the construction site and the new park or open spaces and would be high enough to reduce sound from construction activity from these building sites, to the extent practicable, and to minimize dust. The hoists, cranes, and other equipment would be located on the side of the building sites away from the new park or open spaces, to the extent practicable. As the various building superstructures are being erected, netting would be installed on the side of the buildings facing the new park or open spaces to prevent any materials from falling into the new park or open spaces.

Construction activities would be conducted with the care mandated by the close proximity of an open space to the project site. Dust control measures—including watering of exposed areas and dust covers for trucks—would be implemented to ensure compliance with the New York City Air Pollution Control Code, which regulates construction-related dust emissions. As discussed below, there would be no significant adverse air quality impacts on open spaces.

However, as described in the Noise section of this chapter, at limited times some project site and study area public and private open spaces (including some of the new private open spaces being constructed as part of the proposed project) would experience project-related short-term significant noise impacts from activities such as excavation and foundation construction. These activities would generate noise that could impair the enjoyment of nearby public open space users; however, because of the temporary nature of these impacts, and their short duration (in all cases less than 9 months), these would not be considered significant.

SOCIOECONOMIC CONDITIONS

Consistent with the 2008 FGEIS and subsequent technical memoranda, this analysis finds that the proposed project would not result in any significant adverse construction impacts with respect to socioeconomic conditions.

Construction could, in some instances, temporarily affect pedestrian and vehicular access on street frontages immediately adjacent to the proposed project's various building sites or the areas of the other project elements. However, lane and/or sidewalk closures are expected to be of very limited duration, and are not expected to occur in front of entrances to any existing or planned retail businesses, construction activities would not obstruct major thoroughfares used by customers or businesses, and businesses would not be significantly affected by any temporary reductions in the amount of pedestrian foot traffic or vehicular delays that could occur as a result of construction activities, because of the maintenance and protection of traffic (MPT) measures required by NYCDOT. Utility service would be maintained to all businesses, although very short-term interruptions (i.e., hours) may occur when new equipment (e.g., a transformer, or a sewer or water line) is put into operation. Overall, construction resulting from the proposed project is not expected to result in any significant adverse impacts on surrounding businesses.

Construction would create major direct benefits resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the direct activity.

COMMUNITY FACILITIES

Consistent with the conclusions of the 2008 FGEIS, construction of the proposed project would not result in any significant adverse impacts on community facilities and services, including libraries; health care facilities; and police and fire protection facilities.

No community facilities are located within the project site. Therefore, construction of the proposed project would not have a significant adverse impact on community facilities. Construction activities related to the proposed project would not physically displace or alter any existing community facilities. No study area community facilities would be directly affected by construction activities for an extended duration. The analysis of potential indirect effects on schools finds that the proposed project would not result in any significant adverse impacts on high schools. For Phase 1B, QDG would coordinate with the School Construction Authority (SCA) to determine whether the public school space currently planned as part of Phase 1B would be sufficient to accommodate all of the elementary and intermediate school children generated by the proposed project by 2028. For Phase 2, the New York City Economic Development Corporation (EDC) would require as part of the developer's agreement that the designated developer similarly coordinate with SCA. If necessary, the school spaces would be expanded, and corresponding reductions in square footage would be made elsewhere in the development program.

The construction of the proposed schools on Parcel A8 (during Phase 1B) and Parcel A6 (during Phase 2), as well as ongoing project construction effects on the school located on Parcel A8 once it is operational, are discussed in this chapter. The construction sites adjacent to the school on Parcel A8 would be surrounded by construction fencing and barriers that would limit the effects of construction on this facility. Similarly, the proposed convention center construction site on Parcel A19, adjacent to the school on Parcel A6 would be surrounded by construction fencing and barriers that would limit the effects of construction on this facility.

Construction workers would not place any burden on public schools and would have minimal, if any, demands on libraries, child care facilities, and health care. Construction of the proposed buildings and the other project elements would not block or restrict access to any facilities in the area, and would not materially affect emergency response times. New York Police Department (NYPD) and Fire Department (FDNY) emergency services and response times would not be materially affected as a result of the geographic distribution of the police and fire facilities and their respective coverage areas.

NATURAL RESOURCES

As discussed in detail in Chapter 9, “Natural Resources,” and consistent with the findings of the 2008 FGEIS and subsequent technical memoranda, construction of the proposed project would not result in significant adverse impacts to groundwater, floodplains, water quality, aquatic biota, wetlands, terrestrial natural resources, threatened or endangered species, or essential fish habitat (EFH) within and near the project site.

Willeys West, the South Lot, and Lots B and D are within the current 100-year floodplain, the level of which is projected to increase as a result of climate change, as discussed in more detail in Chapter 9, “Natural Resources.” Most of the District is also within the 100 year floodplain, with the exception of three areas located in the northwest, along the eastern border and along Roosevelt Avenue that are within the 500-year floodplain. Thus in some locations, particularly within the District, new fill would be required during construction of the proposed project to grade and raise the project site structures above the 100-year flood elevation, consistent with the New York City Building Code.¹ Changes to the grade elevation are expected to occur in phases, as construction of the proposed project progresses. During Phase 1A the majority of the project site will remain at the existing grade and only the hotel and commercial spaces would be built at a higher grade above the floodplain elevation. The remainder of the extent of Phase 1A and 1B would be raised above the 100-year flood elevation during the initial stages of construction for Phase 1B. Those grade changes will either occur through bringing in new fill and constructing retaining walls or by building atop basements that raise the finished floor height above the floodplain elevation. Grade transitions would be created between the new streets in Phase 1B and the existing street grades that would remain in the Phase 2 area until that area is raised, most likely during the initial stages of construction for Phase 2. Because the 100-year floodplain within and adjacent to the study area is affected by coastal flooding (rather than local or fluvial flooding) as a result of astronomic tide and meteorological forces, flooding conditions in the

¹ As specified in Appendix G: “Flood Resistant Construction” of the *New York City Building Code*¹ for the applicable building category (see Table 1604.5 of the *New York City Building Code* or Table 1-1 of Appendix G to the *New York City Building Code*), and revisions to these requirements prior to construction.

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project site and surrounding area would not be affected by construction or regrading/filling that would occur as part of the RWCDS.

The project site is more than 180 feet away from the nearest NYSDEC-mapped tidal wetland and more than 165 feet away from the nearest U.S. Fish and Wildlife Services (USFWS) NWI-mapped wetland. As described in the 2008 FGEIS, NYSDEC and NWI-mapped wetlands would not be impacted as a result of construction of the proposed project within the District, and Lots B and D. Similarly, because there are no wetlands present within Willets West or the South Lot, construction of the RWCDS would not adversely affect wetland resources. Therefore, adverse impacts on NYSDEC or USFWS mapped wetlands from construction activities are not expected.

Measures to protect existing trees would include protection plans to minimize impacts to the critical root zones, trunks, and canopies. The potential loss of trees and the existing “terrestrial cultural” ecological communities within the project site, which are common to the New York metropolitan area, would not result in significant adverse impacts to vegetation resources within the region.

Site preparation activities and construction of the RWCDS would generate noise and anthropogenic activity. However, impacts to wildlife would be minimal because wildlife within the study area consists of urban-adapted, highly disturbance-tolerant species. The species of wildlife in the area are ubiquitous throughout the city and commonly inhabit areas with extensive levels of human disturbance and degraded habitat conditions. Wildlife occurring in the area would not be expected to be significantly impacted by the noise and other anthropogenic disturbances generated by project construction.

As discussed in Chapter 10, “Hazardous Materials,” management of wastes generated during project construction related to the cleanup and redevelopment of the project site will be conducted in accordance with applicable federal, state, and local regulatory requirements and with oversight of New York City regulatory agencies. As a result, the proposed project would have the potential to have a direct benefit to soils of the study area. Therefore, consistent with the conclusions in the 2008 FGEIS, construction of the RWCDS would not result in direct or indirect adverse impacts to soils of the study area.

As discussed in Chapter 10, “Hazardous Materials,” a CHASP and SMP for site remediation, excavation, and redevelopment would be developed and would include detailed procedures for managing known contamination issues (e.g., tank removal, and soil and groundwater remediation of existing petroleum spills, excavation, and removal of existing septic tanks or fields, floor drains, and historic fill), as well as any unexpectedly encountered contamination issues during construction. As a result, the proposed project would have the potential to result in a net benefit to groundwater of the study area. Thus, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to groundwater quality.

No in-water construction activities would result from the construction of the RWCDS. Soil disturbing activities associated with construction all phases of the RWCDS would be conducted in accordance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001). Erosion and sediment control measures to be implemented during construction activities would be specified in the stormwater pollution prevention plan (SWPPP). With the implementation of these measures, stormwater discharged through the existing stormwater outfalls would not result in significant adverse impacts to water quality and aquatic biota of Flushing Bay. Additionally,

with implementation of the proposed site remediation (detailed in Chapter 10, “Hazardous Materials”) construction and operation of the RWCDs would reduce the potential for contaminants to enter Flushing Bay and the Flushing River, thereby having the potential to improve the water quality of these waterbodies.

No in-water construction would take place in Flushing Creek and Flushing Bay as a result of the RWCDs. Therefore, the sediments of Flushing Creek and Flushing Bay would not be impacted during the construction or operation of the proposed project. Furthermore, the dredging plans for Flushing Bay, as proposed by DEP and as part of the U.S. Army Corps of Engineers’ (USACE) navigational channel clearance maintenance, would not be impacted by the construction or operation of the proposed project.

As discussed in the 2008 FGEIS and in Chapter 9, “Natural Resources,” no federally- or state-listed species or ecological communities are known to occur within the study area nor is habitat present. Therefore, consistent with the conclusions of the 2008 FGEIS, construction of the RWCDs would not result in adverse impacts to federally- and state-listed species.

As discussed above, no significant adverse impacts to aquatic biota are expected as a result of construction of the proposed project. Construction would not occur within Flushing Bay or Flushing Creek. Therefore, consistent with the conclusions of the 2008 FGEIS, construction of the RWCDs would not result in significant adverse impacts to EFH.

LAND USE

Consistent with the 2008 FGEIS and subsequent technical memoranda, construction of the proposed project would not be expected to result in any significant adverse impacts to land use.

Construction activities resulting from the proposed project would affect land use within the District and on the Willets West, South Lot, Lot D and Lot B sites, but would not alter surrounding land uses. Because the District is isolated from the surrounding uses by the Flushing River, the Whitestone Expressway, the Van Wyck Expressway, and Northern Boulevard, construction is expected to have no significant adverse effects on the surrounding areas. As is typical with construction projects, during periods of peak construction activity there would be some disruption, predominantly noise, to the nearby area. There would be construction trucks and construction workers coming to the various sites. There would also be noise, sometimes intrusive, from building construction as well as trucks and other vehicles backing up, loading, and unloading. These disruptions would be temporary in nature and would have limited effects on land uses within the study area, particularly as most construction activities would take place within each of the building sites, existing surface parking lots, areas of the other project elements, or within portions of sidewalks, curbs, and travel lanes of public streets immediately adjacent to these sites. Throughout construction, access to any remaining or new surrounding residences, businesses, and institutions in the area would be maintained. In addition, measures would be implemented to control noise, vibration, emissions, and dust on construction sites, including the erection of construction fencing incorporating sound-reducing measures. Overall, while the construction at the various building sites and areas of the other project elements within the project site would be evident to the local community, the limited duration of construction at each of the proposed project’s building sites and the areas of the other project elements, coupled with the project site’s isolation from the neighboring community by the Flushing River, the Whitestone Expressway, the Van Wyck Expressway, and Northern Boulevard, construction of the proposed project would not result in significant or long-term adverse impacts on local land use patterns or the character of the nearby area.

RODENT CONTROL

Construction contracts for the various RWCDs building sites (Willets West, Parcels A1-A15, A17-A19, and Lot B) and areas of the other proposed project elements—open spaces, public park (Parcel A16), surface and structured parking (South Lot and Lot D), and infrastructure improvements—would include provisions for a rodent (mouse and rat) control program, as standard construction practice. Before the start of construction at any given Phase or development parcel within the project site, construction contractors would survey and bait the appropriate areas and provide for proper site sanitation. During construction, as necessary, the contractors would carry out a maintenance program. Coordination would be maintained with appropriate public agencies. Only EPA- and NYSDEC-registered rodenticides would be utilized, and the contractors would be required to perform rodent control programs in a manner that avoids hazards to persons, domestic animals, and non-target wildlife. *

A. INTRODUCTION

The preceding chapters of this Draft Supplemental Environmental Impact Statement (DSEIS) discuss the potential for significant adverse environmental impacts to result from the proposed project and potential future development on Lot B. Such potential impacts were identified in the areas of historic resources, community facilities, transportation, and construction. Measures have been examined to minimize or eliminate these anticipated impacts. These mitigation measures are discussed below. This chapter also discusses the potential effect of traffic mitigation measures on air quality and noise.

B. COMMUNITY FACILITIES AND SERVICES

As discussed in Chapter 4, “Community Facilities and Services,” the analysis of potential indirect effects on library services finds that the holdings per resident ratio for the combined study area would decrease from 3.03 under the No Action condition to 2.80 with the proposed project in 2032. This ratio would decrease to 5.02 for the Flushing Library and to 0.69 for the Corona Library. For both the Flushing Library and Corona Library, the catchment area population increase would exceed five percent, which may represent a significant adverse impact on library services according to the *CEQR Technical Manual*. However, as noted above, many of the residents in the catchment areas also reside within the catchment areas for other nearby libraries and would also be served by these libraries, residents of the study area would have access to the entire Queens Library system through the inter-library loan system, and would also have access to libraries near their places of work. In consideration of the above, the lead agency, in consultation with the Queens Public Library, has determined that the additional population introduced by the proposed project would impair the delivery of library services in the study area in 2032. Therefore, Phase 2 of the proposed project would result in a significant adverse impact on library services. To mitigate this impact, adequate space¹ within the 125,000 square feet of as-yet-unprogrammed community facility space in the program for Phase 2 would be made available to ~~could potentially~~ be utilized as a branch library or auxiliary facility for the Queens Library system, or additional volumes or programs to accommodate new users could be provided if adequate space in nearby branches exists. Although no developer has yet been designated for Phase 2, the provision of additional library space in Phase 2 would be based on further consultation with Queens Public Library and the lead agency.

As discussed in Chapter 4, the analysis of indirect effects on child care facilities finds that the proposed project may result in significant adverse impacts on publicly funded child care facilities in 2028. Therefore, consistent with the conclusions of the 2008 FGEIS, to mitigate the potential impact on child care facilities that could occur by 2028, the Queens Development

¹ In other projects, 15,000–20,000 square feet of community facility space has been adequate for the operation of a branch library.

Group (i) would consult with ACS to determine the appropriate way to meet demand for child care services generated by ~~development on the proposed project~~; and (ii) would, as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site. To mitigate the potential impact on child care facilities that could occur by 2032, EDC would require, as part of the developer's agreement, that the designated developer of Phase 2 consult with the New York City Administration for Child Services (ACS) to determine the appropriate way to meet demand for child care services generated by development in the District by 2032 and would, as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site.

Possible mitigation measures, which would be implemented by the developer(s) of Phase 1B and Phase 2, include adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site. At this point, however, it is not possible to know exactly which type of mitigation would be most appropriate and when, because several factors may limit the number of children in need of publicly funded child care slots. Families in the study area could make use of alternatives to publicly funded child care facilities, such as homes licensed to provide family child care which families of eligible children could elect to use instead of a public child care center. In addition, parents of eligible children may use ACS vouchers to finance care at private child care centers either within the study area or could use facilities outside of study area.

C. HISTORIC AND CULTURAL RESOURCES

As discussed in Chapter 7, "Historic and Cultural Resources," there are substantial challenges inherent in retaining the historic building located in the District—the Former Empire Millwork Corporation Building—and the proposed project contemplates demolition of this building in Phase 2. A developer for Phase 2 has not yet been selected, and the Queens Development Group may or may not be selected as the designated developer for Phase 2. Before the development of Phase 2, the selected developer will consult with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and the New York City Landmarks Preservation Commission (LPC) to evaluate any remaining potential alternatives to demolition. If none are identified, measures to mitigate this adverse impact would be developed in consultation with OPRHP and LPC. The mitigation measures could include recording the building through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative.

D. TRAFFIC AND PARKING

As discussed in Chapter 14, "Transportation," the proposed project would result in significant adverse traffic impacts at many locations within the study area. The sections below identify the mitigation that may be needed at each location for each phase of development and provide descriptions of mitigation findings at the intersections analyzed and within the highway network. A separate section is then provided describing implementation of the mitigation measures. ~~The effectiveness and feasibility of proposed mitigation measures will be further assessed between the draft and final SEIS.~~ Detailed LOS tables are presented at the end of the chapter.

TRAFFIC—PHASE 1A (2018)

Table 21-1 presents a summary of significant adverse traffic impacts and their ability to be mitigated, and **Table 21-2** summarizes the unmitigated traffic study area locations by time period. Details of the intersection capacity results and traffic mitigation measures are provided in tables at the back of the chapter.

Table 21-1
Traffic Impact Mitigation Summary—Phase 1A (2018)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
No Significant Impact	44 <u>17</u>	42 <u>16</u>	9 <u>12</u>	9 <u>12</u>	8 <u>9</u>	42 <u>13</u>	40 <u>11</u>
Fully Mitigated Impact	43 <u>12</u>	43 <u>12</u>	15	16	45 <u>13</u>	43 <u>10</u>	43 <u>11</u>
Partially Mitigated Impact	0 <u>1</u>	1	1	1	4 <u>3</u>	4 <u>4</u>	3 <u>5</u>
Unmitigated Impact	2	3	4	3	5 <u>7</u>	3 <u>5</u>	3 <u>5</u>

Table 21-2
Summary of Unmitigated Intersections—Phase 1A (2018)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
Astoria Boulevard at 108th Street			X		X		
Northern Boulevard at 108th Street							
Northern Boulevard at 114th Street							
Northern Boulevard at 126th Street							
Northern Boulevard at Prince Street	X	X	X	X	X	X	X
Northern Boulevard at Main Street		X	X	X	X		X
Northern Boulevard at Union Street							
Northern Boulevard at Parsons Boulevard							
34th Avenue at 114th Street							
34th Avenue at 126th Street							
Roosevelt Avenue at 108th Street							
Roosevelt Avenue at 111th Street							
Roosevelt Avenue at 114th Street							
Roosevelt Avenue at 126th Street					X	X	
Roosevelt Avenue at College Point Boulevard							
Roosevelt Avenue at Prince Street							
Roosevelt Avenue at Main Street							
Roosevelt Avenue at Union Street	X	X	X	X	X	X	X
Roosevelt Avenue at Parsons Boulevard							
Kissena Boulevard at Main Street							
Sanford Avenue at College Point Boulevard							
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard							
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard							
Boat Basin Road at Stadium Road							
Boat Basin Road at World's Fair Marina							
Stadium Road at Grand Central Parkway							
Willeys Point Boulevard at Northern Boulevard							
<u>126th Street at 36th Avenue</u>					<u>X</u>	<u>X</u>	<u>X</u>
<u>126th Street at 37th Avenue</u>					<u>X</u>	<u>X</u>	<u>X</u>
<u>Northern Boulevard at 126th Place</u>							

Notes: "X" means the intersection would be unmitigated in the corresponding peak hour

The overall finding of the traffic mitigation analysis is that the majority of locations analyzed under the proposed project would be significantly impacted, and that a broad range of mitigation measures would be needed. Depending on the peak hour, approximately one-half or more of the significantly impacted locations could be fully or partially mitigated with traffic signal operation changes, such as signal phasing and/or timing changes, signalization of an unsignalized intersection, lane re-striping, parking prohibitions, or turn prohibitions (i.e., the prohibition of right turns from southbound College Point Boulevard at Roosevelt Avenue, the prohibition of left turns from westbound Roosevelt Avenue at College Point Boulevard, and the prohibition of left turns from westbound Northern Boulevard at 114th Street).

Three locations—including 126th Street at Northern Boulevard, 126th Street/Grand Central Parkway (GCP) ramp at 34th Avenue, and the GCP exit ramp at West Park Loop/Stadium Road—would require special, more intensive mitigation measures to mitigate the significant impacts in all peak hours. This more intensive mitigation is explained in detail in the following sections. The locations that were fully or partially mitigated during any of the seven peak analysis hours are listed below:

~~The overall finding of the traffic mitigation analysis is that the majority of locations analyzed under the proposed project would be significantly impacted, and that a broad range of mitigation measures would be needed. Depending on the peak hour, approximately one-half or more of the significantly impacted locations could be fully or partially mitigated with traffic signal operation changes, such as signal phasing and/or timing changes, signalization of an unsignalized intersection, lane re-striping, parking prohibitions, or turn prohibitions (i.e., the prohibition of right turns from southbound College Point Boulevard at Roosevelt Avenue, the prohibition of left turns from westbound Roosevelt Avenue at College Point Boulevard, and the prohibition of left turns from westbound Northern Boulevard at 114th Street).~~

~~Three locations—including 126th Street at Northern Boulevard, 126th Street/Grand Central Parkway (GCP) ramp at 34th Avenue, and the GCP exit ramp at West Park Loop/Stadium Road—would require special, more intensive mitigation measures to mitigate the significant impacts in all peak hours. This more intensive mitigation is explained in detail in the following sections. The locations that were fully or partially mitigated during any of the seven peak analysis hours are listed below:~~

- 108th Street at Astoria Boulevard
- 108th Street at Northern Boulevard
- 114th Street at Northern Boulevard
- 126th Street at Northern Boulevard
- Union Street at Northern Boulevard
- Parsons Boulevard at Northern Boulevard
- 114th Street at 34th Avenue
- 126th Street/GCP Ramp 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 Ave
- Prince Street at Roosevelt Avenue
- Main Street at Roosevelt Avenue
- Parsons Boulevard at Roosevelt Avenue
- Main Street at Kissena Boulevard
- Parsons Boulevard at Sanford Avenue
- Boat Basin Road at Stadium Road
- Boat Basin Road at World's Fair Marina
- GCP Ramp at West Park Loop/Stadium Road

The following intersections could only be partially mitigated or could not be mitigated at all during the following time periods:

- In the weekday non-game AM peak hour, 114th Street at Roosevelt Avenue would be partially mitigated and there would be two unmitigatable intersections—Union Street at Roosevelt Avenue, and Prince Street at Northern Boulevard.
- In the non-game weekday midday peak hour, College Point Boulevard at Roosevelt Avenue would be partially mitigated, and three intersections including the Northern Boulevard intersections at Prince Street and at Main Street, and the intersection of Union Street at Roosevelt Avenue could not be mitigated.
- In the non-game weekday PM peak hour, College Point Boulevard at Roosevelt Avenue would be partially mitigated, and four intersections including 108th Street at Astoria Boulevard, the Northern Boulevard intersections at Prince Street and at Main Street, and the intersection of Union Street at Roosevelt Avenue could not be mitigated.
- In the non-game Saturday midday peak hour, College Point Boulevard at Roosevelt Avenue would be partially mitigated, and three intersections including the Northern Boulevard intersections at Prince Street and at Main Street, and the intersection of Union Street at Roosevelt Avenue could not be mitigated.
- In the weekday pre-game peak hour, 126th Street/GCP Ramp at 34th Avenue, College Point Boulevard at Roosevelt Avenue, and Boat Basin Road at Stadium Road would be partially mitigated, and ~~five~~ seven intersections could not be mitigated, including 108th Street at Astoria Boulevard, the Northern Boulevard intersections at Prince Street and at Main Street, ~~and~~ the Roosevelt Avenue intersections at 126th Street and at Union Street, and the 126th Street intersections at 36th and 37th Avenues.
- In the Saturday pre-game peak hour, 126th Street/GCP Ramp at 34th Avenue, 108th Street at Roosevelt Avenue, 114th Street at Roosevelt Avenue, and 126th Street at Roosevelt Avenue College Point Boulevard at Roosevelt Avenue could be partially mitigated, and ~~three~~ five intersections could not be mitigated, including Prince Street at Northern Boulevard, ~~and~~ the Roosevelt Avenue intersections at 126th Street and at Union Street, and the 126th Street intersections at 36th and 37th Avenues.
- In the Saturday post-game peak hour, there would be ~~three~~ five partially mitigated intersections—126th Street at Northern Boulevard, 126th Street/GCP Ramp at 34th Avenue, 114th Street at Roosevelt Avenue, 126th Street at Roosevelt Avenue, and College Point Boulevard at Roosevelt Avenue, ~~and Boat Basin Road at Stadium Road~~—and ~~three~~ five intersections could not be mitigated, including the Northern Boulevard intersections at Prince Street and at Main Street, ~~and~~ the intersection of Union Street at Roosevelt Avenue, and the 126th Street intersections at 36th and 37th Avenues.

A summary of the traffic mitigation findings for each analysis location, including the proposed mitigation measures where applicable, is provided below.

ASTORIA BOULEVARD

The analyzed intersection at 108th Street would be significantly impacted during the non-game weekday PM, weekday pre-game and weekend post-game peak hours. The impacts on the northbound de-facto left turn lane on 108th Street and on the eastbound Astoria Boulevard approach could not be mitigated during the non-game PM and weekday pre-game peak hours. Signal timing modifications at this intersection would not be possible without creating new significant impacts, and geometric modifications to improve capacity would not be feasible, except during the weekend post-game peak hour, where the impact on the westbound left turn lane on Astoria Boulevard could be fully mitigated by modifying the signal timing plan.

NORTHERN BOULEVARD

~~All seven~~ Seven of the eight intersections analyzed along Northern Boulevard would be significantly impacted during the non-game weekday PM, weekday pre-game arrival and weekend post-game departure peak hours. Six of the ~~seven eight~~ intersections analyzed along Northern Boulevard would be significantly impacted during the non-game weekday AM and midday peak hours and the Saturday midday peak hour, and ~~five six~~ would be significantly impacted during the pre-game Saturday midday arrival peak hour.

Northern Boulevard at 108th Street

This intersection would be significantly impacted during all non-game and game day peak hours. This intersection could be fully mitigated by installing “No Standing Anytime” regulations along the east curb and west curb of the northbound and southbound approaches, respectively, for 250 feet from the intersection to allow for two moving lanes, restriping the southbound approach of 108th Street from one 23-foot-wide lane to one 11-foot-wide exclusive left-turn lane and one 12-foot-wide shared through-right lane for 175 feet, and modifying the signal timing plan in all seven time periods.

Northern Boulevard at 114th Street

Mitigation would not be necessary during the non-game weekday and Saturday midday peak hours. Significant adverse impacts would be ~~partially mitigated during the Saturday post-game departure peak hour and~~ fully mitigated during all other peak hours ~~the Saturday pre-game and non-game Saturday midday peak hours~~ by modifying the signal timing plan and by ~~monitoring the westbound Northern Boulevard traffic conditions by Traffic Enforcement Agents (TEAs) who can manually override the traffic signal timing patterns to improve traffic operation for intersection approaches experiencing congestion during the Saturday post-game peak hour. In order to fully mitigate significant impacts in all peak hours, in addition to the signal timing changes, other mitigation measures would include prohibition of~~ prohibiting left turns from westbound Northern Boulevard and diverting them to southbound 114th Street, ~~prohibition of prohibiting~~ parking along the west east side of southbound 114th Street and lane restriping restriping the southbound 114th Street approach as two 11-foot-wide travel lanes and the receiving lanes as two 11-foot-wide moving lanes with parking on both sides.

Northern Boulevard at 126th Street

This intersection would be significantly impacted during all seven peak hours ~~except during the Saturday pre-game peak hour~~. Significant impacts expected on the northbound 126th Street approach and on westbound Northern Boulevard (leading to the intersection from the Van Wyck and Whitestone Expressway off-ramps) could be fully mitigated in all non-game peak hours and during the weekday and Saturday pre-game peak hours and partially mitigated in the Saturday post-game peak hour by modifying the signal timing plan in addition to more intensive measures discussed below, and by having TEAs monitor traffic conditions (i.e., manually override the traffic signal timing patterns to improve traffic operation for intersection approaches experiencing congestion) on the northbound approach. None of the significant impacts expected during the remaining analysis peak hours could be mitigated by applying the above mentioned mitigation measures. Because this intersection is the convergence point of Northern Boulevard, 126th Street, and two highway exit ramps, it would carry significant project-generated traffic volumes. Under existing conditions, consistently long queues are experienced on the westbound Northern Boulevard approach, especially the lane adjacent to the north curb, which receives the traffic volume from the southbound Whitestone Expressway and the northbound Van Wyck

Expressway exit ramps. One of the mitigation measures at 126th Street/GCP Ramp at 34th Avenue includes closure of the eastbound Northern Boulevard ramp to 126th Street and diversion of traffic through this intersection to 126th Place. Therefore, In order to fully mitigate the significant impacts during all seven peak hours, this intersection would require additional cost intensive mitigation measures including installation of quick curb (i.e., plastic reflective pylons used for channelizing the traffic) Jersey barriers and traffic signal louvers (used on traffic signals to avoid confusion on two closely spaced intersection approaches where approaching motorists may be able to see the signal indication for another approach) on the westbound approach between the right-most lane and the center lane to allow Van Wyck and Whitestone Expressway ramp traffic to operate as free flow through the intersection, plus widening the westbound Northern Boulevard approach by shifting the north and south curbs to allow for a 15-foot-wide right-most lane, modification of signal timing, widening of the eastbound Northern Boulevard approach from two 12-foot-wide lanes to three 10-foot-wide lanes, prohibiting pedestrian crossing in the east crosswalk, channelizing the northbound left-turn lanes to allow for smoother turns onto westbound Northern Boulevard, and implementation of signal timing changes needed to coordinate the northbound 126th Street approach with the upstream signal at the intersection of 126th Street and 34th Avenue.

Northern Boulevard at 126th Place

Significant impacts are not expected during any of the analysis peak hours. However, a traffic signal would be installed to allow pedestrians to cross safely from the south side of Northern Boulevard to the proposed MTA bus stop in the median of Northern Boulevard.

Northern Boulevard at Prince Street

None of the significant impacts expected during the seven analysis peak hours could be mitigated. With impacts occurring on the Northern Boulevard approaches, the geometric complexity and signal timing characteristics of this intersection, ~~there is limited~~ limit opportunity for mitigation.

Northern Boulevard at Main Street

Mitigation would not be required during the weekday non-game AM peak hour and the Saturday pre-game arrival peak hour. Significant impacts during the other five peak hours could not be mitigated.

Northern Boulevard at Union Street

This intersection would be significantly impacted during all non-game and game day peak hours with significant impacts expected on eastbound Northern Boulevard during the non-game weekday AM and midday peak hours and the Saturday post-game peak hour, and on both eastbound and westbound Northern Boulevard during the non-game weekday PM, Saturday midday, weekday pre-game, and the Saturday pre-game peak hours. Installing “No Standing 7 AM–10 PM” regulations along the north curb of the westbound Northern Boulevard approach 200 feet from the intersection to allow for one 10-foot-wide daylighted shared through-right lane, and signal timing adjustments, could fully mitigate significant impacts in all seven peak hours.

Northern Boulevard at Parsons Boulevard

This intersection would be significantly impacted during all non-game and game day peak hours. Installing “No Standing Anytime” regulations along the south side of eastbound Northern Boulevard, north side of westbound Northern Boulevard, and west side of southbound Parsons

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Boulevard and signal timing adjustments during the non-game weekday AM and PM, and weekday pre-game peak hours could fully mitigate significant impacts in all seven time periods.

34TH AVENUE

The intersection of 34th Avenue at 126th Street (and the Grand Central Parkway and eastbound Northern Boulevard ramps) would be significantly impacted during all seven peak hours since the intersection would be a key gateway to the District. The other intersection, 34th Avenue at 114th Street, would be significantly impacted during all seven peak hours except the non-game weekday AM peak hour.

34th Avenue at 114th Street

Significant impacts are expected during all seven peak hours except the non-game weekday AM peak hour, which could be fully mitigated by modifying the signal timing plan.

34th Avenue at 126th Street

Significant impacts are expected during all seven analysis peak hours. As a key entrance point to the District, this intersection would carry significant volumes of project generated traffic. Its geometric complexity, with approaches from two exit ramps in addition to the 126th Street northbound and 34th Avenue eastbound and westbound approaches, limits traditional capacity improvement options. ~~Signal timing changes would fully mitigate the significant adverse impacts only during the weekday AM peak hour, but would only partially mitigate impacts during the remaining six peak hours.~~ To fully mitigate significant impacts during all non-game peak hours six of the seven and partially mitigate significant impacts during the game day time periods, this intersection would require cost intensive mitigation measures including closure of the existing slip ramp from GCP/Astoria Boulevard eastbound Northern Boulevard to 126th Street and ~~combining it with the existing ramp from eastbound Northern Boulevard to 126th Street~~ diverting traffic to 126th Place, striping the proposed ~~combined~~ widened GCP/Astoria Boulevard ramp as one ~~12-foot-wide shared left through lane~~ 11-foot-wide left-turn lane and two 11-foot-wide through lanes, ~~one 12-foot-wide exclusive through lane, and one 12-foot-wide exclusive right turn lane~~, constructing a channelized right-turn from the GCP/Astoria Boulevard ramp to westbound Shea Road (upstream of the intersection), ~~signalization of the intersection of the Northern Boulevard ramp at GCP/Astoria Boulevard ramp (which currently operates as an unsignalized intersection)~~ widening the westbound 34th Avenue approach to two 11-foot-wide travel lanes and two 11-foot-wide receiving lanes, restriping the northbound 126th Street approach from two 11-foot-wide travel lanes, one 12-foot-wide travel lanes and one 7-foot-wide hatched median to one 12-foot-wide exclusive left-turn lane, two 12-foot-wide travel lanes, and one 5-foot-wide Class II bicycle lane, and modifying the existing signal timing plan.

ROOSEVELT AVENUE

All nine intersections would be significantly impacted during the seven analysis peak hours, except for the intersection of Roosevelt Avenue at 108th Street during the weekday AM peak hour, the intersection at 111th Street during the weekday AM and midday peak hours, the intersection at Prince Street during the weekday midday, non-game Saturday midday and all game day peak hours, the intersection at Main Street during the non-game weekday midday and Saturday pre-game peak hours, and the intersection at Parsons Boulevard during the weekday midday and PM peak hours, and the Saturday pre-game and post-game peak hours. In each time period, the intersection of Roosevelt Avenue at Union Street would be unmitigatable. The intersection of Roosevelt Avenue at College Point Boulevard could be fully mitigated during the non-game weekday AM peak hour and

partially mitigated during the ~~non-game weekday midday, PM and Saturday midday~~ other six peak hours, ~~and during the Saturday post-game peak hour~~. The intersection of Roosevelt Avenue at 126th Street could be partially mitigated during ~~all game day~~ the Saturday post-game peak hours ~~and would be unmitigatable during the weekday and Saturday pre-game peak hours~~, and the intersection at 108th Street could be partially mitigated during the Saturday pre-game arrival peak hour. Limited mitigation options for the Roosevelt Avenue corridor would be possible, due in part to limited space for travel lanes and critical curbside activities, including bus stops, bus layover, and truck loading/unloading, and columns supporting the No. 7 subway line.

Roosevelt Avenue at 108th Street

Significant impacts would occur in all peak hours except during the non-game weekday AM peak hour and could be fully mitigated (except during the Saturday pre-game peak hour when it would be only partially mitigated) by providing “No Standing Anytime” parking regulations within 150 feet of the intersection on the east side of northbound 108th Street and the west side of southbound 108th Street, to allow for one 11-foot-wide left-through lane and one 11-foot-wide right-turn lane.

Roosevelt Avenue at 111th Street

Significant impacts would occur in all peak hours except during non-game weekday AM and midday peak hours and could be fully mitigated by providing “No Standing 10 AM–10 PM” parking regulations within 100 feet of the intersection on the north side of the westbound Roosevelt Avenue approach, to allow for one 11-foot-wide left-through lane and one 10-foot-wide right-turn lane.

Roosevelt Avenue at 114th Street

Significant impacts would occur in all seven peak hours. These impacts could be partially mitigated during the non-game weekday AM and Saturday pre- and post-game peak hours and could be fully mitigated during the remaining four peak hours by shifting the centerline of the southbound 114th Street approach two feet to the east, installing “No Standing Anytime” regulations along the west curb of the southbound 114th Street approach 150 feet from the stop bar to allow for one 12-foot-wide shared left-through lane and one 10-foot-wide right-turn lane, installing “No Standing Anytime” regulations along the south curb of the eastbound Roosevelt Avenue approach 150 feet from the stop bar to allow for one 11-foot-wide left-turn lane and one 11-foot-wide shared through-right lane, shifting the centerline of the westbound Roosevelt Avenue approach eleven feet to the south, and restriping the westbound Roosevelt Avenue approach as one 11-foot-wide left-turn pocket (250 feet long), one 11-foot-wide through lane, and one 11-foot-wide right-turn lane (upstream of the intersection, Roosevelt Avenue would continue to operate as two lanes in each direction). In addition to the above mitigation measures, signal timing changes would be necessary to fully or partially mitigate expected significant impacts during all game and non-game peak hours except during the non-game weekday AM and midday peak hours.

Roosevelt Avenue at 126th Street

Significant impacts would occur in all seven peak hours. These impacts could be fully mitigated during all non-game peak hours, and could be partially mitigated in the Saturday post-game peak hour by restriping the southbound 126th Street approach as one 12-foot-wide right-turn lane and one 11-foot-wide shared left-through lane, and by implementing a new signal phasing and timing plan. The significant impacts that occur during the weekday and Saturday pre-game peak hours could not be mitigated.

Roosevelt Avenue at College Point Boulevard

Significant impacts would occur in all seven peak hours. These impacts could be fully mitigated during the non-game weekday AM peak hour, ~~weekday pre-game and Saturday pre-game peak hours~~, and could be partially mitigated in the remaining ~~four~~ six peak hours. Measures necessary for the full or partial mitigation of the significant impacts include ~~geometric changes~~, signal phasing and timing plan changes, turn prohibitions, limited prohibition of parking, and pavement restriping. ~~The geometry of the east leg of the intersection would be changed by removing the 22-foot wide center median and replacing it with a 9-foot wide tapered hatched median between the proposed 13-foot wide westbound left turn pocket and the westbound through-right lanes. The westbound Roosevelt Avenue through-right travel lanes would be restriped from one 13-foot-wide travel lane and one 17-foot-wide travel lane to one 11-foot-wide two 15-foot-wide travel lanes and one 19-foot-wide travel lane for 80 feet. Left turns from westbound Roosevelt Avenue to southbound College Point Boulevard would be prohibited and diverted to Janet Place and 39th Avenue.~~ The northbound College Point Boulevard approach would be restriped from one 9-foot-wide exclusive left-turn lane, one 13-foot-wide travel lane, and one 18-foot-wide travel lane with parking to ~~one two~~ two 10-foot-wide exclusive left-turn lanes, ~~and two 10-foot-wide through travel lanes, and one 10-foot wide exclusive right turn lane~~ for 200 feet. The southbound College Point Boulevard approach would be restriped from one 11-foot-wide travel lane and one 19-foot-wide travel lane to three 10-foot-wide travel lanes for 200 feet. The eastbound Roosevelt Avenue approach would be restriped from one 14-foot-wide travel lane and one 12-foot-wide travel lane to two 13-foot-wide travel lanes. Parking prohibitions at this location include installing “No Standing Anytime” regulations along the east curb of the northbound approach of College Point Boulevard for 250 feet and installing “No Standing Anytime” regulations along the west curb of the southbound approach of College Point Boulevard for 200 feet. Southbound right-turn traffic on College Point Boulevard would be diverted to 39th Avenue and Janet Place. Signal phasing and timing plan would be modified.

Roosevelt Avenue at Prince Street

Significant impacts would occur during the non-game weekday AM and PM peak hours and could be fully mitigated by ~~shifting the center line of the eastbound Roosevelt Avenue approach 6 feet to the north, restriping the eastbound Roosevelt Avenue approach from one 11-foot wide travel lane and one 19-foot wide travel lane with parking to one 11-foot wide exclusive left turn lane, one 11-foot wide travel lane, one 6-foot wide hatched buffer, and one 8-foot wide parking lane for 250 feet, restriping the receiving side of westbound Roosevelt Avenue from one 9-foot-wide travel lane and one 19-foot wide travel lane to two 11-foot wide travel lanes for 250 feet and modifying the signal phasing and timing plan.~~

Roosevelt Avenue at Main Street

This intersection would be significantly impacted during all ~~seven~~ peak hours except for the non-game midday and Saturday pre-game peak hours and could be fully mitigated by modifying the signal timing plan.

Roosevelt Avenue at Union Street

None of the significant impacts expected during all seven peak hours could be mitigated.

Roosevelt Avenue at Parsons Boulevard

Significant impacts are expected during the non-game weekday AM, Saturday midday and weekday pre-game peak hours. Significant impacts during the non-game weekday AM and

weekday pre-game peak hour could be fully mitigated by prohibiting parking between 7 AM–10 AM and 4 PM–7 PM (Monday through Friday) on the northbound approach 75 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane and modifying the signal timing. Significant impacts during the Saturday midday peak hour could be fully mitigated by modifying the signal timing.

SANFORD AVENUE

One of the three intersections analyzed along Sanford Avenue, i.e., Parsons Boulevard at Sanford Avenue, would be significantly impacted during the non-game weekday midday peak hour.

Sanford Avenue at College Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

Sanford Avenue at Union Street

Significant impacts are not expected during any of the analysis peak hours.

Sanford Avenue at Parsons Boulevard

Modifying signal timings would fully mitigate significant impacts expected during the non-game weekday midday peak hour.

OTHER STUDY AREA LOCATIONS

Kissena Boulevard at Main Street

Modifying signal timings would fully mitigate significant impacts during the Saturday midday peak hour.

32nd Avenue at College Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

World's Fair Marina at Boat Basin Road

Significant impacts would occur in all seven peak hours. Significant impacts at this currently unsignalized intersection could be fully mitigated by installing a traffic signal, operating with a 90-second cycle, to provide sufficient gaps for northbound Boat Basin Road left turn traffic toward the entrance ramp to the westbound Grand Central Parkway, striping the westbound approach as one 11-foot-wide left-turn lane and one 11-foot-wide shared left-through lane, and striping the northbound approach as two 10-foot-wide left-turn lanes and one 10-foot-wide right-turn lane.

Northern Boulevard Service Road at College Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

Boat Basin Road at Stadium Road

Significant impacts are expected in all peak hours except during the non-game weekday AM and midday peak hours and could be fully mitigated during the non-game weekday PM, Saturday midday, and Saturday pre-game and post-game peak hours, and could be partially mitigated during the weekday pre-game and ~~Saturday post-game~~ peak hours by installing an actuated signal controller and by modifying the signal phasing and timing plan.

Stadium Road at the Grand Central Parkway Ramp

Significant adverse impacts are expected during non-game weekday midday, Saturday midday, weekday pre-game, and Saturday pre-game peak hours, and could be fully mitigated by

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widening the exit ramp from the westbound GCP to add one travel lane in the diverge/weave area, which would be a channelized right-turn lane at the intersection, and installing a traffic signal with a 120-second cycle length, striping the westbound approach for as two 12-foot-wide left-turn lanes and one 12-foot-wide right-turn lane, and adding a 12-foot-wide southbound left-turn lane in the median of Stadium Road. The new westbound approach exiting the Willets West Center would continue to operate at unacceptable LOS D or LOS E during all peak hours except the non-game weekday AM peak hour.

Willets Point Boulevard at Northern Boulevard

Significant impacts are not expected during any of the analysis peak hours.

~~In addition to the study locations analyzed and reported above, the intersections of 126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place are expected to carry a significant amount of project generated trips in Phase 1A. These three intersections were not analyzed for this Draft SEIS since the majority of project generated trips from the District were assigned to the adjacent analyzed intersections. Since impacts have been identified for these adjacent intersections, the three intersections listed above will be analyzed for the Final SEIS to determine if they would similarly experience significant adverse impacts. If they are found to be significantly impacted under the With Action condition, mitigation measures such as those typically implemented by NYCDOT would be further explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

126th Street at 36th Avenue

Significant impacts are expected during all game day peak hours and would be unmitigatable.

126th Street at 37th Avenue

Significant impacts are expected during all game day peak hours and would be unmitigatable.

TRAFFIC—PHASE 1B (2028)

Table 21-3 presents a summary of significant adverse traffic impacts and their ability to be mitigated, and **Table 21-4** summarizes the unmitigated traffic study area locations by time period. Details of the intersection capacity results and relevant traffic mitigation measures are provided in tables at the back of this chapter.

Table 21-3
Traffic Impact Mitigation Summary—Phase 1B

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
No Significant Impact	44 14	9 12	8 12	5 9	8 11	40 12	9 10
Fully Mitigated Impact	45 14	42 13	44 9	43 12	42 10	43 12	44 11
Partially Mitigated Impact	1	6 5	6 8	8	7 9	4 5	4 9
Unmitigated Impact	3 4	3	5 4	4	3	3 4	3

Table 21-4
Summary of Unmitigated Intersections—Phase 1B

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
Astoria Boulevard at 108th Street			X		X		
Northern Boulevard at 108th Street							
Northern Boulevard at 114th Street							
Northern Boulevard at 126th Street						X	
Northern Boulevard at Prince Street	X						X
Northern Boulevard at Main Street	X	X	X	X	X	X	X
Northern Boulevard at Union Street							
Northern Boulevard at Parsons Boulevard							
34th Avenue at 114th Street							
34th Avenue at 126th Street							
Roosevelt Avenue at 108th Street							
Roosevelt Avenue at 111th Street							
Roosevelt Avenue at 114th Street							
Roosevelt Avenue at 126th Street	X						
Roosevelt Avenue at College Point Boulevard							
Roosevelt Avenue at Prince Street							
Roosevelt Avenue at Main Street			X				
Roosevelt Avenue at Union Street	X	X	X	X	X	X	X
Astoria Boulevard at 108th Street							
Roosevelt Avenue at Parsons Boulevard							
Kissena Boulevard at Main Street							
Sanford Avenue at College Point Boulevard							
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard				X			
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard							
Boat Basin Road at Stadium Road		X	X	X		X	
Boat Basin Road at World's Fair Marina							
Stadium Road at Grand Central Parkway							
Willets Point Boulevard at Northern Boulevard							
New Willets Point Boulevard at 126th Street							
126th Street at 36th Avenue							
126th Street at 37th Avenue							
Northern Boulevard at 126th Place							

Notes: "X" means the intersection would be unmitigated in the corresponding peak hour

The overall finding of the traffic mitigation analysis is that the majority of locations analyzed under the proposed project would be significantly impacted, and that the need for a broad range of mitigation measures would be substantial. As noted above for Phase 1A, depending on the peak hour, approximately one-half or more of the significantly impacted locations could be fully or partially mitigated with the same types of measures described for Phase 1A. The locations that were fully or partially mitigated during any of the seven peak analysis hours are listed below:

- 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
- Union Street at Northern Boulevard
- Parsons Boulevard at Northern Boulevard
- 114th Street at 34th Avenue
- 126th Street/GCP Ramp at 34th Avenue
- 108th Street at Roosevelt Avenue
- 111th Street at Roosevelt Avenue

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- 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
- Parsons Boulevard at Roosevelt Avenue
- Main Street at Kissena Boulevard
- Parsons Boulevard at Sanford Avenue
- College Point Boulevard at Northern Boulevard Service Road
- Boat Basin Road at Stadium Road
- Boat Basin Road at World's Fair Marina
- Willetts Point Boulevard at Northern Boulevard
- GCP Ramp at West Park Loop/Stadium Road
- 126th Street at 36th Avenue
- 126th Street at 37th Avenue

The following intersections could only be partially mitigated or could not be mitigated at all during the following time periods:

- In the weekday non-game AM peak hour, there would be ~~three~~ four unmitigatable intersections including Prince Street at Northern Boulevard, Main Street at Northern Boulevard, 126th Street at Roosevelt Avenue, and Union Street at Roosevelt Avenue, and the intersection of Union Street at Northern Boulevard would be partially mitigated.
- In the non-game weekday midday peak hour, there would be three unmitigatable intersections including Main Street at Northern Boulevard, Union Street at Roosevelt Avenue, and Boat Basin Road at Stadium Road, and ~~six~~ five intersections including the Northern Boulevard intersections at 126th Street, at Prince Street, and at Union Street, ~~126th Street/GCP ramp at 34th Avenue~~, 126th Street at Roosevelt Avenue, and College Point Boulevard at Roosevelt Avenue, and Main Street at Roosevelt Avenue would be partially mitigated.
- In the non-game weekday PM peak hour, there would be ~~five~~ four unmitigatable intersections including 108th Street at Astoria Boulevard, Main Street at Northern Boulevard, ~~Main~~ Street at Roosevelt Avenue, Union Street at Roosevelt Avenue, and Boat Basin Road at Stadium Road, and ~~six~~ eight intersections including the Northern Boulevard intersections at 126th Street, Prince Street, Union Street, and Parsons Boulevard, 126th Street/GCP ramp at 34th Avenue, 126th Street at Roosevelt Avenue, and College Point Boulevard at Roosevelt Avenue, and Main Street at Roosevelt Avenue would be partially mitigated.
- In the non-game Saturday midday peak hour, there would be four unmitigatable intersections including Main Street at Northern Boulevard, Union Street at Roosevelt Avenue, Parsons Boulevard at Sanford Avenue, and Boat Basin Road at Stadium Road, and eight intersections including the Northern Boulevard intersections at 126th Street, Prince Street and Union Street, ~~126th Street/GCP ramp at 34th Avenue~~, 111th Street at Roosevelt Avenue, 126th Street at Roosevelt Avenue, College Point Boulevard at Roosevelt Avenue, Main Street at Roosevelt Avenue, and Parsons Boulevard at Roosevelt Avenue would be partially mitigated.
- In the weekday pre-game peak hour, there would be three unmitigatable intersections including 108th Street at Astoria Boulevard, Main Street at Northern Boulevard, and Union Street at Roosevelt Avenue, and ~~seven~~ nine intersections including the Northern Boulevard

- intersections at 126th Street, Prince Street, Union Street, and Parson Boulevard, 126th Street/GCP ramp at 34th Avenue, 126th Street at Roosevelt Avenue, College Point Boulevard at Roosevelt Avenue, Main Street at Roosevelt Avenue, and Boat Basin Road at Stadium Road would be partially mitigated.
- In the Saturday pre-game peak hour, there would be ~~three~~ four unmitigatable intersections including 126th Street at Northern Boulevard, Main Street at Northern Boulevard, Union Street at Roosevelt Avenue, and Boat Basin Road at Stadium Road, and ~~four~~ five intersections including the Northern Boulevard intersections at Prince Street and Union Street, 126th Street/GCP ramp at 34th Avenue, 126th Street at Roosevelt Avenue, and College Point Boulevard at Roosevelt Avenue would be partially mitigated.
 - In the Saturday post-game peak hour, there would be three unmitigatable intersections including Prince and Main Streets at Northern Boulevard, and Union Street at Roosevelt Avenue, and ~~four~~ nine intersections including Northern Boulevard at 126th Street, Northern Boulevard at Union Street, 126th Street/GCP ramp at 34th Avenue, 114th Street at Roosevelt Avenue, 126th Street at Roosevelt Avenue, College Point Boulevard at Roosevelt Avenue, ~~and~~ Main Street at Roosevelt Avenue, 126th Street at 36th Avenue, and 126th Street at 37th Avenue would be partially mitigated.

A summary of the traffic mitigation findings for each analysis location, including the proposed mitigation measures where applicable, is provided below.

ASTORIA BOULEVARD

The analyzed intersection at 108th Street would be significantly impacted during the non-game weekday PM, Saturday midday, weekday pre-game, Saturday pre-game and Saturday post-game peak hours. The impacts on the northbound de-facto left turn lane on 108th Street, and on the eastbound Astoria Boulevard approach could not be mitigated during the non-game weekday PM and weekday pre-game peak hours. Signal timing modifications at this intersection would not be possible without creating new significant impacts, and geometric modifications to improve capacity would not be feasible. The expected significant impacts could be fully mitigated during the Saturday midday, Saturday pre-game and Saturday post-game peak hours by installing “No Standing Saturday 11 AM–10 PM” regulations along the south curb of the eastbound approach for 150 feet from the intersection to allow for an 11-foot-wide daylighted right-turn lane.

NORTHERN BOULEVARD

~~All seven~~ Seven of the eight intersections analyzed along Northern Boulevard would be significantly impacted during all seven peak hours except the intersection of Northern Boulevard at 114th Street in the non-game weekday midday peak hour.

Northern Boulevard at 108th Street

This intersection would be significantly impacted during all non-game and game day peak hours and could be fully mitigated by installing “No Standing Anytime” regulations along the east curb and west curb of the northbound and southbound approaches, respectively, for 250 feet from the intersection to allow for two moving lanes, and restriping the northbound and southbound approaches of 108th Street from one 23-foot-wide lane to one 11-foot-wide exclusive left-turn lane and one 12-foot-wide shared through-right lane for 175 feet. In addition, other measures would be required including modifying the signal timing plan in all peak hours except during the non-game weekday PM peak hour and the weekday pre-game peak hour, and prohibiting parking between 10 AM–9 PM along the north and south curbs of the westbound and eastbound

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approaches, respectively, for 150 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane in all peak hours except the non-game weekday AM peak hour.

Northern Boulevard at 114th Street

Mitigation would not be necessary during the non-game weekday midday peak hour. Significant adverse impacts would be ~~only partially mitigated during the non-game weekday AM and Saturday post-game departure~~ fully mitigated during all other peak hours by modifying the signal timing plan and by ~~having TEAs monitor traffic conditions on the westbound Northern Boulevard approach (i.e., manually override the traffic signal to improve traffic operation for intersection approaches experiencing congestion) during the weekend post-game departure peak hour.~~ To fully mitigate all significant impacts during all the seven peak hours and to avoid severely congested conditions, in addition to signal timing modifications, other mitigation measures would be required including prohibition of prohibiting left turns from westbound Northern Boulevard and diverting them to southbound 114th Street, prohibition of prohibiting parking along the west east side of southbound 114th Street and restriping the southbound 114th Street approach as two 11-foot-wide travel lanes and the receiving lanes as two 11-foot-wide moving lanes with parking on both sides.

Northern Boulevard at 126th Street

This intersection would be significantly impacted during all seven peak hours. Significant adverse impacts expected on the northbound 126th Street approach, on eastbound Northern Boulevard, on the eastbound Grand Central Parkway ramp, and on westbound Northern Boulevard (leading to the intersection from the Van Wyck and Whitestone Expressway off-ramps) could be fully mitigated in the weekday ~~pre-game~~ non-game AM peak hour and partially mitigated in ~~the Saturday post-game~~ five of the other six peak hours by modifying the signal timing plan ~~and by having TEAs monitor traffic conditions on the northbound approach (i.e., manually override the traffic signal to improve traffic operation for intersection approaches experiencing congestion).~~ None of the significant impacts expected during the remaining analysis peak hours could be mitigated by applying traditional mitigation measures in addition to more intensive measures discussed below. This intersection is the convergence point of Northern Boulevard, 126th Street, and two highway exit ramps carrying significant project-generated traffic volumes. Under existing conditions, consistently long queues are experienced on the westbound approach, especially the lane adjacent to the north curb, which receives the traffic volume from the southbound Whitestone Expressway and the northbound Van Wyck Expressway exit ramps. One of the mitigation measures at 126th Street/GCP Ramp at 34th Avenue includes closure of the eastbound Northern Boulevard ramp to 126th Street and diversion of traffic through this intersection to 126th Place. Therefore, In order to fully mitigate the significant impacts during all seven peak hours the non-game weekday AM peak hour and partially mitigate the remaining peak hours (except for the Saturday pre-game peak hour), this intersection would require the same east-intensive additional mitigation measures identified for Phase 1A.

Northern Boulevard at 126th Place

Significant impacts are not expected during any of the analysis peak hours. However, a traffic signal would be installed to allow pedestrians to cross safely from the south side of Northern Boulevard to the proposed MTA bus stop in the median of Northern Boulevard.

Northern Boulevard at Prince Street

This intersection would have significant adverse impacts during all seven peak hours, which would be unmitigatable in the non-game weekday AM peak hour and the Saturday post-game

peak hour, and would be partially mitigated in the remaining peak hours by installing “No Standing 10 AM–7 PM” regulations along the north curb of the westbound Northern Boulevard service road for 100 feet from the intersection to allow for one 10-foot-wide through lane and one 10-foot-wide daylighted right-turn pocket, and reducing the width of the hatched median between the service road and mainline from 8 feet to 6 feet.

Northern Boulevard at Main Street

None of the significant impacts expected during all seven peak hours could be mitigated.

Northern Boulevard at Union Street

This intersection would be significantly impacted during all seven peak hours with significant impacts expected on both Northern Boulevard approaches and could be partially mitigated by installing “No Standing 7 AM–10 PM” regulations along the north curb of the westbound Northern Boulevard approach 200 feet from the intersection to allow for one 10-foot-wide daylighted shared through-right lane. During the non-game weekday AM peak hour and the Saturday post-game peak hour, signal timing modifications would also be ~~also~~ required to partially mitigate the significant impacts.

Northern Boulevard at Parsons Boulevard

Significant impacts are expected during all seven peak hours and would be partially mitigated in the non-game weekday PM and weekday pre-game PM peak hours, and fully mitigated during the remaining five peak hours by installing “No Standing Anytime” regulations along the south side of eastbound Northern Boulevard for 200 feet from the intersection, north side of westbound Northern Boulevard for 150 feet from the intersection, and west side of southbound Parsons Boulevard for 150 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane on each approach, and signal timing adjustments during the non-game weekday AM, midday, and PM, and weekday pre-game peak hours.

34TH AVENUE

The intersection of 34th Avenue at 126th Street (and the Grand Central Parkway and eastbound Northern Boulevard ramps) would be significantly impacted during all seven peak hours since the intersection would be a key gateway to the District. The other intersection, 34th Avenue at 114th Street, would be significantly impacted during all seven peak hours except the non-game weekday AM peak hour.

34th Avenue at 114th Street

Significant impacts are expected during all seven peak hours except the non-game weekday AM peak hour, which could be fully mitigated by modifying the signal timing plan.

34th Avenue at 126th Street

Significant impacts are expected during all seven analysis peak hours. As a key entrance point to the District, this intersection would carry significant volumes of project generated traffic. Its geometric complexity, with approaches from two exit ramps in addition to the 126th Street northbound and 34th Avenue eastbound and westbound approaches, limits traditional capacity improvement options. Therefore, this intersection would require the same standard and cost intensive mitigation measures as those discussed for this intersection in Phase 1A. ~~including reconstructing and merging the Grand Central Parkway and Northern Boulevard ramp approaches to have two 10 foot wide travel lanes and one 11 foot wide exclusive right turn lane, widening the roadway on the east leg of the intersection to 40 feet to provide two 10 foot wide westbound approach lanes and two 10 foot~~

~~wide eastbound receiving lanes, restriping the northbound 126th Street approach from two 11-foot-wide travel lanes, one 12-foot-wide travel lane, and one 7-foot-wide hatched median to three 12-foot-wide travel lanes and one 5-foot-wide Class II bicycle lane, and modifying the signal timing and phasing plan.~~ These measures would fully mitigate significant impacts during the non-game weekday AM, ~~midday, and Saturday midday~~ peak hour and all game day peak hours, and would partially mitigate the significant impacts in the remaining peak hours, i.e., the non-game ~~midday and PM~~ peak hours and ~~the Saturday midday~~ all game day peak hours.

ROOSEVELT AVENUE

All nine intersections would be significantly impacted during the seven analysis peak hours, except for the intersection of Roosevelt Avenue at 111th Street during the non-game weekday AM ~~and midday~~ peak hours, the intersection at Prince Street during the non-game weekday midday, ~~PM,~~ and Saturday midday peak hours and all game day peak hours, and the intersection at Parsons Boulevard during the non-game weekday midday and PM peak hours, and the Saturday pre-game and post-game peak hours. In each time period, the intersection of Roosevelt Avenue at Union Street would be unmitigatable. Limited mitigation options for the Roosevelt Avenue corridor would be possible, due in part to limited space for travel lanes and critical curbside activities, including bus stops, bus layover, and truck loading/unloading, and columns supporting the No. 7 subway line.

Roosevelt Avenue at 108th Street

Significant impacts would occur in all seven peak hours and could be fully mitigated by using the same measures described for Phase 1A.

Roosevelt Avenue at 111th Street

Significant impacts would occur in all peak hours except during the non-game weekday AM peak hour and could be partially mitigated in the Saturday midday peak hour, and fully mitigated in the remaining peak hours by providing the same measures described for Phase 1A.

Roosevelt Avenue at 114th Street

Significant impacts would occur in all seven peak hours. Measures necessary for full mitigation of significant impacts during six of the seven peak hours and partial mitigation during the Saturday post-game peak hour include geometric changes, signal phasing and timing plan changes, limited prohibition of parking, and pavement restriping. The centerline on the westbound approach would be shifted 11 feet to the south and the approach would be restriped from two 11-foot-wide travel lanes to one 11-foot-wide exclusive left-turn lane, one 11-foot-wide through lane, and one 11-foot-wide exclusive right-turn lane (upstream of the intersection, Roosevelt Avenue would continue to operate as two lanes in each direction). The eastbound approach of Roosevelt Avenue would be restriped from two 11-foot-wide travel lanes to one 11-foot-wide exclusive left-turn lane and one 11-foot-wide shared through-right travel lane. The centerline of the northbound 114th Street approach would be shifted 3 feet to the east and the approach would be restriped from one 16-foot-wide travel lane to one 13-foot-wide travel lane. The centerline of the southbound 114th Street approach would be shifted two feet to the east. Parking prohibitions at this location include installing “No Standing Anytime” regulations along the south curb of the eastbound Roosevelt Avenue approach 250 feet from the intersection, installing “No Standing Anytime” regulations along the east curb of the northbound 114th Street approach 250 feet from the intersection, and installing “No Standing 3 PM–7 PM” regulations along the west curb of the southbound 114th Street approach 150 feet from the intersection to allow for one 12-foot-wide left-through lane and one 10-foot-wide right-turn lane. Signal phasing and timing plan would be modified.

Roosevelt Avenue at 126th Street

Significant impacts would occur in all seven peak hours. These impacts would be unmitigated during the non-game weekday AM peak hour and could be ~~fully mitigated during the non-game AM peak hour~~ and partially mitigated in the remaining peak hours by restriping the northbound approach from one wide 25-foot-wide lane to two 12-foot-wide lanes with a 1-foot buffer at the east curb and modifying the signal phasing and timing plan. In addition to these measures, additional mitigation measures would be required during all game-day peak hours including placing cones on the southbound approach to allow for one 12-foot-wide right-turn lane and one 12-foot-wide shared left-through lane during the weekday and Saturday pre-game peak hours, and on the eastbound approach to allow for one left-turn lane and one shared through-right lane during the Saturday post-game peak hour, and having a TEA operate the signal using the suggested signal timing plan.

Roosevelt Avenue at College Point Boulevard

Significant impacts would occur in all seven peak hours. These impacts could be fully mitigated during the non-game weekday AM peak hour and partially mitigated in the remaining six peak hours by using the same measures described for Phase 1A.

Roosevelt Avenue at Prince Street

Significant impacts would occur during the non-game weekday AM and PM peak hours and could be fully mitigated by using the same measures described for Phase 1A, ~~and by installing “No Standing 7 AM–4 PM Monday–Friday” regulations on the north curb of the westbound approach 175 feet from the stop bar to allow for an 11-foot-wide daylighted right-turn pocket, and modifying the signal phasing and timing plan.~~

Roosevelt Avenue at Main Street

This intersection would be significantly impacted during all seven peak hours and could be fully mitigated in the non-game weekday AM and midday peak hours and the Saturday pre-game peak hours, and partially mitigated in the remaining peak hours ~~(except during non-game weekday PM peak hour when it would be unmitigatable)~~ by modifying the signal timing plan.

Roosevelt Avenue at Union Street

None of the significant impacts expected during all seven peak hours could be mitigated.

Roosevelt Avenue at Parsons Boulevard

Significant impacts are expected during the non-game weekday AM and ~~the~~ Saturday midday peak hours, and during the weekday pre-game peak hour. These impacts could be fully mitigated by prohibiting parking between 7 AM–10 AM and 4 PM–7 PM (Monday through Friday) on the northbound approach 75 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane, and modifying the signal timing in the non-game weekday AM and weekday pre-game peak hours. Significant impacts during the Saturday midday peak hour could be partially mitigated by installing “No Standing 10 AM–8 PM, Saturday” regulations on the northbound approach 75 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane and modifying the signal timing.

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SANFORD AVENUE

One of the three intersections analyzed along Sanford Avenue, i.e., Parsons Boulevard at Sanford Avenue, would be significantly impacted during the non-game weekday AM, midday, and Saturday midday peak hours and weekday pre-game peak hour.

Sanford Avenue at College Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

Sanford Avenue at Union Street

Significant impacts are not expected during any of the analysis peak hours.

Sanford Avenue at Parsons Boulevard

Modifying signal timings, shifting the northbound centerline one foot to the west to allow for a 20-foot-wide northbound approach, and installing “No Standing 7 AM–7 PM Monday–Friday” regulations on the northbound approach 75 feet from the stop bar to allow for one 10-foot-wide left-through lane and one 10-foot-wide daylighted right-turn pocket would fully mitigate the significant impacts expected during the non-game weekday AM, and midday, ~~PM~~ peak hours and the weekday pre-game peak hours. The intersection would be unmitigated during the Saturday non-game peak hour.

OTHER STUDY AREA LOCATIONS

Kissena Boulevard at Main Street

Modifying signal timings would fully mitigate significant impacts during the Saturday midday peak hour.

32nd Avenue at College Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

World's Fair Marina at Boat Basin Road

Significant impacts would occur in all seven peak hours. Significant impacts at this currently unsignalized intersection could be fully mitigated by using the same measures described for Phase 1A.

Northern Boulevard Service Road at College Point Boulevard

Modifying signal timings would fully mitigate significant impacts during all peak hours except the non-game weekday PM, ~~and~~ weekday pre-game, and Saturday pre-game and post-game peak hours when mitigation is not required.

Boat Basin Road at Stadium Road

Significant impacts are expected in all ~~seven~~ peak hours except the non-game weekday AM peak hour and could be fully mitigated during the ~~non-game weekday AM and the~~ Saturday post-game peak hours, and partially mitigated during the weekday pre-game peak hour by installing an actuated signal controller and by modifying the signal phasing and timing plan. None of the significant impacts expected during the non-game weekday midday, PM and Saturday midday and Saturday pre-game peak hours could be mitigated.

Stadium Road at the Grand Central Parkway Ramp

Significant adverse impacts are expected during all peak hours except the non-game weekday AM peak hour, and could be fully mitigated by the same measures described for Phase 1A. The

new westbound approach exiting the Willets West Center would continue to operate at unacceptable LOS D or LOS E during all peak hours except the non-game weekday AM peak hour.

Willets Point Boulevard at Northern Boulevard

Significant impacts are expected during ~~all the~~ Saturday post-game peak hours, and could be fully mitigated by installing a traffic signal with a 90 second cycle length.

126th Street at New Willets Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

~~In addition to the study locations analyzed and reported above, the intersections of 126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place are expected to carry a significant amount of project-generated trips in Phase 1B. These three intersections were not analyzed for this Draft SEIS since the majority of project-generated trips from the District were assigned to the adjacent analyzed intersections. Since impacts have been identified for these adjacent intersections, the three intersections listed above will be analyzed for the Final SEIS to determine if they would similarly experience significant adverse impacts. If they are found to be significantly impacted under the With Action condition, mitigation measures such as those typically implemented by NYCDOT would be further explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

126th Street at 36th Avenue

Significant impacts are expected during the Saturday pre-game and post-game peak hours and would be fully mitigated during the Saturday pre-game peak hour by restriping the westbound approach as one 10-foot-wide left-turn lane and one 10-foot-wide right-turn lane. Significant impacts expected during the Saturday post-game peak hour would be partially mitigated.

126th Street at 37th Avenue

Significant impacts are expected during the non-game weekday midday and Saturday post-game peak hours and would be fully mitigated during the non-game weekday midday peak hour and partially mitigated during the Saturday post-game peak hour by restriping the westbound approach as one 10-foot-wide left-turn lane and one 10-foot-wide right-turn lane.

TRAFFIC—PHASE 2 (2032)

Table 21-5 presents a summary of significant adverse traffic impacts and their ability to be mitigated, and **Table 21-6** summarizes the unmitigated traffic study area locations by time period. Details of the intersection capacity results and traffic mitigation measures are provided in tables at the back of this chapter.

Table 21-5
Traffic Impact Mitigation Summary—Phase 2 (2032)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
No Significant Impact	9 11	5 6	5	5 7	6	8 9	8 9
Fully Mitigated Impact	44 13	44 12	43 14	11	44 13	11	44 9
Partially Mitigated Impact	3 5	7 8	7 9	8 9	9	8 7	7 9
Unmitigated Impact	5	5 8	6	7	5 6	4 7	5 7

Table 21-6
Summary of Unmitigated Intersections—Phase 2 (2032)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
Astoria Boulevard at 108th Street			X	X	X		
Northern Boulevard at 108th Street							
Northern Boulevard at 114th Street							
Northern Boulevard at 126th Street					X	X	
Northern Boulevard at Prince Street	X						X
Northern Boulevard at Main Street	X	X	X	X	X	X	X
Northern Boulevard at Union Street	X						
Northern Boulevard at Parsons Boulevard							
34th Avenue at 114th Street							
34th Avenue at 126th Street							
Roosevelt Avenue at 108th Street							
Roosevelt Avenue at 111th Street			X	X	X	X	X
Roosevelt Avenue at 114th Street							
Roosevelt Avenue at 126th Street							
Roosevelt Avenue at College Point Boulevard							
Roosevelt Avenue at Prince Street		X					
Roosevelt Avenue at Main Street		X	X				
Roosevelt Avenue at Union Street	X	X	X	X	X	X	X
Roosevelt Avenue at Parsons Boulevard				X	X		
Kissena Boulevard at Main Street							
Sanford Avenue at College Point Boulevard							
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard							
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard	X	X		X		X	
Boat Basin Road at Stadium Road		X	X	X			X
Boat Basin Road at World's Fair Marina							
Stadium Road at Grand Central Parkway							
Willetts Point Boulevard at Northern Boulevard							
New Willetts Point Boulevard at 126th Street							
Citi Field/Lot B at Roosevelt Avenue							
126th Street at 36th Avenue		X	X			X	X
126th Street at 37th Avenue		X				X	X
Northern Boulevard at 126th Place							

Notes: "X" means the intersection would be unmitigated in the corresponding peak hour

The overall finding of the traffic mitigation analysis is that the majority of locations analyzed under the proposed project would be significantly impacted, and that the need for a broad range of mitigation measures would be substantial. As noted for Phases 1A and 1B, approximately one-half or more, depending on the peak hour, of the significantly impacted locations could be fully or partially mitigated with the same types of measures described for Phases 1A and 1B. The locations that were fully or partially mitigated during any of the seven peak analysis hours are listed below:

- 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
- Union Street at Northern Boulevard
- Parsons Boulevard at Northern Boulevard
- 114th Street at 34th Avenue
- 126th Street/GCP Ramp 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
- Parsons Boulevard at Roosevelt Avenue
- Main Street at Kissena Boulevard
- College Point Boulevard at Sanford Avenue
- Parsons Boulevard at Sanford Avenue
- College Point Boulevard at Northern Boulevard Service Road
- Boat Basin Road at Stadium Road
- Boat Basin Road at World's Fair Marina
- Willets Point Boulevard at Northern Boulevard
- GCP Ramp at West Park Loop/Stadium Road
- 126th Street at 36th Avenue
- 126th Street at 37th Avenue

The following intersections could only be partially mitigated or could not be mitigated at all during the following time periods:

- In the weekday non-game AM peak hour, there would be five unmitigatable intersections including Prince Street at Northern Boulevard, Main Street at Northern Boulevard, Union Street at Northern Boulevard, Union Street at Roosevelt Avenue, and College Point Boulevard at the westbound Northern Boulevard service road and ~~three~~ five intersections including 108th Street at Northern Boulevard, 126th Street at Northern Boulevard, Parsons Boulevard at Northern Boulevard, 126th Street/GCP Ramp at 34th Avenue, and 126th Street at Roosevelt Avenue would be partially mitigated.
- In the non-game weekday midday peak hour, there would be ~~five~~ eight unmitigatable intersections including Main Street at Northern Boulevard, Main Street at Roosevelt Avenue, Union Street at Roosevelt Avenue, College Point Boulevard at the westbound Northern Boulevard service road, ~~and~~ Boat Basin Road at Stadium Road, 126th Street at 36th Avenue, and 126th Street at 37th Avenue, and ~~seven~~ eight intersections including the Northern Boulevard intersections at 126th Street, Prince Street, Union Street and at Parsons Boulevard, 126th Street/GCP ramp at 34th Avenue, 126th Street at Roosevelt Avenue, College Point Boulevard at Roosevelt Avenue, and 108th Street at Roosevelt Avenue would be partially mitigated.
- In the non-game weekday PM peak hour, there would be six unmitigatable intersections including 108th Street at Astoria Boulevard, Main Street at Northern Boulevard, 111th Street at Roosevelt Avenue, ~~Main Street at Roosevelt Avenue~~, Union Street at Roosevelt Avenue, ~~and~~ Boat Basin Road at Stadium Road, and 126th Street at 36th Avenue, and ~~seven~~ nine intersections including the Northern Boulevard intersections at 126th Street, Prince Street, Union Street, and Parsons Boulevard, 126th Street/GCP ramp at 34th Avenue, and the intersections of Roosevelt Avenue at 108th Street, 126th Street, ~~and~~ College Point Boulevard, and Main Street would be partially mitigated.
- In the non-game Saturday midday peak hour, there would be seven unmitigatable intersections including 108th Street at Astoria Boulevard, Main Street at Northern Boulevard, the intersections of Roosevelt Avenue at 111th Street, Union Street, and Parsons Boulevard, College Point Boulevard at the westbound Northern Boulevard service road, and Boat Basin Road at Stadium Road, and ~~eight~~ nine intersections including the Northern Boulevard intersections at 108th Street, 126th Street, Prince Street, and Union Street, 126th

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Street/GCP ramp at 34th Avenue, and the intersections of Roosevelt Avenue at 108th Street, 126th Street, College Point Boulevard, and Main Street would be partially mitigated.

- In the weekday pre-game peak hour, there would be ~~five~~ six unmitigatable intersections including 108th Street at Astoria Boulevard, 126th Street at Northern Boulevard, Main Street at Northern Boulevard, 111th Street at Roosevelt Avenue, Union Street at Roosevelt Avenue, and Parsons Boulevard at Roosevelt Avenue, and nine intersections including the Northern Boulevard intersections at Prince Street, Union Street, and Parsons Boulevards, 126th Street/GCP ramp at 34th Avenue, the intersections of Roosevelt Avenue at 114th Street, 126th Street, College Point Boulevard, and Main Street, and Boat Basin Road at Stadium Road would be partially mitigated.
- In the Saturday pre-game peak hour, there would be ~~four~~ seven unmitigatable intersections including 126th Street at Northern Boulevard, Main Street at Northern Boulevard, 111th Street at Roosevelt Avenue, Union Street at Roosevelt Avenue, ~~and~~ College Point Boulevard at the westbound Northern Boulevard service road, 126th Street at 36th Avenue, and 126th Street at 37th Avenue, and ~~eight~~ seven intersections including Northern Boulevard intersections at Prince Street, and Union Street, 126th Street/GCP ramp at 34th Avenue, the intersections of Roosevelt Avenue at 108th Street, 126th Street, and College Point Boulevard, ~~and Main Street~~, and Boat Basin Road at Stadium Road would be partially mitigated.
- In the Saturday post-game peak hour, there would be ~~five~~ seven unmitigatable intersections including Main Street at Northern Boulevard, Prince Street at Northern Boulevard, 111th Street at Roosevelt Avenue, Union Street at Roosevelt Avenue, ~~and~~ Boat Basin Road at Stadium Road, 126th Street at 36th Avenue, and 126th Street at 37th Avenue, and ~~seven~~ nine intersections including Northern Boulevard intersections at 114th Street, 126th Street, and Union Street, 126th Street/GCP ramp at 34th Avenue, the intersections of Roosevelt Avenue at 108th Street, 114th Street, 126th Street, College Point Boulevard, and Main Street would be partially mitigated.
- A summary of the traffic mitigation findings for each analysis location, including the proposed mitigation measures where applicable, is provided below.

ASTORIA BOULEVARD

The analyzed intersection at 108th Street would be significantly impacted during all seven peak hours ~~except the non-game weekday AM peak hour~~. The impacts on the northbound de-facto left turn lane on 108th Street, and on the eastbound Astoria Boulevard approach could not be mitigated during the non-game weekday PM, Saturday midday and weekday pre-game peak hours. Signal timing modifications at this intersection during the above mentioned peak hours would not be possible without creating new significant impacts, and geometric modifications to improve capacity would not be feasible. The expected significant impacts could be fully mitigated during the non-game weekday midday, Saturday pre-game and Saturday post-game by installing “No Standing 11 AM–2 PM Monday–Friday” and “No Standing 3 PM–10 PM Saturday” regulations along the south curb of the eastbound approach for 150 feet from the intersection to allow for an 11-foot-wide daylighted right-turn lane, and by modifying the signal timing plan during the weekend game-day peak hours.

NORTHERN BOULEVARD

All ~~seven~~ eight intersections analyzed along Northern Boulevard would be significantly impacted during all seven peak hours, except the intersection of Northern Boulevard at 126th

Place which would only be impacted during the non-game weekday PM and weekday pre-game peak hours.

Northern Boulevard at 108th Street

This intersection would be significantly impacted during all non-game and game day peak hours and would be partially mitigated in the non-game weekday AM peak hour and the Saturday midday peak hour, and fully mitigated during the remaining peak hours by installing “No Standing Anytime” regulations along the east curb and west curb of the northbound and southbound approaches, respectively for 250 feet from the intersection to allow for two moving lanes, restriping the northbound approach of 108th Street from one 22-foot-wide lane to one 11-foot-wide exclusive left-turn lane and one 11-foot-wide shared through-right lane for 175 feet, restriping the southbound approach of 108th Street from one 23-foot-wide lane to one 11-foot-wide exclusive left-turn lane and one 12-foot-wide shared through-right lane for 175 feet. In addition to these measures, other measures would be required including modifying the signal timing plan in all peak hours except during the non-game weekday PM and weekday pre-game peak hours, and prohibiting parking between 10 AM–9 PM along the north and south curbs of the westbound and eastbound approaches, respectively for 150 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane in all peak hours except during the non-game weekday AM peak hour.

Northern Boulevard at 114th Street

This intersection would be significantly impacted during all seven peak hours and could not be fully mitigated by applying traditional mitigation measures. Therefore, additional mitigation measures would be required, which would partially mitigate the significant impacts during the Saturday post-game peak hour and fully mitigate significant impacts in the remaining peak hours by prohibiting left turns from westbound Northern Boulevard and diverting them to southbound 114th Street to allow for three exclusive through lanes along westbound Northern Boulevard. Additional mitigation would include prohibiting parking along the ~~west~~ east side of southbound 114th Street and restriping the approach for two 11-foot-wide moving lanes, restriping the southbound 114th Street receiving lanes as two 11-foot-wide moving lanes with parking on both sides, and modifying the signal phasing and timing plan.

Northern Boulevard at 126th Street

This intersection would be significantly impacted during all seven peak hours. Significant adverse impacts are expected on the northbound 126th Street approach, on eastbound Northern Boulevard, on the eastbound Grand Central Parkway ramp, and on westbound Northern Boulevard (leading to the intersection from the Van Wyck and Whitestone Expressway off-ramps). None of the significant impacts expected during the seven peak hours could be mitigated by applying traditional mitigation measures. As noted previously for Phases 1A and 1B, this intersection is the convergence point of Northern Boulevard, 126th Street, and two highway exit ramps carrying significant project-generated traffic volumes, and consistently long queues are experienced on the westbound approach, especially the lane adjacent to the north curb. Therefore, to ~~fully~~ partially mitigate the significant impacts during ~~all~~ five of the seven peak hours, this intersection would require the same cost intensive mitigation measures identified for Phases 1A and 1B. Significant impacts during the weekday and Saturday pre-game peak hours would be unmitigated.

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Northern Boulevard at 126th Place

Significant impacts are expected during the non-game weekday PM and weekday pre-game peak hours. These impacts could be fully mitigated by installing a traffic signal with a 120 second cycle.

Northern Boulevard at Prince Street

This intersection would have significant adverse impacts during all seven peak hours, which would be unmitigatable in the non-game weekday AM peak hour and the Saturday post-game peak hour, and partially mitigated in the remaining peak hours by using the same measures described for Phase 1B.

Northern Boulevard at Main Street

None of the significant impacts expected during all seven peak hours could be mitigated.

Northern Boulevard at Union Street

This intersection would be significantly impacted during all seven peak hours with significant impacts expected on both Northern Boulevard approaches, which would be unmitigatable in the non-game weekday AM peak hour, and could be partially mitigated in the remaining six peak hours by installing “No Standing 7 AM–10 PM” regulations along the north curb of the westbound Northern Boulevard approach 200 feet from the intersection to allow for one 10-foot-wide daylighted shared through-right lane. During the Saturday post-game peak hour, signal timing modifications would also be required to partially mitigate the significant impacts.

Northern Boulevard at Parsons Boulevard

Significant adverse impacts are expected during all seven peak hours and would be partially mitigated in the non-game weekday AM, midday, PM and weekday pre-game peak hours, and fully mitigated during the remaining three peak hours by installing “No Standing Anytime” regulations along the south side of eastbound Northern Boulevard for 200 feet from the intersection, north side of westbound Northern Boulevard for 150 feet from the intersection, and west side of southbound Parsons Boulevard for 150 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane on each approach, and signal timing adjustments during all seven peak hours except the non-game weekday midday peak hour. These are the same measures described for Phase 1B.

34TH AVENUE

The intersection of 34th Avenue at 126th Street (and the Grand Central Parkway and eastbound Northern Boulevard ramps) would be significantly impacted during all seven peak hours since the intersection would be a key gateway to the District. The other intersection, 34th Avenue at 114th Street, would be significantly impacted during all seven peak hours except the non-game weekday AM peak hour.

34th Avenue at 114th Street

Significant impacts are expected during all seven peak hours except the non-game weekday AM peak hour and could be fully mitigated by modifying the signal timing plan.

34th Avenue at 126th Street

Significant impacts are expected during all seven analysis peak hours. As noted previously, this is a key entrance point to the District; this intersection would carry significant volumes of

project generated traffic. Its geometric complexity, with approaches from two exit ramps in addition to the 126th Street northbound and 34th Avenue eastbound and westbound approaches, limits traditional capacity improvement options, and would require the same cost intensive mitigation measures described for Phases 1A and 1B. The above mentioned mitigation measures would ~~fully mitigate significant impacts during the non-game weekday AM peak hour, and would~~ partially mitigate significant impacts in ~~the remaining~~ all seven peak hours.

ROOSEVELT AVENUE

All nine intersections would be significantly impacted during all seven peak hours, except for the intersection at Prince Street during the non-game ~~weekday~~ Saturday midday and Saturday pre-game and post-game peak hours, ~~the intersection at Main Street during the non-game weekday PM peak hour, and~~ the intersection at Parsons Boulevard during the Saturday midday, weekday pre-game, and the Saturday pre-game peak hours. In each time period, the intersection of Roosevelt Avenue at Union Street would be unmitigatable. Limited mitigation options for the Roosevelt Avenue corridor would be possible, due in part to limited space for travel lanes and critical curbside activities, including bus stops, bus layover, and truck loading/unloading, and columns supporting the No. 7 subway line.

Roosevelt Avenue at 108th Street

Significant impacts would occur in all seven peak hours and could be fully mitigated in the non-game weekday AM and weekday pre-game peak hours, and partially mitigated in the remaining peak hours by installing “No Standing Anytime” regulations along the east curb of the northbound 108th Street approach 150 feet from the intersection to allow for one 11-foot-wide left-through lane and one 11-foot-wide right-turn lane, and installing “No Standing Anytime” regulations along the west curb of the southbound 108th Street approach 150 feet from the intersection to allow for one 11-foot-wide left-through lane and one 11-foot-wide right-turn lane.

Roosevelt Avenue at 111th Street

Significant impacts would occur in all seven peak hours and could be fully mitigated in the non-game weekday AM and midday peak hours by installing “No Standing 7 AM–4 PM Monday–Friday” regulations along the north curb of the westbound Roosevelt Avenue approach 100 feet from the intersection to allow for one 11-foot-wide left-through lane and one 10-foot-wide daylighted right-turn lane. None of the significant impacts in the remaining peak hours could be mitigated.

Roosevelt Avenue at 114th Street

Significant impacts would occur in all seven peak hours. These impacts could be partially mitigated in the weekday pre-game and Saturday post-game peak hours, and fully mitigated in the remaining ~~six~~ five peak hours by using the same measures described for Phase 1B and replacing the “No Standing 3 PM–7 PM” regulations proposed in Phase 1B along the west curb of the southbound 114th Street approach 150 feet from the intersection with “No Standing 4 PM–7PM Monday-Friday” and “No Standing 1PM–9PM Saturday” regulations along the west curb of the southbound 114th Street approach 150 feet from the intersection.

Roosevelt Avenue at 126th Street

Significant impacts would occur in all seven peak hours and would be partially mitigated by reconfiguring all approaches to the intersection. The northbound 126th Street approach would have one 10-foot-wide exclusive left-turn lane and two 10-foot-wide travel lanes. The centerline of the southbound 126th Street approach would be shifted nine feet to the east and the approach

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would be restriped from one 11-foot-wide and one 12-foot-wide travel lane to one 11-foot-wide exclusive left-turn lane, one 10-foot-wide through lane, and one 11-foot-wide exclusive right-turn lane for 250 feet. The centerline of the eastbound Roosevelt Avenue approach would be shifted one foot to the north and the approach would be restriped from one 10-foot-wide and 11-foot-wide travel lane to two 11-foot-wide travel lanes. The centerline of the westbound Roosevelt Avenue approach would be shifted one foot to the south and the approach would be restriped from one 11-foot-wide and 10-foot-wide travel lane to two 11-foot-wide travel lanes. In addition, the signal phasing and timing plan would be modified.

Roosevelt Avenue at College Point Boulevard

Significant impacts would occur in all seven peak hours. These impacts could be fully mitigated during the non-game weekday AM peak hour and partially mitigated in the remaining six peak hours by using the same measures described for Phase 1A.

Roosevelt Avenue at Prince Street

This intersection would be significantly impacted during all seven peak hours except during the non-game ~~weekday~~ Saturday midday, Saturday pre-game, and Saturday post-game peak hours and could be fully mitigated during the weekday non-game AM and PM and weekday pre-game PM peaks hours by ~~shifting the center line of the eastbound Roosevelt Avenue approach six feet to the north, restriping the eastbound Roosevelt Avenue approach from one 11 foot wide travel lane and one 19 foot wide travel lane with parking to one 11 foot wide exclusive left turn lane, one 11 foot wide travel lane, one six feet hatched buffer, and one 8 feet parking lane for 250 feet, restriping the westbound Roosevelt Avenue receiving side from one 9 foot wide travel lane and one 19 foot wide travel lane to two 11 foot wide travel lanes for 250 feet, installing “No Standing 7 AM–10 AM 4 PM Monday–Friday” regulations on the north curb of the westbound approach 175 feet from the stop bar to allow for an 11 foot wide daylighted right turn pocket during the non-game weekday AM and midday peak hours, and modifying the signal phasing and timing plan.~~ Significant impacts during the non-game weekday midday peak hour would be unmitigatable.

Roosevelt Avenue at Main Street

This intersection would be significantly impacted during all seven peak hours. Significant impacts could be fully mitigated in the non-game weekday AM and Saturday pre-game peak hours, and partially mitigated in the remaining peak hours (except during the non-game weekday midday ~~and PM~~ peak hours when it would be unmitigatable) by modifying the signal timing plan.

Roosevelt Avenue at Union Street

None of the significant impacts expected during all seven peak hours could be mitigated.

Roosevelt Avenue at Parsons Boulevard

Significant impacts are expected during the non-game weekday AM, midday, PM, and Saturday midday, and the weekday pre-game and weekend post-game peak hours. These impacts could be fully mitigated during the non-game weekday AM, midday, and PM, and the Saturday pre-game and Saturday post-game peak hours by modifying the signal timing plan, installing “No Standing 7 AM–10 AM and 4 PM–7 PM, Monday–Friday” and “No Standing 10 AM–9 PM Saturday” regulations on the northbound approach 75 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane. Significant impacts during the non-game Saturday midday and weekday pre-game peak hours would be unmitigatable.

SANFORD AVENUE

Parsons Boulevard at Sanford Avenue would be significantly impacted during all ~~seven~~ peak hours except during the Saturday pre-game peak hour, and College Point Boulevard at Sanford Avenue would be significantly impacted during the non-game weekday PM and the Saturday midday peak hours.

Sanford Avenue at College Point Boulevard

Upgrading to a computerized signal controller, modifying signal timings, and installing “No Standing 4 PM–7 PM, Monday-Friday” regulations on the southbound approach 75 feet from the intersection to allow for a 10-foot-wide daylighted right-turn lane would fully mitigate significant impacts during the non-game weekday PM and the Saturday midday peak hours.

Sanford Avenue at Union Street

Significant impacts are not expected during any of the analysis peak hours.

Sanford Avenue at Parsons Boulevard

Significant impacts are expected during all seven peak hours. Modifying signal timings, shifting the northbound centerline one foot to the west to allow for a 20-foot-wide northbound approach, installing “No Standing Anytime” regulations on the northbound approach 75 feet from the stop bar to allow for one 10-foot-wide left-through lane and one 10-foot-wide daylighted right-turn pocket, installing “No Standing 10 AM–9 PM” regulations on the southbound approach 75 feet from the stop bar to allow for a 10-foot-wide daylighted right-turn lane in all peak hours except the non-game weekday AM peak hour, and installing “No Standing 10 AM–4 PM” regulations on the westbound approach 100 feet from the stop bar to allow for a 10-foot-wide daylighted right-turn lane would fully mitigate the significant impacts expected during all seven peak hours.

OTHER STUDY AREA LOCATIONS

Kissena Boulevard at Main Street

Modifying signal timings would fully mitigate significant impacts during the non-game weekday midday, Saturday midday, and weekend pre-game peak hours.

32nd Avenue at College Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

World’s Fair Marina at Boat Basin Road

Significant impacts would occur in all seven peak hours. Significant impacts at this currently unsignalized intersection could be fully mitigated by using the same measures described for Phase 1A.

Northern Boulevard Service Road at College Point Boulevard

Modifying signal timings would fully mitigate the significant impacts expected during the non-game weekday PM and weekday pre-game peak hours. Significant impacts are not expected during the Saturday post-game peak hour. None of the significant impacts in the remaining peak hours could be mitigated.

Boat Basin Road at Stadium Road

Significant impacts are expected in all seven peak hours and could be fully mitigated during the non-game weekday AM peak hour, and partially mitigated during the weekday pre-game and Saturday pre-game peak hours by installing an actuated signal controller and by modifying the

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signal phasing and timing plan. None of the significant impacts expected during the non-game weekday midday, PM and Saturday midday, and Saturday post-game peak hours could be mitigated.

Stadium Road at the Grand Central Parkway Ramp

Significant adverse impacts are expected during all peak hours except the non-game weekday AM peak hour, and could be fully mitigated by the same measures described for Phase 1A. The new westbound approach exiting the Willets West Center would continue to operate at unacceptable LOS D, LOS E, or LOS F during all peak hours except the non-game weekday AM peak hour.

Willets Point Boulevard at Northern Boulevard

Significant impacts are expected during all peak hours except the non-game weekday AM peak hour, and could be fully mitigated by installing a traffic signal with a 60 second cycle length, and channelizing the eastbound right-turn traffic and channelizing the eastbound through traffic and the northbound right-turn traffic on the receiving side to allow for concurrent traffic flow.

126th Street at New Willets Point Boulevard

Significant impacts are not expected during any of the analysis peak hours.

CitiField/Lot B at Roosevelt Avenue

Significant impacts are not expected during any of the analysis peak hours.

~~In addition to the study locations analyzed and reported above, the intersections of 126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place are expected to carry a significant amount of project generated trips in Phase 2. These three intersections were not analyzed for this Draft SEIS since the majority of project generated trips from the District were assigned to the adjacent analyzed intersections. Since impacts have been identified for these adjacent intersections, the three intersections listed above will be analyzed for the Final SEIS to determine if they would similarly experience significant adverse impacts. If they are found to be significantly impacted under the With Action condition, mitigation measures such as those typically implemented by NYCDOT would be further explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

126th Street at 36th Avenue

Significant impacts are expected during all seven peak hours and would be fully mitigated during the non-game weekday AM and Saturday midday peak hours and during the weekday pre-game peaks hour. Mitigation measures include restriping the westbound approach as one 10-foot-wide left-turn lane and one 10-foot-wide right-turn lane. Significant impacts during the remaining four peak hours would be unmitigatable.

126th Street at 37th Avenue

Significant impacts are expected during all seven peak hours except the non-game weekday AM and Saturday midday peak hours and would be fully mitigated during the non-game weekday PM and weekday pre-game peak hours. Mitigation measures include restriping the westbound approach as one 10-foot-wide left-turn lane and one 10-foot-wide right-turn lane. Significant impacts during the remaining three peak hours would be unmitigatable.

HIGHWAY MITIGATION

As discussed in Chapter 14, “Transportation,” the proposed project would result in significant adverse highway impacts at a number of ramps and mainlines within the study area. The detailed traffic simulation analyses show that some of these highway impacts are a result of the extension of congestion or spillback from the surrounding local network intersections which affect highway conditions. This chapter discusses mitigation measures that are aimed at improving the system-wide operation of the roadway network including its highways and local street intersections. In some instances, the proposed mitigation measures may slightly or moderately impact new locations while improving system-wide conditions. One reason for this is that some highway elements that experience lower traffic volumes due to upstream “metering” under future conditions with the proposed project may experience higher volumes with the mitigation measures in place. It is important to note that with the proposed highway and local street mitigation measures, the overall operation of the highway system would improve significantly compared to the With Action condition. Highway mitigation measures and nearby local street intersection mitigation measures that would also improve highway conditions are described below. The need for these measures has also been discussed earlier in this chapter for specific intersections under “Traffic-Phase 1A (2018),” “Traffic-Phase 1B (2028),” and “Traffic-Phase 2 (2032).” Each of these measures is assumed to be in place for all three phases of development. ~~If the mitigation measures outlined below are not implemented, it is expected that significant adverse impacts previously identified in Chapter 14, “Transportation,” would remain unmitigated or partially mitigated, including but not necessarily limited to the westbound Grand Central Parkway (the east side, between Roosevelt Avenue and the LIE), the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard, the ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway, and the ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard.~~

- Grand Central Parkway (GCP) Exit Ramp at West Park Loop/Stadium Road: Widen the Grand Central Parkway off-ramp to West Park Loop/Stadium Road from a single lane to two exit lanes. At the exit ramp’s intersection with West Park Loop/Stadium Road, provide three lanes—one left-turn lane, one through lane, and one channelized right-turn lane. Also, reconfigure the southbound Stadium Road approach to provide a southbound left-turn lane in the roadway median, and install a traffic signal at this currently unsignalized intersection. These measures would help prevent spillback of traffic onto the westbound GCP mainline.
- 126th Street/GCP Exit Ramp/34th Avenue: ~~Close the existing ramp from Grand Central Parkway /Astoria Boulevard to 126th Street and combine it with the existing ramp from eastbound Northern Boulevard to 126th Street, and stripe the proposed combined ramp as one shared left through lane, one exclusive through lane, and one exclusive right turn lane. Install a new traffic signal at the new intersection of the eastbound Northern Boulevard ramp to 126th Street at its intersection with the GCP/Astoria Boulevard. This new traffic signal would be coordinated with the upstream signals at Northern Boulevard at 126th Street and 34th Avenue at Shea Road. The GCP/Astoria Boulevard ramp would be striped as two through lanes to eastbound Northern Boulevard and one exclusive right turn lane to the Willets Point District. Close the existing slip ramp from eastbound Northern Boulevard to 126th Street and divert traffic to 126th Place, stripe the proposed widened GCP/Astoria Boulevard ramp as one 11-foot-wide left-turn lane and two 11-foot-wide through lanes. Construct a channelized right-turn from the GCP/Astoria Boulevard ramp to westbound~~

Shea Road, widen the westbound 34th Avenue approach to two 11-foot-wide travel lanes and two 11-foot-wide receiving lanes, restripe the northbound 126th Street approach from two 11-foot-wide travel lanes, one 12-foot-wide travel lanes and one 7-foot-wide hatched median to one 12-foot-wide exclusive left-turn lane, two 12-foot-wide travel lanes, and one 5-foot-wide Class II bicycle lane, and modify the existing signal timing plan. These measures would improve the efficiency of the signal operation and capacity of the intersection, and would reduce queuing and spillback onto upstream intersections and significantly improve the levels of services at the ramp from eastbound Astoria Boulevard and the GCP to the northbound Whitestone Expressway/eastbound Northern Boulevard.

- Northern Boulevard at 126th Street: Install ~~quick-curb channelization (i.e., plastic reflective pylons used for channelizing traffic)~~ Jersey barriers on the westbound Northern Boulevard approach to this intersection, between the right-most lane and the center lane to allow westbound Northern Boulevard traffic (originating from the Van Wyck and Whitestone Expressways) to have uninterrupted flow through the intersection; also, installing louvers (used on traffic signals to avoid confusion on two closely spaced intersection approaches where approaching motorists may be able to see the signal indication for another approach) would be beneficial along the westbound approach. Widen the eastbound Northern Boulevard approach from two 12-foot-wide lanes to three 10-foot-wide lanes and prohibit pedestrian crossing in the east crosswalk. At this intersection, uninterrupted flow of traffic from the Van Wyck and Whitestone Expressway ramps would significantly reduce the queuing of traffic back onto the two highway ramps and potentially the highway mainlines, which currently occurs at times during pre-game peak hours. In addition, modification of the existing signal timing and coordination with the northbound 126th Street approach would be required.
- World's Fair Marina at Boat Basin Road: Install a new traffic signal and implement a new signal timing plan; and restripe the northbound Boat Basin Road and westbound World's Fair Marina approaches. These measures would reduce queuing and spillback onto westbound Northern Boulevard.
- Boat Basin Road at Stadium Road: Install an actuated signal controller and modify the signal phasing and timing plan. These measures would reduce queuing and spillback onto westbound Northern Boulevard.
- Northern Boulevard at 114th Street: Prohibit left turns from westbound Northern Boulevard onto southbound 114th Street to allow for three exclusive through lanes along westbound Northern Boulevard. Westbound left turns would travel through the intersection and make right turns onto northbound 112th Place and then make another right turn onto southbound 114th Street. Prohibit parking along the east side of ~~Restripe the southbound 114th Street approach and re-stripe the approach~~ to provide shared left-through and shared through-right lanes. Modify the existing signal timing plan. These measures would help prevent spillback of westbound Northern Boulevard traffic onto the westbound Grand Central Parkway mainline.

The mitigation measures identified above for the intersections of World's Fair Marina at Boat Basin Road, Boat Basin Road at Stadium Road, and Northern Boulevard at 114th Street have been reviewed and approved by NYCDOT. NYCDOT reviewed and concurs with the operational analysis that was undertaken for the ~~The improvements identified above for the intersections at the~~ Grand Central Parkway westbound exit ramp at West Park Loop/Stadium Road, the intersection of 126th Street/GCP Exit Ramp/34th Avenue, and the intersection of

~~Northern Boulevard and 126th Street; NYCDOT has given approval for those measures within its jurisdiction (i.e., installation of a traffic signal at the intersection of West Park Loop/Stadium Road). are measures that may call for detailed review by both NYCDOT and NYSDOT and which Final design for construction of those measures which do not fall under the jurisdiction of NYCDOT will be further reviewed by NYSDOT closer to the time of construction. These measures represent preferred improvements that would benefit the overall traffic network. As discussed above, if these mitigation measures are modified or rejected by NYSDOT—the review agencies, significant adverse impacts identified above would may be unmitigated. Additional evaluations may be needed for the Final SEIS and could identify alternative measures that are deemed preferable to those identified above, in which case additional detailed simulation analyses may determine that projected conditions are better than those depicted in the Draft SEIS, or which could identify some deterioration in conditions and potential for previously identified significant adverse impacts that would be unmitigated or partially mitigated.~~

HIGHWAY MITIGATION—PHASE 1A (2018)

Non-Game Day

Resulting highway traffic densities, speeds, and levels of service are detailed in tables at the back of this chapter. In Phase 1A, implementing the mitigation measures at the key locations mentioned above would mitigate all significant impacts during all time periods except the weekday PM and Saturday midday peak hours.

During the non-game weekday AM peak hour, three locations that would be significantly impacted by the proposed project would be fully mitigated.

During the non-game weekday midday peak hour, two ~~four~~ locations that would be significantly impacted would be fully mitigated.

During the non-game weekday PM peak hour, four locations that would be significantly impacted would be fully mitigated and one location would remain unmitigatable—the southbound Van Wyck Expressway mainline (between Roosevelt Avenue and the LIE).

During the Saturday midday peak hour, of the five ~~six~~ locations that would be significantly impacted, two ~~three~~ locations would be fully mitigated and three locations would remain unmitigatable ~~(although vastly improved from With Action conditions)~~ including the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard (which would be vastly improved from With Action conditions).

Game Day

Resulting highway traffic densities, speeds, and levels of service are detailed in tables at the back of this chapter. In Phase 1A, implementing the mitigation measures at the key locations mentioned above would mitigate all significant impacts during all time periods except for the ~~following~~ peak hours and locations discussed below.

During the weekday pre-game peak hour, ~~of the five locations that would be significantly impacted, one~~ four locations that would be significantly impacted by the proposed project would be fully mitigated. ~~would be fully mitigated and one location would remain unmitigatable—the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place.~~

During the weekend pre-game peak hour, of the two ~~five~~ locations that would be significantly impacted, one ~~three~~ locations would be fully mitigated and the other two locations would remain unmitigatable (~~one of which would be~~ although ~~vastly improved from With Action conditions~~) including the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. However, due to the proposed measures, one new location would be slightly impacted—the eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE.

During the weekend post-game peak hour, of the three locations that would be significantly impacted, one location would be fully mitigated and two locations would remain unmitigatable including the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway, and the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard (which would be vastly improved from With Action conditions).

HIGHWAY MITIGATION—PHASE 1B (2028)

Non-Game Day

Resulting highway traffic densities, speeds, and levels of service are detailed in tables at the back of this chapter. In Phase 1B, implementing the mitigation measures at the key locations mentioned above, would mitigate all significant impacts during all time periods except for the following peak hours and locations discussed below.

During the non-game weekday AM peak hour, of the six ~~seven~~ locations that would be significantly impacted, four ~~three~~ locations would be fully mitigated and two ~~four~~ locations would remain unmitigatable (~~one of which would be vastly improved~~) including the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, ~~the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, and~~ the ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard. ~~and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. However, due to the proposed mitigation measures, one new location would be slightly impacted—the eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE.~~

During the non-game weekday midday peak hour, of the eight locations that would be significantly impacted, five ~~four~~ locations would be fully mitigated and three ~~four~~ locations would remain unmitigatable (~~all one of which would be vastly improved~~) including the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard, the ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. However, due to the proposed mitigation measures, one ~~two~~ new locations would be slightly impacted - ~~including the eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE., and the southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE.~~

During the non-game weekday PM peak hour, of the nine locations that would be significantly impacted, three ~~six~~ locations would be fully mitigated and six ~~three~~ locations would remain unmitigatable including the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), the southbound Van Wyck Expressway mainline between

Roosevelt Avenue and the LIE, the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway, the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard (which would be vastly improved from With Action conditions).

~~However, due to the proposed mitigation measures, one new location would be slightly impacted (the southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE) and one new location would be more heavily impacted (the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway).~~

During the Saturday midday peak hour, of the nine ~~10~~ locations that would be significantly impacted, three ~~four~~ locations would be fully mitigated and six locations would remain unmitigatable (three ~~five~~ of which would be vastly improved) including the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway, the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. However, due to the proposed mitigation measures, one new location would be slightly impacted (the southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE).

Game Day

Resulting highway traffic densities, speeds, and levels of service are detailed in tables at the back of this chapter. In Phase 1B, implementing the mitigation measures at the key locations mentioned above, would mitigate all significant impacts during all time periods except for the ~~following~~ peak hours and locations discussed below.

During the weekday pre-game peak hour, of the three locations that would be significantly impacted, one ~~two~~ locations would be fully mitigated and two ~~one~~ locations would remain unmitigatable—the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE and the southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE. However, due to the proposed mitigation measures, one ~~two~~ new locations would be slightly impacted ~~including the eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE, and — the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place.~~

During the weekend pre-game peak hour, ~~of the all seven nine~~ locations that would be significantly impacted, ~~five locations would be fully mitigated and all seven four~~ locations would remain unmitigatable ~~(all of which would be vastly improved)~~ including the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard, the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway, the ramp from westbound Grand Central Parkway toward Stadium Road and northbound Whitestone Expressway, and the ramp from the southbound Whitestone Expressway to westbound Northern

Boulevard. However, due to the proposed mitigation measures, one new location would be slightly impacted—the eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE.

During the weekend post-game peak hour, of the four ~~six~~ locations that would be significantly impacted, three ~~four~~ locations would be fully mitigated and one ~~two~~ locations would remain unmitigatable—including the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, and the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard. However, due to the proposed mitigation measures, one new location would be slightly impacted—the ramp from World's Fair Marina / Boat Basin Road to westbound Grand Central Parkway, the northbound Whitestone Expressway to the southbound Van Wyck Expressway.

HIGHWAY MITIGATION—PHASE 2 (2032)

Non-Game Day

Resulting highway traffic densities, speeds, and levels of service are detailed in tables at the back of this chapter. In Phase 2, implementing the mitigation measures at the key locations mentioned above would mitigate all significant impacts during all time periods except for the following peak hours and locations discussed below.

During the non-game weekday AM peak hour, of the seven locations that would be significantly impacted, two ~~five~~ locations would be fully mitigated and five ~~two~~ locations would remain unmitigatable including the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, and the southbound Van Wyck Whitestone Expressway mainline between Northern Boulevard and Linden Place Roosevelt Avenue and the LIE, the ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. However, due to the proposed mitigation measures, one new location would be slightly impacted—the southbound Van Wyck Expressway mainline between Roosevelt Avenue and LIE.

During the non-game weekday midday peak hour, of the nine ~~ten~~ locations that would be significantly impacted, four locations would be fully mitigated and five ~~six~~ locations would remain unmitigatable (three ~~two~~ of which would be vastly improved) including the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from the northbound Van Wyck Expressway to westeastbound Northern Boulevard, the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard, the ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. However, due to the proposed mitigation measures, two new locations would be slightly impacted including the southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, and the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway. and one new location would be more heavily impacted including the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway.

During the non-game weekday PM peak hour, of the nine locations that would be significantly impacted, three locations would be fully mitigated and six locations would remain unmitigatable

(~~two~~ all of which would be vastly improved) including ~~the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway, the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard.~~ However, due to the proposed mitigation measures, two ~~four~~ new locations would be significantly impacted including the eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE, the ramp from the southbound Whitestone Expressway to the westbound Grand Central Parkway, the northbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from World's Fair Marina/Boat Basin Road to the westbound Grand Central Parkway, and the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway.

During the Saturday midday peak hour, of the 10 locations that would be significantly impacted, two locations would be fully mitigated and eight locations would remain unmitigatable (three of which would be vastly improved) including the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard, the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway, the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. ~~However, due to the proposed mitigation measures, one new location would be slightly impacted the northbound Whitestone Expressway mainline between Northern Boulevard and Linden Place.~~

Game Day

Resulting highway traffic densities, speeds, and levels of service are detailed in tables at the back of this chapter. In Phase 2, implementing the mitigation measures at the key locations mentioned above would mitigate all significant impacts during all time periods except for the ~~following~~ peak hours and locations discussed below.

During the weekday pre-game peak hour, of the six ~~eight~~ locations that would be significantly impacted, one ~~five~~ locations would be fully mitigated and five ~~three~~ locations would remain unmitigatable including the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and LIE, the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, and the ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard.

During the weekend pre-game peak hour, of the six ~~ten~~ locations that would be significantly impacted, two ~~four~~ locations would be fully mitigated and four ~~six~~ locations would remain unmitigatable including the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, the southbound Whitestone Expressway mainline between Northern

~~Boulevard and Linden Place~~, the ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard, ~~the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway~~, the ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway, and the ramp from westbound Grand Central Parkway toward Stadium Road and northbound Whitestone Expressway. ~~the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard~~. However, due to the proposed mitigation measures, two ~~one~~ new locations would be slightly impacted—the eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE and the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE).

During the weekend post-game peak hour, of the eight ~~nine~~ locations that would be significantly impacted, four locations would be fully mitigated and four ~~five~~ locations would remain unmitigatable (two of which would be vastly improved) including the westbound Grand Central Parkway mainline (the east side, between Roosevelt Avenue and the LIE), the westbound Grand Central Parkway mainline (the west side, between Roosevelt Avenue and the LIE), the northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE, ~~the ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard~~, and the ramp from eastbound Astoria Boulevard/Grand Central Parkway to the northbound Whitestone Expressway/eastbound Northern Boulevard, ~~the ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway~~, and the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard. However, due to the proposed mitigation measures, three ~~two~~ new locations would be significantly impacted including the northbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from World's Fair Marina/Boat Basin Road to the westbound Grand Central Parkway, and the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway.

IMPLEMENTATION

Each of the intersection traffic capacity improvements described in this chapter ~~will require~~ has received approval from various divisions of the New York City Department of Transportation (NYCDOT) such as Highway Design, Signals, and ~~possibly~~ others. Overall, these intersection traffic improvements—including signal phasing and timing changes, traffic signal installations, lane additions, lane re-striping, geometric improvements, channelization improvements and parking prohibitions—fall within the range of typical measures employed by NYCDOT in improving traffic conditions in New York City.

Each of the highway network-related improvements described in this chapter beyond the operational improvements which are under NYCDOT jurisdiction would require a collaborative review process between NYCDOT and the New York State Department of Transportation (NYSDOT), and where appropriate, the New York City Department of Parks and Recreation (NYCDPR) closer to the time of construction when the design of those measures is finalized.

With the implementation of the traffic mitigation measures described above, during Phase 1A, new parking prohibitions would result in the removal of approximately ~~60~~ 66 parking or “standing” spaces during various times of the day and days of the week, including 20 parking meters. Northern Boulevard would lose 14 parking meters near Parsons Boulevard and ~~Prince~~ Union Street; Roosevelt Avenue would lose five spaces (including two parking meters) at 111th Street; 108th Street would lose about 20 spaces near Northern Boulevard and Roosevelt Avenue; 114th Street would lose about ~~seven~~ nine spaces near Northern Boulevard and

Roosevelt Avenue; College Point Boulevard would lose 11 spaces near Roosevelt Avenue; and Parsons Boulevard would lose three spaces near Roosevelt Avenue.

During Phase 1B, new parking prohibitions would result in the removal of approximately ~~94~~ 87 parking or “standing” spaces during various times of the day and days of the week, including 24 parking meters. Astoria Boulevard would lose two parking spaces near 108th Street; Northern Boulevard would lose 24 parking spaces (including 18 parking meters) near Parsons Boulevard, 108th Street, Prince Street, and Union Street; Roosevelt Avenue would lose ~~14~~ 7 spaces (including two parking meters) at 111th Street and ~~Prince~~ 114th Street; 108th Street would lose about 20 spaces near Northern Boulevard and Roosevelt Avenue; 114th Street would lose about ~~seven~~ 13 spaces near Northern Boulevard and Roosevelt Avenue; College Point Boulevard would lose 11 spaces near Roosevelt Avenue; and Parsons Boulevard would lose 10 spaces in the vicinity of Northern Boulevard, Roosevelt Avenue, and Sanford Avenue.

During Phase 2, new parking prohibitions would result in the removal of approximately ~~405~~ 101 parking or “standing” spaces during various times of the day and days of the week, including 24 parking meters. Astoria Boulevard would lose two parking spaces near 108th Street; Northern Boulevard would lose 24 parking spaces (including 18 parking meters) in the vicinity of Parsons Boulevard, 108th Street, Prince Street, and Union Street; Roosevelt Avenue would lose ~~14~~ 7 spaces (including two parking meters) at 111th Street, and 114th Street ~~and Prince Street~~; Sanford Avenue would lose four spaces near Parsons Boulevard; 108th Street would lose about 20 spaces near Northern Boulevard and Roosevelt Avenue; 114th Street would lose about ~~42~~ 18 spaces near Northern Boulevard and Roosevelt Avenue; College Point Boulevard would lose 13 spaces near Roosevelt Avenue and Sanford Avenue; and Parsons Boulevard would lose 13 spaces (including four parking meters) in the vicinity of Northern Boulevard, Roosevelt Avenue, and Sanford Avenue. No designated truck loading/unloading or commercial vehicle zones or bus layover space would be affected by the parking modifications proposed.

Of the traffic mitigation measures discussed above, new traffic signals ~~are proposed~~ have been approved at the following, currently unsignalized, intersections: Boat Basin Road at World’s Fair Marina; the intersection of the Grand Central Parkway westbound exit ramp at West Park Loop/Stadium Road; Willets Point Boulevard at Northern Boulevard; New Willets Point Boulevard at 126th Street; ~~and the intersection of the eastbound Northern Boulevard ramp to 126th Street at the eastbound Astoria Boulevard/Grand Central Parkway ramp to eastbound Northern Boulevard; Northern Boulevard at 126th Place; 126th Street at 36th Avenue; and 126th Street at 37th Avenue;~~ and an upgrade to an actuated signal control at the intersection of Boat Basin Road at Stadium Road. Also, it is expected that the intersection of College Point Boulevard at Sanford Avenue would require traffic signal equipment upgrades from the current mechanical systems to computerized systems in order to accommodate variable signal phase green times among the seven analysis time periods. This signal improvement would be similar to NYCDOT’s planned upgrade program for various signalized intersections throughout the City. ~~Signal warrant analyses will be prepared for the Final SEIS. Should NYCDOT determine that any of the proposed traffic signals are not warranted, alternative means of mitigating significant adverse impacts at those locations will need to be developed or unmitigated impacts may result and would be identified as such in the Final SEIS.~~

In order to verify the need and effectiveness of the proposed mitigation measures proposed in this SEIS (especially the more cost intensive highway network improvements), the developer, in consultation with the lead agency and NYCDOT, will develop and conduct a detailed traffic monitoring plan at the completion of the buildout of each phase of the proposed project. The

developer will inform NYCDOT and the lead agency of the progress of development and submit for NYCDOT's review and approval a scope of work that would include all locations where significant traffic impacts have been identified and any locations analyzed where NYCDOT believes improvement measures may be warranted, including the intersections of Janet Place at Roosevelt Avenue and 39th Avenue at College Point Boulevard, which could be affected by proposed turn prohibitions at Roosevelt Avenue at College Point Boulevard. Data collection conducted for the monitoring plan would include 24-hour Automatic Traffic Recorder (ATR) machine counts, manual turning movement counts, vehicle classification counts, pedestrian counts, intersection geometry and field information, signal timing and signal progression and any relevant information necessary for conducting the traffic monitoring plan. In the areas where parking prohibitions would be needed to mitigate significant impacts, such as Downtown Flushing and Corona, curbside utilization surveys would be conducted to determine the number of vehicles that would be displaced and where the displaced vehicles would be accommodated. Additionally, the traffic monitoring program would include an origin-destination survey performed for the destination retail component of the project. The traffic monitoring program would also include intersection capacity and level of service analyses, and traffic simulations, to determine whether actual future With Action conditions have, in fact, resulted in significant traffic impacts and verify the need for mitigation measures identified in this SEIS or similar measures identified through the traffic monitoring plan.

The developer will submit to NYCDOT and the lead agency design drawings for any mitigation measures as per American Association of State Highway and Transportation Officials (AASHTO) and NYCDOT specifications. NYCDOT will participate in the review process relating to all future modifications to geometric alignment, striping and signage during the preliminary and final design phases. In addition, as mutually agreed upon, the City and the developer will be responsible for any cost associated with the monitoring effort. The developer of each phase of the project will be responsible for the cost of the design and construction of any or all mitigation measures identified in this SEIS, for that phase. **Tables 21-7 through 21-27** show the various LOS with mitigation implemented.

Table 21-7
Phase 1A (2018) Highway Level of Service Summary With Mitigation
Weekday AM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.0 36.7	38.7 39.4	E	36.8 36.7	38.9 39.1	E	36.8 36.7	39.5 39.4	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.8 49.0	22.1 21.8	C	48.7 23.2 23.0	C	48.6 23.0	48.4 23.3	23.0 23.3	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.5 44.2	36.2 36.7	E	44.1 44.3	37.2 37.4	E	44.1 44.0	37.4 37.3	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.6 34.5	48.1 48.4	F	34.5 34.6	48.6 48.5	F	34.5 34.6	48.6	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	39.4 39.5	25.2	C	39.2 38.6	28.4 29.1	D	39.3	26.8 26.5	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.2	23.4 22.9	C	45.1 24.3 23.6	C	45.1	23.7 23.6	C	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	26.6 26.0	45.0 46.0	F	17.0 17.5	68.5 67.2	F	26.7 26.6	45.5	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.2	18.9 19.0	B	34.3	18.5 18.3	B	34.1	18.9 19.3	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.7 23.8	33.4 33.2	D	23.7 33.4 35.4	D	23.7 23.8	35.1 34.4	E	E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.2 23.1	33.6 34.4	D	23.1 23.2	36.2 33.8	E	23.2 23.3	36.0 34.4	D
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.5 33.6	13.1	B	33.3 33.4	17.1 16.8	B	33.0 33.2	17.7 17.3	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.7	26.3	C	28.7	26.5 26.9	C	28.5 28.7	26.8 26.6	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	5.6 5.5	A	41.5 41.6	5.8 5.7	A	41.6	5.7	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.5 33.4	30.4 30.7	D	33.6 33.5	29.0 28.9	D	33.6	30.3 30.4	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.5 29.6	17.1 17.3	B	29.4 29.3	16.4 16.1	B	29.5	17.5 17.3	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.8	28.4 28.2	D	29.9 29.8	26.1 26.3	C	29.9 29.8	27.6 27.9	C
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.4 37.3	20.3 20.0	G B	37.3 37.1	21.6 21.4	C	37.2 37.1	21.4 21.6	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.5 44.6	7.7	A	44.1 44.0	11.2 11.1	B	44.1	10.9 11.1	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	13.2 15.2	60.3 48.6	F	3.6 4.5	199.6 169.9	F	26.4 25.1	31.3 33.6	D
Note: Significant Impact									

Table 21-8

Phase 1A (2018) Highway Level of Service Summary With Mitigation
Weekday Midday Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.2	34.7 34.6	D	37.2	34.9 36.0	D	37.2	35.8 35.5	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	43.0 43.1	19.2	B	48.5 42.6	44.0 22.9	E	42.6	22.7 22.8	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	45.2 45.3	27.4 27.3	C	45.0 45.1	29.4 28.8	D	45.1	29.2 28.8	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.9	30.2 30.3	D	38.8	34.0 31.1	D	38.9 38.8	31.1 31.0	D
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	38.6	25.1 24.9	C	38.5 38.8	27.0 28.9	G	38.5 38.4	27.9 28.1	G
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.4 45.6	20.3	C	45.4 45.3	48.5 23.8	B	45.3 45.5	24.4 21.5	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	34.3	24.0	C	33.4 34.3	25.8 25.0	C	34.3	25.0	C
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.4	16.5 16.6	B	34.3 34.4	17.8 17.7	B	34.0 33.0	17.9	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.5 23.4	33.8 34.5	D	23.5 23.6	35.2 33.5	E	23.5	34.3 34.7	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.5 23.4	24.2 24.7	C	23.3	27.6 28.4	G	23.4 23.3	28.2 28.6	D
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	45.3 45.2	40.7 10.2	B	43.5 43.4	45.6 20.2	B	43.5	48.0 18.4	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.5 28.4	30.4	D	28.4	30.2 30.5	D	28.5 28.3	30.2 30.3	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	7.1 7.2	A	41.4 41.5	7.7 7.5	A	41.5	7.6 7.7	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7	27.6 27.9	C	33.6 33.7	27.5 27.3	C	33.6 33.7	27.8 27.4	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	28.8 28.6	11.5 11.1	B	28.6 28.7	11.0 11.3	B	28.7 28.6	11.3 11.1	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.2	9.9 10.1	A	31.3	10.0 10.7	B	31.2	10.2 10.4	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	32.1 32.2	20.5	C	4.6 7.1	123.3 119.5	F	31.9 31.8	25.4 25.7	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	42.3	7.2 7.7	A	2.3 40.2	465.3 19.4	F	40.9 41.0	17.5 17.6	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.5 30.4	14.4 14.5	B	3.4 5.2	491.3 123.4	F	29.4 30.0	20.8 20.6	C
Note: Significant Impact									

Table 21-9
Phase 1A (2018) Highway Level of Service Summary With Mitigation
Weekday PM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	33.0 <u>32.9</u>	45.5 <u>45.9</u>	F	33.0 <u>32.9</u>	46.0 <u>46.4</u>	F	32.9 <u>33.0</u>	45.5 <u>45.4</u>	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	37.7	25.4 <u>25.0</u>	C	30.9 <u>37.5</u>	33.4 <u>28.3</u>	D	37.3 <u>37.4</u>	28.3 <u>28.4</u>	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.5 <u>44.7</u>	32.6	D	44.2 <u>44.3</u>	34.4 <u>34.6</u>	D	44.5 <u>44.3</u>	34.4 <u>34.3</u>	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	33.6	39.9 <u>39.8</u>	E	33.6	41.0 <u>40.8</u>	E	33.5 <u>33.6</u>	41.0 <u>40.9</u>	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	35.5 <u>39.1</u>	34.9 <u>31.6</u>	D	38.7 <u>33.3</u>	34.6 <u>40.1</u>	D E	38.8 <u>36.9</u>	34.4 <u>36.3</u>	D E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	35.1	49.4 <u>49.5</u>	F	35.4 <u>34.9</u>	48.6 <u>53.1</u>	F	35.1	47.8 <u>48.1</u>	F
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	31.9	34.9	D	31.9 <u>31.8</u>	35.9 <u>36.0</u>	E	31.9	35.9 <u>36.0</u>	E
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.1 <u>34.0</u>	19.5 <u>19.6</u>	B	33.8 <u>33.7</u>	21.2 <u>21.7</u>	C	33.6	21.5	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.5 <u>23.3</u>	30.2 <u>30.1</u>	D	23.6	29.4 <u>29.7</u>	D	23.5 <u>23.6</u>	29.4 <u>29.4</u>	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	24.2	20.8 <u>20.9</u>	C	24.2 <u>24.1</u>	23.5 <u>24.4</u>	C	24.2	23.5 <u>24.2</u>	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	39.3 <u>39.5</u>	19.8 <u>20.2</u>	B C	37.5 <u>37.2</u>	29.8 <u>32.3</u>	D	38.0 <u>37.4</u>	28.8 <u>29.9</u>	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.4	29.2	D	28.4 <u>28.3</u>	28.9 <u>29.2</u>	D	28.3 <u>28.4</u>	29.1 <u>29.3</u>	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	39.1	20.0	C	39.0	20.4	C	39.0 <u>39.1</u>	18.8	B
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.1	33.2 <u>33.3</u>	D	33.1	33.0 <u>33.5</u>	D	33.4 <u>33.2</u>	33.3 <u>33.1</u>	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.7	16.9 <u>17.2</u>	B	31.8 <u>31.7</u>	17.6 <u>17.4</u>	B	31.8 <u>31.9</u>	17.4 <u>17.3</u>	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	32.0	11.0	B	32.0	10.8 <u>11.5</u>	B	32.0	11.0 <u>11.5</u>	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	34.7 <u>34.6</u>	25.8 <u>26.1</u>	C	9.0 <u>9.3</u>	104.9 <u>118.7</u>	F	34.0 <u>33.9</u>	30.1 <u>30.4</u>	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.3 <u>41.5</u>	5.6 <u>5.3</u>	A	5.8 <u>39.8</u>	74.7 <u>18.8</u>	F B	40.0	16.3 <u>16.5</u>	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4	20.4 <u>20.3</u>	C	14.2 <u>13.3</u>	59.7 <u>65.3</u>	F	28.5 <u>27.7</u>	27.3 <u>28.5</u>	C D
Note: Significant Impact									

Table 21-10

Phase 1A (2018) Highway Level of Service Summary With Mitigation
Saturday Midday Non-Game Day

Mainlines	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.1	44.2 43.9	E	37.6 37.4	36.9 41.4	E	37.1 37.2	44.4 43.9	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	38.4 38.0	27.0 27.5	C	4.9 37.6	407.0 32.1	F D	37.7 37.6	32.2	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	43.8 43.9	37.8 37.3	E	37.7 43.2	48.4 39.8	F E	43.0 42.7	40.2	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.5 38.6	35.5 35.4	E	38.4 38.5	36.4 36.3	E	38.5	36.4 36.3	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	40.9 40.8	28.7 28.9	D	40.8 40.6	30.4 31.8	D	40.6	34.5 31.9	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	37.1	27.4 27.4	C	37.3 36.9	20.6 27.8	C	37.4 37.0	26.6 27.5	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	33.1	30.1	D	26.0 28.5	39.4 35.5	E	33.4 33.0	31.4	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.0 33.9	20.4	C	33.8 33.6	49.8 22.0	B C	33.4	21.8 22.1	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.4	36.2 36.7	E	23.4	35.6 35.7	E	23.5 23.4	35.0 35.4	E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	26.0	17.7 17.9	B	21.5 25.7	25.8 21.0	C	25.9 25.8	20.3 21.5	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	43.4	43.4 13.3	B	42.3 41.5	46.3 22.8	B C	41.8 41.9	22.6 23.0	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.1	36.6	E	28.4 28.0	36.6 36.0	E	28.4 28.0	36.4 36.3	E
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	40.2	7.0 6.9	A	39.7 39.9	7.3	A	40.0 39.7	7.3	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3	32.2	D	33.3	34.9 32.4	D	33.4 33.3	32.0 32.3	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.3	11.7	B	31.2 23.6	11.5 14.0	B	31.3	11.7	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	39.3 39.2	9.1	A	39.6 39.1	8.4 9.0	A	39.6 39.1	9.0 9.3	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	29.7 29.6	25.4 25.6	C	3.7 5.4	434.0 143.4	F	29.2	30.0 30.5	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	43.5 43.4	6.9 7.2	A	0.9 26.6	498.6 24.8	F C	42.7 42.6	46.4 16.2	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.0	20.5 19.8	C B	4.4 4.7	460.5 163.5	F	25.0 24.1	35.3 36.2	E
Note: Significant Impact									

Table 21-11
Phase 1A (2018) Highway Level of Service Summary With Mitigation
Weekday Pregame

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	38.1 38.0	37.6 38.9	E	38.3 38.0	34.8 39.6	D E	38.4 38.0	38.7 39.3	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.3 39.2	26.2 26.1	C	39.2 39.3	28.0 27.8	D C	39.3 39.3	28.0	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.4 44.3	33.9	D	44.5	33.8 34.3	D	44.5	33.8 34.1	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.4	35.5	E	38.0 38.6	34.0 33.4	D	38.7 38.6	33.3 33.5	D
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	39.3 32.9	31.3 37.2	D E	41.4 36.7	25.7 37.5	G E	35.3 36.2	34.8 37.2	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.0 39.9	42.4 45.3	E E	40.2 39.9	40.1 46.7	E E	40.0 39.9	43.6 44.2	E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	8.6 9.1	119.5 113.3	F	4.5 21.4	140.4 53.0	F	7.2 12.6	131.0 88.2	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.5 34.4	15.7	B	34.7 34.0	15.0 19.2	B	34.3 34.1	15.4 17.9	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.5	30.6 30.4	D	23.7 23.5	29.7 28.7	D	23.6 23.4	30.1 29.4	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	25.1 25.0	20.2 20.7	C	3.6 25.3	39.5 15.2	E B	25.3	12.7 15.0	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	38.8 39.3	19.8 21.1	B C	38.1 37.5	24.6 31.2	C D	37.7 37.8	27.4 27.8	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.8 28.9	24.5 24.4	C	28.7 28.9	24.8 25.1	C	28.8 28.7	24.8 25.1	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.4 38.6	25.5 25.6	C	38.5 38.4	26.0 26.5	C	38.4 38.5	25.4 25.5	C
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7	23.7 23.9	C	33.8 33.3	18.8 30.1	B D	33.9 33.4	21.6 27.4	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.3 31.7	10.4 11.1	B	29.7 32.5	8.8 12.5	A B	30.6 32.1	9.6 11.8	A B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0	8.8	A	31.0 30.9	6.5 10.0	A B	30.9	10.2 9.7	B A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	9.0 13.9	88.5 73.7	F	5.8 13.3	120.7 85.6	F	37.1 37.3	26.4	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.4 41.5	11.4	B	4.0 41.0	126.7 17.3	F B	41.1 41.2	16.1 15.8	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	6.1 6.0	180.3 180.2	F	1.6 9.0	223.3 153.1	F	6.1 8.1	178.5 162.6	F
Note: Significant Impact									

Table 21-12

Phase 1A (2018) Highway Level of Service Summary With Mitigation
Weekend Pregame

Mainlines	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	35.6 35.4	40.0 43.6	E	35.8 35.4	36.2 43.2	E	35.4 35.3	42.5 44.1	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	49.4 35.6	50.8 32.9	F D	3.4 35.2	411.4 33.4	F D	35.3 35.3	33.4 33.5	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1	33.6 33.4	D	43.4 43.9	30.7 33.5	D	43.9	33.4	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	35.6	38.7 38.6	E	35.8 35.7	36.7 36.8	E	35.8 35.7	36.7 36.8	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	46.9 46.8	24.7 25.6	C	46.9 46.8	22.7 25.8	C	46.7	27.7 27.2	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	39.0 38.8	25.2 31.9	C D	39.0 38.8	22.8 32.2	C D	38.9	29.8 28.6	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	34.0 34.0	29.5	D	6.3 9.5	405.8 84.0	F	27.6 33.9	36.3 30.5	E D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.8	13.5	B	34.8 34.9	11.2 13.2	B	34.5 34.6	14.2 14.4	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.5	33.5	D	23.2 23.4	35.4 34.0	E D	23.2 23.3	34.1 35.0	D E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	31.3 31.2	45.8 16.0	B	31.3 31.5	30.2 10.4	D B	31.5 31.6	40.6 10.1	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	35.3 35.1	13.2 16.7	B	34.7 34.0	17.8 26.3	B C	33.7 34.2	25.3 22.7	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.2	36.2 36.1	E	28.4 27.7	36.5 37.5	E	27.4 28.0	37.4 37.0	E
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	39.6 39.7	9.0	A	39.7	9.4	A	39.7	7.2 9.4	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.2 33.3	18.5	B	33.4 33.3	15.2 16.0	B	33.3	18.0 18.5	B
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	27.2	17.7	B	26.6 26.9	15.2 15.8	B	27.2	18.3 18.1	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	38.9	9.4 9.6	A	38.9 38.8	6.4 7.9	A	38.9 38.8	9.9 9.6	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	6.2 8.9	120.1 104.9	F	4.6 10.5	122.4 101.7	F	8.7 34.6	112.2 27.7	F C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	4.7 43.5	403.6 15.1	F B	0.8 42.1	226.2 21.1	F C	42.4 42.1	49.7 20.4	B C
Ramp from Whitestone Expressway SB to Northern Boulevard WB	15.7 20.9	72.7 55.2	F	2.4 5.3	208.5 151.7	F	7.8 21.2	157.4 60.9	F
Note: Significant Impact									

Table 21-13
Phase 1A (2018) Highway Level of Service Summary With Mitigation
Weekend Postgame

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	29.0 29.1	58.4 58.5	F	29.3 29.3	56.2 54.7	F	29.3 29.2	56.1 56.2	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	35.7	28.4 28.6	D	35.6 34.3	31.4 32.0	D	35.5 35.6	31.4 31.0	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	42.9 42.8	34.9 34.7	D	43.4 42.8	35.5 36.1	E	44.4 43.7	35.0 35.6	D E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.9 35.0	35.1 35.2	E	35.0	35.9	E	34.9	36.0	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	47.3 47.4	22.9 23.0	C	47.3 47.0	24.4 25.7	C	47.0	25.4 25.0	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	38.8	34.3 34.9	D	38.9 38.7	31.7 35.9	D E	38.7	36.3 36.0	E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	29.4	28.6	D	29.4 29.3	29.4 29.5	D	29.4	29.4 29.5	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.4 33.5	24.2 24.4	C	33.6 33.5	24.3 23.2	C	33.4 32.8	25.0 22.7	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.3 23.4	33.2 32.1	D	23.5	33.2 29.1	D	23.5 23.4	32.9 33.4	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	31.3	11.5 11.9	B	31.2 31.1	13.3 13.8	B	31.2 31.1	13.4 14.1	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	26.5	29.7 31.0	D	26.4 25.3	39.8 44.0	E	24.2 25.4	47.3 43.1	F E
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.6 28.8	27.4 27.2	C	28.4 28.5	27.5 24.7	C	27.8 28.3	28.6 27.5	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	39.8 39.6	7.4 7.7	A	39.7	7.4	A	39.7	7.3 7.6	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	32.8 32.9	27.2 27.5	C	32.9	27.2 22.0	C	32.9 32.8	27.2 26.9	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	25.0 25.1	19.1 19.2	B	25.0 25.1	19.7 19.9	B	25.0	19.2 19.6	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	38.1	6.6 6.4	A	38.2 38.1	5.7 6.0	A	38.2 38.0	5.8 6.8	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	35.5 35.2	28.1 28.4	D	8.7 8.1	403.8 130.3	F	11.9 34.1	100.9 33.1	F D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.8 41.9	9.7 9.6	A	3.9 5.9	420.5 97.7	F	40.3 40.5	23.4 23.2	C
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.8	14.9 14.8	B	30.0 26.3	19.9 20.3	B C	30.4 30.5	19.4 19.8	B
Note: Significant Impact									

Table 21-14

Phase 1B (2028) Highway Level of Service Summary With Mitigation
Weekday AM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	36.6 36.5	40.2	E	37.2 36.9	32.4 36.7	D F	36.0 36.2	42.3 41.6	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.9 48.7	22.4 22.5	C	48.2 24.9	25.0 24.9	C	48.3 48.2	24.7 25.0	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1 43.9	37.7	E	43.9 43.7	39.0 38.8	E	43.5 43.7	39.3 38.9	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.3 34.4	49.8 49.6	F	31.1 32.6	58.3 56.2	F	28.6 29.0	63.0 61.9	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	37.9 39.3	28.5 27.6	D C	35.4 35.6	36.3	E	39.3 39.1	29.6 29.5	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.0 45.1	24.1 23.9	C	45.1 44.7	18.8 26.2	B C	45.1 44.9	24.8 25.0	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	26.6 25.6	46.2 47.7	F	8.9 8.6	126.7 125.4	F	25.8 26.5	49.1 47.9	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.1 34.2	19.5 19.7	B	34.5 34.4	18.4 17.1	B	33.8	20.9	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	25.9	26.8 26.5	C	26.8 26.4	30.2 27.8	D C	26.6 26.4	27.5 28.5	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.3 23.2	32.5 33.2	D	23.3 23.1	35.7 36.3	E	23.2	36.8 36.5	E
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.6 33.5	14.1 14.2	B	33.4 32.8	12.2 17.7	B	33.4 33.3	15.9 16.8	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.5 28.6	22.8	C	28.3 28.4	24.7 23.4	C	28.3 28.4	24.6 23.3	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	5.7	A	41.5 41.6	6.2 6.3	A	41.6 41.5	6.3	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3	31.7 32.1	D	33.7	25.6 23.7	C	33.3 33.4	32.2 31.8	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.7 29.6	18.0 17.7	B	29.1 13.9	15.3 22.3	B C	29.8 29.7	19.0 18.7	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.7	29.1 28.9	D	29.9	23.3 23.7	C	29.7 29.6	29.5 29.9	D
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.5 37.3	20.7 20.9	C	4.1 5.9	124.7 133.3	F	37.2 37.0	23.5 24.1	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.6	7.7	A	4.1 27.3	193.6 20.4	F C	44.0 43.9	13.0 13.7	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	9.6 6.1	80.0 120.7	F	4.0 3.9	195.4 197.3	F	7.7 14.2	125.2 72.7	F
Note: Significant Impact									

Table 21-15
Phase 1B (2028) Highway Level of Service Summary With Mitigation
Weekday Midday Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.2	35.2 34.9	E D	37.5 37.3	30.3 32.7	D	36.9 37.0	39.5 38.9	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	43.0	19.7	B	0.4 5.5	160.4 98.4	F	42.4 42.3	24.7 24.9	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	45.1 45.3	28.1 28.0	D C	40.7 44.5	36.9 34.2	E D	45.0 44.9	30.3 30.1	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.9	30.9	D	20.5 37.9	53.4 36.6	F E	38.0	36.4	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	38.4	27.1	C	38.3 38.2	30.7 31.9	D	38.1 38.2	32.0 32.2	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.4	20.9 21.6	C	45.8 45.3	16.4 21.2	B C	45.3	23.3 23.9	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	34.3	24.5 24.6	C	12.2 16.0	67.5 53.3	F	34.3 34.2	26.6	C
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.5	16.7 16.5	B	34.0	15.4 17.9	B	33.8 33.7	19.4 20.3	B C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.6	27.3 28.1	C D	25.6 24.5	28.1 29.7	D	24.5 24.4	29.2 30.0	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.6 23.7	20.4 19.8	C B	3.9 23.3	111.8 29.5	F D	23.3 23.4	28.9 28.6	D
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	44.9	11.1 11.0	B	44.7 43.5	11.7 16.3	B	43.5	17.9 18.2	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.4	24.7	C	28.0 27.9	26.9 27.8	C	27.9 27.8	27.5 28.1	C D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.6	7.2	A	41.5	7.7 8.1	A	41.5 41.4	8.2 8.1	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7	28.1 27.9	D C	33.7	26.1 10.8	G B	33.5 33.7	28.8	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	28.8 28.7	11.3	B	28.8 29.1	11.7 12.1	B	29.5 29.3	12.8 12.5	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.3	9.9 9.8	A	31.2	8.1 10.8	A B	31.2 31.1	10.5 11.1	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	32.1 31.9	21.6 22.1	C	3.0 4.3	134.2 145.6	F	18.0 31.4	56.0 30.2	F D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	42.4 42.3	7.7 7.8	A	0.1 1.5	247.0 209.3	F	18.6 40.8	37.2 19.5	E B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.8 30.6	14.0 14.5	B	1.6 3.4	208.0 202.3	F	21.5 16.3	40.7 53.3	E E
Note: Significant Impact									

Table 21-16

Phase 1B (2028) Highway Level of Service Summary With Mitigation
Weekday PM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	33.0	45.4	F	33.5 33.3	35.3 41.6	E	33.0 33.1	46.2 43.7	F E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	37.6	25.5 25.7	C	4.7 17.5	452.0 53.8	F	37.3 37.2	30.7 30.8	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.5	33.8 33.6	D	34.4 43.2	54.2 37.4	F E	44.2 43.4	35.6 37.0	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	33.6 33.5	41.1 41.2	E	33.0	46.5	F	33.0	46.5	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	25.4 38.5	48.9 33.5	F D	29.0 38.2	48.9 39.5	F E	27.9 38.5	54.4 38.1	F E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	35.0 35.1	50.4 49.9	F	35.4 35.0	34.4 48.3	D E	35.4 35.0	48.9 46.1	F
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	34.9 31.8	35.9	E	20.3 26.7	56.0 43.7	F	34.8 31.7	37.7 37.8	E
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.9	20.2 20.1	C	33.4 33.1	20.8 24.9	C	33.4 32.8	24.9 25.1	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.4 23.1	23.9 25.2	C	25.5 24.2	28.6 26.0	D C	24.3 24.2	25.6 25.9	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	24.3	17.6 19.3	B	13.2 24.1	48.7 27.2	F C	24.0 23.2	28.9 27.4	D C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	38.8 39.0	20.6 21.1	C	47.0 34.0	69.4 28.7	F D	34.0 36.0	30.6 30.4	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.4	23.4 22.9	C	26.3 22.2	30.5 33.9	D	6.9 23.9	148.4 32.9	F D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.9 39.0	20.8	C	3.4 39.0	58.9 20.6	F C	39.2	48.6 19.2	B
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.0 33.1	34.4 34.0	D	33.0	35.0 35.4	E	32.9	35.8 36.0	E
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.7	16.7 16.8	B	31.7 31.8	16.8 17.3	B	31.8	17.9 17.5	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	32.0 31.9	11.1 11.0	B	32.0	10.5 12.3	B	32.0	11.6 12.1	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	34.6 34.5	26.0 26.3	C	4.9 6.0	437.9 143.3	F	33.8 33.4	32.0 33.2	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.4	5.4 5.5	A	0.4 2.2	224.7 192.5	F	39.9	48.0 18.1	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4 30.1	20.8 21.2	C	3.9 6.5	405.3 143.5	F	28.8 26.3	32.8 36.2	D E
Note: Significant Impact									

Table 21-17
Phase 1B (2028) Highway Level of Service Summary With Mitigation
Saturday Midday Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.1	44.1 44.0	E	38.1 37.9	29.4 33.4	D	37.1 37.2	44.0 43.5	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	38.1	27.7 28.2	C D	0.5 4.2	184.0 113.8	F	37.4 37.5	34.4 34.1	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	43.6 43.9	39.1 38.3	E	33.1 39.3	56.2 45.7	F	42.3 42.6	42.4 42.6	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.5	36.4 36.3	E	37.7 41.9	42.0 41.9	E	37.6 37.7	42.0 41.8	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	40.7 37.7	30.3 32.6	D	40.5 40.3	32.7 34.9	D	40.3 36.0	36.1 36.0	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	37.1	27.3	C	37.5 37.2	17.6 22.6	B C	37.0	29.0 29.7	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	33.1 33.0	30.8 30.9	D	7.6 7.9	116.5 115.8	F	33.0	33.2	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.9	20.8 20.9	C	33.9 33.8	15.7 18.8	B	33.1 32.9	24.6 25.6	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.3 22.2	30.1 30.5	D	24.8 23.4	34.5 31.9	D	23.3 23.2	31.9 32.9	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	26.0 26.1	16.2 15.9	B	17.5 18.3	35.6 35.2	E	25.7 25.8	23.5 22.7	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	43.5	13.3 13.5	B	42.2 37.3	12.6 18.9	B	41.4 41.7	21.9 22.1	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.0	29.0	D	25.9 26.5	34.7 34.1	D	26.1 25.7	34.7 35.0	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	40.1	6.9 7.0	A	39.8 39.7	8.1 7.8	A	39.9 39.7	7.9 8.0	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.2 33.4	33.0 32.8	D	33.6 33.5	26.2 27.2	C	33.2	34.4 34.7	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.4	11.7	B	5.7 30.3	23.7 10.1	C B	31.5	12.2 12.1	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	39.5 39.1	9.4 9.3	A	39.3 39.0	7.6 8.3	A	39.1 39.0	9.5 10.0	A B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	29.6	25.9	C	2.9 3.7	126.6 146.5	F	29.4 28.9	33.2 34.1	D
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	43.4 43.3	7.1 7.3	A	0.2 0.7	235.2 227.5	F	42.6	20.5 20.8	C
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.0 30.2	20.7 20.3	C	-3.5 3.0	200.2 207.9	F	11.2 14.2	95.7 76.2	F
Note: Significant Impact									

Table 21-18

Phase 1B (2028) Highway Level of Service Summary With Mitigation
Weekday Pregame

Mainlines	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	38.3 38.0	35.3 38.4	E	38.2 38.0	37.4 39.5	E	38.1 38.6	38.8 36.6	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.2 39.3	27.0	C	38.8 31.0	30.9	D	38.9 30.8	30.8	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.4	34.7 34.6	D	44.1 44.2	36.4 36.3	E	44.2 44.4	36.4 36.2	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.4	36.3 36.4	E	38.2 38.5	38.6 38.5	E	38.2 38.6	38.5 38.6	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	23.1 33.5	52.3 35.2	F	32.8 35.6	43.7 41.1	E	35.2 31.1	40.4 44.3	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.0 39.9	41.6 47.1	E	39.9 45.7	43.7 45.7	E	40.0 43.4	43.3 43.4	E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	8.7 7.8	120.0 121.1	F	9.8 114.6	116.4 114.6	F	8.8 8.1	123.0 128.8	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.3 34.5	45.5 15.4	B	34.3 34.1	47.9 18.0	B	34.0 17.4	47.5 17.4	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.1	26.0 25.2	C	23.0	26.4 28.1	C	23.0 22.8	26.7 28.5	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	25.0 25.1	19.9	B	25.3	44.2 13.8	B	25.3	43.7 14.4	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	38.3 38.8	49.6 21.4	B	36.6 23.9	26.5 43.0	C	37.5 37.6	27.3 26.2	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	27.9 28.9	49.9 19.4	B	27.1 21.5	23.0 28.4	C	28.3 27.9	22.4 22.5	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.6 38.5	26.2 26.4	C	38.3	26.8 27.0	C	38.4	25.2 25.4	C
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7 33.9	23.8 23.2	C	33.5 33.6	25.3 25.6	C	33.5 33.8	24.5 23.4	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.4 31.5	40.6 10.8	B	18.5 32.2	47.2 11.8	B	31.8	11.2	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0 31.1	9.5 8.8	A	30.9 30.8	40.0 10.2	B	30.9	40.1 10.3	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	6.7 10.6	120.8 92.2	F	6.9 18.5	114.1 59.0	F	37.0 37.3	25.4 25.6	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.4 41.2	42.1 11.9	B	45.7 35.0	49.8 23.9	F	40.5 40.6	49.8 20.0	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	6.1 3.9	179.2 189.6	F	8.7 157.8	159.1 157.8	F	8.0 7.6	165.3 168.5	F
Note: Significant Impact									

Table 21-19
Phase 1B (2028) Highway Level of Service Summary With Mitigation
Weekend Pregame

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	35.8 35.3	37.1 43.1	E	35.9 35.5	34.1 40.8	D	35.5 35.6	41.2 38.6	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	45.5 35.6	63.6 33.7	F D	4.4 23.7	422.7 49.7	F	26.4 23.3	44.5 48.1	E
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.0 44.2	36.9 34.4	E D	40.5 43.3	36.4 36.2	E	43.7 34.5	36.4 34.5	E D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	35.5	39.7	E	35.2 35.0	42.4 42.5	E	35.3	42.4	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	46.8 46.7	25.2 26.5	C	46.7 46.6	27.3 30.8	G D	46.6 46.7	30.3 29.3	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	39.4 38.6	23.0 31.6	E D	39.0 38.7	49.8 31.9	B D	39.4 38.8	27.4 23.7	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	34.0 33.9	30.2 30.3	D	14.8 24.9	61.2 41.0	F E	33.4 20.3	32.4 50.8	D E
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.9 34.7	13.7	B	34.6	12.6 15.4	B	34.4 34.3	15.5 15.2	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	24.7 21.8	28.9 29.3	E D	32.5 22.2	34.1 34.7	D	22.3	34.4 35.2	D E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	31.4	14.9	B	28.9 31.0	42.0 11.4	B	31.2	40.9 11.2	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	35.5 35.3	11.3 16.5	B	2.3 33.0	60.0 24.7	F C	34.7 34.5	20.4 22.3	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.2 28.0	28.4 28.2	D	25.4 19.6	34.8 43.9	D E	24.6 22.1	35.1 40.1	E
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	39.7 39.6	9.3 9.1	A	40.7 39.6	27.5 10.3	G B	39.6 39.7	7.5 9.5	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3 33.2	18.6	B	33.2 33.1	17.9 18.5	B	33.2 33.1	19.0 18.5	B
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	27.3 27.2	17.7 18.2	B	27.4 27.3	17.7 19.0	B	27.3 27.4	19.6 18.2	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	38.9 38.7	9.5	A	38.8 38.7	8.4 9.4	A	38.8 38.9	9.6 9.5	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	4.5 6.4	149.4 128.4	F	3.5 6.4	428.2 127.0	F	20.4 23.8	54.0 37.2	F E
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	2.7 43.3	146.7 15.6	F B	4.5 14.1	205.7 61.9	F	9.2 7.8	66.4 70.7	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	14.3 16.8	84.7 70.1	F	6.5 10.2	436.7 124.9	F	14.4 7.9	99.8 165.8	F
Note: Significant Impact									

Table 21-20

Phase 1B (2028) Highway Level of Service Summary With Mitigation
Weekend Postgame

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	29.2	56.8 <u>57.1</u>	F	29.2 <u>29.3</u>	56.7	F	29.2 <u>29.3</u>	57.2 <u>56.6</u>	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	35.7	29.5 <u>29.2</u>	D	21.4 <u>35.3</u>	46.9 <u>33.0</u>	F <u>D</u>	35.4	33.0 <u>32.7</u>	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	43.0 <u>42.6</u>	35.7 <u>36.2</u>	E	42.2 <u>41.6</u>	38.6 <u>38.4</u>	E	43.0	37.5 <u>37.7</u>	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.8 <u>34.9</u>	36.2	E	34.5 <u>40.2</u>	40.0 <u>40.2</u>	E	34.6	40.1 <u>39.9</u>	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	47.2	23.4 <u>23.6</u>	C	47.1 <u>46.9</u>	24.3 <u>25.0</u>	C	46.9	25.6 <u>25.5</u>	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	38.8	34.8 <u>35.0</u>	D	38.8 <u>38.7</u>	29.9 <u>36.0</u>	D <u>E</u>	38.5 <u>38.8</u>	39.0 <u>35.9</u>	E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	29.4 <u>29.3</u>	29.3	D	29.3	30.9	D	29.4 <u>29.3</u>	30.9 <u>31.0</u>	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.3 <u>33.4</u>	25.2 <u>25.0</u>	C	33.5 <u>33.2</u>	24.5 <u>27.1</u>	C	32.4 <u>32.3</u>	30.9 <u>31.9</u>	D
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	21.9 <u>22.0</u>	28.5 <u>27.8</u>	D <u>C</u>	22.8 <u>22.9</u>	29.6 <u>29.0</u>	D	22.6 <u>22.7</u>	29.6 <u>30.3</u>	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	31.4 <u>31.5</u>	10.8 <u>10.4</u>	B	30.5 <u>30.6</u>	19.5 <u>19.4</u>	B	30.6	19.7 <u>19.2</u>	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	26.4	30.9 <u>31.1</u>	D	26.4 <u>26.0</u>	27.2 <u>32.1</u>	C <u>D</u>	26.1 <u>26.2</u>	35.3 <u>32.8</u>	E <u>D</u>
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.7	21.1 <u>21.0</u>	C	27.8 <u>27.3</u>	23.3	C	27.4 <u>27.1</u>	23.3 <u>24.2</u>	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	39.7	7.3 <u>7.4</u>	A	39.7 <u>39.6</u>	8.0 <u>8.2</u>	A	39.7	8.0 <u>7.8</u>	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	32.8	28.0 <u>27.7</u>	C	32.8	28.7 <u>28.8</u>	D	32.7	28.8 <u>28.7</u>	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	25.1 <u>25.0</u>	19.3 <u>19.4</u>	B	25.3 <u>25.1</u>	23.0 <u>23.9</u>	C	25.2 <u>25.3</u>	23.2 <u>23.3</u>	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	38.2 <u>38.1</u>	6.8 <u>6.6</u>	A	38.2	6.5 <u>7.2</u>	A	38.0	7.6 <u>7.9</u>	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	35.4	28.3 <u>28.5</u>	D	6.9 <u>9.5</u>	114.7 <u>109.3</u>	F	10.7 <u>34.7</u>	111.3 <u>32.4</u>	F <u>D</u>
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.9	9.9 <u>9.6</u>	A	4.3 <u>2.6</u>	189.3 <u>170.8</u>	F	40.4 <u>40.3</u>	26.8 <u>26.4</u>	C
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.8 <u>30.7</u>	15.3	B	22.1 <u>25.2</u>	31.6 <u>29.8</u>	D	29.7 <u>29.5</u>	24.5 <u>24.4</u>	C
Note: Significant Impact									

Table 21-21
Phase 2 (2032) Highway Level of Service Summary With Mitigation
Weekday AM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	36.5	40.5 40.6	E	37.8 37.5	28.8 32.1	D	36.0 36.5	42.5 41.3	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	48.8	22.7 22.8	C	6.7 48.0	71.6 26.1	F C	48.4 48.0	25.9 26.0	C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.1 44.0	38.1 37.9	E	41.2 43.5	39.7 40.3	E	43.3 43.4	40.5 40.3	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	34.3 34.2	50.1 50.3	F	17.1 17.3	94.6 94.1	F	17.6 17.4	93.0 93.4	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	38.8 39.3	28.6 27.8	D C	35.4 37.0	33.2 30.4	D	33.9 38.6	36.5 35.8	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.1 44.9	24.7 24.6	C	45.3 44.7	15.5 23.7	B C	44.9 44.8	25.5 25.9	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	26.3 26.6	47.2 46.7	F	20.3 5.2	57.9 144.1	F	26.6 15.1	46.7 84.4	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.2 34.1	19.7 19.9	B	34.2 34.6	20.4 16.9	G B	33.8 33.9	21.6 20.8	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	25.0 25.8	26.5 26.2	C	26.5 26.8	27.2 26.1	C	24.0 26.8	28.4 25.6	D C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.3 23.2	31.8 32.8	D	11.6 14.8	54.1 53.2	F	23.2 23.1	34.7 35.8	D E
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	33.6	14.1 14.0	B	33.6 32.8	9.8 15.1	A B	33.0 33.4	16.2 17.0	B
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.4	23.1 23.0	C	27.9 28.0	27.5 25.9	C	27.0 27.9	28.6 25.8	D C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5 41.7	5.8 5.7	A	41.5	6.7	A	41.6 41.7	6.9 6.6	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.4 33.3	31.8 32.0	D	33.3 33.8	30.9 21.0	D C	33.3 33.5	32.2 28.8	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	29.6	18.1 18.0	B	30.3 28.7	19.6 13.9	B	29.4 29.7	20.5 18.4	C B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	29.7	28.9 29.2	D	30.0	24.6 17.5	G B	29.8	27.4 27.3	C
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	37.2	21.1 21.0	C	2.7 4.7	132.3 143.3	F	37.1 36.9	25.1 26.2	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	44.2 44.6	7.8	A	0.1 4.8	225.6 108.8	F	43.7 43.8	15.0 15.6	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	6.0 9.3	128.1 85.8	F	5.2 2.0	105.4 217.9	F	29.0 6.0	26.6 176.0	C E
Note: Significant Impact									

Table 21-22
Phase 2 (2032) Highway Level of Service Summary
Weekday Midday Non-Game Day

Mainlines	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.2	35.2 35.0	E	38.0 37.8	20.2 24.9	C	37.2 37.1	34.9 36.5	D E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	43.0 42.9	49.9 19.7	B	0.0 1.4	491.4 140.9	F	24.4 42.2	37.5 25.8	E C
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	45.1	28.3 28.6	D	33.0 38.2	45.9 43.1	E	44.5 44.8	31.9 31.5	D
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.8	31.4	D	9.2 14.3	110.8 77.5	F	12.9 25.4	95.8 56.4	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	38.5	26.8	C	38.3 38.4	27.5 29.1	C D	38.4 38.0	34.1 35.5	D E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	45.4	21.9 21.8	C	46.0 45.3	12.4 15.5	B	45.2	23.4 24.9	C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	34.3	24.8	C	5.7 4.8	110.9 131.1	F	30.3 13.5	30.7 63.4	D E
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.4	16.8	B	34.0 34.2	12.8	B	33.7 33.6	20.6 21.2	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.5 23.6	28.5 27.8	D C	9.8 24.8	53.6 28.0	F C	10.5 24.7	58.4 30.8	F D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	23.6	20.0	B C	2.9	93.4 120.5	F	23.2 22.7	30.6 33.8	D
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	45.0 45.2	11.0 11.1	B	44.8 44.1	8.5 13.2	A B	3.4 33.9	61.0 22.8	F C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.4 28.3	24.3	C	27.5 26.7	27.7 29.0	G D	26.4 23.2	31.6 36.8	D E
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	41.5	7.4 7.3	A	41.5	8.3 8.5	A	27.3 41.5	13.4 8.3	B A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7	28.2 28.4	D	33.6 33.7	20.7 18.2	G B	33.5	29.3 27.9	D C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	28.7 28.5	11.4 11.1	B	0.1	48.0 57.2	F	24.8 29.5	15.7 13.2	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.2 31.3	10.0 10.2	B	31.3 31.2	6.2 6.9	A	31.3 31.2	40.6 11.1	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	32.0	22.4 22.2	C	4.5 1.7	144.0 150.4	F	5.2 29.3	135.9 36.5	F E
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	42.4 42.3	7.6	A	0.0 0.5	241.6 226.8	F	11.2 40.8	55.2 21.6	F C
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.9 30.3	14.5	B	1.2 1.4	226.5 221.6	F	5.8 4.1	152.2 194.1	F
Note: Significant Impact									

Table 21-23
Phase 2 (2032) Highway Level of Service Summary With Mitigation
Weekday PM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	33.0	45.4 45.0	F E	33.6 33.2	35.8 41.2	E	32.9 32.9	47.6 47.5	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	37.7 37.6	25.8 25.6	C	0.4 3.0	194.9 137.1	F	36.9 37.2	32.0 31.4	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.2 44.1	34.1 34.4	D	35.3 39.8	54.0 42.8	E	43.9 37.4	37.2 37.4	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	33.7 33.6	39.8	E	22.4 32.7	67.9 49.2	F	32.6 32.7	49.2	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	17.3 10.6	69.7 107.4	F	38.9 35.6	36.4 35.6	E	38.6 38.8	41.5 40.8	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	35.1 35.0	50.1 50.5	F	35.5 35.1	36.4 46.3	E	35.1 34.9	52.4 51.7	F
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	31.8	36.2	E	11.2 17.4	89.6 66.4	F	31.6 31.8	38.9 38.7	E
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.1	20.0 19.4	B	33.3 33.4	18.3 20.3	B C	33.0 32.8	32.9 26.7	D C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.8 23.6	19.1 21.1	B C	10.4 24.6	44.1 23.1	F C	21.1 24.6	26.2 22.6	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	24.3 24.4	18.1 15.3	B	7.2 8.1	58.7 39.2	F E	23.8 23.9	31.0 30.4	D
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	19.5 8.9	40.5 83.8	E	38.6 7.2	19.9 76.0	B E	35.2 36.3	31.9 30.6	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	14.9 6.1	41.2 84.2	E	24.6 6.6	29.2 115.9	D E	3.5 3.9	197.0 189.2	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.9 38.8	21.0	C	38.9 38.8	20.2 20.8	C	39.0 38.7	20.6 21.0	C
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.1	33.9 32.7	D	33.1 33.2	30.3 29.7	D	32.9 32.9	35.6 35.4	E
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.8 32.0	16.9 16.6	B	31.7 31.5	17.8 17.5	B	32.0 32.2	22.1 21.7	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	32.0	11.1 10.6	B	32.1 32.0	8.7 10.3	A B	31.9 32.1	12.0 11.4	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	34.8 31.7	25.8 28.7	C D	3.1 4.3	138.6 151.6	F	23.8 30.8	50.3 36.8	F E
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.4	5.4 5.5	A	0.0 1.0	235.0 227.5	F	40.0 39.7	19.3 19.8	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4	20.9 21.6	C	3.0 2.6	204.6 213.4	F	16.2 24.6	69.2 42.7	F E
Note: Significant Impact									

Table 21-24

Phase 2 (2032) Highway Level of Service Summary With Mitigation
Saturday Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.1	44.5 44.1	E	38.3	26.2 25.5	C	37.2	43.7 42.7	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	38.4 38.0	28.4 28.5	D	0.0 0.9	200.2 158.0	F	37.4 37.3	36.0 36.1	E
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	43.4	39.0	E	31.2 27.6	48.8 56.1	F	42.2 41.8	43.7 44.5	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.8	32.6	D	12.0 28.6	105.7 56.1	F	12.0 10.9	103.7 107.2	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	31.8 29.4	38.2 41.0	E	34.8 40.9	33.8 28.3	D	40.2 40.3	37.9 36.7	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	37.0 37.1	27.8	C	37.6 37.3	45.0 16.1	B	36.7 36.9	32.4 30.3	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	33.1 33.0	31.2	D	4.1 4.3	147.2 149.1	F	19.7 10.1	54.6 102.6	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.8	21.1 21.4	C	34.0 34.1	13.6 14.4	B	33.4 33.3	24.2 22.3	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.6 22.4	24.2 27.3	C	7.2 28.6	59.2 33.9	F D	9.4 9.3	59.0 60.4	F
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	26.1	13.5 13.4	B	4.7 7.5	77.9 80.6	F	25.6 23.6	20.9 21.3	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	43.5 43.2	13.3 13.6	B	43.4 43.0	9.5 11.9	A B	37.8 40.7	25.8 22.4	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.1 27.4	29.2 29.8	D	24.2 25.7	40.5 35.7	E	6.0 7.4	150.9 116.9	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	40.1	7.0 7.1	A	39.8 39.7	7.9 8.5	A	39.9 39.8	8.4 8.0	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3	32.7 35.5	D	33.7 33.8	22.7 20.6	C	33.3 33.4	34.8 25.6	D C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.4 31.3	11.7	B	30.6 30.1	10.8 10.1	B	32.5 31.7	14.9 12.5	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	39.3 39.0	8.9 9.1	A	39.6 39.4	5.2 6.5	A	39.1	9.1 8.9	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	29.6	25.9 26.2	C	1.8 2.1	141.2 135.5	F	7.4 18.5	130.4 59.5	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	43.3	7.3 7.5	A	0.0 0.4	243.5 234.4	F	32.8 42.6	28.3 22.7	D C
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4 30.3	21.0 20.9	C	1.5 2.0	214.8 212.6	F	6.4 6.1	171.0 170.5	F
Note: Significant Impact									

Table 21-25
Phase 2 (2032) Highway Level of Service Summary With Mitigation
Weekday Pregame

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	38.4 38.0	33.1 38.9	D E	38.3 38.2	35.4 37.7	E	38.3 38.2	35.0 38.0	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	39.1 39.2	27.5 27.4	C	26.2 38.7	42.5 32.0	E D	38.8 38.7	32.1 32.1	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.4	34.8 34.9	D	44.1	37.7 37.3	E	44.1 44.2	37.0 37.1	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	22.3 38.4	49.6 36.7	F E	37.7 37.5	41.6 42.0	E	37.7 37.4	41.6 42.1	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	32.4 39.6	34.1 31.6	D	41.5 31.8	29.9 31.8	D	40.2 40.9	34.4 34.9	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	40.1 39.8	39.8 48.3	E E	40.0 39.8	42.6 48.2	E E	40.2 39.9	38.1 45.1	E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	5.9 8.2	111.5 121.7	F	5.3 4.7	130.7 141.0	F	8.5 7.5	121.8 130.6	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.6 34.4	15.4 15.3	B	34.3 34.1	17.7 18.0	B	33.8 33.5	19.6 20.4	B C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.0 22.1	23.8 26.1	C	22.8	33.6	D	22.8 22.6	33.7 34.4	D
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	4.0 25.0	54.0 20.3	F C	22.1 13.6	16.6 27.6	B C	25.2 25.1	15.5 16.3	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	39.2 31.6	17.7 26.6	B C	37.1 36.9	25.2 28.9	C D	37.8 37.6	22.9 27.1	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.8 28.9	19.1 19.4	B	27.2 27.1	25.2 24.3	C	27.9 27.3	24.1 25.5	C
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.3 38.5	26.0 26.6	C	38.2 38.4	27.4 27.2	C	38.9 38.3	18.4 25.7	B C
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.7 33.8	22.2 22.4	C	33.7	20.9 20.6	C	33.7	24.0 22.9	C
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	30.2 31.6	10.3 10.8	B	31.6 31.1	11.8 11.1	B	32.4 32.0	13.2 12.4	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	31.0	8.4 9.9	A	31.0 30.9	7.0 5.3	A	30.9	9.7 9.9	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	4.6 10.6	126.3 95.1	F	6.1 12.5	119.6 87.5	F	36.9 37.2	26.3 27.2	C
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	5.1 41.6	51.9 12.1	F B	7.6 37.0	89.2 22.9	F C	40.7	20.5 20.7	C
Ramp from Whitestone Expressway SB to Northern Boulevard WB	1.3 6.2	191.4 177.4	F	2.9 1.3	205.3 221.0	F	8.0 7.5	163.5 166.1	F
Note: Significant Impact									

Table 21-26

Phase 2 (2032) Highway Level of Service Summary With Mitigation
Weekend Pregame

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	36.0 35.8	33.0 36.4	D E	36.2 36.0	29.3 33.3	D	35.7 35.5	37.0 40.7	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	3.4 35.5	141.4 34.0	F D	0.7 23.9	157.7 32.5	F D	32.7 35.1	39.6 37.7	E
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	38.6 43.7	45.9 35.3	F E	42.2 43.4	28.6 36.4	D E	43.5 43.7	36.5 36.1	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	35.5	40.2 40.1	E	42.3 34.4	92.8 47.8	F	48.2 34.4	82.2 47.9	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	46.9 46.8	25.2 25.9	C	46.7 27.7	28.1 27.7	D C	46.7 28.2	29.1 28.2	D
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	39.2 38.8	20.8 26.6	C	38.9 38.6	16.8 22.2	B C	39.1 39.0	18.7 25.0	B C
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	33.9	30.7	D	48.4 13.9	50.1 64.4	F	42.4 33.9	64.4 30.6	F D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.6 34.8	11.3 13.7	B	34.5 34.6	11.5 14.5	B	34.5 34.1	15.3 17.0	B
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	24.7 21.6	29.9	D	7.4 22.6	60.2 37.7	F E	11.0 22.5	62.3 38.3	F E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	31.6	15.3 14.9	B	28.5 27.7	10.0 13.8	A B	19.9 31.1	18.9 11.4	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	35.8 35.3	10.6 13.8	B	39.8 30.9	67.0 21.1	F C	0.3 27.8	120.0 29.0	F D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.2	28.3 28.4	D	11.8 10.8	70.3 77.0	F	6.8 15.0	122.4 52.8	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	39.6	9.4 9.3	A	2.7 39.7	46.0 10.2	F B	32.9 28.4	7.2 16.0	A B
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3 33.2	18.7 19.1	B	33.2	17.7 17.6	B	33.2	18.2 19.5	B
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	23.2 27.3	20.5 17.7	C B	14.1 27.4	28.4 19.9	D B	27.5	19.5 20.8	B C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	38.8	9.6 9.8	A	38.9 38.9	8.2 7.9	A	38.9 38.7	8.3 9.9	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	3.6 4.3	122.8 142.1	F	1.2 4.5	133.1 141.9	F	4.0 11.9	110.7 52.4	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	0.9 32.3	191.5 20.1	F C	0.2 5.0	235.7 127.6	F	4.9 17.1	81.1 46.7	F
Ramp from Whitestone Expressway SB to Northern Boulevard WB	16.7 15.8	71.4 75.1	F	8.1 6.7	98.0 116.8	F	3.9 28.1	127.7 41.6	F E
Note: Significant Impact									

Table 21-27
Phase 2 (2032) Highway Level of Service Summary With Mitigation
Weekend Postgame

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	29.0 29.2	59.3 57.1	F	29.9 29.5	42.6 50.6	E	29.3 56.7	55.6 56.7	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	35.7 35.6	29.2 29.0	D	0.4 6.3	179.4 98.5	F	35.3 34.1	34.5 34.1	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	42.8 43.0	36.7 36.5	E	39.2 39.4	62.7 45.8	F	43.2 39.2	38.4 39.2	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	35.0 34.8	36.5 36.6	E	33.6 33.8	45.0 44.7	E	33.8 33.9	44.7 44.5	E
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	47.2 47.3	23.6 23.8	C	47.2 47.0	24.4 25.2	C	47.0 26.6	25.8 26.6	C
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	38.8 38.7	34.5 34.9	D	39.3 38.5	21.4 32.1	C	38.5 37.5	37.5 32.1	E
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	29.4 29.3	29.7 29.6	D	16.8 15.9	62.7 52.3	F	29.2 29.3	32.0 32.1	D
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.4 33.5	24.6 21.9	C	33.4 33.2	18.6 23.4	B	32.3 32.1	29.0 32.1	D
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.0 21.9	28.7 25.4	D	19.7 23.0	35.3 31.9	E	18.4 23.0	37.0 30.9	E
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	31.4	11.4 10.8	B	11.1 12.1	44.7 27.4	E	30.7 30.4	18.9 21.1	B
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	26.4 26.5	30.3 29.7	D	27.2 26.4	16.4 24.1	B	12.7 15.6	52.4 46.3	F
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.7 28.4	21.3 19.3	C	27.3 26.3	26.6 26.9	C	22.3 24.3	31.4 29.3	D
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	39.6 39.7	7.5 7.4	A	39.6 39.7	9.0 8.5	A	39.7 8.7	8.8 8.7	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	32.8	28.6 22.8	D	32.9 32.8	29.0 28.5	D	32.7 29.4	29.5 29.4	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	25.0 25.1	19.8	B	25.3 25.2	23.5 23.1	C	25.4 24.1	23.1 24.1	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	38.4 38.2	6.3 5.9	A	38.2 5.4	5.5	A	38.2 38.0	7.0 7.8	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	35.5 35.4	28.1 28.4	D	3.2 5.0	129.3 146.3	F	10.8 32.7	104.9 35.8	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.9 41.7	9.7	A	0.0 1.1	227.9 199.2	F	19.7 40.7	39.5 22.1	E
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.8 29.4	15.4 14.6	B	3.7 3.8	132.4 131.8	F	29.7	28.2 28.4	D
Note: Significant Impact									

E. TRANSIT AND PEDESTRIANS

TRANSIT

As discussed in Chapter 14, “Transportation,” the proposed project would not result in any significant adverse transit impacts by the 2018 Phase 1A completion. However, it would result in significant adverse bus line-haul impacts on the Q19, Q48, and Q66 bus lines and subway line-haul impacts on the No. 7 subway line by the 2028 Phase 1B completion. Upon the proposed project’s full build-out in 2032, significant adverse transit impacts were identified for the Mets-Willets Point subway station stairs, the No. 7 subway line-haul, and Q19, Q48, and Q66 bus line-haul conditions. Potential measures to mitigate these significant adverse impacts are described below.

In addition, it should be noted that if NYCT reverts back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, whereby passage through the station between parking in South Lot/Lot D and the north side of Roosevelt Avenue could be made only within the unpaid zone, additional impacts for the station’s street-level connections and the unpaid zone passageway could occur during game days. Because game-day conditions occur on average only approximately 80 40 to 50 times a year and are subject to game-day traffic and pedestrian management, such impacts would be intermittent and may not require permanent mitigation measures. Furthermore, since the planning and design of this station reconfiguration has not yet taken place, the specific nature of the potential game-day impacts cannot be ascertained and any mitigation measures that may be deemed feasible to address the potential game-day impacts also cannot be identified at this time. If NYCT decides to proceed with this station reconfiguration, which would take place independent of the proposed project, additional interagency coordination is expected to take place to develop the appropriate game-day management strategies. Between the Draft and Final SEIS, no changes to operating plans were announced by NYCT; therefore, any potential changes that may be considered for future implementation will be addressed outside of this environmental review. For purposes of disclosure in this ~~Draft-Final~~ SEIS, any impacts that may be attributed to future passage of a reconfigured Mets-Willets Point subway station may potentially be deemed unmitigatable.

SUBWAY STATION OPERATIONS

2032 Phase 2

The north stairway (S-3) on Roosevelt Avenue would decline from LOS A ($v/c = 0.05$), LOS A ($v/c = 0.26$), and LOS A ($v/c = 0.38$) under the 2032 No Action condition to LOS D ($v/c = 1.21$), LOS D ($v/c = 1.14$), and LOS D ($v/c = 1.20$) under the 2032 With Action condition during the weekday PM non-game, weekday pre-game, and weekend pre-game peak periods respectively. The north stairway (S-2) on Roosevelt Avenue would decline from LOS A ($v/c = 0.04$) under the 2032 No Action condition to LOS D ($v/c = 1.10$) under the 2032 With Action condition during the weekday PM non-game peak period, and the north stairway (M-4) that connects to the mezzanine and street level stairways (S-2 and S-3) on Roosevelt Avenue would decline from LOS A ($v/c = 0.06$), LOS A ($v/c = 0.18$), and LOS A ($v/c = 0.22$) under the 2032 No Action condition to LOS E ($v/c = 1.34$), LOS D ($v/c = 1.10$), and LOS D ($v/c = 1.08$) under the 2032 With Action condition during the weekday PM non-game, weekday pre-game, and weekend pre-game peak periods, respectively. According to the *CEQR Technical Manual*, stairway widenings should result in a total effective width that would be a multiple of 30-inch lanes. ~~As shown in Table 21-28 detailed in the DSEIS,~~ in order to mitigate the above significant adverse stairway impacts, the effective widths of the S-3, S-2, and M-4 stairways would need to be widened from

their current effective widths of 78 inches, 81 inches, and 138 inches to 120 inches, 90 inches, and 210 inches, respectively. In addition, these stairway widenings would need to be accompanied by an Americans with Disabilities Act (ADA)-compliant elevator between the street and mezzanine levels. ~~The feasibility of the stairway widening and elevator installation will be further evaluated between the Draft and Final SEIS. In the event these mitigation measures are determined to be infeasible, the projected significant adverse stairway impacts would be deemed unmitigatable. Subsequent to the certification of the DSEIS, the feasibility of~~ the above stairway widenings was studied. Based on the feasibility study, it was determined that the proposed widening of the M-4 stairway from its effective width of 138 inches to 210 inches would not be feasible due to the existing structures on both sides of the stairway. An alternative mitigation scheme was proposed by widening the S-3 stairway from its current effective width of 78 inches to 120 inches, maintaining the current effective width of the M-4 stairway at 138 inches, and demolishing the existing S-2 stairway and relocating it to the east side of the mezzanine level. The new S-2 stairway would be constructed with an effective width of 90 inches, 9 inches wider than its existing effective width of 81 inches. Relocating the S-2 stairway would divert pedestrian volumes away from the M-4 stairway such that the current effective width of 138 inches would be adequate to accommodate the future projected pedestrian volumes from the widened S-3 stairway. In connection with the relocated and widened S-2 stairway, a new fare array consisting of three turnstiles and one emergency gate would be constructed within the mezzanine level to control access to the new S-2 stairway. The mitigated conditions incorporating this alternative mitigation scheme are summarized in **Table 21-28**. In addition, a street to platform level ADA-compliant elevator would be constructed providing access to the westbound platform of the station. The ADA-compliant elevator would be accompanied by an Autonomous Farecard Access System (AFAS) gate to control access to the station. Furthermore, a manual access gate would be installed at the westbound platform elevator landing to separate the ADA-compliant elevator from the existing turnstiles. The manual access gate would facilitate the current non-game and game day operations at the station. It should be noted that the above proposed mitigation measures could be subject to modification due to NYCT's future master plan for the Mets-Willets Point subway station. Any modifications in conformance with the future master plan would provide equivalent functionalities that would similarly mitigate the stairway impacts identified above. Since the projected impacts that prompted the stairway and elevator feasibility study would not occur until Phase 2 of the proposed project, no funding commitments are in place at this time. The City will coordinate with NYCT and the lead agency to ensure the proper mitigation would be implemented at the appropriate time and would add language to the RFP for Phase 2 of the project as well as to the development agreement and/or other legally binding agreements, requiring the designated developer to fund the implementation of this mitigation. The implementation of these mitigation measures would be coordinated with MTA/NYCT to allow enough time for detailed design and specification approvals by MTA/NYCT and for the construction in order to address the increased demand that would result from development of the proposed project by 2032.

Table 21-28

2032 Mitigated Condition: Subway Station Vertical Circulation Analysis

Mets-Willets Point No. 7 Train Station Vertical Circulation Elements	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
			Up	Down				
Weekday PM Non-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	11.3	10.0	477	528	0.90	0.90	0.79	C
Roosevelt Avenue (North) S2 Stair	8.8	7.5	487	473	0.90	0.90	1.00	D
	49.0	47.5	964	1004		0.90	0.88	C
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	477	528	0.90		0.69	B
Weekday Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	11.3	10.0	325	604	0.90	0.90	0.74	C
	49.0	47.5	611	986		0.90	0.72	C
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	325	604	0.90		0.64	B
Weekend Pre-Game								
Street to Mezzanine								
Roosevelt Avenue (North) S3 Stair	11.3	10.0	306	671	0.90	0.90	0.78	C
	49.0	47.5	589	975		0.90	0.71	C
Roosevelt Avenue (North) M4A/4B Stairs	12.8	11.5	306	671	0.90		0.68	B
Notes:								
Capacities were calculated based on rates presented in the <i>CEQR Technical Manual</i> (January 2012 edition).								
Surging factors are only applied to the exiting pedestrian volume (<i>CEQR Technical Manual</i>).								
$V/C \text{ Stairway} = [V_{in} / (150 * We * Sf * Ff)] + [V_x / (150 * We * Sf * Ff)]$								
$V/C \text{ Passageway} = [V_{in} / (225 * We * Sf * Ff)] + [V_x / (225 * We * Sf * Ff)]$								
Where								
Vin = Peak 15-minute entering passenger volume								
Vx = Peak 15-minute exiting passenger volume								
We = Effective width of stairs/passageways								
Sf = Surging factor (if applicable)								
Ff = Friction factor (if applicable)								

SUBWAY LINE HAUL LEVELS

2028 Phase 1B

The project-generated subway trips would add approximately five passengers per car to the No. 7 Manhattan-bound express line at the peak load point during the AM peak period, resulting in a v/c ratio of 1.09. It should be noted that in the event NYCT is able to process one additional express train Manhattan-bound during the AM peak hour, as assumed in the DSEIS, this significant adverse line-haul impact on the No. 7 line would not occur. As discussed in Chapter 14, "Transportation," the City had consulted with the MTA on extending regular LIRR service to Willets Point when the actual demand shows that such service improvement is warranted. The addition of regular LIRR service to Willets Point would provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent additional train service or the introduction of new LIRR service to the area.

2032 Phase 2

The project-generated subway trips would add approximately 11 passengers per car to the No. 7 subway line-Manhattan-bound express line at the peak load point during the AM peak period, resulting in a v/c ratio of 1.20-1.16. As discussed above for the 2028 Phase 1B completion, in

~~Chapter 14, "Transportation," the City had consulted with the MTA on extending regular LIRR service to Willets Point when the actual demand shows that such service improvement is warranted. The addition of regular LIRR service to Willets Point would provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent the introduction of new LIRR service to the area.~~

BUS LINE HAUL LEVELS

2028 Phase 1B

The proposed project would result in significant adverse impacts on the eastbound and westbound Q19 and Q66 routes during the AM and PM peak periods and on the eastbound and westbound Q48 during the PM peak period in 2028. More specifically, the Q19 route would experience the following increases in passengers per bus between the 2028 No Action and With Action conditions:

- Eastbound line-haul increasing from 43 to 65 average passengers per bus in the AM peak period;
- Westbound line-haul increasing from 45 to 61 average passengers per bus in the AM peak period;
- Eastbound line-haul increasing from 28 to 69 average passengers per bus in the PM peak period; and
- Westbound line-haul increasing from 33 to 80 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts, both the eastbound and westbound Q19 route would require one additional bus (increasing from three to four total buses) during the AM peak period. During the PM peak period, the eastbound route would require one additional bus (increasing from three to four total buses) and the westbound route would require two additional buses (increasing from three to five total buses).

The Q48 route would experience the following increases in passengers per bus between the 2028 No Action and With Action conditions:

- Eastbound line-haul increasing from 22 to 63 average passengers per bus in the PM peak period; and
- Westbound line-haul increasing from 23 to 79 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts during the PM peak period, the eastbound Q48 route would require one additional bus (increasing from three to four total buses) and the westbound route would require three additional buses (increasing from five to eight total buses).

The Q66 route would experience the following increases in passengers per bus between the 2028 No Action and With Action conditions:

- Eastbound line-haul increasing from 48 to 68 average passengers per bus in the AM peak period;
- Westbound line-haul increasing from 47 to 64 average passengers per bus in the AM peak period;

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- Eastbound line-haul increasing from 21 to 78 average passengers per bus in the PM peak period; and
- Westbound line-haul increasing from 21 to 87 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts, the eastbound Q66 route would require four additional buses (increasing from 15 to 19 total buses) and the westbound route would require three additional buses (increasing from 14 to 17 total buses) during the AM peak period. During the PM peak period, the eastbound route would require five additional buses (increasing from 10 to 15 total buses) and the westbound route would require six additional buses (increasing from 10 to 16 total buses).

Table 21-29 summarizes the average hourly passenger volumes for the Q19, Q48, and Q66 bus routes and provides the numbers of buses required to fully mitigate the identified significant adverse bus line-haul impacts.

Table 21-29
2028 Mitigated Condition: Bus Line Haul Levels

Route	Number of Buses per Hour		Passengers per Bus		
	Existing	Mitigation	Without Action	With Action	Mitigation
AM Peak Period					
Q19 EB	3	4	43	65	49
Q19 WB	3	4	45	61	46
Q66 EB	15	19	48	68	54
Q66 WB	14	17	47	64	53
PM Peak Period					
Q19 EB	3	4	28	69	52
Q19 WB	3	5	33	80	48
Q48 EB	3	4	22	63	47
Q48 WB	5	8	23	79	50
Q66 EB	10	15	21	78	52
Q66 WB	10	16	21	87	54
Notes: Q19, Q48 and Q66 operate standard buses with a guideline capacity of 54 passengers per bus.					

2032 Phase 2

The proposed project would result in significant adverse impacts on the eastbound and westbound Q19 and Q66 routes during the AM and PM peak periods and on the eastbound and westbound Q48 during the PM peak period in 2032. More specifically, the Q19 route would experience the following increases in passengers per bus between the 2032 No Action and With Action conditions:

- Eastbound line-haul increasing from 44 to 77 average passengers per bus in the AM peak period;
- Westbound line-haul increasing from 45 to 74 average passengers per bus in the AM peak period;
- Eastbound line-haul increasing from 29 to 87 average passengers per bus in the PM peak period; and
- Westbound line-haul increasing from 33 to 100 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts, both the eastbound and westbound Q19 route would require two additional buses (increasing from three to five total buses) during the AM

peak period. During the PM peak period, the eastbound route would require two additional buses (increasing from three to five total buses) and the westbound route would require three additional buses (increasing from three to six total buses).

The Q48 route would experience the following increases in passengers per bus between the 2032 No Action and With Action conditions:

- Eastbound line-haul increasing from 22 to 80 average passengers per bus in the PM peak period; and
- Westbound line-haul increasing from 23 to 103 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts during the PM peak period, the eastbound Q48 route would require two additional buses (increasing from three to five total buses) and the westbound route would require five additional buses (increasing from five to ten total buses).

The Q66 route would experience the following increases in passengers per bus between the 2032 No Action and With Action conditions:

- Eastbound line-haul increasing from 48 to 79 average passengers per bus in the AM peak period;
- Westbound line-haul increasing from 48 to 77 average passengers per bus in the AM peak period;
- Eastbound line-haul increasing from 21 to 103 average passengers per bus in the PM peak period; and
- Westbound line-haul increasing from 21 to 114 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts, the eastbound Q66 route would require seven additional buses (increasing from 15 to 22 total buses) and the westbound route would require six additional buses (increasing from 14 to 20 total buses) during the AM peak period. During the PM peak period, the eastbound route would require 10 additional buses (increasing from 10 to 20 total buses) and the westbound route would require 12 additional buses (increasing from 10 to 22 total buses).

Table 21-30 summarizes the average hourly passenger volumes for the Q19, Q48, and Q66 bus routes and provides the numbers of buses required to fully mitigate the identified significant adverse bus line-haul impacts.

The above mitigation measures consider potential service improvements to only the bus routes currently serving the immediate vicinity of Willets West and the District. While MTA and NYCT routinely monitor changes in bus ridership and would make the necessary service adjustments where warranted, the projected service demand is significant in magnitude. These service adjustments are subject to the agencies' fiscal and operational constraints and, if implemented, are expected to take place over time.

Table 21-30
2032 Mitigated Condition: Bus Line Haul Levels

Route	Number of Buses per Hour		Passengers per Bus		
	Existing	Mitigation	Without Action	With Action	Mitigation
AM Peak Period					
Q19 EB	3	5	44	77	46
Q19 WB	3	5	45	74	45
Q66 EB	15	22	48	79	54
Q66 WB	14	20	48	77	54
PM Peak Period					
Q19 EB	3	5	29	87	53
Q19 WB	3	6	33	100	50
Q48 EB	3	5	22	80	48
Q48 WB	5	10	23	103	52
Q66 EB	10	20	21	103	52
Q66 WB	10	22	21	114	52
Notes: Q19, Q48 and Q66 operate standard buses with a guideline capacity of 54 passengers per bus.					

Recognizing that these improvements may not be operationally viable or adequate in accommodating the projected future demand from developments planned for the District, discussions were initiated with the MTA to explore opportunities to extend existing bus routes from adjacent neighborhoods (e.g., downtown Flushing) and/or creating new bus routes. Potential bus service improvements discussed include: 1) increasing service frequency on the Q19 and providing westbound stop/loop service to Willets Point; 2) extending some or all bus routes that currently terminate in downtown Flushing to Willets Point, including the Q12, Q13, Q15/Q15A, Q16, Q26, and Q28; and 3) possibly extending the limited Q50 along Roosevelt Avenue through Willets Point. These potential service improvements would require new bus stops and layover areas in and around the project site. Between the Draft and Final SEIS, additional discussions were initiated with MTA NYCT regarding the potential bus service improvements discussed above. MTA NYCT considered the Q19 westbound loop to serve Willets West and the District to be unfavorable due to its circuitous routing. The MTA Bus Company would consider extending the Q50 and NYCT would consider extending one of the current bus routes terminating in downtown Flushing to Willets West and the District initially. Additional bus route extensions to Willets West and the District would be considered based on future demand. In addition, several conceptual bus routing options were explored to provide the necessary layover areas and stop locations for the potential bus route extensions. MTA NYCT has found the conceptual bus routing options to be generally reasonable and feasible. While no definitive plans have been made at this time, the City and the applicant will continue-is expected to collaborate with the MTA NYCT ~~during and~~ after this environmental review process to ensure that adequate bus service improvements would be implemented, ~~no definitive plans have been made at this time.~~

PEDESTRIANS

As discussed in Chapter 14, "Transportation," significant adverse pedestrian impacts were identified for the east crosswalk at the intersection of Northern Boulevard and 126th Street, the north and west crosswalks at the intersection of Roosevelt Avenue and 126th Street, the north, south, and east crosswalks at the intersection of 34th Avenue and 126th Street, ~~the south crosswalk at the intersection of New Willets Point Boulevard and 126th Street~~ the north and south crosswalks at the intersection of 37th Avenue and 126th Street, and the north crosswalk at the intersection of Roosevelt Avenue and Lot B Driveway. Measures that could be implemented

to mitigate these impacts are discussed below. Because traffic mitigation measures, as described under Section D, “Traffic and Parking” have been proposed for these intersections, pedestrian mitigation analyses were prepared for the “Base Option” for which only crosswalk widenings were considered and the “Traffic Mitigation Option” in conjunction with the proposed traffic mitigation measures. At locations where significant adverse pedestrian impacts were not identified but traffic mitigation measures were proposed, an assessment of the effects of the proposed traffic mitigation measures on pedestrian operations was also conducted. Where appropriate, additional pedestrian mitigation measures were recommended to address potential impacts that may be created by proposed traffic mitigation measures. In addition, related pedestrian analyses ~~will be~~ were prepared for the three intersections (126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place) where additional traffic analyses ~~will be~~ were also ~~be~~ conducted and are presented in ~~the~~ this Final SEIS. Mitigation measures were recommended where appropriate for the additional three intersections. ~~If additional pedestrian impacts are identified, mitigation measures similar to those described for other impacted pedestrian analysis locations, such as crosswalk widenings and those in conjunction with proposed traffic mitigation measures, would be explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

It should be noted that pedestrian volumes at some of the impacted crosswalks could be substantially lower if an areawide bus service improvement is implemented, with some or all of the bus routes discussed above extended to Willets West and within the District. As a result, some of the projected significant adverse pedestrian impacts may not occur or occur to a lesser extent, requiring no or less mitigation. The reduction of pedestrian volumes at these crosswalk locations could also lessen pedestrian conflicts with turning vehicles, thereby potentially lessening the projected traffic impacts and the required traffic mitigation measures. Similar to the proposed traffic mitigation measures, the eventual implementation of the proposed pedestrian mitigation measures would be subject to a monitoring program undertaken by the developer, in consultation with the lead agency and NYCDOT, to determine actual needs upon completion and occupancy of various components and the three phases of the proposed project.

2018 PHASE 1A

Northern Boulevard and 126th Street

Significant adverse pedestrian impacts were identified for the intersection’s east crosswalk, where it would deteriorate to:

- beyond mid-LOS D (15.6 SFP) from a No Action LOS A (5699.3 SFP) during the weekday midday peak period,
- LOS E (14.0 SFP) from a No Action LOS A (5584.8 SFP) during the weekday PM peak period,
- beyond mid-LOS D (16.1 SFP) from a No Action LOS A (625.9 SFP) during the weekday pre-game peak period,
- LOS E (~~14.6~~ 11.7 SFP) from a No Action LOS A (1695.1 SFP) during the weekend midday non-game peak period,
- LOS E (14.7 SFP) from a No Action LOS A (1095.3 SFP) during the weekend pre-game peak period, and

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- LOS E (10.7 SFP) from a No Action LOS A (136.4 SFP) during the weekend post-game peak periods.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-31**.

Table 21-31
2018 Mitigated Condition: Pedestrian Level of Service Analysis
Northern Boulevard and 126th Street

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
East Crosswalk—Widening by 10.5 feet from 14 feet to 24.5 feet; may be infeasible, hence impacts could be unmitigatable	WD	Midday	5699.3	A	15.6	E D	28.6	C
		PM	5584.8	A	14.0	E	25.7	C
		Pre-Game	625.9	A	16.1	D	29.4	C
	WE	Midday Non-Game	1695.1	A	44.6 11.7	E	21.4	D
		Pre-Game	1095.3	A	46.1 14.7	D E	27.0	C
		Post-Game	136.4	A	44.7 10.7	E	19.6	D
Traffic Mitigation Option								
<u>Relocating existing crosswalk to 126th Place and widening to 20.0 feet</u>	<u>WD</u>	<u>Midday</u>	<u>5699.3</u>	<u>A</u>	<u>15.6</u>	<u>D</u>	<u>51.1</u>	<u>B</u>
		<u>PM</u>	<u>5584.8</u>	<u>A</u>	<u>14.0</u>	<u>E</u>	<u>49.9</u>	<u>B</u>
		<u>Pre-Game</u>	<u>625.9</u>	<u>A</u>	<u>16.1</u>	<u>D</u>	<u>56.5</u>	<u>B</u>
	<u>WE</u>	<u>Midday Non-Game</u>	<u>1695.1</u>	<u>A</u>	<u>11.7</u>	<u>E</u>	<u>34.7</u>	<u>C</u>
		<u>Pre-Game</u>	<u>1095.3</u>	<u>A</u>	<u>14.7</u>	<u>E</u>	<u>49.3</u>	<u>B</u>
		<u>Post-Game</u>	<u>136.4</u>	<u>A</u>	<u>10.7</u>	<u>E</u>	<u>51.8</u>	<u>B</u>
Relocating existing crosswalk and designing/constructing new signalized crossing at 126th Place								
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

Base Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of this crosswalk from 14.0 feet to 24.5 feet. Because this widening could be constrained by the physical median along Northern Boulevard, achieving such widening may not be feasible. If determined to be infeasible, the projected significant adverse impacts at this crosswalk would be either partially mitigated or unmitigated.

Traffic Mitigation Option

As part of the proposed traffic mitigation, a quick-curb would be installed on the westbound approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. As a result, pedestrian crossing at this location would need to be eliminated and the existing westbound Northern Boulevard Q66 bus stop relocated. ~~A potential location to which this bus stop can be relocated is under the highway overpass approximately 400 feet upstream (east of the existing location) across from 126th Place. Coupled with this bus stop relocation, a new 20.0-foot-wide crosswalk would be installed, pedestrian crossing of appropriate width accompanied by a new signal of adequate crossing time would need to be designed and constructed to facilitate crossing between the south and north sides of Northern Boulevard at 126th Place. The significant adverse pedestrian impacts could be fully mitigated with these measures in place. If the relocated bus stop and/or the new signalized crossing are deemed impractical, westbound Q66 bus riders would need to be shifted to the westbound Q48 bus route along Roosevelt Avenue. This shift would alter the area's pedestrian circulation patterns,~~ This bus stop would be relocated to a location under the highway overpass approximately 400 feet upstream (east of the existing location) across from 126th Place. Coupled with this bus stop relocation, a new 20.0-foot-wide crosswalk would be installed, pedestrian crossing of appropriate width accompanied by a new signal of adequate crossing time would need to be designed and constructed to facilitate crossing between the south and north sides of Northern Boulevard at 126th Place. The significant adverse pedestrian impacts could be fully mitigated with these measures in place. If the relocated bus stop and/or the new signalized crossing are deemed impractical, westbound Q66 bus riders would need to be shifted to the westbound Q48 bus route along Roosevelt Avenue. This shift would alter the area's pedestrian circulation patterns,

~~resulting in new or worse significant adverse pedestrian impacts at other study area analysis locations, and/or significant adverse bus impacts on the westbound Q48 route.~~

Roosevelt Avenue and 126th Street

A significant adverse pedestrian impact was identified for the intersection's west crosswalk, where it would deteriorate to LOS F (-67.6 SFP) from a No Action LOS A (194.6 SFP) during the weekend post-game peak period. Potential measures to mitigate this impact are described below and the mitigated conditions are summarized in **Table 21-32**.

Table 21-32

2018 Mitigated Condition: Pedestrian Level of Service Analysis
Roosevelt Avenue and 126th Street

Mitigation Measures	Analysis Time Period		No Action		With Action		Mitigated	
			SFP	LOS	SFP	LOS	SFP	LOS
Base Option								
West Crosswalk – Game-day traffic management	WE	Post-Game	194.6	A	-67.6	F	--	--
Traffic Mitigation Option								
West Crosswalk – Traffic mitigation and game-day traffic management	WE	Post-Game	194.6	A	-67.6	F	344.9	A
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

Base Option

No practical crosswalk widening can be implemented to mitigate the above significant adverse pedestrian impact during the weekend post-game peak period. However, game-day traffic management measures—such as the stationing of traffic control officers at this location to facilitate traffic and pedestrian flows, which currently occurs on game days but was not accounted for in the pedestrian analysis—would be in place. Therefore, no mitigation measures are proposed and game-day traffic management is expected to continue to facilitate traffic and pedestrian movements at this location.

Traffic Mitigation Option

This significant adverse pedestrian impact could be fully mitigated by implementing the recommended traffic signal timing adjustments. The recommended signal timing modifications for the remaining peak periods would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

34th Avenue and 126th Street

Significant adverse pedestrian impacts were identified for the intersection's north, south, and east crosswalks. The north crosswalk would deteriorate to beyond mid-LOS D (17.9 SFP) from a No Action LOS A (2714.0 SFP) during the weekend midday non-game peak period. The south crosswalk would deteriorate to:

- beyond mid-LOS D (16.5 SFP) from a No Action LOS A (5848.7 SFP) during the weekday midday peak period,
- beyond mid-LOS D (18.1 SFP) from a No Action LOS A (3183.4 SFP) during the weekday PM peak period,
- LOS E (11.8 SFP) from a No Action LOS A (1217.7 SFP) during the weekend midday non-game peak period, and

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- LOS E (14.1 SFP) from a No Action LOS D (23.0 SFP) during the weekend pre-game peak period.

The east crosswalk would deteriorate to

- LOS E (10.4 SFP) from a No Action LOS A (80.0 SFP) during the weekday pre-game peak period,
- LOS E (~~14.1~~ 14.3 SFP) from a No Action LOS A (820.4 SFP) during the weekend midday non-game peak period, and
- LOS E (11.4 SFP) from a No Action LOS A (9899.0 SFP) during the weekend pre-game peak period.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-33**.

Table 21-33
2018 Mitigated Condition: Pedestrian Level of Service Analysis
34th Avenue and 126th Street

Mitigation Measures	Analysis Time Period		No Action		With Action		Mitigated	
			SFP	LOS	SFP	LOS	SFP	LOS
Base Option								
North Crosswalk—Widening by 1.5 feet from 12.5 feet to 14 feet	WE	Midday Non-Game	2714.0	A	17.9	D	20.2	D
South Crosswalk—Widening by 6.5 feet from 10.5 feet to 17 feet	WD	Midday	5848.7	A	16.5	D	27.4	C
		PM	3183.4	A	18.1	D	30.0	C
	WE	Midday Non-Game	1217.7	A	11.8	E	14.3 <u>19.8</u>	E <u>D</u>
		Pre-Game	23.0	D	14.1	E	23.7	D
East Crosswalk—Widening by 6 feet from 7 feet to 13 feet	WD	Pre-Game	80.0	A	10.4	E	20.4	D
	WE	Midday Non-Game	820.4	A	14.1 <u>14.3</u>	E	27.8	C
		Pre-Game	9899.0	A	11.4	E	22.2	D
Traffic Mitigation Option								
East Crosswalk—Widening by 7-2.5 feet from 7 feet to <u>14-9.5</u> feet	WD	Pre-Game	80.0	A	10.4	E	28.4 <u>20.5</u>	C <u>D</u>
	WE	Midday Non-Game	820.4	A	14.1 <u>14.3</u>	E	20.5 <u>19.8</u>	D <u>D</u>
		Pre-Game	9899.0	A	11.4	E	37.1 <u>23.3</u>	C <u>D</u>
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

Base Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of the north crosswalk from 12.5 feet to 14.0 feet, the south crosswalk from 10.5 feet to 17.0 feet, and the east crosswalk from 7.0 feet to 13.0 feet.

Traffic Mitigation Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of the east crosswalk from 7.0 feet to ~~14.0~~ 9.5 feet in conjunction with the proposed traffic mitigation measures. No crosswalk widening would be required for the north and south crosswalks.

Roosevelt Avenue and 114th Street

No significant adverse pedestrian impacts were identified at this intersection. The recommended signal timing modifications as part of the traffic mitigation would not alter the conclusions made

for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

37th Avenue and 126th Street

Significant adverse pedestrian impacts were identified for the intersection's north and south crosswalks. The north crosswalk would operate at LOS E (8.2 SFP), LOS E (8.6 SFP), and beyond mid-LOS D (18.4 SFP) during the weekday pre-game, weekend pre-game, and weekend post-game peak periods, respectively. The south crosswalk would operate at LOS E (8.6 SFP) and LOS E (9.3 SFP) during the weekday pre-game and weekend pre-game peak periods, respectively. Since no traffic impacts requiring mitigation were identified for this intersection, the significant adverse pedestrian impacts could be fully mitigated under the Base Option, by restriping the width of the north crosswalk from 15.0 feet to 31.0 and the south crosswalk from 15.0 feet to 30.0 feet, as summarized in **Table 21-34**. However, during the game-day conditions, traffic management measures—such as the stationing of traffic control officers to facilitate traffic and pedestrian flows—would be in place. These measures make it unlikely that the physical widening of the north and south crosswalks would be needed. Also, as detailed below under “2028 Phase 1B” and “2032 Phase 2,” the north and south crosswalks at this intersection would not be impacted in the later phases because the interim surface parking within the District would have been permanently replaced by the new South Lot/Lot D garages. Therefore, CitiField patrons who in Phase 1A have to cross 126th Street at this intersection's north and south crosswalks to access the stadium would instead access the stadium via the Mets-Willets Point subway station in the later phases.

Table 21-34
2018 Mitigated Condition: Pedestrian Level of Service Analysis
37th Avenue and 126th Street

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
North Crosswalk – Widening by 16 feet from 15 feet to 31 feet; game-day traffic management	WD	Pre-Game	==	==	8.2	E	19.8	D
	WE	Pre-Game	==	==	8.6	E	20.6	D
		Post-Game	==	==	18.4	D	43.6	B
South Crosswalk – Widening by 15 feet from 15 feet to 30 feet; game-day traffic management	WD	Pre-Game	==	==	8.6	E	20.2	D
	WE	Pre-Game	==	==	9.3	E	21.7	D
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

36th Avenue and 126th Street

No significant adverse pedestrian impacts were identified at this intersection; therefore, no mitigation measures are needed.

2028 PHASE 1B

Northern Boulevard and 126th Street

Significant adverse pedestrian impacts were identified for the intersection's east crosswalk, where it would deteriorate to:

- LOS F (4.9 SFP) from a No Action LOS A (5656.4 SFP) during the weekday midday peak period,

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- LOS F (4.8 SFP) from a No Action LOS A (5527.5 SFP) during the weekday PM peak period,
- LOS F (6.5 SFP) from a No Action LOS A (584.6 SFP) during the weekday pre-game peak period,
- LOS F (4.7 SFP) from a No Action LOS A (1681.7 SFP) during the weekend midday non-game peak period,
- LOS F (5.7 SFP) from a No Action LOS A (1086.8 SFP) during the weekend pre-game peak period, and
- LOS F (-2.7 SFP) from a No Action LOS A (130.4 SFP) during the weekend post-game peak period.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-3435**.

Table 21-3435

**2028 Mitigated Condition: Pedestrian Level of Service Analysis
Northern Boulevard and 126th Street**

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
East Crosswalk—Widening by 36 feet from 14 feet to 50 feet; may be infeasible, hence impacts could be unmitigatable	WD	Midday	5656.4	A	4.9	F	20.7	D
		PM	5527.5	A	4.8	F	20.0	D
		Pre-Game	584.6	A	6.5	F	26.4	C
	WE	Midday Non-Game	1681.7	A	4.7	F	19.5	D
		Pre-Game	1086.8	A	5.7	F	23.5	D
		Post-Game	130.4	A	-2.7	F	--	--
Traffic Mitigation Option								
<u>Relocating existing crosswalk to 126th Place and widening to 22.5 feet</u>	<u>WD</u>	<u>Midday</u>	<u>5656.4</u>	<u>A</u>	<u>4.9</u>	<u>E</u>	<u>23.5</u>	<u>D</u>
		<u>PM</u>	<u>5527.5</u>	<u>A</u>	<u>4.8</u>	<u>F</u>	<u>24.5</u>	<u>C</u>
		<u>Pre-Game</u>	<u>584.6</u>	<u>A</u>	<u>6.5</u>	<u>F</u>	<u>31.1</u>	<u>C</u>
	<u>WE</u>	<u>Midday Non-Game</u>	<u>1681.7</u>	<u>A</u>	<u>4.7</u>	<u>E</u>	<u>19.8</u>	<u>D</u>
		<u>Pre-Game</u>	<u>1086.8</u>	<u>A</u>	<u>5.7</u>	<u>F</u>	<u>26.3</u>	<u>C</u>
		<u>Post-Game</u>	<u>130.4</u>	<u>A</u>	<u>-2.7</u>	<u>F</u>	<u>29.0</u>	<u>C</u>
Relocating existing crosswalk and designing/construction new signalized crossing at 126th Place								
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

Base Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of this crosswalk from 14.0 feet to 50.0 feet. Because this widening could be constrained by the physical median along Northern Boulevard, as well as available sidewalk landing on each side of Northern Boulevard, achieving such widening may not be feasible. If determined to be infeasible, the projected significant adverse impacts at this crosswalk would be either partially mitigated or unmitigated.

Traffic Mitigation Option

As detailed above under “2018 Phase 1A,” as part of the proposed traffic mitigation, pedestrian crossing at this location would need to be eliminated and the existing westbound Northern Boulevard Q66 bus stop relocated. ~~A potential location to which this bus stop can be~~ This bus stop can be relocated ~~is~~ under the highway overpass approximately 400 feet upstream (east of the existing location) across from 126th Place. Coupled with this bus stop relocation, a new 22.5-foot-wide crosswalk would be installed, pedestrian crossing of appropriate width accompanied by a new signal of adequate crossing time ~~would need to be designed and constructed~~ to facilitate crossing

between the south and north sides of Northern Boulevard at 126th Place. The significant adverse pedestrian impacts could be fully mitigated with these measures in place. If the relocated bus stop and/or the new signalized crossing are deemed impractical, westbound Q66 bus riders would need to be shifted to the westbound Q48 bus route along Roosevelt Avenue. This shift would alter the area's pedestrian circulation patterns, resulting in new or worse significant adverse pedestrian impacts at other study area analysis locations, and/or significant adverse bus impacts on the westbound Q48 route.

Roosevelt Avenue and 126th Street

Significant adverse pedestrian impacts were identified for the intersection's west crosswalk, where it would deteriorate to:

- LOS F (-22.6 -40.9 SFP) from a No Action LOS A (152.5 SFP) during the weekday pre-game peak period, and
- LOS F (-22.4 -34.7 SFP) from a No Action LOS A (103.2 SFP) during the weekend pre-game peak period.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-3536**.

Table 21-3536
2028 Mitigated Condition: Pedestrian Level of Service Analysis
Roosevelt Avenue and 126th Street

Mitigation Measures	Analysis Time Period		No Action		With Action		Mitigated	
			SFP	LOS	SFP	LOS	SFP	LOS
Base Option								
West Crosswalk—Game-day traffic management	WD	Pre-Game	152.5	A	-22.6 <u>-40.9</u>	F	--	--
	WE	Pre-Game	103.2	A	-22.4 <u>-34.7</u>	F	--	--
Traffic Mitigation Option								
West Crosswalk—Traffic mitigation and game-day traffic management	WD	Pre-Game	152.5	A	-22.6 <u>-40.9</u>	F	--	--
	WE	Pre-Game	103.2	A	-22.4 <u>-34.7</u>	F	--	--
North Crosswalk—Impacted by traffic mitigation; widening by 6.5 <u>4</u> feet from 16 feet to 22.5 <u>20</u> feet	WD	Midday	1660.5	A	18.3	D	27.0	C
		PM	2683.6	A	13.4	E	19.9	D
	WE	Midday Non-Game	1181.0	A	16.4	D	24.2	C
		Post-Game	545.7		15.4		19.8	D
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

Base Option

No practical crosswalk widening can be implemented to mitigate the above significant adverse pedestrian impact during the weekday pre-game and weekend pre-game peak periods. However, game-day traffic management measures—such as the stationing of traffic control officers at this location to facilitate traffic and pedestrian flows, which currently occurs on game days but was not accounted for in the pedestrian analysis—would be in place. Therefore, no mitigation measures are proposed and game-day traffic management is expected to continue to facilitate traffic and pedestrian movements at this location.

Traffic Mitigation Option

The recommended traffic signal timing modifications would deteriorate the service levels at the intersection's crosswalks during all time periods and create additional significant adverse

pedestrian impacts for the north crosswalk during the ~~weekday midday, weekday PM, and weekend midday non-game~~ post-game peak periods. The impacts on the north crosswalk could be fully mitigated by restriping the crosswalk from 16.0 feet to ~~22.5~~ 20.0 feet. During game-day conditions, traffic management measures—such as the stationing of traffic control officers at this location to facilitate traffic and pedestrian flows, which currently occurs on game days but was not accounted for in the pedestrian analysis—would be in place. Therefore, no mitigation measures are proposed and game-day traffic management is expected to continue to facilitate traffic and pedestrian movements at this location.

34th Avenue and 126th Street

Significant adverse pedestrian impacts were identified for the intersection's north, south, and east crosswalks. The north crosswalk would deteriorate to:

- beyond mid-LOS D (16.2 SFP) from a No Action LOS A (2139.3 SFP) during the weekday PM peak period, and
- LOS E (13.7 SFP) from a No Action LOS A (2704.6 SFP) during the weekend midday non-game peak period.

The south crosswalk would deteriorate to:

- LOS E (9.9 SFP) from a No Action LOS A (5783.6 SFP) during the weekday midday peak period,
- LOS E (14.7 SFP) from a No Action LOS A (3158.9 SFP) during the weekday PM peak period,
- LOS E (8.4 SFP) from a No Action LOS A (1207.9 SFP) during the weekend midday non-game peak period, and
- beyond mid-LOS D (19.1 SFP) from a No Action LOS D (21.9 SFP) during the weekend pre-game peak period.

The east crosswalk would deteriorate to:

- beyond mid-LOS D (18.8 SFP) from a No Action LOS A (2035.8 SFP) during the weekday AM peak period,
- LOS F (6.2 SFP) from a No Action LOS A (1502.7 SFP) during the weekday midday peak period,
- LOS F (6.9 SFP) from a No Action LOS A (937.3 SFP) during the weekday PM peak period,
- LOS F (3.8 SFP) from a No Action LOS A (78.0 SFP) during the weekday pre-game peak period,
- LOS F (5.3 SFP) from a No Action LOS A (756.1 SFP) during the weekend midday non-game peak period,
- LOS F (4.2 SFP) from a No Action LOS A (9927.5 SFP) during the weekend pre-game peak period, and
- LOS F (5.1 SFP) from a No Action LOS A during the weekend post-game peak period.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-~~36~~37**.

Table 21-3637

2028 Mitigated Condition: Pedestrian Level of Service Analysis
34th Avenue and 126th Street

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
North Crosswalk—Widening by 5.5 feet from 12.5 feet to 18 feet	WD	PM	2139.3	A	16.2	D	23.6	D
	WE	Midday Non-Game	2704.6	A	13.7	E	20.1	D
South Crosswalk—Widening by 13 feet from 10.5 feet to 23.5 feet	WD	Midday	5783.6	A	9.9	E	23.0	D
		PM	3158.9	A	14.7	E	34.0	C
	WE	Midday Non-Game	1207.9	A	8.4	E	19.6	D
		Pre-Game	21.9	D	19.1	D	45.3	B
East Crosswalk—Widening by 21 feet from 7 feet to 28 feet	WD	AM	2035.8	A	18.8	D	84.5	A
		Midday	1502.7	A	6.2	F	31.7	C
		PM	937.3	A	6.9	F	34.5	C
		Pre-Game	78.0	A	3.8	F	19.8	D
	WE	Midday Non-Game	756.1	A	5.3	F	27.7	C
		Pre-Game	9927.5	A	4.2	F	21.9	D
		Post-Game	N/A	A	5.1	F	25.4	C
Traffic Mitigation Option								
South Crosswalk—Widening by 6.5 feet from 10.5 feet to 17 feet	WD	Midday	5783.6	A	9.9	E	70.1	A
		PM	3158.9	A	14.7	E	71.4	A
	WE	Midday Non-Game	1207.9	A	8.4	E	47.5	B
		Pre-Game	21.9	D	19.1	D	20.0	D
East Crosswalk—Widening by 28-24.5 feet from 7 feet to 35-31.5 feet; game-day traffic management	WD	AM	2035.8	A	18.8	D	62.0 80.9	A
		Midday	1502.7	A	6.2	F	23.3 20.9	D
		PM	937.3	A	6.9	F	25.4 22.6	C D
		Pre-Game	78.0	A	3.8	F	16.4 26.5	D C
	WE	Midday Non-Game	756.1	A	5.3	F	19.7 19.8	D
		Pre-Game	9927.5	A	4.2	F	15.2 22.9	D
		Post-Game	N/A	A	5.1	F	19.4 37.8	D C
Notes: SFP = square feet per pedestrian; WD = weekday; WE = weekend. N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.								

Base Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of the north crosswalk from 12.5 feet to 18.0 feet, the south crosswalk from 10.5 feet to 23.5 feet, and the east crosswalk from 7.0 feet to 28.0 feet.

Traffic Mitigation Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of the south crosswalk from 10.5 feet to 17.0 feet and the east crosswalk from 7.0 feet to ~~35.0~~ 31.5 feet for the non game conditions and 43.5 feet for the game day conditions in conjunction with the proposed traffic mitigation measures. ~~During the game-day conditions, traffic management measures—such as the stationing of traffic control officers at this location to facilitate traffic and pedestrian flows, which currently occurs on game days but was not accounted for in the pedestrian analysis—would be in place. These measures make it unlikely that the physical widening of the east crosswalk to 43.5 feet would be needed.~~

Roosevelt Avenue and 114th Street

No significant adverse pedestrian impacts were identified at this intersection. The recommended signal timing modifications as part of the traffic mitigation would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

New Willeys Point Boulevard and 126th Street

No significant adverse pedestrian or traffic impacts were identified at this intersection; therefore, no mitigation measures are needed.

37th Avenue and 126th Street

No significant adverse pedestrian impacts were identified at this intersection; therefore, no mitigation measures are needed. The recommended traffic mitigation would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

36th Avenue and 126th Street

No significant adverse pedestrian impacts were identified at this intersection; therefore, no mitigation measures are needed. The recommended traffic mitigation would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

2032 PHASE 2

Northern Boulevard and 126th Street

Significant adverse pedestrian impacts were identified for the intersection's east crosswalk, where it would deteriorate to:

- LOS E (12.0 SFP) from a No Action LOS A (6403.9 SFP) during the weekday AM peak period,
- LOS F (2.3 SFP) from a No Action LOS A (5642.1 SFP) during the weekday midday peak period,
- LOS F (2.2 SFP) from a No Action LOS A (5513.2 SFP) during the weekday PM peak period,
- LOS F (3.5 SFP) from a No Action LOS A (583.0 SFP) during the weekday pre-game peak period,
- LOS F (2.5 SFP) from a No Action LOS A (1672.8 SFP) during the weekend midday non-game peak period,
- LOS F (3.2 SFP) from a No Action LOS A (1083.9 SFP) during the weekend pre-game peak period, and
- LOS F (-2.9 SFP) from a No Action LOS A (129.6 SFP) during the weekend post-game peak period.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-3738**.

Table 21-3738

**2032 Mitigated Condition: Pedestrian Level of Service Analysis
Northern Boulevard and 126th Street**

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
East Crosswalk—Widening by 83 feet from 14 feet to 97 feet; may be infeasible, hence impacts could be unmitigatable	WD	AM	6403.9	A	12.0	E	95.5	A
		Midday	5642.1	A	2.3	F	20.9	D
		PM	5513.2	A	2.2	F	19.6	D
	WE	Pre-Game	583.0	A	3.5	F	29.8	C
		Midday Non-Game	1672.8	A	2.5	F	21.5	D
		Pre-Game	1083.9	A	3.2	F	28.2	C
	Post-Game	129.6	A	-2.9	F	--	--	
Traffic Mitigation Option								
Relocating existing crosswalk to 126th Place and widening to 30 feet	WD	AM	6403.9	A	12.0	E	49.9	B
		Midday	5642.1	A	2.3	F	21.5	D
		PM	5513.2	A	2.2	F	22.7	D
		Pre-Game	583.0	A	3.5	F	30.0	C
	WE	Midday Non-Game	1672.8	A	2.5	F	19.9	D
		Pre-Game	1083.9	A	3.2	F	25.9	C
		Post-Game	129.6	A	-2.9	F	28.3	C
Relocating existing crosswalk and designing/constructing new signalized crossing at 126th Place								
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

Base Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of this crosswalk from 14.0 feet to 97.0 feet. Because this widening could be constrained by the physical median along Northern Boulevard, as well as available sidewalk landing on each side of Northern Boulevard, achieving such widening may not be feasible. If determined to be infeasible, the projected significant adverse impacts at this crosswalk would be either partially mitigated or unmitigated.

Traffic Mitigation Option

As detailed above under “2018 Phase 1A,” as part of the proposed traffic mitigation, pedestrian crossing at this location would need to be eliminated and the existing westbound Northern Boulevard Q66 bus stop relocated. ~~A potential location to which this bus stop can~~ This bus stop can ~~would be~~ relocated ~~is~~ under the highway overpass approximately 400 feet upstream (east of the existing location) across from 126th Place. Coupled with this bus stop relocation, a new 30.0-foot-wide crosswalk would be installed, pedestrian crossing of appropriate width accompanied by a new signal of adequate crossing time ~~would need to be designed and constructed~~ to facilitate crossing between the south and north sides of Northern Boulevard at 126th Place. The significant adverse pedestrian impacts could be fully mitigated with these measures in place. If the relocated bus stop and/or the new signalized crossing are deemed impractical, westbound Q66 bus riders would need to be shifted to the westbound Q48 bus route along Roosevelt Avenue. This shift would alter the area’s pedestrian circulation patterns, resulting in new or worse significant adverse pedestrian impacts at other study area analysis locations, and/or significant adverse bus impacts on the westbound Q48 route.

Roosevelt Avenue and 126th Street

Significant adverse pedestrian impacts were identified for the intersection’s west and north crosswalks. The west crosswalk would deteriorate to:

Willeys Point Development

- LOS ~~E-F~~ (~~8.0~~ 6.7 SFP) from a No Action LOS A (1560.4 SFP) during the weekday midday peak period,
- LOS F (~~4.4~~ 2.6 SFP) from a No Action LOS A (2031.8 SFP) during the weekday PM peak period,
- LOS F (~~4.8~~ 7.4 SFP) from a No Action LOS A (149.4 SFP) during the weekday pre-game peak period,
- LOS F (~~5.7~~ 4.3 SFP) from a No Action LOS A (1072.1 SFP) during the weekend midday non-game peak period,
- LOS F (~~4.0~~ 5.4 SFP) from a No Action LOS A (99.5 SFP) during the weekend pre-game peak period, and
- LOS ~~E-F~~ (~~9.6~~ 7.8 SFP) from a No Action LOS A (183.4 SFP) during the weekend post-game peak period.

The north crosswalk would deteriorate to:

- beyond mid-LOS D (~~16.4~~ 16.3 SFP) from a No Action LOS A (2680.2 SFP) during the weekday PM peak period, and
- beyond mid-LOS D (~~17.4~~ 17.3 SFP) from a No Action LOS A (537.3 SFP) during the weekend post-game peak period.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-3839**.

Base Option

The significant adverse pedestrian impacts for the west crosswalk could be fully mitigated by restriping the width of the crosswalk from 13.5 feet to ~~50.5~~ 84.0 feet for the non-game day and the weekend post-game conditions. The feasibility of this widening would be limited by the width of the adjoining sidewalks. If such widening could not be achieved, the projected significant adverse impacts during certain time periods would remain unmitigated or partially mitigated. During game-day conditions, traffic management measures—such as the stationing of traffic control officers at this location to facilitate traffic and pedestrian flows, which currently occurs on game days but was not accounted for in the pedestrian analysis—would be in place. Therefore, game-day traffic management is expected to continue to facilitate traffic and pedestrian movements at this location and in conjunction with the proposed crosswalk widening should mitigate the significant adverse pedestrian impacts during the weekday and weekend pre-game conditions. For the north crosswalk, the projected significant adverse pedestrian impacts could be fully mitigated by restriping the crosswalk from 16.0 feet to 19.0 feet.

Table 21-3839

2032 Mitigated Condition: Pedestrian Level of Service Analysis
Roosevelt Avenue and 126th Street

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
West Crosswalk—Widening by 37-70.5 feet from 13.5 feet to 50.5 <u>84</u> feet; may be infeasible, hence impacts could be unmitigatable; game-day traffic management	WD	Midday	1560.4	A	8.0 <u>6.7</u>	E <u>E</u>	34.8 <u>49.5</u>	C <u>B</u>
		PM	2031.8	A	4.4 <u>2.6</u>	F	19.6	D
		Pre-Game	149.4	A	-4.8 <u>-7.4</u>	F	--	--
	WE	Midday Non-Game	1072.1	A	5.7 <u>4.3</u>	F	25.7 <u>32.5</u>	C
		Pre-Game	99.5	A	-4.0 <u>-5.4</u>	F	--	--
		Post-Game	183.4	A	9.6 <u>7.8</u>	F	40.4 <u>55.5</u>	B
North Crosswalk—Widening by 3 feet from 16 feet to 19 feet	WD	PM	2680.2	A	16.4 <u>16.3</u>	D	20.1 <u>20.0</u>	D
	WE	Post-Game	537.3	A	17.4 <u>17.3</u>	D	21.1 <u>21.0</u>	D
Traffic Mitigation Option								
West Crosswalk—Widening by 45.5 <u>14</u> feet from 13.5 feet to 29-27.5 feet; may be infeasible, hence impacts could be unmitigatable; traffic mitigation and game-day traffic management	WD	Midday	1560.4	A	8.0 <u>6.7</u>	E <u>E</u>	19.8 <u>28.0</u>	D <u>C</u>
		PM	2031.8	A	4.4 <u>2.6</u>	F	21.5 <u>27.0</u>	D <u>C</u>
		Pre-Game	149.4	A	-4.8 <u>-7.4</u>	F	--	--
	WE	Midday Non-Game	1072.1	A	5.7 <u>4.3</u>	F	23.3 <u>19.6</u>	D
		Pre-Game	99.5	A	-4.0 <u>-5.4</u>	F	--	--
		Post-Game	183.4	A	9.6 <u>7.8</u>	F	25.5 <u>25.4</u>	C
North Crosswalk—Impacted by traffic mitigation during the weekday AM, midday and weekend midday non-game <u>and pre-game</u> peak periods; widening by 9.5 <u>15</u> feet from 16 feet to 25.5 <u>31</u> feet	WD	AM	1630.7	A	16.6 <u>19.1</u>	D	28.5 <u>40.4</u>	C <u>B</u>
		Midday	1621.1	A	14.4 <u>13.0</u>	E	24.7 <u>28.0</u>	C
		PM	2680.2	A	16.4 <u>8.9</u>	D <u>E</u>	19.7 <u>19.6</u>	D
	WE	Midday Non-Game	1158.5	A	13.7 <u>13.6</u>	E	23.6 <u>29.3</u>	D <u>C</u>
		<u>Pre-Game</u>	<u>700.6</u>	<u>A</u>	<u>16.7</u>	<u>D</u>	<u>35.5</u>	<u>C</u>
		Post-Game	537.3	A	17.4 <u>10.4</u>	D <u>E</u>	27.3 <u>21.9</u>	C <u>D</u>
East Crosswalk — Impacted by traffic mitigation; widening by 2 feet from 14 feet to 16 feet	WD	Midday	2012.3	A	17.1	D	19.7	D
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

Traffic Mitigation Option

The recommended traffic signal timing modifications would create additional adverse pedestrian impacts for the north crosswalk during the weekday AM, weekday midday, ~~and weekend midday non-game, and weekend pre-game~~ peak periods ~~and the east crosswalk during the weekday midday peak period~~. The impacts on the north crosswalk could be fully mitigated by restriping the crosswalk from 16.0 feet to 25.5 31.0 feet ~~and the east crosswalk could be fully~~

~~mitigated by restriping the crosswalk from 14.0 feet to 16.0 feet.~~ The west crosswalk during non-game conditions could be fully mitigated by restriping the crosswalk from 13.5 feet to ~~29.0~~ 27.5 feet. The feasibility of this widening would be limited by the width of the adjoining sidewalks. If such widening could not be achieved, the projected significant adverse impacts during certain time periods would remain unmitigated or partially mitigated. During game-day conditions, traffic management measures—such as the stationing of traffic control officers at this location to facilitate traffic and pedestrian flows, which currently occurs on game days but was not accounted for in the pedestrian analysis—would be in place.

34th Avenue and 126th Street

Significant adverse pedestrian impacts were identified for the intersection's north, south, and east crosswalks. The north crosswalk would deteriorate to:

- beyond mid-LOS D (16.8 SFP) from a No Action LOS A during the weekday midday peak period,
- LOS E (9.7 SFP) from a No Action LOS A (2131.7 SFP) during the weekday PM peak period, and
- LOS F (8.0 SFP) from a No Action LOS A (2699.8 SFP) during the weekend midday non-game peak period.

The south crosswalk would deteriorate to:

- LOS E (13.9 SFP) from a No Action LOS A (2947.4 SFP) during the weekday AM peak period,
- LOS F (1.9 SFP) from a No Action LOS A (5767.3 SFP) during the weekday midday peak period,
- LOS F (6.8 SFP) from a No Action LOS A (3150.8 SFP) during the weekday PM peak period, and
- LOS F (3.4 SFP) from a No Action LOS A (1204.7 SFP) during the weekend midday non-game peak period.

The east crosswalk would deteriorate to:

- LOS E (10.6 SFP) from a No Action LOS A (2035.8 SFP) during the weekday AM peak period,
- LOS F (4.6 SFP) from a No Action LOS A (1394.7 SFP) during the weekday midday peak period,
- LOS F (4.8 SFP) from a No Action LOS A (937.3 SFP) during the weekday PM peak period,
- LOS F (3.0 SFP) from a No Action LOS A (76.9 SFP) during the weekday pre-game peak period,
- LOS F (3.7 SFP) from a No Action LOS A (755.4 SFP) during the weekend midday non-game peak period,
- LOS F (3.3 SFP) from a No Action LOS A (9908.5 SFP) during the weekend pre-game peak period, and
- LOS F (5.4 SFP) from a No Action LOS A during the weekend post-game peak period.

Potential measures to mitigate these impacts are described below and the mitigated conditions are summarized in **Table 21-3940**.

Table 21-3940
2032 Mitigated Condition: Pedestrian Level of Service Analysis
34th Avenue and 126th Street

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
North Crosswalk—Widening by 17.5 feet from 12.5 feet to 30 feet	WD	Midday	N/A	A	16.8	D	41.3	B
		PM	2131.7	A	9.7	E	24.1	C
	WE	Midday Non-Game	2699.8	A	8.0	F	19.8	D
East Crosswalk—Widening by 26 feet from 7 feet to 33 feet	WD	AM	2035.8	A	10.6	E	60.1	A
		Midday	1394.7	A	4.6	F	29.8	C
		PM	937.3	A	4.8	F	30.5	C
		Pre-Game	76.9	A	3.0	F	19.8	D
	WE	Midday Non-Game	755.4	A	3.7	F	24.7	C
		Pre-Game	9908.5	A	3.3	F	21.9	D
		Post-Game	N/A	A	5.4	F	33.4	C
Traffic Mitigation Option								
North Crosswalk—Widening by 9.5 <u>0.5</u> feet from 12.5 feet to <u>22-13</u> feet	WD	Midday	N/A	A	16.8	D	<u>55.6</u> <u>97.5</u>	<u>B</u> <u>A</u>
		PM	2131.7	A	9.7	E	<u>69.0</u> <u>62.2</u>	A
	WE	Midday Non-Game	2699.8	A	8.0	F	<u>19.5</u> <u>65.9</u>	<u>D</u> <u>A</u>
South Crosswalk— <u>Traffic mitigation</u> Widening by 18 feet from 10.5 feet to 28.5 feet	WD	AM	2947.4	A	13.9	E	<u>375.0</u> <u>193.1</u>	A
		Midday	5767.3	A	1.9	F	<u>51.6</u> <u>55.7</u>	B
		PM	3150.8	A	6.8	F	<u>93.6</u> <u>41.4</u>	<u>A</u> <u>B</u>
	WE	Midday Non-Game	1204.7	A	3.4	F	<u>19.7</u> <u>32.9</u>	<u>D</u> <u>C</u>
	East Crosswalk—Widening by 35 feet from 7 feet to 42 feet; may be infeasible, hence impacts could be unmitigatable	WD	AM	2035.8	A	10.6	E	<u>52.0</u> <u>49.5</u>
Midday			1394.7	A	4.6	F	28.1	C
PM			937.3	A	4.8	F	<u>25.3</u> <u>27.9</u>	C
Pre-Game			76.9	A	3.0	F	<u>39.1</u> <u>28.0</u>	C
WE		Midday Non-Game	755.4	A	3.7	F	<u>19.5</u> <u>19.6</u>	D
		Pre-Game	9908.5	A	3.3	F	<u>27.3</u> <u>26.2</u>	C
		Post-Game	N/A	A	5.4	F	<u>42.6</u> <u>42.2</u>	B
Notes: SFP = square feet per pedestrian; WD = weekday; WE = weekend. N/A = Crosswalk volume is zero, and SFP is not calculable. LOS is assumed to be A.								

Base Option

No practical crosswalk widening can be implemented to mitigate the above significant adverse pedestrian impact on the south crosswalk during the non-game peak periods. However, the significant adverse pedestrian impacts identified on the north and east crosswalks could be fully mitigated by restriping the width of the north crosswalk from 12.5 feet to 30.0 feet and the east crosswalk from 7.0 feet to 33.0 feet.

Willetts Point Development

Traffic Mitigation Option

The significant adverse pedestrian impacts could be fully mitigated by restriping the width of the north crosswalk from 12.5 feet to ~~22.0~~ 13.0 feet, ~~the south crosswalk from 10.5 feet to 28.5 feet,~~ and the east crosswalk from 7.0 feet to 42.0 in conjunction with the proposed traffic mitigation measures. The feasibility of these widenings would be limited by the width of the adjoining sidewalks. In particular for the intersection's east crosswalk, if the above widening could not be achieved, the projected significant adverse impacts during certain time periods would remain unmitigated or partially mitigated.

Roosevelt Avenue and 114th Street

No significant adverse pedestrian impacts were identified at this intersection. The recommended signal timing modifications as part of the traffic mitigation would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

New Willetts Point Boulevard and 126th Street

No significant adverse pedestrian or traffic impacts were identified at this intersection; therefore, no mitigation measures are needed. ~~A significant adverse pedestrian impact was identified for the intersection's south crosswalk, where it would operate at beyond mid-LOS D (18.7 SFP) during the weekday PM peak period. Since no traffic impacts requiring mitigation were identified for this intersection, the significant adverse pedestrian impact could be fully mitigated, under the Base Option, by restriping the width of the south crosswalk from 15.0 feet to 16.0 feet, as summarized in Table 21-40.~~

Table 21-40
2032 Mitigated Condition: Pedestrian Level of Service Analysis
New Willetts Point Boulevard and 126th Street

Mitigation Measures	Analysis Time Period		No Action		With Action		Mitigated	
			SFP	LOS	SFP	LOS	SFP	LOS
Base Option								
South Crosswalk – Widening by 1 foot from 15 feet to 16 feet	WD	PM	--	--	18.7	D	20.1	D
Note: — SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

37th Avenue and 126th Street

No significant adverse pedestrian impacts were identified at this intersection; therefore, no mitigation measures are needed. The recommended traffic mitigation would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

36th Avenue and 126th Street

No significant adverse pedestrian impacts were identified at this intersection; therefore, no mitigation measures are needed. The recommended traffic mitigation would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

Roosevelt Avenue and Lot B Driveway

Significant adverse pedestrian impacts were identified for the north crosswalk, where it would operate at LOS E (45.0 14.8 SFP), LOS E (43.6 13.3 SFP), LOS E-F (8.4 7.9 SFP), LOS D (45.8 15.3 SFP), LOS E (42.4 11.7 SFP), LOS D (46.0 15.5 SFP), and LOS D (48.3 17.7 SFP) during the weekday AM, weekday midday, weekday PM, weekday pre-game, weekend midday non-game, weekend pre-game, and weekend post-game peak periods, respectively. Since no traffic impacts requiring mitigation were identified for this intersection, the significant adverse pedestrian impacts could be fully mitigated, under the Base Option, by restriping the width of the north crosswalk from 12.5 feet to ~~24.5~~ 25.0 feet, as summarized in **Table 21-41**. Due to the very low projected vehicular activity at the Lot B Driveway during all time periods, the north crosswalk would operate at most times as an extension of the connecting sidewalks with perpetual walk for the majority of the time. Consequently, it is unlikely that the projected significant adverse impacts on the north crosswalk would occur and a lesser widening (i.e., from 12.5 feet to 20.0 feet) would be expected to adequately serve the future pedestrian flow at this location.

Table 21-41
2032 Mitigated Condition: Pedestrian Level of Service Analysis
Roosevelt Avenue and Lot B Driveway

Mitigation Measures	Analysis Time Period	No Action		With Action		Mitigated		
		SFP	LOS	SFP	LOS	SFP	LOS	
Base Option								
North Crosswalk—Widening by 12 <u>12.5</u> feet from 12.5 feet to 24.5 <u>25</u> feet	WD	AM	--	--	15.0 <u>14.8</u>	E	34.2 <u>34.7</u>	C
		Midday	--	--	13.6 <u>13.3</u>	E	31.2 <u>31.3</u>	C
		PM	--	--	8.4 <u>7.9</u>	E F	49.7 <u>19.8</u>	D
		Pre-Game	--	--	45.8 <u>15.3</u>	D	35.8 <u>35.7</u>	C
	WE	Midday Non-Game	--	--	42.4 <u>11.7</u>	E	28.0 <u>27.8</u>	C
		Pre-Game	--	--	46.0 <u>15.5</u>	D	36.1 <u>35.9</u>	C
		Post-Game	--	--	48.3 <u>17.7</u>	D	40.8 <u>40.6</u>	B
Note: SFP = square feet per pedestrian; WD = weekday; WE = weekend.								

F. AIR QUALITY

EFFECTS OF PROPOSED TRAFFIC MITIGATION MEASURES

Chapter 15, “Air Quality,” concludes that the proposed project would not result in significant adverse impacts on air quality. Therefore, no air quality mitigation is required. Since the proposed traffic mitigation measures described above would alter traffic conditions when compared with the proposed project, the localized air quality impacts with mitigation were modeled for each of the analysis sites described in Chapter 15, “Air Quality.”

Table 21-42 shows the future maximum predicted 8-hour average CO concentration without the proposed project (No Action), as well as with the proposed project with and without the implementation of the traffic mitigation measures (With Action and With Traffic Mitigation) in

Table 21-42
Phase 1A (2018)

8-Hour Average CO Concentrations with Traffic Mitigation

Analysis Site	Location	Time Period	8-Hour Average Concentration (ppm)				
			No Action	With Action	With Traffic Mitigation	Increment with Traffic Mitigation	De Minimis with Traffic Mitigation
2	Boat Basin Road and Shea Road	Weekend non-game day	2.1	2.3	2.3	0.2	3.5
2	Boat Basin Road and Shea Road	Weekend game day	2.3	2.4	2.4	0.1	3.4

Notes: 8-hour standard (NAAQS) is 9 ppm.
Increment with Traffic Mitigation = With Traffic Mitigation – No Action

Phase 1A. Improvements to the traffic mitigation measures at intersection analyzed for Phase 2 (Site 1) were developed between DSEIS and FEIS. The mobile source analysis of CO concentrations at Site 1 reflects changes to traffic mitigation since DSEIS certification. **Table 21-43** shows the effects of traffic mitigation measures on air quality for Phase 2. The results indicate that the proposed project with the traffic mitigation measures would not result in any violations of the 8-hour CO standard (9 ppm) as the 8-hour average concentrations with traffic mitigation (2.3 ppm for the weekend non-game day peak period, and 2.4 ppm for the weekend game day per period in Phase 1A; 2.5 ppm for the weekend non-game day peak period and ~~2.6~~ 2.4 ppm for the game day peak period in Phase 2) would be less than the standard. In addition, the incremental increases in 8-hour average CO concentrations are very small (a maximum of 0.2 ppm for Phase 1A, and a maximum of 0.4 for Phase 2), and consequently would not result in a violation of the CEQR *de minimis* CO criteria, calculated to be 3.5 ppm for the weekend non-game day peak period, and 3.4 ppm for the weekend game day peak period, per the *CEQR Technical Manual* guidance.

Table 21-43
Phase 2 (2032)

8-Hour Average CO Concentrations with Traffic Mitigation

Analysis Site	Location	Time Period	8-Hour Average Concentration (ppm)				
			No Action	With Action	With Traffic Mitigation	Increment with Traffic Mitigation	De Minimis with Traffic Mitigation
1	34th Avenue and 126th Street	Weekend non-game day	2.1	2.6	2.5	0.4	3.5
1	34th Avenue and 126th Street	Weekend game day	2.2	2.6	2.6 <u>2.4</u>	0.4	3.4

Notes: 8-hour standard (NAAQS) is 9 ppm.
Increment with Traffic Mitigation = With Traffic Mitigation – No Action

Table 21-44 shows the Phase 1A (2018) maximum predicted 24-hour average PM₁₀ concentrations without the proposed project, with the proposed project, and with the proposed project and implementation of the traffic mitigation measures (No Action, With Action, With Traffic Mitigation).

Table 21-44
Phase 1A (2018)
24-Hour Average PM₁₀ Concentrations with Traffic Mitigation

Analysis Site	Location	Time Period	24-Hour Concentration (µg/m ³) ¹		
			No Action	With Action	With Traffic Mitigation
2	Boat Basin Road and Shea Road	Weekend non-game day	57.8	65.2	65.2
2	Boat Basin Road and Shea Road	Weekend game day	65.9	66.4	66.4

Note: ¹ NAAQS—24-hour average 150 µg/m³.

As mentioned previously, improvements to the traffic mitigation measures at intersection analyzed for Phase 2 (Site 1) were developed between DSEIS and FSEIS. The mobile source analysis of particulate matter concentrations at Analysis Site 1 reflects changes to traffic mitigation since DSEIS certification, as well as the refined analysis methodology using traffic data from the CORSIM model, as discussed in Chapter 15.

Table 21-45 shows the Phase 2 (2032) maximum predicted 24-hour average PM₁₀ concentrations. The results indicate that the implementation of the traffic mitigation measures for the proposed project would not result in any violations of the PM₁₀ standard at any of the receptor locations analyzed.

Table 21-45
Phase 2 (2032)
24-Hour Average PM₁₀ Concentrations with Traffic Mitigation

Analysis Site	Location	Time Period	24-Hour Concentration (µg/m ³) ¹		
			No Action	With Action	With Traffic Mitigation
1	34th Avenue and 126th Street	Weekend non-game day	69.3	70.1	69.3 62.6
4	34th Avenue and 126th Street	Weekend game day	62.2	70.6	70.0

Note: ¹ NAAQS—24-hour average 150 µg/m³.

Future maximum predicted 24-hour and annual average PM_{2.5} concentrations were determined so that they could be compared with the ~~interim guidance~~ *de minimis* criteria for PM_{2.5}. Consistent with current CEQR guidance, PM_{2.5} concentrations are presented as an incremental change in concentrations for both the proposed project without traffic mitigation measures (as compared with the No Action) and for the proposed project with traffic mitigation measures (as compared with the No Action). The maximum predicted localized 24-hour average and neighborhood-scale annual average PM_{2.5} concentration increments are presented in **Tables 21-46** and **21-47**, respectively, for Phase 1A, and in **Tables 21-48** and **21-49**, respectively, for Phase 2. The results show that the maximum daily (24-hour) PM_{2.5} increments with traffic mitigation measures (**Table 21-46** for Phase 1A and **Table 21-48** for Phase 2) are predicted to be below the *de minimis* ~~applicable interim guidance criterion~~ of 4.5 µg/m³, and the maximum annual average PM_{2.5} increments (**Table 21-47** for Phase 1A and **Table 21-49** for Phase 2) are not predicted to exceed the applicable ~~interim guidance~~ *de minimis* criterion of 0.1 µg/m³. Furthermore, implementation of the traffic mitigation measures would lower the predicted ~~neighborhood-scale annual~~ 24-hour average PM_{2.5} concentration increment from the proposed project.

Table 21-46
Phase 1A (2018)

24-Hour Average PM_{2.5} Concentration Increments with Traffic Mitigation

Analysis Site	Location	Time Period	Increment (µg/m ³)	Increment with Traffic Mitigation (µg/m ³)	<i>De Minimis</i>
2	Boat Basin Road and Shea Road	Weekend non-game day	2.31	2.32	<u>4.5</u>
2	Boat Basin Road and Shea Road	Weekend game day	0.93	0.90	<u>4.5</u>
Notes: EPA has lowered the NAAQS to 35 µg/m ³ , effective December 18, 2006. <u>The PM_{2.5} <i>de minimis</i> criteria superseded the PM_{2.5} interim guidance criteria on June 5, 2013. The 24-hour average, interim guidance criteria for PM_{2.5} were as follows — > 2 µg/m³ (5 µg/m³ not-to-exceed value), based on the magnitude, frequency duration, location, and size of the area of the predicted concentrations.</u> <u>The PM_{2.5} increments shown are less than the <i>de minimis</i> value. These increments were not considered significant when they were compared with the interim guidance criteria in the DSEIS, and are also not significant when compared to the <i>de minimis</i> value.</u>					

Table 21-47
Phase 1A (2018)

Neighborhood Scale PM_{2.5} Concentration Increments with Traffic Mitigation

Analysis Site	Location	Increment (µg/m ³)	Increment with Traffic Mitigation (µg/m ³)
2	Boat Basin Road and Shea Road	0.03	0.05
Notes: EPA has lowered the NAAQS to 12 µg/m ³ , effective March 2013. PM _{2.5} interim guidance <i>de minimis</i> criteria—annual average (neighborhood scale) 0.1 µg/m ³ . <u>The <i>de minimis</i> criteria superseded the interim guidance criteria that were used for impact assessment in the DSEIS. For annual increments, the <i>de minimis</i> criteria are the same as the superseded interim guidance criteria.</u>			

Table 21-48
Phase 2 (2032)

24-Hour Average PM_{2.5} Concentration Increments with Traffic Mitigation

Analysis Site	Location	Time Period	Increment (µg/m ³)	Increment with Traffic Mitigation (µg/m ³)	<i>De Minimis</i>
1	34th Avenue and 126th Street	Weekend non-game day	3.50 <u>1.28</u>	3.24 <u>1.05</u>	<u>4.5</u>
4	34th Avenue and 126th Street	Weekend game day	4.70	4.83	<u>4.5</u>
Notes: EPA has lowered the NAAQS to 35 µg/m ³ , effective December 18, 2006. <u>The PM_{2.5} <i>de minimis</i> criteria superseded the PM_{2.5} interim guidance criteria on June 5, 2013. The 24-hour average, interim guidance criteria for PM_{2.5} were as follows — > 2 µg/m³ (5 µg/m³ not-to-exceed value), based on the magnitude, frequency duration, location, and size of the area of the predicted concentrations.</u> <u>The PM_{2.5} increments shown are less than the <i>de minimis</i> value. These increments were not considered significant when they were compared with the interim guidance criteria in the DSEIS, and are also not significant when compared to the <i>de minimis</i> value.</u>					

Table 21-49

Phase 2 (2032) with Traffic Mitigation
Neighborhood Scale PM_{2.5} Concentration Increments in µg/m³

Analysis Site	Location	Increment	Increment with Traffic Mitigation	<i>De Minimis</i>
1	34th Avenue and 126th Street	0.10 <u>0.08</u>	0.06 <u>0.10</u>	<u>0.1</u>
Notes: EPA has lowered the NAAQS to 12 µg/m ³ , effective March 2013. PM _{2.5} interim guidance <i>de minimis</i> criteria—annual average (neighborhood scale) 0.1 µg/m ³ . <i>The de minimis criteria superseded the interim guidance criteria that were used for impact assessment in the DSEIS. For annual increments, the de minimis criteria are the same as the superseded interim guidance criteria.</i>				

For Phase 1A, the maximum 24-hour average incremental PM_{2.5} concentration from the proposed project with the traffic mitigation measures was predicted to be 2.32 µg/m³ (shown in **Table 21-46**) at Site 2, for the non-game analysis period, slightly above the incremental concentration predicted without the mitigation measures. ~~Throughout the five analysis years, 24-hour average PM_{2.5} concentration increments above 2.0 µg/m³ were predicted to occur four times, and at most once per year. Based on the magnitude, extent, and frequency of 24 hour average PM_{2.5} concentrations above 2.0 µg/m³, the proposed project with traffic mitigation would not result in significant PM_{2.5} impacts at the analyzed receptor location in Phase 1A. Furthermore, the maximum predicted 24 hour average concentration for Phase 1A with traffic mitigation is 4.52 µg/m³, which when added to the PM_{2.5} background concentration of 26 µg/m³ would be less than the corresponding NAAQS of 35 µg/m³.~~

Additional air quality studies were undertaken between the DSEIS and FSEIS to account for improvements to the traffic mitigation measures that were developed for Analysis Site 1 after DSEIS certification. The refined analysis, using traffic data from the CORSIM model was conducted for the non-game analysis period, which resulted in greatest concentrations at sensitive receptors without the refined modeling. For Phase 2, the maximum 24-hour average incremental PM_{2.5} concentration from the proposed project with the traffic mitigation measures was predicted to be ~~3.24~~ 1.05 µg/m³ (shown in **Table 21-48**) at Site 1, for the non-game analysis period, which is less than the incremental concentration predicted without the mitigation measures. ~~Assuming non-game day conditions throughout the five analysis years, 24 hour average PM_{2.5} concentration increments above 2.0 µg/m³ were predicted to occur for at most two times in a year, and at an average of 1.2 times per year, much less frequently than without the traffic mitigation measures. With traffic mitigation, over the five year period, there would be only two occurrences of 24 hour average PM_{2.5} concentration increments above 3.0 µg/m³, occurring at most once per year and at an average of 0.4 times per year. Based on the magnitude, extent, and frequency of 24 hour average PM_{2.5} concentrations above 2.0 µg/m³, the proposed project with traffic mitigation measures would not result in significant PM_{2.5} impacts at the analyzed receptor locations. Furthermore, the maximum predicted 24 hour average concentration for Phase 2 with traffic mitigation is 6.36 µg/m³, which when added to the PM_{2.5} background concentration of 26 µg/m³ would be less than the corresponding NAAQS of 35 µg/m³. Therefore, no significant adverse air quality impacts would occur as a result of the proposed traffic mitigation measures. Additional air quality studies may be undertaken between the Draft SEIS and Final SEIS to further refine mitigation mobile source analysis for the Phase 2 analysis year, in consultation with DEP.~~

G. NOISE

Future noise levels with the proposed traffic mitigation measures were calculated for a residential receptor along Janet Place using the methodology described in Chapter 17, “Noise,” for 2018, 2028, and 2032 analysis years. This receptor was analyzed, as traffic traveling southbound on College Point Boulevard and turning right on Roosevelt Avenue would be diverted onto 39th Avenue and Janet Place before turning onto Roosevelt Avenue, and traffic traveling west on Roosevelt Avenue and turning left on College Point Boulevard would be diverted north on Janet Place and east on 39th Avenue before making a right onto College Point Boulevard. A proportional model was used to determine that the proposed traffic mitigation measures would not have the potential to increase noise levels at other noise-sensitive receptor locations. A weekday AM peak hour measurement was conducted on February 7, 2013. The TNM was used to estimate noise levels during all time periods and to predict future No Action and With Action values and to assess any potential impacts. No Action and With Action (With Mitigation) values for 2018, 2028, and 2032 analysis years with the proposed traffic mitigation measures in place are shown in **Tables 21-50, 21-51, and 21-52.**

Table 21-50
2018 Noise Levels With Traffic Mitigation Measures

Location	Day	Time Period	No Action L _{eq} (1)	With Mitigation L _{eq} (1)	Mitigation— No Action Increase
Janet Place between 39th and Roosevelt Avenues	Weekday	AM	67.7 68.0	67.7 68.5	0.0 0.5
	Weekday	MD	67.6	67.7 68.1	0.0 0.5
	Weekday	PM	67.7 67.8	67.8 68.1	0.0 0.3
	Saturday	MD	67.5	67.6 67.9	0.1 0.4
	Weekday	Pre-Game	67.4	67.5 67.8	0.1 0.4
	Saturday	Pre-Game	67.5	67.5 67.8	0.0 0.3
	Saturday	Post-Game	67.5	67.5 67.8	0.0 0.3

Table 21-51
2028 Noise Levels With Traffic Mitigation Measures

Location	Day	Time Period	No Action $L_{eq(1)}$	With Mitigation $L_{eq(1)}$	Mitigation— No Action Increase
Janet Place between 39th and Roosevelt Avenues	Weekday	AM	<u>67.7</u> 68.0	<u>67.8</u> 68.6	<u>0.1</u> 0.6
	Weekday	MD	67.6	<u>67.8</u> 68.1	<u>0.2</u> 0.5
	Weekday	PM	<u>67.7</u> 67.8	<u>67.8</u> 68.1	<u>0.1</u> 0.3
	Saturday	MD	67.5	<u>67.7</u> 68.0	<u>0.2</u> 0.5
	Weekday	Pre-Game	67.4	<u>67.5</u> 67.9	<u>0.1</u> 0.5
	Saturday	Pre-Game	67.5	<u>67.6</u> 67.9	<u>0.1</u> 0.5
	Saturday	Post-Game	67.5	<u>67.6</u> 67.9	<u>0.1</u> 0.5

Table 21-52
2032 Noise Levels With Traffic Mitigation Measures

Location	Day	Time Period	No Action $L_{eq(1)}$	With Mitigation $L_{eq(1)}$	Mitigation— No Action Increase
Janet Place between 39th and Roosevelt Avenues	Weekday	AM	<u>67.7</u> 68.1	<u>67.9</u> 68.7	<u>0.2</u> 0.6
	Weekday	MD	67.6	<u>67.9</u> 68.2	<u>0.3</u> 0.5
	Weekday	PM	<u>67.7</u> 67.8	<u>67.9</u> 68.2	<u>0.2</u> 0.5
	Saturday	MD	67.5	<u>67.7</u> 68.0	<u>0.2</u> 0.5
	Weekday	Pre-Game	67.4	<u>67.6</u> 68.0	<u>0.2</u> 0.6
	Saturday	Pre-Game	67.5	<u>67.7</u> 67.9	<u>0.2</u> 0.5
	Saturday	Post-Game	67.5	<u>67.6</u> 68.0	<u>0.1</u> 0.5

In 2032, when the proposed project would be completed, $L_{eq(1)}$ noise levels due to project-generated traffic with the proposed traffic mitigation measures would be less than 1 dBA. Noise level increases of this magnitude would be imperceptible and would not result in any significant adverse noise impacts due to the traffic mitigation measures noise.

H. CONSTRUCTION

There would be temporary inconvenience and disruption arising from the construction of the proposed project throughout the Willets Point/CitiField area. As explained in detail in Chapter 20, "Construction," the proposed project would result in significant adverse construction impacts related to transportation and historic and cultural resources. Potential mitigation for these significant adverse impacts is described below.

HISTORIC AND CULTURAL RESOURCES

As described above, in Section C. “Historic and Cultural Resources,” consistent with the findings in the 2008 FGEIS, construction activities related to the development that would occur within the District during Phase 2 of the proposed project would be anticipated to result in the demolition of the former Empire Millwork Corporation Building, which was found by OPRHP to be eligible for listing on the State and National Registers of Historic Places (S/NR). Demolition of this structure would be considered a significant adverse effect on this architectural resource. Potential measures to mitigate this adverse impact are described in Section C above.

TRAFFIC

As detailed in Chapter 20, “Construction,” the worst-case analysis of peak Phase 2 construction identified significant adverse traffic impacts during the 6–7 AM and 3–4 PM construction peak hours. All significantly impacted intersections could be fully or partially mitigated, the majority of which would require standard mitigation measures typically implemented by NYCDOT. In addition, two locations—126th Street at Northern Boulevard and 126th Street/Grand Central Parkway Ramp at 34th Avenue—would require special more intensive mitigation measures to mitigate the significant impacts in the 3–4 PM peak construction hour. The recommended mitigation measures would be similar to those proposed to mitigate the intersection impacts associated with the project’s build-out and occupancy. In addition, the significant adverse traffic impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition are expected to also address the potential traffic impacts during construction. As with the 2032 With Action condition, several of the projected traffic impacts during various analysis peak periods may remain unmitigated.

TRANSIT

The construction worker trips would occur outside of peak periods of transit ridership and would be distributed and dispersed to the nearby transit facilities, and would not result in any significant adverse transit impacts. However, the significant adverse transit impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition (i.e., stairway widening at the Mets-Willets Point subway station and bus frequency increase) are expected to also address the potential transit impacts during construction. As with the 2028 and 2032 With Action conditions, the projected subway ~~station and~~ line-haul impacts may remain unmitigated.

PEDESTRIANS

The construction worker pedestrian trips would primarily be concentrated during off-peak hours (6–7 AM and 3–4 PM) and would be distributed among numerous pedestrian facilities (i.e. sidewalks, corner reservoirs, and crosswalks) in the area. Accordingly, there would not be a potential for significant adverse pedestrian impacts attributable to the projected construction worker pedestrian trips. However, the significant adverse pedestrian impacts disclosed for the 2032 With Action condition may also occur during peak construction in 2031. Similar mitigation measures as those identified for the 2032 With Action condition (i.e., crosswalk widening) are expected to also address the potential pedestrian impacts during construction. Where mitigation measures may be deemed impractical to mitigate the projected With Action significant adverse pedestrian impacts, those impacts could similarly be unmitigatable during construction.

Detailed Intersection Level of Service Tables

TABLE 1
2018 (PHASE 1A) SUMMARY OF NON-GAMEDAY MITIGATION MEASURES

INTERSECTION SIGNALIZED INTERSECTIONS	NON-GAMEDAY WEEKDAY AM PEAK HOUR	NON-GAMEDAY WEEKDAY MIDDAY PEAK HOUR	NON-GAMEDAY WEEKDAY PM PEAK HOUR	NON-GAMEDAY SATURDAY MIDDAY PEAK HOUR
108th Street at Astoria Boulevard	Mitigation not required. Install "No Standing Anytime" regulations along the east curb of the NB approach for 250 ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250 ft from the intersection to allow for two moving lanes. Restrict NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.	Mitigation not required. Install "No Standing Anytime" regulations along the east curb of the NB approach for 250 ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250 ft from the intersection to allow for two moving lanes. Restrict NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 2 of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 66 s to 68 s; NB/SB green time shifts from 30 s to 28 s].	Unmitigatable impact. Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restrict NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 2 green time from EB/WB phase to EB/WB phase; shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 71 s to 74 s; EB/WB left-turn phase shifts from 9 s to 7 s; NB/SB phase shifts from 25 s to 24 s].	Mitigation not required. Install "No Standing Anytime" regulations along the east curb of the NB approach for 250 ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restrict NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 4 green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 66 s to 70 s; NB/SB phase shifts from 30 s to 26 s].
114th Street at Northern Boulevard (RT, 25A)	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Street and then to SEB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restrict SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 7 s green time from WB lead phase to SB phase [SB green time shifts from 23 to 30 s]. Shift 34 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 46 to 38 s].	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Street and then to SEB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restrict SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 to 75 s]. [Measures reflect improvements needed for the Weekday Non-game AM and PM, Saturday, Weekday Pre-game, and Saturday Pre- and Post-game peak periods.]	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Street and then to SEB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restrict SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 25 to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 to 75 s].	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Street and then to SEB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restrict SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 to 75 s]. [Measures reflect improvements needed for the Weekday Non-game AM and PM, Saturday, Weekday Pre-game, and Saturday Pre- and Post-game peak periods.]
126th Street at Northern Boulevard (RT, 25A)	Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyk and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th P to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Restrict NB approach of 126th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 126th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase and shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [EB Northern Blvd green time shifts from 55 s to 57 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 42 s; NB 126th St green time shifts from 25 s to 26 s].	Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyk and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th P to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Restrict NB approach of 126th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 126th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase and shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [EB Northern Blvd green time shifts from 55 s to 57 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 42 s; NB 126th St green time shifts from 25 s to 26 s].	Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyk and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th P to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Restrict NB approach of 126th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 126th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase and shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [EB Northern Blvd green time shifts from 55 s to 57 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 42 s; NB 126th St green time shifts from 25 s to 26 s].	Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyk and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th P to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Restrict NB approach of 126th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restrict SB approach of 126th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase and shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [EB Northern Blvd green time shifts from 55 s to 57 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 44 s].
Prince Street at Northern Boulevard (RT, 25A) Main Street at Northern Boulevard (RT, 25A)	Unmitigatable impact. Mitigation not required. Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].	Unmitigatable impact. Mitigation not required. Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].	Unmitigatable impact. Mitigation not required. Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].	Unmitigatable impact. Mitigation not required. Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 3 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 41 s; EB/WB green time shifts from 45 s to 48 s].
Union Street at Northern Boulevard (RT, 25A)	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB green time shifts from 50 s to 51 s; EB/WB protected left-turn green time shifts from 12 s to 11 s].	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to NB/SB phase and 2 s green time from EB/WB protected left-turn phase to EB/WB phase [NB/SB green time shifts from 50 s to 52 s].	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to NB/SB phase and 2 s green time from EB/WB protected left-turn phase to EB/WB phase [NB/SB green time shifts from 50 s to 52 s].	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 4 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 50 s to 54 s].
Parsons Boulevard at Northern Boulevard (RT, 25A)	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB green time shifts from 50 s to 51 s; EB/WB protected left-turn green time shifts from 12 s to 11 s].	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	Unmitigatable impact. Mitigation not required. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 4 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 50 s to 54 s].
126th Street/GCP Ramp at 34th Avenue	Mitigation not required. Restrict the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn lane from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s]. Restrict the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn lane from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s]. Restrict the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn lane from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].	Restrict the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn lane from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].
108th Street at Roosevelt Avenue	Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. [Measures reflect improvements needed for the Weekday Non-game Midday, Weekday Non-game PM and Saturday Non-game Midday peak periods.]	Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150 ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150 ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150 ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150 ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
111th Street at Roosevelt Avenue	Mitigation not required.	Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane. [Measures reflect improvements needed for the Weekday Non-game PM, Saturday Non-game Midday, Weekday Pre-game, and Saturday Pre- and Post-game peak periods.]	Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.	Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.
114th Street at Roosevelt Avenue	Partially mitigated. Shift the centerline of the SB 114th Street approach 2 feet to the east. Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. Shift center line of WB Roosevelt Avenue approach 11 ft to the south. Restrict WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane.	Shift the centerline of the SB 114th Street approach 2 feet to the east. Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. Shift center line of WB Roosevelt Avenue approach 11 ft to the south. Restrict WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane.	Shift the centerline of the SB 114th Street approach 2 feet to the east. Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150 ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. Shift center line of WB Roosevelt Avenue approach 11 ft to the south. Restrict WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane.	Shift the centerline of the SB 114th Street approach 2 feet to the east. Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150 ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. Shift center line of WB Roosevelt Avenue approach 11 ft to the south. Restrict WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane.
126th Street at Roosevelt Avenue	Restrict SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. New signal phasing and timing plan: Shared EB/WB phase receives 55 s green time; EB lag phase with SB right-turn receives 7 s green time; NB/SB phase receives 39 s green time [each phase will have 3 s amber and 2 s all red time].	Restrict SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. New signal phasing and timing plan: Shared EB/WB phase receives 55 s green time; EB lag phase with SB right-turn receives 7 s green time; NB/SB phase receives 43 s green time [each phase will have 3 s amber and 2 s all red time].	Restrict SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. New signal phasing and timing plan: Shared EB/WB phase receives 59 s green time; EB lag phase with SB right-turn receives 7 s green time; NB/SB phase receives 39 s green time [each phase will have 3 s amber and 2 s all red time].	Restrict SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. New signal phasing and timing plan: Shared EB/WB phase receives 56 s green time; EB lag phase with SB right-turn receives 7 s green time; NB/SB phase receives 42 s green time [each phase will have 3 s amber and 2 s all red time].

2018 (PHASE 1A) SUMMARY OF NON- GAMEDAY MITIGATION MEASURES

NOTE: This table has been revised for the Final SEIS.

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS															
ASTORIA BOULEVARD															
108th Street at Astoria Boulevard															
108th Street	NB	DefL	0.76	59.1	E	DefL	0.80	62.6	E						-Mitigation not required.
		T	0.21	35.5	D	T	0.21	35.5	D						
Astoria Boulevard	SB	LTR	0.35	38.3	D	LTR	0.35	38.3	D						
	EB	TR	0.59	25.4	C	TR	0.61	25.8	C						
	WB	L	0.55	14.3	B	L	0.56	14.8	B						
	TR	0.76	7.8	A	TR	0.77	7.9	A							
Overall Intersection		-	0.76	17.6	B	-	0.78	18.1	B						
NORTHERN BOULEVARD															
108th Street at Northern Boulevard (RT. 25A)															
108th Street	NB	LTR	1.10	100.2	F	LTR	1.20	139.5	F	L	0.55	43.9	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes.	
		-	-	-	-	-	-	-	-	TR	0.60	42.5	D		
Northern Boulevard (Rt. 25A)	SB	LTR	0.96	77.2	E	LTR	0.97	79.0	E	L	0.30	42.6	D	-Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes.	
	-	-	-	-	-	-	-	-	-	TR	0.62	47.3	D		
	EB	L	0.07	20.8	C	L	0.07	21.4	C	L	0.07	21.4	C	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft.	
	TR	0.74	20.3	C	TR	0.77	21.1	C	TR	0.77	21.1	C			
	WB	L	0.42	20.3	C	L	0.44	21.7	C	L	0.44	21.7	C	-Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.	
	TR	1.02	30.5	C	TR	1.03	33.7	C	TR	1.03	33.7	C			
Overall Intersection		-	0.91	34.2	C	-	0.94	39.0	D	-	0.80	31.1	C		
114th Street at Northern Boulevard (RT. 25A)															
114th Street	SB	LTR	0.46	47.5	D	LTR	0.49	48.2	D	LTR	0.61	43.4	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes.	
	EB	T	0.86	39.9	D	T	0.89	42.1	D	T	0.51	10.8	B		
Northern Boulevard (Rt. 25A)	-	R	0.73	37.7	D	R	0.74	38.4	D	R	0.43	10.3	B	-Divert left-turning turning to NB 112th Street and then to SB 114th Street.	
	WB	DefL	0.48	13.6	B	DefL	0.51	16.6	B	-	-	-	-	-Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes.	
	-	T	1.16	89.8	F	T	1.17	94.4	F	T	0.98	21.6	C	-Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides.	
	Overall Intersection		-	1.30	67.8	E	-	1.32	70.9	E	-	0.88	20.5	C	-Modify signal timing: Eliminate WB lead phase. Shift 7 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 30 s]. Shift 34 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 46 s to 80 s].
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.28	41.1	D	L	0.37	42.6	D	L	0.37	42.6	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.	
		R	0.27	41.2	D	R	0.63	53.5	D	R	0.39	43.3	D		
Northern Boulevard	EB	T	0.53	38.0	D	T	0.53	38.0	D	T	0.56	37.9	D	-Close the ramp from EB Northern Blvd ramp to 126th Street.	
	WB	T	0.64	10.6	B	T	0.66	10.9	B	T	0.66	10.9	B	-Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.	
Grand Central Parkway Ramp	EB	T	0.82	40.9	D	T	0.82	40.9	D	T	0.82	40.9	D	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes.	
Van Wyck & Whitestone Expressway Ramp	WB	T	1.09	101.3	F	T	1.20	144.9	F	-	-	-	-	-Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard.	
Overall Intersection		-	0.91	48.5	D	-	1.07	63.2	E	-	0.63	28.2	C		

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Prince Street at Northern Boulevard (RT. 25A)														
Prince Street	NB	LTR	1.13	124.0	F	LTR	1.13	124.0	F					-Unmitigatable impact.
	SB	LTR	0.78	52.5	D	LTR	0.78	52.5	D					
Northern Boulevard (Rt. 25A)	EB	L	0.94	89.0	F	L	0.94	89.0	F					
		T	0.79	22.0	C	T	0.80	22.4	C					
	WB	L	0.94	88.4	F	L	0.94	88.4	F					
		T	1.13	85.4	F	T	1.15	90.0	F					
Northern Boulevard Service Rd.	EB	TR	0.44	16.5	B	TR	0.44	16.5	B					
	WB	TR	0.65	18.8	B	TR	0.67	19.2	B					
Overall Intersection		-	1.10	57.2	E	-	1.10	59.1	E					
Main Street at Northern Boulevard (RT. 25A)														
Main Street	NB	L	0.76	43.1	D	L	0.76	43.1	D					-Mitigation not required.
	R		0.83	52.1	D	R	0.83	52.1	D					
Northern Boulevard (Rt. 25A)	EB	T	0.92	37.9	D	T	0.94	39.4	D					
		R	1.14	113.1	F	R	1.14	113.1	F					
	WB	L	0.16	26.4	C	L	0.16	26.4	C					
		T	1.03	34.9	C	T	1.04	40.6	D					
Overall Intersection		-	0.99	45.0	D	-	0.99	47.8	D					
Union Street at Northern Boulevard (RT. 25A)														
Union Street	NB	TR	0.66	34.6	C	TR	0.66	34.6	C	TR	0.69	36.9	D	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.
	SB	TR	0.87	41.0	D	TR	0.87	41.0	D	TR	0.91	45.5	D	
Northern Boulevard (Rt. 25A)	EB	L	0.94	61.6	E	L	0.94	61.7	E	L	0.94	61.6	E	
		TR	1.20	131.0	F	TR	1.22	139.0	F	TR	1.17	114.7	F	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].
	WB	L	1.00	71.7	E	L	1.00	71.8	E	L	1.00	71.8	E	
		TR	0.94	37.3	D	TR	0.96	38.8	D	TR	0.92	34.1	C	
Overall Intersection		-	1.05	68.1	E	-	1.05	71.2	E	-	1.07	63.0	E	
Parsons Boulevard at Northern Boulevard (RT. 25A)														
Parsons Boulevard	NB	L	0.91	81.5	F	L	0.91	81.5	F	L	0.91	81.5	F	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	0.55	39.5	D	TR	0.55	39.5	D	TR	0.55	39.5	D	
	SB	LTR	0.79	45.4	D	LTR	0.79	45.7	D	LTR	0.79	45.7	D	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	-	-	-	-	
Northern Boulevard (Rt. 25A)	EB	L	0.52	44.7	D	L	0.53	45.1	D	L	0.55	46.0	D	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	1.01	53.4	D	TR	1.03	60.8	E	T	0.79	31.8	C	
		-	-	-	-	-	-	-	-	R	0.37	24.6	C	-Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB green time shifts from 50 s to 51 s; EB/WB protected left-turn green time shifts from 12 s to 11 s].
	WB	L	0.42	35.3	D	L	0.43	36.4	D	L	0.40	30.6	C	
		TR	1.10	75.1	E	TR	1.11	83.5	F	TR	1.09	72.7	E	
		-	-	-	-	-	-	-	-	-	-	-	-	
Overall Intersection		-	1.00	62.0	E	-	1.00	67.9	E	-	1.01	54.8	D	
34TH AVENUE														
114th Street at 34th Avenue														
114th Street	SB	L	0.82	37.5	D	L	0.85	39.1	D					-Mitigation not required.
		T	0.31	24.5	C	T	0.33	24.8	C					
34th Avenue	EB	T	0.41	11.8	B	T	0.41	11.8	B					
		R	0.11	8.8	A	R	0.11	8.8	A					
Overall Intersection		-	0.56	23.2	C	-	0.57	24.0	C					

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	DefL	0.25	22.1	C	L	0.14	19.5	B	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].	
Northern Boulevard Ramp	SB	LTR	0.17	19.9	B	TR	0.23	20.7	C	TR	0.20	19.8	B		
	SB	LTR	0.31	22.3	C	LTR	0.39	23.7	C	-	-	-	-		
GCP Ramp	SB	LTR	0.81	64.0	E	LTR	1.22	169.9	F	L	0.02	17.9	B		
Shea Road	-	-	-	-	-	-	-	-	-	T	0.14	19.0	B		
	EB	-	-	-	-	-	-	-	-	-	-	-	-		
34th Avenue	LTR	0.46	43.0	D	LTR	0.76	54.2	D	LTR	0.29	21.0	C			
	-	-	-	-	-	-	-	-	DefL	0.40	23.8	C			
WB	LTR	0.63	52.9	D	LTR	0.77	65.9	E	TR	0.25	20.9	C			
Overall Intersection	-	0.51	39.8	D	-	0.68	73.5	E	-	0.30	20.7	C			
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	0.99	70.3	E	LTR	1.00	73.7	E	LT	0.81	49.4	D		-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. [Measures reflect improvements needed for the Weekday Non-game Midday, Weekday Non-gan PM and Saturday Non-game Midday peak periods.]
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.18	35.8	D		
	SB	LTR	1.05	83.8	F	LTR	1.05	85.2	F	LT	0.83	49.7	D		
	-	-	-	-	-	-	-	-	-	R	0.29	37.0	D		
	EB	LTR	0.67	15.6	B	LTR	0.69	16.5	B	LTR	0.69	16.5	B		
	WB	LTR	0.80	9.7	A	LTR	0.83	10.7	B	LTR	0.83	10.7	B		
	Overall Intersection	-	0.87	32.5	C	-	0.89	33.5	C	-	0.83	23.6	C		
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	0.97	63.1	E	LTR	0.97	63.1	E					-Mitigation not required.	
Roosevelt Avenue	EB	LTR	0.66	15.1	B	LTR	0.69	15.9	B						
	WB	LTR	0.91	16.0	B	LTR	0.93	18.4	B						
	-	-	-	-	-	-	-	-	-						
Overall Intersection	-	0.92	24.9	C	-	0.94	26.0	C							
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	1.00	66.8	E	LTR	1.02	72.4	E	LTR	1.02	72.4	E	-Partially mitigated. -Shift the centerline of the SB 114th Street approach 2 feet to the east. -Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. -Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane.	
Roosevelt Avenue	SB	LTR	1.07	90.0	F	LTR	1.20	142.3	F	LT	0.95	58.6	E		
	-	-	-	-	-	-	-	-	-	R	0.09	34.7	C		
	EB	LTR	0.80	21.5	C	LTR	0.85	24.7	C	L	0.18	8.2	A		
	-	-	-	-	-	-	-	-	-	TR	0.58	13.1	B		
	WB	LTR	0.55	5.3	A	LTR	0.60	5.7	A	L	0.56	15.2	B		
	-	-	-	-	-	-	-	-	-	T	0.52	5.6	A		
	-	-	-	-	-	-	-	-	-	R	0.16	7.9	A		
	Overall Intersection	-	0.88	27.7	C	-	0.95	34.4	C	-	0.70	23.5	C		
126th Street at Roosevelt Avenue															
126th Street	NB	LTR	0.21	36.9	D	LTR	0.21	36.9	D	LTR	0.17	29.7	C	-Restripe SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. -New signal phasing and timing plan: Shared EB/WB phase receives 59 s green time; EB lag phase with SB right-turns receives 7 s green time; NB/SB phase receives 39 s green time [each phase will have 3 s amber and 2 s all red time].	
Roosevelt Avenue	SB	DefL	1.20	164.2	F	DefL	1.26	187.0	F	LT	1.02	93.1	F		
	TR	0.65	51.6	D	TR	0.69	53.7	D	R	0.28	23.5	C			
	EB	-	-	-	-	-	-	-	-	-	-	-	-		
	LTR	0.55	12.2	B	LTR	0.58	12.8	B	LTR	0.63	18.4	B			
	WB	LTR	0.61	5.9	A	LTR	0.64	6.4	A	LTR	0.87	30	C		
	Overall Intersection	-	0.75	32.9	C	-	0.79	36.2	D	-	0.98	34.2	C		

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard Roosevelt Avenue	NB	L	1.38	230.9	F	L	1.45	258.0	F	L	1.19	157.2	F	-Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. -Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 33 s green time; EB-lag phase will have 20 s green time; NB lead-phase will have 17 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].
		TR	0.72	27.0	C	TR	0.72	27.0	C	TR	0.81	35.2	D	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SB	TR	0.84	42.5	D	TR	0.86	44.1	D	T	0.76	46.1	
	EB	L	0.44	39.9	D	L	0.44	39.9	D	L	0.40	35.3	D	
		TR	0.96	55.8	E	TR	1.01	66.4	E	TR	0.86	36.4	D	
	WB	L	0.22	45.2	D	L	0.22	45.2	D	-	-	-	-	
		TR	0.67	44.0	D	TR	0.69	44.9	D	TR	0.46	37.4	D	
Overall Intersection		-	1.07	65.2	E	-	1.12	71.7	E	-	0.88	55.2	E	
Prince Street at Roosevelt Avenue														
Prince Street Roosevelt Avenue	SB	LTR	0.50	30.7	C	LTR	0.50	30.7	C	LTR	0.51	31.6	C	-Modify Signal Timing: Shift 1 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 64 s; SB green time shifts from 47 s to 46 s].
	EB	DefL	1.26	165.4	F	DefL	1.27	171.0	F	DefL	1.24	157.6	F	
	TR	0.57	22.7	C	TR	0.59	23.1	C	TR	0.58	22.2	C		
	WB	LTR	0.88	32.0	C	LTR	0.90	33.3	C	LTR	0.88	31.2	C	
	Overall Intersection		-	0.94	63.3	E	-	0.94	64.6	E	-	0.94	60.6	
Main Street at Roosevelt Avenue														
Main Street Roosevelt Avenue	NB	T	0.58	21.9	C	T	0.58	21.9	C	T	0.60	23.5	C	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 47 s; NB/SB green time shifts from 65 s to 63 s].
	SB	T	0.44	19.5	B	T	0.44	19.5	B	T	0.45	20.9	C	
	EB	L	0.41	43.0	D	L	0.43	45.8	D	L	0.38	38.9	D	
		TR	0.56	35.8	D	TR	0.58	36.7	D	TR	0.56	34.4	C	
	WB	L	0.10	25.3	C	L	0.11	25.4	C	L	0.10	24	C	
		TR	0.97	61.5	E	TR	0.99	66.0	E	TR	0.95	54.9	D	
	Overall Intersection		-	0.74	34.5	C	-	0.76	36.1	D	-	0.75	33.5	
Union Street at Roosevelt Avenue														
Union Street Roosevelt Avenue	NB	TR	0.58	19.6	B	TR	0.58	19.6	B					-Unmitigatable impact.
	SB	LT	1.04	59.4	E	LT	1.04	59.4	E					
	R	0.83	33.6	C	R	0.83	33.6	C						
	EB	LTR	1.35	196.4	F	LTR	1.41	221.2	F					
	WB	LT	0.97	44.8	D	LT	0.99	49.5	D					
		R	1.08	92.6	F	R	1.08	92.6	F					
	Overall Intersection		-	1.18	69.9	E	-	1.21	75.7	E				

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div></div>															
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	1.09	78.0	E	LTR	1.10	80.2	F	LT	0.98	41.5	D	-Modify Signal Timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 56 s; NB/SB green time shifts from 55 s to 54 s. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	
		-	-	-	-	-	-	-	-	R	0.08	18.9	B		
	SB	LTR	0.79	33.6	C	LTR	0.79	33.6	C	LTR	0.81	35.0	C		
	Roosevelt Avenue	EB	LTR	0.48	25.5	C	LTR	0.50	26.0	C	LTR	0.49	25.1		C
WB		LTR	1.12	90.5	F	LTR	1.14	98.7	F	LTR	1.12	88.0	F		
Overall Intersection		-	1.11	61.8	E	-	1.12	64.9	E	-	1.05	51.4	D		
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.71	31.6	C	L	0.71	31.8	C					-Mitigation not required.	
		TR	0.68	24.6	C	TR	0.68	24.6	C						
	SB	L	0.63	37.5	D	L	0.63	37.5	D						
		TR	0.38	18.2	B	TR	0.38	18.2	B						
Kissena Boulevard	WB	T	0.72	37.5	D	T	0.72	37.5	D						
Overall Intersection		-	0.71	27.1	C	-	0.72	27.1	C						
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.20	10.1	B	L	0.20	10.1	B					-Mitigation not required.	
		T	0.67	14.7	B	T	0.68	14.8	B						
	SB	TR	0.57	13.0	B	TR	0.58	13.1	B						
	Sanford Avenue	WB	L	0.77	43.9	D	L	0.77	43.9	D					
		TR	0.54	29.7	C	TR	0.56	30.2	C						
Overall Intersection		-	0.70	18.7	B	-	0.71	18.9	B						
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.68	29.3	C	LTR	0.68	29.3	C					-Mitigation not required.	
	SB	LTR	0.59	24.2	C	LTR	0.60	24.3	C						
	Sanford Avenue	EB	DefL	0.55	24.8	C	DefL	0.55	25.0	C					
			TR	0.36	15.7	B	TR	0.36	15.7	B					
	WB	LTR	0.86	27.6	C	LTR	0.86	27.6	C						
Overall Intersection		-	0.78	24.9	C	-	0.79	25.1	C						
Parsons Boulevard at Sanford Avenue															
Parsons Boulevard	NB	LTR	1.08	61.9	E	LTR	1.08	62.9	E					-Mitigation not required.	
	SB	LTR	0.93	34.1	C	LTR	0.95	36.2	D						
	Sanford Avenue	EB	LTR	0.71	26.6	C	LTR	0.71	26.8	C					
		WB	LTR	0.80	29.7	C	LTR	0.82	30.5	C					
Overall Intersection		-	0.95	38.8	D	-	0.95	39.9	D						
WHITESTONE EXPRESSWAY / 32ND AVENUE															
College Point Boulevard at 32nd Avenue															
College Point Boulevard	NB	T	0.43	23.7	C	T	0.43	23.7	C					-Mitigation not required.	
		TR	0.69	31.2	C	TR	0.69	31.2	C						
	SB	L	0.49	36.3	D	L	0.49	36.3	D						
		T	0.58	12.8	B	T	0.58	12.8	B						
32nd Avenue	WB	LTR	0.84	42.1	D	LTR	0.84	42.1	D						
Overall Intersection		-	1.38	23.4	C	-	1.38	23.3	C						

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
NORTHERN BOULEVARD SERVICE ROAD															
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard	NB	TR	0.41	11.7	B	TR	0.41	11.7	B	-Mitigation not required.					
	SB	LT	0.85	22.3	C	LT	0.85	22.5	C						
Northern Blvd Service Rd	WB	LR	0.77	35.8	D	LR	0.79	37.2	D						
Overall Intersection		-	0.82	21.0	C	-	0.83	21.5	C						
STADIUM ROAD															
Boat Basin Road at Stadium Road															
Boat Basin Road	NB	LTR	0.08	7.3	A	LTR	0.04	7.0	A	LTR	0.11	40.1	D	-Install an actuated controller. -Modify signal phasing and timing plan: EB/WB phase will have 40 s green time; NB phase will have 23 s green time; SB phase will have 42 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase. [Measures reflect improvements needed for the Weekday Pre-game, and Saturday Pre- and Post-game peak periods.]	
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
Stadium Road	-	LTR	0.38	9.6	A	LTR	0.55	11.8	B	LTR	0.81	40.8	D		
	EB	-	-	-	-	-	-	-	-	-	-	-	-		
	-	-	-	-	-	LTR	0.19	25.3	C	LTR	0.15	28.2	C		
	WB	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	0.33	12.8	B	-	0.57	19.0	B	-	0.51	37.1	D		
UNSIGNALIZED INTERSECTIONS															
Willets Point Boulevard at 126th Street															
126th Street	SB	LT	-	8.1	A	-	-	-	-	-Intersection would no longer exist under the With Action condition.					
Willets Point Boulevard	WB	LR	-	11.1	B	-	-	-	-						
Overall Intersection		-	-	10.2	B	-	-	-	-						
Boat Basin Road at Worlds Fair Marina															
Boat Basin Road	NB	L	-	37.4	E	L	-	207.2	F	L	0.06	24.0	C		-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
	-	R	-	8.7	A	R	-	8.7	A	R	0.04	2.4	A		
Worlds Fair Marina	-	-	-	-	-	-	-	-	-	TR	0.02	35.8	D		
	WB	LT	-	8.8	A	LT	-	9.6	A	L	0.54	21.3	C		
	-	-	-	-	-	-	-	-	-	LT	0.39	18.5	B		
Overall Intersection		-	-	9.9	A	-	-	25.1	D	-	0.31	19.5	B		
Willets Point Boulevard at Northern Boulevard															
Willets Point Boulevard	NB	TR	-	10.3	B	TR	-	10.3	B	-Mitigation not required.					
Overall Intersection		-	-	10.3	B	-	-	10.3	B						
Boat Basin Road at Stadium Road / Citifield Entrance 8															
Citifield Entrance 8	NB	T	-	10.5	B	-	-	-	-	-Intersection would no longer exist under the With Action condition.					
Boat Basin Road	SB	LT	-	11.3	B	-	-	-	-						
Stadium Road	EB	LT	-	7.4	A	-	-	-	-						
Overall Intersection		-	-	8.5	A	-	-	-	-						

TABLE 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Grand Central Parkway Ramp at West Park Loop/Stadium Road															
INTERSECTION & APPROACH		Mvt.	V/C	No Action Control Delay	LOS	Mvt.	V/C	With Action Control Delay	LOS	Mvt.	V/C	Mitigation Control Delay	LOS	Mitigation Measure	
Stadium Road		NB	-	-	-	-	-	-	-	T	0.05	30.6	C	-Mitigation not required.	
		SB	-	-	-	LT	-	7.5	A	L	0.21	33.4	C	-Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red time].	
			-	-	-	-	-	-	-	TR	0.52	37.7	D	-Add a right turn lane and channelized right-turn to the GCP off ramp.	
Grand Central Parkway Off-Ramp		EB	L	-	11.3	B	L	-	15.8	C	L	0.11	24.9	C	-Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane.
			-	-	-	T	-	17.1	C	T	0.22	26.3	C	-Add a 12-ft SB left-turn lane in the median of Stadium Road.	
		R	-	-	9.3	A	R	-	9.6	A	-	-	-	-	-Intersection meets NYCDOT Signal Warrant Criteria.
Willets West Center Exit		WB	-	-	-	L	-	20.5	C	L	0.21	40.1	D		
			-	-	-	R	-	8.5	A	R	0.07	38.6	D		
Overall Intersection		-	-	-	10.8	B	-	-	15.4	C	-	0.32	34.7	C	
126th Street at 36th Avenue															
126th Street		NB	-	-	-	TR	0.24	20.2	C	TR	0.24	20.2	C	-Mitigation not required.	
		SB	-	-	-	-	-	-	-	-	-	-	-	-Intersection meets NYCDOT Signal Warrant Criteria.	
		LT	-	-	8.2	A	LT	0.42	16.4	B	LT	0.42	16.3	B	-Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
36th Avenue		WB	LR	-	13.4	B	L	0.03	25.1	C	L	0.03	25.1	C	
			-	-	-	R	0.07	18.4	B	R	0.07	18.4	B		
Overall Intersection		-	-	-	9.0	A	-	0.25	18.1	B	-	0.25	18.0	B	
126th Street at 37th Avenue															
126th Street		NB	-	-	-	TR	0.19	14.3	B	TR	0.19	14.3	B	-Mitigation not required.	
		SB	-	-	-	-	-	-	-	-	-	-	-	-Intersection meets NYCDOT Signal Warrant Criteria.	
		LT	-	-	7.8	A	LT	0.20	7.9	A	LT	0.19	7.9	A	-Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
37th Avenue		WB	LR	-	12.3	B	L	0.21	36.9	D	L	0.21	36.9	D	
			-	-	-	R	0.11	25.0	C	R	0.11	25.0	C		
Overall Intersection		-	-	-	11.7	B	-	0.27	14.3	B	-	0.27	14.3	B	
Northern Boulevard at 126th Place															
126th Place		NB	R	-	13.8	B	R	-	14.1	B	R	0.11	7.4	A	-Mitigation not required.
Northern Boulevard		EB	-	-	-	-	-	-	-	TR	0.40	39.3	D	-Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes.	
			-	-	-	-	-	-	-	-	-	-	-	-Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].	
Overall Intersection		-	-	-	13.8	B	-	-	14.1	B	-	0.33	8.1	A	

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure		
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
SIGNALIZED INTERSECTIONS																
ASTORIA BOULEVARD																
108th Street at Astoria Boulevard																
108th Street	NB	DefL	0.47	26.5	C	DefL	0.57	29.6	C	-Mitigation not required.						
		T	0.13	20.1	C	T	0.13	20.1	C							
	SB	LTR	0.17	20.6	C	LTR	0.17	20.6	C							
		TR	0.82	28.6	C	TR	0.88	31.2	C							
	WB	L	0.71	29.8	C	L	0.74	33.8	C							
TR		0.33	12.3	B	TR	0.35	12.6	B								
Overall Intersection		-	0.69	23.3	C	-	0.76	25.3	C							
NORTHERN BOULEVARD																
108th Street at Northern Boulevard (RT. 25A)																
108th Street	NB	LTR	1.15	119.4	F	LTR	1.47	257.2	F	L	0.61	42.6	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes.		
		-	-	-	-	-	-	-	-	TR	0.78	45.0	D			
	SB	LTR	0.90	65.7	E	LTR	0.92	69.0	E	L	0.46	45.4	D		-Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes.	
		-	-	-	-	-	-	-	-	TR	0.51	43.0	D			
	Northern Boulevard (Rt. 25A)	EB	L	0.08	22.9	C	L	0.08	25.2	C	L	0.08	22.9		C	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft.
TR			0.86	27.6	C	TR	0.94	34.1	C	TR	0.91	29.9	C			
WB		L	0.69	42.9	D	L	0.75	50.1	D	L	0.73	47.0	D	-Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.		
	TR	0.99	42.5	D	TR	1.04	57.1	E	TR	1.01	46.2	D				
Overall Intersection		-	0.98	45.0	D	-	1.11	66.9	E	-	0.90	39.5	D	-Modify signal timing: shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB phase time shifts from 66 s to 68 s; NB/SB green time shifts from 30 s to 28 s].		
114th Street at Northern Boulevard (RT. 25A)																
114th Street	SB	LTR	0.38	44.2	D	LTR	0.44	45.7	D	LTR	0.44	36.1	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes.		
		EB	T	0.79	26.5	C	T	0.86	29.9	C	T	0.72	17.4		B	
	WB	R	0.45	19.2	B	R	0.48	19.7	B	R	0.40	12.3	B		-Divert left-turning turning to NB 112th Street and then to SB 114th Street.	
		DefL	0.49	15.8	B	DefL	0.64	27.0	C	-	-	-	-			
	Northern Boulevard (Rt. 25A)	T	0.73	12.4	B	T	0.76	13.3	B	T	0.68	15.8	B		-Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes.	
Overall Intersection		-	1.16	19.4	B	-	1.24	22.1	C	-	0.63	17.9	B	-Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides.		
126th Street at Northern Boulevard (RT. 25A)																
126th Street	NB	L	0.45	43.8	D	L	0.66	48.9	D	L	0.63	47.3	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.		
		R	0.32	42.0	D	R	1.51	305.0	F	R	0.51	45.3	D			
	Northern Boulevard	EB	T	0.78	46.0	D	T	0.78	46.0	D	T	0.78	43.1		D	-Close the ramp from EB Northern Blvd ramp to 126th Street.
		WB	T	0.33	7.1	A	T	0.36	7.3	A	T	0.36	7.7		A	
	Grand Central Parkway Ramp	EB	T	0.77	38.2	D	T	0.77	38.2	D	T	0.83	43.3		D	-Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.
Van Wyck & Whitestone Expressway Ramp	WB	T	0.75	15.9	B	T	1.02	50.4	D	T	-	-	-	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes.		
Overall Intersection		-	0.68	29.1	C	-	1.13	54.9	D	-	0.76	35.8	D	-Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard.		
-Modify signal timing: shift 2 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase and shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [EB Northern Blvd green time shifts from 35 s to 37 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 42 s; NB 126th St green time shifts from 25 to 26 s].																

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														No Action	With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH			Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS										
Prince Street at Northern Boulevard (RT. 25A)																								
Prince Street			NB	LTR	1.13	107.5	F	LTR	1.13	107.5	F							-Unmitigatable impact.						
			SB	LTR	0.52	41.0	D	LTR	0.52	41.0	D													
Northern Boulevard (Rt. 25A)			EB	L	0.87	69.8	E	L	0.87	69.8	E													
			T	0.92	34.0	C	T	0.95	37.8	D														
Northern Boulevard Service Rd.			WB	L	0.89	88.0	F	L	0.89	88.0	F													
			T	1.11	92.6	F	T	1.15	108.7	F														
			EB	TR	0.60	26.0	C	TR	0.60	26.0	C													
			WB	TR	0.69	34.2	C	TR	0.76	37.5	D													
Overall Intersection			-	1.07	61.2	E	-	1.09	68.3	E														
Main Street at Northern Boulevard (RT. 25A)																								
Main Street			NB	L	0.97	62.8	E	L	0.97	62.8	E							-Unmitigatable impact.						
			R	0.66	38.7	D	R	0.66	38.7	D														
Northern Boulevard (Rt. 25A)			EB	T	0.95	41.3	D	T	1.00	49.4	D													
			R	1.25	157.1	F	R	1.25	157.1	F														
			WB	L	0.10	25.6	C	L	0.10	25.6	C													
			T	0.74	22.3	C	T	0.79	23.7	C														
Overall Intersection			-	1.00	54.3	D	-	1.00	56.9	E														
Union Street at Northern Boulevard (RT. 25A)																								
Union Street			NB	TR	0.76	38.1	D	TR	0.76	38.1	D	TR	0.80	41.2	D	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.								
			SB	TR	0.54	32.1	C	TR	0.54	32.1	C	TR	0.57	34.0	C									
Northern Boulevard (Rt. 25A)			EB	L	0.53	21.3	C	L	0.54	22.7	C	L	0.50	18.1	B	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].								
			TR	1.35	198.2	F	TR	1.41	223.1	F	TR	1.35	193.6	F										
			WB	L	1.16	136.0	F	L	1.16	136.3	F	L	1.16	136.4	F									
			TR	0.81	36.7	D	TR	0.88	39.6	D	TR	0.62	30.2	C										
Overall Intersection			-	1.37	104.5	F	-	1.37	115.3	F	-	1.41	101.7	F										
Parsons Boulevard at Northern Boulevard (RT. 25A)																								
Parsons Boulevard			NB	L	0.70	54.6	D	L	0.71	55.9	E	L	0.68	53.1	D	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.								
			TR	0.51	38.4	D	TR	0.51	38.4	D	TR	0.51	38.4	D										
			SB	LTR	1.11	96.7	F	LTR	1.14	108.3	F	LT	0.69	36.2	D	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.								
			-	-	-	-	-	-	-	-	R	0.31	32.7	C										
Northern Boulevard (Rt. 25A)			EB	L	0.78	56.1	E	L	0.81	58.6	E	L	0.81	57.8	E				-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.					
			TR	1.02	57.4	E	TR	1.08	79.0	E	T	0.87	34.9	C										
			-	-	-	-	-	-	-	R	0.35	23.9	C											
			WB	L	0.34	34.3	C	L	0.36	37.5	D	L	0.33	32.2	C									
			TR	1.14	100.2	F	TR	1.22	136.0	F	T	1.02	46.8	D										
			-	-	-	-	-	-	-	R	0.35	23.0	C											
Overall Intersection			-	1.12	75.5	E	-	1.18	98.2	F	-	0.93	40.5	D										
34TH AVENUE																								
114th Street at 34th Avenue																								
114th Street			SB	L	0.82	41.7	D	L	0.89	49.2	D	L	0.81	38.0	D	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].								
			T	0.22	23.9	C	T	0.31	25.1	C	T	0.28	22.6	C										
34th Avenue			EB	T	0.39	11.6	B	T	0.39	11.6	B	T	0.42	13.5	B									
			R	0.07	8.5	A	R	0.07	8.5	A	R	0.07	9.9	A										
Overall Intersection			-	0.54	25.9	C	-	0.57	29.8	C	-	0.57	25.3	C										

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	DefL	0.47	28.5	C	L	0.25	21.3	C	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].	
Northern Boulevard Ramp GCP Ramp	LTR	0.25	20.8	C		TR	0.35	22.3	C	TR	0.32	21.3	C		
	SB	LTR	0.37	23.5	C	LTR	0.76	36.3	D	-	-	-	-		
Shea Road	SB	LTR	0.88	72.2	E	LTR	2.04	525.7	F	L	0.02	17.8	B		
	-	-	-	-	-	-	-	-	-	T	0.20	19.7	B		
34th Avenue	EB	-	-	-	-	-	-	-	-	DefL	0.51	27.0	C		
	LTR	0.54	44.5	D		LTR	1.66	354.2	F	TR	0.52	26.4	C		
Overall Intersection	-	-	-	-	-	-	-	-	-	DefL	0.46	25.2	C		
	WB	LTR	0.63	52.4	D	LTR	1.15	166.1	F	TR	0.31	21.8	C		
Overall Intersection		-	0.55	40.8	D	-	1.28	255.4	F	-	0.42	23.1	C		
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.05	90.7	F	LTR	1.09	103.9	F	LT	0.91	59.4	E	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.28	37.3	D		
	SB	LTR	1.19	132.5	F	LTR	1.20	136.6	F	LT	0.96	53.9	D		
Overall Intersection	-	-	-	-	-	-	-	-	-	R	0.33	37.2	D		
	EB	LTR	0.74	18.2	B	LTR	0.80	21.6	C	LTR	0.80	21.6	C		
Overall Intersection	WB	LTR	0.83	21.8	C	LTR	0.92	31.5	C	LTR	0.92	31.5	C		
	Overall Intersection		-	0.92	49.7	D	-	1.00	55.2	E	-	0.93	34.6		C
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	0.71	49.8	D	LTR	0.71	49.8	D	LTR	0.71	49.8	D	-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane. [Measures reflect improvements needed for the Weekday Non-game PM, Saturday Non-game Midday, Weekday Pre-game, and Saturday Pre- and Post-game peak periods.]	
Roosevelt Avenue	EB	LTR	0.71	16.2	B	LTR	0.79	19.6	B	LTR	0.79	19.4	B		
	WB	LTR	0.85	23.7	C	LTR	0.93	32.3	C	LT	0.77	18.0	B		
Overall Intersection	-	-	-	-	-	-	-	-	-	R	0.11	7.5	A		
	Overall Intersection		-	0.81	24.4	C	-	0.87	29.4	C	-	0.77	22.4		C
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	0.68	49.6	D	LTR	0.72	52.2	D	LTR	0.72	49.6	D	-Shift the centerline of the SB 114th Street approach 2 feet to the east. -Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. -Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane.	
Roosevelt Avenue	SB	LTR	0.66	51.1	D	LTR	0.90	77.5	E	LT	0.67	51.5	D		
	-	-	-	-	-	-	-	-	-	R	0.10	35.2	D		
Overall Intersection	EB	LTR	0.85	25.2	C	LTR	1.03	58.0	E	L	0.25	9.2	A		
	-	-	-	-	-	-	-	-	-	TR	0.62	13.9	B		
Overall Intersection	WB	LTR	0.46	10.5	B	LTR	0.60	12.6	B	L	0.29	9.9	A		
	-	-	-	-	-	-	-	-	-	T	0.54	12.3	B		
Overall Intersection	-	-	-	-	-	-	-	-	-	R	0.34	9.6	A		
	Overall Intersection		-	0.80	23.5	C	-	0.99	36.9	D	-	0.64	19.0		B
126th Street at Roosevelt Avenue															
126th Street	NB	LTR	0.87	62.0	E	LTR	0.95	75.4	E	LTR	0.82	48.6	D	-Restripe SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. -New signal phasing and timing plan: Shared EB/WB phase receives 55 s green time; EB lag phase with SB right-turns receives 7 s green time; NB/SB phase receives 43 s green time [each phase will have 3 s amber and 2 s all red time].	
Roosevelt Avenue	SB	DefL	1.17	159.0	F	DefL	1.39	247.9	F	LT	1.08	109.4	F		
	TR	0.61	50.6	D		TR	0.74	57.6	E	R	0.24	20.4	C		
Overall Intersection	EB	-	-	-	-	-	-	-	-	-	-	-	-		
	LTR	0.50	11.3	B		LTR	0.62	13.5	B	LTR	0.74	24.3	C		
Overall Intersection	WB	LTR	0.49	11.0	B	LTR	0.59	12.7	B	LTR	0.88	39.9	D		
	Overall Intersection		-	0.67	35.2	D	-	0.81	47.7	D	-	1.03	43.1		D

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard		NB	L	1.34	204.5	F	L	1.58	310.3	F	L	0.94	73.2	E	-Partially Mitigated
		TR		0.86	29.7	C	TR	0.86	29.7	C	TR	0.89	40.6	D	-Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.
		-	-	-	-	-	-	-	-	-	-	-	-	-	-Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.
Roosevelt Avenue		SB	TR	1.18	119.8	F	TR	1.26	155.4	F	T	0.98	67.1	E	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13 ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft.
		EB	L	0.55	30.2	C	L	0.56	30.5	C	L	0.50	35.6	D	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13 ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft.
		TR		1.23	130.9	F	TR	1.38	197.7	F	TR	1.27	154.0	F	-Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.
		WB	L	0.27	33.4	C	L	0.27	33.4	C	-	-	-	-	-Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes.
		TR		0.57	30.1	C	TR	0.63	31.8	C	TR	0.48	37.0	D	-Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.
Overall Intersection		-	1.33	91.2	F	-	1.50	128.0	F	-	1.10	72.6	E	-Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.	

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

												Mitigation Measure		
INTERSECTION & APPROACH		No Action				With Action				Mitigation				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Roosevelt Avenue													-Mitigation not required.	
Parsons Boulevard	NB	LTR	0.63	23.7	C	LTR	0.65	24.3	C					
	SB	LTR	0.63	23.0	C	LTR	0.63	23.0	C					
Roosevelt Avenue	EB	LTR	0.57	22.8	C	LTR	0.65	25.3	C					
	WB	LTR	0.75	29.4	C	LTR	0.80	32.2	C					
Overall Intersection		-	0.69	24.8	C	-	0.72	26.2	C					
KISSENA BOULEVARD														
Main Street at Kissena Boulevard													-Mitigation not required.	
Main Street	NB	L	0.82	45.4	D	L	0.85	48.4	D					
		TR	0.62	21.9	C	TR	0.62	21.9	C					
	SB	L	0.45	20.2	C	L	0.45	20.2	C					
		TR	0.50	19.2	B	TR	0.50	19.2	B					
Kissena Boulevard	WB	T	0.71	26.3	C	T	0.71	26.3	C					
Overall Intersection		-	0.76	23.8	C	-	0.78	24.2	C					
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue													-Mitigation not required.	
College Point Boulevard	NB	L	0.53	21.4	C	L	0.55	23.1	C					
		T	0.65	14.1	B	T	0.66	14.4	B					
	SB	TR	0.75	16.4	B	TR	0.77	17.0	B					
Sanford Avenue	WB	L	0.56	34.3	C	L	0.56	34.3	C					
		TR	0.36	26.9	C	TR	0.42	27.8	C					
Overall Intersection		-	0.69	17.7	B	-	0.70	18.3	B					
Union Street at Sanford Avenue													-Mitigation not required.	
Union Street	NB	LTR	0.33	20.5	C	LTR	0.33	20.5	C					
	SB	LTR	0.59	23.8	C	LTR	0.60	24.0	C					
Sanford Avenue	EB	DefL	0.40	18.8	B	DefL	0.41	19.3	B					
		TR	0.20	13.6	B	TR	0.20	13.6	B					
	WB	LTR	0.85	27.3	C	LTR	0.85	27.3	C					
Overall Intersection		-	0.74	23.4	C	-	0.76	24.4	C					
Parsons Boulevard at Sanford Avenue													-Modify Signal Timing: Shift 1 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].	
Parsons Boulevard	NB	LTR	1.10	74.4	E	LTR	1.12	81.2	F	LTR	1.08	64.2		E
	SB	LTR	0.69	24.7	C	LTR	0.73	26.1	C	LTR	0.71	24.7		C
Sanford Avenue	EB	LTR	0.55	21.9	C	LTR	0.56	22.3	C	LTR	0.58	23.4		C
	WB	LTR	0.84	32.2	C	LTR	0.87	34.7	C	LTR	0.89	37.9		D
Overall Intersection		-	0.98	39.8	D	-	1.00	42.5	D	-	0.99	38.7	D	
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue													-Mitigation not required.	
College Point Boulevard	NB	T	0.71	30.1	C	T	0.71	30.0	C					
		TR	0.79	35.3	D	TR	0.79	35.3	D					
	SB	L	0.73	47.0	D	L	0.73	47.0	D					
		T	0.48	11.5	B	T	0.49	11.6	B					
32nd Avenue	WB	LTR	0.76	38.5	D	LTR	0.76	38.5	D					
Overall Intersection		-	1.28	27.4	C	-	1.28	27.4	C					

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
NORTHERN BOULEVARD SERVICE ROAD															
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard	NB	TR	0.51	12.9	B	TR	0.52	13.0	B	-Mitigation not required.					
	SB	LT	0.83	21.6	C	LT	0.84	22.1	C						
Northern Blvd Service Rd	WB	LR	0.77	35.8	D	LR	0.83	39.8	D						
Overall Intersection		-	0.81	20.5	C	-	0.84	21.7	C						
STADIUM ROAD															
Boat Basin Road at Stadium Road															
Boat Basin Road	NB	LTR	0.07	7.2	A	LTR	0.15	7.7	A	LTR	0.37	42.6	D	-Install an actuated controller. -Modify signal phasing and timing plan: EB/WB phase will have 40 s green time; NB phase will have 23 s green time; SB phase will have 42 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase. [Measures reflect improvements needed for the Weekday Pre-game, and Saturday Pre- and Post-game peak periods.]	
	SB	DefL	0.27	9.2	A	-	-	-	-	-	-	-	-		
Stadium Road	TR	0.17	8.0	A	LTR	0.46	10.6	B	LTR	0.61	33.2	C			
	EB	-	-	-	DefL	0.29	28.3	C	-	-	-	-			
	-	-	-	-	TR	0.36	28.1	C	LTR	0.35	30.5	C			
	WB	-	-	-	DefL	1.59	311.4	F	-	-	-	-			
	LTR	0.18	25.2	C	TR	0.78	43.1	D	LTR	0.70	37.8	D			
Overall Intersection		-	0.24	12.4	B	-	0.81	90.1	F	-	0.59	35.6	D		
UNSIGNALIZED INTERSECTIONS															
Willets Point Boulevard at 126th Street															
126th Street	SB	LT	-	8.3	A	-	-	-	-	-Intersection would no longer exist under the With Action condition.					
Willets Point Boulevard	WB	LR	-	12.1	B	-	-	-	-						
Overall Intersection		-	-	10.7	B	-	-	-	-						
Boat Basin Road at Worlds Fair Marina															
Boat Basin Road	NB	L	-	18.9	C	L	-	850.5	F	L	0.16	25.0	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.	
	R	-	8.4	A	R	-	8.7	A	R	0.05	2.4	A			
	-	-	-	-	-	-	-	-	TR	0.09	36.5	D			
Worlds Fair Marina	WB	LT	-	8.2	A	LT	-	9.7	A	L	0.60	22.9	C		
	-	-	-	-	-	-	-	-	LT	0.42	19.0	B			
Overall Intersection		-	-	9.4	A	-	-	165.4	F	-	0.39	21.2	C		
Willets Point Boulevard at Northern Boulevard															
Willets Point Boulevard	NB	TR	-	10.6	B	TR	-	10.6	B	-Mitigation not required.					
Overall Intersection		-	-	10.6	B	-	-	10.6	B						
Boat Basin Road at Stadium Road / Citifield Entrance 8															
Citifield Entrance 8	NB	T	-	11.3	B	-	-	-	-	-Intersection would no longer exist under the With Action condition.					
Boat Basin Road	SB	LT	-	11.3	B	-	-	-	-						
Stadium Road	EB	LT	-	7.4	A	-	-	-	-						
Overall Intersection		-	-	8.6	A	-	-	-	-						

TABLE 3
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	T	0.07	30.9	C	-Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red] -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	LT	-	7.8	A	L	0.53	41.2		D
Grand Central Parkway Off-Ramp	-	-	-	-	-	-	-	-	TR	0.48	36.9	D		
	EB	L	-	10.7	B	L	-	31.4	D	L	0.18	25.8		C
	-	-	-	-	T	-	192.5	F	T	0.60	34.3	C		
	R	-	9.2	A	R	-	10.2	B	-	-	-	-		
Willets West Center Exit	WB	-	-	-	L	-	1000.0+	F	L	0.69	50.0	D		
	-	-	-	-	R	-	8.8	A	R	0.22	41.2	D		
Overall Intersection		-	-	10.2	B	-	-	1000.0+	F	-	0.60	39.5	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.36	21.8	C	TR	0.36	21.8	C	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
36th Avenue	LT	-	8.4	A	LT	0.58	19.3	B	LT	0.55	18.8	B		
	WB	LR	-	14.9	B	L	0.07	25.6	C	L	0.07	25.6	C	
	-	-	-	-	R	0.11	18.9	B	R	0.11	18.9	B		
	Overall Intersection	-	-	10.7	B	-	0.36	20.5	C	-	0.35	20.2	C	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.26	15.0	B	TR	0.26	15.0	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
37th Avenue	LT	-	8.3	A	LT	0.39	9.9	A	LT	0.38	9.7	A		
	WB	LR	-	12.5	B	L	0.10	35.1	D	L	0.10	35.1	D	
	-	-	-	-	R	0.29	27.9	C	R	0.29	27.9	C		
	Overall Intersection	-	-	10.6	B	-	0.29	14.5	B	-	0.28	14.4	B	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	15.9	C	R	-	16.7	C	R	0.11	39.3	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.53	8.6	A	
Overall Intersection		-	-	15.9	C	-	-	16.7	C	-	0.43	9.1	A	

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

				No Action				With Action				Mitigation			
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mitigation Measure	
SIGNALIZED INTERSECTIONS															
ASTORIA BOULEVARD															
108th Street at Astoria Boulevard															
108th Street	NB	DefL	0.56	45.8	D	DefL	0.68	52.5	D					-Unmitigatable impact.	
		T	0.21	35.6	D	T	0.21	35.6	D						
	SB	LTR	0.38	38.9	D	LTR	0.38	38.9	D						
Astoria Boulevard	EB	TR	0.88	26.4	C	TR	0.91	27.5	C						
	WB	L	0.71	45.3	D	L	0.71	45.6	D						
		TR	0.33	9.7	A	TR	0.35	9.9	A						
Overall Intersection	-		0.78	25.2	C	-	0.84	26.3	C						
NORTHERN BOULEVARD															
108th Street at Northern Boulevard (RT. 25A)															
108th Street	NB	LTR	1.12	107.1	F	LTR	1.49	267.6	F	L	0.78	51.2	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes.	
		-	-	-	-	-	-	-	-	TR	0.89	49.6	D		
	SB	LTR	1.09	102.2	F	LTR	1.12	112.7	F	L	0.55	48.3	D	-Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes.	
		-	-	-	-	-	-	-	-	TR	0.83	51.1	D		
Northern Boulevard (Rt. 25A)	EB	L	0.15	33.0	C	L	0.15	36.2	D	L	0.17	34.2	C	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft.	
		TR	0.82	13.5	B	TR	0.87	14.8	B	TR	0.83	11.6	B		
	WB	L	0.65	40.5	D	L	0.66	43.0	D	L	0.73	43.6	D	-Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.	
		TR	1.12	81.4	F	TR	1.17	104.6	F	TR	1.13	81.8	F		
Overall Intersection	-		1.05	52.4	D	-	1.17	73.9	E	-	0.99	44.4	D	-Modify signal timing: shift 2 s green time from EB/WB left-turn phase to EB/WB phase; shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 71 s to 74 s;	
114th Street at Northern Boulevard (RT. 25A)															
114th Street	SB	LTR	0.38	45.6	D	LTR	0.45	47.2	D	LTR	0.51	37.4	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes.	
Northern Boulevard (Rt. 25A)	EB	T	1.12	74.4	E	T	1.18	100.1	F	T	1.02	24.7	C	-Divert left-turning turning to NB 112th Street and then to SB 114th Street.	
		R	0.82	17.1	B	R	0.85	17.8	B	R	0.73	8.7	A	-Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes.	
	WB	DefL	0.85	55.6	E	DefL	1.03	89.8	F	-	-	-	-	-Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides.	
		T	0.90	17.0	B	T	0.94	20.1	C	T	0.85	20.1	C	-Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 s to 75 s].	
Overall Intersection	-		1.53	41.6	D	-	1.61	55.1	E	-	0.86	21.8	C		
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.42	43.1	D	L	0.62	47.4	D	L	0.62	47.4	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.	
		R	0.27	41.1	D	R	1.39	251.4	F	R	0.49	44.9	D		
Northern Boulevard	EB	T	1.21	154.8	F	T	1.21	154.8	F	T	1.07	94.2	F	-Close the ramp from EB Northern Blvd ramp to 126th Street.	
	WB	T	0.39	7.6	A	T	0.43	7.9	A	T	0.43	7.9	A	-Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.	
Grand Central Parkway Ramp	EB	T	0.73	29.7	C	T	0.73	29.7	C	T	0.77	33.2	C	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes.	
Van Wyck & Whitestone Expressway Ramp	WB	T	0.88	23.0	C	T	1.12	83.0	F	-	-	-	-	-Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard.	
Overall Intersection	-		0.77	48.8	D	-	1.18	74.9	E	-	0.81	46.6	D	-Modify signal timing: shift 3 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 28 s; EB GCP/Astoria Blvd ramp green time shifts from 55 s to 52 s].	

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														No Action	With Action				Mitigation				Mitigation Measure
INTERSECTION & APPROACH			Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS									
Prince Street at Northern Boulevard (RT. 25A)																							
Prince Street			NB	LTR	1.17	122.7	F	LTR	1.17	122.7	F					-Unmitigatable Impact.							
			SB	LTR	0.51	41.4	D	LTR	0.51	41.4	D												
Northern Boulevard (Rt. 25A)			EB	L	0.60	45.4	D	L	0.60	45.4	D												
			T	0.95	35.7	D	T	0.99	42.2	D													
			WB	L	0.79	70.6	E	L	0.79	70.6	E												
			T	1.12	98.3	F	T	1.16	113.1	F													
Northern Boulevard Service Rd.			EB	TR	0.64	27.1	C	TR	0.64	27.1	C												
			WB	TR	0.65	34.8	C	TR	0.71	37.6	D												
Overall Intersection			-	1.00	62.0	E	-	1.02	69.4	E													
Main Street at Northern Boulevard (RT. 25A)																							
Main Street			NB	L	0.95	59.2	E	L	0.95	59.2	E					-Unmitigatable Impact.							
			R	0.95	71.2	E	R	0.95	71.2	E													
Northern Boulevard (Rt. 25A)			EB	T	1.05	59.7	E	T	1.10	78.3	E												
			R	1.16	115.7	F	R	1.16	115.7	F													
			WB	L	0.16	26.7	C	L	0.16	26.7	C												
			T	0.75	22.5	C	T	0.80	23.9	C													
Overall Intersection			-	1.06	54.5	D	-	1.06	61.7	E													
Union Street at Northern Boulevard (RT. 25A)																							
Union Street			NB	TR	0.76	37.8	D	TR	0.76	37.8	D	TR	0.80	40.9	D	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.							
			SB	TR	0.81	38.7	D	TR	0.81	38.7	D	TR	0.84	42.0	D								
Northern Boulevard (Rt. 25A)			EB	L	0.75	41.8	D	L	0.75	42.2	D	L	0.75	34.5	C								
			TR	1.11	87.6	F	TR	1.16	108.1	F	TR	1.11	84.3	F	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].								
			WB	L	0.84	47.5	D	L	0.84	47.9	D	L	0.84	47.9	D								
			TR	0.90	39.9	D	TR	0.97	45.8	D	TR	0.69	31.1	C									
Overall Intersection			-	0.97	59.2	E	-	0.99	69.4	E	-	0.98	56.4	E									
Parsons Boulevard at Northern Boulevard (RT. 25A)																							
Parsons Boulevard			NB	L	0.81	65.4	E	L	0.83	67.6	E	L	0.82	65.6	E	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.							
			TR	0.49	35.0	D	TR	0.49	35.0	D	TR	0.47	34.0	C	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.								
			SB	LTR	1.09	86.3	F	LTR	1.12	99.9	F	LT	0.68	34.7	C	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.							
			-	-	-	-	-	-	-	-	R	0.42	33.4	C	-Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to NB/SB phase and 2 s green time from EB/WB protected left-turn phase to EB/WB phase [NB/SB green time shifts from 36 s to 37 s; EB/WB protected left-turn green time shifts from 12 s to 9 s; EB/WB green time shifts from 50 s to 52 s].								
Northern Boulevard (Rt. 25A)			EB	L	0.42	44.2	D	L	0.46	45.9	D	L	0.53	48.6	D								
			TR	0.98	42.1	D	TR	1.03	55.2	E	TR	0.99	42.0	D									
			-	-	-	-	-	-	-	-	-	-	-	-									
			WB	L	0.35	38.9	D	L	0.35	39.7	D	L	0.41	41.7	D								
			TR	1.11	87.4	F	TR	1.18	118.1	F	T	0.96	38.0	D									
			-	-	-	-	-	-	-	-	R	0.31	22.8	C									
Overall Intersection			-	1.05	61.8	E	-	1.07	79.2	E	-	0.99	40.2	D									
34TH AVENUE																							
114th Street at 34th Avenue																							
114th Street			SB	L	0.98	56.6	E	L	1.06	78.2	E	L	0.95	49.6	D	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].							
			T	0.39	25.9	C	T	0.47	27.1	C	T	0.42	24.2	C									
34th Avenue			EB	T	0.37	11.3	B	T	0.37	11.3	B	T	0.40	13.2	B								
			R	0.07	8.5	A	R	0.07	8.5	A	R	0.07	9.9	A									
Overall Intersection			-	0.58	34.5	C	-	0.61	45.4	D	-	0.61	32.1	C									

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action															With Action															Mitigation															Mitigation Measure														
INTERSECTION & APPROACH					Mvt.	V/C	Control Delay	LOS						Mvt.	V/C	Control Delay	LOS						Mvt.	V/C	Control Delay	LOS																																	
126th Street/GCP Ramp at 34th Avenue																																																											
126th Street					NB	DefL	0.35	23.5	C						DefL	0.62	32.5	C						L	0.30	22.1	C						-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].																										
						TR	0.27	21.1	C						TR	0.34	22.1	C						TR	0.31	21.1	C																																
Northern Boulevard Ramp					SB	LTR	0.27	21.6	C						LTR	0.42	24.2	C						-	-	-	-																																
GCP Ramp					SB	LTR	0.74	58.6	E						LTR	1.93	475.9	F						L	0.02	17.9	B																																
																								T	0.16	19.3	B																																
Shea Road					EB		-	-	-						DefL	2.01	524.7	F						DefL	0.52	27.4	C																																
						LTR	0.43	42.4	D						TR	1.59	335.8	F						TR	0.34	22.5	C																																
							-	-	-							-	-	-						DefL	0.47	25.5	C																																
34th Avenue					WB	LTR	0.95	86.9	F						LTR	1.22	178.5	F						TR	0.44	24.1	C																																
Overall Intersection					-	0.59	41.8	D						-	1.28	253.4	F						-	0.41	22.8	C																																	
ROOSEVELT AVENUE																																																											
108th Street at Roosevelt Avenue																																																											
108th Street					NB	LTR	1.06	85.6	F						LTR	1.10	99.7	F						LT	0.87	50.1	D							-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.																									
							-	-	-							-	-	-						R	0.35	37.9	D																																
					SB	LTR	1.15	114.9	F						LTR	1.16	120.0	F						LT	0.90	48.3	D																																
							-	-	-							-	-	-						R	0.38	37.8	D																																
Roosevelt Avenue					EB	LTR	0.72	9.3	A						LTR	0.79	11.4	B						LTR	0.79	11.4	B																																
					WB	LTR	0.82	17.1	B						LTR	0.92	22.6	C						LTR	0.92	22.6	C																																
Overall Intersection					-	0.91	43.2	D						-	0.98	47.3	D						-	0.91	26.9	C																																	
111th Street at Roosevelt Avenue																																																											
111th Street					NB	LTR	0.83	54.4	D						LTR	0.83	54.4	D						LTR	0.83	54.4	D						-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.																										
Roosevelt Avenue					EB	LTR	0.77	10.2	B						LTR	0.85	13.5	B						LTR	0.89	17.2	B																																
					WB	LTR	1.20	113.5	F						LTR	1.30	156.4	F						LT	1.06	56.2	E																																
							-	-	-							-	-	-						R	0.15	7.6	A																																
Overall Intersection					-	1.10	67.6	E						-	1.17	89.5	F						-	1.00	39.8	D																																	
114th Street at Roosevelt Avenue																																																											
114th Street					NB	LTR	0.95	57.8	E						LTR	1.01	71.8	E						LTR	0.92	52.1	D						-Shift the centerline of the SB 114th Street approach 2 feet to the east. -Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. -Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane. -Modify Signal Timing: Shift 3 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s].																										
					SB	LTR	1.05	77.6	E						LTR	1.22	144.5	F						LT	0.83	41.3	D																																
							-	-	-							-	-	-						R	0.12	32.7	C																																
Roosevelt Avenue					EB	LTR	0.89	17.4	B						LTR	1.07	57.1	E						L	0.33	12.4	B																																
							-	-	-							-	-	-						TR	0.70	9.8	A																																
					WB	LTR	0.72	15.0	B						LTR	0.88	22.4	C						L	0.62	18.4	B																																
							-	-	-							-	-	-						T	0.79	20.5	C																																
							-	-	-							-	-	-						R	0.44	12.1	B																																
Overall Intersection					-	0.94	27.6	C						-	1.11	49.0	D						-	0.83	22.1	C																																	
126th Street at Roosevelt Avenue																																																											
126th Street					NB	LTR	0.64	52.2	D						LTR	0.71	58.2	E						LTR	0.71	52.7	D							-Restripe SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. -New signal phasing and timing plan: Shared EB/WB phase receives 59 s green time; EB lag phase with SB right-turns receives 7 s green time; NB/SB phase receives 39 s green time [each phase will have 3 s amber and 2 s all red time].																									
					SB	DefL	1.01	95.7	F						DefL	1.16	143.2	F						LT	1.04	94.2	F																																
						TR	0.64	47.1	D						TR	0.76	53.4	D						R	0.37	24.9	C																																
Roosevelt Avenue					EB		-	-	-						DefL	0.75	30.8	C						DefL	0.63	45.4	D																																
						LTR	0.68	7.5	A						TR	0.65	7.4	A						TR	0.74	15.2	B																																
					WB	LTR	0.59	12.4	B						LTR	0.67	14.0	B						LTR	0.91	39.7	D																																
Overall Intersection					-	0.77	26.0	C						-	0.86	34.6	C						-	1.45	40.4	D																																	

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard		NB	L	1.22	171.2	F	L	1.43	254.8	F	L	0.85	64.6	E	-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 28 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 27 s green time [each phase will have 3 s amber and 2 s all red time].
			TR	0.74	30.5	C	TR	0.74	30.5	C	TR	0.79	35.1	D	
Roosevelt Avenue		SB	TR	1.30	181.6	F	TR	1.35	204.5	F	T	1.20	145.2	F	
			L	0.47	37.0	D	L	0.49	37.3	D	L	0.47	35.0	C	
		EB	TR	1.18	115.0	F	TR	1.32	179.5	F	TR	1.22	132.5	F	
			L	0.24	43.6	D	L	0.24	43.6	D	-	-	-	-	
		WB	TR	0.44	35.7	D	TR	0.50	37.1	D	TR	0.51	43.1	D	
			Overall Intersection		-	1.29	111.6	F	-	1.43	140.3	F	-	1.15	
Prince Street at Roosevelt Avenue															
Prince Street Roosevelt Avenue		SB	LTR	0.58	32.6	C	LTR	0.58	32.6	C	LTR	0.61	34.9	C	
		EB	DefL	1.07	85.6	F	DefL	1.10	95.6	F	DefL	1.05	78.9	E	
		TR	0.67	24.6	C	TR	0.74	27.2	C	TR	0.72	24.9	C		
		WB	LTR	0.59	20.5	C	LTR	0.64	21.4	C	LTR	0.62	19.9	B	
Overall Intersection		-	0.86	40.3	D	-	0.88	42.4	D	-	0.87	38.1	D		
Main Street at Roosevelt Avenue															
Main Street Roosevelt Avenue		NB	T	0.50	20.8	C	T	0.50	20.8	C	T	0.53	23.9	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].
		SB	T	0.54	21.9	C	T	0.54	21.9	C	T	0.58	25.2	C	
		EB	L	0.45	40.3	D	L	0.49	44.8	D	L	0.42	35.6	D	
			TR	0.87	58.2	E	TR	1.01	86.5	F	TR	0.92	62.1	E	
		WB	L	0.19	26.6	C	L	0.21	27.1	C	L	0.18	23.9	C	
			TR	0.99	65.1	E	TR	1.07	89.1	F	TR	0.98	59.3	E	
		Overall Intersection		-	0.72	37.2	D	-	0.75	48.9	D	-	0.75	39.4	
Union Street at Roosevelt Avenue															
Union Street Roosevelt Avenue		NB	TR	0.40	16.5	B	TR	0.40	16.5	B	-Unmitigatable Impact.				
		SB	LT	0.88	32.8	C	LT	0.88	32.8	C					
		R	2.48	705.0	F	R	2.48	705.0	F						
		EB	LTR	1.80	393.4	F	LTR	2.01	484.2	F					
		WB	LT	0.55	24.2	C	LT	0.61	25.9	C					
			R	1.11	133.8	F	R	1.11	133.8	F					
Overall Intersection		-	2.17	211.2	F	-	2.26	235.4	F						

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action				With Action				Mitigation				Mitigation Measure			
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.82	37.6	D	LTR	0.85	40.2	D	LT	0.78	36.3	D	-Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 57 s; NB/SB green time shifts from 55 s to 53 s. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Weekday Non-game AM and Weekday Pre-game PM peak periods.]	
		-	-	-	-	-	-	-	-	R	0.07	19.4	B		
	SB	LTR	0.69	29.9	C	LTR	0.69	29.9	C	LTR	0.71	32.2	C		
	EB	LTR	0.49	25.7	C	LTR	0.58	28.4	C	LTR	0.56	26.4	C		
Roosevelt Avenue	WB	LTR	0.74	33.9	C	LTR	0.80	37.5	D	LTR	0.77	33.9	C		
Overall Intersection	-	0.78	32.3	C	-	0.83	34.3	C	-	0.78	32.3	C			
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.74	36.2	D	L	0.75	37.1	D					-Mitigation not required.	
		TR	0.57	22.1	C	TR	0.57	22.1	C						
	SB	L	0.82	49.5	D	L	0.82	49.5	D						
		TR	0.45	19.2	B	TR	0.45	19.2	B						
Kissena Boulevard	WB	T	0.64	34.9	C	T	0.64	34.9	C						
Overall Intersection	-	0.78	28.7	C	-	0.78	28.9	C							
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.51	30.5	C	L	0.51	30.5	C					-Mitigation not required.	
		T	0.59	13.0	B	T	0.60	13.2	B						
	SB	TR	0.96	29.4	C	TR	0.99	34.9	C						
	Sanford Avenue	WB	L	0.75	44.9	D	L	0.75	44.9	D					
		TR	0.35	26.7	C	TR	0.41	27.6	C						
Overall Intersection	-	0.89	25.1	C	-	0.91	28.1	C							
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.29	20.0	C	LTR	0.29	20.0	C					-Mitigation not required.	
	SB	LTR	0.70	25.9	C	LTR	0.72	26.3	C						
		-	-	-	-	-	-	-	-						
	Sanford Avenue		LTR	0.31	14.6	B	LTR	0.31	14.6	B					
	WB	LTR	0.66	21.6	C	LTR	0.69	22.4	C						
Overall Intersection	-	0.68	21.8	C	-	0.70	22.2	C							
Parsons Boulevard at Sanford Avenue															
Parsons Boulevard	NB	LTR	0.86	31.2	C	LTR	0.87	32.6	C					-Mitigation not required.	
	SB	LTR	0.75	26.2	C	LTR	0.82	30.0	C						
	Sanford Avenue	EB	LTR	0.68	25.3	C	LTR	0.70	26.0	C					
		WB	LTR	0.77	28.9	C	LTR	0.80	30.5	C					
Overall Intersection	-	0.81	28.0	C	-	0.84	29.9	C							
WHITESTONE EXPRESSWAY / 32ND AVENUE															
College Point Boulevard at 32nd Avenue															
College Point Boulevard	NB	T	0.49	25.1	C	T	0.50	25.2	C					-Mitigation not required.	
		TR	0.91	44.7	D	TR	0.91	44.7	D						
	SB	L	0.47	34.3	C	L	0.47	34.3	C						
		T	0.42	10.8	B	T	0.43	10.8	B						
32nd Avenue	WB	LTR	0.87	42.4	D	LTR	0.87	42.4	D						
Overall Intersection	-	1.14	28.2	C	-	1.14	28.1	C							

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.54	13.3	B	TR	0.55	13.4	B					-Mitigation not required.
	SB	LT	0.82	21.4	C	LT	0.83	22.0	C					
Northern Blvd Service Rd	WB	LR	0.71	33.6	C	LR	0.77	36.4	D					
Overall Intersection	-		0.78	19.8	B	-	0.81	20.7	C					
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	LTR	0.05	7.1	A	LTR	0.22	8.2	A	LTR	0.46	43.5	D	-Install an actuated controller.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	-Modify signal phasing and timing plan: EB/WB phase will have 40 s green time; NB phase will have 23 s green time; SB phase will have 42 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.
Stadium Road		LTR	0.22	8.2	A	LTR	0.59	12.1	B	LTR	0.61	33.1	C	
	EB	-	-	-	-	DefL	0.81	79.1	E	DefL	0.49	34.2	C	
		-	-	-	-	TR	0.38	28.6	C	TR	0.32	30.2	C	
	WB	-	-	-	-	-	-	-	-	-	-	-	-	
		LTR	0.29	26.3	C	LTR	0.95	54.8	D	LTR	0.70	37.3	D	
Overall Intersection	-		0.24	14.7	B	-	0.70	28.4	C	-	0.61	36.0	D	
UNSIGNALIZED INTERSECTIONS														
Willets Point Boulevard at 126th Street														
126th Street	SB	LT	-	8.3	A	-	-	-	-					-Intersection would no longer exist under the With Action condition.
Willets Point Boulevard	WB	LR	-	14.7	B	-	-	-	-					
Overall Intersection	-	-		12.1	B	-	-	-	-					
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	16.2	C	L	-	571.4	F	L	0.19	25.3	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time].
		R	-	8.8	A	R	-	9.1	A	R	0.08	2.5	A	
		-	-	-	-	-	-	-	-	TR	0.08	36.4	D	
Worlds Fair Marina	WB	LT	-	7.8	A	LT	-	8.9	A	L	0.52	21.0	C	-Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane.
		-	-	-	-	-	-	-	-	LT	0.41	18.8	B	-Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane.
Overall Intersection	-	-		9.0	A	-	-	128.9	F	-	0.35	19.7	B	-Intersection meets NYCDOT Signal Warrant Criteria.
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.8	A	TR	-	9.9	A					-Mitigation not required.
Overall Intersection	-	-		9.8	A	-	-	9.9	A					
Boat Basin Road at Stadium Road / Citifield Entrance 8														
Citifield Entrance 8	NB	T	-	10.7	B	-	-	-	-					-Intersection would no longer exist under the With Action condition.
Boat Basin Road	SB	LT	-	11.3	B	-	-	-	-					
Stadium Road	EB	LT	-	7.4	A	-	-	-	-					
Overall Intersection	-	-		9.2	A	-	-	-	-					

TABLE 4
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
				Delay				Delay				Delay		
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.08	31.0	C	-Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	LT	-	7.8	A	L	0.47	39.3	D	
Grand Central Parkway Off-Ramp	-	-	-	-	-	-	-	-	-	TR	0.54	38.2	D	
	EB	L	-	10.6	B	L	-	24.6	C	L	0.17	25.6	C	
	-	-	-	-	-	T	-	105.9	F	T	0.52	32.0	C	
Willets West Center Exit	R	-	-	9.4	A	R	-	10.5	B	-	-	-	-	-
	WB	-	-	-	-	L	-	1000.0+	F	L	0.86	56.4	E	
	-	-	-	-	-	R	-	9.0	A	R	0.27	42.0	D	
Overall Intersection		-	-	10.0	A	-	-	1000.0+	F	-	0.60	42.9	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.35	21.6	C	TR	0.35	21.6	C	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
36th Avenue	LT	-	-	8.2	A	LT	0.46	16.9	B	LT	0.44	16.6	B	
	WB	LR	-	11.7	B	L	0.07	25.6	C	L	0.07	25.6	C	
	-	-	-	-	-	R	0.23	20.6	C	R	0.23	20.6	C	
Overall Intersection		-	-	10.9	B	-	0.30	19.4	B	-	0.29	19.3	B	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.27	15.2	B	TR	0.27	15.2	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
37th Avenue	LT	-	-	8.2	A	LT	0.34	9.2	A	LT	0.33	9.1	A	
	WB	LR	-	12.5	B	L	0.10	35.1	D	L	0.10	35.1	D	
	-	-	-	-	-	R	0.17	25.9	C	R	0.17	25.9	C	
Overall Intersection		-	-	11.0	B	-	0.29	13.6	B	-	0.29	13.6	B	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	18.7	C	R	-	19.9	C	R	0.11	39.3	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.60	9.5	A	
Overall Intersection		-	-	18.7	C	-	-	19.9	C	-	0.49	9.9	A	

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS															
ASTORIA BOULEVARD															
108th Street at Astoria Boulevard															
108th Street	NB	DefL	0.50	27.1	C	DefL	0.62	30.8	C	-Mitigation not required.					
		T	0.20	21.0	C	T	0.20	21.0	C						
	SB	LTR	0.25	21.6	C	LTR	0.25	21.6	C						
		TR	0.92	31.8	C	TR	1.00	42.0	D						
	WB	L	0.54	23.2	C	L	0.54	23.9	C						
TR		0.35	12.5	B	TR	0.38	12.7	B							
Overall Intersection		-	0.73	24.6	C	-	0.81	30.4	C						
NORTHERN BOULEVARD															
108th Street at Northern Boulevard (RT. 25A)															
108th Street	NB	LTR	1.09	97.2	F	LTR	1.50	274.3	F	L	0.68	47.2	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes.	
		-	-	-	-	-	-	-	-	TR	0.86	50.3	D		
	SB	LTR	0.89	63.5	E	LTR	0.93	69.3	E	L	0.50	49.7	D		-Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes.
		-	-	-	-	-	-	-	-	TR	0.62	47.2	D		
Northern Boulevard (Rt. 25A)	EB	L	0.17	37.8	D	L	0.17	41.3	D	L	0.17	36.5	D	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft.	
		TR	0.92	30.4	C	TR	1.01	45.4	D	TR	0.95	31.2	C		
	WB	L	0.69	41.3	D	L	0.76	46.6	D	L	0.71	42.5	D	-Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.	
		TR	1.16	101.1	F	TR	1.22	128.0	F	TR	1.15	94.8	F		
Overall Intersection		-	1.06	69.5	E	-	1.23	102.9	F	-	1.01	61.8	E	-Modify signal timing: shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 66 s to 70 s; NB/SB phase shifts from 30 s to 26 s].	
114th Street at Northern Boulevard (RT. 25A)															
114th Street	SB	LTR	0.36	43.4	D	LTR	0.43	45.0	D	LTR	0.52	37.7	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes.	
		T	0.70	23.3	C	T	0.77	25.6	C	T	0.65	15.5	B		
	EB	R	0.58	22.2	C	R	0.62	23.1	C	R	0.52	14.2	B		-Divert left-turning turning to NB 112th Street and then to SB 114th Street.
		DefL	0.68	17.8	B	DefL	0.91	43.8	D	-	-	-	-		
	WB	T	0.97	23.5	C	T	1.01	33.1	C	T	0.92	22.6	C		
Overall Intersection		-	1.29	23.6	C	-	1.32	31.1	C	-	0.79	21.4	C	-Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes.	
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.43	43.4	D	L	0.65	48.4	D	L	0.63	46.8	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.	
		R	0.34	42.2	D	R	2.34	670.7	F	R	0.56	45.9	D		
Northern Boulevard	EB	T	0.72	42.8	D	T	0.72	42.8	D	T	0.78	44.0	D	-Close the ramp from EB Northern Blvd ramp to 126th Street.	
		WB	T	0.30	6.9	A	T	0.34	7.2	A	T	0.34	7.6		A
Grand Central Parkway Ramp	EB	T	0.83	40.8	D	T	0.83	40.8	D	T	0.84	42.7	D	-Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.	
Van Wyck & Whitestone Expressway Ramp	WB	T	0.73	14.7	B	T	1.01	46.9	D	-	-	-	-	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes.	
Overall Intersection		-	0.66	29.1	C	-	1.31	83.8	F	-	0.77	36.3	D	-Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard.	
-Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [NB 126th St green time shifts from 25 s to 26 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 44 s].															

-Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [NB 126th St green time shifts from 25 s to 26 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 44 s].

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														Mitigation Measure	
INTERSECTION & APPROACH		No Action				With Action				Mitigation					
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.10	91.6	F	LTR	1.10	91.6	F						-Unmitigatable Impact.
	SB	LTR	0.45	36.6	D	LTR	0.45	36.6	D						
Northern Boulevard (Rt. 25A)	EB	L	0.65	49.1	D	L	0.65	49.1	D						
	T		1.04	56.8	E	T	1.09	77.0	E						
Northern Boulevard Service Rd.	WB	L	0.80	63.5	E	L	0.80	63.5	E						
	T		1.14	102.8	F	T	1.19	121.3	F						
	EB	TR	0.61	25.5	C	TR	0.61	25.5	C						
	WB	TR	0.73	34.3	C	TR	0.81	38.5	D						
Overall Intersection		-	1.02	69.7	E	-	1.05	83.6	F						
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.92	54.6	D	L	0.92	54.6	D						-Unmitigatable Impact.
	R		0.87	58.7	E	R	0.87	58.7	E						
Northern Boulevard (Rt 25A)	EB	T	0.94	37.8	D	T	0.99	46.3	D						
	R		1.34	192.6	F	R	1.34	192.6	F						
	WB	L	0.08	25.1	C	L	0.08	25.1	C						
	T		0.92	28.1	C	T	0.98	34.5	C						
Overall Intersection		-	1.12	56.8	E	-	1.12	60.9	E						
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.75	37.3	D	TR	0.75	37.3	D	TR	0.80	41.9	D	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.63	33.9	C	TR	0.63	33.9	C	TR	0.68	37.4	D		
Northern Boulevard (Rt. 25A)	EB	L	0.71	32.5	C	L	0.71	32.9	C	L	0.71	31.4	C	-Modify Signal Timing: Shift 3 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 41 s; EB/WB green time shifts from 45 s to 48 s].	
	TR		1.43	229.9	F	TR	1.50	263.0	F	TR	1.40	217.8	F		
	WB	L	0.85	45.5	D	L	0.85	45.5	D	L	0.85	32.8	C		
	TR		1.00	49.3	D	TR	1.08	76.8	E	TR	0.76	31.6	C		
Overall Intersection		-	1.08	114.1	F	-	1.11	136.3	F	-	1.11	105.3	F		
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.81	63.9	E	L	0.84	67.3	E	L	0.78	59.4	E	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
	TR		0.58	40.3	D	TR	0.58	40.3	D	TR	0.58	40.3	D		
	SB	LTR	1.10	89.9	F	LTR	1.14	106.9	F	LT	0.72	36.2	D	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
	-	-	-	-	-	-	-	-	-	R	0.36	33.3	C		
Northern Boulevard (Rt. 25A)	EB	L	0.49	46.7	D	L	0.52	46.4	D	L	0.52	47.3	D	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
	TR		1.06	65.4	E	TR	1.13	97.4	F	T	0.89	33.7	C		
	-	-	-	-	-	-	-	-	-	R	0.57	27.8	C		
	WB	L	0.48	43.2	D	L	0.47	44.5	D	L	0.48	41.9	D		
	TR		1.14	96.3	F	TR	1.22	133.2	F	T	1.04	52.5	D		
	-	-	-	-	-	-	-	-	-	R	0.30	22.3	C		
Overall Intersection		-	1.07	76.9	E	-	1.15	104.5	F	-	0.93	42.5	D		
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	0.96	57.2	E	L	1.08	90.1	F	L	0.98	57.5	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.33	25.2	C	T	0.42	26.6	C	T	0.38	23.8	C		
34th Avenue	EB	T	0.56	13.8	B	T	0.56	13.8	B	T	0.59	16.2	B		
	R		0.10	8.7	A	R	0.10	8.7	A	R	0.11	10.2	B		
Overall Intersection		-	0.70	31.3	C	-	0.74	45.4	D	-	0.74	33.2	C		

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	DefL	0.38	25.3	C	L	0.22	20.6	-	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].	
Northern Boulevard Ramp GCP Ramp	SB	LTR	0.25	20.8	C	TR	0.35	22.2	C	TR	0.31	21.1	C		
	SB	LTR	0.35	23.0	C	LTR	0.64	30.2	C	-	-	-	-		
Shea Road	EB	-	-	-	-	-	-	-	-	L	0.05	18.4	B		
		-	-	-	-	-	-	-	-	T	0.17	19.4	B		
		-	-	-	-	DefL	2.55	759.9	F	DefL	0.70	34.2	C		
		LTR	0.61	46.1	D	TR	2.13	571.0	F	TR	0.41	23.6	C		
34th Avenue	WB	-	-	-	-	-	-	-	-	DefL	0.52	27.1	C		
		LTR	0.79	64.3	E	LTR	0.90	82.3	F	TR	0.41	23.6	C		
Overall Intersection		-	0.57	39.7	D	-	1.43	330.6	F	-	0.51	24.2	C		
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.16	119.5	F	LTR	1.20	139.1	F	LT	1.03	71.8	E		-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.37	37.7	D		
	SB	LTR	1.11	100.5	F	LTR	1.12	105.3	F	LT	0.98	57.3	E		
	-	-	-	-	-	-	-	-	-	R	0.28	36.6	D		
	EB	LTR	0.69	15.9	B	LTR	0.76	18.8	B	LTR	0.76	18.8	B		
WB	LTR	0.76	14.5	B	LTR	0.86	17.4	B	LTR	0.86	17.4	B			
Overall Intersection		-	0.87	48.1	D	-	0.95	52.0	D	-	0.91	31.4	C		
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	1.03	69.7	E	LTR	1.03	69.7	E	LTR	1.03	69.7	E	-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.	
Roosevelt Avenue	EB	LTR	0.83	21.6	C	LTR	0.94	32.7	C	LTR	0.94	33.0	C		
	WB	LTR	1.17	100.6	F	LTR	1.30	158.3	F	LT	1.04	45.5	D		
-	-	-	-	-	-	-	-	-	-	R	0.18	7.7	A		
Overall Intersection		-	1.13	65.1	E	-	1.23	94.6	F	-	1.04	42.6	D		
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	0.99	64.4	E	LTR	1.10	98.5	F	LTR	0.96	54.7	D	-Shift the centerline of the SB 114th Street approach 2 feet to the east. -Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane.	
Roosevelt Avenue	SB	LTR	1.06	80.1	F	LTR	1.27	168.9	F	LT	0.93	45.7	D		
	-	-	-	-	-	-	-	-	-	R	0.05	31.3	C		
	EB	LTR	1.15	93.9	F	LTR	1.51	254.0	F	L	0.43	12.5	B		
	-	-	-	-	-	-	-	-	-	TR	0.74	16.9	B		
WB	LTR	0.67	13.9	B	LTR	0.91	24.6	C	L	0.69	23.8	C			
	-	-	-	-	-	-	-	-	-	T	0.69	17.4	B		
-	-	-	-	-	-	-	-	-	-	R	0.63	16.5	B		
Overall Intersection		-	1.12	51.4	D	-	1.44	111.6	F	-	0.80	24.6	C		
126th Street at Roosevelt Avenue															
126th Street	NB	LTR	0.35	40.1	D	LTR	0.38	41.3	D	LTR	0.33	31.4	C	-Restripe SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. -New signal phasing and timing plan: Shared EB/WB phase receives 56 s green time; EB lag phase with SB right-turns receives 7 s green time; NB/SB phase receives 42 s green time [each phase will have 3 s amber and 2 s all red time].	
	SB	DefL	1.08	116.7	F	DefL	1.20	162.9	F	LT	0.92	64.0	E		
	-	TR	0.52	43.4	D	TR	0.66	48.7	D	R	0.34	22.7	C		
Roosevelt Avenue	EB	-	-	-	-	-	-	-	-	DefL	0.64	45.0	D		
	LTR	0.66	14.3	B	LTR	0.80	19.5	B	TR	0.81	27.9	C			
WB	LTR	0.47	10.6	B	LTR	0.59	12.3	B	LTR	0.85	35.3	D			
Overall Intersection		-	0.77	30.8	C	-	0.91	38.8	D	-	1.43	36.6	D		

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

										No Action				With Action				Mitigation				Mitigation Measure
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS									
College Point Boulevard at Roosevelt Avenue																						
College Point Boulevard		NB	L	1.27	172.5	F	L	1.54	288.3	F	L	0.96	75.0	E	-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].							
			TR	0.91	32.0	C	TR	0.91	32.0	C	TR	0.88	36.8	D								
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	-	-	-	-									
	SB	TR	0.99	50.4	D	TR	1.07	75.5	E	T	0.87	48.7	D									
		L	0.56	20.7	C	L	0.57	20.9	C	L	0.55	25.1	-									
	EB	TR	1.21	120.9	F	TR	1.39	200.6	F	TR	1.29	163.4	F									
		L	0.33	34.2	C	L	0.33	34.2	C	-	-	-	-									
	WB	L	0.33	34.2	C	L	0.33	34.2	C	-	-	-	-									
TR		0.48	26.9	C	TR	0.55	28.3	C	TR	0.56	42.3	D										
Overall Intersection		-	1.24	64.2	E	-	1.39	100.6	F	-	1.09	67.7	E									
Prince Street at Roosevelt Avenue																						
Prince Street Roosevelt Avenue		SB	LTR	0.94	54.2	D	LTR	0.94	54.2	D	-Mitigation not required.											
		EB	DefL	0.78	19.1	B	DefL	0.81	20.5	C												
		TR	0.73	15.2	B	TR	0.79	17.2	B													
		WB	LTR	0.56	12.4	B	LTR	0.61	13.3	B												
Overall Intersection		-	0.83	24.1	C	-	0.85	24.6	C													
Main Street at Roosevelt Avenue																						
Main Street Roosevelt Avenue		NB	T	0.74	25.8	C	T	0.74	25.8	C	T	0.83	32.2	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].							
		SB	T	0.65	24.0	C	T	0.65	24.0	C	T	0.73	28.9	C								
		EB	L	0.22	19.5	B	L	0.24	20.5	C	L	0.20	16.5	B								
			TR	0.91	47.6	D	TR	1.04	75.3	E	TR	0.93	46.4	D								
		WB	L	0.03	14.8	B	L	0.04	14.9	B	L	0.03	12.6	B								
			TR	0.84	31.3	C	TR	0.93	38.4	D	TR	0.84	28.1	C								
		Overall Intersection		-	0.82	30.4	C	-	0.89	38.0	D	-	0.89	33.3		C						
Union Street at Roosevelt Avenue																						
Union Street		NB	TR	0.55	18.8	B	TR	0.55	18.8	B	-Unmitigatable impact.											
		SB	LT	1.02	56.1	E	LT	1.02	56.1	E												
Roosevelt Avenue	R	2.75	822.2	F	R	2.75	822.2	F														
	EB	LTR	2.28	607.1	F	LTR	2.55	728.2	F													
	WB	LT	0.54	23.4	C	LT	0.61	25.3	C													
		R	1.29	208.0	F	R	1.29	208.0	F													
Overall Intersection		-	2.54	301.8	F	-	2.66	337.9	F													

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard	NB	LTR	0.83	32.2	C	LTR	0.86	34.6	C	LTR	0.89	39.0	D	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 41 s; NB/SB green time shifts from 40 s to 39 s].
	SB	LTR	0.77	26.5	C	LTR	0.77	26.5	C	LTR	0.79	28.1	C	
	EB	LTR	0.73	27.4	C	LTR	0.84	34.2	C	LTR	0.82	31.6	C	
	WB	LTR	0.84	34.3	C	LTR	0.93	45.4	D	LTR	0.90	39.9	D	
Overall Intersection		-	0.84	29.9	C	-	0.90	34.7	C	-	0.90	34.4	C	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street	NB	L	1.12	114.7	F	L	1.15	123.2	F	L	1.10	106.9	F	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].
	TR		0.67	22.9	C	TR	0.67	22.9	C	TR	0.66	21.8	C	
	SB	L	0.53	21.6	C	L	0.53	21.6	C	L	0.55	22.6	C	
	TR		0.56	19.9	B	TR	0.56	19.9	B	TR	0.54	19.1	B	
Kissena Boulevard	WB	T	0.73	26.4	C	T	0.73	26.4	C	T	0.75	27.9	C	
Overall Intersection		-	0.93	32.3	C	-	0.94	33.4	C	-	0.93	31.5	C	
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard	NB	L	0.57	25.8	C	L	0.61	30.1	C					-Mitigation not required.
	T		0.72	15.4	B	T	0.73	15.7	B					
	SB	TR	0.83	18.3	B	TR	0.86	19.4	B					
	WB	L	0.68	38.5	D	L	0.68	38.5	D					
Sanford Avenue	TR		0.51	29.1	C	TR	0.59	30.8	C					
Overall Intersection		-	0.78	19.9	B	-	0.80	20.8	C					
Union Street at Sanford Avenue														
Union Street	NB	LTR	0.38	21.4	C	LTR	0.38	21.5	C					-Mitigation not required.
	SB	LTR	0.72	26.7	C	LTR	0.74	27.2	C					
	EB	DefL	0.46	20.5	C	DefL	0.47	21.1	C					
	TR		0.34	15.4	B	TR	0.34	15.4	B					
Sanford Avenue	WB	LTR	0.85	27.4	C	LTR	0.85	27.4	C					
Overall Intersection		-	0.79	24.3	C	-	0.82	25.4	C					
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.88	33.4	C	LTR	0.90	35.1	D					-Mitigation not required.
	SB	LTR	0.82	28.4	C	LTR	0.91	35.8	D					
	EB	LTR	0.71	25.9	C	LTR	0.73	26.7	C					
	WB	LTR	0.88	35.1	D	LTR	0.92	39.6	D					
Overall Intersection		-	0.88	30.7	C	-	0.92	34.6	C					
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.35	23.1	C	T	0.36	23.2	C					-Mitigation not required.
	TR		0.77	33.5	C	TR	0.77	33.5	C					
	SB	L	0.51	35.7	D	L	0.51	35.7	D					
	T		0.40	10.6	B	T	0.41	10.6	B					
32nd Avenue	WB	LTR	0.52	31.5	C	LTR	0.52	31.5	C					
Overall Intersection		-	1.04	23.0	C	-	1.04	22.9	C					

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation Measure				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.53	13.1	B	TR	0.53	13.2	B					-Mitigation not required.
	SB	LT	0.76	19.1	B	LT	0.77	19.5	B					
Northern Blvd Service Rd	WB	LR	0.68	32.0	C	LR	0.76	35.5	D					
Overall Intersection	-		0.73	18.6	B	-	0.77	19.7	B					
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	LTR	0.08	7.2	A	LTR	0.22	8.2	A	LTR	0.48	43.7	D	-Install an actuated controller. -Modify signal phasing and timing plan: EB/WB phase will have 47 s green time; NB phase will have 23 s green time; SB phase will have 35 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.
	SB	DefL	0.20	8.3	A	-	-	-	-	-	-	-	-	
		TR	0.15	7.8	A	LTR	0.54	11.3	B	LTR	0.72	40.8	D	
Stadium Road	EB	-	-	-	-	DefL	0.73	52.1	D	DefL	0.74	46.7	D	
		-	-	-	-	TR	0.48	30.5	C	TR	0.34	25.9	C	
	WB	-	-	-	-	DefL	2.43	686.4	F	-	-	-	-	
		LTR	0.27	26.1	C	TR	1.07	91.1	F	LTR	0.72	33.4	C	
Overall Intersection	-		0.22	14.3	B	-	1.13	208.2	F	-	0.68	37.5	D	
UNSIGNALIZED INTERSECTIONS														
Willets Point Boulevard at 126th Street														
126th Street	SB	LT	-	8.5	A	-	-	-	-					-Intersection would no longer exist under the With Action condition.
Willets Point Boulevard	WB	LR	-	15.2	C	-	-	-	-					
Overall Intersection	-	-		14.0	B	-	-	-	-					
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	16.7	C	L	-	1000.0+	F	L	0.23	25.7	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.6	A	R	-	8.9	A	R	0.10	2.6	A	
		-	-	-	-	-	-	-	-	TR	0.15	37.2	D	
Worlds Fair Marina	WB	LT	-	7.9	A	LT	-	9.5	A	L	0.60	22.7	C	
		-	-	-	-	-	-	-	-	LT	0.46	19.7	B	
Overall Intersection	-	-		9.7	A	-	-	284.4	F	-	0.41	21.0	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.2	A	TR	-	9.2	A					-Mitigation not required.
Overall Intersection	-	-		9.2	A	-	-	9.2	A					
Boat Basin Road at Stadium Road / Citifield Entrance 8														
Citifield Entrance 8	NB	T	-	12.0	B	-	-	-	-					-Intersection would no longer exist under the With Action condition.
Boat Basin Road	SB	LT	-	-	-	-	-	-	-					
Stadium Road	EB	LT	-	7.5	A	-	-	-	-					
Overall Intersection	-	-		7.5	A	-	-	-	-					

TABLE 5
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Grand Central Parkway Ramp at West Park Loop/Stadium Road															
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.12	30.0	C	-Install traffic signal with the following timing plan: EB will have 43 s green time; WB will have 25 s green time; NB/SB will have 37 s green time [each phase will have 3 s amber and 2 s all red] -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	LT	-	8.2	A	L	0.64	44.4	D		
Grand Central Parkway Off-Ramp	-	-	-	-	-	-	-	-	-	TR	0.53	36.6	D		
	EB	L	-	11.1	B	L	-	74.9	F	L	0.25	28.2	C		
	-	-	-	-	-	T	-	431.0	F	T	0.70	39.7	D		
	R	-	-	9.3	A	R	-	10.5	B	-	-	-	-		
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.96	73.8	E		
	-	-	-	-	-	R	-	9.2	A	R	0.33	43.4	D		
Overall Intersection		-	-	10.6	B	-	-	1000.0+	F	-	0.74	48.3	D		
126th Street at 36th Avenue															
126th Street	NB	-	-	-	-	TR	0.34	21.6	C	TR	0.34	21.6	C	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
36th Avenue	LT	-	-	8.3	A	LT	0.52	18.1	B	LT	0.50	17.7	B		
	WB	LR	-	13.2	B	L	0.07	25.6	C	L	0.07	25.6	C		
	-	-	-	-	-	R	0.17	19.8	B	R	0.17	19.8	B		
	Overall Intersection		-	-	10.9	B	-	0.33	19.8	B	-	0.32	19.6	B	
126th Street at 37th Avenue															
126th Street	NB	-	-	-	-	TR	0.25	15.0	B	TR	0.25	15.0	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
37th Avenue	LT	-	-	8.1	A	LT	0.38	9.7	A	LT	0.33	9.0	A		
	WB	LR	-	11.8	B	L	0.10	35.1	D	L	0.10	35.1	D		
	-	-	-	-	-	R	0.25	27.5	C	R	0.25	27.5	C		
	Overall Intersection		-	-	10.9	B	-	0.28	14.0	B	-	0.28	13.9	B	
Northern Boulevard at 126th Place															
126th Place	NB	R	-	16.2	C	R	-	17.2	C	R	0.11	39.3	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.	
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.56	9.1	A		
Overall Intersection		-	-	16.2	C	-	-	17.2	C	-	0.46	9.5	A		

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 6

INTERSECTION		2018 (PHASE 1A) SUMMARY OF GAMEDAY MITIGATION MEASURES	
SIGNALIZED INTERSECTIONS	WEEKDAY PRE-GAME PEAK HOUR	SATURDAY PRE-GAME PEAK HOUR	SATURDAY POST-GAME PEAK HOUR
108th Street at Astoria Boulevard	Unmitigatable impact.	Mitigation not required.	Modify signal timing: shift 1 s green time from EB/WB phase to WB lead phase [EB/WB green time shifts from 34 s to 33 s; WB lead phase shifts from 9 s to 10 s].
108th Street at Northern Boulevard (RT. 25A)	Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 2 s green time from EB/WB left-turn phase to EB/WB phase; shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 71 s to 74 s; EB/WB left-turn phase shifts from 9 s to 7 s; NB/SB phase shifts from 25 s to 24 s].	Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 66 s to 70 s; NB/SB phase shifts from 30 s to 26 s].	Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 66 s to 70 s; NB/SB phase shifts from 30 s to 26 s].
114th Street at Northern Boulevard (RT. 25A)	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Street and then to SEB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 s to 75 s].	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Street and then to SB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Street and then to SEB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].
126th Street at Northern Boulevard (RT. 25A)	Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Modify signal timing: shift 3 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 28 s; EB GCP/Astoria Blvd ramp green time shifts from 55 s to 52 s].	Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [NB 126th St green time shifts from 25 s to 26 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 44 s]. [Measures reflect improvements needed for the Weekday Non-game AM, midday, PM,	Partially mitigated. Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase and 5 s green time from EB Northern Blvd phase to NB 126th St phase [NB 126th St green time shifts from 25 s to 26 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 44
Prince Street at Northern Boulevard (RT. 25A)	Unmitigatable impact.	Unmitigatable impact.	Unmitigatable impact.
Main Street at Northern Boulevard (RT. 25A)	Unmitigatable impact.	Mitigation not required.	Unmitigatable impact.
Union Street at Northern Boulevard (RT. 25A)	Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 3 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].	Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 3 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 41 s; EB/WB green time shifts from 45 s to 48 s].	Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 3 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 41 s; EB/WB green time shifts from 45 s to 48 s].
Parsons Boulevard at Northern Boulevard (RT. 25A)	Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to NB/SB phase and 2 s green time from EB/WB protected left-turn phase to EB/WB phase [NB/SB green time shifts from 36 s to 37 s; EB/WB protected left-turn green time shifts from 12 s to 9 s; EB/WB green time shifts from 50 s to 52 s].	Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
114th Street at 34th Avenue	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].
126th Street/GCP Ramp at 34th Avenue	Partially mitigated. Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 65 s green time; NB/SB phase will have 45 s green time [each phase will have 3 s amber and 2 s all red time].	Partially mitigated. Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 65 s green time; NB/SB phase will have 45 s green time [each phase will have 3 s amber and 2 s all red time].	Partially mitigated. Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 45 s green time; NB/SB phase will have 65 s green time [each phase will have 3 s amber and 2 s all red time].
108th Street at Roosevelt Avenue	Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	Partially mitigated. Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
111th Street at Roosevelt Avenue	Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.	Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.	Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.

TABLE 6

2018 (PHASE 1A) SUMMARY OF GAMEDAY MITIGATION MEASURES

114th Street at Roosevelt Avenue	Shift the centerline of the SB 114th Street approach 2 feet to the east. Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. Shift center line of WB Roosevelt Avenue approach 11 ft to the south. Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane. Modify Signal Timing: Shift 3 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s].	Partially mitigated. Shift the centerline of the SB 114th Street approach 2 feet to the east. Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. Shift center line of WB Roosevelt Avenue approach 11 ft to the south. Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane. Modify Signal Timing: Shift 4 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].	Partially Mitigated. Shift the centerline of the SB 114th Street approach 2 feet to the east. Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. Shift center line of WB Roosevelt Avenue approach 11 ft to the south. Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane. Modify Signal Timing: Shift 4 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].
126th Street at Roosevelt Avenue	Unmitigatable impact. Restripe SB approach as one 11-ft right-turn lane and one 12-ft shared left-through lane. New signal phasing and timing plan: Shared EB/WB phase receives 67 s green time; EB lag phase with SB right-turns receives 13 s green time; NB/SB phase receives 25 s green time [each phase will have 3 s amber and 2 s all red time]. Traffic Enforcement Agents should monitor traffic conditions and direct traffic accordingly.	Unmitigatable impact. Restripe SB approach as one 11-ft right-turn lane and one 12-ft shared left-through lane. New signal phasing and timing plan: Shared EB/WB phase receives 65 s green time; EB lag phase with SB right-turns receives 15 s green time; NB/SB phase receives 25 s green time [each phase will have 3 s amber and 2 s all red time]. Traffic Enforcement Agents should monitor traffic conditions and direct traffic accordingly.	Partially Mitigated. Restripe SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane. New signal phasing and timing plan: Shared EB/WB phase receives 42 s green time; EB lag phase with SB right-turns receives 7 s green time; NB/SB phase receives 36 s green time [each phase will have 3 s amber and 2 s all red time]. Traffic Enforcement Agents should monitor traffic conditions and direct traffic accordingly.
College Point Boulevard at Roosevelt Avenue	Partially Mitigated Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft. Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.	Partially Mitigated. Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft. Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. Install "No Standing Anytime" regulations along the west curb of the SB approach of College	Partially Mitigated. Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft. Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.
Prince Street at Roosevelt Avenue	Modify Signal Timing: Shift 2 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 65 s; SB green time shifts from 47 s to 45 s]. [Measures reflect improvements needed for the Weekday non-game PM peak periods.]	Mitigation not required.	Mitigation not required.
Main Street at Roosevelt Avenue	Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].	Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].	Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].
Union Street at Roosevelt Avenue	Unmitigatable Impact.	Unmitigatable Impact.	Unmitigatable impact.
Parsons Boulevard at Roosevelt Avenue	Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 57 s; NB/SB green time shifts from 55 s to 53 s]. Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 41 s; NB/SB green time shifts from 40 s to 39 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]	Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]
Main Street at Kissena Boulevard	Mitigation not required.	Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]	Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]
College Point Boulevard at Sanford Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.
Union Street at Sanford Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.
Parsons Boulevard at Sanford Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.
College Point Boulevard at 32nd Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.
College Point Boulevard at Northern Boulevard Service Road	Mitigation not required.	Mitigation not required.	Mitigation not required.
Boat Basin Road at Stadium Road	Partially Mitigated. Install an actuated controller. Modify signal phasing and timing plan: EB/WB phase will have 39 s green time; NB phase will have 16 s green time; SB phase will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.	Install an actuated controller. Modify signal phasing and timing plan: EB/WB phase will have 33 s green time; NB phase will have 14 s green time; SB phase will have 58 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.	Install an actuated controller. Modify signal phasing and timing plan: EB/WB phase will have 65 s green time; NB phase will have 11 s green time; SB phase will have 29 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.
UNSIGNALIZED INTERSECTIONS			
Willets Point Boulevard at 126th Street	Intersection no longer exists under the Build condition.	Intersection no longer exists under the Build condition.	Intersection no longer exists under the Build condition.
Boat Basin Road at Worlds Fair Marina	Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.
Willets Point Boulevard at Northern Boulevard	Mitigation not required.	Mitigation not required.	Mitigation not required.
Boat Basin Road at Stadium Road / Citifield Entrance 8	Intersection no longer exists under the Build condition.	Intersection no longer exists under the Build condition.	Intersection no longer exists under the Build condition.
Grand Central Parkway Ramp at West Park Loop/Stadium Road	Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 39 s green time; WB will have 22 s green time; NB/SB will have 44 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. [Measures reflect improvements needed for the Weekday Non-game Midday, Saturday Non-game Midday, Weekday Pre-game, and Saturday Pre-game peak periods.] Intersection meets NYCDOT Signal Warrant Criteria.
126th Street at 36th Avenue	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.

TABLE 6

2018 (PHASE 1A) SUMMARY OF GAMEDAY MITIGATION MEASURES

126th Street at 37th Avenue	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
Northern Boulevard at 126th Place	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.

NOTE: This table has been revised for the Final SEIS.

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.65	50.2	D	DefL	0.77	58.8	E					-Unmitigatable impact.
		T	0.27	36.7	D	T	0.27	36.7	D					
	SB	LTR	0.34	37.8	D	LTR	0.34	37.8	D					
		TR	1.04	46.9	D	TR	1.07	57.4	E					
	WB	L	0.73	49.2	D	L	0.73	49.6	D					
TR		0.28	9.2	A	TR	0.29	9.3	A						
Overall Intersection		-	0.90	40.2	D	-	0.95	47.6	D					
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.12	106.6	F	LTR	1.39	223.3	F	L	0.88	55.9	E	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Modify signal timing: shift 2 s green time from EB/WB left-turn phase to EB/WB phase; shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 71 s to 74 s;
		-	-	-	-	-	-	-	-	TR	0.66	42.6	D	
	SB	LTR	1.09	95.6	F	LTR	1.11	104.9	F	L	0.55	45.6	D	
		-	-	-	-	-	-	-	-	TR	0.67	44.4	D	
	EB	L	0.18	30.1	C	L	0.18	33.0	C	L	0.20	30.8	C	
TR		0.84	13.8	B	TR	0.87	15.0	B	TR	0.84	11.7	B		
Northern Boulevard (Rt. 25A)	WB	L	0.71	44.0	D	L	0.72	46.3	D	L	0.80	48.8	D	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Modify signal timing: shift 2 s green time from EB/WB left-turn phase to EB/WB phase; shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 71 s to 74 s;
		TR	1.04	48.7	D	TR	1.09	66.5	E	TR	1.04	47.0	D	
	Overall Intersection		-	1.01	39.3	D	-	1.14	55.4	E	-	0.97	30.7	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.75	55.4	E	LTR	0.82	60.2	E	LTR	0.55	37.5	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Street and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 s to 75 s].
		T	0.98	28.3	C	T	1.03	39.9	D	T	0.89	12.4	B	
	EB	R	0.62	14.6	B	R	0.64	15.0	B	R	0.56	7.6	A	
		DefL	0.78	42.8	D	DefL	0.94	66.6	E	-	-	-	-	
	WB	T	0.85	14.2	B	T	0.87	15.5	B	T	0.81	18.6	B	
		Overall Intersection		-	1.47	23.1	C	-	1.54	29.7	C	-	0.78	
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.46	43.8	D	L	0.62	47.3	D	L	0.62	47.3	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 3 s of green time from EB GCP/Astoria Blvd ramp phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 28 s; EB GCP/Astoria Blvd ramp green time shifts from 55 s to 52 s].
		R	0.38	43.3	D	R	1.32	220.9	F	R	0.50	45.2	D	
Northern Boulevard	EB	T	1.08	106.8	F	T	1.08	106.8	F	T	1.07	94.7	F	
		WB	T	0.79	15.7	B	T	0.85	18.4	B	T	0.85	18.4	B
Grand Central Parkway Ramp	EB	T	0.87	37.2	D	T	0.87	37.2	D	T	0.92	44.4	D	
		WB	T	0.77	13.9	B	T	0.73	12.8	B	-	-	-	-
Overall Intersection		-	0.72	35.8	D	-	0.95	45.4	D	-	0.89	51.9	D	

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

															No Action	With Action				Mitigation				Mitigation Measure
INTERSECTION & APPROACH			Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS										
Prince Street at Northern Boulevard (RT. 25A)																								
Prince Street			NB	LTR	1.10	92.3	F	LTR	1.10	92.3	F					-Unmitigatable impact.								
			SB	LTR	0.58	42.0	D	LTR	0.58	42.0	D													
Northern Boulevard (Rt. 25A)			EB	L	0.95	68.2	E	L	0.95	68.2	E													
				T	1.02	48.9	D	T	1.06	61.6	E													
			WB	L	0.77	67.3	E	L	0.77	67.3	E													
				T	1.08	81.6	F	T	1.12	95.1	F													
Northern Boulevard Service Rd.			EB	TR	0.58	24.8	C	TR	0.58	24.8	C													
			WB	TR	0.77	40.6	D	TR	0.83	44.6	D													
Overall Intersection			-	1.05	60.6	E	-	1.07	69.9	E														
Main Street at Northern Boulevard (RT. 25A)																								
Main Street			NB	L	0.89	51.4	D	L	0.89	51.4	D					-Unmitigatable impact.								
				R	0.88	58.6	E	R	0.88	58.6	E													
Northern Boulevard (Rt. 25A)			EB	T	1.12	85.5	F	T	1.16	103.9	F													
				R	1.20	124.0	F	R	1.20	124.0	F													
			WB	L	0.22	27.8	C	L	0.22	27.8	C													
				T	0.76	22.6	C	T	0.80	23.9	C													
Overall Intersection			-	1.05	63.8	E	-	1.05	71.2	E														
Union Street at Northern Boulevard (RT. 25A)																								
Union Street			NB	TR	0.68	35.3	D	TR	0.68	35.3	D	TR	0.71	37.7	D	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.								
			SB	TR	0.68	34.8	C	TR	0.68	34.8	C	TR	0.71	37.1	D									
Northern Boulevard (Rt. 25A)			EB	L	0.62	30.4	C	L	0.62	30.9	C	L	0.62	27.5	C	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 42 s; EB/WB green time shifts from 45 s to 47 s].								
				TR	1.15	104.2	F	TR	1.19	122.4	F	TR	1.14	97.2	F									
			WB	L	0.78	40.0	D	L	0.78	40.4	D	L	0.78	40.4	D									
				TR	0.97	48.8	D	TR	1.03	73.4	E	TR	0.73	32.2	C									
Overall Intersection			-	0.93	67.9	E	-	0.95	82.9	F	-	0.95	61.0	E										
Parsons Boulevard at Northern Boulevard (RT. 25A)																								
Parsons Boulevard			NB	L	0.85	75.0	E	L	0.87	77.2	E	L	0.87	76.6	E	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.								
				TR	0.57	39.9	D	TR	0.57	39.9	D	TR	0.55	38.6	D									
			SB	LTR	1.15	109.0	F	LTR	1.18	123.4	F	LT	0.72	35.3	D	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.								
											R	0.36	32.6	C										
Northern Boulevard (Rt. 25A)			EB	L	0.46	45.3	D	L	0.50	46.9	D	L	0.58	49.3	D	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.								
				TR	0.99	41.1	D	TR	1.03	52.9	D	TR	0.99	39.8	D									
				-	-	-	-	-	-	-	-	-	-	-	-Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to NB/SB phase and 2 s green time from EB/WB protected left-turn phase to EB/WB phase [NB/SB green time shifts from 36 s to 37 s; EB/WB protected left-turn green time shifts from 12 s to 9 s; EB/WB green time shifts from 50 s to 52 s].									
			WB	L	0.43	40.3	D	L	0.43	40.8	D	L	0.50	43.0		D								
				TR	1.13	101.6	F	TR	1.21	129.4	F	T	0.98	36.0		D								
											R	0.36	23.2	C										
Overall Intersection			-	1.09	69.9	E	-	1.10	85.9	F	-	1.03	39.2	D										
34TH AVENUE																								
114th Street at 34th Avenue																								
114th Street			SB	L	1.03	72.5	E	L	1.11	100.4	F	L	1.01	63.6	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].								
				T	0.53	28.5	C	T	0.61	30.5	C	T	0.55	26.8	C									
34th Avenue			EB	T	0.49	12.8	B	T	0.49	12.8	B	TR	0.52	14.9	B									
				R	0.16	9.1	A	R	0.16	9.1	A		0.17	10.6	B									
Overall Intersection			-	0.68	37.5	D	-	0.71	49.2	D	-	0.71	35.4	D										

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.26	177.2	F	L	1.37	222.9	F	L	1.19	152.0	F	-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13 ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 28 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 27 s green time [each phase will have 3 s amber and 2 s all red time].
	TR		0.68	28.5	C	TR	0.68	28.5	C	TR	0.73	32.5	C	
	-		-	-	-	-	-	-	-	-	-	-		
Roosevelt Avenue	SB	TR	0.87	46.2	D	TR	0.91	49.1	D	T	0.85	51.0	D	
	EB	L	0.49	37.1	D	L	0.50	37.4	D	L	0.48	35.0	D	
		TR	1.22	132.0	F	TR	1.33	180.0	F	TR	1.24	137.0	F	
	WB	L	0.31	44.8	D	L	0.31	44.8	D	-	-	-	-	
	TR	0.48	36.2	D	TR	0.53	37.5	D	TR	0.54	43.5	D		
Overall Intersection	-	1.20	75.5	E	-	1.28	94.1	F	-	1.13	77.6	E		
Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.51	30.7	C	LTR	0.51	30.7	C	LTR	0.54	32.7	C	-Modify Signal Timing: Shift 2 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 65 s; SB green time shifts from 47 s to 45 s]. [Measures reflect improvements needed for the Weekday non-game PM peak periods.]
Roosevelt Avenue	EB	DefL	0.78	30.9	C	DefL	0.80	32.3	C	DefL	0.76	28.4	C	
		TR	0.78	28.0	C	TR	0.85	31.5	C	TR	0.82	28.4	C	
	WB	LTR	0.59	21.2	C	LTR	0.63	22.0	C	LTR	0.61	20.4	C	
Overall Intersection	-	0.67	27.2	C	-	0.70	28.7	C	-	0.70	27.0	C		
Main Street at Roosevelt Avenue														
Main Street	NB	T	0.62	23.2	C	T	0.62	23.2	C	T	0.66	26.8	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].
	SB	T	0.54	21.9	C	T	0.54	21.9	C	T	0.58	25.2	C	
Roosevelt Avenue	EB	L	0.34	35.3	D	L	0.36	37.2	D	L	0.31	30.8	C	
		TR	0.91	62.2	E	TR	1.02	85.3	F	TR	0.93	61.0	E	
	WB	L	0.19	28.1	C	L	0.21	29.0	C	L	0.18	25.3	C	
		TR	0.87	52.8	D	TR	0.94	61.4	E	TR	0.85	47.1	D	
Overall Intersection	-	0.73	35.8	D	-	0.82	42.8	D	-	0.82	43.8	D		
Union Street at Roosevelt Avenue														
Union Street	NB	TR	0.53	18.6	B	TR	0.53	18.6	B					-Unmitigatable Impact.
	SB	LT	1.23	128.1	F	LT	1.23	128.1	F					
		R	1.87	417.7	F	R	1.87	417.7	F					
Roosevelt Avenue	EB	LTR	2.26	595.0	F	LTR	2.48	696.8	F					
	WB	LT	0.79	31.5	C	LT	0.85	35.7	D					
		R	0.78	46.0	D	R	0.78	46.0	D					
Overall Intersection	-	2.04	224.7	F	-	2.15	253.7	F						

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div></div>														
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard	NB	LTR	0.78	35.4	D	LTR	0.79	35.8	D	LT	0.71	33.0	C	-Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 57 s; NB/SB green time shifts from 55 s to 53 s. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	R	0.07	19.6	B	
Roosevelt Avenue	SB	LTR	0.76	32.5	C	LTR	0.76	32.5	C	LTR	0.79	35.3	D	
	EB	LTR	0.67	30.7	C	LTR	0.77	35.8	D	LTR	0.74	32.8	C	
	WB	LTR	0.90	43.2	D	LTR	0.97	55.5	E	LTR	0.93	45.6	D	
Overall Intersection		-	0.84	35.6	D	-	0.88	40.0	D	-	0.86	36.6	D	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street	NB	L	0.71	34.5	C	L	0.71	34.8	C					-Mitigation not required.
		TR	0.57	21.9	C	TR	0.57	21.9	C					
Kissena Boulevard	SB	L	0.85	51.6	D	L	0.85	51.6	D					
		TR	0.49	19.9	B	TR	0.49	19.9	B					
	WB	T	0.71	37.1	D	T	0.71	37.1	D					
Overall Intersection		-	0.77	29.1	C	-	0.77	29.2	C					
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard	NB	L	0.36	14.2	B	L	0.37	14.9	B					-Mitigation not required.
		T	0.73	15.6	B	T	0.74	15.8	B					
Sanford Avenue	SB	TR	0.73	15.5	B	TR	0.75	15.8	B					
	WB	L	0.79	46.9	D	L	0.79	46.9	D					
		TR	0.46	28.3	C	TR	0.53	29.5	C					
Overall Intersection		-	0.75	19.2	B	-	0.76	19.6	B					
Union Street at Sanford Avenue														
Union Street	NB	LTR	0.37	21.3	C	LTR	0.37	21.3	C					-Mitigation not required.
	SB	LTR	0.68	25.4	C	LTR	0.69	25.7	C					
Sanford Avenue	EB	-	-	-	-	-	-	-	-					
		LTR	0.28	14.2	B	LTR	0.28	14.2	B					
	WB	LTR	0.88	29.1	C	LTR	0.90	31.5	C					
Overall Intersection		-	0.79	24.2	C	-	0.81	25.1	C					
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.98	39.7	D	LTR	0.99	42.2	D					-Mitigation not required.
	SB	LTR	0.68	24.2	C	LTR	0.74	26.6	C					
Sanford Avenue	EB	LTR	0.60	23.1	C	LTR	0.61	23.5	C					
	WB	LTR	0.74	27.3	C	LTR	0.77	28.8	C					
	Overall Intersection		-	0.86	29.3	C	-	0.88	30.9	C				
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.38	23.6	C	T	0.39	23.7	C					-Mitigation not required.
		TR	0.26	22.0	C	TR	0.26	22.0	C					
32nd Avenue	SB	L	0.44	33.2	C	L	0.44	33.2	C					
		T	0.40	10.5	B	T	0.40	10.5	B					
	WB	LTR	0.72	36.8	D	LTR	0.72	36.8	D					
Overall Intersection		-	1.09	20.9	C	-	1.09	20.9	C					

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Northern Boulevard Service Road															
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard	NB	TR	0.48	12.5	B	TR	0.48	12.5	B					-Mitigation not required.	
	SB	LT	0.81	20.2	C	LT	0.82	20.5	C						
Northern Blvd Service Rd	WB	LR	0.70	33.1	C	LR	0.76	35.4	D						
Overall Intersection	-		0.77	19.2	B	-	0.80	19.9	B						
Stadium Road															
Boat Basin Road at Stadium Road															
Boat Basin Road	NB	-	-	-	-	-	-	-	-	-	-	-	-	-Partially Mitigated. -Install an actuated controller. -Modify signal phasing and timing plan: EB/WB phase will have 39 s green time; NB phase will have 16 s green time; SB phase will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.	
	LTR	0.52	43.3	D	LTR	0.97	83.4	F	LTR	0.70	54.7	D			
	SB	LTR	0.87	33.0	C	LTR	0.98	48.1	D	LTR	0.91	42.4	D		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Stadium Road	EB	-	-	-	-	DefL	0.74	57.6	E	DefL	0.65	44.2	D		
	-	-	-	-	-	TR	0.33	24.0	C	TR	0.34	31.1	C		
	WB	LTR	0.85	31.7	C	LTR	0.88	34.2	C	LTR	0.75	37.8	D		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection	-		0.82	33.2	C	-	0.94	46.9	D	-	0.82	42.0	D		
Unsignalized Intersections															
Willets Point Boulevard at 126th Street															
126th Street	SB	LT	-	8.1	A	-	-	-	-					-Intersection would no longer exist under the With Action condition.	
Willets Point Boulevard	WB	LR	-	11.9	B	-	-	-	-						
Overall Intersection	-		-	11.9	B	-	-	-	-						
Boat Basin Road at Worlds Fair Marina															
Boat Basin Road	NB	L	-	45.9	E	L	-	145.2	F	L	0.17	25.1	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.	
	R	-	8.6	A	R	-	8.9	A	R	0.08	2.5	A			
Worlds Fair Marina	EB	TR	-	-	-	-	-	-	-	TR	0.13	37.0	D		
	WB	LT	-	11.8	B	LT	-	11.6	B	L	0.94	46.6	D		
	-	-	-	-	-	-	-	-	-	LT	0.66	24.7	C		
Overall Intersection	-		-	12.8	B	-	-	25.6	D	-	0.58	34.1	C		
Willets Point Boulevard at Northern Boulevard															
Willets Point Boulevard	NB	TR	-	9.5	A	TR	-	8.9	A					-Mitigation not required.	
Overall Intersection	-		-	9.5	A	-	-	8.9	A						
Boat Basin Road at Stadium Road / Citifield Entrance 8															
Citifield Entrance 8	NB	-	-	-	-	-	-	-	-					-Intersection would no longer exist under the With Action condition.	
Boat Basin Road	SB	LT	-	8.3	A	-	-	-	-						
Stadium Road	EB	LT	-	28.9	D	-	-	-	-						
	TR	-	27.8	D	-	-	-	-	-						
Citifield Entrance 9	WB	R	-	10.3	B	-	-	-	-						
Overall Intersection	-		-	27.2	D	-	-	-	-						

TABLE 7
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	T	0.07	30.9	C	-Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red] -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	LT	-	7.8	A	L	0.46	39.0		D
Grand Central Parkway Off-Ramp	-	-	-	-	-	-	-	-	TR	0.56	38.6	D		
	EB	L	30.9	D	L	-	37.9	E	L	0.23	26.6	C		
	-	-	-	-	T	-	12.0	B	T	0.48	31.0	C		
	R	-	9.6	A	R	-	9.6	A	-	-	-	-		
Willets West Center Exit	WB	-	-	-	L	-	11.1	B	L	0.79	54.6	D		
	-	-	-	-	R	-	8.9	A	R	0.24	41.5	D		
Overall Intersection	-	-	28.3	D	-	-	34.4	D	-	0.58	40.8	D		
126th Street at 36th Avenue														
126th Street	NB	-	-	-	TR	0.75	37.7	D	TR	0.75	37.7	D	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	DefL	0.99	61.8	E	DefL	0.99	61.8	E		
36th Avenue	LT	-	8.3	A	T	1.01	45.7	D	T	1.01	45.7	D		
	WB	LR	16.8	C	L	0.01	37.8	D	L	0.01	37.8	D		
	-	-	-	-	R	0.05	13.1	B	R	0.05	13.1	B		
	Overall Intersection	-	-	12.0	B	-	1.21	46.4	D	-	1.21	46.4		D
126th Street at 37th Avenue														
126th Street	NB	-	-	-	TR	1.28	170.0	F	TR	1.28	170.0	F	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	DefL	1.18	137.4	F	DefL	1.18	137.4	F		
37th Avenue	LT	-	8.2	A	T	0.49	7.3	A	T	0.49	7.3	A		
	WB	LR	15.3	C	L	0.02	41.9	D	L	0.02	41.9	D		
	-	-	-	-	R	0.11	16.6	B	R	0.11	16.6	B		
	Overall Intersection	-	-	12.3	B	-	1.82	120.1	F	-	1.82	120.1		F
Northern Boulevard at 126th Place														
126th Place	NB	R	-	20.1	C	R	-	19.1	C	R	0.11	39.3	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	TR	0.66	10.5	B		
Overall Intersection	-	-	20.1	C	-	-	19.1	C	-	0.54	10.9	B		

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.45	25.7	C	DefL	0.52	27.5	C	-Mitigation not required.				
		T	0.19	20.9	C	T	0.19	20.9	C					
	SB	LTR	0.22	21.4	C	LTR	0.22	21.4	C					
		TR	0.74	26.3	C	TR	0.78	27.5	C					
	WB	L	0.76	33.5	C	L	0.80	38.7	D					
TR		0.29	11.9	B	TR	0.30	12.0	B						
Overall Intersection		-	0.65	22.5	C	-	0.70	23.7	C					
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.11	99.6	F	LTR	1.37	213.5	F	L	0.89	54.9	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes.
		-	-	-	-	-	-	-	-	TR	0.73	43.7	D	
	SB	LTR	1.04	84.0	F	LTR	1.07	92.5	F	L	0.50	45.2	D	
-		-	-	-	-	-	-	-	TR	0.76	48.6	D		
Northern Boulevard (Rt. 25A)	EB	L	0.09	34.1	C	L	0.09	36.8	D	L	0.09	31.4	C	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft.
		TR	0.95	32.8	C	TR	1.01	45.7	D	TR	0.96	31.0	C	
	WB	L	0.79	45.4	D	L	0.85	49.9	D	L	0.80	45.2	D	-Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.
		TR	1.14	90.5	F	TR	1.18	109.0	F	TR	1.11	76.9	E	
Overall Intersection		-	1.08	67.4	E	-	1.19	90.8	F	-	1.01	53.6	D	-Modify signal timing: shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 66 s to 70 s; NB/SB phase shifts from 30 s to 26 s].
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.60	49.0	D	LTR	0.67	51.8	D	LTR	0.59	38.8	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Street and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].
		T	0.74	24.2	C	T	0.79	25.9	C	T	0.67	15.7	B	
	EB	R	0.77	27.9	C	R	0.80	29.3	C	R	0.67	17.2	B	
		WB	DefL	0.79	31.7	C	DefL	0.95	58.9	E	-	-	-	
	T	0.83	15.0	B	T	0.86	16.1	B	T	0.79	18.3	B		
Overall Intersection		-	1.28	22.4	C	-	1.34	26.0	C	-	0.73	19.7	B	
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.61	46.5	D	L	0.75	51.2	D	L	0.72	49.2	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.
		R	0.32	41.7	D	R	1.32	220.3	F	R	0.44	42.8	D	
Northern Boulevard	EB	T	0.54	38.0	D	T	0.54	38.0	D	T	0.72	41.6	D	-Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.
	WB	T	0.67	12.3	B	T	0.72	13.9	B	T	0.73	14.7	B	
Grand Central Parkway Ramp	EB	T	0.86	42.9	D	T	0.86	42.9	D	T	0.88	45.3	D	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard.
Van Wyck & Whitestone Expressway Ramp	WB	T	0.72	12.5	B	T	0.70	11.9	B	-	-	-		
Overall Intersection		-	0.69	26.3	C	-	0.86	36.9	D	-	0.79	37.4	D	-Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase [NB 126th St green time shifts from 25 s to 26 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 44 s].

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														No Action	With Action				Mitigation				Mitigation Measure
INTERSECTION & APPROACH		Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		LOS							
				Delay					Delay					Delay									
Prince Street at Northern Boulevard (RT. 25A)																							
Prince Street		NB	LTR	1.08	85.5	F	LTR	1.08	85.5	F								-Unmitigatable impact.					
		SB	LTR	0.50	37.4	D	LTR	0.50	37.4	D													
Northern Boulevard (Rt. 25A)		EB	L	0.97	78.9	E	L	0.97	78.9	E													
		T	0.95	36.7	D	T	0.99	42.2	D														
		WB	L	0.95	94.7	F	L	0.95	94.7	F													
		T	1.11	90.1	F		T	1.14	103.7	F													
Northern Boulevard Service Rd.		EB	TR	0.50	22.9	C	TR	0.50	22.9	C													
		WB	TR	0.73	34.7	C	TR	0.79	37.5	D													
Overall Intersection		-	1.07	60.3	E		-	1.09	67.0	E													
Main Street at Northern Boulevard (RT. 25A)																							
Main Street		NB	L	0.85	47.3	D	L	0.85	47.3	D								-Mitigation not required.					
		R	0.92	64.0	E	R	0.92	64.0	E														
Northern Boulevard (Rt 25A)		EB	T	0.94	38.3	D	T	0.98	43.7	D													
		R	1.31	177.6	F	R	1.31	177.6	F														
		WB	L	0.16	26.5	C	L	0.16	26.5	C													
		T	0.86	25.6	C	T	0.91	27.9	C														
Overall Intersection		-	1.13	53.4	D		-	1.13	55.4	E													
Union Street at Northern Boulevard (RT. 25A)																							
Union Street		NB	TR	0.68	35.1	D	TR	0.68	35.1	D	TR	0.73	38.8	D				-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.					
		SB	TR	0.59	32.8	C	TR	0.59	32.8	C	TR	0.63	35.9	D									
Northern Boulevard (Rt. 25A)		EB	L	0.68	33.9	C	L	0.68	34.4	C	L	0.68	29.4	C									
		TR	1.25	150.1	F	TR	1.29	170.6	F	TR	1.21	131.9	F										
		WB	L	0.96	63.8	E	L	0.96	64.1	E	L	0.96	64.3	E									
		TR	0.96	43.2	D	TR	1.02	55.0	D	TR	0.71	30.8	C										
Overall Intersection		-	0.97	80.4	F		-	0.99	91.9	F	-	0.99	70.8	E									
Parsons Boulevard at Northern Boulevard (RT. 25A)																							
Parsons Boulevard		NB	L	0.66	49.3	D	L	0.67	49.8	D	L	0.65	48.6	D				-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.					
		TR	0.53	38.7	D	TR	0.53	38.7	D	TR	0.53	38.7	D										
		SB	LTR	1.10	91.0	F	LTR	1.13	103.2	F	LT	0.64	34.7	C									
		-	-	-	-	-	-	-	-	-	R	0.33	32.9	C									
Northern Boulevard (Rt. 25A)		EB	L	0.41	42.8	D	L	0.42	44.2	D	L	0.43	42.4	D									
		TR	1.10	83.3	F	TR	1.16	108.0	F	T	0.97	37.8	D										
		-	-	-	-	-	-	-	-	-	R	0.36	23.5	C									
		WB	L	0.44	43.6	D	L	0.43	44.4	D	L	0.44	42.7	D									
		TR	1.04	59.1	E	TR	1.11	85.8	F	T	0.91	34.5	C										
										R	0.35	23.4	C										
Overall Intersection		-	1.08	68.1	E		-	1.09	88.6	F	-	0.85	36.3	D									
34TH AVENUE																							
114th Street at 34th Avenue																							
114th Street		SB	L	1.01	66.0	E	L	1.08	87.6	F	L	0.98	54.7	D				-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].					
		T	0.53	28.4	C	T	0.61	30.2	C	T	0.55	26.6	C										
34th Avenue		EB	T	0.42	11.9	B	T	0.42	11.9	B	T	0.45	13.8	B									
		R	0.11	8.8	A	R	0.11	8.8	A	R	0.12	10.2	B										
Overall Intersection		-	0.63	37.5	D		-	0.65	47.6	D	-	0.65	33.6	C									

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	DefL	1.34	227.6	F	DefL	1.05	160.2	F	L	0.85	91.5	F	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 65 s green time; NB/SB phase will have 45 s green time [each phase will have 3 s amber and 2 s all red time].	
		TR	0.57	40.1	D	TR	0.64	42.2	D	TR	0.43	29.1	C		
Northern Boulevard Ramp	SB	LTR	0.63	45.1	D	LTR	1.32	203.4	F	-	-	-	-		
		LTR	1.26	171.3	F	LTR	1.57	307.9	F	L	0.02	23.8	C		
GCP Ramp	SB	-	-	-	-	-	-	-	-	T	0.81	39.8	D		
		-	-	-	-	-	-	-	-	-	-	-	-		
Shea Road	EB	-	-	-	-	-	-	-	-	-	-	-	-		
		LTR	0.45	32.3	C	LTR	1.99	487.6	F	LTR	0.97	39.8	D		
34th Avenue	WB	-	-	-	-	-	-	-	-	DefL	1.49	248.4	F		
		LTR	0.45	31.7	C	LTR	0.91	46.5	D	TR	0.28	14.9	B		
Overall Intersection		-	0.98	110.2	F	-	1.65	284.4	F	-	1.23	60.1	E		
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.14	111.7	F	LTR	1.16	119.9	F	LT	0.99	57.8	E	-Partially mitigated. -Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	
		-	-	-	-	-	-	-	-	R	0.40	38.0	D		
SB	LTR	1.14	109.3	F	LTR	1.14	112.6	F	LT	1.01	64.2	E			
	-	-	-	-	-	-	-	-	R	0.34	37.3	D			
Roosevelt Avenue	EB	LTR	0.76	18.3	B	LTR	0.82	21.3	C	LTR	0.82	21.3	C		
		WB	LTR	0.97	25.1	C	LTR	1.07	53.4	D	LTR	1.07	53.4	D	
Overall Intersection		-	1.02	50.9	D	-	1.09	63.1	E	-	1.04	44.4	D		
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	1.03	67.8	E	LTR	1.03	67.8	E	LTR	1.03	67.8	E	-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.	
		EB	LTR	0.84	21.1	C	LTR	0.91	26.8	C	LTR	0.90	25.9		C
Roosevelt Avenue	WB	LTR	1.18	101.2	F	LTR	1.26	138.9	F	LT	0.99	29.9	C		
		-	-	-	-	-	-	-	-	R	0.19	7.7	A		
Overall Intersection		-	1.13	63.4	E	-	1.20	81.1	F	-	1.01	33.7	C		
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	1.06	75.7	E	LTR	1.09	87.8	F	LTR	1.10	91.6	F	-Partially mitigated. -Shift the centerline of the SB 114th Street approach 2 feet to the east. -Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane. -Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane. -Modify Signal Timing: Shift 4 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].	
		SB	LTR	1.08	84.0	F	LTR	1.16	119.6	F	LT	0.74	37.5		D
Roosevelt Avenue	EB	-	-	-	-	-	-	-	-	R	0.26	33.5	C		
		LTR	1.20	110.9	F	LTR	1.43	215.2	F	L	0.42	11.4	B		
WB	LTR	0.58	12.3	B	LTR	0.74	16.0	B	TR	0.71	15.2	B			
	-	-	-	-	-	-	-	-	L	0.60	20.2	C			
Overall Intersection		-	1.16	64.9	E	-	1.35	102.6	F	-	0.84	28.3	C		
126th Street at Roosevelt Avenue															
126th Street	NB	LTR	0.73	66.4	E	LTR	0.59	51.3	D	LTR	0.65	60.3	E	-Unmitigatable impact. -Restripe SB approach as one 11-ft right-turn lane and one 12-ft shared left-through lane. -New signal phasing and timing plan: Shared EB/WB phase receives 65 s green time; EB lag phase with SB right-turns receives 15 s green time; NB/SB phase receives 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Traffic Enforcement Agents should monitor traffic conditions and direct traffic accordingly.	
		SB	-	-	-	-	-	-	-	LT	1.00	70.2	E		
Roosevelt Avenue	EB	LTR	1.12	101.8	F	LTR	0.93	48.2	D	R	0.72	33.4	C		
		DefL	1.13	116.6	F	DefL	3.00+	1000.0+	F	DefL	1.75	388.7	F		
WB	TR	0.54	12.2	B	TR	0.60	13.5	B	TR	0.57	10.5	B			
	LTR	0.65	13.2	B	LTR	0.77	16.7	B	LTR	0.96	41.4	D			
Overall Intersection		-	1.13	47.4	D	-	2.87	262.4	F	-	1.32	107.3	F		

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.29	177.8	F	L	1.41	230.4	F	L	1.10	116.0	F	-Partially Mitigated
	TR		0.81	26.7	C	TR	0.81	26.7	C	TR	0.79	32.4	C	-Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.
	-	-	-	-	-	-	-	-	-	-	-	-	-	-Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.
Roosevelt Avenue	SB	TR	1.19	122.2	F	TR	1.24	144.1	F	T	0.92	50.2	D	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13 ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft.
	EB	L	0.48	28.8	C	L	0.49	28.9	C	L	0.47	36.3	D	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13 ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes lanes for 200 ft.
	TR		1.21	122.4	F	TR	1.32	171.4	F	TR	1.23	135.6	F	-Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.
	WB	L	0.28	33.3	C	L	0.28	33.3	C	-	-	-	-	-Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes.
	TR		0.54	28.0	C	TR	0.59	29.2	C	TR	0.57	42.5	D	-Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.
Overall Intersection	-	1.34	89.7	F	-	1.45	112.5	F	-	1.12	68.2	E		-Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.
														-Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.
														-Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.
														-Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue.
														-Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].
Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.79	40.5	D	LTR	0.79	40.5	D					-Mitigation not required.
Roosevelt Avenue	EB	DefL	0.76	17.7	B	DefL	0.77	18.4	B					
	TR		0.63	12.8	B	TR	0.68	13.6	B					
	WB	LTR	0.61	13.0	B	LTR	0.64	13.6	B					
Overall Intersection	-	0.77	19.9	B	-	0.78	20.1	C						
Main Street at Roosevelt Avenue														
Main Street	NB	T	0.66	23.9	C	T	0.66	23.9	C	T	0.74	28.9	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].
	SB	T	0.63	23.8	C	T	0.63	23.9	C	T	0.71	28.6	C	
Roosevelt Avenue	EB	L	0.25	20.2	C	L	0.27	20.9	C	L	0.23	16.9	B	
	TR		0.73	31.8	C	TR	0.81	36.9	D	TR	0.73	28.5	C	
	WB	L	0.07	15.5	B	L	0.07	15.6	B	L	0.06	13.1	B	
	TR		0.83	37.8	D	TR	0.89	43.5	D	TR	0.79	31.8	C	
Overall Intersection	-	0.74	27.9	C	-	0.77	30.2	C	-	0.77	29.0	C		
Union Street at Roosevelt Avenue														
Union Street	NB	TR	0.45	17.2	B	TR	0.45	17.2	B					-Unmitigatable impact.
	SB	LT	0.97	47.8	D	LT	0.97	47.8	D					
	R		2.58	746.9	F	R	2.58	746.9	F					
Roosevelt Avenue	EB	LTR	1.89	433.8	F	LTR	2.04	500.4	F					
	WB	LT	0.56	24.1	C	LT	0.61	25.5	C					
	R		1.19	174.2	F	R	1.19	174.2	F					
Overall Intersection	-	2.26	239.8	F	-	2.33	257.7	F						

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Control				Control				Control				
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard	NB	LTR	0.71	26.4	C	LTR	0.72	26.8	C	LTR	0.74	28.8	C	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 41 s; NB/SB green time shifts from 40 s to 39 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]
	SB	LTR	0.72	25.2	C	LTR	0.72	25.2	C	LTR	0.74	26.6	C	
	EB	LTR	0.44	19.7	B	LTR	0.51	21.2	C	LTR	0.50	20.2	C	
	WB	LTR	0.61	23.6	C	LTR	0.66	25.3	C	LTR	0.65	23.9	C	
Overall Intersection		-	0.67	24.2	C	-	0.69	24.9	C	-	0.69	25.3	C	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street	NB	L	0.84	48.5	D	L	0.85	49.1	D	L	0.82	44.0	D	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]
	TR		0.58	21.1	C	TR	0.58	21.1	C	TR	0.57	20.1	C	
	SB	L	0.50	21.0	C	L	0.50	21.0	C	L	0.52	22.0	C	
	TR		0.52	19.4	B	TR	0.52	19.4	B	TR	0.51	18.6	B	
Kissena Boulevard	WB	T	0.64	24.0	C	T	0.64	24.0	C	T	0.66	25.3	C	
	Overall Intersection		-	0.74	23.6	C	-	0.74	23.6	C	-	0.74	23.0	C
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard	NB	L	0.48	19.3	B	L	0.50	20.5	C					-Mitigation not required.
	T		0.80	17.4	B	T	0.81	17.6	B					
	SB	TR	0.80	17.4	B	TR	0.82	17.9	B					
	WB	L	0.85	51.8	D	L	0.85	51.8	D					
Sanford Avenue	TR		0.50	29.0	C	TR	0.55	30.0	C					
	Overall Intersection		-	0.82	21.3	C	-	0.83	21.8	C				
Union Street at Sanford Avenue														
Union Street	NB	LTR	0.45	23.3	C	LTR	0.45	23.3	C					-Mitigation not required.
	SB	LTR	0.90	32.6	C	LTR	0.91	33.5	C					
	EB	DefL	0.55	23.2	C	DefL	0.56	23.8	C					
	TR		0.32	15.0	B	TR	0.32	15.0	B					
Sanford Avenue	WB	LTR	0.73	22.8	C	LTR	0.75	23.7	C					
	Overall Intersection		-	0.80	26.0	C	-	0.82	26.7	C				
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.82	29.6	C	LTR	0.82	30.1	C					-Mitigation not required.
	SB	LTR	0.71	25.1	C	LTR	0.78	28.3	C					
	EB	LTR	0.61	22.9	C	LTR	0.62	23.2	C					
	WB	LTR	0.83	31.3	C	LTR	0.87	34.0	C					
Overall Intersection		-	0.82	27.4	C	-	0.85	29.2	C					
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.35	23.2	C	T	0.36	23.2	C					-Mitigation not required.
	TR		0.57	25.8	C	TR	0.57	25.8	C					
	SB	L	0.57	37.6	D	L	0.57	37.6	D					
	T		0.44	11.0	B	T	0.45	11.0	B					
32nd Avenue	WB	LTR	0.45	29.8	C	LTR	0.45	29.8	C					
	Overall Intersection		-	1.03	21.7	C	-	1.03	21.6	C				

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
NORTHERN BOULEVARD SERVICE ROAD															
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard	NB	TR	0.53	13.2	B	TR	0.54	13.2	B					-Mitigation not required.	
	SB	LT	0.88	23.8	C	LT	0.89	24.2	C						
Northern Blvd Service Rd	WB	LR	0.70	32.3	C	LR	0.75	34.3	C						
Overall Intersection	-		0.81	20.7	C	-	0.84	21.4	C						
STADIUM ROAD															
Boat Basin Road at Stadium Road															
Boat Basin Road	NB	-	-	-	-	-	-	-	-	-	-	-	-	-Install an actuated controller. -Modify signal phasing and timing plan: EB/WB phase will have 33 s green time; NB phase will have 14 s green time; SB phase will have 58 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.	
	LTR	0.66	48.6	D	LTR	0.75	53.0	D	LTR	0.62	53.2	D			
SB	LTR	0.76	25.0	C	LTR	1.07	69.3	E	LTR	0.70	25.7	C			
Stadium Road	EB	-	-	-	-	DefL	0.85	74.2	E	DefL	0.57	40.8	D		
	-	-	-	-	-	TR	0.48	29.7	C	TR	0.50	37.5	D		
	WB	LTR	0.93	35.6	D	LTR	0.82	32.2	C	DefL	0.80	44.0	D		
	-	-	-	-	-	-	-	-	-	TR	0.77	41.9	D		
Overall Intersection	-		0.80	31.3	C	-	0.95	56.4	E	-	0.72	35.1	D		
UNSIGNALIZED INTERSECTIONS															
Willets Point Boulevard at 126th Street															
126th Street	SB	LT	-	8.8	A	-	-	-	-					-Intersection would no longer exist under the With Action condition.	
Willets Point Boulevard	WB	LR	-	10.5	B	-	-	-	-						
Overall Intersection	-		-	10.7	B	-	-	-	-						
Boat Basin Road at Worlds Fair Marina															
Boat Basin Road	NB	L	-	36.1	E	L	-	98.9	F	L	0.16	25.0	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.	
	R	-	8.7	A	R	-	8.9	A	R	0.10	2.6	A			
Worlds Fair Marina	EB	TR	-	-	-	-	-	-	-	TR	0.12	26.8	C		
	WB	LT	-	10.8	B	LT	-	11.0	B	L	0.90	40.6	D		
-	-	-	-	-	-	-	-	-	-	LT	0.70	25.9	C		
Overall Intersection	-		-	11.6	B	-	-	20.1	C	-	0.55	30.9	C		
Willets Point Boulevard at Northern Boulevard															
Willets Point Boulevard	NB	TR	-	9.1	A	TR	-	8.7	A					-Mitigation not required.	
Overall Intersection	-		-	9.1	A	-	-	8.7	A						
Boat Basin Road at Stadium Road / Citifield Entrance 8															
Citifield Entrance 8	NB	-	-	-	-	-	-	-	-					-Intersection would no longer exist under the With Action condition.	
Boat Basin Road	SB	LT	-	7.7	A	-	-	-	-						
Stadium Road	EB	LT	-	62.2	F	-	-	-	-						
-	TR	-	-	30.1	D	-	-	-	-						
Citifield Entrance 9	WB	R	-	9.3	A	-	-	-	-						
Overall Intersection	-		-	42.5	E	-	-	-	-						

TABLE 8
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Grand Central Parkway Ramp at West Park Loop/Stadium Road															
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.09	31.1	C	-Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	LT	-	9.3	A	L	0.51	40.9	D		
Grand Central Parkway Off-Ramp	-	-	-	-	-	-	-	-	-	TR	0.39	35.3	D		
	EB	L	-	30.8	D	L	-	38.0	E	L	0.32	28.0	C		
	-	-	-	-	-	T	-	288.3	F	T	0.51	31.9	C		
	R	-	-	9.1	A	R	-	12.5	B	-	-	-	-		
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.70	50.2	D		
	-	-	-	-	-	R	-	10.3	B	R	0.24	41.5	D		
Overall Intersection		-	-	28.5	D	-	-	1000.0+	F	-	0.56	38.5	D		
126th Street at 36th Avenue															
126th Street	NB	-	-	-	-	TR	1.02	70.5	E	TR	1.02	70.5	E	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	DefL	0.98	63.2	E	DefL	0.98	63.2	E		
36th Avenue	LT	-	-	9.4	A	T	1.12	80.8	F	T	1.12	80.8	F		
	WB	LR	-	23.4	C	L	0.01	41.8	D	L	0.01	41.8	D		
	-	-	-	-	-	R	0.10	16.2	B	R	0.10	16.2	B		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	-	16.4	C	-	1.35	73.2	E	-	1.35	73.2	E		
126th Street at 37th Avenue															
126th Street	NB	-	-	-	-	TR	1.27	165.2	F	TR	1.27	165.2	F	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	DefL	1.01	80.9	F	DefL	1.01	80.9	F		
37th Avenue	LT	-	-	8.8	A	T	0.72	11.7	B	T	0.72	11.7	B		
	WB	LR	-	16.7	C	L	0.01	41.8	D	L	0.01	41.8	D		
	-	-	-	-	-	R	0.17	17.5	B	R	0.17	17.5	B		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	-	14.1	B	-	1.22	97.0	F	-	1.22	97.0	F		
Northern Boulevard at 126th Place															
126th Place	NB	R	-	15.3	C	R	-	16.0	C	R	0.11	39.3	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].	
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.55	8.9	A		
Overall Intersection		-	-	15.3	C	-	-	16.0	C	-	0.45	9.4	A		
-Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.															

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.52	27.3	C	DefL	0.60	30.0	C	DefL	0.60	30.0	C	-Modify signal timing: shift 1 s green time from EB/WB phase to WB lead phase [EB/WB green time shifts from 34 s to 33 s; WB lead phase shifts from 9 s to 10 s].
		T	0.21	21.2	C	T	0.21	21.2	C	T	0.21	21.2	C	
Astoria Boulevard	SB	LTR	0.19	20.8	C	LTR	0.19	20.8	C	LTR	0.19	20.8	C	
	EB	TR	0.67	25.0	C	TR	0.70	25.8	C	TR	0.73	27.0	C	
	WB	L	0.88	44.3	D	L	0.92	51.8	D	L	0.88	45.3	D	
	TR	0.30	12.0	B	TR	0.31	12.1	B	TR	0.31	12.1	B		
Overall Intersection		-	0.67	23.2	C	-	0.74	24.5	C	-	0.69	24.4	C	
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.14	115.6	F	LTR	1.39	221.9	F	L	0.67	46.6	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Modify signal timing: shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 66 s to 70 s; NB/SB phase shifts from 30 s to 26 s].
		-	-	-	-	-	-	-	-	TR	0.88	49.9	D	
Northern Boulevard (Rt. 25A)	SB	LTR	1.13	109.5	F	LTR	1.17	123.3	F	L	0.64	45.6	D	
	-	-	-	-	-	-	-	-	-	TR	0.75	45.3	D	
	EB	L	0.14	35.1	D	L	0.14	38.3	D	L	0.14	33.3	C	
	TR	0.94	32.3	C	TR	1.00	43.0	D	TR	0.94	30.0	C		
WB	L	0.95	59.5	E	L	1.02	76.3	E	L	0.95	59.0	E		
	TR	1.11	78.7	E	TR	1.16	102.5	F	TR	1.10	71.4	E		
Overall Intersection		-	1.10	66.3	E	-	1.21	91.2	F	-	1.02	51.7	D	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.46	45.6	D	LTR	0.50	46.6	D	LTR	0.69	41.7	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Street and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].
		T	0.65	22.2	C	T	0.69	23.3	C	T	0.58	14.3	B	
Northern Boulevard (Rt. 25A)	R	0.65	24.2	C	R	0.67	24.9	C	R	0.56	15.2	B		
	WB	DefL	1.22	125.9	F	DefL	1.40	206.2	F	-	-	-	-	
	T	1.17	96.3	F	T	1.21	110.8	F	T	1.13	83.1	F		
	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	1.82	74.3	E	-	2.14	91.0	F	-	0.99	57.9	E	
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	1.14	112.8	F	L	2.39	674.7	F	L	1.93	463.0	F	-Partially mitigated. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 1 s of green time from EB GCP/Astoria Blvd ramp phase to NB 126th St phase and 5 s green time from EB Northern Blvd phase to NB 126th St phase [NB 126th St green time shifts from 25 s to 26 s; EB GCP/Astoria Blvd ramp green time shifts from 45 s to 44 s].
		R	0.63	43.9	D	R	2.20	589.5	F	R	0.64	39.9	D	
Northern Boulevard	EB	T	0.55	38.2	D	T	0.55	38.2	D	T	0.66	43.7	D	
	WB	T	0.31	6.9	A	T	0.33	7.1	A	T	0.36	9.6	A	
Grand Central Parkway Ramp	EB	T	0.90	46.3	D	T	0.90	46.3	D	T	0.92	49.4	D	
Van Wyck & Whitestone Expressway Ramp	WB	T	0.62	11.6	B	T	0.82	18.4	B	-	-	-	-	
Overall Intersection		-	0.74	45.3	D	-	1.17	274.2	F	-	1.14	191.6	F	

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														Mitigation Measure	
INTERSECTION & APPROACH		No Action				With Action				Mitigation					
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.10	93.5	F	LTR	1.10	93.5	F						-Unmitigatable impact.
	SB	LTR	0.40	38.5	D	LTR	0.40	38.5	D						
Northern Boulevard (Rt. 25A)	EB	L	0.87	63.3	E	L	0.87	63.3	E						
		T	1.01	45.3	D	T	1.05	58.3	E						
Northern Boulevard Service Rd.	WB	L	0.88	86.1	F	L	0.88	86.1	F						
		T	0.97	45.8	D	T	0.99	51.1	D						
	EB	TR	0.44	21.7	C	TR	0.44	21.7	C						
	WB	TR	0.53	28.7	C	TR	0.58	30.0	C						
Overall Intersection		-	0.98	47.5	D	-	1.04	54.4	D						
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.84	47.2	D	L	0.84	47.2	D						-Unmitigatable impact.
		R	0.72	40.8	D	R	0.72	40.8	D						
Northern Boulevard (Rt 25A)	EB	T	1.03	56.7	E	T	1.08	74.1	E						
		R	1.15	112.5	F	R	1.15	112.5	F						
	WB	L	0.11	25.9	C	L	0.11	25.9	C						
		T	0.68	20.8	C	T	0.72	21.5	C						
Overall Intersection		-	0.95	50.1	D	-	0.95	57.0	E						
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.65	34.4	C	TR	0.65	34.4	C	TR	0.70	37.9	D	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.66	34.3	C	TR	0.66	34.3	C	TR	0.71	37.8	D		
Northern Boulevard (Rt. 25A)	EB	L	0.72	31.5	C	L	0.72	34.6	C	L	0.68	20.6	C		
		TR	1.21	134.7	F	TR	1.27	158.1	F	TR	1.18	120.3	F		
	WB	L	0.98	75.5	E	L	0.98	78.1	E	L	0.98	78.7	E	-Modify Signal Timing: Shift 3 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 41 s; EB/WB green time shifts from 45 s to 48 s].	
		TR	0.83	38.0	D	TR	0.88	40.3	D	TR	0.61	29.6	C		
Overall Intersection		-	0.92	76.0	E	-	0.97	86.5	F	-	0.95	69.2	E		
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.72	54.5	D	L	0.73	55.7	E	L	0.73	55.7	E	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
		TR	0.58	38.0	D	TR	0.58	38.0	D	TR	0.58	38.0	D		
	SB	LTR	1.10	88.8	F	LTR	1.13	100.6	F	LT	0.69	35.5	D	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
		-	-	-	-	-	-	-	-	R	0.32	32.8	C		
Northern Boulevard (Rt. 25A)	EB	L	0.44	42.9	D	L	0.49	44.5	D	L	0.49	42.2	D	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
		TR	1.13	91.5	F	TR	1.18	117.7	F	T	0.98	38.2	D		
		-	-	-	-	-	-	-	-	R	0.42	24.0	C		
	WB	L	0.51	45.7	D	L	0.51	46.6	D	L	0.51	45.4	D		
		TR	1.10	79.8	E	TR	1.15	104.0	F	T	0.95	35.6	D		
		-	-	-	-	-	-	-	-	R	0.32	22.6	C		
Overall Intersection		-	1.08	78.9	E	-	1.10	98.8	F	-	0.92	37.2	D		
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	1.15	106.1	F	L	1.21	131.0	F	L	1.10	85.7	F	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
		T	0.34	24.9	C	T	0.41	25.8	C	T	0.37	23.2	C		
34th Avenue	EB	T	0.43	12.1	B	T	0.43	12.1	B	T	0.46	14.1	B		
		R	0.06	8.4	A	R	0.06	8.4	A	R	0.06	9.8	A		
Overall Intersection		-	0.70	62.5	E	-	0.72	75.8	E	-	0.72	52.5	D		

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	-	-	-	-	DefL	2.19	571.1	F	L	1.56	286.8	F	-Partially mitigated.
Northern Boulevard Ramp GCP Ramp	LTR	0.44	19.8	B	TR	1.48	250.8	F	TR	0.89	30.2	C	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane.	
	SB	LTR	0.16	16.7	B	LTR	0.35	19.6	B	-	-	-	-	-Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes.
	LTR	0.96	92.7	F	LTR	1.95	490.2	F	L	0.07	15.2	B	-Close the ramp from EB Northern Blvd ramp to 126th Street.	
Shea Road	-	-	-	-	-	-	-	-	T	0.13	13.7	B	-Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road.	
	EB	DefL	3.14	1016.0	F	DefL	1.56	313.4	F	DefL	0.77	43.2	D	-Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes.
34th Avenue	TR	1.80	420.2	F	TR	0.74	65.5	E	TR	0.19	25.8	C	-Modify signal phasing and timing plan: EB/WB phase will have 45 s green time; NB/SB phase will have 65 s green time [each phase will have 3 s amber and 2 s all red time].	
	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	LTR	0.86	79.0	E	LTR	0.88	81.3	F	LTR	0.48	30.9	C	
	Overall Intersection	-	1.22	289.6	F	-	1.98	324.6	F	-	1.24	93.0	F	
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.12	104.0	F	LTR	1.14	113.2	F	LT	1.09	89.3	F	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
Roosevelt Avenue	-	-	-	-	-	-	-	-	R	0.27	36.4	D	-Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	
	SB	LTR	1.16	120.9	F	LTR	1.17	124.3	F	LT	1.05	77.3	E	
	-	-	-	-	-	-	-	-	R	0.34	37.3	D		
	EB	LTR	0.62	14.4	B	LTR	0.67	15.8	B	LTR	0.67	15.8	B	
	WB	LTR	0.91	18.7	B	LTR	0.99	26.6	C	LTR	0.99	26.6	C	
	Overall Intersection	-	0.97	50.5	D	-	1.03	54.3	D	-	1.02	39.5	D	
111th Street at Roosevelt Avenue														
111th Street	NB	LTR	1.03	69.2	E	LTR	1.03	69.2	E	LTR	1.03	69.2	E	-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.
Roosevelt Avenue	EB	LTR	0.72	16.8	B	LTR	0.78	19.4	B	LTR	0.80	20.9	C	
	WB	LTR	1.19	107.1	F	LTR	1.28	145.8	F	LT	0.98	25.2	C	
	-	-	-	-	-	-	-	-	R	0.24	8.0	A		
	Overall Intersection	-	1.15	69.8	E	-	1.21	88.5	F	-	0.99	31.0	C	
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	0.66	45.2	D	LTR	0.70	47.8	D	LTR	0.66	42.7	D	-Partially Mitigated.
Roosevelt Avenue	SB	LTR	1.08	82.8	F	LTR	1.19	132.9	F	LT	0.74	37.7	D	-Shift the centerline of the SB 114th Street approach 2 feet to the east.
	-	-	-	-	-	-	-	-	R	0.27	33.5	C	-Install "No Standing Anytime" regulations along the west curb of the SB 114th Street approach 150-ft from the stop bar to allow for one 12-ft shared left-through lane and one 10-ft right-turn lane.	
	EB	LTR	1.24	129.7	F	LTR	1.55	270.4	F	L	0.50	12.8	B	-Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 150-ft from the stop bar to allow for one 11-ft left-turn lane and one 11-ft shared through-right lane.
	-	-	-	-	-	-	-	-	TR	0.61	13.6	B	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south.	
	WB	LTR	0.77	16.3	B	LTR	1.12	79.8	E	L	0.45	14.1	B	-Restripe WB Roosevelt Avenue approach as one 11-ft left-turn pocket (250 feet long), one 11-ft through lane, and one 11-ft right-turn lane.
	-	-	-	-	-	-	-	-	T	0.66	16.1	B	-Modify Signal Timing: Shift 4 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].	
	-	-	-	-	-	-	-	-	R	1.44	230.0	F		
	Overall Intersection	-	1.19	58.2	E	-	1.44	131.8	F	-	1.21	70.0	E	
126th Street at Roosevelt Avenue														
126th Street	NB	LTR	0.20	37.0	D	LTR	0.60	63.3	E	LTR	0.11	18.5	B	-Partially Mitigated.
Roosevelt Avenue	SB	DefL	1.22	153.7	F	-	-	-	-	LT	1.05	83.5	F	-Restripe SB approach as one 12-ft right-turn lane and one 11-ft shared left-through lane.
	TR	0.50	29.9	C	LTR	1.63	324.4	F	R	1.36	193.8	F	-New signal phasing and timing plan: Shared EB/WB phase receives 42 s green time; EB lag phase with SB right-turns receives 7 s green time; NB/SB phase receives 56 s green time [each phase will have 3 s amber and 2 s all red time].	
	EB	-	-	-	-	-	-	-	-	-	-	-	-Traffic Enforcement Agents should monitor traffic conditions and direct traffic accordingly.	
	LTR	0.60	22.5	C	LTR	0.70	25.5	C	LTR	0.82	36.3	D		
	WB	LTR	0.49	20.0	B	LTR	0.56	21.3	C	LTR	0.85	45.1	D	
	Overall Intersection	-	0.87	52.7	D	-	1.11	174.6	F	-	1.17	98.4	F	

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.00	81.3	F	L	1.14	126.1	F	L	0.77	58.7	E	-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].	
		TR	0.76	25.3	C	TR	0.76	25.3	C	TR	0.69	29.5	C		
		-	-	-	-	-	-	-	-	-	-	-	-		
	SB	TR	0.87	38.7	D	TR	0.92	43.0	D	T	0.57	40.9	D		
		L	0.57	30.3	C	L	0.61	31.0	C	L	0.57	38.5	D		
		TR	1.21	118.3	F	TR	1.33	172.1	F	TR	1.31	169.2	F		
	WB	L	0.24	32.7	C	L	0.24	32.7	C	-	-	-	-		
		TR	0.41	25.7	C	TR	0.46	26.4	C	TR	0.45	40.1	D		
Overall Intersection		-	1.14	56.8	E	-	1.21	76.7	E	-	1.02	73.7	E		
Prince Street at Roosevelt Avenue															
Prince Street	SB	LTR	0.70	36.2	D	LTR	0.70	36.2	D	-Mitigation not required.					
		DefL	0.76	17.9	B	-	-	-	-						
		TR	0.81	17.3	B	LTR	0.78	15.0	B						
		WB	LTR	0.59	12.1	B	LTR	0.64	13.0						B
	Overall Intersection		-	0.77	19.6	B	-	0.76	18.3	B					
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.66	23.9	C	T	0.66	23.9	C	T	0.74	28.8	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].	
		SB	T	0.54	22.0	C	T	0.54	22.0	C	T	0.60	26.1		C
		EB	L	0.25	19.1	B	L	0.26	19.6	B	L	0.22	16.0		B
	WB	TR	0.93	45.6	D	TR	1.02	67.1	E	TR	0.93	42.3			
		L	0.19	17.2	B	L	0.22	18.0	B	L	0.18	14.7	B		
		TR	0.84	34.8	C	TR	0.89	39.2	D	TR	0.80	29.1	C		
	Overall Intersection		-	0.80	30.4	C	-	0.85	37.1	D	-	0.85	31.2		C
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.44	17.1	B	TR	0.44	17.1	B	-Unmitigatable impact.					
		SB	LT	1.17	109.2	F	LT	1.17	109.2						F
		R	1.85	417.1	F	R	1.85	417.1	F						
	WB	LTR	1.92	446.6	F	LTR	2.09	521.5	F						
		LT	0.71	29.8	C	LT	0.77	33.0	C						
		R	1.41	258.7	F	R	1.41	258.7	F						
	Overall Intersection		-	1.88	210.1	F	-	1.96	233.8	F					

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard Roosevelt Avenue	NB	LTR	0.91	36.6	D	LTR	0.92	37.4	D	LTR	0.95	43.2	D	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 41 s; NB/SB green time shifts from 40 s to 39 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]
	SB	LTR	0.74	25.9	C	LTR	0.74	25.9	C	LTR	0.76	27.3	C	
	EB	LTR	0.69	25.6	C	LTR	0.79	30.5	C	LTR	0.77	28.5	C	
	WB	LTR	0.73	27.3	C	LTR	0.78	30.1	C	LTR	0.76	28.1	C	
Overall Intersection		-	0.82	29.2	C	-	0.85	31.0	C	-	0.86	32.0	C	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street Kissena Boulevard	NB	L	0.66	29.8	C	L	0.66	30.0	C	L	0.64	28.0	C	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]
		TR	0.65	22.4	C	TR	0.65	22.4	C	TR	0.64	21.3	C	
	SB	L	0.43	19.5	B	L	0.43	19.5	B	L	0.44	20.4	C	
		TR	0.47	18.7	B	TR	0.47	18.7	B	TR	0.46	17.9	B	
	WB	T	0.64	23.9	C	T	0.64	23.9	C	T	0.65	25.1	C	
Overall Intersection		-	0.65	21.7	C	-	0.65	21.7	C	-	0.65	21.3	C	
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard Sanford Avenue	NB	L	0.23	12.5	B	L	0.24	13.1	B					-Mitigation not required.
		T	0.55	12.4	B	T	0.56	12.5	B					
	SB	TR	0.78	16.7	B	TR	0.80	17.4	B					
	WB	L	0.56	34.0	C	L	0.56	34.0	C					
		TR	0.33	26.4	C	TR	0.38	27.1	C					
Overall Intersection		-	0.71	17.1	B	-	0.72	17.6	B					
Union Street at Sanford Avenue														
Union Street Sanford Avenue	NB	LTR	0.41	21.9	C	LTR	0.41	21.9	C					-Mitigation not required.
	SB	LTR	0.79	28.6	C	LTR	0.80	29.1	C					
	EB	-	-	-	-	-	-	-	-					
		LTR	0.23	13.7	B	LTR	0.23	13.7	B					
	WB	LTR	0.68	21.7	C	LTR	0.70	22.4	C					
Overall Intersection		-	0.73	23.3	C	-	0.74	23.6	C					
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard Sanford Avenue		8.5x11												-Mitigation not required.
	NB	LTR	0.89	32.7	C	LTR	0.90	33.9	C					
	SB	LTR	0.72	25.2	C	LTR	0.80	29.2	C					
	EB	LTR	0.79	28.6	C	LTR	0.79	29.1	C					
	WB	LTR	0.79	30.0	C	LTR	0.82	31.7	C					
Overall Intersection		-	0.84	29.1	C	-	0.86	30.9	C					
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard 32nd Avenue	NB	T	0.43	23.8	C	T	0.44	23.9	C					-Mitigation not required.
		TR	0.34	22.8	C	TR	0.36	23.0	C					
	SB	L	0.27	27.3	C	L	0.27	27.3	C					
		T	0.29	9.5	A	T	0.29	9.5	A					
	WB	LTR	0.29	26.7	C	LTR	0.29	26.7	C					
Overall Intersection		-	0.85	19.4	B	-	0.85	19.5	B					

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.50	12.7	B	TR	0.51	12.8	B					-Mitigation not required.
	SB	LT	0.53	13.6	B	LT	0.54	13.7	B					
Northern Blvd Service Rd	WB	LR	0.55	28.7	C	LR	0.59	29.8	C					
Overall Intersection	-		0.53	15.6	B	-	0.56	16.0	B					
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	L	1.76	375.0	F	DefL	0.86	73.6	E	-	-	-	-	-Install an actuated controller. -Modify signal phasing and timing plan: EB/WB phase will have 65 s green time; NB phase will have 11 s green time; SB phase will have 29 s green time [each phase will have 3 s amber and 2 s all red time]. NB/SB pedestrians will cross during the SB phase.
		TR	1.38	202.4	F	TR	0.27	19.7	B	LTR	0.88	75.8	E	
	SB	LTR	0.29	20.0	C	LTR	0.74	27.6	C	LTR	0.66	43.3	D	
		-	-	-	-	-	-	-	-	-	-	-	-	
Stadium Road	EB	-	-	-	-	DefL	1.20	186.4	F	DefL	0.82	56.6	E	
		-	-	-	-	TR	0.18	12.8	B	TR	0.17	14.0	B	
	WB	LTR	0.30	13.6	B	LTR	1.07	63.7	E	LTR	0.79	24.5	C	
Overall Intersection	-		0.94	221.9	F	-	1.06	51.9	D	-	0.78	36.1	D	
UNSIGNALIZED INTERSECTIONS														
Willets Point Boulevard at 126th Street														
126th Street	SB	LT	-	8.0	A	-	-	-	-					-Intersection would no longer exist under the With Action condition.
Willets Point Boulevard	WB	LR	-	9.8	A	-	-	-	-					
Overall Intersection	-		-	9.8	A	-	-	-	-					
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	79.7	F	L	-	813.1	F	L	0.50	29.5	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	12.9	B	R	-	9.2	A	R	0.14	2.8	A	
Worlds Fair Marina	EB	-	-	-	-	-	-	-	-	TR	0.12	36.8	D	
		-	-	-	-	-	-	-	-	L	0.36	18.0	B	
	WB	LT	-	7.7	A	LT	-	8.4	A	LT	0.86	35.0	D	
Overall Intersection	-		-	43.0	E	-	-	370.1	F	-	0.64	27.4	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.1	A	TR	-	8.8	A					-Mitigation not required.
Overall Intersection	-		-	9.1	A	-	-	8.8	A					
Boat Basin Road at Stadium Road / Citifield Entrance 8														
Citifield Entrance 8	NB	-	-	-	-	-	-	-	-					-Intersection would no longer exist under the With Action condition.
Boat Basin Road	SB	-	-	-	-	-	-	-	-					
Stadium Road	EB	LT	-	64.2	F	-	-	-	-					
		-	-	-	-	-	-	-	-					
Citifield Entrance 9	WB	R	-	50.9	F	-	-	-	-					
Overall Intersection	-		-	62.4	F	-	-	-	-					

TABLE 9
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2018 PHASE 1A SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Grand Central Parkway Ramp at West Park Loop/Stadium Road															
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.02	24.3	C	-Install traffic signal with the following timing plan: EB will have 39 s green time; WB will have 22 s green time; NB/SB will have 44 s green time [each phase will have 3 s amber and 2 s all red -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. [Measures reflect improvements needed for the Weekday Non-game MIDDAY, Saturday Non-game MIDDAY, Weekday Pre-game, and Saturday Pre-game peak periods.] -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	LT	-	7.7	A	L	0.29	28.6	C		
Grand Central Parkway Off-Ramp	-	-	-	-	-	-	-	-	-	TR	0.86	44.2	D		
	EB	L	-	46.3	E	L	-	49.9	E	L	0.30	31.7	C		
	-	-	-	-	-	T	-	60.6	F	T	0.40	33.5	C		
	R	-	21.5	C	R	-	13.2	B	-	-	-	-	-		
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.87	63.7	E		
	-	-	-	-	-	R	-	8.8	A	R	0.26	44.5	D		
Overall Intersection		-	-	36.9	E	-	-	1000.0+	F	-	0.69	45.6	D		
126th Street at 36th Avenue															
126th Street	NB	-	-	-	-	TR	1.32	186.8	F	TR	1.32	186.8	F	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
36th Avenue	LT	-	8.4	A	LT	0.60	34.0	C	LT	0.60	34.0	C			
	WB	LR	-	12.9	B	L	0.62	22.7	C	L	0.62	22.7	C		
	-	-	-	-	R	1.34	190.6	F	R	1.34	190.6	F			
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	-	12.6	B	-	1.33	144.5	F	-	1.33	144.5	F		
126th Street at 37th Avenue															
126th Street	NB	-	-	-	-	TR	1.04	94.3	F	TR	1.04	94.3	F	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
37th Avenue	LT	-	8.4	A	LT	1.30	184.6	F	LT	1.30	184.6	F			
	WB	LR	-	16.3	C	L	0.58	18.5	B	L	0.58	18.5	B		
	-	-	-	-	R	1.66	322.6	F	R	1.66	322.6	F			
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	-	15.2	C	-	1.61	177.5	F	-	1.61	177.5	F		
Northern Boulevard at 126th Place															
126th Place	NB	R	-	16.1	C	R	-	17.0	C	R	0.11	39.3	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.	
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.50	8.4	A		
Overall Intersection		-	-	16.1	C	-	-	17.0	C	-	0.41	8.9	A		

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 10

2028 (PHASE 1B) SUMMARY OF NON-GAMEDAY MITIGATION MEASURES

126th Street at Roosevelt Avenue	Modify signal phasing and timing plan: EB lead phase will have 9 s green time; EB/WB phase will have 52 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 32 s green time; [each phase will have 3 s amber and 2 s all red time.]B22 Restrict NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.	Partially mitigated. Modify signal phasing and timing plan: EB lead phase will have 8 s green time; EB/WB phase will have 55 s green time; WB lag phase will have 8 s green time; NB/SB phase will have 29 s green time; [each phase will have 3 s amber and 2 s all red time.] Restrict NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.	Unmitigated impact Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 59 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 29 s green time; [each phase will have 3 s amber and 2 s all red time.] Restrict NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.	Partially mitigated. Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 59 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 29 s green time; [each phase will have 3 s amber and 2 s all red time.] Restrict NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.
	Restrict the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. Restrict the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 15-ft travel lanes. Restrict the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. Restrict the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. Restrict the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft exclusive left-turn lane, and three SB 10-ft travel lanes. Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. Modify signal phasing and timing plan: EB/WB will have 33 s green time; EB-lag phase will have 20 s green time; NB lead phase will have 17 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].	Partially Mitigated Restrict the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. Restrict the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 15-ft travel lanes. Restrict the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. Restrict the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. Restrict the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft exclusive left-turn lane, and three SB 10-ft travel lanes. Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. Install "Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. Modify signal phasing and timing plan: EB/WB will have 35 s green time; EB-lag phase will have 20 s green time; NB lead phase will have 19 s green time; NB/SB phase will have 26 s green time [each phase will have 3 s amber and 2 s all red time].	Partially Mitigated Restrict the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. Restrict the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 15-ft travel lanes. Restrict the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. Restrict the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. Restrict the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft exclusive left-turn lane, and three SB 10-ft travel lanes. Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 24 s green time; NB lead phase will have 19 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].	Partially mitigated. Restrict the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. Restrict the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 15-ft travel lanes. Restrict the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. Restrict the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. Restrict the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft exclusive left-turn lane, and three SB 10-ft travel lanes. Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 24 s green time; NB lead phase will have 19 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].
College Point Boulevard at Roosevelt Avenue				
Prince Street at Roosevelt Avenue	Modify Signal Timing: Shift 2 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 65 s; SB green time shifts from 47 s to 45 s].	Mitigation not required.	Modify Signal Timing: Shift 2 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 65 s; SB green time shifts from 47 s to 45 s].	Mitigation not required.
Main Street at Roosevelt Avenue	Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 47 s; NB/SB green time shifts from 65 s to 63 s].	Partially Mitigated. Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 41 s; NB/SB green time shifts from 41 s to 39 s].	Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].	Partially mitigated. Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].
Union Street at Roosevelt Avenue	Unmitigatable impact. Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 57 s; NB/SB green time shifts from 55 s to 53 s]. Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	Unmitigatable impact. Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 59 s; NB/SB green time shifts from 55 s to 51 s]. Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	Unmitigatable impact. Modify Signal Timing: Shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 59 s; NB/SB green time shifts from 55 s to 51 s]. Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Weekday Pre-game PM peak period.]	Unmitigatable impact. Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s]. Install "No Standing 10 AM - 8 PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.
Parsons Boulevard at Roosevelt Avenue				
Main Street at Kissena Boulevard	Mitigation not required.	Mitigation not required.	Mitigation not required.	Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].
College Point Boulevard at Sanford Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.	Mitigation not required.
Union Street at Sanford Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.	Mitigation not required.
Parsons Boulevard at Sanford Avenue	Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].	Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 38 s; NB/SB green time shifts from 40 s to 42 s].	Unmitigatable impact. Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].
College Point Boulevard at 32nd Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.	Mitigation not required.
College Point Boulevard at Northern Boulevard Service Road	Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s]. Install an actuated controller. Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 26 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 60 s green time; [each phase will have 3 s amber and 2 s all red time].	Modify Signal Timing: Shift 3 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 48 s; WB green time shifts from 29 s to 32 s]. Install an actuated controller. Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 10 s green time; NB/SB phase will have 62 s green time; [each phase will have 3 s amber and 2 s all red time].	Mitigation not required.	Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s]. Unmitigatable impact. Install an actuated controller. Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 15 s green time; NB/SB phase will have 57 s green time; [each phase will have 3 s amber and 2 s all red time].
Boat Basin Road at Stadium Road				
UNISIGNALIZED INTERSECTIONS				
Boat Basin Road at World's Fair Marina	Install traffic signal with the following timing plan: EB will have 10 s green time; WB - NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Strip WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Strip NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Strip WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Strip NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Strip WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Strip NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Strip WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Strip NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.
Willets Point Boulevard at Northern Boulevard	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB will have 25 s green time; NB/SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB will have 25 s green time; NB/SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB will have 25 s green time; NB/SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB will have 25 s green time; NB/SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.
Grand Central Parkway Ramp at West Park Loop/Stadium Road	Mitigation not required. Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Strip the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Strip the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Strip the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Strip the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.
126th Street at 36th Avenue	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
126th Street at 37th Avenue	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restrict the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
Northern Boulevard at 126th Place	Mitigation not required. Restrict the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crossover across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restrict the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crossover across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restrict the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crossover across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restrict the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crossover across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.
NEW (WITH ACTION) SIGNALIZED INTERSECTION				
126th Street at New Willets Point Boulevard	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria.

NOTE: This table has been revised for the Final SEIS.

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation Measure				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.78	61.4	E	DefL	0.81	64.8	E	-Mitigation not required.				
		T	0.21	35.6	D	T	0.21	35.6	D					
Astoria Boulevard	SB	LTR	0.36	38.5	D	LTR	0.36	38.5	D					
	EB	TR	0.60	25.7	C	TR	0.65	26.6	C					
	-	-	-	-	-	-	-	-	-					
	WB	L	0.57	14.9	B	L	0.60	16.4	B					
		TR	0.78	8.1	A	TR	0.80	8.4	A					
Overall Intersection		-	0.78	18.0	B	-	0.81	18.8	B					
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.14	113.7	F	LTR	1.23	154.6	F	L	0.57	44.3	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes.
		-	-	-	-	-	-	-	-	TR	0.61	42.6	D	
Northern Boulevard (Rt. 25A)	SB	LTR	0.98	81.6	F	LTR	0.99	83.6	F	L	0.31	42.7	D	-Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes.
	-	-	-	-	-	-	-	-	-	TR	0.63	47.8	D	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft.
	EB	L	0.08	22.6	C	L	0.08	25.5	C	L	0.09	23.1	C	-Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.
	TR	0.76	20.8	C	TR	0.84	24.2	C	TR	0.82	21.9	C	-Modify Signal Timing: Shift 2 s of green time from EB/WB left-turn phase EB/WB phase [EB/WB left-turn green time shifts from 9 s to 7 s; EB/WB green time shifts from 71 s to 73 s].	
	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.44	21.5	C	L	0.49	27.2	C	L	0.51	26.5	C	
	TR	1.05	39.0	D	TR	1.09	55.7	E	TR	1.06	41.6	D		
	-	-	-	-	-	-	-	-	-	-	-	F		
Overall Intersection		-	0.94	40.3	D	-	1.00	53.2	D	-	0.84	35.9	D	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.47	47.8	D	LTR	0.50	48.5	D	LTR	0.63	43.7	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes.
		T	0.87	41.1	D	T	0.99	56.5	E	T	0.57	11.6	B	
		R	0.74	38.5	D	R	0.76	39.2	D	R	0.44	10.5	B	
		WB	DefL	0.50	15.4	B	DefL	0.55	22.8	C	-	-	-	
Northern Boulevard (Rt. 25A)		T	1.19	102.1	F	T	1.23	121.8	F	T	1.03	35.0	C	-Divert left-turning turning to NB 112th Place and then to SB 114th Street.
		-	-	-	-	-	-	-	-	-	-	-	-	-Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes.
Overall Intersection		-	1.31	75.5	E	-	1.37	90.6	F	-	0.92	28.7	C	-Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides.
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.28	41.1	D	L	0.71	51.1	D	L	0.63	45.9	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.
		R	0.27	41.3	D	R	1.16	166.6	F	R	0.38	40.8	D	
Northern Boulevard	EB	T	0.54	38.2	D	T	0.57	38.9	D	T	0.70	43.6	D	-Close the ramp from EB Northern Blvd ramp to 126th Street.
	WB	T	0.66	10.9	B	T	0.69	11.5	B	T	0.71	13.5	B	-Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.
Grand Central Parkway Ramp	EB	T	0.83	42.0	D	T	0.85	43.2	D	T	0.85	43.2	D	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes.
Van Wyck & Whitestone Expressway Ramp	WB	T	1.12	111.2	F	T	1.35	206.5	F	-	-	-	-	-Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard.
Overall Intersection		-	0.93	51.7	D	-	1.30	88.5	F	-	0.75	32.1	C	-Modify signal timing: shift 3 s of green time from EB Northern Blvd phase to NB 126th St phase [NB 126th St green time shifts from 25 s to 28 s; EB Northern Blvd green time shifts from 35 s to 32 s].

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

													Mitigation Measure		
INTERSECTION & APPROACH		No Action				With Action				Mitigation					
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)														-Unmitigatable impact.	
Prince Street		NB	LTR	1.15	132.8	F	LTR	1.15	132.8	F					
		SB	LTR	0.80	53.5	D	LTR	0.80	53.5	D					
Northern Boulevard (Rt. 25A)		EB	L	0.96	94.8	F	L	0.96	94.8	F					
		T	0.81	22.5	C	T	0.84	23.8	C						
		WB	L	0.96	92.6	F	L	0.96	92.6	F					
		T	1.16	96.2	F	T	1.18	106.9	F						
Northern Boulevard Service Rd.		EB	TR	0.45	16.7	B	TR	0.45	16.7	B					
		WB	TR	0.67	19.1	B	TR	0.76	21.9	C					
		-	-	-	-	-	-	-	-						
Overall Intersection		-	1.12	62.5	E	-	1.14	66.9	E						
Main Street at Northern Boulevard (RT. 25A)														-Unmitigatable impact.	
Main Street		NB	L	0.77	43.7	D	L	0.77	43.7	D					
		R	0.85	55.0	D	R	0.85	55.0	E						
Northern Boulevard (Rt. 25A)		EB	T	0.94	39.8	D	T	0.98	46.4	D					
		R	1.17	124.0	F	R	1.17	124.0	F						
		WB	L	0.17	26.4	C	L	0.17	26.4	C					
		T	1.05	44.3	D	T	1.10	63.8	E						
Overall Intersection		-	1.01	50.8	D	-	1.01	60.8	E						
Union Street at Northern Boulevard (RT. 25A)															-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane. -Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 44 s to 43 s; EB/WB green time shifts from 45 s to 46 s].
Union Street		NB	TR	0.67	35.0	C	TR	0.67	35.0	C	TR	0.69	36.1		
		SB	TR	0.89	42.3	D	TR	0.90	43.0	D	TR	0.92	45.6	D	
Northern Boulevard (Rt. 25A)		EB	L	0.96	65.4	E	L	0.96	65.7	E	L	0.96	65.8	E	
		TR	1.23	141.8	F	TR	1.28	166.5	F	TR	1.25	153.1	F		
		WB	L	1.02	78.5	E	L	1.02	77.6	E	L	1.02	77.6	E	
		TR	0.96	39.5	D	TR	1.01	49.1	D	TR	0.99	42.8	D		
Overall Intersection		-	1.12	72.8	E	-	1.11	84.3	F	-	1.12	78.3	E		
Parsons Boulevard at Northern Boulevard (RT. 25A)														-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 2 s green time from EB/WB protected left-turn phase to EB/WB phase; shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [EB/WB protected left-turn green time shifts from 12 s to 10 s; EB/WB green time shifts from 50 s to 52 s NB/SB green time shifts from 36 s to 37 s; LPI shifts from 7 s to 6 s].	
Parsons Boulevard		NB	L	0.96	92.2	F	L	0.97	95.4	F	L	0.93	84.6		
		TR	0.56	39.8	D	TR	0.56	39.8	D	TR	0.55	38.6	D		
		SB	LTR	0.82	47.6	D	LTR	0.84	48.6	D	LTR	0.81	45.8		D
		-	-	-	-	-	-	-	-	-	-	-	-		
Northern Boulevard (Rt. 25A)		EB	L	0.53	45.4	D	L	0.55	46.5	D	L	0.61	48.5		D
		TR	1.03	60.9	E	TR	1.11	88.5	F	T	0.84	32.7	C		
		-	-	-	-	-	-	-	-	R	0.38	24.1	C		
		WB	L	0.44	36.7	D	L	0.46	39.7	D	L	0.44	33.9		C
		TR	1.12	86.5	F	TR	1.18	110.3	F	TR	1.13	88.3	F		
		-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	1.02	69.9	E	-	1.03	88.8	F	-	1.04	62.4	E		
34TH AVENUE															
114th Street at 34th Avenue															
114th Street		SB	L	0.84	38.8	D	L	0.87	40.7	D					-Mitigation not required.
		T	0.31	24.6	C	T	0.34	25.0	C						
34th Avenue		EB	T	0.42	12.0	B	T	0.42	12.0	B					
		R	0.11	8.8	A	R	0.12	8.9	A						
Overall Intersection		-	0.57	23.8	C	-	0.58	24.6	C						

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	DefL	0.36	24.8	C	L	0.21	16.9	B	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 49 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 49 s green time [each phase will have 3 s amber and 2 s all red time].	
Northern Boulevard Ramp	LTR	0.17	19.9	B	TR	0.33	22.1	C	TR	0.32	25.0	C			
	SB	LTR	0.32	22.4	C	LTR	0.54	27.1	C	-	-	-	-		
GCP Ramp	SB	LTR	0.82	65.2	E	LTR	2.52	738.7	F	L	0.35	19.0	B		
Shea Road	-	-	-	-	-	-	-	-	-	T	0.30	24.6	C		
	EB	-	-	-	-	-	-	-	-	-	-	-	-		
34th Avenue	LTR	0.47	43.1	D	LTR	1.52	291.3	F	LTR	0.58	30.1	C			
	-	-	-	-	DefL	0.68	38.7	D							
WB	LTR	0.64	53.4	D	LTR	3.00+	1000.0+	F	TR	0.65	34.4	C			
Overall Intersection	-	0.52	40.2	D	-	1.75	468.8	F	-	0.53	28.2	C			
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.03	81.3	F	LTR	1.05	88.8	F	LT	0.86	52.3	D		-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.20	36.1	D		
	SB	LTR	1.10	100.9	F	LTR	1.10	104.3	F	LT	0.88	53.5	D		
	-	-	-	-	-	-	-	-	-	R	0.30	37.2	D		
	EB	LTR	0.69	16.3	B	LTR	0.77	19.3	B	LTR	0.77	19.3	B		
WB	LTR	0.82	10.6	B	LTR	0.90	15.1	B	LTR	0.90	15.1	B			
Overall Intersection	-	0.90	37.4	D	-	0.96	40.4	D	-	0.90	26.6	C			
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	1.00	69.6	E	LTR	1.00	69.6	E					-Mitigation not required.	
Roosevelt Avenue	EB	LTR	0.67	15.4	B	LTR	0.75	18.1	B						
	WB	LTR	0.93	18.7	B	LTR	1.01	32.4	C						
	-	-	-	-	-	-	-	-	-						
Overall Intersection	-	0.95	27.5	C	-	1.00	34.0	C							
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	1.03	76.1	E	LTR	1.05	83.3	F	LTR	0.70	40.8	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s].	
Roosevelt Avenue	SB	LTR	1.12	111.0	F	LTR	1.32	196.4	F	LTR	1.03	74.0	E		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Roosevelt Avenue	EB	LTR	0.82	22.7	C	LTR	0.93	34.6	C	L	0.21	9.7	A		
	-	-	-	-	-	-	-	-	-	TR	0.59	14.3	B		
Roosevelt Avenue	WB	LTR	0.57	5.4	A	LTR	0.65	6.4	A	L	0.68	22.2	C		
	-	-	-	-	-	-	-	-	-	T	0.59	8.0	A		
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.20	9.3	A		
	-	-	-	-	-	-	-	-	-						
Overall Intersection	-	0.91	31.6	C	-	1.04	43.9	D	-	0.79	22.3	C			

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action															With Action															Mitigation															Mitigation Measure																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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126th Street			NB	LTR	0.22	37.1	D			LTR	0.23	37.3	D			LTR	0.12	33.7	C																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.60	22.3	C	T	0.60	22.3	C	T	0.61	23.9	C	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 47 s; NB/SB green time shifts from 65 s to 63 s].	
	SB	T	0.45	19.7	B	T	0.45	19.7	B	T	0.46	21.1	C		
Roosevelt Avenue	EB	L	0.43	45.8	D	L	0.47	50.3	D	L	0.44	45.3	D		
	TR		0.57	36.2	D	TR	0.64	38.9	D	TR	0.61	36.3	D		
	WB	L	0.12	25.6	C	L	0.13	25.9	C	L	0.12	24.4	C		
	TR		1.00	68.1	E	TR	1.05	83.4	F	TR	1.01	68.6	E		
Overall Intersection	-	0.77	36.6	D	-	0.79	41.9	D	-	0.79	38.1	D			
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.60	20.0	B	TR	0.60	20.0	B					-Unmitigatable impact.	
	SB	LT	1.09	75.8	E	LT	1.09	75.8	E						
Roosevelt Avenue		R	0.85	35.3	D	R	0.85	35.3	D						
	EB	LTR	1.40	220.7	F	LTR	1.58	296.9	F						
	WB	LT	1.00	51.1	D	LT	1.06	69.3	E						
		R	1.12	106.5	F	R	1.12	106.5	F						
Overall Intersection	-	1.23	80.1	F	-	1.31	99.5	F							
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	1.14	96.6	F	LTR	1.14	99.0	F	LT	1.05	62.8	E	-Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 57 s; NB/SB green time shifts from 55 s to 53 s]. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	
		-	-	-	-	-	-	-	-	R	0.09	19.5	B		
Roosevelt Avenue	SB	LTR	0.81	34.6	C	LTR	0.81	34.7	C	LTR	0.84	38.0	D		
	EB	LTR	0.49	25.8	C	LTR	0.55	27.2	C	LTR	0.53	25.3	C		
	WB	LTR	1.15	104.6	F	LTR	1.21	130.7	F	LTR	1.16	106.8	F		
	Overall Intersection	-	1.14	71.4	E	-	1.18	80.3	F	-	1.11	63.3	E		
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.75	34.0	C	L	0.75	34.7	C					-Mitigation not required.	
		TR	0.69	25.1	C	TR	0.69	25.1	C						
Kissena Boulevard	SB	L	0.65	38.3	D	L	0.65	38.3	D						
		TR	0.39	18.3	B	TR	0.39	18.3	B						
	WB	T	0.73	38.3	D	T	0.73	38.3	D						
	Overall Intersection	-	0.74	27.8	C	-	0.75	27.8	C						
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.21	10.2	B	L	0.21	10.4	B					-Mitigation not required.	
		T	0.68	14.9	B	T	0.70	15.2	B						
Sanford Avenue	SB	TR	0.59	13.2	B	TR	0.60	13.4	B						
	WB	L	0.79	45.6	D	L	0.79	45.6	D						
		TR	0.55	30.0	C	TR	0.62	31.5	C						
	Overall Intersection	-	0.72	19.1	B	-	0.73	19.6	B						
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.70	30.1	C	LTR	0.70	30.3	C						-Mitigation not required.
	SB	LTR	0.61	24.7	C	LTR	0.62	24.9	C						
Sanford Avenue	EB	DefL	0.57	25.6	C	DefL	0.58	26.6	C						
		TR	0.37	15.8	B	TR	0.37	15.8	B						
	WB	LTR	0.88	29.1	C	LTR	0.91	31.6	C						
	Overall Intersection	-	0.80	25.7	C	-	0.82	26.8	C						

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div><div></div><div></div></div>														
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	1.10	73.7	E	LTR	1.12	78.7	E	LT	0.85	21.2	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach.
		-	-	-	-	-	-	-	-	R	0.11	14.1	B	-Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.
	SB	LTR	0.96	38.1	D	LTR	0.99	43.4	D	LTR	0.99	42.9	D	-Modify Signal Timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].
	EB	LTR	0.72	27.2	C	LTR	0.73	27.7	C	LTR	0.75	29.5	C	
Sanford Avenue	WB	LTR	0.82	31.0	C	LTR	0.86	33.4	C	LTR	0.88	36.2	D	
Overall Intersection		-	0.97	43.6	D	-	0.99	47.0	D	-	0.99	32.8	C	
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.44	23.8	C	T	0.45	24.0	C					-Mitigation not required.
		TR	0.71	31.7	C	TR	0.71	31.7	C					
	SB	L	0.51	36.8	D	L	0.51	36.8	D					
		T	0.59	12.9	B	T	0.60	13.1	B					
32nd Avenue	WB	LTR	0.87	44.3	D	LTR	0.87	44.3	D					
Overall Intersection		-	1.40	23.9	C	-	1.40	23.9	C					
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.42	11.8	B	TR	0.42	11.8	B	TR	0.43	12.5	B	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s].
	SB	LT	0.87	23.9	C	LT	0.89	25.1	C	LT	0.91	27.7	C	
Northern Blvd Service Rd	WB	LR	0.79	36.8	D	LR	0.90	46.3	D	LR	0.87	42.0	D	
Overall Intersection		-	0.84	22.0	C	-	0.89	24.9	C	-	0.89	25.4	C	
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.07	15.7	B	-Install an actuated controller.
		LTR	0.09	7.3	A	LTR	0.04	7.0	A	TR	0.05	15.4	B	-Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 26 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 60 s green time; [each phase will have 3 s amber and 2 s all red time].
	SB	-	-	-	-	DefL	0.59	14.3	B	DefL	0.71	27.0	C	
		LTR	0.39	9.7	A	TR	0.68	16.3	B	TR	0.84	34.8	C	
Stadium Road	EB	-	-	-	-	-	-	-	-	DefL	0.24	30.4	C	
		-	-	-	-	LTR	0.27	26.3	C	TR	0.23	30.4	C	
	WB	-	-	-	-	-	-	-	-	-	-	-	-	
		LTR	0.24	25.8	C	LTR	0.81	40.4	D	LTR	0.66	37.3	D	
Overall Intersection		-	0.34	12.8	B	-	0.72	23.7	C	-	0.92	32.5	C	

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	40.2	E	L	-	1000.0+	F	L	0.09	24.3	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.7	A	R	-	8.7	A	R	0.04	2.4	A	
Worlds Fair Marina	EB	-	-	-	-	-	-	-	-	TR	0.02	35.8	D	
	WB	LT	-	8.9	A	LT	-	11.2	B	L	0.69	25.8	C	
		-	-	-	-	-	-	-	-	LT	0.55	21.4	C	
Overall Intersection	-	-	-	10.2	B	-	-	987.9	F	-	0.40	23.1	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	10.3	B	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.
New Van Wyck Expressway Ramp	SB	-	-	-	-	-	-	-	-	T	0.20	8.0	A	
Northern Boulevard Service Road	EB	-	-	-	-	T	-	12.5	B	T	0.08	24.4	C	
Overall Intersection	-	-	-	10.3	B	-	-	12.5	B	-	0.16	9.4	A	
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.05	30.6	C	-Mitigation not required. -Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	LT	-	7.5	A	L	0.21	33.4	C	
		-	-	-	-	-	-	-	-	TR	0.59	39.4	D	
Grand Central Parkway Off-Ramp	EB	L	-	11.4	B	L	-	19.3	C	L	0.19	26.0	C	
		-	-	-	-	T	-	17.7	C	T	0.22	26.3	C	
		R	-	9.4	A	R	-	9.8	A	-	-	-	-	
Willets West Center Exit	WB	-	-	-	-	L	-	20.9	C	L	0.21	40.1	D	
		-	-	-	-	R	-	8.5	A	R	0.07	38.6	D	
Overall Intersection	-	-	-	10.9	B	-	-	18.0	C	-	0.34	35.0	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.27	15.2	B	TR	0.27	15.2	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.72	17.4	B	DefL	0.67	15.4	B	
		LT	-	8.2	A	T	0.49	9.2	A	T	0.47	9.0	A	
36th Avenue	WB	LR	-	13.5	B	L	0.06	38.4	D	L	0.06	38.4	D	
		-	-	-	-	R	0.17	26.0	C	R	0.17	26.0	C	
Overall Intersection	-	-	-	9.1	A	-	0.77	14.0	B	-	0.71	13.5	B	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.23	14.7	B	TR	0.23	14.7	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
		LT	-	7.8	A	LT	0.44	10.5	B	LT	0.42	10.1	B	
37th Avenue	WB	LR	-	12.5	B	L	0.22	37.1	D	L	0.22	37.1	D	
		-	-	-	-	R	0.20	26.6	C	R	0.20	26.6	C	
Overall Intersection	-	-	-	11.8	B	-	0.36	15.0	B	-	0.36	14.9	B	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	14.1	B	R	-	15.5	C	R	0.21	40.9	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.47	8.1	A	
Overall Intersection	-	-	-	14.1	B	-	-	15.5	C	-	0.41	9.2	A	

TABLE 11
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<u>No Action</u>					<u>With Action</u>				<u>Mitigation</u>			<u>Mitigation Measure</u>			
INTERSECTION & APPROACH	Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mitigation Measure		
			Delay				Delay				Delay				
NEW (WITH ACTION) SIGNALIZED INTERSECTION															
126th Street at New Willets Point Boulevard															
126th Street	NB	-	-	-	TR	0.39	19.5	B						-Mitigation not required.	
	SB	-	-	-	-	-	-	-						-Intersection meets NYCDOT Signal Warrant Criteria.	
New Willets Point Boulevard		-	-	-	LT	0.32	9.0	A							
	WB	-	-	-	L	0.24	37.3	D							
		-	-	-	R	0.15	22.8	C							
Overall Intersection															
	-	-	-	-	-	0.43	16.7	B							

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.19	129.9	F	LTR	1.19	129.9	F	LTR	1.19	129.9	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.54	41.3	D	LTR	0.54	41.3	D	LTR	0.54	41.3	D		
Northern Boulevard (Rt. 25A)	EB	L	0.89	72.8	E	L	0.89	72.8	E	L	0.89	72.8	E		
	T		0.93	35.6	D	T	1.01	49.0	D	T	1.01	49.0	D		
	WB	L	0.90	91.0	F	L	0.90	91.0	F	L	0.90	91.0	F		
	T		1.13	101.0	F	T	1.19	126.0	F	T	1.19	126.0	F		
Northern Boulevard Service Rd.	EB	TR	0.62	26.4	C	TR	0.62	26.4	C	TR	0.62	26.4	C		
	WB	TR	0.71	35.1	D	TR	0.90	49.8	D	T	0.66	32.2	C		
	-	-	-	-	-	-	-	-	-	R	0.14	21.5	C		
Overall Intersection	-	1.10	66.1	E	-	1.13	80.0	E	-	1.13	78.6	E			
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.98	64.9	E	L	0.98	64.9	E						-Unmitigatable impact.
	R		0.68	39.6	D	R	0.68	39.6	D						
Northern Boulevard (Rt. 25A)	EB	T	0.97	44.1	D	T	1.06	68.9	E						
	R		1.28	168.4	F	R	1.28	168.4	F						
	WB	L	0.10	25.7	C	L	0.10	25.7	C						
	T		0.76	22.8	C	T	0.86	26.3	C						
Overall Intersection	-	1.02	57.3	E	-	1.02	65.7	E							
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.78	38.8	D	TR	0.78	38.8	D	TR	0.78	38.8	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.56	32.4	C	TR	0.56	32.4	C	TR	0.56	32.4	C		
Northern Boulevard (Rt. 25A)	EB	L	0.55	22.0	C	L	0.55	27.0	C	L	0.55	21.1	C		
	TR		1.38	209.8	F	TR	1.50	262.2	F	TR	1.50	262.2	F		
	WB	L	1.18	142.7	F	L	1.17	126.0	F	L	1.17	126.0	F		
	TR		0.83	37.5	D	TR	0.96	46.9	D	TR	0.71	33.2	C		
Overall Intersection	-	1.42	109.6	F	-	1.40	132.8	F	-	1.40	128.7	F			
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.72	57.4	E	L	0.75	60.0	E	L	0.72	56.5	E		-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 1 s of green time from EB/WB phase to EB/WB protected left-turn phase [EB/WB green time shifts from 52 s to 51 s; EB/WB protected left-turn green time shifts from 10 s to 11 s].
	TR		0.52	38.8	D	TR	0.52	38.8	D	TR	0.52	38.8	D		
	SB	LTR	1.16	118.2	F	LTR	1.21	139.4	F	LT	0.68	35.9	D		
	-	-	-	-	-	-	-	-	-	R	0.34	33.0	C		
Northern Boulevard (Rt. 25A)	EB	L	0.80	57.9	E	L	0.86	63.5	E	L	0.82	59.1	E		
	TR		1.04	64.4	E	TR	1.18	117.1	F	T	0.98	45.5	D		
	-	-	-	-	-	-	-	-	-	R	0.37	24.9	C		
	WB	L	0.36	35.7	D	L	0.39	41.9	D	L	0.36	37.3	D		
	TR		1.17	113.2	F	TR	1.34	185.4	F	T	1.14	97.1	F		
	-	-	-	-	-	-	-	-	-	R	0.38	24.1	C		
Overall Intersection	-	1.19	85.2	F	-	1.28	134.3	F	-	1.00	62.4	E			
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	0.84	43.2	D	L	0.91	51.8	D	L	0.82	39.2	D	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.23	24.0	C	T	0.31	25.3	C	T	0.28	22.7	C		
34th Avenue	EB	T	0.40	11.7	B	T	0.40	11.7	B	T	0.43	13.6	B		
	R		0.07	8.5	A	R	0.07	8.5	A	R	0.07	9.9	A		
Overall Intersection	-	0.55	26.5	C	-	0.58	31.0	C	-	0.58	25.9	C			

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action															With Action															Mitigation															Mitigation Measure																													
Intersection & Approach					Mvt.		V/C		Control		Delay		LOS		Mvt.					V/C					Control					Delay					LOS																																							
126th Street at Roosevelt Avenue																																																																										
126th Street					NB		LTR		0.90		65.1		E		LTR					1.36					224.5					F					DefL					0.59					47.5					D					-Partially mitigated. -Modify signal phasing and timing plan: EB lead phase will have 8 s green time; EB/WB phase will have 55 s green time; WB lag phase will have 8 s green time; NB/SB phase will have 29 s green time; [each phase will have 3 s amber and 2 s all red time]. -Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.																			
									-		-		-		-					-					-					TR					0.46					41.6					D																													
SB		DefL		1.21		171.5		F		DefL					2.11					563.1					F					DefL					2.09					552.0					F																													
				TR		0.63		51.1		D		TR					1.28					193.1					F					TR					1.33					215.5					F																											
Roosevelt Avenue					EB		-		-		-		DefL					0.78					36.5					D					DefL					0.80					42.0					D																										
							LTR		0.52		11.6		B		TR					0.68					15.8					B					TR					0.81					28.8					C																								
					WB		LTR		0.50		11.1		B		LTR					0.80					19.2					B					LTR					0.96					42.2					D																								
Overall Intersection					-		0.69		37.1		D		-					1.12					120.3					F					-					1.74					121.8					F																										
College Point Boulevard at Roosevelt Avenue																																																																										
College Point Boulevard					NB		L		1.35		212.5		F		L					1.78					398.6					F					L					1.06					102.3					F					-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 35 s green time; EB-lag phase will have 20 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 26 s green time [each phase will have 3 s amber and 2 s all red time].																			
									TR		0.88		31.0		C		TR					0.88					31.0					C					TR					0.91					42.4					D																						
Roosevelt Avenue		SB		TR		1.20		128.1		F		TR					1.42					226.4					F					T					1.00					71.4					E																											
				EB		L		0.56		30.4		C		L					0.59					31.0					C					L					0.53					36.6					D																									
					WB		TR		1.26		143.8		F		TR					1.55					276.0					F					TR					1.38					202.9					F																								
							L		0.28		33.5		C		L					0.28					33.5					C					-					-					-					-																								
					TR		0.58		30.4		C		TR					0.70					34.3					C					TR					0.53					37.9					D																										
Overall Intersection					-		1.29		97.0		F		-					1.70					177.2					F					-					1.23					89.4					F																										
Prince Street at Roosevelt Avenue																																																																										
Prince Street					SB		LTR		0.86		47.3		D		LTR					0.86					47.3					D					-Mitigation not required.																																							
									EB		DefL		0.95		37.2		D		DefL					0.98					44.9					D																																								
					TR		0.67		14.3		B		TR					0.79					17.7					B																																														
					WB		LTR		0.53		12.0		B		LTR					0.61					13.3					B																																												
Overall Intersection					-		0.92		26.7		C		-					0.94					28.6					C																																														

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control			
				Delay				Delay				Delay			
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.67	24.4	C	T	0.67	24.4	C	T	0.71	26.8	C	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 41 s; NB/SB green time shifts from 41 s to 39 s].	
	SB	T	0.52	21.9	C	T	0.52	21.9	C	T	0.55	23.9	C		
Roosevelt Avenue	EB	L	0.31	22.1	C	L	0.35	24.7	C	L	0.32	21.8	C		
	TR		0.74	33.3	C	TR	0.94	54.6	D	TR	0.89	44.4	D		
	L		0.13	16.5	B	L	0.16	17.1	B	L	0.14	15.6	B		
	TR		0.84	35.9	D	TR	0.98	55.1	E	TR	0.93	43.5	D		
Overall Intersection		-	0.75	27.7	C	-	0.82	37.2	D	-	0.82	33.5	C		
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.58	19.4	B	TR	0.58	19.4	B					-Unmitigatable impact.	
	SB	LT	0.99	52.8	D	LT	0.99	52.8	D						
Roosevelt Avenue	R		3.00+	1000.0+	F	R	3.00+	1000.0+	F						
	EB	LTR	2.04	503.2	F	LTR	2.45	683.8	F						
	WB	LT	0.62	25.8	C	LT	0.74	30.6	C						
	R		0.93	82.4	F	R	0.93	82.4	F						
Overall Intersection		-	3.00+	492.8	F	-	3.00+	525.6	F						
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.65	24.6	C	LTR	0.69	25.8	C					-Mitigation not required.	
		-	-	-	-	-	-	-	-						
Roosevelt Avenue	SB	LTR	0.65	23.6	C	LTR	0.65	23.6	C						
	EB	LTR	0.59	23.2	C	LTR	0.77	30.8	C						
	WB	LTR	0.77	30.3	C	LTR	0.88	39.0	D						
Overall Intersection		-	0.71	25.5	C	-	0.78	30.0	C						
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.86	51.1	D	L	0.89	54.8	D					-Mitigation not required.	
	TR		0.63	22.2	C	TR	0.63	22.2	C						
Kissena Boulevard	SB	L	0.46	20.4	C	L	0.46	20.4	C						
	TR		0.52	19.4	B	TR	0.52	19.4	B						
	WB	T	0.72	27.1	C	T	0.72	27.1	C						
Overall Intersection		-	0.79	24.7	C	-	0.80	25.1	C						
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.56	23.6	C	L	0.62	28.3	C					-Mitigation not required.	
	T		0.66	14.4	B	T	0.68	14.8	B						
Sanford Avenue	SB	TR	0.76	16.8	B	TR	0.80	18.1	B						
	WB	L	0.57	34.8	C	L	0.57	34.8	C						
	TR		0.37	27.0	C	TR	0.48	28.8	C						
Overall Intersection		-	0.70	18.1	B	-	0.73	19.3	B						
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.34	20.8	C	LTR	0.34	20.8	C						-Mitigation not required.
	SB	LTR	0.61	24.2	C	LTR	0.62	24.4	C						
Sanford Avenue	EB	DefL	0.42	19.5	B	DefL	0.45	20.5	C						
	TR		0.21	13.7	B	TR	0.21	13.7	B						
	WB	LTR	0.88	29.3	C	LTR	0.93	34.9	C						
Overall Intersection		-	0.76	24.4	C	-	0.79	26.8	C						

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														Mitigation Measure
		No Action				With Action				Mitigation				
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	1.15	94.1	F	LTR	1.18	107.5	F	LT	0.96	29.6	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach.
		-	-	-	-	-	-	-	-	R	0.13	14.8	B	-Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.
	SB	LTR	0.71	25.1	C	LTR	0.80	29.4	C	LTR	0.81	30.0	C	
Sanford Avenue	EB	LTR	0.56	22.2	C	LTR	0.58	22.8	C	LTR	0.58	22.8	C	
	WB	LTR	0.87	34.4	C	LTR	0.93	41.4	D	LTR	0.93	41.4	D	
Overall Intersection		-	1.01	46.0	D	-	1.06	52.2	D	-	0.94	31.5	C	
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.71	30.0	C	T	0.70	29.8	C					-Mitigation not required.
		TR	0.80	36.0	D	TR	0.80	36.0	D					
	SB	L	0.75	48.2	D	L	0.75	48.2	D					
		T	0.49	11.6	B	T	0.50	11.8	B					
32nd Avenue	WB	LTR	0.78	39.6	D	LTR	0.78	39.6	D					
Overall Intersection		-	1.29	27.8	C	-	1.29	27.8	C					
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.53	13.1	B	TR	0.54	13.3	B	TR	0.57	15.4	B	-Modify Signal Timing: Shift 3 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 48 s; WB green time shifts from 29 s to 32 s].
	SB	LT	0.86	23.5	C	LT	0.88	25.1	C	LT	0.95	35.9	D	
Northern Blvd Service Rd	WB	LR	0.79	37.0	D	LR	0.98	59.8	E	LR	0.89	41.8	D	
Overall Intersection		-	0.83	21.6	C	-	0.92	27.7	C	-	0.93	29.0	C	
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	-	-	-	-	-Unmitigatable impact.
		LTR	0.07	7.2	A	LTR	0.15	7.7	A	LTR	0.18	15.5	B	-Install an actuated controller.
	SB	DefL	0.27	9.2	A	DefL	0.75	21.7	C	DefL	0.89	44.9	D	-Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 10 s green time; NB/SB phase will have 62 s green time; [each phase will have 3 s amber and 2 s all red time].
		TR	0.18	8.1	A	TR	0.42	10.4	B	TR	0.49	19.3	B	
Stadium Road	EB	-	-	-	-	DefL	0.57	42.7	D	DefL	0.51	37.9	D	
		-	-	-	-	TR	0.40	28.9	C	TR	0.41	36.1	D	
	WB	-	-	-	-	DefL	1.62	325.7	F	-	-	-	-	
		LTR	0.19	25.2	C	TR	1.41	231.4	F	LTR	0.98	68.8	E	
Overall Intersection		-	0.25	12.5	B	-	1.02	130.1	F	-	1.00	44.1	D	

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	19.5	C	L	-	1000.0+	F	L	0.28	26.3	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.5	A	R	-	8.7	A	R	0.05	2.4	A	
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.09	36.5	D	
		WB	LT	-	8.2	A	LT	-	11.1	B	L	0.77	29.1	
		-	-	-	-	-	-	-	LT	0.56	21.7	C		
Overall Intersection		-	-	9.4	A	-	-	1000.0+	F	-	0.51	25.3	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	10.6	B	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	-	-	-	T	0.29	8.6	A		
	Northern Boulevard Service Road	EB	-	-	-	-	T	-	14.6	B	T	0.10	24.6	
Overall Intersection		-	-	10.6	B	-	-	14.6	B	-	0.23	9.9	A	
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.08	31.0	C	-Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 25 s green time; NB/SB will have 35 s green time [each phase will have 3 s amber and 2 s all red and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	LT	-	7.8	A	L	0.53	41.3	D	
		-	-	-	-	-	-	-	-	TR	0.64	40.7	D	
Grand Central Parkway Off-Ramp	EB	L	-	10.7	B	L	-	51.6	F	L	0.22	26.5	C	-Intersection meets NYCDOT Signal Warrant Criteria.
		-	-	-	-	T	-	243.2	F	T	0.60	34.3	C	
		R	-	9.2	A	R	-	10.8	B	-	-	-	-	
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.69	50.0	D	
		-	-	-	-	R	-	8.8	A	R	0.22	41.2	D	
Overall Intersection		-	-	10.2	B	-	-	1000.0+	F	-	0.63	40.2	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.47	17.9	B	TR	0.47	17.9	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.83	29.3	C	-	-	-	-	
		LT	-	8.4	A	T	0.76	15.6	B	LT	0.80	16.7	B	
36th Avenue	WB	LR	-	16.0	C	L	0.14	39.6	D	L	0.14	39.6	D	
		-	-	-	-	R	0.38	30.3	C	R	0.38	30.3	C	
Overall Intersection		-	-	11.1	B	-	1.07	19.8	B	-	0.63	18.6	B	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.38	16.5	B	TR	0.38	16.5	B	-Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.90	55.2	E	DefL	0.78	36.0	D	
		LT	-	8.3	A	T	0.58	13.0	B	T	0.58	13.0	B	
37th Avenue	WB	LR	-	12.7	B	L	0.11	35.3	D	L	0.11	35.3	D	
		-	-	-	-	R	0.61	38.1	D	R	0.61	38.1	D	
Overall Intersection		-	-	10.7	B	-	1.00	24.6	C	-	0.89	21.1	C	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	16.2	C	R	-	18.5	C	R	0.17	40.1	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
	Northern Boulevard	EB	-	-	-	-	-	-	-	TR	0.63	10.1	B	
Overall Intersection		-	-	16.2	C	-	-	18.5	C	-	0.53	10.7	B	

TABLE 12
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<u>No Action</u>					<u>With Action</u>				<u>Mitigation</u>			<u>Mitigation Measure</u>		
INTERSECTION & APPROACH	Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mitigation Measure	
			Delay				Delay				Delay			
NEW (WITH ACTION) SIGNALIZED INTERSECTION														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	TR	0.60	23.8	C						-Mitigation not required.
	SB	-	-	-	DefL	0.67	18.9	B						-Intersection meets NYCDOT Signal Warrant Criteria.
New Willets Point Boulevard		-	-	-	T	0.38	9.9	A						
	WB	-	-	-	L	0.55	44.6	D						
		-	-	-	R	0.57	33.4	C						
Overall Intersection														
	-	-	-	-	-	0.79	23.5	C						

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

-Mitigation not required.
-Intersection meets NYCDOT Signal Warrant Criteria.

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.57	46.6	D	DefL	0.70	53.7	D	-Unmitigatable impact.				
		T	0.22	35.7	D	T	0.22	35.7	D					
Astoria Boulevard	SB	LTR	0.40	39.4	D	LTR	0.40	39.4	D					
	EB	TR	0.91	27.3	C	TR	0.95	30.2	C					
	-	-	-	-	-	-	-	-						
	WB	L	0.72	47.0	D	L	0.72	47.5	D					
		TR	0.34	9.8	A	TR	0.39	10.2	B					
Overall Intersection		-	0.81	25.9	C	-	0.87	27.9	C					
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.17	129.2	F	LTR	1.55	294.2	F	L	0.76	49.7	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. -Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	TR	0.76	44.9	D	
SB	LTR	1.13	116.0	F	LTR	1.15	125.9	F	L	0.53	46.7	D		
	-	-	-	-	-	-	-	-	TR	0.69	45.2	D		
Northern Boulevard (Rt. 25A)	EB	L	0.15	34.4	C	L	0.15	43.1	D	L	0.15	34.5	C	
		TR	0.84	14.1	B	TR	0.93	17.8	B	TR	0.93	17.8	B	
	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.67	42.2	D	L	0.67	44.2	D	L	0.67	44.2	D	
TR		1.15	92.0	F	TR	1.27	147.2	F	T	1.05	51.0	D		
		-	-	-	-	-	-	-	R	0.31	12.5	B		
Overall Intersection		-	1.08	59.1	E	-	1.25	93.9	F	-	0.97	33.7	C	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.39	45.8	D	LTR	0.45	47.3	D	LTR	0.52	37.6	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Place and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 s to 75 s].
		-	-	-	-	-	-	-	-	T	1.10	58.8	E	
Northern Boulevard (Rt. 25A)	EB	T	1.15	85.9	F	T	1.27	142.3	F	T	0.75	8.9	A	
		R	0.84	17.6	B	R	0.87	18.4	B	R	0.75	8.9	A	
	WB	DefL	0.87	58.5	E	DefL	1.05	96.0	F	-	-	-	-	
		T	0.92	18.5	B	T	1.01	34.6	C	T	0.92	23.3	C	
Overall Intersection		-	1.56	46.9	D	-	1.73	77.9	E	-	0.92	35.8	D	
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.42	43.2	D	L	1.02	87.1	F	L	1.11	117.5	F	-Partially mitigated. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 1 s green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase and 2 s green time from NB 126th St phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 28 s; EB GCP/Astoria Blvd Ramp green time shifts from 55 s to 54 s; NB 126th St green time shifts from 25 s to 23 s].
		R	0.28	41.2	D	R	3.00+	1000.0+	F	R	0.64	50.8	D	
Northern Boulevard	EB	T	1.23	165.1	F	T	1.27	182.1	F	T	1.19	142.2	F	
		WB	T	0.40	7.7	A	T	0.45	8.2	A	T	0.44	7.3	
Grand Central Parkway Ramp	EB	T	0.74	30.3	C	T	0.78	31.6	C	T	0.79	32.9	C	
		WB	T	0.90	25.2	C	T	1.24	131.8	F	-	-	-	
Van Wyck & Whitestone Expressway Ramp		-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	
Overall Intersection		-	0.79	51.4	D	-	2.29	218.4	F	-	0.97	71.8	E	

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.23	148.9	F	LTR	1.23	148.9	F	LTR	1.23	148.9	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.53	41.7	D	LTR	0.53	41.7	D	LTR	0.53	41.7	D		
Northern Boulevard (Rt. 25A)	EB	L	0.62	45.8	D	L	0.62	45.8	D	L	0.62	45.8	D		
	T		0.97	38.1	D	T	1.04	57.9	E	T	1.04	57.9	E		
	WB	L	0.81	72.6	E	L	0.81	72.6	E	L	0.81	72.6	E		
	T		1.14	106.9	F	T	1.20	129.5	F	T	1.20	129.5	F		
Northern Boulevard Service Rd.	EB	TR	0.66	27.5	C	TR	0.66	27.5	C	TR	0.66	27.5	C		
	WB	TR	0.66	35.4	D	TR	0.83	45.8	D	T	0.61	32.6	C		
	-	-	-	-	-	-	-	-	-	R	0.13	23.3	C		
Overall Intersection	-	1.03	67.1	E	-	1.06	82.2	F	-	1.06	81.4	F			
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.96	61.0	E	L	0.96	61.0	E					-Unmitigatable impact.	
	R		0.97	76.1	E	R	0.97	76.1	E						
Northern Boulevard (Rt. 25A)	EB	T	1.07	67.4	E	T	1.16	104.8	F						
	R		1.19	127.1	F	R	1.19	127.1	F						
	WB	L	0.17	26.8	C	L	0.17	26.8	C						
	T		0.77	23.0	C	T	0.86	26.2	C						
Overall Intersection	-	1.08	59.3	E	-	1.08	73.9	E							
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.78	38.5	D	TR	0.78	38.5	D	TR	0.78	38.5	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.82	39.5	D	TR	0.82	39.5	D	TR	0.82	39.5	D		
Northern Boulevard (Rt. 25A)	EB	L	0.77	43.4	D	L	0.78	44.9	D	L	0.78	43.4	D		
	TR		1.13	97.5	F	TR	1.22	136.8	F	TR	1.22	136.8	F		
	WB	L	0.86	49.4	D	L	0.86	50.2	D	L	0.56	50.2	D		
	TR		0.93	41.4	D	TR	1.04	63.4	E	TR	0.77	34.2	C		
Overall Intersection	-	0.98	63.9	E	-	1.02	86.6	F	-	1.02	78.7	E			
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.84	70.0	E	L	0.86	73.5	E	L	0.85	71.1	E	-Partially Mitigated. -Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 2 s of green time from EB/WB protected left-turn phase to EB/WB phase; shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [EB/WB protected left-turn green time shifts from 12 s to 10 s; EB/WB green time shifts from 50 s to 52 s LPI shifts from 7 s to 6 s; NB/SB green time shifts from 36 s to 37 s].	
	TR		0.50	35.3	D	TR	0.50	35.3	D	TR	0.49	34.3	C		
	SB	LTR	1.12	98.5	F	LTR	1.16	116.5	F	LT	0.65	34.1	C		
	-	-	-	-	-	-	-	-	-	R	0.44	33.7	C		
Northern Boulevard (Rt. 25A)	EB	L	0.43	44.7	D	L	0.47	46.9	D	L	0.52	48.6	D		
	TR		1.01	47.4	D	TR	1.10	82.0	F	TR	1.06	62.6	E		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.36	39.5	D	L	0.36	41.2	D	L	0.40	42.2	D		
	TR		1.14	99.2	F	TR	1.27	157.9	F	T	1.04	57.1	E		
	-	-	-	-	-	-	-	-	-	R	0.32	23.0	C		
Overall Intersection	-	1.06	69.4	E	-	1.13	106.2	F	-	0.98	55.3	E			
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	1.00	62.0	E	L	1.08	85.9	F	L	0.98	53.7	D	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.40	26.1	C	T	0.48	27.3	C	T	0.43	24.4	C		
34th Avenue	EB	T	0.39	11.5	B	T	0.39	11.5	B	T	0.41	13.3	B		
	R		0.07	8.5	A	R	0.07	8.5	A	R	0.07	9.9	A		
Overall Intersection	-	0.60	37.0	D	-	0.63	49.0	D	-	0.63	34.0	C			

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action															With Action															Mitigation															Mitigation Measure														
INTERSECTION & APPROACH			Mvt.	V/C	Control Delay	LOS				Mvt.	V/C	Control Delay	LOS				Mvt.	V/C	Control Delay	LOS																																							
126th Street/GCP Ramp at 34th Avenue																																																											
126th Street			NB	DefL	0.36	23.8	C	DefL			1.56	297.0	F		L	0.78	44.0	D	-Partially mitigated.																																								
				TR	0.27	21.2	C	TR			0.53	25.4	C		TR	0.71	41.2	D	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane.																																								
Northern Boulevard Ramp			SB	LTR	0.28	21.7	C	LTR			0.61	29.3	C		-	-	-	-																																									
GCP Ramp			SB	LTR	0.76	59.9	E	LTR			3.00+	1000.0+	F		L	0.44	25.1	C	-Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes.																																								
				-	-	-	-	-			-	-	-		T	0.49	35.5	D	-Close the ramp from EB Northern Blvd ramp to 126th Street.																																								
Shea Road			EB					DefL			3.00+	1000.0+	F		DefL	1.07	115.1	F	-Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road.																																								
				LTR	0.44	42.6	D	TR			2.31	649.5	F		TR	0.59	29.4	C	-Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes.																																								
				-	-	-	-	-			-	-	-		-	-	-	-																																									
34th Avenue			WB	LTR	0.99	96.6	F	LTR			3.00+	1000.0+	F		TR	0.92	46.1	D	-Modify signal phasing and timing plan: EB/WB phase will have 53 s green time; NB/SB lead left-turn phase will have 15 s green time; NB/SB phase will have 37 s green time [each phase will have 3 s amber and 2 s all red time].																																								
Overall Intersection			-	0.61	43.7	D	-			2.83	787.7	F		-	0.93	45.3	D																																										
ROOSEVELT AVENUE																																																											
108th Street at Roosevelt Avenue																																																											
108th Street			NB	LTR	1.11	103.1	F	LTR			1.15	121.5	F		LT	0.93	55.3	E	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.																																								
				-	-	-	-	-			-	-	-		R	0.38	38.2	D																																									
			SB	LTR	1.18	128.7	F	LTR			1.19	135.8	F		LT	0.95	52.3	D	-Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.																																								
				-	-	-	-	-			-	-	-		R	0.39	38.0	D																																									
Roosevelt Avenue			EB	LTR	0.74	9.9	A	LTR			0.86	15.8	B		LTR	0.86	15.8	B																																									
			WB	LTR	0.83	17.7	B	LTR			1.01	38.3	D		LTR	1.01	38.3	D																																									
Overall Intersection			-	0.93	48.9	D	-			1.06	59.0	E		-	0.99	34.8	C																																										
111th Street at Roosevelt Avenue																																																											
111th Street			NB	LTR	0.86	56.9	E	LTR			0.86	56.9	E		LTR	0.86	56.9	E	-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.																																								
Roosevelt Avenue			EB	LTR	0.79	10.8	B	LTR			0.93	20.4	C		LTR	0.99	33.5	C																																									
			WB	LTR	1.24	129.8	F	LTR			1.42	210.1	F		LT	1.17	99.4	F																																									
				-	-	-	-	-			-	-	-		R	0.16	7.6	A																																									
Overall Intersection			-	1.13	76.2	E	-			1.27	118.7	F		-	1.08	65.7	E																																										
114th Street at Roosevelt Avenue																																																											
114th Street			NB	LTR	0.98	63.6	E	LTR			1.04	80.2	F		LTR	0.72	40.0	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south.																																								
			SB	LTR	1.08	87.8	F	LTR			1.24	156.6	F		LT	0.87	43.6	D	-Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane.																																								
				-	-	-	-	-			-	-	-		R	0.13	33.5	-																																									
Roosevelt Avenue			EB	LTR	0.91	20.4	C	LTR			1.27	149.1	F		L	0.40	14.3	B	-Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane.																																								
				-	-	-	-	-			-	-	-		TR	0.67	8.1	A	-Shift centerline of NB 114th Street approach 3 ft to the east.																																								
			WB	LTR	0.74	15.5	B	LTR			1.04	52.4	D		L	0.68	20.9	C	-Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane																																								
				-	-	-	-	-			-	-	-		T	0.85	23.7	C	-Shift center line of SB 114th Street approach 2 ft to the east.																																								
				-	-	-	-	-			-	-	-		R	0.62	15.3	B	Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection.																																								
Overall Intersection			-	0.96	30.5	C	-			1.26	89.1	F		-	0.86	21.7	C	Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection.																																									
-Modify signal timing: Shift 2 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 78 s; NB/SB green time shifts from 30 s to 32 s].																																																											
-Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.																																																											

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Main Street at Roosevelt Avenue														
Main Street	NB	T	0.51	21.1	C	T	0.51	21.1	C	T	0.55	24.2	C	-Partially mitigated. -Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].
	SB	T	0.56	22.2	C	T	0.56	22.2	C	T	0.59	25.5	C	
	EB	L	0.48	42.6	D	L	0.57	52.2	D	L	0.47	39.6	D	
	TR	0.89	61.0	E	TR	1.14	127.8	F	TR	1.04	90.0	F		
	WB	L	0.20	26.8	C	L	0.24	28.1	C	L	0.21	24.6	C	
	TR	1.01	69.7	E	TR	1.14	115.9	F	TR	1.04	75.8	E		
Overall Intersection		-	0.74	38.8	D	-	0.79	64.6	E	-	0.88	78.4	E	
Union Street at Roosevelt Avenue														
Union Street	NB	TR	0.42	16.7	B	TR	0.42	16.7	B					-Unmitigatable impact.
	SB	LT	0.92	36.8	D	LT	0.92	36.8	D					
	R	2.58	751.0	F	R	2.58	751.0	F						
	EB	LTR	1.84	408.5	F	LTR	2.19	566.7	F					
	WB	LT	0.56	24.4	C	LT	0.66	27.8	C					
	R	1.14	146.0	F	R	1.14	146.0	F						
Overall Intersection		-	2.23	222.0	F	-	2.40	265.8	F					
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard	NB	LTR	0.85	40.0	D	LTR	0.88	43.3	D	LT	0.86	44.4	D	-Modify Signal Timing: Shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 59 s; NB/SB green time shifts from 55 s to 51 s. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Weekday Pre-game PM peak period.]
	-	-	-	-	-	-	-	-	-	R	0.07	20.6	C	
	SB	LTR	0.71	30.6	C	LTR	0.71	30.6	C	LTR	0.76	35.8	D	
	EB	LTR	0.50	26.0	C	LTR	0.66	31.4	C	LTR	0.61	26.9	C	
	WB	LTR	0.75	34.5	C	LTR	0.87	43.3	D	LTR	0.80	34.2	C	
Overall Intersection		-	0.80	33.4	C	-	0.87	37.3	D	-	0.83	35.3	D	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street	NB	L	0.77	38.8	D	L	0.78	39.5	D					-Mitigation not required.
	TR	0.58	22.4	C	TR	0.58	22.4	C						
	SB	L	0.84	51.7	D	L	0.84	51.7	D					
	TR	0.46	19.3	B	TR	0.46	19.3	B						
Kissena Boulevard	WB	T	0.66	35.5	D	T	0.66	35.5	D					
Overall Intersection		-	0.80	29.6	C	-	0.81	29.6	C					
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard	NB	L	0.52	31.5	C	L	0.52	31.5	C					-Mitigation not required.
	T	0.60	13.2	B	T	0.62	13.5	B						
	SB	TR	0.98	32.5	C	TR	1.02	42.8	D					
	WB	L	0.77	46.6	D	L	0.77	46.6	D					
Sanford Avenue	TR	0.36	26.8	C	TR	0.46	28.4	C						
Overall Intersection		-	0.91	26.9	C	-	0.94	32.5	C					
Union Street at Sanford Avenue														
Union Street	NB	LTR	0.30	20.1	C	LTR	0.30	20.1	C					-Mitigation not required.
	SB	LTR	0.73	26.6	C	LTR	0.74	27.2	C					
	EB	-	-	-	-	-	-	-	-					
	LTR	0.32	14.7	B	LTR	0.32	14.7	B						
Sanford Avenue	WB	LTR	0.68	22.2	C	LTR	0.72	23.8	C					
Overall Intersection		-	0.70	22.3	C	-	0.73	23.0	C					

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div><div></div><div></div></div>														
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.89	33.8	C	LTR	0.91	35.9	D	LT	0.65	21.0	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. -Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 38 s; NB/SB green time shifts from 40 s to 42 s].
	-	-	-	-	-	-	-	-	R	0.14	14.0	B		
	SB	LTR	0.77	27.2	C	LTR	0.90	37.5	D	LTR	0.95	43.5	D	
	EB	LTR	0.70	26.0	C	LTR	0.73	27.1	C	LTR	0.77	30.6	C	
Sanford Avenue	WB	LTR	0.78	29.7	C	LTR	0.84	33.3	C	LTR	0.89	39.8	D	
Overall Intersection		-	0.84	29.3	C	-	0.87	33.7	C	-	0.92	33.7	C	
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.50	25.2	C	T	0.52	25.6	C					-Mitigation not required.
	TR	0.93	46.9	D	TR	0.93	46.9	D						
	SB	L	0.49	34.8	C	L	0.49	34.8	C					
	T	0.43	10.9	B	T	0.44	11.0	B						
32nd Avenue	WB	LTR	0.89	44.7	D	LTR	0.89	44.7	D					
Overall Intersection		-	1.15	29.1	C	-	1.15	29.1	C					
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.56	13.5	B	TR	0.57	13.7	B					-Mitigation not required.
	SB	LT	0.86	23.4	C	LT	0.88	24.9	C					
	WB	LR	0.73	34.2	C	LR	0.88	44.8	D					
Northern Blvd Service Rd														
Overall Intersection		-	0.81	20.7	C	-	0.88	23.8	C					
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	-	-	-	-	-Unmitigatable impact. -Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 15 s green time; NB/SB phase will have 57 s green time; [each phase will have 3 s amber and 2 s all red time].
	LTR	0.05	7.1	A	LTR	0.23	8.3	A	LTR	0.25	18.9	B		
	SB	-	-	-	-	-	-	-	DefL	0.85	42.2	D		
	LTR	0.23	8.2	A	LTR	0.74	15.4	B	TR	0.62	24.7	C		
Stadium Road	EB	-	-	-	-	DefL	1.06	148.7	F	DefL	0.53	38.6	D	
	-	-	-	-	TR	0.41	29.2	C	TR	0.42	36.2	D		
	WB	-	-	-	-	-	-	-	-	-	-	-		
	LTR	0.30	26.4	C	LTR	1.48	253.5	F	LTR	1.01	70.2	E		
Overall Intersection		-	0.25	14.8	B	-	0.97	111.7	F	-	0.98	46.7	D	

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	16.6	C	L	-	1000.0+	F	L	0.37	27.5	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.8	A	R	-	9.1	A	R	0.08	2.5	A	
Worlds Fair Marina	EB	-	-	-	-	-	-	-	-	TR	0.08	36.4	D	
	WB	LT	-	7.8	A	LT	-	9.6	A	L	0.65	24.4	C	
		-	-	-	-	-	-	-	-	LT	0.57	21.9	C	
Overall Intersection	-	-	-	9.1	A	-	-	1000.0+	F	-	0.48	23.1	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.9	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.
New Van Wyck Expressway Ramp	SB	-	-	-	-	-	-	-	-	T	0.25	8.4	A	
Northern Boulevard Service Road	EB	-	-	-	-	T	-	14.1	B	T	0.09	24.5	C	
Overall Intersection	-	-	-	9.9	A	-	-	14.1	B	-	0.20	9.7	A	
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.07	27.4	C	-Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	LT	-	7.8	A	L	0.41	34.0	C	
		-	-	-	-	-	-	-	-	TR	0.69	38.7	D	
Grand Central Parkway Off-Ramp	EB	L	-	10.7	B	L	-	36.0	E	L	0.23	29.9	C	
		-	-	-	-	T	-	157.1	F	T	0.58	37.3	D	
		R	-	9.4	A	R	-	11.6	B	-	-	-	-	
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.86	59.4	E	
		-	-	-	-	R	-	9.0	A	R	0.27	42.0	D	
Overall Intersection	-	-	-	10.0	A	-	-	1000.0+	F	-	0.69	43.0	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.49	18.3	B	TR	0.49	18.3	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
		LT	-	8.2	A	LT	0.65	11.8	B	LT	0.60	10.7	B	
36th Avenue	WB	LR	-	12.1	B	L	0.13	39.5	D	L	0.13	39.5	D	
		-	-	-	-	R	0.56	36.2	D	R	0.56	36.2	D	
Overall Intersection	-	-	-	11.2	B	-	0.54	17.4	B	-	0.52	17.1	B	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.44	17.3	B	TR	0.44	17.3	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
		LT	-	8.2	A	LT	0.61	13.3	B	LT	0.57	12.6	B	
37th Avenue	WB	LR	-	13.1	B	L	0.10	35.2	D	L	0.10	35.2	D	
		-	-	-	-	R	0.41	31.5	C	R	0.41	31.5	C	
Overall Intersection	-	-	-	11.4	B	-	0.48	17.0	B	-	0.45	16.7	B	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	19.2	C	R	-	24.2	C	R	0.20	40.6	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.71	11.4	B	
Overall Intersection	-	-	-	19.2	C	-	-	24.2	C	-	0.59	12.0	B	

TABLE 13
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<u>No Action</u>					<u>With Action</u>				<u>Mitigation</u>			<u>Mitigation Measure</u>		
INTERSECTION & APPROACH	Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mitigation Measure	
			Delay				Delay				Delay			
NEW (WITH ACTION) SIGNALIZED INTERSECTION														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	TR	0.56	22.7	C						-Mitigation not required.
	SB	-	-	-	DefL	0.54	15.2	B						-Intersection meets NYCDOT Signal Warrant Criteria.
New Willets Point Boulevard		-	-	-	T	0.42	10.5	B						
	WB	-	-	-	L	0.69	50.0	D						
		-	-	-	-	R	0.67	36.7	D					
Overall Intersection		-	-	-	-	0.84	25.1	C						

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

-Mitigation not required.
-Intersection meets NYCDOT Signal Warrant Criteria.

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS															
ASTORIA BOULEVARD															
108th Street at Astoria Boulevard															
108th Street	NB	DefL	0.51	27.4	C	DefL	0.63	31.2	C	DefL	0.63	31.2	C	-Install "No Standing Saturday 11 AM - 10 PM" regulations along the south curb of the EB approach for 150-ft from the intersection to allow for an 11-ft daylighted right-turn lane.	
		T	0.20	21.1	C	T	0.20	21.1	C	T	0.20	21.1	C		
Astoria Boulevard	SB	LTR	0.25	21.7	C	LTR	0.25	21.7	C	LTR	0.25	21.7	C		
	EB	TR	0.94	33.6	C	TR	1.08	68.0	E	T	0.95	33.8	C		
		-	-	-	-	-	-	-	-	R	0.27	20.1	C		
		WB	L	0.56	23.9	C	L	0.56	25.1	C	L	0.56	24.4		C
		TR	0.36	12.6	B	TR	0.42	13.2	B	TR	0.42	13.2	B		
Overall Intersection		-	0.75	25.6	C	-	0.86	43.9	D	-	0.80	25.8	C		
NORTHERN BOULEVARD															
108th Street at Northern Boulevard (RT. 25A)															
108th Street	NB	LTR	1.12	109.4	F	LTR	1.54	290.6	F	L	0.63	44.2	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Modify signal timing: shift 2 s of green time from NB/SB phase to EB/WB left-turn phase [NB/SB green time shifts from 30 s to 28 s; EB/WB left-turn green time shifts from 9 s to 11 s].	
		-	-	-	-	-	-	-	-	TR	0.81	46.9	D		
SB	LTR	0.92	67.4	E	LTR	0.95	73.8	E	L	0.45	45.4	D			
	-	-	-	-	-	-	-	-	TR	0.59	44.7	D			
Northern Boulevard (Rt. 25A)	EB	L	0.18	39.5	D	L	0.18	44.2	D	L	0.16	38.4	D		
	TR	0.94	32.6	C	TR	1.11	81.8	F	T	0.97	36.1	D			
		-	-	-	-	-	-	-	-	R	0.16	13.6	B		
		WB	L	0.71	42.9	D	L	0.77	49.2	D	L	0.69	45.7		D
		TR	1.19	113.2	F	TR	1.32	170.7	F	T	1.11	75.8	E		
		-	-	-	-	-	-	-	-	R	0.29	14.6	B		
Overall Intersection		-	1.09	76.9	E	-	1.30	135.8	F	-	1.00	52.2	D		
-Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.															
114th Street at Northern Boulevard (RT. 25A)															
114th Street	SB	LTR	0.36	43.6	D	LTR	0.43	45.2	D	LTR	0.54	38.0	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Place and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street and restripe as two 11-ft moving lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].	
		EB	T	0.71	23.7	C	T	0.86	29.9	C	T	0.73	17.4		B
Northern Boulevard (Rt. 25A)	R	0.59	22.5	C	R	0.63	23.5	C	R	0.53	14.4	B			
	WB	DefL	0.71	20.6	C	DefL	1.03	77.7	E	-	-	-	-		
		T	0.99	27.7	C	T	1.09	60.3	E	T	0.98	28.8	C		
Overall Intersection		-	1.31	26.1	C	-	1.56	48.5	D	-	0.84	25.2	C		
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.44	43.6	D	L	1.01	85.2	F	L	1.10	115.2	F	-Partially mitigated. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 2 s green time from NB 126th St phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 35 s to 37 s; NB 126th St green time shifts from 25 s to 23 s].	
		R	0.35	42.4	D	R	3.00+	1000.0+	F	R	0.75	55.8	E		
Northern Boulevard	EB	T	0.73	43.4	D	T	0.76	44.6	D	T	0.85	46.0	D		
	WB	T	0.31	6.9	A	T	0.36	7.3	A	T	0.35	6.5	A		
Grand Central Parkway Ramp	EB	T	0.84	41.8	D	T	0.89	45.2	D	T	0.89	45.2	D		
	WB	T	0.75	15.3	B	T	1.15	96.0	F	-	-	-	-		
Overall Intersection		-	0.68	29.7	C	-	2.47	265.6	F	-	0.92	50.3	D		

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.13	105.2	F	LTR	1.13	105.2	F	LTR	1.13	105.2	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.47	36.9	D	LTR	0.47	36.9	D	LTR	0.47	36.9	D		
Northern Boulevard (Rt. 25A)	EB	L	0.66	49.6	D	L	0.66	49.6	D	L	0.66	49.6	D		
	T		1.06	64.0	E	T	1.15	103.1	F	T	1.15	103.1	F		
	WB	L	0.82	65.3	E	L	0.82	65.3	E	L	0.82	65.3	E		
	T		1.16	112.3	F	T	1.23	138.9	F	T	1.23	138.9	F		
Northern Boulevard Service Rd.	EB	TR	0.62	25.8	C	TR	0.62	25.8	C	TR	0.62	25.8	C		
	WB	TR	0.75	35.0	D	TR	0.95	54.3	D	T	0.72	33.0	C		
		-	-	-	-	-	-	-	-	R	0.13	21.3	C		
Overall Intersection		-	1.04	76.4	E	-	1.09	100.8	F	-	1.09	99.2	F		
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.93	56.1	E	L	0.93	56.1	E					-Unmitigatable impact.	
		R	0.89	62.7	E	R	0.89	62.7	E						
Northern Boulevard (Rt. 25A)	EB	T	0.96	39.9	D	T	1.05	65.0	E						
		R	1.38	209.6	F	R	1.38	209.6	F						
	WB	L	0.08	25.2	C	L	0.08	25.2	C						
	T		0.94	29.8	C	T	1.04	53.4	D						
Overall Intersection		-	1.16	60.5	E	-	1.16	75.7	E						
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.76	37.9	D	TR	0.76	37.9	D	TR	0.76	37.9	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.65	34.4	C	TR	0.65	34.4	C	TR	0.65	34.4	C		
Northern Boulevard (Rt. 25A)	EB	L	0.73	33.0	C	L	0.72	34.1	C	L	0.73	32.0	C		
	TR		1.45	242.3	F	TR	1.58	301.0	F	TR	1.58	301.0	F		
	WB	L	0.86	46.6	D	L	0.86	46.6	D	L	0.86	46.6	D		
	TR		1.03	56.1	E	TR	1.16	113.0	F	TR	0.86	36.0	D		
Overall Intersection		-	1.10	120.9	F	-	1.15	163.5	F	-	1.15	139.0	F		
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.84	68.1	E	L	0.87	73.0	E	L	0.82	64.0	E	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
		TR	0.60	40.8	D	TR	0.60	40.8	D	TR	0.60	40.8	D		
	SB	LTR	1.13	102.6	F	LTR	1.18	124.3	F	LT	0.69	35.6	D		
	-	-	-	-	-	-	-	-	-	R	0.38	33.5	C		
Northern Boulevard (Rt. 25A)	EB	L	0.50	47.3	D	L	0.54	48.5	D	L	0.55	45.6	D		
	TR		1.08	75.0	E	TR	1.22	135.8	F	T	0.97	39.6	D		
	-	-	-	-	-	-	-	-	-	R	0.59	28.2	C		
	WB	L	0.49	44.0	D	L	0.49	46.0	D	L	0.49	44.4	D		
	TR		1.16	107.8	F	TR	1.31	175.2	F	T	1.12	89.3	F		
	-	-	-	-	-	-	-	-	-	R	0.31	22.4	C		
Overall Intersection		-	1.09	86.1	F	-	1.19	137.0	F	-	0.95	58.4	E		
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	0.98	62.0	E	L	1.10	97.2	F	L	0.99	61.8	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
		T	0.34	25.3	C	T	0.43	26.7	C	T	0.38	23.9	C		
34th Avenue	EB	T	0.57	14.0	B	T	0.57	14.0	B	T	0.60	16.5	B		
		R	0.11	8.7	A	R	0.11	8.7	A	R	0.11	10.2	B		
Overall Intersection		-	0.71	33.3	C	-	0.75	48.3	D	-	0.75	35.0	C		

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	-	-	-	-	DefL	0.86	58.0	E	L	0.57	27.8	C	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane.
Northern Boulevard Ramp GCP Ramp	LTR	0.26	20.9	C	-	TR	0.53	25.3	C	TR	0.64	37.0	D	
	SB	LTR	0.36	23.1	C	LTR	1.02	75.4	E	-	-	-	-	
	LTR	0.81	64.6	E	LTR	3.00+	1000.0+	F	L	0.68	36.1	D	-Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes.	
Shea Road	-	-	-	-	-	-	-	-	-	T	0.51	34.0	C	-Close the ramp from EB Northern Blvd ramp to 126th Street.
	EB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	0.84	47.7	D	-Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road.
	LTR	0.63	46.6	D	-	TR	3.00+	1000.0+	F	TR	0.70	31.4	C	-Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes.
34th Avenue	-	-	-	-	-	-	-	-	-	DefL	0.75	39.7	D	-Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB lead left-turn phase will have 10 s green time; NB/SB phase will have 40 s green time [each phase will have 3 s amber and 2 s all red time].
	WB	LTR	0.81	66.8	E	LTR	3.00+	1000.0+	F	TR	0.82	38.8	D	
	Overall Intersection	-	0.58	40.5	D	-	3.00+	938.2	F	-	0.78	36.4	D	
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.19	134.9	F	LTR	1.26	163.4	F	LT	1.09	91.2	F	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.41	38.1	D	
	SB	LTR	1.16	118.8	F	LTR	1.18	127.6	F	LT	1.04	73.4	E	-Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
	-	-	-	-	-	-	-	-	-	R	0.29	36.7	D	
	EB	LTR	0.70	16.4	B	LTR	0.84	23.5	C	LTR	0.84	23.5	C	
	WB	LTR	0.78	15.0	B	LTR	0.96	24.7	C	LTR	0.96	24.7	C	
Overall Intersection	-	0.89	54.3	D	-	1.04	61.9	E	-	1.00	39.3	D		
111th Street at Roosevelt Avenue														
111th Street	NB	LTR	1.05	77.4	E	LTR	1.05	77.4	E	LTR	1.05	77.4	E	-Partially Mitigated.
Roosevelt Avenue	EB	LTR	0.85	22.9	C	LTR	1.04	56.6	E	LTR	1.07	66.5	E	-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.
	WB	LTR	1.21	118.3	F	LTR	1.45	223.5	F	LT	1.17	99.4	F	
	-	-	-	-	-	-	-	-	-	R	0.19	7.8	A	
Overall Intersection	-	1.17	74.9	E	-	1.34	134.4	F	-	1.14	79.0	E		
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	1.02	72.1	E	LTR	1.11	101.8	F	LTR	0.69	38.1	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south.
Roosevelt Avenue	SB	LTR	1.09	91.5	F	LTR	1.30	179.8	F	LTR	1.06	73.9	E	-Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane.
	-	-	-	-	-	-	-	-	-	-	-	-	-	
	EB	LTR	1.20	115.0	F	LTR	1.82	390.6	F	L	0.55	15.6	B	-Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane.
	-	-	-	-	-	-	-	-	-	TR	0.73	17.1	B	
	WB	LTR	0.69	14.3	B	LTR	1.05	55.9	E	L	0.86	42.7	D	-Shift centerline of NB 114th Street approach 3 ft to the east.
	-	-	-	-	-	-	-	-	-	T	0.78	21.3	C	-Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane
	-	-	-	-	-	-	-	-	-	R	0.81	25.3	C	-Shift center line of SB 114th Street approach 2 ft to the east.
	Overall Intersection	-	1.17	60.0	E	-	1.66	165.8	F	-	0.93	29.4	C	-Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection.
-Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection.														
-Modify signal timing: Shift 5 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 75 s; NB/SB green time shifts from 30 s to 35 s].														

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	LTR	0.35	40.3	D	LTR	0.50	46.8	D	DefL	0.30	40.0	D	-Partially mitigated. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 55 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 31 s green time; [each phase will have 3 s amber and 2 s all red time]. -Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.	
		-	-	-	-	-	-	-	-	TR	0.16	35.6	D		
SB	DefL	1.10	125.2	F	DefL	1.81	425.3	F	DefL	1.72	381.3	F			
	TR	0.53	43.8	D	TR	1.08	114.6	F	TR	1.04	101.5	F			
Roosevelt Avenue	EB	-	-	-	DefL	1.25	163.7	F	DefL	1.34	224.1	F			
	LTR	0.68	14.8	B	TR	0.71	16.2	B	TR	0.85	31.3	C			
WB	LTR	0.48	10.8	B	LTR	0.78	18.0	B	LTR	0.95	41.4	D			
Overall Intersection		-	0.79	32.2	C	-	1.40	98.7	F	-	2.09	108.6	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.29	181.9	F	L	1.72	367.7	F	L	1.07	104.9	F		-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].
		TR	0.93	34.4	C	TR	0.93	34.4	C	TR	0.90	38.5	D		
	-	-	-	-	-	-	-	-	-	-	-	-			
	SB	TR	1.01	55.4	E	TR	1.21	132.9	F	T	0.89	49.9	D		
Roosevelt Avenue	EB	L	0.57	20.8	C	L	0.60	21.2	C	L	0.58	25.6	C		
	TR	1.24	132.8	F	TR	1.53	262.2	F	TR	1.42	219.6	F			
WB	L	0.34	34.3	C	L	0.34	34.3	C	-	-	-	-			
TR	0.49	27.0	C	TR	0.61	29.7	C	TR	0.61	43.3	D				
Overall Intersection		-	1.26	69.1	E	-	1.50	139.3	F	-	1.17	84.4	F		
Prince Street at Roosevelt Avenue															
Prince Street	SB	LTR	0.96	58.3	E	LTR	0.96	58.3	E	-Mitigation not required.					
	EB	DefL	0.79	19.8	B	DefL	0.83	22.4	C						
Roosevelt Avenue	TR	0.75	15.7	B	TR	0.86	20.1	C							
	WB	LTR	0.57	12.6	B	LTR	0.65	14.2	B						
	-	-	-	-	-	-	-	-							
Overall Intersection		-	0.85	25.4	C	-	0.89	26.6	C						

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Main Street at Roosevelt Avenue														
Main Street Roosevelt Avenue	NB	T	0.76	26.4	C	T	0.76	26.4	C	T	0.86	33.4	C	-Partially mitigated. -Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].
	SB	T	0.66	24.4	C	T	0.66	24.4	C	T	0.74	29.6	C	
	EB	L	0.22	19.6	B	L	0.26	21.7	C	L	0.22	17.2	B	
	TR	0.93	50.1	D	TR	1.14	111.3	F	TR	1.03	68.4	E		
	WB	L	0.03	14.8	B	L	0.04	15.0	B	L	0.03	12.7	B	
	TR	0.86	32.3	C	TR	1.00	51.4	D	TR	0.90	32.1	C		
Overall Intersection		-	0.84	31.3	C	-	0.95	49.4	D	-	0.95	39.6	D	
Union Street at Roosevelt Avenue														
Union Street Roosevelt Avenue	NB	TR	0.56	19.2	B	TR	0.56	19.2	B					-Unmitigatable impact.
	SB	LT	1.07	71.4	E	LT	1.07	71.4	E					
	R	2.83	856.2	F	R	2.83	856.2	F						
	EB	LTR	2.33	630.2	F	LTR	2.79	836.4	F					
	WB	LT	0.55	23.8	C	LT	0.67	27.5	C					
	R	1.35	233.5	F	R	1.35	233.5	F						
Overall Intersection		-	2.60	315.8	F	-	2.81	379.3	F					
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard Roosevelt Avenue	NB	LTR	0.86	34.8	C	LTR	0.90	38.5	D	LT	0.87	36.6	D	-Partially mitigated. -Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s]. -Install "No Standing 10AM - 8PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	R	0.05	15.4	B	
	SB	LTR	0.79	27.2	C	LTR	0.79	27.3	C	LTR	0.83	30.9	C	
	EB	LTR	0.75	28.3	C	LTR	0.95	49.1	D	LTR	0.90	39.1	D	
	WB	LTR	0.87	37.2	D	LTR	1.04	70.8	E	LTR	0.97	51.1	D	
Overall Intersection		-	0.87	31.6	C	-	0.97	45.9	D	-	0.92	38.9	D	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street Kissena Boulevard	NB	L	1.18	136.5	F	L	1.20	144.1	F	L	1.16	127.6	F	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].
	TR	0.69	23.4	C	TR	0.69	23.4	C	TR	0.68	22.3	C		
	SB	L	0.55	21.9	C	L	0.55	21.9	C	L	0.56	22.9	C	
	TR	0.57	20.2	C	TR	0.57	20.2	C	TR	0.56	19.3	B		
	WB	T	0.75	27.2	C	T	0.75	27.2	C	T	0.77	28.8	C	
Overall Intersection		-	0.97	35.0	D	-	0.98	36.0	D	-	0.97	34.0	C	
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard Sanford Avenue	NB	L	0.63	31.0	C	L	0.71	42.2	D					-Mitigation not required.
	T	0.74	15.8	B	T	0.76	16.4	B						
	SB	TR	0.85	19.2	B	TR	0.89	21.3	C					
	WB	L	0.69	39.1	D	L	0.69	39.1	D					
	TR	0.52	29.4	C	TR	0.65	32.4	C						
Overall Intersection		-	0.80	20.5	C	-	0.83	22.4	C					
Union Street at Sanford Avenue														
Union Street Sanford Avenue	NB	LTR	0.39	21.8	C	LTR	0.40	21.8	C					-Mitigation not required.
	SB	LTR	0.74	27.4	C	LTR	0.76	28.0	C					
	EB	DefL	0.48	21.2	C	DefL	0.50	22.3	C					
	TR	0.35	15.5	B	TR	0.35	15.5	B						
	WB	LTR	0.87	28.8	C	LTR	0.93	34.2	C					
Overall Intersection		-	0.81	25.1	C	-	0.85	27.4	C					

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														Mitigation Measure	
INTERSECTION & APPROACH		No Action				With Action				Mitigation					
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Parsons Boulevard at Sanford Avenue															
Parsons Boulevard	NB	LTR	0.92	37.8	D	LTR	0.95	41.9	D						-Unmitigatable impact.
		-	-	-	-	-	-	-	-						
	SB	LTR	0.85	29.6	C	LTR	1.01	54.2	D						
	EB	LTR	0.73	26.6	C	LTR	0.75	27.5	C						
Sanford Avenue	WB	LTR	0.91	38.6	D	LTR	0.98	50.6	D						
Overall Intersection		-	0.92	33.1	C	-	1.00	44.6	D						
WHITESTONE EXPRESSWAY / 32ND AVENUE															
College Point Boulevard at 32nd Avenue															
College Point Boulevard	NB	T	0.36	23.2	C	T	0.38	23.5	C						-Mitigation not required.
		TR	0.79	34.4	C	TR	0.79	34.4	C						
	SB	L	0.52	36.1	D	L	0.52	36.1	D						
		T	0.41	10.7	B	T	0.42	10.8	B						
32nd Avenue	WB	LTR	0.54	31.9	C	LTR	0.54	31.9	C						
Overall Intersection		-	1.05	23.3	C	-	1.05	23.3	C						
NORTHERN BOULEVARD SERVICE ROAD															
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard	NB	TR	0.54	13.3	B	TR	0.55	13.4	B	TR	0.56	14.1	B	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s].	
	SB	LT	0.79	20.2	C	LT	0.81	21.3	C	LT	0.83	23.1	C		
Northern Blvd Service Rd	WB	LR	0.69	32.5	C	LR	0.90	46.4	D	LR	0.87	42.2	D		
Overall Intersection		-	0.75	19.2	B	-	0.84	23.3	C	-	0.85	23.3	C		
STADIUM ROAD															
Boat Basin Road at Stadium Road															
Boat Basin Road	NB	-	-	-	-	-	-	-	-	-	-	-	-	-Unmitigatable impact. -Install an actuated controller.	
		LTR	0.08	7.2	A	LTR	0.24	8.4	A	LTR	0.27	18.5	B		
	SB	DefL	0.20	8.4	A	-	-	-	-	DefL	0.87	44.5	D		
		TR	0.16	7.9	A	LTR	0.71	14.8	B	TR	0.62	24.3	C		
Stadium Road	EB	-	-	-	-	DefL	1.71	397.1	F	DefL	0.85	68.8	E	-Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 14 s green time; NB/SB phase will have 58 s green time; [each phase will have 3 s amber and 2 s all red time].	
		-	-	-	-	TR	0.53	31.6	C	TR	0.54	38.1	D		
	WB	-	-	-	-	DefL	2.49	711.0	F	-	-	-	-		
		LTR	0.28	26.2	C	TR	1.69	351.7	F	LTR	1.04	79.2	E		
Overall Intersection		-	0.23	14.4	B	-	1.27	266.8	F	-	1.03	51.1	D		

TABLE 14
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2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	17.2	C	L	-	1000.0+	F	L	0.36	27.3	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 40 s green time; NB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.6	A	R	-	8.9	A	R	0.10	2.6	A	
Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.16	37.3	D		
	WB	LT	-	7.9	A	LT	-	10.8	B	L	0.76	29.0	C	
		-	-	-	-	-	-	-	LT	0.61	23.0	C		
Overall Intersection	-	-	9.9	A	-	-	1000.0+	F	-	0.55	25.1	C		
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.2	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.
New Van Wyck Expressway Ramp	SB	-	-	-	-	-	-	-	T	0.29	8.7	A		
Northern Boulevard Service Road	EB	-	-	-	-	T	-	14.4	B	T	0.06	24.1	C	
Overall Intersection	-	-	9.2	A	-	-	14.4	B	-	0.22	9.4	A		
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.11	27.9	C	-Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
		SB	-	-	-	LT	-	8.2	A	L	0.59	39.9	D	
	-	-	-	-	-	-	-	-	TR	0.64	37.0	D		
Grand Central Parkway Off-Ramp	EB	L	-	11.2	B	L	-	177.8	F	L	0.34	31.7	C	
		-	-	-	-	T	-	516.2	F	T	0.76	44.8	D	
	R	-	9.3	A	R	-	11.3	B	-	-	-	-		
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.96	73.8	E	
		-	-	-	-	R	-	9.2	A	R	0.33	43.4	D	
Overall Intersection	-	-	10.7	B	-	-	1000.0+	F	-	0.76	48.1	D		
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.43	17.3	B	TR	0.43	17.3	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
		SB	-	-	-	-	-	-	-	-	-	-	-	
36th Avenue	WB	LT	-	8.4	A	LT	0.76	14.8	B	LT	0.70	12.9	B	
		LR	-	13.4	B	L	0.13	39.5	D	L	0.13	39.5	D	
	-	-	-	-	R	0.48	33.2	C	R	0.48	33.2	C		
Overall Intersection	-	-	11.0	B	-	0.59	17.7	B	-	0.55	16.8	B		
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.35	16.2	B	TR	0.35	16.2	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
		SB	-	-	-	-	-	-	-	-	-	-	-	
37th Avenue	WB	LT	-	8.1	A	LT	0.64	14.0	B	LT	0.60	13.0	B	
		LR	-	12.0	B	L	0.10	35.2	D	L	0.10	35.2	D	
	-	-	-	-	R	0.51	34.6	C	R	0.51	34.6	C		
Overall Intersection	-	-	11.0	B	-	0.54	17.4	B	-	0.51	17.0	B		
Northern Boulevard at 126th Place														
126th Place	NB	R	-	16.6	C	R	-	20.4	C	R	0.20	40.8	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.69	11.2	B	
Overall Intersection	-	-	16.6	C	-	-	20.4	C	-	0.58	11.9	B		

TABLE 14
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
NEW (WITH ACTION) SIGNALIZED INTERSECTION															
126th Street at New Willets Point Boulevard															
126th Street	NB	-	-	-	-	TR	0.57	23.0	C	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria.					
	SB	-	-	-	-	DefL	0.57	15.7	B						
New Willets Point Boulevard		-	-	-	-	T	0.43	10.5	B						
	WB	-	-	-	-	L	0.52	43.4	D						
		-	-	-	-	R	0.36	26.6	C						
Overall Intersection		-	-	-	-	-	0.80	21.4	C						

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 15

2028 (PHASE 1B) SUMMARY OF GAMEDAY MITIGATION MEASURES

114th Street at Roosevelt Avenue	<p>Shift center line of WB Roosevelt Avenue approach 11 ft to the south.</p> <p>Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane.</p> <p>Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane.</p> <p>Shift centerline of NB 114th Street approach 3 ft to the east.</p> <p>Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane</p> <p>Shift center line of SB 114th Street approach 2 ft to the east.</p> <p>Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection.</p> <p>Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection.</p> <p>Modify signal timing: Shift 2 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 78 s; NB/SB green time shifts from 30 s to 32 s].</p> <p>Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.</p>	<p>Shift center line of WB Roosevelt Avenue approach 11 ft to the south.</p> <p>Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane.</p> <p>Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane.</p> <p>Shift centerline of NB 114th Street approach 3 ft to the east.</p> <p>Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane</p> <p>Shift center line of SB 114th Street approach 2 ft to the east.</p> <p>Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection.</p> <p>Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection.</p> <p>Modify signal timing: Shift 4 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].</p> <p>Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.</p>	<p>Partially mitigated.</p> <p>Shift center line of WB Roosevelt Avenue approach 11 ft to the south.</p> <p>Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane.</p> <p>Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane.</p> <p>Shift centerline of NB 114th Street approach 3 ft to the east.</p> <p>Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane</p> <p>Shift center line of SB 114th Street approach 2 ft to the east.</p> <p>Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection.</p> <p>Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection.</p> <p>Modify signal timing: Shift 4 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].</p>
126th Street at Roosevelt Avenue	<p>Partially Mitigated.</p> <p>Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the eas curb.</p> <p>Place cones on SB approach to allow for one 12-ft right-turn lane and one 12-ft shared left-through lane during the pre-game peak hour.</p> <p>Traffic Enforcement Agent should be present to operate the signal.</p> <p>Modify signal phasing (to be followed by Traffic Enforcement Agent): EB + SB right-turn lead phase will have 11 s green time; EB/WB phase will have 69 s green time; NB/SB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].</p>	<p>Partially Mitigated.</p> <p>Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.</p> <p>Place cones on SB approach to allow for one 12-ft right-turn lane and one 12-ft shared left-through lane during the pre-game peak hour.</p> <p>Traffic Enforcement Agent should be present to operate the signal.</p> <p>Modify signal phasing (to be followed by Traffic Enforcement Agent): EB + SB right-turn lead phase will have 16 s green time; EB/WB phase will have 64 s green time; NB/SB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].</p>	<p>Partially Mitigated.</p> <p>Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.</p> <p>Place cones on EB approach to allow for one left-turn lane and one shared through-right lane during the post-game peak hour.</p> <p>Traffic Enforcement Agent should be present to operate the signal.</p> <p>Modify signal phasing (to be followed by Traffic Enforcement Agent): EB lead phase will have 19 s green time; EB/WB phase will have 52 s green time; NB/SB phase will have 34 s green time [each phase will have 3 s amber and 2 s all red time].</p>
College Point Boulevard at Roosevelt Avenue	<p>Partially Mitigated.</p> <p>Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.</p> <p>Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.</p> <p>Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.</p> <p>Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.</p> <p>Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes.</p> <p>Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.</p> <p>Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.</p> <p>Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.</p> <p>Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.</p> <p>Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue.</p> <p>Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 24 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].</p>	<p>Partially Mitigated.</p> <p>Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.</p> <p>Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.</p> <p>Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.</p> <p>Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.</p> <p>Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes.</p> <p>Extend median on the north leg 3 ft to the east. Taper 45 ft to meet existing lanes.</p> <p>Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.</p> <p>Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.</p> <p>Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.</p> <p>Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue.</p> <p>Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].</p>	<p>Partially Mitigated.</p> <p>Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.</p> <p>Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.</p> <p>Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.</p> <p>Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.</p> <p>Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes.</p> <p>Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.</p> <p>Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.</p> <p>Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.</p> <p>Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.</p> <p>Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue.</p> <p>Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].</p>
Prince Street at Roosevelt Avenue	<p>Modify Signal Timing: Shift 2 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 65 s; SB green time shifts from 47 s to 45 s].</p> <p>[Measures reflect improvements needed for the Weekday non-game PM peak periods.]</p>	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>
Main Street at Roosevelt Avenue	<p>Partially mitigated.</p> <p>Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].</p>	<p>Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].</p>	<p>Partially mitigated.</p> <p>Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].</p>
Union Street at Roosevelt Avenue	<p>Unmitigatable impact.</p>	<p>Unmitigatable impact.</p>	<p>Unmitigatable impact.</p>
Parsons Boulevard at Roosevelt Avenue	<p>Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 59 s; NB/SB green time shifts from 55 s to 51 s].</p> <p>Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.</p> <p>[Measures reflect improvements needed for the Weekday Non-game AM and Weekday Pre-game PM peak periods.]</p>	<p>Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s].</p> <p>Install "No Standing 10AM - 8PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.</p> <p>[Measures reflect improvements needed for the Saturday Non-game peak period.]</p>	<p>Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s].</p> <p>Install "No Standing 10AM - 8PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.</p> <p>[Measures reflect improvements needed for the Saturday Non-game peak period.]</p>
Main Street at Kissena Boulevard	<p>Mitigation not required.</p>	<p>Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].</p> <p>[Measures reflect improvements needed for the Saturday Non-game peak period.]</p>	<p>Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].</p> <p>[Measures reflect improvements needed for the Saturday Non-game peak period.]</p>
College Point Boulevard at Sanford Avenue	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>
Union Street at Sanford Avenue	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>
Parsons Boulevard at Sanford Avenue	<p>Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach.</p> <p>Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.</p> <p>Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 38 s; NB/SB green time shifts from 40 s to 42 s].</p>	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>
College Point Boulevard at 32nd Avenue	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>	<p>Mitigation not required.</p>
College Point Boulevard at Northern Boulevard Service Road	<p>Mitigation not required.</p>	<p>Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s].</p> <p>[Measures reflect improvements needed for the Saturday Non-game peak period.]</p>	<p>Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s].</p> <p>[Measures reflect improvements needed for the Saturday Non-game peak period.]</p>
Boat Basin Road at Stadium Road	<p>Partially Mitigated.</p> <p>Install an actuated controller.</p> <p>Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 13 s green time; NB/SB phase will have 59 s green time; [each phase will have 3 s amber and 2 s all red time].</p>	<p>Unmitigatable impact.</p> <p>Install an actuated controller.</p> <p>Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 12 s green time; NB/SB phase will have 60 s green time; [each phase will have 3 s amber and 2 s all red time].</p>	<p>Install an actuated controller.</p> <p>Modify signal phasing and timing plan: EB lead phase will have 22 s green time; EB/WB phase will have 25 s green time; WB lag phase will have 11 s green time; NB/SB phase will have 42 s green time; [each phase will have 3 s amber and 2 s all red time].</p>
UNSIGNALIZED INTERSECTIONS			
Boat Basin Road at Worlds Fair Marina	<p>Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 45 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time].</p> <p>Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane.</p> <p>Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane.</p> <p>Intersection meets NYCDOT Signal Warrant Criteria.</p>	<p>Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 45 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time].</p> <p>Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane.</p> <p>Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane.</p> <p>Intersection meets NYCDOT Signal Warrant Criteria.</p>	<p>Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 45 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time].</p> <p>Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane.</p> <p>Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane.</p> <p>Intersection meets NYCDOT Signal Warrant Criteria.</p>

TABLE 15

2028 (PHASE 1B) SUMMARY OF GAMEDAY MITIGATION MEASURES

Willels Point Boulevard at Northern Boulevard	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB will have 25 s green time; NB/SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB will have 25 s green time; NB/SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB will have 25 s green time; NB/SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.
Grand Central Parkway Ramp at West Park Loop/Stadium Road	Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 30 s green time; WB will have 25 s green time; NB/SB will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.
126th Street at 36th Avenue	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Partially mitigated. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
126th Street at 37th Avenue	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Partially mitigated. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
Northern Boulevard at 126th Place	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.
NEW (WITH ACTION) SIGNALIZED INTERSECTION			
126th Street at New Willels Point Boulevard	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Intersection meets NYCDOT Signal Warrant Criteria.

NOTE: This table has been revised for the Final SEIS.

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation Measure				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.67	51.7	D	DefL	0.79	61.3	E	-Unmitigatable impact.				
		T	0.28	36.8	D	T	0.28	36.8	D					
Astoria Boulevard	SB	LTR	0.35	38.0	D	LTR	0.35	38.0	D					
	EB	TR	1.07	58.1	E	TR	1.11	76.7	E					
	-	-	-	-	-	-	-	-						
	WB	L	0.74	51.1	D	L	0.74	51.2	D					
		TR	0.28	9.3	A	TR	0.32	9.6	A					
Overall Intersection		-	0.92	48.0	D	-	0.98	60.6	E					
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.17	125.0	F	LTR	1.44	245.2	F	L	0.85	53.5	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. -Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	TR	0.65	41.8	D	
SB	LTR	1.12	108.4	F	LTR	1.15	118.5	F	L	0.53	44.5	D		
Northern Boulevard (Rt. 25A)	-	-	-	-	-	-	-	-	-	TR	0.66	43.6	D	
	EB	L	0.19	32.3	C	L	0.19	37.0	D	L	0.18	29.7	C	
	TR	0.86	14.4	B	TR	0.93	18.0	B	TR	0.93	18.0	B		
	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.73	45.9	D	L	0.73	47.6	D	L	0.73	47.6	D	
	TR	1.07	58.3	E	TR	1.15	95.2	F	T	0.94	26.5	C		
	-	-	-	-	-	-	-	-	R	0.30	12.5	B		
	Overall Intersection		-	1.04	45.2	D	-	1.16	69.1	E	-	1.01	25.2	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.77	56.7	E	LTR	0.91	69.8	E	LTR	0.58	38.1	D	
Northern Boulevard (Rt. 25A)	EB	T	1.00	33.3	C	T	1.10	69.2	E	T	0.96	16.5	B	
	R	0.63	14.9	B	R	0.74	17.1	B	R	0.64	8.6	A		
	WB	DefL	0.82	48.9	D	DefL	0.96	71.8	E	-	-	-	-	
		T	0.87	15.1	B	T	0.93	19.0	B	T	0.86	20.2	C	
Overall Intersection		-	1.51	25.7	C	-	1.65	42.7	D	-	0.84	19.4	B	
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.47	44.0	D	L	0.96	73.7	E	L	1.05	97.3	F	-Partially Mitigated. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 1 s green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase and 2 s green time from NB 126th St phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 28 s; EB GCP/Astoria Blvd Ramp green time shifts from 55 s to 54 s; NB 126th St green time shifts from 25 s to 23 s].
		R	0.39	43.6	D	R	3.00+	1000.0+	F	R	0.64	50.8	D	
Northern Boulevard	EB	T	1.11	115.5	F	T	1.14	126.9	F	T	1.11	111.5	F	
	WB	T	0.81	16.5	B	T	0.89	21.2	C	T	0.87	18.4	B	
Grand Central Parkway Ramp	EB	T	0.89	38.9	D	T	0.92	41.9	D	T	0.94	44.8	D	
	WB	T	0.79	14.5	B	T	0.79	14.5	B	-	-	-	-	
Van Wyck & Whitestone Expressway Ramp	-	-	-	-	-	-	-	-	-	-	-	-		
	-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	0.73	37.9	D	-	1.50	107.5	F	-	1.01	61.8	E	

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														No Action	With Action				Mitigation				Mitigation Measure
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS										
Prince Street at Northern Boulevard (RT. 25A)															-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.								
Prince Street		NB	LTR	1.12	102.0	F	LTR	1.12	102.0	F	LTR	1.12	102.0	F									
		SB	LTR	0.59	42.3	D	LTR	0.59	42.3	D	LTR	0.59	42.3	D									
Northern Boulevard (Rt. 25A)		EB	L	0.97	73.3	E	L	0.97	73.3	E	L	0.97	73.3	E									
		T	1.04	55.8	E	T	1.10	81.0	F	T	1.10	81.0	F										
		WB	L	0.78	69.0	E	L	0.78	69.0	E	L	0.78	69.0	E									
		T	1.10	89.8	F	T	1.15	109.8	F	T	1.15	109.8	F										
Northern Boulevard Service Rd.		EB	TR	0.59	25.1	C	TR	0.59	25.1	C	TR	0.59	25.1	C									
		WB	TR	0.79	41.6	D	TR	0.94	59.7	E	T	0.66	34.0	C									
		-	-	-	-	-	-	-	-	R	0.18	24.0	C										
Overall Intersection		-	1.08	66.7	E	-	1.10	83.5	F	-	1.10	81.7	F										
Main Street at Northern Boulevard (RT. 25A)																							
Main Street		NB	L	0.90	52.7	D	L	0.90	52.7	D					-Unmitigatable impact.								
		R	0.91	62.7	E	R	0.91	62.7	E														
Northern Boulevard (Rt. 25A)		EB	T	1.14	95.9	F	T	1.22	128.5	F													
		R	1.23	137.5	F	R	1.23	137.5	F														
		WB	L	0.23	28.0	C	L	0.23	28.0	C													
		T	0.78	23.2	C	T	0.85	25.9	C														
Overall Intersection		-	1.07	69.8	E	-	1.07	83.0	F														
Union Street at Northern Boulevard (RT. 25A)																							
Union Street		NB	TR	0.70	35.8	D	TR	0.70	35.8	D	TR	0.70	35.8	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.								
		SB	TR	0.69	35.3	D	TR	0.69	35.3	D	TR	0.69	35.3	D									
Northern Boulevard (Rt. 25A)		EB	L	0.64	31.6	C	L	0.64	32.5	C	L	0.64	30.4	C									
		TR	1.18	115.2	F	TR	1.25	147.1	F	TR	1.25	147.1	F										
		WB	L	0.79	41.1	D	L	0.79	41.8	D	L	0.79	41.8	D									
		TR	1.00	63.2	E	TR	1.11	102.9	F	TR	0.82	35.5	D										
Overall Intersection		-	0.95	76.7	E	-	0.98	102.5	F	-	0.98	82.6	F										
Parsons Boulevard at Northern Boulevard (RT. 25A)																							
Parsons Boulevard		NB	L	0.88	79.4	E	L	0.90	84.6	F	L	0.91	85.4	F	-Partially Mitigated. -Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 2 s of green time from EB/WB protected left-turn phase to EB/WB phase; shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [EB/WB protected left-turn green time shifts from 12 s to 10 s; EB/WB green time shifts from 50 s to 52 s; LPI shifts from 7 s to 6 s; NB/SB green time shifts from 36 s to 37 s].								
		TR	0.58	40.4	D	TR	0.58	40.4	D	TR	0.57	39.2	D										
		SB	LTR	1.18	122.9	F	LTR	1.22	142.7	F	LT	0.73	35.7	D									
										R	0.39	33.0	C										
Northern Boulevard (Rt. 25A)		EB	L	0.47	45.9	D	L	0.52	47.3	D	L	0.58	49.6	D									
		TR	1.01	47.4	D	TR	1.09	75.9	E	TR	1.05	56.9	E										
		-	-	-	-	-	-	-	-	-	-	-	-										
		WB	L	0.44	40.9	D	L	0.44	41.9	D	L	0.49	43.0	D									
		TR	1.18	113.9	F	TR	1.29	163.9	F	T	1.04	55.0	D										
										R	0.38	23.4	C										
Overall Intersection		-	1.11	78.3	E	-	1.18	109.7	F	-	1.05	52.7	D										
34TH AVENUE																							
114th Street at 34th Avenue																							
114th Street		SB	L	1.05	79.9	E	L	1.13	108.9	F	L	1.03	69.1	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].								
		T	0.54	28.9	C	T	0.81	38.6	D	T	0.73	32.0	C										
34th Avenue		EB	T	0.50	13.0	B	T	0.50	13.0	B	T	0.54	15.2	B									
		R	0.16	9.2	A	R	0.16	9.2	A	R	0.17	10.6	B										
Overall Intersection		-	0.70	40.3	D	-	0.73	53.2	D	-	0.73	38.1	D										

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

126th Street/GCP Ramp at 34th Avenue														
INTERSECTION & APPROACH		No Action				With Action				Mitigation				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
126th Street		NB	DefL	0.82	78.7	E	DefL	1.41	278.1	F	L	0.56	35.3	D
			TR	0.38	37.3	D	TR	0.65	43.2	D	TR	0.51	35.9	D
Northern Boulevard Ramp		SB	LTR	0.78	54.5	D	LTR	1.73	286.1	F	-	-	-	-
GCP Ramp		SB	LTR	1.35	212.5	F	LTR	1.54	295.1	F	L	0.53	39.3	D
			-	-	-	-	-	-	-	T	0.71	41.1	D	
Shea Road		EB	DefL	0.50	32.9	C	DefL	1.73	383.7	F	DefL	0.68	29.9	C
			TR	0.31	28.2	C	TR	2.20	586.6	F	TR	0.83	37.5	D
			-	-	-	-	-	-	-	DefL	0.84	46.6	D	
34th Avenue		WB	LTR	0.30	28.0	C	LTR	1.43	248.8	F	TR	0.41	20.0	C
Overall Intersection		-	0.82	118.2	F	-	1.88	317.1	F	-	0.80	35.5	D	
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street		NB	LTR	1.16	119.5	F	LTR	1.20	138.7	F	LT	0.94	52.0	D
			-	-	-	-	-	-	-	R	0.48	39.1	D	
		SB	LTR	1.17	126.6	F	LTR	1.19	134.0	F	LT	1.00	60.3	E
			-	-	-	-	-	-	-	R	0.30	36.9	D	
Roosevelt Avenue		EB	LTR	0.71	8.4	A	LTR	0.82	11.9	B	LTR	0.82	11.9	B
		WB	LTR	0.66	12.3	B	LTR	0.81	15.3	B	LTR	0.81	15.3	B
Overall Intersection		-	0.83	50.6	D	-	0.92	53.4	D	-	0.87	26.1	C	
111th Street at Roosevelt Avenue														
111th Street		NB	LTR	1.05	77.5	E	LTR	1.05	77.5	E	LTR	1.05	77.5	E
Roosevelt Avenue		EB	LTR	0.76	9.4	A	LTR	0.88	15.1	B	LTR	0.88	14.7	B
		WB	LTR	1.19	108.0	F	LTR	1.36	180.9	F	LT	1.10	67.7	E
			-	-	-	-	-	-	-	R	0.17	7.6	A	
Overall Intersection		-	1.15	64.3	E	-	1.27	98.0	F	-	1.09	45.5	D	
114th Street at Roosevelt Avenue														
114th Street		NB	LTR	0.91	59.6	E	LTR	0.91	60.1	E	LTR	0.80	47.5	D
		SB	LTR	1.10	94.4	F	LTR	1.50	269.0	F	LT	1.13	103.8	F
			-	-	-	-	-	-	-	R	0.13	33.5	C	
		EB	LTR	0.99	26.8	C	LTR	1.26	141.5	F	L	0.26	9.7	A
			-	-	-	-	-	-	-	TR	0.78	9.3	A	
Roosevelt Avenue		WB	LTR	0.69	14.3	B	LTR	0.98	35.5	D	L	0.88	39.5	D
			-	-	-	-	-	-	-	T	0.61	14.2	B	
			-	-	-	-	-	-	-	R	0.73	19.8	B	
Overall Intersection		-	1.02	33.4	C	-	1.33	101.4	F	-	0.96	30.4	C	
Mitigation Measure														
-Partially mitigated.														
-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane.														
-Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes.														
-Close the ramp from EB Northern Blvd ramp to 126th Street.														
-Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road.														
-Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes.														
-Modify signal phasing and timing plan: EB/WB phase will have 61 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 37 s green time [each phase will have 3 s amber and 2 s all red time].														

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	LTR	0.64	60.2	E	LTR	1.13	186.8	F	DefL	0.57	71.4	E	-Partially mitigated -Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb. -Place cones on SB approach to allow for one 12-ft right-turn lane and one 12-ft shared left-through lane during the pre-game peak hour. -Traffic Enforcement Agent should be present to operate the signal. -Modify signal phasing (to be followed by Traffic Enforcement Agent): EB + SB right-turn lead phase will have 11 s green time; EB/WB phase will have 69 s green time; NB/SB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].	
		-	-	-	-	-	-	-	-	TR	0.25	42.5	D		
	SB	-	-	-	-	-	-	-	-	LT	1.56	301.4	F		
		LTR	1.17	122.0	F	LTR	1.91	454.5	F	R	1.95	465.7	F		
	Roosevelt Avenue	EB	DefL	1.02	64.4	E	DefL	1.84	417.4	F	DefL	1.22	149.8		F
		TR	0.71	8.0	A	TR	0.78	9.9	A	TR	0.74	5.8	A		
	WB	LTR	0.62	12.8	B	LTR	0.79	17.5	B	LTR	0.98	42.3	D		
	Overall Intersection	-	1.06	45.7	D	-	1.86	191.7	F	-	1.92	164.5	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.29	188.9	F	L	1.48	272.0	F	L	1.22	162.6	F	-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 24 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].	
		TR	0.69	29.0	C	TR	0.69	29.0	C	TR	0.69	28.7	C		
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
		TR	0.89	47.6	D	TR	0.99	62.3	E	T	0.78	45.8	D		
	Roosevelt Avenue	EB	L	0.50	37.4	D	L	0.52	37.8	D	L	0.54	38.2		D
		TR	1.26	147.7	F	TR	1.45	232.6	F	TR	1.43	226.9	F		
		WB	L	0.31	44.9	D	L	0.31	44.9	D	-	-	-		-
		TR	0.48	36.4	D	TR	0.57	38.6	D	TR	0.58	44.3	D		
	Overall Intersection	-	1.21	80.6	F	-	1.37	116.7	F	-	1.21	97.9	F		
	Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.52	31.0	C	LTR	0.52	31.0	C	LTR	0.55	33.1	C	-Modify Signal Timing: Shift 2 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 65 s; SB green time shifts from 47 s to 45 s]. [Measures reflect improvements needed for the Weekday non-game PM peak periods.]	
		DefL	0.81	32.4	C	DefL	0.84	35.6	D	DefL	0.80	30.9	C		
	Roosevelt Avenue	TR	0.80	29.0	C	TR	0.91	37.5	D	TR	0.88	32.8	C		
		WB	LTR	0.61	21.5	C	LTR	0.67	23.0	C	LTR	0.65	21.2		C
	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Overall Intersection	-	0.69	27.9	C	-	0.75	31.6	C	-	0.75	29.2	C		

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.63	23.6	C	T	0.63	23.6	C	T	0.68	27.2	C	-Partially mitigated. -Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].	
	SB	T	0.55	22.2	C	T	0.55	22.2	C	T	0.59	25.5	C		
Roosevelt Avenue	EB	L	0.35	35.9	D	L	0.40	40.7	D	L	0.33	32.5	C		
	TR		0.93	65.4	E	TR	1.11	113.0	F	TR	1.01	79.1	E		
	WB	L	0.21	28.8	C	L	0.26	31.0	C	L	0.22	26.5	C		
	TR		0.90	55.6	E	TR	1.00	74.9	E	TR	0.91	53.9	D		
Overall Intersection		-	0.75	37.2	D	-	0.86	52.1	D	-	0.82	42.8	D		
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.54	18.8	B	TR	0.54	18.8	B					-Unmitigatable impact.	
	SB	LT	1.27	146.5	F	LT	1.27	146.5	F						
Roosevelt Avenue		R	1.91	437.2	F	R	1.91	437.2	F						
	EB	LTR	2.32	624.7	F	LTR	2.70	796.8	F						
	WB	LT	0.81	33.0	C	LT	0.91	43.0	D						
		R	0.82	50.1	D	R	0.82	50.1	D						
Overall Intersection		-	2.10	238.1	F	-	2.27	289.0	F						
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.81	37.3	D	LTR	0.83	39.2	D	LT	0.80	39.8	D	-Modify Signal Timing: Shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 59 s; NB/SB green time shifts from 55 s to 51 s. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Weekday Non-game AM and Weekday Pre-game PM peak periods.]	
		-	-	-	-	-	-	-	-	R	0.08	20.8	C		
Roosevelt Avenue	SB	LTR	0.78	33.3	C	LTR	0.78	33.4	C	LTR	0.85	40.1	D		
	EB	LTR	0.69	31.8	C	LTR	0.88	45.0	D	LTR	0.81	36.0	D		
	WB	LTR	0.92	47.0	D	LTR	1.05	78.5	E	LTR	0.96	49.9	D		
	Overall Intersection		-	0.87	37.4	D	-	0.94	49.3	D	-	0.91	41.2		D
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.74	37.6	D	L	0.75	38.3	D					-Mitigation not required.	
		TR	0.59	22.2	C	TR	0.59	22.2	C						
Kissena Boulevard	SB	L	0.87	54.4	D	L	0.87	54.4	D						
		TR	0.50	20.1	C	TR	0.50	20.1	C						
	WB	T	0.73	38.0	D	T	0.73	38.0	D						
Overall Intersection		-	0.80	30.1	C	-	0.80	30.2	C						
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.38	15.1	B	L	0.41	16.4	B					-Mitigation not required.	
		T	0.75	16.0	B	T	0.76	16.4	B						
Sanford Avenue	SB	TR	0.75	15.9	B	TR	0.78	16.7	B						
	WB	L	0.81	49.2	D	L	0.81	49.2	D						
		TR	0.47	28.5	C	TR	0.58	30.6	C						
Overall Intersection		-	0.77	19.7	B	-	0.79	20.6	C						
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.39	21.7	C	LTR	0.39	21.7	C					-Mitigation not required.	
	SB	LTR	0.70	25.9	C	LTR	0.71	26.3	C						
Sanford Avenue	EB	-	-	-	-	-	-	-	-						
		LTR	0.29	14.3	B	LTR	0.29	14.3	B						
	WB	LTR	0.90	31.4	C	LTR	0.95	36.9	D						
	Overall Intersection		-	0.81	25.2	C	-	0.84	27.4	C					

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

										<u>No Action</u>				<u>With Action</u>				<u>Mitigation</u>				<u>Mitigation Measure</u>
INTERSECTION & APPROACH		Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS									
Parsons Boulevard at Sanford Avenue																						
Parsons Boulevard	NB	LTR	1.03	51.7	D	LTR	1.04	56.9	E	LT	0.77	22.4	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. -Install "No Standing 7 AM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 38 s; NB/SB green time shifts from 40 s to 42 s].								
		-	-	-	-	-	-	-	-	R	0.13	13.7	B									
Sanford Avenue	SB	LTR	0.70	25.0	C	LTR	0.81	30.5	C	LTR	0.84	31.7	C									
	EB	LTR	0.61	23.6	C	LTR	0.63	24.1	C	LTR	0.66	26.8	C									
	WB	LTR	0.76	28.3	C	LTR	0.81	31.3	C	LTR	0.85	36.3	D									
Overall Intersection		-	0.89	33.2	C	-	0.93	36.8	D	-	0.85	29.1	C									
<u>WHITESTONE EXPRESSWAY / 32ND AVENUE</u>																						
College Point Boulevard at 32nd Avenue																						
College Point Boulevard	NB	T	0.39	23.7	C	T	0.41	23.9	C	-Mitigation not required.												
		TR	0.27	22.0	C	TR	0.27	22.0	C													
	SB	L	0.45	33.5	C	L	0.45	33.5	C													
T		0.41	10.6	B	T	0.42	10.7	B														
32nd Avenue	WB	LTR	0.74	37.8	D	LTR	0.74	37.8	D													
Overall Intersection		-	1.10	21.1	C	-	1.10	21.1	C													
<u>NORTHERN BOULEVARD SERVICE ROAD</u>																						
College Point Boulevard at Northern Boulevard Service Road																						
College Point Boulevard	NB	TR	0.49	12.6	B	TR	0.50	12.7	B	-Mitigation not required.												
	SB	LT	0.84	21.6	C	LT	0.86	22.6	C													
Northern Blvd Service Rd	WB	LR	0.72	33.7	C	LR	0.87	43.3	D													
Overall Intersection		-	0.80	19.9	B	-	0.86	22.7	C													
<u>STADIUM ROAD</u>																						
Boat Basin Road at Stadium Road																						
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.53	23.9	C	-Partially Mitigated. -Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 13 s green time; NB/SB phase will have 59 s green time; [each phase will have 3 s amber and 2 s all red time].								
		LTR	0.54	43.8	D	LTR	0.99	88.7	F	TR	0.25	17.8	B									
Stadium Road	SB	-	-	-	-	-	-	-	-	DefL	1.23	153.0	F									
		LTR	0.89	34.7	C	LTR	1.15	105.2	F	TR	0.99	59.6	E									
	EB	-	-	-	-	DefL	1.30	231.2	F	DefL	0.65	44.3	D									
			-	-	-	-	TR	0.35	24.4	C	TR	0.43	36.5			D						
WB	-	-	-	-	-	-	-	-	-	-	-	-	-									
		LTR	0.87	32.6	C	DefL	1.30	231.2	F	LTR	0.90	44.2	D									
Overall Intersection		-	0.84	34.5	C	-	1.19	96.3	F	-	1.20	67.4	E									

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	52.2	F	L	-	781.3	F	L	0.32	30.6	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 45 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.6	A	R	-	8.9	A	R	0.08	2.5	A	
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.14	37.0	D	
		WB	LT	-	12.2	B	LT	-	13.6	B	L	0.95	43.6	
		-	-	-	-	-	-	-	LT	0.68	21.7	C		
Overall Intersection	-	-	-	13.4	B	-	-	491.1	F	-	0.67	32.3	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.5	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	-	-	-	-	T	0.28	8.5	A	
	Northern Boulevard Service Road	EB	-	-	-	-	T	-	13.8	B	T	0.06	24.1	
Overall Intersection	-	-	-	9.5	A	-	-	13.8	B	-	0.21	9.3	A	
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.07	27.4	C	-Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	LT	-	9.2	A	L	0.40	33.8	C	
		-	-	-	-	-	-	-	-	TR	0.83	44.9	D	
Grand Central Parkway Off-Ramp	EB	L	-	34.1	D	L	-	186.4	F	L	0.30	31.0	C	
		-	-	-	-	T	-	461.7	F	T	0.54	36.0	D	
		R	-	9.6	A	R	-	242.3	F	-	-	-	-	
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.79	54.6	D	
		-	-	-	-	R	-	10.2	B	R	0.24	41.5	D	
Overall Intersection	-	-	-	31.1	D	-	-	1000.0+	F	-	0.71	43.4	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.31	15.7	B	TR	0.31	15.7	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
	36th Avenue	LT	-	8.3	A	LT	0.82	17.0	B	LT	0.79	15.4	B	
		WB	LR	-	17.3	C	L	0.12	39.4	D	L	0.12	39.4	
		-	-	-	-	R	0.31	28.7	C	R	0.31	28.7	C	
Overall Intersection	-	-	-	12.2	B	-	0.66	17.8	B	-	0.63	16.6	B	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.28	15.3	B	TR	0.28	15.3	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-	-	
	37th Avenue	LT	-	8.2	A	LT	0.77	17.2	B	LT	0.74	16.1	B	
		WB	LR	-	15.7	C	L	0.10	35.2	D	L	0.10	35.2	
		-	-	-	-	R	0.32	29.2	C	R	0.32	29.2	C	
Overall Intersection	-	-	-	12.6	B	-	0.57	17.8	B	-	0.55	17.1	B	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	20.7	C	R	-	24.7	C	R	0.17	40.1	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.73	11.9	B	
Overall Intersection	-	-	-	20.7	C	-	-	24.7	C	-	0.60	12.4	B	

TABLE 16
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action			With Action			Mitigation			Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay
NEW (WITH ACTION) SIGNALIZED INTERSECTION												
126th Street at New Willets Point Boulevard												
126th Street	NB	-	-	-	-	TR	0.42	20.1	C	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria.		
	SB	-	-	-	-	-	-	-	-			
New Willets Point Boulevard		-	-	-	-	LT	0.70	15.0	B			
	WB	-	-	-	-	L	0.65	48.3	D			
		-	-	-	-	R	0.37	27.4	C			
Overall Intersection		-	-	-	-	-	0.67	21.4	C			

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

-Mitigation not required.
-Intersection meets NYCDOT Signal Warrant Criteria.

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS															
ASTORIA BOULEVARD															
108th Street at Astoria Boulevard															
108th Street Astoria Boulevard	NB	DefL	0.46	25.9	C	DefL	0.53	27.8	C	DefL	0.53	27.8	C	-Install "No Standing Saturday 11 AM - 10 PM" regulations along the south curb of the EB approach for 150-ft from the intersection to allow for an 11-ft daylighted right-turn lane.	
		T	0.20	21.0	C	T	0.20	21.0	C	T	0.20	21.0	C		
	SB	LTR	0.22	21.4	C	LTR	0.22	21.4	C	LTR	0.22	21.4	C		
		EB	TR	0.75	26.8	C	TR	0.84	29.5	C	T	0.74	26.3		C
	WB	-	-	-	-	-	-	-	-	R	0.21	19.6	B		
		L	0.79	37.1	D	L	0.82	45.5	D	L	0.82	40.7	D		
		TR	0.29	11.9	B	TR	0.33	12.3	B	TR	0.33	12.3	B		
Overall Intersection		-	0.66	23.1	C	-	0.73	25.1	C	-	0.68	23.0	C		
NORTHERN BOULEVARD															
108th Street at Northern Boulevard (RT. 25A)															
108th Street Northern Boulevard (Rt. 25A)	NB	LTR	1.15	117.0	F	LTR	1.42	234.5	F	L	0.82	49.0	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Modify signal timing: shift 2 s of green time from NB/SB phase to EB/WB left-turn phase [NB/SB green time shifts from 30 s to 28 s; EB/WB left-turn green time shifts from 9 s to 11 s].	
		-	-	-	-	-	-	-	-	TR	0.69	41.8	D		
	SB	LTR	1.08	96.6	F	LTR	1.10	104.9	F	L	0.45	42.3	D		
		-	-	-	-	-	-	-	-	TR	0.73	46.0	D		
	EB	L	0.09	35.8	D	L	0.09	43.4	D	L	0.08	32.5	C		
		TR	0.97	36.3	D	TR	1.10	78.2	E	T	0.96	33.4	C		
	WB	-	-	-	-	-	-	-	-	R	0.17	13.7	B		
		L	0.83	47.7	D	L	0.88	53.8	D	L	0.80	47.9	D		
		TR	1.16	101.9	F	TR	1.27	148.7	F	T	1.04	47.4	D		
		-	-	-	-	-	-	-	-	R	0.33	15.1	B		
	Overall Intersection		-	1.11	76.0	E	-	1.26	121.8	F	-	0.96	39.9		D
	-Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane.														
-Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.															
114th Street at Northern Boulevard (RT. 25A)															
114th Street Northern Boulevard (Rt. 25A)	SB	LTR	0.62	49.6	D	LTR	0.75	55.8	E	LTR	0.62	39.5	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Place and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street and restripe as two 11-ft moving lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].	
		EB	T	0.76	24.7	C	T	0.88	29.8	C	T	0.74	17.3		B
	WB	R	0.79	28.8	C	R	0.90	37.6	D	R	0.76	20.2	C		
		DefL	0.82	36.4	D	DefL	1.07	96.1	F	-	-	-	-		
	T	0.85	15.8	B	T	0.92	20.0	B	T	0.85	20.1	C			
Overall Intersection		-	1.31	23.4	C	-	1.66	32.9	C	-	0.77	21.4	C		
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.62	46.9	D	L	1.10	109.7	F	L	1.19	148.4	F	-Unmitigated impact. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 2 s green time from NB 126th St phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 35 s to 37 s; NB 126th St green time shifts from 25 s to 23 s].	
		R	0.33	41.9	D	R	3.00+	1000.0+	F	R	0.60	48.8	D		
Northern Boulevard	EB	T	0.55	38.2	D	T	0.57	38.7	D	T	0.73	40.6	D		
	WB	T	0.68	12.6	B	T	0.77	15.4	B	T	0.75	13.7	B		
Grand Central Parkway Ramp	EB	T	0.88	44.4	D	T	0.91	47.6	D	T	0.91	47.6	D		
Van Wyck & Whitestone Expressway Ramp	WB	T	0.74	12.9	B	T	0.76	13.6	B	-	-	-	-		
Overall Intersection		-	0.71	26.9	C	-	1.85	156.0	F	-	0.91	56.6	E		

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.11	98.7	F	LTR	1.11	98.7	F	LTR	1.11	98.7	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.51	37.7	D	LTR	0.51	37.7	D	LTR	0.51	37.7	D		
Northern Boulevard (Rt. 25A)	EB	L	1.00	84.9	F	L	1.00	84.9	F	L	1.00	84.9	F		
	T		0.97	39.4	D	T	1.04	57.0	E	T	1.04	57.0	E		
	WB	L	0.97	99.7	F	L	0.97	99.7	F	L	0.97	99.7	F		
	T		1.13	99.3	F	T	1.18	120.4	F	T	1.18	120.4	F		
Northern Boulevard Service Rd.	EB	TR	0.51	23.1	C	TR	0.51	23.1	C	TR	0.51	23.1	C		
	WB	TR	0.75	35.5	D	TR	0.91	48.8	D	T	0.66	31.1	C		
	-	-	-	-	-	-	-	-	-	R	0.16	21.7	C		
Overall Intersection	-	1.10	65.6	E	-	1.12	79.4	E	-	1.12	78.2	E			
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.86	48.1	D	L	0.86	48.1	D						-Unmitigatable impact.
	R		0.95	68.8	E	R	0.95	68.8	E						
Northern Boulevard (Rt. 25A)	EB	T	0.96	40.5	D	T	1.03	58.5	E						
	R		1.34	192.7	F	R	1.34	192.7	F						
	WB	L	0.16	26.6	C	L	0.16	26.6	C						
	T		0.88	26.6	C	T	0.97	34.0	C						
Overall Intersection	-	1.16	56.6	E	-	1.16	64.0	E							
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.69	35.6	D	TR	0.69	35.6	D	TR	0.69	35.6	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.60	33.1	C	TR	0.60	33.1	C	TR	0.60	33.1	C		
Northern Boulevard (Rt. 25A)	EB	L	0.69	34.9	C	L	0.69	35.8	D	L	0.69	33.8	C		
	TR		1.27	160.6	F	TR	1.36	202.7	F	TR	1.36	202.7	F		
	WB	L	0.98	67.7	E	L	0.98	53.9	D	L	0.98	53.9	D		
	TR		0.98	46.9	D	TR	1.09	84.0	F	TR	0.81	34.9	C		
Overall Intersection	-	0.99	85.5	F	-	1.03	113.2	F	-	1.03	97.3	F			
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.68	50.8	D	L	0.70	52.2	D	L	0.68	50.8	D	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.	
	TR		0.54	39.1	D	TR	0.54	39.1	D	TR	0.54	39.1	D		
	SB	LTR	1.13	103.0	F	LTR	1.18	126.8	F	LT	0.66	35.1	D		
	-	-	-	-	-	-	-	-	-	R	0.36	33.3	C		
Northern Boulevard (Rt. 25A)	EB	L	0.41	43.3	D	L	0.46	46.2	D	L	0.46	44.6	D		
	TR		1.13	94.5	F	TR	1.24	145.1	F	T	1.04	57.2	E		
	-	-	-	-	-	-	-	-	-	R	0.38	23.7	C		
	WB	L	0.44	44.2	D	L	0.44	45.8	D	L	0.44	44.6	D		
	TR		1.07	68.9	E	TR	1.20	124.2	F	T	0.99	42.4	D		
										R	0.36	23.6	C		
Overall Intersection	-	1.10	77.1	E	-	1.14	119.6	F	-	0.91	46.0	D			
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	1.03	72.3	E	L	1.11	96.4	F	L	1.00	60.0	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.54	28.6	C	T	0.80	37.4	D	T	0.72	31.3	C		
34th Avenue	EB	T	0.43	12.0	B	T	0.43	12.0	B	T	0.46	14.0	B		
	R		0.11	8.8	A	R	0.11	8.8	A	R	0.12	10.2			
Overall Intersection	-	0.64	40.2	D	-	0.69	52.0	D	-	0.67	36.6	D			

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	DefL	1.20	168.9	F	DefL	1.56	337.1	F	L	0.86	77.9	E	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 63 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 35 s green time [each phase will have 3 s amber and 2 s all red time].	
		TR	0.53	37.1	D	TR	0.83	48.5	D	TR	0.54	37.4	D		
Northern Boulevard Ramp	SB	LTR	0.59	41.1	D	LTR	1.93	472.7	F	-	-	-	-		
		LTR	1.47	267.9	F	LTR	1.71	372.2	F	L	0.66	52.0	D		
GCP Ramp	SB	-	-	-	-	-	-	-	-	T	0.81	47.2	D		
		-	-	-	-	-	-	-	-	-	-	-	-		
Shea Road	EB	LTR	0.45	31.6	C	LTR	1.70	358.7	F	LTR	0.90	32.4	C		
		-	-	-	-	-	-	-	-	DefL	1.47	244.0	F		
34th Avenue	WB	LTR	0.44	31.0	C	LTR	2.55	737.7	F	TR	0.56	19.5	B		
		-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	0.98	141.1	F	-	2.11	361.4	F	-	1.17	58.5	E		
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.18	127.3	F	LTR	1.23	149.0	F	LT	1.04	72.5	E	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	
		-	-	-	-	-	-	-	-	R	0.44	38.6	D		
	SB	LTR	1.17	125.8	F	LTR	1.19	134.5	F	LT	1.07	82.4	F		
		-	-	-	-	-	-	-	-	R	0.35	37.4	D		
Roosevelt Avenue	EB	LTR	0.78	19.4	B	LTR	0.90	28.3	C	LTR	0.88	26.0	C		
		WB	LTR	1.00	31.3	C	LTR	1.18	104.4	F	LTR	1.02	35.3		D
Overall Intersection		-	1.05	58.8	E	-	1.20	92.0	F	-	1.02	42.8	D		
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	1.06	76.7	E	LTR	1.06	76.7	E	LTR	1.06	76.7	E		-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.
		EB	LTR	0.86	22.9	C	LTR	1.00	44.5	D	LTR	1.00	42.3		
Roosevelt Avenue	WB	LTR	1.22	120.1	F	LTR	1.40	199.0	F	LT	1.11	72.7	E		
		-	-	-	-	-	-	-	-	R	0.20	7.8	A		
Overall Intersection		-	1.17	73.7	E	-	1.30	115.1	F	-	1.10	57.8	E		
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	1.09	89.3	F	LTR	1.12	99.5	F	LTR	0.94	45.9	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 4 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s]. -Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.	
		SB	LTR	1.11	96.2	F	LTR	1.36	206.9	F	LT	0.90	41.6		
	SB	-	-	-	-	-	-	-	-	R	0.27	33.6	C		
		EB	LTR	1.24	130.9	F	LTR	1.67	321.0	F	L	0.49	12.3		
Roosevelt Avenue	WB	-	-	-	-	-	-	-	-	TR	0.69	14.8	B		
		LTR	0.60	12.6	B	LTR	0.85	21.1	C	L	0.72	28.4	C		
	WB	-	-	-	-	-	-	-	-	T	0.58	14.7	B		
		-	-	-	-	-	-	-	-	R	0.70	19.9	B		
Overall Intersection		-	1.20	75.4	E	-	1.58	152.8	F	-	0.79	24.6	C		

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
				Delay				Delay				Delay		
126th Street at Roosevelt Avenue														
126th Street	NB	LTR	0.83	80.5	F	LTR	1.76	437.6	F	DefL	0.60	67.7	E	-Partially Mitigated. -Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb. -Place cones on SB approach to allow for one 12-ft right-turn lane and one 12-ft shared left-through lane during the pre-game peak hour. -Traffic Enforcement Agent should be present to operate the signal. -Modify signal phasing (to be followed by Traffic Enforcement Agent): EB + SB right-turn lead phase will have 16 s green time; EB/WB phase will have 64 s green time; NB/SB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].
		-	-	-	-	-	-	-	-	TR	0.26	42.1	D	
	SB	-	-	-	-	-	-	-	-	LT	1.52	283.4	F	
		LTR	1.15	114.7	F	LTR	2.00	497.3	F	R	1.86	425.0	F	
	EB	DefL	1.19	138.6	F	DefL	2.28	616.6	F	DefL	1.36	215.6	F	
		TR	0.55	12.4	B	TR	0.62	13.8	B	TR	0.58	10.7	B	
	WB	LTR	0.66	13.6	B	LTR	0.83	18.9	B	LTR	0.98	42.5	D	
		Overall Intersection	-	1.18	53.5	D	-	2.20	241.0	F	-	2.08	165.8	
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.32	190.6	F	L	1.55	292.6	F	L	1.21	159.3	F	-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].
		TR	0.83	27.7	C	TR	0.83	27.7	C	TR	0.81	33.2	C	
	-	-	-	-	-	-	-	-	-	-	-	-		
	SB	L	1.22	132.3	F	TR	1.37	200.7	F	T	0.94	51.9	D	
		EB	L	0.49	28.9	C	L	0.52	29.4	C	L	0.50	37.0	
	TR	1.24	132.9	F	TR	1.47	235.6	F	TR	1.36	195.0	F		
		WB	L	0.28	33.4	C	L	0.28	33.4	C	-	-	-	
	TR	0.55	28.3	C	TR	0.65	30.9	C	TR	0.62	43.5	D		
Overall Intersection	-	1.37	96.2	F	-	1.61	150.8	F	-	1.22	87.4	F		
Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.80	41.4	D	LTR	0.80	41.4	D	-Mitigation not required.				
		EB	DefL	0.77	18.3	B	DefL	0.80	20.0					
	TR	0.65	13.1	B	TR	0.74	14.9	B						
	WB	LTR	0.61	13.2	B	LTR	0.68	14.6	B					
		-	-	-	-	-	-	-	-					
Overall Intersection	-	0.78	20.3	C	-	0.80	21.0	C						

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.67	24.3	C	T	0.67	24.3	C	T	0.76	29.5	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].	
	SB	T	0.65	24.1	C	T	0.65	24.1	C	T	0.73	29.1	C		
Roosevelt Avenue	EB	L	0.26	20.4	C	L	0.29	22.2	C	L	0.24	17.5	B		
		TR	0.74	32.7	C	TR	0.91	47.4	D	TR	0.81	33.8	C		
	WB	L	0.07	15.5	B	L	0.08	15.8	B	L	0.07	13.3	B		
		TR	0.85	40.1	D	TR	0.97	56.6	E	TR	0.87	37.7	D		
Overall Intersection		-	0.76	28.8	C	-	0.82	35.7	D	-	0.82	31.7	C		
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.46	17.3	B	TR	0.46	17.3	B					-Unmitigatable impact.	
	SB	LT	1.01	55.9	E	LT	1.01	55.9	E						
Roosevelt Avenue		R	2.65	781.7	F	R	2.65	781.7	F						
	EB	LTR	1.93	450.8	F	LTR	2.23	586.8	F						
	WB	LT	0.57	24.3	C	LT	0.67	27.5	C						
		R	1.27	204.8	F	R	1.27	204.8	F						
Overall Intersection		-	2.31	251.7	F	-	2.45	289.8	F						
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.73	27.4	C	LTR	0.76	29.0	C	LT	0.74	29.4	C	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s]. -Install "No Standing 10AM - 8PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Saturday Non-game peak period.]	
		-	-	-	-	-	-	-	-	R	0.03	15.3	B		
Roosevelt Avenue	SB	LTR	0.74	25.8	C	LTR	0.74	25.8	C	LTR	0.78	28.9	C		
	EB	LTR	0.46	20.0	B	LTR	0.60	23.5	C	LTR	0.57	21.3	C		
	WB	LTR	0.63	24.2	C	LTR	0.73	28.1	C	LTR	0.69	25.0	C		
	Overall Intersection		-	0.68	24.9	C	-	0.75	26.7	C	-	0.73	26.4		C
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.89	56.5	E	L	0.90	59.1	E	L	0.87	51.3	D	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]	
		TR	0.60	21.4	C	TR	0.60	21.4	C	TR	0.59	20.5	C		
Kissena Boulevard	SB	L	0.52	21.3	C	L	0.52	21.3	C	L	0.53	22.3	C		
		TR	0.54	19.6	B	TR	0.54	19.6	B	TR	0.52	18.8	B		
	WB	T	0.66	24.5	C	T	0.66	24.5	C	T	0.67	25.8	C		
	Overall Intersection		-	0.77	24.6	C	-	0.78	24.9	C	-	0.77	24.0		C
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.52	21.8	C	L	0.58	26.0	C					-Mitigation not required.	
		T	0.82	18.0	B	T	0.84	18.7	B						
Sanford Avenue	SB	TR	0.82	18.0	B	TR	0.85	19.3	B						
	WB	L	0.87	54.6	D	L	0.87	54.6	D						
		TR	0.51	29.2	C	TR	0.61	31.3	C						
	Overall Intersection		-	0.84	22.1	C	-	0.86	23.3	C					
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.46	23.6	C	LTR	0.47	23.7	C					-Mitigation not required.	
	SB	LTR	0.92	35.0	C	LTR	0.94	36.5	D						
Sanford Avenue	EB	DefL	0.57	24.1	C	DefL	0.59	25.4	C						
		TR	0.33	15.1	B	TR	0.33	15.1	B						
	WB	LTR	0.74	23.5	C	LTR	0.79	25.3	C						
	Overall Intersection		-	0.82	27.3	C	-	0.86	28.6	C					

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														Mitigation Measure	
INTERSECTION & APPROACH		No Action				With Action				Mitigation					
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Parsons Boulevard at Sanford Avenue															
Parsons Boulevard	NB	LTR	0.85	31.7	C	LTR	0.87	34.0	C						-Mitigation not required.
		-	-	-	-	-	-	-	-						
Sanford Avenue	SB	LTR	0.73	25.8	C	LTR	0.87	34.6	C						
	EB	LTR	0.63	23.4	C	LTR	0.65	24.0	C						
	WB	LTR	0.85	33.0	C	LTR	0.91	38.9	D						
Overall Intersection		-	0.85	28.6	C	-	0.89	33.3	C						
<u>WHITESTONE EXPRESSWAY / 32ND AVENUE</u>															
College Point Boulevard at 32nd Avenue															
College Point Boulevard	NB	T	0.36	23.3	C	T	0.38	23.5	C						-Mitigation not required.
		TR	0.59	26.1	C	TR	0.59	26.1	C						
32nd Avenue	SB	L	0.58	38.1	D	L	0.58	38.1	D						
		T	0.45	11.1	B	T	0.46	11.2	B						
	WB	LTR	0.46	30.1	C	LTR	0.46	30.1	C						
	Overall Intersection		-	1.04	21.9	C	-	1.04	21.9	C					
<u>NORTHERN BOULEVARD SERVICE ROAD</u>															
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard	NB	TR	0.55	13.3	B	TR	0.55	13.4	B	TR	0.56	14.2	B	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]	
	SB	LT	0.91	26.5	C	LT	0.93	28.7	C	LT	0.95	33.0	C		
Northern Blvd Service Rd	WB	LR	0.71	32.9	C	LR	0.87	42.5	D	LR	0.84	38.9	D		
	Overall Intersection		-	0.84	22.0	C	-	0.91	25.2	C	-	0.91	26.5		C
<u>STADIUM ROAD</u>															
Boat Basin Road at Stadium Road															
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.24	17.5	B	-Unmitigatable impact.	
		LTR	0.49	49.3	D	LTR	0.76	53.5	D	TR	0.22	17.0	B		
Stadium Road	SB	-	-	-	-	-	-	-	-	DefL	1.07	88.5	F	-Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 21 s green time; WB lag phase will have 12 s green time; NB/SB phase will have 60 s green time; [each phase will have 3 s amber and 2 s all red time].	
		LTR	0.67	33.0	C	LTR	1.40	210.4	F	TR	1.01	66.2	E		
	EB	-	-	-	-	DefL	1.20	179.1	F	DefL	0.78	56.6	E		
		-	-	-	-	TR	0.45	26.1	C	TR	0.56	38.8	D		
	WB	-	-	-	-	-	-	-	-	-	-	-	-		
		LTR	0.87	29.2	C	LTR	0.94	35.5	D	LTR	0.91	43.1	D		
Overall Intersection		-	0.83	32.9	C	-	1.23	135.6	F	-	1.15	56.5	E		

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
UNSIGNALIZED INTERSECTIONS															
Boat Basin Road at Worlds Fair Marina															
Boat Basin Road	NB	L	-	39.3	E	L	-	700.9	F	L	0.33	30.8	C	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 45 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.	
		R	-	8.7	A	R	-	8.9	A	R	0.10	2.6	A		
Worlds Fair Marina	EB	-	-	-	-	-	-	-	-	TR	0.12	36.8	D		
	WB	LT	-	11.1	B	LT	-	12.9	B	L	0.93	40.1	D		
		-	-	-	-	-	-	-	-	LT	0.74	24.2	C		
Overall Intersection	-	-	-	12.0	B	-	-	428.5	F	-	0.66	30.8	C		
Willets Point Boulevard at Northern Boulevard															
Willets Point Boulevard	NB	TR	-	9.2	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.	
New Van Wyck Expressway Ramp	SB	-	-	-	-	-	-	-	-	T	0.22	8.1	A		
Northern Boulevard Service Road	EB	-	-	-	-	T	-	12.3	B	T	0.04	23.9	C		
Overall Intersection	-	-	-	9.2	A	-	-	12.3	B	-	0.16	8.7	A		
Grand Central Parkway Ramp at West Park Loop/Stadium Road															
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.09	27.6	C	-Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	LT	-	9.4	A	L	0.45	35.2	D		
		-	-	-	-	-	-	-	-	TR	0.69	38.4	D		
Grand Central Parkway Off-Ramp	EB	L	-	34.2	D	L	-	191.9	F	L	0.40	33.1	C		
		-	-	-	-	T	-	520.6	F	T	0.58	37.2	D		
		R	-	9.1	A	R	-	314.1	F	-	-	-	-		
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.70	50.2	D		
		-	-	-	-	R	-	10.3	B	R	0.24	41.5	D		
Overall Intersection	-	-	-	31.5	D	-	-	1000.0+	F	-	0.65	39.6	D		
126th Street at 36th Avenue															
126th Street	NB	-	-	-	-	TR	0.43	17.2	B	TR	0.43	17.2	B	-Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
		LT	-	9.5	A	LT	1.04	51.6	D	LT	0.99	38.0	D		
36th Avenue	WB	LR	-	24.8	C	L	0.13	39.5	D	L	0.13	39.5	D		
		-	-	-	-	R	0.48	32.9	C	R	0.48	32.9	C		
Overall Intersection	-	-	-	17.2	C	-	0.83	40.5	D	-	0.79	31.7	C		
126th Street at 37th Avenue															
126th Street	NB	-	-	-	-	TR	0.34	16.0	B	TR	0.34	16.0	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	-	-	-	-	-	-	-	-		
		LT	-	8.8	A	LT	1.01	44.9	D	LT	0.97	35.8	D		
37th Avenue	WB	LR	-	17.4	C	L	0.10	35.2	D	L	0.10	35.2	D		
		-	-	-	-	R	0.73	45.0	D	R	0.73	45.0	D		
Overall Intersection	-	-	-	14.6	B	-	0.90	38.0	D	-	0.87	32.1	C		
Northern Boulevard at 126th Place															
126th Place	NB	R	-	15.6	C	R	-	18.2	C	R	0.19	40.6	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.	
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.63	10.1	B		
Overall Intersection	-	-	-	15.6	C	-	-	18.2	C	-	0.53	10.9	B		

TABLE 17
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action			With Action			Mitigation			Mitigation Measure			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NEW (WITH ACTION) SIGNALIZED INTERSECTION														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	0.52	22.1	C	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria.				
	SB	-	-	-	-	-	-	-	-					
New Willets Point Boulevard		-	-	-	-	LT	0.72	15.9	B					
	WB	-	-	-	-	L	0.70	50.4	D					
		-	-	-	-	R	0.52	31.9	C					
Overall Intersection		-	-	-	-	-	0.70	23.4	C					

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 18
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Prince Street at Northern Boulevard (RT. 25A)														
Prince Street	NB	LTR	1.13	109.9	F	LTR	1.13	109.9	F	-Unmitigatable Impact.				
	SB	LTR	0.41	38.7	D	LTR	0.41	38.7	D					
Northern Boulevard (Rt. 25A)	EB	L	0.89	66.0	E	L	0.89	66.0	E					
		T	1.03	51.1	D	T	1.10	80.0	E					
	WB	L	0.90	89.7	F	L	0.90	89.7	F					
		T	0.98	49.4	D	T	1.02	59.5	E					
Northern Boulevard Service Rd.	EB	TR	0.45	21.8	C	TR	0.45	21.8	C					
	WB	TR	0.54	29.1	C	TR	0.67	33.1	C					
	-	-	-	-	-	-	-	-	-					
Overall Intersection		-	1.04	52.1	D	-	1.08	67.1	E					
Main Street at Northern Boulevard (RT. 25A)														
Main Street	NB	L	0.85	47.9	D	L	0.85	47.9	D	-Unmitigatable impact.				
		R	0.74	42.2	D	R	0.74	42.2	D					
Northern Boulevard (Rt 25A)	EB	T	1.05	64.2	E	T	1.14	99.7	F					
		R	1.18	124.2	F	R	1.18	124.2	F					
	WB	L	0.12	25.9	C	L	0.12	25.9	C					
		T	0.70	21.1	C	T	0.76	22.8	C					
Overall Intersection		-	0.98	54.6	D	-	0.98	68.8	E					
Union Street at Northern Boulevard (RT. 25A)														
Union Street	NB	TR	0.66	34.8	C	TR	0.66	34.8	C	TR	0.68	35.9	D	-Partially Mitigated.
	SB	TR	0.68	34.8	C	TR	0.68	34.8	C	TR	0.70	35.9	D	
Northern Boulevard (Rt. 25A)	EB	L	0.74	34.3	C	L	0.74	36.0	D	L	0.71	29.6	C	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.
		TR	1.24	145.9	F	TR	1.34	189.3	F	TR	1.34	189.3	F	
	WB	L	1.00	69.1	E	L	1.00	83.5	F	L	0.96	71.1	E	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB left-turn phase [NB/SB green time shifts from 44 s to 43 s; EB/WB left-turn green time shifts from 15 s to 16 s].
		TR	0.85	38.9	D	TR	0.94	46.4	D	TR	0.70	33.3	C	
Overall Intersection		-	0.97	80.4	F	-	0.97	101.2	F	-	1.02	97.0	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)														
Parsons Boulevard	NB	L	0.74	57.2	E	L	0.76	59.1	E	L	0.76	59.1	E	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	0.59	38.4	D	TR	0.59	38.4	D	TR	0.59	38.4	D	
	SB	LTR	1.13	100.4	F	LTR	1.17	119.2	F	LT	0.71	35.8	D	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	R	0.34	33.1	C	
Northern Boulevard (Rt. 25A)	EB	L	0.45	43.5	D	L	0.52	46.0	D	L	0.52	44.8	D	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	1.15	102.7	F	TR	1.26	153.0	F	T	1.06	61.2	E	
		-	-	-	-	-	-	-	-	R	0.43	24.1	C	
	WB	L	0.52	46.2	D	L	0.51	43.6	D	L	0.52	46.7	D	
		TR	1.12	91.0	F	TR	1.23	139.8	F	T	1.02	49.5	D	
		-	-	-	-	-	-	-	-	R	0.33	22.8	C	
Overall Intersection		-	1.09	88.3	F	-	1.16	127.3	F	-	0.92	50.3	D	
34TH AVENUE														
114th Street at 34th Avenue														
114th Street	SB	L	1.17	117.3	F	L	1.23	142.7	F	L	1.13	95.4	F	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].
		T	0.35	25.1	C	T	0.42	26.0	C	T	0.38	23.3	C	
34th Avenue	EB	T	0.45	12.2	B	T	0.45	12.2	B	T	0.47	14.3	B	
		R	0.06	8.4	A	R	0.06	8.4	A	R	0.06	9.8	A	
Overall Intersection		-	0.72	68.3	E	-	0.74	81.8	F	-	0.74	57.6	E	

TABLE 18
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	DefL	0.89	69.2	E	-	-	-	-	L	0.87	55.3	E	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 43 s green time [each phase will have 3 s amber and 2 s all red time].
		TR	0.68	39.5	D	LTR	2.32	636.5	F	TR	1.32	187.3	F	
Northern Boulevard Ramp	SB	LTR	0.26	32.5	C	-	-	-	-	-	-	-		
		LTR	0.65	47.7	D	LTR	2.17	577.3	F	L	0.65	47.0	D	
GCP Ramp	SB	-	-	-	-	-	-	-	T	0.37	29.4	C		
		DefL	1.83	419.6	F	DefL	2.84	876.3	F	DefL	1.32	184.8	F	
Shea Road	EB	TR	0.97	70.0	E	TR	0.92	59.5	E	TR	0.41	22.7	C	
		-	-	-	-	-	-	-	-	-	-	-		
34th Avenue	WB	LTR	0.56	40.3	D	LTR	1.27	186.3	F	TR	0.36	22.0	C	
		Overall Intersection	-	1.17	125.9	F	-	2.69	602.8	F	-	1.30	125.2	
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.16	118.2	F	LTR	1.20	135.5	F	LT	1.14	113.1	F	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
		-	-	-	-	-	-	-	R	0.29	36.7	D		
Roosevelt Avenue	SB	LTR	1.21	140.7	F	LTR	1.22	146.1	F	LT	1.11	100.6	F	
		-	-	-	-	-	-	-	R	0.36	37.5	D		
Roosevelt Avenue	EB	LTR	0.64	14.9	B	LTR	0.75	18.4	B	LTR	0.74	18.1	B	
		WB	LTR	0.92	19.7	B	LTR	1.09	64.8	E	LTR	1.03	38.5	D
Overall Intersection	-	0.99	57.1	E	-	1.12	75.8	E	-	1.06	50.3	D		
111th Street at Roosevelt Avenue														
111th Street	NB	LTR	1.06	78.8	E	LTR	1.06	78.8	E	LTR	1.06	78.8	E	-Install "No Standing 10 AM - 10 PM" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.
		EB	LTR	0.74	17.8	B	LTR	0.87	24.9	C	LTR	0.92	30.9	
Roosevelt Avenue	WB	LTR	1.23	124.7	F	LTR	1.40	199.9	F	LT	1.08	59.5	E	
		-	-	-	-	-	-	-	R	0.24	8.1	A		
Overall Intersection	-	1.18	80.2	F	-	1.31	117.2	F	-	1.08	50.0	D		
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	0.67	45.8	D	LTR	0.72	48.8	D	LTR	0.50	36.0	D	-Partially mitigated. -Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. -Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 4 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].
		SB	LTR	1.11	95.2	F	LTR	1.23	148.0	F	LTR	1.04	65.7	
Roosevelt Avenue	EB	-	-	-	-	-	-	-	-	-	-	-		
		LTR	1.29	154.7	F	LTR	1.82	389.8	F	L	0.59	14.4	B	
Roosevelt Avenue	WB	-	-	-	-	-	-	-	TR	0.59	13.3	B		
		LTR	0.79	17.0	B	LTR	1.25	137.2	F	L	0.52	16.2	B	
Overall Intersection	-	-	-	-	-	-	-	-	T	0.73	18.0	B		
		-	-	-	-	-	-	-	R	1.65	322.7	F		

TABLE 18
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	
126th Street at Roosevelt Avenue														
126th Street	NB	LTR	0.22	37.4	D	LTR	0.24	38.1	D	DefL	0.26	40.2	D	-Partially Mitigated.
		-	-	-	-	-	-	-	-	TR	0.11	32.6	C	-Restripe NB approach from one wide 25-ft lane to two 12-ft wide lanes with a 1-ft buffer at the east curb.
Roosevelt Avenue	SB	DefL	1.25	163.9	F	DefL	0.89	57.2	D	-	-	-	-	-Place cones on EB approach to allow for one left-turn lane and one shared through-right lane during the post-game peak hour.
		TR	0.51	30.2	C	TR	0.81	43.5	D	LTR	1.23	158.2	F	-Traffic Enforcement Agent should be present to operate the signal.
	EB	-	-	-	-	DefL	3.00+	1000.0+	F	L	3.00+	1000.0+	F	-Modify signal phasing (to be followed by Traffic Enforcement Agent): EB lead phase will have 19 s green time; EB/WB phase will have 52 s green time; NB/SB phase will have 34 s green time [each phase will have 3 s amber and 2 s all red time].
		LTR	0.61	22.8	C	TR	1.06	75.7	E	TR	0.90	30.2	C	
	WB	LTR	0.50	20.1	C	LTR	0.74	26.5	C	LTR	0.90	43.4	D	
Overall Intersection		-	0.89	55.2	E	-	3.00+	996.9	F	-	3.00+	359.7	F	
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.04	91.6	F	L	1.32	194.3	F	L	0.84	63.4	E	-Partially Mitigated
		TR	0.78	26.0	C	TR	0.78	26.0	C	TR	0.75	31.5	C	-Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.
Roosevelt Avenue		-	-	-	-	-	-	-	-	-	-	-	-	-Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.
	SB	TR	0.89	39.8	D	TR	1.03	65.9	E	T	0.69	43.7	D	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.
	EB	L	0.58	30.5	C	L	0.64	31.6	C	L	0.62	39.7	D	-Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.
		TR	1.24	129.6	F	TR	1.44	222.7	F	TR	1.38	199.1	F	-Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes.
	WB	L	0.24	32.8	C	L	0.24	32.8	C	-	-	-	-	-Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.
		TR	0.42	25.8	C	TR	0.51	27.4	C	TR	0.50	41.1	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.
Overall Intersection		-	1.14	60.9	E	-	1.40	102.8	F	-	1.08	84.5	F	-Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.
Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.72	37.1	D	LTR	0.72	37.1	D					-Mitigation not required.
	EB	DefL	0.77	18.7	B	-	-	-	-					
Roosevelt Avenue		TR	0.83	18.2	B	LTR	0.82	16.3	B					
	WB	LTR	0.60	12.3	B	LTR	0.68	13.9	B					
	-	-	-	-	-	-	-	-	-					
Overall Intersection		-	0.79	20.3	C	-	0.79	19.2	B					

TABLE 18
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.67	24.3	C	T	0.67	24.3	C	T	0.76	29.5	C	-Partially mitigated. -Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].	
	SB	T	0.55	22.3	C	T	0.55	22.3	C	T	0.62	26.4	C		
	Roosevelt Avenue	EB	L	0.26	19.4	B	L	0.29	20.6	C	L	0.24	16.6		B
		TR	0.95	49.7	D	TR	1.12	97.9	F	TR	1.02	60.9	E		
		WB	L	0.20	17.3	B	L	0.26	19.3	B	L	0.21	15.3		B
		TR	0.86	36.2	D	TR	0.95	47.9	D	TR	0.85	32.5	C		
Overall Intersection	-	0.82	31.8	C	-	0.90	47.5	D	-	0.90	37.1	D			
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.45	17.3	B	TR	0.45	17.3	B					-Unmitigatable impact.	
	SB	LT	1.21	127.2	F	LT	1.21	127.2	F						
	R	1.90	439.9	F	R	1.90	439.9	F							
	Roosevelt Avenue	EB	LTR	1.97	469.0	F	LTR	2.29	608.9	F					
		WB	LT	0.74	31.0	C	LT	0.84	38.4	D					
		R	1.49	293.1	F	R	1.49	293.1	F						
Overall Intersection		-	1.93	224.5	F	-	2.08	269.2	F						
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.95	41.6	D	LTR	0.97	46.2	D	LT	0.91	37.5	D	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s]. -Install "No Standing 10AM - 8PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Saturday Non-game peak period.]	
	-	-	-	-	-	-	-	-	-	R	0.08	15.7	B		
	SB	LTR	0.77	26.9	C	LTR	0.77	26.9	C	LTR	0.89	38.0	D		
	Roosevelt Avenue	EB	LTR	0.71	26.3	C	LTR	0.88	37.9	D	LTR	0.84	32.2		C
		WB	LTR	0.74	28.1	C	LTR	0.84	34.7	C	LTR	0.80	29.5		C
		Overall Intersection	-	0.84	31.1	C	-	0.93	36.6	D	-	0.73	34.0		C
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.68	31.6	C	L	0.70	32.7	C	L	0.68	30.2	C	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]	
	TR	0.67	22.8	C	TR	0.67	22.8	C	TR	0.66	21.8	C			
	SB	L	0.44	19.7	B	L	0.44	19.7	B	L	0.45	20.6	C		
	TR	0.48	18.8	B	TR	0.48	18.8	B	TR	0.47	18.1	B			
	Kissena Boulevard	WB	T	0.65	24.4	C	T	0.65	24.4	C	T	0.67	25.7		C
		Overall Intersection	-	0.67	22.1	C	-	0.68	22.2	C	-	0.67	21.8		C
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.24	12.9	B	L	0.27	14.4	B					-Mitigation not required.	
	T	0.56	12.6	B	T	0.58	12.8	B							
	SB	TR	0.80	17.2	B	TR	0.84	18.6	B						
	Sanford Avenue	WB	L	0.58	34.6	C	L	0.58	34.6	C					
		TR	0.34	26.5	C	TR	0.42	27.8	C						
		Overall Intersection	-	0.73	17.5	B	-	0.75	18.5	B					
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.42	22.2	C	LTR	0.42	22.2	C					-Mitigation not required.	
	SB	LTR	0.81	29.6	C	LTR	0.82	30.2	C						
	EB	-	-	-	-	-	-	-	-						
	Sanford Avenue	LTR	0.24	13.7	B	LTR	0.24	13.8	B						
		WB	LTR	0.70	22.3	C	LTR	0.73	23.6	C					
		Overall Intersection	-	0.75	23.8	C	-	0.77	24.5	C					

TABLE 18
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div><div></div><div></div></div>														
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.92	35.9	D	LTR	0.94	39.2	D					-Mitigation not required.
		-	-	-	-	-	-	-	-					
Sanford Avenue	SB	LTR	0.74	26.1	C	LTR	0.88	35.8	D					
	EB	LTR	0.81	29.8	C	LTR	0.82	30.7	C					
	WB	LTR	0.82	31.5	C	LTR	0.86	35.1	D					
Overall Intersection		-	0.87	30.8	C	-	0.90	35.2	D					
<u>WHITESTONE EXPRESSWAY / 32ND AVENUE</u>														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.44	24.0	C	T	0.46	24.2	C					-Mitigation not required.
		TR	0.35	22.9	C	TR	0.36	23.1	C					
32nd Avenue	SB	L	0.28	27.7	C	L	0.28	27.8	C					
		T	0.30	9.6	A	T	0.30	9.6	A					
	WB	LTR	0.30	26.8	C	LTR	0.30	26.8	C					
Overall Intersection		-	0.86	19.5	B	-	0.86	19.7	B					
<u>NORTHERN BOULEVARD SERVICE ROAD</u>														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.51	12.8	B	TR	0.53	13.1	B	TR	0.54	13.8	B	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 50 s; WB green time shifts from 29 s to 30 s]. [Measures reflect improvements needed for the Saturday Non-game peak period.]
	SB	LT	0.55	14.0	B	LT	0.57	14.3	B	LT	0.58	15.2	B	
Northern Blvd Service Rd	WB	LR	0.56	29.0	C	LR	0.70	33.2	C	LR	0.67	31.5	C	
Overall Intersection		-	0.55	15.8	B	-	0.61	17.3	B	-	0.62	17.6	B	
<u>STADIUM ROAD</u>														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	L	1.82	401.9	F	DefL	1.29	220.0	F	DefL	0.63	39.2	D	-Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 22 s green time; EB/WB phase will have 25 s green time; WB lag phase will have 11 s green time; NB/SB phase will have 42 s green time; [each phase will have 3 s amber and 2 s all red time].
		TR	1.42	218.7	F	TR	0.28	19.7	B	TR	0.31	28.7	C	
Stadium Road	SB	-	-	-	-	-	-	-	-	-	-	-	-	
		LTR	0.30	20.1	C	LTR	1.00	55.7	E	LTR	0.82	42.6	D	
	EB	-	-	-	-	DefL	2.84	867.4	F	DefL	1.26	170.7	F	
		-	-	-	-	TR	0.53	17.5	B	TR	0.62	27.7	C	
WB		-	-	-	-	-	-	-	-	-	-	-	-	
	LTR	0.31	13.7	B	LTR	0.77	21.8	C	LTR	0.87	43.9	D		
Overall Intersection		-	0.97	238.6	F	-	2.17	159.5	F	-	1.53	61.6	E	

TABLE 18
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	95.0	F	L	-	1000.0+	F	L	0.69	38.1	D	-Install traffic signal with the following timing plan: EB will have 10 s green time; WB + NB-Right will have 45 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	13.2	B	R	-	10.7	B	R	0.32	3.8	A	
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.12	36.8	D	
		WB	LT	-	7.7	A	LT	-	8.9	A	L	0.42	15.8	
		-	-	-	-	-	-	-	LT	0.86	30.8	C		
Overall Intersection		-	-	50.1	F	-	-	1000.0+	F	-	0.71	25.2	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.1	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.
	New Van Wyck Expressway Ramp	SB	-	-	-	-	-	-	-	T	0.19	7.9	A	
	Northern Boulevard Service Road	EB	-	-	-	-	T	-	49.4	E	T	0.69	37.5	
Overall Intersection		-	-	9.1	A	-	-	49.4	E	-	0.35	21.8	C	
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.52	27.5	C	-Install traffic signal with the following timing plan: EB will have 30 s green time; WB will have 25 s green time; NB/SB will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	LT	-	13.0	B	L	0.65	43.4	D	
		-	-	-	-	-	-	-	-	TR	0.54	28.2	C	
Grand Central Parkway Off-Ramp	EB	L	-	51.0	F	L	-	179.9	F	L	0.44	41.4	D	
		-	-	-	-	T	-	701.8	F	T	0.52	43.2	D	
		R	-	22.5	C	R	-	11.5	B	-	-	-	-	
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.76	53.0	D	
		-	-	-	-	R	-	13.3	B	R	0.23	41.3	D	
Overall Intersection		-	-	40.1	E	-	-	1000.0+	F	-	0.64	36.6	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.94	34.0	C	TR	0.94	34.0	C	-Partially mitigated. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.68	50.5	D	DefL	0.56	38.7	D	
		LT	-	8.4	A	T	0.52	9.8	A	T	0.51	9.5	A	
36th Avenue	WB	LR	-	13.2	B	L	0.11	39.2	D	L	0.11	39.2	D	
		-	-	-	-	R	0.85	59.3	E	R	0.85	59.3	E	
Overall Intersection		-	-	12.9	B	-	1.08	32.0	C	-	1.06	31.5	C	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	1.08	72.8	E	TR	1.08	72.8	E	-Partially mitigated. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.68	51.0	D	DefL	0.56	39.8	D	
		LT	-	8.4	A	T	0.46	11.0	B	T	0.46	11.0	B	
37th Avenue	WB	LR	-	16.8	C	L	0.18	36.4	D	L	0.18	36.4	D	
		-	-	-	-	R	0.35	29.8	C	R	0.35	29.8	C	
Overall Intersection		-	-	15.6	C	-	1.07	56.8	E	-	1.07	56.4	E	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	16.4	C	R	-	19.5	C	R	0.19	40.5	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	-	TR	0.59	9.5	A	
Overall Intersection		-	-	16.4	C	-	-	19.5	C	-	0.50	10.3	B	

TABLE 18
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2028 PHASE 1B SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
NEW (WITH ACTION) SIGNALIZED INTERSECTION															
126th Street at New Willets Point Boulevard															
126th Street	NB	-	-	-	-	TR	0.96	44.6	D	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria.					
	SB	-	-	-	-	DefL	0.54	35.0	D						
		-	-	-	-	T	0.46	11.0	B						
New Willets Point Boulevard	WB	-	-	-	-	L	0.40	40.4	D						
		-	-	-	-	R	0.36	27.0	C						
Overall Intersection		-	-	-	-	-	1.02	35.6	D						

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

-Mitigation not required.
-Intersection meets NYCDOT Signal Warrant Criteria.

TABLE 19
2032 (PHASE 2) NON-GAMEDAY MITIGATION MEASURES

[illegible]

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS															
ASTORIA BOULEVARD															
108th Street at Astoria Boulevard															
108th Street	NB	DefL	0.79	62.6	E	DefL	0.83	66.7	E	DefL	0.80	61.7	E	-Modify Signal Timing: Shift 1 s of green time from WB lead phase to NB/SB phase [WB lead phase green time shifts from 18 s to 17 s; NB/SB green time shifts from 32 s to 33 s].	
		T	0.21	35.6	D	T	0.21	35.6	D	T	0.21	34.7	C		
SB	LTR	0.36	38.5	D	LTR	0.36	38.5	D	LTR	0.35	37.5	D			
	EB	TR	0.61	25.8	C	TR	0.68	27.3	C	TR	0.68	27.3	C		
Astoria Boulevard	-	-	-	-	-	-	-	-	-	-	-	-			
	WB	L	0.58	15.3	B	L	0.62	17.7	B	L	0.65	18.8	B		
		TR	0.79	8.2	A	TR	0.82	8.8	A	TR	0.83	9.7	A		
Overall Intersection		-	0.79	18.2	B	-	0.82	19.4	B	-	0.82	19.7	B		
NORTHERN BOULEVARD															
108th Street at Northern Boulevard (RT. 25A)															
108th Street	NB	LTR	1.17	125.6	F	LTR	1.26	165.1	F	L	0.58	44.5	D		-Partially Mitigated. -Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Modify Signal Timing: Shift 2 s of green time from EB/WB left-turn phase EB/WB phase [EB/WB left-turn green time shifts from 9 s to 7 s; EB/WB green time shifts from 71 s to 73 s].
		-	-	-	-	-	-	-	-	TR	0.62	42.7	D		
SB	LTR	1.00	85.5	F	LTR	1.00	86.6	F	L	0.31	42.8	D			
	-	-	-	-	-	-	-	-	TR	0.64	48.1	D			
Northern Boulevard (Rt. 25A)	EB	L	0.08	23.2	C	L	0.08	29.6	C	L	0.09	26.6	C		
		TR	0.77	21.0	C	TR	0.90	28.4	C	TR	0.88	25.2	C		
	-	-	-	-	-	-	-	-	-	-	-	-			
WB	L	0.45	22.1	C	L	0.53	32.6	C	L	0.56	32.1	C			
	TR	1.06	43.2	D	TR	1.13	75.0	E	TR	1.10	59.8	E			
-	-	-	-	-	-	-	-	-	-	-	-	-			
Overall Intersection		-	0.95	43.8	D	-	1.05	65.8	E	-	0.89	47.2	D		
114th Street at Northern Boulevard (RT. 25A)															
114th Street	SB	LTR	0.48	47.9	D	LTR	0.51	48.8	D	LTR	0.64	44.0	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Place and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 7 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 30 s]. Shift 34 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 46 s to 80 s].	
		EB	T	0.88	41.7	D	T	1.08	84.8	F	T	0.62	12.4		B
Northern Boulevard (Rt. 25A)	R	0.75	38.9	D	R	0.76	39.5	D	R	0.44	10.5	B			
	WB	DefL	0.50	16.0	B	DefL	0.57	26.3	C	-	-	-	-		
T		1.20	107.2	F	T	1.28	144.2	F	T	1.07	51.3	D			
Overall Intersection		-	1.32	78.8	E	-	1.41	110.6	F	-	0.95	38.6	D		
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.28	41.2	D	L	1.09	112.5	F	L	1.09	112.5	F		-Partially mitigated. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 2 s of green time from EB Northern Blvd phase to EB GCP/Astoria Blvd Ramp phase [EB GCP/Astoria Blvd Ramp green time shifts from 45 s to 47 s; EB Northern Blvd green time shifts from 35 s to 33 s].
		R	0.27	41.3	D	R	2.21	622.0	F	R	0.49	45.5	D		
Northern Boulevard	EB	T	0.54	38.3	D	T	0.62	40.2	D	T	0.76	45.0	D		
	WB	T	0.66	11.0	B	T	0.72	12.2	B	T	0.72	12.2	B		
Grand Central Parkway Ramp	EB	T	0.84	42.4	D	T	0.93	51.4	D	T	0.89	45.1	D		
	WB	T	1.13	115.7	F	T	1.48	265.0	F	-	-	-	-		
Overall Intersection		-	0.94	53.2	D	-	1.64	133.6	F	-	0.90	44.0	D		

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

												No Action		With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH			Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS									
Prince Street at Northern Boulevard (RT. 25A)																							
Prince Street			NB	LTR	1.17	140.0	F	LTR	1.17	140.0	F							-Unmitigatable impact.					
			SB	LTR	0.81	54.1	D	LTR	0.81	54.1	D												
Northern Boulevard (Rt. 25A)			EB	L	0.97	96.9	F	L	0.97	96.9	F												
			WB	L	0.82	22.8	C	T	0.87	25.2	C												
			WB	L	0.96	94.1	F	L	0.96	94.1	F												
				T	1.17	100.6	F	T	1.22	120.8	F												
Northern Boulevard Service Rd.			EB	TR	0.45	16.7	B	TR	0.45	16.7	B												
			WB	TR	0.67	19.3	B	TR	0.86	26.4	C												
			-	-	-	-	-	-	-	-	-												
Overall Intersection			-	1.13	64.9	E	-	1.16	73.3	E													
Main Street at Northern Boulevard (RT. 25A)																							
Main Street			NB	L	0.78	43.8	D	L	0.78	43.8	D							-Unmitigatable impact.					
				R	0.86	56.1	E	R	0.86	56.1	E												
Northern Boulevard (Rt. 25A)			EB	T	0.95	40.7	D	T	1.02	55.7	E												
				R	1.18	128.3	F	R	1.18	128.3	F												
			WB	L	0.17	26.5	C	L	0.17	26.5	C												
				T	1.06	48.5	D	T	1.15	86.7	F												
Overall Intersection			-	1.02	53.3	D	-	1.02	73.9	E													
Union Street at Northern Boulevard (RT. 25A)																							
Union Street			NB	TR	0.68	35.2	D	TR	0.68	35.2	D							-Unmitigatable impact. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.					
			SB	TR	0.90	43.3	D	TR	0.92	44.8	D												
Northern Boulevard (Rt. 25A)			EB	L	0.97	68.6	E	L	0.97	69.1	E												
				TR	1.24	145.7	F	TR	1.33	188.3	F												
			WB	L	1.03	79.7	E	L	1.02	78.9	E												
				TR	0.97	40.7	D	TR	1.06	67.3	E												
Overall Intersection			-	1.13	74.6	E	-	1.13	98.4	F													
Parsons Boulevard at Northern Boulevard (RT. 25A)																							
Parsons Boulevard			NB	L	0.97	95.3	F	L	1.00	104.0	F	L	0.96	91.6	F	-Partially mitigated. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 2 s green time from EB/WB protected left-turn phase to EB/WB phase; shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [EB/WB protected left-turn green time shifts from 12 s to 10 s; EB/WB green time shifts from 50 s to 52 s NB/SB green time shifts from 36 s to 37 s; LPI shifts from 7 s to 6 s].							
				TR	0.57	39.9	D	TR	0.57	39.9	D	TR	0.55	38.7	D								
			SB	LTR	0.83	48.1	D	LTR	0.87	51.1	D	LTR	0.84	47.5	D								
			-	-	-	-	-	-	-	-	-	-	-	-									
Northern Boulevard (Rt. 25A)			EB	L	0.54	45.6	D	L	0.57	47.7	D	L	0.63	49.9	D								
				TR	1.04	64.3	E	TR	1.17	115.0	F	T	0.89	35.1	D								
			-	-	-	-	-	-	-	-	R	0.38	24.1	C									
			WB	L	0.44	37.1	D	L	0.47	41.9	D	L	0.46	36.7	D								
				TR	1.13	91.8	F	TR	1.23	135.4	F	TR	1.18	112.0	F								
			-	-	-	-	-	-	-	-	-	-	-	-									
Overall Intersection			-	1.03	73.4	E	-	1.07	108.6	F	-	1.05	74.6	E									
34TH AVENUE																							
114th Street at 34th Avenue																							
114th Street			SB	L	0.85	39.3	D	L	0.87	41.3	D							-Mitigation not required.					
				T	0.32	24.6	C	T	0.35	25.0	C												
34th Avenue			EB	T	0.43	12.0	B	T	0.43	12.0	B												
				R	0.11	8.8	A	R	0.14	9.0	A												
Overall Intersection			-	0.58	24.0	C	-	0.58	24.6	C													

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	DefL	0.59	33.6	C	L	0.42	25.4	C	-Partially mitigated -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 56 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 42 s green time [each phase will have 3 s amber and 2 s all red time].	
Northern Boulevard Ramp	LTR	0.17	19.9	B	TR	0.46	24.3	C	TR	0.54	33.8	C			
	SB	LTR	0.33	22.5	C	LTR	0.68	32.1	C	-	-	-	-		
GCP Ramp	SB	LTR	0.83	66.1	E	LTR	3.00+	1000.0+	F	L	0.92	76.5	E		
Shea Road	-	-	-	-	-	-	-	-	-	T	0.48	31.9	C		
	EB	-	-	-	-	-	-	-	-	-	-	-	-		
34th Avenue	LTR	0.48	43.4	D	LTR	2.46	712.5	F	LTR	0.78	32.8	C			
	WB	-	-	-	-	-	-	-	-	DefL	0.98	79.5	E		
	LTR	0.67	55.9	E	LTR	3.00+	1000.0+	F	TR	0.99	65.5	E			
	Overall Intersection	-	0.53	40.7	D	-	3.00+	1000.0+	F	-	0.95	45.7	D		
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.04	83.4	F	LTR	1.08	97.3	F	LT	0.87	53.7	D		-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
	-	-	-	-	-	-	-	-	-	R	0.22	36.3	D		
	SB	LTR	1.12	108.7	F	LTR	1.13	116.0	F	LT	0.91	56.6	E		
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.30	37.2	D		
	EB	LTR	0.69	16.3	B	LTR	0.82	22.6	C	LTR	0.82	22.6	C		
WB	LTR	0.83	10.8	B	LTR	0.96	21.3	C	LTR	0.96	21.3	C			
Overall Intersection	-	0.91	39.2	D	-	1.00	45.8	D	-	0.94	30.2	C			
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	1.02	73.8	E	LTR	1.02	73.8	E	LTR	1.02	73.8	E	-Install "No Standing 7 AM - 4 PM Mon - Fri" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.	
Roosevelt Avenue	EB	LTR	0.67	15.6	B	LTR	0.81	21.0	C	LTR	0.80	20.9	C		
	WB	LTR	0.94	20.2	C	LTR	1.07	51.9	D	LT	0.91	15.6	B		
	-	-	-	-	-	-	-	-	-	R	0.08	7.2	A		
	Overall Intersection	-	0.96	29.2	C	-	1.05	44.2	D	-	0.94	27.5	C		
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	1.04	79.3	E	LTR	1.08	94.1	F	LTR	0.72	41.3	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s].	
	SB	LTR	1.15	121.3	F	LTR	1.44	246.0	F	LTR	1.11	103.7	F		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
Roosevelt Avenue	EB	LTR	0.83	23.4	C	LTR	1.01	52.9	D	L	0.23	10.1	B		
	-	-	-	-	-	-	-	-	-	TR	0.64	15.6	B		
	WB	LTR	0.57	5.5	A	LTR	0.70	7.2	A	L	0.76	28.6	C		
	-	-	-	-	-	-	-	-	-	T	0.64	8.7	A		
	-	-	-	-	-	-	-	-	-	R	0.23	9.6	A		
	Overall Intersection	-	0.92	33.3	C	-	1.13	55.5	E	-	0.87	26.2	C		

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue														
126th Street	NB	-	-	-	-	-	-	-	L	0.21	35.9	D	-Partially mitigated.	
	LTR	0.22	37.1	D	LTR	3.00+	1000.0+	F	TR	0.10	31.2	C	-Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes.	
	SB	DefL	1.23	175.4	F	-	-	-	L	1.20	155.2	F	-Shift centerline of SB 126th Street approach 9 ft to the east.	
	TR	0.67	52.7	D	LTR	3.00+	1000.0+	F	T	0.88	59.3	E	-Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft.	
Roosevelt Avenue	-	-	-	-	-	-	-	-	R	0.58	33.2	C	-Shift centerline of EB Roosevelt Avenue approach 1 ft to north.	
	EB	-	-	-	DefL	1.13	117.7	F	DefL	0.73	44.2	D	-Shift centerline of WB Roosevelt Avenue approach 1 ft to south.	
	LTR	0.57	12.6	B	TR	0.62	14.1	B	TR	0.57	15.3	B	-Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes.	
	WB	LTR	0.63	6.2	A	LTR	1.05	45.3	D	LTR	1.04	58.0	E	-Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes.
Overall Intersection	-	0.77	34.5	C	-	1.86	479.4	F	-	1.54	86.7	F	-Modify signal phasing and timing plan: EB/WB will have 63 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 35 s green time [each phase will have 3 s amber and 2 s all red time].	
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.43	252.6	F	L	1.79	410.8	F	L	1.37	228.7	F	-Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.
	TR	0.74	27.7	C	TR	0.74	27.7	C	TR	0.83	36.4	D	-Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
	SB	TR	0.86	43.8	D	TR	1.06	81.2	F	T	0.80	48.7	D	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.
	EB	L	0.44	40.0	D	L	0.49	41.3	D	L	0.44	36.5	D	-Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.
	TR	0.99	61.8	E	TR	1.19	132.2	F	TR	1.01	62.8	E	-Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes.	
	WB	L	0.23	45.3	D	L	0.23	45.3	D	-	-	-	-	-
	TR	0.69	44.8	D	TR	0.81	51.0	D	TR	0.53	38.5	D	-Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.	
Overall Intersection	-	1.10	69.3	E	-	1.37	118.0	F	-	1.02	71.7	E	-Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.	
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.
	-	-	-	-	-	-	-	-	-	-	-	-	-	-Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.
	-	-	-	-	-	-	-	-	-	-	-	-	-	-Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue.
	-	-	-	-	-	-	-	-	-	-	-	-	-	-Modify signal phasing and timing plan: EB/WB will have 33 s green time; EB-lag phase will have 20 s green time; NB lead-phase will have 18 s green time; NB/SB phase will have 29 s green time [each phase will have 3 s amber and 2 s all red time].
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection	-	0.96	67.7	E	-	1.01	77.2	E	-	0.98	62.3	E	-	
Prince Street at Roosevelt Avenue														
Prince Street	SB	LTR	0.52	31.1	C	LTR	0.52	31.1	C	LTR	0.56	34.3	C	-Modify Signal Timing: Shift 3 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 66 s; SB green time shifts from 47 s to 44 s].
	EB	DefL	1.30	180.6	F	DefL	1.37	211.9	F	DefL	1.27	167.7	F	-
	TR	0.59	23.3	C	TR	0.67	25.8	C	TR	0.64	22.8	C	-	
	WB	LTR	0.91	34.7	C	LTR	0.99	47.4	D	LTR	0.94	36.0	D	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection	-	0.96	67.7	E	-	1.01	77.2	E	-	0.98	62.3	E	-	

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.60	22.4	C	T	0.60	22.4	C	T	0.64	25.8	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 49 s; NB/SB green time shifts from 65 s to 61 s].	
	SB	T	0.45	19.8	B	T	0.45	19.8	B	T	0.49	22.7	C		
	Roosevelt Avenue	EB	L	0.44	46.6	D	L	0.47	50.3	D	L	0.43	43.3		D
		TR	0.57	36.4	D	TR	0.70	41.3	D	TR	0.64	35.7	D		
		WB	L	0.12	25.7	C	L	0.14	26.1	C	L	0.12	23.1		C
		TR	1.01	69.5	E	TR	1.11	101.5	F	TR	1.02	68.7	E		
Overall Intersection	-	0.77	37.1	D	-	0.81	48.0	D	-	0.81	39.3	D			
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.61	20.1	C	TR	0.61	20.1	C					-Unmitigatable impact.	
	SB	LT	1.10	80.0	E	LT	1.10	80.0	F						
	Roosevelt Avenue	R	0.85	35.8	D	R	0.85	35.8	D						
		EB	LTR	1.43	231.1	F	LTR	1.75	372.1	F					
		WB	LT	1.01	53.8	D	LT	1.12	93.7	F					
		R	1.13	111.6	F	R	1.13	111.6	F						
Overall Intersection	-	1.25	83.9	F	-	1.40	121.8	F							
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	1.15	104.8	F	LTR	1.17	112.0	F	LT	1.14	102.5	F	-Modify Signal Timing: Shift 4 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 59 s; NB/SB green time shifts from 55 s to 51 s]. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	
	-	-	-	-	-	-	-	-	-	R	0.09	20.7	C		
	SB	LTR	0.82	35.1	D	LTR	0.82	35.1	D	LTR	0.9	44.5	D		
	EB	LTR	0.50	26.0	C	LTR	0.58	28.4	C	LTR	0.54	24.5	C		
	WB	LTR	1.17	112.5	F	LTR	1.28	161.7	F	LTR	1.17	111.6	F		
	Overall Intersection	-	1.16	76.1	E	-	1.23	94.0	F	-	1.16	75.7	E		
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.75	34.6	C	L	0.78	36.7	D					-Mitigation not required.	
	TR	0.70	25.4	C	TR	0.70	25.4	C							
	SB	L	0.66	38.7	D	L	0.66	38.7	D						
	TR	0.39	18.4	B	TR	0.39	18.4	B							
	Kissena Boulevard	WB	T	0.74	38.9	D	T	0.74	38.9	D					
	Overall Intersection	-	0.75	28.1	C	-	0.76	28.4	C						
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.22	10.4	B	L	0.23	10.7	B	L	0.23	10.2	B	-Mitigation not required. -Upgrade to computerized signal controller with the following timing plan: WB phase will have 26 s green time; NB/SB phase will have 54 s green time [each phase will have 3 s amber and 2 s all red time]. [Measures reflect improvements needed for the weekday Non-game PM and Saturday Non-game peak periods.]	
	T	0.69	15.0	B	T	0.71	15.6	B	T	0.70	14.8	B			
	SB	TR	0.59	13.2	B	TR	0.62	13.8	B	TR	0.61	13.1	B		
	-	-	-	-	-	-	-	-	-	-	-	-			
	Sanford Avenue	WB	L	0.79	46.2	D	L	0.79	46.2	D	L	0.80	46.5		D
	TR	0.56	30.1	C	TR	0.67	33.0	C	TR	0.68	33.2	C			
Overall Intersection	-	0.72	19.3	B	-	0.74	20.2	C	-	0.73	19.7	B			
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.71	31.0	C	LTR	0.72	31.5	C					-Mitigation not required.	
	SB	LTR	0.62	24.8	C	LTR	0.63	25.3	C						
	Sanford Avenue	EB	DefL	0.58	26.4	C	DefL	0.60	28.0	C					
		TR	0.37	15.8	B	TR	0.37	15.8	B						
		WB	LTR	0.90	30.1	C	LTR	0.94	35.7	D					
		Overall Intersection	-	0.81	26.3	C	-	0.84	28.7	C					

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div></div>																			
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure					
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS						
Parsons Boulevard at Sanford Avenue																			
Parsons Boulevard	NB	LTR	1.12	79.7	E	LTR	1.14	88.9	F	LT	0.88	21.7	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. -Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. -Modify Signal Timing: Shift 2 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 40 s to 38 s; NB/SB green time shifts from 40 s to 42 s].					
	-	-	-	-	-	-	-	-	-	R	0.11	13.6	B						
SB	LTR	0.97	39.3	D	LTR	1.00	47.4	D	LTR	0.99	40.3	D							
-	-	-	-	-	-	-	-	-	-	-	-	-							
Sanford Avenue	EB	LTR	0.73	27.5	C	LTR	0.75	28.5	C	LTR	0.79	32.2	C						
	WB	LTR	0.83	31.7	C	LTR	0.89	36.1	D	LTR	0.93	43.6	D						
-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Overall Intersection		-	0.98	45.8	D	-	1.02	51.7	D	-	0.96	34.5	C						
WHITESTONE EXPRESSWAY / 32ND AVENUE																			
College Point Boulevard at 32nd Avenue																			
College Point Boulevard	NB	T	0.44	23.9	C	T	0.47	24.2	C	-Mitigation not required.									
	TR	0.71	31.8	C	TR	0.71	31.8	C											
32nd Avenue	SB	L	0.52	37.2	D	L	0.52	37.2	D										
	T	0.60	13.0	B	T	0.61	13.2	B											
WB	LTR	0.88	44.9	D	LTR	0.88	44.9	D											
-	-	-	-	-	-	-	-	-											
Overall Intersection		-	1.41	24.0	C	-	1.41	24.1	C										
NORTHERN BOULEVARD SERVICE ROAD																			
College Point Boulevard at Northern Boulevard Service Road																			
College Point Boulevard	NB	TR	0.42	11.8	B	TR	0.43	12.0	B	-Unmitigatable impact.									
	SB	LT	0.89	25.0	C	LT	0.91	27.7	C										
Northern Blvd Service Rd	WB	LR	0.79	37.0	D	LR	1.01	66.9	E										
Overall Intersection		-	0.85	22.6	C	-	0.95	31.1	C										
STADIUM ROAD																			
Boat Basin Road at Stadium Road																			
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.12	29.3	C	-Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 25 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 31 s green time; SB lag phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].					
	LTR	0.09	7.3	A	LTR	0.04	7.0	A	TR	0.09	28.9	C							
Stadium Road	SB	-	-	-	-	DefL	0.91	32.9	C	DefL	0.90	44.4	D						
	LTR	0.39	9.8	A	TR	0.69	16.4	B	TR	0.85	37.4	D							
-	EB	-	-	-	-	-	-	-	-	DefL	0.29	30.6	C						
	-	-	-	-	-	LTR	0.37	27.8	C	TR	0.30	30.6	C						
WB	-	-	-	-	-	-	-	-	-	-	-	-	-						
	LTR	0.24	25.8	C	LTR	0.97	59.9	E	LTR	0.77	40.8	D							
Overall Intersection		-	0.34	12.8	B	-	0.93	35.1	D	-	1.39	39.5	D						

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action				With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	41.2	E	L	-	1000.0+	F	L	0.14	30.1	C	-Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.7	A	R	-	8.7	A	R	0.04	1.7	A	
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.03	38.7	D	
		WB	LT	-	8.9	A	LT	-	14.6	B	L	0.69	19.0	
		-	-	-	-	-	-	-	LT	0.59	16.2	B		
Overall Intersection	-	-	10.2	B	-	-	585.7	F	-	0.50	18.0	B		
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	10.3	B	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	-	-	-	T	0.58	15.3	B		
	New Van Wyck Expressway Ramp	EB	-	-	-	T	-	21.6	C	T	0.11	11.0		B
Northern Boulevard Service Road														
Overall Intersection	-	-	10.3	B	-	-	21.6	C	-	0.34	14.9	B		
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	T	0.04	24.5	C	-Mitigation not required. -Install traffic signal with the following timing plan: EB will have 38 s green time; WB will have 23 s green time; NB/SB will have 44 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	LT	-	7.5	A	L	0.17	26.5	C		
		-	-	-	-	-	-	-	TR	0.54	32.0	C		
Grand Central Parkway Off-Ramp	EB	L	-	11.5	B	L	-	26.6	D	L	0.32	32.9		C
		-	-	-	-	T	-	18.5	C	T	0.26	31.7		C
		R	-	9.4	A	R	-	10.2	B	-	-	-		-
Willets West Center Exit	WB	-	-	-	-	L	-	22.5	C	L	0.23	41.9		D
		-	-	-	-	R	-	8.5	A	R	0.08	40.3		D
Overall Intersection	-	-	10.9	B	-	-	19.7	C	-	0.39	32.8	C		
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.34	16.1	B	TR	0.34	16.1	B	-Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.88	45.3	D	-	-	-	-	
	LT	-	-	8.2	A	T	0.71	13.7	B	LT	0.79	16.3	B	
36th Avenue	WB	LR	-	13.6	B	L	0.06	38.5	D	L	0.06	38.5	D	
		-	-	-	-	R	0.28	28.2	C	R	0.28	28.2	C	
Overall Intersection	-	-	9.1	A	-	1.08	21.4	C	-	0.61	17.1	B		
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.29	15.4	B	TR	0.29	15.4	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	-	-	-	-	-	-	-		
	LT	-	-	7.8	A	LT	0.62	13.6	B	LT	0.59	12.9	B	
37th Avenue	WB	LR	-	12.5	B	L	0.23	37.2	D	L	0.23	37.2	D	
		-	-	-	-	R	0.31	28.9	C	R	0.31	28.9	C	
Overall Intersection	-	-	11.9	B	-	0.50	16.5	B	-	0.48	16.2	B		
Northern Boulevard at 126th Place														
126th Place	NB	R	-	14.1	B	R	-	18.4	C	R	0.33	43.4	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
Northern Boulevard	EB	-	-	-	-	-	-	-	TR	0.56	9.1	A		
Overall Intersection	-	-	14.1	B	-	-	18.4	C	-	0.51	10.8	B		

TABLE 20
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action			With Action			Mitigation			Mitigation Measure			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	0.60	23.8	C	-Mitigation not required.				
	SB	-	-	-	-	-	-	-	-					
New Willets Point Boulevard		-	-	-	-	LT	0.51	13.8	B					
	WB	-	-	-	-	L	0.63	43.3	D					
		-	-	-	-	R	0.21	23.8	C					
Overall Intersection		-	-	-	-	-	0.72	23.0	C					
Citi Field/Lot B at Roosevelt Avenue														
Citi Field/Lot B	SB	LR	-	-	-	LR	0.02	34.0	C	-Mitigation not required.				
	EB	LT	-	-	-	LT	0.43	10.0	B					
Roosevelt Avenue	WB	TR	-	-	-	TR	0.48	10.7	B					
Overall Intersection		-	-	-	-	-	0.35	10.5	B					

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 21
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation Measure						
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
SIGNALIZED INTERSECTIONS															
ASTORIA BOULEVARD															
108th Street at Astoria Boulevard															
108th Street	NB	DefL	0.48	26.9	C	DefL	0.58	30.1	C	DefL	0.58	30.1	C	-Install "No Standing 11 AM - 2 PM Mon-Fri" regulations along the south curb of the EB approach for 150-ft from the intersection to allow for an 11-ft daylighted right-turn lane.	
		T	0.13	20.1	C	T	0.13	20.1	C	T	0.13	20.1	C		
	SB	LTR	0.18	20.7	C	LTR	0.18	20.7	C	LTR	0.18	20.7	C		
		EB	TR	0.84	29.6	C	TR	1.00	45.7	D	T	0.87	30.6		C
	WB	-	-	-	-	-	-	-	-	R	0.26	20.2	C		
		L	0.75	33.5	C	L	0.77	38.5	D	L	0.77	38.0	D		
		TR	0.34	12.4	B	TR	0.43	13.4	B	TR	0.43	13.4	B		
		Overall Intersection	-	0.71	24.2	C	-	0.82	32.8	C	-	0.76	24.8		C
NORTHERN BOULEVARD															
108th Street at Northern Boulevard (RT. 25A)															
108th Street	NB	LTR	1.21	144.5	F	LTR	1.52	282.2	F	L	0.71	46.3	D		-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Modify signal timing: shift 4 s of green time from NB/SB phase to EB/WB left-turn phase [NB/SB green time shifts from 30 s to 26 s; EB/WB left-turn green time shifts from 9 s to 13 s]. -Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. -Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	TR	0.86	48.9	D		
	SB	LTR	0.94	71.9	E	LTR	0.96	76.2	E	L	0.56	51.8	D		
		-	-	-	-	-	-	-	-	TR	0.57	46.1	D		
	Northern Boulevard (Rt. 25A)	EB	L	0.08	24.3	C	L	0.09	34.3	C	L	0.08	24.9	C	
			TR	0.89	29.3	C	TR	1.12	87.4	F	T	1.00	44.2	D	
		WB	-	-	-	-	-	-	-	-	R	0.12	13.2	B	
			L	0.73	46.6	D	L	0.86	66.4	E	L	0.71	50.7	D	
	TR		1.03	50.7	D	TR	1.22	127.3	F	T	1.00	43.4	D		
	-		-	-	-	-	-	-	-	R	0.30	15.3	B		
	Overall Intersection	-	1.02	51.7	D	-	1.25	117.4	F	-	1.00	43.0	D		
	114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.40	44.5	D	LTR	0.46	46.1	D	LTR	0.45	36.4	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Place and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s]. [Measures reflect improvements needed for the Weekday Non-game AM and PM, Saturday, Weekday Pre-game, and Saturday Pre- and Post-game peak periods.]	
		EB	T	0.82	27.5	C	T	1.06	65.4	E	T	0.89	24.3		C
	Northern Boulevard (Rt. 25A)	R	0.46	19.5	B	R	0.49	20.0	B	R	0.41	12.4	B		
		WB	DefL	0.52	17.5	B	DefL	0.77	50.8	D	-	-	-		-
	WB	T	0.75	13.0	B	T	0.88	18.3	B	T	0.78	18.2	B		
		Overall Intersection	-	1.19	20.2	C	-	1.46	39.3	D	-	0.75	21.5		C
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.46	44.1	D	L	1.43	248.4	F	L	1.62	336.4	F	-Partially mitigated.	
		R	0.33	42.2	D	R	3.00+	1000.0+	F	R	0.96	84.2	F		
Northern Boulevard	EB	T	0.80	47.3	D	T	0.84	49.7	D	T	0.90	49.9	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 3 s of green time from NB phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 35 s to 38 s; NB green time shifts from 25 s to 22 s].	
		WB	T	0.33	7.1	A	T	0.41	7.8	A	T	0.39	6.5		A
Grand Central Parkway Ramp	EB	T	0.79	39.1	D	T	0.87	44.0	D	T	0.87	44.0	D		
Van Wyck & Whitestone Expressway Ramp	WB	T	0.78	17.0	B	T	1.32	166.2	F	-	-	-	-		
Overall Intersection	-	0.71	29.8	C	-	2.94	367.8	F	-	1.04	102.6	F			

TABLE 21
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street		NB	LTR	1.21	141.8	F	LTR	1.21	141.8	F	LTR	1.21	141.8	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.
		SB	LTR	0.54	41.4	D	LTR	0.54	41.4	D	LTR	0.54	41.4	D	
Northern Boulevard (Rt. 25A)		EB	L	0.90	73.8	E	L	0.90	73.8	E	L	0.90	73.8	E	
		T	0.94	36.3	D	T	1.05	63.7	E	T	1.05	63.7	E		
Northern Boulevard Service Rd.		WB	L	0.91	93.1	F	L	0.91	93.1	F	L	0.91	93.1	F	
		T	1.14	104.5	F	T	1.23	141.1	F	T	1.23	141.1	F		
		EB	TR	0.62	26.5	C	TR	0.62	26.5	C	TR	0.62	26.5	C	
		WB	TR	0.71	35.3	D	TR	1.03	77.1	E	T	0.77	37.3	D	
		-	-	-	-	-	-	-	-	R	0.14	21.5	C		
Overall Intersection		-	1.11	68.3	E	-	1.15	92.9	F	-	1.15	90.5	F		
Main Street at Northern Boulevard (RT. 25A)															
Main Street		NB	L	0.98	66.1	E	T	0.98	66.1	E					
		R	0.69	40.0	D	R	0.69	40.0	D						
Northern Boulevard (Rt. 25A)		EB	T	0.98	45.5	D	T	1.12	90.6	F					
		R	1.29	173.4	F	R	1.29	173.4	F						
		WB	L	0.11	25.7	C	L	0.11	25.7	C					
		T	0.77	23.0	C	T	0.91	30.0	C						
Overall Intersection		-	1.03	58.7	E	-	1.03	74.8	E						
Union Street at Northern Boulevard (RT. 25A)															
Union Street		NB	TR	0.79	39.1	D	TR	0.79	39.1	D	TR	0.79	39.1	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.
		SB	TR	0.56	32.5	C	TR	0.56	32.5	C	TR	0.56	32.5	C	
Northern Boulevard (Rt. 25A)		EB	L	0.55	22.2	C	L	0.56	28.3	C	L	0.56	25.0	C	
		TR	1.39	214.5	F	TR	1.57	294.1	F	TR	1.57	294.1	F		
		WB	L	1.19	146.1	F	L	1.18	144.3	F	L	1.18	144.3	F	
		TR	0.84	37.8	D	TR	1.03	64.7	E	TR	0.77	34.6	C		
		-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	1.44	111.6	F	-	1.42	152.0	F	-	1.42	143.0	F		
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard		NB	L	0.74	59.0	E	L	0.78	63.7	E	L	0.73	58.0	E	-Partially mitigated. -Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	0.53	39.0	D	TR	0.53	39.0	D	TR	0.53	39.0	D		
		SB	LTR	1.19	127.7	F	LTR	1.27	166.5	F	LT	0.69	36.1	D	
		-	-	-	-	-	-	-	-	R	0.38	33.5	C		
Northern Boulevard (Rt. 25A)		EB	L	0.80	58.0	E	L	0.91	64.9	E	L	0.92	70.5	E	
		TR	1.06	68.8	E	TR	1.25	151.0	F	T	1.03	57.3	E		
		-	-	-	-	-	-	-	-	R	0.37	24.3	C		
		WB	L	0.36	36.3	D	L	0.39	43.1	D	L	0.39	40.6	D	
		TR	1.19	118.2	F	TR	1.43	229.3	F	T	1.20	126.7	F		
		-	-	-	-	-	-	-	-	R	0.38	23.4	C		
		-	-	-	-	-	-	-	-	-	-	-	-		
Overall Intersection		-	1.20	89.6	F	-	1.36	166.7	F	-	0.96	78.1	E		
34TH AVENUE															
114th Street at 34th Avenue															
114th Street		SB	L	0.84	43.9	D	L	0.92	52.8	D	L	0.83	39.7	D	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].
		T	0.23	24.0	C	T	0.31	25.3	C	T	0.28	22.7	C		
34th Avenue		EB	T	0.41	11.8	B	T	0.41	11.8	B	T	0.43	13.7	B	
		R	0.07	8.5	A	R	0.07	8.5	A	R	0.07	9.9	A		
Overall Intersection		-	0.56	26.9	C	-	0.59	31.4	C	-	0.59	26.1	C		

TABLE 21
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	DefL	2.26	615.4	F	L	1.67	363.1	F	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 53 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 45 s green time [each phase will have 3 s amber and 2 s all red time].	
Northern Boulevard Ramp	SB	LTR	0.26	20.9	C	TR	0.76	32.2	C	TR	0.87	44.5	D		
	GCP Ramp	SB	LTR	0.39	23.7	C	LTR	1.46	251.0	F	-	-	-		-
Shea Road		EB	-	-	-	-	LTR	3.00+	1000.0+	F	L	1.54	316.5		F
	-		-	-	-	-	-	-	T	0.77	38.3	D			
34th Avenue	WB	-	-	-	-	DefL	3.00+	1000.0+	F	-	-	-	-		
		LTR	0.57	45.1	D	TR	3.00+	1000.0+	F	LTR	1.28	170.5	F		
		-	-	-	-	-	-	-	DefL	1.81	419.0	F			
		LTR	0.67	54.9	D	LTR	3.00+	1000.0+	F	TR	0.86	44.1	D		
Overall Intersection	-	0.58	42.0	D	-	3.00+	1000.0+	F	-	1.91	141.4	F			
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.11	109.2	F	LTR	1.19	140.3	F	LT	0.97	69.9	E		-Partially mitigated. -Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
Roosevelt Avenue	SB	LTR	1.24	157.6	F	LTR	1.27	170.9	F	R	0.34	38.2	D		
	-	-	-	-	-	-	-	-	LT	1.02	66.6	E			
Roosevelt Avenue	EB	LTR	0.76	19.3	B	-	-	-	R	0.35	37.5	D			
	WB	LTR	0.85	23.9	C	LTR	0.96	39.6	D	LTR	0.95	38.0	D		
						LTR	1.14	96.3	F	LTR	1.03	55.7	E		
Overall Intersection	-	0.96	58.0	E	-	1.18	93.6	F	-	1.03	51.1	D			
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	0.73	51.2	D	LTR	0.73	51.2	D	LTR	0.73	51.2	D	-Install "No Standing 7 AM - 4 PM Mon - Fri" regulations along the north curb of the WB Roosevelt Avenue approach 100-ft from the intersection to allow for one 11-ft left-through lane and one 10-ft right-turn lane.	
Roosevelt Avenue	EB	LTR	0.73	16.9	B	LTR	0.96	37.0	D	LTR	0.96	36.3	D		
	WB	LTR	0.88	26.2	C	LTR	1.11	83.4	F	LT	0.93	30.2	C		
	-	-	-	-	-	-	-	-	R	0.11	7.5	A			
Overall Intersection	-	0.84	26.1	C	-	1.01	60.1	E	-	0.90	34.5	C			
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	0.71	51.1	D	LTR	0.82	61.2	E	LTR	0.52	39.6	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 4 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 76 s; NB/SB green time shifts from 30 s to 34 s].	
Roosevelt Avenue	SB	LTR	0.70	53.9	D	LTR	0.98	95.7	F	LTR	0.77	55.2	E		
	-	-	-	-	-	-	-	-	-	-	-	-			
Roosevelt Avenue	EB	LTR	0.89	29.9	C	LTR	1.39	204.3	F	L	0.39	13.7	B		
	-	-	-	-	-	-	-	-	TR	0.71	18.1	B			
Roosevelt Avenue	WB	LTR	0.48	10.7	B	LTR	0.81	19.0	B	L	0.44	15.5	B		
	-	-	-	-	-	-	-	-	T	0.70	18.2	B			
	-	-	-	-	-	-	-	-	R	0.63	17.5	B			
Overall Intersection	-	0.84	25.6	C	-	1.28	87.2	F	-	0.73	22.3	C			

TABLE 21
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street		NB	-	-	-	-	-	-	-	L	1.15	144.5	F	-Partially mitigated. -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach 9 ft to the east. -Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach 1 ft to south. -Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB will have 62 s green time; EB-lag/SB right phase will have 8 s green time; NB/SB phase will have 35 s green time [each phase will have 3 s amber and 2 s all red time].	
	LTR	0.91	67.9	E	LTR	3.00+	1000.0+	F	TR	0.43	35.2	D			
	SB	DefL	1.22	176.1	F	DefL	3.00+	1000.0+	F	L	2.19	589.8	F		
	TR	0.63	51.4	D	TR	3.00+	1000.0+	F	T	0.71	44.9	D			
	-	-	-	-	-	-	-	-	R	0.90	55.8	E			
	EB	-	-	-	-	DefL	1.28	181.8	F	DefL	0.88	72.6	E		
	LTR	0.53	11.6	B	TR	0.74	17.9	B	TR	0.71	19.4	B			
	WB	LTR	0.51	11.2	B	LTR	1.09	73.9	E	LTR	1.29	165.7	F		
Overall Intersection		-	0.69	37.9	D	-	2.98	831.5	F	-	1.99	149.2	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard		NB	L	1.37	217.4	F	L	2.01	500.9	F	L	1.20	152.9		F
	TR	0.89	31.5	C	TR	0.89	31.5	C	TR	0.91	43.2	D			
	-	-	-	-	-	-	-	-	-	-	-	-			
	SB	TR	1.20	129.9	F	TR	1.57	292.4	F	T	1.01	73.4	E		
	EB	L	0.56	30.4	C	L	0.61	31.4	C	L	0.55	37.1	D		
	TR	1.27	148.2	F	TR	1.73	355.4	F	TR	1.54	272.9	F			
	L	0.28	33.5	C	L	0.28	33.5	C	-	-	-	-			
	TR	0.58	30.6	C	TR	0.77	38.1	D	TR	0.58	38.9	D			
Overall Intersection		-	1.29	98.9	F	-	1.90	229.3	F	-	1.34	114.3	F		
Prince Street at Roosevelt Avenue															
Prince Street		SB	LTR	0.86	47.9	D	LTR	0.86	47.9	D					-Unmitigatable impact.
	EB	DefL	0.96	38.2	D	DefL	1.01	52.2	D						
	TR	0.68	14.4	B	TR	0.85	20.9	C							
	WB	LTR	0.54	12.1	B	LTR	0.65	14.2	B						
	-	-	-	-	-	-	-	-	-						
Overall Intersection		-	0.93	27.1	C	-	0.96	31.0	C						

TABLE 21
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure		
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
Main Street at Roosevelt Avenue																
Main Street	NB	T	0.67	24.6	C	T	0.67	24.6	C						-Unmitigatable impact.	
	SB	T	0.53	22.1	C	T	0.53	22.1	C							
Roosevelt Avenue	EB	L	0.31	22.1	C	L	0.39	27.1	C							
		TR	0.76	34.2	C	TR	1.06	84.9	F							
	WB	L	0.15	16.7	B	L	0.19	18.1	B							
		TR	0.84	36.3	D	TR	1.06	78.5	E							
Overall Intersection		-	0.76	28.0	C	-	0.92	50.3	D							
Union Street at Roosevelt Avenue																
Union Street	NB	TR	0.58	19.5	B	TR	0.58	19.5	B						-Unmitigatable impact.	
	SB	LT	1.01	59.5	E	LT	1.01	59.5	E							
		R	3.00+	1000.0+	F	R	3.00+	1000.0+	F							
Roosevelt Avenue	EB	LTR	2.05	505.0	F	LTR	2.70	797.9	F							
	WB	LT	0.62	25.9	C	LT	0.82	35.3	D							
		R	0.95	88.1	F	R	0.95	88.1	F							
Overall Intersection		-	3.00+	496.8	F	-	3.00+	553.9	F							
Parsons Boulevard at Roosevelt Avenue																
Parsons Boulevard	NB	LTR	0.66	24.8	C	LTR	0.72	27.4	C	LTR	0.75	29.4	C	-Modify Signal Timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 41 s; NB/SB green time shifts from 40 s to 39 s].		
		-	-	-	-	-	-	-	-	-	-	-	-			
Roosevelt Avenue	SB	LTR	0.66	23.8	C	LTR	0.66	23.9	C	LTR	0.67	25.1	C			
	EB	LTR	0.59	23.3	C	LTR	0.88	40.0	D	LTR	0.85	36.6	D			
	WB	LTR	0.77	30.6	C	LTR	0.95	50.1	D	LTR	0.92	44.2	D			
	Overall Intersection		-	0.72	25.7	C	-	0.84	36.0	D	-	0.84	34.2		C	
KISSENA BOULEVARD																
Main Street at Kissena Boulevard																
Main Street	NB	L	0.88	54.1	D	L	0.92	61.0	E	L	0.88	53.4	D	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].		
		TR	0.64	22.5	C	TR	0.64	22.5	C	TR	0.63	21.4	C			
	SB	L	0.47	20.5	C	L	0.47	20.5	C	L	0.48	21.4	C			
		TR	0.52	19.5	B	TR	0.52	19.5	B	TR	0.51	18.7	B			
Kissena Boulevard	WB	T	0.73	27.4	C	T	0.73	27.4	C	T	0.75	29.0	C			
	Overall Intersection		-	0.80	25.2	C	-	0.82	26.0	C	-	0.82	25.0		C	
SANFORD AVENUE																
College Point Boulevard at Sanford Avenue																
College Point Boulevard	NB	L	0.57	24.1	C	L	0.66	33.1	C	L	0.62	27.7	C	-Mitigation not required. -Upgrade to computerized signal controller with the following timing plan: WB phase will have 25 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. [Measures reflect improvements needed for the weekday Non-game PM and Saturday Non-game peak periods.]		
		T	0.67	14.5	B	T	0.70	15.3	B	T	0.68	13.7	B			
	SB	TR	0.77	16.9	B	TR	0.83	19.2	B	TR	0.80	16.9	B			
		-	-	-	-	-	-	-	-	-	-	-	-			
Sanford Avenue	WB	L	0.57	35.0	C	L	0.57	35.0	C	L	0.60	37.2	D			
		TR	0.38	27.1	C	TR	0.53	29.9	C	TR	0.56	31.4	C			
Overall Intersection		-	0.70	18.2	B	-	0.75	20.3	C	-	0.74	18.8	B			
Union Street at Sanford Avenue																
Union Street	NB	LTR	0.34	20.8	C	LTR	0.34	20.8	C						-Mitigation not required.	
	SB	LTR	0.61	24.3	C	LTR	0.63	24.6	C							
Sanford Avenue	EB	DefL	0.43	19.7	B	DefL	0.46	20.9	C							
		TR	0.21	13.7	B	TR	0.21	13.7	B							
	WB	LTR	0.89	29.7	C	LTR	0.96	38.8	D							
	Overall Intersection		-	0.76	24.6	C	-	0.81	28.6	C						

TABLE 21
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div><div></div><div></div></div>														
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	1.17	102.6	F	LTR	1.22	124.5	F	LT	1.07	60.9	E	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. -Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. -Install "No Standing 10 AM - 4 PM" regulations on the WB approach 100 feet from the stop bar to allow for a 10-ft daylighted right-turn lane. -Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.
	-	-	-	-	-	-	-	-	R	0.13	14.8	B		
	SB	LTR	0.72	25.4	C	LTR	0.85	32.9	C	LT	0.62	22.7	C	
Sanford Avenue	-	-	-	-	-	-	-	-	R	0.25	16.5	B		
	EB	LTR	0.56	22.3	C	LTR	0.59	23.1	C	LTR	0.60	23.4	C	
	WB	LTR	0.87	34.7	C	LTR	0.95	45.1	D	LT	0.69	24.1	C	
-	-	-	-	-	-	-	-	-	R	0.24	16.3	B		
Overall Intersection		-	1.02	48.5	D	-	1.09	58.6	E	-	0.88	31.2	C	
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.71	29.9	C	T	0.71	29.7	C	-Mitigation not required.				
	TR	0.81	36.4	D	TR	0.81	36.4	D						
	SB	L	0.75	48.8	D	L	0.75	48.8	D					
32nd Avenue	-	T	0.50	11.7	B	T	0.51	11.9	B					
	WB	LTR	0.79	40.6	D	LTR	0.79	40.6	D					
	-	-	-	-	-	-	-	-	-					
Overall Intersection		-	1.30	28.1	C	-	1.30	28.0	C					
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.53	13.2	B	TR	0.55	13.4	B	-Unmitigatable impact.				
	SB	LT	0.87	24.4	C	LT	0.90	27.2	C					
	WB	LR	0.79	37.3	D	LR	1.11	98.3	F					
Overall Intersection		-	0.84	22.0	C	-	0.98	38.2	D					
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	-	-	-	-	-Unmitigatable impact. -Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 25 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 31 s green time; SB lag phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time].
	LTR	0.07	7.2	A	LTR	0.15	7.6	A	LTR	0.32	33.4	C		
	SB	DefL	0.28	9.3	A	DefL	1.12	93.8	F	DefL	1.07	93.4	F	
Stadium Road	TR	0.18	8.1	A	TR	0.42	10.4	B	TR	0.53	22.2	C		
	EB	-	-	-	-	DefL	1.11	163.7	F	DefL	0.56	37.4	D	
	-	-	-	-	-	TR	0.47	30.3	C	TR	0.43	33.6	C	
WB	-	-	-	-	-	-	-	-	-	-	-	-		
LTR	0.19	25.3	C	LTR	2.01	492.1	F	LTR	1.51	274.4	F			
Overall Intersection		-	0.25	12.5	B	-	1.40	247.5	F	-	1.22	151.4	F	

TABLE 21
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action			With Action			Mitigation			Mitigation Measure			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	1.30	172.2	F	-Mitigation not required.				
	SB	-	-	-	-	DefL	1.33	212.6	F					
New Willets Point Boulevard		-	-	-	-	T	0.58	15.7	B					
	WB	-	-	-	-	L	0.96	75.3	E					
		-	-	-	-	R	0.79	46.2	D					
Overall Intersection		-	-	-	-	-	1.48	115.5	F					
Citi Field/Lot B at Roosevelt Avenue														
Citi Field/Lot B	SB	LR	-	-	-	LR	0.03	34.2	C	-Mitigation not required.				
	EB	LT	-	-	-	LT	0.51	11.1	B					
Roosevelt Avenue	WB	TR	-	-	-	TR	0.57	11.9	B					
Overall Intersection		-	-	-	-	-	0.42	11.7	B					

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation Measure				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.58	47.0	D	DefL	0.71	54.7	D	-Unmitigatable impact.				
		T	0.22	35.7	D	T	0.22	35.7	D					
Astoria Boulevard	SB	LTR	0.40	39.4	D	LTR	0.40	39.4	D					
	EB	TR	0.91	27.7	C	TR	0.98	33.2	C					
	-	-	-	-	-	-	-	-						
	WB	L	0.73	48.0	D	L	0.73	48.7	D					
TR	0.34	9.8	A	TR	0.41	10.5	B							
Overall Intersection	-	0.81	26.3	C	-	0.89	29.8	C						
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.19	134.6	F	LTR	1.56	302.4	F	L	0.78	50.3	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. -Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	TR	0.77	45.2	D	
SB	LTR	1.15	124.9	F	LTR	1.18	135.2	F	L	0.55	47.5	D		
	-	-	-	-	-	-	-	-	TR	0.70	45.3	D		
Northern Boulevard (Rt. 25A)	EB	L	0.15	35.0	C	L	0.15	45.1	D	L	0.15	39.8	D	
		TR	0.85	14.3	B	TR	0.98	23.2	C	TR	0.98	23.2	C	
	WB	-	-	-	-	-	-	-	-	-	-	-		
		L	0.67	42.9	D	L	0.67	45.1	D	L	0.67	45.1	D	
TR	1.16	97.1	F	TR	1.35	183.7	F	T	1.13	82.8	F			
-	-	-	-	-	-	-	-	-	R	0.31	12.5	B		
Overall Intersection	-	1.09	62.1	E	-	1.30	111.6	F	-	0.97	47.7	D		
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.40	46.1	D	LTR	0.47	47.9	D	LTR	0.53	37.8	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Place and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 s to 75 s].
		EB	T	1.16	90.5	F	T	1.35	179.3	F	T	1.17	90.9	
Northern Boulevard (Rt. 25A)	R	0.85	17.8	B	R	0.87	18.6	B	R	0.76	9.0	A		
	WB	DefL	0.88	52.4	D	DefL	1.06	100.3	F	-	-	-	-	
T	0.93	19.2	B	T	1.08	56.5	E	T	0.97	28.4	C			
Overall Intersection	-	1.58	48.7	D	-	1.78	102.1	F	-	0.97	50.2	D		
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.43	43.3	D	L	1.41	240.8	F	L	1.41	240.8	F	-Partially mitigated. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 4 s of green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 29 s; EB GCP/Astoria Blvd Ramp green time shifts from 55 s to 51 s].
		R	0.28	41.2	D	R	3.00+	1000.0+	F	R	0.73	52.7	D	
Northern Boulevard	EB	T	1.24	169.6	F	T	1.35	214.2	F	T	1.26	171.0	F	
	WB	T	0.41	7.7	A	T	0.47	8.4	A	T	0.47	8.4	A	
Grand Central Parkway Ramp	EB	T	0.75	30.5	C	T	0.84	34.9	C	T	0.91	42.9	D	
		WB	T	0.91	26.2	C	T	1.35	179.7	F	-	-	-	
Overall Intersection	-	0.80	52.6	D	-	2.70	317.1	F	-	1.12	108.4	F		

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.25	159.4	F	LTR	1.25	159.4	F	LTR	1.25	159.4	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.53	41.8	D	LTR	0.53	41.8	D	LTR	0.53	41.8	D		
Northern Boulevard (Rt. 25A)	EB	L	0.62	46.0	D	L	0.62	46.0	D	L	0.62	46.0	D		
	T		0.97	39.4	D	T	1.10	81.2	F	T	1.10	81.2	F		
	WB	L	0.82	73.7	E	L	0.82	73.7	E	L	0.82	73.7	E		
	T		1.15	110.5	F	T	1.23	141.9	F	T	1.23	141.9	F		
Northern Boulevard Service Rd.	EB	TR	0.66	27.6	C	TR	0.66	27.6	C	TR	0.66	27.6	C		
	WB	TR	0.67	35.7	D	TR	0.93	58.8	E	T	0.69	35.7	D		
		-	-	-	-	-	-	-	-	R	0.13	23.3	C		
Overall Intersection		-	1.05	69.4	E	-	1.10	96.2	F	-	1.10	95.3	F		
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.97	62.1	E	T	0.97	62.1	E					-Unmitigatable impact.	
	R		0.99	79.7	E	R	0.99	79.7	E						
Northern Boulevard (Rt. 25A)	EB	T	1.08	70.7	E	T	1.23	135.3	F						
	R		1.20	132.4	F	R	1.20	132.4	F						
	WB	L	0.17	26.9	C	L	0.17	26.9	C						
	T		0.78	23.2	C	T	0.90	29.0	C						
Overall Intersection		-	1.10	61.5	E	-	1.10	87.6	F						
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.79	38.9	D	TR	0.79	38.9	D	TR	0.79	38.9	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.83	39.9	D	TR	0.83	40.0	D	TR	0.83	40.0	D		
Northern Boulevard (Rt. 25A)	EB	L	0.78	44.3	D	L	0.79	46.1	D	L	0.79	44.5	D		
	TR		1.14	101.5	F	TR	1.29	167.3	F	TR	1.29	167.3	F		
	WB	L	0.86	50.4	D	L	0.86	39.9	D	L	0.86	39.9	D		
	TR		0.94	42.2	D	TR	1.10	86.6	F	TR	0.81	35.4	D		
Overall Intersection		-	0.99	65.9	E	-	1.06	106.3	F	-	1.06	92.2	F		
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.86	72.5	E	L	0.88	77.4	E	L	0.87	74.8	E	-Partially Mitigated. -Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to EB/WB phase; shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [EB/WB protected left-turn green time shifts from 12 s to 11 s; EB/WB green time shifts from 50 s to 51 s LPI shifts from 7 s to 6 s; NB/SB green time shifts from 36 s to 37 s].	
	TR		0.50	35.4	D	TR	0.50	35.4	D	TR	0.49	34.4	C		
	SB	LTR	1.13	100.8	F	LTR	1.19	128.1	F	LT	0.65	34.2	C		
	-	-	-	-	-	-	-	-	-	R	0.46	34.1	C		
Northern Boulevard (Rt. 25A)	EB	L	0.44	45.0	D	L	0.50	47.8	D	L	0.54	49.4	D		
	TR		1.02	50.0	D	TR	1.18	114.1	F	TR	1.15	103.0	F		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.37	39.8	D	L	0.36	42.8	D	L	0.38	43.3	D		
	TR		1.15	103.4	F	TR	1.34	189.1	F	T	1.13	93.0	F		
		-	-	-	-	-	-	-	-	R	0.34	23.8	C		
Overall Intersection		-	1.07	72.2	E	-	1.18	132.0	F	-	0.99	84.7	F		
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	1.01	64.3	E	L	1.09	89.3	F	L	0.98	55.6	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.41	26.1	C	T	0.48	27.4	C	T	0.44	24.4	C		
34th Avenue	EB	T	0.39	11.5	B	T	0.39	11.5	B	T	0.41	13.4	B		
	R		0.07	8.5	A	R	0.07	8.5	A	R	0.07	9.9			
Overall Intersection		-	0.61	38.2	D	-	0.63	50.5	D	-	0.63	34.9	C		

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action						With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street		NB	DefL	0.36	23.9	C	DefL	3.00+	961.3	F	L	1.35	213.3	F	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 46 s green time; NB/SB lead left-turn phase will have 15 s green time; NB/SB phase will have 44 s green time [each phase will have 3 s amber and 2 s all red time].
			TR	0.27	21.2	C	TR	0.74	31.1	C	TR	0.85	42.9	D	
Northern Boulevard Ramp		SB	LTR	0.28	21.7	C	LTR	0.86	45.8	D	-	-	-	-	
GCP Ramp		SB	LTR	0.76	60.2	E	LTR	3.00+	1000.0+	F	L	0.83	49.1	D	
			-	-	-	-	-	-	-	T	0.55	32.0	C		
Shea Road		EB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	1.41	254.1	F	
			LTR	0.45	42.8	D	TR	3.00+	1000.0+	F	TR	1.03	84.8	F	
34th Avenue		WB	-	-	-	-	-	-	-	DefL	1.32	203.2	F		
			LTR	1.00	99.0	F	LTR	3.00+	1000.0+	F	TR	1.65	336.0	F	
Overall Intersection		-	0.62	44.1	D	-	3.00+	1000.0+	F	-	1.59	146.7	F		
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street		NB	LTR	1.13	113.2	F	LTR	1.19	138.5	F	LT	0.95	58.8	E	-Partially mitigated. -Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
			-	-	-	-	-	-	-	R	0.40	38.6	D		
		SB	LTR	1.20	138.5	F	LTR	1.22	147.9	F	LT	0.97	55.9	E	
			-	-	-	-	-	-	-	R	0.40	38.1	D		
Roosevelt Avenue		EB	LTR	0.75	10.1	B	LTR	0.93	21.9	C	LTR	0.93	21.9	C	
		WB	LTR	0.84	18.3	B	LTR	1.10	68.9	E	LTR	1.10	68.9	E	
Overall Intersection		-	0.94	52.6	D	-	1.13	75.8	E	-	1.06	49.0	D		
111th Street at Roosevelt Avenue															
111th Street		NB	LTR	0.86	57.2	E	LTR	0.86	57.2	E					-Unmitigatable impact.
Roosevelt Avenue		EB	LTR	0.79	11.1	B	LTR	0.99	33.0	C					
		WB	LTR	1.25	133.7	F	LTR	1.51	251.7	F					
			-	-	-	-	-	-	-	-					
Overall Intersection		-	1.14	78.3	E	-	1.33	144.1	F						
114th Street at Roosevelt Avenue															
114th Street		NB	LTR	0.99	64.9	E	LTR	1.09	96.1	F	LTR	0.72	39.5	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s]. -Install "No Standing 4 PM - 7 PM Mon-Fri" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.
		SB	LTR	1.09	91.4	F	LTR	1.27	167.8	F	LT	0.87	42.9	D	
			-	-	-	-	-	-	-	R	0.13	32.8	-		
		EB	LTR	0.93	22.7	C	LTR	1.53	265.6	F	L	0.55	22.3	C	
			-	-	-	-	-	-	-	TR	0.74	10.1	B		
Roosevelt Avenue		WB	LTR	0.74	15.7	B	LTR	1.23	130.0	F	L	0.78	28.4	C	
			-	-	-	-	-	-	-	T	0.93	32.6	C		
			-	-	-	-	-	-	-	R	0.91	32.2	C		
Overall Intersection		-	0.98	31.7	C	-	1.45	162.8	F	-	0.91	28.4	C		

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	0.76	54.6	D	-Partially mitigated. -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach 9 ft to the east. -Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach 1 ft to south. -Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB will have 57 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 41 s green time [each phase will have 3 s amber and 2 s all red time].	
	LTR	0.68	55.0	D	LTR	3.00+	1000.0+	F	TR	0.51	33.0	C			
	SB	DefL	1.03	100.7	F	DefL	3.00+	1000.0+	F	L	2.29	633.1	F		
	TR	0.66	48.0	D	TR	3.00+	1000.0+	F	T	0.41	32.1	C			
	-	-	-	-	-	-	-	-	R	1.24	156.4	F			
	EB	-	-	-	-	DefL	1.85	425.1	F	DefL	1.32	217.6	F		
	LTR	0.70	8.0	A	TR	0.71	8.5	A	TR	0.77	18.1	B			
	WB	LTR	0.60	12.7	B	LTR	1.11	81.6	F	LTR	1.37	202.8	F		
	Overall Intersection	-	0.79	27.1	C	-	3.00+	1000.0+	F	-	2.15	181.8	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.25	176.0	F	L	1.70	368.8	F	L	0.97	79.5	E		-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 24 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].
	TR	0.76	31.3	C	TR	0.76	31.3	C	TR	0.75	30.9	C			
	-	-	-	-	-	-	-	-	-	-	-	-			
	SB	TR	1.33	193.8	F	TR	1.53	284.5	F	T	1.11	103.6	F		
	EB	L	0.48	37.2	D	L	0.53	38.4	D	L	0.55	38.8	D		
	TR	1.22	133.8	F	TR	1.61	307.1	F	TR	1.58	295.6	F			
	WB	L	0.25	43.7	D	L	0.25	43.7	D	-	-	-	-		
	TR	0.45	35.9	D	TR	0.60	39.7	D	TR	0.58	44.7	D			
	Overall Intersection	-	1.33	119.6	F	-	1.71	207.8	F	-	1.34	116.3	F		
Prince Street at Roosevelt Avenue															
Prince Street	SB	LTR	0.61	33.3	C	LTR	0.61	33.3	C	LTR	0.65	36.9	D	-Modify Signal Timing: Shift 3 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 66 s; SB green time shifts from 47 s to 44 s].	
	EB	DefL	1.10	97.0	F	DefL	1.18	126.9	F	DefL	1.10	95.5	F		
	TR	0.69	25.4	C	TR	0.89	36.6	D	TR	0.84	30.7	C			
	WB	LTR	0.61	20.9	C	LTR	0.72	23.2	C	LTR	0.69	20.7	C		
	-	-	-	-	-	-	-	-	-	-	-	-			
	Overall Intersection	-	0.89	43.4	D	-	0.93	50.9	D	-	0.92	42.6	D		

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.51	21.2	C	T	0.51	21.2	C	T	0.56	25.1	C	-Partially mitigated. -Modify Signal Timing: Shift 5 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 50 s; NB/SB green time shifts from 65 s to 60 s].	
	SB	T	0.56	22.3	C	T	0.56	22.3	C	T	0.61	26.6	C		
	Roosevelt Avenue	EB	L	0.48	43.1	D	L	0.63	61.8	E	L	0.49	41.1		D
		TR	0.90	61.9	E	TR	1.28	181.9	F	TR	1.14	122.1	F		
	WB	L	0.20	26.8	C	L	0.29	29.6	C	L	0.23	24.5	C		
		TR	1.02	73.9	E	TR	1.22	147.6	F	TR	1.09	90.1	F		
Overall Intersection		-	0.75	39.9	D	-	0.85	85.8	F	-	0.85	61.5	E		
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.42	16.8	B	TR	0.42	16.8	B					-Unmitigatable impact.	
	SB	LT	0.93	37.9	D	LT	0.93	37.9	D						
		R	2.61	765.5	F	R	2.61	765.5	F						
	Roosevelt Avenue	EB	LTR	1.86	416.9	F	LTR	2.39	657.4	F					
		WB	LT	0.57	24.6	C	LT	0.72	30.2	C					
		R	1.17	155.3	F	R	1.17	155.3	F						
Overall Intersection		-	2.26	226.3	F	-	2.51	295.7	F						
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.86	41.1	D	LTR	0.92	49.2	D	LT	0.86	42.1	D	-Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 57 s; NB/SB green time shifts from 55 s to 53 s. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	
		-	-	-	-	-	-	-	-	R	0.07	19.4	B		
	SB	LTR	0.71	30.8	C	LTR	0.71	30.8	C	LTR	0.74	33.3	C		
	Roosevelt Avenue	EB	LTR	0.50	26.1	C	LTR	0.75	35.8	D	LTR	0.72	32.8		C
		WB	LTR	0.76	35.2	D	LTR	0.94	53.3	D	LTR	0.89	44.9		D
	Overall Intersection		-	0.81	34.0	C	-	0.93	42.4	D	-	0.87	38.0		D
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.78	40.5	D	L	0.80	42.4	D					-Mitigation not required.	
		TR	0.59	22.6	C	TR	0.59	22.6	C						
	SB	L	0.85	52.7	D	L	0.85	52.7	D						
		TR	0.46	19.4	B	TR	0.46	19.4	B						
	Kissena Boulevard	WB	T	0.67	35.8	D	T	0.67	35.8	D					
Overall Intersection		-	0.81	30.0	C	-	0.82	30.3	C						
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.54	32.5	C	L	0.54	32.5	C	L	0.54	32.1	C	-Upgrade to computerized signal controller with the following timing plan: WB phase will have 26 s green time; NB/SB phase will have 54 s green time [each phase will have 3 s amber and 2 s all red time]. -Install "No Standing 4 PM - 7 PM, Mon-Fri" regulations on the SB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	
		T	0.61	13.3	B	T	0.63	13.8	B	T	0.62	13.1	B		
	SB	TR	0.99	33.9	C	TR	1.06	55.2	E	T	0.96	28.5	C		
		-	-	-	-	-	-	-	-	R	0.07	7.6	A		
	Sanford Avenue	WB	L	0.78	47.6	D	L	0.78	47.6	D	L	0.78	47.9		D
		TR	0.37	26.9	C	TR	0.50	29.1	C	TR	0.50	29.2	C		
Overall Intersection		-	0.92	27.8	C	-	0.97	39.2	D	-	0.90	24.9	C		
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.31	20.3	C	LTR	0.31	20.3	C					-Mitigation not required.	
	SB	LTR	0.73	26.8	C	LTR	0.75	27.5	C						
		EB	-	-	-	-	-	-	-						
	Sanford Avenue	LTR	0.32	14.7	B	LTR	0.32	14.7	B						
		WB	LTR	0.68	22.4	C	LTR	0.74	24.5	C					
	Overall Intersection		-	0.71	22.4	C	-	0.75	23.4	C					

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div><div></div><div></div></div>														
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.90	35.5	D	LTR	0.93	39.3	D	LT	0.79	27.6	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. -Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. -Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.
	-	-	-	-	-	-	-	-	-	R	0.15	15.2	B	
Sanford Avenue	SB	LTR	0.78	27.5	C	LTR	0.97	49.0	D	LT	0.82	30.9	C	
	-	-	-	-	-	-	-	-	-	R	0.22	16.1	B	
Sanford Avenue	EB	LTR	0.71	26.3	C	LTR	0.74	27.8	C	LTR	0.74	27.8	C	
	WB	LTR	0.79	30.0	C	LTR	0.87	35.8	D	LTR	0.87	35.8	D	
		-	-	-	-	-	-	-	-	-	-	-	-	
Overall Intersection		-	0.85	30.0	C	-	0.92	38.6	D	-	0.84	29.4	C	
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.50	25.3	C	T	0.54	25.9	C	-Mitigation not required.				
	TR	0.93	47.3	D	TR	0.93	47.3	D						
32nd Avenue	SB	L	0.49	34.9	C	L	0.49	35.0	C					
	T	0.44	10.9	B	T	0.46	11.1	B						
32nd Avenue	WB	LTR	0.90	45.6	D	LTR	0.90	45.6	D					
			-	-	-	-	-	-	-					
Overall Intersection		-	1.16	29.4	C	-	1.16	29.3	C					
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.56	13.6	B	TR	0.58	13.8	B	TR	0.61	16.1	B	-Modify Signal Timing: Shift 3 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 48 s; WB green time shifts from 29 s to 32 s].
	SB	LT	0.87	24.2	C	LT	0.90	27.4	C	LT	0.98	41.6	D	
Northern Blvd Service Rd	WB	LR	0.74	34.7	C	LR	0.98	60.6	E	LR	0.88	42.3	D	
			-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
Overall Intersection		-	0.82	21.1	C	-	0.93	28.4	C	-	0.94	31.0	C	
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.51	37.3	D	-Unmitigatable impact. -Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 25 s green time; WB lag phase will have 11 s green time; NB/SB phase will have 37 s green time; SB lag phase will have 15 s green time [each phase will have 3 s amber and 2 s all red time].
	LTR	0.05	7.1	A	LTR	0.21	8.1	A	TR	0.44	33.8	C		
Stadium Road	SB	-	-	-	-	DefL	0.94	41.1	D	DefL	0.87	44.5	D	
	LTR	0.23	8.2	A	TR	0.71	15.6	B	TR	0.91	42.6	D		
Stadium Road	EB	-	-	-	-	DefL	1.16	179.7	F	DefL	0.58	38.5	D	
	-	-	-	-	-	TR	0.46	30.0	C	TR	0.41	33.4	C	
	WB	-	-	-	-	-	-	-	-	-	-	-	-	
	LTR	0.30	26.4	C	LTR	2.00	487.5	F	LTR	1.52	279.6	F		
Overall Intersection		-	0.25	14.8	B	-	1.27	231.2	F	-	1.45	145.5	F	

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	16.7	C	L	-	1000.0+	F	L	0.73	41.9	D	-Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.
		R	-	8.8	A	R	-	9.1	A	R	0.08	1.9	A	
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.11	39.7	D	
		WB	LT	-	7.8	A	LT	-	10.8	B	L	0.63	17.3	
		-	-	-	-	-	-	-	LT	0.60	16.3	B		
Overall Intersection		-	-	9.1	A	-	-	1000.0+	F	-	0.61	23.0	C	
Willets Point Boulevard at Northern Boulevard														
Willets Point Boulevard	NB	TR	-	9.9	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.
	New Van Wyck Expressway Ramp	SB	-	-	-	-	-	-	-	T	0.67	16.9	B	
	Northern Boulevard Service Road	EB	-	-	-	-	T	-	1000.0+	F	T	0.78	23.8	
Overall Intersection		-	-	9.9	A	-	-	1000.0+	F	-	0.72	19.5	B	
Grand Central Parkway Ramp at West Park Loop/Stadium Road														
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.06	24.7	C	-Install traffic signal with the following timing plan: EB will have 38 s green time; WB will have 23 s green time; NB/SB will have 44 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.
	SB	-	-	-	-	LT	-	7.8	A	L	0.37	30.3	C	
		-	-	-	-	-	-	-	-	TR	0.86	44.2	D	
Grand Central Parkway Off-Ramp	EB	L	-	10.7	B	L	-	68.2	F	L	0.29	32.2	C	
		-	-	-	-	T	-	235.7	F	T	0.61	39.8	D	
		R	-	9.4	A	R	-	13.3	B	-	-	-	-	
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.93	70.8	E	
		-	-	-	-	R	-	9.0	A	R	0.29	44.2	D	
Overall Intersection		-	-	10.0	A	-	-	1000.0+	F	-	0.78	47.7	D	
126th Street at 36th Avenue														
126th Street	NB	-	-	-	-	TR	0.74	24.1	C	TR	0.74	24.1	C	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.80	41.9	D	DefL	0.65	26.2	C	
		LT	-	-	8.2	A	T	0.88	23.4	C	T	0.85	20.5	
36th Avenue	WB	LR	-	12.1	B	L	0.14	39.6	D	L	0.14	39.6	D	
		-	-	-	-	R	0.77	49.6	D	R	0.77	49.6	D	
Overall Intersection		-	-	11.2	B	-	1.21	27.7	C	-	1.18	25.5	C	
126th Street at 37th Avenue														
126th Street	NB	-	-	-	-	TR	0.66	21.6	C	TR	0.66	21.6	C	-Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
	SB	-	-	-	-	DefL	0.90	51.7	D	DefL	0.74	31.3	C	
		LT	-	-	8.2	A	T	0.78	19.1	B	T	0.78	19.1	
37th Avenue	WB	LR	-	13.1	B	L	0.11	35.3	D	L	0.11	35.3	D	
		-	-	-	-	R	0.61	38.9	D	R	0.61	38.9	D	
Overall Intersection		-	-	11.4	B	-	1.12	25.1	C	-	1.03	23.1	C	
Northern Boulevard at 126th Place														
126th Place	NB	R	-	19.4	C	R	-	38.4	E	R	0.36	43.9	D	-Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.
	Northern Boulevard	EB	-	-	-	-	-	-	-	TR	0.85	15.6	B	
Overall Intersection		-	-	19.4	C	-	-	38.4	E	-	0.74	16.6	B	

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
				Delay				Delay				Delay		
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	1.28	162.7	F	-Mitigation not required.				
	SB	-	-	-	-	DefL	1.00	99.2	F					
New Willets Point Boulevard		-	-	-	-	T	0.61	16.4	B					
	WB	-	-	-	-	L	1.08	108.5	F					
		-	-	-	-	R	1.04	92.9	F					
Overall Intersection		-	-	-	-	-	1.53	108.9	F					
Citi Field/Lot B at Roosevelt Avenue														
Citi Field/Lot B	SB	LR	-	-	-	LR	0.02	28.3	C	-Mitigation not required.				
	EB	LT	-	-	-	LT	0.60	16.5	B					
Roosevelt Avenue	WB	TR	-	-	-	TR	0.82	22.9	C					
Overall Intersection		-	-	-	-	-	0.54	20.3	C					

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action				With Action				Mitigation Measure						
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.52	27.6	C	DefL	0.63	31.5	C				-Unmitigatable impact.	
		T	0.21	21.1	C	T	0.21	21.1	C					
	SB	LTR	0.26	21.7	C	LTR	0.26	21.7	C					
Astoria Boulevard	EB	TR	0.95	34.5	C	TR	1.13	89.4	F					
		-	-	-	-	-	-	-	-					
	WB	L	0.57	24.3	C	L	0.57	26.0	C					
		TR	0.37	12.6	B	TR	0.44	13.5	B					
Overall Intersection	-	0.75	26.1	C	-	0.88	55.1	E						
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.13	112.4	F	LTR	1.55	294.2	F	L	0.68	46.2	D	-Partially mitigated.
		-	-	-	-	-	-	-	-	TR	0.85	49.1	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes.
	SB	LTR	0.94	70.3	E	LTR	0.97	77.5	E	L	0.50	48.5	D	-Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes.
		-	-	-	-	-	-	-	-	TR	0.61	46.3	D	
Northern Boulevard (Rt. 25A)	EB	L	0.18	40.1	D	L	0.18	45.4	D	L	0.17	41.4	D	-Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft.
		TR	0.95	33.6	C	TR	1.20	119.4	F	T	1.02	46.7	D	-Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft.
		-	-	-	-	-	-	-	-	R	0.16	12.6	B	-Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB left-turn phase and shift 2 s green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 30 s to 27 s; EB/WB left-turn green time shifts from 9 s to 10 s; EB/WB green time shifts from 66 s to 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
	WB	L	0.72	43.4	D	L	0.77	50.6	D	L	0.73	47.6	D	-Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
		TR	1.20	118.1	F	TR	1.39	205.0	F	T	1.14	90.5	F	
		-	-	-	-	-	-	-	-	R	0.28	13.5	B	
Overall Intersection	-	1.11	79.9	E	-	1.35	164.9	F	-	1.01	62.3	E		
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.38	43.8	D	LTR	0.45	45.6	D	LTR	0.55	38.2	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes.
Northern Boulevard (Rt. 25A)	EB	T	0.72	23.9	C	T	0.95	38.1	D	T	0.80	19.7	B	-Divert left-turning turning to NB 112th Place and then to SB 114th Street.
		R	0.60	22.7	C	R	0.63	23.7	C	R	0.53	14.5	B	-Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes.
	WB	DefL	0.73	22.1	C	DefL	1.13	116.6	F	-	-	-	-	-Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides.
		T	1.00	30.1	C	T	1.15	86.0	F	T	1.03	41.3	D	-Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].
Overall Intersection	-	1.33	27.5	C	-	1.93	66.3	E	-	0.87	32.5	C		
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.45	43.6	D	L	1.38	229.1	F	L	1.38	229.1	F	-Partially mitigated.
		R	0.35	42.4	D	R	3.00+	1000.0+	F	R	0.83	58.7	E	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.
Northern Boulevard	EB	T	0.74	43.7	D	T	0.82	47.6	D	T	0.89	47.9	D	-Close the ramp from EB Northern Blvd ramp to 126th Street.
	WB	T	0.31	6.9	A	T	0.39	7.6	A	T	0.39	7.6	A	-Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.
Grand Central Parkway Ramp	EB	T	0.85	42.3	D	T	1.01	65.9	E	T	1.08	90.7	F	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes.
Van Wyck & Whitestone Expressway Ramp	WB	T	0.75	15.6	B	T	1.30	159.2	F	-	-	-	-	-Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard.
Overall Intersection	-	0.68	29.9	C	-	2.89	366.6	F	-	1.08	88.3	F		-Modify signal timing: shift 3 s of green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase [EB GCP/Astoria Blvd Ramp green time shifts from 45 s to 42 s; EB Northern Blvd green time shifts from 35 s to 38 s].

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.14	108.9	F	LTR	1.14	108.9	F	LTR	1.14	108.9	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.47	36.9	D	LTR	0.47	36.9	D	LTR	0.47	36.9	D		
Northern Boulevard (Rt. 25A)	EB	L	0.67	49.9	D	L	0.67	49.9	D	L	0.67	49.9	D		
	T		1.07	67.0	E	T	1.21	128.1	F	T	1.21	128.1	F		
	WB	L	0.83	66.0	E	L	0.83	66.0	E	L	0.83	66.0	E		
	T		1.17	116.5	F	T	1.26	154.3	F	T	1.26	154.3	F		
Northern Boulevard Service Rd.	EB	TR	0.63	26.0	C	TR	0.63	26.0	C	TR	0.63	26.0	C		
	WB	TR	0.76	35.4	D	TR	1.09	91.9	F	T	0.84	38.9	D		
	-	-	-	-	-	-	-	-	-	R	0.13	21.3	C		
Overall Intersection	-	1.05	79.2	E	-	1.13	118.3	F	-	1.13	114.9	F			
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.94	56.9	E	T	0.94	56.9	E						-Unmitigatable impact.
	R		0.90	63.9	E	R	0.90	63.9	E						
Northern Boulevard (Rt. 25A)	EB	T	0.96	40.9	D	T	1.11	87.7	F						
	R		1.40	216.1	F	R	1.40	216.1	F						
	WB	L	0.08	25.2	C	L	0.08	25.2	C						
	T		0.95	30.6	C	T	1.11	79.1	E						
Overall Intersection	-	1.17	62.1	E	-	1.17	93.2	F							
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.77	38.2	D	TR	0.77	38.2	D	TR	0.77	38.2	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.66	34.6	C	TR	0.66	34.7	C	TR	0.66	34.7	C		
Northern Boulevard (Rt. 25A)	EB	L	0.74	33.5	C	L	0.74	25.7	C	L	0.74	32.9	C		
	TR		1.47	247.2	F	TR	1.66	336.0	F	TR	1.66	336.0	F		
	WB	L	0.87	47.0	D	L	0.87	47.0	D	L	0.87	47.0	D		
	TR		1.04	59.6	E	TR	1.25	149.3	F	TR	0.92	38.3	D		
Overall Intersection	-	1.10	123.8	F	-	1.19	190.0	F	-	1.19	154.2	F			
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.86	70.4	E	L	0.90	77.8	E	L	0.84	66.6	E		-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 1 s green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB protected left-turn green time shifts from 10 s to 9 s; EB/WB green time shifts from 52 s to 53 s].
	TR		0.61	41.1	D	TR	0.61	41.1	D	TR	0.61	41.1	D		
	SB	LTR	1.14	108.0	F	LTR	1.22	140.7	F	LT	0.70	35.7	D		
	-	-	-	-	-	-	-	-	-	R	0.41	33.9	C		
Northern Boulevard (Rt. 25A)	EB	L	0.51	47.6	D	L	0.58	49.2	D	L	0.62	50.6	D		
	TR		1.09	79.2	E	TR	1.30	172.1	F	T	1.02	51.8	D		
	-	-	-	-	-	-	-	-	-	R	0.58	27.4	C		
	WB	L	0.50	44.2	D	L	0.49	43.9	D	L	0.52	46.2	D		
	TR		1.18	113.1	F	TR	1.40	215.1	F	T	1.18	115.2	F		
	-	-	-	-	-	-	-	-	-	R	0.30	21.8	C		
Overall Intersection	-	1.10	90.3	F	-	1.26	168.2	F	-	1.04	72.7	E			
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	0.99	63.9	E	L	1.11	100.9	F	L	1.00	64.2	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.35	25.4	C	T	0.43	26.8	C	T	0.39	23.9	C		
34th Avenue	EB	T	0.57	14.2	B	T	0.57	14.2	B	T	0.61	16.6	B		
	R		0.11	8.8	A	R	0.11	8.8	A	R	0.12	10.2	B		
Overall Intersection	-	0.72	34.0	C	-	0.76	49.7	D	-	0.76	35.9	D			

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	-	-	-	-	DefL	1.59	317.1	F	L	0.91	52.2	D	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 49 s green time; NB/SB lead left-turn phase will have 14 s green time; NB/SB phase will have 42 s green time [each phase will have 3 s amber and 2 s all red time].
	LTR	0.26	20.9	C	TR	0.72	30.5	C	TR	0.84	44.1	D		
Northern Boulevard Ramp	SB	LTR	0.37	23.3	C	LTR	1.72	365.2	F	-	-	-	-	
GCP Ramp	SB	LTR	0.82	65.2	E	LTR	3.00+	1000.0+	F	L	1.30	187.3	F	
	-	-	-	-	-	-	-	-	T	0.66	36.2	D		
Shea Road	EB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	1.36	223.0	F	
	LTR	0.64	46.9	D	TR	3.00+	1000.0+	F	TR	1.29	176.4	F		
34th Avenue	WB	-	-	-	-	-	-	-	DefL	1.65	346.2	F		
	LTR	0.82	68.5	E	LTR	3.00+	1000.0+	F	TR	1.43	240.1	F		
Overall Intersection	-	0.59	40.8	D	-	3.00+	1000.0+	F	-	1.67	142.1	F		
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.22	145.5	F	LTR	1.30	183.3	F	LT	1.12	104.3	F	-Partially mitigated. -Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
	-	-	-	-	-	-	-	-	R	0.43	38.5	D		
	SB	LTR	1.17	125.0	F	LTR	1.19	135.8	F	LT	1.06	78.9	E	
	-	-	-	-	-	-	-	-	R	0.29	36.8	D		
Roosevelt Avenue	EB	LTR	0.71	16.8	B	LTR	0.92	30.7	C	LTR	0.92	30.7	C	
	WB	LTR	0.79	15.1	B	LTR	1.05	48.9	D	LTR	1.05	48.9	D	
Overall Intersection	-	0.90	57.5	E	-	1.12	75.6	E	-	1.07	51.7	D		
111th Street at Roosevelt Avenue														
111th Street	NB	LTR	1.06	81.0	F	LTR	1.06	81.0	F					-Unmitigatable impact.
Roosevelt Avenue	EB	LTR	0.86	23.7	C	LTR	1.13	89.1	F					
	WB	LTR	1.23	124.6	F	LTR	1.57	277.3	F					
	-	-	-	-	-	-	-	-	-					
Overall Intersection	-	1.18	78.6	E	-	1.43	172.2	F						
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	1.03	74.0	E	LTR	1.14	116.1	F	LTR	0.85	46.7	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Install "No Standing 1 PM - 9 PM Saturday" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.
	SB	LTR	1.11	96.6	F	LTR	1.32	191.9	F	LT	1.09	88.3	F	
	-	-	-	-	-	-	-	-	R	0.07	34.4	C		
Roosevelt Avenue	EB	LTR	1.22	124.1	F	LTR	2.15	537.9	F	L	0.54	13.2	B	
	-	-	-	-	-	-	-	-	TR	0.76	15.0	B		
	WB	LTR	0.69	14.4	B	LTR	1.21	118.9	F	L	0.86	40.1	D	
	-	-	-	-	-	-	-	-	T	0.79	19.0	B		
	-	-	-	-	-	-	-	-	R	0.95	39.0	D		
Overall Intersection	-	1.19	63.6	E	-	1.90	241.4	F	-	0.99	32.3	C		

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	0.64	59.9	E	-Partially mitigated. -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach 9 ft to the east. -Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach 1 ft to south. -Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB will have 64 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 34 s green time [each phase will have 3 s amber and 2 s all red time].	
		LTR	0.37	40.7	D	LTR	3.00+	1000.0+	F	TR	0.33	35.2	D		
	SB	DefL	1.11	127.6	F	DefL	3.00+	1000.0+	F	L	2.14	570.7	F		
		TR	0.53	44.0	D	TR	3.00+	1000.0+	F	T	0.66	45.1	D		
Roosevelt Avenue	-	-	-	-	-	-	-	-	R	1.33	203.0	F			
	EB	-	-	-	-	DefL	2.02	497.5	F	DefL	1.22	168.3	F		
	LTR	0.68	15.0	B	TR	0.75	17.9	B	TR	0.69	17.7	B			
	WB	LTR	0.49	10.8	B	LTR	1.05	58.8	E	LTR	1.18	120.3	F		
	Overall Intersection	-	0.80	32.6	C	-	3.00+	853.2	F	-	1.92	157.9	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.30	185.0	F	L	1.93	464.3	F	L	1.15	131.0	F		-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 29 s green time [each phase will have 3 s amber and 2 s all red time].
		TR	0.94	35.6	D	TR	0.94	35.6	D	TR	0.91	39.4	D		
	-	-	-	-	-	-	-	-	-	-	-	-			
	SB	TR	1.02	57.0	E	TR	1.35	194.4	F	T	0.93	53.8	D		
		EB	L	0.57	20.9	C	L	0.63	21.6	C	L	0.60	26.0	-	
	Roosevelt Avenue	TR	1.25	138.1	F	TR	1.69	335.2	F	TR	1.57	288.3	F		
		L	0.34	34.4	C	L	0.34	34.4	C	-	-	-	-		
		TR	0.49	27.1	C	TR	0.67	31.4	C	TR	0.65	44.3	D		
		Overall Intersection	-	1.26	71.0	E	-	1.78	185.7	F	-	1.31	105.4	F	
Prince Street at Roosevelt Avenue															
Prince Street	SB	LTR	0.97	60.6	E	LTR	0.97	60.6	E					-Mitigation not required.	
		DefL	0.80	20.3	C	DefL	0.87	25.2	C						
	TR	0.75	15.9	B	TR	0.91	23.9	C							
	WB	LTR	0.58	12.8	B	LTR	0.70	15.4	B						
	-	-	-	-	-	-	-	-	-						
Overall Intersection	-	0.86	26.1	C	-	0.93	28.8	C							

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Main Street at Roosevelt Avenue														
Main Street	NB	T	0.77	26.7	C	T	0.77	26.7	C	T	0.86	34.0	C	-Partially mitigated. -Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].
	SB	T	0.67	24.5	C	T	0.67	24.5	C	T	0.75	29.8	C	
	EB	L	0.22	19.7	B	L	0.29	23.5	C	L	0.24	18.0	B	
	TR	0.94	52.8	D	TR	1.25	153.9	F	TR	1.12	99.1	F		
	WB	L	0.03	14.8	B	L	0.05	15.2	B	L	0.04	12.8	B	
	TR	0.86	32.6	C	TR	1.07	73.3	E	TR	0.96	40.1	D		
Overall Intersection		-	0.85	32.1	C	-	1.00	65.0	E	-	1.00	48.9	D	
Union Street at Roosevelt Avenue														
Union Street	NB	TR	0.57	19.2	B	TR	0.57	19.2	B					-Unmitigatable impact.
	SB	LT	1.08	75.2	E	LT	1.08	75.2	E					
		R	2.83	856.2	F	R	2.83	856.2	F					
	EB	LTR	2.35	641.1	F	LTR	3.00+	941.2	F					
	WB	LT	0.55	23.9	C	LT	0.74	30.1	C					
	R	1.40	254.6	F	R	1.40	254.6	F						
Overall Intersection		-	2.61	319.9	F	-	2.92	414.5	F					
Parsons Boulevard at Roosevelt Avenue														
Parsons Boulevard	NB	LTR	0.88	36.2	D	LTR	0.93	44.3	D	LT	0.91	41.8	D	-Unmitigatable impact. -Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s]. -Install "No Standing 10AM - 9PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Saturday post-game peak period.]
		-	-	-	-	-	-	-	-	R	0.05	15.4	B	
	SB	LTR	0.79	27.6	C	LTR	0.79	27.6	C	LTR	0.84	31.4	C	
	EB	LTR	0.76	28.8	C	LTR	1.05	73.6	E	LTR	0.99	55.9	E	
	WB	LTR	0.88	37.9	D	LTR	1.12	99.2	F	LTR	1.05	71.7	E	
Overall Intersection		-	0.88	32.4	C	-	1.03	61.3	E	-	0.98	49.9	D	
KISSENA BOULEVARD														
Main Street at Kissena Boulevard														
Main Street	NB	L	1.21	147.6	F	L	1.25	163.4	F	L	1.20	143.0	F	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].
		TR	0.70	23.6	C	TR	0.70	23.6	C	TR	0.68	22.5	C	
	SB	L	0.55	22.1	C	L	0.55	22.1	C	L	0.57	23.1	C	
	TR	0.58	20.3	C	TR	0.58	20.3	C	TR	0.56	19.4	B		
	WB	T	0.76	27.4	C	T	0.76	27.4	C	T	0.78	29.1	C	
Overall Intersection		-	0.98	36.3	D	-	1.00	38.5	D	-	0.99	36.1	D	
SANFORD AVENUE														
College Point Boulevard at Sanford Avenue														
College Point Boulevard	NB	L	0.64	32.2	C	L	0.78	54.4	D	L	0.71	41.2	D	-Upgrade to computerized signal controller with the following timing plan: WB phase will have 25 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time].
		T	0.74	15.9	B	T	0.78	17.0	B	T	0.75	15.1	B	
	SB	TR	0.86	19.5	B	TR	0.92	23.6	C	TR	0.89	19.9	B	
		-	-	-	-	-	-	-	-	-	-	-	-	
	WB	L	0.71	39.9	D	L	0.71	39.9	D	L	0.74	43.2	D	
	TR	0.52	29.5	C	TR	0.70	34.0	C	TR	0.73	36.2	D		
Overall Intersection		-	0.81	20.8	C	-	0.85	24.1	C	-	0.84	22.1	C	
Union Street at Sanford Avenue														
Union Street	NB	LTR	0.40	21.8	C	LTR	0.40	21.8	C					-Mitigation not required.
	SB	LTR	0.75	27.7	C	LTR	0.77	28.6	C					
	EB	DefL	0.49	21.6	C	DefL	0.52	23.2	C					
		TR	0.36	15.6	B	TR	0.36	15.6	B					
	WB	LTR	0.89	29.9	C	LTR	0.96	38.9	D					
Overall Intersection		-	0.83	25.7	C	-	0.88	29.4	C					

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Parsons Boulevard at Sanford Avenue														
Parsons Boulevard	NB	LTR	0.94	40.0	D	LTR	0.98	47.7	D	LT	0.87	32.6	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach.
	-	-	-	-	-	-	-	-	-	R	0.13	15.0	B	-Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket.
	SB	LTR	0.85	30.1	C	LTR	1.07	74.6	E	LT	0.81	28.6	C	-Install "No Standing 10 AM - 4 PM" regulations on the WB approach 100 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.
Sanford Avenue	-	-	-	-	-	-	-	-	-	R	0.32	17.1	B	-Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.
	EB	LTR	0.74	26.9	C	LTR	0.76	28.1	C	LTR	0.77	28.6	C	
	WB	LTR	0.91	39.1	D	LTR	1.01	57.2	E	LT	0.77	27.1	C	
-	-	-	-	-	-	-	-	-	-	R	0.20	15.9	B	
Overall Intersection		-	0.93	34.0	C	-	1.04	54.0	D	-	0.82	27.2	C	
WHITESTONE EXPRESSWAY / 32ND AVENUE														
College Point Boulevard at 32nd Avenue														
College Point Boulevard	NB	T	0.36	23.3	C	T	0.39	23.6	C					-Mitigation not required.
	TR		0.79	34.6	C	TR	0.79	34.6	C					
	SB	L	0.53	36.4	D	L	0.53	36.4	D					
32nd Avenue	-	T	0.42	10.7	B	T	0.44	10.9	B					
	WB	LTR	0.54	32.0	C	LTR	0.54	32.0	C					
	-	-	-	-	-	-	-	-	-					
Overall Intersection		-	1.05	23.4	C	-	1.05	23.3	C					
NORTHERN BOULEVARD SERVICE ROAD														
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.55	13.3	B	TR	0.56	13.6	B					-Unmitigatable impact.
	SB	LT	0.80	20.8	C	LT	0.84	22.9	C					
	WB	LR	0.69	32.7	C	LR	1.04	75.5	E					
Overall Intersection		-	0.76	19.5	B	-	0.91	31.4	C					
STADIUM ROAD														
Boat Basin Road at Stadium Road														
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.56	42.9	D	-Unmitigatable impact.
	LTR		0.08	7.2	A	LTR	0.21	8.1	A	TR	0.52	38.5	D	-Install an actuated controller.
	SB	DefL	0.20	8.4	A	DefL	1.07	73.7	E	DefL	0.99	69.1	E	-Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 30 s green time; WB lag phase will have 8 s green time; NB/SB phase will have 32 s green time; SB lag phase will have 18 s green time [each phase will have 3 s amber and 2 s all red time].
Stadium Road	TR		0.16	7.9	A	TR	0.63	13.8	B	TR	0.85	36.6	D	
	EB	-	-	-	-	DefL	1.83	449.5	F	DefL	0.92	77.1	E	
	-	-	-	-	-	TR	0.63	34.4	C	TR	0.50	31.3	C	
WB	-	-	-	-	-	DefL	2.72	817.4	F	DefL	1.68	357.6	F	
	LTR		0.28	26.2	C	TR	2.26	607.5	F	TR	1.73	371.8	F	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
Overall Intersection		-	0.23	14.4	B	-	1.59	356.2	F	-	1.82	195.6	F	

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

Intersection & Approach		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
UNSIGNALIZED INTERSECTIONS															
Boat Basin Road at Worlds Fair Marina															
Boat Basin Road	NB	L	-	17.4	C	L	-	1000.0+	F	L	0.62	37.8	D	-Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.	
		R	-	8.6	A	R	-	8.9	A	R	0.10	1.9	A		
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.23	41.4	D		
		WB	LT	-	8.0	A	LT	-	13.9	B	L	0.77	22.3		C
		-	-	-	-	-	-	-	LT	0.66	17.9	B			
Overall Intersection		-	-	10.0	A	-	-	1000.0+	F	-	0.69	23.3	C		
Willets Point Boulevard at Northern Boulevard															
Willets Point Boulevard	NB	TR	-	9.2	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.	
	New Van Wyck Expressway Ramp	SB	-	-	-	-	-	-	-	T	0.86	23.5	C		
	Northern Boulevard Service Road	EB	-	-	-	-	T	-	713.5	F	T	0.46	14.9		B
Overall Intersection		-	-	9.2	A	-	-	713.5	F	-	0.66	21.6	C		
Grand Central Parkway Ramp at West Park Loop/Stadium Road															
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.11	27.9	C	-Install traffic signal with the following timing plan: EB will have 40 s green time; WB will have 25 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
	SB	-	-	-	-	LT	-	8.2	A	L	0.59	39.9	D		
		-	-	-	-	-	-	-	-	TR	0.80	43.4	D		
Grand Central Parkway Off-Ramp	EB	L	-	11.2	B	L	-	407.6	F	L	0.43	33.6	C		
		-	-	-	-	T	-	620.9	F	T	0.76	44.8	D		
		R	-	9.3	A	R	-	12.4	B	-	-	-	-		
Willets West Center Exit	WB	-	-	-	-	L	-	1000.0+	F	L	0.96	73.8	E		
		-	-	-	-	R	-	9.2	A	R	0.33	43.4	D		
Overall Intersection		-	-	10.7	B	-	-	1000.0+	F	-	0.82	49.2	D		
126th Street at 36th Avenue															
126th Street	NB	-	-	-	-	TR	0.60	20.4	C	TR	0.60	20.4	C	-Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	DefL	0.95	56.2	E	-	-	-	-		
		LT	-	8.4	A	T	0.97	35.7	D	LT	0.99	40.5	D		
36th Avenue	WB	LR	-	13.5	B	L	0.14	39.6	D	L	0.14	39.6	D		
		-	-	-	-	R	0.65	40.9	D	R	0.65	40.9	D		
Overall Intersection		-	-	11.1	B	-	1.34	32.8	C	-	0.86	32.8	C		
126th Street at 37th Avenue															
126th Street	NB	-	-	-	-	TR	0.50	18.4	B	TR	0.50	18.4	B	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
	SB	-	-	-	-	-	-	-	-	-	-	-			
		LT	-	8.2	A	LT	0.94	32.6	C	LT	0.88	24.5	C		
37th Avenue	WB	LR	-	12.0	B	L	0.11	35.3	D	L	0.11	35.3	D		
		-	-	-	-	R	0.69	43.6	D	R	0.69	43.6	D		
Overall Intersection		-	-	11.0	B	-	0.84	28.6	C	-	0.79	24.4	C		
Northern Boulevard at 126th Place															
126th Place	NB	R	-	16.6	C	R	-	29.3	D	R	0.34	43.5	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.	
	Northern Boulevard	EB	-	-	-	-	-	-	-	TR	0.88	17.4	B		
Overall Intersection		-	-	16.6	C	-	-	29.3	D	-	0.76	18.4	B		

TABLE 23
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY NON-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	1.22	138.5	F					-Mitigation not required.
	SB	-	-	-	-	DefL	1.03	103.7	F					
New Willets Point Boulevard		-	-	-	-	T	0.64	17.0	B					
	WB	-	-	-	-	L	0.96	73.8	E					
		-	-	-	-	R	0.61	34.4	C					
Overall Intersection		-	-	-	-	-	1.47	85.5	F					
Citi Field/Lot B at Roosevelt Avenue														
Citi Field/Lot B	SB	LR	-	-	-	LR	0.04	34.3	C					-Mitigation not required.
	EB	LT	-	-	-	LT	0.60	13.0	B					
Roosevelt Avenue		WB	TR	-	-	-	TR	0.63	12.5	B				
Overall Intersection		-	-	-	-	-	0.47	12.9	B					

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 24

2032 (PHASE 2) GAMEDAY MITIGATION MEASURES			
INTERSECTION SIGNALIZED INTERSECTIONS	WEEKDAY PRE-GAME PEAK HOUR	SATURDAY PRE-GAME PEAK HOUR	SATURDAY POST-GAME PEAK HOUR
108th Street at Astoria Boulevard	Unmitigatable impact.	Install "No Standing 3 PM - 10 PM Saturday" regulations along the south curb of the EB approach for 150-ft from the intersection to allow for an 11-ft daylighted right-turn lane. Modify signal timing: shift 1 s of green time from EB/WB phase to WB lead phase [EB/WB green time shifts from 34 s to 33 s; WB lead green time shifts from 9 s to 10 s].	Install "No Standing 3 PM - 10 PM Saturday" regulations along the south curb of the EB approach for 150-ft from the intersection to allow for an 11-ft daylighted right-turn lane. Modify signal timing: shift 1 s of green time from EB/WB phase to WB lead phase [EB/WB green time shifts from 34 s to 33 s; WB lead green time shifts from 9 s to 10 s].
108th Street at Northern Boulevard (RT. 25A)	Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.	Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB left-turn phase and shift 2 s green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 30 s to 27 s; EB/WB left-turn green time shifts from 9 s to 10 s; EB/WB green time shifts from 66 s to 68 s]. Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.	Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB left-turn phase and shift 2 s green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 30 s to 27 s; EB/WB left-turn green time shifts from 9 s to 10 s; EB/WB green time shifts from 66 s to 68 s]. Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
114th Street at Northern Boulevard (RT. 25A)	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Place and then to SB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 s to 75 s].	Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Place and then to SB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].	Partially mitigated. Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. Divert left-turning turning to NB 112th Place and then to SB 114th Street. Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft moving lanes. Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. Modify signal timing: Eliminate WB lead phase. Shift 10 s green time from WB lead phase to SB phase [SB green time shifts from 25 s to 35 s]. Shift 12 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 63 s to 75 s].
126th Street at Northern Boulevard (RT. 25A)	Unmitigated Impact Install quick-curb on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Modify signal timing: shift 4 s of green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 29 s; EB GCP/Astoria Blvd Ramp green time shifts from 55 s to 51 s].	Unmitigated Impact Install quick-curb on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Modify signal timing: shift 3 s of green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase [EB GCP/Astoria Blvd Ramp green time shifts from 45 s to 42 s; EB Northern Blvd green time shifts from 35 s to 38 s].	Partially mitigated. Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. Close the ramp from EB Northern Blvd ramp to 126th Street. Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. Modify signal timing: shift 1 s of green time from EB Northern Blvd phase to NB 126th St phase [EB Northern Blvd green time shifts from 35 s to 34 s; NB 126th St green time shifts from 25 s to 26 s].
Prince Street at Northern Boulevard (RT. 25A)	Partially Mitigated. Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	Partially Mitigated. Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	Unmitigatable Impact.
Main Street at Northern Boulevard (RT. 25A)	Unmitigatable impact.	Unmitigatable impact.	Unmitigatable impact.
Union Street at Northern Boulevard (RT. 25A)	Partially Mitigated. Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	Partially Mitigated. Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	Partially Mitigated. Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane. Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB left-turn phase [NB/SB green time shifts from 44 s to 43 s; EB/WB left-turn green time shifts from 15 s to 16 s].
Parsons Boulevard at Northern Boulevard (RT. 25A)	Partially Mitigated. Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to EB/WB phase; shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [EB/WB protected left-turn green time shifts from 12 s to 11 s; EB/WB green time shifts from 50 s to 51 s; LPI shifts from 7 s to 6 s; NB/SB green time shifts from 36 s to 37 s].	Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB protected left-turn green time shifts from 10 s to 9 s; EB/WB green time shifts from 52 s to 53 s].	Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150 ft from the intersection to allow for one 10-ft daylighted right-turn lane. Modify Signal Timing: Shift 1 s green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB protected left-turn green time shifts from 10 s to 9 s; EB/WB green time shifts from 52 s to 53 s].
114th Street at 34th Avenue	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].
126th Street/GCP Ramp at 34th Avenue	Partially mitigated. Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 53 s green time; NB/SB lead left-turn phase will have 12 s green time; NB/SB phase will have 38 s green time [each phase will have 3 s amber and 2 s all red time].	Partially mitigated. Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 53 s green time; NB/SB lead left-turn phase will have 11 s green time; NB/SB phase will have 41 s green time [each phase will have 3 s amber and 2 s all red time].	Partially mitigated. Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. Close the ramp from EB Northern Blvd ramp to 126th Street. Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. Modify signal phasing and timing plan: EB/WB phase will have 48 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 50 s green time [each phase will have 3 s amber and 2 s all red time].

TABLE 24

2032 (PHASE 2) GAMEDAY MITIGATION MEASURES

TABLE 24

2032 (PHASE 2) GAMEDAY MITIGATION MEASURES

Parsons Boulevard at Sanford Avenue	Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.	Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.	Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.
College Point Boulevard at 32nd Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.
College Point Boulevard at Northern Boulevard Service Road	Modify Signal Timing: Shift 3 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 48 s; WB green time shifts from 29 s to 32 s].	Unmitigatable impact.	Mitigation not required.
Boat Basin Road at Stadium Road	Partially Mitigated. Install an actuated controller. Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 24 s green time; WB lag phase will have 9 s green time; NB/SB phase will have 45 s green time; SB lag phase will have 10 s green time [each phase will have 3 s amber and 2 s all red time].	Partially Mitigated. Install an actuated controller. Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 34 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 31 s green time; SB lag phase will have 16 s green time [each phase will have 3 s amber and 2 s all red time].	Unmitigatable impact. Install an actuated controller. Modify signal phasing and timing plan: EB lead phase will have 14 s green time; EB/WB phase will have 37 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 29 s green time; SB lag phase will have 8 s green time [each phase will have 3 s amber and 2 s all red time].
UNSIGNALIZED INTERSECTIONS			
Boat Basin Road at Worlds Fair Marina	Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. Intersection meets NYCDOT Signal Warrant Criteria.
Willets Point Boulevard at Northern Boulevard	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB/NB right-turn will have 25 s green time; NB/SB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB/NB right-turn will have 25 s green time; NB/SB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.	Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. Install traffic signal with the following timing plan: EB/NB right-turn will have 30 s green time; NB/SB will have 20 s green time [each phase will have 3 s amber and 2 s all red time]. Intersection meets NYCDOT Signal Warrant Criteria.
Grand Central Parkway Ramp at West Park Loop/Stadium Road	Install traffic signal with the following timing plan: EB will have 35 s green time; WB will have 20 s green time; NB/SB will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 45 s green time; WB will have 20 s green time; NB/SB will have 40 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.	Install traffic signal with the following timing plan: EB will have 35 s green time; WB will have 20 s green time; NB/SB will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. Add a right turn lane and channelized right-turn to the GCP off ramp. Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. Add a 12-ft SB left-turn lane in the median of Stadium Road. Intersection meets NYCDOT Signal Warrant Criteria.
126th Street at 36th Avenue	Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
126th Street at 37th Avenue	Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	Unmitigatable impact. Intersection meets NYCDOT Signal Warrant Criteria. Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.
Northern Boulevard at 126th Place	Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.	Mitigation not required. Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. Intersection meets NYCDOT Signal Warrant Criteria.
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS			
126th Street at New Willets Point Boulevard	Mitigation not required.	Mitigation not required.	Mitigation not required.
Citi Field/Lot B at Roosevelt Avenue	Mitigation not required.	Mitigation not required.	Mitigation not required.

NOTE: This table has been revised for the Final SEIS.

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation Measure				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
ASTORIA BOULEVARD														
108th Street at Astoria Boulevard														
108th Street	NB	DefL	0.67	51.9	D	DefL	0.79	61.7	E	-Unmitigatable impact.				
		T	0.28	36.8	D	T	0.28	36.8	D					
Astoria Boulevard	SB	LTR	0.35	38.1	D	LTR	0.35	38.1	D					
	EB	TR	1.08	62.7	E	TR	1.13	87.2	F					
	-	-	-	-	-	-	-	-	-					
	WB	L	0.75	49.2	D	L	0.75	51.5	D					
		TR	0.29	9.3	A	TR	0.33	9.7	A					
Overall Intersection		-	0.93	51.1	D	-	1.00	67.5	E					
NORTHERN BOULEVARD														
108th Street at Northern Boulevard (RT. 25A)														
108th Street	NB	LTR	1.18	128.9	F	LTR	1.45	250.0	F	L	0.87	54.7	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 250-ft from the intersection to allow for two moving lanes. -Install "No Standing Anytime" regulations along the west curb of the SB approach for 250-ft from the intersection to allow for two moving lanes. -Restripe NB approach of 108th Street from one 22-ft lane to one 11-ft exclusive left-turn lane and one 11-ft shared through-right lane for 175 ft. -Restripe SB approach of 108th Street from one 23-ft lane to one 11-ft exclusive left-turn lane and one 12-ft shared through-right lane for 175 ft. -Install "No Standing 10 AM - 9 PM" regulations along the north curb of the WB approach for 150-ft from the intersection to allow for a 10-ft daylighted right-turn lane. -Install "No Standing 10 AM - 9 PM" regulations along the south curb of the EB approach for 100-ft from the intersection to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	TR	0.66	41.9	D	
SB	LTR	1.14	115.9	F	LTR	1.16	126.3	F	L	0.54	44.7	D		
	-	-	-	-	-	-	-	-	TR	0.67	43.7	D		
Northern Boulevard (Rt. 25A)	EB	L	0.19	32.9	C	L	0.19	40.4	D	L	0.19	33.4	C	
		TR	0.87	14.7	B	TR	0.97	22.3	C	TR	0.97	22.3	C	
	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.74	46.8	D	L	0.74	48.5	D	L	0.74	48.5	D	
TR		1.08	62.9	E	TR	1.21	119.6	F	T	0.99	33.7	C		
	-	-	-	-	-	-	-	-	R	0.31	12.5	B		
Overall Intersection		-	1.07	47.8	D	-	1.20	80.5	F	-	1.02	29.6	C	
114th Street at Northern Boulevard (RT. 25A)														
114th Street	SB	LTR	0.78	57.6	E	LTR	0.92	72.3	E	LTR	0.59	38.2	D	-Prohibit left-turns from WB Northern Boulevard onto SB 114th Street to allow for three exclusive through lanes. -Divert left-turning turning to NB 112th Place and then to SB 114th Street. -Prohibit parking along east curb of SB 114th Street for 200 ft and restripe as two 11-ft lanes. -Restripe SB 114th Street receiving lanes as two 11-ft moving lanes with parking on both sides. -Modify signal timing: Eliminate WB lead phase. Shift 12 s green time from WB lead phase to SB phase [SB green time shifts from 23 s to 35 s]. Shift 10 s green time from WB lead phase to EB/WB phase [EB/WB green time shifts from 65 s to 75 s].
		EB	T	1.01	35.8	D	T	1.16	94.0	F	T	1.01	25.3	
Northern Boulevard (Rt. 25A)	R	0.64	14.9	B	R	0.75	17.4	B	R	0.65	8.7	A		
	WB	DefL	0.84	51.2	D	DefL	0.97	74.3	E	-	-	-	-	
	T	0.87	15.5	B	T	0.97	24.2	C	T	0.89	21.8	C		
Overall Intersection		-	1.52	26.9	C	-	1.72	54.2	D	-	0.87	23.2	C	
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.47	44.1	D	L	1.16	134.2	F	L	1.16	134.2	F	-Unmitigated Impact -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 4 s of green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase [EB Northern Blvd green time shifts from 25 s to 29 s; EB GCP/Astoria Blvd Ramp green time shifts from 55 s to 51 s].
		R	0.40	43.6	D	R	3.00+	1000.0+	F	R	0.70	51.4	D	
Northern Boulevard	EB	T	1.12	118.9	F	T	1.19	149.3	F	T	1.16	129.8	F	
	WB	T	0.82	16.8	B	T	0.92	24.2	C	T	0.92	24.2	C	
Grand Central Parkway Ramp	EB	T	0.90	39.6	D	T	0.98	51.5	D	T	1.05	75.3	E	
	WB	T	0.80	14.8	B	T	0.83	16.3	B	-	-	-	-	
Overall Intersection		-	0.74	38.7	D	-	2.30	217.0	F	-	1.11	85.1	F	

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.13	107.6	F	LTR	1.13	107.6	F	LTR	1.13	107.6	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.60	42.5	D	LTR	0.60	42.5	D	LTR	0.60	42.5	D		
Northern Boulevard (Rt. 25A)	EB	L	0.98	75.2	E	L	0.98	75.2	E	L	0.98	75.2	E		
	T		1.05	58.9	E	T	1.15	102.0	F	T	1.15	102.0	F		
	WB	L	0.79	69.4	E	L	0.79	69.4	E	L	0.79	69.4	E		
	T		1.11	93.3	F	T	1.17	119.4	F	T	1.17	119.4	F		
Northern Boulevard Service Rd.	EB	TR	0.59	25.2	C	TR	0.59	25.2	C	TR	0.59	25.2	C		
	WB	TR	0.80	42.3	D	TR	1.03	80.6	F	T	0.73	36.9	D		
		-	-	-	-	-	-	-	-	R	0.19	24.0	C		
Overall Intersection		-	1.09	69.4	E	-	1.11	96.3	F	-	1.11	94.0	F		
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	L	0.91	53.1	D	L	0.91	53.1	D					-Unmitigatable impact.	
	R		0.92	64.7	E	R	0.92	64.7	E						
Northern Boulevard (Rt 25A)	EB	T	1.15	99.8	F	T	1.28	153.5	F						
	R		1.24	143.2	F	R	1.24	143.2	F						
	WB	L	0.23	28.0	C	L	0.23	28.0	C						
	T		0.79	23.4	C	T	0.89	27.7	C						
Overall Intersection		-	1.08	72.1	E	-	1.08	94.5	F						
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.70	36.0	D	TR	0.70	36.0	D	TR	0.70	36.0	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.70	35.5	D	TR	0.70	35.5	D	TR	0.70	35.5	D		
Northern Boulevard (Rt. 25A)	EB	L	0.64	31.9	C	L	0.64	33.5	C	L	0.64	31.1	C		
	TR		1.19	119.7	F	TR	1.30	172.6	F	TR	1.30	172.6	F		
	WB	L	0.80	41.8	D	L	0.80	31.9	C	L	0.80	31.9	C		
	TR		1.01	65.7	E	TR	1.16	124.9	F	TR	0.82	36.6	D		
Overall Intersection		-	0.95	79.4	E	-	1.01	120.4	F	-	1.01	94.1	F		
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.90	84.4	F	L	0.93	91.7	F	L	0.94	92.8	F	-Partially Mitigated. -Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 1 s of green time from EB/WB protected left-turn phase to EB/WB phase; shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [EB/WB protected left-turn green time shifts from 12 s to 11 s; EB/WB green time shifts from 50 s to 51 s; LPI shifts from 7 s to 6 s; NB/SB green time shifts from 36 s to 37 s].	
	TR		0.59	40.4	D	TR	0.59	40.4	D	TR	0.57	39.2	D		
	SB	LTR	1.19	129.2	F	LTR	1.25	155.8	F	LT	0.74	35.9	D		
Northern Boulevard (Rt. 25A)	EB	L	0.48	46.2	D	L	0.54	47.8	D	L	0.58	48.9	D		
	TR		1.02	50.3	D	TR	1.15	101.6	F	TR	1.13	90.6	F		
	-	-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.45	41.1	D	L	0.44	42.9	D	L	0.47	43.5	D		
	TR		1.19	118.8	F	TR	1.34	189.1	F	T	1.11	85.6	F		
										R	0.40	24.3	C		
Overall Intersection		-	1.11	81.9	F	-	1.22	130.7	F	-	1.05	77.0	E		
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	1.06	83.8	F	L	1.15	113.7	F	L	1.04	72.3	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.55	29.0	C	T	0.81	39.0	D	T	0.73	32.3	C		
34th Avenue	EB	T	0.51	13.0	B	T	0.51	13.0	B	T	0.54	15.2	B		
	R		0.16	9.2	A	R	0.16	9.2	A	R	0.17	10.7	B		
Overall Intersection		-	0.70	41.9	D	-	0.73	55.0	E	-	0.73	39.4	D		

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	DefL	0.74	64.0	E	DefL	2.60	790.1	F	L	0.88	58.9	E	-Partially mitigated.
		TR	0.36	35.5	D	TR	0.84	50.3	D	TR	0.68	39.4	D	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane.
Northern Boulevard Ramp	SB	LTR	0.74	49.8	D	LTR	2.47	720.2	F	-	-	-	-	-Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes.
		LTR	1.47	266.5	F	LTR	1.99	498.3	F	L	0.85	68.9	E	-Close the ramp from EB Northern Blvd ramp to 126th Street.
GCP Ramp	SB	-	-	-	-	-	-	-	-	T	0.81	45.0	D	-Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road.
		EB	DefL	0.50	33.0	C	DefL	2.59	768.4	F	DefL	1.00	83.2	F
Shea Road	TR	0.31	28.3	C	TR	2.63	781.7	F	TR	1.17	128.0	F	-Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB lead left-turn phase will have 12 s green time; NB/SB phase will have 38 s green time [each phase will have 3 s amber and 2 s all red time].	
		WB	-	-	-	-	-	-	-	DefL	1.45	254.4	F	
34th Avenue	LTR	0.30	28.1	C	LTR	3.00+	1000.0+	F	TR	0.79	36.9	D		
		Overall Intersection	-	0.82	140.5	F	-	2.90	656.4	F	-	1.17	82.5	F
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.18	128.0	F	LTR	1.23	150.8	F	LT	0.97	55.6	E	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
		-	-	-	-	-	-	-	-	R	0.49	39.2	D	-Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
Roosevelt Avenue	SB	LTR	1.19	132.8	F	LTR	1.20	140.2	F	LT	1.01	65.0	E	
		-	-	-	-	-	-	-	-	R	0.31	36.9	D	
Roosevelt Avenue	EB	LTR	0.71	8.6	A	LTR	0.86	14.6	B	LTR	0.86	14.6	B	
		WB	LTR	0.67	12.4	B	LTR	0.86	17.0	B	LTR	0.86	17.0	B
Overall Intersection	-	0.84	53.3	D	-	0.96	56.5	E	-	0.91	28.3	C		
111th Street at Roosevelt Avenue														
111th Street	NB	LTR	1.05	78.7	E	LTR	1.05	78.7	E					-Unmitigatable impact.
		EB	LTR	0.77	9.7	A	LTR	0.94	20.2	C				
Roosevelt Avenue	WB	LTR	1.21	115.3	F	LTR	1.43	216.0	F					
		-	-	-	-	-	-	-	-					
Overall Intersection	-	1.17	67.8	E	-	1.33	115.9	F						
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	0.91	60.5	E	LTR	0.92	62.1	E	LTR	0.74	42.9	D	-Partially mitigated.
		SB	LTR	1.12	100.8	F	LTR	1.52	280.3	F	LT	1.09	89.3	F
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.12	32.7	C	-Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane.
		EB	LTR	1.00	31.0	C	LTR	1.42	213.5	F	L	0.29	10.7	B
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	TR	0.83	11.6	B	-Shift centerline of NB 114th Street approach 3 ft to the east.
		WB	LTR	0.69	14.5	B	LTR	1.12	83.5	F	L	1.00	68.2	E
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	T	0.66	15.9	B	-Shift center line of SB 114th Street approach 2 ft to the east.
		-	-	-	-	-	-	-	-	R	0.97	47.9	D	Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection.
Overall Intersection	-	1.04	35.8	D	-	1.45	145.1	F	-	1.00	30.2	C	Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection.	
-Modify signal timing: Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s].														
-Install "No Standing 4 PM - 7 PM Mon-Fri" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.														

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	0.40	45.8	D	-Partially mitigated. -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach 9 ft to the east. -Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach 1 ft to south. -Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB will have 68 s green time; EB-lag/SB right phase will have 8 s green time; NB/SB phase will have 29 s green time [each phase will have 3 s amber and 2 s all red time].	
	LTR	0.66	61.7	E	LTR	3.00+	1000.0+	F	TR	0.30	38.2	D			
	SB	-	-	-	-	DefL	3.00	946.9	F	L	2.01	499.5	F		
LTR	1.18	126.0	F	TR	3.00+	1000.0+	F	T	0.47	39.3	D				
-	-	-	-	-	-	-	-	-	R	3.01	942.4	F			
Roosevelt Avenue	EB	DefL	1.04	70.9	E	DefL	2.53	727.5	F	DefL	1.15	142.0	F		
	TR	0.71	8.1	A	TR	0.82	11.3	B	TR	0.75	8.2	A			
	WB	LTR	0.63	12.9	B	LTR	0.94	29.4	C	LTR	0.99	45.0	D		
Overall Intersection		-	1.08	47.4	D	-	3.00+	1000.0+	F	-	1.77	298.5	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.30	194.3	F	L	1.56	307.3	F	L	1.28	190.1	F	-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 24 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].	
	TR	0.70	29.2	C	TR	0.70	29.2	C	TR	0.69	28.9	C			
	-	-	-	-	-	-	-	-	-	-	-	-			
	SB	TR	0.90	48.2	D	TR	1.05	80.1	F	T	0.79	46.0	D		
	Roosevelt Avenue	EB	L	0.50	37.4	D	L	0.53	38.1	D	L	0.55	38.6		D
		TR	1.27	153.5	F	TR	1.56	285.5	F	TR	1.55	279.3	F		
		WB	L	0.31	45.0	D	L	0.31	45.0	D	-	-	-		-
	TR	0.49	36.5	D	TR	0.61	39.8	D	TR	0.61	45.0	D			
Overall Intersection		-	1.23	82.7	F	-	1.54	139.3	F	-	1.29	116.0	F		
Prince Street at Roosevelt Avenue															
Prince Street	SB	LTR	0.53	31.2	C	LTR	0.53	31.2	C	LTR	0.57	34.4	C	-Modify Signal Timing: Shift 3 s of green time from SB phase to EB/WB phase [EB/WB green time shifts from 63 s to 66 s; SB green time shifts from 47 s to 44 s].	
Roosevelt Avenue	EB	DefL	0.82	33.2	C	DefL	0.87	38.3	D	DefL	0.81	30.6	C		
	TR	0.81	29.4	C	TR	0.97	45.5	D	TR	0.92	35.9	D			
	WB	LTR	0.61	21.6	C	LTR	0.70	23.8	C	LTR	0.67	21.1	C		
-	-	-	-	-	-	-	-	-	-	-	-	-			
Overall Intersection		-	0.70	28.3	C	-	0.78	35.2	D	-	0.78	30.4	C		

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														Mitigation Measure	
INTERSECTION & APPROACH		No Action				With Action				Mitigation					
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.64	23.7	C	T	0.64	23.7	C	T	0.70	28.4	C	-Partially mitigated. -Modify Signal Timing: Shift 5 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 50 s; NB/SB green time shifts from 65 s to 60 s].	
	SB	T	0.56	22.3	C	T	0.56	22.3	C	T	0.61	26.6	C		
	Roosevelt Avenue	EB	L	0.35	36.2	D	L	0.43	43.7	D	L	0.34	32.2		C
		TR	0.94	66.9	E	TR	1.19	143.2	F	TR	1.06	91.9	F		
		WB	L	0.22	28.9	C	L	0.29	32.8	C	L	0.23	26.4		C
		TR	0.90	56.5	E	TR	1.04	87.0	F	TR	0.93	55.8	E		
Overall Intersection	-	0.76	37.7	D	-	0.86	62.1	E	-	0.86	47.0	D			
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.55	18.9	B	TR	0.55	18.9	B					-Unmitigatable impact.	
	SB	LT	1.28	154.0	F	LT	1.28	154.0	F						
	Roosevelt Avenue	R	1.93	447.1	F	R	1.93	447.1	F						
		EB	LTR	2.34	633.4	F	LTR	2.88	873.9	F					
		WB	LT	0.82	33.3	C	LT	0.96	50.7	D					
		R	0.83	52.0	D	R	0.83	52.0	D						
Overall Intersection	-	2.12	242.7	F	-	2.37	315.8	F							
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.82	38.4	D	LTR	0.86	42.5	D	LT	0.79	37.4	D	-Unmitigatable impact. -Modify Signal Timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 55 s to 57 s; NB/SB green time shifts from 55 s to 53 s. -Install "No Standing 7 AM - 10 AM, 4 PM - 7 PM, Mon-Fri" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Weekday Non-game AM and Weekday Pre-game PM peak periods.]	
	-	-	-	-	-	-	-	-	R	0.08	19.6	B			
	SB	LTR	0.80	34.2	C	LTR	0.80	34.2	C	LTR	0.83	37.4	D		
	Roosevelt Avenue	EB	LTR	0.70	32.1	C	LTR	0.95	56.6	E	LTR	0.91	48.4		D
		WB	LTR	0.94	49.9	D	LTR	1.12	103.4	F	LTR	1.07	81.8		F
		Overall Intersection	-	0.88	38.7	D	-	0.99	59.8	E	-	0.95	51.5		D
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.76	38.9	D	L	0.78	41.1	D					-Mitigation not required.	
	TR	0.59	22.4	C	TR	0.59	22.4	C							
	SB	L	0.88	55.5	E	L	0.88	55.5	E						
	TR	0.51	20.2	C	TR	0.51	20.2	C							
	Kissena Boulevard	WB	T	0.73	38.2	D	T	0.73	38.2	D					
		Overall Intersection	-	0.81	30.5	C	-	0.82	30.8	C					
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.40	15.8	B	L	0.46	18.9	B	L	0.44	17.7	B	-Mitigation not required. -Upgrade to computerized signal controller with the following timing plan: WB phase will have 26 s green time; NB/SB phase will have 54 s green time [each phase will have 3 s amber and 2 s all red time]. [Measures reflect improvements needed for the weekday Non-game PM and Saturday Non-game peak periods.]	
	T	0.76	16.2	B	T	0.78	16.9	B	T	0.77	16	B			
	SB	TR	0.76	16.1	B	TR	0.80	17.5	B	TR	0.79	16.5	B		
	-	-	-	-	-	-	-	-	-	-	-	-			
	Sanford Avenue	WB	L	0.82	50.2	D	L	0.82	50.2	D	L	0.82	50.7		D
		TR	0.48	28.6	C	TR	0.61	31.6	C	TR	0.62	31.7	C		
Overall Intersection		-	0.78	20.0	B	-	0.81	21.3	C	-	0.80	20.6	C		
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.39	21.7	C	LTR	0.39	21.7	C					-Mitigation not required.	
	SB	LTR	0.71	26.3	C	LTR	0.72	26.7	C						
	Sanford Avenue	EB	-	-	-	-	-	-	-						
		LTR	0.29	14.3	B	LTR	0.29	14.4	B						
		WB	LTR	0.91	32.4	C	LTR	0.97	40.7	D					
		Overall Intersection	-	0.82	25.7	C	-	0.86	28.9	C					

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														No Action	
														With Action	
														Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS		
Parsons Boulevard at Sanford Avenue															
Parsons Boulevard		NB	LTR	1.05	58.4	E	LTR	1.08	68.6	E	LT	0.96	37.0	D	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach.
		-	-	-	-	-	-	-	-	-	R	0.14	14.9	B	-Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket.
		SB	LTR	0.70	25.1	C	LTR	0.85	34.1	C	LT	0.72	26.4	C	-Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	-	R	0.20	15.9	B	
Sanford Avenue		EB	LTR	0.61	23.6	C	LTR	0.63	24.2	C	LTR	0.63	24.2	C	
		WB	LTR	0.76	28.5	C	LTR	0.83	32.5	C	LTR	0.83	32.5	C	
		-	-	-	-	-	-	-	-	-	-	-	-	-	
Overall Intersection		-	0.90	35.3	D	-	0.95	41.3	D	-	0.89	29.2	C		
WHITESTONE EXPRESSWAY / 32ND AVENUE															
College Point Boulevard at 32nd Avenue															
College Point Boulevard		NB	T	0.40	23.8	C	T	0.42	24.1	C	-Mitigation not required.				
		TR	0.27	22.0	C	TR	0.27	22.0	C						
		SB	L	0.45	33.6	C	L	0.45	33.6	C					
		T	0.41	10.6	B	T	0.42	10.8	B						
32nd Avenue		WB	LTR	0.75	38.4	D	LTR	0.75	38.4	D					
Overall Intersection		-	1.10	21.2	C	-	1.10	21.2	C						
NORTHERN BOULEVARD SERVICE ROAD															
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard		NB	TR	0.49	12.7	B	TR	0.50	12.8	B	TR	0.54	14.9	B	-Modify Signal Timing: Shift 3 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 48 s; WB green time shifts from 29 s to 32 s].
		SB	LT	0.85	22.5	C	LT	0.88	24.3	C	LT	0.95	34.9	C	
Northern Blvd Service Rd		WB	LR	0.72	33.9	C	LR	0.95	54.5	D	LR	0.86	39.7	D	
Overall Intersection		-	0.81	20.4	C	-	0.91	26.1	C	-	0.92	28.2	C		
STADIUM ROAD															
Boat Basin Road at Stadium Road															
Boat Basin Road		NB	-	-	-	-	-	-	-	-	DefL	0.70	45.5	D	-Partially Mitigated.
		LTR	0.54	43.9	D	LTR	0.98	85.0	F	F	TR	0.32	26.9	C	-Install an actuated controller.
		SB	-	-	-	-	-	-	-	-	DefL	1.23	148.5	F	-Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 24 s green time; WB lag phase will have 9 s green time; NB/SB phase will have 45 s green time; SB lag phase will have 10 s green time [each phase will have 3 s amber and 2 s all red time].
		LTR	0.90	35.6	D	LTR	1.27	154.9	F	F	TR	0.99	58.0	E	
Stadium Road		EB	-	-	-	-	DefL	1.35	247.7	F	DefL	0.68	44.9	D	
		-	-	-	-	-	TR	0.38	24.9	C	TR	0.43	34.3	C	
		WB	-	-	-	-	-	-	-	-	-	-	-	-	
		LTR	0.88	33.1	C	LTR	1.43	225.2	F	F	LTR	1.40	225.0	F	
Overall Intersection		-	0.85	35.2	D	-	1.29	169.0	F	-	1.58	133.9	F		

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
UNSIGNALIZED INTERSECTIONS															
Boat Basin Road at Worlds Fair Marina															
Boat Basin Road	NB	L	-	54.8	F	L	-	1000.0+	F	L	0.50	35.2	D	-Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.	
		R	-	8.6	A	R	-	8.9	A	R	0.08	1.9	A		
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.20	41.0	D		
		WB	LT	-	12.4	B	LT	-	16.6	C	L	0.94	38.1		D
		-	-	-	-	-	-	-	LT	0.71	19.5	B			
Overall Intersection		-	-	13.7	B	-	-	420.1	F	-	0.77	29.8	C		
Willets Point Boulevard at Northern Boulevard															
Willets Point Boulevard	NB	TR	-	9.6	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 25 s green time; SB will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.	
		SB	-	-	-	-	-	-	-	T	0.53	14.7	B		
	New Van Wyck Expressway Ramp	EB	-	-	-	-	-	-	-	T	0.72	21.0	C		
Overall Intersection		-	-	9.6	A	-	-	463.3	F	-	0.62	17.3	B		
Grand Central Parkway Ramp at West Park Loop/Stadium Road															
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.05	21.0	C	-Install traffic signal with the following timing plan: EB will have 35 s green time; WB will have 20 s green time; NB/SB will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.	
		SB	-	-	-	LT	-	9.2	A	L	0.32	25.3	C		
	Grand Central Parkway Off-Ramp	-	-	-	-	-	-	-	-	TR	0.80	36.1	D		
		EB	L	-	35.6	E	L	-	326.9	F	L	0.38	36.2		D
		-	-	-	-	T	-	547.0	F	T	0.61	42.1	D		
Willets West Center Exit	WB	R	-	9.6	A	R	-	334.7	F	-	-	-	-		
		-	-	-	-	L	-	1000.0+	F	L	0.99	86.3	F		
		-	-	-	-	R	-	10.2	B	R	0.30	47.1	D		
Overall Intersection		-	-	32.4	D	-	-	1000.0+	F	-	0.77	47.2	D		
126th Street at 36th Avenue															
126th Street	NB	-	-	-	-	TR	0.45	17.6	B	TR	0.45	17.6	B	-Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
		SB	-	-	-	-	-	-	-	-	-	-	-		
	36th Avenue	LT	-	8.3	A	LT	1.07	63.4	E	LT	1.02	44.6	D		
		WB	LR	-	17.5	C	L	0.13	39.5	D	L	0.13	39.5		D
		-	-	-	-	R	0.44	32.4	C	R	0.44	32.4	C		
Overall Intersection		-	-	12.3	B	-	0.84	48.1	D	-	0.80	35.8	D		
126th Street at 37th Avenue															
126th Street	NB	-	-	-	-	TR	0.41	16.9	B	TR	0.41	16.9	B	-Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.	
		SB	-	-	-	-	-	-	-	-	-	-	-		
	37th Avenue	LT	-	8.2	A	LT	1.04	55.7	E	LT	1.00	42.4	D		
		WB	LR	-	15.9	C	L	0.11	35.3	D	L	0.11	35.3		D
		-	-	-	-	R	0.45	32.6	C	R	0.45	32.6	C		
Overall Intersection		-	-	12.6	B	-	0.82	43.4	D	-	0.78	34.6	C		
Northern Boulevard at 126th Place															
126th Place	NB	R	-	21.0	C	R	-	34.5	D	R	0.28	42.3	D	-Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.	
	Northern Boulevard	EB	-	-	-	-	-	-	-	TR	0.84	15.2	B		
Overall Intersection		-	-	21.0	C	-	-	34.5	D	-	0.71	16.0	B		

TABLE 25
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY PRE-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<u>No Action</u>					<u>With Action</u>				<u>Mitigation</u>				<u>Mitigation Measure</u>		
INTERSECTION & APPROACH		Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mvt.	V/C	<u>Control</u>	LOS	Mitigation Measure	
				Delay				Delay				Delay			
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS															
126th Street at New Willets Point Boulevard															
126th Street	NB	-	-	-	-	TR	0.86	36.7	D	-Mitigation not required.					
	SB	-	-	-	-	-	-	-	-						
New Willets Point Boulevard	-	-	-	-	-	LT	0.97	40.6	D						
	WB	-	-	-	-	L	0.96	75.2	E						
	-	-	-	-	-	R	0.56	32.4	C						
Overall Intersection		-	-	-	-	-	0.99	44.6	D						
Citi Field/Lot B at Roosevelt Avenue															
Citi Field/Lot B	SB	LR	-	-	-	LR	0.01	33.9	C	-Mitigation not required.					
	EB	LT	-	-	-	LT	0.56	11.8	B						
Roosevelt Avenue	WB	TR	-	-	-	TR	1.02	46.0	D						
Overall Intersection		-	-	-	-	-	0.75	34.4	C						

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 26
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Prince Street at Northern Boulevard (RT. 25A)															
Prince Street	NB	LTR	1.12	101.5	F	LTR	1.12	101.5	F	LTR	1.12	101.5	F	-Partially Mitigated. -Install "No Standing 10 AM - 7 PM" regulations along the north curb of the WB Northern Boulevard Service Road approach for 100-ft from the intersection to allow for one 10-ft through lane and one 10-ft daylighted right-turn pocket. -Reduce the width of the hatched median between the Service Road and Mainline from 8-ft to 6-ft.	
	SB	LTR	0.51	37.8	D	LTR	0.51	37.8	D	LTR	0.51	37.8	D		
Northern Boulevard (Rt. 25A)	EB	L	1.01	87.7	F	L	1.01	87.7	F	L	1.01	87.7	F		
	T		0.98	40.8	D	T	1.08	73.6	E	T	1.08	73.6	E		
	WB	L	0.98	102.3	F	L	0.98	102.3	F	L	0.98	102.3	F		
	T		1.14	103.1	F	T	1.21	134.4	F	T	1.21	134.4	F		
Northern Boulevard Service Rd.	EB	TR	0.51	23.2	C	TR	0.51	23.2	C	TR	0.51	23.2	C		
	WB	TR	0.76	35.9	D	TR	1.03	73.7	E	T	0.76	34.9	C		
	-	-	-	-	-	-	-	-	-	R	0.16	21.8	C		
Overall Intersection	-	1.11	67.8	E	-	1.14	92.1	F	-	1.14	89.7	F			
Main Street at Northern Boulevard (RT. 25A)															
Main Street	NB	T	0.87	48.5	D	T	0.87	48.5	D						-Unmitigatable impact.
	R		0.96	71.5	E	R	0.96	71.5	E						
Northern Boulevard (Rt. 25A)	EB	T	0.96	41.6	D	T	1.08	76.5	E						
	R		1.36	200.0	F	R	1.36	200.0	F						
	WB	L	0.17	26.6	C	L	0.17	26.6	C						
	T		0.89	27.0	C	T	1.02	47.2	D						
Overall Intersection	-	1.17	58.2	E	-	1.17	75.2	E							
Union Street at Northern Boulevard (RT. 25A)															
Union Street	NB	TR	0.70	35.8	D	TR	0.70	35.8	D	TR	0.70	35.8	D	-Partially Mitigated. -Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.	
	SB	TR	0.61	33.3	C	TR	0.61	33.4	C	TR	0.61	33.4	C		
Northern Boulevard (Rt. 25A)	EB	L	0.70	35.5	D	L	0.70	37.2	D	L	0.70	35.0	C		
	TR		1.28	165.0	F	TR	1.43	230.1	F	TR	1.43	230.1	F		
	WB	L	0.99	69.8	E	L	0.99	70.1	E	L	0.99	70.1	E		
	TR		0.99	48.6	D	TR	1.17	115.5	F	TR	0.87	36.5	D		
Overall Intersection	-	0.95	87.7	F	-	1.06	135.0	F	-	1.06	109.0	F			
Parsons Boulevard at Northern Boulevard (RT. 25A)															
Parsons Boulevard	NB	L	0.69	51.0	D	L	0.71	53.5	D	L	0.69	51.3	D	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane. -Modify Signal Timing: Shift 1 s green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB protected left-turn green time shifts from 10 s to 9 s; EB/WB green time shifts from 52 s to 53 s].	
	TR		0.54	39.2	D	TR	0.54	39.2	D	TR	0.54	39.2	D		
	SB	LTR	1.14	107.6	F	LTR	1.23	144.6	F	LT	0.66	35.2	D		
	-	-	-	-	-	-	-	-	-	R	0.39	33.6	C		
Northern Boulevard (Rt. 25A)	EB	L	0.42	43.5	D	L	0.48	46.9	D	L	0.52	47.0	D		
	TR		1.14	99.2	F	TR	1.32	177.2	F	T	1.09	75.3	E		
	-	-	-	-	-	-	-	-	-	R	0.37	23.0	C		
	WB	L	0.45	44.5	D	L	0.45	47.0	D	L	0.47	46.5	D		
	TR		1.08	72.9	E	TR	1.28	160.4	F	T	1.04	57.7	E		
										R	0.36	22.9	C		
Overall Intersection	-	1.11	80.7	F	-	1.20	147.8	F	-	0.93	58.1	E			
34TH AVENUE															
114th Street at 34th Avenue															
114th Street	SB	L	1.04	74.5	E	L	1.11	99.3	F	L	1.01	61.7	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].	
	T		0.55	28.8	C	T	0.80	37.8	D	T	0.72	31.5	C		
34th Avenue	EB	T	0.43	12.1	B	T	0.43	12.1	B	T	0.46	14.1	B		
	R		0.11	8.8	A	R	0.12	8.8	A	R	0.12	10.3	B		
Overall Intersection	-	0.65	41.2	D	-	0.67	53.1	D	-	0.67	37.2	D			

TABLE 26
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	DefL	1.03	104.7	F	DefL	2.12	570.6	F	L	1.06	101.7	F	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 53 s green time; NB/SB lead left-turn phase will have 11 s green time; NB/SB phase will have 41 s green time [each phase will have 3 s amber and 2 s all red time].	
		TR	0.48	33.4	C	TR	0.97	62.9	E	TR	0.85	45.0	D		
Northern Boulevard Ramp	SB	LTR	0.54	36.6	D	LTR	2.82	871.0	F	-	-	-	-		
		GCP Ramp	SB	LTR	2.09	545.7	F	LTR	3.00+	982.6	F	L	1.44		251.6
Shea Road	EB	-		-	-	-	-	-	-	-	T	0.83	44.0		D
		LTR	0.41	28.4	C	LTR	1.89	443.0	F	LTR	1.48	251.0	F		
34th Avenue	WB	-	-	-	-	-	-	-	-	DefL	3.00+	1000.0+	F		
		LTR	0.41	28.0	C	LTR	3.00+	1000.0+	F	TR	1.02	50.9	D		
Overall Intersection		-	0.97	241.8	F	-	3.00+	738.5	F	-	2.81	214.2	F		
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.20	137.9	F	LTR	1.27	165.8	F	LT	1.07	82.2	F		-Partially mitigated. -Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
		-	-	-	-	-	-	-	-	R	0.47	38.9	D		
Roosevelt Avenue	SB	LTR	1.20	136.6	F	LTR	1.22	147.5	F	LT	1.10	93.5	F		
		EB	LTR	0.79	19.6	B	LTR	0.96	38.0	D	R	0.36	37.5	D	
WB	LTR	1.01	33.5	C	LTR	1.28	149.3	F	LTR	0.94	33.1	C			
Overall Intersection		-	1.07	63.3	E	-	1.28	116.6	F	-	1.09	58.5	E		
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	1.07	80.2	F	LTR	1.07	80.2	F	-Unmitigatable impact.					
		EB	LTR	0.87	23.3	C	LTR	1.07	64.9						E
Roosevelt Avenue	WB	LTR	1.23	126.6	F	LTR	1.50	244.9	F						
		-	-	-	-	-	-	-	-						
Overall Intersection		-	1.19	77.3	E	-	1.37	143.7	F						
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	1.10	94.5	F	LTR	1.14	109.7	F	LTR	1.05	72.4	E	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 2 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 78 s; NB/SB green time shifts from 30 s to 32 s]. -Install "No Standing 1 PM - 9 PM Saturday" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.	
		SB	LTR	1.12	100.4	F	LTR	1.38	216.1	F	LT	0.95	45.8		D
Roosevelt Avenue	-	-	-	-	-	-	-	-	-	R	0.29	35.3	D		
		EB	LTR	1.26	137.8	F	LTR	1.88	417.9	F	L	0.52	11.8		B
WB	LTR	-	-	-	-	-	-	-	-	TR	0.73	14.4	B		
		LTR	0.61	12.7	B	LTR	0.96	33.5	C	L	0.78	33.4	C		
-	-	-	-	-	-	-	-	-	-	T	0.61	14.4	B		
		-	-	-	-	-	-	-	-	R	0.83	26.7	C		
Overall Intersection		-	1.22	79.1	E	-	1.73	187.4	F	-	0.90	29.0	C		

TABLE 26
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	0.56	51.8	D	-Partially mitigated. -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach 9 ft to the east. -Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach 1 ft to south. -Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB will have 61 s green time; EB-lag/SB right phase will have 14 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].	
	LTR	0.84	83.3	F	LTR	3.00+	1000.0+	F	TR	0.35	38.1	D			
	SB	-	-	-	-	-	-	-	-	L	1.88	442.8	F		
	LTR	1.16	119.6	F	LTR	3.00+	1000.0+	F	T	0.52	39.5	D			
Roosevelt Avenue	-	-	-	-	-	-	-	-	R	2.60	758.7	F			
	EB	DefL	1.22	150.9	F	DefL	3.00+	1000.0+	F	DefL	1.14	139.1	F		
	TR	0.56	12.5	B	TR	0.65	14.6	B	TR	0.60	13.3	B			
	WB	LTR	0.67	13.7	B	LTR	1.03	48.4	D	LTR	1.25	149.6	F		
Overall Intersection		-	1.21	56.0	E	-	3.00+	1000.0+	F	-	1.85	277.6	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.33	195.3	F	L	1.69	352.9	F	L	1.25	173.8	F		-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 29 s green time [each phase will have 3 s amber and 2 s all red time].
	TR	0.84	28.1	C	TR	0.84	28.1	C	TR	0.82	33.6	C			
	-	-	-	-	-	-	-	-	-	-	-	-			
	SB	TR	1.23	136.8	F	TR	1.49	252.2	F	T	0.98	58.5	E		
	EB	L	0.50	29.0	C	L	0.55	29.8	C	L	0.53	37.5	D		
	TR	1.25	140.1	F	TR	1.60	296.4	F	TR	1.49	251.3	F			
	WB	L	0.29	33.5	C	L	0.29	33.5	C	-	-	-	-		
	TR	0.55	28.4	C	TR	0.71	32.8	C	TR	0.66	44.5	D			
	Overall Intersection		-	1.38	99.4	F	-	1.77	187.7	F	-	1.30	104.2	F	
Prince Street at Roosevelt Avenue															
Prince Street	SB	LTR	0.81	42.3	D	LTR	0.81	42.3	D	-Mitigation not required.					
	EB	DefL	0.78	18.6	B	DefL	0.83	21.7	C						
	TR	0.66	13.2	B	TR	0.78	16.3	B							
	WB	LTR	0.63	13.4	B	LTR	0.73	15.8	B						
	-	-	-	-	-	-	-	-							
Overall Intersection		-	0.79	20.7	C	-	0.82	22.0	C						

TABLE 26
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS		
				Delay				Delay				Delay			
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.68	24.5	C	T	0.68	24.5	C	T	0.76	29.7	C	-Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].	
	SB	T	0.65	24.3	C	T	0.65	24.3	C	T	0.73	29.4	C		
	Roosevelt Avenue	EB	L	0.28	20.9	C	L	0.34	24.6	C	L	0.28	18.8		B
		TR	0.75	33.1	C	TR	0.98	61.8	E	TR	0.88	40.2	D		
		WB	L	0.07	15.6	B	L	0.09	16.1	B	L	0.08	13.5		B
		TR	0.86	40.9	D	TR	1.03	72.3	E	TR	0.92	44.9	D		
Overall Intersection	-	0.77	29.1	C	-	0.87	42.6	D	-	0.85	34.9	C			
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.46	17.3	B	TR	0.46	17.3	B					-Unmitigatable impact.	
	SB	LT	1.01	57.9	E	LT	1.01	57.9	E						
Roosevelt Avenue		R	2.67	789.3	F	R	2.67	789.3	F						
	EB	LTR	1.95	459.4	F	LTR	2.42	672.2	F						
	WB	LT	0.58	24.4	C	LT	0.73	29.7	C						
		R	1.29	215.3	F	R	1.29	215.3	F						
Overall Intersection	-	2.33	255.8	F	-	2.55	316.9	F							
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.74	28.0	C	LTR	0.80	31.3	C	LT	0.73	28.5	C	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s]. -Install "No Standing 10AM - 9PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane. [Measures reflect improvements needed for the Saturday post-game peak period.]	
		-	-	-	-	-	-	-	-	R	0.03	15.3	B		
Roosevelt Avenue	SB	LTR	0.75	26.1	C	LTR	0.75	26.1	C	LTR	0.79	29.4	C		
	EB	LTR	0.46	20.1	C	LTR	0.67	25.8	C	LTR	0.63	23.1	C		
	WB	LTR	0.64	24.4	C	LTR	0.78	30.8	C	LTR	0.74	27.0	C		
Overall Intersection	-	0.69	25.2	C	-	0.79	28.5	C	-	0.76	27.1	C			
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.91	60.1	E	L	0.94	65.9	E	L	0.90	57.5	E	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s].	
		TR	0.60	21.5	C	TR	0.60	21.5	C	TR	0.59	20.6	C		
Kissena Boulevard	SB	L	0.52	21.4	C	L	0.52	21.4	C	L	0.54	22.4	C		
		TR	0.54	19.7	B	TR	0.54	19.7	B	TR	0.53	18.9	B		
	WB	T	0.66	24.8	C	T	0.66	24.8	C	T	0.68	26.1	C		
	Overall Intersection	-	0.79	25.0	C	-	0.80	25.7	C	-	0.79	24.7	C		
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.53	22.5	C	L	0.62	30.3	C	L	0.60	27.5	C	-Mitigation not required. -Upgrade to computerized signal controller with the following timing plan: WB phase will have 26 s green time; NB/SB phase will have 54 s green time [each phase will have 3 s amber and 2 s all red time]. [Measures reflect improvements needed for the weekday Non-game PM and Saturday Non-game peak periods.]	
		T	0.83	18.3	B	T	0.86	19.7	B	T	0.85	18.5	B		
Sanford Avenue	SB	TR	0.83	18.3	B	TR	0.87	20.5	C	TR	0.86	19.2	B		
		-	-	-	-	-	-	-	-	-	-	-	-		
	WB	L	0.88	56.5	E	L	0.88	56.5	E	L	0.89	57.0	E		
		TR	0.52	29.3	C	TR	0.65	32.5	C	TR	0.66	32.7	C		
Overall Intersection	-	0.85	22.6	C	-	0.88	24.5	C	-	0.87	23.5	C			
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.49	24.4	C	LTR	0.49	24.5	C					-Mitigation not required.	
	SB	LTR	0.93	36.0	D	LTR	0.95	38.3	D						
Sanford Avenue	EB	DefL	0.58	24.6	C	DefL	0.61	26.6	C						
		TR	0.33	15.1	B	TR	0.33	15.1	B						
	WB	LTR	0.75	23.8	C	LTR	0.81	26.5	C						
Overall Intersection	-	0.83	28.0	C	-	0.87	29.8	C							

TABLE 26
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

<div><div></div><div></div></div>																			
INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure					
		Mvt.	V/C	<div>Control</div> <div>Delay</div>	LOS	Mvt.	V/C	<div>Control</div> <div>Delay</div>	LOS	Mvt.	V/C	<div>Control</div> <div>Delay</div>	LOS						
Parsons Boulevard at Sanford Avenue																			
Parsons Boulevard	NB	LTR	0.86	32.6	C	LTR	0.91	37.6	D	LT	0.79	28.2	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. -Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. -Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.					
		-	-	-	-	-	-	-	-	R	0.13	15.0	B						
Sanford Avenue	SB	LTR	0.74	26.0	C	LTR	0.94	43.9	D	LT	0.77	28.2	C						
		-	-	-	-	-	-	-	-	R	0.23	16.2	B						
	EB	LTR	0.63	23.5	C	LTR	0.66	24.2	C	LTR	0.66	24.2	C						
	WB	LTR	0.86	33.3	C	LTR	0.93	41.9	D	LTR	0.93	41.9	D						
		-	-	-	-	-	-	-	-	-	-	-	-						
Overall Intersection		-	0.86	29.0	C	-	0.94	37.7	D	-	0.86	29.9	C						
WHITESTONE EXPRESSWAY / 32ND AVENUE																			
College Point Boulevard at 32nd Avenue																			
College Point Boulevard	NB	T	0.37	23.3	C	T	0.39	23.7	C	-Mitigation not required.									
		TR	0.59	26.1	C	TR	0.59	26.1	C										
	SB	L	0.58	38.3	D	L	0.58	38.3	D										
		T	0.46	11.1	B	T	0.47	11.3	B										
32nd Avenue	WB	LTR	0.47	30.3	C	LTR	0.47	30.3	C										
Overall Intersection		-	1.05	21.9	C	-	1.05	21.9	C										
NORTHERN BOULEVARD SERVICE ROAD																			
College Point Boulevard at Northern Boulevard Service Road																			
College Point Boulevard	NB	TR	0.55	13.4	B	TR	0.57	13.6	B	-Unmitigatable impact.									
	SB	LT	0.92	28.0	C	LT	0.96	32.7	C										
Northern Blvd Service Rd	WB	LR	0.72	33.2	C	LR	0.98	59.5	E										
Overall Intersection		-	0.85	22.7	C	-	0.97	30.8	C										
STADIUM ROAD																			
Boat Basin Road at Stadium Road																			
Boat Basin Road	NB	-	-	-	-	-	-	-	-	DefL	0.62	50.0	D	-Partially Mitigated. -Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 7 s green time; EB/WB phase will have 34 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 31 s green time; SB lag phase will have 16 s green time [each phase will have 3 s amber and 2 s all red time].					
		LTR	0.68	49.6	D	LTR	0.76	53.5	D	D	TR	0.44	37.9		D				
	SB	-	-	-	-	-	-	-	-	DefL	1.34	200.1	F						
		LTR	0.77	24.6	C	LTR	1.44	225.7	F	F	TR	1.20	139.7		F				
Stadium Road	EB	-	-	-	-	DefL	1.69	390.8	F	DefL	0.84	60.3	E						
		-	-	-	-	TR	0.63	34.6	C	TR	0.46	28.2	C						
	WB	-	-	-	-	-	-	-	-	-	-	-	-						
		LTR	1.00	45.6	D	LTR	1.43	227.5	F	LTR	0.96	42.1	D						
Overall Intersection		-	0.83	35.1	D	-	1.43	205.0	F	-	1.50	102.3	F						

TABLE 26
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY PRE-GAME MIDDAY NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure	
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	0.90	39.8	D	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria.				
	SB	-	-	-	-	-	-	-	-					
New Willets Point Boulevard		-	-	-	-	LT	1.03	55.9	E					
	WB	-	-	-	-	L	0.99	81.7	F					
		-	-	-	-	R	0.68	34.7	C					
Overall Intersection		-	-	-	-	-	1.00	53.2	D					
Citi Field/Lot B at Roosevelt Avenue														
Citi Field/Lot B	SB	LR	-	-	-	LR	0.03	34.0	C	-Mitigation not required.				
	EB	LT	-	-	-	LT	0.50	11.0	B					
Roosevelt Avenue	WB	TR	-	-	-	TR	1.05	56.0	E					
Overall Intersection		-	-	-	-	-	0.77	42.2	D					

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE 27
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Prince Street at Northern Boulevard (RT. 25A)														
Prince Street	NB	LTR	1.15	115.1	F	LTR	1.15	115.1	F	-Unmitigatable Impact.				
	SB	LTR	0.41	38.7	D	LTR	0.41	38.7	D					
Northern Boulevard (Rt. 25A)	EB	L	0.91	67.7	E	L	0.91	67.7	E					
		T	1.03	53.8	D	T	1.15	102.8	F					
	WB	L	0.90	90.6	F	L	0.90	90.6	F					
		T	0.99	51.1	D	T	1.05	68.2	E					
Northern Boulevard Service Rd.	EB	TR	0.45	21.9	C	TR	0.45	21.9	C					
	WB	TR	0.55	29.3	C	TR	0.76	37.6	D					
	-	-	-	-	-	-	-	-	-					
Overall Intersection		-	1.05	54.1	D	-	1.12	79.9	E					
Main Street at Northern Boulevard (RT. 25A)														
Main Street	NB	T	0.86	48.2	D	T	0.86	48.2	D	-Unmitigatable impact.				
		R	0.75	42.6	D	R	0.75	42.6	D					
Northern Boulevard (Rt. 25A)	EB	T	1.06	67.3	E	T	1.20	125.9	F					
		R	1.20	131.0	F	R	1.20	131.0	F					
	WB	L	0.12	26.0	C	L	0.12	26.0	C					
		T	0.71	21.3	C	T	0.81	24.3	C					
Overall Intersection		-	0.99	56.7	E	-	0.99	80.6	F					
Union Street at Northern Boulevard (RT. 25A)														
Union Street	NB	TR	0.67	34.9	C	TR	0.67	34.9	C	TR	0.68	36.1	D	-Partially Mitigated.
	SB	TR	0.68	35.0	C	TR	0.69	35.0	D	TR	0.70	36.2	D	
Northern Boulevard (Rt. 25A)	EB	L	0.75	35.7	D	L	0.76	37.5	D	L	0.72	34.2	C	-Install "No Standing 7AM - 10PM" regulations along the north curb of the WB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted shared through-right lane.
		TR	1.25	149.8	F	TR	1.40	218.9	F	TR	1.40	218.9	F	
	WB	L	1.01	69.8	E	L	1.01	84.6	F	L	0.96	71.9	E	-Modify Signal Timing: Shift 1 s of green time from NB/SB phase to EB/WB left-turn phase [NB/SB green time shifts from 44 s to 43 s; EB/WB left-turn green time shifts from 15 s to 16 s].
		TR	0.86	39.4	D	TR	1.00	68.9	E	TR	0.74	34.3	C	
Overall Intersection		-	0.98	82.1	F	-	1.04	120.1	F	-	1.05	109.8	F	
Parsons Boulevard at Northern Boulevard (RT. 25A)														
Parsons Boulevard	NB	L	0.76	58.2	E	L	0.78	62.0	E	L	0.78	61.4	E	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	0.60	38.6	D	TR	0.60	38.6	D	TR	0.60	38.6	D	
	SB	LTR	1.13	104.3	F	LTR	1.20	132.9	F	LT	0.71	35.9	D	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		-	-	-	-	-	-	-	-	R	0.37	33.4	C	
Northern Boulevard (Rt. 25A)	EB	L	0.46	43.7	D	L	0.56	47.4	D	L	0.59	47.0	D	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	1.16	107.4	F	TR	1.34	187.9	F	T	1.11	82.4	F	
		-	-	-	-	-	-	-	-	R	0.42	23.5	C	-Modify Signal Timing: Shift 1 s green time from EB/WB protected left-turn phase to EB/WB phase [EB/WB protected left-turn green time shifts from 10 s to 9 s; EB/WB green time shifts from 52 s to 53 s].
	WB	L	0.52	46.4	D	L	0.51	47.1	D	L	0.55	47.0	D	
		TR	1.14	96.4	F	TR	1.31	173.6	F	T	1.07	67.8	E	
		-	-	-	-	-	-	-	-	R	0.33	22.1	C	
Overall Intersection		-	1.10	92.4	F	-	1.22	155.0	F	-	0.94	64.4	E	
34TH AVENUE														
114th Street at 34th Avenue														
114th Street	SB	L	1.18	121.6	F	L	1.24	147.1	F	L	1.14	99.2	F	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s; SB green time shifts from 28 s to 31 s].
		T	0.36	25.1	C	T	0.42	26.0	C	T	0.38	23.4	C	
34th Avenue	EB	T	0.45	12.3	B	T	0.45	12.3	B	T	0.48	14.4	B	
		R	0.06	8.4	A	R	0.06	8.5	A	R	0.07	9.8	A	
Overall Intersection		-	0.72	70.5	E	-	0.75	84.0	F	-	0.75	59.5	E	

TABLE 27
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	1.14	123.6	F	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 48 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 50 s green time [each phase will have 3 s amber and 2 s all red time].	
	LTR	0.58	29.3	C	LTR	2.06	513.6	F	TR	1.28	164.6	F			
Northern Boulevard Ramp	SB	LTR	0.20	24.2	C	LTR	3.00+	1000.0+	F	-	-	-	-		
GCP Ramp	SB	LTR	0.94	87.3	F	LTR	3.00+	1000.0+	F	L	1.49	287.1	F		
	-	-	-	-	-	-	-	-	-	T	0.41	25.7	C		
Shea Road	EB	DefL	1.98	488.9	F	DefL	3.00+	1000.0+	F	DefL	2.15	562.5	F		
	TR	1.07	99.8	F	TR	1.66	345.3	F	TR	0.84	40.1	D			
34th Avenue	WB	-	-	-	-	-	-	-	-	DefL	0.79	51.8	D		
	LTR	0.60	43.4	D	LTR	3.00+	1000.0+	F	TR	1.26	166.5	F			
Overall Intersection	-	1.15	141.6	F	-	3.00+	976.2	F	-	2.23	175.9	F			
ROOSEVELT AVENUE															
108th Street at Roosevelt Avenue															
108th Street	NB	LTR	1.18	129.9	F	LTR	1.23	152.2	F	LT	1.17	126.9	F	-Partially mitigated. -Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane. -Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.	
	-	-	-	-	-	-	-	-	-	R	0.32	37.0	D		
	SB	LTR	1.22	146.9	F	LTR	1.24	154.2	F	LT	1.13	109.0	F		
	-	-	-	-	-	-	-	-	-	R	0.36	37.6	D		
Roosevelt Avenue	EB	LTR	0.65	15.1	B	LTR	0.80	21.0	C	LTR	0.79	20.7	C		
	WB	LTR	0.94	20.4	C	LTR	1.18	104.2	F	LTR	1.11	71.5	E		
Overall Intersection	-	1.01	60.5	E	-	1.20	95.1	F	-	1.13	65.9	E			
111th Street at Roosevelt Avenue															
111th Street	NB	LTR	1.08	85.9	F	LTR	1.08	85.9	F						-Unmitigatable impact.
Roosevelt Avenue	EB	LTR	0.75	17.9	B	LTR	0.93	32.0	C						
	WB	LTR	1.24	130.2	F	LTR	1.49	242.3	F						
	-	-	-	-	-	-	-	-	-						
Overall Intersection	-	1.20	84.4	F	-	1.38	140.7	F							
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	0.69	46.6	D	LTR	0.74	50.3	D	LTR	0.54	38.5	D	-Partially mitigated. -Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. -Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 2 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 78 s; NB/SB green time shifts from 30 s to 32 s]. -Install "No Standing 1 PM - 9 PM Saturday" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.	
	SB	LTR	1.11	97.5	F	LTR	1.24	153.3	F	LT	0.80	40.2	D		
	-	-	-	-	-	-	-	-	-	R	0.30	35.3	D		
Roosevelt Avenue	EB	LTR	1.33	170.5	F	LTR	2.14	534.2	F	L	0.64	14.5	B		
	-	-	-	-	-	-	-	-	-	TR	0.63	12.9	B		
	WB	LTR	0.80	17.4	B	LTR	1.39	200.3	F	L	0.56	16.7	B		
	-	-	-	-	-	-	-	-	-	T	0.77	18.4	B		
	-	-	-	-	-	-	-	-	-	R	1.84	404.6	F		
Overall Intersection	-	1.26	71.4	E	-	1.87	266.7	F	-	1.51	116.4	F			

TABLE 27
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	0.27	40.4	D	-Partially mitigated. -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach 9 ft to the east. -Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach 1 ft to south. -Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB will have 59 s green time; EB-lag/SB right phase will have 16 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].	
	LTR	0.22	37.4	D	LTR	2.83	889.5	D	TR	0.25	36.8	D			
	SB	DefL	1.25	167.0	F	DefL	1.90	456.2	D	L	1.83	434.7	F		
	TR	0.52	30.4	C	TR	1.96	476.0	F	T	0.45	41.5	D			
	-	-	-	-	-	-	-	-	R	1.15	125.9	F			
Roosevelt Avenue	EB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	3.06	970.5	F		
	LTR	0.62	23.0	C	TR	1.12	95.9	F	TR	0.86	23.6	C			
	WB	LTR	0.51	20.2	C	LTR	1.01	57.7	E	LTR	0.93	42.8	D		
Overall Intersection		-	0.89	56.0	E	-	3.00+	1000.0+	F	-	1.83	336.8	F		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	1.05	93.9	F	L	1.47	260.9	F	L	0.89	66.9	E		-Partially Mitigated -Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes. -Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes. -Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue. -Modify signal phasing and timing plan: EB/WB will have 29 s green time; EB-lag phase will have 23 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 29 s green time [each phase will have 3 s amber and 2 s all red time].
	TR	0.78	26.3	C	TR	0.78	26.3	C	TR	0.76	31.8	C			
		-	-	-	-	-	-	-	-	-	-	-	-		
Roosevelt Avenue	SB	TR	0.89	40.4	D	TR	1.14	105.3	F	T	0.72	45.2	D		
	EB	L	0.59	30.5	C	L	0.67	32.0	C	L	0.64	40.3	D		
	TR	1.25	134.7	F	TR	1.55	272.4	F	TR	1.48	246.4	F			
	WB	L	0.25	32.9	C	L	0.25	32.9	C	-	-	-	-		
	TR	0.42	25.8	C	TR	0.55	28.3	C	TR	0.53	41.7	D			
Overall Intersection		-	1.14	62.6	E	-	1.53	133.7	F	-	1.17	100.0	F		
Prince Street at Roosevelt Avenue															
Prince Street	SB	LTR	0.73	37.4	D	LTR	0.73	37.4	D					-Mitigation not required.	
Roosevelt Avenue	EB	DefL	0.78	19.0	B	-	-	-	-						
	TR	0.84	18.7	B	LTR	0.86	17.6	B							
	WB	LTR	0.60	12.4	B	LTR	0.72	14.7	B						
	-	-	-	-	-	-	-	-	-						
Overall Intersection		-	0.80	20.5	C	-	0.82	20.1	C						

TABLE 27
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
Main Street at Roosevelt Avenue															
Main Street	NB	T	0.68	24.5	C	T	0.68	24.5	C	T	0.76	29.7	C	-Partially mitigated. -Modify Signal Timing: Shift 4 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 39 s to 43 s; NB/SB green time shifts from 41 s to 37 s].	
	SB	T	0.56	22.4	C	T	0.56	22.4	C	T	0.62	26.6	C		
	Roosevelt Avenue	EB	L	0.26	19.5	B	L	0.31	21.6	C	L	0.26	17.1		B
		TR	0.96	50.8		TR	1.19	127.5	F	TR	1.08	81.7	F		
		WB	L	0.20	17.4	B	L	0.32	21.5	C	L	0.23	16.0		B
		TR	0.87	37.3		TR	1.01	61.7	E	TR	0.91	37.8	D		
Overall Intersection	-	0.82	32.3	C	-	0.94	59.3	E	-	0.94	44.3	D			
Union Street at Roosevelt Avenue															
Union Street	NB	TR	0.46	17.4	B	TR	0.46	17.4	B					-Unmitigatable impact.	
	SB	LT	1.23	134.3	F	LT	1.23	134.3	F						
		R	1.93	453.3	F	R	1.93	453.3	F						
	Roosevelt Avenue	EB	LTR	2.00	480.3	F	LTR	2.47	690.8	F					
		WB	LT	0.75	31.8	C	LT	0.91	46.5	D					
			R	1.53	309.9	F	R	1.53	309.9	F					
Overall Intersection		-	1.96	231.5	F	-	2.17	300.2	F						
Parsons Boulevard at Roosevelt Avenue															
Parsons Boulevard	NB	LTR	0.96	43.7	D	LTR	1.00	54.3	D	LT	0.94	42.1	D	-Modify Signal Timing: Shift 2 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 40 s to 42 s; NB/SB green time shifts from 40 s to 38 s]. -Install "No Standing 10AM - 9PM, Saturday" regulations on the NB approach 75 feet from the intersection to allow for a 10-ft daylighted right-turn lane.	
		-	-	-	-	-	-	-	-	R	0.08	15.7	B		
	SB	LTR	0.77	27.2	C	LTR	0.77	27.2	C	LTR	0.90	39.6	D		
	Roosevelt Avenue	EB	LTR	0.72	26.9	C	LTR	0.96	50.4	D	LTR	0.92	40.9		D
		WB	LTR	0.76	28.8	C	LTR	0.91	41.8	D	LTR	0.85	33.9		C
		Overall Intersection	-	0.86	32.1	C	-	0.98	43.6	D	-	0.93	38.7		D
KISSENA BOULEVARD															
Main Street at Kissena Boulevard															
Main Street	NB	L	0.70	32.8	C	L	0.72	34.4	C	L	0.70	31.5	C	-Modify Signal Timing: Shift 1 s of green time from WB Kissena Blvd phase to NB/SB phase [WB green time shifts from 40 s to 39 s; NB/SB green time shifts from 40 s to 41 s]. [Measures reflect improvements needed for the Saturday Non-game and Saturday Pre-game peak periods.]	
		TR	0.68	23.0	C	TR	0.68	23.0	C	TR	0.66	21.9	C		
	SB	L	0.44	19.8	B	L	0.44	19.8	B	L	0.45	20.7	C		
		TR	0.49	18.9	B	TR	0.49	18.9	B	TR	0.47	18.1	B		
	Kissena Boulevard	WB	T	0.66	24.6	C	T	0.66	24.6	C	T	0.68	25.9		C
	Overall Intersection	-	0.68	22.4	C	-	0.69	22.5	C	-	0.69	22.0	C		
SANFORD AVENUE															
College Point Boulevard at Sanford Avenue															
College Point Boulevard	NB	L	0.24	13.2	B	L	0.29	15.8	B	L	0.27	13.6	B	-Mitigation not required. -Upgrade to computerized signal controller with the following timing plan: WB phase will have 25 s green time; NB/SB phase will have 55 s green time [each phase will have 3 s amber and 2 s all red time]. [Measures reflect improvements needed for the weekday Non-game PM and Saturday Non-game peak periods.]	
		T	0.57	12.7	B	T	0.59	13.1	B	T	0.57	11.7	B		
	SB	TR	0.80	17.4	B	TR	0.86	19.9	B	TR	0.83	17.4	B		
		-	-	-	-	-	-	-	-	-	-	-	-		
	Sanford Avenue	WB	L	0.58	34.8	C	L	0.58	34.8	C	L	0.61	37.0		D
		TR	0.34	26.6	C	TR	0.46	28.5	C	TR	0.49	29.8	C		
Overall Intersection	-	0.73	17.6	B	-	0.77	19.4	B	-	0.76	17.9	B			
Union Street at Sanford Avenue															
Union Street	NB	LTR	0.42	22.2	C	LTR	0.42	22.2	C					-Mitigation not required.	
	SB	LTR	0.82	30.1	C	LTR	0.83	30.9	C						
	EB	-	-	-	-	-	-	-	-						
		LTR	0.24	13.8	B	LTR	0.24	13.8	B						
	Sanford Avenue	WB	LTR	0.70	22.4	C	LTR	0.75	24.2	C					
	Overall Intersection	-	0.75	24.1	C	-	0.79	25.0	C						

TABLE 27
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														No Action	With Action				Mitigation				Mitigation Measure
INTERSECTION & APPROACH			Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS									
Parsons Boulevard at Sanford Avenue																							
Parsons Boulevard			NB	LTR	0.94	38.6	D	LTR 0.97 45.6 D				LT	0.86	31.3	C	-Shift NB centerline 1-ft to the west to allow for a 20-ft NB approach. -Install "No Standing Anytime" regulations on the NB approach 75-ft from the stopbar to allow for one 10-ft left-through lane and one 10-ft daylighted right-turn pocket. -Install "No Standing 10 AM - 9 PM" regulations on the SB approach 75 feet from the stop bar to allow for a 10-ft daylighted right-turn lane.							
			-	-	-	-	-	-	-	-	R	0.12	14.9	B									
Sanford Avenue			SB	LTR	0.75	26.4	C	LTR 0.95 44.6 D				LT	0.78	28.7	C								
			-	-	-	-	-	-	-	-	R	0.25	16.4	B									
			EB	LTR	0.81	30.1	C	LTR 0.83 31.5 C				LTR	0.83	31.5	C								
			WB	LTR	0.83	32.5	C	LTR 0.89 38.3 D				LTR	0.89	38.3	D								
			-	-	-	-	-	-	-	-	-	-	-	-	-								
			Overall Intersection			-	0.88	31.9	C	-	0.93	40.1	D	-	0.88		31.0	C					
WHITESTONE EXPRESSWAY / 32ND AVENUE																							
College Point Boulevard at 32nd Avenue																							
College Point Boulevard			NB	T	0.45	24.0	C	T	0.48	24.4	C						-Mitigation not required.						
			TR	0.35	22.9	C	TR	0.37	23.1	C													
			SB	L	0.28	27.8	C	L	0.28	28.0	C												
			T	0.30	9.6	A	T	0.31	9.7	A													
32nd Avenue			WB	LTR	0.31	26.9	C	LTR	0.31	26.9	C												
			Overall Intersection			-	0.86	19.6	B	-	0.86	19.8	B										
NORTHERN BOULEVARD SERVICE ROAD																							
College Point Boulevard at Northern Boulevard Service Road																							
College Point Boulevard			NB	TR	0.51	12.9	B	TR	0.54	13.2	B					-Mitigation not required.							
			SB	LT	0.55	14.0	B	LT	0.58	14.6	B												
Northern Blvd Service Rd			WB	LR	0.57	29.2	C	LR	0.80	38.3	D												
			Overall Intersection			-	0.56	15.9	B	-	0.66	18.9	B										
STADIUM ROAD																							
Boat Basin Road at Stadium Road																							
Boat Basin Road			NB	L	2.39	663.8	F	DefL	1.37	256.3	F	DefL	0.56	43.5	D		-Unmitigatable impact. -Install an actuated controller. -Modify signal phasing and timing plan: EB lead phase will have 14 s green time; EB/WB phase will have 37 s green time; WB lag phase will have 7 s green time; NB/SB phase will have 29 s green time; SB lag phase will have 8 s green time [each phase will have 3 s amber and 2 s all red time].						
			TR	1.90	438.3	F	TR	0.35	26.3	C	TR	0.44	39.3	D									
Stadium Road			SB	-	-	-	-	-	-	-	DefL 1.39 236.8 F												
			LTR	0.41	27.7	C	LTR 1.75 374.9 F				TR	0.70	37.1	D									
			EB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	1.88	443.2	F								
			-	-	-	-	-	TR	0.49	12.2	B	TR	0.62	25.3	C								
			WB	-	-	-	-	-	-	-	-	-	-	-	-								
			LTR	0.27	9.3	A	LTR	0.81	18.2	B	LTR	0.93	44.9	D									
Overall Intersection			-	0.98	431.4	F	-	2.84	276.7	F	-	3.00+	125.6	F									

TABLE 27
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS				
UNSIGNALIZED INTERSECTIONS																	
Boat Basin Road at Worlds Fair Marina																	
Boat Basin Road	NB	L	-	103.5	F	L	-	1000.0+	F	L	0.89	52.9	D	-Install traffic signal with the following timing plan: EB will have 7 s green time; WB + NB-Right will have 50 s green time; NB will have 18 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane. -Intersection meets NYCDOT Signal Warrant Criteria.			
		R	-	13.4	B	R	-	10.7	B	R	0.31	2.9	A				
	Worlds Fair Marina	EB	-	-	-	-	-	-	-	TR	0.18	40.7	D				
		WB	LT	-	7.8	A	LT	-	9.8	A	L	0.49	14.2		B		
				-	-	-	-	-	LT	0.91	32.0	C					
Overall Intersection		-	-	54.1	F	-	-	1000.0+	F	-	0.83	29.0	C				
Willets Point Boulevard at Northern Boulevard																	
Willets Point Boulevard	NB	TR	-	9.1	A	-	-	-	-	-	-	-	-	-Channelize EB through receiving and NB right-turn receiving to allow concurrent traffic flow. -Install traffic signal with the following timing plan: EB will have 30 s green time; SB will have 20 s green time [each phase will have 3 s amber and 2 s all red time]. -Intersection meets NYCDOT Signal Warrant Criteria.			
		SB	-	-	-	-	-	-	-	T	0.73	22.3	C				
	New Van Wyck Expressway Ramp	EB	-	-	-	-	-	-	-	T	0.77	19.2	B				
		EB	-	-	-	-	TR	-	1000.0+	F							
Overall Intersection		-	-	9.1	A	-	-	1000.0+	F	-	0.76	20.9	C				
Grand Central Parkway Ramp at West Park Loop/Stadium Road																	
Stadium Road	NB	-	-	-	-	-	-	-	-	T	0.53	27.6	C	-Install traffic signal with the following timing plan: EB will have 35 s green time; WB will have 20 s green time; NB/SB will have 50 s green time [each phase will have 3 s amber and 2 s all red time]. -Add a right turn lane and channelized right-turn to the GCP off ramp. -Stripe the WB approach as two 12-ft left-turn lanes and one 12-ft right-turn lane. -Add a 12-ft SB left-turn lane in the median of Stadium Road. -Intersection meets NYCDOT Signal Warrant Criteria.			
		SB	-	-	-	-	LT	-	13.1	B	L	0.66	44.0		D		
	-	-	-	-	-	-	-	-	-	TR	0.67	31.3	C				
	Grand Central Parkway Off-Ramp	EB	L	-	53.2	F	L	-	333.6	F	L	0.46	37.9		D		
-			-	-	-	T	-	761.5	F	T	0.44	37.5	D				
Willets West Center Exit	WB	R	-	22.8	C	R	-	12.5	B	-	-	-	-				
		-	-	-	-	L	-	1000.0+	F	L	0.95	78.8	E				
				-	-	-	-	R	-	0.29	46.8	D					
Overall Intersection		-	-	41.7	E	-	-	1000.0+	F	-	0.65	41.4	D				
126th Street at 36th Avenue																	
126th Street	NB	-	-	-	-	TR	1.08	70.3	E	TR	1.08	70.3	E	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.			
		SB	-	-	-	DefL	0.89	82.2	F	DefL	0.71	57.0	E				
	36th Avenue	LT	-	8.4	A	T	0.71	14.0	B	T	0.69	13.2	B				
		WB	LR	-	13.3	B	L	0.13	39.5	D	L	0.13	39.5		D		
				-	-	-	-	R	1.12	128.9	F	R	1.12		128.9	F	
Overall Intersection		-	-	13.0	B	-	1.33	62.1	E	-	1.30	61.2	E				
126th Street at 37th Avenue																	
126th Street	NB	-	-	-	-	TR	1.10	80.8	F	TR	1.10	80.8	F	-Unmitigatable impact. -Intersection meets NYCDOT Signal Warrant Criteria. -Restripe the WB approach as one 10-ft left-turn lane and one 10-ft right-turn lane.			
		SB	-	-	-	DefL	0.89	82.0	F	DefL	0.72	55.9	E				
	37th Avenue	LT	-	8.4	A	T	0.64	14.5	B	T	0.64	14.5	B				
		WB	LR	-	17.0	C	L	0.20	36.7	D	L	0.20	36.7		D		
				-	-	-	-	R	0.52	34.7	C	R	0.52		34.7	C	
Overall Intersection		-	-	15.7	C	-	1.23	61.2	E	-	1.23	59.8	E				
Northern Boulevard at 126th Place																	
126th Place	NB	R	-	16.6	C	R	-	26.5	D	R	0.33	43.2	D	-Mitigation not required. -Restripe the NB approach as one 12-ft right-turn lane and two 10-ft receiving lanes. -Install traffic signal with the following timing plan: EB phase will have 85 s green time; NB phase will have 25 s green time [each phase will have 3 s amber and 2 s all red time]. -Install a crosswalk across the EB Northern Blvd approach to allow pedestrian access to a new bus stop in the WB Northern Blvd median. -Intersection meets NYCDOT Signal Warrant Criteria.			
		EB	-	-	-	-	-	-	-	TR	0.72	11.8	B				
	Overall Intersection		-	-	16.6	C	-	-	26.5	D	-	0.63	13.0		B		

TABLE 27
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action					With Action				Mitigation				Mitigation Measure		
INTERSECTION & APPROACH		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mitigation Measure	
				Delay				Delay				Delay			
NEW (WITH ACTION) SIGNALIZED INTERSECTIONS															
126th Street at New Willets Point Boulevard															
126th Street	NB	-	-	-	-	TR	1.34	188.1	F	-Mitigation not required. -Intersection meets NYCDOT Signal Warrant Criteria.					
	SB	-	-	-	-	DefL	0.78	69.6	E						
New Willets Point Boulevard		-	-	-	-	T	0.63	16.7	B						
	WB	-	-	-	-	L	0.76	49.8	D						
		-	-	-	-	R	0.52	30.9	C						
	Overall Intersection	-	-	-	-	-	1.47	119.0	F						
Citi Field/Lot B at Roosevelt Avenue															
Citi Field/Lot B	SB	LR	-	-	-	LR	0.02	33.9	C	-Mitigation not required.					
	EB	LT	-	-	-	LT	1.07	61.4	E						
Roosevelt Avenue	WB	TR	-	-	-	TR	0.55	11.6	B						
Overall Intersection		-	-	-	-	-	0.78	43.9	D						

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

A. INTRODUCTION

Consistent with City Environmental Quality Review (CEQR) requirements, this chapter of this Supplemental Environmental Impact Statement (SEIS) examines alternatives to the proposed project, which is a modification to the previously approved Willets Point Development Plan.

CEQR requires the examination of a No Action Alternative, in which a proposed project would not be undertaken. CEQR also recommends the examination of alternatives that would have no unmitigated significant adverse impacts, if unmitigated significant adverse impacts are predicted for a proposed project. Therefore, the alternatives examined in this chapter are the No Action Alternative and the No Unmitigated Significant Impacts Alternative. As described in detail below in Section B, “Summary of Findings—2008 FGEIS and Subsequent Technical Memoranda,” the other alternatives evaluated in the 2008 FGEIS are not being considered in this analysis.

This analysis first examines the No Action Alternative, which describes the conditions that would exist if the proposed project were not implemented. The second alternative examined below is the No Unmitigated Significant Impacts Alternative, which examines the level of development that would be necessary to avoid all the potential unmitigated impacts associated with the proposed project.

PRINCIPAL CONCLUSIONS

NO ACTION ALTERNATIVE

The No Action Alternative assumes the continuation of existing uses on the various portions of the project site. Since this alternative would allow the continued industrial use of the District, it would not allow for development of affordable housing, community facilities, schools, and public open space. It also would not comprehensively remediate contaminated soils and groundwater, nor provide new sanitary and storm sewers; as a result, there would continue to be degraded water quality and potential impacts to aquatic biota through the continued discharge of wastewater, polluted storm water, and sediments from the District to the Flushing River, Flushing Bay, and groundwater aquifers. Because the No Action Alternative would not develop new retail and entertainment uses at Willets West and the District, it would not generate the substantial economic and civic benefits resulting from the proposed project in the way of new jobs and tax revenues. Moreover, this alternative would not advance a number of the Downtown Flushing Development Framework’s fundamental goals, including the creation of a regional destination that would enhance economic growth in Downtown Flushing and Corona, improvement of environmental conditions, and integration of new development in the District with surrounding amenities. The former Empire Millwork Corporation Building would remain under private ownership in the No Action Alternative and could be demolished as-of-right; mitigation measures such as photographic documentation would not be required.

NO UNMITIGATED SIGNIFICANT IMPACTS ALTERNATIVE

The No Unmitigated Significant Impacts Alternative explores modifications to the proposed project that would avoid the unmitigated significant impacts to historic and cultural resources, traffic, transit, and pedestrians:

- For historic and cultural resources, this alternative would avoid the demolition of the former Empire Millwork Corporation Building that would occur with Phase 2 of the proposed project. Although this could be achieved through adaptive reuse, exterior elements would still need to be upgraded to comply with building codes and noise attenuation requirements, and flood protection measures such as gates or pumps would be required to comply with flood insurance requirements. Overall, this alternative would reduce the footprint of any new development, which would result in greater density in the remainder of the District, fewer housing units, less open space, or some combination of these possibilities. As noted above, the former Empire Millwork Corporation Building could be demolished as-of-right under existing conditions, and mitigation measures such as photographic documentation would not be required.
- For traffic, the proposed project and the potential future development on Lot B would result in significant adverse impacts that cannot be fully alleviated with practical mitigation measures. Because of existing congestion at a number of intersections, even a minimal increase in traffic would result in unmitigated impacts. Based on a sensitivity analysis of intersections within the study area, it was determined that in all three phases of the proposed project, the addition of five or fewer vehicles through some intersections would trigger an impact that cannot be fully mitigated. Thus, almost any new development at the project site would result in unmitigated traffic impacts, and no reasonable alternative could be developed to avoid such impacts.
- For transit, the proposed project and potential future development on Lot B would result in significant adverse subway line-haul impacts on the Manhattan-bound No.7 subway line express service during the 2028 and 2032 AM peak periods and on station operations at the Mets-Willets Point subway station under the 2018, 2028, and 2032 With Action conditions. Should New York City Transit (NYCT) revert back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, the significant adverse impacts on station operations may potentially be deemed unmitigatable. Although the City had consulted with the New York Metropolitan Transportation Authority (MTA) on extending regular Long Island Rail Road (LIRR) service to Willets Point, which would be expected to provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing, the implementation of the LIRR service improvement would depend on whether the actual future demand shows that such service improvement is warranted. It should be noted that this significant adverse line-haul impact on the No. 7 line would not occur until Phase 2 should NYCT be able to process an additional Manhattan-bound express train during the AM peak hour, as assumed in the Draft SEIS (DSEIS). To avoid this potentially unmitigatable impact, portions or all of Phase 1B and Phase 2 of the proposed project and the potential future development on Lot B would need to be eliminated from the current development plan. Almost any new development at the project site would result in the potentially unmitigatable impact on station operations at the Mets-Willets Point subway station, and no reasonable alternative could be developed to avoid such impacts without substantially compromising the proposed project's stated goals.

- For pedestrians, the proposed project and potential future development on Lot B would result in significant adverse impacts at ~~five-seven~~ study area crosswalks upon Phase 1A completion, five study area crosswalks upon and Phase 1B completion, and seven study area crosswalks upon the Phase 2 full build-out in 2032, respectively in 2018 and 2028, respectively, and at eight study area crosswalks upon the Phase 2 full build out in 2032. No reasonable alternative could be developed to avoid these impacts without substantially compromising the proposed project's stated goals.

B. SUMMARY OF FINDINGS—2008 FGEIS AND SUBSEQUENT TECHNICAL MEMORANDA

The 2008 Final Generic Environmental Impact Statement (FGEIS) examined five alternatives, including:

- A No Action Alternative, which described the conditions that would exist if the 2008 Willets Point Development Plan were not implemented;
- A No Unmitigated Impact Alternative, which examined the level of development that would be necessary to avoid all the potential unmitigated impacts associated with the 2008 Willets Point Development Plan;
- A Flushing Bridge Alternative, which assessed the 2008 Willets Point Development Plan with a new pedestrian bridge connecting the District and Downtown Flushing;
- A Municipal Services Alternative, which evaluated conditions that would have been likely to occur if the District were not rezoned but additional municipal services were provided to the District; and
- A Staged Acquisition Alternative, in which properties in the District would have been acquired and infrastructure developed over time.

The No Action Alternative considered in the FGEIS was intended to avoid some of the adverse environmental impacts of the 2008 Willets Point Development Plan but would not have resulted in the benefits of the 2008 proposed project. The No Unmitigated Impact Alternative considered in the FGEIS explored modifications to the 2008 Willets Point Development Plan that would have mitigated project impacts to historic resources, traffic, pedestrians, and noise. The subsequent Technical Memoranda 3 and 4 considered an Adjusted Plan and an Updated Plan, which, like the Staged Acquisition Alternative, proposed development in stages. As the proposed project assumes a very similar development of the District in stages, a re-evaluation of the Staged Acquisition Alternative is not necessary.

While the 2008 FGEIS concluded that the Flushing Bridge Alternative would improve pedestrian access to the District as well as access to the District's proposed open space, and would help integrate new development in the District with surrounding amenities, this alternative also would require a variety of approvals, including: acquisition of property, an easement, or a lease for right-of-way on state-owned property; approval by the New York State Department of Transportation (NYSDOT) and potentially Federal Highway Administration (FHWA) for construction of new structures above the Van Wyck Expressway ramps; approval by the New York State Department of Environmental Conservation (NYSDEC) and potentially the U.S. Army Corps of Engineers (USACE) for construction above and adjacent to the Flushing River; and approval by the City of New York for acquisition of property, an easement, or a lease of private property within the view corridor of 37th Avenue east of the Flushing River. No

application for such actions has been made, and no funding has been allocated or is planned for allocation to the construction of such a bridge. Therefore, the Flushing Bridge Alternative is not analyzed in this SEIS.

The 2008 FGEIS concluded that the Municipal Services Alternative would not result in the creation of a dynamic, sustainable community that integrates regional attractions and residential, retail, and other uses; would not provide for new affordable housing units, community facilities, or open space within the District; and would not advance a number of the Downtown Flushing Development Framework's fundamental goals, including the creation of a regional destination that would enhance economic growth in Downtown Flushing and Corona, and integration of new development in the District with surrounding amenities. Furthermore, as the municipal improvements that would have taken place under this alternative would have been largely limited to public property, and existing private properties would remain developed with buildings at their current grade, this alternative presented more serious complications with respect to the feasibility of effectively upgrading the area's infrastructure than would redevelopment of the District as would have occurred under the Willets Point Development Plan. The Municipal Services Alternative also would not result in the filling of the District to flood elevation. The Municipal Services Alternative also would not result in comprehensive site remediation of the District, which is one of the goals of the proposed project. No changes to background conditions, differences in elements between the development program analyzed in the 2008 FGEIS and the proposed project, or changes in analysis methodology would alter these conclusions. Therefore, the Municipal Services Alternative is not analyzed in this SEIS.

C. NO ACTION ALTERNATIVE

DESCRIPTION

The No Action Alternative has been discussed as the "future without the proposed project" in the technical chapters of this SEIS. The No Action Alternative assumes that the existing uses within the Special Willets Point District, Willets West, as well as South Lot and Lot D would remain and that the mix of uses would not be developed. The No Action Alternative also assumes that the potential future development on Lot B would not occur. As such, the No Action Alternative would not require the special permit to allow surface parking/open and enclosed privately operated recreation uses within the District, modification of the existing lease for the CitiField and adjacent parking properties, or any revisions to the previously approved City Maps to modify the staging for the closure of City streets. The No Action Alternative would also not result in the remediation of contaminated soils within the District; filling of the District to above flood elevation; or the creation of new streets, sewers, and other public infrastructure within the District.

LAND USE, ZONING, AND PUBLIC POLICY

LAND USE

The No Action Alternative, like the proposed project, would not result in significant adverse impacts on land use, zoning, and public policy. However, neither would it result in the positive effects that the proposed project would provide.

Without the proposed project, it is expected that the District would continue to have the industrial and auto-related uses that are currently there and would continue to be isolated from

surrounding neighborhoods, and that the Willets West and Roosevelt Avenue portions of the project site would continue to serve the parking needs of CitiField. The existing uses in the remainder of the Willets Point peninsula, including the undeveloped MTA property to the east of the District, also are expected to remain unchanged. The substantial amount of new development under construction or planned within the primary and secondary study areas would occur over the long term without the proposed project, following current development projects and alongside other initiatives proposed as part of the 2004 Downtown Flushing Development Framework.

The planning effort being undertaken by the Flushing Willets Corona Local Development Corporation (FWCLDC), in consultation with the New York City Department of City Planning (DCP), with funding from the New York State Department of State (NYSDOS) under the Brownfield Opportunity Areas (BOA) Program would still occur under the No Action Alternative; however, the No Action Alternative would not advance a number of the Downtown Flushing Development Framework's fundamental goals, including facilitating future growth and sustainability of the area through the redevelopment of Willets Point. Furthermore, the environmental remediation that would be undertaken with the proposed project would not occur and would not lead to improved environmental conditions in the District.

ZONING

Under the No Action Alternative, no changes to zoning are anticipated for the project site. Some changes to zoning would occur in study areas, related to the No Build projects identified in Chapter 2, "Land Use, Zoning and Public Policy."

PUBLIC POLICY

Under the No Action Alternative, no new policies are expected that would affect the project site or the primary and secondary study areas. Without the proposed project, an essential component of the Downtown Flushing Development Framework—the redevelopment of the Willets Point peninsula—would not proceed, and many of the Framework's goals, which focus on facilitating future growth and sustainability of the area through the redevelopment of Willets Point, would not be achieved. It is expected that the City would continue to explore opportunities to advance the other components of the Framework, such as opportunities for mixed-use development in Downtown Flushing, enhancements to public open spaces and streetscapes, improved connections between Downtown Flushing and the Flushing waterfront, and transportation and parking strategies. Goals such as improving environmental conditions in the District and enhancing adjacent regional destinations would not likely be achieved in the future without the proposed project. Additionally, as Willets West, the South Lot, Lot D, and Lot B would remain surface parking areas, the goals outlined in the Framework, such as creating regional destinations that would enhance economic growth in Downtown Flushing and Corona, also are unlikely to be achieved.

SOCIOECONOMICS

The No Action Alternative would not result in direct or indirect residential or business displacement, would not require property acquisition or the relocation of businesses, and would not generate substantial new residents or employees in Queens. The existing auto-related and other businesses would continue to operate, and the one residential unit would remain.

The No Action Alternative would not contribute to the revitalization of the Special Willets Point District or the surrounding area. The proposed project includes a mix of residential,

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entertainment/retail, hotel, convention center, commercial office, community facility, a public school, publicly accessible open space, and parking uses in the District, Willets West, and Roosevelt Avenue portions of the project site. Under this Alternative, these uses would not be developed, jobs would not be created, and the supply of affordable housing in the study area would not be increased.

Therefore, the No Action Alternative would not result in the economic benefits derived from new jobs, consumers, and residents in the District and Willets West. While the No Action Alternative would not involve the same expenditure of public funds as the proposed project, it would not result in the substantial economic benefits that would be realized with the proposed project.

COMMUNITY FACILITIES

SCHOOLS

Under the No Action Alternative, elementary and intermediate schools in CSD 25/Sub-District 2 and high schools in Queens will be over capacity in 2018, 2028, and 2032. Unlike the proposed project, the No Action Alternative would not generate new demand for public school seats; however, the proposed project would not result in significant adverse impacts on high schools, and would avoid significant adverse impacts on elementary and intermediate schools by creating new school capacity. The Queens Development Group, LLC (QDG) would coordinate with the School Construction Authority (SCA) to determine whether the public school space currently planned as part of Phase 1B would be sufficient to accommodate all of the school children generated by the proposed project by 2028. Provision of the school in Phase 1B would be ensured through a contractual agreement. If necessary, the school spaces would be expanded, and corresponding reductions in square footage would be made elsewhere in the development program. For Phase 2, the New York City Economic Development Corporation (EDC) would require as part of the developer's agreement that the designated developer similarly coordinate with SCA.

LIBRARIES

Under the No Action Alternative, the delivery of library services in the study area would not be adversely affected in 2032. In comparison, the lead agency, in consultation with the Queens Public Library, has determined that the additional population introduced by the proposed project would impair the delivery of library services in the study area in 2032. To mitigate this impact, adequate space¹ within the 125,000 square feet of as-yet-unprogrammed community facility space in the program for Phase 2 ~~could potentially~~ would be made available to be utilized as a branch library or auxiliary facility for the Queens Library system, or additional volumes or programs to accommodate new users could be provided if adequate space in nearby branches exists. Although no developer has yet been designated for Phase 2, the provision of additional library space in Phase 2 would be based on further consultation with Queens Public Library and the lead agency.

¹ In other projects, 15,000–20,000 square feet of community facility space has been adequate for the operation of a branch library.

CHILD CARE

Under the No Action Alternative, known planned or proposed development projects in the study area would introduce approximately 76 additional children under age six who would be eligible for publicly funded child care programs. Therefore, the utilization rate for publicly funded child care facilities serving the study area is assumed to increase from 97 percent under existing conditions to 107 percent in the No Action Alternative, with a shortfall of 55 slots. By comparison, the proposed project may result in significant adverse impacts on publicly funded child care facilities in 2028. To mitigate this impact, QDG (i) would consult with the New York City Administration for Child Services (ACS) to determine whether adding capacity to existing facilities or providing a new child care facility within or near the area surrounding the project site is the appropriate way to meet demand for child care services generated by the proposed project; and (ii) would, as directed by ACS, add capacity to existing facilities or provide a new child care facility within or near the area surrounding the project site. EDC would require, as part of the developer's agreement, that the designated developer of Phase 2 similarly consult with ACS to determine the appropriate way to meet demand for child care services generated by development in the District by 2032. Such mitigation would not occur in the No Action Alternative.

HEALTHCARE

Like the proposed project, the No Action Alternative would not adversely affect the overall provision of health care services.

POLICE AND FIRE PROTECTION SERVICES

The No Action Alternative would generate fewer new worker and visitor populations and would result in a lower demand for police and fire protection services than the proposed project. With the proposed project, both NYPD and FDNY would continue to reevaluate their staffing and resource needs and would continue to have the ability to adjust to congestion en route to emergencies. Response times are not expected to dramatically change in such a way as to result in a significant adverse impact.

OPEN SPACE

The No Action Alternative would not generate the same level of demand for open space resources as the proposed project; however, it also would not introduce substantial new open space within the District. Under the No Action Alternative, residents and workers within the study area would continue to be well served by open space. With the proposed project, open space ratios would remain above the recommended City guidelines, with the exception of the active open space ratio, which would decrease from 1.81 acres per 1,000 residents in the No Action Alternative to 1.55 in the 2028 With Action condition and 1.32 in the 2032 With Action condition. However, these decreases would not result in a significant adverse open space impact.

SHADOWS

Unlike the proposed project, the No Action Alternative would not cast any new shadows on public open space or other sun-sensitive resources. Neither the No Action Alternative nor the proposed project would result in any significant adverse shadows impacts.

HISTORIC AND CULTURAL RESOURCES

Neither the No Action Alternative nor the proposed project would adversely affect archaeological resources. Unlike the proposed project, under the No Action Alternative there would be no adverse impacts to historic resources. With the proposed project, it is anticipated that the former Empire Millwork Corporation Building would be demolished, resulting in a significant adverse impact on this historic resource.

URBAN DESIGN AND VISUAL RESOURCES

Unlike the proposed project, the No Action Alternative would not alter the urban design of the project site. The No Action Alternative would not result in any new construction on the project site, whereas the proposed project would result in the development of multiple buildings of varying heights and the transformation of this area with new residential, entertainment/retail, hotel, school, community facility, office, and convention center. The No Action Alternative also would not result in the creation of any new public open space within the District. While the proposed project would create some taller structures within the District, it would not adversely affect any views to visual resources in the surrounding area. Therefore, neither the No Action Alternative nor the proposed project would adversely affect urban design or visual resources.

NATURAL RESOURCES

Like the proposed project, the No Action Alternative would not result in significant adverse impacts on floodplains, wetlands, sediments, groundwater, terrestrial resources, aquatic resources, endangered, threatened species, or species of special concern and rare ecological communities, and Essential Fish Habitat (EFH). In the No Action Alternative, the several proposed and ongoing projects aimed at improving water quality and aquatic resources in New York, including in Flushing Bay and Flushing River, would occur independently of the proposed project. However, the No Action Alternative would not result in improvements to the existing infrastructure within the District, and the grade would not be raised above the existing 100-year floodplain. As a result, frequent flooding of the area would continue, likely getting worse with projected sea-level rise due to climate change, and the stormwater runoff would continue to pose a threat to the surrounding water bodies and groundwater.

HAZARDOUS MATERIALS

Under the No Action Alternative, in the event that projects independent of the proposed project were to occur, such development would not be expected to result in significant adverse impacts with respect to hazardous materials. With the No Action Alternative, the Special Willets Point District portion of the project site would have both continued New York State Department of Environmental Conservation (NYSDEC) involvement (related to spill cleanup and enforcement actions) and NYC Office of Environmental Remediation (OER) involvement related to the existing E designations. For portions of the sites outside of the District, any future development would be subject to new City leases and/or disposition agreements which would set forth hazardous materials requirements, similar to those associated with the proposed project, but tailored to the development (e.g., extent of proposed soil disturbance and land use).

WATER AND SEWER INFRASTRUCTURE

Neither the No Action Alternative nor the proposed project would result in any significant adverse impacts to water and sewer infrastructure. However, in the No Action Alternative, the

infrastructure that would be constructed as part of the proposed project would likely not be built, the grade would likely not be raised to above the existing 100-year floodplain, and the District would continue to be vulnerable to frequent flooding, likely getting worse with projected sea-level rise due to climate change. Under the No Action Alternative, stormwater runoff would likely continue to carry existing suspected contaminants from the site to nearby water bodies and groundwater. Existing water demand and sanitary sewer generation is expected to remain unchanged. Future sanitary sewage generation is estimated to continue to be directed to the existing septic system, but a limited volume may be directed to the municipal infrastructure improvements currently under construction. No changes to the stormwater runoff coefficient would occur in the No Action Alternative. New York City Department of Environmental Protection (DEP) is working to reduce combined sewer overflows (CSOs) via upgrades at water pollution treatment plants (WTP), storm sewer expansions, and CSO retention tanks, and as with the proposed project, a reduction in CSOs would occur. With the proposed project, infrastructure improvements would be implemented for various phases of the project.

SOLID WASTE AND SANITATION

Neither the No Action Alternative nor the proposed project would result in significant adverse impacts to solid waste and sanitation. The No Action Alternative would not result in new development on the project site; therefore, it would not generate new demand for municipal solid waste collection and also would not result in the displacement of two waste transfer businesses currently operating in the District. Independent of the proposed action, there would be some changes in the City's waste management services to the project site, including completion of a new Marine Transfer Station (MTS) that will have the capacity to handle up to 3,672 tons per day of solid waste under normal conditions.

ENERGY

The No Action Alternative would generate less energy demand than the proposed project. With both the No Action Alternative and the proposed project, it is expected that measures will be taken to provide adequate electrical capacity to the New York City metropolitan area through 2032 and beyond. It is also assumed that Con Edison would continue to implement its electrical distribution improvement programs in Queens. In the future, it is expected that the existing trend toward sustainability would lead to greater energy efficiency in the City. Therefore, it is anticipated that energy supplies could meet the demand from the project site under both the No Action Alternative and the proposed project.

TRANSPORTATION

TRAFFIC

While the No Action Alternative would not generate new vehicular traffic, there would be increased volumes from background growth and other proposed development projects outside of the project site. Overall, the resulting volumes would be lower than with the proposed project; however, there would be a number of intersections on a typical weekday with substandard operations with the No Action Alternative.

The summary overview of the No Action Alternative for Phase 1A (2018) without a Mets game indicates that:

Willeys Point Development

- In the weekday AM peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at overall level of service (LOS) E or F would increase from none under existing conditions to eight. The number of traffic lane groups projected to operate at LOS E or F would increase from 13 to ~~32~~ 31.
- 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 five, while the number of traffic lane groups at LOS E or F would increase from eight to 26.
- In the weekday PM peak hour, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to six. The number of lane groups projected to operate at LOS E or F would increase from 13 to ~~34~~ 33.
- In the Saturday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from zero to eight, while the number of lane groups at LOS E or F would increase from 11 to ~~33~~ 32.

Under the No Action Alternative with a Mets game for Phase 1A, traffic conditions in the study area would be as described below:

- In the weekday PM pre-game peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at LOS E or F would increase from zero under existing conditions to eight. The number of traffic lane groups projected to operate at LOS E or F would increase from 16 to ~~32~~ 31.
- In the Saturday afternoon 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 nine. The number of lane groups projected to operate at LOS E or F would increase from 18 to 33. The unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS E.
- 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 zero under existing conditions to 11. The number of lane groups projected to operate at LOS E or F would increase from 16 to ~~38~~ 37. The unsignalized intersections of Boat Basin Road at World's Fair Marina and Grand Central Parkway Ramp at West Park Loop/Stadium Road would operate at LOS E, and the unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.

The summary overview of the No Action Alternative for Phase 1B (2028) without a Mets game indicates that:

- In the weekday AM peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to eight. The number of traffic lane groups projected to operate at LOS E or F would increase from 13 to 33.
- 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 six, while the number of traffic lane groups at LOS E or F would increase from eight to 27.
- In the weekday PM peak hour, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to ~~nine~~ eight. The number of lane groups projected to operate at LOS E or F would increase from 13 to ~~35~~ 36.

- In the Saturday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from zero to nine, while the number of lane groups at LOS E or F would increase from 11 to ~~37~~ 36.

Under the No Action Alternative with a Mets game for Phase 1B, traffic conditions in the study area would be as follows.

- In the weekday PM pre-game peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at LOS E or F would increase from zero under existing conditions to eight. The number of traffic lane groups projected to operate at LOS E or F would increase from 16 to ~~37~~ 38.
- In the Saturday afternoon 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 11. The number of lane groups projected to operate at LOS E or F would increase from 18 to 35. The unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.
- 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 zero under existing conditions to 13. The number of lane groups projected to operate at LOS E or F would increase from 16 to ~~38~~ 37. The unsignalized intersection of Grand Central Parkway Ramp at West Park Loop/Stadium Road would operate at LOS E, and the unsignalized intersections of Boat Basin Road at World's Fair Marina and Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.

The summary overview of the No Action Alternative for Phase 2 (2032) without a Mets game indicates that:

- In the weekday AM peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to eight. The number of traffic lane groups projected to operate at LOS E or F would increase from 13 to 35.
- 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 seven, while the number of traffic lane groups at LOS E or F would increase from eight to 28.
- In the weekday PM peak hour, the number of locations that are projected to operate at overall LOS E or F would increase from none under existing conditions to ~~nine~~ eight. The number of lane groups projected to operate at LOS E or F would increase from 13 to ~~34~~ 35.
- In the Saturday midday peak hour, the number of signalized intersections that would operate at overall LOS E or F would increase from zero to ten, while the number of lane groups at LOS E or F would increase from 11 to ~~37~~ 36.

Under the No Action Alternative with a Mets game for Phase 2, traffic conditions in the study area would be as follows.

- In the weekday PM pre-game peak hour, of the 26 signalized intersections analyzed, the number of locations that are projected to operate at LOS E or F would increase from zero under existing conditions to eight. The number of traffic lane groups projected to operate at LOS E or F would increase from 16 to ~~39~~ 40.

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- 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 12. The number of lane groups projected to operate at LOS E or F would increase from 18 to 38. The unsignalized intersection of Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.
- 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 zero under existing conditions to 14. The number of lane groups projected to operate at LOS E or F would increase from 16 to ~~38~~ 37. The unsignalized intersection of Grand Central Parkway Ramp at West Park Loop/Stadium Road would operate at LOS E, and the unsignalized intersections of Boat Basin Road at World's Fair Marina and Boat Basin Road at Stadium Road/CitiField Entrance 8 would operate at LOS F.

The proposed project would result in more locations with substandard operations, but as detailed in Chapter 21, "Mitigation," depending on the peak hour, approximately one-half or more of the significantly impacted locations could be fully or partially mitigated with traffic signal operation changes, such as signal phasing and/or timing changes, signalization of an unsignalized intersection, lane re-striping, parking prohibitions, or turn prohibitions, with the exception of three locations—including 126th Street at Northern Boulevard, 126th Street/Grand Central Parkway (GCP) ramp at 34th Avenue, and the GCP exit ramp at West Park Loop/Stadium Road—which would require special, more intensive mitigation measures to partially or fully mitigate the significant impacts in peak hours.

For significant adverse impacts that would be unmitigated or partially mitigated with the proposed project, traffic operations would be better under the No Action Alternative. However, in either case, there would continue to be a number of congested locations within the study area with LOS E or F conditions during the peak hours analyzed.

HIGHWAY NETWORK

The No Action Alternative would not generate new vehicular traffic on the highway network, but there would be increased volumes from background growth and other proposed development projects outside of the project site. In addition, the proposed ramp connection to the Van Wyck Expressway (proposed under the Phase 1B and 2 With Action conditions) would not be provided as part of the No Action Alternative. With the proposed project, volumes would be higher during all time periods, but in both the No Action and With Action scenarios, there would be considerable congestion at multiple locations within the highway network.

Under the Phase 1A No Action Alternative, between two and seven of the 19 analyzed highway mainlines and ramps would operate at marginally unacceptable or unacceptable (LOS D, E, or F) conditions on non-game days during each peak hour of analysis. On game days, between five and nine of the 19 analyzed highway mainlines and ramps would operate at marginally unacceptable or unacceptable (LOS D, E, or F) conditions during each peak hour of analysis.

Under the Phase 1B No Action Alternative, between one and seven of the 19 analyzed highway mainlines and ramps would operate at marginally unacceptable or unacceptable (LOS D, E, or F) conditions on non-game days during each peak hour of analysis. On game days, between four and eight of the 19 analyzed highway mainlines and ramps would operate at marginally unacceptable or unacceptable (LOS D, E, or F) conditions during each peak hour of analysis.

Under the Phase 2 No Action Alternative, between one and ~~seven~~ nine of the 19 analyzed highway mainlines and ramps would operate at marginally unacceptable or unacceptable (LOS D, E, or F) conditions on non-game days during each peak hour of analysis. On game days, between four and ~~ten~~ eight of the 19 analyzed highway mainlines and ramps would operate at marginally unacceptable or unacceptable (LOS D, E, or F) conditions during each peak hour of analysis.

PARKING

The No Action Alternative itself would not generate new demand for parking, but it would also not provide for new on- or off-street parking within the project site. However, parking demand would increase as a result of background growth and other proposed development projects outside of the District.

Under the No Action Alternative, for all three phases of the proposed project, there would be adequate off-street parking to meet demand. The proposed project would provide an increased amount of off-street parking in each phase and, similar to the No Action Alternative, there would be enough overall off-street parking to meet demand.

On a typical weekday (both game day and non-game day), a weekend non-game day, and during the pre-game period on weekend game days, it is projected that on-street parking demand would be at or above capacity in all phases under the No Action Alternative. In Phases 1B and 2 of the proposed project, new on-street parking spaces would be provided within the District. During certain periods, this parking would not be fully occupied and could accommodate some of the non-project unmet demand that would occur under the No Action Alternative. Therefore, it is anticipated that the proposed project would provide for greater capacity to meet parking demand than the No Action Alternative.

Under the No Action Alternative, Mets parking would not be affected, whereas the proposed project would relocate 4,100 Mets parking spaces within the immediate area. Therefore, Mets parking needs would be similarly satisfied under both the No Action Alternative and the proposed project.

TRANSIT

The No Action Alternative itself would not generate new demand for subway service, but there would be additional riders from background growth and other proposed development projects outside of the project site. Under this alternative, all subway station stairways and control area elements would continue to operate at acceptable levels and all analyzed bus routes would continue to operate within their guideline capacities under the 2018, 2028, and 2032 No Action Alternative conditions. As with the proposed project, the No. 7 subway line would continue to operate within guideline capacity during the weekday AM peak period for the Manhattan-bound local service and during the PM peak period for the Flushing-bound service under the 2018, 2028, and 2032 No Action Alternative conditions. However, the Manhattan-bound express service would continue to exceed the guideline capacity during the weekday AM peak period under the 2018, 2028, and 2032 No Action Alternative conditions.

In 2018, both the No Action Alternative and the proposed project with Phase 1A completed would not result in any significant adverse transit impacts. In 2028, the No Action Alternative would not result in the significant adverse bus line-haul impacts on the Q19, Q48, and Q66 routes and significant adverse subway line-haul impacts on the No. 7 line Manhattan-bound

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express service, as identified for the proposed project with Phase 1B completed. It should be noted that this significant adverse line-haul impact on the No. 7 line would not occur until Phase 2 should NYCT be able to process an additional Manhattan-bound express train during the AM peak hour, as assumed in the DSEIS. In 2032, the No Action Alternative would not result in the significant adverse impacts on the Mets-Willets Point subway station's north stairways, the No. 7 line Manhattan-bound express service, and the Q19, Q48, and Q66 bus routes, as identified for the proposed project with Phase 2 built out.

It should be noted that if NYCT reverts back to its pre-CitiField station operation plan, which could take place independent of the proposed project and whereby passage through the station between parking in South Lot/Lot D and the north side of Roosevelt Avenue could be made only within the unpaid zone, additional congestion would be expected on game days, which occur on average only approximately 80, 40 to 50 times a year, for Met patrons traveling between parking in South Lot/Lot D and CitiField through the station. However, under the No Action Alternative, no significant adverse impacts would result at the circulation elements along this station pedestrian route, as would under the With Action conditions.

PEDESTRIANS

The No Action Alternative itself would not generate new pedestrian trips, but there would be additional demand from general background growth and other proposed development projects outside of the project site. Under this alternative, all pedestrian elements except for the north and south crosswalks of 34th Avenue and 126th Street during the weekend post-game peak period, would continue to operate at acceptable levels (maximum of 8.5 PMF platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks) during all analysis time periods under the 2018, 2028, and 2032 conditions.

In 2018, the No Action Alternative would not result in the significant adverse crosswalk impacts at the intersections of Northern Boulevard and 126th Street, Roosevelt Avenue and 126th Street, ~~and 34th Avenue and 126th Street, and 37th Avenue and 126th Street,~~ as identified for the proposed project with Phase 1A completed. In 2028, the No Action Alternative would not result in the significant adverse crosswalk impacts at the intersections of Northern Boulevard and 126th Street, Roosevelt Avenue and 126th Street, and 34th Avenue and 126th Street ~~same three intersections~~, as identified for the proposed project with Phase 1B completed. In 2032, the No Action Alternative would not result in the significant adverse crosswalk impacts at the same three intersections identified in 2028, as well as the intersections of ~~New Willets Point Boulevard and 126th Street and~~ Roosevelt Avenue and Lot B Driveway, as identified for the proposed project with Phase 2 built out.

AIR QUALITY

The No Action Alternative would result in less vehicular traffic than the proposed project, and the mobile source emissions would be lower. The No Action Alternative would allow for the continued operation of industrial uses within Willets Point. It would not result in the development of new recreational, residential, hotel, open space, and commercial uses (in Phases 1A and 1B) in close proximity to auto, manufacturing, and industrial uses that may remain in the area proposed for development in Phase 2. However, neither the proposed project nor the No Action Alternative would result in significant adverse air quality impacts. Unlike the proposed project, the No Action Alternative would allow the use of fuel oil for heating and hot water systems and would not require certain restrictions, such as requirements on the fuel type and the

use of low-nitrogen oxide (low-NO_x) burners, to avoid potential stationary source air quality impacts.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

The No Action Alternative would result in no new development on the project site and less vehicular traffic in the study area than the proposed project, and therefore the potential GHG emissions associated with the No Action Alternative would be lower than with the proposed project. The potential GHG emissions associated with the proposed project in 2032 upon completion of Phase 2 (cumulative with Phases 1A and 1B) are projected to be approximately 160,500 metric tons of CO₂e. However, measures for reducing GHG emissions are included as part of the proposed project, making it consistent with the City's GHG reduction goal. Unlike the proposed project, the No Action Alternative would not include measures to reduce the vulnerability to flood damage, including grading and elevating the project site above the existing 100-year floodplain or measures to make the proposed project site more resilient to projected sea-level rise due to climate change.

NOISE

The No Action Alternative would result in less vehicular traffic in the study area than the proposed project; however, ambient noise levels in the area would continue to be high. As with the proposed project, noise levels under the No Action Alternative (for the 2018, 2028, and 2032 analysis years) at World's Fair Marina Park (Receptor Site 3) and the intersection of Roosevelt Avenue between College Point Boulevard and Prince Street (Receptor Site 2) would be in the "marginally unacceptable" category, and noise levels at the intersection of Roosevelt Avenue between 114th Street and 111th Street (Receptor Site 1) would be in the "clearly unacceptable" category. With the proposed project, lots located within the District would have restrictions placed on them to ensure that adequate attenuation requirements are met within the proposed buildings.

PUBLIC HEALTH

Neither the No Action Alternative nor the proposed project would adversely affect public health.

NEIGHBORHOOD CHARACTER

The No Action Alternative would not alter the current character of the project site. It also would not result in new vehicle trips, and therefore, traffic operations would be less congested as compared with the proposed project. Like the proposed project, the No Action Alternative would not result in significant adverse impacts on neighborhood character.

While conditions with respect to traffic and noise would not be changed under the No Action Alternative, it would not provide the neighborhood character benefits of the proposed project. The No Action Alternative would not transform the area surrounding CitiField into a thriving new neighborhood and regional destination. Furthermore, the No Action Alternative would not represent a significant investment to improve the project area's infrastructure, nor would it remediate existing environmental contaminations as the proposed project would.

CONSTRUCTION

Since there would be no development under the No Action Alternative, potential significant adverse construction impacts related to transportation and historic and cultural resources with construction of the proposed project would not occur. However, the substantial economic benefits attributable to construction expenditures and construction jobs under the proposed project would not be realized under the No Action Alternative.

D. NO UNMITIGATED SIGNIFICANT IMPACTS ALTERNATIVE

DESCRIPTION

The proposed project would result in some unmitigated impacts with respect to historic and cultural resources, traffic, transit, and pedestrians. Therefore, as required by the *CEQR Technical Manual*, alternatives were developed to explore modifications to the proposed actions that would allow for the mitigation of these impacts.

HISTORIC AND CULTURAL RESOURCES

The proposed project would result in the demolition of the former Empire Millwork Corporation Building, which is considered eligible for State and National Registers of Historic Places (S/NR) listing by the New York State Office of Parks, Recreation & Historic Preservation (OPHRP), but measures such as photographic documentation of this resource would be undertaken to partially mitigate this impact. The No Unmitigated Significant Impacts Alternative would avoid demolition of this historic resource. Under this alternative, any new development within the District during Phase 2 of the proposed project would be designed so as to leave this structure in place. This could be achieved through adaptive reuse, but exterior elements such as windows and facades would need to be upgraded to comply with building codes and noise attenuation requirements. Furthermore, the building is located below flood elevation, and its site could not be raised if it would remain. Therefore, flood protection measures such as gates or pumps would be required to comply with flood insurance requirements. This alternative would involve the same discretionary actions as the proposed project. However, preservation of the building would need to be required through the developer's formal request for proposals (RFP) process.

Overall, this alternative would reduce the footprint of any new development within the District, which would result in greater density in the remainder of the District, fewer housing units, less open space, or some combination of these possibilities. The preservation of this resource would also significantly constrain the design of the proposed project in ways that could make future development of the District more difficult and may undermine the benefits of the proposed project. As noted under the No Action Alternative, the former Empire Millwork Corporation Building could be demolished as-of-right under existing conditions, and mitigation measures such as photographic documentation would not be required.

TRAFFIC

~~The proposed project and the potential future development on Lot B would result in significant adverse traffic impacts at intersections and on highway segments within the study area that cannot be fully alleviated with practical mitigation measures. As described more fully in Chapter 21, "Mitigation," mitigation measures requiring further agency review prior to implementation~~

~~are proposed for six intersections. If the mitigation measures at these locations are not implemented, unmitigated significant adverse impacts would occur.~~

Because of existing congestion at a number of intersections, even a minimal increase in traffic would result in unmitigated impacts. Based on a sensitivity analysis of intersections within the study area, it was determined that, even as early as in Phase 1A completion in 2018, the addition of five or less vehicles through some intersections would create an impact that cannot be fully mitigated. This would be the case for all three phases of the proposed project. Thus, almost any new development at the project site would result in unmitigated traffic impacts, and no reasonable alternative could be developed to avoid such impacts without substantially compromising the proposed project's stated goals.

TRANSIT

The proposed project and potential future development on Lot B would result in significant adverse subway line-haul impacts on the Manhattan-bound No.7 subway line express service during the 2028 and 2032 AM peak periods and on station operations at the Mets-Willets Point subway station under the 2018, 2028, and 2032 With Action conditions. Should NYCT revert back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, the significant adverse impacts on station operations may potentially be deemed unmitigatable. Although the City had consulted with the MTA on extending regular LIRR service to Willets Point, which would be expected to provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing, the implementation of the LIRR service improvement would depend on whether the actual future demand shows that such service improvement is warranted. It should be noted that this significant adverse line-haul impact on the No. 7 line would not occur until Phase 2 should NYCT be able to process an additional Manhattan-bound express train during the AM peak hour, as assumed in the DSEIS. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent the introduction of new LIRR service to the area. The feasibility of stairway widening and elevator installation at the Mets-Willets Point subway station were ~~will be~~ further evaluated between the Draft and Final SEIS. ~~In the event these mitigation measures are determined to be infeasible, the projected significant adverse stairway impacts would be deemed unmitigatable.~~ Specifically, an engineering feasibility study and design schematics were prepared and concluded that the recommended stairway widenings, as well as the installation of an Americans with Disabilities Act (ADA)-compliant elevator, would be feasible. It should be noted that the above proposed mitigation measures could be subject to modification due to NYCT's future master plan for the Mets-Willets Point subway station. Any modifications in conformance with the future master plan would provide equivalent functionality that would similarly mitigate the stairway impacts identified above. Since the projected impacts that prompted the stairway and elevator feasibility study would not occur until Phase 2 of the proposed project, no funding commitments are in place at this time. The City will coordinate with NYCT to ensure the proper mitigation would be implemented at the appropriate time and would add language to the RFP for Phase 2 of the project, requiring the designated developer to fund the implementation of this mitigation.

To avoid the potentially unmitigatable impact on line-haul capacity, portions or all of Phase 1B and Phase 2 of the proposed project and potential future development on Lot B would need to be eliminated from the current development plan. Almost any new development at the project site would result in the potentially unmitigatable impact on station operations at the Mets-Willets

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Point subway station, and no reasonable alternative could be developed to avoid such impacts without substantially compromising the proposed project's stated goals.

PEDESTRIANS

The proposed project and potential future development on Lot B would result in significant adverse pedestrian impacts at ~~five~~seven study area crosswalks upon Phase 1A completion, five study area crosswalks upon and Phase 1B completion, and seven study area crosswalks upon the Phase 2 full build-out in 2018, 2028, and 2032, respectively. ~~in 2018 and 2028, respectively, and at eight study area crosswalks upon the Phase 2 full build out in 2032.~~ Although potential pedestrian mitigation measures, some of which in conjunction with the proposed traffic mitigation measures, have been developed to address these impacts to the extent practicable, potentially unmitigatable pedestrian impacts could still occur with the development of Phase 1A of the proposed project. Hence, no reasonable alternative could be developed to avoid such impacts without substantially compromising the proposed project's stated goals. *

A. INTRODUCTION

Unavoidable significant adverse impacts are defined as those that meet the following two criteria:

- There are no reasonably practicable mitigation measures to eliminate the impacts; and
- There are no reasonable alternatives to the proposed project that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant adverse impacts.

As described in Chapter 21, “Mitigation,” a number of the potential impacts identified for the proposed project could be mitigated. However, as described below, in some cases, project impacts would not be fully mitigated.

B. HISTORIC AND CULTURAL RESOURCES

As described in Chapter 7, “Historic and Cultural Resources,” Phase 2 of the proposed project contemplates demolition of the former Empire Millwork Corporation Building, located at 128-50 Willets Point Boulevard in the Special Willets Point District. Demolition of this building would constitute a significant adverse impact on this historic resource. A developer for Phase 2 has not yet been selected, and the Queens Development Group, LLC (QDG) may or may not be selected as the designated developer for Phase 2. Before the development of Phase 2, the selected developer will consult with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and the New York City Landmarks Preservation Commission (LPC) to evaluate any remaining potential alternatives to demolition. If none are identified, measures to mitigate this adverse impact would be developed in consultation with OPRHP and LPC. The mitigation measures could include recording the building through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative. However, this impact would not be completely eliminated, as the resource would still be demolished. Therefore, consistent with the conclusions of the 2008 FGEIS, the demolition would constitute an unavoidable significant adverse impact on this historic resource as a result of the proposed project.

C. TRANSPORTATION**TRAFFIC AND PARKING**

As discussed in the Traffic and Parking section of Chapter 21, “Mitigation,” the proposed project would result in unmitigated impacts at local intersections and highway elements within the traffic study area and partially mitigated impacts at other locations. Not all of the unmitigated impact locations would occur in all seven traffic analysis periods. This section

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summarizes the unmitigated and partially mitigated locations based on the mitigation measures described in Chapter 21; for additional information, refer to Chapter 21.

LOCAL INTERSECTIONS

Under Phase 1A, ~~8~~ 13 of the ~~29~~ 32 intersections analyzed would have significant impacts that could not be fully mitigated in at least one peak hour, including:

- Astoria Boulevard at 108th Street;
- Northern Boulevard at 126th Street, Prince Street and at Main Street;
- Roosevelt Avenue at 108th Street, 114th Street, 126th Street, College Point Boulevard, and Union Street; ~~and~~
- 126th Street at 34th Avenue, 36th Avenue, and 37th Avenue; and
- Boat Basin Road at Stadium Road.

Under Phase 1B, ~~44~~ 18 of the ~~30~~ 33 intersections analyzed (there is one additional intersection analyzed in the study area under Phase 1B) would have significant impacts that could not be fully mitigated in at least one peak hour, including the following locations in addition to those cited above for Phase 1A (Note: the intersection of Roosevelt Avenue at 108th Street, which could not be fully mitigated in Phase 1A, could be fully mitigated in Phase 1B):

- Northern Boulevard at Union Street and at Parsons Boulevard;
- ~~34th Avenue at 126th Street;~~
- Roosevelt Avenue at 111th Street, at Main Street, and at Parsons Boulevard; and
- Sanford Avenue at Parsons Boulevard.

Under Phase 2, ~~48~~ 23 of the ~~34~~ 34 intersections analyzed (there is one more intersection analyzed in the study area under Phase 2) would have significant impacts that could not be fully mitigated in at least one peak hour, including the following locations in addition to those cited above for Phase 1B:

- Northern Boulevard at 108th Street and at 114th Street;
- Roosevelt Avenue at 108th Street and Prince Street; ~~114th Street~~; and
- Northern Boulevard at College Point Boulevard.

HIGHWAY NETWORK

Under Phase 1A, 6 of the 19 highway elements analyzed would have significant impacts that could not be fully mitigated in at least one peak hour, including:

- Westbound Grand Central Parkway (GCP) mainline (east side and west side), between Roosevelt Avenue and the Long Island Expressway (LIE);
- ~~Southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place;~~
- Southbound Van Wyck Expressway between Roosevelt Avenue and the LIE;
- Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway;
- Ramp from the Grand Central Parkway/eastbound Astoria Boulevard to the northbound Whitestone Expressway/eastbound Northern Boulevard; and

- Ramp from the southbound Whitestone Expressway to westbound Northern Boulevard.

~~As discussed in Chapter 21, “Mitigation,” there would be additional highway locations that would be slightly or moderately impacted due to the implementation of mitigation measures at local intersections and highway ramps. In Phase 1A, the eastbound GCP mainline between Roosevelt Avenue and the LIE would be slightly impacted and unmitigated during one of the seven peak traffic analysis hours.~~

Under Phase 1B, ~~40~~ 11 of the 19 analyzed highway elements would have significant traffic impacts that could not be fully mitigated in at least one peak hour, including the following locations in addition to those cited under Phase 1A (Note: the ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway, which could not be fully mitigated in Phase 1A, could be fully mitigated in Phase 1B):

- Northbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE;
- Southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place;
- Ramp from the northbound Van Wyck Expressway to eastbound Northern Boulevard;
- Ramp from the northbound Van Wyck Expressway to westbound Northern Boulevard;
- Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway; and
- Ramp from the westbound GCP toward Stadium Road and the northbound Whitestone Expressway.

~~As mentioned above for Phase 1A, in Chapter 21, there would be additional highway locations that would be slightly or moderately impacted due to the implementation of mitigation measures at local intersections and highway ramps, including the following in addition to the one location cited above for Phase 1A:~~

- Eastbound Grand Central Parkway mainline between Roosevelt Avenue and the LIE;
- Southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE;
- Southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place; and
- Ramp from World’s Fair Marina/Boat Basin Road to the westbound Grand Central Parkway.
- ~~• Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway; and~~
- ~~• Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway.~~

Under Phase 2, the same 11 of the 19 analyzed highway elements would have significant impacts that could not be fully mitigated in at least one peak hour as in Phases 1A and 1B above. ~~, including the following location in addition to those cited for Phases 1A and 1B:~~

- ~~• Southbound Van Wyck Expressway mainline between Roosevelt Avenue and the LIE.~~

~~As mentioned above for Phases 1A and 1B, there would be additional highway locations that would be slightly or moderately impacted due to the implementation of mitigation measures at local intersections and highway ramps, including the following in addition to locations cited above for Phases 1A and 1B:~~

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- Westbound Grand Central Parkway mainline (east side), between Roosevelt Avenue and the LIE;
- Northbound Whitestone Expressway mainline between Northern Boulevard and Linden Place;
- Ramp from World's Fair Marina/Boat Basin Road to the westbound GCP; and
- Ramp from the northbound Whitestone Expressway to the southbound Van Wyck Expressway;
- Ramp from the southbound Whitestone Expressway to the westbound GCP; and
- Ramp from westbound Northern Boulevard to the southbound Van Wyck Expressway.

As described in the Mitigation chapter, mitigation measures are proposed that would require further agency review prior to implementation at the following ~~six~~ three intersections: Grand Central Parkway (GCP) Exit Ramp at West Park Loop/Stadium Road, 126th Street/GCP Exit Ramp/34th Avenue, and Northern Boulevard at 126th Street, ~~World's Fair Marina at Boat Basin Road, Boat Basin Road at Stadium Road and Northern Boulevard at 114th Street.~~ If the mitigation measures at these locations are reviewed and concurs with the operational analysis that was undertaken for the improvements for the intersections at the Grand Central Parkway westbound exit ramp at West Park Loop/Stadium Road, the intersection of 126th Street/GCP Exit Ramp/34th Avenue, and the intersection of Northern Boulevard and 126th Street; NYCDOT has given approval for those measures within its jurisdiction (i.e., installation of a traffic signal at the intersection of West Park Loop/Stadium Road). Final design for construction of those measures which do not fall under the jurisdiction of NYCDOT will be further reviewed by the New York State Department of Transportation (NYSDOT) closer to the time of construction. If the mitigation measures at these locations are rejected by NYSDOT and not implemented, significant adverse impacts identified above would be unmitigated, including but not necessarily limited to the westbound Grand Central Parkway (the east side, between Roosevelt Avenue and the LIE), the southbound Whitestone Expressway mainline between Northern Boulevard and Linden Place, the ramp from the southbound Whitestone Expressway to westbound Northern Boulevard, the ramp from the westbound Grand Central Parkway toward Stadium Road and the northbound Whitestone Expressway, and the ramp from eastbound Astoria Boulevard and the Grand Central Parkway to the northbound Whitestone Expressway and eastbound Northern Boulevard in addition to the intersections of the Grand Central Parkway westbound exit ramp at West Park Loop/Stadium Road, 126th Street/GCP Exit Ramp/34th Avenue, and Northern Boulevard and 126th Street.

~~In addition, the intersections of 126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place will be analyzed and the related findings will be presented in the Final EIS. If these intersections are found to be significantly impacted, mitigation measures would be explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.~~

TRANSIT AND PEDESTRIANS

As discussed in the Transit and Pedestrians section of Chapter 21, the proposed project would potentially result in unmitigated significant adverse impacts on station operations at the Mets-Willets Point subway station under the 2018, 2028, and 2032 With Action conditions, subway line haul operations for the No. 7 line under the 2032 With Action condition, and street level pedestrian facility operations under the 2018, 2028, and 2032 With Action conditions. Not all of

these potentially unmitigated impacts would occur in all analysis time periods. This section summarizes the potentially unmitigated and partially mitigated locations; for additional information, refer to Chapter 21.

SUBWAY STATION OPERATIONS

Under Phase 2, the proposed project would result in significant adverse impacts on the S-3, S-2, and M-4 stairways located on the north side of Roosevelt Avenue, requiring stairway widenings and the installation of an Americans with Disabilities Act (ADA)-compliant elevator between the street and mezzanine levels. The feasibility of the stairway widening and elevator installation ~~were will be~~ further evaluated between the Draft and Final SEIS. ~~In the event these mitigation measures are determined to be infeasible, the projected significant adverse stairway impacts would be deemed unmitigatable. Specifically, an engineering feasibility study and design schematics were prepared and concluded that the recommended stairway widenings, as well as the installation of an ADA-compliant elevator, would be feasible. It should be noted that the above proposed mitigation measures may be subject to modification due to New York City Transit's (NYCT) future master plan for the Mets-Willets Point subway station. Any modifications in conformance with the future master plan would provide equivalent functionalities that would similarly mitigate the stairway impacts identified above. Since the projected impacts that prompted the stairway and elevator feasibility study would not occur until Phase 2 of the proposed project, no funding commitments are in place at this time. The City will coordinate with NYCT and the lead agency to ensure the proper mitigation would be implemented at the appropriate time and would add language to the Request for Proposals (RFP) for Phase 2 of the project as well as to the development agreement and/or other legally binding agreements, requiring the designated developer to fund the implementation of this mitigation.~~

In addition, NYCT may revert back to its pre-CitiField station operating plan for the Mets-Willets Point subway station, whereby passage through the station between parking in South Lot/Lot D and the north side of Roosevelt Avenue could be made only within the unpaid zone. If NYCT decides to proceed with this plan, which would take place independent of the proposed project, additional impacts for the station's street-level connections and the unpaid zone passageway could occur during game days. Although these impacts would be intermittent, occurring on average only approximately 80 40 to 50 times a year, and subject to game-day traffic and pedestrian management, they may potentially be deemed unmitigatable. No changes to operating plans were announced by NYCT between the Draft and Final SEIS; therefore, any potential changes that may be considered for future implementation will be addressed outside of this environmental review.

SUBWAY LINE HAUL

Under Phase 1B and Phase 2, the proposed project would result in a significant adverse impact on the Manhattan-bound No. 7 subway line express service during the AM peak period. It should be noted that this significant adverse line-haul impact on the No. 7 line would not occur until Phase 2 should NYCT be able to process an additional Manhattan-bound express train during the AM peak hour, as assumed in the Draft SEIS. The addition of regular Long Island Rail Road (LIRR) service to Willets Point would provide substantial relief to the No. 7 subway line and may prevent this significant adverse subway impact from materializing. Since there are constraints on what service improvements are available to NYCT, the identified significant line-haul capacity impact on the No. 7 line would likely remain unmitigated absent the introduction of new LIRR service to the area.

PEDESTRIANS

Under Phases 1A and 1B, widening the east crosswalk of Northern Boulevard and 126th Street could fully mitigate the significant adverse impact during all peak periods. However, if the proposed widening was determined to be infeasible, the projected significant adverse impacts at this crosswalk would be either partially mitigated or unmitigated.

Under Phase 2, widening the east crosswalk of Northern Boulevard and 126th Street, the west crosswalk of Roosevelt Avenue and 126th Street, and the east crosswalk of 34th Avenue and 126th Street could fully mitigate the significant adverse impacts during all peak periods. However, if the proposed widenings were determined to be infeasible, the projected significant adverse impacts at these crosswalks would be either partially mitigated or unmitigated.

In addition, related pedestrian analyses ~~will be~~ were prepared for the three intersections (126th Street at 36th Avenue, 126th Street at 37th Avenue, and Northern Boulevard at 126th Place) where additional traffic analyses ~~will~~ were also be conducted and are presented in ~~the~~ this Final SEIS. Mitigation measures were recommended where appropriate for the additional three intersections and would not result in any additional unmitigatable impacts. If additional pedestrian impacts are identified, mitigation measures would be explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable. *

A. INTRODUCTION

This chapter provides an assessment of the potential growth-inducing aspects of the proposed project. These generally refer to “secondary” impacts that could trigger additional development in areas outside of the project site that would not have such development without the proposed project. The 2012 *City Environmental Quality Review (CEQR) Technical Manual* indicates that an analysis of the growth-inducing aspects of a proposed action is appropriate when an action:

- Adds substantial new land use, new residents, or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or
- Introduces or greatly expands infrastructure capacity.

The proposed project would transform surface parking lots and a largely underutilized site with substantial environmental degradation into a lively, mixed-use, sustainable community and regional destination. The proposed project would introduce a variety of uses, including residential, retail, office, entertainment, hotel, convention center, community facility, open space, and parking (see Chapter 1, “Project Description,” for details). As described in Chapter 1, consistent with the assumptions of the 2008 FGEIS, it is anticipated that if the proposed project is approved and the project site is redeveloped, additional development could occur on CitiField parking Lot B. While specific development plans for Lot B have not yet been proposed, it is anticipated that approximately 280,000 square feet (sf) of office and 184,500 sf of retail could potentially be developed on Lot B.

While any future development on Lot B would require its own environmental review process subject to CEQR, consistent with the 2008 FGEIS, this Supplemental Environmental Impact Statement (SEIS) considers the cumulative impacts of both the proposed project and the potential future development on Lot B. While the uses proposed for Willets West and the Special Willets Point District would contribute to growth in the local Queens, City, and State economies, they would not be expected to induce notable growth outside of the project site and the anticipated development on Lot B. As described in Chapter 2, “Land Use, Zoning, and Public Policy,” it is unlikely that the proposed project and potential future development on Lot B would alter land use patterns in surrounding neighborhoods. Given the recent trend to redevelop underutilized sites near the Flushing River waterfront, it is possible that the proposed project and new development on Lot B could encourage further redevelopment of some nearby underutilized sites along the Flushing River. However, given that such changes are already under way, potential development parcels are limited, and as the project site is physically separated from surrounding neighborhoods by water bodies, roadways, and parkland, the ability of the proposed project to alter land use and economic patterns or induce substantial growth in the study area would be minimal.

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As described in Chapter 1, substantial infrastructure and roadway improvements would be provided as part of the proposed project. The infrastructure and roadway improvements included in the proposed project are intended to support the anticipated growth in the Willets West and District portions of the project site, as well as the potential future development of Lot B. The infrastructure in the study area is already well-developed such that improvements associated with the proposed project would not induce additional growth. *

Chapter 25: Irreversible and Irretrievable Commitment of Resources

There are a number of resources, both natural and built, that would be expended in the construction and operation of the proposed project. These resources include the building materials used in construction of the proposed project; energy in the form of gas and electricity consumed during construction and operation of the proposed project; and the human effort (time and labor) required to develop, construct, and operate various components of the proposed project. They are considered irretrievably committed because their reuse for some purpose other than the proposed project would be highly unlikely. The proposed project constitutes a commitment of the project site as a land resource, thereby rendering the land's use for other purposes infeasible. However, the transformation of surface parking lots and a largely underutilized site with substandard conditions and substantial environmental degradation into a lively, mixed-use, sustainable community and regional destination would be an improvement to the District and areas surrounding CitiField. *

A. INTRODUCTION

This document summarizes and responds to comments on the Willets Point Development Draft Supplemental Environmental Impact Statement (DSEIS). Oral and written comments were received during the public hearing held by the New York City Planning Commission, on Wednesday, July 10, 2013. Written comments were accepted through the public comment period, which ended on Monday, July 22, 2013.

Section B lists the elected officials, organizations, and individuals who provided comments on the DSEIS. Section C contains a summary of these comments and responses to relevant comments. As is standard practice, these summaries convey the substance of the comments made, but do not necessarily quote the comments verbatim. Comments are organized by subject matter and generally parallel the chapter structure of the DSEIS. Where more than one commentator expressed similar views, those comments have been grouped and addressed together. It is noted that many of the comments offered substantive concerns, issues, and recommendations about the overall plan itself, but not specifically on EIS technical issues. In these instances, the responses include either an acknowledgment of the comment (“Comment noted.”) or an indication that the comment raised issues beyond City Environmental Quality Review (CEQR) and the technical scope of the DSEIS.

B. LIST OF ORGANIZATIONS AND INDIVIDUALS WHO COMMENTED ON THE DRAFT SCOPE OF WORK**COMMUNITY BOARD**

1. Queens Community Board 3, oral comments by Giovanna Reid (CB3)

ORGANIZATIONS

2. Auburndale Improvement Association, written submission by Henry Euler dated July 10, 2013 (Auburndale)
3. Bay Terrace Community Alliance, oral comments by Phil Konigsberg (BTCA)
4. International Union of Operating Engineers, Local 14, oral comments by James Conway (IUOE)
5. Jackson Heights Beautification Group, oral comments and undated written submission by Edwin Westley (JHBG)
6. Kew Gardens Improvement Association, oral comments by Sylvia Hack (KGIA)

¹ This entire chapter is new to the FSEIS.

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7. New York League of Conservation Voters, oral comments and written submission dated July 10, 2013 by Dan Hendrick (NYLCV)
8. New York City Park Advocates, oral comments by Geoffrey Croft (NYCPA)
9. Queens Civic Congress, written submission dated June 6, 2013 by Richard Hellenbrecht, read by Phil Konigsberg (QCC)
10. Urban Justice Center, oral comments by Edward W. De Barbieri (UJC)
11. Willets Point Sunrise Co-operative, oral comments by Marco Neira (Sunrise-Neira); oral comments by Sergio Ageri (Sunrise-Ageri)
12. Willets Point United, oral comments and written submissions (July 10, 2013 and July 19, 2013) by Gerald Antonacci (WPU-Antonacci)¹; oral comments by David Schwartz (WPU-Schwartz); written submission dated July 17, 2013 by Michael B. Gerrard (WPU-Gerrard); written submission dated July 10, 2013 by Brian Ketcham, P.E. (WPU-Ketcham)

INTERESTED PUBLIC

13. Joseph Ardizzone, affected resident and member of Willets Point United, oral comments (Ardizzone)
14. Benjamin Haber, oral comments and written submissions dated July 5, 2013 and July 12, 2013 (Haber)
15. Irene Presti, affected property owner and member of Willets Point United, oral comments (Presti)
16. Heather Russell-Loux, written submission dated July 17, 2013 (Russell-Loux)

C. COMMENTS AND RESPONSES

GENERAL

Comment 1: We support the project; it will provide 20,000 sustainable jobs and apprenticeship training opportunities. (IUOE)

We support the project. In addition to the jobs it will create and the economic investment it will make in Queens, this project presents what is probably the best hope to finally improve the water quality in Flushing Creek and Flushing Bay, while creating new access points and green spaces for residents. (NYLCV)

Response: Comment noted.

Comment 2: This plan is robbing me of my past, my present and my future. (WPU-Ardizzone)

Response: Comment noted.

¹ Written submission included developer RFP responses as an attachment.

APPROVAL PROCESS

Comment 3: The Willets Point parking lot would enable the applicants to transfer the Mets CitiField parking lot to Willets Point so the area can be made available for a 1.4 million square foot shopping mall at CitiField. This mall has nothing to do with the 2008 approved plan, nor any connection with CitiField. This is a change in land use and the applicant must comply with current law and undertake the Uniform Land Use Review Procedure (ULURP) for the mall. (Haber)

The approval to allow a parking lot on the Willets Point District is just to facilitate development of a mall. It would be both inappropriate and an abdication of the Commission's responsibilities for the Commission to narrowly consider just the parking lot application, while disregarding the specific intended larger effect of that application—the construction of a huge shopping mall on parkland. (WPU-Antonacci)

Response: The proposed project will result in development in the 61-acre District as substantially similar to the project described and analyzed in the 2008 Final Generic Environmental Impact Statement (FGEIS) and subsequent technical memoranda. The proposed project also includes the development of land beyond the District, at Willets West and south of Roosevelt Avenue. The DSEIS assesses the potential for impacts on all land comprising the proposed project including assessment of the potential for impacts on the surrounding neighborhoods resulting from the development in the District as well as development from additional parcels beyond the District.

ULURP is not required for a change in land use as described by the commenter. As it is proposed to be constructed on mapped parkland, the portion of the development outside the Special Willets Point District—including the development on Willets West—is not zoned, is not subject to the regulations of the Zoning Resolution, and does not require approval pursuant to ULURP. The only portion of the proposed project subject to ULURP is the proposed interim parking area and recreational use within the Special Willets Point District. Nonetheless, as discussed above, this Final Supplemental Environmental Impact Statement (FSEIS) assesses the potential for impact of all components of the project, including on proposed project land not subject to ULURP.

Comment 4: Please reject this application. Let the city issue a new Request for Proposal (RFP) and let the respondents conform with the parameters and goals of the project that was approved in 2008. (WPU-Antonacci)

Response: This is not a comment on the DSEIS. However, the proposal for the initial 23 acres fulfills the first phase of the original vision for the area and more. The developer proposal, in its final form, conformed fully with the vision, addressing two key challenges—the absence of development activity in the

general area surrounding Willets Point, and the need to remediate environmental contamination on a large portion of the district. The proposed project would allow for initial uses in the immediate area that are critical to create the economic environment necessary to achieve the full vision at Willets Point.

Comment 5: Public participation in the environmental analysis is a farce. Over the past five years more than a thousand pages of comments have been generated on the FGEIS, the Access Modification Report (AMR), the Phase 1 Report, the Van Wyck Ramp Environmental Assessment (EA) and the Final Scoping Document for Willets Point “West.” Thousands of comments have had no effect on the outcome of these analyses. Comments were deemed as not requiring a response, given a meaningless response, or the response simply disagreed with the commenter. In 2010, there was a meeting with the Federal Highway Administration (FHWA), the New York State Department of Transportation (NYSDOT), the New York City Economic Development Corporation (EDC), and a host of lawyers where WPU identified problems so significant that it forced a two-year delay in the Willets Point project. The project presented one story in the FGEIS and another in the Environmental Assessment for the Van Wyck Ramps. The EA report hid traffic volumes to under-report project impacts. (WPU-Ketcham)

WPU discovered that the draft AMR relied on traffic presumptions that differed dramatically from those contained in the FGEIS. Thereafter, NYSDOT and FHWA did not approve the draft AMR, but rejected it; restructured the ramp approval process to require an Environmental Assessment prior to approval of any AMR, and sent EDC back to the drawing board to draft a new AMR, which took two years. (WPU-Antonacci)

Response: The public comment process for the GEIS, AMR, and this FSEIS review was extensive. As a result of public input, comments were considered by the lead agencies and these documents were revised, where appropriate.

The Draft AMR referred to in the comment was a preliminary draft, and the traffic analysis contained therein underwent substantial revision, culminating in the traffic analysis contained in the EA. The two-year length of time that was required to complete and issue the EA for public comment suggests the rigorous nature of the EA’s review by NYSDOT and FHWA.

It should be noted that the EA and FGEIS use different methodologies. The EA, in evaluating the proposed access modification project, is a National Environmental Policy Act (NEPA) document and thus was guided by NYSDOT and FHWA procedures for assessing potential impacts from highway projects. This assessment is more regional in its approach and focused on highway systems. The FGEIS was developed in consultation with the New York City Department of Transportation (NYCDOT) and in accordance with the *CEQR Technical Manual*. Second, because the proposed access modification project

looks at the highway system, there were different data needs than used in the FGEIS. A complete data collection program was developed to record traffic volumes along highway and local roads, which resulted in a new base of traffic for evaluation in the EA. Third, each methodology used a different growth to forecast the future No Build condition. While the FGEIS used a conservative standard flat rate, as defined in the *CEQR Technical Manual*, the EA, being more regional in nature and focused on the highway system, used the regional long-range planning model. Fourth, the FGEIS follows the *CEQR Technical Manual*, and considers traffic flow on a localized level to determine site-specific impacts, whereas the EA analyzes traffic on a more regional level. Fifth and last, projected growth associated with both the proposed project and other local developments as defined in the FGEIS are the same for both the EA and FGEIS.

Comment 6: The Commission has treated unequally those who would provide proxy testimony opposed to the Willets Point development, versus those who would provide proxy testimony in favor of the Willets Point development. (WPU-Antonacci)

Response: The New York City Planning Commission accepted all oral and written testimonies that were offered at the public hearing. All testimony that was submitted within the public comment period was accepted for consideration by the lead agency. The comment period remained open for 10 days beyond the hearing date pursuant to New York State Environmental Quality Review Act (SEQRA) regulations. Thus, all comments on the DSEIS were included in the record.

RFP, BIDDING DOCUMENTS, LEASE TERMS, COMMUNITY INVOLVEMENT

Comment 7: Gone is the pledge to provide workers with a living wage. (Presti)

A living wage for retail workers has been pushed off into the indefinite future. (WPU-Schwartz)

Response: This is not a comment on the DSEIS. Living wage provisions are not a socioeconomic impact issue under CEQR guidance and, thus, are outside the scope of this project's environmental review.

Comment 8: The City used the threat of eminent domain to grab land that will now be used as a parking lot. What the City is getting for its overall investment of about \$500 million is a mall and a parking lot. Everything else is smoke and mirrors. (Presti).

The proposed development is nothing more than a land grab by private developers with deep pockets whose claims of improving the community are questionable at best. The current development is not to benefit the community

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but solely for the benefit of those who wish to attend events at CitiField. (Russell-Loux)

Don't believe for a second if there is a chance to use eminent domain they won't use it. The City is using inappropriate, un-American tactics for private enrichment. (WPU-Antonacci)

I voted against the proposal in 2008, and am still opposed because eminent domain is still an option. (BTCA)

Response: This is not a comment on the DSEIS. The City uses eminent domain sparingly and only as a last resort. Since the 2008 approval of the Plan, the City has undertaken outreach and has been negotiating with property owners in the District. Through negotiated acquisition, the City has acquired, or is in contract to purchase, approximately 95 percent of the land area within the proposed Phase 1A/1B footprint (Assemblage Option 2). The City will continue its outreach efforts as the development of the District moves forward. The City's acquisition of the land area within the District would serve to meet the goals and objectives of the Willets Point development plan, to remediate and transform the area surrounding CitiField into a thriving new neighborhood and regional destination.

Comment 9: There was no consultation with the community boards on the developers' plan. (CB3)

The community board was not included as part of the developer selection process. Had there been community board input, this shopping mall project would not have been selected. (Haber)

Community Board 9 was not consulted and involved in the proposals. (KGIA)

The decision to select the plan of Sterling/Related to the exclusion of all others was made by the City administration via a process that violated written guarantees within the Willets Point FGEIS and elsewhere, that the Willets Point Advisory Committee would participate in and help to guide developer selection. (WPU-Antonacci)

Response: Comment noted. Community Board participation in developer selection is outside the scope of this project's environmental review. The ULURP application and the DSEIS were referred out to Queens Community Board 7 for review pursuant to the ULURP rules. Furthermore, Queens Community Board 3 requested and was sent the ULURP application materials for review.

Comment 10: The 2008 approvals of the proposed Willets Point development—procured in the context of lobbying so illegal that it required the restructuring of EDC to ensure it will never happen again—still are the basis of the proposed Willets

Point Phase 1/Willets West development being considered now. (WPU-Antonacci)

Response: This is not a comment on the DSEIS and is outside the scope of this project's environmental review.

SUBSIDIES

Comment 11: Other developers would be happy to get the land for \$1 and receive \$99 million in taxpayer subsidy. (Haber)

The City has decided to gift the property to Related and Sterling Equities for \$1. (Presti)

They've gotten 23 acres for \$1. That's \$250 million dollars in land for \$1. They've gotten \$100 million grant, \$20 million in sales tax, and it just goes on and on. (WPU-Antonacci)

The City is taking over land from private owners to build a parking lot, just so a private developer can buy parkland for \$1 to build a mall. \$200 million has been spent to purchase property to be given to developers for \$1, with a \$99 million subsidy to the developer. (WPU-Schwartz)

Response: Business terms are beyond the scope of this project's EIS. The contamination of the Willets Point land in conjunction with the requirements to remediate the land renders it of only nominal value. The City has a certain amount of funding available for this project that has been allocated towards demolition, remediation and infrastructure costs in order to expedite the project. The Queens Development Group plans to invest \$3 billion to remediate the property and build a new mixed-use community in its place. A Request for Proposals (RFP) was issued by EDC providing an opportunity for developers to submit proposals for development of Phase 1 of the Willets Point Development Plan. No other developers responded with proposals that achieved the development of Willets Point according to the goals of the plan without requiring subsidies that far exceeded the current proposal.

Comment 12: The developers are getting a \$99 million grant for cleanup and \$20 million in sales tax exemptions. Any profits from that mall go directly to Sterling and Related, and the remediation is paid for by the tax paying people. (WPU-Antonacci)

Response: The business terms are beyond the scope of this EIS. Please refer to response to Comment 7 regarding the City's commitment to fund the environmental cleanup and required infrastructure to support the development.

VAN WYCK RAMP APPROVALS

Comment 13: The highways cannot be enlarged. There's never going to be ramps. The housing is never going to happen. (Haber)

The affordable housing and new schools will be delayed and contingent on the construction of the Van Wyck ramps. (CB3)

The Van Wyck ramps and the highway ramps are never getting built. A clause in the contract says that if Sterling and Related want to build them, they can build them by themselves. There's also a line in the contract that says under no circumstances is it to be assumed that the City is obligated to build the ramps. (WPU-Antonacci)

Had it been stated back in 2008 that the affordable housing would be put off for 10 years on some speculation that maybe our ramps will be built off the Van Wyck Expressway, this plan would never have been approved. This is a bamboozle. (WPU-Schwartz)

When the City put forward its original plan, it said that it would provide ramps off the Van Wyck to mitigate the tens of thousands of weekly car and truck trips. Now, even with an added 1.4 million square feet of mall, there are no immediate plans to build those ramps. And without them, heaven help those trying to navigate streets like Roosevelt Avenue, near where my property lies today. (Presti)

Response: The City sought and received approval for the Van Wyck Expressway ramps and is committed to funding the ramps in order to maximize the full allowable development in the first phase, including affordable housing, and ensure the development of future phases as well as to mitigate impacts of development. The Queens Development Group is not contractually prevented from building the ramps without waiting for the City to move ahead with its plans to construct them and it would have to meet any future obligations imposed by FHWA and NYSDOT before it could commence with their construction. The design and construction of the ramps is a complex process that, like any other large infrastructure project, will require extensive coordination from multiple governmental agencies. As described in Chapter 14, "Transportation," and Chapter 21, "Mitigation," the DSEIS has addressed and considered the impacts of the Willets Point development project, including the proposed development on the Willets West portion of the project site.

Comment 14: The City still refuses to disclose anything about the cost of the Van Wyck ramps, though they say the City has agreed to pay for them. It appears that the traffic methodology used for the DSEIS was similar to that employed by the City in the original FEIS. That FEIS also projected terrible traffic consequences, though not nearly as bad as those in the DSEIS (at least in part because of the

considerable enlargement of the project). The City then abandoned that methodology when it prepared an AMR in its successful effort to persuade NYSDOT and FHWA to approve the Van Wyck ramps. Now the City is going back to its original methodology. In view of this new information, the prior approvals by the NYSDOT and the FHWA are invalid, and those agencies need to undertake a fresh review under NEPA. (WPU-Gerrard)

Response: The comment appears to relate to the scope of the EA and Finding of No Significant Impact (FONSI) issued by FHWA, but not to the DSEIS. For the reasons noted in the response to Comment 5, it should be noted that FHWA requires a different analysis of modified or new access to and from the existing highways network than required under SEQRA or CEQR. The appropriate methodologies were used for the respective approval processes.

The AMR was approved by FHWA, upon recommendation for approval by NYSDOT. The Van Wyck Ramp project analyzed in the EA and the AMR, and discussed in FHWA's issuance of a FONSI, have not changed. The Willets Point development project is a background development project for the EA and changed after FHWA had issued the EA, FONSI and AMR. This DSEIS addresses a change to the schedule and scope of the background project. If the proposed changes to the Willets Point development project are approved, FHWA will be apprised of the changes to the background project as they relate to the EA, FONSI and AMR. As described in the Van Wyck Ramp EA, capital construction costs are estimated to be approximately \$50 million.

Comment 15: Why did not EDC and/or the developer revise the EA for the Van Wyck ramps? The DSEIS reports the Willets "West" Mall will be adding about 28,000 car and truck trips to the WP area (and a great deal more if their assumptions are wrong) for average weekdays. Adding the Willets "West" Mall traffic results in significant differences in background traffic that will affect travel conditions with the ramps. These trips, as many as 3,000 an hour entering or leaving the Willets "West" Mall, will get onto nearby expressways affecting the baseline conditions examined to determine the environmental impacts of the Van Wyck ramps to be constructed. The DSEIS itself reports that the Willets "West" Mall will produce significant traffic impacts on surrounding expressways requiring costly mitigation (should funds be available) (DSEIS Page 21-27). The EA must be updated. (WPU-Ketcham)

Response: FHWA requires a different analysis of modified or new access to and from the existing highways network than is required under the SEQRA/CEQR process. Thus, the AMR framework includes travel demand modeling and simulation to understand the potential effects within a larger regional area and much further into the future than is typically done in the SEQRA/CEQR process. Whereas the project's environmental assessment of project-generated traffic impacts conforms with the *CEQR Technical Manual* guidance of using Highway

Capacity Manual (HCM) (version 5.5) procedures, accounting for traffic generated by other nearby development projects, and applying prescribed annual background traffic growth rate, the AMR framework utilized the Best Practices Model (BPM), which is a travel demand forecasting model for the New York Metropolitan Transportation Council (NYMTC) region. The BPM macro-model comprises data and projections from 28 counties in the tri-state region. The traffic analysis performed for the AMR analyzes the regional highway impacts of the ramps themselves, whereas the potential impacts that are analyzed in the DSEIS are associated with the proposed project modifications on a more localized basis. Thus, the methodologies and inputs for both analyses are different with no inherent discrepancies or data oversight in the impact assessments between the Willets Point DSEIS and the AMR documents. The focus on the local effects of the Plan and the regional effects of the proposed Willets Point ramps on the Van Wyck Expressway necessitate the use of different modeling methodologies and time horizons. If the proposed changes to the Willets Point development project are approved, FHWA will be apprised of the changes to the background project as they relate to the EA, FONSI, and AMR.

RELOCATION/ RELOCATION ASSISTANCE

Comment 16: The DSEIS still does not identify relocation sites for the remaining businesses that have not agreed to sell. The Response to Comments on the Draft Scope (page 20) says that the City is still working on this, but there is no indication that any progress has been made for the last several years. The original EIS assumed that all the businesses could be readily relocated. Five years later relocation sites have not yet been found for my clients and others. The Supplemental EIS must acknowledge this reality. (WPU-Gerrard)

The City has been trying to push us out of Willets Point. They've arrested 54 of the owners and workers. We want to know where we're going to relocate, and how the City is going to follow through. We found land where we can relocate as a group, but nobody is taking us seriously. Our interests are being pushed behind others. (Sunrise-Ageri)

Response: Since the approval of the 2008 Plan, the City has been undertaking an extensive outreach effort to the existing businesses and their workers. EDC has contracted with The Cornerstone Group, a business relocation expert, to provide relocation assistance and advisory services free of charge to affected tenant businesses on city-owned property in the Phase 1 footprint of the District. Cornerstone has been providing services at Willets Point since they were initially engaged by EDC in 2008, and has maintained a regular presence in the District since that time. Cornerstone commenced its most recent round of outreach to affected Willets Point tenant businesses on City-owned property in September 2012 and their outreach in Willets Point is ongoing. To date, Cornerstone has identified

over 120 potential relocation sites (for rent and sale) with a range of sizes and prices. They have been in contact with all tenant businesses on City-owned property in the Phase 1 footprint who are on record with the New York City Department of Housing, Preservation, and Development (HPD) (as landlord) and have presented each of them with multiple potential relocation sites over the past several months. They have taken many business representatives on site tours, and as instructed by businesses, made a number of offers on their behalf. Cornerstone is actively working with individual businesses, as well as businesses who have expressed a desire to co-locate in clusters. The identification of potential sites for relocation will not be provided in the SEIS, as the public release of such information could jeopardize negotiations with existing property owners. The DSEIS provides a reporting of the businesses that remain on the project site, and the anticipated timing of their displacement. The DSEIS also clarifies that the proposed project would result in the same direct business displacement identified and analyzed in the 2008 FGEIS and subsequent technical memoranda.

Comment 17: Cornerstone recently has been helpful in analyzing the market and finding sites to relocate to. Unfortunately, the task is to relocate all the businesses. They benefit from co-location, they're asking to be relocated together, and Cornerstone hasn't been able to help us get to that point. We have approached EDC, the developer, and we have worked with Councilmember Ferreras to get a relocation plan that's meaningful and workable for the members of the [Sunrise] cooperative. Unfortunately, we don't have a viable relocation plan, and that's a serious flaw in this project. The City has given no commitment to help with a viable relocation plan. Our concern is that the displaced businesses will die. (UJC)

We would like to see our members relocated as a group, similar to the Fulton Fish Market model. (Sunrise-Neira)

These businesses are all interrelated with each other, and that's why it's so important for the relocation that these businesses are kept together. And there is really no plan to do that. (WPU-Schwartz)

The 79+ businesses that are not members of the Sunrise Corporation are just as dependent upon co-location for their future survival as are the members of the Sunrise Corporation. (WPU-Antonacci)

Response: As described above, EDC has contracted with The Cornerstone Group, a business relocation expert, to provide relocation assistance and advisory services free of charge to affected tenant businesses on City-owned property in the Phase 1 footprint of the Willets Point District. Cornerstone commenced its most recent round of outreach to affected Willets Point businesses on City-owned property in September 2012 and their outreach is ongoing. Cornerstone

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is actively working with individual businesses, as well as tenant businesses who have expressed a desire to co-locate in clusters.

Comment 18: LaGuardia Community College's retraining program doesn't work. The workers already have jobs, they're running businesses. All they're asking for is to be relocated somewhere else where they can continue to operate their business. (UJC)

Response: This is not a comment on the DSEIS. However, the Willets Point Worker Assistance Program (WAP), administered by LaGuardia Community College on behalf of EDC, has successfully provided a variety of services at no cost to Willets Point workers who have enrolled in the program. These services include job training, job placement, General Education Development (GED) test preparation, referrals to counseling for immigration issues, as well as educational and vocational classes. To date, over 600 Willets Point workers have registered with the WAP, and 470 have taken advantage of program services. On a weekly basis, LaGuardia Community College identifies potential job opportunities, which are provided to Willets Point workers who have enrolled in the program and who have expressed interest in finding employment beyond the District. LaGuardia Community College has successfully placed over two dozen participants in the WAP into jobs in various industries.

HOUSING

Comment 19: The housing is never going to be built. Phase 2, with the promise of 35 percent for affordable housing, has a scheduled completion of 2032. (JHBG)

Gone is the housing, pushed way back into the distant future with no guarantee that it will ever get built. (Presti)

Affordable housing has been pushed off into the indefinite future. (WPU-Schwartz)

The housing won't get built. There's a \$30 million out clause. And if the city doesn't build the ramps, they don't have to build the housing. Without the ramps, only Phase 1A (essentially, the mall) can be built. (WPU-Antonacci)

The estimated cost is \$3 billion for Phase 1A and 1B, but they have an out clause that costs \$35 million. These developers are kicking the can down the road. (JHBG)

Response: The purpose of the SEIS is to analyze the potential environmental impacts of the project as proposed. The remediation of the Willets Point Phase I area, the development of Willets West and the activation of 126th Street combined will catalyze further development of the area in the future phases, including affordable housing. The RWCDs for Phase 1B and Phase 2 of the project include the development of a mixed-use community that contains thousands of

housing units, hundreds of which are anticipated to be affordable housing units. The residential uses will require the supportive development of the retail, office, school, community facility, and open space uses that will surround it. As such, plans do not currently call for the construction of stand-alone residential uses in this area without the other uses that would support such housing. It should be noted that affordable housing is one of a number of important goals for the proposed project and is anticipated to commence in Phase 1B.

LEASE FOR PARKLAND

Comment 20: The 1961 Legislation does not permit any shopping mall. Administrative Code 18-118 explicitly states that any moneys gained from a temporary lease on the property must go back into the property. The intention of the law was not to allow any project to make a permanent claim on parkland or its facilities. The parkland we are talking about here today was never alienated as required under state law and no replacement for this parkland is being proposed. If the 30+ acres of parkland they are attempting to seize for the project were no longer needed for parking for the Mets, then it should revert back to its original use. (NYCPA)

The DSEIS does not satisfactorily address the comments raised by a number of commenters that the land that the City acquired for park purposes cannot lawfully be utilized for a shopping mall and associated parking, in particular there is no, or insufficient, legislative authorization to abrogate the public trust doctrine in this instance, and that the Administrative Code does not permit the City to lease or sell the parkland at issue to construct a mall. (WPU-Gerrard)

There is no plan to replace the 30.7 acres of parkland. Urban Justice Center has issued an opinion that there is nothing in the 1961 legislation that even hints of the building of a mall. It does address possible development but only as it relates to a sports venue. (JHBG)

The mall is taking away 30 acres of parkland. A shopping mall on public parkland is not appropriate. The Commission is being asked to approve a ULURP application to facilitate construction of a mall that is unlawful and cannot occur. (WPU-Antonacci)

This is a radical change in land use from a parking area to a huge shopping mall and not contemplated in the 1961 lease of the CitiField property. There is no obligation to replace parkland. (Haber)

The 1961 legislation doesn't specifically allow a mall to be built on the Willets West site. (UJC)

Any change in use should be subject to State alienation legislation. As parking lots they could be easily returned to public space as open space if they were no longer needed, but the introduction of a massive steel and concrete mall to these

western parking lots would permanently destroy a public park amenity the community should enjoy for recreation and fun. (QCC)

Flushing Meadows Corona Park is being murdered piece by piece. If it's so wonderful to have these things, I don't understand why Central Park or Prospect Park never get looked at. How is it that 30 acres or so of property is being transferred for the use of a mall? That is outrageous. (KGIA)

Community Board 3 is opposed to constructing a mall on active parkland. (CB3)

Taking parkland from the residents of Queens is outrageous. (WPU-Schwartz)

Response: Comments regarding the permissibility and appropriateness of building on Willets West are not comments on the DSEIS. Nonetheless, the City has previously received the legislative authority to enter into leases for the use of the portion of the project here known as Willets West in furtherance of entertainment, trade and commerce for the benefit of the City, and therefore additional parkland alienation approval is not required for the proposed project. Specifically, Section 18-118 of the Administrative Code (originally codified as Section 532-15.0) was enacted by the New York State Legislature under Chapter 729 of the Session Laws of 1961 and authorizes the City to enter into leases, contracts and other agreements for a multitude of purposes, including for any purpose which is of such a nature so as to foster or promote amusement, entertainment or the improvement of trade and commerce. The statute declares that such purposes, as well as others set forth in the statute, are for the benefit of the people of the City and for the improvement of, among other things, their health, welfare, recreation and prosperity, and for the improvement of trade and commerce, and are further declared to be public purposes. The proposed use fits within the uses allowed by the above statutory provision.

FRAMEWORK FOR ANALYSIS

Comment 21: The DSEIS relies on inaccurate “No Action” baseline assumptions that the existing uses on the project site would be maintained. The City intends, and is already taking steps, to evict tenant businesses that operate throughout the Willets Point Phase 1 property. The City has not disclosed what will become of City-owned Willets Point property in the event that the City's proposed Willets Point development does not occur, but it must do so now in order to ensure an accurate SEIS analysis. The SEIS must also assess what owner-development would likely occur, even without action on the part of the City, now that the sewer main lines along 126th Street directly adjacent to the Willets Point property exist. (WPU-Antonacci)

Response: The DSEIS assumption that the existing uses would be maintained in each of the three No Action scenarios is conservative. This framework for analysis allows for the displacement of Willets Point businesses and workers—as well as the

project's effects on traffic, parking, transit, and pedestrians—to be fully accounted for. The assumption of any current owner development in the No Action scenario would lessen the effects attributable to the proposed project.

CEQR methodologies require analysis of the incremental difference between the impacts of the development scenario where the City has taken action versus one where the City has not taken action. This SEIS conservatively assumes that if the City does not take action, existing conditions would continue. In addition, it is a reasonable assumption that development according to zoning would not proceed without City action even after the construction of sanitary sewers as significant assemblage, environmental remediation and change of grade would be required prior to development.

SOCIOECONOMICS

Comment 22: More tenant businesses are impacted than the Commission has been led to believe. The public hearing on July 10, 2013 included testimony from representatives of the Sunrise Corporation, an association of approximately 60 tenant businesses. It is our understanding that some of those 60 businesses are located within Willets Point but beyond the Phase 1 area that would be affected if the present Sterling/Related plan succeeds. In the recent eminent domain case pertaining to a first phase of Willets Point property that was substantially similar to the Phase 1 that is presently contemplated, the City's "Response to EDPL Comments" dated May 2011 acknowledged that 139 auto-related businesses in the first phase would be displaced. (WPU-Antonacci)

Response: The commenter is referring to testimonies related to different actions. The EDPL process, which has been subsequently withdrawn, only related to properties within the Phase 1 area, whereas this CEQR record addresses the redevelopment of Phase 1 and Phase 2 of the Special Willets Point District. As the DSEIS discloses, all existing businesses (260) in the District would be displaced by the full build year of 2032.

Comment 23: The DSEIS makes inconsistent statements about retail capture rate. The application claims that the project would capture retail spending in the surrounding suburbs yet would not affect the 5-mile study area. If the second statement is correct then they will put existing Queens malls into bankruptcy, like Atlas Mall in Middle Village. (JHBG)

Response: The DSEIS is consistent in its presentation of retail capture rates. The retail expenditure analysis conducted as part of the preliminary assessment indicates that the 5-Mile Primary Trade Area is currently under-retailed, with an overall retail capture rate of 61 percent. In the future with the proposed project, the retail capture rate would increase to 77 percent. That the capture rate in the future with the proposed project would remain well below 100 percent (the

CEQR threshold requiring a detailed analysis of indirect business displacement due to retail market saturation) indicates that there would continue to be ample retail expenditure potential in the 5-Mile Primary Trade Area to support the both the proposed project, existing retail, and retail introduced in the future independent of the proposed project.

As noted in the DSEIS, The Shops at Atlas Park has struggled to attract and retain tenants in recent years, in part due to its relative isolation and the lack of an anchor retailer. While shopping centers like Atlas Park may continue to struggle in the future, such troubles would be unrelated to the proposed project, as the capture rate analysis indicates that the retail market in the 5-Mile Primary Trade Area (and in Queens as a whole) would not approach saturation in the future with the project.

Comment 24: A mall will destroy hundreds of mom and pop businesses and surrounding neighborhoods, introducing potentially devastating competition to existing struggling malls such as the Shops at Atlas Park, Rego Park, and Queens Center Mall. (QCC)

There was no discussion of the displacement of the residents and the businesses [in Community Board 3]. We have small mom and pop stores that are going to be impacted by the proposed plan. (CB3)

The mall will harm hundreds of small businesses on Northern Boulevard, Roosevelt Avenue, Downtown Flushing, the shops on 20th Avenue, and Rego Park. (Haber)

The disruption to the community as well as to the users of Flushing Meadows Corona Park by the Willets Point West proposed development cannot be stressed enough. Businesses and workers will be displaced. (Russell-Loux)

What will happen to local businesses when the mall is completed? (Auburndale)

Response: The DSEIS followed *CEQR Technical Manual* guidelines in analyzing the potential for significant adverse impacts to neighborhood retail concentrations due to competition. Based on CEQR guidelines, if the capture rate for specific, relevant categories of goods would exceed 100 percent in the future with the proposed project, it may have the potential to saturate the market for particular retail goods and a detailed analysis is warranted. As indicated in the DSEIS, capture rates for each of the retail categories analyzed would remain below 100 percent in the future with the proposed project, indicating that the project would not have the potential to saturate the market for particular retail goods and that a detailed analysis was not warranted. Nonetheless, to maintain consistency with the analysis performed for the FGEIS, a detailed analysis of indirect business displacement due to retail market saturation was conducted. This detailed analysis focused on local grocery stores, which generally serve as anchors for local retail concentrations, as well as on anchors in regional retail centers,

including movie theaters and restaurants, because the Willets West component of the proposed project would constitute a major new shopping and entertainment center. The detailed analysis confirmed that the proposed project would not have a significant adverse impact due to indirect business displacement.

Comment 25: Can the project east of 126th Street accommodate nearly 600,000 square feet (sf) of local retail and, if so, how? What is the basis for assuming 593,000 sf of local retail east of 126th Street? This assumption appears very high for a project with just 5,850 residences, approximately 12,000 residents (plus workers and others, although local retail is nowhere close to the Willets “West” Mall and entertainment center and additional retail would be redundant for the Willets Point “West” shopping mall). Moreover, assuming stores are 60 feet deep, the developer is looking at installing nearly two miles of storefront space in the original Willets Point project. We don’t think there is enough space for this much local retail. And, with all this local retail using curb space, where will 657,000 sf of additional destination retail go if all frontage is occupied by local retail? So, what’s the point of so much local retail? Considering that just 15 percent of shoppers are assumed to arrive by auto for local retail we believe this is the developer’s way of hiding auto trips and minimizing traffic impacts. We are convinced that more than half of this “local retail” space will, in fact, end up as destination retail. The DSEIS must be revised to account for this worst case condition. (WPU-Ketcham)

Response: The DSEIS used the full available square footage under the District approvals for a reasonable worst-case development scenario (RWCDs) impact analysis. Further, there is a practical limit to the amount of destination retail that a single area can accommodate. The 2008 FGEIS assumed that up to 1.55 million square feet of destination retail would be developed within the District. Since the proposed project would introduce an additional one million square feet of destination retail to the area, and considering the amount of destination retail already existing in nearby downtown Flushing, it was assumed that the District could not reasonably accommodate more than 600,000 or 700,000 square feet of additional destination retail, due to reasonable limits on the number of large destination retailers that could viably locate there. The potential for big box stores would also be constrained by the building footprints imposed by the special district’s regulations, as well as by market conditions. The proposed project’s local retail offerings east of 126th Street would serve a substantial and diverse user base, including most notably the 5,850 households introduced by the project who would add approximately \$93.7 million in expenditure potential within the local economy. The proposed local retail space also would draw customers from the office, hotel, community facility, convention center, and school uses that would be introduced by the proposed project, as well as game-day Mets patrons and patrons of the area’s parks. In areas of New York City

where local retail stores serve multiple consumer groups it is not uncommon to find the mix of uses proposed. In addition, these local retail uses could include mid-size supermarkets, grocery stores, restaurants, and other neighborhood amenities that would be essential to the new community that would be created within the District. Many of these could be substantially more than “60 feet deep” and occupy more than just “storefront space” within the future District buildings. Hence, the commenter’s assertion that “more than half of this local retail space will, in fact, end up as destination retail” is unfounded.

OPEN SPACE

Comment 26: We are very concerned about the three proposed projects to be constructed on parkland at Flushing Meadows Corona Park: expansion of the National Tennis Center, building of a soccer stadium, and construction of a huge mall. We oppose all three. The proposed 1.4 million-square-foot mall would be constructed on parkland, which is sacrosanct and should be off limits to any private development. The asphalt on the unused part of the parking lot to the west of CitiField should be removed and trees and other vegetation should be planted in order to make it look more like a park once again. (Auburndale)

I strongly oppose any proposed development which will diminish the green space now available in Flushing Meadows Corona Park. The proposed Willets Point West shopping mall can not be viewed in a vacuum but as part of the larger assault on Flushing Meadows Corona Park. There are currently three proposals to permanently annex public parkland for private use. The land which is now the old Shea Stadium parking lot was formerly green space which should revert back to green space if it is no longer needed for the original purpose for which it was annexed. The land should not be allowed to be transferred further. In fact, the very thought that it is acceptable to confiscate any amount of park space for the building of a shopping mall, as well as the other proposed developments, i.e. soccer stadium, increasing the USTA’s allotment of park space, speaks volumes about the current mayor and our politicians’ disregard for minorities and lower income residents of our community. Such a proposal would never have been tolerated much less suggested with regards to Prospect Park or Central Park. Apparently it is fair game to trample on the residents of Queens. (Russell-Loux)

Response: The three projects described are separate projects with separate approval processes. The DSEIS accounts for the potential cumulative impacts of these projects. Further, the mapped parkland on which the Willets West portion of the project was alienated in 1961 for economic and commercial activities and was never built as a green space open to the public. This area is currently, and has since 1961, been under a long-term lease to a private entity for uses to which public access is limited and controlled.

HISTORIC AND CULTURAL RESOURCES

Comment 27: We object to the demolition of the Empire Millwork Corporation building, which is on the State and National Registers of Historic Places. (JHBG)

Response: Comment noted. The effects of the proposed project on the Empire Millwork Corporation Building would be the same as those disclosed in the FGEIS; potential mitigation measures have been disclosed. However, demolition of the building would occur in Phase 2 of the project, approximately 11 years later than previously assumed in the FGEIS. The DSEIS considered the potential retention of this structure, as part of the No Unmitigated Significant Impacts Alternative. As discussed in Chapter 22, “Alternatives,” although demolition of the building could be avoided through adaptive reuse, exterior elements would still need to be upgraded to comply with building codes and noise attenuation requirements, and flood protection measures such as gates or pumps would be required to comply with flood insurance requirements. Furthermore, this alternative would reduce the footprint of any new development, which would result in greater density in the remainder of the District, fewer housing units, less open space, or some combination of these possibilities.

HAZARDOUS MATERIALS

Comment 28: I have hired a chemist to test my property. I don’t believe that the toxicity is what they say. I will try to hand in written supporting submission by close of comment period. (Presti)

Response: No such documentation was submitted by the commenter within the comment period, and it is unclear where the commenter’s property is located. Nonetheless, hazardous materials testing pursuant to a City- and State-approved testing protocol will be conducted throughout the area of the proposed project prior to remediation.

Comment 29: A major rationale for the City’s insistence that the entire project be done at once, without phases, was that soil contamination all needed to be remediated at once. The City has now decided to adopt a phased approach. The FSEIS should explain this change in position, and how it envisions that contamination will be addressed on a phased basis. (WPU-Gerrard)

Response: The hazardous materials analysis of the DSEIS considers the proposed development of the District in phases. As discussed in Chapter 10, “Hazardous Materials” of the DSEIS, Phase 1A of the proposed project would incorporate a comprehensive investigation of the entire District with associated remedial actions that would remove areas of significant contamination and prepare the District for subsequent development.

While some subsurface contamination would likely remain after completion of each element/phase of development (e.g., historical fill materials underlying developed sites and contamination in nearby areas that would not be cleaned up until later), each new development would include appropriate engineering controls (e.g., capping to prevent exposure to underlying soils, groundwater monitoring and controls at development site boundaries, and vapor barriers with active or passive sub-slab depressurization systems beneath occupied buildings). Following development, measures including the mandatory implementation of appropriate health and safety procedures and additional institutional controls (beyond those requiring investigation and cleanup during construction) would be undertaken at developed sites to prevent exposure during future intrusive work (e.g., subsurface utility repairs).

The initial institutional controls would require the project sponsor (and any future owners/developers), prior to seeking or obtaining DOB permits associated with development, to conduct Phase I and Phase II ESAs (to the extent they have not already been conducted), and complete necessary remediation (with appropriate construction-related HASPs) either prior to or as a part of site development, to the satisfaction of the New York City Office of Environmental Remediation (OER).

When development takes place adjacent to or near already developed sites, OER would ensure that appropriate measures would be undertaken to prevent human exposure. These will include measures for dust control, procedures for dewatering, proper management of excavated material and prevention of stormwater pollution from runoff.

Comment 30: At a Community Board 7 meeting, Sterling/Related and the city were challenged to produce scientific reports proving the existence of alleged hazardous contamination at Willets Point. Given that the city claims to own over 90 percent of the Phase 1 properties, the city is certainly able to conduct tests on that land. Not only did they not produce any such report but for several years, the city has rented Phase 1 properties to scores of tenant businesses, which the city could not do if the area was actually hazardous to anyone. Significantly, Dr. James Cervino, a geochemist who is affiliated with the Woods Hole Oceanographic Institution and is also Chair of the CB7 environmental committee, voted to deny this application. If there really was an urgent need to remediate any hazardous contamination at Willets Point, a scientist such as Dr. Cervino would be expected to have approved this application. (WPU-Antonacci)

The City administration spent upwards of \$200 million of taxpayer funds to acquire the Willets Point Phase 1 property, but intends to gift that Phase 1 property to Sterling/Related for the price of \$1. As we understand it, the new rationale for the steeply discounted \$1 price is that the property has “negative

value,” because it is allegedly contaminated. But with no scientific tests performed, how can the taxpayers be certain that a discount of \$200+ million is actually warranted? The City and Sterling/Related are deliberately delaying any scientific testing of Willets Point Phase 1 property until after Sterling/Related have closed the property transaction and taken possession of the property. (WPU-Antonacci)

Response: Business terms are beyond the scope of this project’s EIS. Invasive testing of soil conditions cannot occur while existing leaseholders of the property remain on the site. Results of testing would not be definitive as long as active industrial uses remain. As described in Chapter 10, “Hazardous Materials,” the City has been able to draw certain conclusions based on historical data, and sample testing completed in the roadbeds and on one City-owned property, where access was available.

TRANSPORTATION

Comment 31: The analyses don’t consider impacts, including the impacts of traffic, in Community Boards 3 and 4. (CB3)

The Queens Center Mall as well as the Mall at 63rd Drive and Queens Boulevard, and the Target Mall (also on Queens Boulevard) provide an abundance of retail shopping opportunities for Queens residents in the communities surrounding Flushing Meadows Corona Park. Moreover, all of these shopping areas are easily accessible by public transportation. Any proposed shopping mall in Willets Point West would not be so easily accessible by public transportation, thus resulting in increased traffic congestion in the area. (Russell-Loux)

What is the impact on traffic and quality of life in the surrounding community if the mall is built? (Auburndale)

Response: The comment is incorrect. The DSEIS analysis does include critical intersections located in Community Boards 3 and 4, including Astoria Boulevard at 108th Street, Northern Boulevard at 108th Street and 114th Street, 34th Avenue at 114th Street, and Roosevelt Avenue at 108th Street, 111th Street, and 114th Street. These study locations were vetted by NYCDOT and they are identical to the 2008 FGEIS. The analyses also identified potential impacts, for which feasible mitigation measures have been recommended and approved. These measures were found to be effective in mitigating many of the identified traffic impacts. However, some could potentially remain unmitigated. Of the seven study locations in Community Boards 3 and 4, a maximum of one intersection would be unmitigated in any peak hour in Phases 1A and 1B and a maximum of two intersections would be unmitigated in any peak hour in Phase 2, due largely to the more robust mitigation measures set forth in the DSEIS,

whereas three of the seven intersections were unmitigated in the approved 2008 FGEIS.

As described in the DSEIS, traffic congestion in the study area would be present even without the proposed project, as the expected magnitude of background development in the No Action condition would generate substantial traffic volumes in the study area mostly along the primary streets in the study area network (including Northern Boulevard, Roosevelt Avenue, Astoria Boulevard, and College Point Boulevard). While the study area will be heavily trafficked, and the proposed project would generate traffic resulting in significant adverse traffic impacts, traffic conditions are but one of several factors affecting the character of the neighborhood and residents' quality of life. Moreover, significant adverse traffic impacts could be fully or partially mitigated at most of the impacted locations with signal timing adjustments and other measures, as described in Chapter 21, "Mitigation," and are not expected to contribute to a potential significant adverse impact on neighborhood character. Furthermore, the proposed project would transform the area surrounding CitiField into a thriving new neighborhood and regional destination. The commercial components of the proposed project would complement the adjacent sports venue and strengthen economic activity in the neighborhood. The new structures and open spaces are intended to create an active streetscape enhancing the pedestrian experience. The proposed entertainment and retail destination of Willets West would complement the anticipated development within the District, and both would connect Flushing to the east with Corona to the west through the creation of an unbroken series of uses along Roosevelt Avenue stretching from east of the Flushing River to west of the Grand Central Parkway.

Comment 32: The traffic increase will be beyond the capacities of both highways and side streets. (JHBG)

The only vehicular arteries that can service the area are the Grand Central Parkway, Van Wyck Expressway, Northern Boulevard, and Roosevelt Avenue, arteries that are choked to capacity and cannot in any way be enlarged to handle the huge increase in traffic. (Haber)

We've seen on the studies that there are intersections where you have to wait 15 minutes before you can get through the light. Traffic is going to be backed up for miles and miles and miles. In our opinion, the remaining unmitigated impacts are collectively so severe as to make this proposed development inappropriate and unworthy of approval. (WPU-Antonacci)

Response: As described in Chapter 21, "Mitigation," the DSEIS identifies which highway ramps and mainline segments, and which local street intersections, have sufficient capacity or can be improved via standard traffic capacity improvements or more cost-intensive mitigation measures so that they will

operate acceptably or the magnitude of projected impacts can be minimized. Many roadways and intersections will continue to operate acceptably while others will remain significantly impacted.

Comment 33: Even with the hypothetical mitigation measures in place, there will be very severe traffic impacts, including gridlock conditions at local intersections. From the developer's own mitigation report (Chapter 21 of the DSEIS): delays of 821 seconds, 273 seconds, and 226 seconds—even with the most optimistic mitigation measures in place. Meanwhile, the DSEIS does not even guarantee the feasibility or effectiveness of the recommended mitigation measures but proceeds to rely on them. Back in 2008, the City Planning Commission's report noted that the City would monitor traffic impacts of this development. But when people are experiencing these lengths of delays, what difference would it make to monitor those delays? (WPU-Antonacci)

Response: Several locations, such as 126th Street at 34th Avenue and 126th Street at Roosevelt Avenue, would experience the magnitude of delays noted by the commenter. However, these locations remained unmitigated in the approved 2008 FGEIS, whereas they have been partially mitigated in this DSEIS. In addition, many of the reported significant impacts throughout the study area could be mitigated by the proposed measures. It should also be noted that the number of unmitigated impacts is lower in the DSEIS than the number of unmitigated impacts reported in the 2008 FGEIS due to the recommendation of additional standard and cost intensive measures. The maximum number of unmitigated intersections during any peak hour in the approved 2008 FGEIS was 14 intersections, whereas the maximum number of unmitigated intersections during any peak hour for this Final SEIS would be seven in Phase 1A, four in Phase 1B, and eight in Phase 2. All proposed mitigation measures have been reviewed and approved by NYCDOT. The DSEIS also commits the developer to conducting a comprehensive traffic monitoring plan at each phase that is aimed at potentially identifying additional mitigation measures where possible and where warranted. Furthermore, the developer has committed to establish a \$1.9 million Traffic Mitigation Fund for the cost of studies and improvements which address infrastructure or traffic issues relating to the project.

Comment 34: The traffic studies that were conducted didn't include mitigation for 114th Street, Astoria Boulevard, 34th Avenue, Roosevelt Avenue, and Northern Boulevard, just to name a few. It did not consider the impact of public transportation, solely our No. 7 train, which is already overtaxed. (CB3)

Response: Key intersections along the above referenced corridors were analyzed as part of the DSEIS, including Astoria Boulevard at 108th Street, Northern Boulevard at 108th and 114th Streets, 34th Avenue at 114th Street, and Roosevelt Avenue at

108th, 111th, and 114th Streets. The DSEIS identifies mitigation measures at these locations during any peak hour in which the intersections are significantly impacted and, where feasible and practical mitigation for impacts is not available, the DSEIS discloses those locations as being unmitigated. The DSEIS also analyzes the area's subway and bus services. Similar to traffic, where significant impacts are identified, mitigation measures were recommended and, where no feasible mitigation measures can be identified, the corresponding impacts are disclosed as unmitigated.

Comment 35: EDC claims that by adding the Willets “West” Mall they will actually reduce traffic congestion—this is a preposterous claim; the Willets “West” Mall will make traffic congestion far more severe than what was reported in the WP FGEIS. (WPU-Ketcham)

Response: The analyses in the DSEIS show that the number of fully mitigated impacts for full buildout of the proposed project would be higher than the number of fully mitigated impacts reported in the prior 2008 FGEIS, which did not contain the Willets West development. In addition, the number of unmitigated impacts is lower in the DSEIS than the number reported in the 2008 FGEIS. Even though Willets West is expected to increase the volume of traffic generated under full buildout conditions, a series of cost-intensive mitigation measures have been identified within the DSEIS, which were not identified in the 2008 FGEIS, and the developer has committed to funding those measures. It is these measures, which go above and beyond those proposed in 2008, that have resulted in a reduction in unmitigated impacts of the proposed project.

Comment 36: The plan is too big for the area; Willets Point is surrounded by what are already the nation's most congested expressways; the Willets “West” Mall/Willets Point Project will only make conditions worse. Project impacts reported in the DSEIS are extremely severe and it is unlikely many can be mitigated. (WPU-Ketcham)

Response: As described in Chapter 21, “Mitigation,” the DSEIS clearly identifies projected significant traffic impacts on both the highway network and local street intersections. Some, but not all, of these roadway network locations are congested today, some would be significantly impacted, while others would be mitigated using a combination of standard traffic capacity improvements and new, cost-intensive measures that were identified during the course of completing the DSEIS. All proposed mitigation measures within its jurisdiction have been reviewed and approved by NYCDOT.

Comment 37: Mitigation for expressways is not described in the DSEIS; major changes to expressways take years and require their own individual engineering and environmental assessments delaying project implementation. Much of the mitigation proposed in the DSEIS requires the preparation of a site-specific EA

along with traffic analysis and engineering drawings all subject to NYSDOT and FHWA approval. Each action requires new counts specific to each location. The DSEIS warns of this problem on page 21-29: mitigation “... measures that may call for detailed review by both NYCDOT and NYSDOT ... if these mitigation measures are modified or rejected by the review agencies, significant adverse impacts identified above would be unmitigated.” What guarantees can the developer provide that the Willets Point project will not experience the same delays and what impact would that have on project completion schedules? And, who is going to pay for mitigation? Including intersection expansion plus modifications to expressways and ramps (plus \$70 million for just the Van Wyck ramps) we are looking at hundreds of millions of dollars in reconstruction. (WPU-Ketcham)

Response: Mitigation measures that would improve conditions on the expressway segments analyzed in the DSEIS have been identified in the DSEIS, and the effects of those mitigation measures on ramp and mainline conditions have been fully documented. They do include physical widenings at the ramp’s at-grade connection to the local streets, signalization of ramp intersections with local streets, and the reconfiguration of the ramp intersections to promote smoother and more efficient flow both at the intersection and upstream on the roadway approaches to those intersections. The developer has committed to funding the implementation of the traffic mitigation measures outlined in the DSEIS. Furthermore, the City sought and received approval for the Van Wyck Expressway ramps and has continually expressed its commitment to fund and construct them.

Comment 38: Proposed mitigation still leaves intersections and expressways gridlocked; this is especially true for Astoria Blvd., Northern Blvd. and Roosevelt Avenue. (WPU-Ketcham)

Response: Several locations along these corridors and expressways would be significantly impacted, as is documented in Chapter 21, “Mitigation,” of the DSEIS. However, the combination of standard mitigation measures and cost-intensive mitigation measures have been identified which would partially or fully mitigate many of the impacts that were disclosed, both on the local roadway network and the surrounding expressways. The maximum number of unmitigated intersections during any peak hour in the approved 2008 FGEIS was 14 intersections, whereas the maximum number of unmitigated intersections during any peak hour for this FSEIS would be seven in Phase 1A, four in Phase 1B, and eight in Phase 2. In addition, the proposed mitigation measures would improve conditions along segments of roadway and at intersections that are currently congested.

Comment 39: It appears that the DSEIS uses trip generation factors that are considerably lower than real world experience with comparable uses would show are appropriate. (WPU-Gerrard)

The DSEIS low balls the number of trips this project will generate; a great deal more traffic will in fact be produced than reported further gridlocking the area. (WPU-Ketcham)

Response: The trip generation factors used in the DSEIS are largely based on those used in the 2008 FGEIS, which have been used on numerous New York City development projects and approved by NYCDOT as fully appropriate for New York City conditions. Where appropriate, these factors were updated in compliance with the 2012 *CEQR Technical Manual*, and any updates were reviewed and approved by NYCDOT. They do not underestimate potential trip-making associated with the three phases of the proposed project.

Comment 40: For example, the DSEIS reports that less than 60 percent of shoppers will use autos to access the site; today 85 percent of Queens's shopping trips are by auto; 95 percent of shoppers to large malls arrive by auto; for destination retail the DSEIS under reports auto trips by 50 percent. The developer assumes that 59 percent of shopping trips will be made by auto with the rest by walking or transit. This number appears incredibly low when compared to other isolated shopping malls like Gateway Plaza in Brooklyn or Palisades Mall in West Nyack, both of which exceed 95 percent of shoppers arriving by auto; and both of which provide double the parking per 1,000 sf of retail space. The developer must provide its source justifying this 59 percent assumption. The effects of using reported auto use for isolated destination malls compared to 59 percent are striking. (WPU-Ketcham)

Response: As stated above in the previous response, all trip generation assumptions used in the DSEIS were fully vetted and approved by NYCDOT. With regard to the proportion of trips traveling to and from the destination retail by auto, the mode share used in the FGEIS was actually conservative toward auto use. As summarized in Tables 14-29 and 14-30 of the DSEIS, the destination retail modal split profile is based on what was used in the 2008 FGEIS. In that document, it was explained that this trip-making profile was developed for the Gateway Center at Bronx Terminal Market in the Bronx, which was determined (with NYCDOT concurrence) to be the appropriate model to follow for Willets Point. Both sites have comparable subway access and nearby residential uses, and are adjacent to baseball stadiums.

Contrary to the commenter's assertion, the planned destination retail uses in Willets West and the Special Willets Point District would not be "isolated destination malls." The Willets Point development would be a high-density development located near existing high-density residential areas. Moreover, the District is accessible by a nearby Long Island Rail Road (LIRR) station and the

Mets-Willets Point subway station, as well as by local bus routes which, as stated in the DSEIS, are expected to improve over time. Gateway Center in the East New York section of Brooklyn, on the other hand, is not located near any subway or commuter rail lines. The commenter also cited the Palisades Mall in West Nyack for comparison. Palisades Mall is situated at a location where there is no rail service and very limited bus service, with sparse adjacency to low density residential and other uses. Therefore, neither Gateway Center in East New York nor Palisades Mall in West Nyack can be considered a more comparable model than Gateway Center at Bronx Terminal Market for the future Willets Point destination retail uses.

Comment 41: Destination retail would be responsible for more than half of total trips reported for this project; there is no justification for nearly 2 million square feet of new destination retail in the Willets Point area. (WPU-Ketcham)

Response: The amount of destination retail space contemplated under the DSEIS is greater than what was studied and approved in the 2008 FGEIS and subsequent Technical Memoranda. However, with approximately one million square feet of destination retail now allocated to Willets West, the current plan calls for less destination retail within the Special Willets Point District, which allows for more local-oriented retail uses within the District. Tables 14-53 and 14-54 in the DSEIS summarize the projected person and vehicle trip generation estimates for various components of the proposed project during seven analysis peak hours. The percent of projected destination retail trip generation as of the total peak hour trip generation was estimated to range from 22.8 to 46.1 percent for person trips and from 29.5 to 55.6 percent for vehicle trips. Hence, only some of the analysis peak hours would incur vehicle trip-making that comprises marginally greater than 50 percent from the destination retail use. With regard to justification for the amount of destination retail, the socioeconomic conditions analysis in the DSEIS assesses the existing and projected capture rates for retail spending in the primary trade area and concludes that there is sufficient demand for the destination retail uses contemplated in the proposed project.

Comment 42: The project proposes relatively little parking for the size of the project; proposed parking cannot accommodate parking demand; spillover traffic will intensify gridlock conditions. The developer appears to justify providing little parking on the basis of extremely optimistic trip generation rates and the heavy use of public transit that really does not exist. Experience elsewhere at large malls suggests not only that they attract many more auto trips per 1,000 square feet of retail space, but they typically provide double the number of parking spaces per 1,000 square feet of retail space than is being provided at either the Willets “West” Mall or for the destination retail proposed for Phase 2 of the project. (WPU-Ketcham)

Response: As detailed above in response to Comment 39, the DSEIS's trip generation estimates are based on data and assumptions that are more appropriate than those suggested by the commenter and that have been fully vetted and approved by NYCDOT. These trip generation estimates were used as inputs to the projection of parking needs, as summarized in Tables 14-60 to 14-62 of the DSEIS for the 2032 Phase 2 full build-out. Notwithstanding the commenter's assertion that "experience elsewhere at large malls" would typically provide more parking per 1,000 square feet of retail space than what is planned for this project, the DSEIS's parking analysis concluded that the amount of parking planned for uses in Willets West and the Willets Point District would adequately accommodate the projected parking demand.

Comment 43: The project relies on substantial public transit service; there is no way the MTA can meet proposed transit demand; the No. 7 line will be gridlocked if this project is built; commuters will face huge delays. (WPU-Ketcham)

The No. 7 train will need to be a double decker to handle demand. (JHBG)

The DSEIS says that in 2032 with the project built, on the Manhattan-bound express No. 7 train, the volume/capacity ratio would be 1.20, and the available capacity would be -3,673 (minus 3,673). In other words, the subway would be able to carry 3,673 fewer people per hour than want to take it, even with the subways running at the maximum capacity that the signal system will allow (Table 14-143, p. 14-190). In order to alleviate some of the subway crowding, the DSEIS suggests providing more LIRR service there (p. 14-156). Again, there is no discussion of whether this is feasible, what it would entail, or how much it would cost, and there is no commitment to do it. (WPU-Gerrard)

Response: The DSEIS's transit analysis acknowledged that the Manhattan-bound No. 7 express subway line is currently (2012) operating at over its guideline capacity during the AM peak hour and is projected to continue operating over capacity in the future with or without the proposed project even with the scheduled addition of one subway train during this peak hour. However, it should be noted that the capacity used for assessing subway service is its guideline capacity. For the Division A subway cars that operate on the No. 7 line, the guideline capacity is 110 passengers per subway car (including about 40 seated and 70 standing). During peak hours, it is not uncommon for subway cars to carry passenger loads above this guideline capacity. In fact, the physical capacity of Division A subway cars is between 160 and 170 passengers, or approximately 50 percent higher than its guideline capacity. Therefore, contrary to the commenter's assertion, having a volume/capacity ratio of 1.20 does not mean that the subway line would be unable to carry people who want to take it. It indicates that the crowding level of the line would increase to above guideline capacity during this peak hour.

The City has consulted with the Metropolitan Transportation Authority (MTA) on expanding regular LIRR service along its Port Washington Branch to the existing Willets Point LIRR station when the actual demand shows that such service improvement is warranted. The Port Washington Branch currently runs regular service between Port Washington and Penn Station. Currently, it serves the Willets Point LIRR station only during Mets game days, the US Open, and other special events. Since both the station and the line already exist, there would be little or no capital costs associated with implementing regular service at the Willets Point LIRR station. The additional operating costs incurred should also be marginal and recovered through the additional fare collection from future new riders. As part of MTA's regular operational assessments, the agency would review future demand and effects on scheduling due to the inclusion of a potential additional scheduled stop at the Willets Point LIRR station.

Comment 44: The addition of 61 million miles of vehicular travel produces considerable externality costs, not just traffic accidents costs but the health costs of added air pollution, traffic noise, water pollution and so forth. These costs are not trivial: for full Willets Point build out including the Willets "West" Mall these costs total \$120 million every year—costs that are far greater than any benefits provided to NYC by the Willets Point project. (WPU-Ketcham)

Response: The commenter does not provide any estimated benefits that the proposed project would provide New York City but claims that it would be far less than his projection of the project's externality costs, which were developed based on traffic estimates independently by the commenter without review by NYCDOT. The project will result in the environmental remediation of 62 acres of contaminated land, and Phases 1A and 1B, alone, will result in \$3 billion of private investment in Queens, the development of nearly 900 units of affordable housing, and the creation of an estimated 12,000 construction jobs and 7,000 permanent jobs. As described in Chapter 17, "Noise," noise associated with traffic generated by the proposed project and its associated parking facilities would not be expected to result in any significant increases in noise levels, including at World's Fair Marina Park, which was predicted to experience a significant adverse noise impact in the 2008 FGEIS. To meet the CEQR interior noise level requirements, the DSEIS prescribes between 31 and 43 dBA of building attenuation for the proposed project buildings, which is similar to the amount of building attenuation specified in the 2008 FGEIS. Similar to what was predicted in the 2008 FGEIS, noise levels in the newly created open spaces would be greater than the 55 dBA $L_{10(1)}$ criteria set forth in the *CEQR Technical Manual*, but would be comparable to other parks around New York City and would not constitute a significant adverse impact. As described in Chapter 15, "Air Quality," the proposed project would not result in any violations of National Ambient Air Quality Standards or exceedances of the *de minimis* criteria set forth in the *CEQR Technical Manual*. Furthermore, there would be

no potential for significant adverse air quality impacts from the proposed project's heating and hot water systems (considering buildings proposed for construction in all phases), provided that certain restrictions on the fuel type, placement of heating and hot water system stacks, and use of low-nitrogen oxide (low-NO_x) burners are imposed. As described in Chapter 19, "Neighborhood Character," the proposed project would result in an improvement in neighborhood character, as it would remediate the area and would represent a significant investment to improve the project area's infrastructure.

Comment 45: Assuming the assumptions reported in the DSEIS are correct (and we do not believe they are) total project build out will generate 194 million added vehicle miles of travel. The effects of Willets Point on traffic accidents have been ignored. The FGEIS for the Willets Point Development Plan reports that the project will add 80,000 car and truck trips a day, 365 days a year, generating 116 million additional miles of travel annually. Based on NYSDOT traffic accident rates for NYC the WP project will thereby increase auto and truck accidents by 944 a year including 2 dead and 316 injured. Including the cost of property damage the cost to motorists and society total \$41 million in 2017. Adding another 28,000 car and truck trips a day or 61 million miles of travel each year for the Willets "West" Mall will increase this number to 1,578 crashes annually with 3 dead and 528 injured and approximately 2,500 more cars and trucks damaged. The total cost of the combined effect of Willets "West" Mall and the Willets Point Development Plan in 2032 would be \$124 million annually. Externality costs for total build out including accident costs (\$40 million each year in increased health care and property damage) in 2032 would total \$382 million annually. (WPU-Ketcham)

Response: The FGEIS did not report a daily trip-making of 80,000 car and truck trips. Both this and the 28,000-trip figures, as well as the annual vehicle-mile and accident projections, were estimated by the commenter.

There are many factors that contribute to accidents, not solely traffic levels, including signage, roadway geometry, sight lines, intersection control, pavement conditions, crosswalk markings, curbside usage, and driver/pedestrian behavior. The traffic safety assessment in the DSEIS was prepared in accordance with *CEQR Technical Manual* guidelines. This assessment, which was vetted and approved by NYCDOT, examined the causes of high accident locations in the study area and provided recommendations on how safety improvements can be made in the vicinity of the District.

The CEQR methodology for traffic safety assessment leads practitioners toward prevention rather than attempting to predict what may occur in the future. It stipulates a low threshold (5 bicycle or pedestrian related accidents per year) for identifying high accident locations regardless of how much traffic traverses those locations. For the high accident locations, the analysis in the DSEIS

evaluated accident trends, identified safety improvement measures, and addressed the effects the proposed project could have on the safety of these locations. This approach is consistent with the City's continuing effort to improve traffic and pedestrian safety across the five boroughs.

Comment 46: The developer reports that he will add an additional 1.4 million square feet of shopping mall/entertainment facilities to the already oversized Willets Point development. According to the FGEIS, the 11 million square feet Willets Point project will add 80,000 car and truck trips to the project area with significant impacts at 78 percent of all intersections analyzed and adding Willets West Mall will increase project traffic by about 25 percent and further impact nearby intersections, expressways and expressway entry/exit ramps. Level of Service (LOS) F is reported at many mitigated intersections—for full intersections (many that cannot be mitigated at all) and/or at many intersections they claim to mitigate that retains one or more intersection approaches that remain at LOS F or worse. (WPU-Ketcham)

Response: The 1.4 million square feet of entertainment and retail facilities that the commenter alludes to as in addition to the Willets Point development project is not accurate. First, Willets West is anticipated to contain only one million leasable square feet of entertainment and retail space (400,000 square feet would be non-leaseable common area and back-of-house space). Second, in the 2008 FGEIS, the proposed project included 1.7 million square feet of retail space in the Special Willets Point District whereas in the DSEIS the District is projected to include only 1.25 million square feet of retail space (450,000 sf less than noted by the commenter) by the end of Phase 2 in addition to the one million square feet of leasable entertainment/retail space in Willets West, which would result in a net increase in retail-type development of 550,000 leasable square feet, not 1.4 million square feet.

Regarding the comment that the 2008 FGEIS would add 80,000 car and truck trips to the area, it should be pointed out that this is the commenter's estimate and not a number contained in the FGEIS. Assuming that the commenter has developed it as an estimate of daily trips, it must be pointed out that traffic analysis methodologies all utilize peak hour trips, not daily trips, to evaluate the capacity of the roadway network to accommodate future traffic as per the *CEQR Technical Manual*. Although the addition of West Willets would add traffic to the roadway network, additional cost-intensive mitigation measures have been identified beyond the measures identified in the FGEIS that would allow for increased mitigatability of projected traffic impacts. The number of partially or fully mitigated locations is higher than the number reported in the FGEIS. The DSEIS does identify locations that would continue to operate at LOS F as part of its full disclosure of projected future conditions; this is not unusual for many locations within New York City. The DSEIS commits the developer to a comprehensive traffic monitoring plan that will evaluate future conditions and

potentially be able to identify additional measures to help mitigate adverse conditions further.

Comment 47: The DSEIS reports operating conditions at approximately 30 key intersections affected by the Willets Point project. While relatively few intersections are examined in the DSEIS, project impacts are clear: adding 8,000 to 10,000 hourly car and truck trips to peak travel hours will impose severe restrictions on travel. This can be seen by examining Table 14-59 which shows project impacts for virtually every intersection examined in the DSEIS. (WPU-Ketcham)

Response: The DSEIS analyzes the same approximately 30 key intersections as those analyzed in the 2008 FGEIS and the number and location of these analysis locations was vetted by NYCDOT as part of the scoping process for the DSEIS. During the time between certification of the DSEIS and FSEIS, two additional intersections along 126th Street and one additional intersection along Northern Boulevard adjacent to the District were included in the analyses for this SEIS. Table 14-59 identifies the number of intersections that would be significantly impacted under With Action conditions without proposed mitigation measures implemented. However, a majority of those impacted intersections can be either fully or partially mitigated, as discussed in Chapter 21, "Mitigation."

Comment 48: A review of all results for peak hours with available mitigation shows that during evening peak hours, access roads to Willets Point (Northern Boulevard, Roosevelt Avenue, Astoria Boulevard) will be gridlocked. With all the mitigation the developer proposed he leaves critical intersections with overall average vehicle delays of 100 to 200 seconds and these conditions do not get better on Saturday. While Table 22 shows some locations along these access roads can be fully or partially mitigated, the community is still faced with gridlock traffic conditions with cars facing two or three signal cycles to move through an intersection. For 126th Street at Roosevelt Avenue and 34th Avenue, we find a number of intersection approach movements at LOS F, with delays of between 100 to more than 800 seconds. Project traffic creating huge delays will create a huge impediment to the operation of Willets Point and will be of even greater consequence on a Mets game day. (WPU-Ketcham)

Response: As the commenter noted, several locations along access roads to Willets Point would experience congestion and cars would face more than one cycle at several locations. However, it should also be noted that the number of unmitigated impacts is lower in the DSEIS than the number of unmitigated impacts reported in the 2008 FGEIS due to the additional standard and cost intensive measures that have been proposed. Traffic conditions were analyzed for Mets game days and mitigation measures were proposed for those conditions as well. In addition, New York City Police Department (NYPD) would continue to operate several intersections surrounding Citi Field that they operate in existing conditions

during game times. The DSEIS also commits the developer to conducting a comprehensive traffic monitoring plan at each phase that is aimed at potentially identifying additional mitigation measures where possible and where warranted.

Comment 49: The complexity of Roosevelt Avenue at 126th Street—a main entry point into the Willets Point project—is not discussed in any detail. How do the columns supporting the overhead No. 7 transit line impede the efficient movement of traffic or reduce sight distance and thus after safety. The City Planning Commission needs intersection and expressway drawings to make this review more effective. (WPU-Ketcham)

Response: The existing analyses and calibration of the model were based upon the prevailing roadway conditions. These take into consideration all the limitations, such as limited cone of vision, narrow lane widths, etc. The future build analyses reflect the same limitations as under existing conditions. Schematics that show the proposed mitigation measures have been reviewed and approved by NYCDOT.

Comment 50: Due to breakdown conditions in all directions, the project will create huge traffic delays along access roads spilling back onto the surrounding expressway system. In addition, the project will have a huge negative effect on the community, imposing greater traffic delays, more traffic injuries and deaths, and other costly externalities to the million motorists that pass by Willets Point each day on nearby expressways and arterials. (WPU-Ketcham)

Response: The DSEIS acknowledges that several key access roads would be impacted under With Action conditions, as determined both by intersection level of service analyses and by a roadway network corridor simulation, or CORSIM, analysis that depicts conditions on highway mainline segments and on highway ramps at their intersections with local intersections. However, standard mitigation measures and more cost-intensive mitigation measures have been identified and would mitigate most significant impacts either partially or entirely. See response to Comment 44 above with regard to externalities.

Comment 51: A comparison of the rates used in the DSEIS with those reported in the 1991, 2001 and 2012 *CEQR Technical Manuals* shows little change in trip generation rates over this period. We know that many of the assumed trip generation rates date to the Regional Plan Association that did counts in the early 1960s in Manhattan. How can the developer justify using these antiquated rates especially outside Manhattan? The *CEQR Technical Manual* advises that if rates are over 3 years old the developer should take counts at representative locations. WPU has repeatedly requested that the developer undertake such counts. For a project of this size with the severe traffic impacts that the developer has reported in the DSEIS how can they continue to rely on ancient data? The numbers

recommended in the *Technical Manual* date from two to three decades back in time when demographics and travel behavior were very different from today. These are the same numbers used in the FGEIS and now in the DSEIS to under report traffic impacts. For example, increasing shopper trips to destination retail from 59 percent to 90 percent would increase vehicle miles of travel by 36 percent to 83 million miles of vehicular travel annually, from 61 million estimated using DSEIS assumptions. For full project build out, Phase 2, if we stick with 90 percent of shoppers accessing Willets West destination retail by auto (it is an isolated site with poor transit access), assume that for destination retail east of 126th Street 80 percent of shoppers will arrive by auto, and assume that the additional local retail proposed for Phase 2 is assumed to be destination retail, the result is an overall increase in average weekday vehicular travel to 109,386, an increase of 21,864 trips, and an increase of 25 percent. This is a conservative adjustment. We have not tinkered with other trip generation assumptions, most of which do not have supporting documentation. (WPU-Ketcham)

Response: As stated in the previous responses (to Comments 39 and 40), the trip generation factors used in the DSEIS, some of which are recently developed and others of which are based on past research, were reviewed and approved by NYCDOT in compliance with the 2012 *CEQR Technical Manual* as an accurate conservative representation of trip-making characteristics. The commenter is incorrect in citing that “the *CEQR Technical Manual* advises that if rates are over 3 years old the developer should take counts at representative locations.” Rather, it states that if “the source cited be considered “stale” by the lead agency, in consultation with NYCDOT, it is recommended that an original survey be conducted for the same land use in a comparable setting of the City.” NYCDOT thoroughly reviewed all trip generation factors and approved them for use on this project. Also, in addition to providing an incorrect modal split assumption for destination retail uses (see response to Comment 40), the comment that local retail within the Willets Point District should really be destination retail is without basis.

Comment 52: The DSEIS reports average weekday and average Saturday traffic impacts. Weekly and seasonal variations are not disclosed. The Institute of Transportation Engineers (ITE) *Trip Generation Manual* reports that traffic is 19 percent greater on Friday than weekdays and 51 percent greater on Friday than Saturdays for shopping malls. It also reports that Decembers produce 42 percent more traffic during the month than for annual averages. As a result of holiday effects, the parking supply is good for only half of demand. If these differences were accounted for, you would find true “worst-case” conditions that would be significantly worse than reported. (WPU-Ketcham)

Response: The DSEIS provides detailed analyses for seven peak periods, including three on weekend days. The purpose of an EIS is to conservatively analyze a

“reasonable” worst case condition for potential impacts. Consistent with other approved EISs for retail uses, conditions that may occur during the December shopping season or only on “Black Friday” are not subject to analysis under CEQR.

Comment 53: The DSEIS manipulates temporal assumptions to minimize peak hour parking demand. The developer’s assumption does not agree with ITE numbers for large shopping malls. The developer must provide documentation justifying the assumptions made for hourly parking arrivals and departures for the eight land use types evaluated in the DSEIS. (WPU-Ketcham)

Response: The 2012 *CEQR Technical Manual* states that “the ITE Trip Generation Report contains auto trip generation rates for a wide range of land uses, but most of these rates reflect nationwide averages based on surveys conducted in suburban settings, often with little or no available public transportation. Therefore, these rates may not be appropriate for the urban character of New York City.” As stated above in previous responses (to Comments 39 and 40), the trip generation factors used in the DSEIS were reviewed and approved by NYCDOT in compliance with the 2012 *CEQR Technical Manual*. Similarly, the parking demand projections, which are based on the peak hour trip generation estimates, were also fully vetted and approved by NYCDOT.

Comment 54: The Long Island Expressway and Grand Central Parkway (south of the Long Island Expressway) were not analyzed as part of the DSEIS and both will be heavily impacted by the expanded Willets Point project (another 28,000 daily car and truck trips from what was examined in the FGEIS). NYSDOT engineers report that the Grand Central Parkway south of the Long Island Expressway cannot take “one more new vehicle trip from the WP project” even after they spend \$1 billion realigning that expressway near the Jackie Robinson Parkway. Both should be examined in a verified EA for the Van Wyck Expressway ramps. (WPU-Ketcham)

Response: The extent of the traffic study area was determined through the scoping process that included review and approval by NYCDOT. The Grand Central Parkway and Van Wyck Expressway north of the Long Island Expressway carry more concentrated volumes of project-generated trips compared to the two segments mentioned by the commenter, since the two referenced highways are feeder roadways to the analyzed highway segments. In addition, due to implementation of the proposed cost-intensive measures at the highways’ intersections with the local network, the speeds along the analyzed highway mainlines would improve compared to the With Action conditions. It is also the same highway network approved for analysis in the 2008 FGEIS. See Response to Comment 5 regarding a verified EA for the Van Wyck Expressway ramps.

Comment 55: Expressway data are totally missing from the DSEIS. Internal site specific traffic movements for the WP project are no longer provided as well. How can anyone evaluate the DSEIS when the traffic network has been simplified so greatly by removing critical data that was originally provided in the FGEIS? The developer must provide maps showing vehicular trip assignments by land use type for new no-build construction and for full build out trips including the local project roadway network. The developer must also provide maps showing traffic volumes along all expressways and expressway ramps on which all Willets Point vehicular trips have been assigned with and without WP Phases 1A, 1B, and 2. (WPU-Ketcham)

Response: The DSEIS documents existing and projected speeds, densities, and levels of service for all expressway segments and ramps in its traffic study area. Traffic volume maps were prepared and have been reviewed and approved by NYCDOT. These volume maps appear in Appendix C of the DSEIS. Streets within the District would be demapped and would no longer remain as public streets. Private streets would then be constructed within the District based on general design guidelines, which will ensure that the streets adequately serve circulation needs for future users. In addition, the DSEIS contains a commitment from the developers to conduct a traffic monitoring program that would ascertain actual traffic conditions and respond with appropriate mitigation, if necessary. Such a plan can also be used to monitor internal conditions once the design is finalized and the development is built and occupied. Accordingly, the DSEIS provides a detailed assessment of the key corridors and intersections leading to and from the District and bordering the District, and which are most prone to impacts requiring mitigation analysis.

Comment 56: Chapter 21 on mitigation provides considerable insight on project impacts and how hard it is to mitigate so large a project as Willets Point. Table 21-23 shows the significant impacts for an average weekday in Phase 2 and shows that while some improvements are made, it also shows the traffic mess that is left. The impacts are severe and the DSEIS provides little confidence that much real mitigation can be accomplished. (WPU-Ketcham)

No one is committing to the “effectiveness” and “feasibility” of the specific mitigation measures. Rather, a future, final version of the mitigation report may conclude that all or some of the recommended mitigation measures are simply not effective, or even feasible, in which case the improvements in traffic flow shown in the present mitigation report will not occur, and those impacts may instead be unmitigated. Achieving the vastly improved traffic flows described in the mitigation report requires measures that NYCDOT and NYSDOT have not yet reviewed or approved, and which they may eventually reject. How can anyone rely on a report that cannot vouch for even the “feasibility” of the alleged solutions that it presents? (WPU-Antonacci)

Response: Through a combination of standard traffic capacity improvements and more cost-intensive mitigation measures that would be funded by the developer, the number of fully mitigated impacts under Phase 2 full buildout conditions would be higher than the number of fully mitigated impacts reported in the prior 2008 FGEIS; and, the number of unmitigated impacts is lower in the DSEIS than the number reported in the 2008 FGEIS. The feasibility of the proposed mitigation measures has been reviewed by NYCDOT. The DSEIS also commits the developer to conducting a comprehensive traffic monitoring plan that is aimed at potentially identifying additional mitigation measures where possible and where warranted.

Comment 57: The DSEIS does not provide detailed descriptions of what mitigation the developer is proposing for various expressways or expressway ramps. The DSEIS has no drawings illustrating each mitigation location. Written descriptions are too brief and just not good enough for public review. (WPU-Ketcham)

Response: Mitigation measures have been identified for highway ramps and at their intersections with the local roadway network, which would also result in improved conditions on several expressway segments. The mitigation measures are described in the DSEIS in sufficient detail to convey the key elements of the proposed improvements, both in the text of Chapter 21, “Mitigation,” as well as the mitigation tables in the back of that chapter. Schematics for these proposed mitigation measures have been prepared for illustrative purposes only and have been provided to NYCDOT to assist in their review.

Comment 58: In the year 2032, under the “No Action” condition, the average speeds on the westbound Grand Central Parkway between Roosevelt Avenue and the Long Island Expressway on non-game days would be 48.1 mph during the weekday AM run, 43.0 mph during the weekday midday, and 37.7 mph during the evening rush. If the project is built, the average speeds during those same periods on non-game days would be 6.7 mph, 0.0 mph, and 0.4 mph, respectively. The FSEIS should calculate the travel time from one end of the studied segment to the other. The meaning of a 0.0 mph speed on a highway should also be explained. The FSEIS should also explain the impacts of these speeds on emergency response times and on airport access. (WPU-Gerrard)

Response: The traffic analyses that were conducted conform to *CEQR Technical Manual* guidelines, which do not call for the use of point-to-point travel time projections. The speeds during the non-game weekday AM, midday, and PM peak hours of 6.7 mph, 0.0 mph, and 0.4 mph, respectively, are representative of speeds on that segment under the 2032 With Action condition *without mitigation* measures in place. With proposed mitigation measures in place, speeds would increase significantly during the non-game weekday AM, midday,

and PM peak hours to 48.1 mph, 24.1 mph, and 36.9 mph, respectively. As discussed in Chapter 4, “Community Facilities,” the proposed project would generate additional traffic on roads throughout the area, including the possible routes used by FDNY and EMS vehicles to access the project site. Traffic at certain intersections near the project site may result in slower access for FDNY and EMS vehicles. However, FDNY and EMS vehicles, when responding to emergencies, are not bound by standard traffic controls or rules and are capable of adjusting to congestion encountered en route to their destinations and are therefore less affected than other vehicles by such congestion. FDNY vehicles are also equipped with enhanced sirens and emergency lights that assist them in safely navigating through congested areas. These vehicles would be able to access the project site as they do other areas throughout New York City, including the most congested areas of Downtown Flushing. Furthermore, EMS units are assigned a permanent cross-street location where they await a service call. If warranted by demand, the FDNY could assign an EMS unit within the District to provide services to the new population.

Comment 59: If the mitigation measures are undertaken, the DSEIS projects speeds in 2032 under the “build” condition of up to 48.8 mph during the morning rush and 48.1 mph during the evening rush, but they would still be at 6.7 mph during the midday. (DSEIS Table 21-21, p. 21-50.) (WPU-Gerrard)

Response: The commenter misinterpreted the data on page 21-50. The three columns do not represent the AM, midday, and PM peak hours, but rather represent “No Action,” “With Action,” and “With Mitigation” for the weekday AM peak hour. The 6.7 mph that the commenter refers to is the speed of the westbound Grand Central Parkway (east side) between Roosevelt Avenue and the Long Island Expressway during the non-game weekday AM peak hour. The impact at that location would be mitigated and the projected resulting speed would improve to 48.1 mph, which is very close to the speed under No Action conditions.

Comment 60: If the City approves the project, the SEQRA Findings Statement will have to explain why it is acceptable to undertake a lengthy and expensive action that will result in traffic speeds of 6.7 mph, 0.0 mph, and 0.4 mph on one of the City’s major arteries. If reliance is placed on the lane-widening and other mitigation measures, then (1) those measures should be explained in detail; (2) their collateral consequences (e.g., condemnation of real property and consequent loss of housing and jobs) should be enumerated; and (3) they should be committed to. (WPU-Gerrard)

Response: The speeds that the commenter refers to are speeds under the With Action conditions, without mitigation measures implemented (as also noted in the Response to Comment 58 above). Speeds would increase considerably after implementation of cost-intensive mitigation measures, as explained in the

Response above, some of which would reach near No Action speeds. As discussed in the Response to Comment 57, schematics for these proposed mitigation measures have been provided to and reviewed by NYCDOT. All the mitigation measures are described in detail, both in the text of Chapter 21, “Mitigation,” as well as the mitigation tables in the back of that chapter. Furthermore, the developer has committed to funding the implementation of the enumerated mitigation measures.

Comment 61: In 2032 on non-game days under No Action conditions, the number of signalized intersections with LOS F would be 1 during the weekday morning peak, 4 during the weekday midday peak, 2 during the weekday evening peak, and 3 on Saturday midday. Under With Action conditions, those numbers become 9, 12, 15, and 13. Numerous intersections cannot be mitigated at all. (WPU-Gerrard)

Response: The numbers cited by the commenter refer to the With Action conditions *without* mitigation implemented. Under the 2032 Phase 2 conditions with mitigation implemented, the number of intersections that operate at LOS F would be 2 in the non-game weekday AM peak hour, 7 in the non-game midday peak hour, 10 in the non-game PM peak hour, and 9 in the Saturday non-game midday peak hour. In addition, the number of intersections that are entirely unmitigated is lower in this DSEIS than the number of unmitigated impacts in the 2008 FGEIS.

Comment 62: My comments of September 27 on the draft scope for this DSEIS stated, “The City has a history of releasing wildly contradictory reports about the traffic impacts of this project, without ever clearly explaining the reasons for these discrepancies. The supplemental EIS should include a table comparing the assumptions, methodologies and other inputs of the traffic study used there and all the prior traffic studies for this project, so that readers can understand the differences and draw their own conclusions as to which, if any, is valid.” The DSEIS failed to include this table. The FSEIS should include it. (WPU-Gerrard)

Response: The assumptions, methodologies, and other inputs follow the latest *CEQR Technical Manual* procedures and were subject to review and approval by the lead agency and NYCDOT. Such assumptions have been identified in this DSEIS. The methodologies used in the analyses for the DSEIS are comparable to those used in the analyses for the 2008 FGEIS. However, new traffic data were collected and incorporated into the model based on prevailing existing conditions.

Comment 63: The tables in the DSEIS (though not the text, except euphemistically) reveal that conditions within the Mets-Willets Point No. 7 subway station would also become horrible; especially the stairs from the Roosevelt Avenue entrances

down to the mezzanine. Conditions in 2032 on non-game days without the project show an LOS A for these stairs (Table 14-111, p. 14-156); in 2032 with the project, the LOS is E+ for one staircase and D+ for two. (Table 14-141, p. 14-187.) The DSEIS says that wider staircases could help alleviate this condition, but that it is not clear whether this would be feasible, there is no indication of how much they would cost or who would pay for them, and they are not committed to (p. 14-189, 21-57). (WPU-Gerrard)

Response: Subsequent to the certification of the DSEIS, an engineering feasibility study and design schematics were reviewed with New York City Transit (NYCT). This review concluded that the recommended stairway widenings, as well as the installation of an Americans with Disabilities Act (ADA)-compliant elevator, would be feasible. The description of the proposed stairway widenings and feasibility determination has been updated for this FSEIS. Since the projected impacts that prompted the stairway and elevator feasibility investigation would not occur until Phase 2 of the proposed project, no funding commitments are in place at this time. The City will coordinate with NYCT and the lead agency to ensure the proper mitigation would be implemented at the appropriate time and would add language to the RFP for Phase 2 of the project, as well as to the development agreement and/or other legally binding agreements, requiring the designated developer to fund the implementation of this mitigation.

Comment 64: The developer is relying on the MTA to provide additional bus service to the Willets Point “West” location. Willets Point “West” Mall will produce about 14,000 additional bus riders on an average weekday. At 56 people per bus (capacity) that would require the addition of 250 weekday buses (most spread out from 10 AM to 8 PM). What guarantee can the developer provide that the MTA can provide this level of added bus service? At the third meeting of the Building/Zoning Committee of Queens Community Board 7 the developer mentioned that they were working with the LIRR on using that service to provide some relief for the overcrowding their project will create on the No. 7 subway line. Has the developer analyzed the potential for utilizing the LIRR? If so, what have they found? And, how realistic is using the LIRR during peak commute hours? (WPU-Ketcham)

Response: Subsequent to the certification of the DSEIS, additional discussions with MTA NYCT took place regarding the potential bus service improvements beyond increasing service frequency of existing bus routes. Results of this coordination effort, which include both the MTA Bus Company and NYCT considering near-term extension of one bus route by each agency to Willets West and the Willets Point District, both agencies finding several conceptual bus routing options, which would be coupled with the necessary layover areas and stop locations, to be generally reasonable and feasible, and both agreeing to evaluate additional bus route extensions based on actual future demand. While no definitive plans have been made at this time, the City and the applicant will continue to

collaborate with the MTA NYCT after this environmental review process to ensure that adequate bus service improvements would be implemented.

With regard to the LIRR, as stated in the response to Comment 43, the City has consulted with the MTA on extending regular LIRR service along its Port Washington Branch to the Willets Point LIRR station when the actual demand shows that such service improvement is warranted. However, no definitive commitments have been made at this time.

CONSTRUCTION

Comment 65: Is this land, where the mall is to be built, stable enough to support the structures? The area was originally wetland. (Auburndale)

Response: Prior to commencement of construction, full geotechnical studies and reports would be conducted for the Willets West land to determine appropriate construction methods and guarantee structural stability of proposed buildings. The developer has experience constructing on land with similar (if not the same) subsurface conditions at CitiField adjacent to Willets West, which was completed in 2009, and will draw upon its experience constructing CitiField in constructing the entertainment and retail facility at Willets West.

ALTERNATIVES

Comment 66: The City rejected my request to study an alternative that looks at the project without any eminent domain. This alternative should have been studied, for only that way can the reader understand whether or not this condemnation is truly necessary. The possibility of leaving untouched any properties whose owners will not sell voluntarily becomes more feasible in view of the City's new plan to use much of Willets Point as a parking lot. (WPU-Gerrard)

If phasing [of the project] is now possible, the FSEIS should consider an alternative in which certain properties (especially those being acquired from private parties) are excluded from the early phases. (WPU-Gerrard)

Response: As described in the *CEQR Technical Manual*, the purpose of the alternatives analysis is to consider a range of reasonable alternatives to the proposed project that have the potential to reduce or eliminate a proposed project's impacts, while considering the goals and objectives of the proposed actions. As noted in the DSEIS, since the 2008 approval of the Plan, the City has undertaken outreach and has been negotiating with property owners in the Willets Point District. Through negotiated acquisition, the City has acquired, or is in contract to purchase, approximately 95 percent of the land area within the proposed Phase 1A/1B footprint (Assemblage Option 2). The City would continue its outreach efforts as the development of the District moves forward. The analysis of a no-condemnation alternative would not result in meaningful differences in the

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overall environmental impacts resulting from development pursuant to the District's Urban Renewal Plan through either condemnation or negotiated acquisition. Furthermore, the potential for development of individual properties and their various development timelines present myriad challenges in the general ability to meet project goals under the comprehensive redevelopment plan, particularly as they relate to the implementation of comprehensive site remediation; need for grade transitions to the new floodplain elevations; integration of the Phase 2 parcels into the planned water, sewer, and drainage infrastructure as well as the street network.

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Appendix A-1
Proposed Zoning Text Amendment

PROPOSED ZONING TEXT AMENDMENT

Willets Point Development Roosevelt Avenue to Northern Boulevard between 126th Street and 127th Street/Willets Point Blvd/MTA Property Queens, New York

Matter in underline is new, to be added;

Matter in ~~strikeout~~ is to be deleted

Matter with # # is defined in Section 12-10

* * * indicates where unchanged text appears in the Zoning Resolution

124-60

SPECIAL PERMIT TO MODIFY USE OR BULK REGULATIONS

For any #zoning lot# within the #Special Willets Point District#, the City Planning Commission may permit modification of the #use# or #bulk# regulations, except #floor area ratio# provisions, provided the Commission shall find that such:

(a) #use# or #bulk# modification shall aid in achieving the general purposes and intent of the Special District;

(b) #use# modification shall encourage a lively pedestrian environment along the street, or is necessary for, and the only practicable way to achieve, the programmatic requirements of the development;

(c) #bulk# modifications shall enhance the distribution of #bulk# within the Special District;

(d) #bulk# modifications shall permit adequate access of light and air to surrounding streets; and

(e) #use# or #bulk# modification shall relate harmoniously to the character of the surrounding area.

Notwithstanding the foregoing, a #use# modification may include a #use# proposed as part of a phased development within the Special District, where the Commission finds that such #use# is reasonably necessary for transitional purposes to assist in achievement the goals of the Special District, provided the findings of paragraphs (a), (b) and (e) above are met to the maximum extent possible, taking into account the nature of such #use#.

The Commission may prescribe appropriate conditions and safeguards to minimize adverse effects on the character of the surrounding area.

Appendix A-2
WRP CAF

For Internal Use Only:

WRP no. _____

Date Received: _____

DOS no. _____

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM Consistency Assessment Form

Proposed action subject to CEQR, ULURP, or other Local, State or Federal Agency Discretionary Actions that are situated within New York City's designated Coastal Zone Boundary must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)*. The WRP was adopted as a 197-a Plan by the Council of the City of New York on October 13, 1999, and approved in coordination with local, state and Federal laws and regulations, including the State's Coastal Management Program (Executive Law, Article 42) and the Federal Coastal Zone Management Act of 1972 (P.L. 92-583). As a result of these approvals, state and federal discretionary actions within the city's coastal zone must be consistent to the maximum extent practicable with the WRP policies and the city must be given the opportunity to comment on all state and federal projects within its coastal zone.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, other State Agency or the New York City Department of City Planning in its review of the applicant's certification of consistency.

A. APPLICANT

1. Name:

Queens Development Group

Address:

c/o Jesse Masyr, Wachtel, Masyr & Missry, LLP, 1 Dag Hammarskjold Plaza, 47th Floor, New York, New York 10117

3. Telephone:

Fax:

212-909-9500

E-mail Address:

masyr@wmlp.com

4. Project site owner:

City of New York, various private entities

B. PROPOSED ACTIVITY

1. Brief description of activity:

See EAS page 1a.

2. Purpose of activity:

The proposed project would support the economic revitalization of the Willets Point neighborhood of Queens by converting large, surface parking lots into mixed-use residential, office, and commercial development. It would create new employment opportunities for local residents and would create economic and fiscal benefits to the City in the form of economic revitalization, increased employment opportunities, and tax revenue. In addition, the proposed project would provide approximately 8 acres of new publicly accessible open space and new community facilities and public school facilities, which would serve the surrounding neighborhood.

3. Location of activity:

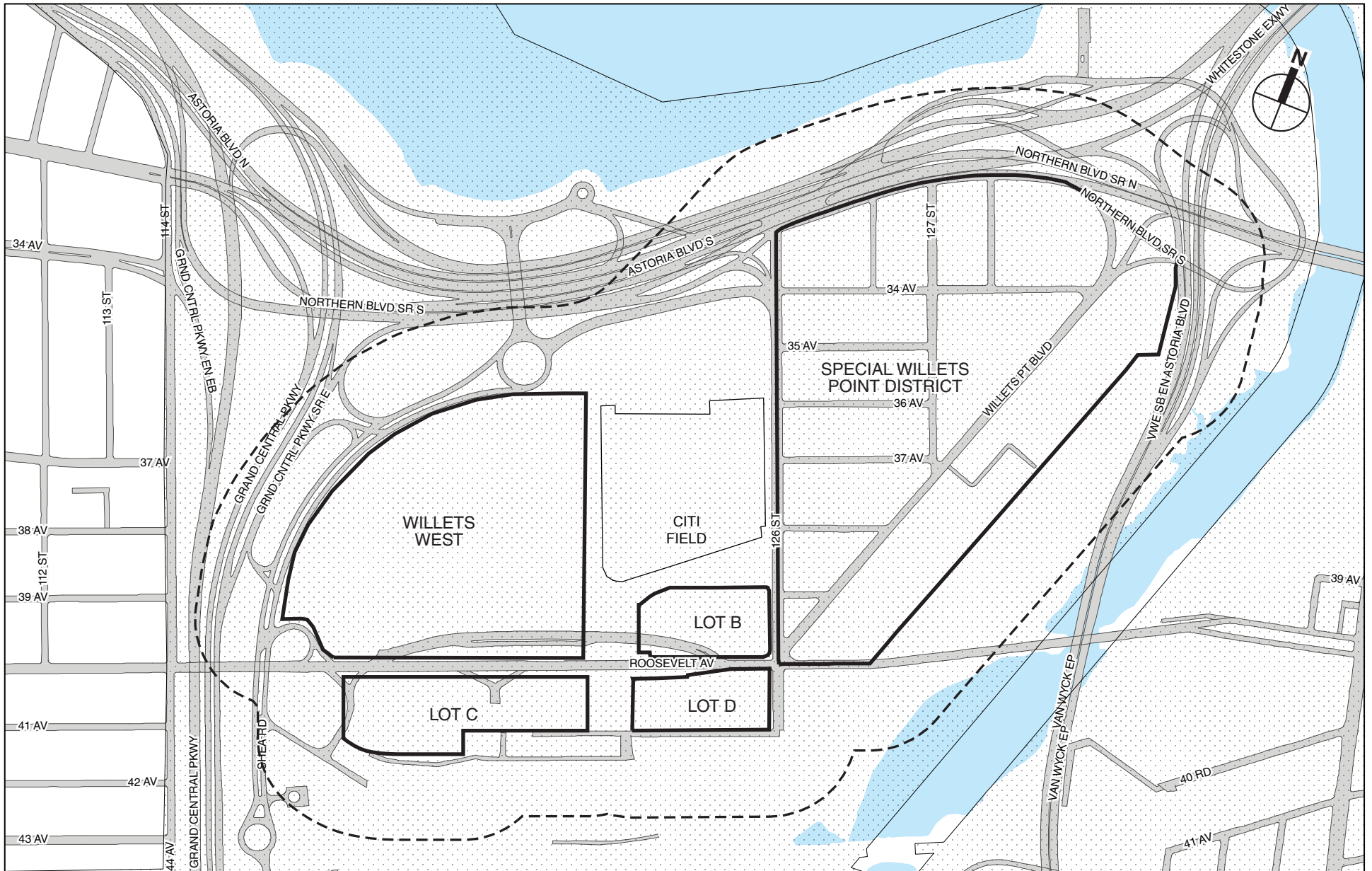
Borough:

See EAS page 1a.

Queens

Street Address or Site Description:

The project site is roughly bounded by Northern Boulevard, Shea Road, Roosevelt Avenue, and Willets Point Boulevard (see Figure A-1).



Project Site Boundary
 Study Area Boundary (400-Foot Perimeter)
 Coastal Zone

WILLETS POINT Development

0 200 400 FEET
SCALE

Coastal Zone Boundary
Figure A-1

Proposed Activity Cont'd

4. If a federal or state permit or license was issued or is required for the proposed activity, identify the permit type(s), the authorizing agency and provide the application or permit number(s), if known:

**Approval from Federal Aviation Administration (FAA) for building in proximity to LaGuardia Airport.
Approval by the New York City Industrial Development Agency (IDA) for the waiver of mortgage recording tax for property within the Special Willets Point District.**

5. Is federal or state funding being used to finance the project? If so, please identify the funding source(s).

No

6. Will the proposed project result in any large physical change to a site within the coastal area that will require the preparation of an environmental impact statement? **Yes** **No**

If yes, identify Lead Agency:

✓

Office of the Deputy Mayor for Economic Development (ODMED)

7. Identify City discretionary actions, such as **zoning amendment or adoption of an urban renewal plan**, required for the proposed project.

Special permit(s) to allow surface parking uses within the Special Willets Point District, and modification of the City's existing lease for the CitiField property and adjacent parking properties; Mayoral and Queens Borough Board approval of the business terms pursuant to New York Charter Section 384(b)(4); technical revisions to the previously-approved City Maps that modify the staging for the closure of City streets.

C. COASTAL ASSESSMENT

The following questions represent, in a broad sense, the policy of the WRP. The number in the parentheses after each question indicated the policy or policies that are the focus of the question. A detailed explanation of the Waterfront Revitalization Program and its policies are contained in the publication the *New York City Waterfront Revitalization Program*. Check either "Yes" or "No" for each of the following questions. Once the checklist is completed, assess how the proposed project affects the policy or standards indicated in "()" after each question with a Yes response. Explain how the action is consistent with the goals of the policy or standard.

Location Questions:

Yes

No

1. Is the project site on the waterfront or at the water's edge? **✓**
2. Does the proposed project require a waterfront site? **✓**
3. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land underwater, or coastal waters? **✓**

Policy Questions:

Yes

No

The following questions represent, in a broad sense, the policies of the WRP. Numbers in parentheses after each questions indicate the policy or policies addressed by the question. The new Waterfront Revitalization Program offers detailed explanations of the policies, including criteria for consistency determinations. Check either "Yes" or "No" for each of the following questions. For all "yes" responses, provide an attachment assessing the effects of the proposed activity on the relevant policies or standards. Explain how the action would be consistent with the goals of those policies and standards.

4. Will the proposed project result in revitalization or redevelopment of a deteriorated or under- used waterfront site? (1) **✓**
5. Is the project site appropriate for residential or commercial redevelopment? (1.1) **✓**
6. Will the action result in a change in scale or character of a neighborhood? (1.2) **✓**
7. Will the proposed activity require provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (1.3) **✓**

Policy Questions cont'd:		Yes	No
8.	Is the action located in one of the designated Significant Maritime and Industrial Areas (SMIA): South Bronx, Newtown Creek, Brooklyn Navy Yard, Red Hook, Sunset Park, or Staten Island? (2)	<hr/>	<hr/> ✓
9.	Are there any waterfront structures, such as piers, docks, bulkheads or wharves, located on the project sites? (2)	<hr/>	<hr/> ✓
10.	Would the action involve the siting or construction of a facility essential to the generation or transmission of energy, or a natural gas facility, or would it develop new energy resources? (2.1)	<hr/>	<hr/> ✓
11.	Does the action involve the siting of a working waterfront use outside of a SMIA? (2.2)	<hr/>	<hr/> ✓
12.	Does the proposed project involve infrastructure improvement, such as construction or repair of piers, docks, or bulkheads? (2.3, 3.2)	<hr/>	<hr/> ✓
13.	Would the action involve mining, dredging, or dredge disposal, or placement of dredged or fill materials in coastal waters? (2.3, 3.1, 4, 5.3, 6.3)	<hr/>	<hr/> ✓
14.	Would the action be located in a commercial or recreational boating center, such as City Island, Sheepshead Bay or Great Kills or an area devoted to water-dependent transportation? (3)	<hr/>	<hr/> ✓
15.	Would the proposed project have an adverse effect upon the land or water uses within a commercial or recreation boating center or water-dependent transportation center? (3.1)	<hr/>	<hr/> ✓
16.	Would the proposed project create any conflicts between commercial and recreational boating? (3.2)	<hr/>	<hr/> ✓
17.	Does the proposed project involve any boating activity that would have an impact on the aquatic environment or surrounding land and water uses? (3.3)	<hr/>	<hr/> ✓
18.	Is the action located in one of the designated Special Natural Waterfront Areas (SNWA): Long Island Sound-East River, Jamaica Bay, or Northwest Staten Island? (4 and 9.2) The project site is located within the Long Island Sound SNWA. Therefore, the project's consistency with Policies 4 and 9.2 will be analyzed in the SEIS.	<hr/> ✓	<hr/>
19.	Is the project site in or adjacent to a Significant Coastal Fish and Wildlife Habitats? (4.1)	<hr/>	<hr/> ✓
20.	Is the site located within or adjacent to a Recognized Ecological Complex: South Shore of Staten Island or Riverdale Natural Area District? (4.1 and 9.2)	<hr/>	<hr/> ✓
21.	Would the action involve any activity in or near a tidal or freshwater wetland? (4.2)	<hr/>	<hr/> ✓
22.	Does the project site contain a rare ecological community or would the proposed project affect a vulnerable plant, fish, or wildlife species? (4.3) The project's consistency with Policy 4.3 will be determined in the SEIS.	<hr/>	<hr/>
23.	Would the action have any effects on commercial or recreational use of fish resources? (4.4)	<hr/>	<hr/> ✓
24.	Would the proposed project in any way affect the water quality classification of nearby waters or be unable to be consistent with that classification? (5) The project's consistency with Policy 5 will be determined in the SEIS.	<hr/>	<hr/>
25.	Would the action result in any direct or indirect discharges, including toxins, hazardous substances, or other pollutants, effluent, or waste, into any waterbody? (5.1)	<hr/>	<hr/> ✓
26.	Would the action result in the draining of stormwater runoff or sewer overflows into coastal waters? (5.1) The project's consistency with Policy 5.1 will be addressed in the SEIS.	<hr/>	<hr/>
27.	Will any activity associated with the project generate nonpoint source pollution? (5.2)	<hr/>	<hr/> ✓

Policy Questions cont'd:		Yes	No
28.	Would the action cause violations of the National or State air quality standards? (5.2) The project's consistency with Policy 5.2 will be addressed in the SEIS.	<hr/>	<hr/>
29.	Would the action result in significant amounts of acid rain precursors (nitrates and sulfates)? (5.2C)	<hr/>	<hr/> <input checked="" type="checkbox"/>
30.	Will the project involve the excavation or placing of fill in or near navigable waters, marshes, estuaries, tidal marshes or other wetlands? (5.3) The project's consistency with Policy 5.3 will be addressed in the SEIS.	<hr/>	<hr/>
31.	Would the proposed action have any effects on surface or ground water supplies? (5.4)	<hr/>	<hr/> <input checked="" type="checkbox"/>
32.	Would the action result in any activities within a Federally designated flood hazard area or State designated erosion hazards area? (6) The project site lies within the 100-year flood boundary. Therefore, the project's consistency with Policy 6 will be addressed in the SEIS.	<hr/> <input checked="" type="checkbox"/>	<hr/>
33.	Would the action result in any construction activities that would lead to erosion? (6)	<hr/>	<hr/> <input checked="" type="checkbox"/>
34.	Would the action involve construction or reconstruction of flood or erosion control structure? (6.1)	<hr/>	<hr/> <input checked="" type="checkbox"/>
35.	Would the action involve any new or increased activity on or near any beach, dune, barrier island, or bluff? (6.1)	<hr/>	<hr/> <input checked="" type="checkbox"/>
36.	Does the proposed project involve use of public funds for flood prevention or erosion control? (6.2)	<hr/>	<hr/> <input checked="" type="checkbox"/>
37.	Would the proposed project affect a non-renewable source of sand? (6.3)	<hr/>	<hr/> <input checked="" type="checkbox"/>
38.	Would the action result in shipping, handling, or storing of solid wastes; hazardous materials, or other pollutants? (7)	<hr/>	<hr/> <input checked="" type="checkbox"/>
39.	Would the action affect any sites that have been used as landfills? (7.1) The project's consistency with Policy 7.1 will be addressed in the SEIS.	<hr/>	<hr/>
40.	Would the action result in development of a site that may contain contamination or has a history of underground fuel tanks, oil spills, or other form or petroleum product use or storage? (7.2) The historical uses and conditions on and off the project site indicate the potential for adverse impacts related to hazardous materials. Therefore, the project's consistency with Policy 7.2 will be addressed in the SEIS.	<hr/> <input checked="" type="checkbox"/>	<hr/>
41.	Will the proposed activity result in any transport, storage, treatment, or disposal of solid wastes or hazardous materials, or the siting of a solid or hazardous waste facility? (7.3) The remediation of the project site may require the treatment and/or disposal of solid wastes or hazardous materials. Therefore, the project's consistency with Policy 7.3 will be addressed in the SEIS.	<hr/>	<hr/>
42.	Would the action result in a reduction of existing or required access to or along coastal waters, public access areas, or public parks or open spaces? (8)	<hr/>	<hr/> <input checked="" type="checkbox"/>
43.	Will the proposed project affect or be located in, on, or adjacent to any federal, state, or city park or other land in public ownership protected for open space preservation? (8) A portion of the project is located within the boundaries of Flushing Meadows Corona Park. Therefore, the project's consistency with Policy 8 will be addressed in the SEIS.	<hr/> <input checked="" type="checkbox"/>	<hr/>
44.	Would the action result in the provision of open space without the provision for its maintenance? (8.1)	<hr/>	<hr/> <input checked="" type="checkbox"/>
45.	Would the action result in any development along the shoreline but NOT include new water enhanced or water dependent recreational space? (8.2)	<hr/>	<hr/> <input checked="" type="checkbox"/>
46.	Will the proposed project impede visual access to coastal lands, waters and open space? (8.3) The project's consistency with Policy 8.3 will be addressed in the SEIS.	<hr/>	<hr/>
47.	Does the proposed project involve publically owned or acquired land that could accommodate waterfront open space or recreation? (8.4)	<hr/>	<hr/> <input checked="" type="checkbox"/>
48.	Does the project site involve lands or waters held in public trust by the state or city? (8.5)	<hr/>	<hr/> <input checked="" type="checkbox"/>

Policy Questions cont'd:**Yes****No**

49. Would the action affect natural or built resources that contribute to the scenic quality of a coastal area? (9) _____ ✓ _____
50. Does the site currently include elements that degrade the area's scenic quality or block views to the water? (9.1) **The project's consistency with Policy 9.1 will be addressed in the SEIS.** _____ ✓ _____
51. Would the proposed action have a significant adverse impact on historic, archeological, or cultural resources? (10) **As disclosed in the FGEIS, the proposed project would demolish the former Empire Millwork Corporation Building, which has been determined eligible for listing on the New York State and National Registers of Historic Places (S/NR), and thus would have a significant adverse impact on historic resources.** _____ ✓ _____
52. Will the proposed activity affect or be located in, on, or adjacent to an historic resource listed on the National or State Register of Historic Places, or designated as a landmark by the City of New York? (10) _____ ✓ _____

D. CERTIFICATION

The applicant must certify that the proposed activity is consistent with New York City's Waterfront Revitalization Program, pursuant to the New York State Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If the certification can be made, complete this section.

"The proposed activity complies with New York State's Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent Name:

Queens Development Group,**c/o Jesse Masyr, Wachtel, Masyr & Missry, LLP**

Address:

1 Dag Hammarskjold Plaza, 47th Floor, New York, NY 10117

Telephone

212-909-9500

Applicant/Agent Signature:

Date: **8/27/2012**

Appendix B
Agency Correspondence

ENVIRONMENTAL REVIEW

DME /07DME014Q

02/02/07

PROJECT NUMBER

DATE RECEIVED

PROJECT

WILLETS PT. DEV. PLAN

- ☒ [X] No architectural significance
- ☒ [X] No archaeological significance
- ☐ [] Designated New York City Landmark or Within Designated Historic District
- ☐ [] Listed on National Register of Historic Places
- ☐ [] Appears to be eligible for National Register Listing and/or New York City Landmark Designation
- ☐ [] May be archaeologically significant; requesting additional materials

COMMENTS

The LPC is in receipt of the draft EAS and draft scope of work for EIS (SEIS) dated 2/2/07. Based on these documents and the block/lot list provided by EDC, no architectural or archaeological resources have been identified on the project site or in the project study area. This information should be disclosed in the EAS and SEIS.



SIGNATURE

02/07/07

DATE



New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

www.nysparks.com

Elliot Spitzer
Governor

Carol Ash
Commissioner

November 19, 2007

Carey Jones
Historian
AKRF
440 Park Avenue South, 7th floor
New York, NY 10016

Re: CEQR
Willeys Pointe Development
Queens County
07PR04413

Dear Ms. Jones,

Thank you for requesting the comments of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) with regard to the potential for this project to affect significant historical/cultural resources. OPRHP has reviewed the Phase 1 Archaeological report prepared and submitted for this project. Based on our review of that report, the OPRHP has no further archaeological concerns regarding this project.

Please note that if state and or federal permits are necessary, the project will need to be reviewed in accordance with Section 14.09 of the State Historic Preservation Act or Section 106 of the National Historic Preservation Act. While archaeological issues with the site have been addressed, please continue to consult with our technical review staff regarding architectural resources.

Please contact me at extension 3291, or by e-mail at douglas.mackey@oprhp.state.ny.us, if you have any questions regarding these comments.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre Street, 9N, New York, NY 10007 (212) 669-7700 www.nyc.gov/landmarks

ENVIRONMENTAL REVIEW

DEPUTY MAYOR FINANCE/ECO DEV/07DME014Q

9/2/2008

Project number

Date received

Project: WILLETS POINT

Properties with no Architectural or archaeological significance:

ROOSEVELT AVENUE, BBL 4020181500

9/3/2008

SIGNATURE

DATE

A handwritten signature in black ink, reading "Gina Santucci". The signature is written in a cursive, flowing style. The first name "Gina" is followed by a space and then the last name "Santucci". The signature is positioned below the "SIGNATURE" label and to the left of the "DATE" label.

7367_FSO_DNP_09032008.doc

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre Street, 9N, New York, NY 10007 (212) 669-7700 www.nyc.gov/landmarks

ENVIRONMENTAL REVIEW

DEPUTY MAYOR FINANCE/ECO DEV/LA-CEQR-Q

9/4/2008

Project number

Date received

Project: WILLETS POINT

Properties with no archaeological significance:

130 STREET, BBL 4042060100
23 AVENUE, BBL 4042070001
58-26 47 STREET, BBL 4026010025

9/4/2008

SIGNATURE

DATE

A handwritten signature in black ink, reading "Gina Santucci". The signature is written in a cursive, flowing style.

24979_FSO_DNP_09042008.doc

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre Street, 9N, New York, NY 10007 (212) 669-7700 www.nyc.gov/landmarks

ENVIRONMENTAL REVIEW

DEPUTY MAYOR FINANCE/ECO DEV/07DME014Q

9/10/2008

Project number

Date received

Project: WILLETS POINT

Properties with no archaeological significance:

122-02 28 AVENUE, BBL 4043170001
28 AVENUE, BBL 4043170020

9/10/2008

SIGNATURE

DATE

A handwritten signature in black ink, reading "Gina Santucci". The signature is written in a cursive, flowing style.

7367_FSO_GS_09102008.doc

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre St., 9N, New York, NY 10007 (212) 380-7700

ENVIRONMENTAL REVIEW

DPR/02DPR001Q
PROJECT NUMBER

12/14/01
DATE RECEIVED


PROJECT

SHEA STDM REDEVELOPMENT: SHEA STADIUM REDEVELOPMENT

- ☐ No architectural significance
- ☒ No archaeological significance
- ☐ Designated New York City Landmark or Within Designated Historic District
- ☐ Listed on National Register of Historic Places
- ☒ Appears to be eligible for ~~National Register Listing and/or~~ New York City Landmark Designation
- ☐ May be archaeologically significant; requesting additional materials

COMMENTS

The LPC is in receipt of the full DEIS for this project dated November 13, 2001. The text is acceptable. Please note that the Candela Structures, built in 1964 and eligible for LPC designation, are not eligible for listing on the State and National Registers, as such properties must be at least 50 years old.


SIGNATURE

12/14/01
DATE

ENVIRONMENTAL REVIEW

DPR/02DPR001Q
PROJECT NUMBER

11/08/01
DATE RECEIVED

PROJECT

SHEA STDM REDEVELOPMENT: SHEA STADIUM REDEVELOPMENT

- ☐ No architectural significance
- ☒ No archaeological significance
- ☐ Designated New York City Landmark or Within Designated Historic District
- ☐ Listed on National Register of Historic Places
- ☒ Appears to be eligible for ~~National Register Listing and/or~~ New York City Landmark Designation
- ☐ May be archaeologically significant; requesting additional materials

within
project
study
area

COMMENTS

The LPC is in receipt of Chapter 6, "Historic Resources" of the DEIS dated 10/01. Within the project study area and listed as a potential historic resource are the Candela bus shelters. They appear eligible for designation as NYC landmarks. No adverse impacts are anticipated to the structures as a result of the action.

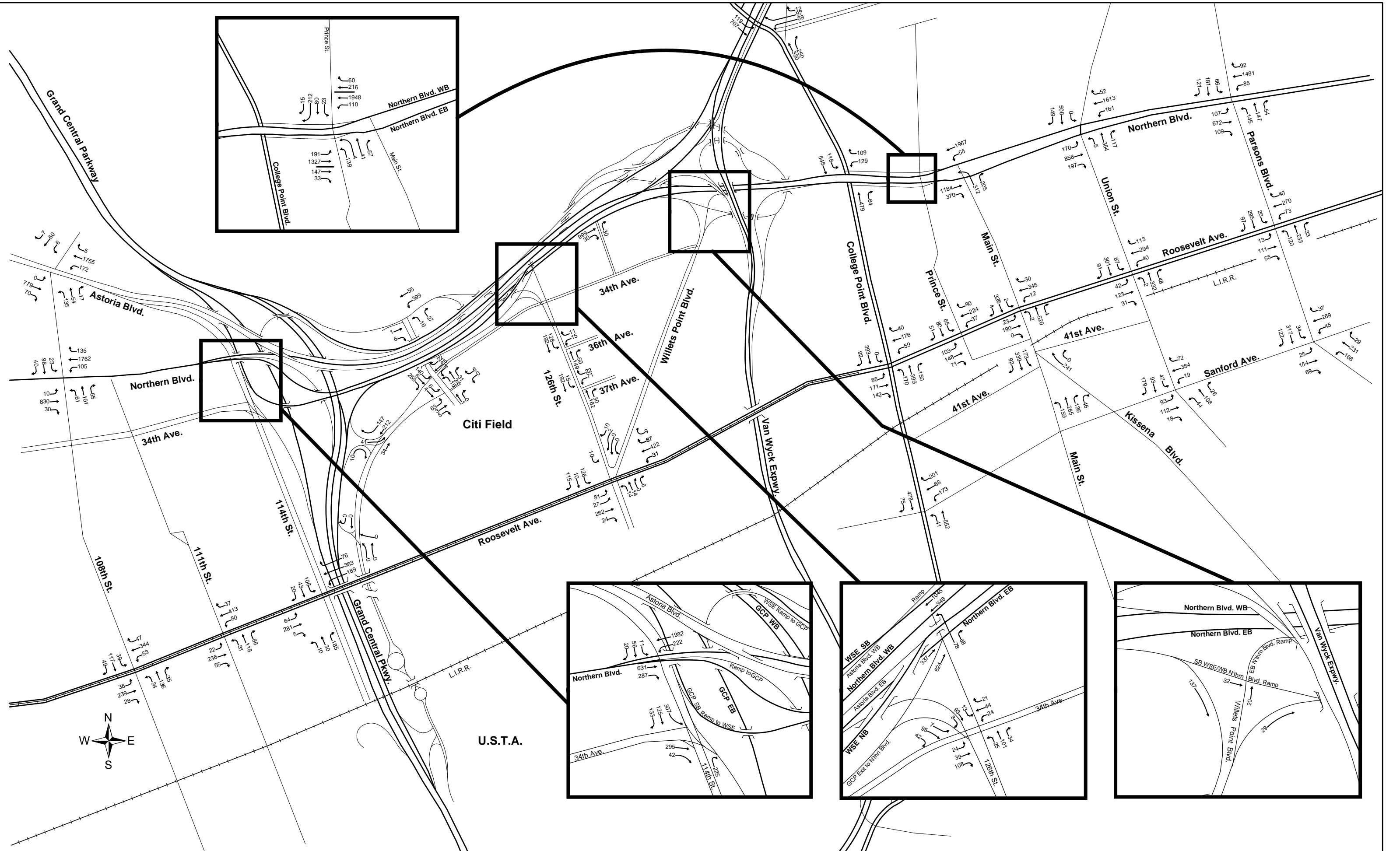
The LPC is in receipt of The Stage 1A Archaeological Assessment for Shea Stadium Redevelopment dated October 2001 and prepared by Historical Perspectives Inc. The LPC concurs that there are no further concerns. Please submit three bound copies of the study for archival distribution.

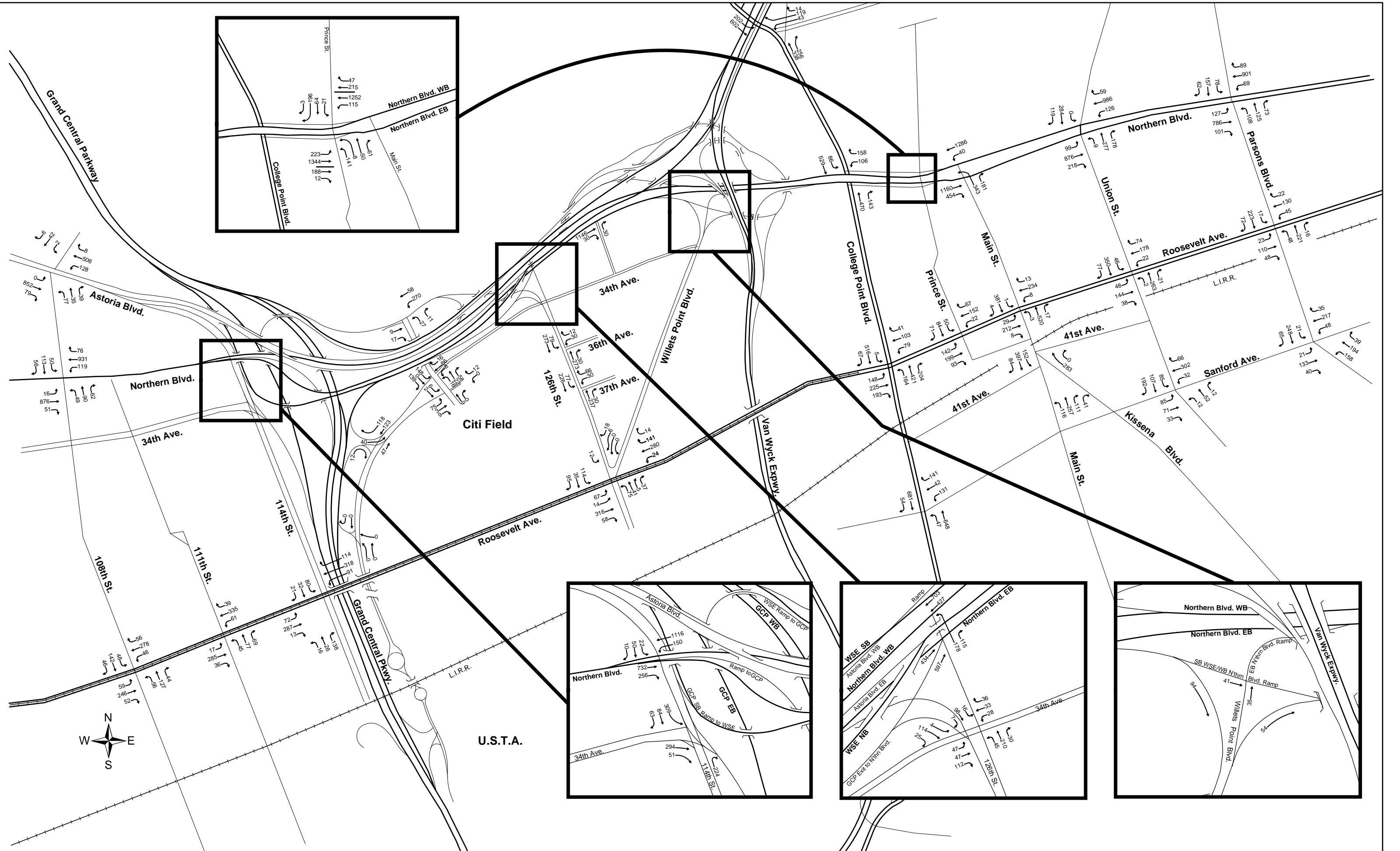

SIGNATURE

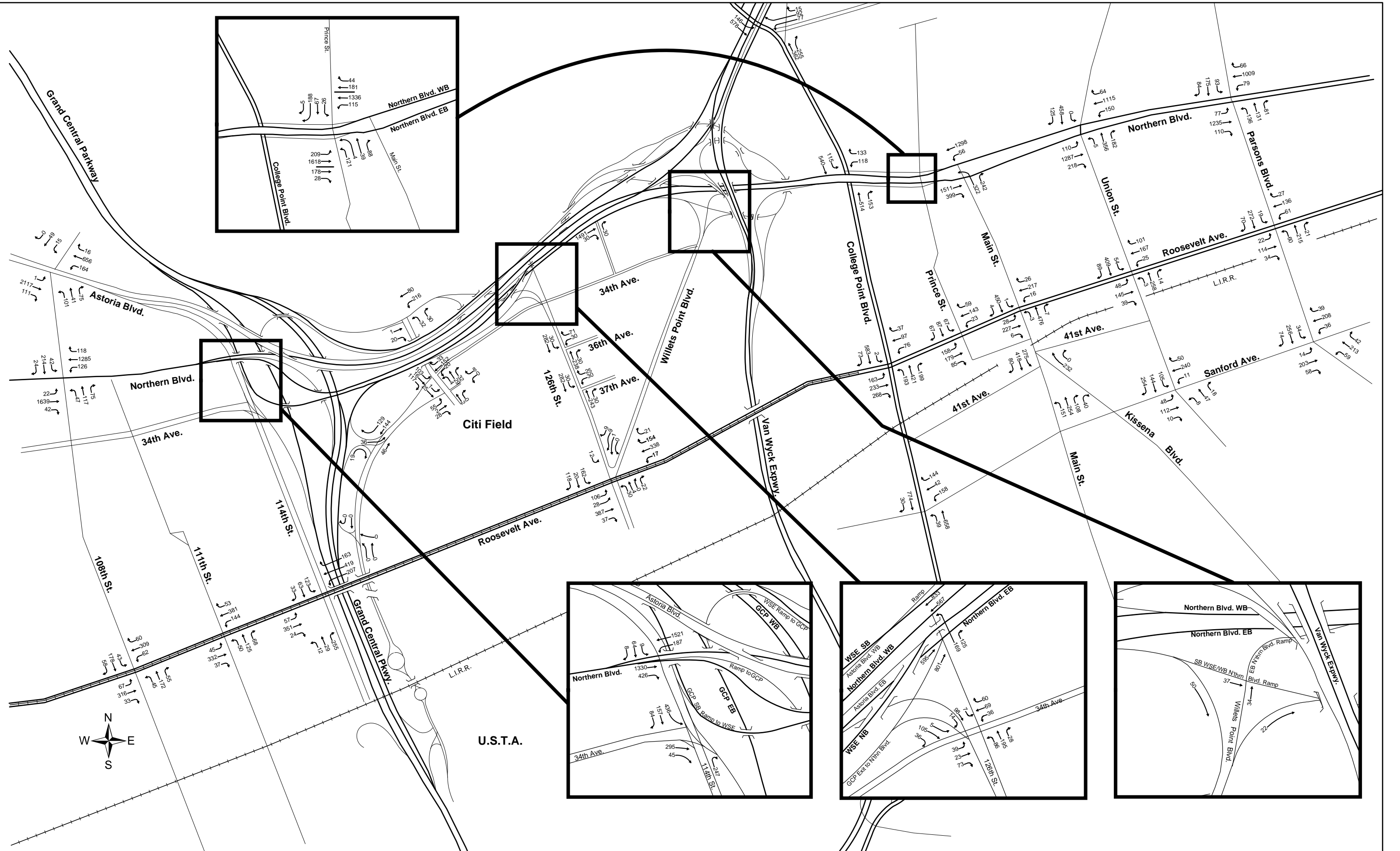
11/28/01
DATE

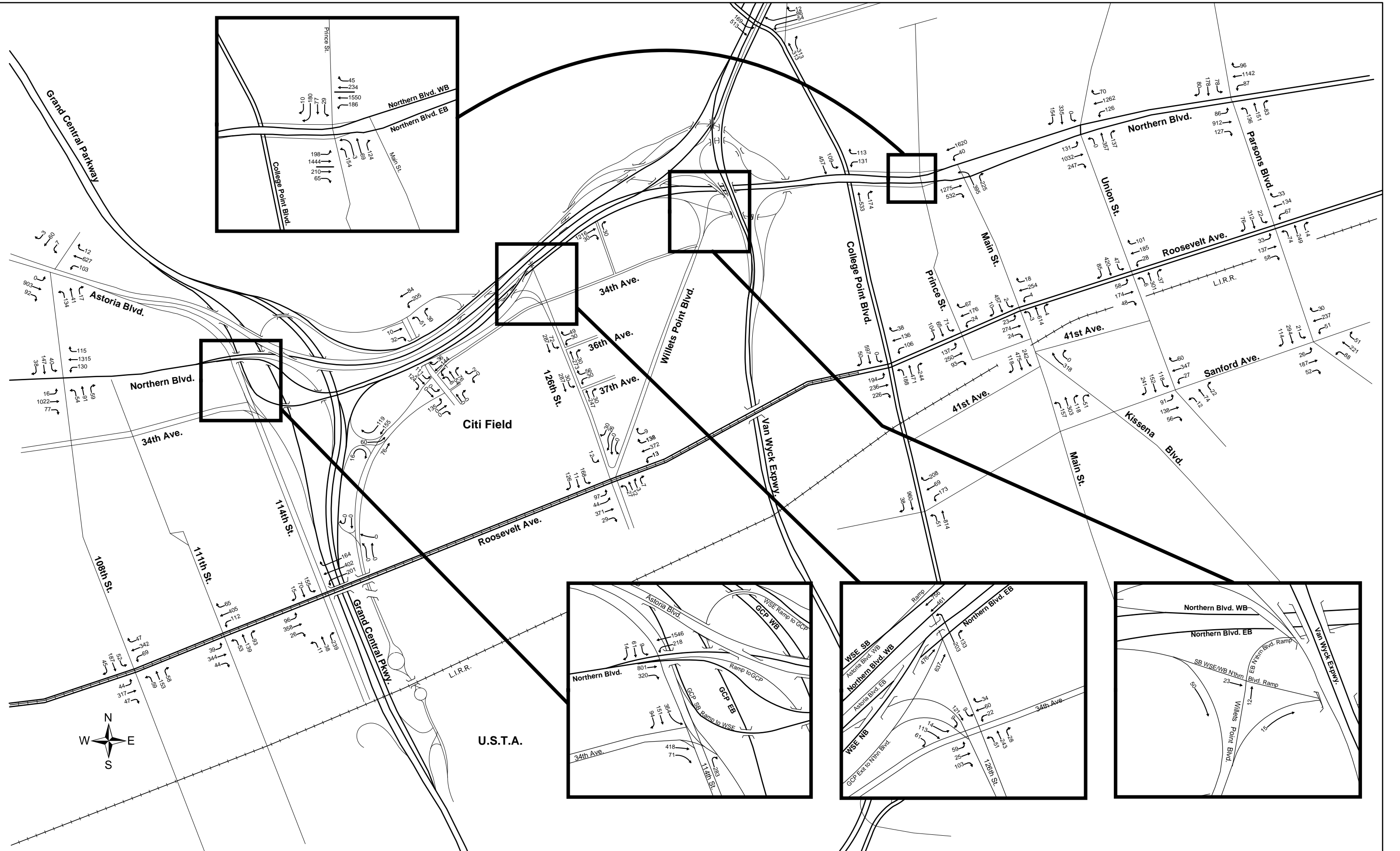
Appendix C

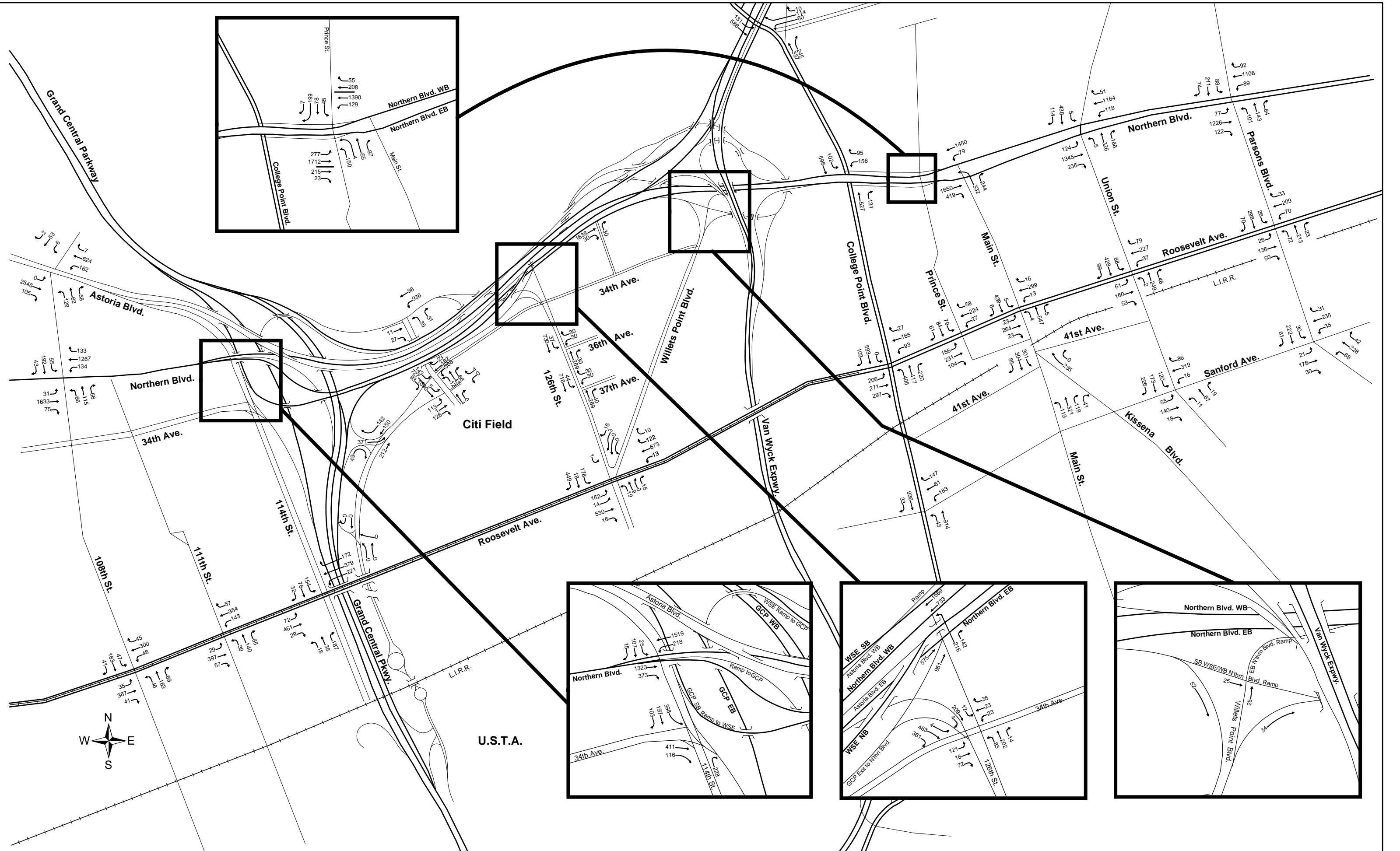
Traffic

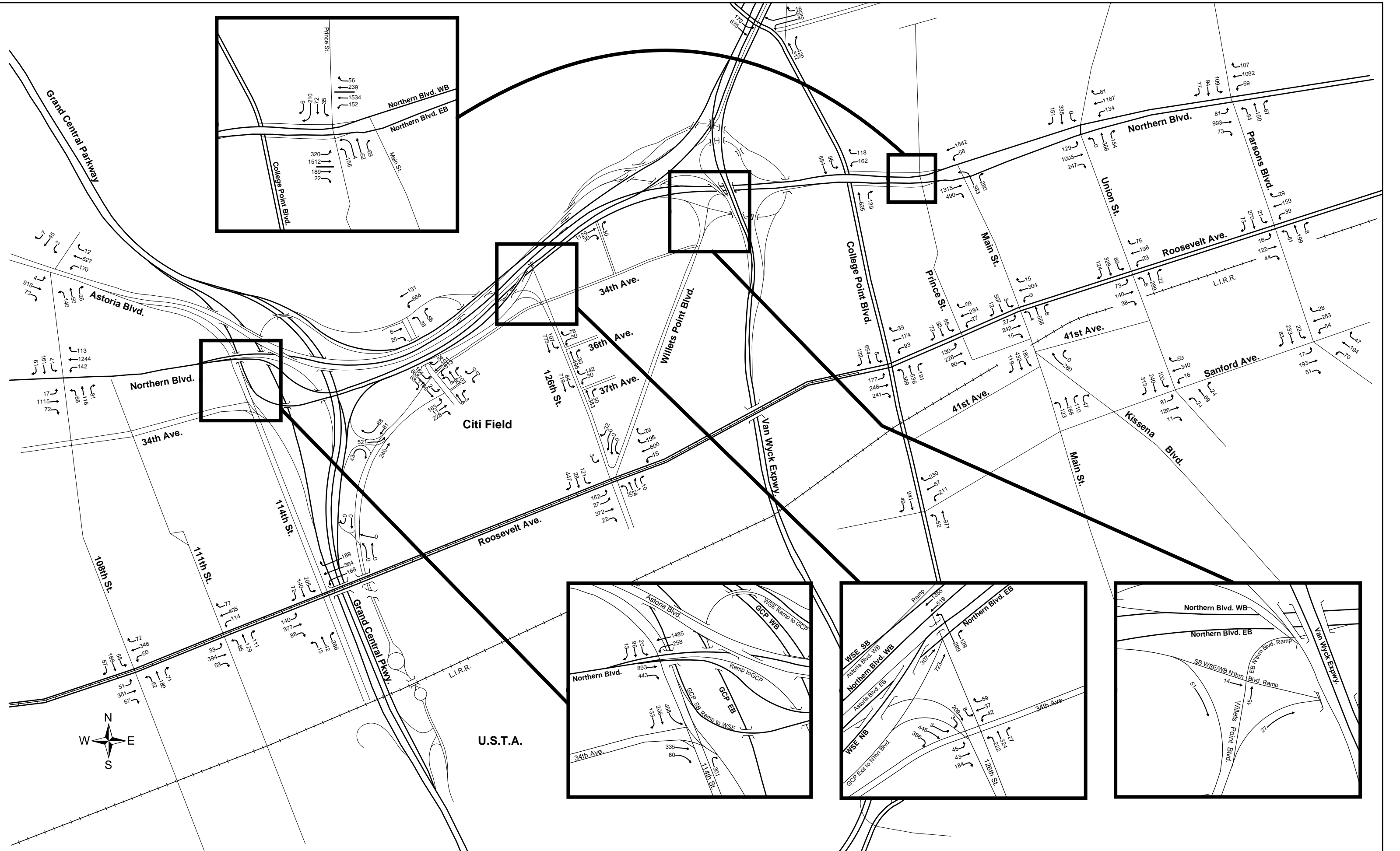


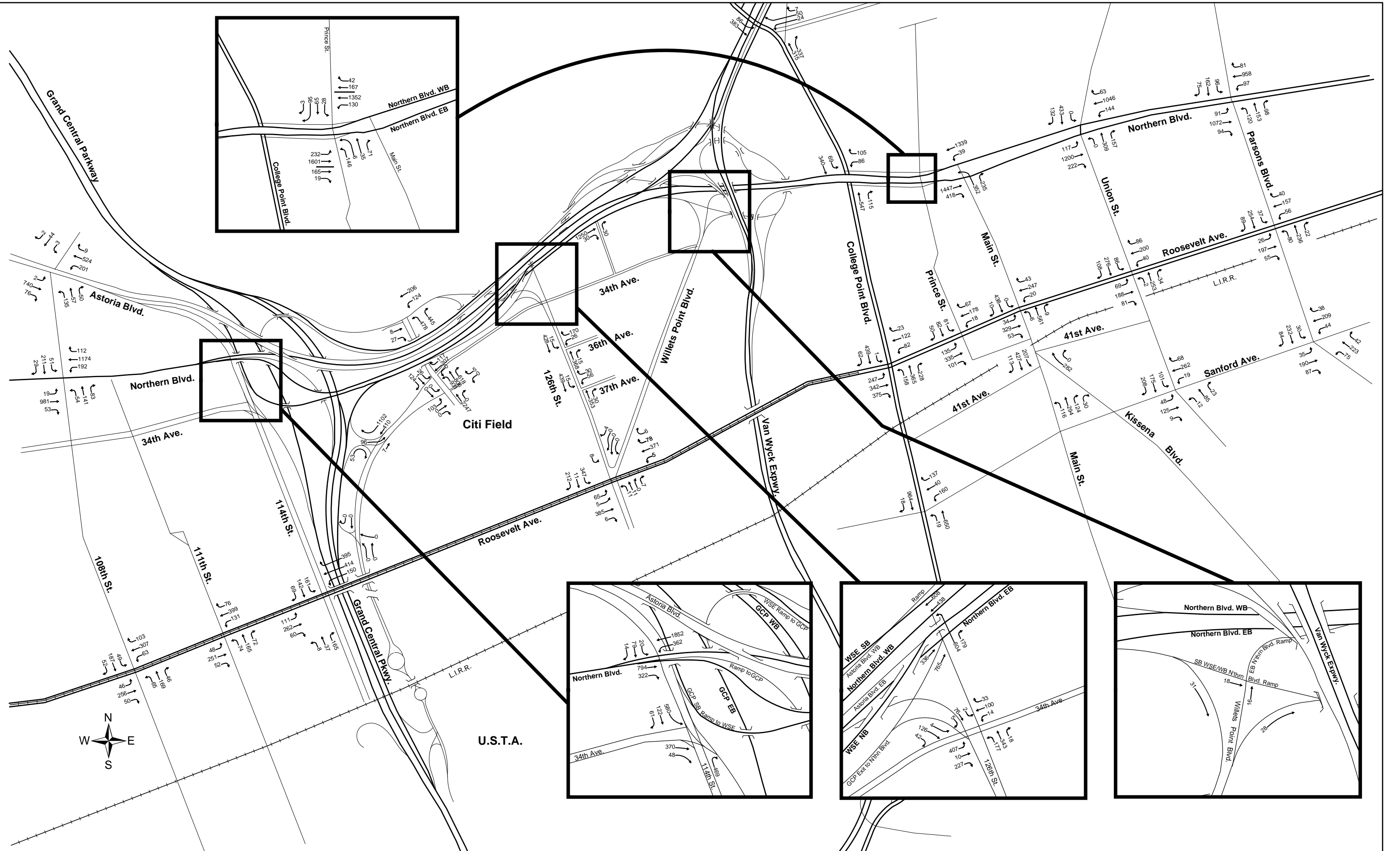


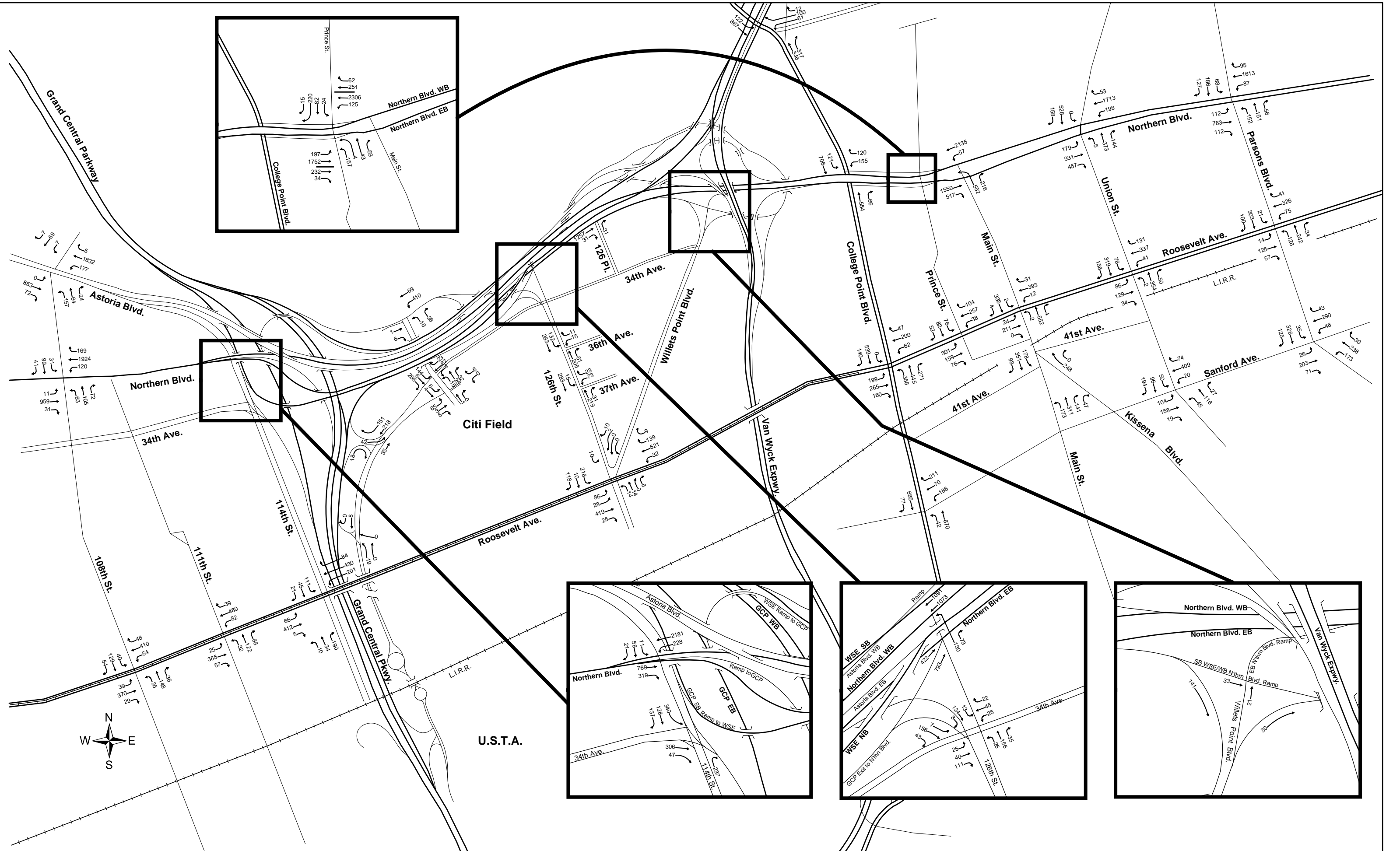


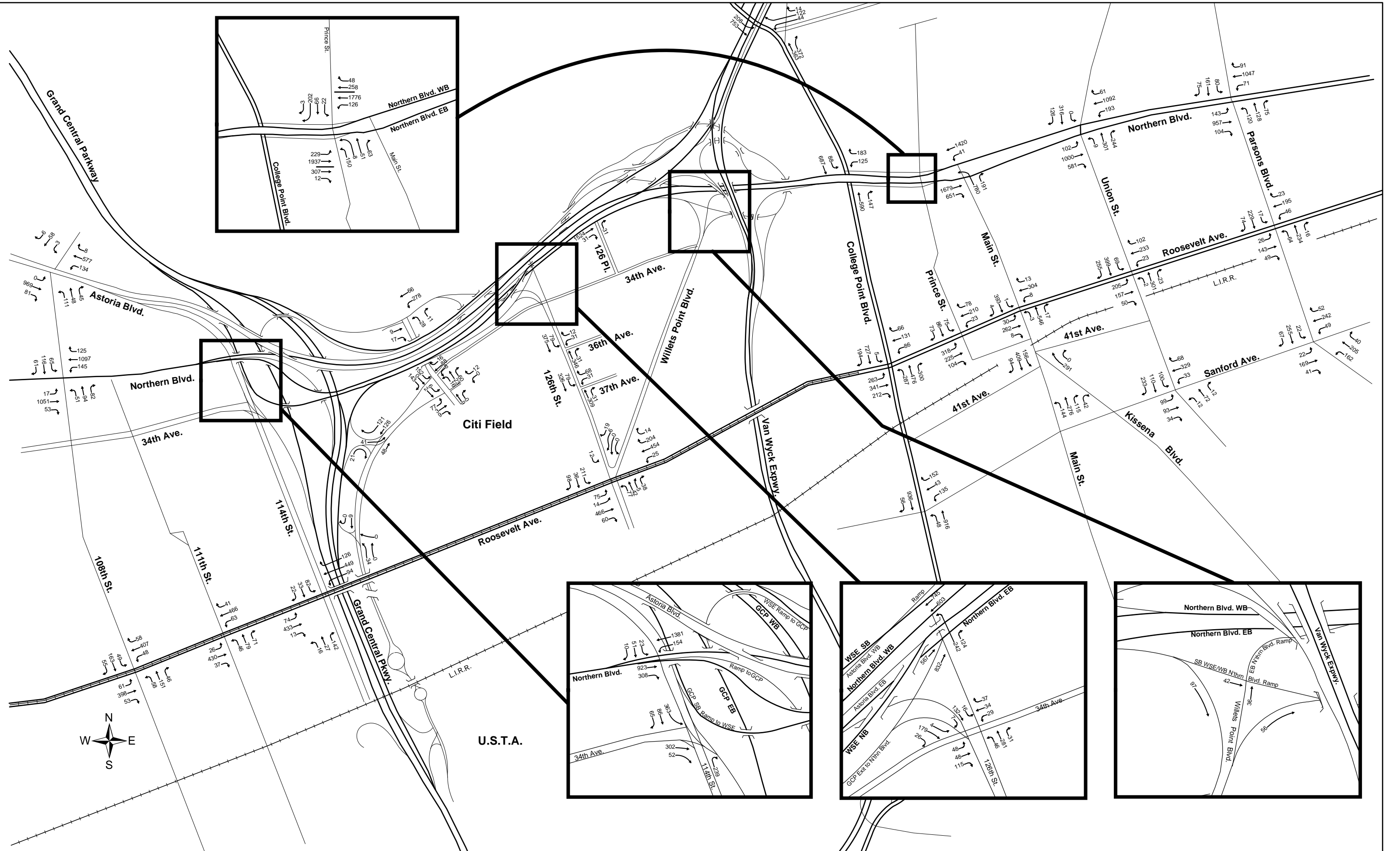


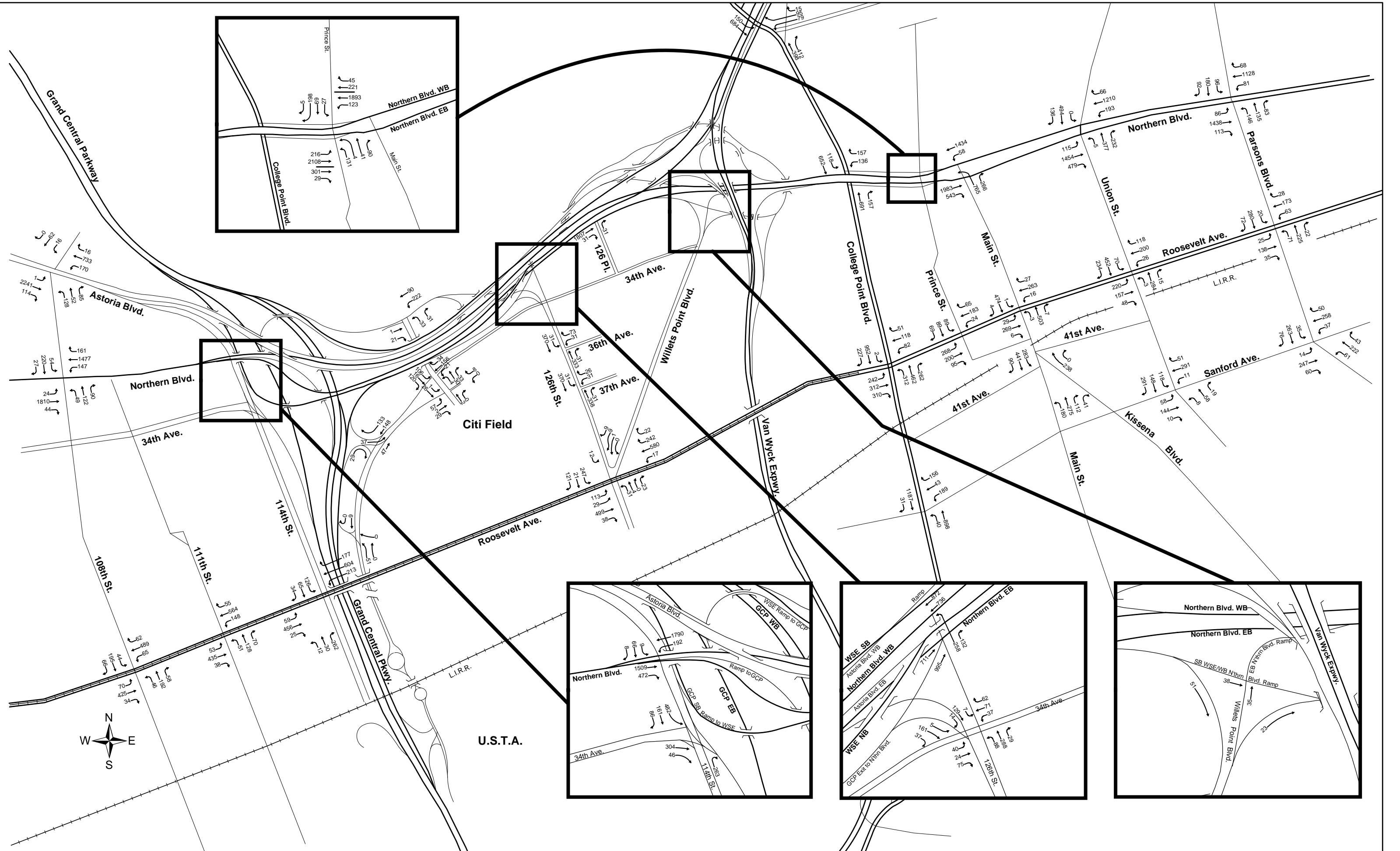


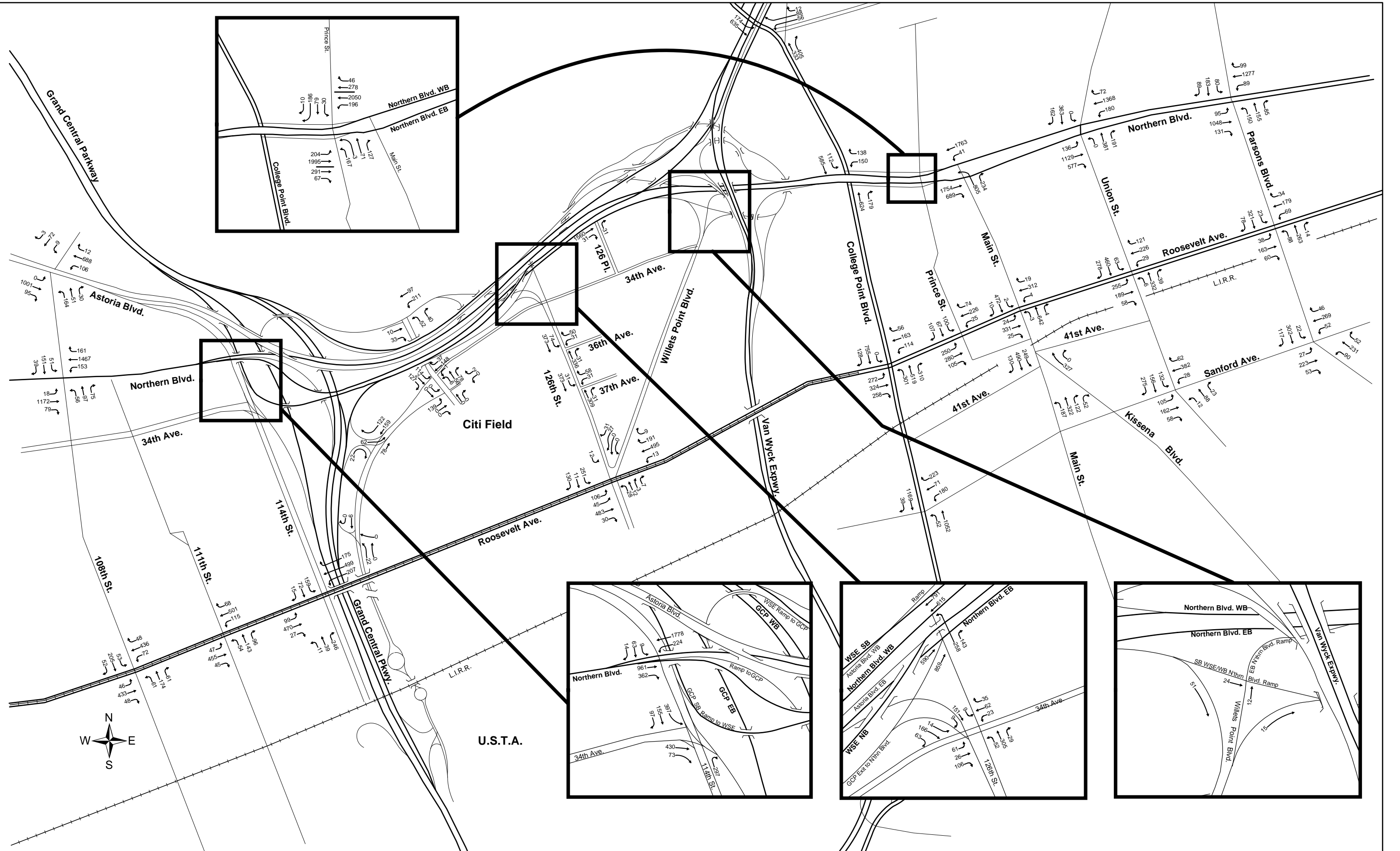


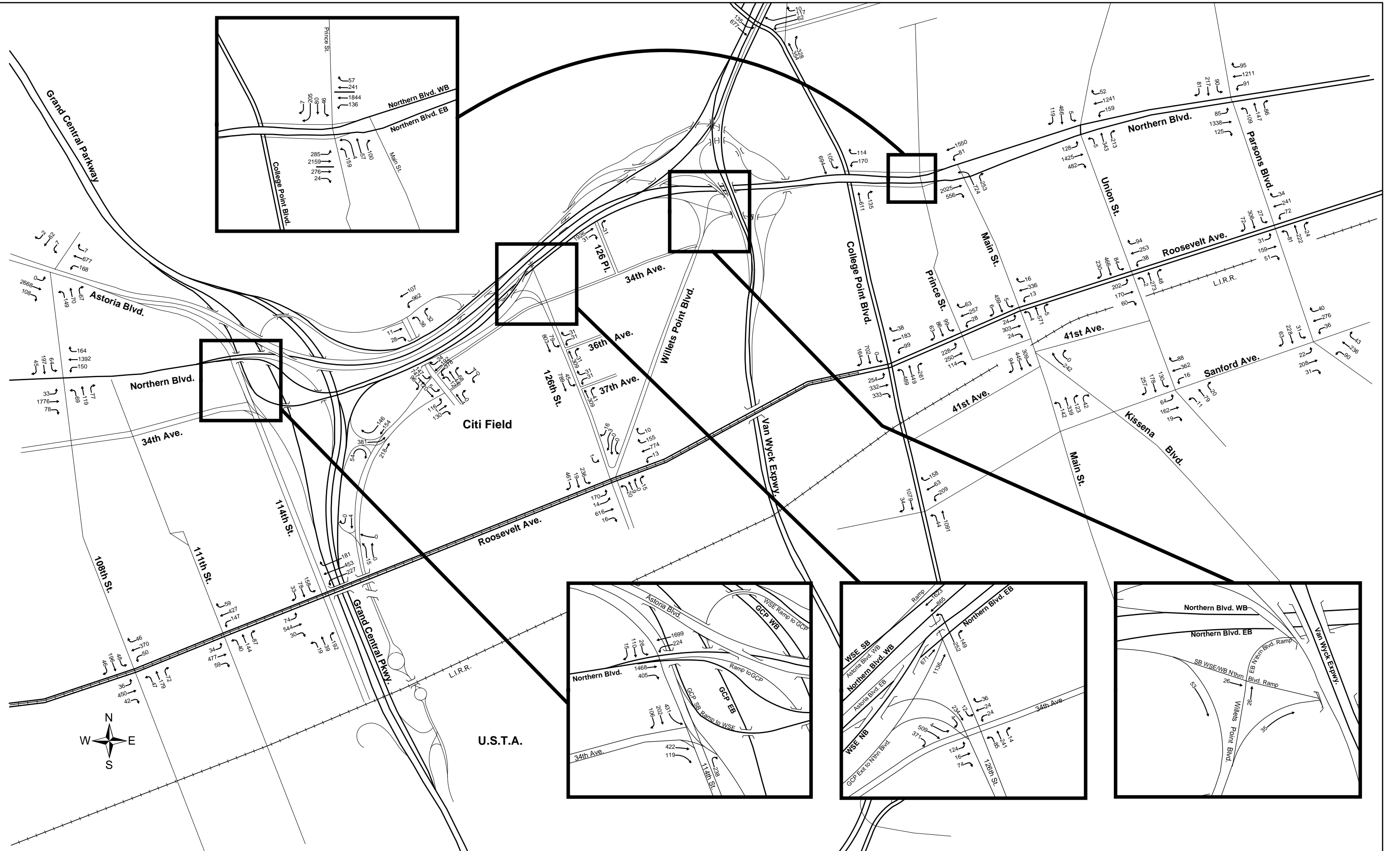


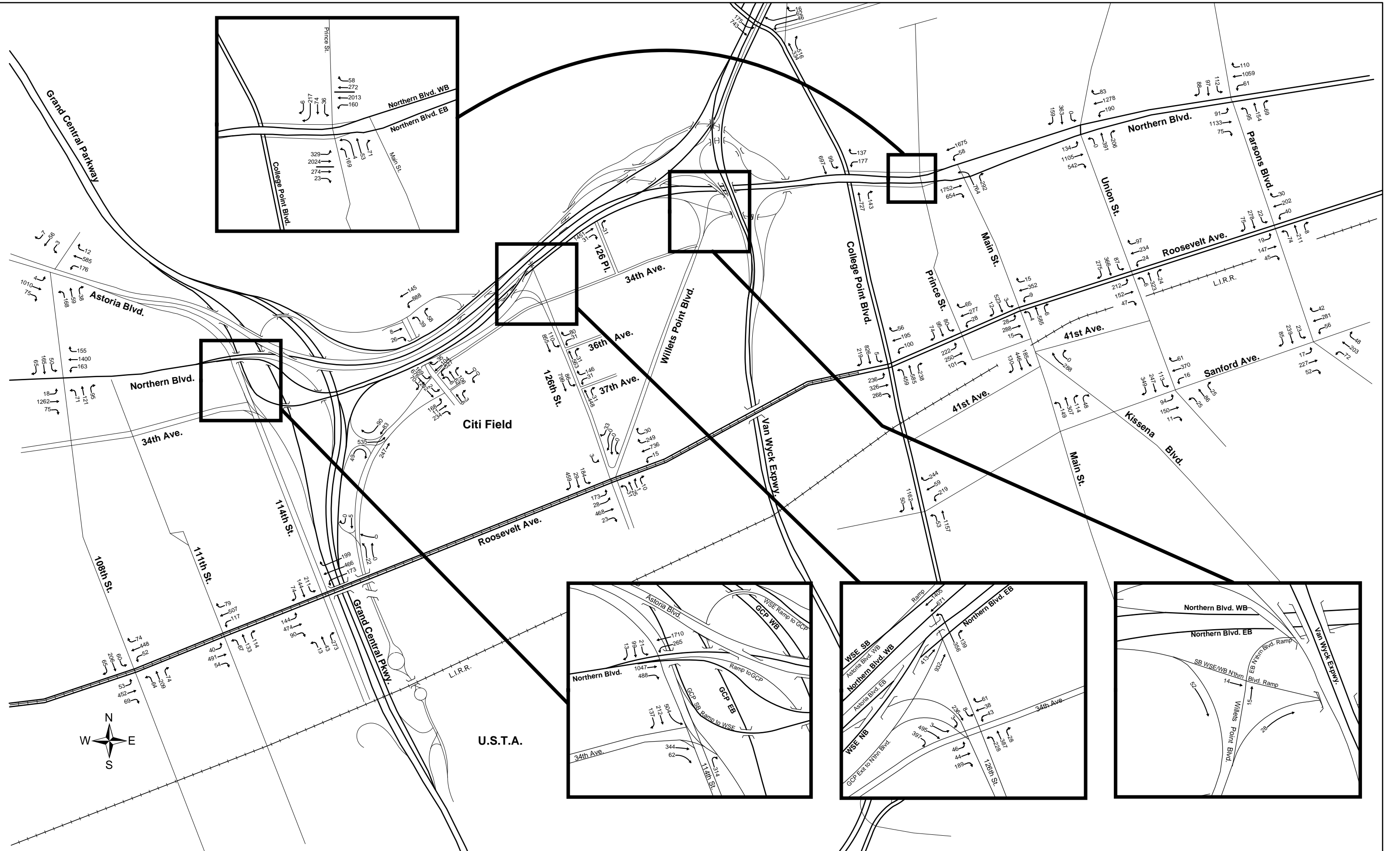


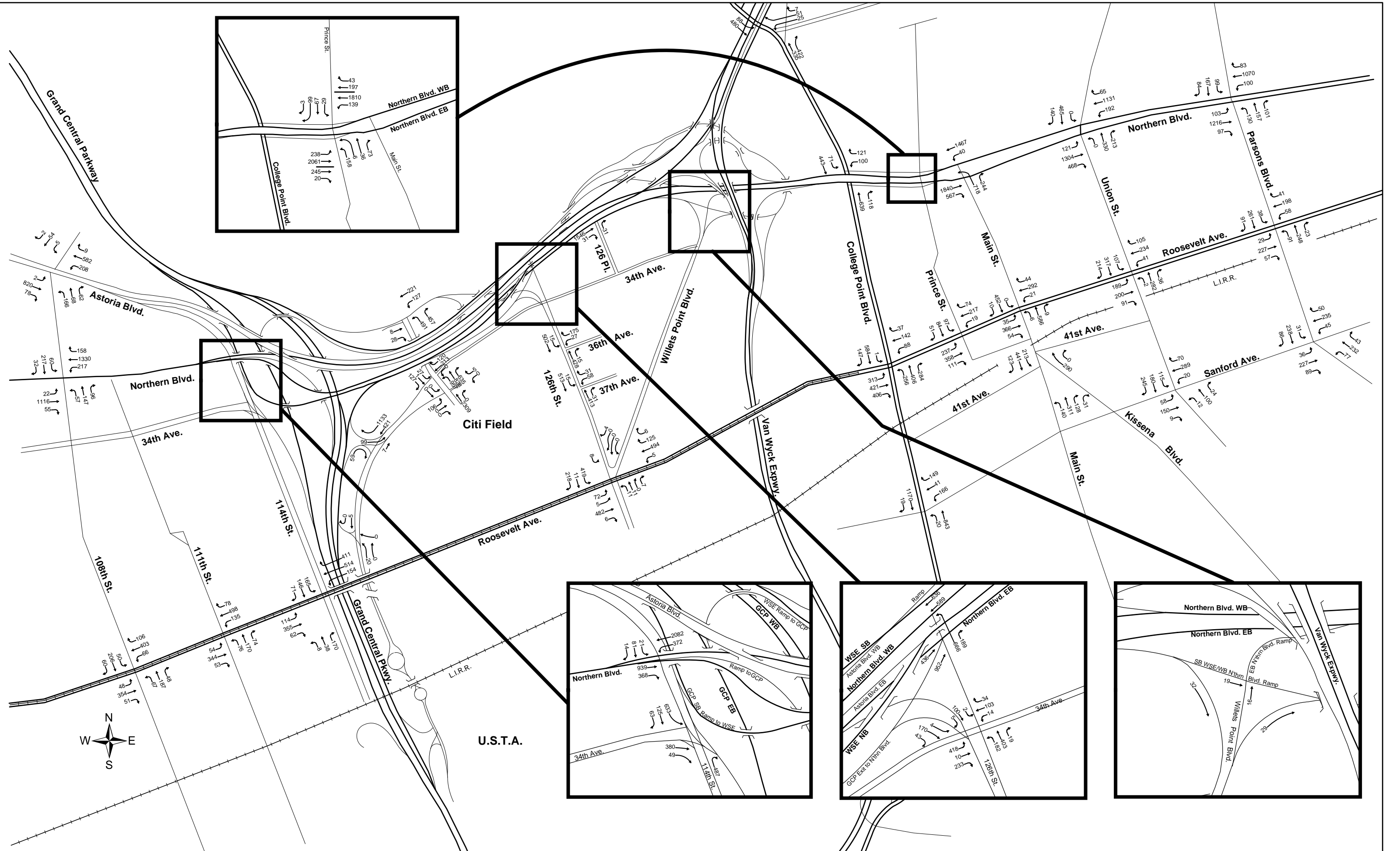


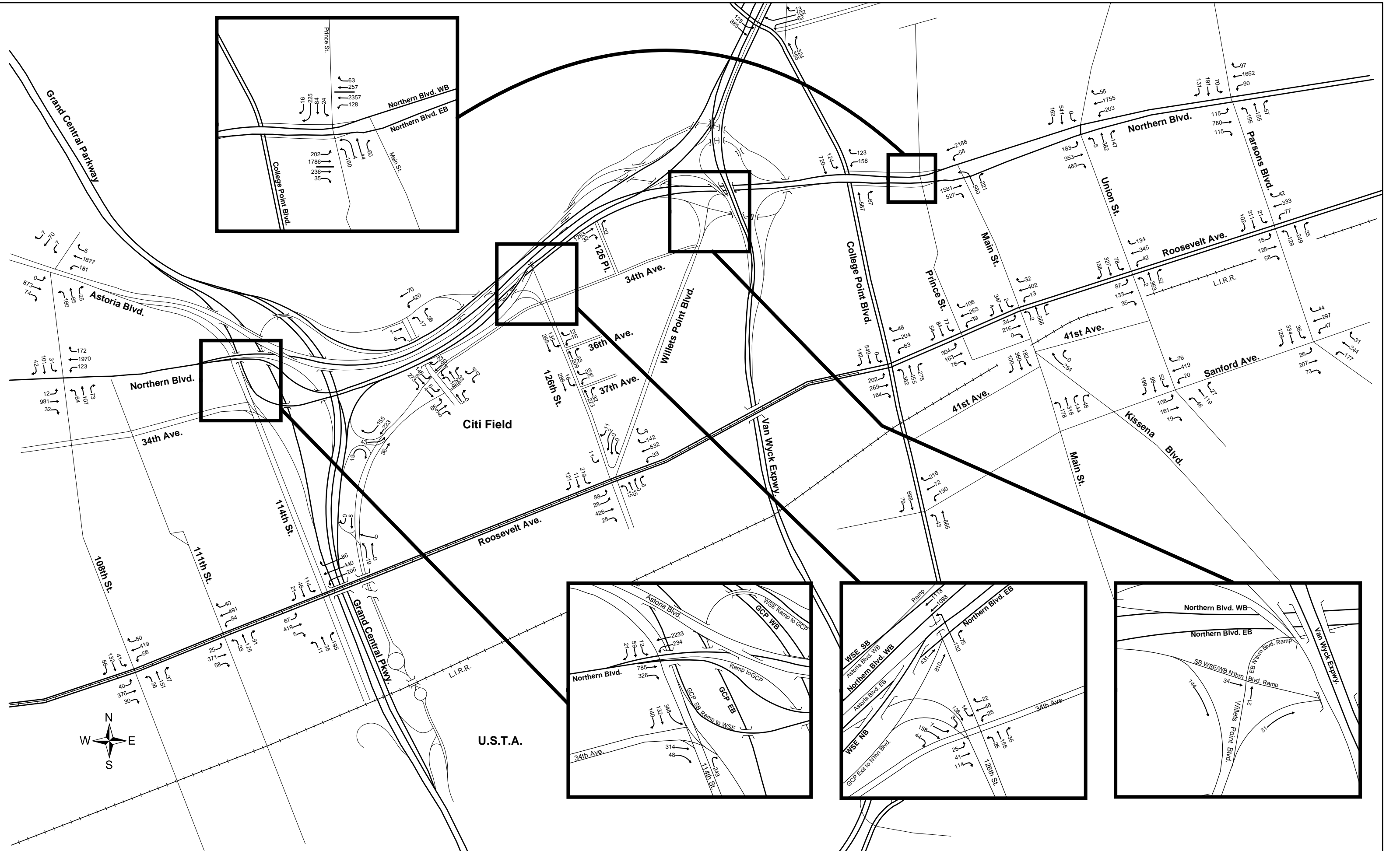


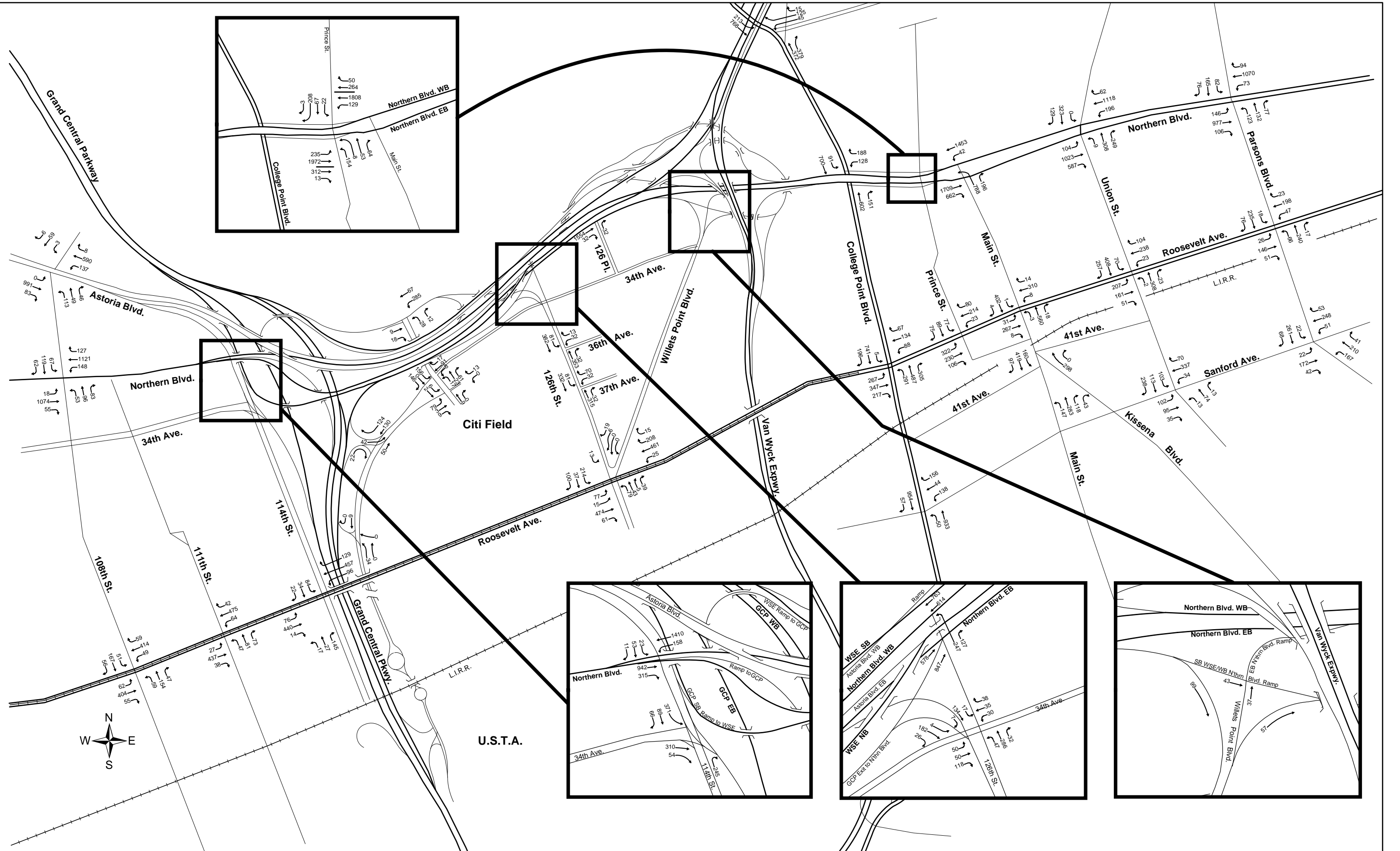


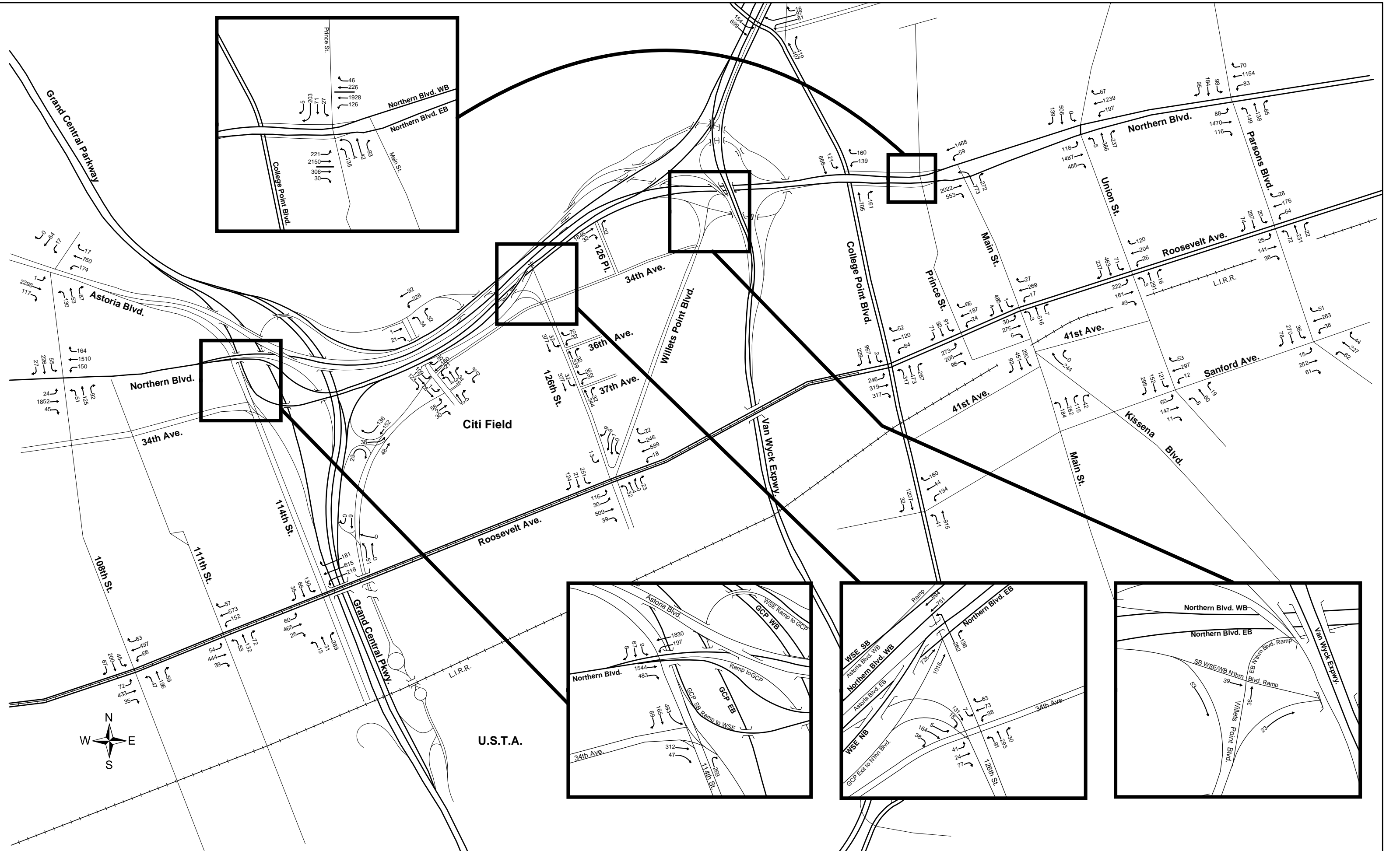


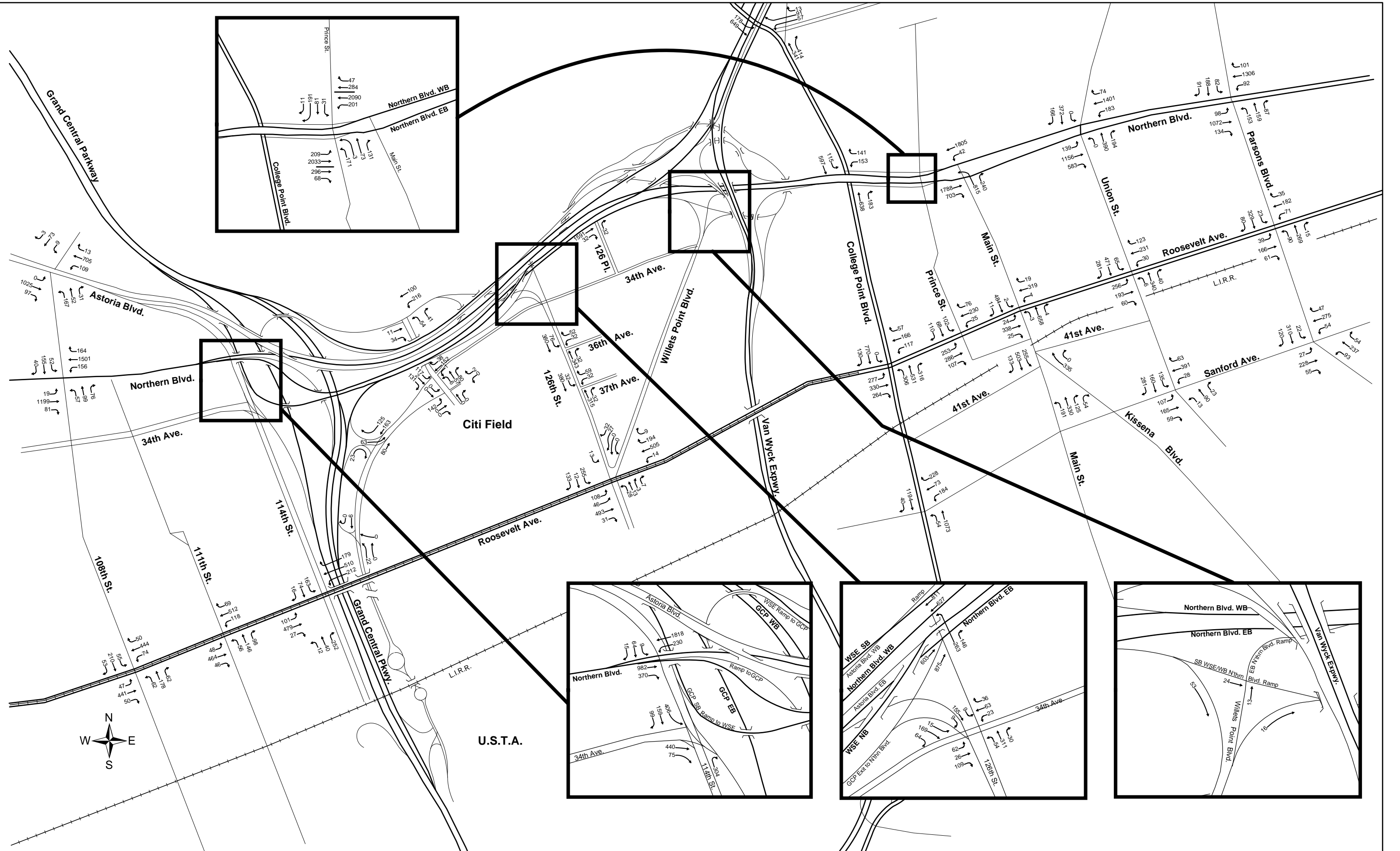


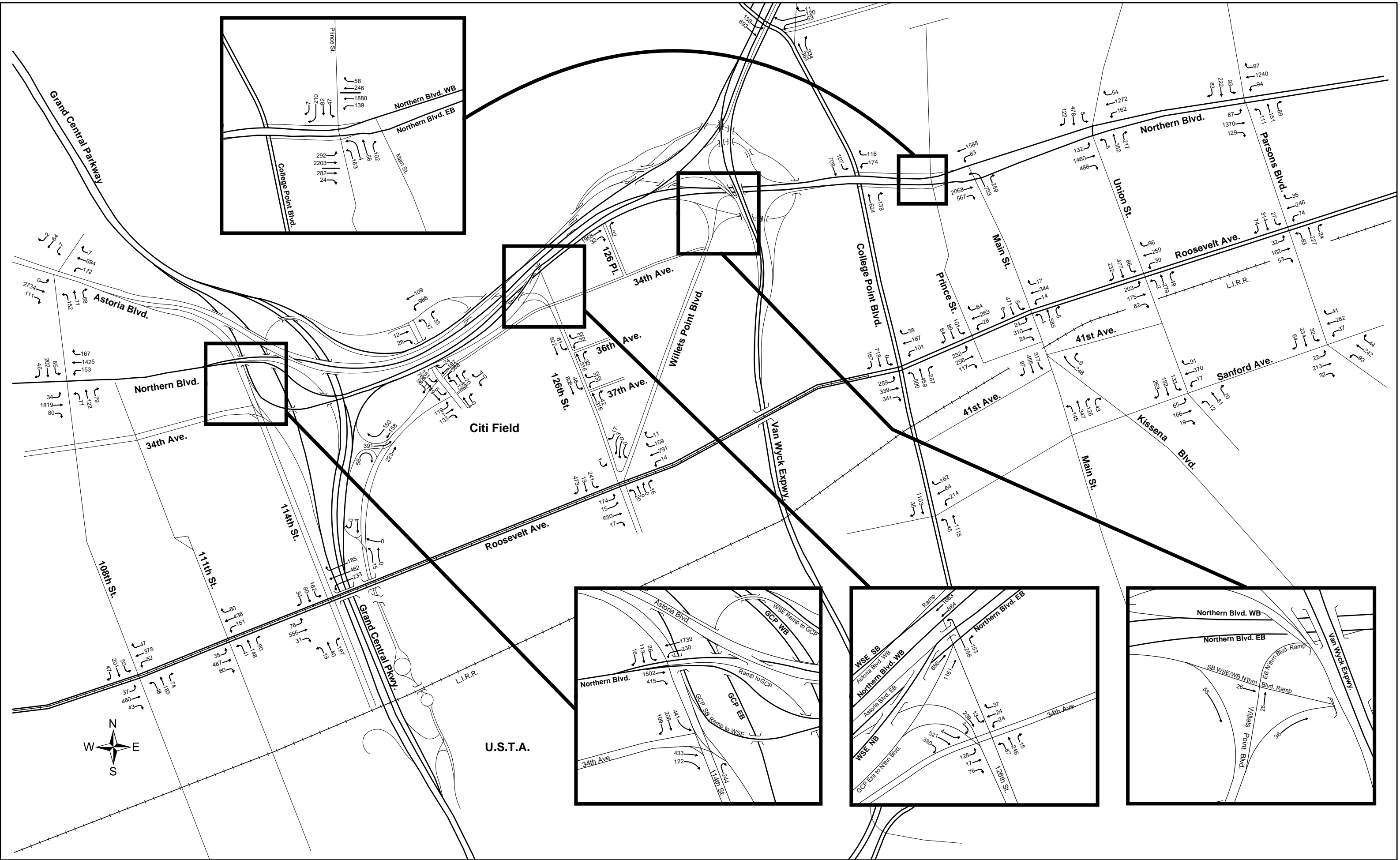


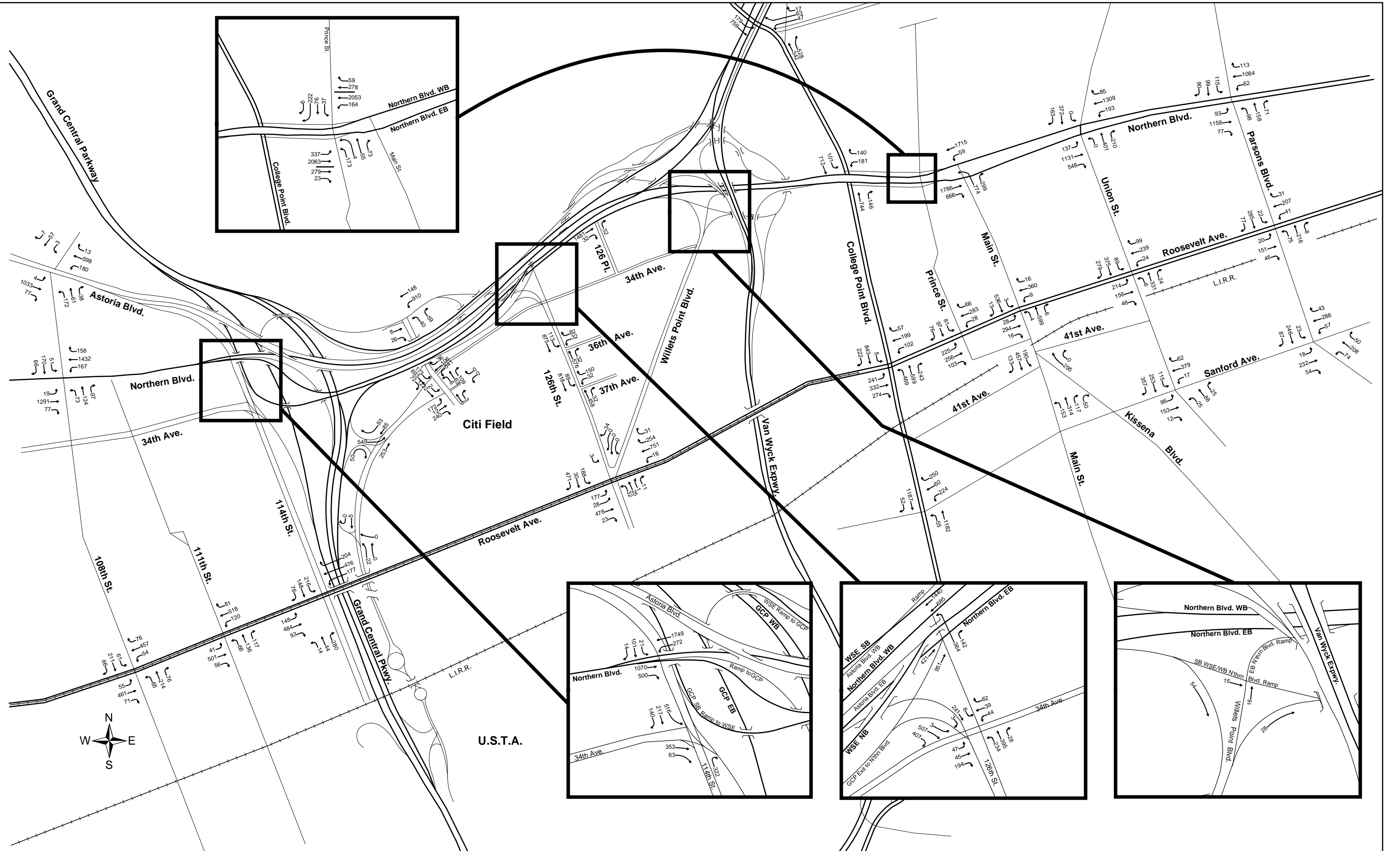


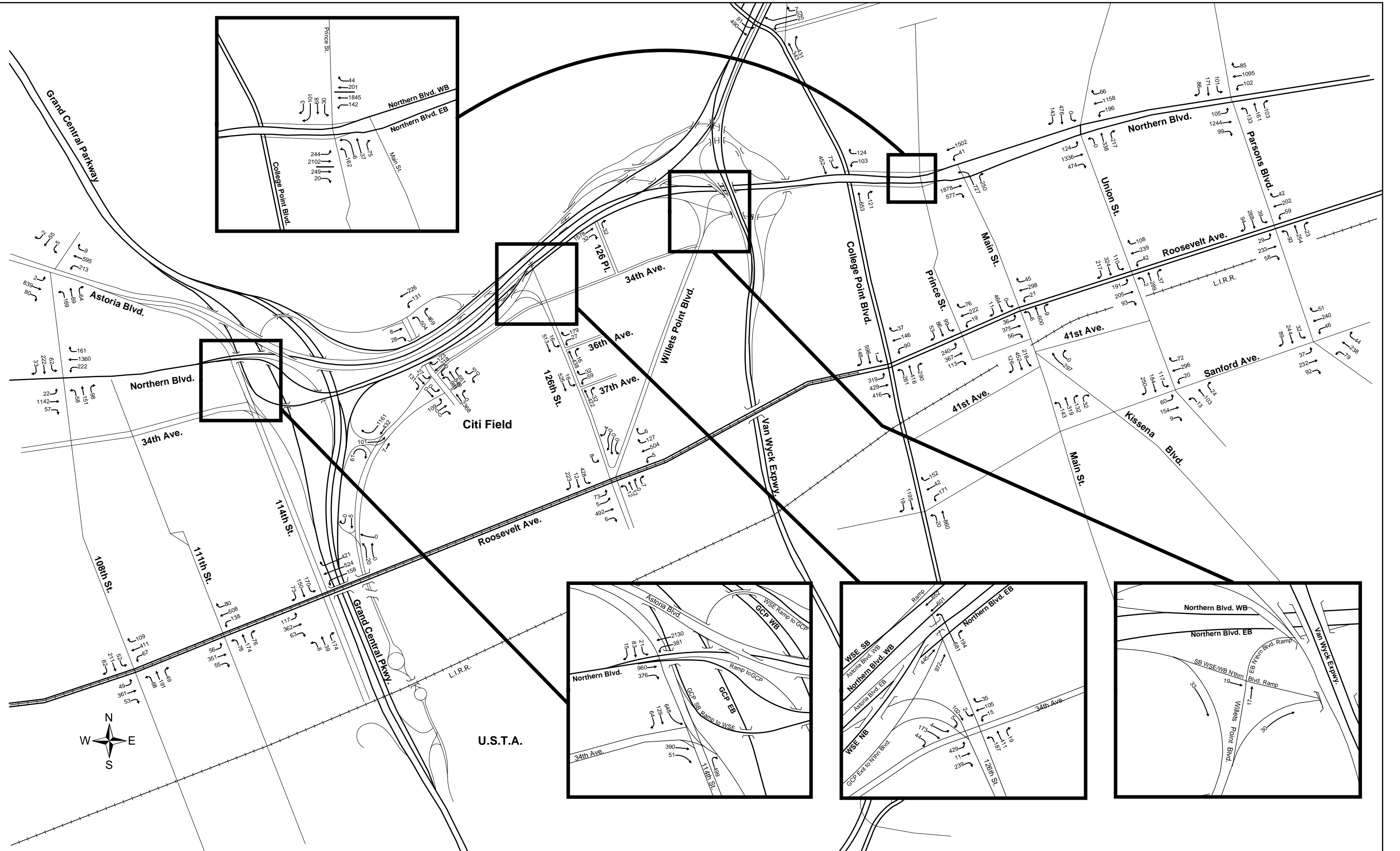


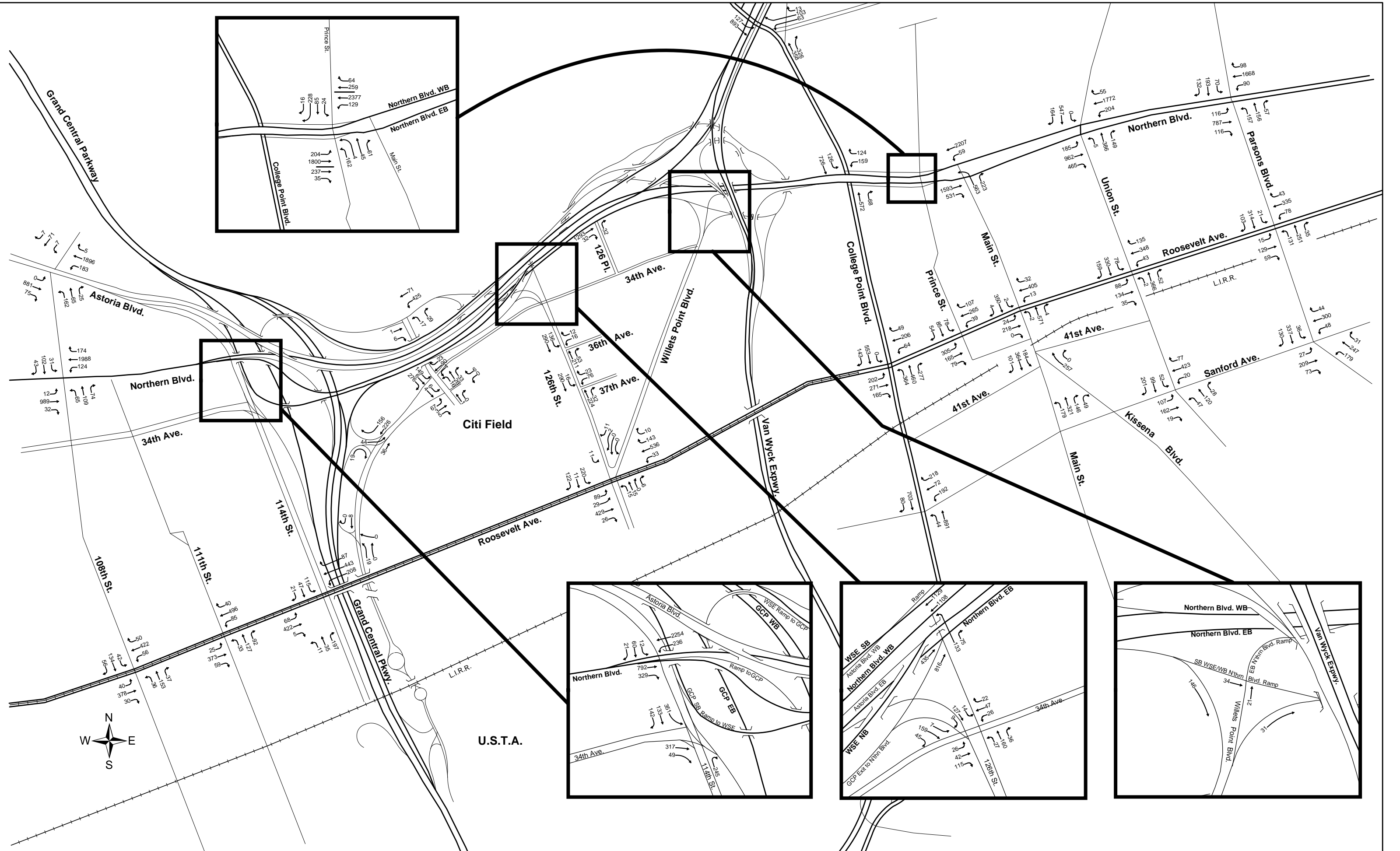


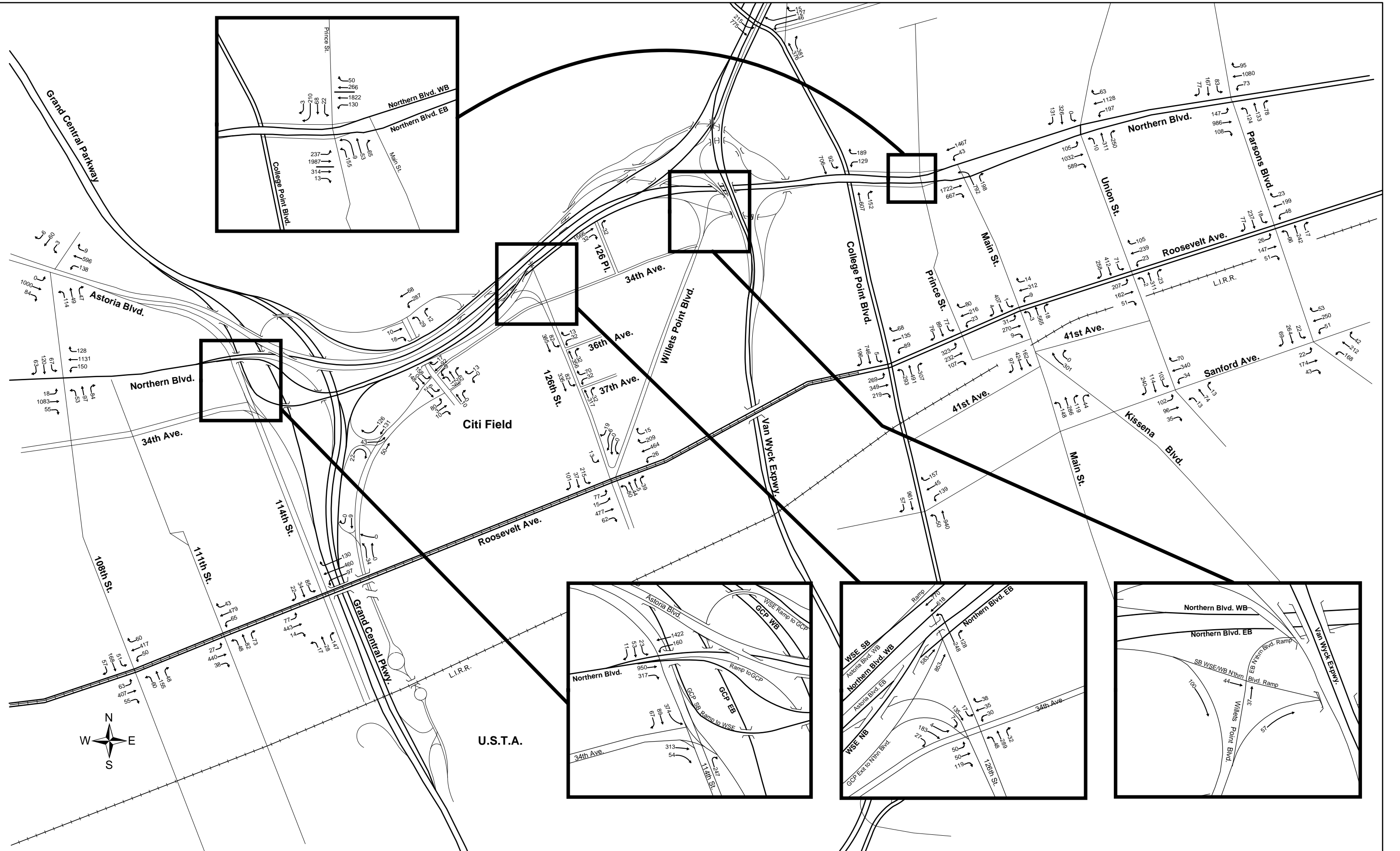


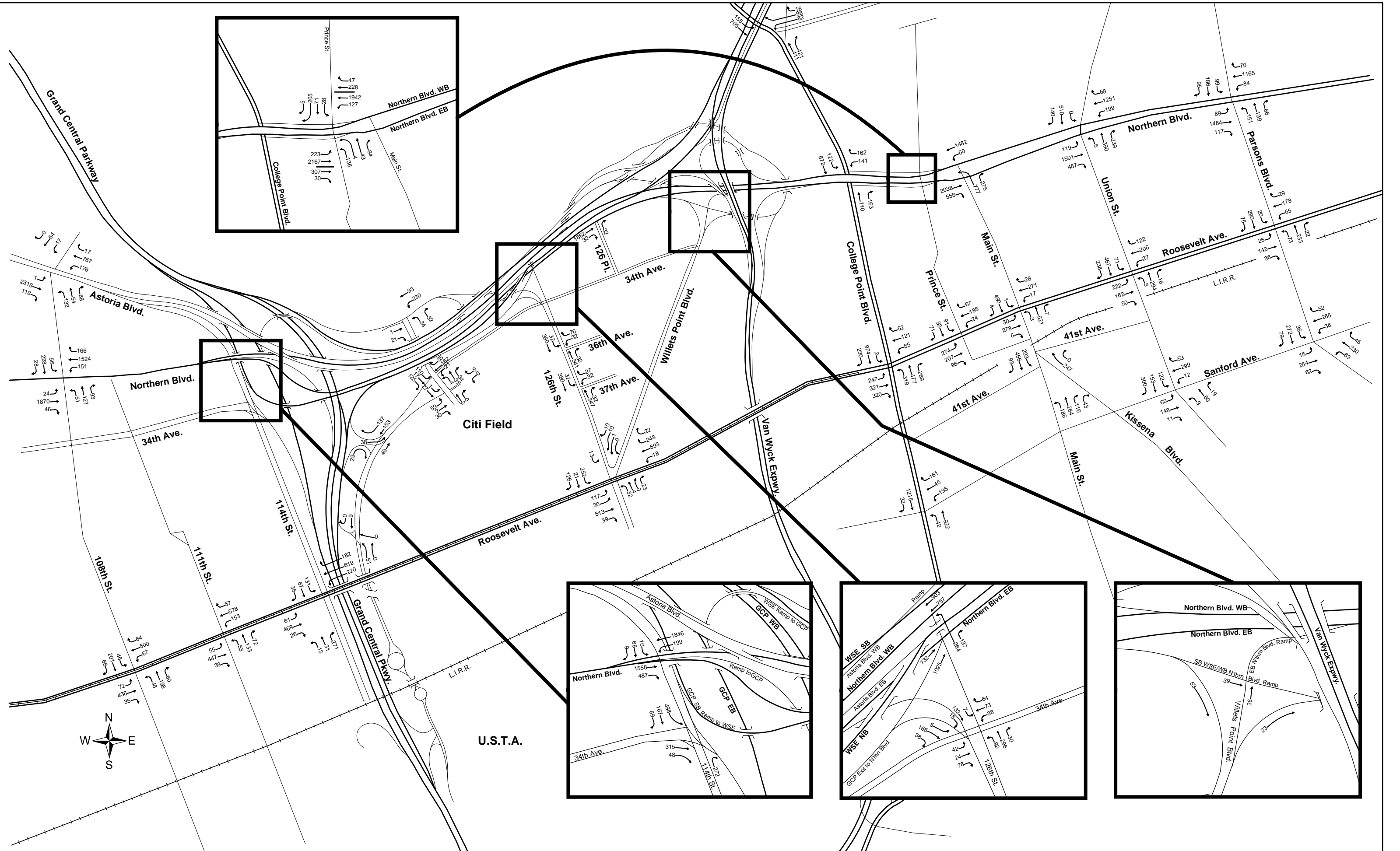


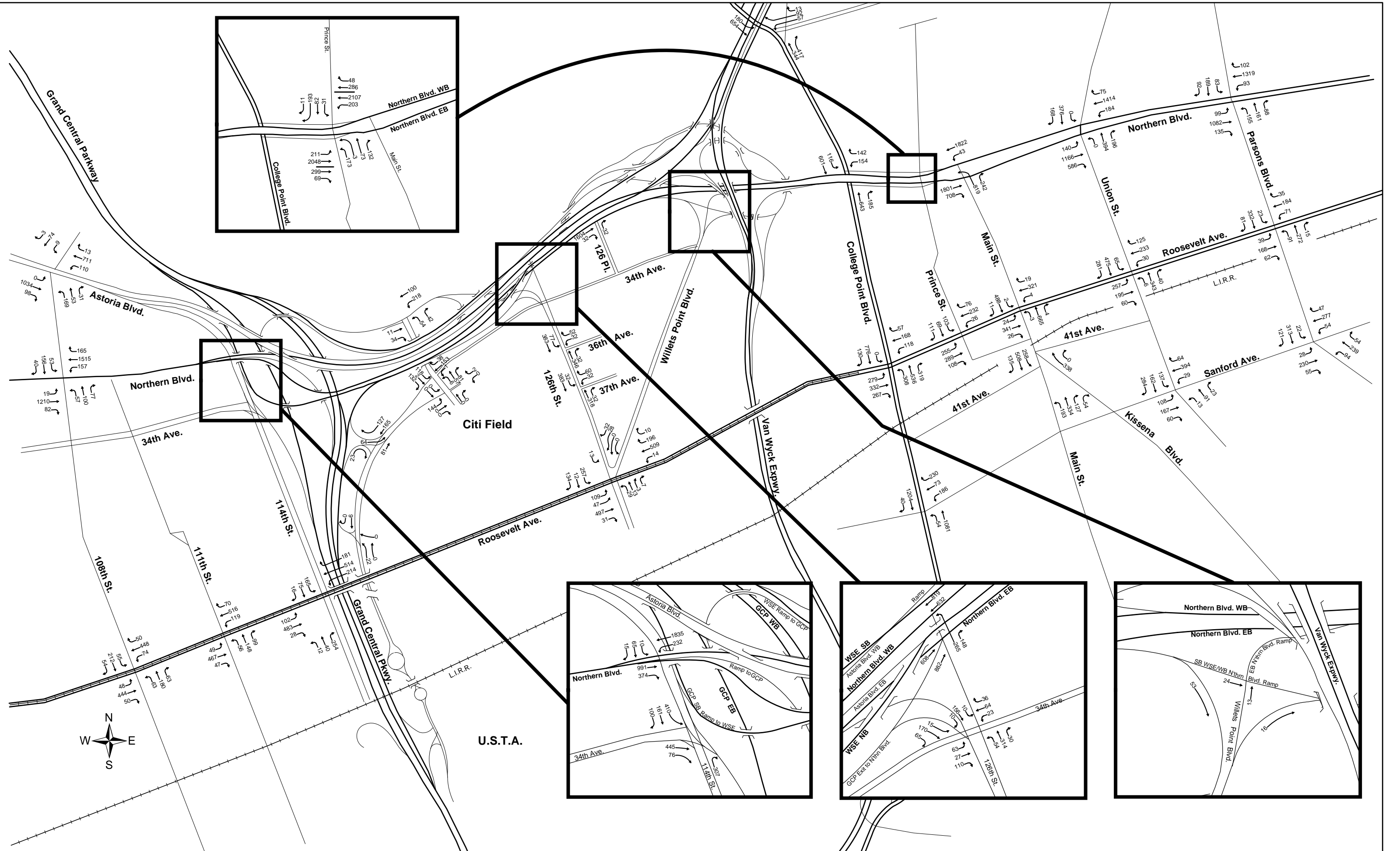


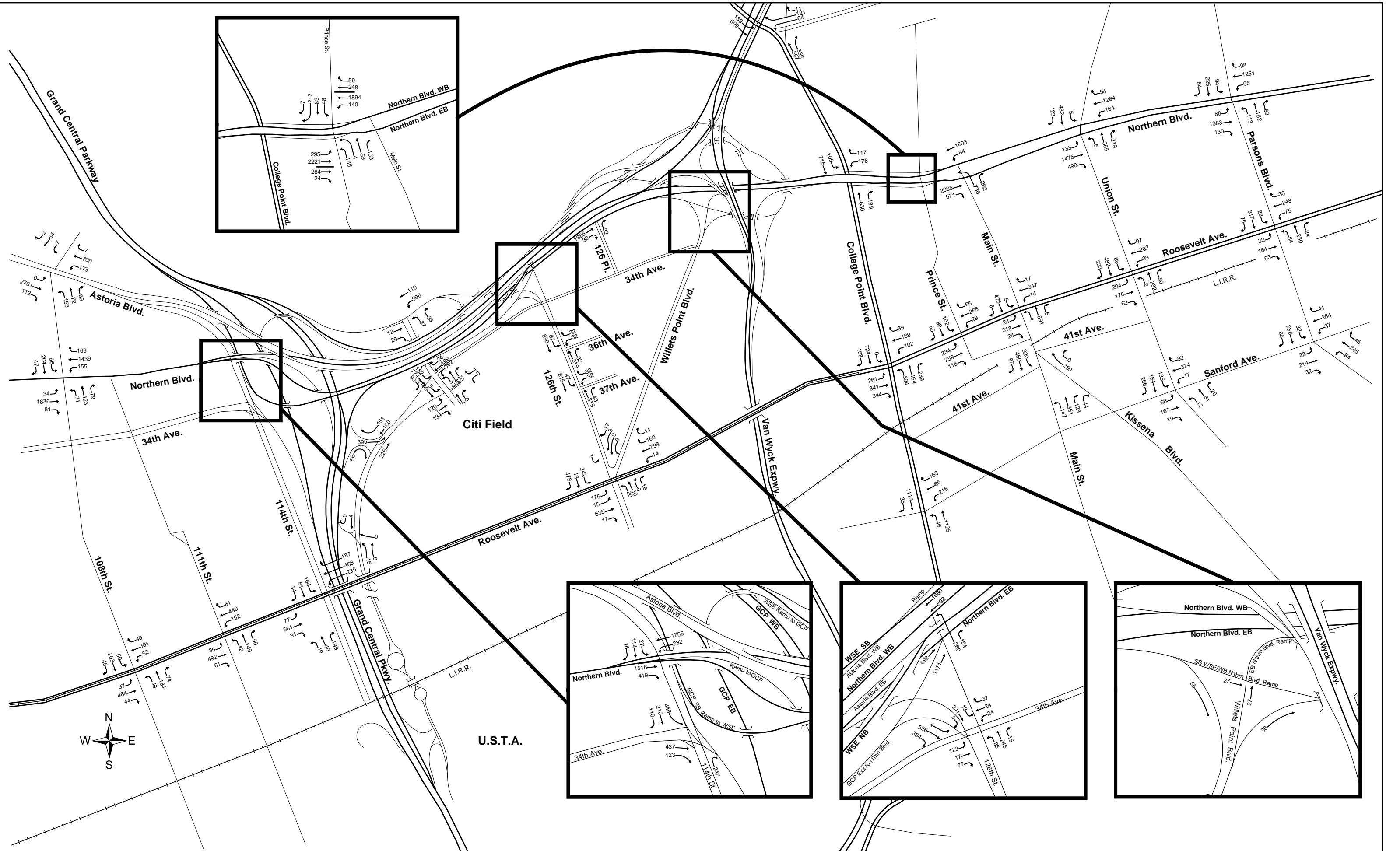


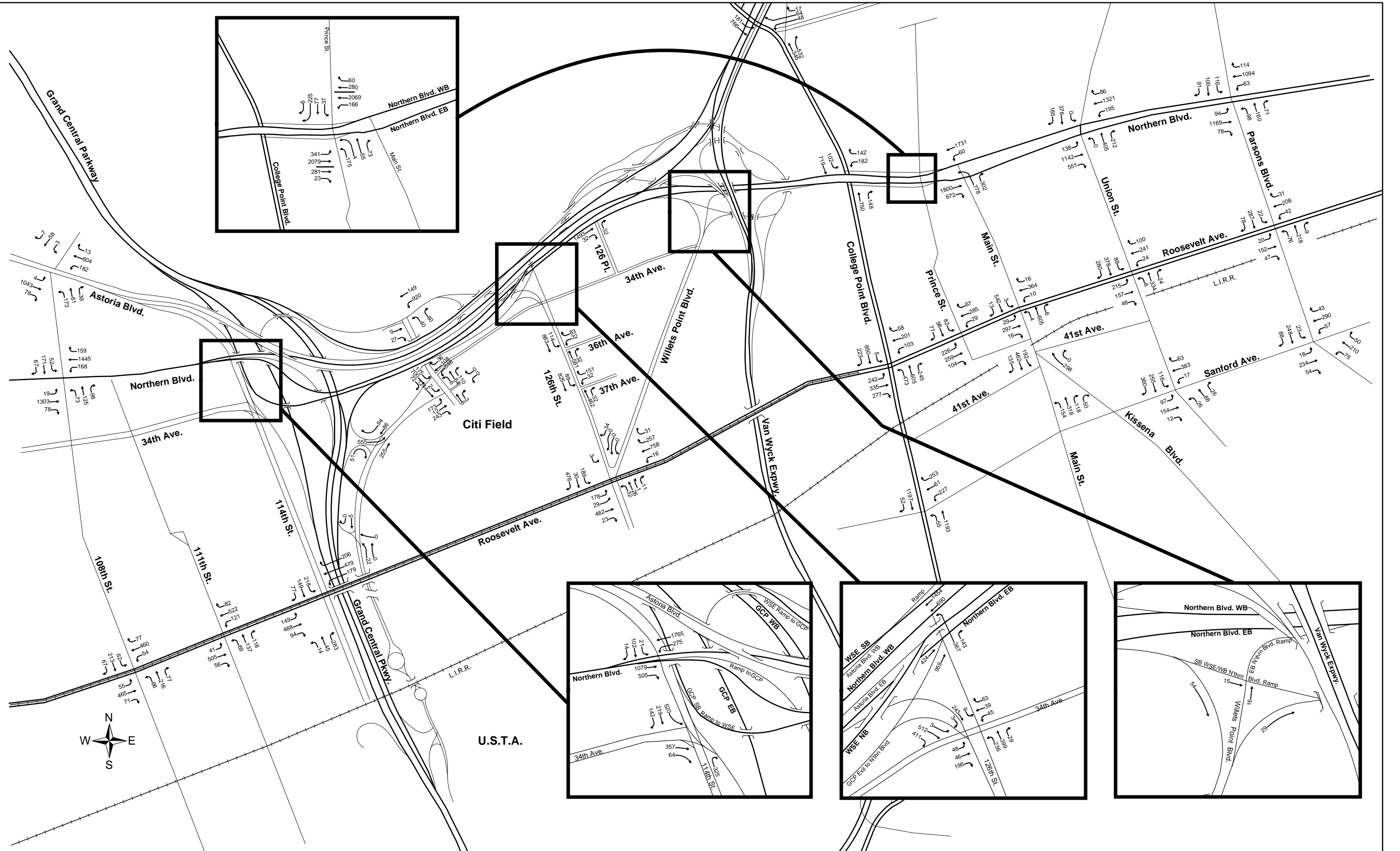


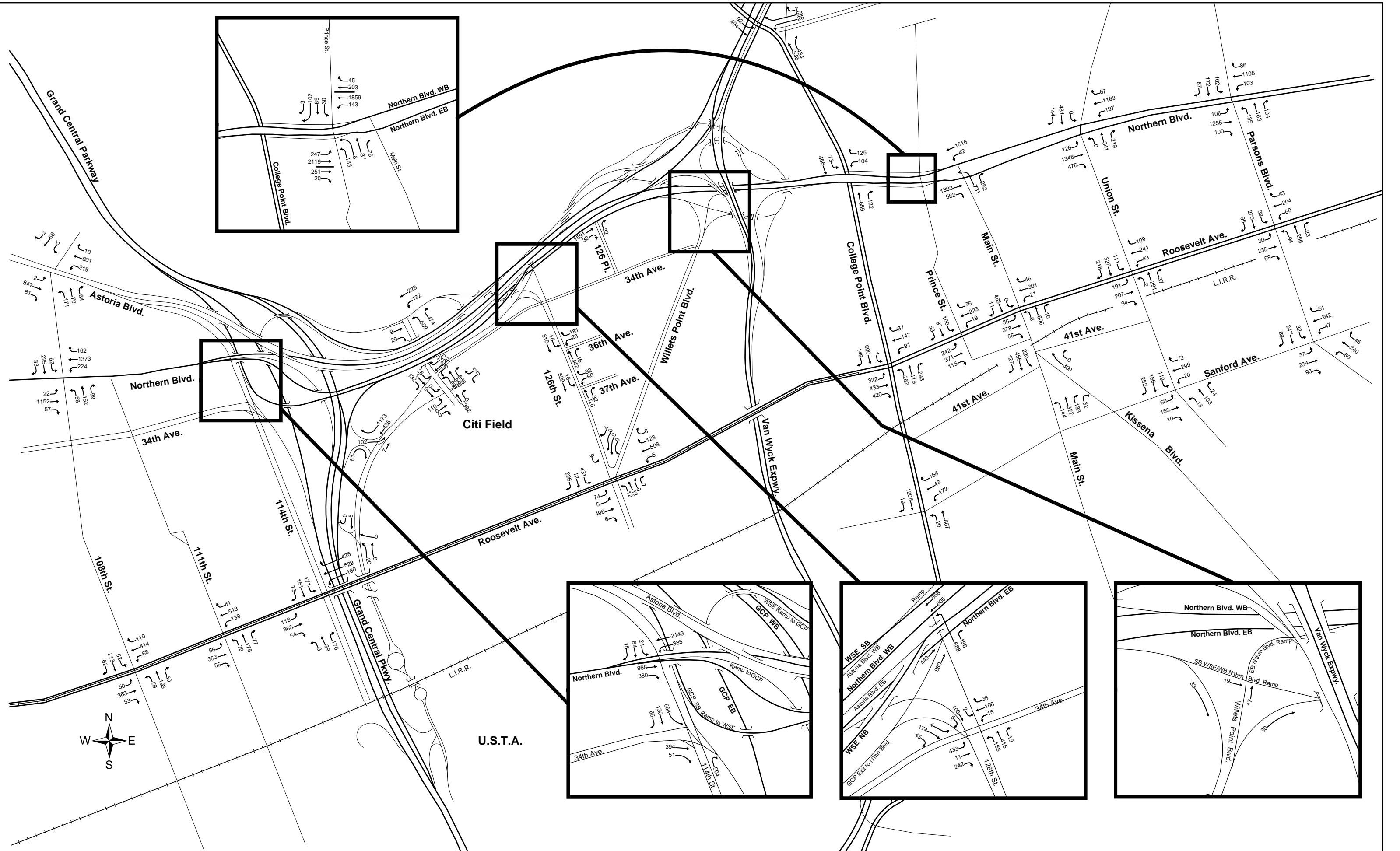


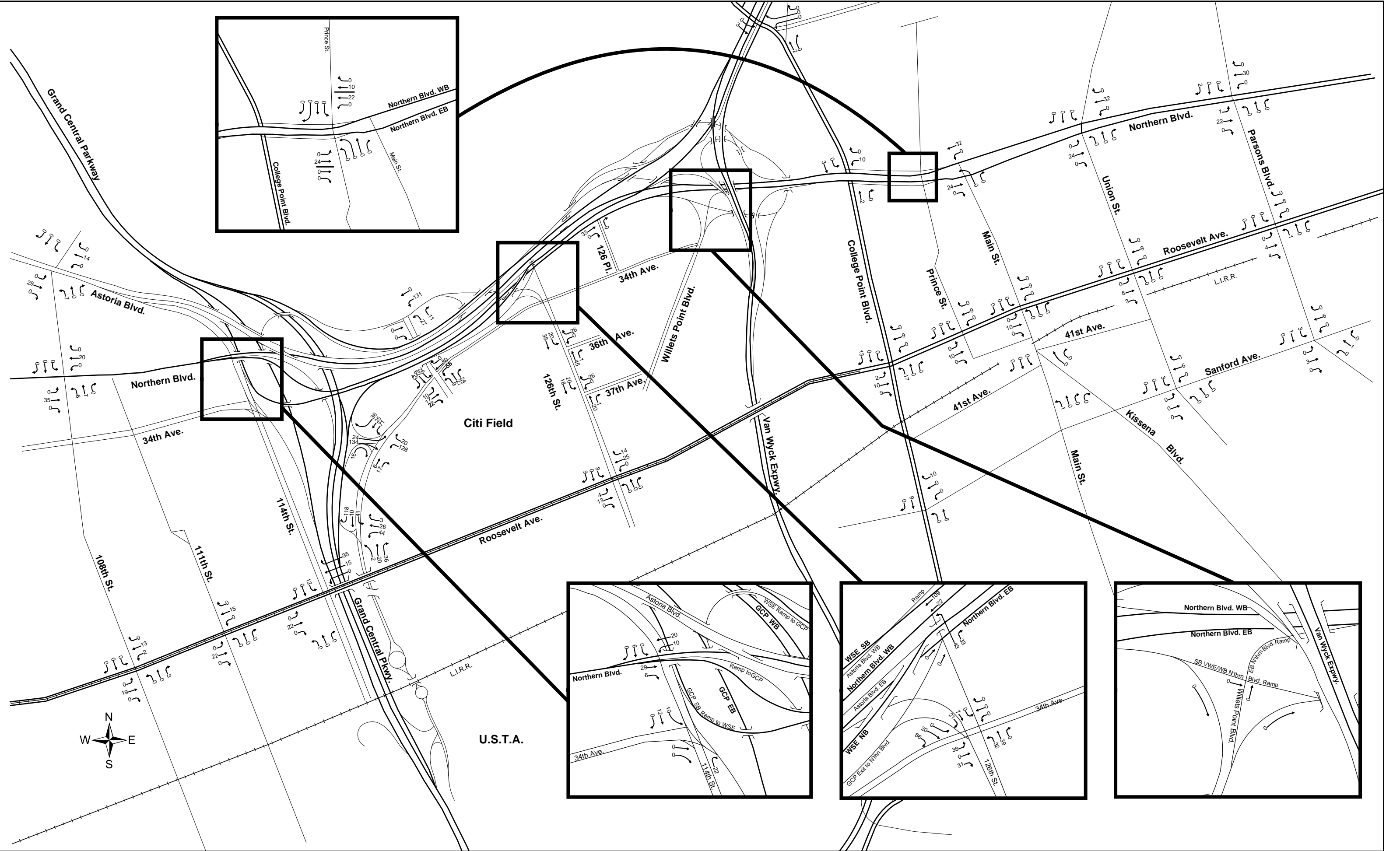


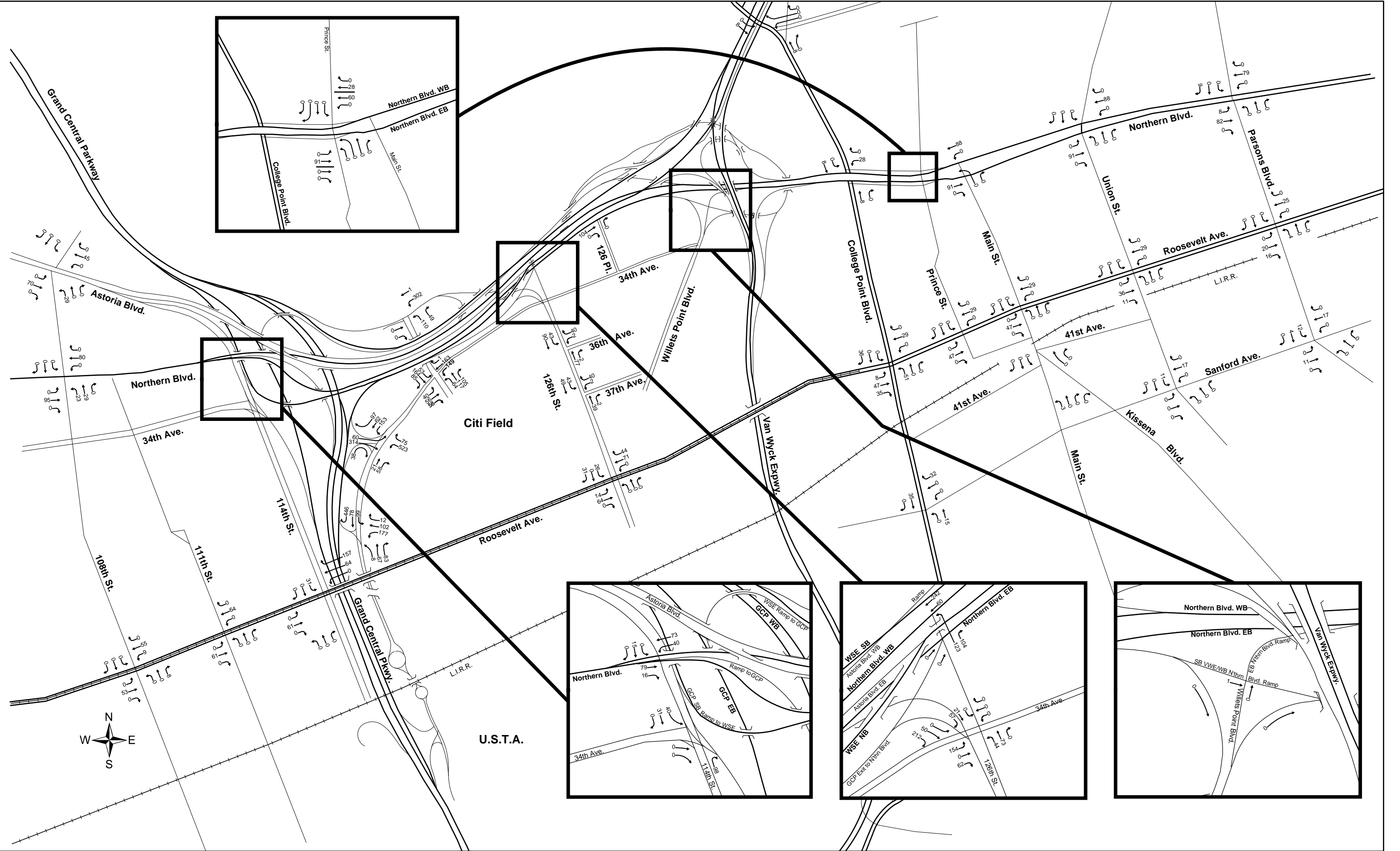


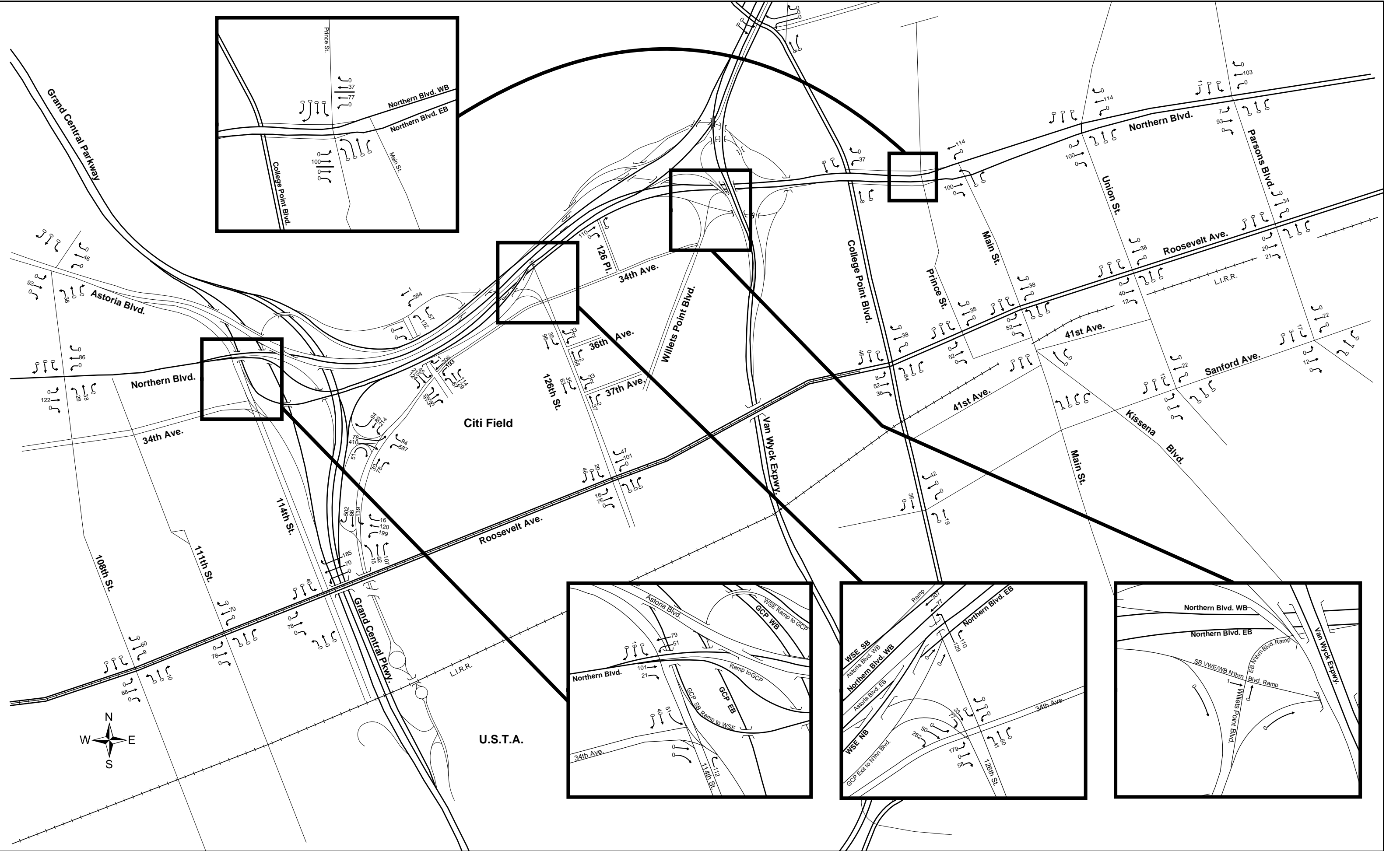


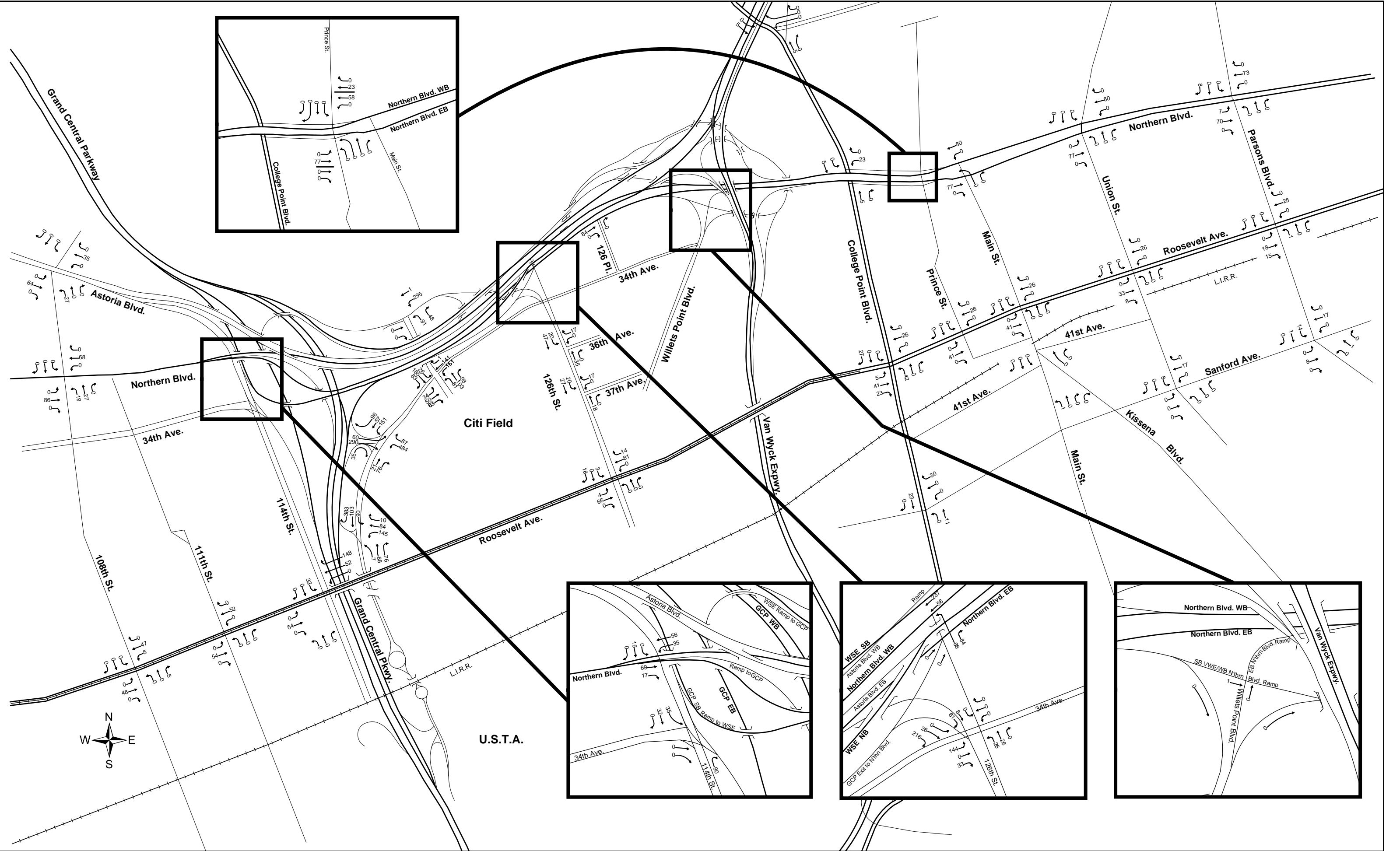


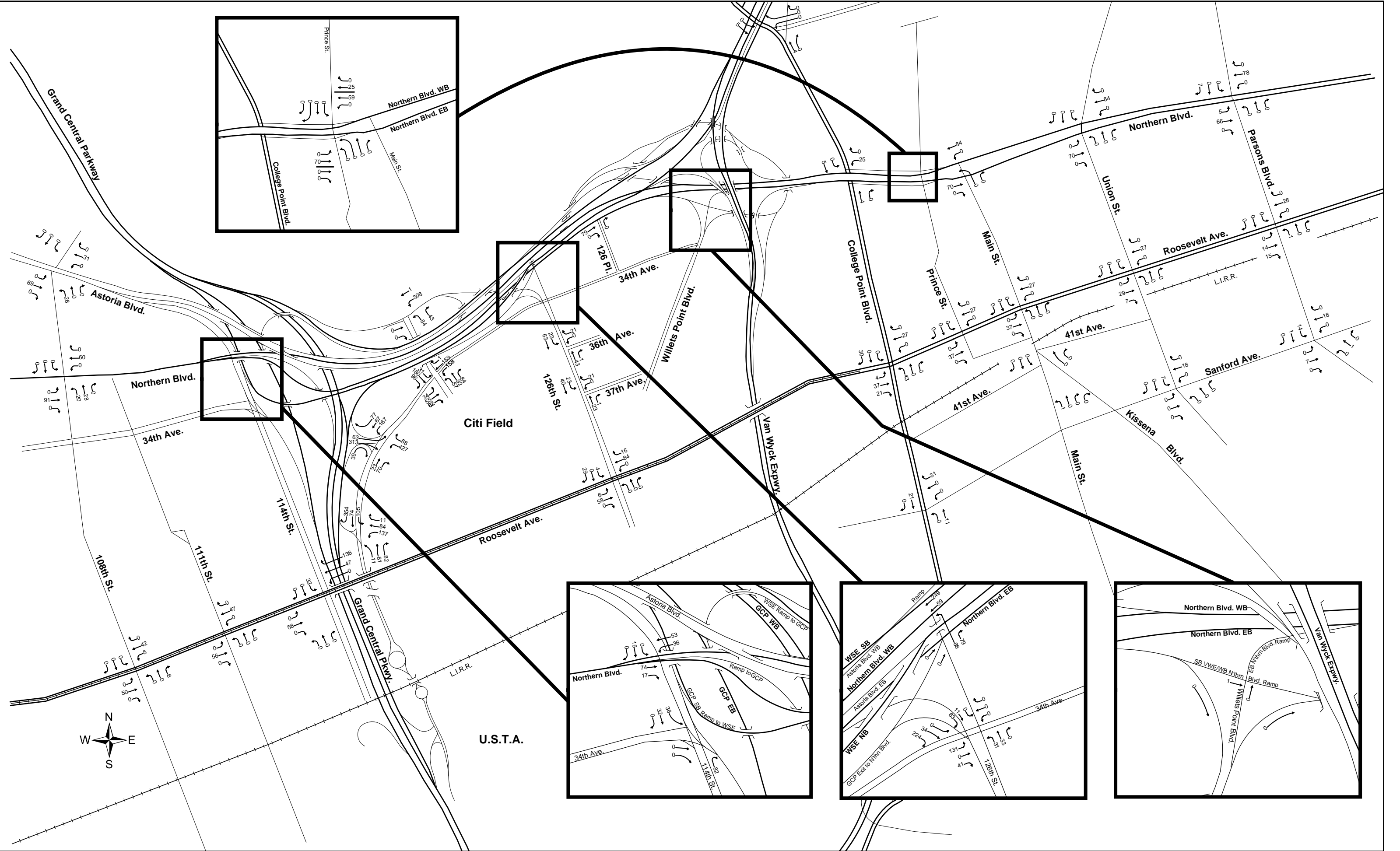


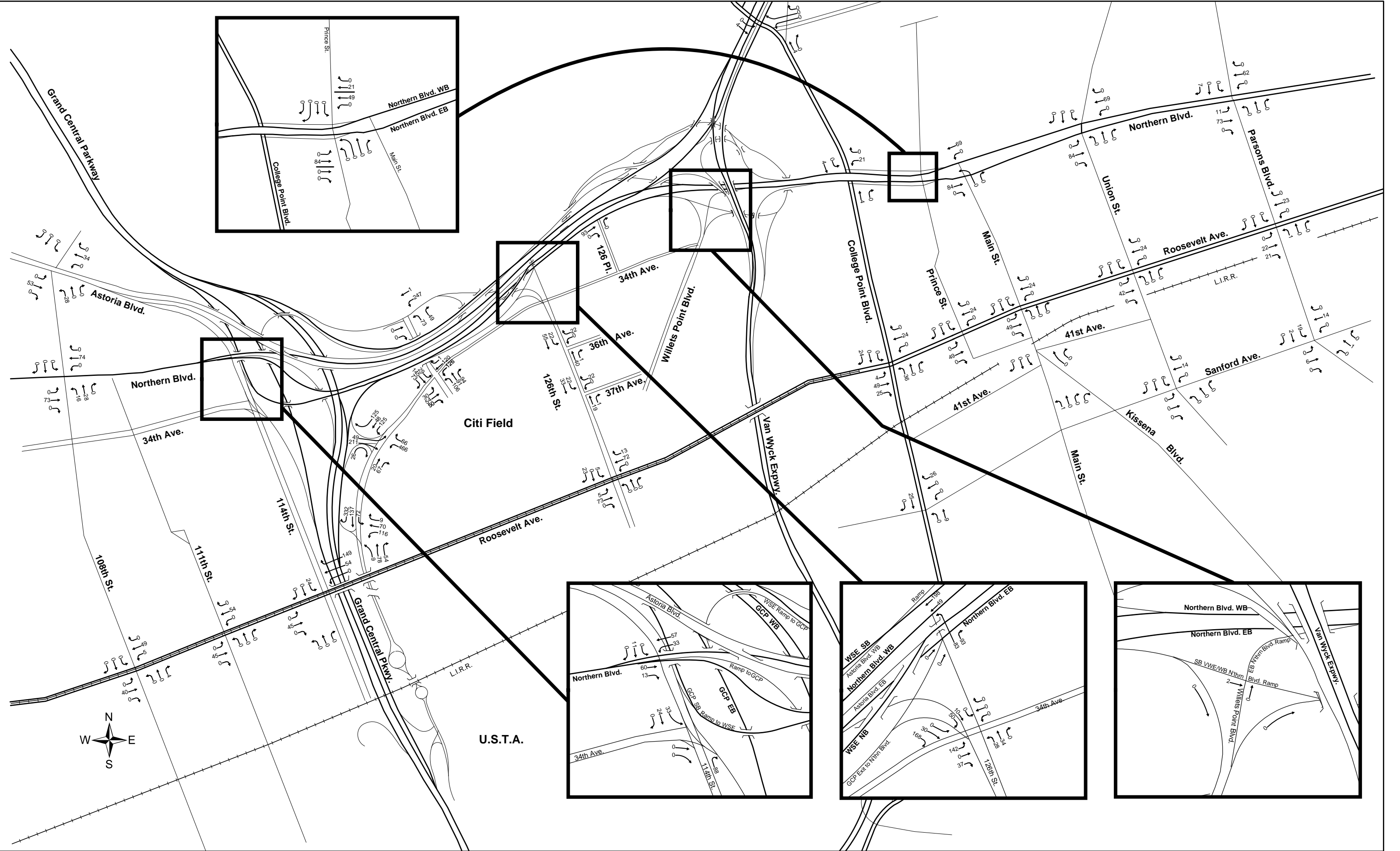


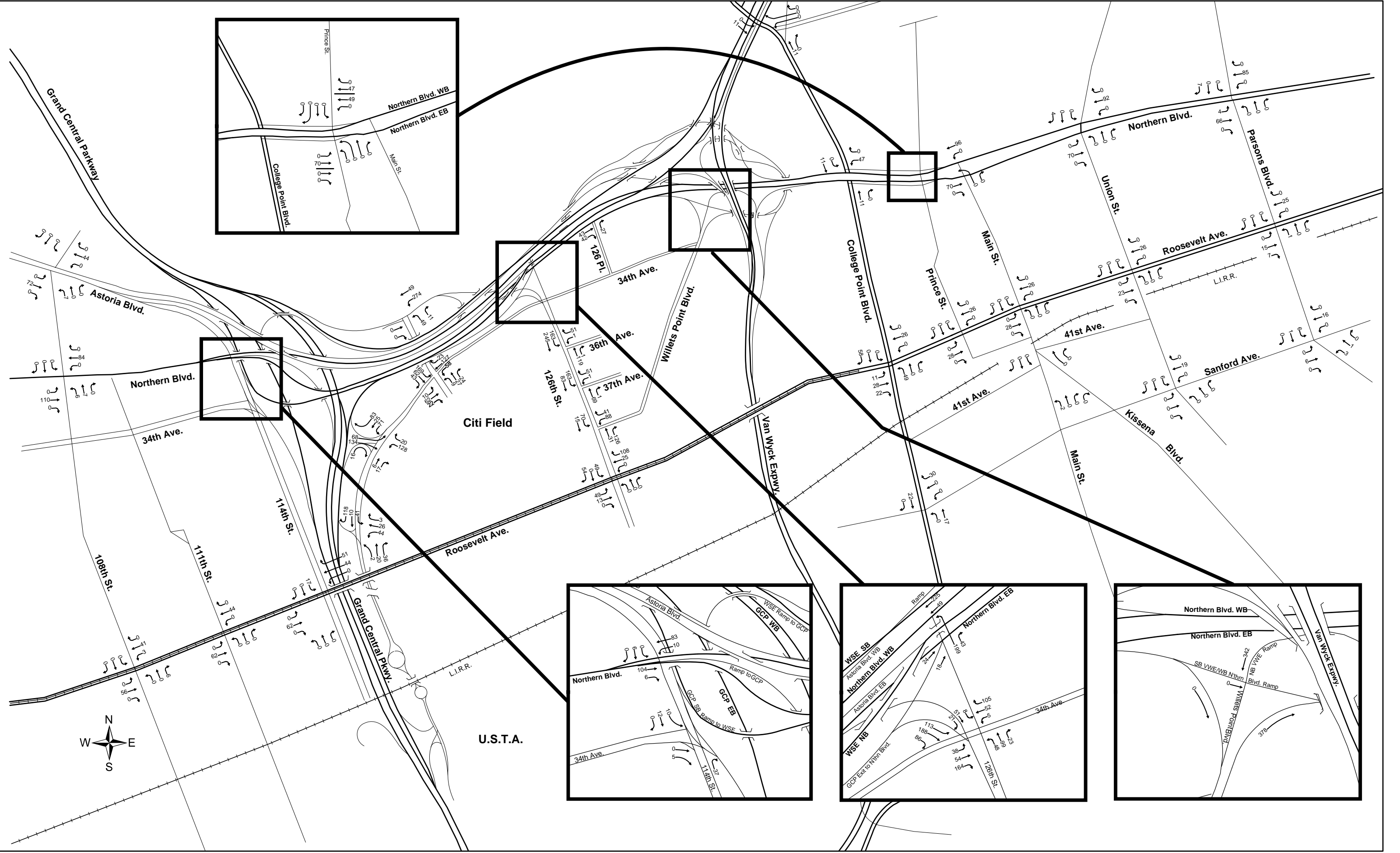


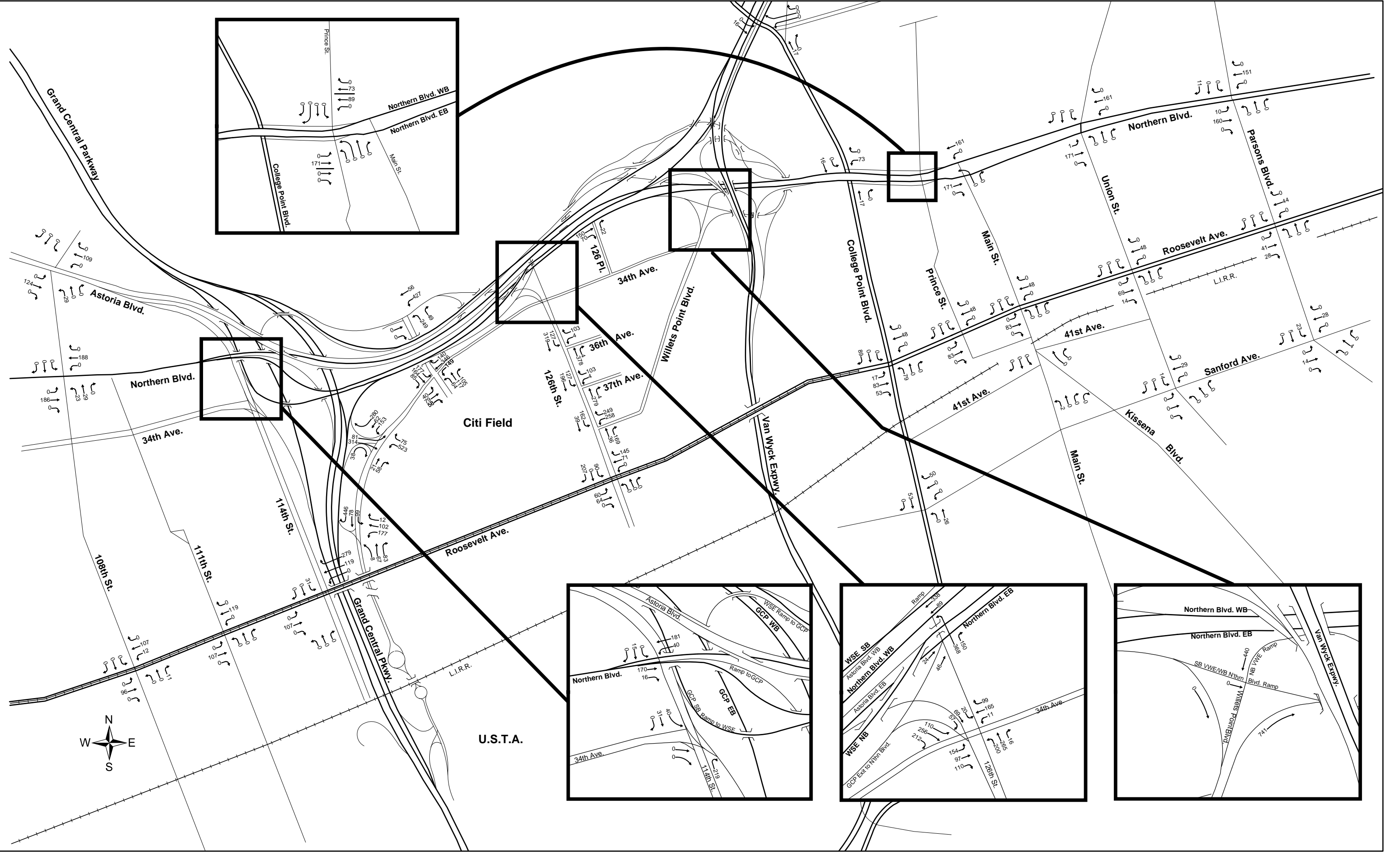


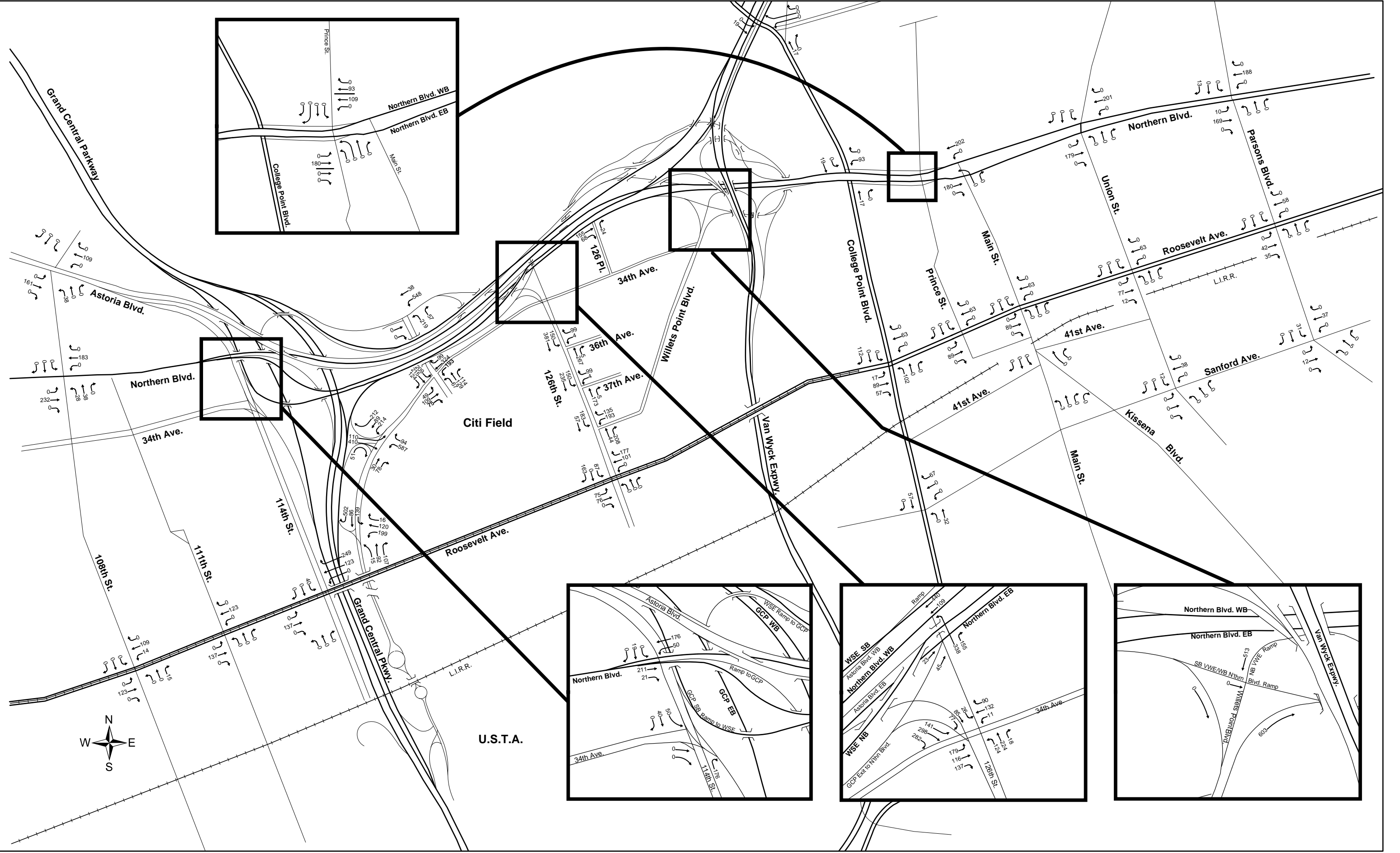


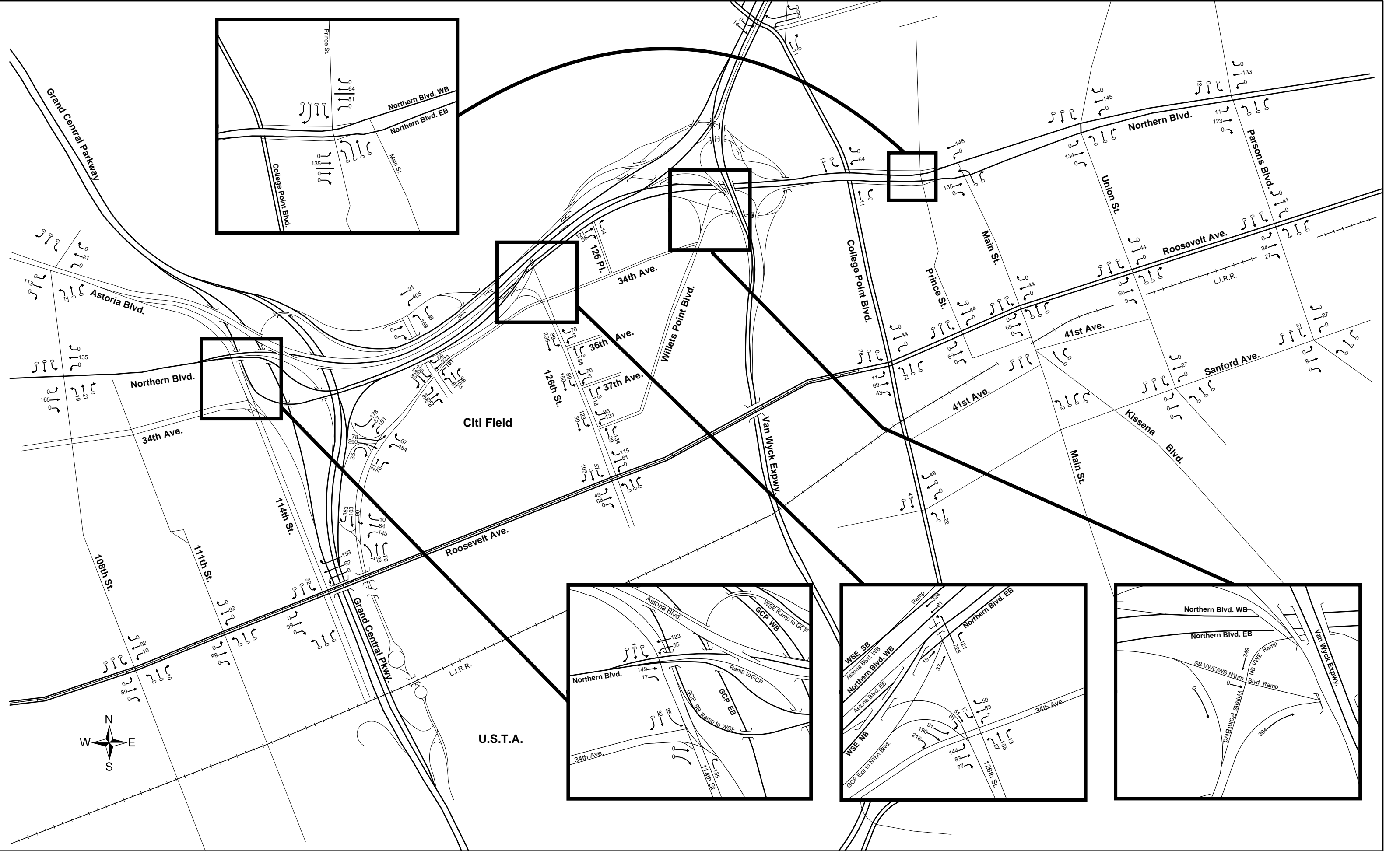


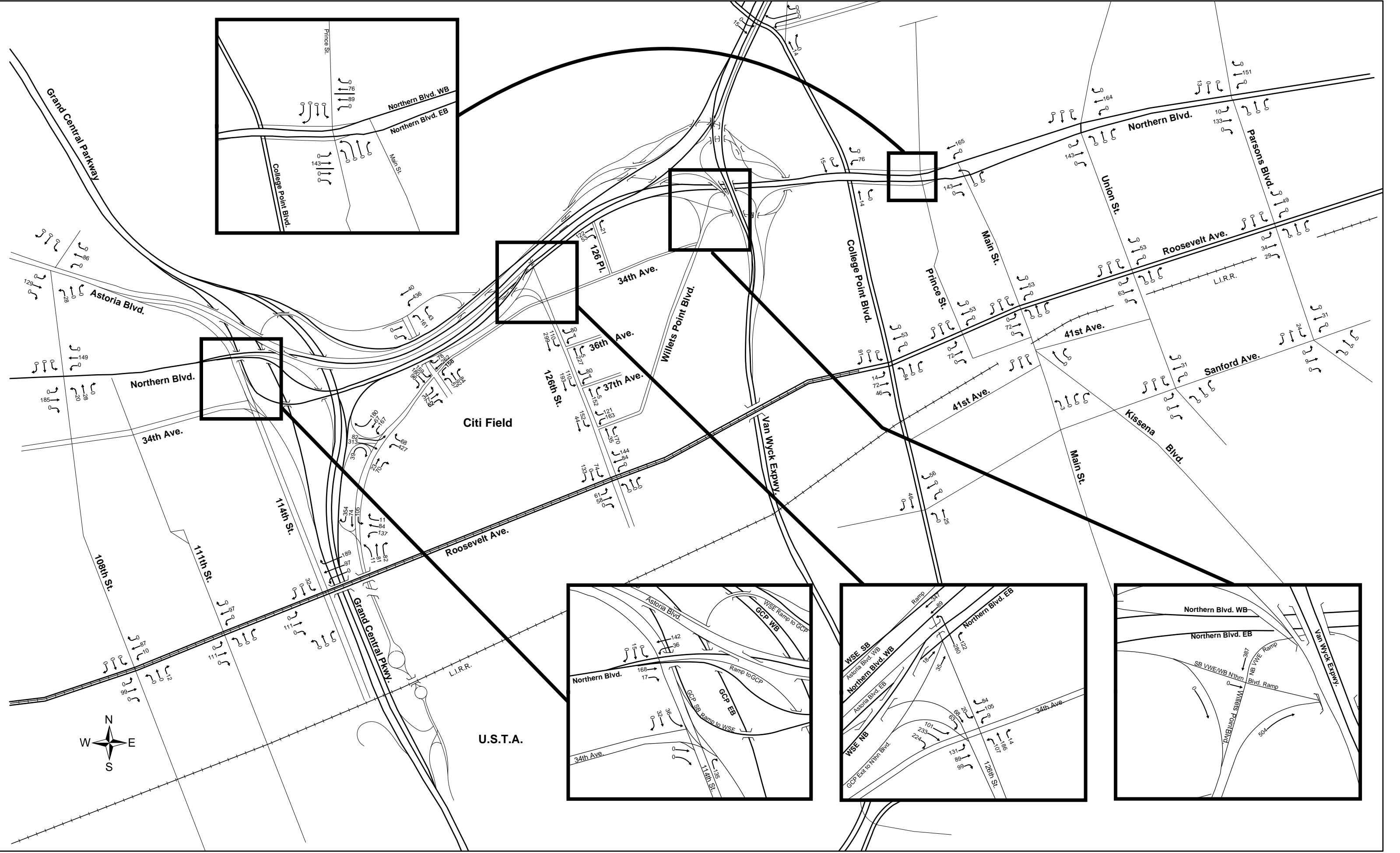


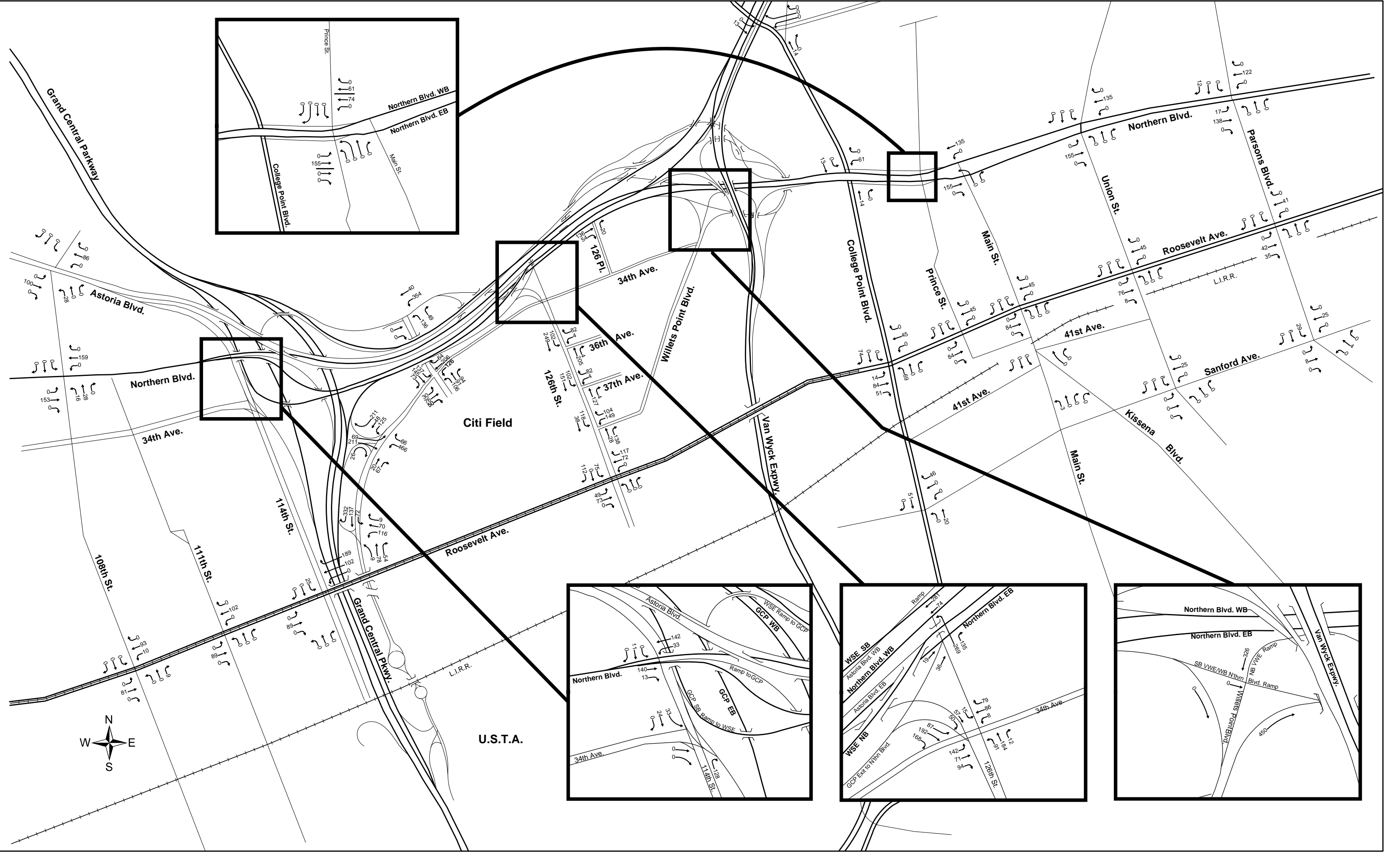


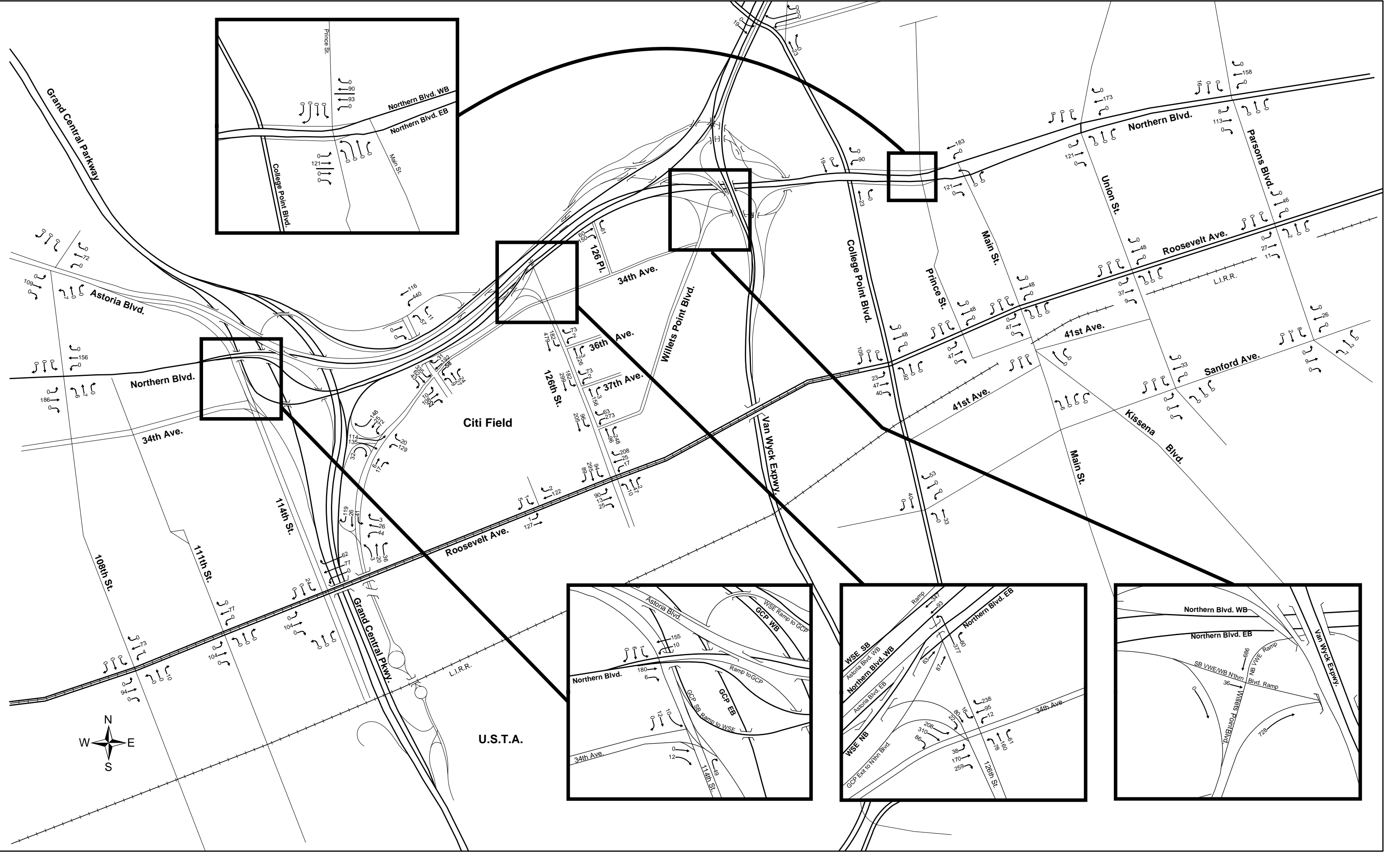


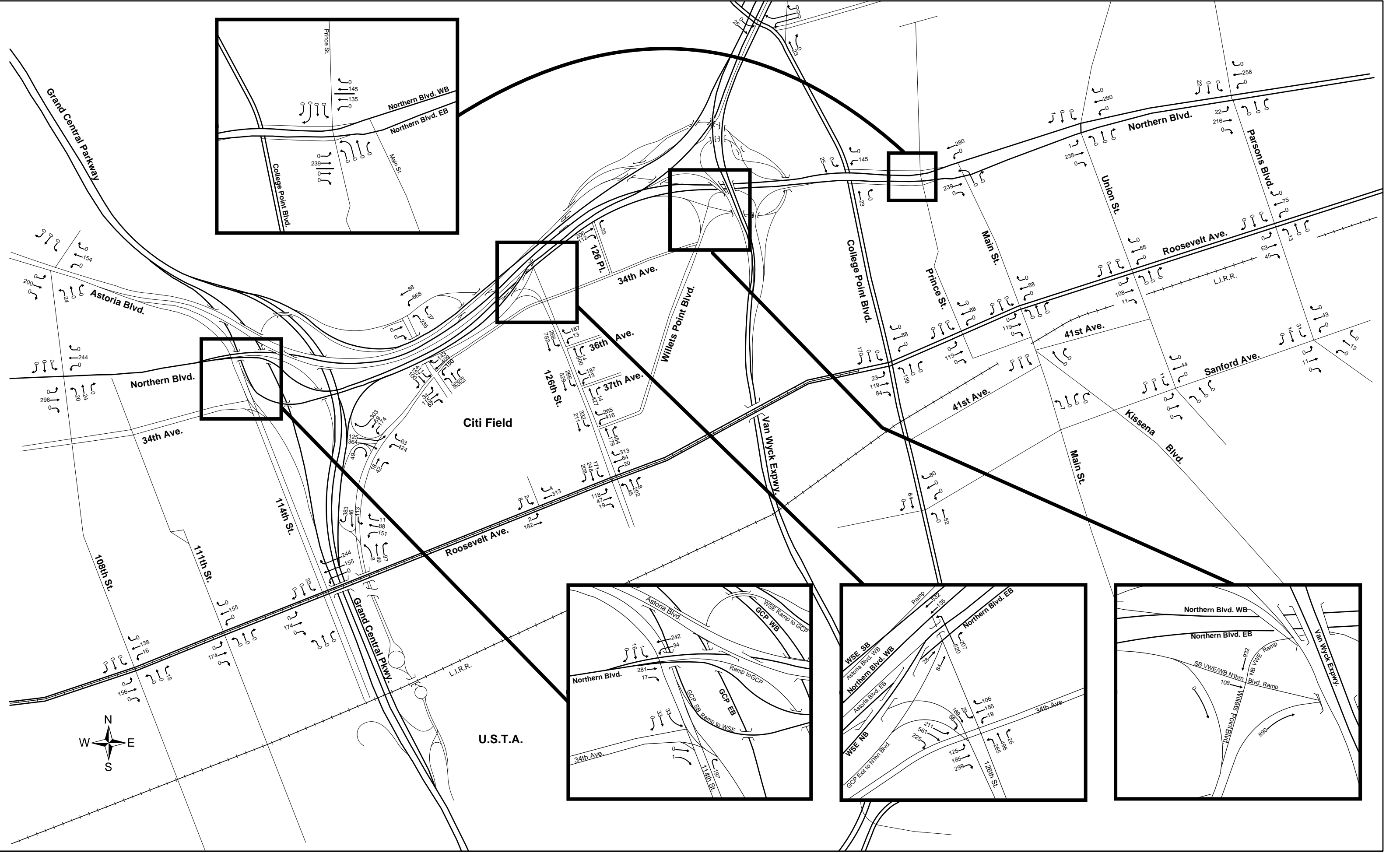


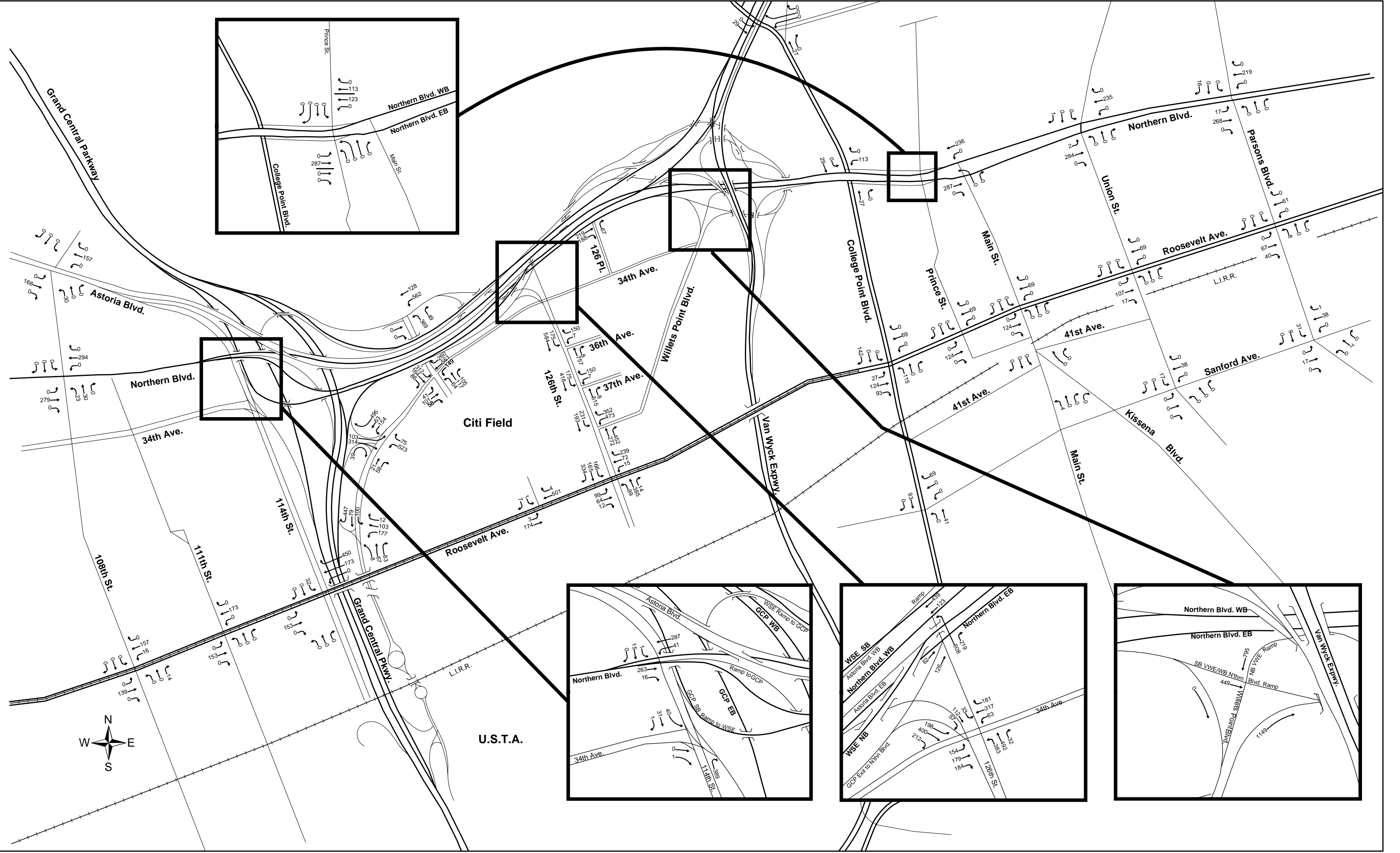


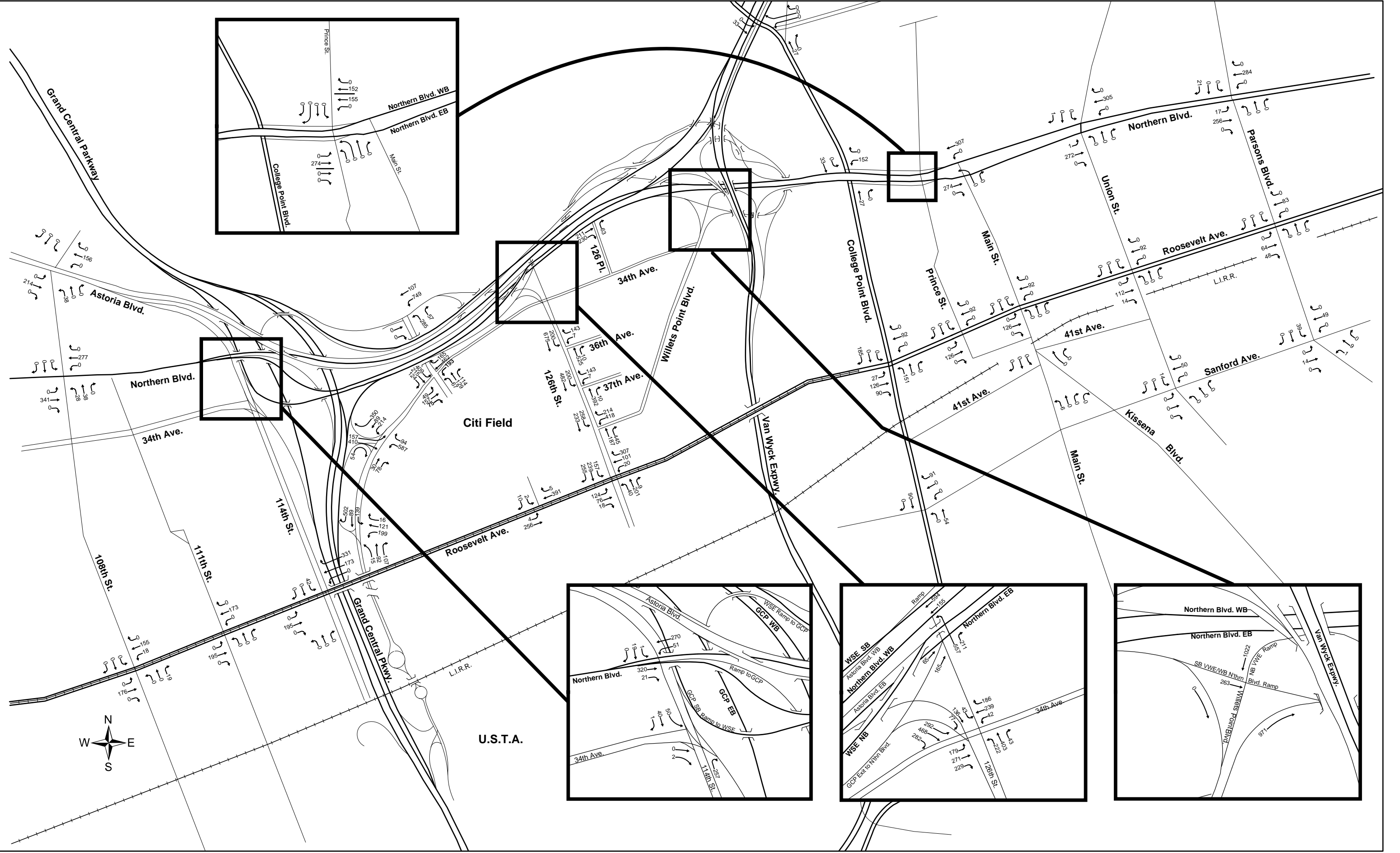


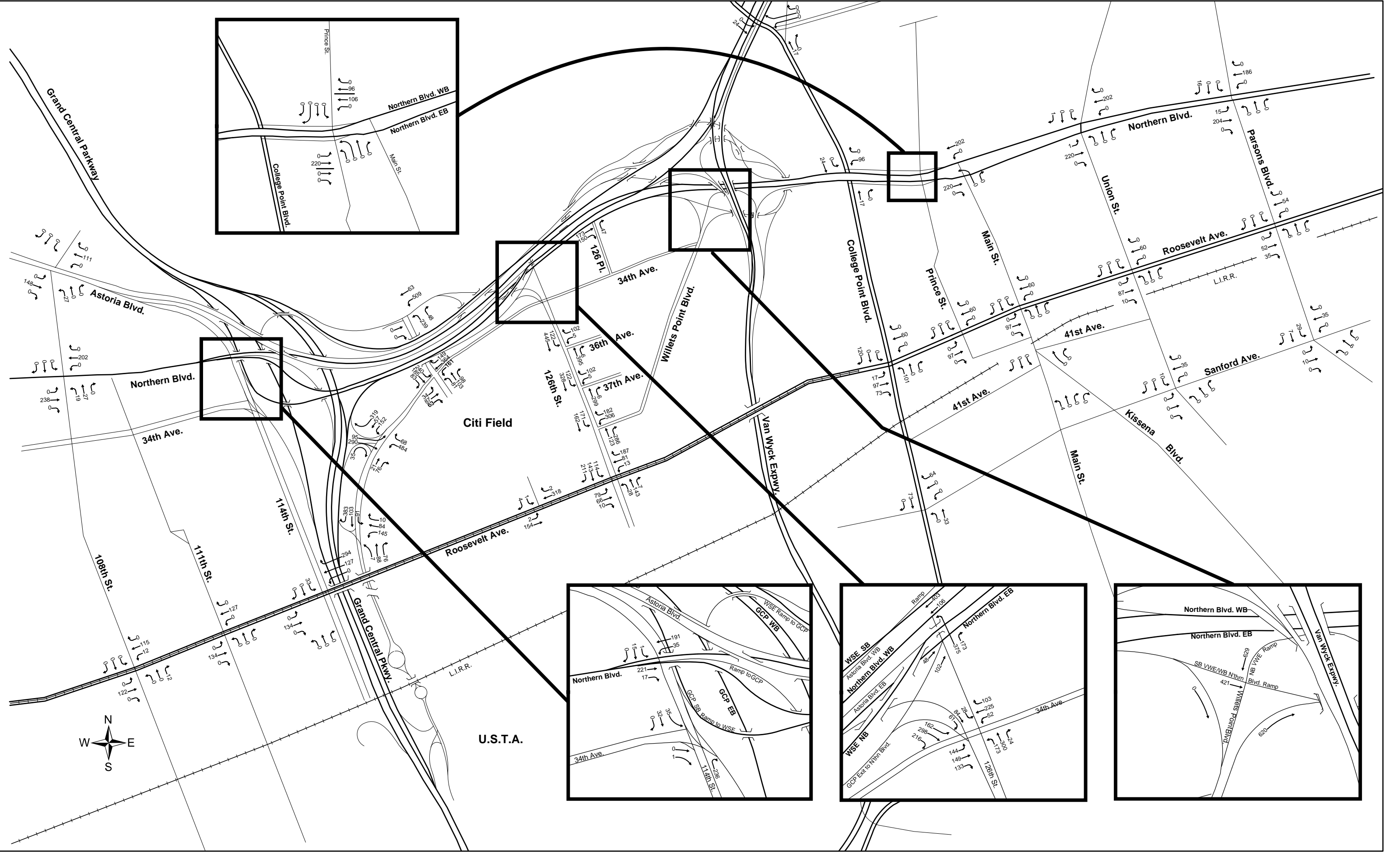


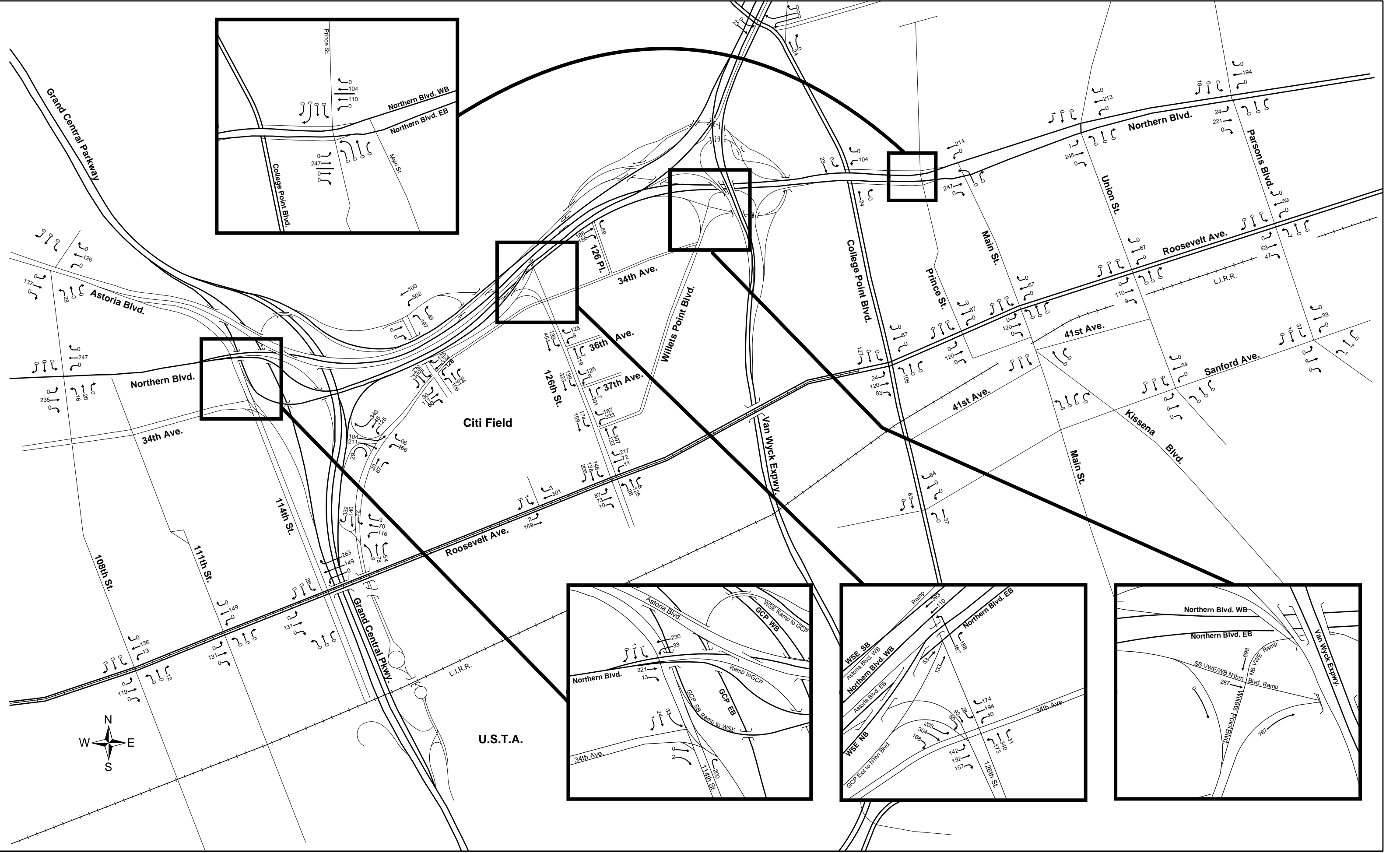


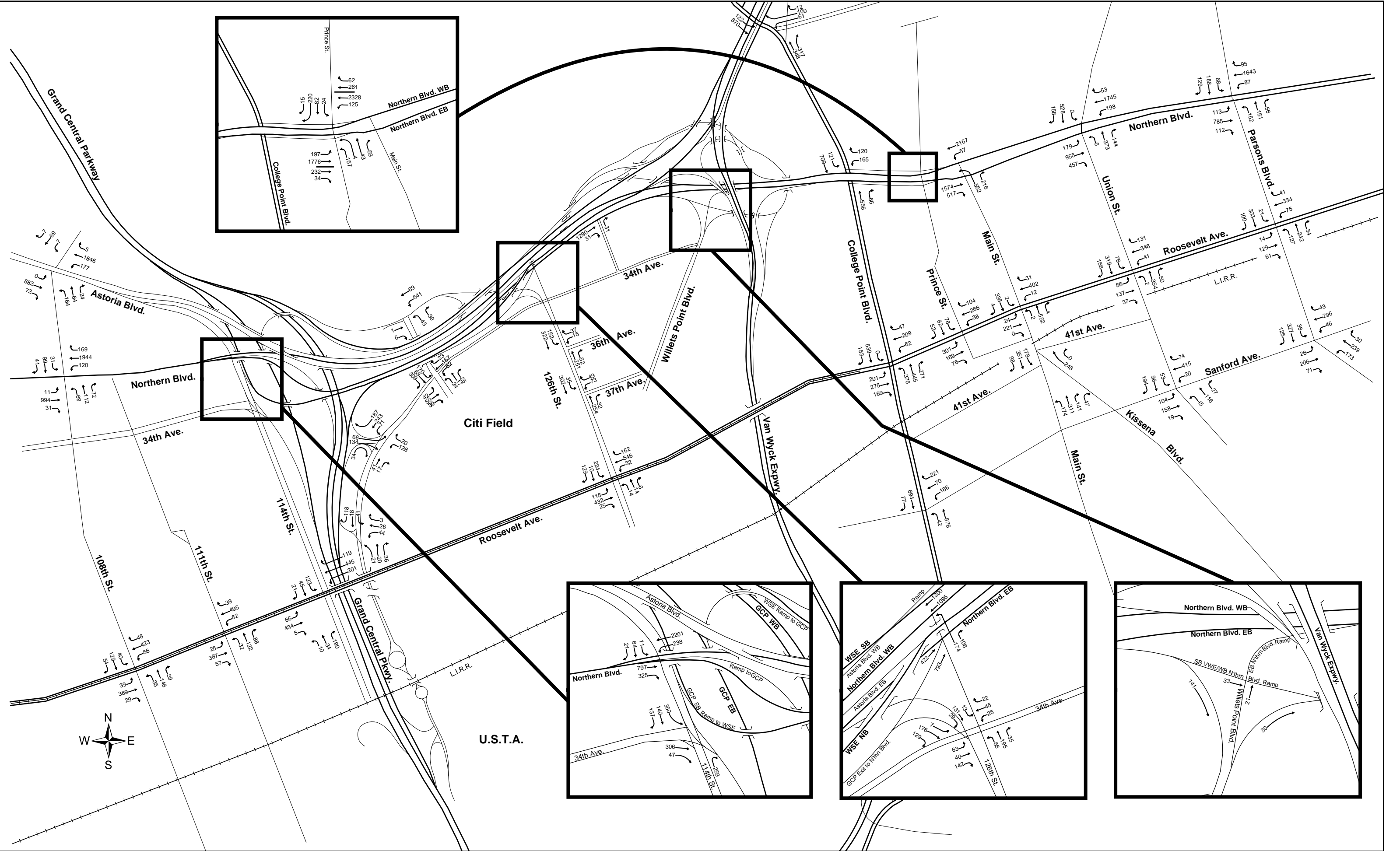


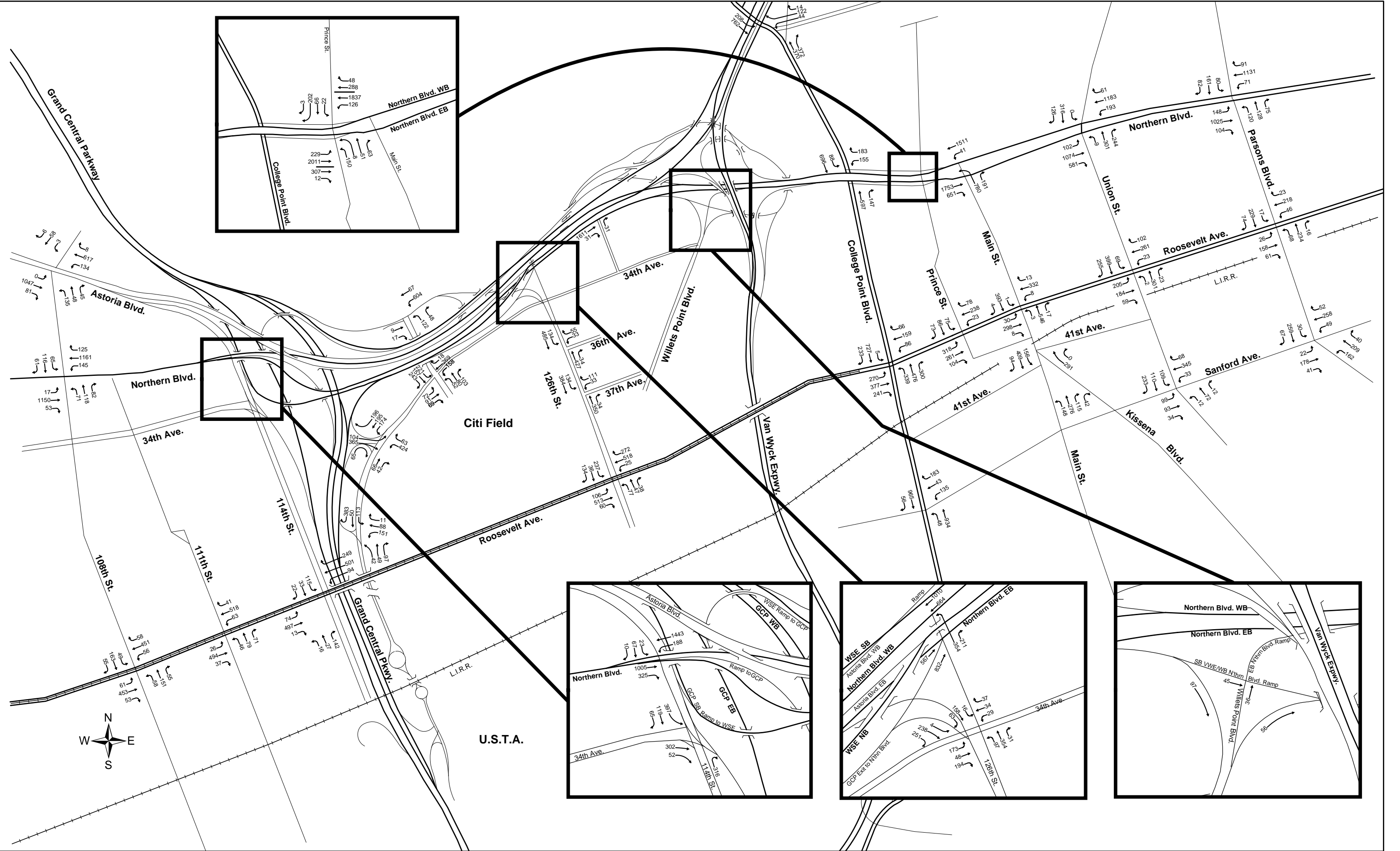


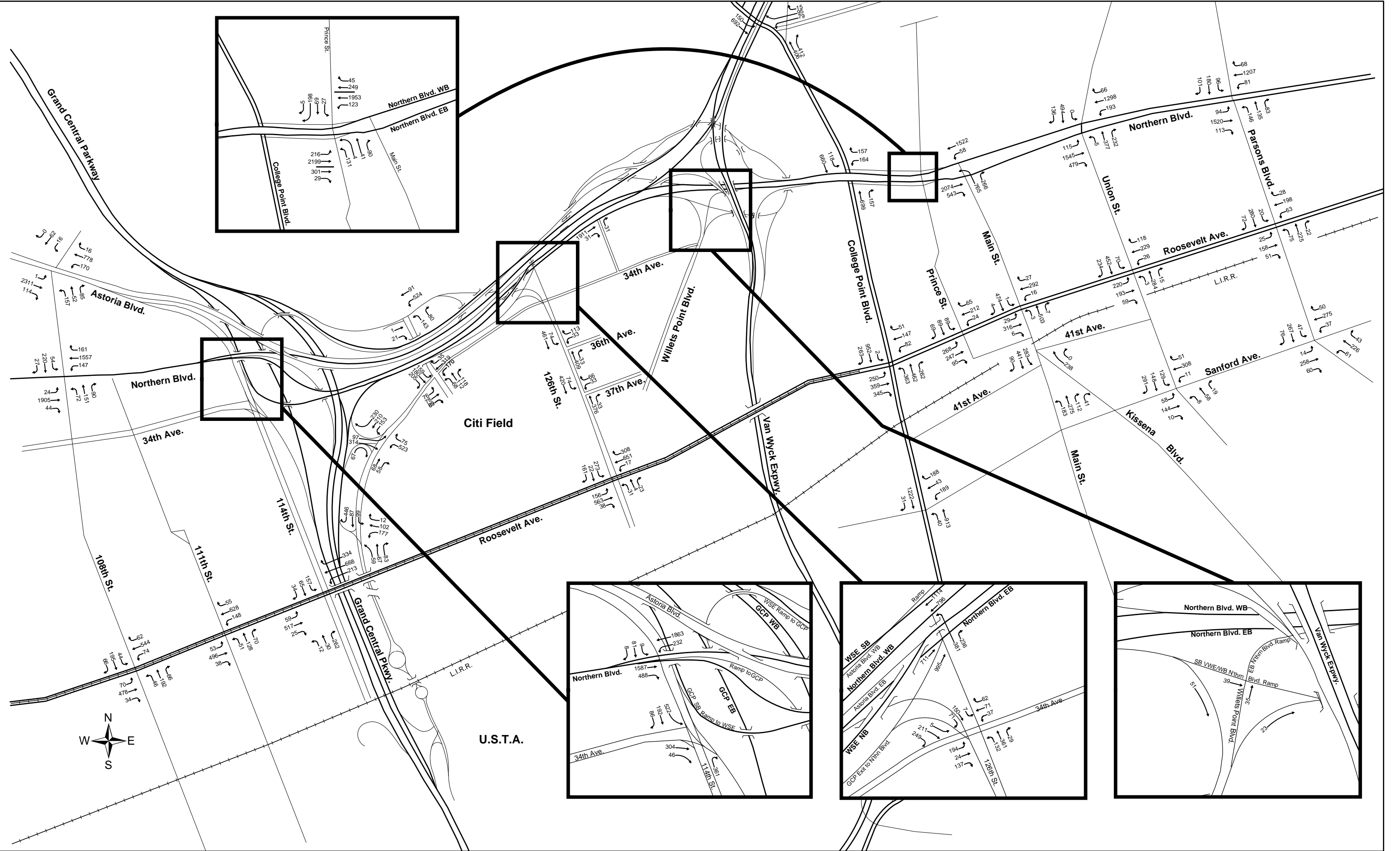


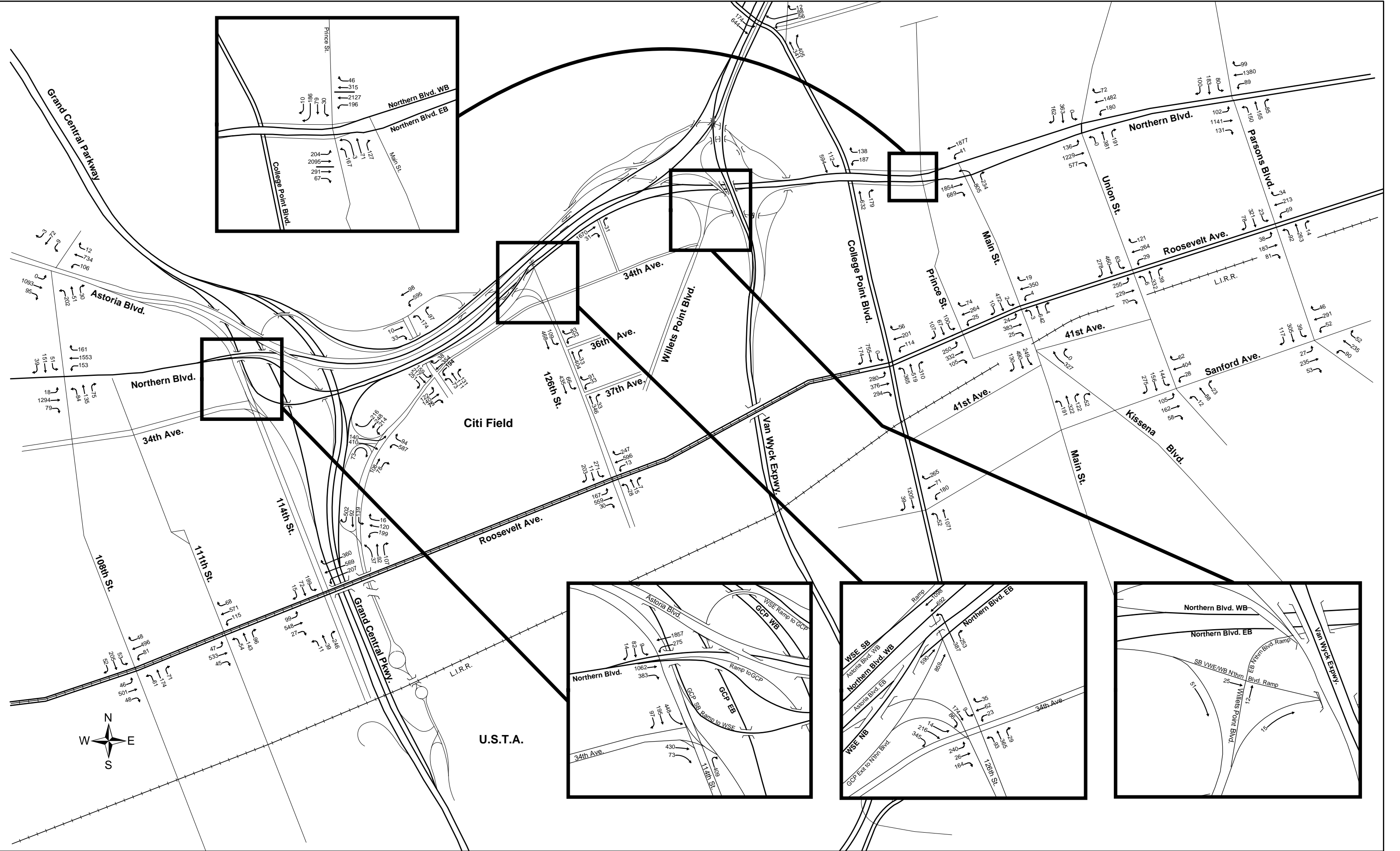


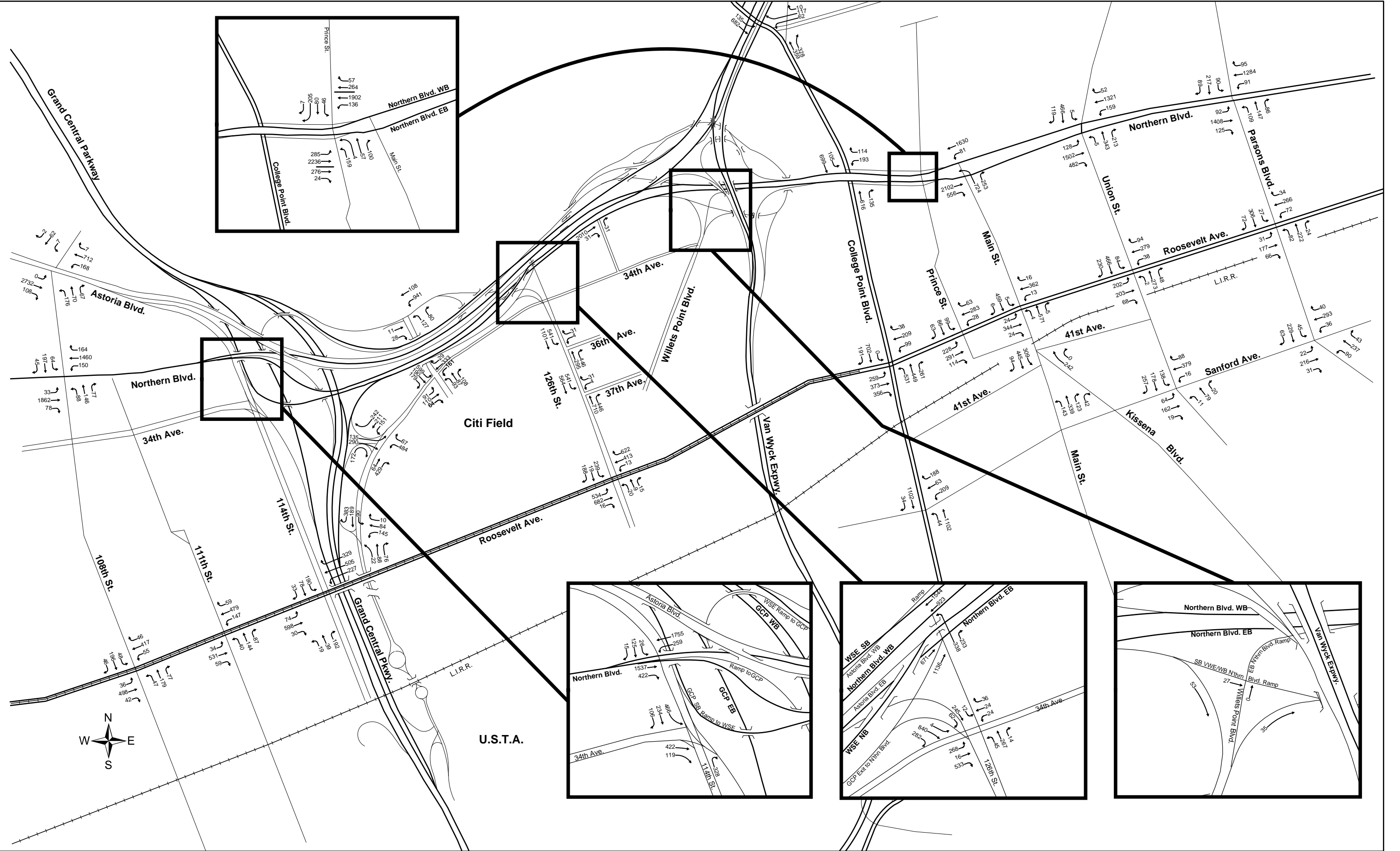


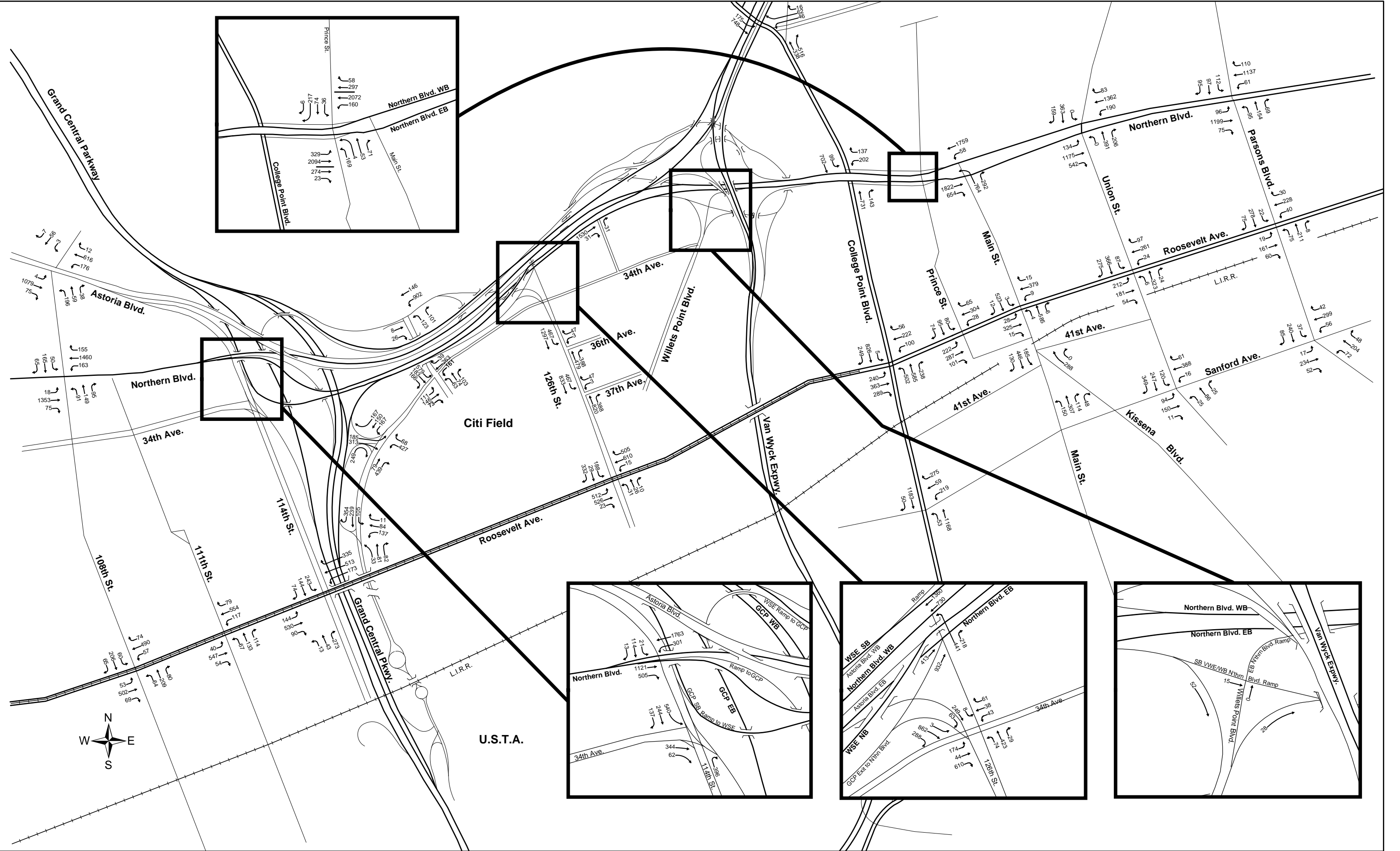


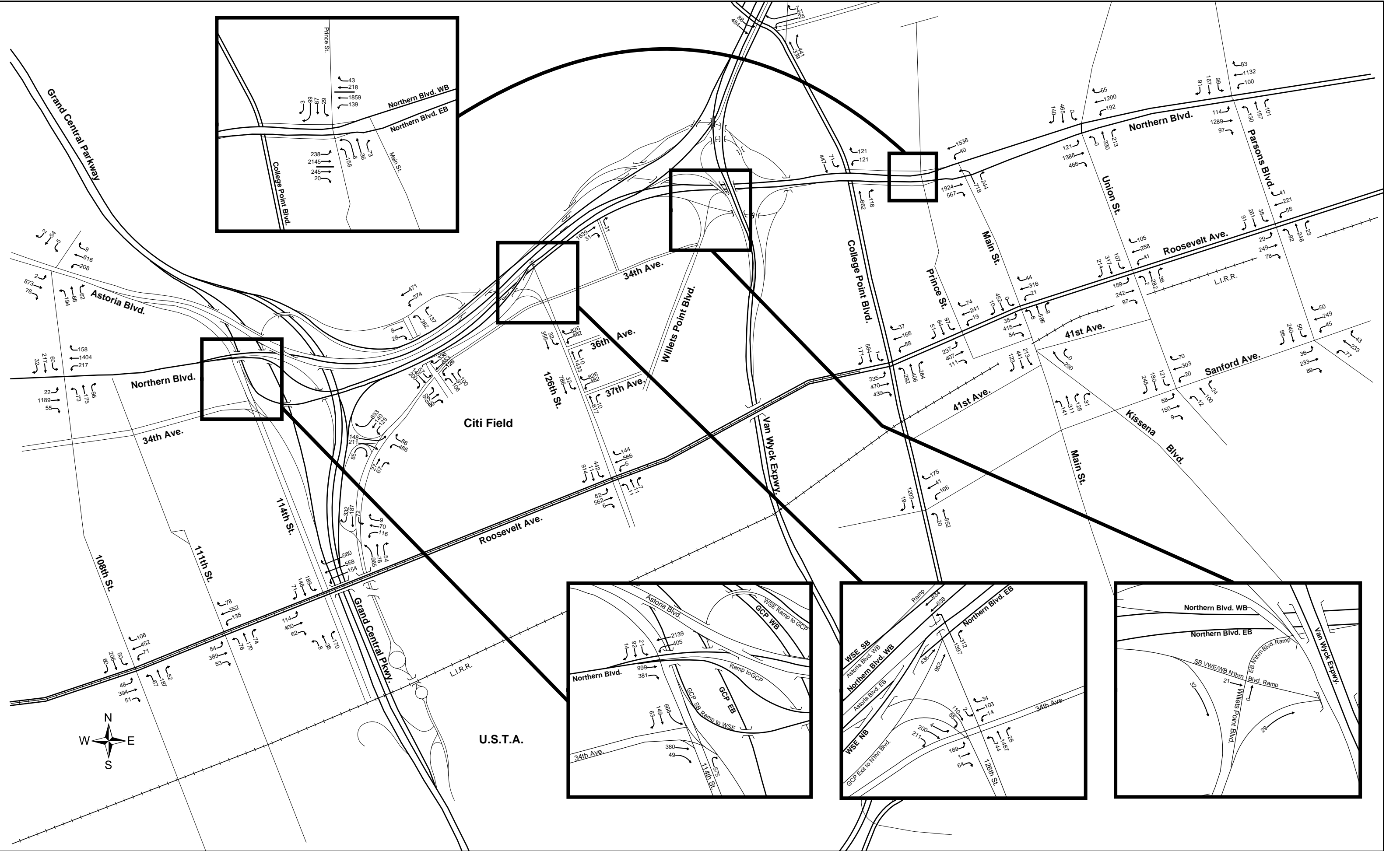


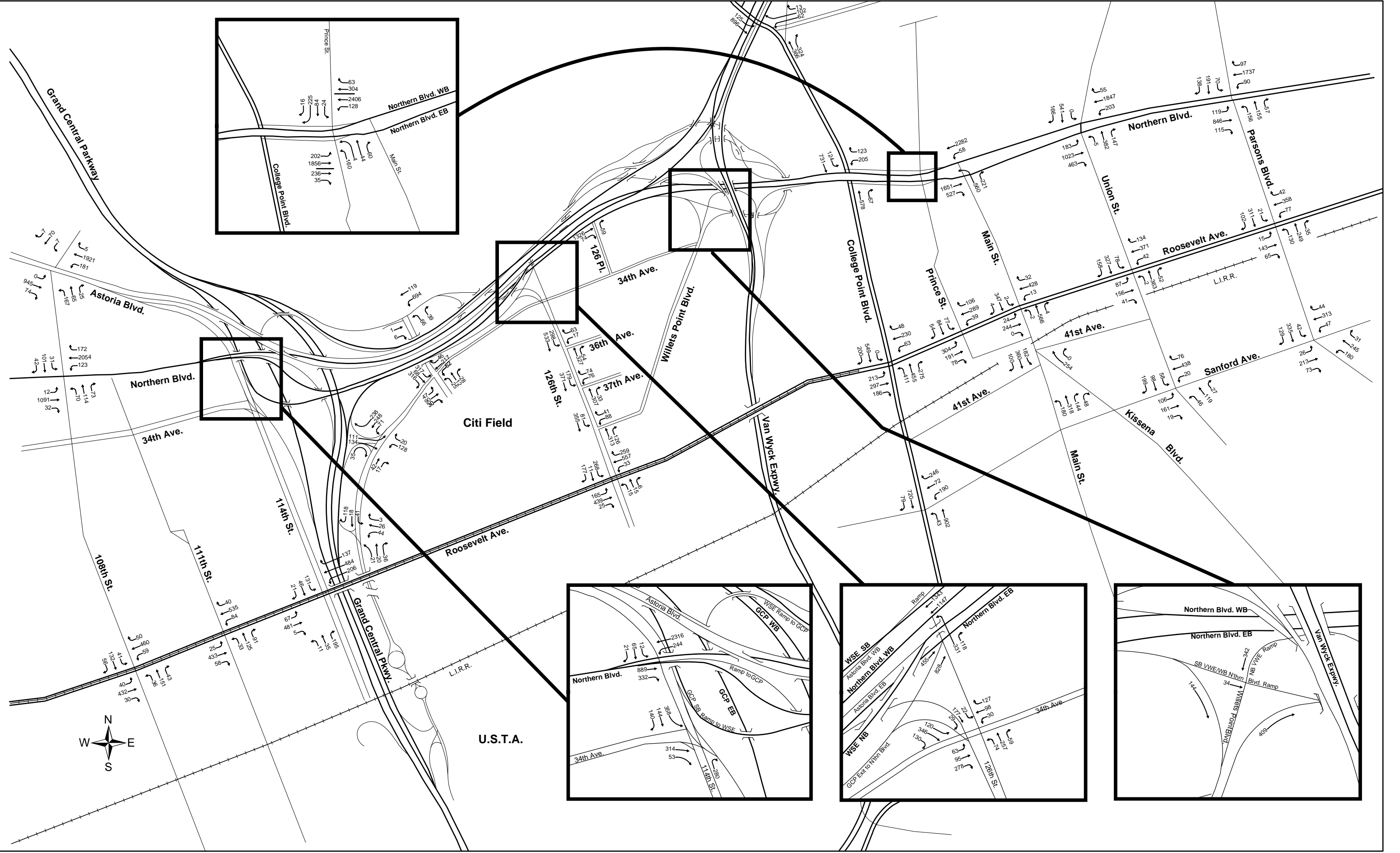


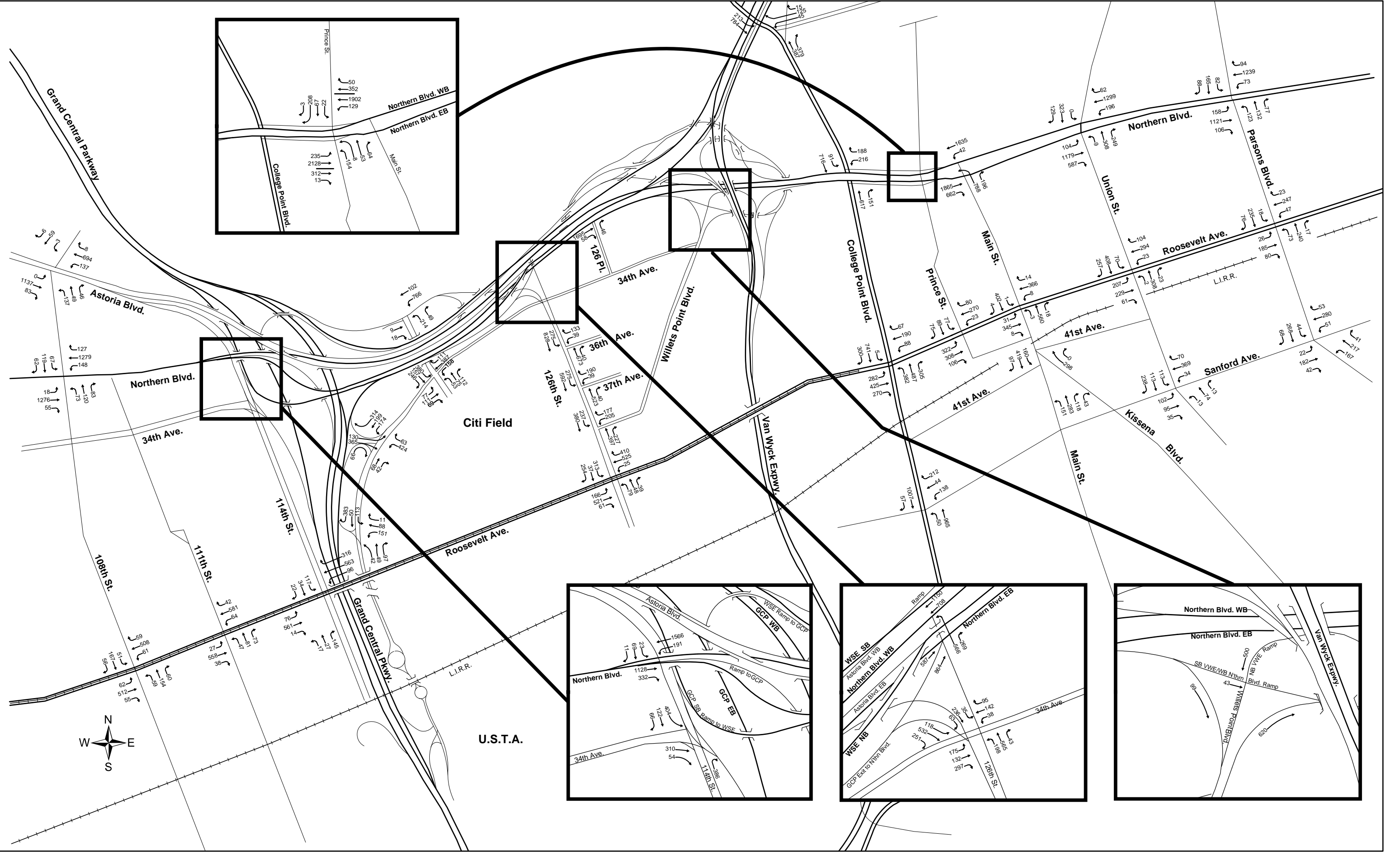


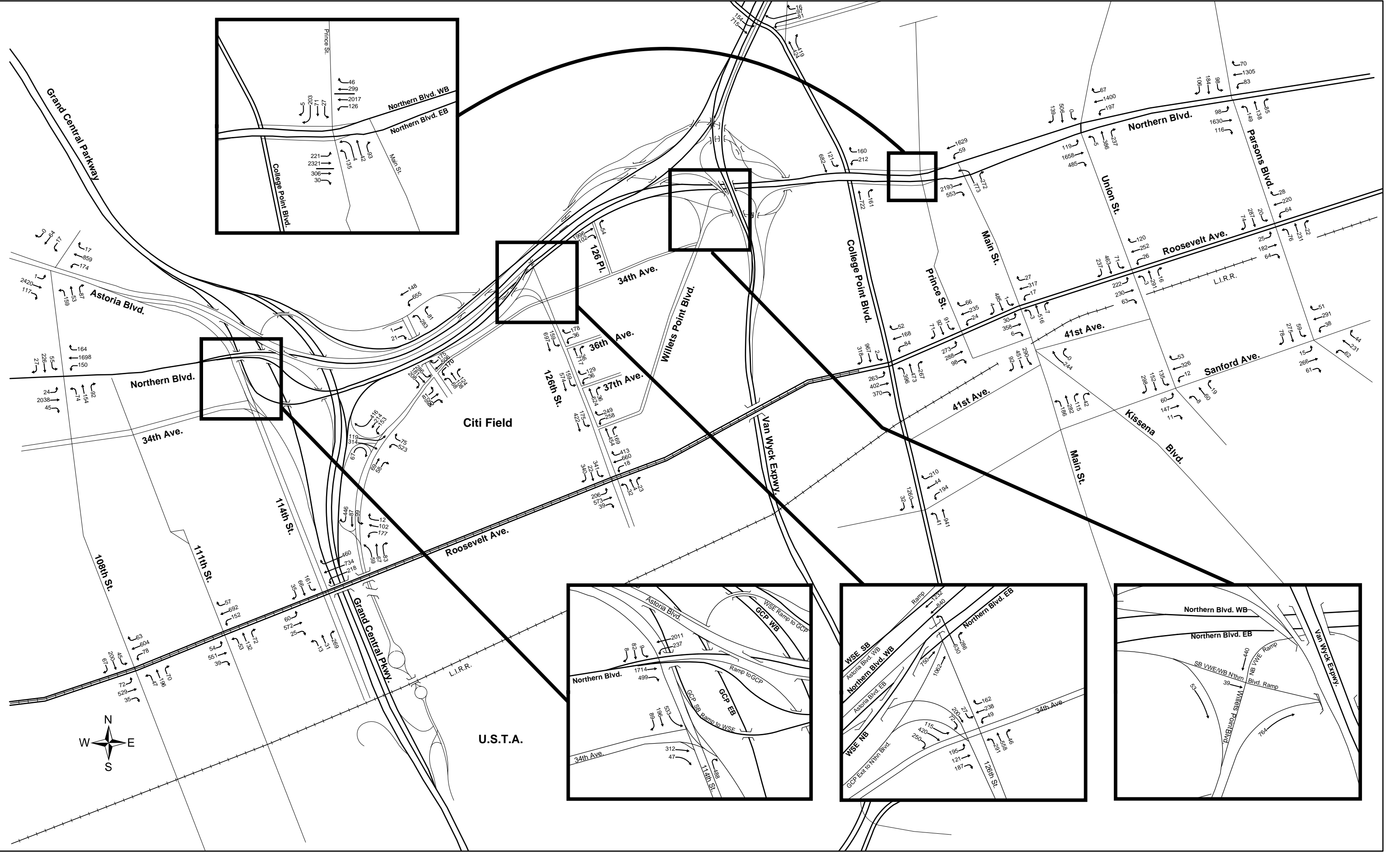


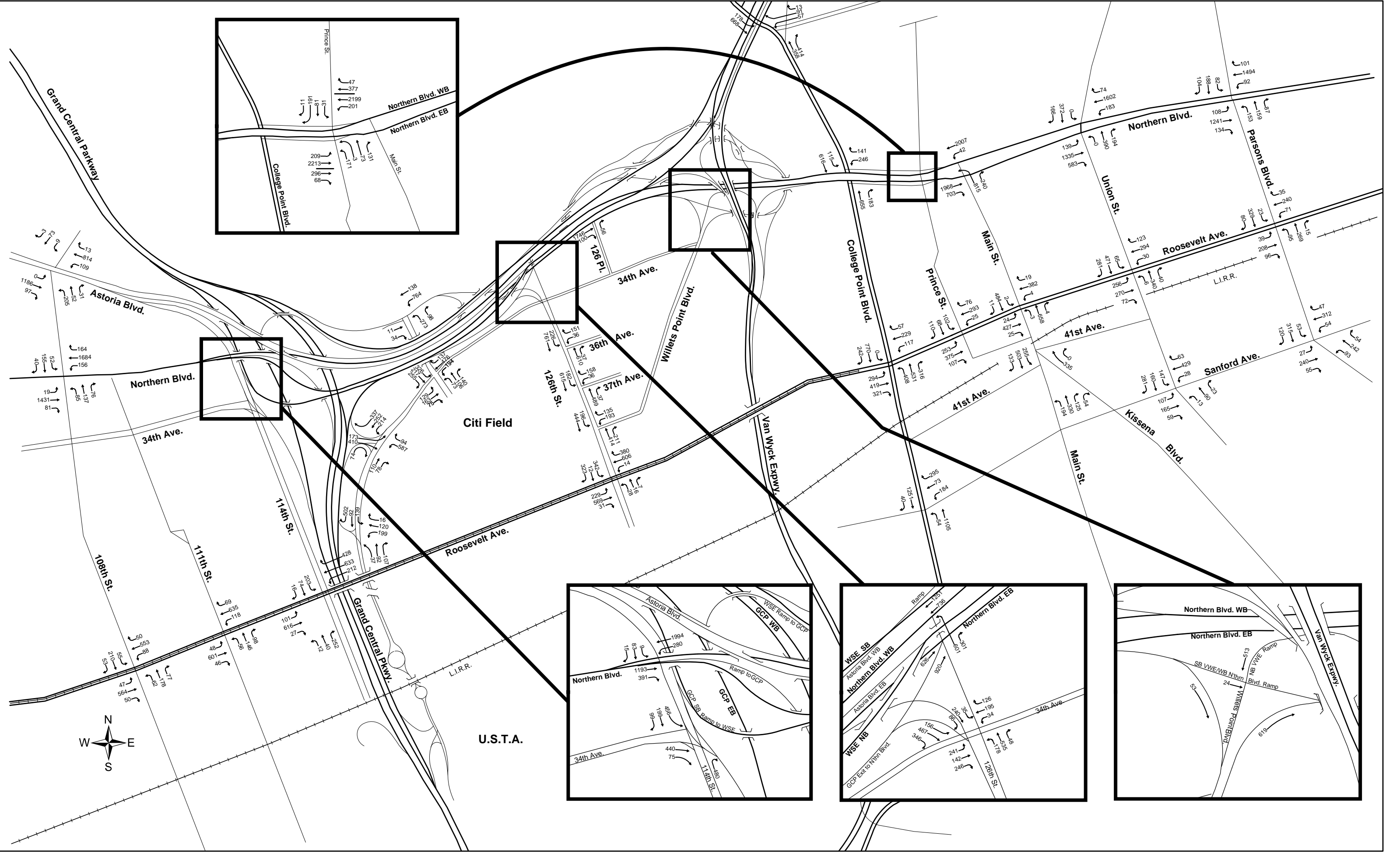


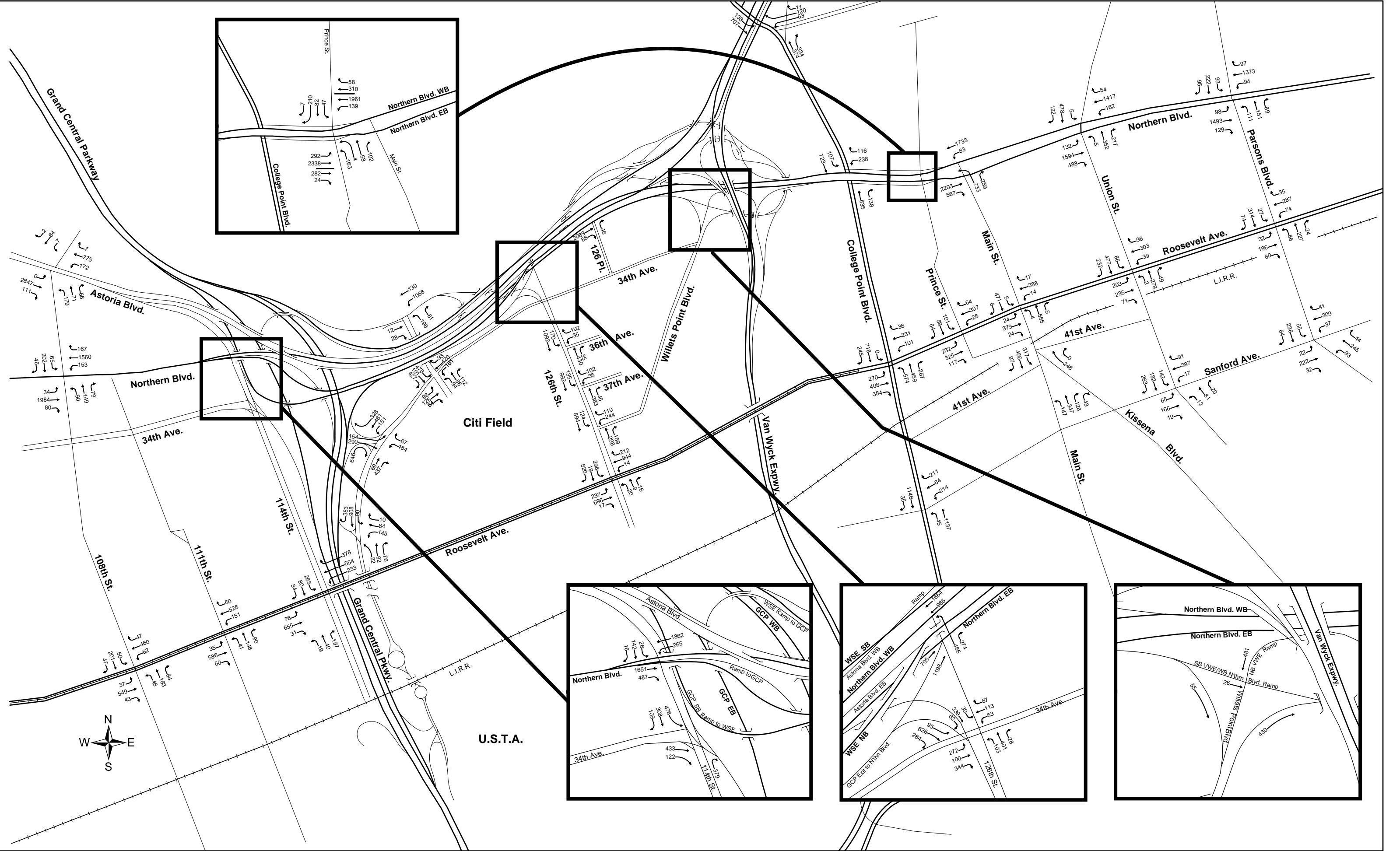


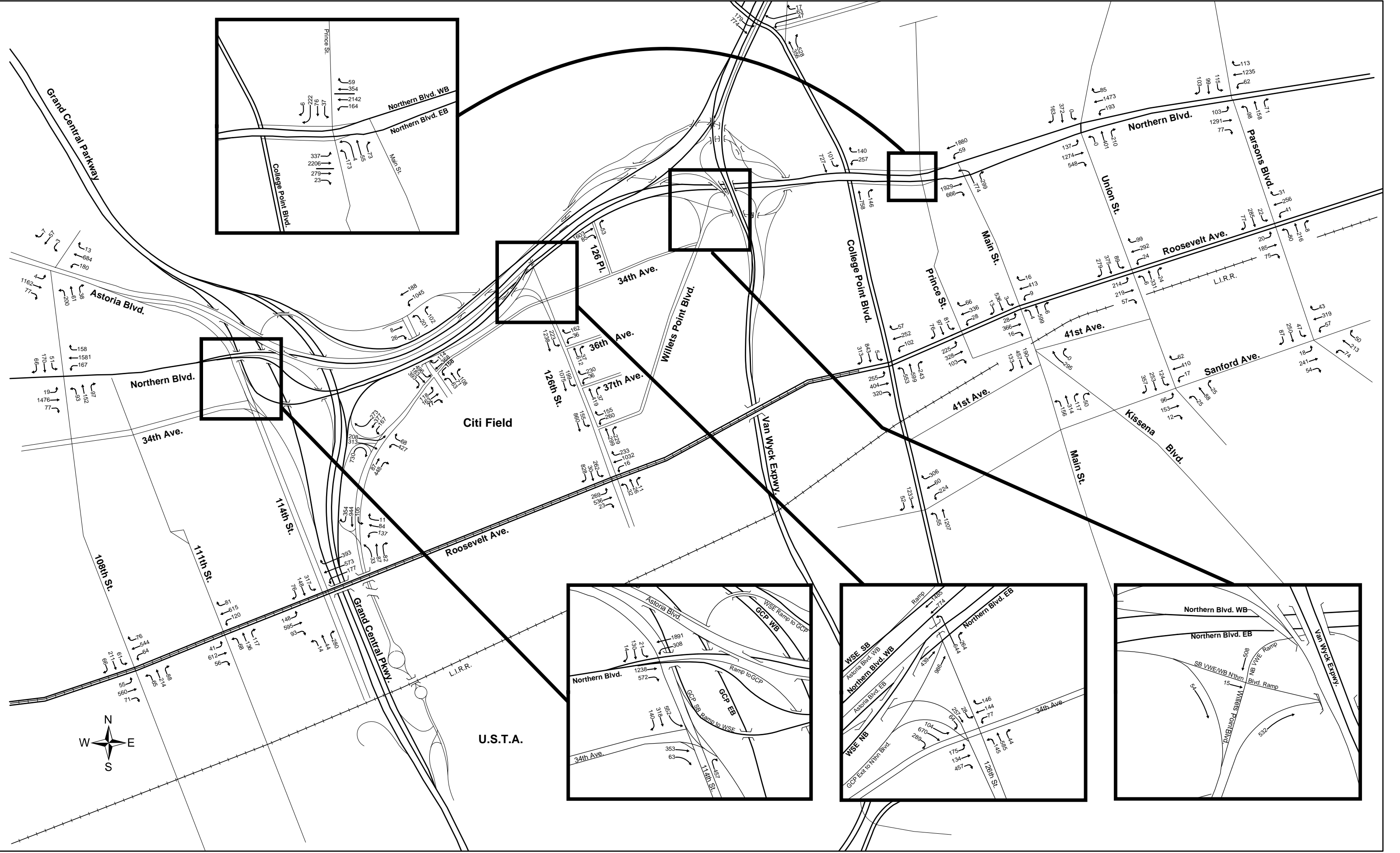


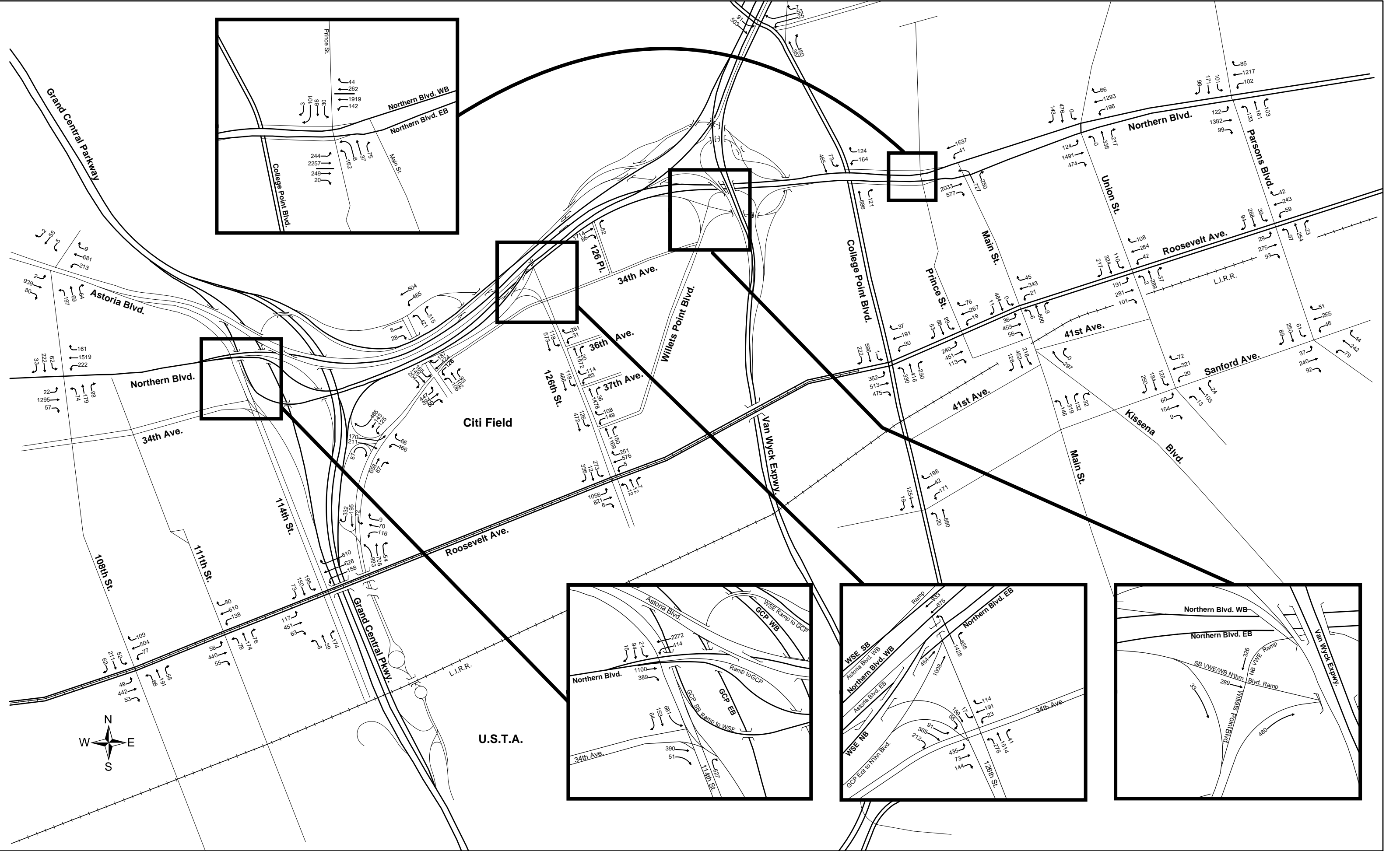


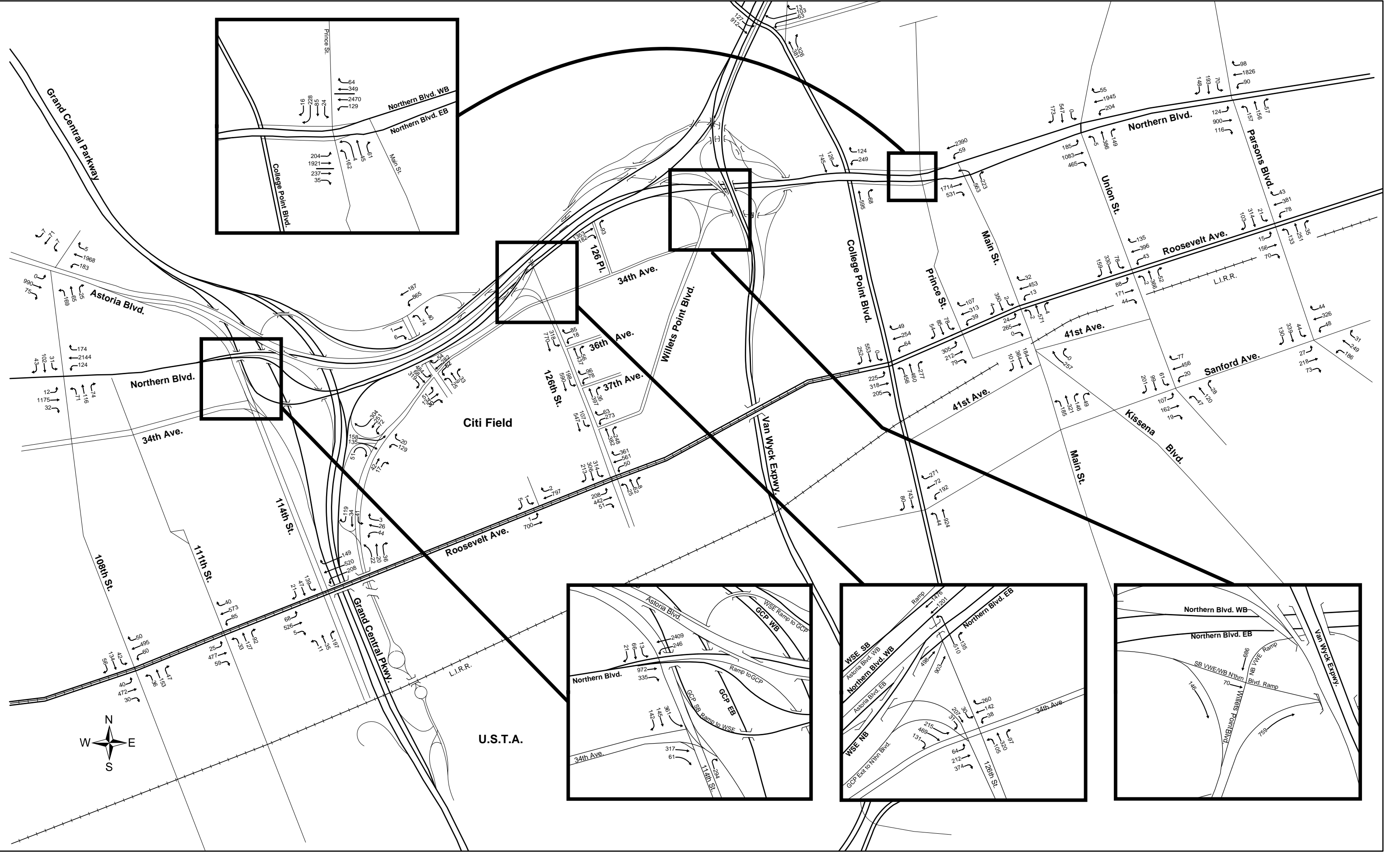


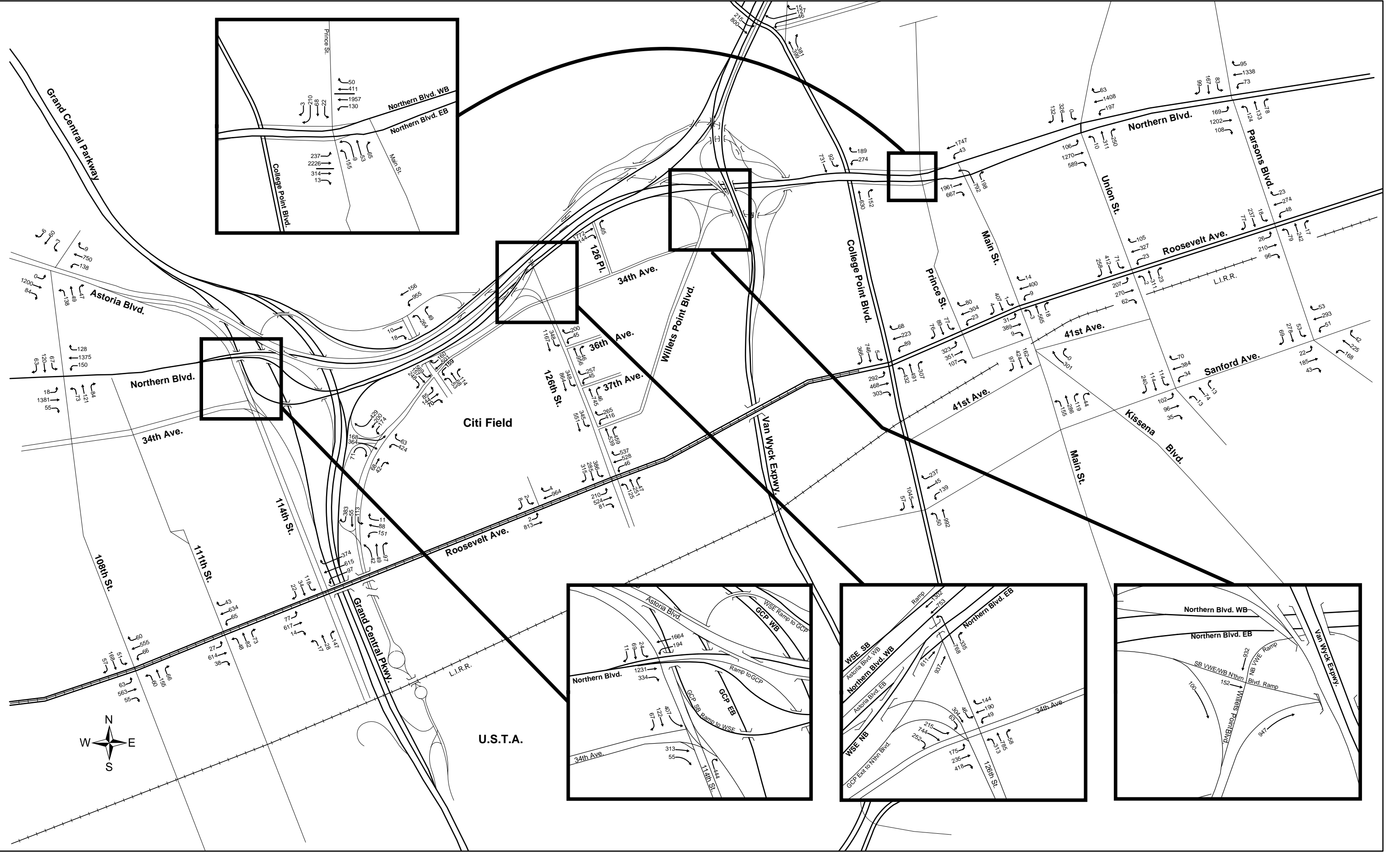


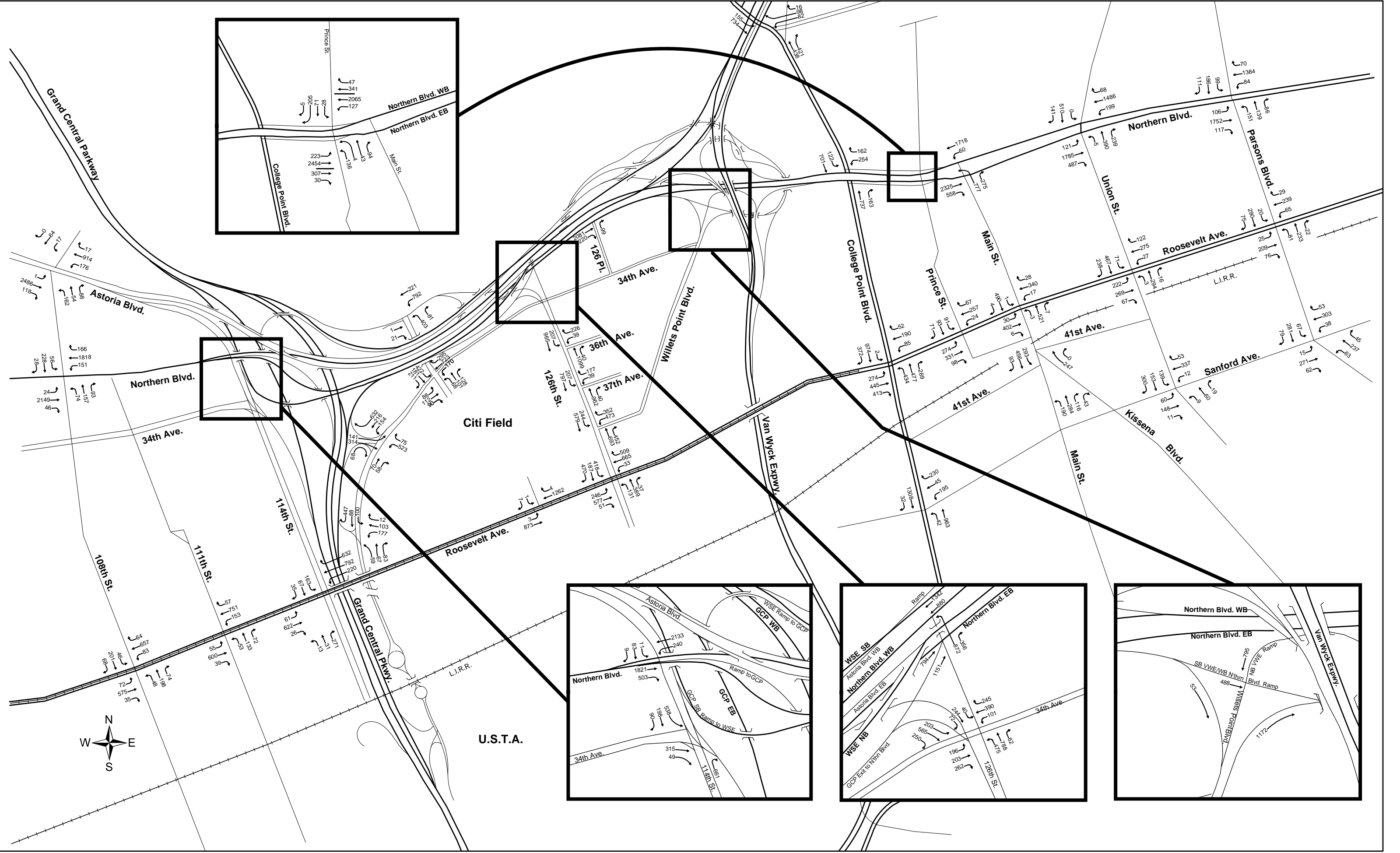


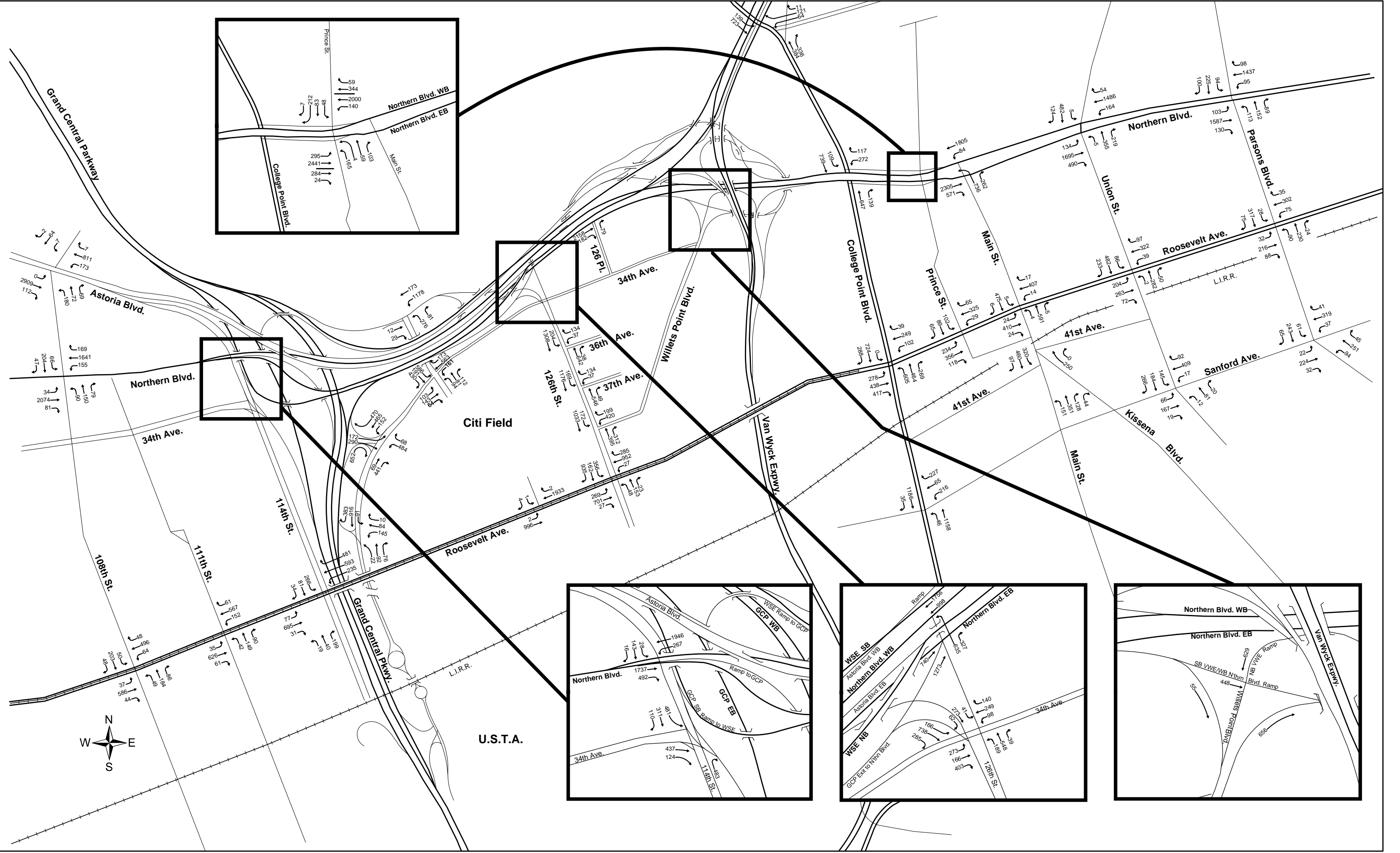


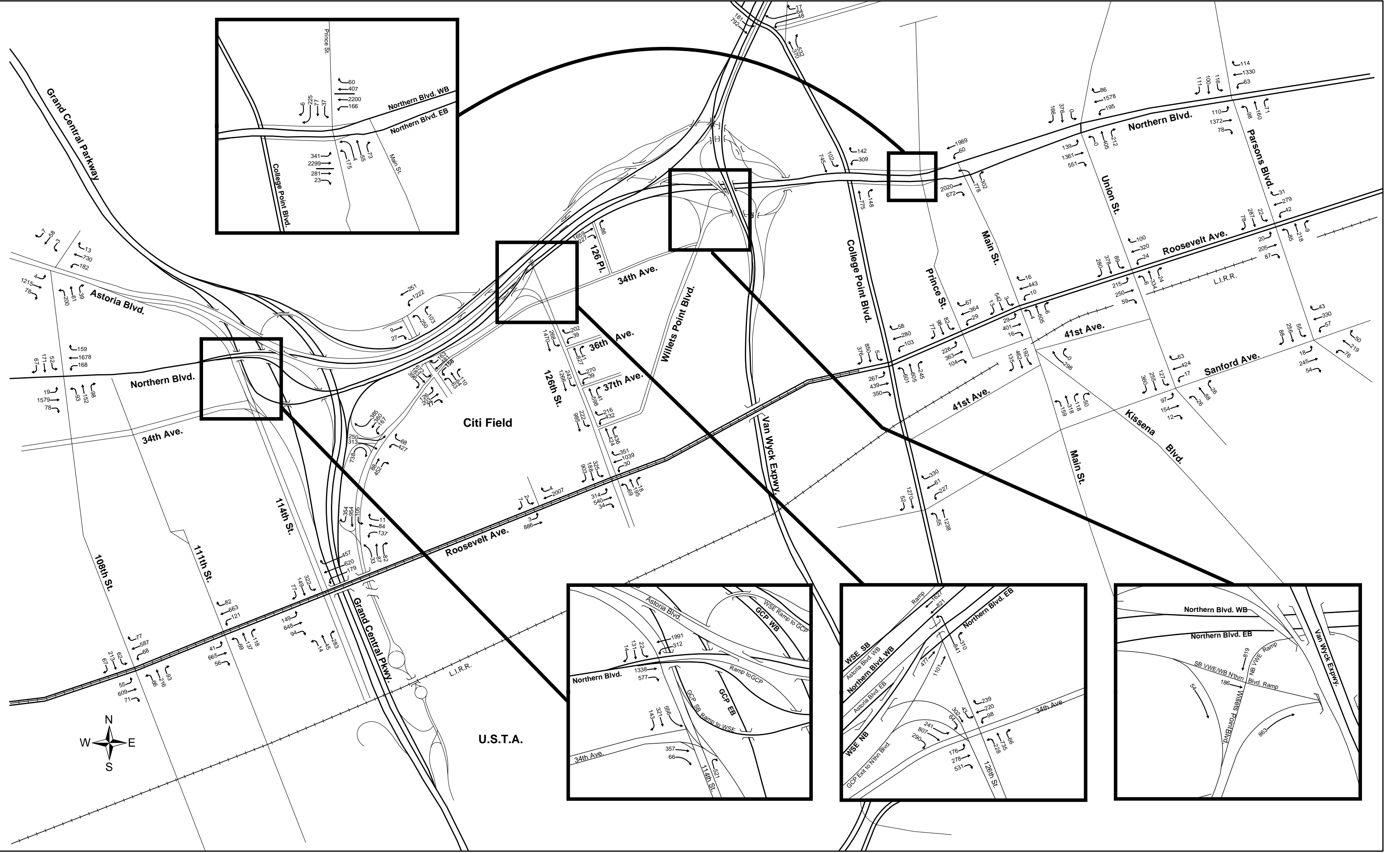


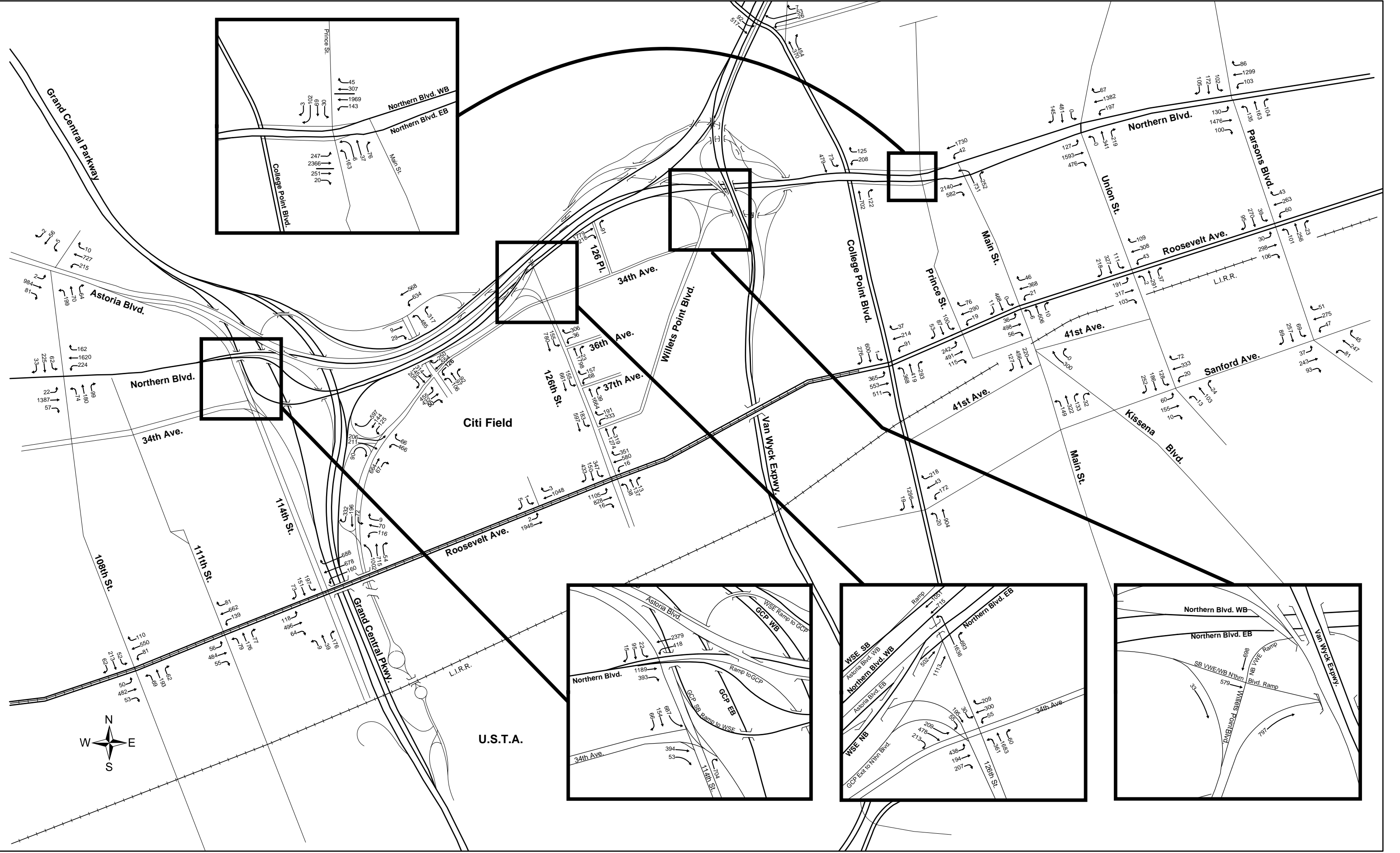






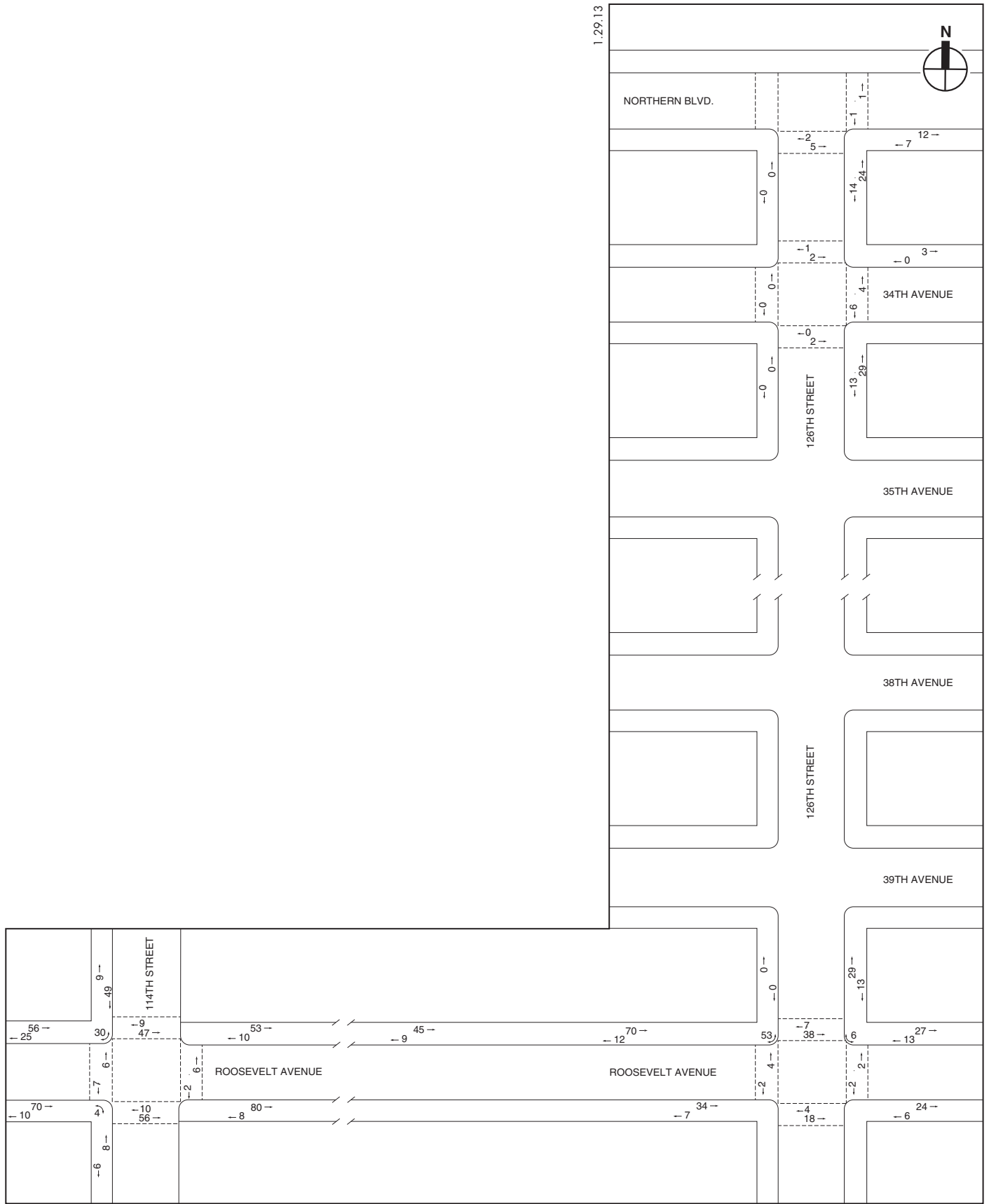




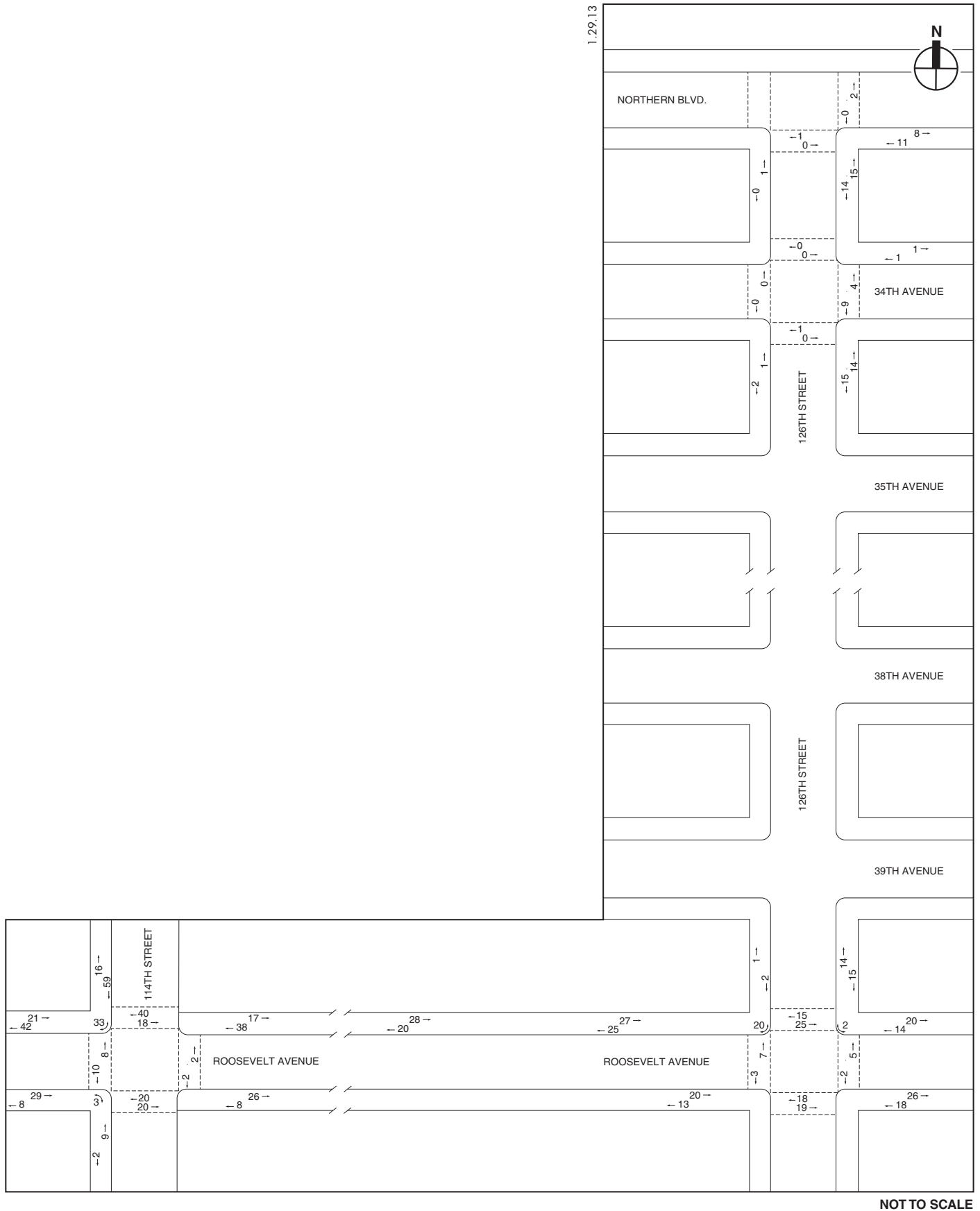


Appendix D

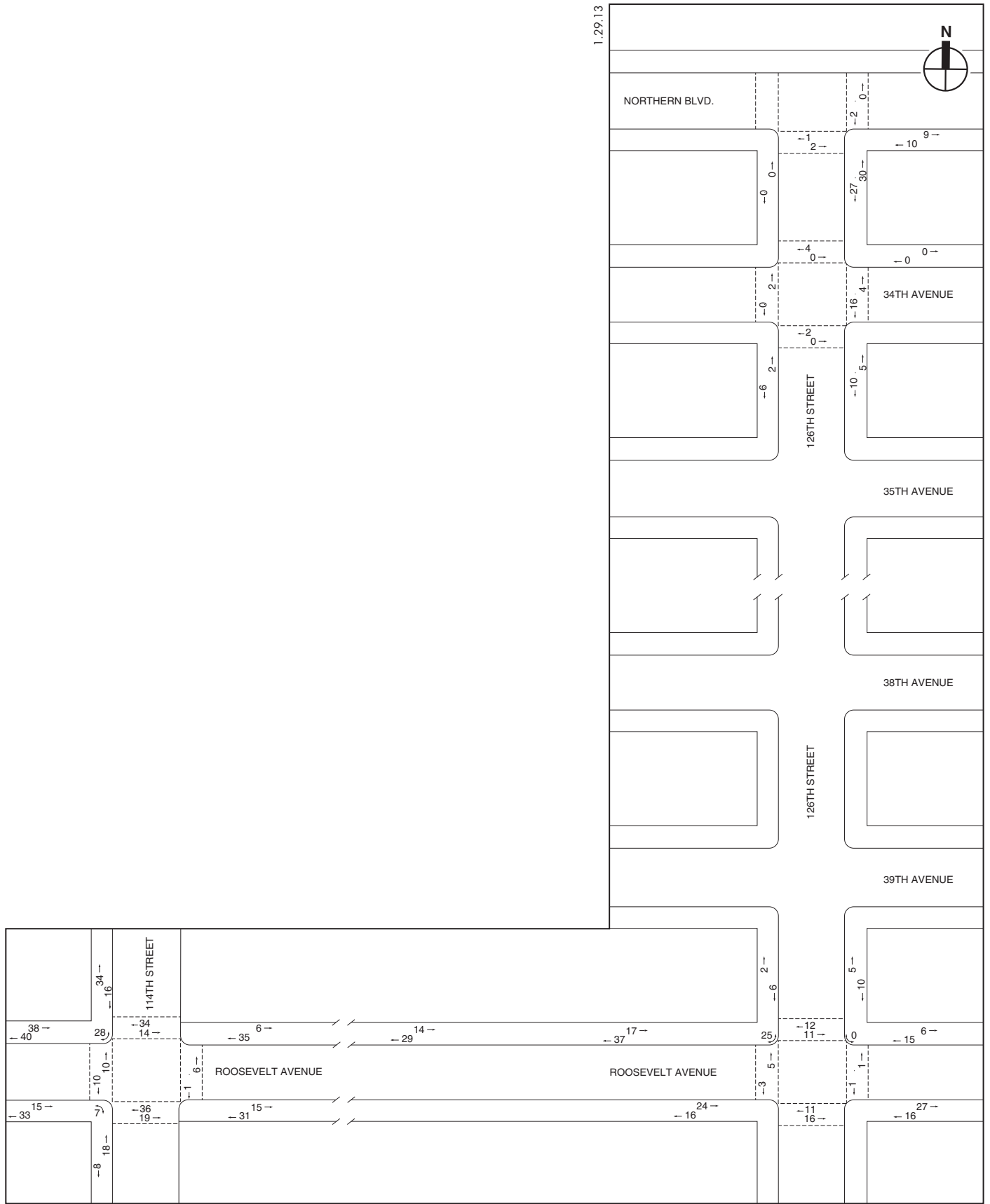
Transit and Pedestrians



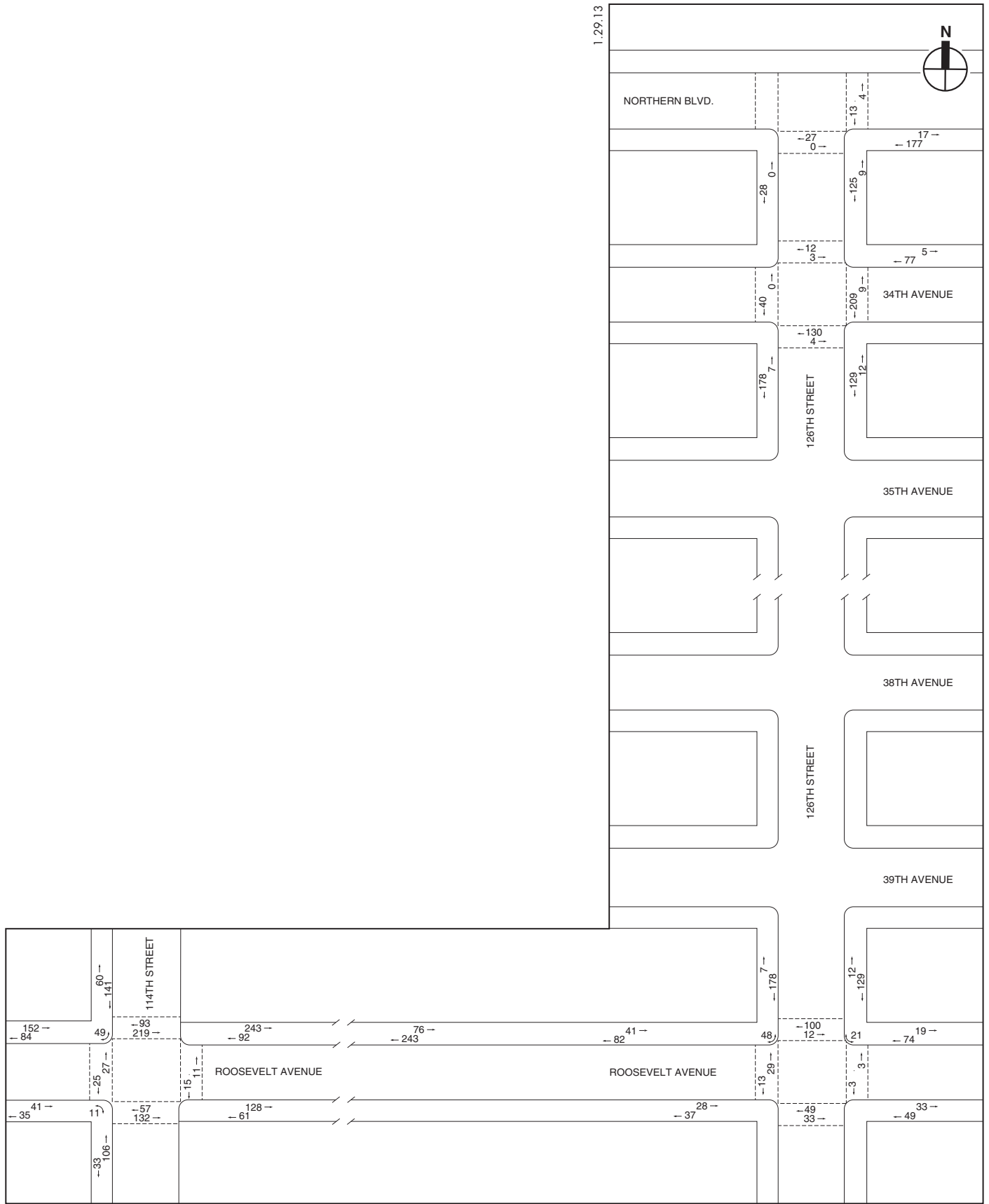
2012 Existing Pedestrian Volumes
Weekday AM Peak Hour
Figure D-1



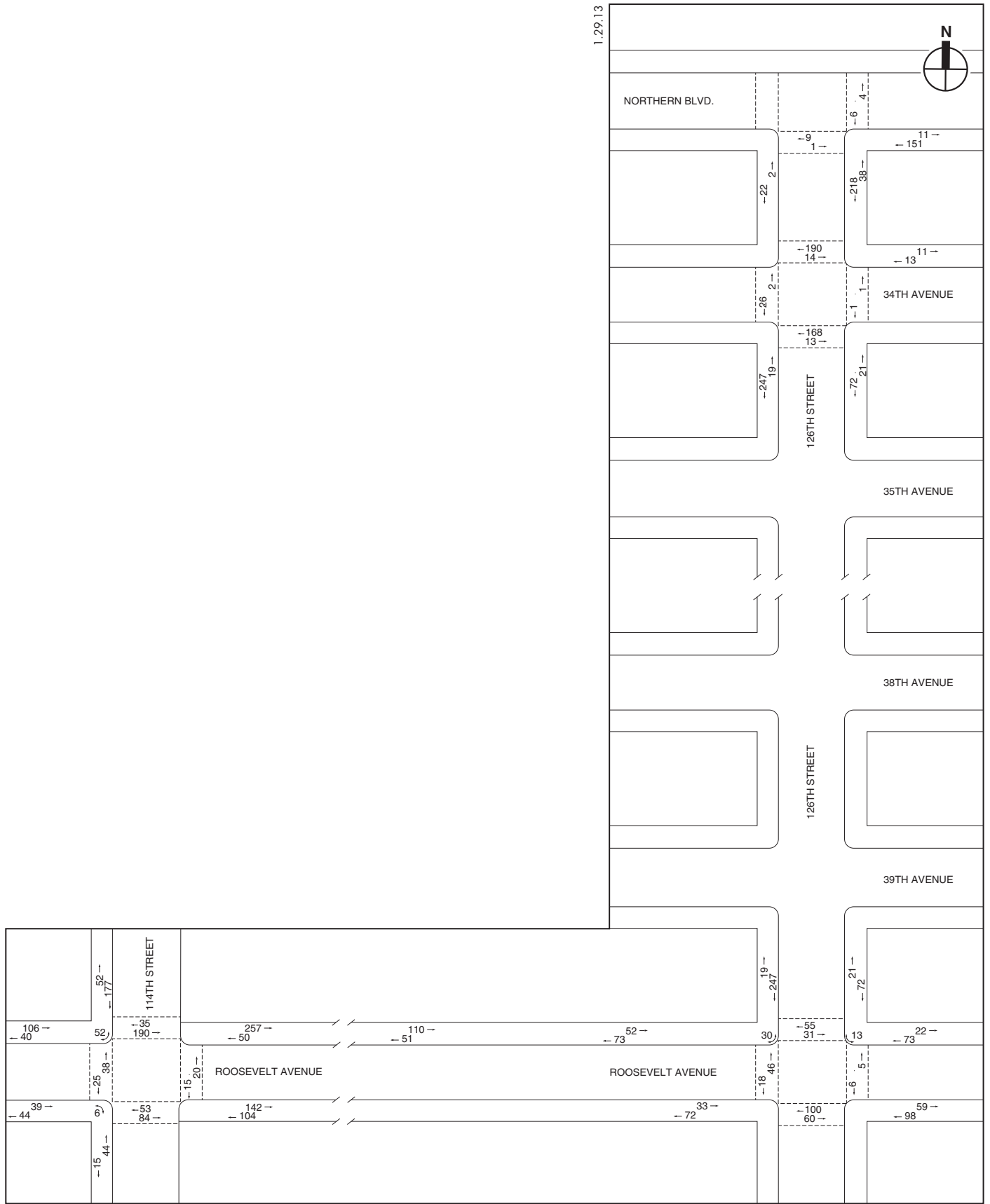
2012 Existing Pedestrian Volumes
 Weekday Midday Peak Hour
Figure D-2



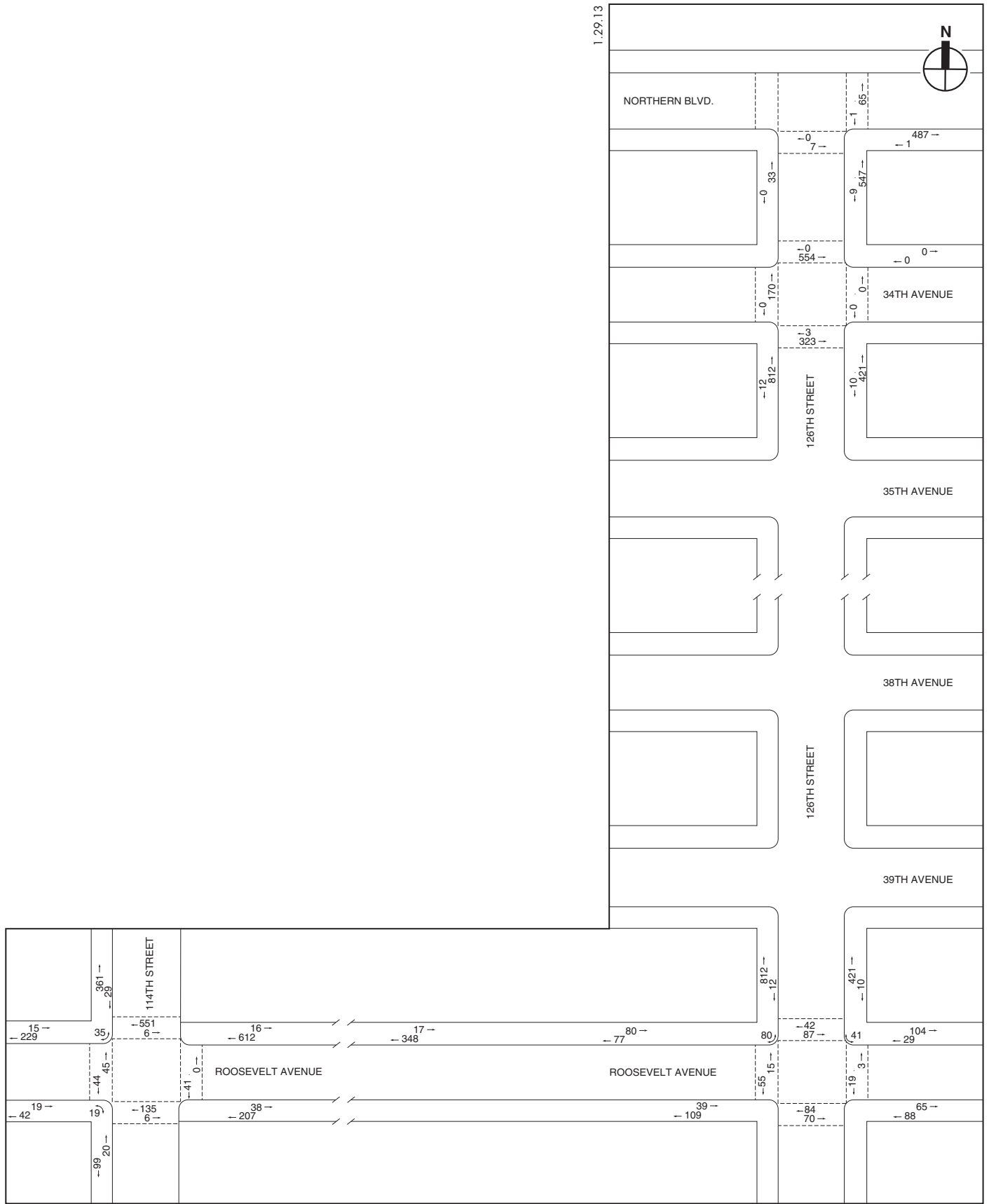
2012 Existing Pedestrian Volumes
 Weekday PM Peak Hour
Figure D-3



2012 Existing Pedestrian Volumes
Weekday Pre-Game Peak Hour
Figure D-4

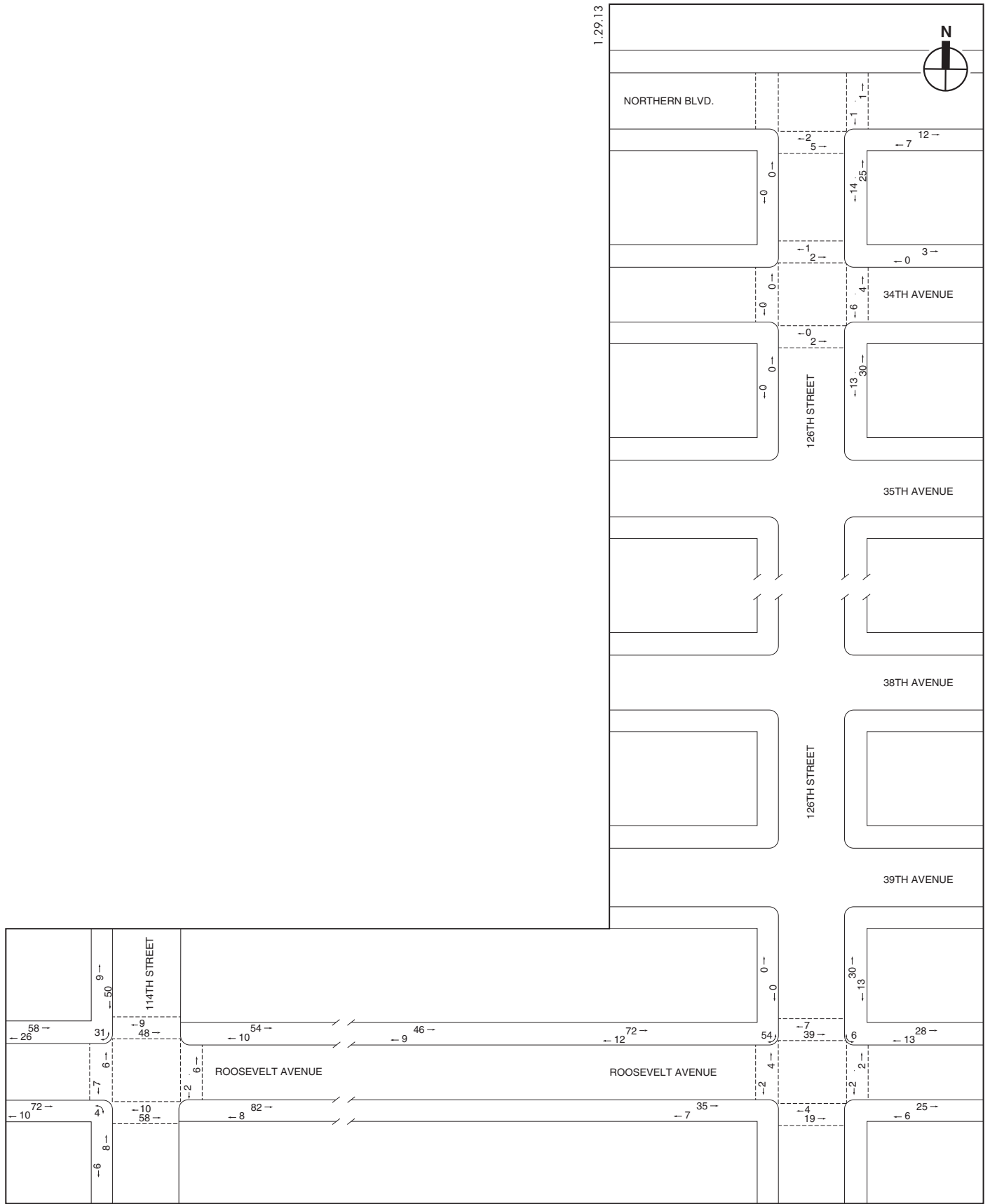


2012 Existing Pedestrian Volumes
Weekend Pre-Game Peak Hour
Figure D-6

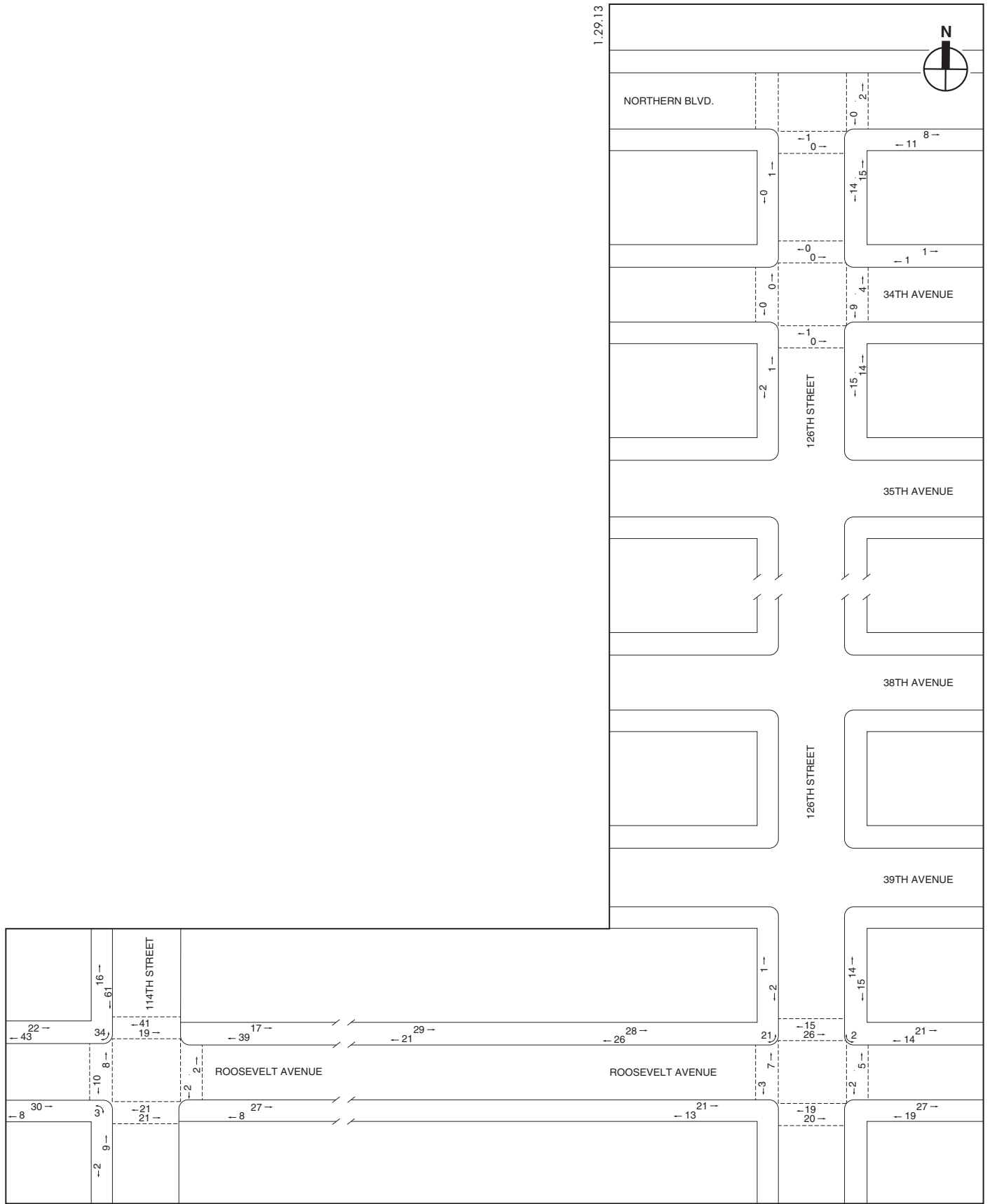


NOT TO SCALE

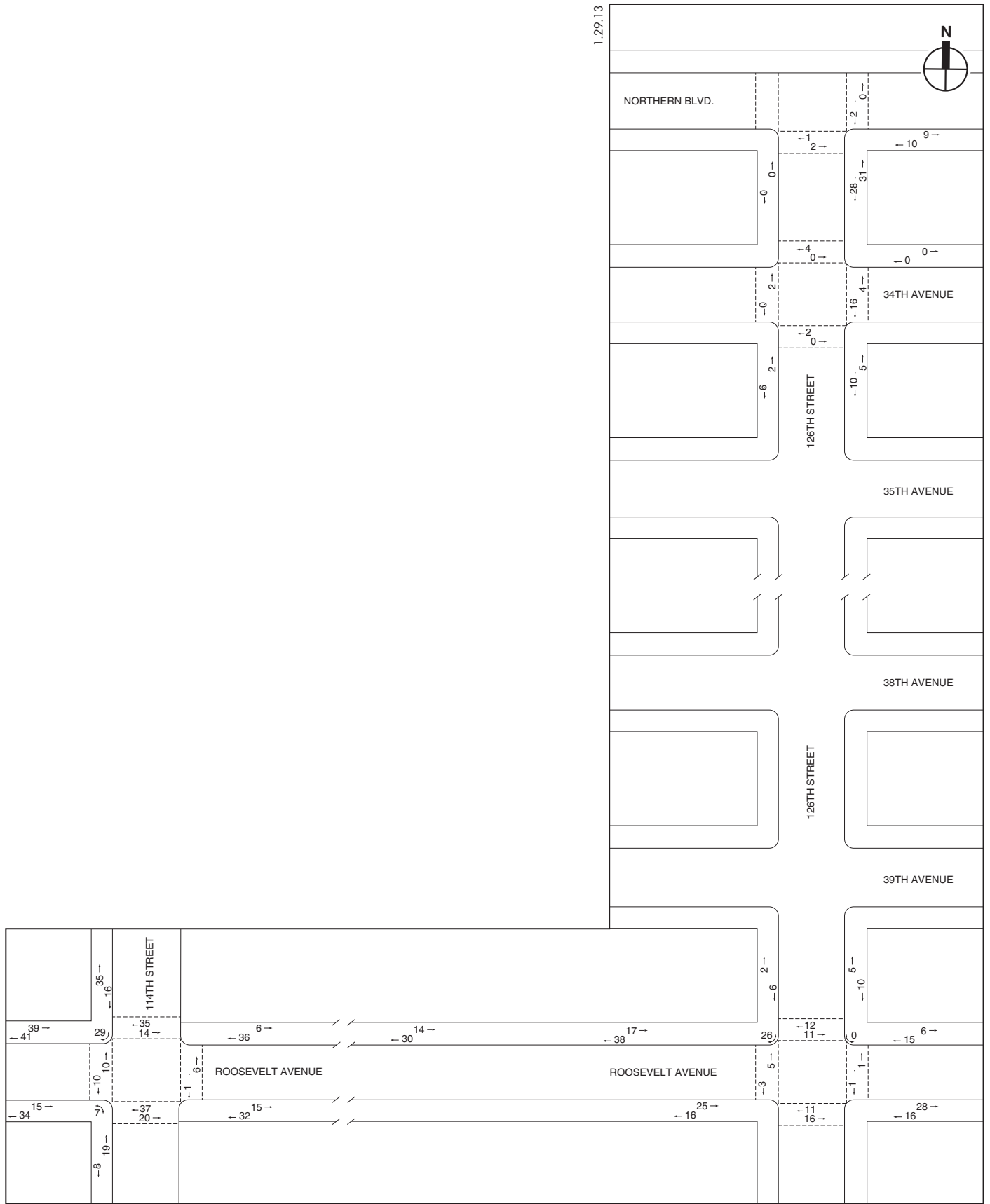
2012 Existing Pedestrian Volumes
Weekend Post-Game Peak Hour
Figure D-7



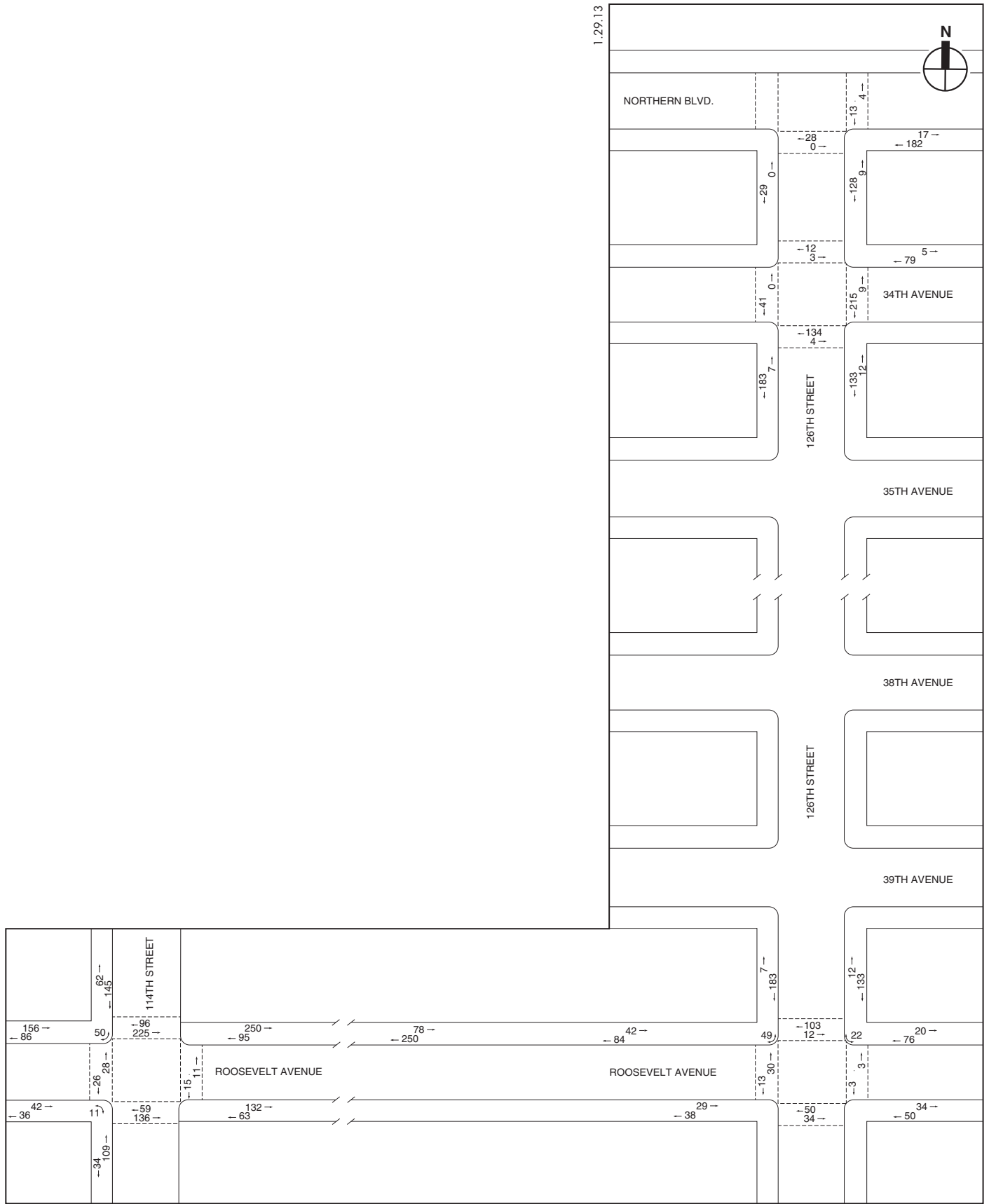
2018 No Action Pedestrian Volumes
Weekday AM Peak Hour
Figure D-8



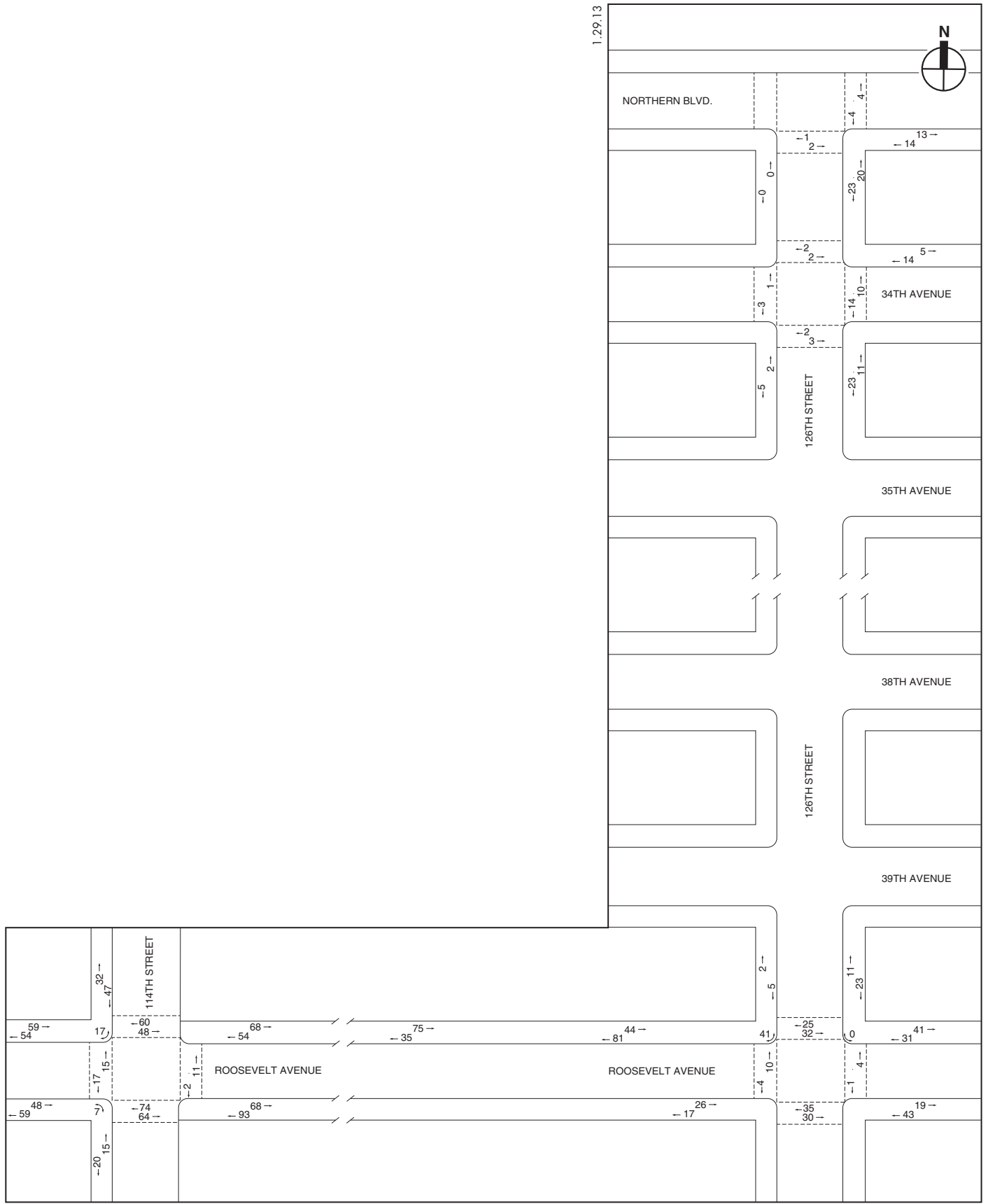
2018 No Action Pedestrian Volumes
Weekday Midday Peak Hour
Figure D-9



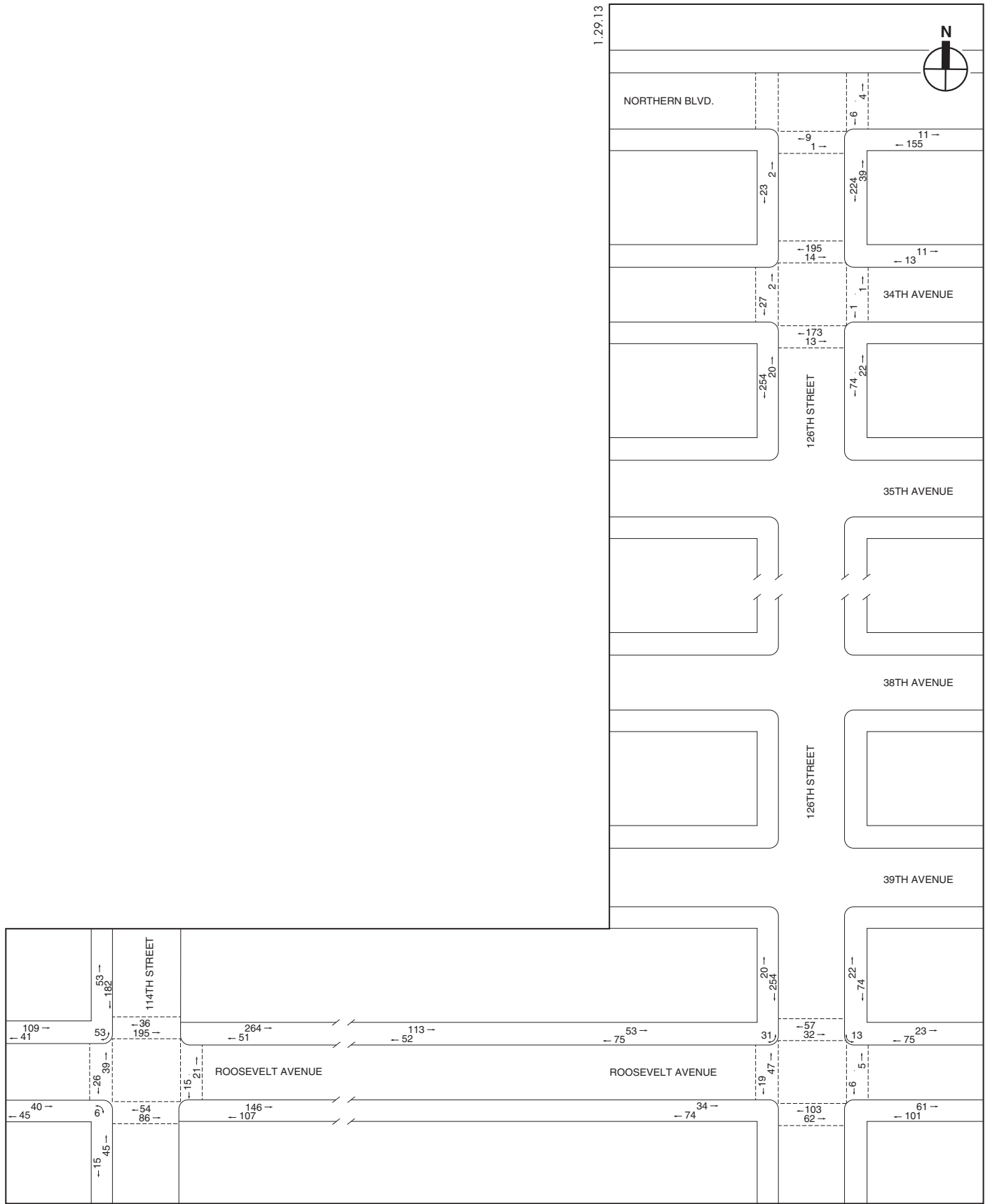
2018 No Action Pedestrian Volumes
 Weekday PM Peak Hour
Figure D-10



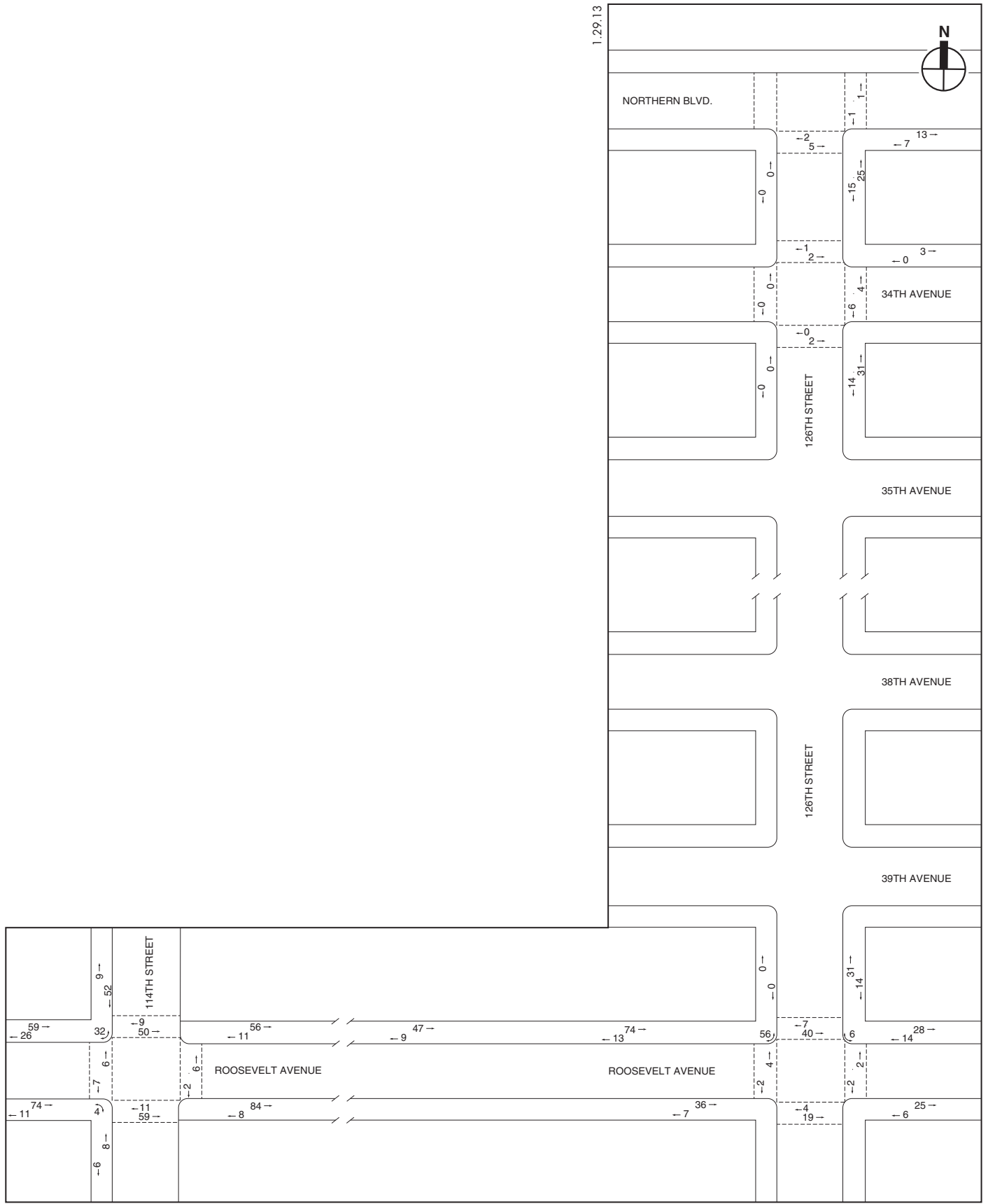
2018 No Action Pedestrian Volumes
Weekday Pre-Game Peak Hour
Figure D-11



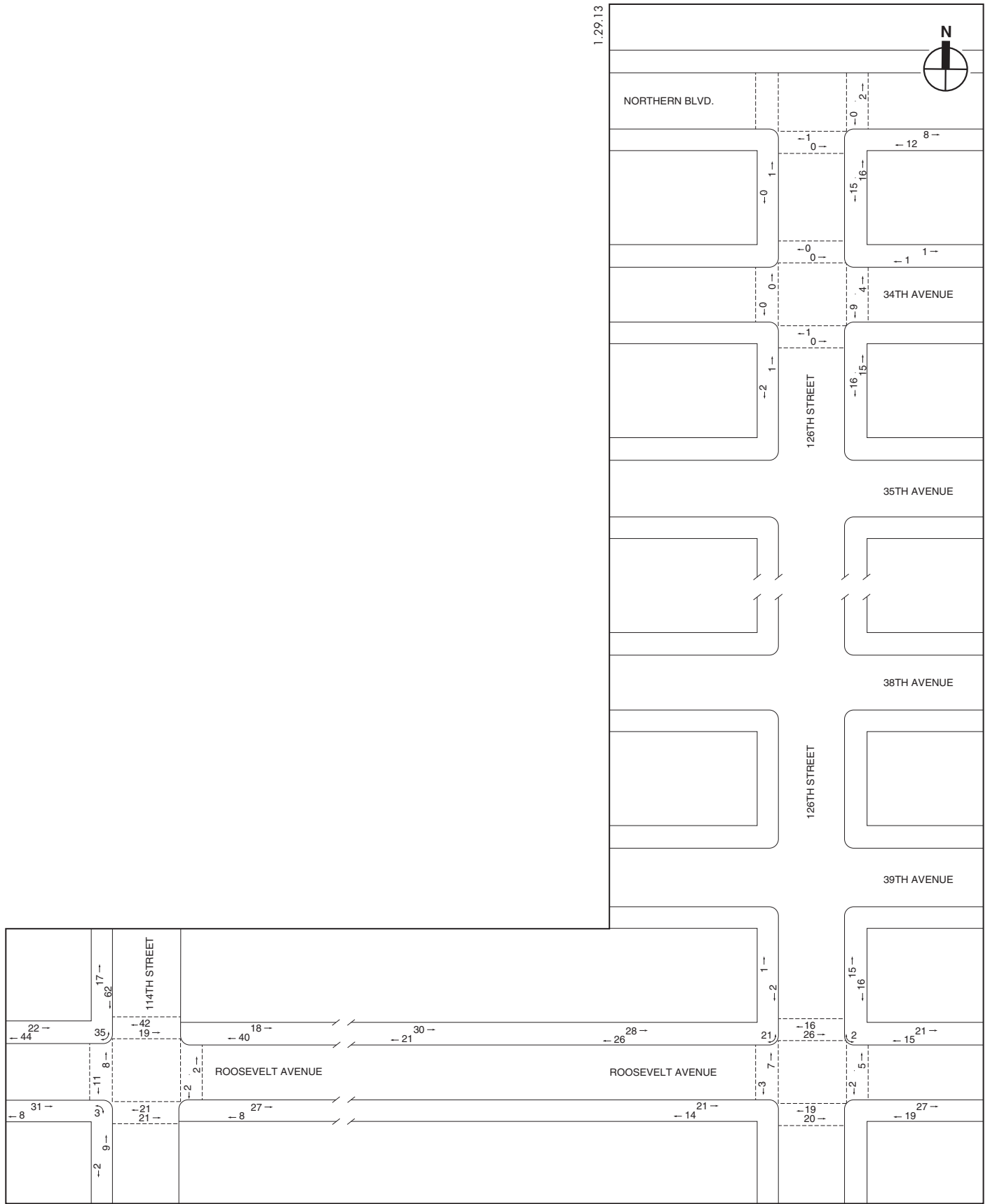
2018 No Action Pedestrian Volumes
Weekend Midday Non-Game Peak Hour
Figure D-12



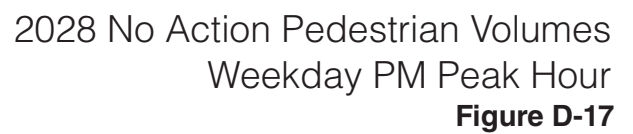
2018 No Action Pedestrian Volumes
Weekend Pre-Game Peak Hour
Figure D-13

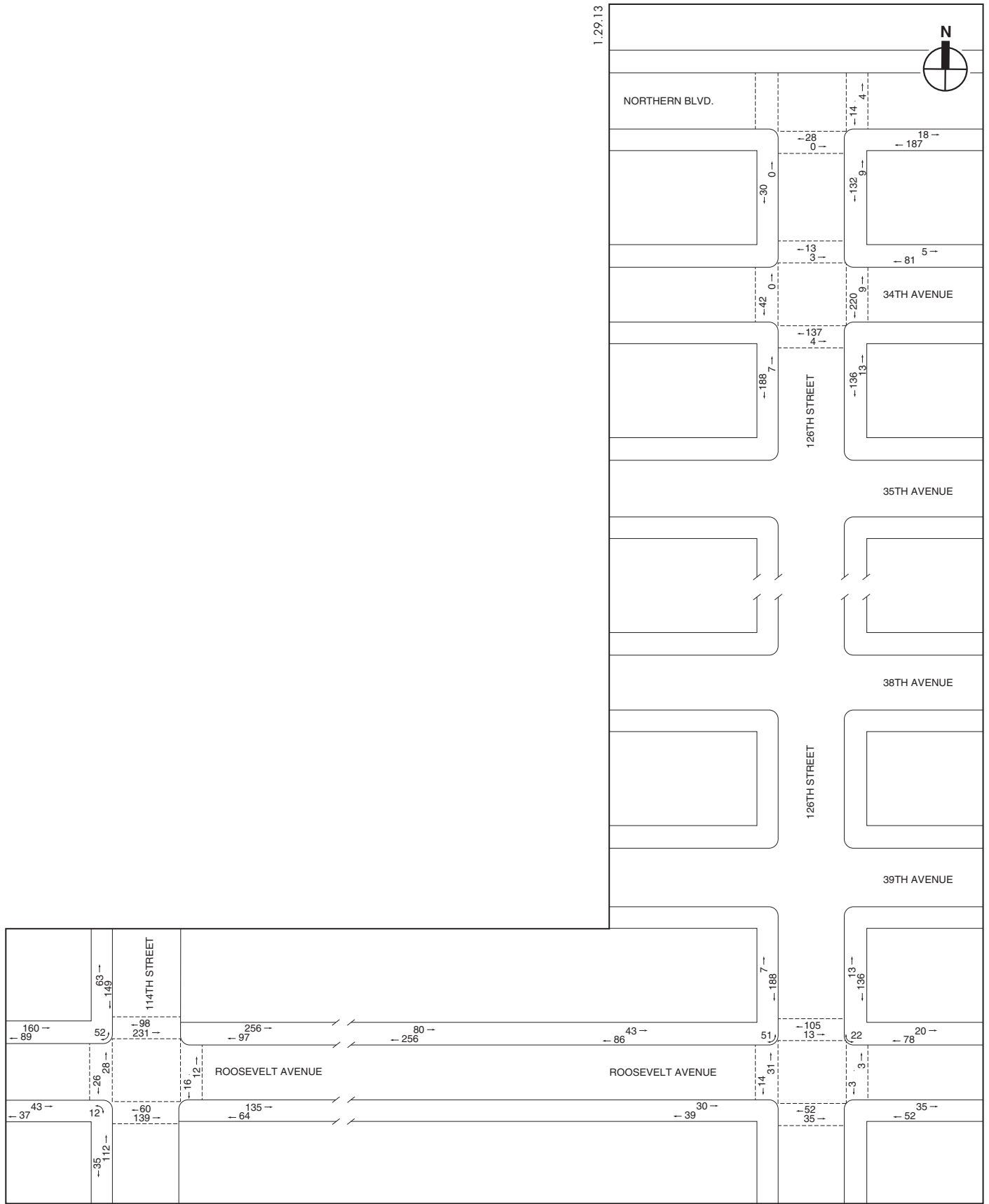


2028 No Action Pedestrian Volumes
Weekday AM Peak Hour
Figure D-15

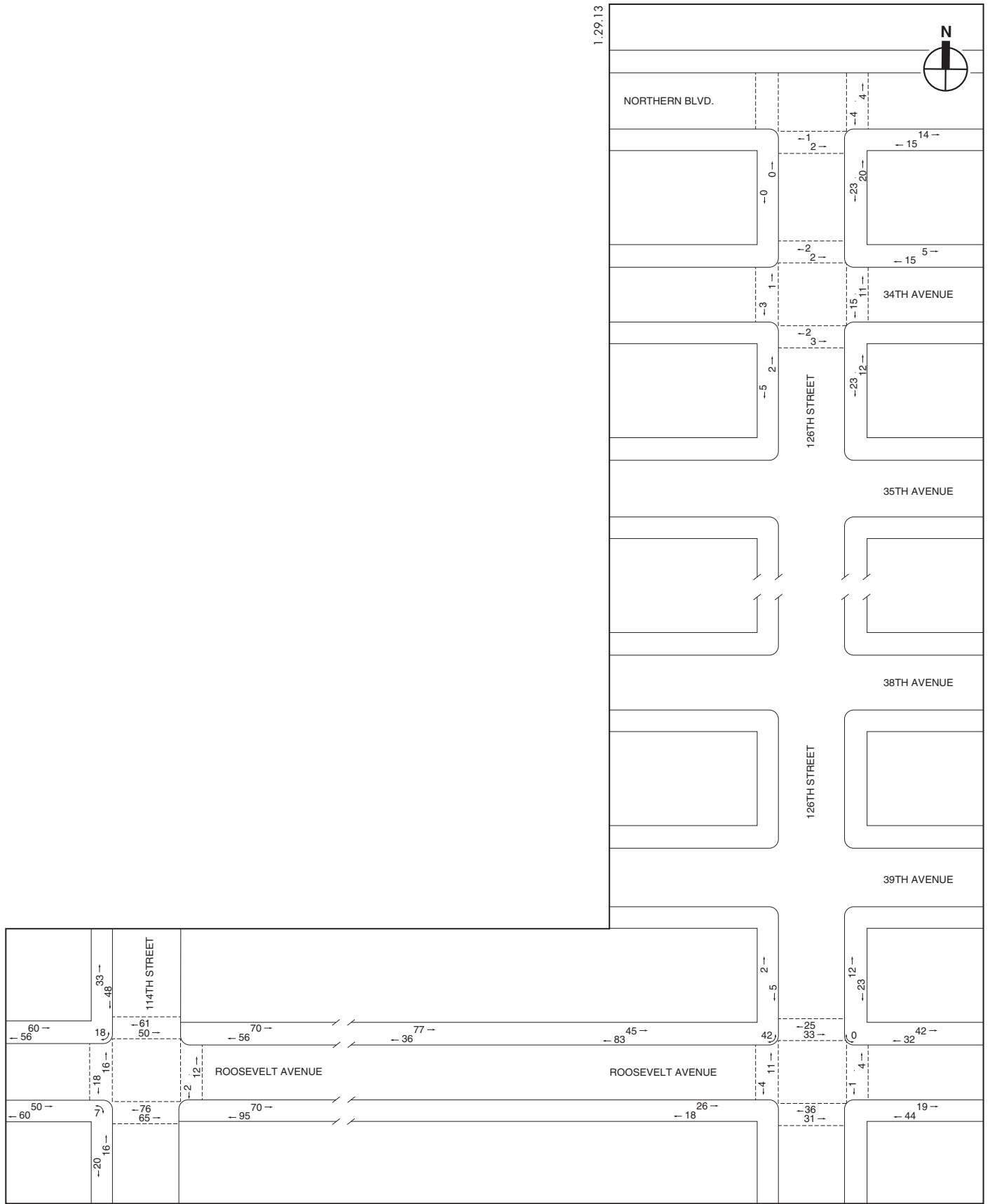


2028 No Action Pedestrian Volumes
Weekday Midday Peak Hour
Figure D-16

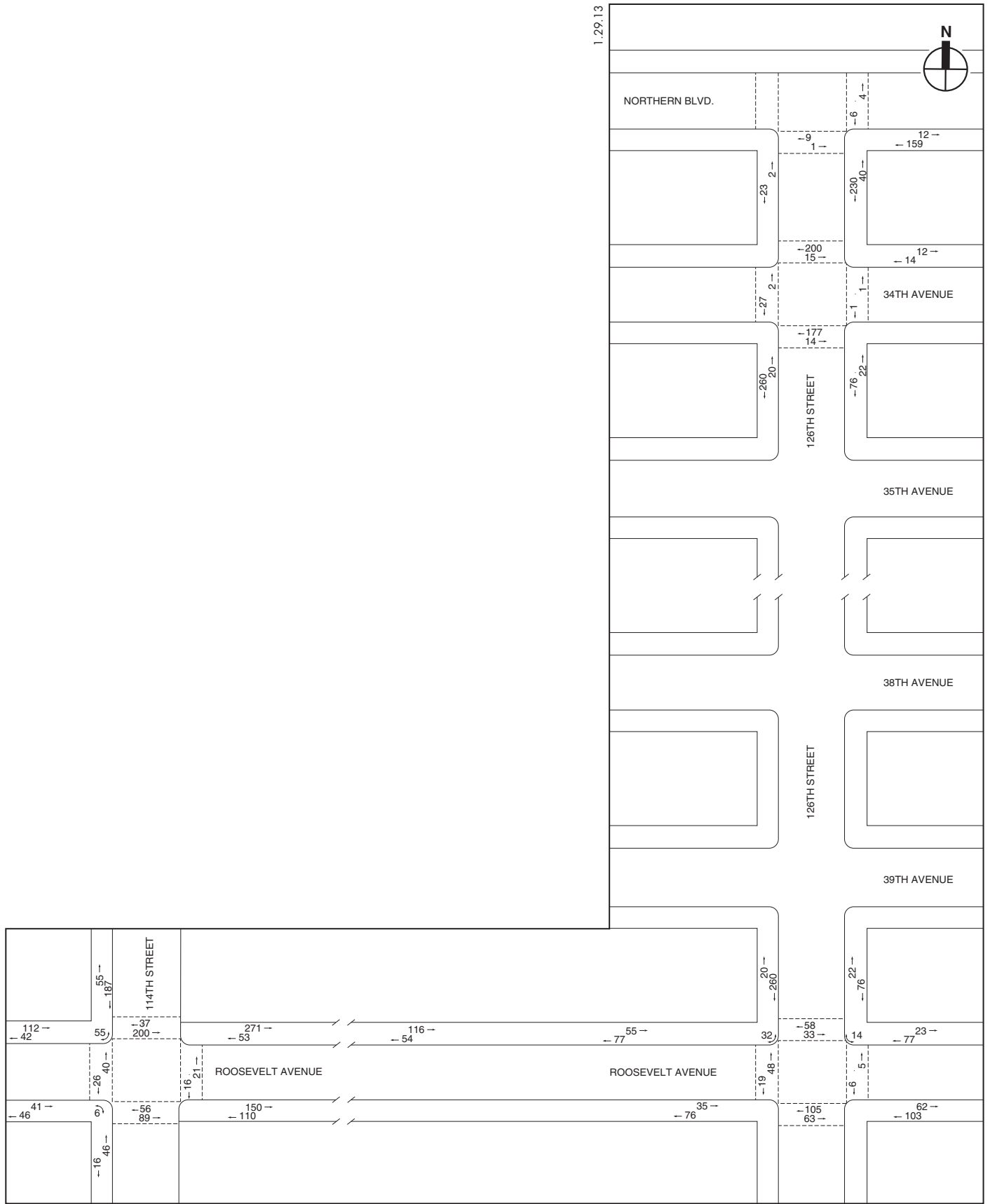




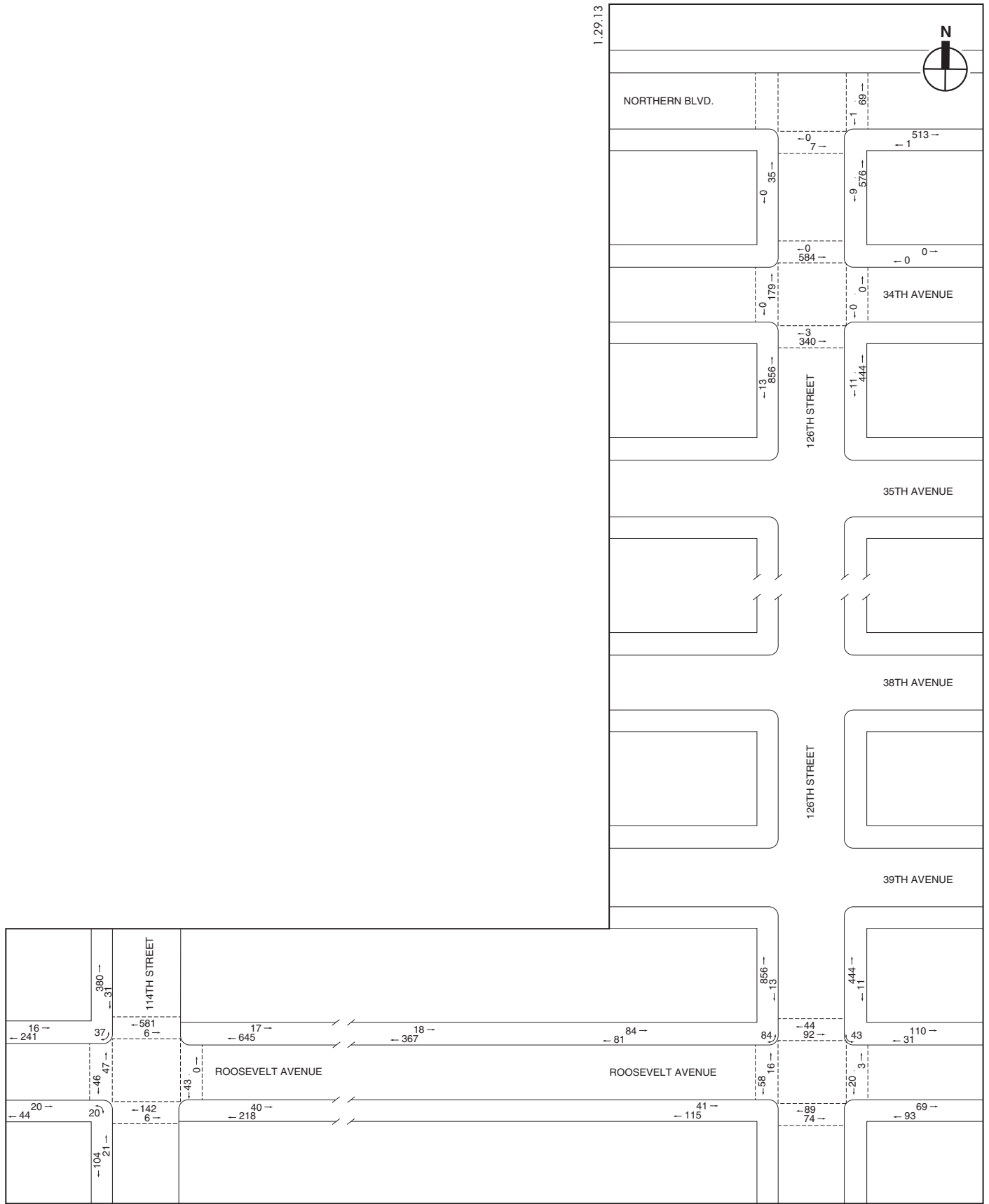
2028 No Action Pedestrian Volumes
Weekday Pre-Game Peak Hour
Figure D-18

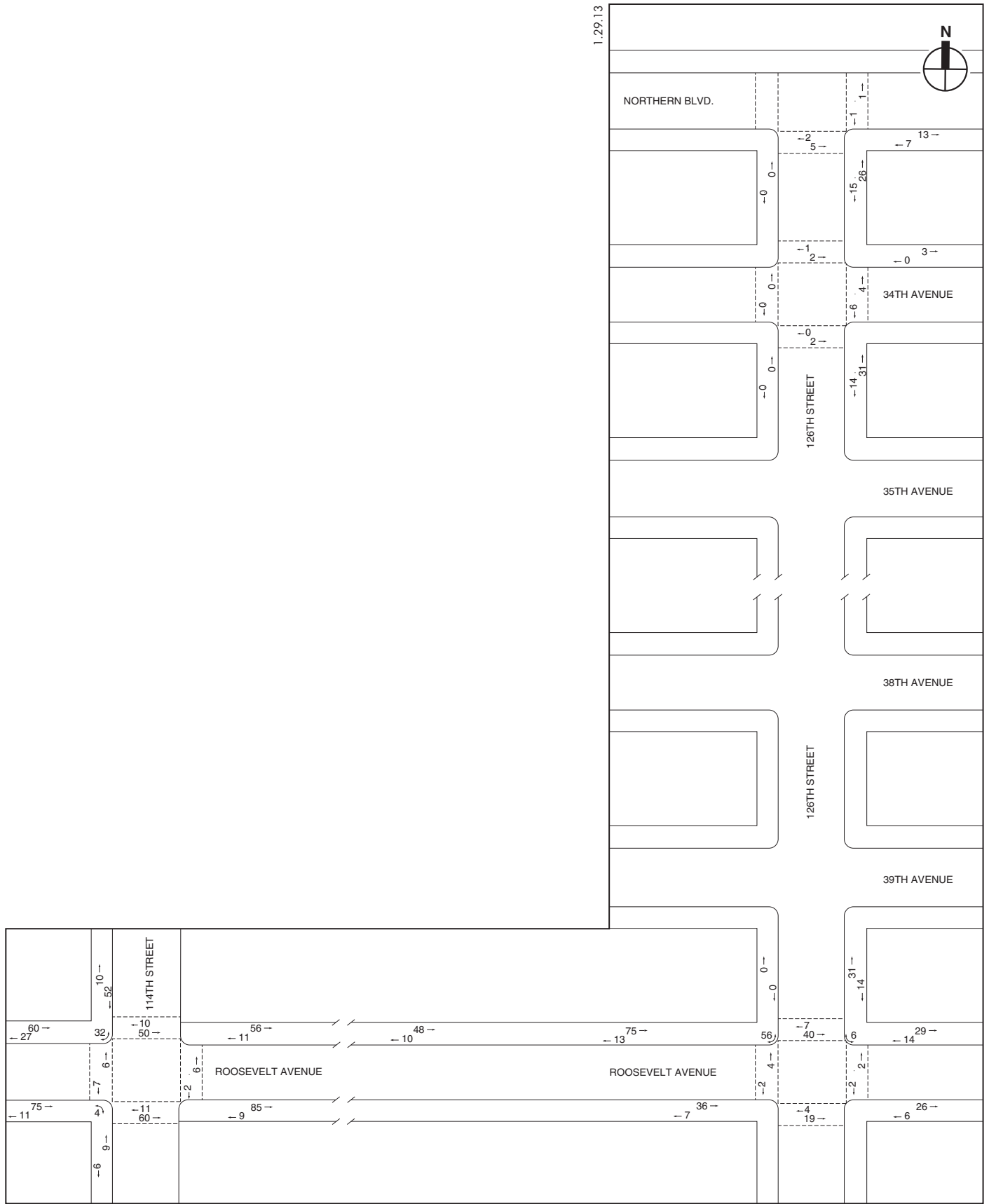


2028 No Action Pedestrian Volumes
Weekend Midday Non-Game Peak Hour
Figure D-19

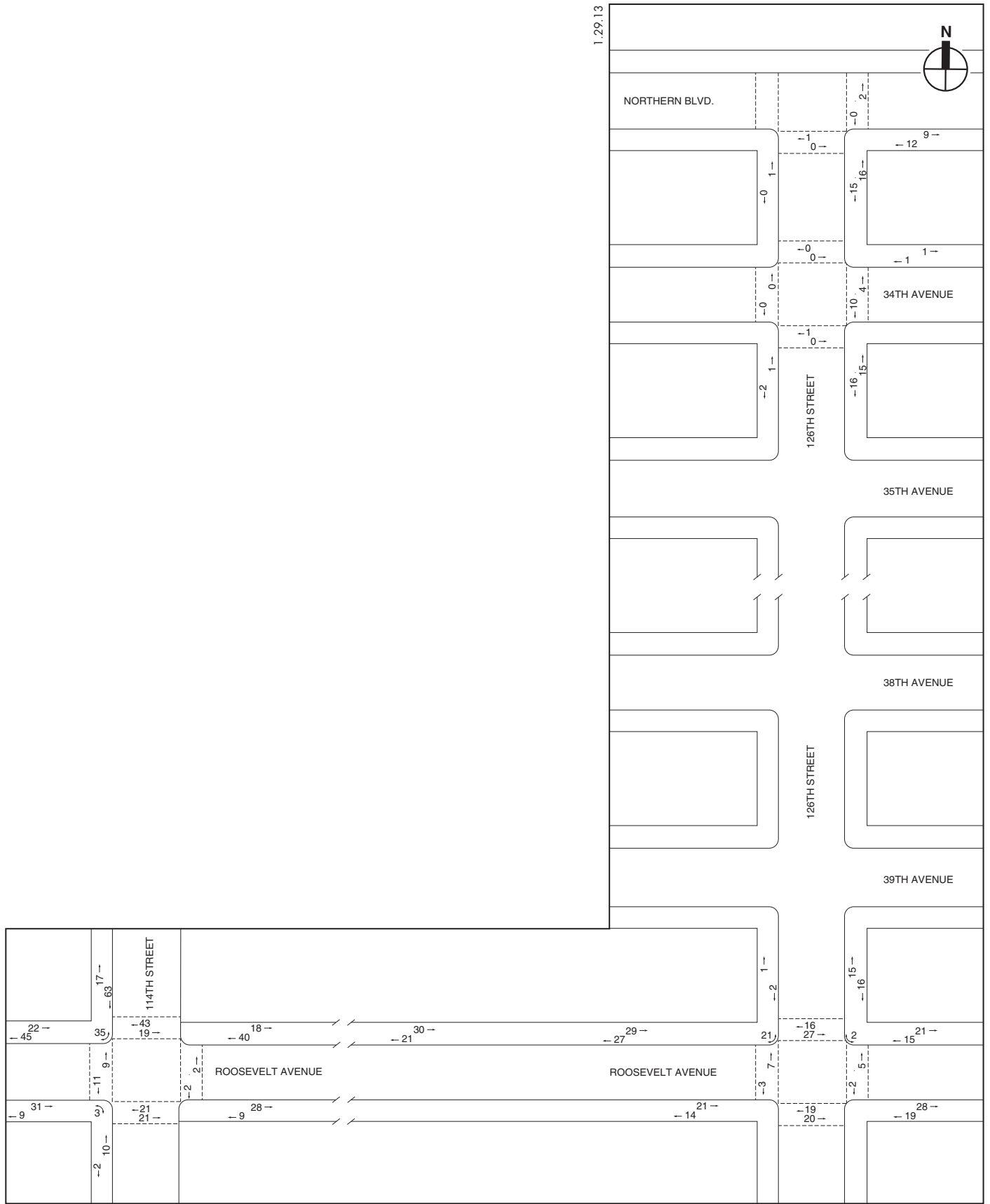


2028 No Action Pedestrian Volumes
Weekend Pre-Game Peak Hour
Figure D-20

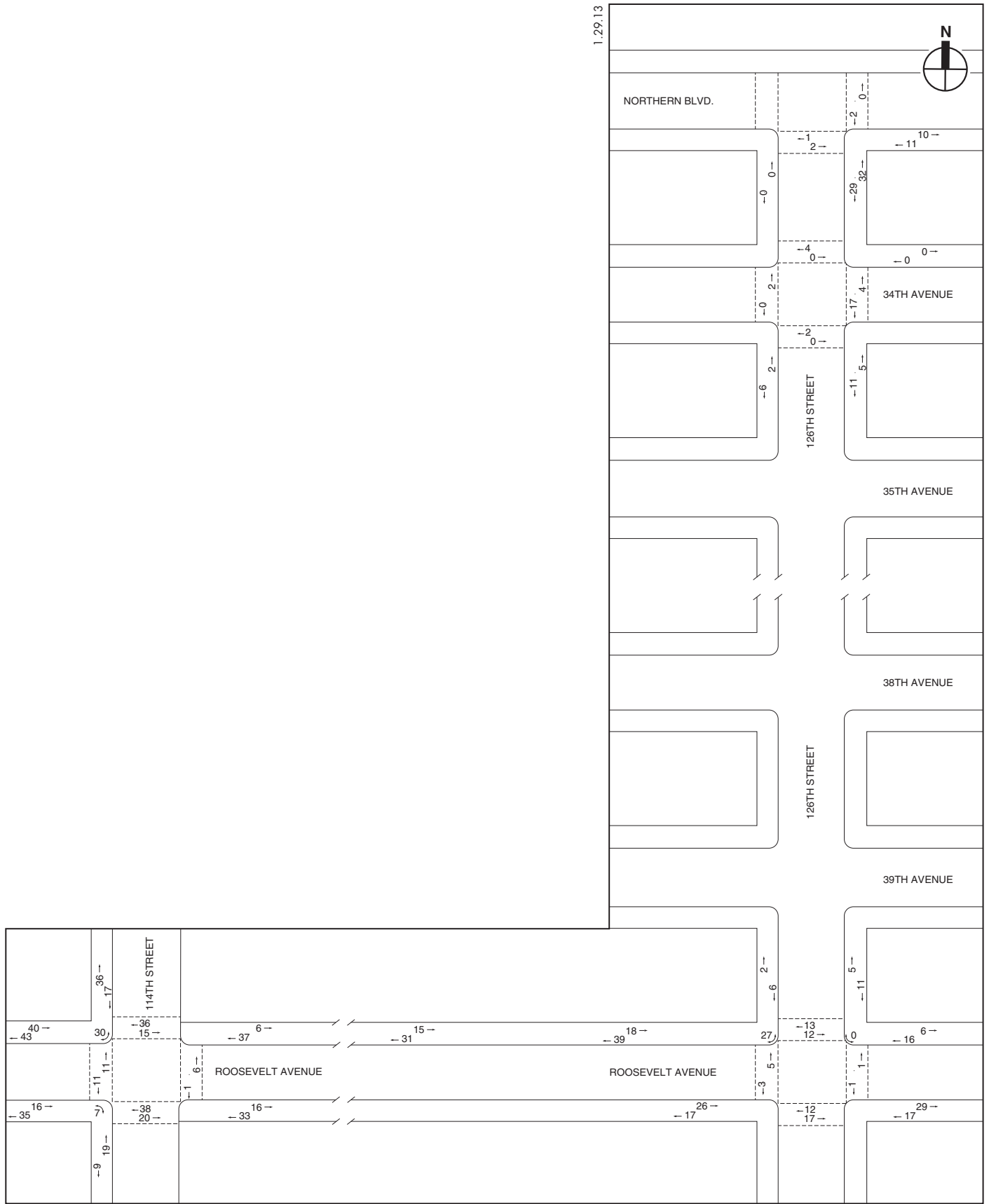




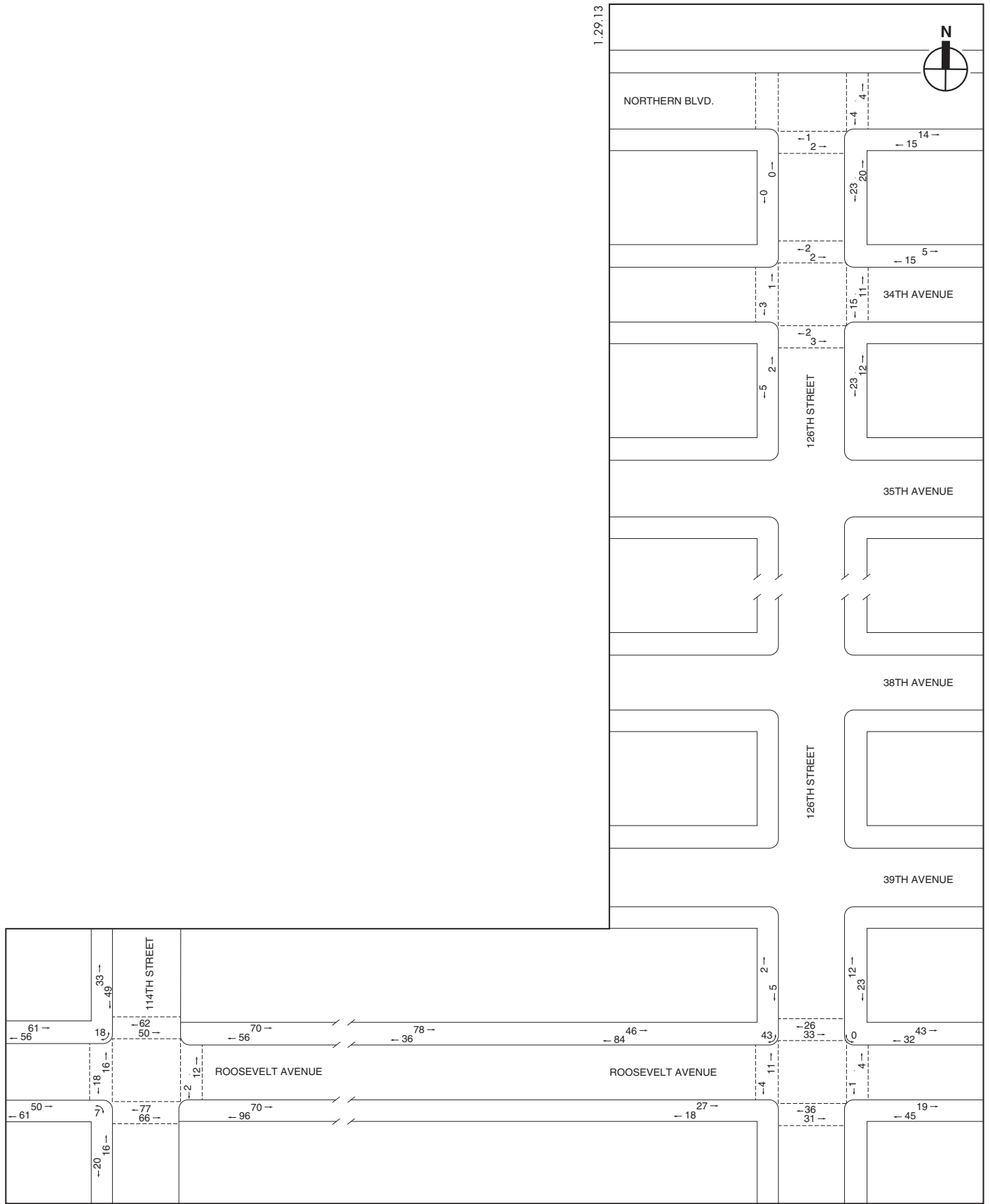
2032 No Action Pedestrian Volumes
Weekday AM Peak Hour
Figure D-22



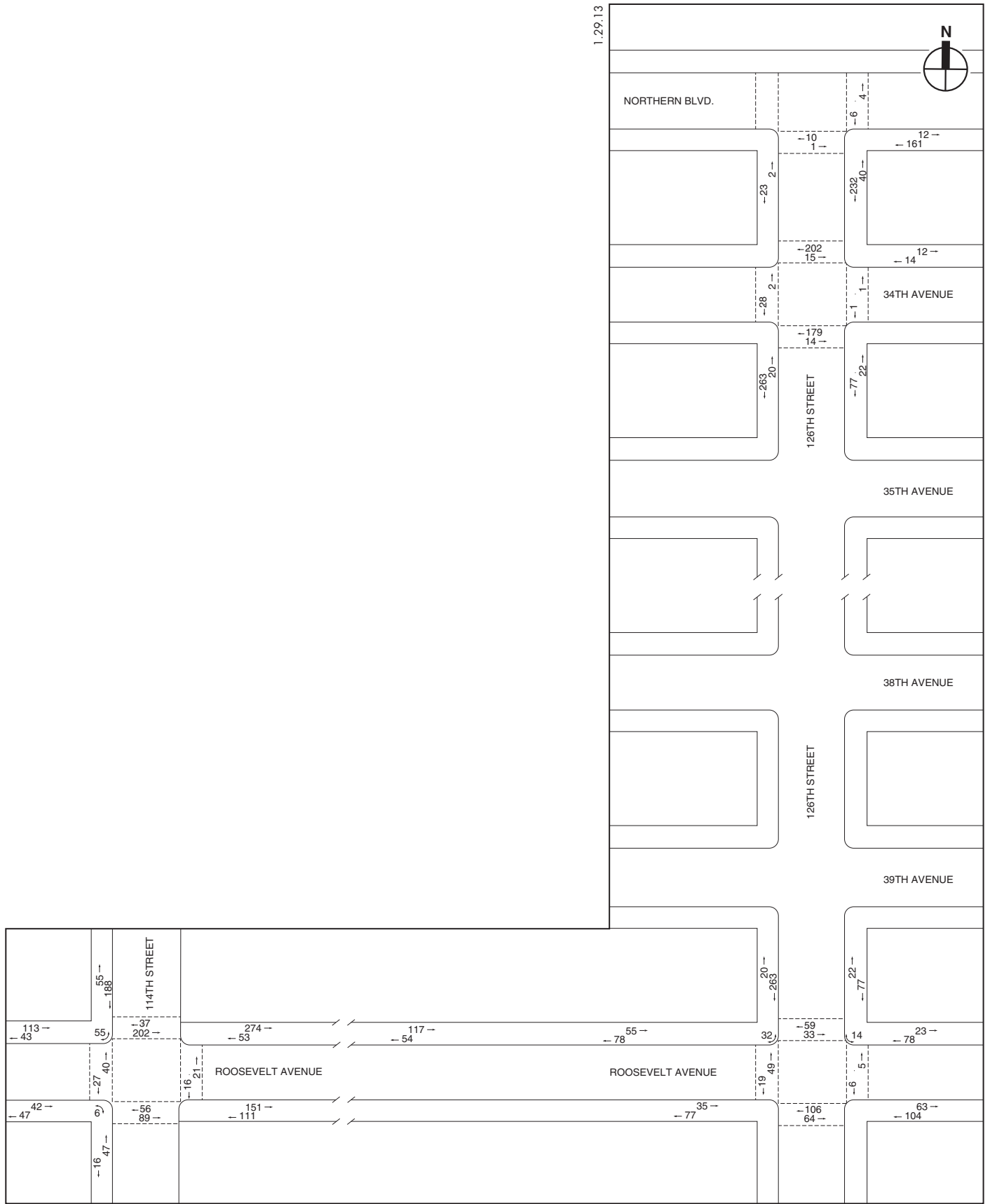
2032 No Action Pedestrian Volumes
Weekday Midday Peak Hour
Figure D-23



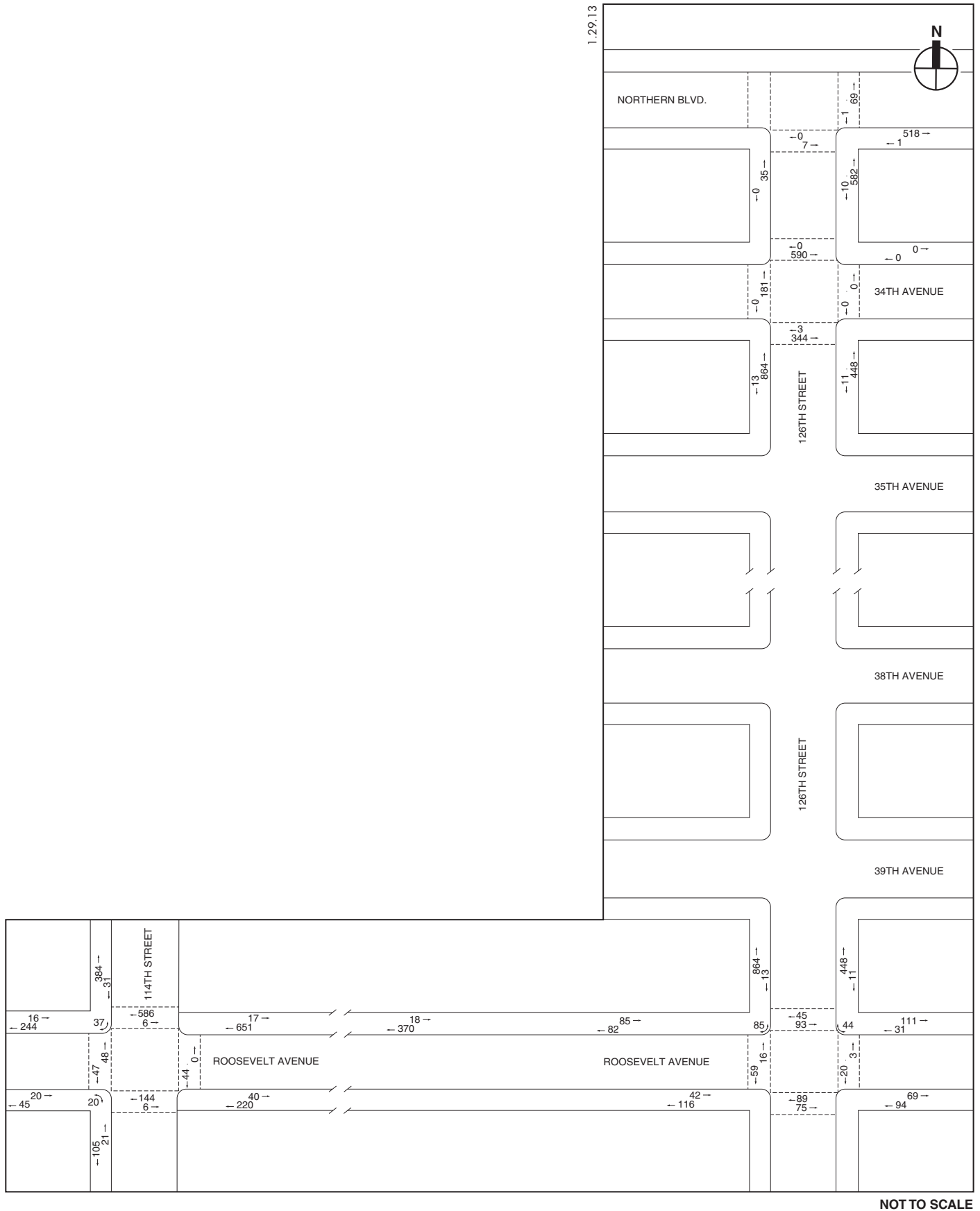
2032 No Action Pedestrian Volumes
Weekday PM Peak Hour
Figure D-24

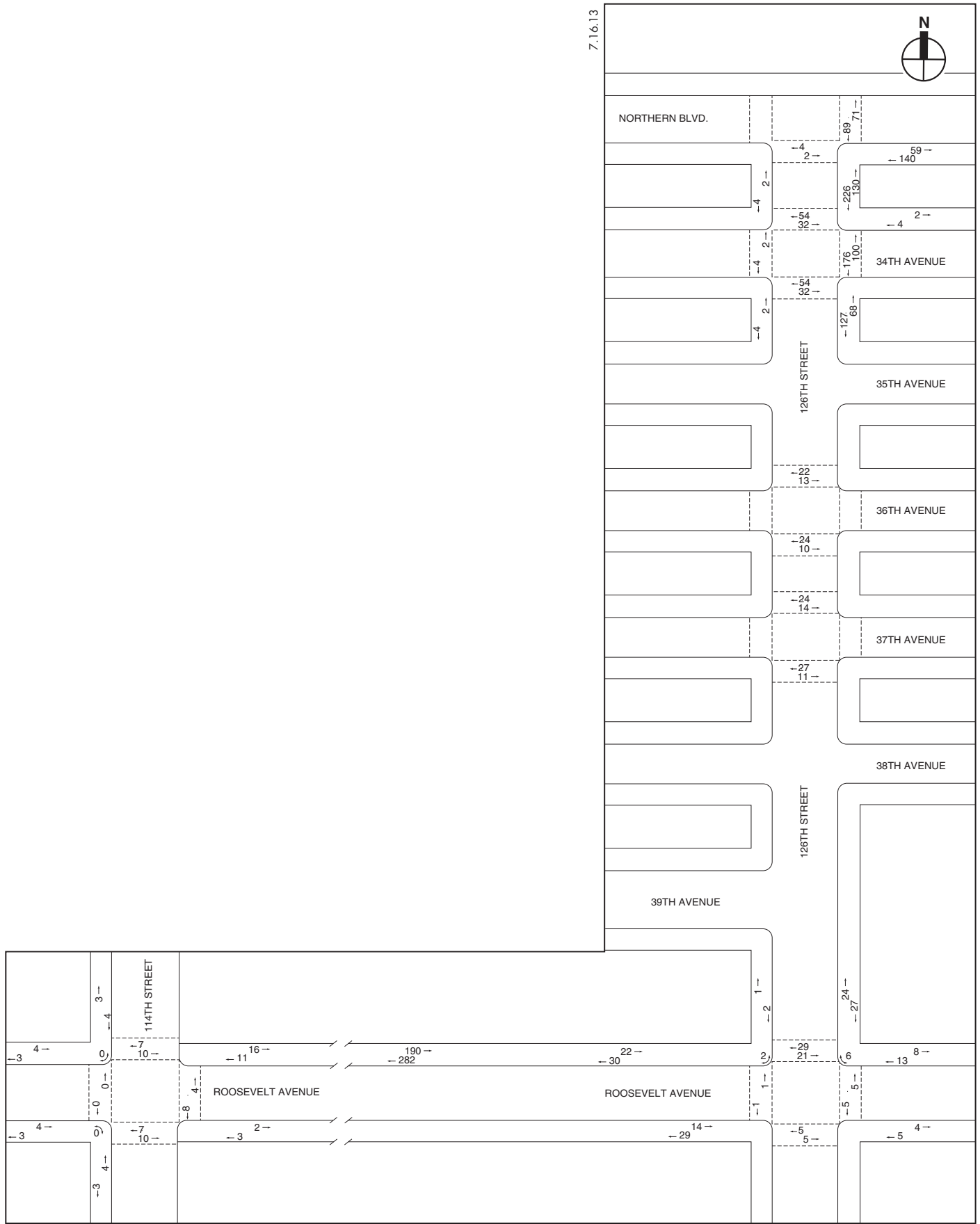


2032 No Action Pedestrian Volumes
Weekend Midday Non-Game Peak Hour
Figure D-26

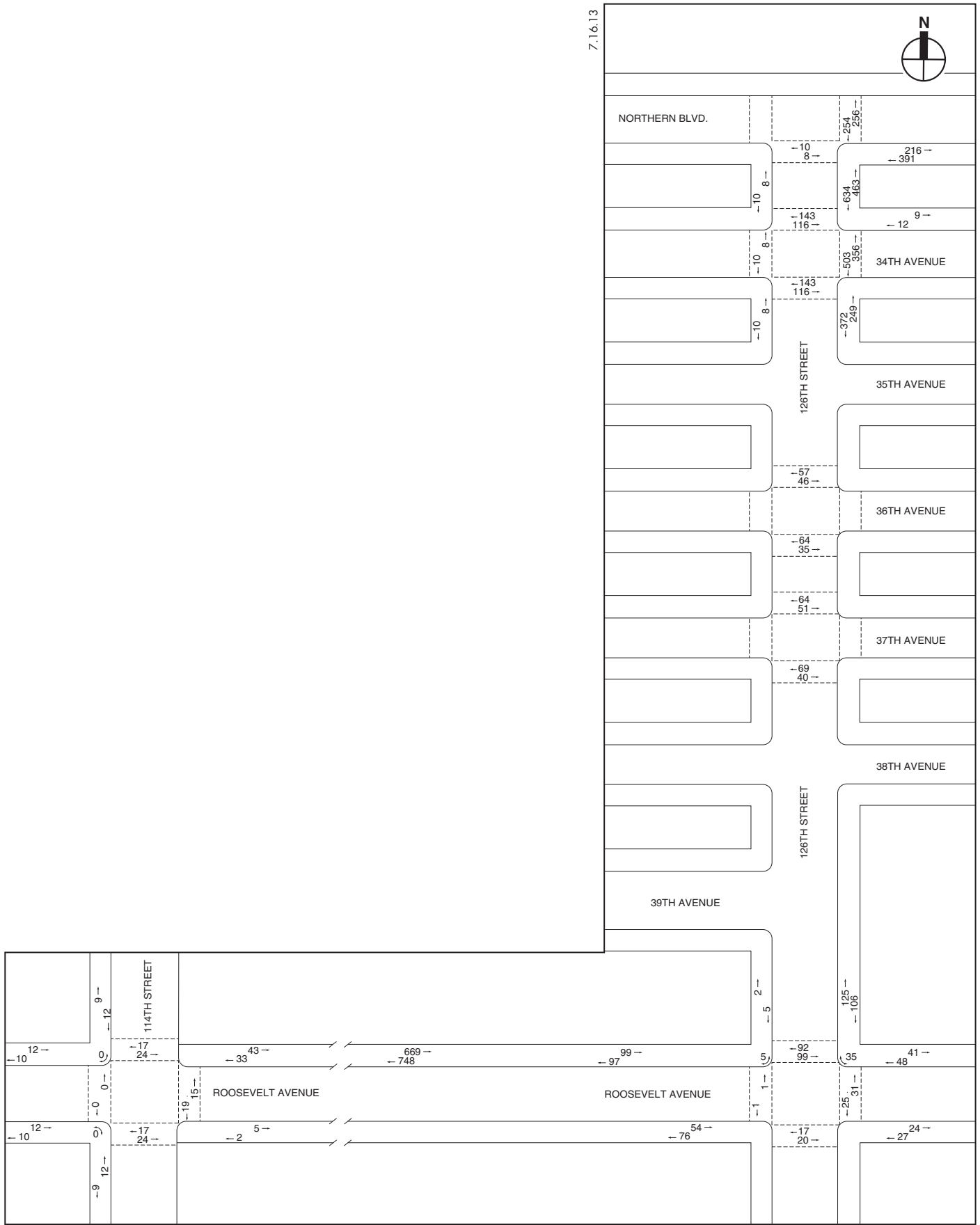


2032 No Action Pedestrian Volumes
Weekend Pre-Game Peak Hour
Figure D-27

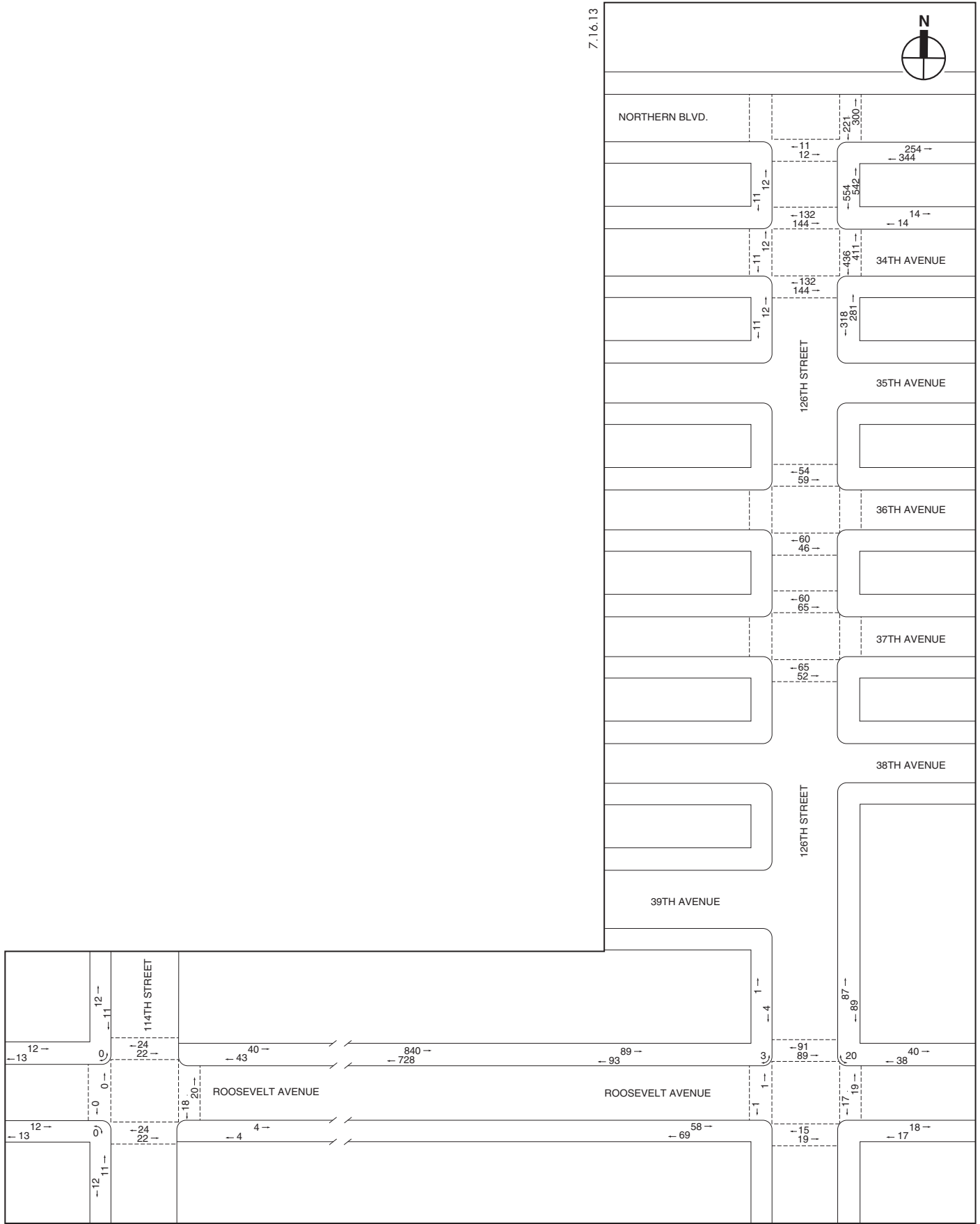




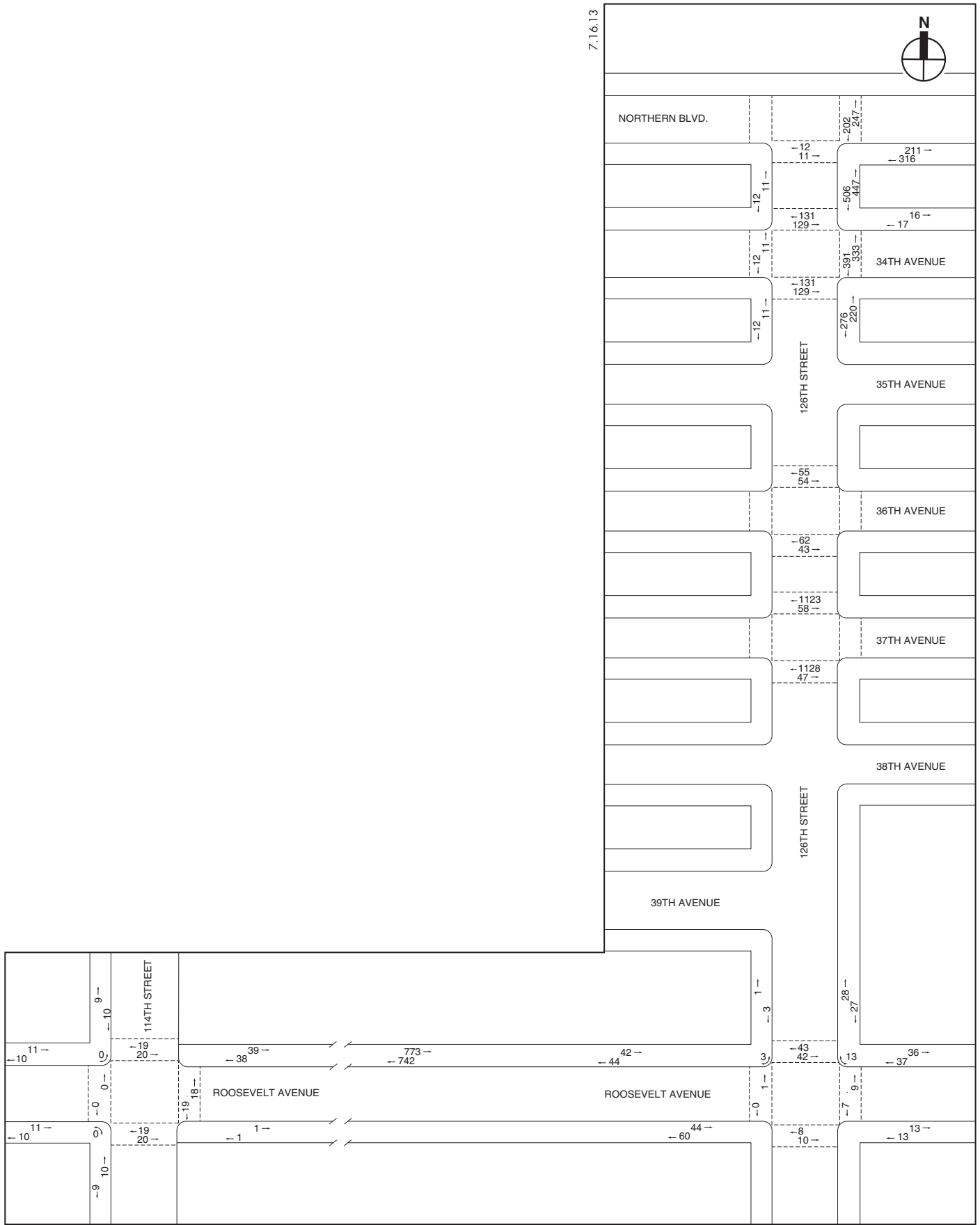
2018 With Action Pedestrian Increments
 Weekday AM Peak Hour
Figure D-29



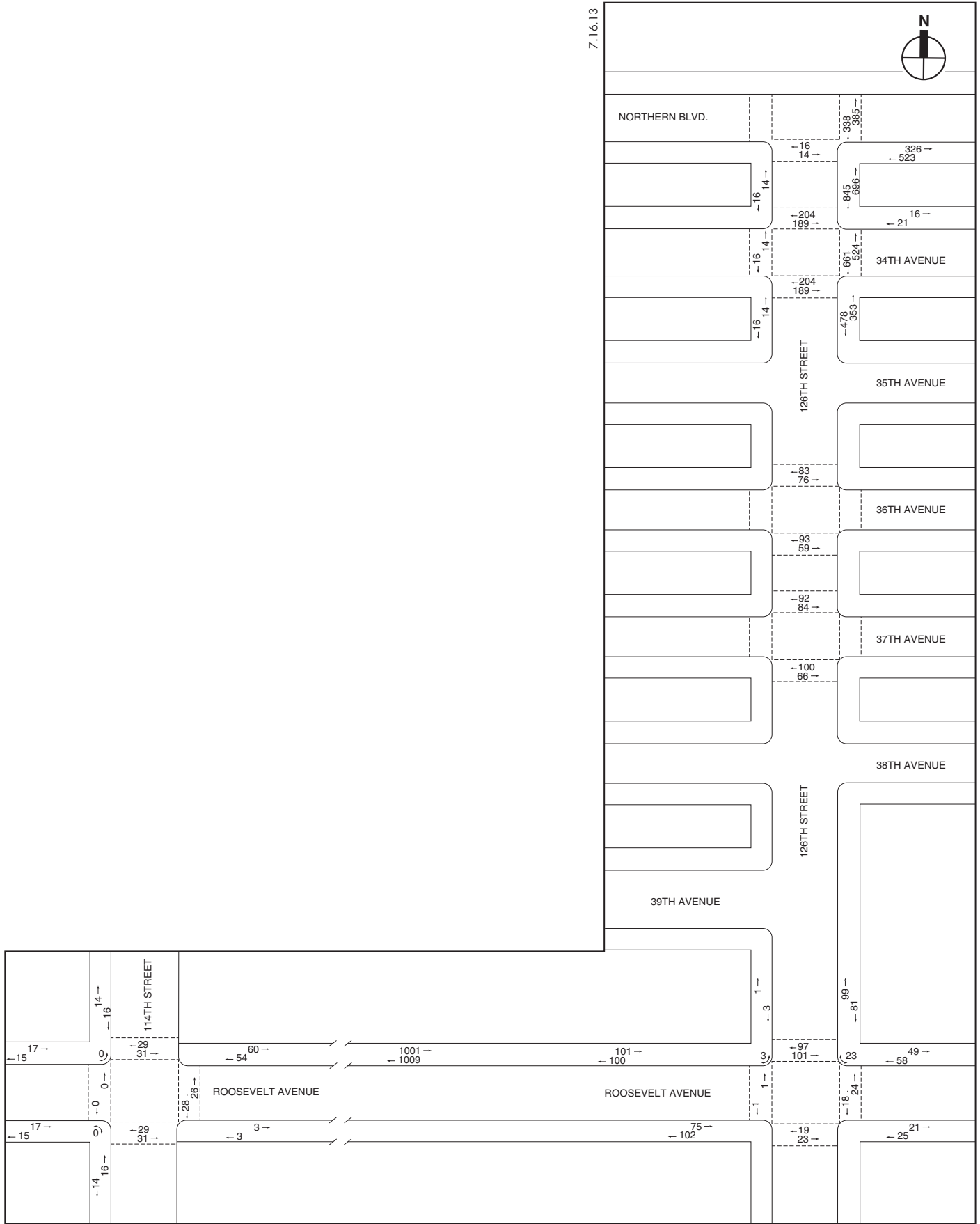
2018 With Action Pedestrian Increments
 Weekday Midday Peak Hour
Figure D-30



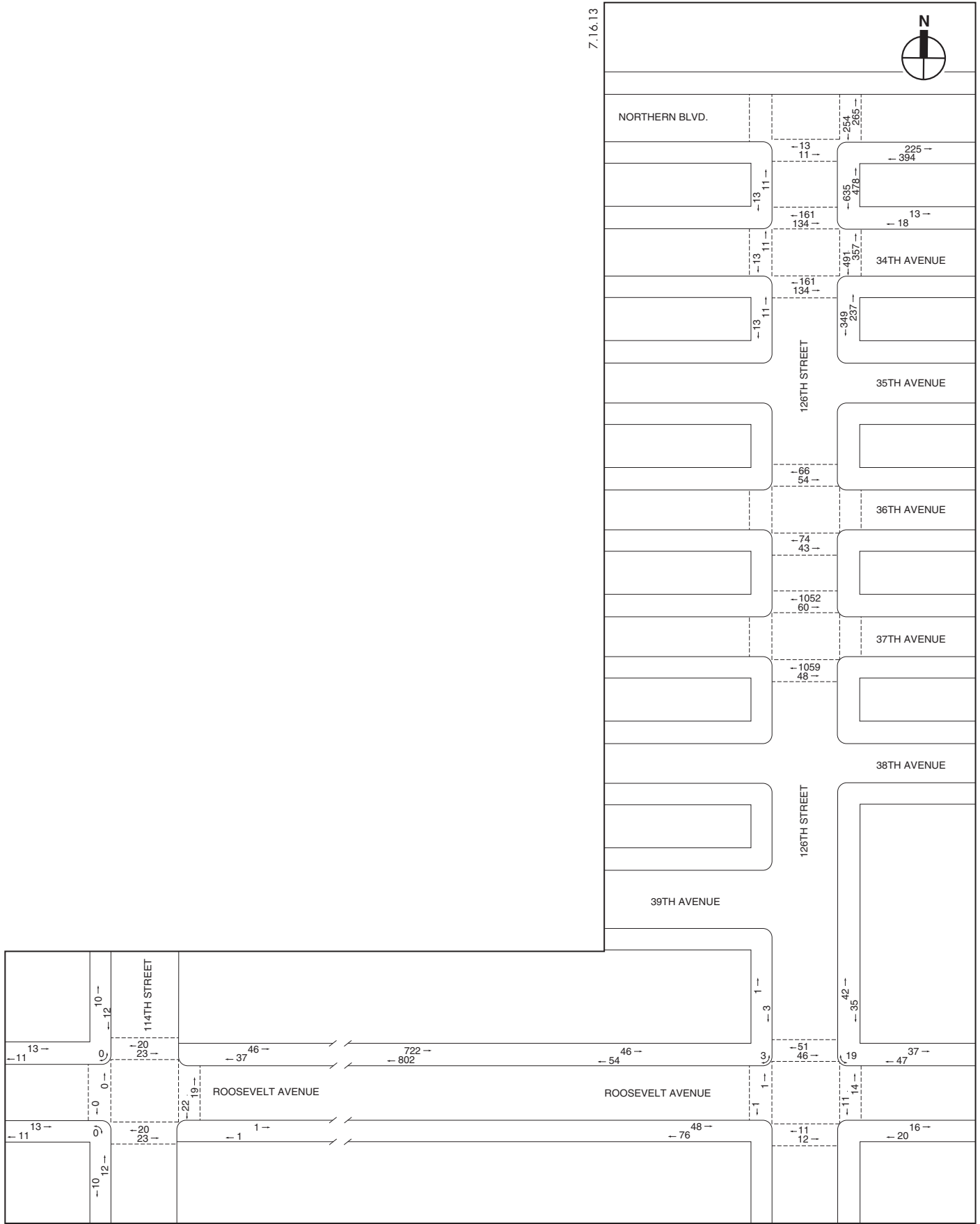
2018 With Action Pedestrian Increments
 Weekday PM Peak Hour
Figure D-31



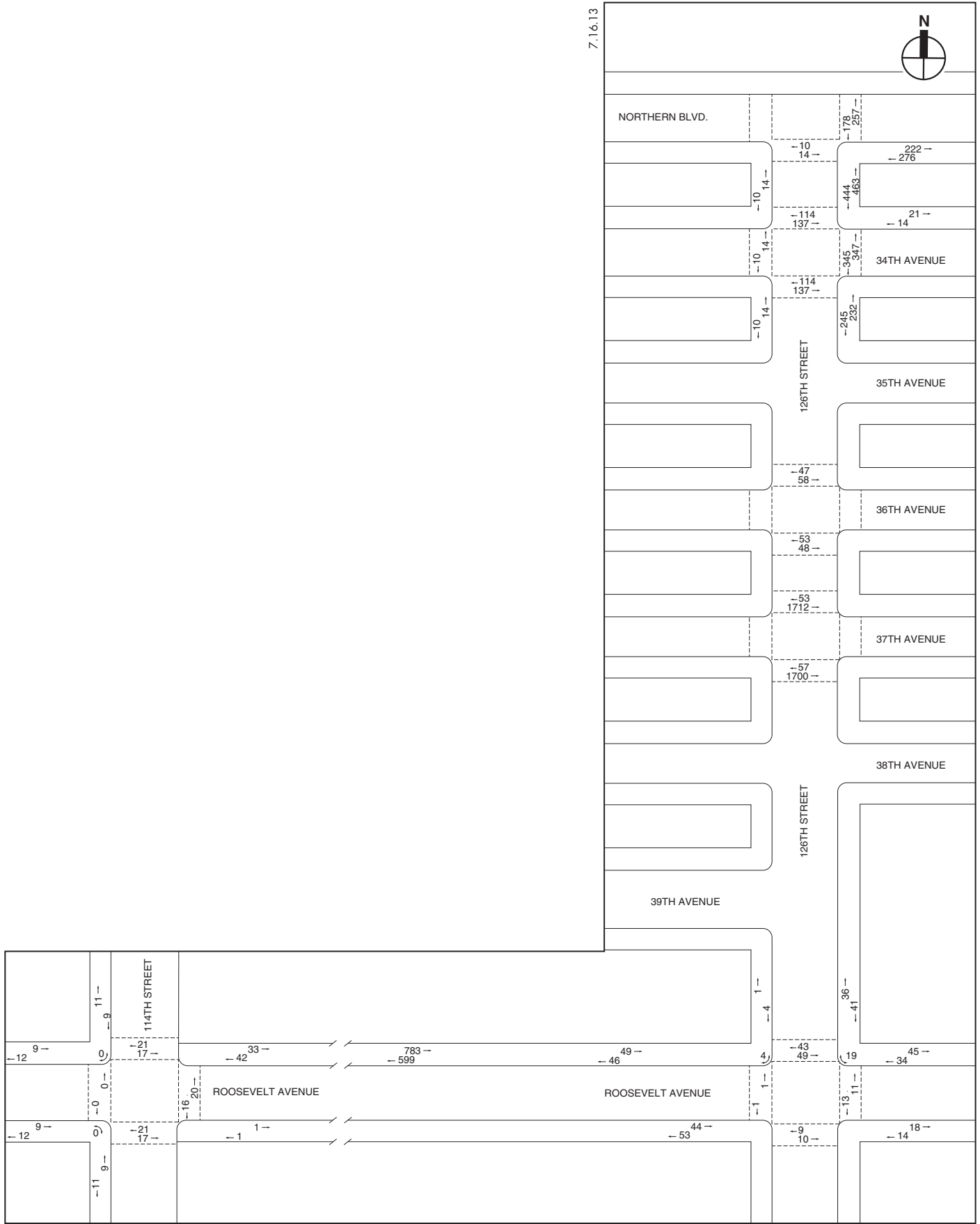
2018 With Action Pedestrian Increments
 Weekday Pre-Game Peak Hour
Figure D-32



2018 With Action Pedestrian Increments
Weekend Midday Non-Game Peak Hour
Figure D-33



2018 With Action Pedestrian Increments
Weekend Pre-Game Peak Hour
Figure D-34

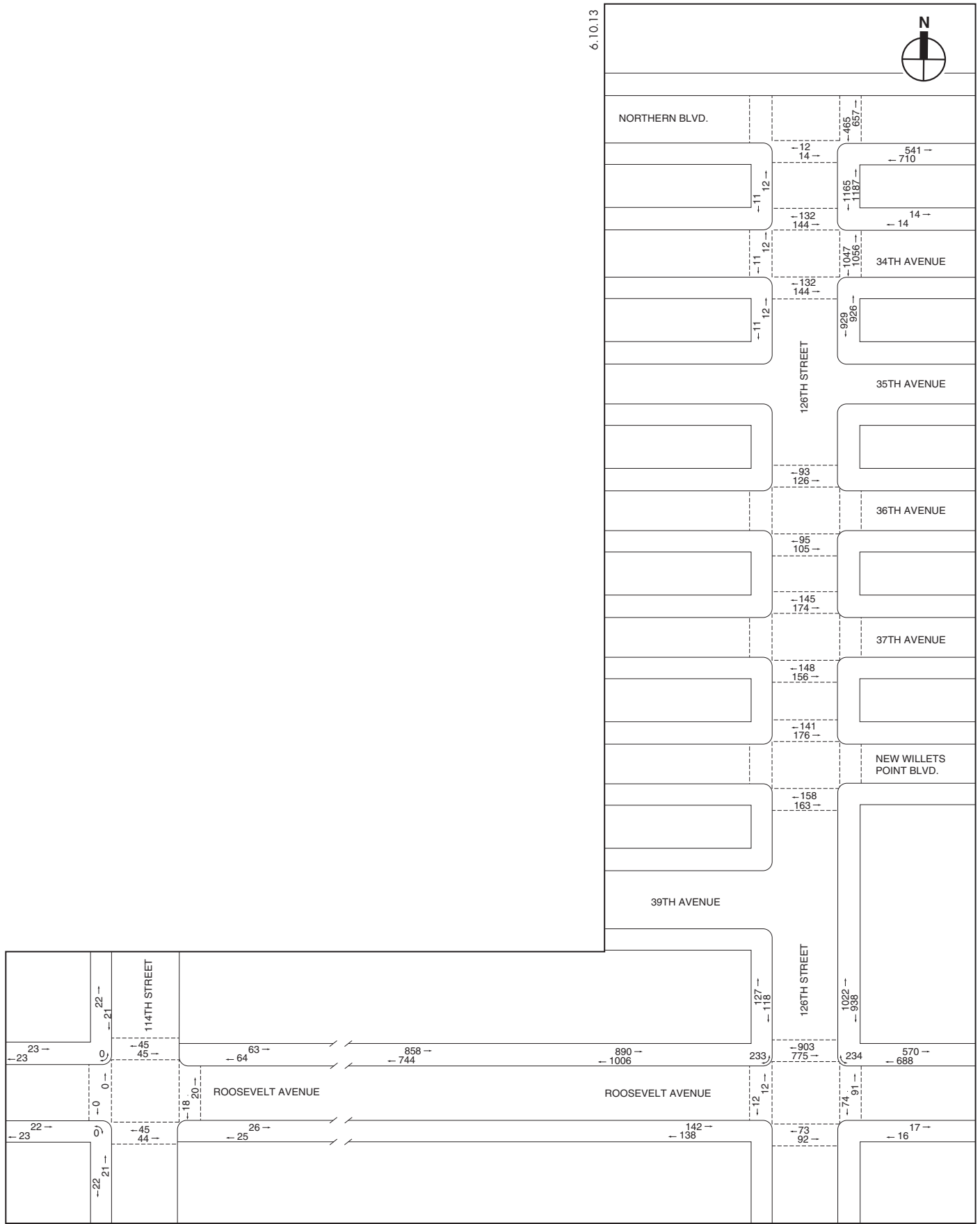


2018 With Action Pedestrian Increments
Weekend Post-Game Peak Hour
Figure D-35

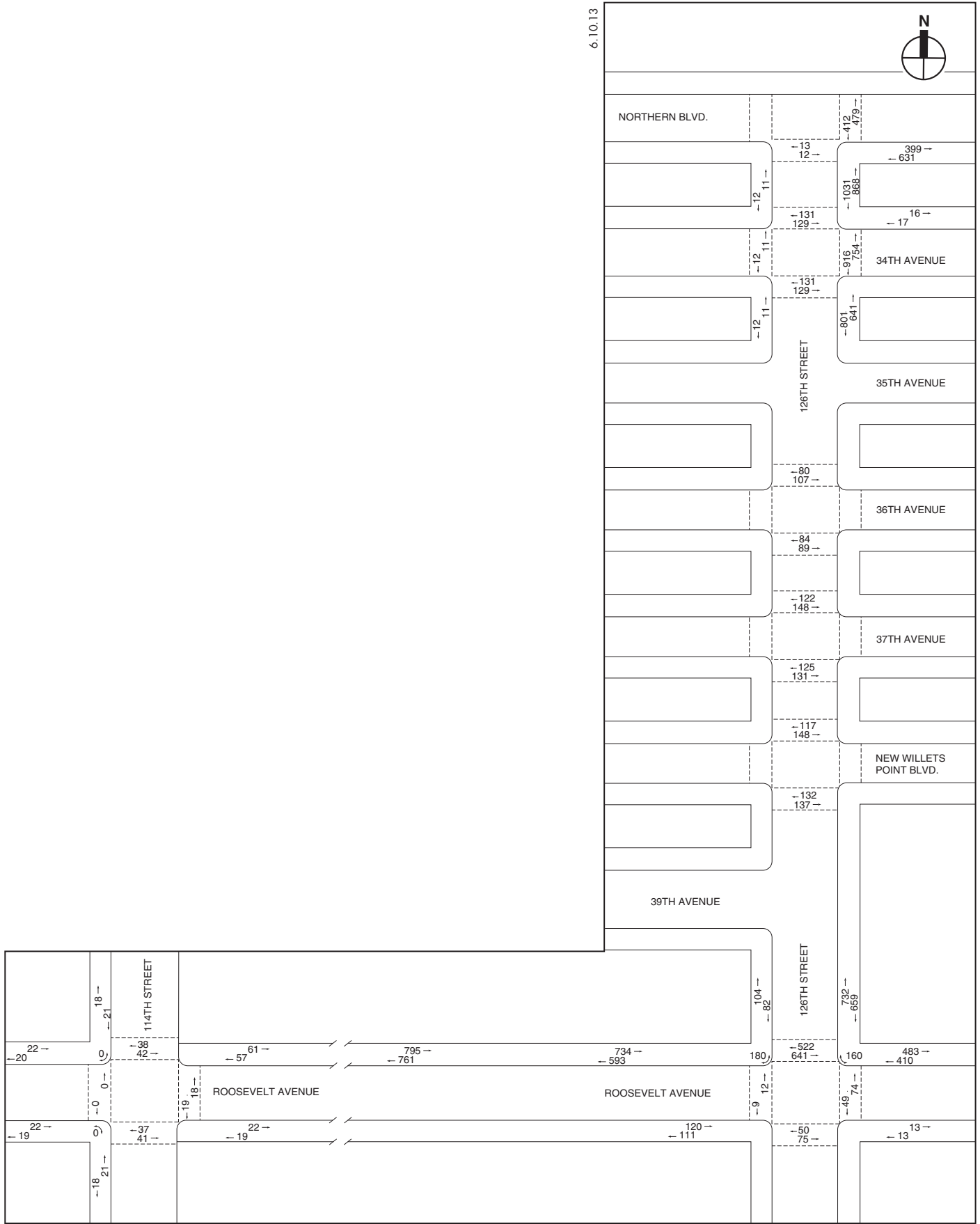


Figure D-36

**WILLETS POINT** Development

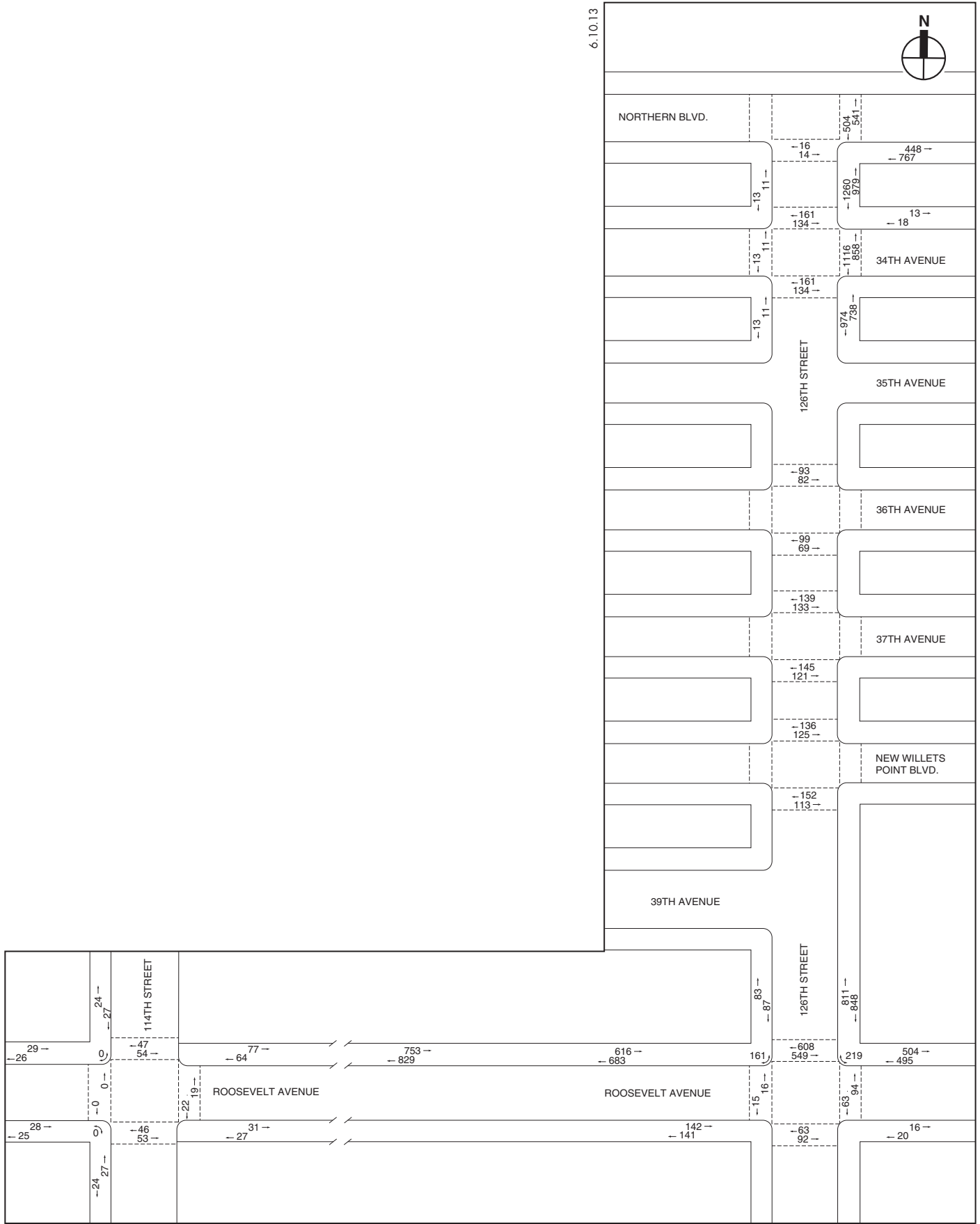


2028 With Action Pedestrian Increments
Weekday PM Peak Hour
Figure D-38



2028 With Action Pedestrian Increments
 Weekday Pre-Game Peak Hour
Figure D-39

**WILLETS POINT** Development



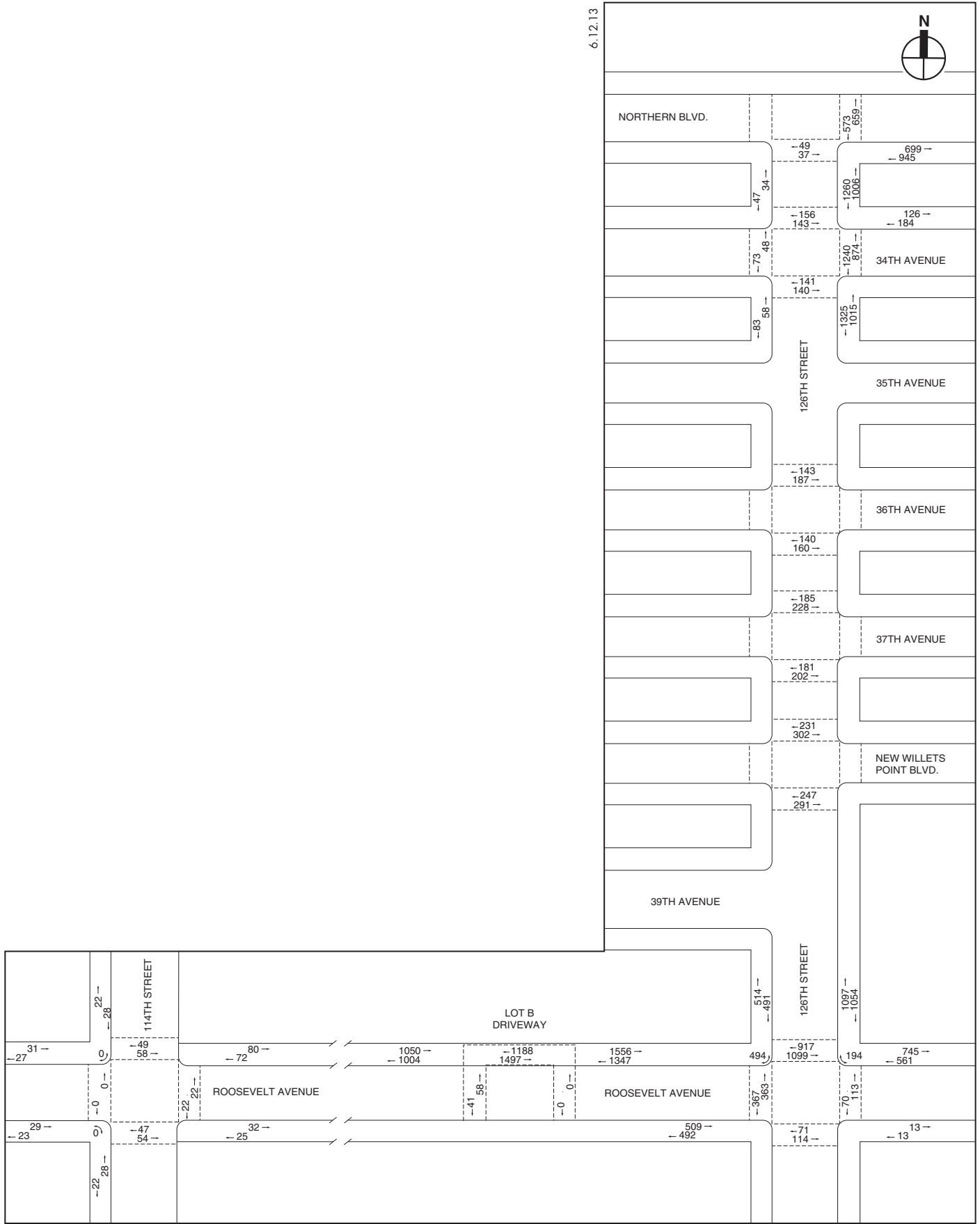
NOT TO SCALE

2028 With Action Pedestrian Increments
Weekend Pre-Game Peak Hour
Figure D-41

**WILLETS POINT** Development

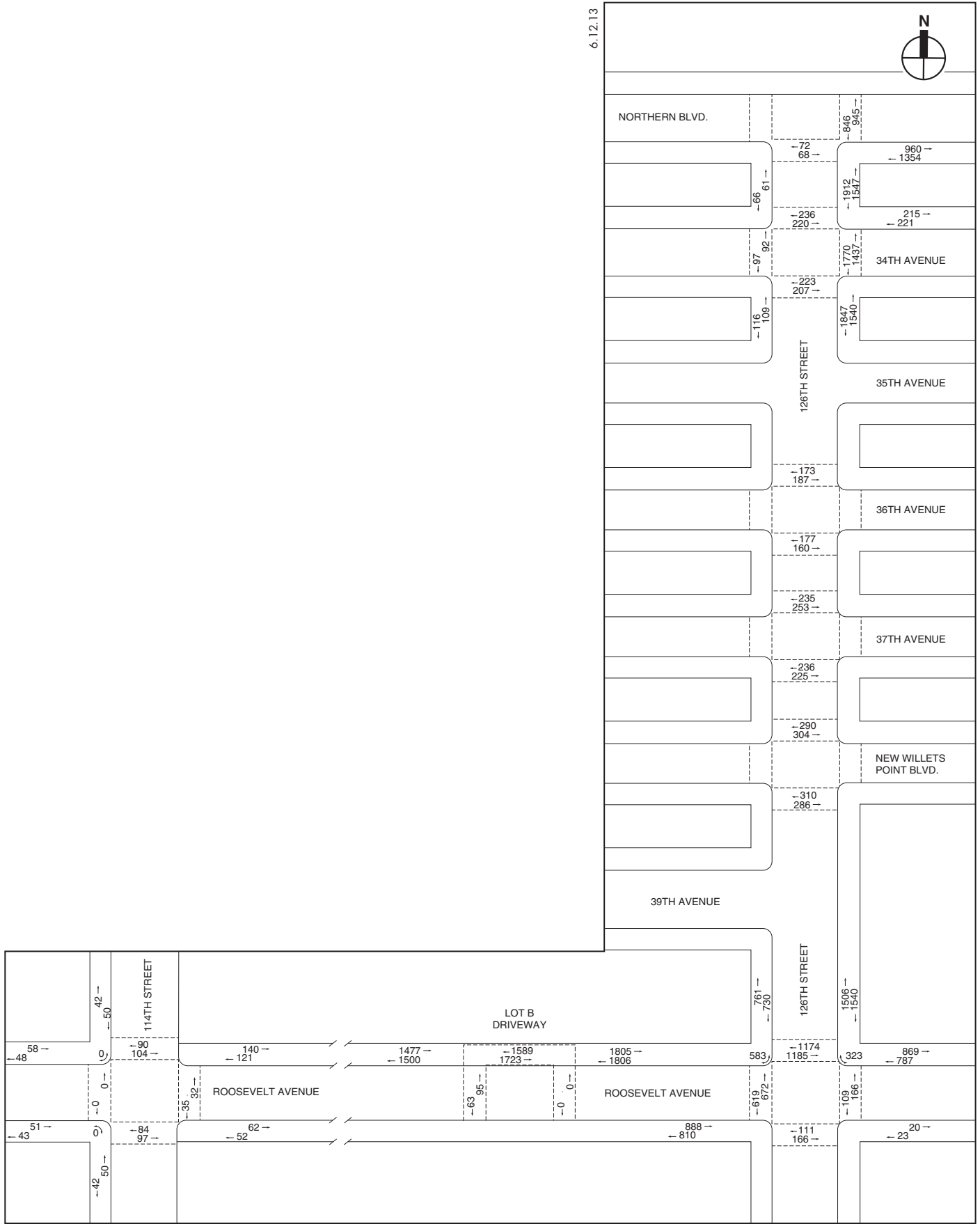
**WILLETS POINT** Development

**WILLETS POINT** Development

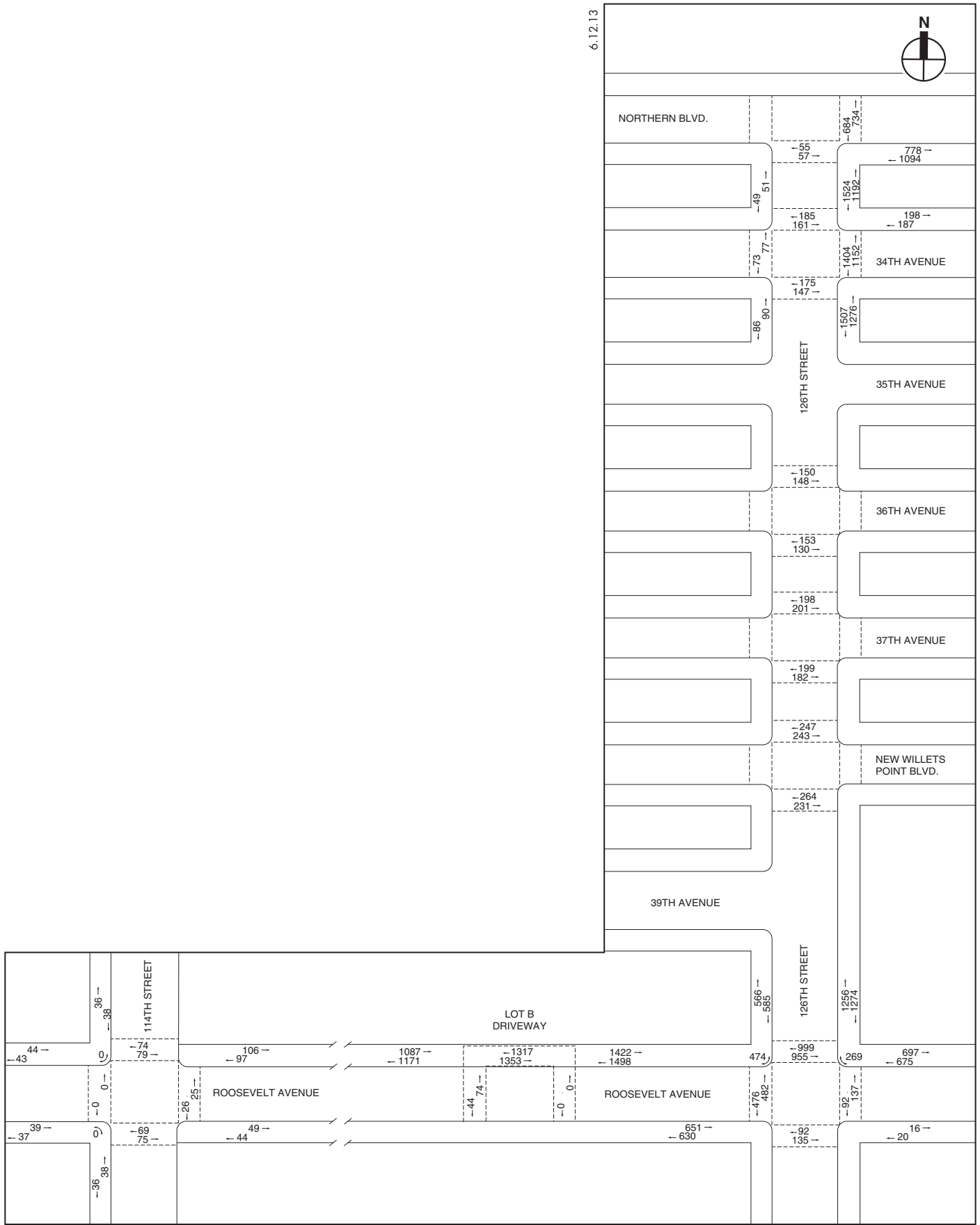


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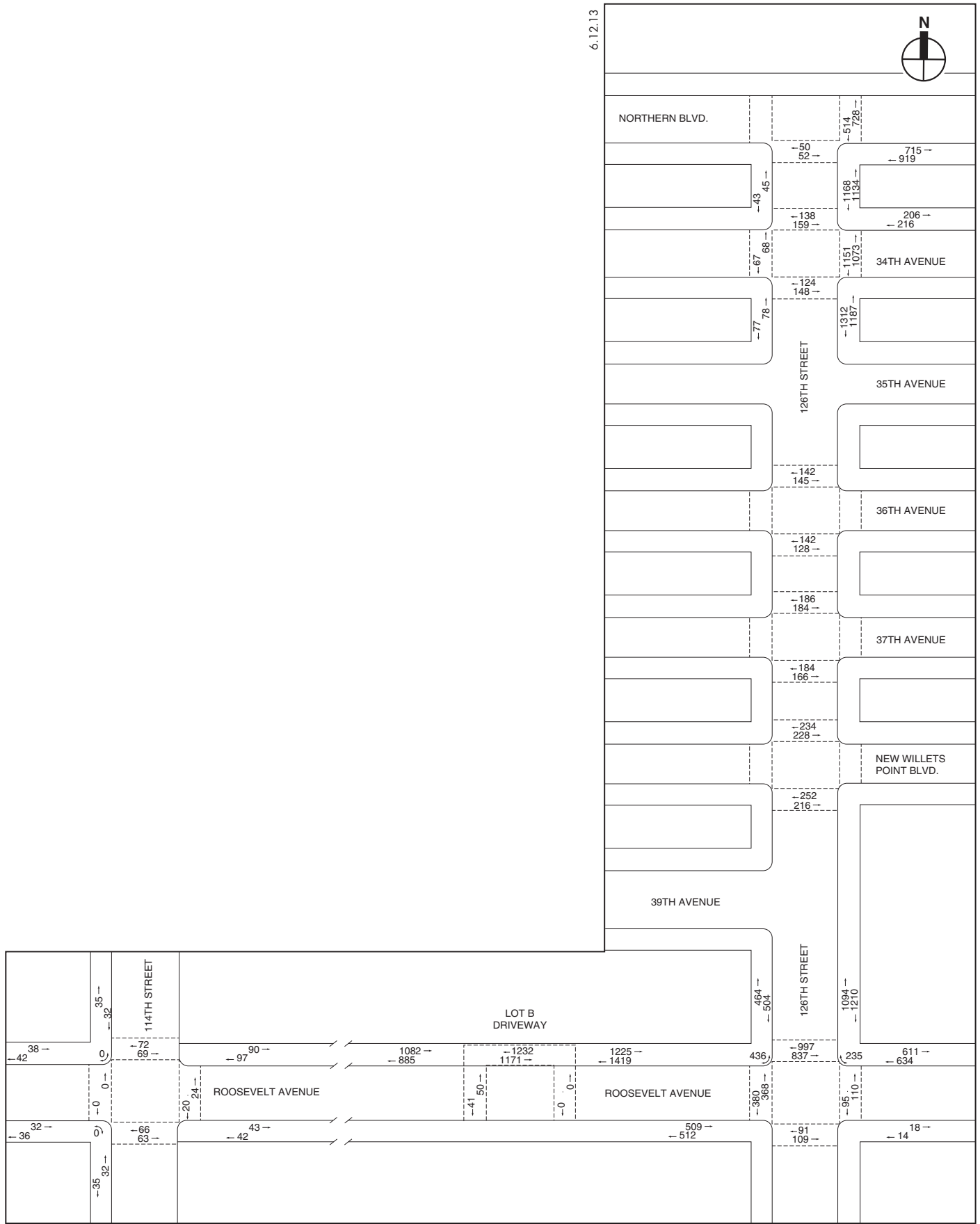
2032 With Action Pedestrian Increments
 Weekday Pre-Game Peak Hour
Figure D-46



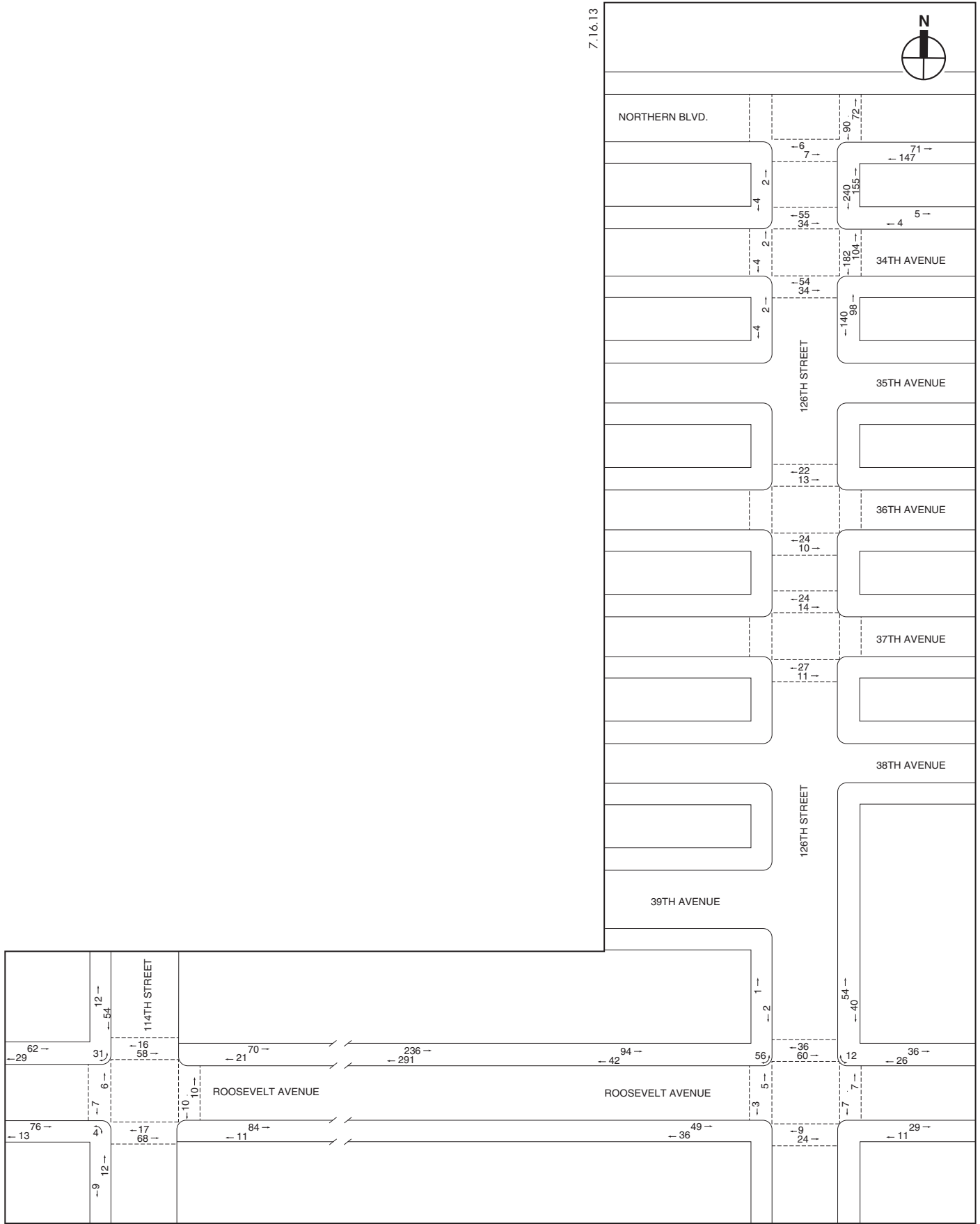
2032 With Action Pedestrian Increments
Weekend Midday Non-Game Peak Hour
Figure D-47



2032 With Action Pedestrian Increments
Weekend Pre-Game Peak Hour
Figure D-48

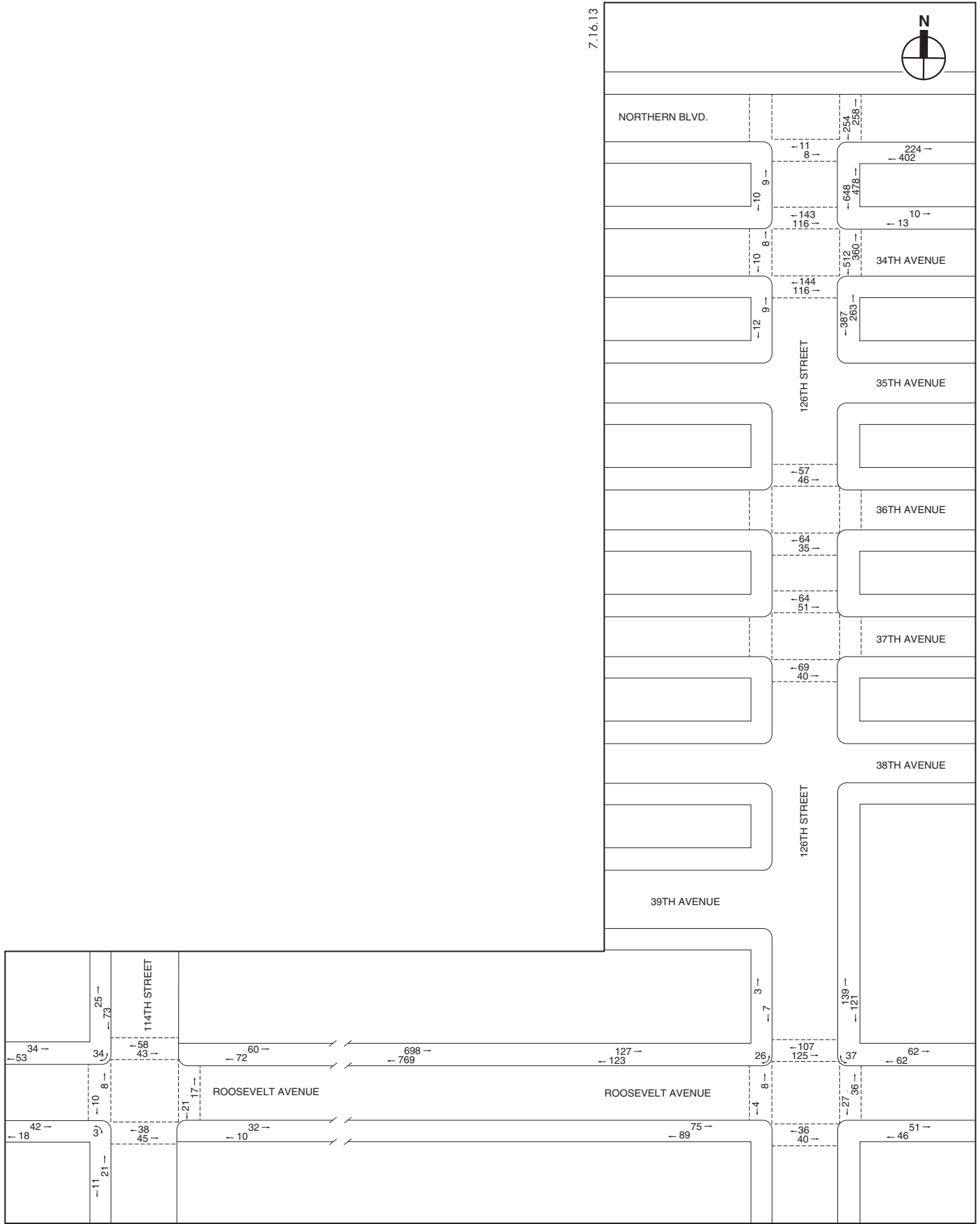


2032 With Action Pedestrian Increments
Weekend Post-Game Peak Hour
Figure D-49



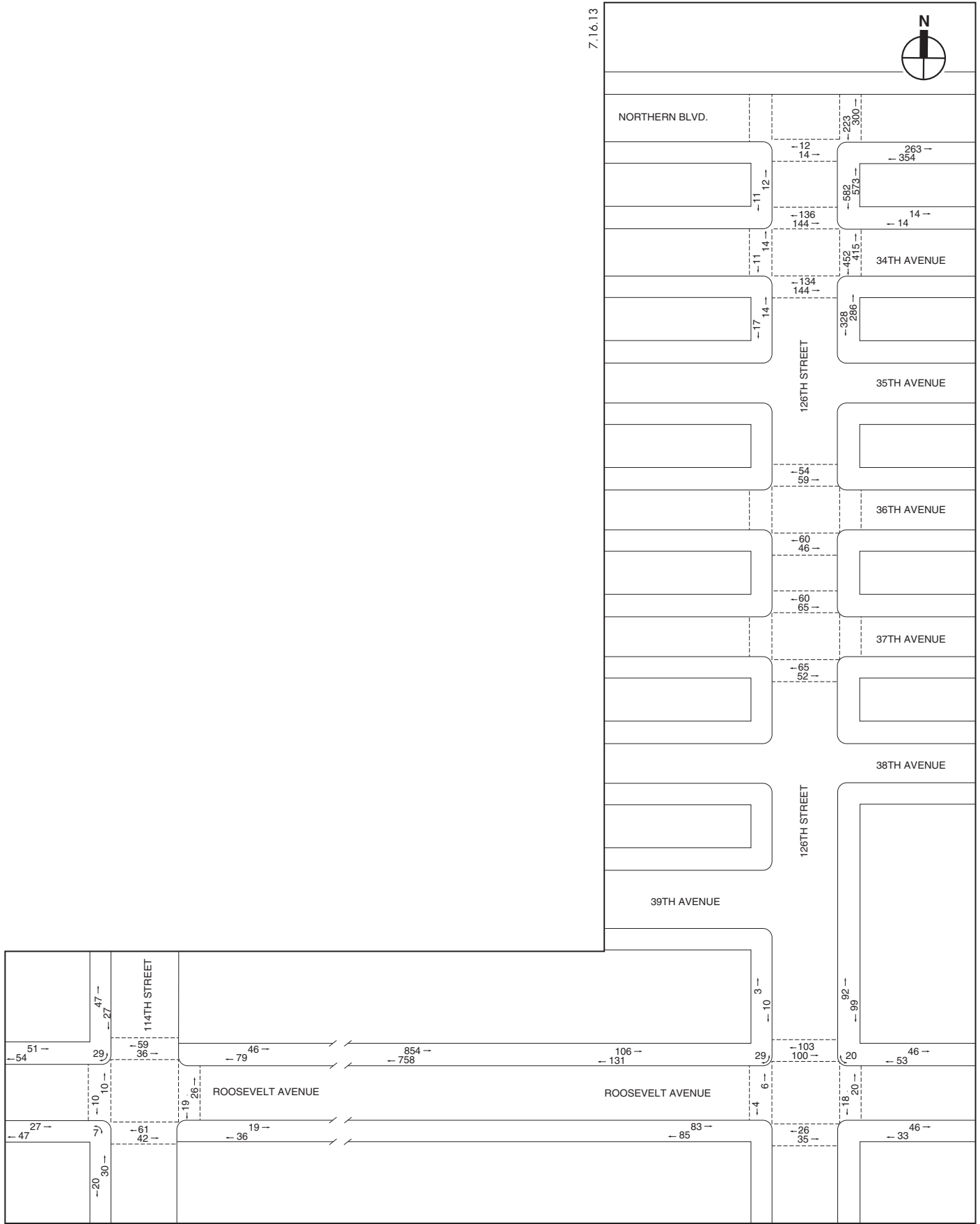
NOT TO SCALE

2018 With Action Pedestrian Volumes
Weekday AM Peak Hour
Figure D-50

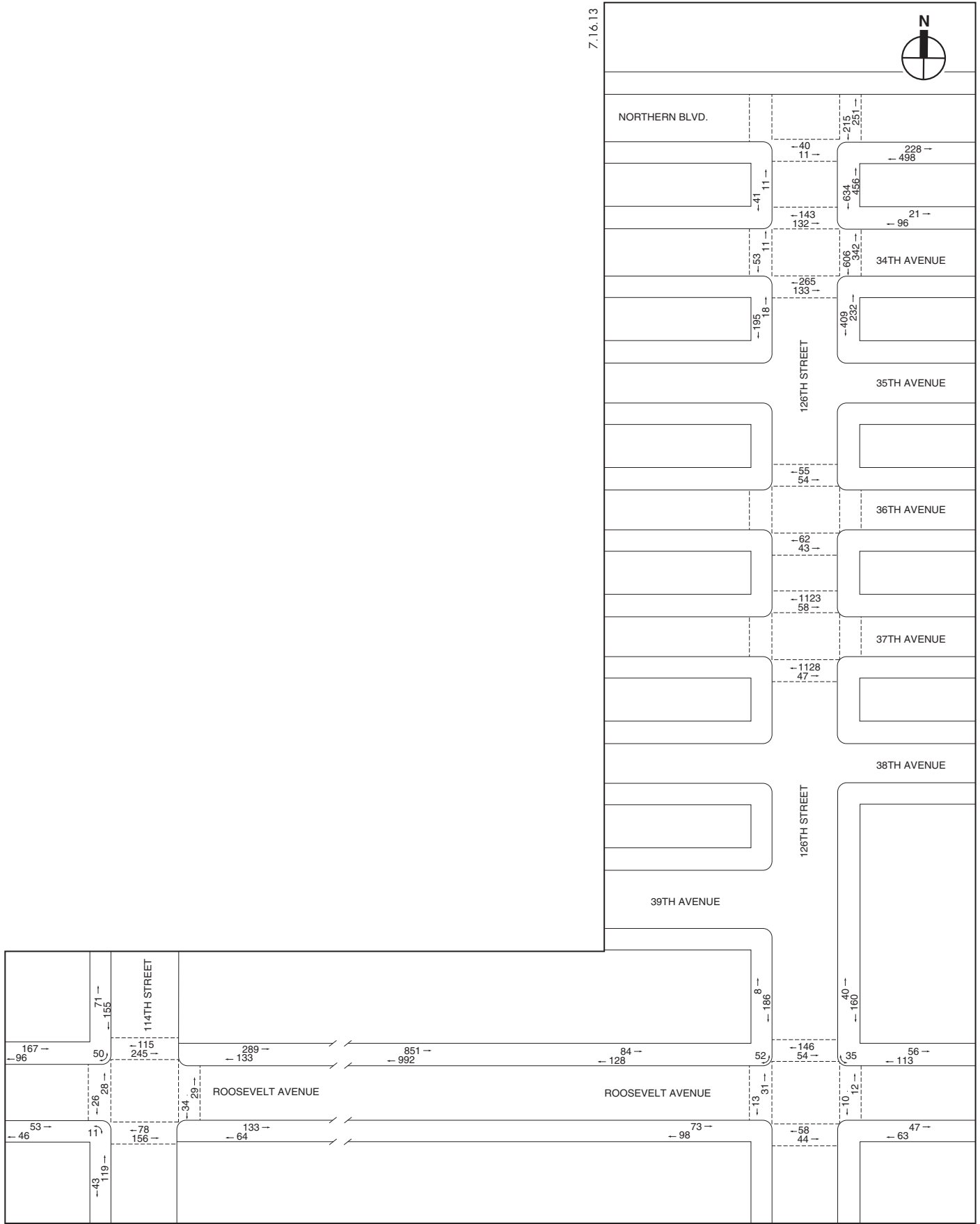


NOT TO SCALE

2018 With Action Pedestrian Volumes
Weekday Midday Peak Hour
Figure D-51

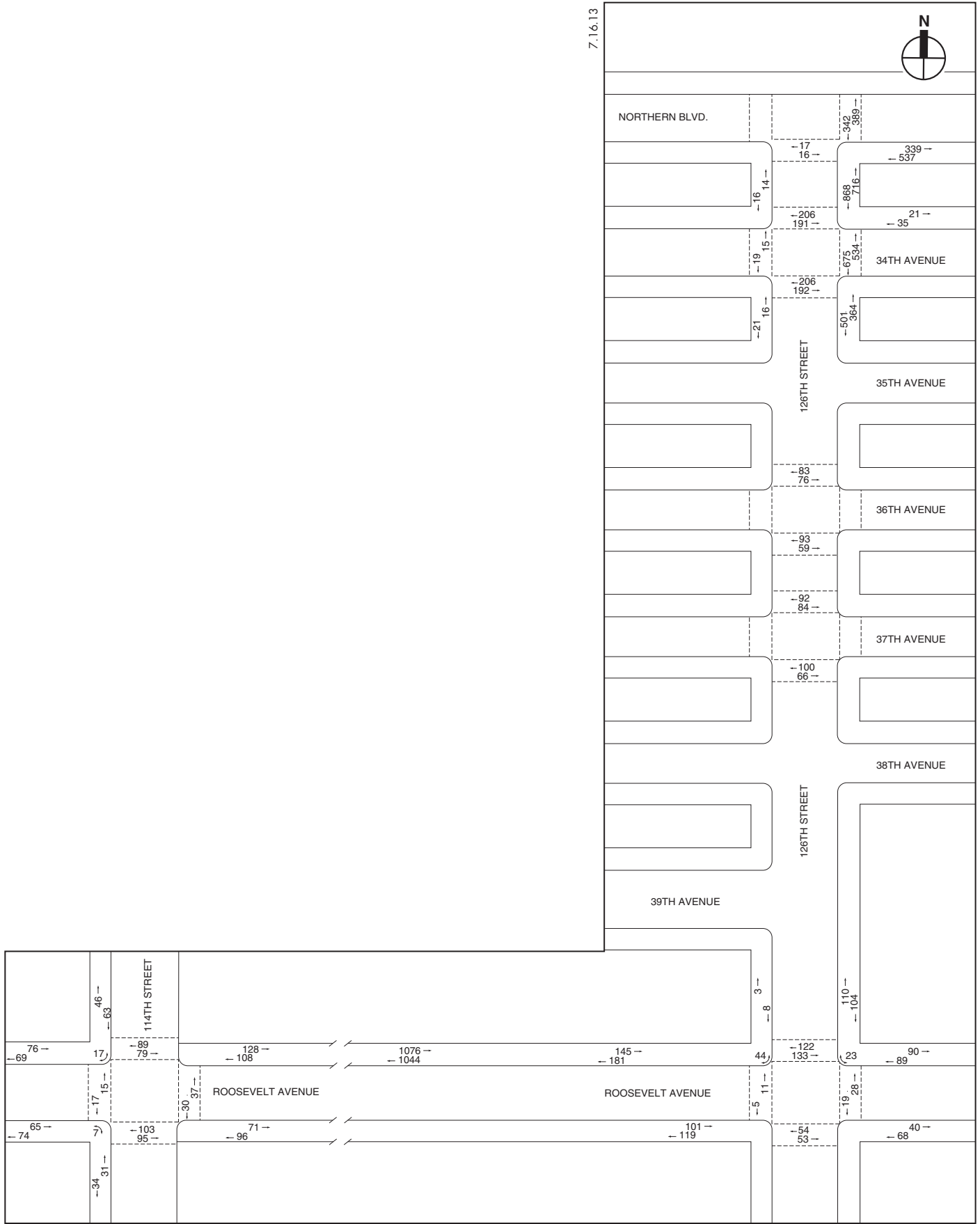


2018 With Action Pedestrian Volumes
Weekday PM Peak Hour
Figure D-52



NOT TO SCALE

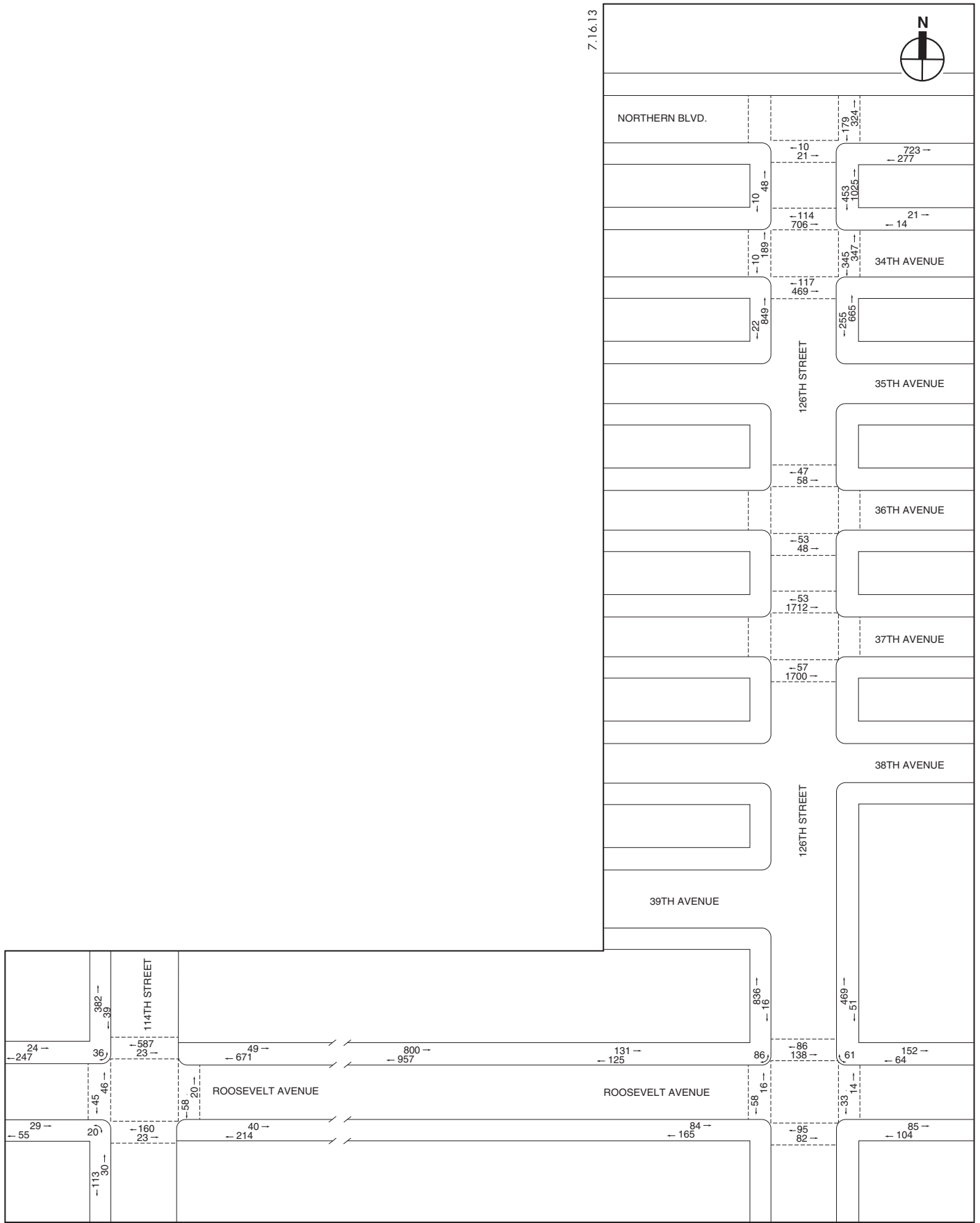
2018 With Action Pedestrian Volumes
Weekday Pre-Game Peak Hour
Figure D-53



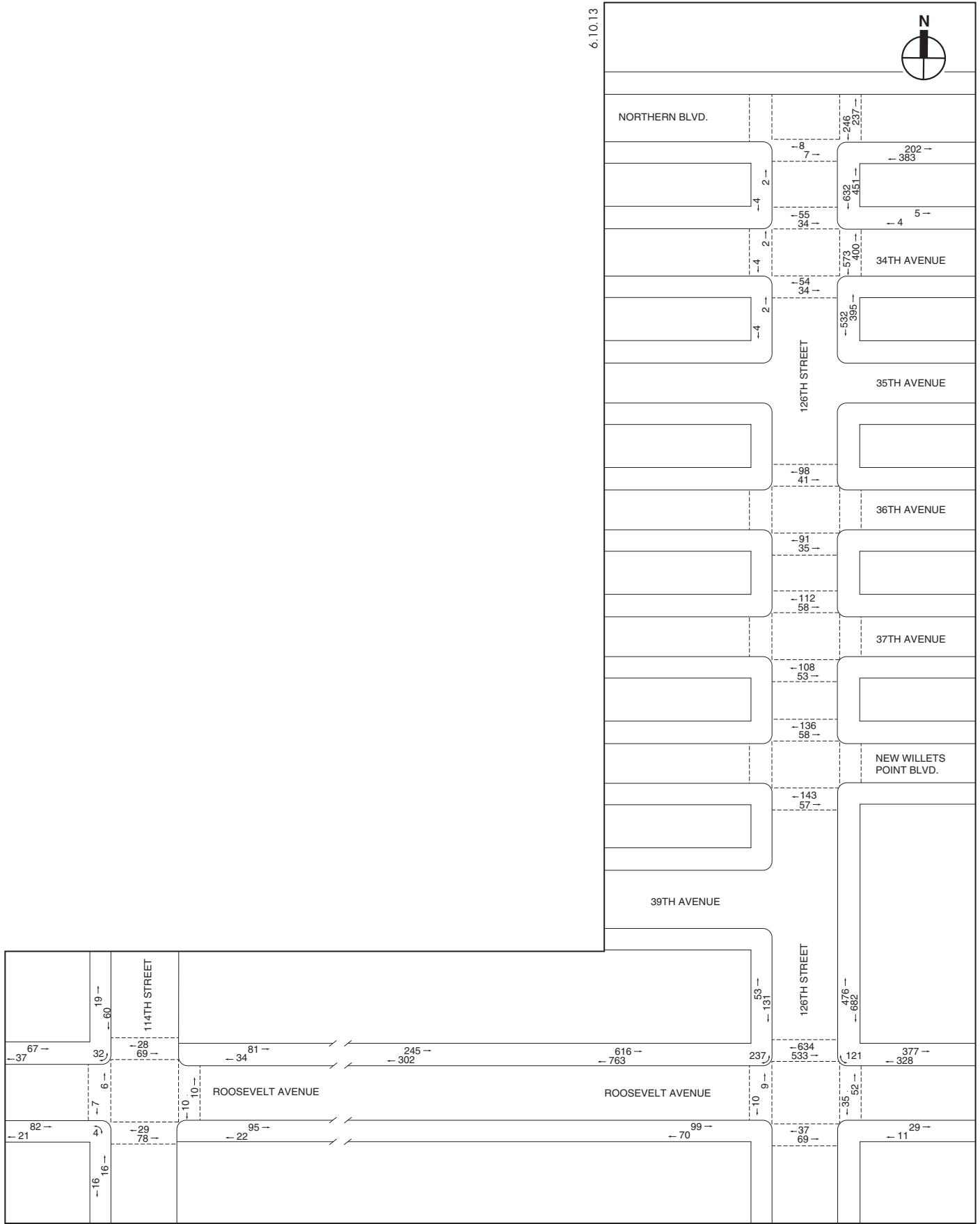
NOT TO SCALE

2018 With Action Pedestrian Volumes
Weekend Midday Non-Game Peak Hour
Figure D-54

**WILLETS POINT** Development

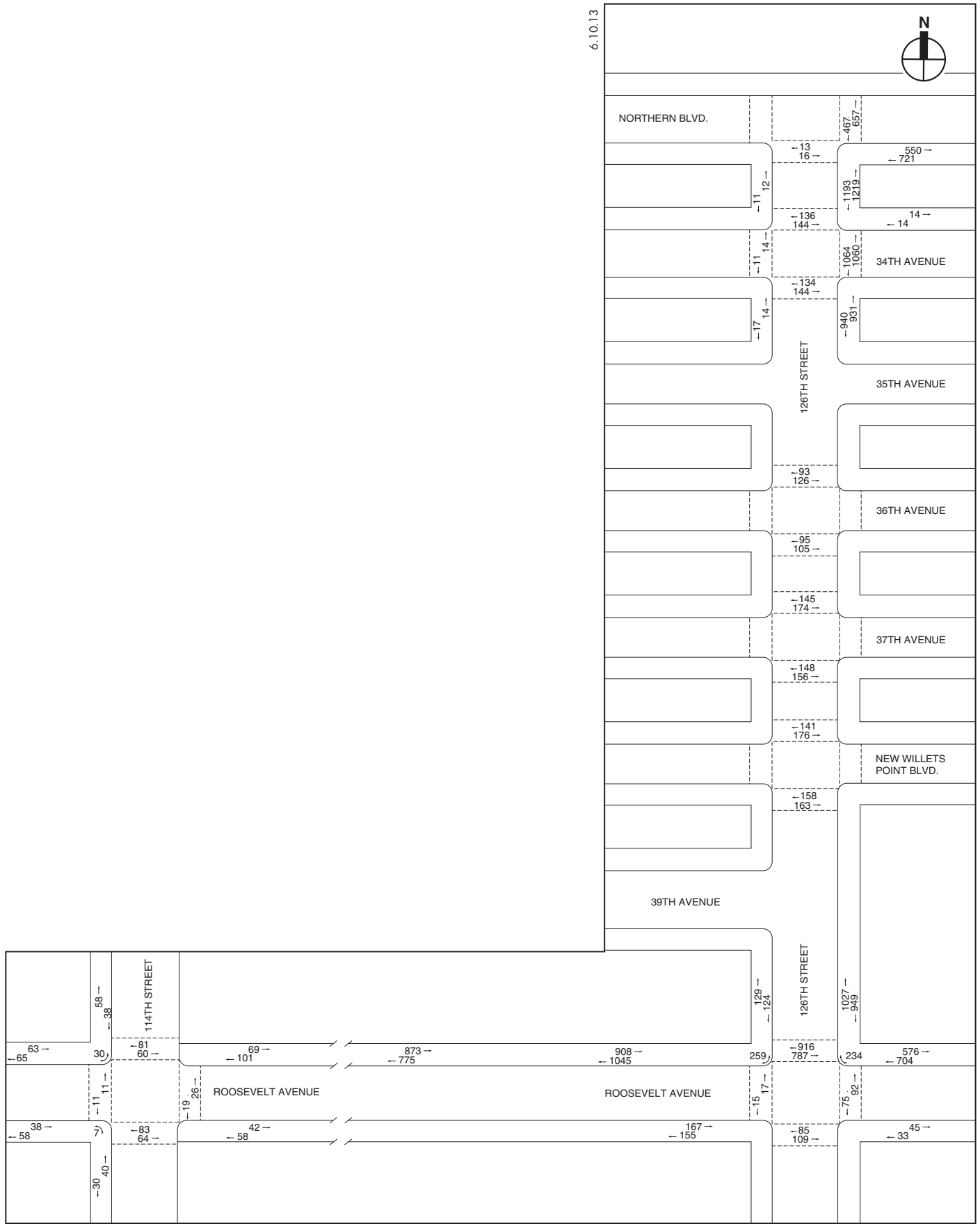


2018 With Action Pedestrian Volumes
Weekend Post-Game Peak Hour
Figure D-56

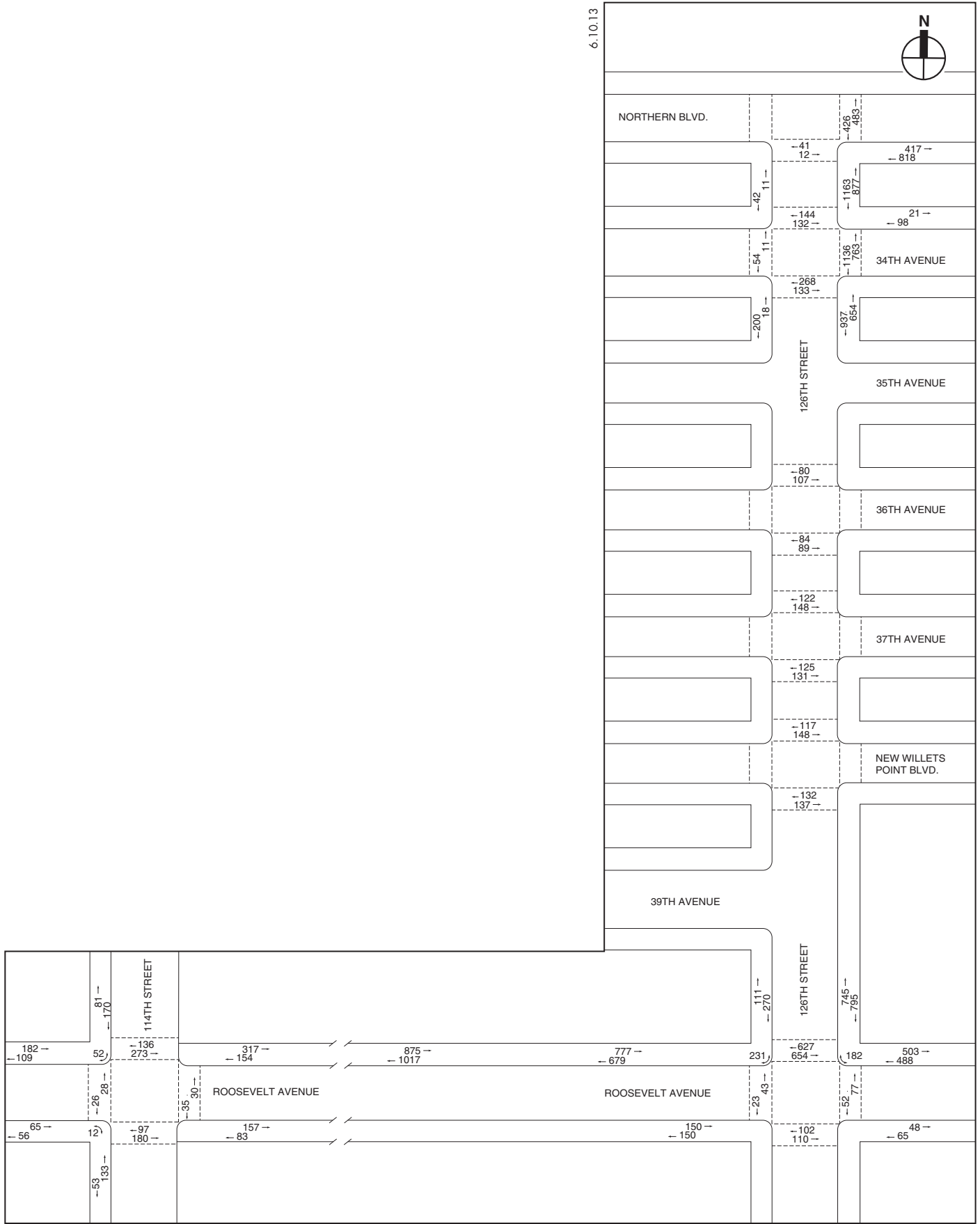


2028 With Action Pedestrian Volumes
Weekday AM Peak Hour
Figure D-57

**WILLETS POINT** Development



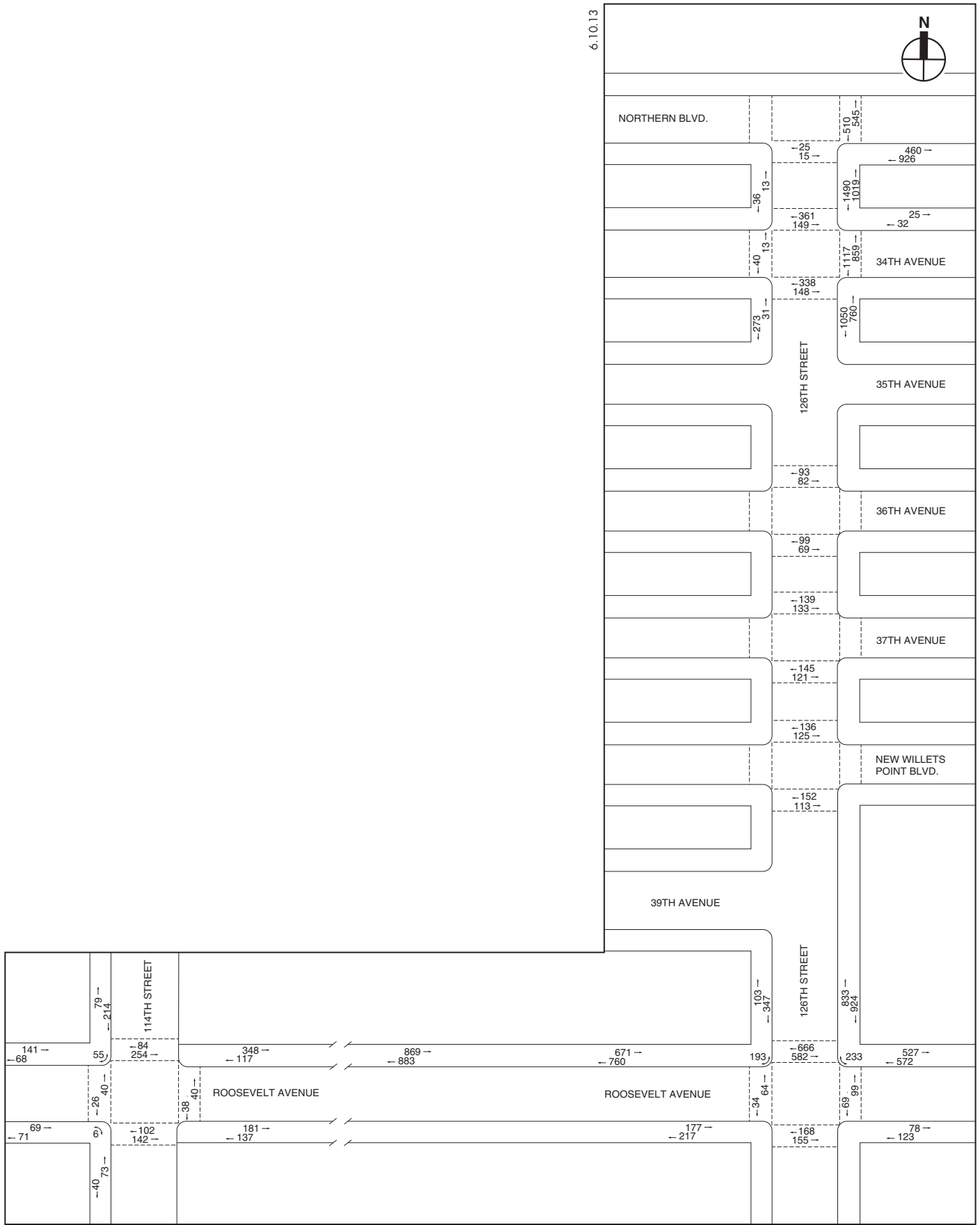
2028 With Action Pedestrian Volumes
 Weekday PM Peak Hour
Figure D-59



NOT TO SCALE

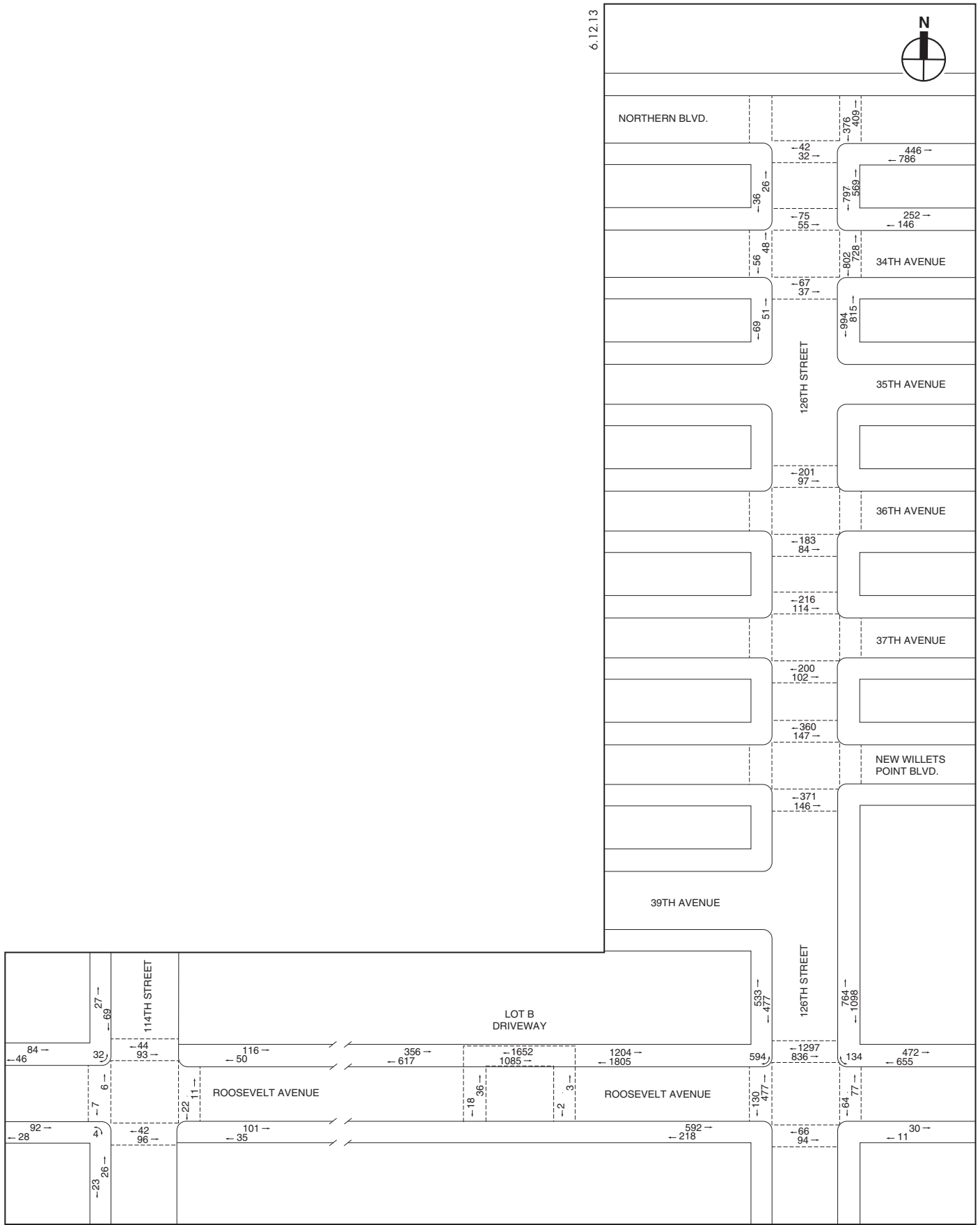
2028 With Action Pedestrian Volumes
Weekday Pre-Game Peak Hour
Figure D-60

**WILLETS POINT** Development



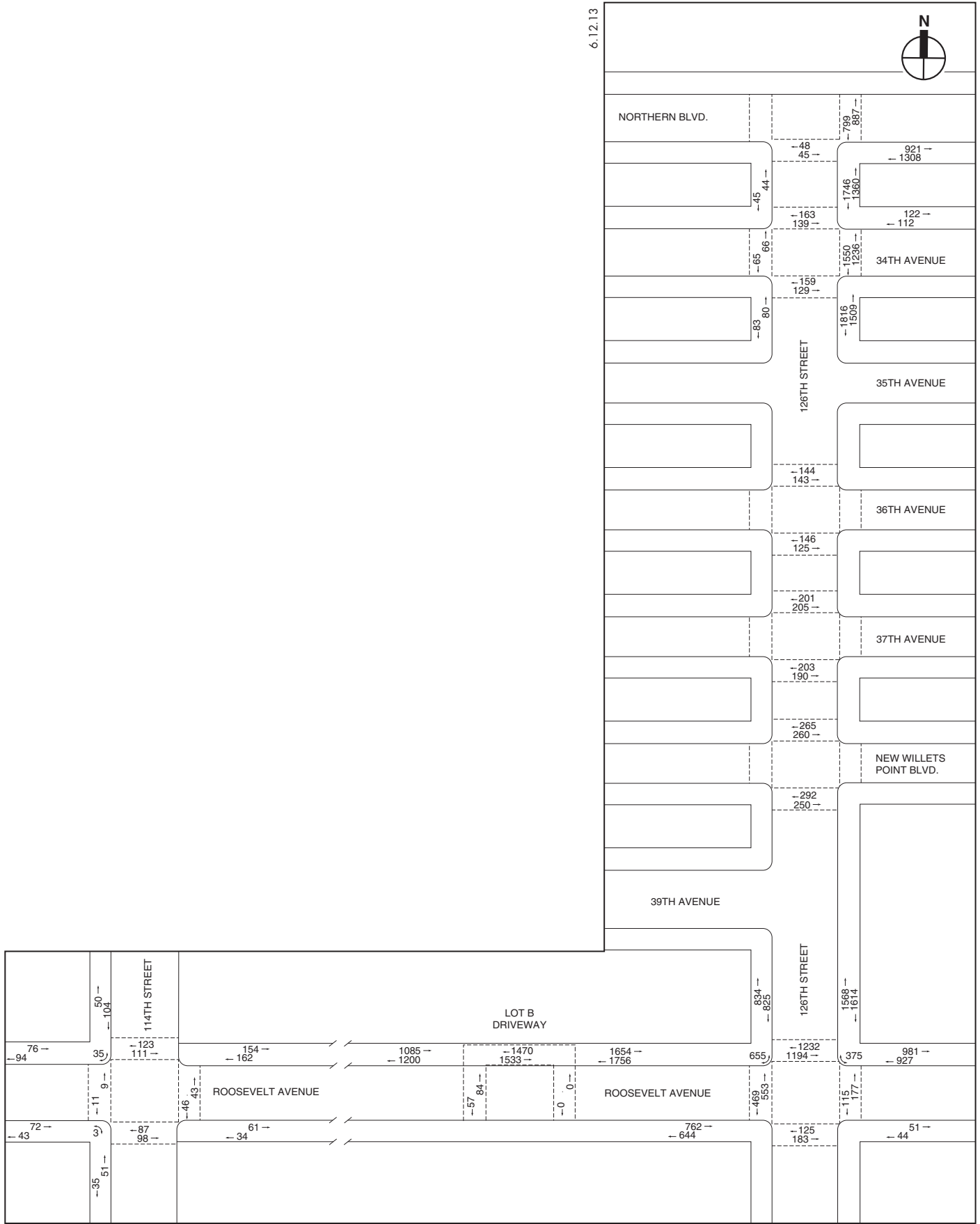
2028 With Action Pedestrian Volumes
Weekend Pre-Game Peak Hour
Figure D-62

**WILLETS POINT** Development



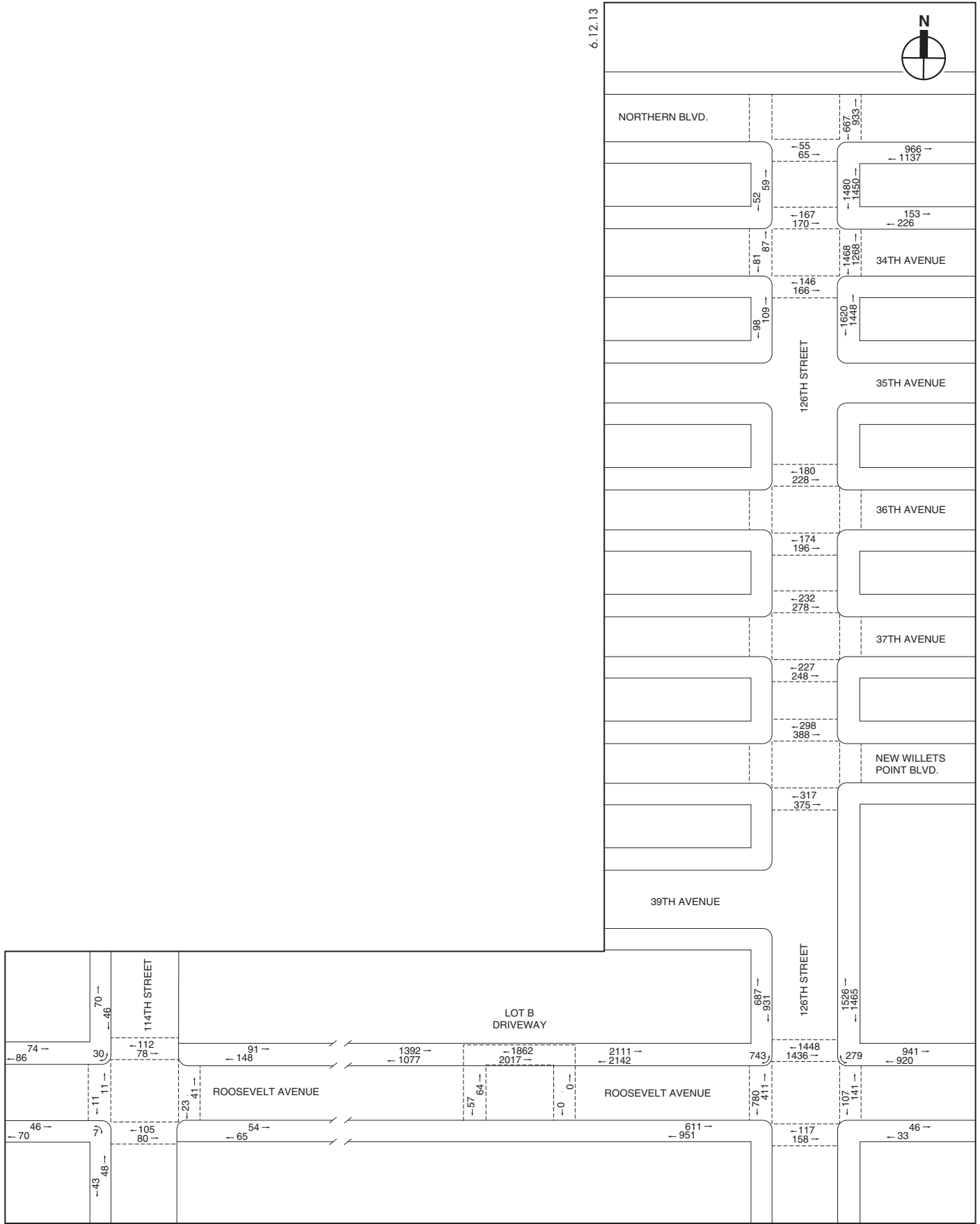
NOT TO SCALE

2032 With Action Pedestrian Volumes
Weekday AM Peak Hour
Figure D-64



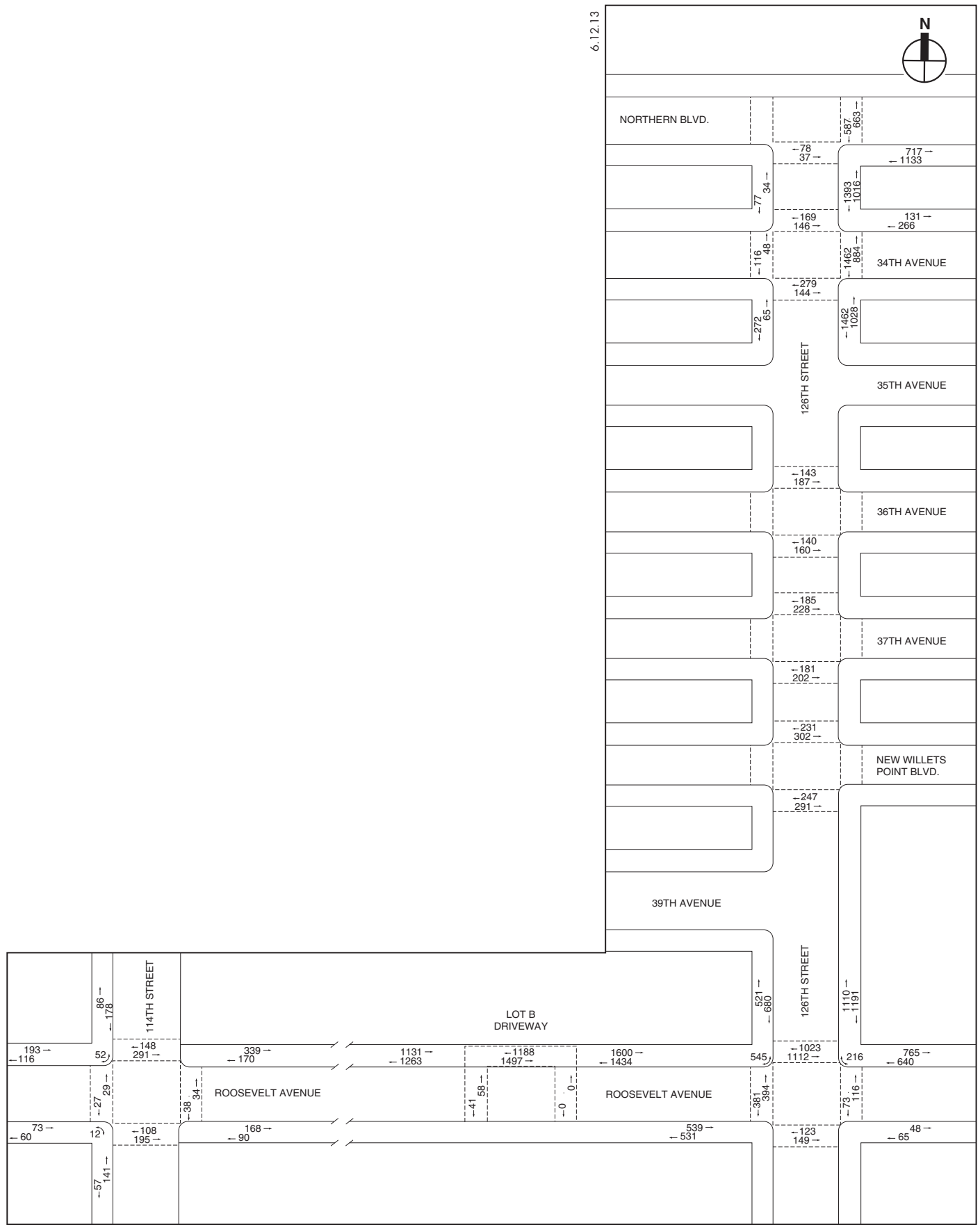
NOT TO SCALE

2032 With Action Pedestrian Volumes
Weekday Midday Peak Hour
Figure D-65



NOT TO SCALE

2032 With Action Pedestrian Volumes
Weekday PM Peak Hour
Figure D-66

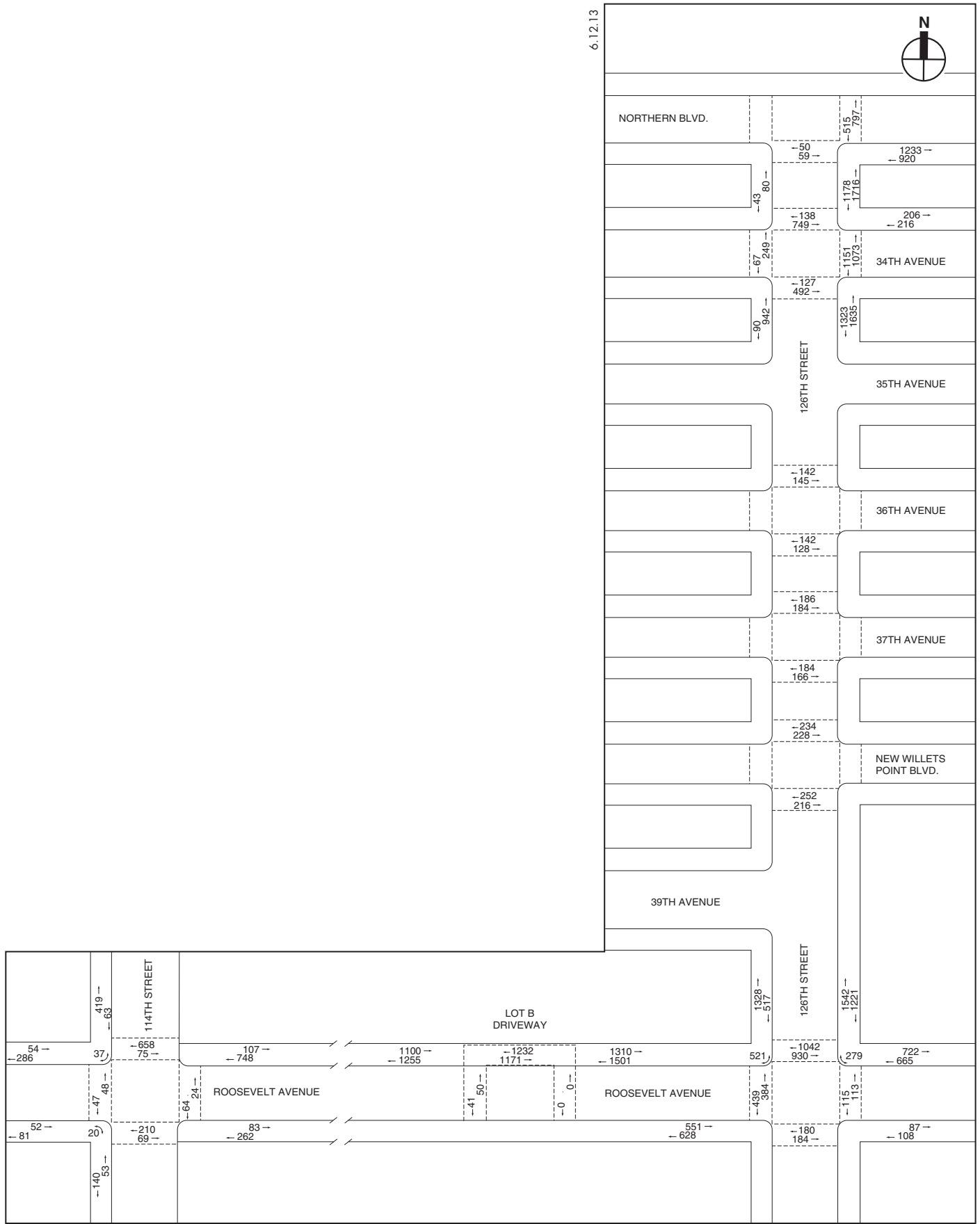


NOT TO SCALE

2032 With Action Pedestrian Volumes
Weekday Pre-Game Peak Hour
Figure D-67

**WILLETS POINT** Development

**WILLETS POINT** Development



NOT TO SCALE

2032 With Action Pedestrian Volumes
Weekend Post-Game Peak Hour
Figure D-70

APPENDIX E

CONSTRUCTION

Construction Workforce Projections	2014												2015												2016												2017												2018											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec												
Phase 1A																																																												
Surface Parking East of 126th Street																																																												
Abatement/Demolition	59	59	59	59	59	59																																																						
Remediation							59	59	59	59	59	59																																																
Fill/Grading/Utilities													59	59	59	59	59	59																																										
Surface Improvements																			59	59	59	59	59	59																																				
Hotel & Retail East of 126th Street - Parcels A3 & A4																																																												
Excavations & Foundations																									20	20	20																																	
Core and Shell																																																												
Interiors & MEP																																																												
Entertainment/Retail Center & Structured Parking West of 126th Street																																																												
Excavations & Foundations																																																												
Core and Shell																																																												
Interiors & MEP																																																												
Structured Parking Garage South of Roosevelt Avenue (South Lot)																																																												
Excavations & Foundations																																																												
Core and Shell																																																												
Interiors & MEP																																																												
Sitework/Utilities																																																												
Surface Improvements																																																												
Average Workers per Day	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	20	20	20	73.75	73.75	201.8	201.8	249.8	582.8	562.8	562.8	787.8	787.8	734	734	848	1175	1175	1175	1521	952	904	1253	1253	1289	956	610	610	610	261	261	261	261	0	0	

Construction Workforce Projections		2022												2023												2024												2025												2026												2027												2028											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec																								
Phase 1B																																																																																					
Entire Phase 1B Willets Point Site																																																																																					
Demo/Site Prep and Fill Utilities and Infrastructure																																																																																					
Structured Parking Garages (South of Roosevelt Avenue - South Lot/Lot D)																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A1																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A2																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A3																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A4																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A5																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A11 - Temporary Open Space																																																																																					
Demolition																																																																																					
Abatement																																																																																					
Remedial Work																																																																																					
Parcel A8																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A9																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A10																																																																																					
Excavations & Foundations																																																																																					
Core and Shell																																																																																					
Interiors & MEP																																																																																					
Parcel A7 - Temporary Open Space																																																																																					
Demolition																																																																																					
Abatement																																																																																					
Remedial Work																																																																																					
Average Workers per Day		0	0	0	0	0	66	66	66	66	267	201	201	403	403	403	403	202	202	273	71	71	71	71	187	187	187	187	187	247	629	629	950	834	995	1055	1199	1139	1068	1068	1325	1325	1508	1104	1287	1287	1216	1400	1400	1400	1519	1519	1801	1552	1439	1508	1754	1427	1372	1438	1528	1528	1607	1261	1261	1077	1077	1077	831	831	672	672	672	672	374	148	148	0	0	0	0	0	0	0	
Van Wyck Ramps/Access Roads*																																																																																					
Construction																																																																																					
*The Van Wyck Ramps/Access Roads and Lot B Development are not part of the proposed project, but have been accounted for in the construction analyses.																																																																																					

[illegible]

Table 1
Construction Auto Trip Summary

Overall

Auto Share 70.0% As per NYCDOT suggestion for 2008 Willets Point FGEIS

Auto Occupancy 1.15 RJTW

Auto Trips

Regular Shift

Workers

In/Out

1Q 2014

1Q 2015

1Q 2016

1Q 2017

1Q 2018

1Q 2019

1Q 2020

1Q 2021

1Q 2022

1Q 2023

1Q 2024

1Q 2025

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Table 1

Construction Auto Trip Summary

Auto Share 70.0% As per NYCDOT suggestion for 2008 Willets Point FGEIS
Auto Occupancy 1.15 RJTW

[illegible]

Table 1

Construction Auto Trip Summary

Auto Share 70.0% As per NYCDOT suggestion for 2008 Willets Point FGEIS
Auto Occupancy 1.15 RJTW

[illegible]

Table 2

Construction Truck Trip Summary

Phase 1A

[illegible]

PCE	2.00
-----	------

[illegible]

Table 2

Construction Truck Trip Summary

Phase 2

[illegible]

PCE	2.00
-----	------

[illegible]

Table 3

Construction Vehicle Trip Summary

Overall

[illegible][illegible]

Phase 1A

[illegible][illegible]

Table 3

Construction Vehicle Trip Summary

Phase 1B

[illegible][illegible]

Table 3

Construction Vehicle Trip Summary

Phase 2

[illegible][illegible]

[illegible][illegible]

Table 4B
Operational - Taxi Trips

Overall - Operational Tax

[illegible][illegible]

Table 4C
Operational - Truck Trips

Overall - Operational Truck

[illegible][illegible]

Table 4D

Operational - Total Vehicle Trips

[illegible][illegible]

Table 5
Construction + Operational Vehicle Trip Summary

[illegible][illegible]

TABLE F - 1
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION NO ACTION TRAFFIC LEVELS OF SERVICE - WEEKDAY NON-GAME DAY PEAK HOURS

Weekday AM Peak Hour (6:00 - 7:00 AM)						Weekday PM Peak Hour (3:00 - 4:00 PM)				
Intersection & Approach		Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
				Delay				Delay		
Signalized Intersections										
126th Street at Northern Boulevard (RT. 25A)										
126th Street	NB	L	0.16	39.5	D	L	0.42	43.1	D	
		R	0.16	39.6	D	R	0.28	41.2	D	
Northern Boulevard	EB	T	0.32	34.1	C	T	1.22	158.6	F	
		WB	T	0.39	7.5	A	T	0.40	7.6	A
Grand Central Parkway Ramp	EB	T	0.49	30.4	C	T	0.73	29.9	C	
Van Wyck & Whitestone Expressway Ramp	WB	T	0.66	14.7	B	T	0.89	24.2	C	
Overall Intersection		-	0.55	19.5	B	-	0.78	49.8	D	
126th Street/GCP Ramp at 34th Avenue										
126th Street	NB	-	-	-	-	DefL	0.35	23.7	C	
		LTR	0.10	19.1	B	TR	0.27	21.1	C	
Northern Boulevard Ramp	SB	LTR	0.18	20.4	C	LTR	0.27	21.6	C	
GCP Ramp	SB	LTR	0.48	47.3	D	LTR	0.74	58.6	E	
Shea Road	EB	LTR	0.28	39.6	D	LTR	0.44	42.5	D	
34th Avenue	WB	LTR	0.35	42.6	D	LTR	0.97	90.0	F	
Overall Intersection		-	0.30	33.2	C	-	0.60	42.3	D	
114th Street at Roosevelt Avenue										
114th Street	NB	LTR	0.60	41.3	D	LTR	0.97	60.5	E	
		SB	LTR	0.42	37.0	D	LTR	1.07	82.6	F
Roosevelt Avenue	EB	LTR	0.43	10.5	B	LTR	0.89	18.0	B	
		WB	LTR	0.31	3.7	A	LTR	0.72	15.2	B
Overall Intersection		-	0.47	14.7	B	-	0.94	28.8	C	
126th Street at Roosevelt Avenue										
126th Street	NB	LTR	0.13	35.6	D	LTR	0.65	52.5	D	
		SB	DefL	0.69	55.5	E	DefL	1.02	96.7	F
		TR	0.39	43.4	D	TR	0.64	47.2	D	
Roosevelt Avenue	EB	LTR	0.27	8.6	A	LTR	0.68	7.6	A	
		WB	LTR	0.34	3.8	A	LTR	0.59	12.5	B
		Overall Intersection		-	0.43	16.3	B	-	0.77	26.2
College Point Boulevard at Roosevelt Avenue										
College Point Boulevard	NB	L	0.64	35.3	D	L	1.23	172.2	F	
		TR	0.43	20.5	C	TR	0.74	30.7	C	
Roosevelt Avenue	SB	TR	0.50	32.0	C	TR	1.30	181.6	F	
		L	0.26	36.0	D	L	0.47	37.0	D	
	TR	0.55	28.2	C	TR	1.19	120.7	F		
		L	0.13	43.8	D	L	0.24	43.6	D	
	WB	L	0.40	37.2	D	TR	0.44	35.8	D	
		TR	0.40	37.2	D	TR	0.44	35.8	D	
Overall Intersection		-	0.67	29.8	C	-	1.30	112.6	F	
College Point Boulevard at Northern Boulevard Service Road										
College Point Boulevard	NB	TR	0.25	10.1	B	TR	0.55	13.4	B	
		SB	LT	0.43	11.9	B	LT	0.84	22.4	C
Northern Blvd Service Rd	WB	LR	0.46	26.6	C	LR	0.72	34.0	C	
Overall Intersection		-	0.44	14.0	B	-	0.80	20.3	C	
Unsignalized Intersections										
Willets Point Boulevard at 126th Street										
126th Street	SB	LT	-	7.8	A	LT	-	8.3	A	
Willets Point Boulevard	WB	LR	-	9.6	A	LR	-	14.7	B	
Overall Intersection		-	-	4.5	A	-	-	4.5	A	
Boat Basin Road at Worlds Fair Marina										
Boat Basin Road	NB	L	-	17.1	C	L	-	16.4	C	
		R	-	8.6	A	R	-	8.8	A	
Worlds Fair Marina	WB	LT	-	8.1	A	LT	-	7.8	A	
Overall Intersection		-	-	8.2	A	-	-	8.1	A	

Notes

- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): This table has been revised for the Final SEIS.

TABLE F - 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION WITH ACTION TRAFFIC LEVELS OF SERVICE - WEEKDAY NON-GAME DAY PEAK HOURS

Weekday AM Peak Hour (6:00 - 7:00 AM)					Weekday PM Peak Hour (3:00 - 4:00 PM)				
INTERSECTION & APPROACH			Control		LOS			Control	
			Delay					Delay	
SIGNALIZED INTERSECTIONS									
126th Street at Northern Boulevard (RT. 25A)									
126th Street	NB	L	0.18	39.8	D	L	1.22	161.2	F
		R	0.45	49.6	D	R	3.00+	1000.0+	F
Northern Boulevard	EB	T	0.37	35.1	D	T	1.27	182.1	F
	WB	T	0.39	7.5	A	T	0.45	8.2	A
Grand Central Parkway Ramp	EB	T	0.68	35.0	D	T	0.76	31.1	C
Van Wyck & Whitestone Expressway Ramp	WB	T	0.85	25.4	C	T	1.25	136.7	F
Overall Intersection	-		0.76	25.2	C	-	2.39	247.3	F
126th Street/GCP Ramp at 34th Avenue									
126th Street	NB	-	-	-	-	DefL	1.49	269.1	F
		LTR	0.11	19.2	B	TR	0.56	26.1	C
Northern Boulevard Ramp	SB	LTR	0.22	20.8	C	LTR	0.64	30.3	C
GCP Ramp	SB	LTR	1.58	321.9	F	LTR	3.00+	1000.0+	F
Shea Road	EB	-	-	-	-	DefL	3.00+	1000.0+	F
		LTR	1.05	100.8	F	TR	2.43	704.5	F
34th Avenue	WB	LTR	0.66	57.7	E	LTR	3.00+	1000.0+	F
Overall Intersection	-		0.74	159.6	F	-	3.00+	1000.0+	F
114th Street at Roosevelt Avenue									
114th Street	NB	LTR	0.61	41.6	D	LTR	1.03	75.4	E
	SB	LTR	0.43	37.1	D	LTR	1.24	154.6	F
Roosevelt Avenue	EB	LTR	0.46	11.0	B	LTR	1.37	195.6	F
	WB	LTR	0.32	3.7	A	LTR	1.14	89.4	F
Overall Intersection	-		0.50	14.8	B	-	1.33	119.3	F
126th Street at Roosevelt Avenue									
126th Street	NB	LTR	0.13	35.7	D	LTR	3.00+	1000.0+	F
	SB	DefL	0.70	56.1	E	-	-	-	-
		TR	0.40	43.8	D	LTR	2.14	563.4	F
Roosevelt Avenue	EB	-	-	-	-	DefL	1.49	263.6	F
		LTR	0.35	9.4	A	TR	0.65	7.4	A
	WB	LTR	0.43	4.4	A	LTR	0.89	24.4	C
Overall Intersection	-		0.49	16.4	B	-	2.11	271.0	F
College Point Boulevard at Roosevelt Avenue									
College Point Boulevard	NB	L	0.68	37.4	D	L	1.61	333.7	F
		TR	0.43	20.5	C	TR	0.74	30.7	C
	SB	TR	0.55	33.1	C	TR	1.44	244.6	F
Roosevelt Avenue	EB	L	0.26	36.1	D	L	0.52	38.0	D
		TR	0.55	28.3	C	TR	1.55	280.4	F
	WB	L	0.13	43.8	D	L	0.24	43.6	D
		TR	0.41	37.4	D	TR	0.58	39.2	D
Overall Intersection	-		0.68	30.5	C	-	1.62	184.1	F
College Point Boulevard at Northern Boulevard Service Road									
College Point Boulevard	NB	TR	0.25	10.1	B	TR	0.56	13.6	B
	SB	LT	0.43	11.9	B	LT	0.86	24.0	C
Northern Blvd Service Rd	WB	LR	0.52	27.7	C	LR	0.90	47.6	D
Overall Intersection	-		0.46	14.5	B	-	0.88	24.1	C
UNSIGNALIZED INTERSECTIONS									
Boat Basin Road at Worlds Fair Marina									
Boat Basin Road	NB	L	-	40.2	E	L	-	1000.0+	F
		R	-	8.6	A	R	-	9.0	A
Worlds Fair Marina	WB	LT	-	9.0	A	LT	-	9.8	A
Overall Intersection	-	-	-	8.8	A	-	-	1000.0+	F
NEW (BUILD) SIGNALIZED INTERSECTION									
126th Street at New Willets Point Boulevard									
126th Street	NB	TR	0.22	17.4	B	TR	0.83	33.1	C
	SB	-	-	-	-	DefL	0.60	34.5	C
		LT	0.17	9.6	A	T	0.51	14.2	B
New Willets Point Boulevard	WB	L	0.13	31.9	C	L	1.02	88.2	F
		R	0.02	20.6	C	R	0.49	29.7	C
Overall Intersection	-		0.29	14.9	B	-	1.27	40.3	D

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
- (3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".
- (4): This table has been revised for the Final SEIS.

TABLE G - 1
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION WEEKDAY NON-GAME 6-7 AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

															Mitigation Measure
		No Action				With Action				Mitigation					
INTERSECTION & APPROACH		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS															
126th Street at Northern Boulevard (RT. 25A)															
126th Street	NB	L	0.16	39.5	D	L	0.18	39.8	D	L	0.18	39.8	D	-Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection.	
		R	0.16	39.6	D	R	0.45	49.6	D	R	0.16	39.7	D	-Close the ramp from EB Northern Blvd ramp to 126th Street.	
Northern Boulevard	EB	T	0.32	34.1	C	T	0.37	35.1	D	T	0.39	36.5	D	-Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave.	
	WB	T	0.39	7.5	A	T	0.39	7.5	A	T	0.39	7.5	A	-Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes.	
Grand Central Parkway Ramp	EB	T	0.49	30.4	C	T	0.68	35.0	D	T	0.65	32.8	C	-Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at	
Van Wyck & Whitestone Expressway Ramp	WB	T	0.66	14.7	B	T	0.85	25.4	C	-	-	-	-	-Modify signal timing: shift 2 s of green time from EB Northern Blvd phase to EB GCP/Astoria Blvd Ramp phase [EB GCP/Astoria Blvd Ramp green time shifts from 45 s to 47 s; EB Northern Blvd green time shifts from 35 s to 33 s].	
Overall Intersection	-	0.55	19.5	B	-	0.76	25.2	C	-	0.34	24.7	C			
126th Street/GCP Ramp at 34th Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	0.04	14.9	B	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane.	
		LTR	0.10	19.1	B	LTR	0.11	19.2	B	TR	0.12	22.3	C		
Northern Boulevard Ramp	SB	LTR	0.18	20.4	C	LTR	0.22	20.8	C	L	0.42	21.9	C		
GCP Ramp	SB	LTR	0.48	47.3	D	LTR	1.58	321.9	F	T	0.11	22.2	C	-Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes.	
Shea Road	EB	-	-	-	-	-	-	-	-	-	-	-	-	-Close the ramp from EB Northern Blvd ramp to 126th Street.	
		LTR	0.28	39.6	D	LTR	1.05	100.8	F	LTR	0.42	26.7	C	-Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road.	
34th Avenue	WB	-	-	-	-	-	-	-	-	DefL	0.32	26.3	C	-Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes.	
		LTR	0.35	42.6	D	LTR	0.66	57.7	E	TR	0.16	23.1	C	-Modify signal phasing and timing plan: EB/WB phase will have 49 s green time; NB/SB lead left-turn phase will have 7 s green time; NB/SB phase will have 49 s green time [each phase will have 3 s amber and 2 s all red time].	
Overall Intersection	-	0.30	33.2	C	-	0.74	159.6	F	-	0.40	24.1	C			
114th Street at Roosevelt Avenue															
114th Street	NB	LTR	0.60	41.3	D	LTR	0.61	41.6	D	LTR	0.41	36.0	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south.	
	SB	-	-	-	-	-	-	-	-	-	-	-	-	-Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane.	
		LTR	0.42	37.0	D	LTR	0.43	37.1	D	LTR	0.35	34.0	C		
Roosevelt Avenue	EB	-	-	-	-	-	-	-	-	L	0.10	8.5	A	-Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane.	
		LTR	0.43	10.5	B	LTR	0.46	11.0	B	TR	0.33	10.5	B		
	WB	-	-	-	-	-	-	-	-	L	0.27	10.5	B	-Shift centerline of NB 114th Street approach 3 ft to the east.	
		LTR	0.31	3.7	A	LTR	0.32	3.7	A	T	0.32	5.2	A	-Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane	
		-	-	-	-	-	-	-	-	R	0.07	8.3	A	-Shift center line of SB 114th Street approach 2 ft to the east.	
Overall Intersection	-	0.47	14.7	B	-	0.50	14.8	B	-	0.35	14.9	B		Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection.	
														Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection.	
														-Modify signal timing: Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s].	
														[Measure reflects improvements needed for the PM construction peak period.]	

TABLE G - 1
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION WEEKDAY NON-GAME 6 - 7 AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure	
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
126th Street at Roosevelt Avenue															
126th Street	NB	-	-	-	-	-	-	-	-	L	0.04	28.6	C	-Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes.	
		LTR	0.13	35.6	D	LTR	0.13	35.7	D	TR	0.04	28.5	C	-Shift centerline of SB 126th Street approach 9 ft to the east.	
		DefL	0.69	55.5	E	DefL	0.70	56.1	E	L	0.46	36.2	D	-Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft.	
	SB	TR	0.39	43.4	D	TR	0.40	43.8	D	T	0.04	31.4	C	-Shift centerline of EB Roosevelt Avenue approach 1 ft to north.	
		-	-	-	-	-	-	-	-	R	0.16	21.2	C	-Shift centerline of WB Roosevelt Avenue approach 1 ft to south.	
		-	-	-	-	-	-	-	-	-	-	-	-	-Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes.	
Roosevelt Avenue	EB	LTR	0.27	8.6	A	LTR	0.35	9.4	A	LTR	0.36	13.0	B	-Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes.	
		WB	LTR	0.34	3.8	A	LTR	0.43	4.4	A	LTR	0.59	19.9	B	-Modify signal phasing and timing plan: EB/WB will have 58 s green time; EB-lag/SB right phase will have 9 s green time; NB/SB phase will have 38 s green time [each phase will have 3 s amber and 2 s all red time].
		-	-	-	-	-	-	-	-	-	-	-	-	[Measure reflects improvements needed for the PM construction peak period.]	
Overall Intersection		-	0.43	16.3	B	-	0.49	16.4	B	-	0.63	20.1	C		
College Point Boulevard at Roosevelt Avenue															
College Point Boulevard	NB	L	0.64	35.3	D	L	0.68	37.4	D	L	0.49	44.4	D	-Mitigation not required	
		TR	0.43	20.5	C	TR	0.43	20.5	C	TR	0.44	21.8	C	-Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.	
		-	-	-	-	-	-	-	-	-	-	-	-	-Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.	
	SB	TR	0.50	32.0	C	TR	0.55	33.1	C	T	0.51	42.3	D	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.	
		EB	L	0.26	36.0	D	L	0.26	36.1	D	L	0.26	35.0	C	-Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.
		TR	0.55	28.2	C	TR	0.55	28.3	C	TR	0.51	26.1	C	-Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left turn lanes, and three SB 10-ft travel lanes.	
	WB	L	0.13	43.8	D	L	0.13	43.8	D	-	-	-	-	-Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.	
		TR	0.40	37.2	D	TR	0.41	37.4	D	TR	0.27	34.7	C	-Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.	
		-	-	-	-	-	-	-	-	-	-	-	-	-Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.	
Overall Intersection		-	0.67	29.8	C	-	0.68	30.5	C	-	0.51	32.9	C	-Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.	
College Point Boulevard at Northern Boulevard Service Road															
College Point Boulevard	NB	TR	0.25	10.1	B	TR	0.25	10.1	B					-Mitigation not required	
		SB	LT	0.43	11.9	B	LT	0.43	11.9	B					
		Northern Blvd Service Rd	WB	LR	0.46	26.6	C	LR	0.52	27.7	C				
Overall Intersection		-	0.44	14.0	B	-	0.46	14.5	B						

TABLE G - 1
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION WEEKDAY NON-GAME 6 - 7 AM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

														Mitigation Measure
INTERSECTION & APPROACH		No Action				With Action				Mitigation				
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	17.1	C	L	-	40.2	E	L	0.02	27.4	C	-Install traffic signal with the following timing plan: EB will have 7 s green time; WB/NB-Right will have 48 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane.
		R	-	8.6	A	R	-	8.6	A	R	0.02	1.7	A	
		-	-	-	-	-	-	-	-	TR	0.06	38.9	D	
Worlds Fair Marina	WB	LT	-	8.1	A	LT	-	9.0	A	L	0.45	14.7	B	
		-	-	-	-	-	-	-	-	LT	0.30	12.6	B	
		-	-	-	-	-	-	-	-	-	-	-	-	
Overall Intersection		-	-	8.2	A	-	-	8.8	A	-	0.30	14.1	B	
NEW (BUILD) SIGNALIZED INTERSECTION														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	0.22	17.4	B	-Mitigation not required				
		SB	-	-	-	-	-	-	-					
		-	-	-	-	LT	0.17	9.6	A					
New Willets Point Boulevard	WB	-	-	-	-	L	0.13	31.9	C					
		-	-	-	-	R	0.02	20.6	C					
		-	-	-	-	-	-	-	-					
Overall Intersection		-	-	-	-	-	0.29	14.9	B					

Notes

(1): Control delay is measured in seconds per vehicle.

(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.

(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

(4): This table has been revised for the Final SEIS.

TABLE G - 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION WEEKDAY NON-GAME 3 - 4 PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS														
126th Street at Northern Boulevard (RT. 25A)														
126th Street	NB	L	0.42	43.1	D	L	1.22	161.2	F	L	1.13	122.7	F	-Partially mitigated. -Install Jersey barriers on WB approach between the right-most lane and center lane to allow the Van Wyck and Whitestone Expressway Ramp to bypass the signal and operate as free flow through the intersection. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Divert traffic from the closed ramp through the intersection to SB 126th Pl to 34th Ave. -Widen the EB Northern approach from two 12-ft lanes to three 10-ft lanes. -Prohibit pedestrian crossing in the east crosswalk and divert pedestrians to the new crossing at 126th Place at Northern Boulevard. -Modify signal timing: shift 3 s of green time from EB GCP/Astoria Blvd Ramp phase to EB Northern Blvd phase and shift 2 s green time from EB GCP/Astoria Blvd Ramp phase to NB 126th Street phase [EB Northern Blvd green time shifts from 25 s to 28 s; EB GCP/Astoria Blvd Ramp green time shifts from 55 s to 50 s; NB 126th Street green time shifts from 25 s to 27 s].
		R	0.28	41.2	D	R	3.00+	1000.0+	F	R	0.58	45.6	D	
Northern Boulevard	EB	T	1.22	158.6	F	T	1.27	182.1	F	T	1.20	146.9	F	
	WB	T	0.40	7.6	A	T	0.45	8.2	A	T	0.46	9.1	A	
Grand Central Parkway Ramp	EB	T	0.73	29.9	C	T	0.76	31.1	C	T	0.84	38.3	D	
Van Wyck & Whitestone Expressway Ramp	WB	T	0.89	24.2	C	T	1.25	136.7	F	-	-	-	-	
Overall Intersection	-	0.78	49.8	D	-	2.39	247.3	F	-	1.01	76.9	E		
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	DefL	0.35	23.7	C	DefL	1.49	269.1	F	L	0.77	44.8	D	-Partially mitigated. -Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft hatched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class I bicycle lane. -Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes. -Close the ramp from EB Northern Blvd ramp to 126th Street. -Construct a channelized right-turn from the GCP/EB Astoria Blvd ramp to WB Shea Road. -Reconstruct the GCP/EB Astoria Blvd ramp to have one 11-ft exclusive left-turn lane and two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB phase will have 55 s green time; NB/SB lead left turn phase will have 14 s green time; NB/SB phase will have 36 s green time [each phase will have 3 s amber and 2 s all red time].
		TR	0.27	21.1	C	TR	0.56	26.1	C	TR	0.78	44.9	D	
Northern Boulevard Ramp	SB	LTR	0.27	21.6	C	LTR	0.64	30.3	C	L	0.69	36.6	D	
	SB	LTR	0.74	58.6	E	LTR	3.00+	1000.0+	F	T	0.49	36.4	D	
GCP Ramp	EB	-	-	-	-	DefL	3.00+	1000.0+	F	DefL	2.61	793.3	F	
Shea Road	EB	-	-	-	-	TR	2.43	704.5	F	TR	0.62	28.9	C	
		LTR	0.44	42.5	D	-	-	-	-	-	-	-	-	
34th Avenue	WB	-	-	-	-	LTR	3.00+	1000.0+	F	LTR	1.47	249.6	F	
Overall Intersection	-	0.60	42.3	D	-	3.00+	1000.0+	F	-	1.76	157.1	F		
114th Street at Roosevelt Avenue														
114th Street	NB	LTR	0.97	60.5	E	LTR	1.03	75.4	E	LTR	0.69	38.5	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s]. -Install "No Standing 4 PM - 7 PM Monday-Friday" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.
		SB	-	-	-	-	-	-	-	LT	0.85	42.0	D	
	LTR	1.07	82.6	F	LTR	1.24	154.6	F	R	0.12	32.7	C		
	EB	-	-	-	-	-	-	-	L	0.48	18.0	B		
Roosevelt Avenue	LTR	0.89	18.0	B	LTR	1.37	195.6	F	TR	0.70	9.2	A		
		-	-	-	-	-	-	-	L	0.71	23.3	C		
WB	LTR	0.72	15.2	B	LTR	1.14	89.4	F	T	0.90	28.8	C		
		-	-	-	-	-	-	-	R	0.78	21.3	C		
Overall Intersection	-	0.94	28.8	C	-	1.33	119.3	F	-	0.88	24.3	C		

TABLE G - 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION WEEKDAY NON-GAME 3 - 4 PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action				With Action				Mitigation				Mitigation Measure
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
126th Street at Roosevelt Avenue														
126th Street	NB	-	-	-	-	-	-	-	-	L	0.42	45.9	D	-Partially mitigated.
	LTR	0.65	52.5	D	LTR	3.00+	1000.0+	F	TR	0.16	39.1	D	-Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes.	
	SB	DefL	1.02	96.7	F	-	-	-	-	L	2.37	674.9	F	-Shift centerline of SB 126th Street approach 9 ft to the east.
Roosevelt Avenue	TR	0.64	47.2	D	LTR	2.14	563.4	F	T	0.15	39.1	D	-Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft.	
	-	-	-	-	-	-	-	-	R	1.69	358.6	F	-Shift centerline of EB Roosevelt Avenue approach 1 ft to north.	
	EB	-	-	-	DefL	1.49	263.6	F	DefL	0.89	64.8	E	-Shift centerline of WB Roosevelt Avenue approach 1 ft to south.	
	LTR	0.68	7.6	A	TR	0.65	7.4	A	TR	0.61	4.7	A	-Shift centerline of WB Roosevelt Avenue approach 1 ft to south.	
	WB	LTR	0.59	12.5	B	LTR	0.89	24.4	C	LTR	0.98	42.5	D	-Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes.
	Overall Intersection	-	0.77	26.2	C	-	2.11	271.0	F	-	1.76	186.4	F	-Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes.
														-Modify signal phasing and timing plan: EB/WB will have 72 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 26 s green time [each phase will have 3 s amber and 2 s all red time].
College Point Boulevard at Roosevelt Avenue														
College Point Boulevard	NB	L	1.23	172.2	F	L	1.61	333.7	F	L	0.91	70.0	E	-Partially Mitigated
	TR	0.74	30.7	C	TR	0.74	30.7	C	TR	0.73	30.3	C	-Restripe the WB Roosevelt Avenue approach from one 13-ft travel lane and one 17-ft travel lane to two 15-ft travel lanes.	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-Restripe the EB Roosevelt Avenue approach from one 14-ft travel lane and one 12-ft travel lane to two 13-ft travel lanes.
	SB	TR	1.30	181.6	F	TR	1.44	244.6	F	T	1.09	94.5	F	-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.
	EB	L	0.47	37.0	D	L	0.52	38.0	D	L	0.53	38.4	D	-Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.
	TR	1.19	120.7	F	TR	1.55	280.4	F	TR	1.53	270.6	F	-Restripe the NB/SB lanes in the Roosevelt Avenue median from one NB 24-ft travel lane, one NB 11-ft travel lane, one NB 10-ft exclusive left-turn lane, one SB 10-ft travel lane and one SB 20-ft travel lane to one NB 15-ft travel lane, one NB 10-ft travel lane, two NB 10-ft exclusive left-turn lanes, and three SB 10-ft travel lanes.	
	WB	L	0.24	43.6	D	L	0.24	43.6	D	-	-	-	-	-Extend median on the north leg 3 ft to the east and shift NB receiving lanes 3 ft to the east. Taper 45 ft to meet existing lanes.
	TR	0.44	35.8	D	TR	0.58	39.2	D	TR	0.57	44.4	D	-Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.	
Overall Intersection	-	1.30	112.6	F	-	1.62	184.1	F	-	1.29	106.9	F	-Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.	
College Point Boulevard	NB	TR	0.55	13.4	B	TR	0.56	13.6	B	TR	0.60	15.9	B	-Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.
	SB	LT	0.84	22.4	C	LT	0.86	24.0	C	LT	0.94	33.7	C	-Divert WB left-turn traffic on Roosevelt Avenue to Janet Place and 39th Avenue.
	WB	LR	0.72	34.0	C	LR	0.90	47.6	D	LR	0.82	36.6	D	-Modify signal phasing and timing plan: EB/WB will have 27 s green time; EB-lag phase will have 24 s green time; NB lead-phase will have 19 s green time; NB/SB phase will have 30 s green time [each phase will have 3 s amber and 2 s all red time].
	Overall Intersection	-	0.80	20.3	C	-	0.88	24.1	C	-	0.89	26.6	C	
College Point Boulevard at Northern Boulevard Service Road														
College Point Boulevard	NB	TR	0.55	13.4	B	TR	0.56	13.6	B	TR	0.60	15.9	B	-Modify Signal Timing: Shift 3 s of green time from NB/SB phase to WB phase [NB/SB green time shifts from 51 s to 48 s; WB green time shifts from 29 s to 32 s].
	SB	LT	0.84	22.4	C	LT	0.86	24.0	C	LT	0.94	33.7	C	
Northern Blvd Service Rd	WB	LR	0.72	34.0	C	LR	0.90	47.6	D	LR	0.82	36.6	D	
Overall Intersection	-	0.80	20.3	C	-	0.88	24.1	C	-	0.89	26.6	C		

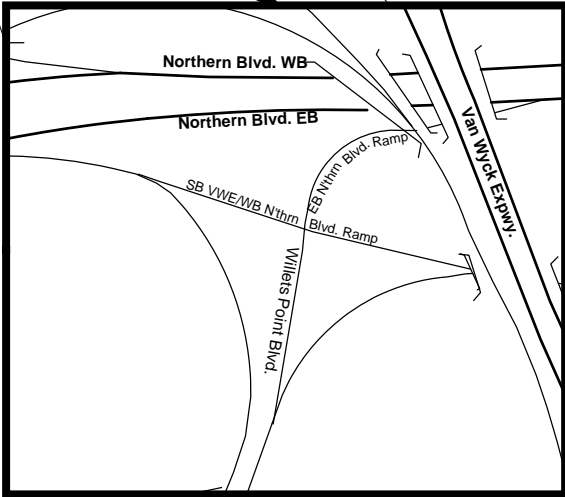
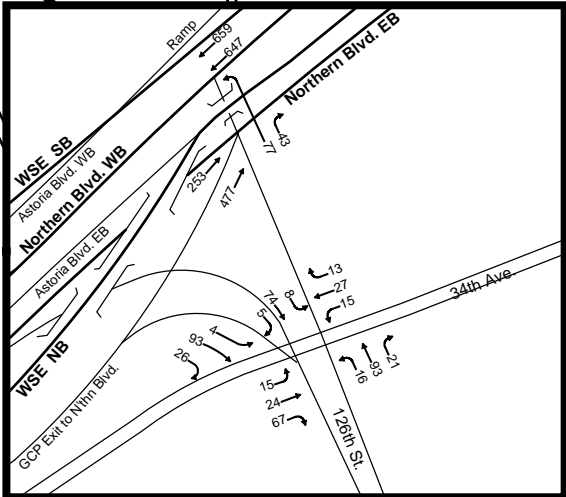
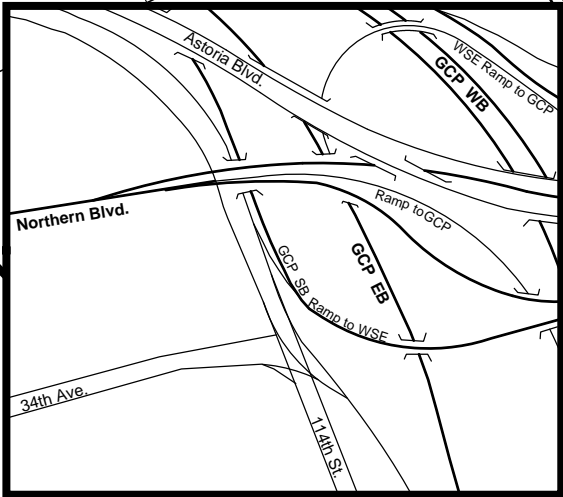
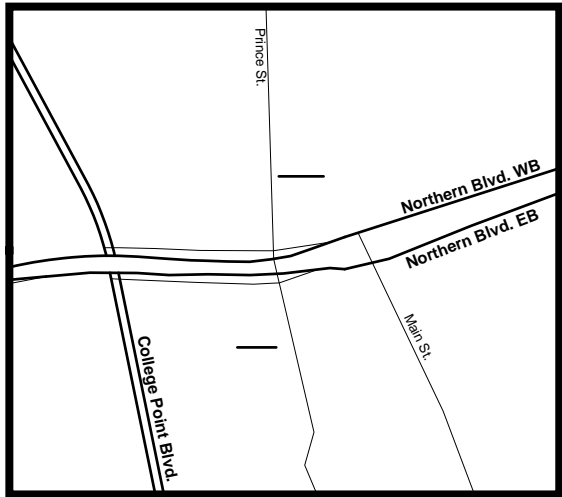
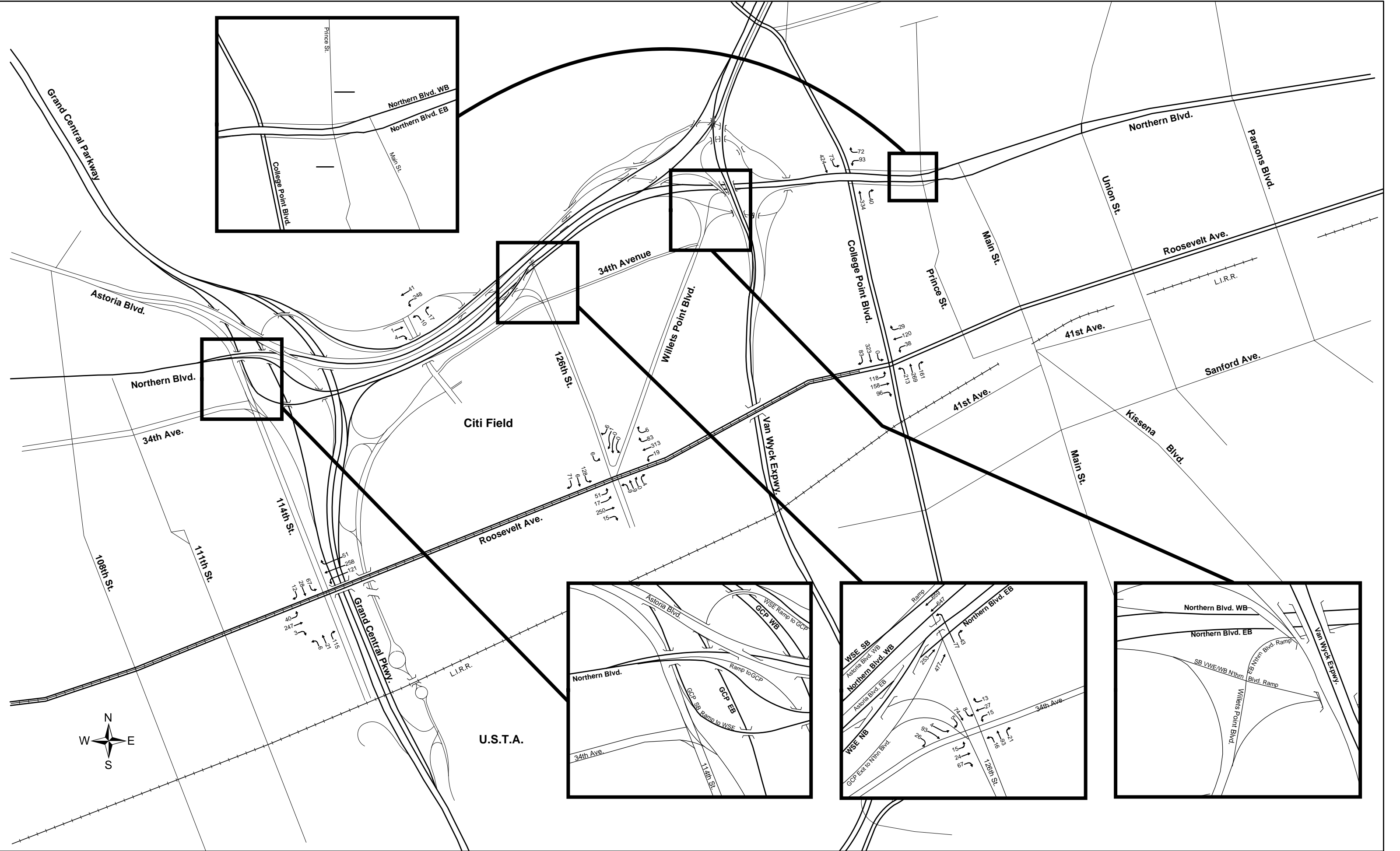
TABLE G - 2
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2031 PHASE 2 CONSTRUCTION WEEKDAY NON-GAME 3 - 4 PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

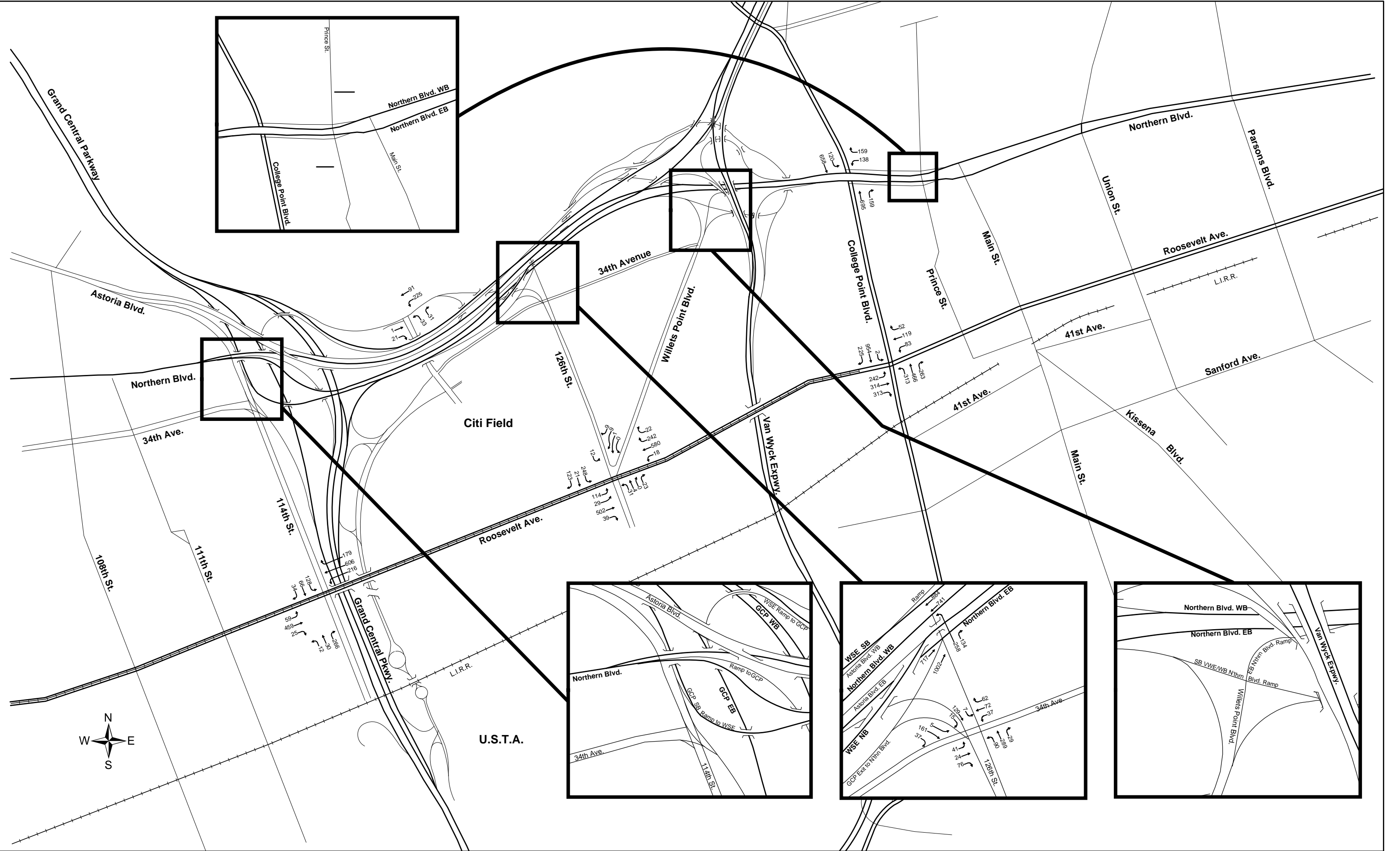
		No Action				With Action				Mitigation				Mitigation Measure
INTERSECTION & APPROACH		Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	Mvt.	V/C	<u>Control</u> Delay	LOS	
UNSIGNALIZED INTERSECTIONS														
Boat Basin Road at Worlds Fair Marina														
Boat Basin Road	NB	L	-	16.4	C	L	-	1000.0+	F	L	0.77	41.6	D	-Install traffic signal with the following timing plan: EB will have 7 s green time; WB/NB-Right will have 48 s green time; NB will have 20 s green time [each phase will have 3 s amber and 2 s all red time]. -Stripe WB approach as one 11-ft left-turn lane and one 11-ft shared left-through lane. -Stripe NB approach as two 10-ft left-turn lanes and one 10-ft right-turn lane.
		R	-	8.8	A	R	-	9.0	A	R	0.10	1.9	A	
Worlds Fair Marina	WB	-	-	-	-	-	-	-	-	TR	0.18	40.7	D	
		LT	-	7.8	A	LT	-	9.8	A	L	0.63	18.3	B	
		-	-	-	-	-	-	-	-	LT	0.64	18.5	B	
Overall Intersection		-	-	8.1	A	-	-	1000.0+	F	-	0.63	24.7	C	
NEW (BUILD) SIGNALIZED INTERSECTION														
126th Street at New Willets Point Boulevard														
126th Street	NB	-	-	-	-	TR	0.83	33.1	C					-Mitigation not required
	SB	-	-	-	-	DefL	0.60	34.5	C					
New Willets Point Boulevard	WB	-	-	-	-	T	0.51	14.2	B					
		-	-	-	-	L	1.02	88.2	F					
		-	-	-	-	R	0.49	29.7	C					
Overall Intersection		-	-	-	-	-	1.27	40.3	D					

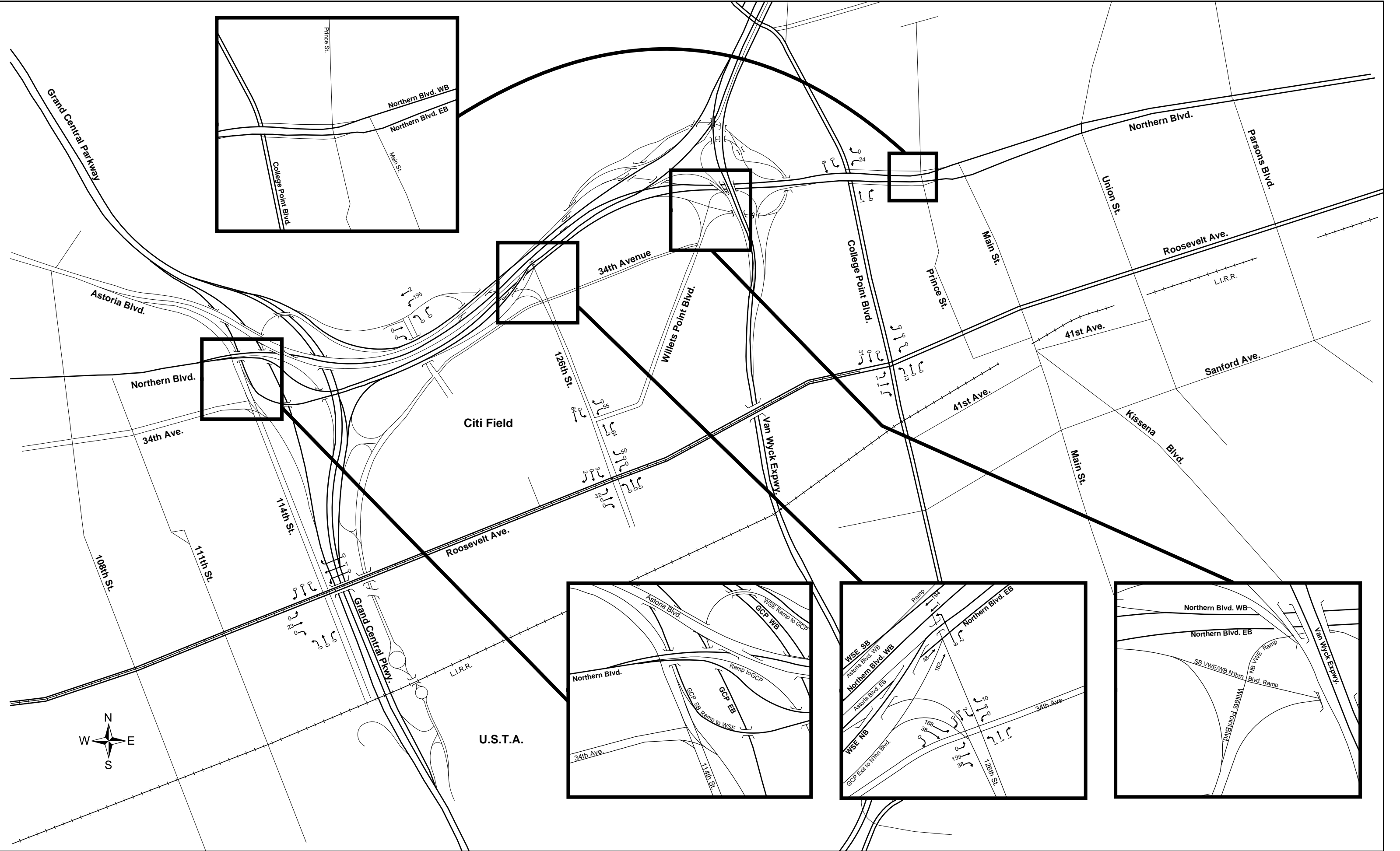
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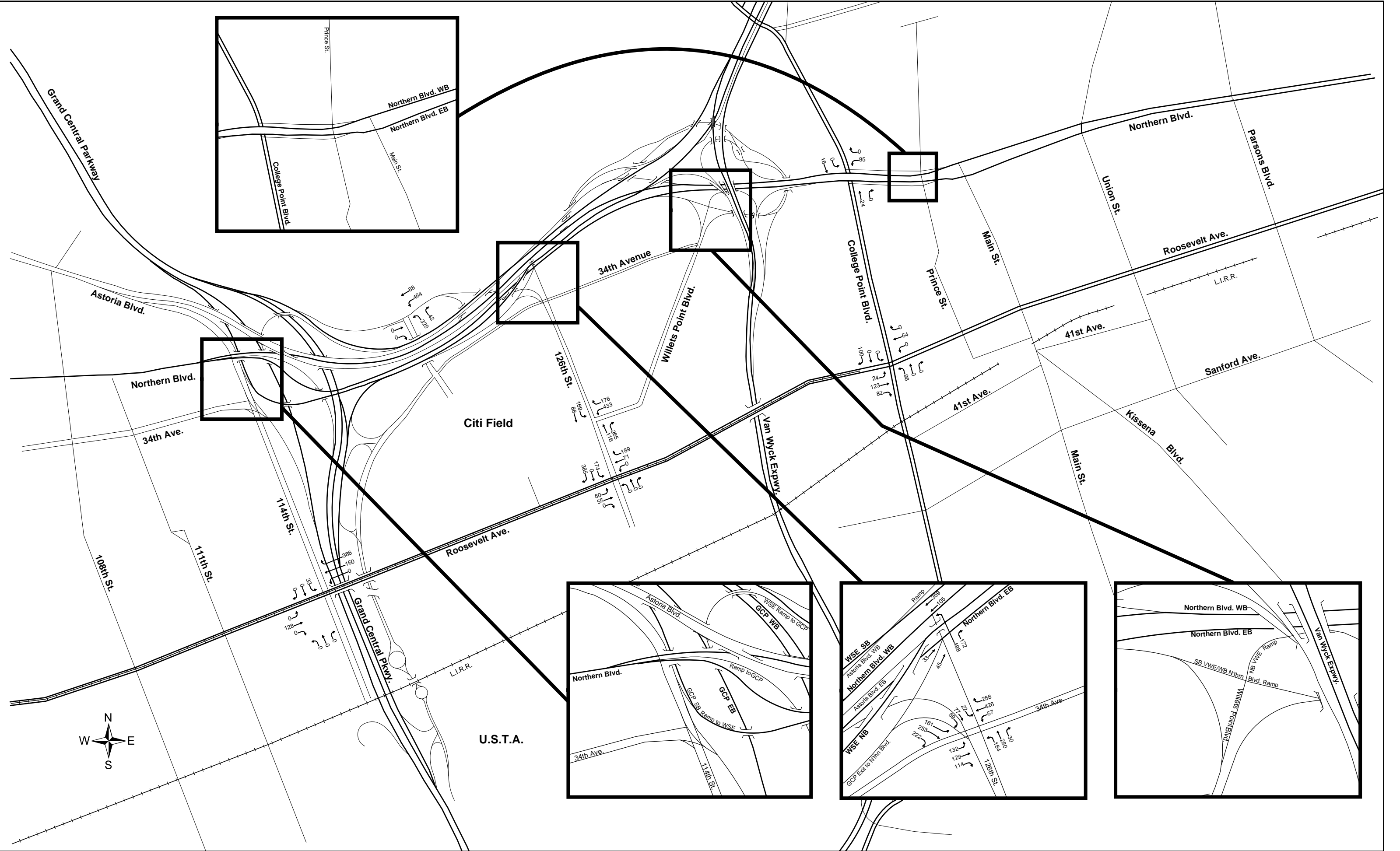
- (1): Control delay is measured in seconds per vehicle.
(2): Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3): V/C ratios above 1.20 represent saturated conditions and, at several locations, result in predicted average vehicle delays in the 1,000 to 4,000+ second range for signalized intersections and 1,000 to 10,000+ second range for unsignalized intersections. These are theoretical HCM-generated outputs that may, in fact, overestimate delays for such conditions. Lane groups reflecting these conditions are presented in the tables as having delays of "1,000+" seconds and v/c ratios of approximately "3.00+".

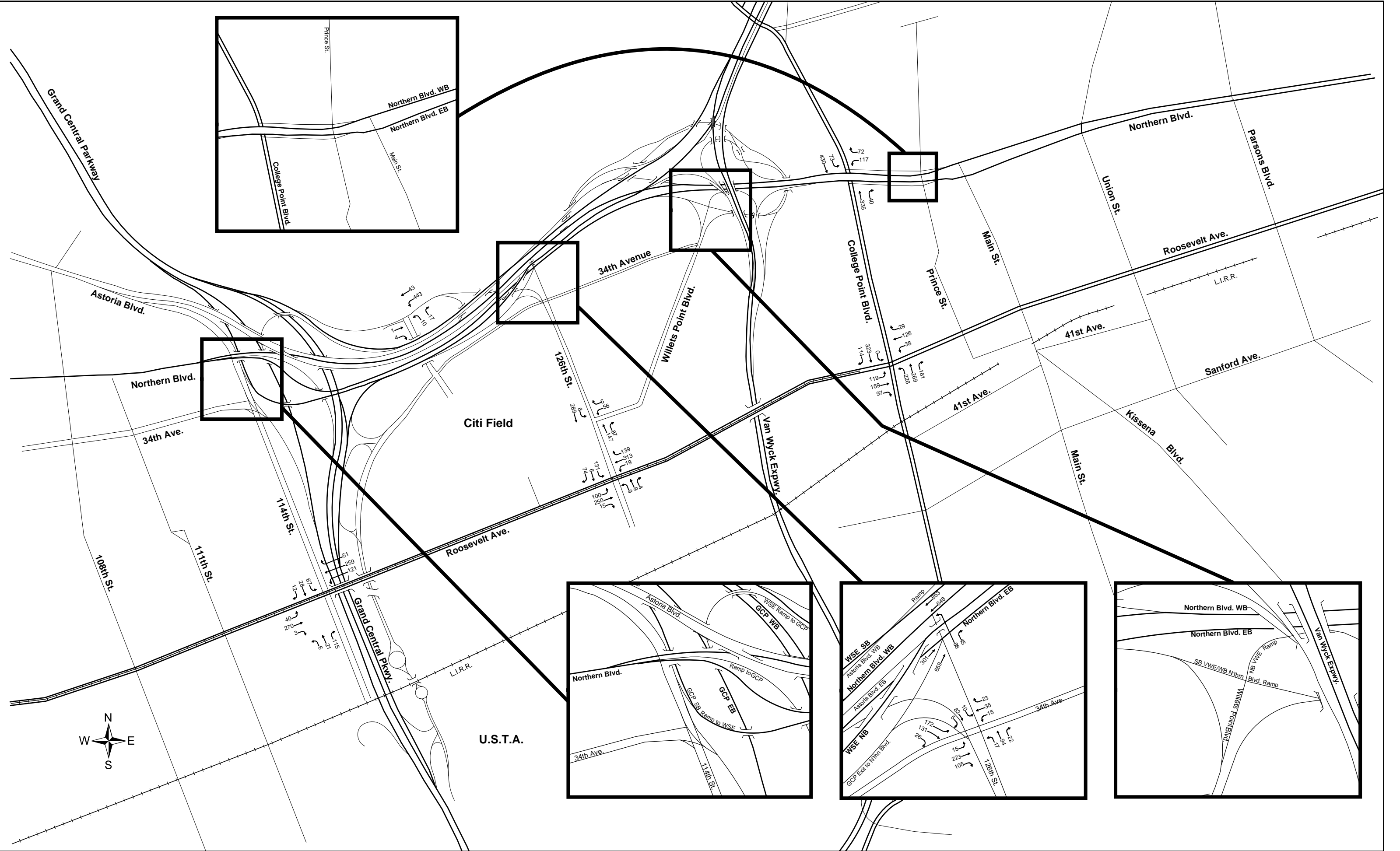
(4): This table has been revised for the Final SEIS.

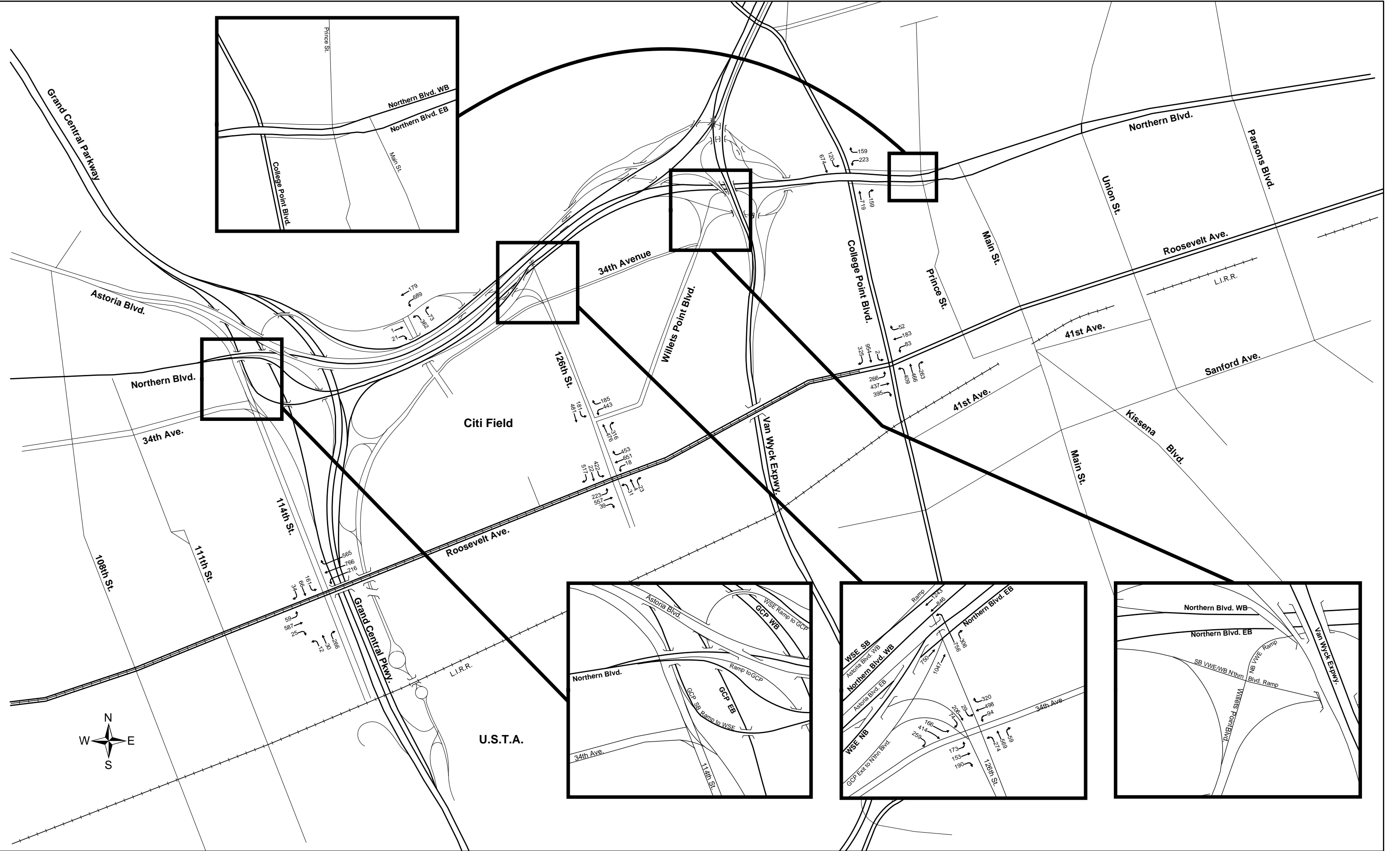






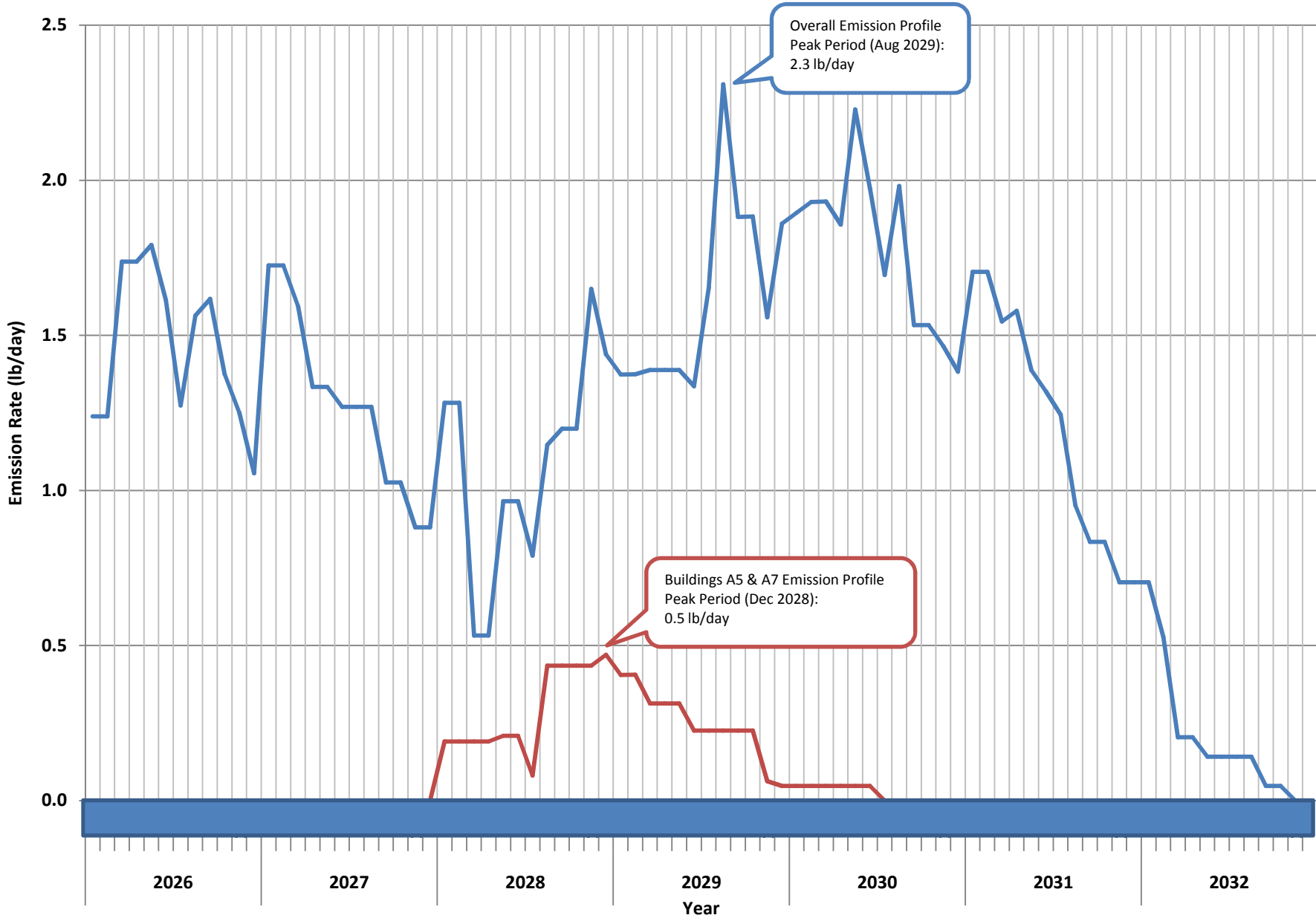








Short-Term (24-Hour Average) PM_{2.5} Construction Emissions Profile



Construction Noise Results

Halletts Point

CadnaA Receptor Sites	Elevation (floor)	Location	Existing Leq(1)	Existing L10	Construction Duration																								Max Increase	Max Increase	Max Exterior L10
					2015				2016				2017				2019				2020				2021						
					Leq		Exceed ?	L10	Leq		Exceed?	L10	Leq		Exceed?	L10	Leq		Exceed?	L10	Leq		Exceed?	L10	Leq		Exceed?	L10			
					Total	Change			Total	Change			Total	Change			Total	Change			Total	Change			Total	Change					
OA	1	Park at northwest corner of 1st Street and 26th Avenue	62.0	65.0	75.9	13.7	YES	78.9	76.9	14.8	YES	79.9	65.6	2.2		68.6	63.8	1.3		66.8	62.5	0.2		65.5	62.5	-0.8		65.5	14.8	14.8	79.9
OB	1	Park west of 1st Street and Astoria Boulevard	59.5	61.0	63.8	4.3		65.3	64.3	4.8		65.8	65.7	6.2	YES	67.2	67.3	7.7	YES	68.8	73.6	14.0	YES	75.1	73.6	14.0	YES	75.1	14.0	14.0	75.1
1A	1	1-07 27th Avenue	64.0	65.3	65.3	1.3		66.6	65.7	1.7		67.0	68.7	4.7	YES	70.0	70.4	6.4	YES	71.7	68.3	4.3	YES	69.6	68.3	4.2	YES	69.6	6.4		71.7
1A	2	1-07 27th Avenue	65.4	66.7	66.6	1.2		67.9	67.8	2.4		69.1	72.9	7.5	YES	74.2	72.7	7.2	YES	74.0	70.9	5.5	YES	72.2	70.9	5.5	YES	72.2	7.5		74.2
1A	3	1-07 27th Avenue	65.6	66.9	66.9	1.3		68.2	68.2	2.6		69.5	75.8	10.2	YES	77.1	73.5	7.8	YES	74.8	71.9	6.3	YES	73.2	71.9	6.3	YES	73.2	10.2		77.1
1A	4	1-07 27th Avenue	66.4	67.7	71.0	4.6	YES	72.3	71.3	4.9	YES	72.6	78.4	11.9	YES	79.7	75.5	8.9	YES	76.8	73.0	6.4	YES	74.3	73.0	6.1	YES	74.3	11.9	11.9	79.7
1B	1	1-07 27th Avenue	53.3	54.6	59.8	6.3	YES	61.1	60.4	6.9	YES	61.7	62.9	9.1	YES	64.2	60.8	6.2	YES	62.1	59.0	5.0	YES	60.3	59.0	3.5		60.3	9.1		64.2
1B	2	1-07 27th Avenue	54.6	55.9	64.6	9.9	YES	65.9	62.9	8.1	YES	64.2	67.2	12.2	YES	68.5	64.8	8.2	YES	66.1	60.8	5.0	YES	62.1	60.8	3.3		62.1	12.2		68.5
1B	3	1-07 27th Avenue	56.5	57.8	69.0	12.5	YES	70.3	68.2	11.5	YES	69.5	74.2	17.3	YES	75.5	67.8	10.1	YES	69.1	63.7	6.1	YES	65.0	63.7	4.1		65.0	17.3		75.5
1B	4	1-07 27th Avenue	62.7	64.0	71.9	9.2	YES	73.2	71.5	8.8	YES	72.8	78.3	15.5	YES	79.6	73.4	10.3	YES	74.7	70.6	7.4	YES	71.9	70.6	6.4	YES	71.9	15.5	17.3	79.6
1C	3	1-07 27th Avenue	61.3	62.6	64.9	3.6		66.2	67.6	6.3	YES	68.9	75.7	14.3	YES	77.0	72.4	10.8	YES	73.7	71.3	9.7	YES	72.6	71.3	9.1	YES	72.6	14.3		77.0
1C	4	1-07 27th Avenue	64.4	65.7	70.5	6.1	YES	71.8	70.8	6.4	YES	72.1	78.7	14.2	YES	80.0	74.7	10.0	YES	76.0	72.2	7.6	YES	73.5	72.2	7.1	YES	73.5	14.2	14.3	80.0
1D	1	1-07 27th Avenue	53.8	55.1	57.9	4.1		59.2	57.2	3.3		58.5	61.6	7.6	YES	62.9	60.4	6.2	YES	61.7	58.4	4.4		59.7	58.4	3.9		59.7	7.6		62.9
1D	2	1-07 27th Avenue	59.6	60.9	63.5	3.9		64.8	64.6	4.9		65.9	70.8	11.1	YES	72.1	66.8	6.8	YES	68.1	62.2	2.5		63.5	62.2	2.2		63.5	11.1		72.1
1D	3	1-07 27th Avenue	62.1	63.4	67.9	5.8	YES	69.2	66.1	4.0	YES	67.4	72.1	9.9	YES	73.4	68.4	6.0	YES	69.7	64.6	2.3		65.9	64.6	2.0		65.9	9.9		73.4
1D	4	1-07 27th Avenue	63.7	65.0	70.6	6.9	YES	71.9	71.0	7.3	YES	72.3	76.7	12.9	YES	78.0	73.3	9.3	YES	74.6	70.8	6.8	YES	72.1	70.8	6.2	YES	72.1	12.9	12.9	78.0
2A	1	3-08 26th Avenue	63.6	64.8	72.5	8.9	YES	73.7	64.1	0.5		65.3	67.0	3.0	YES	68.2	64.7	0.9		65.9	64.2	0.5		65.4	64.1	0.3		65.3	8.9		73.7
2A	2	3-08 26th Avenue	63.6	64.8	75.4	11.8	YES	76.6	64.6	1.0		65.8	66.6	2.6		67.8	64.5	0.8		65.7	64.3	0.6		65.5	64.2	0.4		65.4	11.8		76.6
2A	3	3-08 26th Avenue	63.0	64.2	78.9	15.9	YES	80.1	64.3	1.2		65.5	66.3	2.7		67.5	64.1	0.8		65.3	64.0	0.8		65.2	63.9	0.4		65.1	15.9		80.1
2A	4	3-08 26th Avenue	63.2	64.4	79.8	16.4	YES	81.0	65.3	1.8		66.5	68.0	1.7		69.2	64.8	0.7		66.0	65.3	1.2		66.5	65.1	-0.2		66.3	16.4	16.4	81.0
2B	1	3-08 26th Avenue	61.3	62.5	62.6	1.2		63.8	62.5	1.1		63.7	62.8	0.6		64.0	62.0	0.2		63.2	61.9	0.4		63.1	61.8	-0.1		63.0	1.2		64.0
2B	2	3-08 26th Avenue	62.1	63.3	63.5	1.2		64.7	63.3	0.9		64.5	64.6	0.4		65.8	63.0	0.2		64.2	62.9	0.4		64.1	62.9	-0.7		64.1	1.2		65.8
2B	3	3-08 26th Avenue	62.1	63.3	64.3	2.0		65.5	63.6	1.1		64.8	65.3	0.4		66.5	63.0	0.2		64.2	63.2	0.7		64.4	63.1	-0.5		64.3	2.0		66.5
2B	4	3-08 26th Avenue	62.3	63.5	70.9	8.4	YES	72.1	64.3	1.7		65.5	66.4	0.5		67.6	63.4	0.3		64.6	64.5	1.5		65.7	64.3	-0.2		65.5	8.4	8.4	72.1
2C	1	3-08 26th Avenue	66.5	67.7	69.9	3.3	YES	71.1	66.8	0.2		68.0	67.5	0.1		68.7	66.8	0.1		68.0	66.7	0.1		67.9	66.7	-0.5		67.9	3.3		71.1
2C	2	3-08 26th Avenue	66.3	67.5	73.0	6.6	YES	74.2	67.3	0.9		68.5	67.3	0.1		68.5	66.6	0.1		67.8	66.5	0.1		67.7	66.5	-0.5		67.7	6.6		74.2
2C	3	3-08 26th Avenue	65.5	66.7	74.9	9.3	YES	76.1	66.7	1.1		67.9	67.2	0.1		68.4	65.9	0.1		67.1	65.7	0.1		66.9	65.7	-0.5		66.9	9.3		76.1
2C	4	3-08 26th Avenue	65.2	66.4	77.0	11.7	YES	78.2	67.3	2.0		68.5	67.8	0.7		69.0	65.9	0.2		67.1	66.5	0.9		67.7	66.4	-0.3		67.6	11.7	11.7	78.2
3A	1	26-25 4th Street	62.0	63.2	72.4	10.4	YES	73.6	62.7	0.7		63.9	66.6	4.5	YES	67.8	63.5	1.4		64.7	62.8	0.8		64.0	62.8	0.6		64.0	10.4		73.6
3A	2	26-25 4th Street	62.3	63.5	75.4	13.1	YES	76.6	63.2	0.9		64.4	66.1	3.6	YES	67.3	63.5	1.1		64.7	63.2	0.9		64.4	63.2	0.6		64.4	13.1		76.6
3A	3	26-25 4th Street	61.9	63.1	79.0	17.1	YES	80.2	63.0	1.1		64.2	65.9	3.8	YES	67.1	63.2	1.1		64.4	63.1	1.1		64.3	63.0	0.6		64.2	17.1		80.2
3A	4	26-25 4th Street	62.4	63.6																											

6C	3	Astoria Houses Building 6	61.3	62.5	62.2	0.9		63.4	63.5	2.1		64.7	63.1	1.5		64.3	62.4	0.4		63.6	63.5	1.5		64.7	63.4	0.4		64.6	2.1	2.3	64.7
6D	1	Astoria Houses Building 6	53.3	54.5	55.0	1.6		56.2	59.6	6.2	YES	60.8	59.0	5.4	YES	60.2	57.6	3.7		58.8	58.0	4.3		59.2	57.7	3.2		58.9	6.2		60.8
6D	2	Astoria Houses Building 6	54.9	56.1	56.3	1.3		57.5	61.5	6.4	YES	62.7	60.6	5.5	YES	61.8	58.9	2.8		60.1	60.5	5.3	YES	61.7	60.1	4.3		61.3	6.4		62.7
6D	3	Astoria Houses Building 6	55.8	57.0	60.5	4.6		61.7	62.5	6.5	YES	63.7	62.4	6.2	YES	63.6	58.9	1.8		60.1	61.1	4.9		62.3	60.6	3.4		61.8	6.5	6.5	63.7
7A	1	Astoria Houses Building 16	53.3	54.5	65.4	12.0	YES	66.6	55.5	1.9		56.7	57.0	1.6		58.2	56.1	1.4		57.3	54.8	0.9		56.0	54.8	-0.2		56.0	12.0		66.6
7A	2	Astoria Houses Building 16	53.3	54.5	66.2	12.8	YES	67.4	55.7	1.9		56.9	57.9	1.7		59.1	56.4	1.6		57.6	55.4	1.3		56.6	55.4	-0.4		56.6	12.8	12.8	67.4
7B	1	Astoria Houses Building 16	54.1	55.3	63.7	9.5	YES	64.9	55.8	1.2		57.0	57.2	1.2		58.4	57.6	0.9		58.8	55.6	0.6		56.8	55.6	-1.3		56.8	9.5		64.9
7B	2	Astoria Houses Building 16	55.8	57.0	64.6	8.7	YES	65.8	57.2	1.0		58.4	58.7	0.9		59.9	58.6	0.6		59.8	57.3	0.7		58.5	57.3	-1.3		58.5	8.7	9.5	65.8
7C	1	Astoria Houses Building 16	58.7	59.9	62.2	3.4		63.4	60.1	1.2		61.3	60.3	1.3		61.5	59.7	0.6		60.9	59.6	0.8		60.8	59.6	0.3		60.8	3.4		63.4
7C	2	Astoria Houses Building 16	59.4	60.6	62.8	3.4		64.0	61.0	1.4		62.2	61.0	1.2		62.2	60.3	0.4		61.5	60.9	1.3		62.1	60.8	0.7		62.0	3.4	3.4	64.0
7D	1	Astoria Houses Building 16	53.3	54.5	59.7	6.3	YES	60.9	55.4	1.9		56.6	56.4	2.6		57.6	56.1	1.4		57.3	55.4	1.5		56.5	55.3	0.5		56.5	6.3		60.9
7D	2	Astoria Houses Building 16	53.9	55.1	61.8	7.8	YES	63.0	56.3	2.1		57.5	57.3	2.7		58.5	57.0	1.5		58.2	56.7	1.9		57.9	56.6	0.5		57.8	7.8	7.8	63.0
8A	1	Halletts Point Building 1	60.9	62.1	66.3	5.4	YES	67.5	62.0	1.1		63.2	71.0	10.0	YES	72.2	67.4	6.3	YES	68.6	63.2	2.2		64.4	63.2	2.0		64.4	10.0		72.2
8A	2	Halletts Point Building 1	61.1	62.3	67.6	6.5	YES	68.8	62.7	1.6		63.9	71.6	10.5	YES	72.8	68.2	6.9	YES	69.4	64.3	3.1		65.5	64.3	2.9		65.5	10.5		72.8
8A	3	Halletts Point Building 1	60.1	61.3	70.9	10.8	YES	72.1	64.1	4.0		65.3	72.1	11.9	YES	73.3	68.1	7.7	YES	69.3	64.2	3.9		65.4	64.2	3.4		65.4	11.9		73.3
8A	4	Halletts Point Building 1	59.8	61.0	72.1	12.2	YES	73.3	65.5	5.6	YES	66.7	72.8	13.0	YES	74.0	68.4	8.2	YES	69.6	64.8	4.7		66.0	64.8	4.1		66.0	13.0		74.0
8A	5	Halletts Point Building 1	60.1	61.3	73.2	13.0	YES	74.4	67.2	7.0	YES	68.4	73.7	13.3	YES	74.9	68.7	8.0	YES	69.9	65.3	4.8	YES	66.5	65.3	3.7	YES	66.5	13.3	13.3	74.9
8B	1	Halletts Point Building 1	53.3	54.5	55.7	2.2		56.9	58.3	4.8		59.5	59.0	5.2	YES	60.2	57.9	3.0		59.1	57.1	3.2		58.3	57.1	1.9		58.3	5.2		60.2
8B	2	Halletts Point Building 1	53.4	54.6	56.1	2.5		57.3	60.1	6.3	YES	61.3	59.2	5.0	YES	60.4	58.4	2.8		59.6	59.4	4.3		60.6	59.4	2.0		60.6	6.3		61.3
8B	3	Halletts Point Building 1	55.4	56.6	58.0	2.4		59.2	59.8	4.0		61.0	60.6	4.2		61.8	60.0	2.1		61.2	61.4	4.4		62.6	61.4	2.0		62.6	4.4		62.6
8B	4	Halletts Point Building 1	56.5	57.7	58.8	2.1		60.0	62.0	5.2	YES	63.2	62.5	4.6		63.7	60.8	2.2		62.0	62.5	4.4		63.7	62.5	2.0		63.7	5.2		63.7
8B	5	Halletts Point Building 1	57.3	58.5	62.0	4.4		63.2	64.3	6.6	YES	65.5	64.4	5.4	YES	65.6	62.1	3.0		63.3	63.5	4.2		64.7	63.3	1.1		64.5	6.6	6.6	65.6
8C	3	Halletts Point Building 1	55.9	57.1	69.8	13.7	YES	71.0	59.6	3.4		60.8	63.1	6.4	YES	64.3	60.9	2.8		62.1	58.1	0.9		59.3	58.1	-1.3		59.3	13.7		71.0
8C	4	Halletts Point Building 1	57.3	58.5	71.4	13.9	YES	72.6	62.5	4.9		63.7	65.9	7.6	YES	67.1	61.5	2.5		62.7	59.3	0.9		60.5	59.3	-1.2		60.5	13.9		72.6
8C	5	Halletts Point Building 1	58.5	59.7	71.9	13.2	YES	73.1	65.8	7.1	YES	67.0	67.7	8.0	YES	68.9	63.0	3.1		64.2	61.2	1.5		62.4	61.1	-1.0		62.3	13.2	13.9	73.1
9A	1	Halletts Point Building 7A	60.7	61.9	65.7	5.0	YES	66.9	61.9	1.2		63.1	71.5	10.7	YES	72.7	67.4	6.5	YES	68.6	63.5	2.7		64.7	63.5	2.5		64.7	10.7		72.7
9A	2	Halletts Point Building 7A	60.6	61.8	66.7	6.1	YES	67.9	62.5	1.8		63.7	71.9	11.3	YES	73.1	68.3	7.5	YES	69.5	64.6	3.9		65.8	64.6	3.6		65.8	11.3		73.1
9A	3	Halletts Point Building 7A	60.2	61.4	69.8	9.6	YES	71.0	64.0	3.7		65.2	72.5	12.2	YES	73.7	68.5	8.0	YES	69.7	64.7	4.3		65.9	64.7	3.8		65.9	12.2		73.7
9A	4	Halletts Point Building 7A	59.9	61.1	71.1	11.2	YES	72.3	66.6	6.6	YES	67.8	73.5	13.6	YES	74.7	68.5	8.3	YES	69.7	65.0	4.9	YES	66.2	65.0	4.3	YES	66.2	13.6		74.7
9A	5	Halletts Point Building 7A	60.2	61.4	72.6	12.3	YES	73.8	66.5	6.3	YES	67.7	74.5	14.1	YES	75.7	69.4	8.6	YES	70.6	65.4	4.8	YES	66.6	65.4	3.9	YES	66.6	14.1	14.1	75.7
9B	1	Halletts Point Building 7A	53.3	54.5	55.1	1.7		56.3	55.6	2.0		56.8	58.3	4.5		59.5	58.8	2.8		60.0	56.2	1.5		57.4	56.2	-0.6		57.4	4.5		60.0
9B	2	Halletts Point Building 7A	55.0	56.2	56.5	1.3		57.7	56.9	1.6		58.1	59.2	3.6		60.4	59.6	2.3		60.8	57.9	1.3		59.1	57.9	-1.1		59.1	3.6		60.8
9B	3	Halletts Point Building 7A	56.6	57.8	58.0	1.2		59.2	58.5	1.6		59.7	60.6	3.3		61.8	60.6	2.0		61.8	59.5	1.6		60.7	59.5	-1.0		60.7	3.3		61.8
9B	4	Halletts Point Building 7A	57.5	58.7	58.8	1.1		60.0	59.7	1.9		60.9	61.7	3.2		62.9	61.4	2.1		62.6	61.6	2.7		62.8	61.6	0.2		62.8	3.2		62.9
9B	5	Halletts Point Building 7A	58.3	59.5	61.6	3.1		62.8	61.6	3.0		62.8	64.3	4.7		65.5	62.9	3.1		64.1	63.0	2.9		64.2	62.9	-0.1		64.1	4.7	4.7	65.5
9C	1	Halletts Point Building 7A	54.9	56.1	58.0	3.1		59.2	57.0	2.0		58.2	62.7	7.7	YES	63.9	63.7	8.5	YES	64.9	61.5	6.4	YES	62.7	61.5	6.1	YES	62.7	8.5		64.9
9C	2	Halletts Point Building 7A	56.2	57.4	59.8	3.6		61.0	58.0	1.8		59.2	63.5	7.2	YES	64.7	64.3	7.8	YES	65.5	62.2	5.9	YES	63.4	62.2	5.7	YES	63.4	7.8		65.5
9C	3	Halletts Point Building 7A	56.7	57.9	62.7	5.9	YES	63.9	58.7	1.9		59.9	64.4	7.6	YES	65.6	64.7	7.6	YES	65.9	62.8	6.0	YES	64.0	62.8	5.5	YES	64.0	7.6		65.9
9C	4	Halletts Point Building 7A	57.1	58.3	63.6	6.5	YES	64.8	59.6	2.5		60.8	67.5	10.3	YES	68.7	65.2	7.7	YES	66.4	63.4	6.0	YES	64.6	63.4	5.5	YES	64.6	10.3		68.7
9C	5	Halletts Point Building 7A	58.4	59.6	65.9	7.4	YES	67.1	62.1	3.5		63.3	69.4	10.6	YES	70.6	66.5	7.1	YES	67.7	64.3	5.4	YES	65.5	64.2	4.3		65.4	10.6	10.6	70.6
10A	1	1-07 27th Avenue	54.4	55.6	56.9	2.4		58.1	57.9	3.2		59.1	68.6	13.7	YES	69.8	61.7	5.3	YES	62.9	57.1	1.9		58.3	57.0	0.2		58.2	13.7		69.8
10A	2	1-07 27th Avenue	56.1	57.3	58.7	2.4		59.9	60.0	3.7		61.2	69.1	12.5	YES	70.3	62.2	4.6		63.4	58.5	1.4		59.7	58.5	-0.4		59.7	12.5		70.3
10A	3	1-07 27th Avenue	57.1	58.3	61.8	4.5		63.0	62.4	5.1	YES	63.6	69.9	12.1	YES	71.1	63.0	4.2		64.2	59.5	1.2		60.7	59.4	-1.0		60.6	12.1		71.1
10A	4	1-07 27th Avenue	57.3	58.5	63.7	6.2	YES	64.9	64.1	6.6	YES	65.3	70.8	12.5	YES	72.0	64.0	5.1	YES	65.2	59.9	1.3		61.1	59.9	-1.1		61.1	12.5		72.0
10A	5	1-07 27th Avenue	57.8	59.0	67.8	9.7	YES	69.0	65.2	7.1	YES	66.4	71.6	12.6	YES	72.8	65.7	6.3	YES	66.9	61.6	2.0		62.8	61.6	-0.9		62.8	12.6	13.7	72.8
10B	1	1-07 27th Avenue	60.5	61.7	64.4	3.9		65.6	62.5	2.0		63.7	73.2	12.7	YES	74.4	67.5	6.8	YES	68.7	64.8	4.2		66.0	64.8	4.0		66.0	12.7		74.4
10B	2	1-07 27th Avenue	61.2	62.4	65.6	4.4	YES	66.8	63.7	2.5		64.9	73.8	12.6	YES	75.0	68.1	6.7	YES	69.3	65.6	4.2	YES	66.8	65.6	4.0	YES	66.8	12.6		75.0
10B	3	1-07 27th Avenue	61.1	62.3	68.4	7.3	YES	69.6	64.9	3.8		66.1	74.7	13.6	YES	75.9	69.1	7.7	YES	70.3	65.9	4.7	YES	67.1	65.9	4.3	YES	67.1	13.6		75.9
10B	4	1-07 27th Avenue	60.8	62.0	69.2	8.4	YES	70.4	65.8	5.0	YES	67.																			

12B	5	1-07 27th Avenue	56.3	57.5	61.1	4.4		62.3	60.5	3.9		61.7	66.2	6.8	YES	67.4	64.9	6.3	YES	66.1	61.5	2.8		62.7	61.4	-1.1		62.6	6.8	6.8	67.4
13A	1	1-07 27th Avenue	62.7	64.7	65.6	2.9		67.6	70.4	7.7	YES	72.4	72.0	9.3	YES	74.0	76.6	13.8	YES	78.6	66.6	3.9	YES	68.6	66.6	3.8	YES	68.6	13.8		78.6
13A	2	1-07 27th Avenue	63.2	65.2	66.1	2.9		68.1	70.7	7.4	YES	72.7	73.2	9.9	YES	75.2	77.7	14.4	YES	79.7	67.1	3.9	YES	69.1	67.1	3.9	YES	69.1	14.4		79.7
13A	3	1-07 27th Avenue	62.9	64.9	65.8	2.9		67.8	70.6	7.7	YES	72.6	74.6	11.7	YES	76.6	77.9	15.0	YES	79.9	67.1	4.2	YES	69.1	67.1	4.2	YES	69.1	15.0		79.9
13A	4	1-07 27th Avenue	62.4	64.4	65.3	2.9		67.3	70.0	7.6	YES	72.0	75.5	13.1	YES	77.5	79.5	17.0	YES	81.5	67.0	4.5	YES	69.0	67.0	4.4	YES	69.0	17.0		81.5
13A	5	1-07 27th Avenue	62.1	64.1	65.5	3.4	YES	67.5	70.5	8.3	YES	72.5	76.9	14.7	YES	78.9	79.8	17.4	YES	81.8	67.3	4.9	YES	69.3	67.3	4.4	YES	69.3	17.4	17.4	81.8
13B	1	1-07 27th Avenue	53.3	55.3	55.3	1.7		57.3	58.0	4.2		60.0	60.0	5.6	YES	62.0	60.0	4.9		62.0	57.3	2.9		59.3	57.3	1.0		59.3	5.6		62.0
13B	2	1-07 27th Avenue	53.3	55.3	55.9	2.1		57.9	60.9	7.0	YES	62.9	60.6	5.8	YES	62.6	60.6	4.3		62.6	60.4	4.7		62.4	60.4	1.9		62.4	7.0		62.9
13B	3	1-07 27th Avenue	53.3	55.3	56.7	2.7		58.7	63.2	9.1	YES	65.2	61.5	5.6	YES	63.5	60.9	4.0		62.9	61.9	5.6	YES	63.9	61.9	2.2		63.9	9.1		65.2
13B	4	1-07 27th Avenue	53.7	55.7	58.5	3.9		60.5	57.5	3.1		59.5	62.5	5.2	YES	64.5	61.2	3.8		63.2	58.3	1.5		60.3	58.2	-2.2		60.2	5.2		64.5
13B	5	1-07 27th Avenue	54.6	56.6	61.3	5.8	YES	63.3	60.1	4.8		62.1	65.7	7.3	YES	67.7	63.8	6.0	YES	65.8	60.4	1.9		62.4	60.3	-2.4		62.3	7.3	9.1	67.7
14A	1	1-07 27th Avenue	62.9	64.9	65.7	2.8		67.7	71.3	8.4	YES	73.3	72.1	9.2	YES	74.1	77.2	14.2	YES	79.2	66.8	3.9	YES	68.8	66.8	3.8	YES	68.8	14.2		79.2
14A	2	1-07 27th Avenue	63.4	65.4	66.3	2.9		68.3	71.5	8.1	YES	73.5	73.0	9.6	YES	75.0	77.9	14.4	YES	79.9	67.3	3.9	YES	69.3	67.3	3.8	YES	69.3	14.4		79.9
14A	3	1-07 27th Avenue	63.1	65.1	66.0	2.9		68.0	71.6	8.5	YES	73.6	75.0	11.9	YES	77.0	78.0	14.9	YES	80.0	67.5	4.4	YES	69.5	67.5	4.3	YES	69.5	14.9		80.0
14A	4	1-07 27th Avenue	62.6	64.6	65.5	2.9		67.5	71.2	8.6	YES	73.2	75.0	12.3	YES	77.0	78.6	15.9	YES	80.6	67.8	5.1	YES	69.8	67.8	5.0	YES	69.8	15.9		80.6
14A	5	1-07 27th Avenue	62.3	64.3	65.5	3.1	YES	67.5	71.7	9.3	YES	73.7	76.2	13.7	YES	78.2	79.1	16.4	YES	81.1	68.0	5.4	YES	70.0	68.0	4.7	YES	70.0	16.4	16.4	81.1
14B	1	1-07 27th Avenue	53.3	55.3	56.0	2.5		58.0	57.0	3.4		59.0	59.1	5.1	YES	61.1	58.6	3.2		60.6	56.1	1.2		58.1	56.0	-1.5		58.0	5.1		61.1
14B	2	1-07 27th Avenue	53.3	55.3	55.8	2.0		57.8	60.8	6.8	YES	62.8	60.1	5.5	YES	62.1	59.4	2.7		61.4	57.4	1.0		59.4	57.4	-2.3		59.4	6.8		62.8
14B	3	1-07 27th Avenue	54.9	56.9	57.8	2.4		59.8	64.0	8.5	YES	66.0	62.4	6.0	YES	64.4	60.8	2.5		62.8	59.0	1.1		61.0	59.0	-2.4		61.0	8.5		66.0
14B	4	1-07 27th Avenue	55.8	57.8	61.0	4.7		63.0	59.5	3.2		61.5	62.1	4.4		64.1	61.0	2.3		63.0	60.2	1.4		62.2	60.1	-2.2		62.1	4.7		64.1
14B	5	1-07 27th Avenue	56.6	58.6	62.9	5.8	YES	64.9	62.6	5.6	YES	64.6	65.1	6.1	YES	67.1	62.7	3.7		64.7	62.3	1.9		64.3	62.3	-2.2		64.3	6.1	8.5	67.1
15A	1	1-07 27th Avenue	62.5	64.5	65.3	2.8		67.3	66.4	3.9	YES	68.4	70.1	7.6	YES	72.1	77.2	14.6	YES	79.2	65.6	3.1	YES	67.6	65.6	2.9		67.6	14.6		79.2
15A	2	1-07 27th Avenue	63.0	65.0	65.9	2.9		67.9	67.7	4.7	YES	69.7	71.5	8.4	YES	73.5	77.7	14.6	YES	79.7	66.3	3.3	YES	68.3	66.3	3.1	YES	68.3	14.6		79.7
15A	3	1-07 27th Avenue	62.9	64.9	65.9	2.9		67.9	71.2	8.2	YES	73.2	74.5	11.4	YES	76.5	77.8	14.5	YES	79.8	67.8	4.3	YES	69.8	67.7	3.2	YES	69.7	14.5	14.6	79.8
15B	3	1-07 27th Avenue	55.7	57.7	58.7	2.6		60.7	63.4	7.3	YES	65.4	63.5	6.6	YES	65.5	60.9	2.0		62.9	61.7	3.3		63.7	61.7	0.0		63.7	7.3	7.3	65.5
15C	3	1-07 27th Avenue	57.6	59.6	60.4	2.4		62.4	70.1	12.2	YES	72.1	70.6	12.1	YES	72.6	63.8	4.4		65.8	65.6	6.2	YES	67.6	65.3	3.1	YES	67.3	12.2	12.2	72.6
16A	1	1-07 27th Avenue	53.3	54.5	55.8	2.4		57.0	56.2	2.7		57.4	59.2	5.6	YES	60.4	58.2	2.7		59.4	56.0	1.2		57.2	55.9	-0.9		57.1	5.6		60.4
16A	2	1-07 27th Avenue	53.4	54.6	56.8	3.1		58.0	59.8	6.0	YES	61.0	61.9	7.6	YES	63.1	58.6	2.5		59.8	57.8	2.3		59.0	57.7	-0.6		58.9	7.6	7.6	63.1
16B	1	1-07 27th Avenue	54.0	55.2	55.4	1.3		56.6	58.3	4.2		59.5	59.5	5.3	YES	60.7	58.8	3.3		60.0	57.4	2.7		58.6	57.3	1.5		58.5	5.3		60.7
16B	2	1-07 27th Avenue	56.6	57.8	57.9	1.2		59.1	63.7	7.0	YES	64.9	62.9	6.1	YES	64.1	60.4	2.2		61.6	61.7	4.1		62.9	61.7	2.7		62.9	7.0	7.0	64.9
16C	1	1-07 27th Avenue	61.3	62.5	62.5	1.2		63.7	69.1	7.7	YES	70.3	68.4	6.9	YES	69.6	63.1	1.5		64.3	64.7	3.2		65.9	64.7	2.8		65.9	7.7		70.3
16C	2	1-07 27th Avenue	61.8	63.0	63.3	1.5		64.5	71.0	9.1	YES	72.2	69.3	7.4	YES	70.5	63.7	1.3		64.9	65.7	3.5	YES	66.9	65.7	2.8		66.9	9.1	9.1	72.2
17A	1	1-07 27th Avenue	65.3	66.5	65.5	0.1		66.7	65.4	0.1		66.6	67.1	0.0		68.3	65.5	0.0		66.7	65.4	0.0		66.6	65.4	-0.3		66.6	0.1		68.3
17A	2	1-07 27th Avenue	65.3	66.5	65.5	0.1		66.7	65.4	0.1		66.6	65.6	0.1		66.8	65.5	0.0		66.7	65.4	0.0		66.6	65.4	-0.2		66.6	0.1		66.8
17A	3	1-07 27th Avenue	65.0	66.2	65.9	0.8		67.1	65.2	0.1		66.4	66.3	0.1		67.5	65.2	0.0		66.4	65.1	0.0		66.3	65.1	-0.2		66.3	0.8		67.5
17A	4	1-07 27th Avenue	64.7	65.9	66.8	1.9		68.0	65.2	0.3		66.4	68.3	0.2		69.5	65.4	0.1		66.6	65.1	0.2		66.3	65.1	-0.7		66.3	1.9	1.9	69.5
17B	1	1-07 27th Avenue	53.3	54.5	55.1	1.7		56.3	54.7	1.2		55.9	56.0	1.3		57.2	56.3	0.8		57.5	56.0	0.7		57.2	56.0	-0.6		57.2	1.7		57.5
17B	2	1-07 27th Avenue	55.0	56.2	60.4	5.3	YES	61.6	56.2	1.0		57.4	59.1	2.0		60.3	57.7	1.0		58.9	56.7	0.9		57.9	56.7	-0.4		57.9	5.3		61.6
17B	3	1-07 27th Avenue	57.5	58.7	63.0	5.5	YES	64.2	58.6	1.0		59.8	61.6	1.8		62.8	59.6	0.8		60.8	59.3	1.1		60.5	59.2	-0.2		60.4	5.5		64.2
17B	4	1-07 27th Avenue	59.0	60.2	64.3	5.1	YES	65.5	60.6	1.3		61.8	63.5	2.1		64.7	61.2	0.8		62.4	62.8	1.3		64.0	62.7	0.1		63.9	5.1	5.5	65.5
17C	2	1-07 27th Avenue	57.8	59.0	62.0	4.1		63.2	58.3	0.4		59.5	59.4	1.4		60.6	58.8	0.6		60.0	58.4	0.4		59.6	58.4	-0.1		59.6	4.1		63.2
17C	3	1-07 27th Avenue	60.2	61.4	63.9	3.7		65.1	60.6	0.4		61.8	61.5	1.1		62.7	60.9	0.5		62.1	60.6	0.3		61.8	60.6	0.0		61.8	3.7		65.1
17C	4	1-07 27th Avenue	61.4	62.6	65.6	4.2	YES	66.8	62.2	0.6		63.4	63.6	1.2		64.8	62.3	0.5		63.5	62.2	0.6		63.4	62.2	-0.3		63.4	4.2	4.2	66.8
18A	1	1-07 27th Avenue	66.2	67.4	66.4	0.1		67.6	66.5	0.1		67.7	67.9	0.0		69.1	66.7	0.0		67.9	66.4	0.0		67.6	66.4	-1.0		67.6	0.1		69.1
18A	2	1-07 27th Avenue	66.1	67.3	66.5	0.3		67.7	66.4	0.1		67.6	68.1	0.0		69.3	66.6	0.0		67.8	66.3	0.0		67.5	66.3	-0.9		67.5	0.3		69.3
18A	3	1-07 27th Avenue	65.5	66.7	66.5	0.8		67.7	65.9	0.1		67.1	68.5	0.0		69.7	66.0	0.0		67.2	65.8	0.0		67.0	65.8	-0.9		67.0	0.8		69.7
18A	4	1-07 27th Avenue	65.4	66.6	67.8	2.1		69.0	66.1	0.4		67.3	69.6	0.3		70.8	66.2	0.1		67.4	66.2	0.2		67.4	66.1	-1.1		67.3	2.1	2.1	70.8
18B	1	1-07 27th Avenue	53.3	54.5	54.9	1.5		56.1	55.1	1.5		56.3	55.8	1.4		57.0	55.2	0.7		56.4	55.0	0.8		56.2	54.9	-0.9		56.1	1.5		57.0</

21A	4	26-02 4th Street	60.8	62.0	63.6	2.8		64.8	61.5	0.6		62.7	62.9	1.1		64.1	61.7	0.6		62.9	61.5	0.5		62.7	61.5	-0.2		62.7	2.8		64.8
21A	5	26-02 4th Street	64.4	65.6	66.7	2.1		67.9	65.4	0.7		66.6	68.1	0.7		69.3	65.9	0.4		67.1	66.7	0.7		67.9	66.6	-1.6		67.8	2.1	2.8	69.3
21B	1	26-02 4th Street	66.1	67.3	66.4	0.0		67.6	66.6	0.1		67.8	68.6	0.0		69.8	66.8	0.0		68.0	66.4	0.0		67.6	66.4	-1.2		67.6	0.1		69.8
21B	2	26-02 4th Street	66.0	67.2	66.3	0.0		67.5	66.5	0.1		67.7	69.0	0.0		70.2	66.7	0.0		67.9	66.3	0.0		67.5	66.3	-1.0		67.5	0.1		70.2
21B	3	26-02 4th Street	65.4	66.6	65.9	0.2		67.1	65.9	0.1		67.1	70.0	0.1		71.2	66.2	0.0		67.4	65.7	0.1		66.9	65.7	-1.1		66.9	0.2		71.2
21B	4	26-02 4th Street	64.7	65.9	65.8	0.7		67.0	65.3	0.1		66.5	71.8	0.1		73.0	65.7	0.0		66.9	65.6	0.1		66.8	65.6	-1.6		66.8	0.7		73.0
21B	5	26-02 4th Street	66.7	67.9	68.3	1.3		69.5	67.5	0.4		68.7	73.0	0.2		74.2	68.0	0.2		69.2	68.9	0.4		70.1	68.9	-2.7		70.1	1.3	1.3	74.2
21C	1	26-02 4th Street	56.8	58.0	59.1	2.2		60.3	63.1	6.1	YES	64.3	58.8	1.6		60.0	58.5	0.3		59.7	59.0	1.0		60.2	58.9	-0.5		60.1	6.1		64.3
21C	2	26-02 4th Street	58.9	60.1	61.2	2.2		62.4	62.4	3.4		63.6	60.2	1.0		61.4	60.6	0.3		61.8	61.9	1.7		63.1	61.8	0.0		63.0	3.4		63.6
21C	3	26-02 4th Street	61.1	62.3	63.7	2.6		64.9	62.2	1.0		63.4	62.3	0.7		63.5	62.9	0.3		64.1	65.8	2.9		67.0	65.6	0.7		66.8	2.9		67.0
21C	4	26-02 4th Street	64.0	65.2	65.5	1.4		66.7	64.8	0.8		66.0	65.3	0.6		66.5	65.4	0.3		66.6	67.5	1.8		68.7	67.4	-0.8		68.6	1.8		68.7
21C	5	26-02 4th Street	65.2	66.4	67.0	1.5		68.2	66.7	1.1		67.9	68.8	0.8		70.0	66.9	0.4		68.1	69.2	1.2		70.4	69.1	-2.3		70.3	1.5	6.1	70.4
21D	1	26-02 4th Street	54.4	55.6	58.6	4.1		59.8	59.9	5.2	YES	61.1	56.3	1.1		57.5	56.2	0.8		57.4	55.8	0.6		57.0	55.8	-0.9		57.0	5.2		61.1
21D	2	26-02 4th Street	56.2	57.4	59.9	3.6		61.1	60.1	3.7		61.3	57.9	1.1		59.1	57.7	0.8		58.9	57.2	0.5		58.4	57.2	-0.6		58.4	3.7		61.3
21D	3	26-02 4th Street	56.6	57.8	61.6	4.9		62.8	57.6	0.8		58.8	59.0	1.7		60.2	58.2	0.9		59.4	58.2	1.1		59.4	58.2	-0.1		59.4	4.9		62.8
21D	4	26-02 4th Street	57.1	58.3	62.8	5.6	YES	64.0	58.6	1.3		59.8	60.3	2.4		61.5	59.1	1.3		60.3	58.9	1.2		60.1	58.9	0.0		60.1	5.6		64.0
21D	5	26-02 4th Street	64.4	65.6	66.7	2.1		67.9	65.5	0.9		66.7	67.9	0.9		69.1	66.1	0.4		67.3	67.7	0.7		68.9	67.6	-2.6		68.8	2.1	5.6	69.1
21E	1	26-02 4th Street	61.4	62.6	62.1	0.1		63.3	62.5	0.3		63.7	66.1	0.1		67.3	62.4	0.1		63.6	64.6	2.3		65.8	64.4	-0.2		65.6	2.3		67.3
21E	2	26-02 4th Street	63.0	64.2	63.5	0.1		64.7	63.8	0.2		65.0	67.2	0.0		68.4	64.0	0.1		65.2	65.9	2.0		67.1	65.8	-0.3		67.0	2.0		68.4
21E	3	26-02 4th Street	63.8	65.0	64.3	0.1		65.5	64.6	0.2		65.8	68.6	0.1		69.8	64.9	0.0		66.1	67.0	1.8		68.2	66.9	-0.8		68.1	1.8		69.8
21E	4	26-02 4th Street	65.4	66.6	65.8	0.1		67.0	66.0	0.2		67.2	70.2	0.0		71.4	66.4	0.0		67.6	68.5	1.2		69.7	68.5	-2.1		69.7	1.2		71.4
21E	5	26-02 4th Street	66.1	67.3	67.4	0.9		68.6	67.1	0.6		68.3	71.7	0.4		72.9	67.4	0.3		68.6	69.5	1.0		70.7	69.5	-2.4		70.7	1.0	2.3	72.9
22A	1	26-11 3rd Street	59.4	60.6	63.2	3.8		64.4	59.8	0.4		61.0	60.1	0.6		61.3	60.1	0.5		61.3	59.8	0.3		61.0	59.8	0.0		61.0	3.8		64.4
22A	2	26-11 3rd Street	59.6	60.8	63.7	4.1		64.9	60.0	0.3		61.2	60.4	0.7		61.6	60.3	0.5		61.5	60.1	0.3		61.3	60.0	0.0		61.2	4.1		64.9
22A	3	26-11 3rd Street	59.7	60.9	64.7	4.9		65.9	60.2	0.5		61.4	60.8	0.9		62.0	60.7	0.7		61.9	60.3	0.4		61.5	60.3	0.0		61.5	4.9		65.9
22A	4	26-11 3rd Street	63.0	64.2	66.9	3.8	YES	68.1	63.7	0.6		64.9	64.7	0.9		65.9	64.2	0.4		65.4	64.4	0.7		65.6	64.4	-0.8		65.6	3.8	4.9	68.1
22B	1	26-11 3rd Street	53.3	54.5	58.3	4.8		59.5	55.4	1.6		56.6	55.9	1.6		57.1	56.7	0.5		57.9	55.1	0.8		56.3	55.1	-1.2		56.3	4.8		59.5
22B	2	26-11 3rd Street	55.4	56.6	59.3	3.7		60.5	57.1	1.3		58.3	57.5	1.2		58.7	58.2	0.3		59.4	56.8	0.5		58.0	56.8	-1.1		58.0	3.7		60.5
22B	3	26-11 3rd Street	57.9	59.1	62.3	4.3		63.5	59.5	1.3		60.7	60.5	1.1		61.7	60.1	0.3		61.3	59.2	0.4		60.4	59.2	-1.1		60.4	4.3		63.5
22B	4	26-11 3rd Street	62.2	63.4	66.1	3.8	YES	67.3	63.5	1.2		64.7	64.4	1.3		65.6	63.7	0.4		64.9	64.0	0.9		65.2	64.0	-0.7		65.2	3.8	4.8	67.3
22C	1	26-11 3rd Street	53.3	54.5	55.1	1.6		56.3	56.4	2.6		57.6	57.5	3.0		58.7	56.5	0.5		57.7	55.2	0.8		56.4	55.2	-1.3		56.4	3.0		58.7
22C	2	26-11 3rd Street	55.1	56.3	56.1	0.8		57.3	58.7	3.2		59.9	60.3	4.0		61.5	58.1	0.3		59.3	57.3	0.6		58.5	57.3	-1.8		58.5	4.0		61.5
22C	3	26-11 3rd Street	59.6	60.8	60.4	0.7		61.6	62.3	2.5		63.5	64.3	3.7		65.5	61.4	0.2		62.6	61.5	0.4		62.7	61.5	-1.7		62.7	3.7		65.5
22C	4	26-11 3rd Street	62.3	63.5	65.7	3.3	YES	66.9	64.3	1.8		65.5	66.0	2.7		67.2	63.8	0.3		65.0	64.0	0.6		65.2	64.0	-1.2		65.2	3.3	4.0	67.2
22D	1	26-11 3rd Street	53.3	54.5	59.8	6.4	YES	61.0	54.7	1.1		55.9	55.6	1.7		56.8	55.8	1.0		57.0	55.1	0.9		56.3	55.1	-0.7		56.3	6.4		61.0
22D	2	26-11 3rd Street	54.7	55.9	60.6	5.8	YES	61.8	55.8	0.9		57.0	56.8	1.7		58.0	57.8	0.7		59.0	57.3	0.7		58.5	57.3	-1.4		58.5	5.8		61.8
22D	3	26-11 3rd Street	57.4	58.6	63.7	6.2	YES	64.9	58.4	0.8		59.6	59.4	1.6		60.6	59.7	0.6		60.9	59.7	0.7		60.9	59.6	-1.4		60.8	6.2		64.9
22D	4	26-11 3rd Street	62.7	63.9	66.7	3.9	YES	67.9	63.5	0.7		64.7	64.6	1.2		65.8	64.0	0.4		65.2	64.3	0.7		65.5	64.3	-0.9		65.5	3.9	6.4	67.9
23A	1	26-15 3rd Street	59.9	61.1	63.4	3.5		64.6	60.3	0.4		61.5	60.6	0.6		61.8	60.5	0.4		61.7	60.3	0.3		61.5	60.3	0.0		61.5	3.5		64.6
23A	2	26-15 3rd Street	59.8	61.0	64.1	4.3		65.3	61.9	2.1		63.1	60.6	0.7		61.8	60.5	0.5		61.7	60.3	0.3		61.5	60.2	0.1		61.4	4.3		65.3
23A	3	26-15 3rd Street	59.4	60.6	64.9	5.4	YES	66.1	59.9	0.4		61.1	60.5	1.0		61.7	60.4	0.8		61.6	60.0	0.5		61.2	60.0	0.2		61.2	5.4		66.1
23A	4	26-15 3rd Street	59.2	60.4	65.7	6.5	YES	66.9	59.9	0.6		61.1	60.9	1.5		62.1	60.6	1.1		61.8	60.1	0.7		61.3	60.1	0.2		61.3	6.5		66.9
23A	5	26-15 3rd Street	63.0	64.2	68.4	5.3	YES	69.6	66.4	3.2	YES	67.6	68.2	4.2	YES	69.4	64.8	0.9		66.0	66.5	2.2		67.7	66.2	-0.5		67.4	5.3	6.5	69.6
23B	1	26-15 3rd Street	55.3	56.5	61.4	6.0	YES	62.6	56.7	1.0		57.9	57.2	1.2		58.4	58.1	0.7		59.3	57.5	0.7		58.7	57.5	-0.6		58.7	6.0		62.6
23B	2	26-15 3rd Street	57.7	58.9	62.5	4.7		63.7	58.7	0.7		59.9	59.2	0.9		60.4	59.9	0.5		61.1	59.6	0.4		60.8	59.6	-1.5		60.8	4.7		63.7
23B	3	26-15 3rd Street	59.9	61.1	64.5	4.5		65.7	60.4	0.3		61.6	60.8	0.4		62.0	61.5	0.3		62.7	61.4	0.2		62.6	61.3	-1.6		62.5	4.5		65.7
23B	4	26-15 3rd Street	61.6	62.8	66.2	4.5	YES	67.4	62.1	0.3		63.3	62.7	0.4		63.9	62.9	0.1		64.1	62.9	0.2		64.1	62.9	-1.5		64.1	4.5		67.4
23B	5	26-15 3rd Street	63.0	64.2	68.0	4.9	YES	69.2	66.4	3.2	YES	67.6	68.5	4.4	YES	69.7	64.6	0.6		65.8	66.7	2.1		67.9	66.4	-0.4		67.6	4.9	6.0	69.7
23C	1	26-15 3rd Street	53.3	54.5	56.7	3.2		57.9	55.9	2.0		57.1	56.7	2.3		57.9	57.0	0.5		58.2	56.1	1.7		57.3	56.0	-0.6		57.2</			

25B	4	26-18 4th Street	54.4	55.6	61.9	7.3	YES	63.1	56.6	1.9		57.8	59.4	2.6		60.6	57.0	1.3		58.2	56.8	1.2		58.0	56.7	-0.6		57.9	7.3		63.1
25B	5	26-18 4th Street	64.2	65.4	66.7	2.3		67.9	67.3	2.9		68.5	69.9	2.4		71.1	66.0	0.6		67.2	68.0	1.9		69.2	67.9	-1.2		69.1	2.9	7.3	71.1
25C	1	26-18 4th Street	59.7	60.9	59.9	0.1		61.1	60.6	0.7		61.8	60.5	0.4		61.7	60.9	0.2		62.1	65.1	4.7	YES	66.3	65.0	3.5	YES	66.2	4.7		66.3
25C	2	26-18 4th Street	61.8	63.0	62.0	0.1		63.2	63.1	1.1		64.3	62.5	0.3		63.7	62.9	0.1		64.1	66.5	4.0	YES	67.7	66.3	2.6		67.5	4.0		67.7
25C	3	26-18 4th Street	63.9	65.1	64.1	0.1		65.3	65.0	1.0		66.2	64.7	0.2		65.9	65.1	0.1		66.3	67.7	2.9		68.9	67.5	1.2		68.7	2.9		68.9
25C	4	26-18 4th Street	65.1	66.3	65.3	0.1		66.5	66.9	1.6		68.1	66.7	0.3		67.9	66.3	0.1		67.5	68.9	2.2		70.1	68.7	-0.5		69.9	2.2		70.1
25C	5	26-18 4th Street	66.1	67.3	67.9	1.6		69.1	68.7	2.4		69.9	69.4	1.8		70.6	67.6	0.5		68.8	69.8	1.8		71.0	69.6	-1.0		70.8	2.4	4.7	71.0
25D	3	26-18 4th Street	55.5	56.7	58.4	2.8		59.6	61.7	6.0	YES	62.9	64.1	8.1	YES	65.3	58.8	1.7		60.0	64.2	8.1	YES	65.4	63.8	6.6	YES	65.0	8.1		65.4
25D	4	26-18 4th Street	57.8	59.0	60.8	2.9		62.0	64.8	6.8	YES	66.0	66.6	8.4	YES	67.8	60.8	1.8		62.0	65.6	5.4	YES	66.8	65.3	3.2	YES	66.5	8.4		67.8
25D	5	26-18 4th Street	64.2	65.4	66.7	2.3		67.9	67.6	3.3	YES	68.8	69.6	3.7	YES	70.8	66.1	0.8		67.3	68.3	2.2		69.5	68.1	-0.7		69.3	3.7	8.4	70.8
26A	1	26-31 3rd Street	59.8	61.0	61.3	1.5		62.5	60.5	0.7		61.7	61.0	1.1		62.2	60.8	0.8		62.0	60.4	0.5		61.6	60.4	0.3		61.6	1.5		62.5
26A	2	26-31 3rd Street	59.8	61.0	61.8	2.0		63.0	60.6	0.7		61.8	61.2	1.3		62.4	60.9	1.0		62.1	60.5	0.5		61.7	60.5	0.3		61.7	2.0		63.0
26A	3	26-31 3rd Street	59.9	61.1	64.1	4.2		65.3	61.4	1.4		62.6	62.4	2.3		63.6	61.7	1.5		62.9	61.2	1.1		62.4	61.2	0.5		62.4	4.2	4.2	65.3
26B	1	26-31 3rd Street	53.3	54.5	54.2	0.7		55.4	57.7	4.1		58.9	58.8	4.8		60.0	57.2	0.9		58.4	58.5	4.2		59.7	58.3	2.1		59.5	4.8		60.0
26B	2	26-31 3rd Street	54.1	55.3	55.1	0.7		56.3	60.4	5.7	YES	61.6	60.9	5.7	YES	62.1	58.3	0.8		59.5	62.4	6.1	YES	63.6	62.0	3.1		63.2	6.1		63.6
26B	3	26-31 3rd Street	57.4	58.6	58.6	0.9		59.8	61.8	4.1		63.0	63.2	4.8		64.4	60.6	0.8		61.8	64.8	5.3	YES	66.0	64.3	2.3		65.5	5.3	6.1	66.0
26C	3	26-31 3rd Street	58.8	60.0	63.9	4.9		65.1	60.4	1.3		61.6	61.3	1.8		62.5	61.3	0.7		62.5	61.2	0.9		62.4	61.1	-1.3		62.3	4.9	4.9	65.1
27A	1	26-33 3rd Street	61.8	63.0	63.4	1.6		64.6	62.6	0.8		63.8	62.8	0.9		64.0	62.7	0.8		63.9	62.3	0.4		63.5	62.3	0.3		63.5	1.6		64.6
27A	2	26-33 3rd Street	60.9	62.1	63.2	2.3		64.4	62.0	1.0		63.2	62.4	1.4		63.6	62.2	1.2		63.4	61.6	0.6		62.8	61.6	0.4		62.8	2.3		64.4
27A	3	26-33 3rd Street	61.0	62.2	64.4	3.4		65.6	65.4	4.3	YES	66.6	64.5	3.2		65.7	63.1	1.4		64.3	64.3	2.7		65.5	64.0	1.4		65.2	4.3	4.3	66.6
27B	1	26-33 3rd Street	53.3	54.5	54.3	0.6		55.5	57.2	3.2		58.4	58.8	3.8		60.0	57.9	1.0		59.1	56.8	1.7		58.0	56.7	-1.1		57.9	3.8		60.0
27B	2	26-33 3rd Street	55.8	57.0	56.7	0.5		57.9	61.0	4.7		62.2	62.8	5.4	YES	64.0	59.6	0.8		60.8	60.7	2.6		61.9	60.5	0.2		61.7	5.4		64.0
27B	3	26-33 3rd Street	58.1	59.3	60.5	2.1		61.7	67.9	9.5	YES	69.1	69.3	10.3	YES	70.5	62.2	1.9		63.4	65.7	5.8	YES	66.9	65.2	2.8		66.4	10.3	10.3	70.5
27C	1	26-33 3rd Street	53.3	54.5	54.3	0.7		55.5	56.6	2.9		57.8	57.9	3.5		59.1	56.6	2.0		57.8	56.2	2.2		57.4	56.1	1.0		57.3	3.5		59.1
27C	2	26-33 3rd Street	54.0	55.2	55.2	0.8		56.4	59.1	4.7		60.3	60.7	5.5	YES	61.9	58.4	3.2		59.6	58.7	4.1		59.9	58.4	2.7		59.6	5.5		61.9
27C	3	26-33 3rd Street	58.1	59.3	61.9	3.5		63.1	68.3	10.0	YES	69.5	67.9	9.1	YES	69.1	62.2	2.5		63.4	66.8	7.0	YES	68.0	66.3	4.1	YES	67.5	10.0	10.0	69.5
28A	1	23-36 4th Street	53.3	54.5	55.5	2.1		56.7	59.6	6.0	YES	60.8	61.3	7.6	YES	62.5	57.2	2.8		58.4	56.3	2.5		57.5	56.2	1.1		57.4	7.6		62.5
28A	2	23-36 4th Street	54.6	55.8	58.1	3.4		59.3	62.7	7.8	YES	63.9	64.2	9.0	YES	65.4	60.9	5.0	YES	62.1	59.0	3.7		60.2	58.8	1.7		60.0	9.0	9.0	65.4
28B	2	23-36 4th Street	59.0	60.2	61.0	1.9		62.2	62.0	2.7		63.2	62.3	2.8		63.5	61.3	0.8		62.5	62.5	2.1		63.7	62.4	0.1		63.6	2.8		63.7
28B	3	23-36 4th Street	60.6	61.8	63.5	2.6		64.7	68.3	7.4	YES	69.5	68.4	7.2	YES	69.6	67.7	5.7	YES	68.9	69.0	6.6	YES	70.2	68.6	3.8	YES	69.8	7.4	7.4	70.2
28C	1	23-36 4th Street	61.3	62.5	61.6	0.2		62.8	62.7	1.3		63.9	62.2	0.7		63.4	62.1	0.4		63.3	68.4	6.7	YES	69.6	68.1	5.6	YES	69.3	6.7		69.6
28C	2	23-36 4th Street	62.0	63.2	62.5	0.4		63.7	64.6	2.5		65.8	63.6	1.4		64.8	63.3	0.8		64.5	69.1	6.7	YES	70.3	68.8	5.1	YES	70.0	6.7	6.7	70.3
28D	1	23-36 4th Street	53.6	54.8	54.4	0.5		55.6	57.8	3.8		59.0	58.8	4.1		60.0	57.5	2.9		58.7	58.5	4.0		59.7	58.3	2.1		59.5	4.1		60.0
28D	2	23-36 4th Street	55.9	57.1	57.3	1.2		58.5	63.8	7.5	YES	65.0	63.7	6.6	YES	64.9	62.7	5.9	YES	63.9	64.1	7.4	YES	65.3	63.6	5.3	YES	64.8	7.5	7.5	65.3
29A	1	26-25 4th Street	64.6	65.8	64.9	0.2		66.1	66.4	1.8		67.6	65.5	0.8		66.7	65.4	0.6		66.6	66.2	1.5		67.4	65.9	1.0		67.1	1.8		67.6
29A	2	26-25 4th Street	63.7	64.9	64.3	0.6		65.5	66.7	3.0		67.9	65.3	1.6		66.5	65.2	1.2		66.4	65.9	2.0		67.1	65.5	1.3		66.7	3.0		67.9
29A	3	26-25 4th Street	63.7	64.9	65.3	1.5		66.5	67.3	3.4	YES	68.5	66.0	2.0		67.2	66.1	1.7		67.3	66.8	2.0		68.0	66.5	0.1		66.7	3.4	3.4	68.5
29B	1	26-25 4th Street	55.8	57.0	56.7	0.7		57.9	56.7	0.5		57.9	57.4	0.8		58.6	59.2	0.4		60.4	60.0	0.2		61.2	60.0	-3.0		61.2	0.8		61.2
29B	2	26-25 4th Street	60.5	61.7	61.1	0.4		62.3	61.0	0.2		62.2	61.6	0.4		62.8	63.4	0.3		64.6	64.5	0.1		65.7	64.5	-3.0		65.7	0.4		65.7
29B	3	26-25 4th Street	66.6	67.8	67.2	0.4		68.4	67.0	0.2		68.2	67.8	0.5		69.0	68.5	0.5		69.7	70.3	0.1		71.5	70.3	-3.8		71.5	0.5	0.8	71.5
29C	1	26-25 4th Street	62.8	64.0	63.1	0.1		64.3	63.3	0.1		64.5	63.4	0.1		64.6	65.9	0.1		67.1	64.0	0.1		65.2	64.0	-2.4		65.2	0.1	0.1	67.1
29D	1	26-25 4th Street	56.5	57.7	56.9	0.3		58.1	57.4	0.6		58.6	57.6	0.6		58.8	58.7	0.3		59.9	59.0	0.5		60.2	59.0	-3.9		60.2	0.6		60.2
29D	2	26-25 4th Street	63.5	64.7	64.5	0.4		65.7	64.2	0.1		65.4	65.0	0.1		66.2	66.2	0.1		67.4	69.1	0.1		70.3	69.1	-3.8		70.3	0.4	0.6	70.3
30A	1	4-21 27th Avenue	60.4	62.4	62.5	2.1		64.5	68.5	8.1	YES	70.5	66.2	5.7	YES	68.2	65.6	5.0	YES	67.6	68.4	7.9	YES	70.4	67.8	6.8	YES	69.8	8.1		70.5
30A	2	4-21 27th Avenue	60.3	62.3	63.2	2.8		65.2	69.4	9.0	YES	71.4	68.0	7.6	YES	70.0	67.4	6.8	YES	69.4	69.0	8.5	YES	71.0	68.4	7.6	YES	70.4	9.0		71.4
30A	3	4-21 27th Avenue	59.8	61.8	63.1	3.2		65.1	70.0	10.2	YES	72.0	68.6	8.7	YES	70.6	67.8	7.6	YES	69.8	69.4	9.4	YES	71.4	68.6	8.2	YES	70.6	10.2		72.0
30A	4	4-21 27th Avenue	59.3	61.3	63.2	3.9		65.2	71.1	11.7	YES	73.1	69.0	9.5	YES	71.0	67.9	8.2	YES	69.9	70.8	11.3	YES	72.8	69.5	9.5	YES	71.5	11.7		73.1
30A	5	4-21 27th Avenue	58.9	60.9	64.0	5.1	YES	66.0	71.6	12.7	YES	73.6	69.4	10.3	YES	71.4	68.2	8.9	YES	70.2	71.7	12.6	YES	73.7	70.8	11.0	YES	72.8	12.7		73.7
30A	6	4-21 27th Avenue	58.4	60.4	64.2	5.8	YES	66.2</																							

30C	8	4-21 27th Avenue	68.7	69.9	69.8	0.8		71.0	69.1	0.1		70.3	70.1	0.1		71.3	70.2	0.0		71.4	72.8	0.1		74.0	72.8	-4.9		74.0	0.8		74.0
30C	9	4-21 27th Avenue	69.3	70.5	70.4	0.7		71.6	69.7	0.1		70.9	70.7	0.1		71.9	70.7	0.0		71.9	73.0	0.0		74.2	73.0	-4.6		74.2	0.7		74.2
30C	10	4-21 27th Avenue	70.1	71.3	71.0	0.6		72.2	70.5	0.1		71.7	71.5	0.1		72.7	71.4	0.1		72.6	73.4	0.0		74.6	73.4	-4.4		74.6	0.6		74.6
30C	11	4-21 27th Avenue	70.4	71.6	71.3	0.6		72.5	70.8	0.0		71.3	72.0	0.1		73.2	71.7	0.0		72.9	73.6	0.1		74.8	73.6	-4.2		74.8	0.6		74.8
30C	12	4-21 27th Avenue	70.3	71.5	71.3	0.6		72.5	70.7	0.1		71.9	71.9	0.1		73.1	71.7	0.0		72.9	73.6	0.0		74.8	73.6	-4.3		74.8	0.6		74.8
30C	13	4-21 27th Avenue	70.2	71.4	71.2	0.6		72.4	70.7	0.1		71.9	71.9	0.1		73.1	71.6	0.0		72.8	73.7	0.0		74.9	73.7	-4.3		74.9	0.6	1.6	74.9
30D	1	4-21 27th Avenue	58.1	60.1	59.2	0.2		61.2	59.6	0.5		61.6	60.1	0.5		62.1	62.7	0.1		64.7	64.3	0.2		66.3	64.3	-4.2		66.3	0.5		66.3
30D	2	4-21 27th Avenue	59.7	61.7	61.0	0.2		63.0	61.1	0.4		63.1	62.5	0.3		64.5	64.1	0.1		66.1	66.4	0.2		68.4	66.4	-5.2		68.4	0.4		68.4
30D	3	4-21 27th Avenue	61.2	63.2	62.8	0.1		64.8	63.1	0.2		65.1	63.8	0.2		65.8	65.0	0.1		67.0	69.0	0.1		71.0	69.0	-4.8		71.0	0.2		71.0
30D	4	4-21 27th Avenue	62.5	64.5	64.2	0.3		66.2	64.2	0.3		66.2	65.0	0.2		67.0	65.8	0.1		67.8	70.5	0.1		72.5	70.5	-4.9		72.5	0.3		72.5
30D	5	4-21 27th Avenue	63.8	65.8	65.3	0.2		67.3	65.3	0.3		67.3	66.2	0.2		68.2	67.0	0.1		69.0	71.3	0.1		73.3	71.3	-4.8		73.3	0.3		73.3
30D	6	4-21 27th Avenue	64.7	66.7	66.1	0.2		68.1	66.1	0.3		68.1	67.0	0.2		69.0	68.0	0.1		70.0	71.8	0.1		73.8	71.8	-5.0		73.8	0.3		73.8
30D	7	4-21 27th Avenue	65.9	67.9	67.1	0.2		69.1	67.1	0.3		69.1	68.0	0.1		70.0	68.9	0.1		70.9	72.3	0.1		74.3	72.3	-5.4		74.3	0.3		74.3
30D	8	4-21 27th Avenue	66.7	68.7	67.8	0.2		69.8	67.8	0.3		69.8	68.6	0.1		70.6	69.5	0.1		71.5	72.7	0.1		74.7	72.7	-5.6		74.7	0.3		74.7
30D	9	4-21 27th Avenue	67.9	69.9	68.8	0.1		70.8	68.9	0.3		70.9	69.4	0.1		71.4	70.3	0.1		72.3	73.3	0.1		75.3	73.2	-5.4		75.2	0.3		75.3
30D	10	4-21 27th Avenue	68.2	70.2	69.0	0.1		71.0	69.2	0.3		71.2	69.9	0.1		71.9	70.6	0.0		72.6	73.4	0.1		75.4	73.4	-5.4		75.4	0.3		75.4
30D	11	4-21 27th Avenue	68.8	70.8	69.6	0.1		71.6	69.7	0.3		71.7	70.4	0.1		72.4	71.2	0.1		73.2	73.9	0.1		75.9	73.9	-5.1		75.9	0.3		75.9
30D	12	4-21 27th Avenue	68.9	70.9	69.6	0.0		71.6	69.8	0.3		71.8	70.5	0.1		72.5	71.3	0.0		73.3	74.0	0.1		76.0	74.0	-5.0		76.0	0.3		76.0
30D	13	4-21 27th Avenue	69.1	71.1	69.9	0.0		71.9	70.1	0.3		72.1	70.8	0.1		72.8	71.5	0.0		73.5	74.2	0.1		76.2	74.2	-4.9		76.2	0.3	0.5	76.2
31A	1	4-27 27th Avenue	57.6	59.6	60.2	2.2		62.2	64.3	6.4	YES	66.3	61.1	2.9		63.1	62.0	2.0		64.0	69.4	7.7	YES	71.4	69.2	4.7	YES	71.2	7.7		71.4
31A	2	4-27 27th Avenue	59.2	61.2	61.9	2.2		63.9	65.4	6.0	YES	67.4	62.6	2.6		64.6	63.0	1.9		65.0	72.4	6.9	YES	74.4	72.3	4.0	YES	74.3	6.9		74.4
31A	3	4-27 27th Avenue	59.8	61.8	62.6	2.0		64.6	67.3	7.0	YES	69.3	63.4	2.3		65.4	63.5	1.8		65.5	72.8	6.0	YES	74.8	72.6	3.0	YES	74.6	7.0		74.8
31A	4	4-27 27th Avenue	60.4	62.4	63.0	1.8		65.0	67.9	7.0	YES	69.9	64.1	2.0		66.1	64.0	1.6		66.0	72.9	5.6	YES	74.9	72.8	2.0		74.8	7.0	7.7	74.9
31B	1	4-27 27th Avenue	64.6	66.6	67.6	2.9		69.6	70.4	5.8	YES	72.4	69.5	4.9	YES	71.5	69.6	4.8	YES	71.6	72.4	7.7	YES	74.4	72.2	7.2	YES	74.2	7.7		74.4
31B	2	4-27 27th Avenue	64.9	66.9	67.8	2.9		69.8	70.1	5.2	YES	72.1	69.6	4.7	YES	71.6	69.5	4.5	YES	71.5	72.5	7.5	YES	74.5	72.3	7.0	YES	74.3	7.5		74.5
31B	3	4-27 27th Avenue	64.4	66.4	67.3	2.9		69.3	70.2	5.8	YES	72.2	69.4	5.0	YES	71.4	69.1	4.5	YES	71.1	72.3	7.8	YES	74.3	71.9	7.1	YES	73.9	7.8		74.3
31B	4	4-27 27th Avenue	64.1	66.1	66.9	2.7		68.9	70.9	6.7	YES	72.9	69.3	5.1	YES	71.3	68.9	4.4	YES	70.9	72.3	7.8	YES	74.3	71.9	6.6	YES	73.9	7.8	7.8	74.3
31C	1	4-27 27th Avenue	58.2	60.2	58.9	0.1		60.9	59.3	0.3		61.3	59.7	0.3		61.7	63.1	0.0		65.1	63.2	0.2		65.2	63.2	-4.2		65.2	0.3		65.2
31C	2	4-27 27th Avenue	59.8	61.8	60.7	0.1		62.7	60.9	0.2		62.9	61.9	0.2		63.9	64.2	0.1		66.2	65.7	0.1		67.7	65.6	-4.1		67.6	0.2		67.7
31C	3	4-27 27th Avenue	61.3	63.3	62.4	0.0		64.4	62.4	0.1		64.4	63.3	0.1		65.3	65.2	0.1		67.2	67.9	0.1		69.9	67.9	-3.8		69.9	0.1		69.9
31C	4	4-27 27th Avenue	62.6	64.6	63.8	0.0		65.8	64.1	0.1		66.1	64.4	0.1		66.4	66.1	0.0		68.1	68.6	0.1		70.6	68.6	-4.6		70.6	0.1	0.3	70.6
32A	1	4-29 27th Avenue	64.7	66.7	67.7	2.9		69.7	70.4	5.6	YES	72.4	69.4	4.7	YES	71.4	69.6	4.7	YES	71.6	72.0	7.2	YES	74.0	71.8	6.7	YES	73.8	7.2		74.0
32A	2	4-29 27th Avenue	64.9	66.9	67.8	2.9		69.8	69.9	5.0	YES	71.9	69.5	4.6	YES	71.5	69.5	4.4	YES	71.5	72.1	7.1	YES	74.1	72.0	6.7	YES	74.0	7.1		74.1
32A	3	4-29 27th Avenue	64.5	66.5	67.3	2.8		69.3	70.2	5.6	YES	72.2	69.3	4.7	YES	71.3	69.1	4.5	YES	71.1	72.0	7.3	YES	74.0	71.6	6.6	YES	73.6	7.3		74.0
32A	4	4-29 27th Avenue	64.4	66.4	67.0	2.5		69.0	70.8	6.3	YES	72.8	69.4	4.8	YES	71.4	69.1	4.0	YES	71.1	72.0	6.9	YES	74.0	71.6	5.3	YES	73.6	6.9	7.3	74.0
32B	1	4-29 27th Avenue	58.7	60.7	59.4	0.1		61.4	59.7	0.2		61.7	60.1	0.3		62.1	63.4	0.1		65.4	63.4	0.2		65.4	63.3	-3.6		65.3	0.3		65.4
32B	2	4-29 27th Avenue	60.5	62.5	61.3	0.0		63.3	61.4	0.2		63.4	62.3	0.1		64.3	64.5	0.1		66.5	65.3	0.2		67.3	65.3	-4.3		67.3	0.2		67.3
32B	3	4-29 27th Avenue	61.9	63.9	62.8	0.0		64.8	62.9	0.1		64.9	63.7	0.1		65.7	65.5	0.0		67.5	67.4	0.1		69.4	67.4	-3.3		69.4	0.1		69.4
32B	4	4-29 27th Avenue	63.2	65.2	64.4	0.0		66.4	64.6	0.1		66.6	64.9	0.1		66.9	66.6	0.1		68.6	69.2	0.1		71.2	69.2	-3.4		71.2	0.1	0.3	71.2
33A	1	4-31 27th Avenue	64.8	66.8	67.7	2.9		69.7	70.3	5.5	YES	72.3	69.2	4.4	YES	71.2	69.4	4.5	YES	71.4	71.5	6.6	YES	73.5	71.2	6.1	YES	73.2	6.6		73.5
33A	2	4-31 27th Avenue	64.9	66.9	67.8	2.9		69.8	69.9	4.9	YES	71.9	69.2	4.3	YES	71.2	69.3	4.2	YES	71.3	71.6	6.6	YES	73.6	71.3	6.1	YES	73.3	6.6		73.6
33A	3	4-31 27th Avenue	64.5	66.5	67.3	2.8		69.3	70.0	5.5	YES	72.0	69.0	4.5	YES	71.0	68.9	4.3	YES	70.9	71.4	6.8	YES	73.4	71.0	6.1	YES	73.0	6.8		73.4
33A	4	4-31 27th Avenue	64.4	66.4	67.0	2.5		69.0	70.6	6.1	YES	72.6	69.0	4.5	YES	71.0	68.9	3.9	YES	70.9	71.4	6.5	YES	73.4	71.0	4.9	YES	73.0	6.5	6.8	73.4
33B	1	4-31 27th Avenue	58.8	60.8	59.4	0.1		61.4	59.8	0.2		61.8	60.2	0.3		62.2	63.2	0.1		65.2	63.3	0.2		65.3	63.3	-3.5		65.3	0.3		65.3
33B	2	4-31 27th Avenue	60.8	62.8	61.5	0.0		63.5	61.7	0.1		63.7	62.5	0.1		64.5	64.5	0.1		66.5	65.0	0.1		67.0	65.0	-4.7		67.0	0.1		67.0
33B	3	4-31 27th Avenue	62.2	64.2	63.0	0.0		65.0	63.1	0.1		65.1	63.8	0.1		65.8	65.5	0.1		67.5	67.0	0.1		69.0	67.0	-3.3		69.0	0.1		69.0
33B	4	4-31 27th Avenue	63.4	65.4	64.5	0.0		66.5	64.7	0.1		66.7	65.0	0.1		67.0	66.7	0.1		68.7	68.6	0.1		70.6	68.6	-3.8		70.6	0.1	0.3	70.6
34A	1	4-33 27th Avenue	65.1	67.1	68.0	2.9		70.0	70.3	5.2	YES	72.3	69.2	4.1	YES	71.2	69.5	4.2	YES	71.5	70.8	5.7	YES	72.8	70.6	5.2	YES	72.6	5.7		72.8
34A	2	4-33 27th Avenue	65.1	67.1	67.9	2.8		69.9	69.7	4.6	YES	71.7	69																		

36C	4	4-37 27th Avenue	65.6	67.6	67.0	0.4		69.0	67.7	1.4		69.7	67.5	0.9		69.5	69.0	0.4		71.0	68.8	1.5		70.8	68.7	-1.4		70.7	1.5	1.5	71.0
37A	1	8-15 27th Avenue	63.2	65.2	64.1	0.9		66.1	66.6	3.4	YES	68.6	66.0	2.8		68.0	66.0	2.7		68.0	66.2	2.8		68.2	66.1	2.4		68.1	3.4		68.6
37A	2	8-15 27th Avenue	63.6	65.6	64.5	0.9		66.5	66.5	2.9		68.5	66.1	2.5		68.1	66.4	2.6		68.4	67.6	3.9	YES	69.6	67.5	3.5	YES	69.5	3.9		69.6
37A	3	8-15 27th Avenue	63.3	65.3	64.3	1.0		66.3	66.2	2.8		68.2	66.0	2.7		68.0	66.1	2.6		68.1	67.5	4.0	YES	69.5	67.4	3.7	YES	69.4	4.0		69.5
37A	4	8-15 27th Avenue	62.9	64.9	63.9	1.0		65.9	66.2	3.3	YES	68.2	65.8	2.9		67.8	65.9	2.8		67.9	67.5	4.4	YES	69.5	67.3	3.9	YES	69.3	4.4		69.5
37A	5	8-15 27th Avenue	62.4	64.4	63.5	1.1		65.5	66.5	4.0	YES	68.5	65.6	3.2	YES	67.6	65.6	3.0		67.6	67.4	4.8	YES	69.4	67.2	4.2	YES	69.2	4.8		69.4
37A	6	8-15 27th Avenue	62.0	64.0	63.1	1.1		65.1	66.6	4.6	YES	68.6	65.5	3.4	YES	67.5	65.5	3.2	YES	67.5	67.5	5.2	YES	69.5	67.2	4.5	YES	69.2	5.2		69.5
37A	7	8-15 27th Avenue	62.1	64.1	63.4	0.9		65.4	67.0	4.8	YES	69.0	65.8	3.2	YES	67.8	66.5	2.5		68.5	67.8	4.6	YES	69.8	67.6	2.8		69.6	4.8		69.8
37A	8	8-15 27th Avenue	62.5	64.5	64.0	0.8		66.0	67.1	4.5	YES	69.1	66.3	3.0		68.3	66.6	2.4		68.6	68.3	4.0	YES	70.3	68.1	1.5		70.1	4.5	5.2	70.3
37B	1	8-15 27th Avenue	59.1	61.1	60.1	1.0		62.1	62.4	3.2		64.4	60.6	1.4		62.6	60.9	1.1		62.9	62.3	2.8		64.3	62.3	2.0		64.3	3.2		64.4
37B	2	8-15 27th Avenue	60.8	62.8	61.7	0.9		63.7	63.4	2.6		65.4	62.1	1.3		64.1	62.3	1.1		64.3	63.3	2.1		65.3	63.2	1.4		65.2	2.6		65.4
37B	3	8-15 27th Avenue	61.6	63.6	62.6	0.9		64.6	64.2	2.5		66.2	63.1	1.4		65.1	63.4	1.3		65.4	63.9	2.0		65.9	63.8	1.4		65.8	2.5		66.2
37B	4	8-15 27th Avenue	61.9	63.9	62.9	0.9		64.9	65.0	3.1	YES	67.0	63.7	1.7		65.7	64.2	1.8		66.2	64.5	2.3		66.5	64.4	1.5		66.4	3.1		67.0
37B	5	8-15 27th Avenue	62.0	64.0	63.1	1.0		65.1	65.6	3.5	YES	67.6	64.4	2.3		66.4	65.0	2.4		67.0	65.3	3.0		67.3	65.2	2.0		67.2	3.5		67.6
37B	6	8-15 27th Avenue	62.0	64.0	63.2	1.0		65.2	65.4	3.3	YES	67.4	64.9	2.7		66.9	65.7	2.6		67.7	65.5	3.1	YES	67.5	65.4	1.8		67.4	3.3		67.7
37B	7	8-15 27th Avenue	62.2	64.2	63.9	1.0		65.9	67.1	4.8	YES	69.1	65.6	2.8		67.6	66.6	2.4		68.6	66.8	3.2	YES	68.8	66.3	0.4		68.3	4.8		69.1
37B	8	8-15 27th Avenue	62.6	64.6	64.8	0.8		66.8	67.6	4.7	YES	69.6	66.3	2.5		68.3	67.0	2.2		69.0	67.8	3.0	YES	69.8	67.4	-0.6		69.4	4.7	4.8	69.8
37C	1	8-15 27th Avenue	64.9	66.9	65.7	0.1		67.7	65.8	0.2		67.8	65.8	0.1		67.8	65.5	0.1		67.5	67.7	0.1		69.7	67.7	-2.4		69.7	0.2		69.7
37C	2	8-15 27th Avenue	66.0	68.0	67.1	0.2		69.1	67.1	0.2		69.1	67.1	0.1		69.1	66.9	0.1		68.9	68.6	0.1		70.6	68.6	-2.9		70.6	0.2		70.6
37C	3	8-15 27th Avenue	66.3	68.3	67.6	0.2		69.6	67.5	0.2		69.5	67.6	0.1		69.6	68.1	0.1		70.1	69.4	0.2		71.4	69.4	-3.1		71.4	0.2		71.4
37C	4	8-15 27th Avenue	66.8	68.8	68.3	0.2		70.3	68.4	0.4		70.4	68.2	0.2		70.2	70.9	0.1		72.9	70.2	0.2		72.2	70.2	-3.2		72.2	0.4		72.9
37C	5	8-15 27th Avenue	67.0	69.0	68.7	0.2		70.7	69.0	0.6		71.0	68.6	0.1		70.6	71.6	0.1		73.6	70.9	0.3		72.9	70.9	-3.1		72.9	0.6		73.6
37C	6	8-15 27th Avenue	67.3	69.3	69.1	0.3		71.1	69.5	0.7		71.5	68.9	0.2		70.9	71.9	0.1		73.9	71.5	0.5		73.5	71.4	-3.3		73.4	0.7		73.9
37C	7	8-15 27th Avenue	67.6	69.6	69.4	0.3		71.4	70.0	0.9		72.0	69.2	0.2		71.2	72.4	0.1		74.4	72.2	0.4		74.2	72.1	-3.2		74.1	0.9	0.9	74.4
37C	8	8-15 27th Avenue	69.2	71.2	70.6	0.2		72.6	71.2	0.9		73.2	70.5	0.2		72.5	73.4	0.1		75.4	73.2	0.5		75.2	73.1	-3.4		75.1	0.9		75.4
37D	1	8-15 27th Avenue	63.6	65.6	66.5	0.2		68.5	64.3	0.0		66.3	65.5	0.1		67.5	64.5	0.0		66.5	65.1	0.1		67.1	65.1	-2.4		67.1	0.2		68.5
37D	2	8-15 27th Avenue	65.5	67.5	67.9	0.2		69.9	66.2	0.0		68.2	67.3	0.0		69.3	66.2	0.0		68.2	67.1	0.0		69.1	67.1	-2.6		69.1	0.2		69.9
37D	3	8-15 27th Avenue	66.8	68.8	69.3	0.2		71.3	67.5	0.0		69.5	68.3	0.0		70.3	67.5	0.0		69.5	68.7	0.0		70.7	68.7	-5.0		70.7	0.2		71.3
37D	4	8-15 27th Avenue	67.8	69.8	70.3	0.1		72.3	68.5	0.0		70.5	69.2	0.0		71.2	68.6	0.0		70.6	69.3	0.1		71.3	69.3	-5.1		71.3	0.1		72.3
37D	5	8-15 27th Avenue	68.6	70.6	71.0	0.1		73.0	69.2	0.0		71.2	70.1	0.0		72.1	69.4	0.0		71.4	70.1	0.1		72.1	70.1	-4.7		72.1	0.1		73.0
37D	6	8-15 27th Avenue	69.2	71.2	71.4	0.1		73.4	69.8	0.0		71.8	70.6	0.0		72.6	70.2	0.0		72.2	71.4	0.2		73.4	71.4	-4.2		73.4	0.2		73.4
37D	7	8-15 27th Avenue	70.2	72.2	72.1	0.1		74.1	70.8	0.1		72.8	71.4	0.0		73.4	71.0	0.0		73.0	72.3	0.2		74.3	72.2	-4.1		74.2	0.2		74.3
37D	8	8-15 27th Avenue	69.8	71.8	71.3	0.2		73.3	70.6	0.2		72.6	70.9	0.0		72.9	71.1	0.0		73.1	72.9	0.2		74.9	72.8	-4.1		74.8	0.2	0.2	74.9
37E	1	8-15 27th Avenue	62.3	64.3	65.5	0.3		67.5	62.9	0.0		64.9	64.4	0.0		66.4	63.3	0.0		65.3	62.8	0.0		64.8	62.8	-1.1		64.8	0.3		67.5
37E	2	8-15 27th Avenue	64.2	66.2	66.7	0.3		68.7	64.8	0.0		66.8	66.0	0.0		68.0	65.0	0.0		67.0	64.9	0.0		66.9	64.9	-4.4		66.9	0.3		68.7
37E	3	8-15 27th Avenue	65.9	67.9	68.2	0.3		70.2	66.4	0.0		68.4	67.3	0.0		69.3	66.7	0.0		68.7	66.7	0.0		68.7	66.7	-6.1		68.7	0.3		70.2
37E	4	8-15 27th Avenue	67.0	69.0	69.4	0.2		71.4	67.5	0.0		69.5	68.3	0.0		70.3	67.8	0.0		69.8	68.6	0.0		70.6	68.6	-6.1		70.6	0.2		71.4
37E	5	8-15 27th Avenue	67.9	69.9	70.0	0.1		72.0	68.4	0.0		70.4	69.1	0.0		71.1	68.7	0.0		70.7	69.9	0.0		71.9	69.9	-5.8		71.9	0.1		72.0
37E	6	8-15 27th Avenue	69.2	71.2	71.0	0.2		73.0	69.6	0.0		71.6	70.2	0.0		72.2	70.2	0.0		72.2	71.4	0.0		73.4	71.4	-5.3		73.4	0.2		73.4
37E	7	8-15 27th Avenue	70.7	72.7	72.0	0.2		74.0	71.0	0.0		73.0	71.6	0.0		73.6	72.1	0.0		74.1	72.9	0.1		74.9	72.9	-4.4		74.9	0.2		74.9
37E	8	8-15 27th Avenue	71.2	73.2	72.5	0.1		74.5	71.5	0.1		73.5	72.2	0.0		74.2	72.4	0.0		74.4	74.1	0.1		76.1	74.1	-4.0		76.1	0.1	0.3	76.1
38	1	26-25 4th Street	73.8	75.8	74.3	0.0		76.3	73.9	0.0		75.9	74.1	0.0		76.1	74.0	0.0		76.0	74.0	0.0		76.0	74.0	-4.0		76.0	0.0		76.3
38	2	26-25 4th Street	75.6	77.6	76.0	0.0		78.0	75.7	0.0		77.7	75.8	0.0		77.8	75.8	0.0		77.8	79.8	0.0		81.8	79.8	-5.8		81.8	0.0		81.8
38	3	26-25 4th Street	77.1	79.1	77.6	0.0		79.6	77.2	0.0		79.4	77.4	0.0		79.4	77.2	0.0		79.2	80.3	0.0		82.3	80.3	-7.3		82.3	0.0	0.0	82.3
39	1	26-25 4th Street	68.7	70.7	70.0	0.0		72.0	68.9	0.0		70.9	69.6	0.0		71.6	69.2	0.0		71.2	69.2	0.0		71.2	69.2	-6.3		71.2	0.0		72.0
39	2	26-25 4th Street	73.2	75.2	73.8	0.0		75.8	73.3	0.0		75.3	73.6	0.0		75.6	73.4	0.0		75.4	74.7	0.0		76.7	74.7	-6.2		76.7	0.0		76.7
39	3	26-25 4th Street	76.3	78.3	76.8	0.0		78.8	76.4	0.0		78.4	76.5	0.0		78.5	76.4	0.0		78.4	78.2	0.0		80.2	78.2	-6.1		80.2	0.0	0.0	80.2
40	1	26-16 9th Street	64.0	66.0	66.9	0.0		68.9	64.4	0.0		66.4	66.3	0.0		68.3	65.2	0.0		67.2	65.2	0.0		67.2	65.2	-8.6		67.2	0.0		68.9
40	2	26-16 9th Street	68.3	70.3	69.8	0.1		71.8	68.6	0.0		70.6	69.4	0.1		71.4	68.9	0.0		70.9	70.7	0.0		72.7	70.7	-7.3		72.7</			

45B	3	8-10 28th Avenue	63.6	65.6	65.3	1.7	67.3	65.4	1.7	67.4	65.6	1.6	67.6	65.6	1.6	67.6	66.4	1.8	68.4	66.4	0.2	68.4	1.8		68.4
45B	4	8-10 28th Avenue	63.5	65.5	65.3	1.6	67.3	65.3	1.7	67.3	65.5	1.6	67.5	65.6	1.5	67.6	66.4	1.7	68.4	66.4	-0.1	68.4	1.7		68.4
45B	5	8-10 28th Avenue	63.5	65.5	65.4	1.5	67.4	65.4	1.6	67.4	65.5	1.5	67.5	65.9	1.3	67.9	66.6	1.7	68.6	66.6	-0.4	68.6	1.7		68.6
45B	6	8-10 28th Avenue	63.4	65.4	65.4	1.3	67.4	65.6	1.5	67.6	65.4	1.4	67.4	66.0	1.1	68.0	66.8	1.6	68.8	66.8	-0.9	68.8	1.6		68.8
45B	7	8-10 28th Avenue	63.3	65.3	65.3	1.3	67.3	65.7	1.5	67.7	65.5	1.4	67.5	66.4	1.0	68.4	67.1	1.5	69.1	67.0	-0.8	69.0	1.5		69.1
45B	8	8-10 28th Avenue	63.1	65.1	65.3	1.2	67.3	65.9	1.7	67.9	65.5	1.4	67.5	66.8	0.8	68.8	67.0	1.4	69.0	67.0	-0.9	69.0	1.7		69.0
45B	9	8-10 28th Avenue	63.0	65.0	65.3	1.2	67.3	66.2	2.0	68.2	65.7	1.4	67.7	67.1	0.8	69.1	67.3	1.5	69.3	67.3	-1.0	69.3	2.0		69.3
45B	10	8-10 28th Avenue	63.0	65.0	65.4	1.2	67.4	66.4	2.1	68.4	65.8	1.4	67.8	67.5	0.7	69.5	67.5	1.6	69.5	67.4	-1.2	69.4	2.1	2.1	69.5
45C	1	8-10 28th Avenue	53.3	55.3	54.0	0.6	56.0	54.2	0.8	56.2	54.3	0.9	56.3	54.6	0.7	56.6	55.6	1.9	57.6	55.6	1.1	57.6	1.9		57.6
45C	2	8-10 28th Avenue	53.3	55.3	54.2	0.8	56.2	54.3	1.0	56.3	54.5	1.0	56.5	54.7	0.9	56.7	55.7	2.1	57.7	55.7	1.3	57.7	2.1		57.7
45C	3	8-10 28th Avenue	53.4	55.4	54.4	1.0	56.4	54.6	1.1	56.6	54.7	1.2	56.7	54.9	1.0	56.9	56.2	2.5	58.2	56.2	1.7	58.2	2.5		58.2
45C	4	8-10 28th Avenue	54.4	56.4	55.4	1.0	57.4	55.6	1.1	57.6	55.6	1.1	57.6	55.8	1.0	57.8	57.2	2.6	59.2	57.2	2.0	59.2	2.6		59.2
45C	5	8-10 28th Avenue	55.0	57.0	56.0	1.0	58.0	56.1	1.1	58.1	56.2	1.1	58.2	56.3	1.0	58.3	58.4	3.2	60.4	58.4	2.6	60.4	3.2		60.4
45C	6	8-10 28th Avenue	55.4	57.4	56.4	1.0	58.4	56.6	1.1	58.6	56.6	1.1	58.6	56.7	1.0	58.7	58.9	3.3	60.9	58.9	2.8	60.9	3.3		60.9
45C	7	8-10 28th Avenue	55.7	57.7	56.7	0.9	58.7	56.8	1.1	58.8	56.8	1.0	58.8	56.9	1.0	58.9	59.1	3.2	61.1	59.1	2.7	61.1	3.2		61.1
45C	8	8-10 28th Avenue	56.0	58.0	56.9	0.9	58.9	57.0	0.9	59.0	57.0	1.0	59.0	57.2	0.9	59.2	59.4	3.2	61.4	59.3	2.7	61.3	3.2		61.4
45C	9	8-10 28th Avenue	56.7	58.7	58.2	1.3	60.2	58.1	1.3	60.1	58.8	1.8	60.8	58.9	0.8	60.9	60.8	2.4	62.8	60.8	0.0	62.8	2.4		62.8
45C	10	8-10 28th Avenue	57.5	59.5	60.1	1.8	62.1	60.0	2.3	62.0	60.2	2.2	62.2	60.7	1.1	62.7	62.5	2.4	64.5	62.5	-0.9	64.5	2.4	3.3	64.5
45D	1	8-10 28th Avenue	53.3	55.3	53.7	0.3	55.7	54.0	0.5	56.0	54.1	0.6	56.1	54.8	0.4	56.8	56.0	0.5	58.0	56.0	-1.7	58.0	0.6		58.0
45D	2	8-10 28th Avenue	53.3	55.3	53.8	0.4	55.8	54.1	0.7	56.1	54.2	0.7	56.2	55.1	0.4	57.1	57.3	0.4	59.3	57.3	-2.6	59.3	0.7		59.3
45D	3	8-10 28th Avenue	53.3	55.3	53.9	0.4	55.9	54.2	0.7	56.2	54.2	0.7	56.2	55.6	0.4	57.6	57.6	0.4	59.6	57.6	-2.7	59.6	0.7		59.6
45D	4	8-10 28th Avenue	53.3	55.3	54.0	0.5	56.0	54.2	0.7	56.2	54.3	0.8	56.3	56.4	0.3	58.4	57.8	0.4	59.8	57.8	-2.9	59.8	0.8		59.8
45D	5	8-10 28th Avenue	53.3	55.3	54.1	0.5	56.1	54.3	0.9	56.3	54.4	0.8	56.4	56.8	0.4	58.8	58.1	0.5	60.1	58.1	-2.9	60.1	0.9		60.1
45D	6	8-10 28th Avenue	53.3	55.3	54.3	0.6	56.3	54.5	1.1	56.5	54.7	1.0	56.7	57.2	0.3	59.2	58.3	0.4	60.3	58.3	-3.1	60.3	1.1		60.3
45D	7	8-10 28th Avenue	53.3	55.3	55.1	0.6	57.1	54.9	1.5	56.9	55.3	1.1	57.3	57.4	0.5	59.4	58.6	0.5	60.6	58.6	-3.3	60.6	1.5		60.6
45D	8	8-10 28th Avenue	54.0	56.0	56.2	0.8	58.2	56.4	2.2	58.4	57.0	1.9	59.0	58.4	0.5	60.4	60.6	1.5	62.6	60.6	-2.6	62.6	2.2		62.6
45D	9	8-10 28th Avenue	55.8	57.8	58.3	1.0	60.3	59.5	3.5	61.5	59.2	2.2	61.2	60.4	0.7	62.4	62.5	2.0	64.5	62.5	-2.2	64.5	3.5		64.5
45D	10	8-10 28th Avenue	57.0	59.0	59.5	1.0	61.5	60.8	3.7	62.8	60.5	2.0	62.5	61.5	0.6	63.5	64.0	2.2	66.0	63.9	-1.9	65.9	3.7	3.7	66.0
45E	1	8-10 28th Avenue	53.3	55.3	53.7	0.3	55.7	53.9	0.5	55.9	54.0	0.5	56.0	54.7	0.3	56.7	56.1	0.4	58.1	56.1	-3.8	58.1	0.5		58.1
45E	2	8-10 28th Avenue	53.3	55.3	53.9	0.3	55.9	54.0	0.5	56.0	54.1	0.6	56.1	55.8	0.3	57.8	57.0	0.3	59.0	57.0	-4.1	59.0	0.6		59.0
45E	3	8-10 28th Avenue	53.3	55.3	54.1	0.4	56.1	54.1	0.6	56.1	54.2	0.6	56.2	56.5	0.3	58.5	58.5	0.3	60.5	58.5	-4.4	60.5	0.6		60.5
45E	4	8-10 28th Avenue	53.3	55.3	54.4	0.4	56.4	54.2	0.7	56.2	54.4	0.7	56.4	57.8	0.2	59.8	58.8	0.3	60.8	58.8	-4.5	60.8	0.7		60.8
45E	5	8-10 28th Avenue	53.3	55.3	54.7	0.4	56.7	54.3	0.8	56.3	54.6	0.8	56.6	57.0	0.3	59.0	59.1	0.3	61.1	59.1	-4.6	61.1	0.8		61.1
45E	6	8-10 28th Avenue	53.3	55.3	54.8	0.5	56.8	54.4	0.9	56.4	54.8	0.9	56.8	57.4	0.4	59.4	59.3	0.3	61.3	59.3	-4.4	61.3	0.9		61.3
45E	7	8-10 28th Avenue	53.3	55.3	55.5	0.5	57.5	54.6	1.0	56.6	55.6	0.9	57.6	57.7	0.4	59.7	59.9	0.3	61.9	59.9	-4.6	61.9	1.0		61.9
45E	8	8-10 28th Avenue	53.7	55.7	56.1	0.6	58.1	55.2	1.2	57.2	57.1	1.7	59.1	58.8	0.4	60.8	61.4	1.1	63.4	61.4	-3.5	63.4	1.7		63.4
45E	9	8-10 28th Avenue	54.9	56.9	58.1	0.5	60.1	56.4	1.3	58.4	58.6	1.9	60.6	60.3	0.5	62.3	62.7	0.9	64.7	62.7	-2.9	64.7	1.9		64.7
45E	10	8-10 28th Avenue	56.0	58.0	59.2	0.6	61.2	58.1	1.9	60.1	59.7	1.9	61.7	61.0	0.4	63.0	63.6	1.3	65.6	63.6	-2.5	65.6	1.9	1.9	65.6
46A	1	28-05 8th Street	63.2	65.7	63.6	0.4	66.1	63.7	0.5	66.2	63.7	0.5	66.2	63.8	0.5	66.3	64.0	0.6	66.5	64.0	0.2	66.5	0.6		66.5
46A	2	28-05 8th Street	64.7	67.2	65.2	0.5	67.7	65.2	0.5	67.7	65.3	0.5	67.8	65.3	0.5	67.8	65.4	0.6	67.9	65.4	0.2	67.9	0.6		67.9
46A	3	28-05 8th Street	65.5	68.0	65.9	0.4	68.4	66.0	0.5	68.5	66.1	0.5	68.6	66.1	0.4	68.6	66.2	0.5	68.7	66.2	0.1	68.7	0.5		68.7
46A	4	28-05 8th Street	66.0	68.5	66.4	0.4	68.9	66.5	0.4	69.0	66.5	0.4	69.0	66.6	0.4	69.1	66.7	0.5	69.2	66.7	0.1	69.2	0.5		69.2
46A	5	28-05 8th Street	67.4	69.9	67.9	0.4	70.4	67.9	0.4	70.4	67.9	0.4	70.4	68.2	0.4	70.7	68.0	0.5	70.5	68.0	0.1	70.5	0.5	0.6	70.7
46B	1	28-05 8th Street	61.6	64.1	62.2	0.5	64.7	62.3	0.5	64.8	62.2	0.5	64.7	62.3	0.5	64.8	62.7	0.8	65.2	62.7	0.3	65.2	0.8		65.2
46B	2	28-05 8th Street	63.4	65.9	64.0	0.5	66.5	64.1	0.5	66.6	64.0	0.5	66.5	64.1	0.5	66.6	64.4	0.7	66.9	64.4	0.3	66.9	0.7		66.9
46B	3	28-05 8th Street	64.2	66.7	64.8	0.4	67.3	64.9	0.4	67.4	64.8	0.5	67.3	64.9	0.5	67.4	65.2	0.6	67.7	65.2	0.2	67.7	0.6		67.7
46B	4	28-05 8th Street	64.5	67.0	65.1	0.4	67.6	65.2	0.5	67.7	65.1	0.5	67.6	65.2	0.5	67.7	65.5	0.6	68.0	65.5	0.1	68.0	0.6		68.0
46B	5	28-05 8th Street	66.3	68.8	66.8	0.4	69.3	66.9	0.4	69.4	66.8	0.4	69.3	66.9	0.4	69.4	67.1	0.5	69.6	67.1	0.1	69.6	0.5	0.8	69.6
46C	1	28-05 8th Street	53.5	56.0	53.8	0.2	56.3	54.0	0.4	56.5	54.1	0.5	56.6	54.2	0.4	56.7	54.5	0.7	57.0	54.4	0.1	56.9	0.7		57.0
46C	2	28-05 8th Street	56.6	59.1	56.8	0.2	59.3	56.9	0.3	59.4	57.0	0.3	59.5	57.0	0.3	59.5	57.2	0.4	59.7	57.1	0.1	59.6	0.4		59.7
46C	3	28-05 8th Street	58.2	60.7	58.4	0.2	60.9	58.5	0.3	61.0	58.5	0.3	61.0	58.6	0.3	61.1	58.7	0.4	61.2	58.7	0.2	61.2	0.4		61.2
46C	4	28-05 8th Street	61.7	64.2	62.0	0.3	64.5	62.1	0.4	64.6	62.1	0.4	64.6	62.1	0.3	64.6	62.3	0.6	64.8	62.3	0.4	64.8	0.6		64.8
46C	5	28-05 8th Street	65.2	67.7	65.6	0.4	68.1	65.6	0.4	68.1	65.7	0.4	68.2	65.7	0.4	68.2	65.8	0.6	68.3	65.8	0.5	68.3	0.6		68.3
47A	1	28-07 8th Street	57.0	59.5	57.4	0.3	59.9	57.5	0.5	60.0	57.7	0.6	60.2	57.8	0.5	60.3	57.8	0.6	60.3	57.8	0.2	60.3	0.6		60.3
47A	2	28-07 8th Street	58.2	60.7	58.5	0.3	61.0</																		

48C	1	28-09 8th Street	56.6	59.1	57.0	0.4		59.5	57.1	0.4		59.6	57.1	0.5		59.6	57.2	0.4		59.7	57.3	0.6		59.8	57.3	0.3		59.8	0.6		59.8
48C	2	28-09 8th Street	58.5	61.0	58.9	0.4		61.4	58.9	0.4		61.4	59.0	0.4		61.5	59.0	0.4		61.5	59.1	0.5		61.6	59.1	0.3		61.6	0.5		61.6
48C	3	28-09 8th Street	60.2	62.7	60.5	0.3		63.0	60.6	0.4		63.1	60.6	0.4		63.1	60.6	0.4		63.1	60.7	0.4		63.2	60.7	0.3		63.2	0.4	0.6	63.2
48D	1	28-09 8th Street	53.3	55.8	53.6	0.2		56.1	53.9	0.5		56.4	54.1	0.6		56.6	54.1	0.3		56.6	54.5	0.8		57.0	54.5	-0.1		57.0	0.8		57.0
48D	2	28-09 8th Street	53.3	55.8	53.6	0.2		56.1	54.0	0.6		56.5	54.1	0.6		56.6	54.1	0.3		56.6	54.5	0.8		57.0	54.5	0.0		57.0	0.8		57.0
48D	3	28-09 8th Street	53.3	55.8	53.8	0.4		56.3	54.3	0.8		56.8	54.3	0.7		56.8	54.3	0.4		56.8	54.7	0.9		57.2	54.7	-0.1		57.2	0.9	0.9	57.2
49A	1	8-01 Astoria Blvd	53.3	55.8	53.5	0.2		56.0	53.8	0.4		56.3	53.9	0.5		56.4	54.0	0.4		56.5	54.2	0.7		56.7	54.2	0.1		56.7	0.7		56.7
49A	2	8-01 Astoria Blvd	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	54.0	0.6		56.5	54.0	0.4		56.5	54.3	0.7		56.8	54.2	0.2		56.7	0.7		56.8
49A	3	8-01 Astoria Blvd	54.8	57.3	55.1	0.3		57.6	55.3	0.5		57.8	55.5	0.6		58.0	55.5	0.4		58.0	55.7	0.6		58.2	55.6	0.1		58.1	0.6		58.2
49A	4	8-01 Astoria Blvd	64.2	66.7	64.5	0.3		67.0	64.6	0.4		67.1	64.6	0.4		67.1	64.6	0.4		67.1	64.6	0.4		67.1	64.6	0.2		67.1	0.4		67.1
49B	1	8-01 Astoria Blvd	61.1	63.6	61.6	0.5		64.1	61.6	0.5		64.1	61.7	0.5		64.2	61.6	0.3		64.1	61.7	0.6		64.2	61.7	0.5		64.2	0.6	0.7	64.2
49B	2	8-01 Astoria Blvd	62.3	64.8	62.8	0.5		65.3	62.8	0.5		65.3	62.8	0.5		65.3	62.8	0.5		65.3	62.9	0.6		65.4	62.9	0.5		65.4	0.6		65.4
49B	3	8-01 Astoria Blvd	62.9	65.4	63.4	0.5		65.9	63.4	0.5		65.9	63.4	0.5		65.9	63.4	0.5		65.9	63.5	0.5		66.0	63.5	0.5		66.0	0.5		66.0
49B	4	8-01 Astoria Blvd	64.5	67.0	64.9	0.4		67.4	65.3	0.7		67.8	64.9	0.4		67.4	64.9	0.4		67.4	65.0	0.5		67.5	65.0	0.3		67.5	0.7		67.8
49C	1	8-01 Astoria Blvd	69.4	71.9	70.0	0.6		72.5	70.0	0.6		72.5	70.0	0.6		72.5	70.0	0.6		72.5	70.2	0.8		72.7	70.2	0.8		72.7	0.8	0.8	72.7
49C	2	8-01 Astoria Blvd	69.6	72.1	70.1	0.5		72.6	70.1	0.5		72.6	70.1	0.5		72.6	70.1	0.5		72.6	70.3	0.7		72.8	70.3	0.7		72.8	0.7		72.8
49C	3	8-01 Astoria Blvd	69.3	71.8	69.7	0.4		72.2	69.8	0.5		72.3	69.8	0.4		72.3	69.8	0.4		72.3	70.0	0.7		72.5	70.0	0.6		72.5	0.7		72.5
49C	4	8-01 Astoria Blvd	69.1	71.6	69.5	0.4		72.0	69.5	0.4		72.0	69.5	0.4		72.0	69.5	0.4		72.0	69.7	0.6		72.2	69.7	0.6		72.2	0.6		72.2
49D	1	8-01 Astoria Blvd	63.8	66.3	64.2	0.4		66.7	64.6	0.8		67.1	64.2	0.4		66.7	64.4	0.3		66.9	64.9	1.0		67.4	64.9	0.8		67.4	1.0	1.0	67.4
49D	2	8-01 Astoria Blvd	65.1	67.6	65.5	0.4		68.0	65.9	0.8		68.4	65.5	0.4		68.0	65.7	0.3		68.2	66.1	0.9		68.6	66.1	0.6		68.6	0.9		68.6
49D	3	8-01 Astoria Blvd	65.7	68.2	66.1	0.3		68.6	66.4	0.6		68.9	66.1	0.4		68.6	66.3	0.3		68.8	66.6	0.8		69.1	66.6	0.5		69.1	0.8		69.1
49D	4	8-01 Astoria Blvd	66.7	69.2	67.1	0.3		69.6	67.3	0.6		69.8	67.1	0.3		69.6	67.3	0.3		69.8	67.5	0.7		70.0	67.5	0.4		70.0	0.7		70.0
50A	1	8-07 Astoria Blvd	69.2	71.7	69.8	0.6		72.3	69.8	0.6		72.3	69.8	0.6		72.3	69.8	0.6		72.3	70.0	0.8		72.5	70.0	0.8		72.5	0.8	0.8	72.5
50A	2	8-07 Astoria Blvd	69.0	71.5	69.5	0.5		72.0	69.6	0.6		72.1	69.6	0.6		72.1	69.6	0.6		72.1	69.8	0.8		72.3	69.8	0.8		72.3	0.8		72.3
50A	3	8-07 Astoria Blvd	68.8	71.3	69.3	0.5		71.8	69.3	0.5		71.8	69.3	0.5		71.8	69.3	0.5		71.8	69.5	0.7		72.0	69.5	0.7		72.0	0.7		72.0
50A	4	8-07 Astoria Blvd	68.6	71.1	69.0	0.4		71.5	69.0	0.4		71.5	69.0	0.4		71.5	69.0	0.4		71.5	69.3	0.7		71.8	69.3	0.6		71.8	0.7		71.8
50B	1	8-07 Astoria Blvd	61.4	63.9	61.8	0.4		64.3	61.9	0.5		64.4	61.9	0.5		64.4	61.9	0.5		64.4	61.9	0.5		64.4	61.9	0.4		64.4	0.5	0.5	64.4
50B	2	8-07 Astoria Blvd	62.5	65.0	63.0	0.4		65.5	63.0	0.5		65.5	63.0	0.5		65.5	63.0	0.5		65.5	63.0	0.5		65.5	63.0	0.4		65.5	0.5		65.5
50B	3	8-07 Astoria Blvd	63.1	65.6	63.5	0.4		66.0	63.6	0.4		66.1	63.6	0.5		66.1	63.6	0.4		66.1	63.6	0.5		66.1	63.6	0.4		66.1	0.5		66.1
50B	4	8-07 Astoria Blvd	64.0	66.5	64.4	0.4		66.9	64.5	0.5		67.0	64.4	0.4		66.9	64.4	0.4		66.9	64.5	0.5		67.0	64.5	0.3		67.0	0.5		67.0
50C	1	8-07 Astoria Blvd	53.3	55.8	53.4	0.1		55.9	53.7	0.3		56.2	53.8	0.4		56.3	53.8	0.3		56.3	54.1	0.6		56.6	54.1	0.0		56.6	0.6	0.8	56.6
50C	2	8-07 Astoria Blvd	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	53.9	0.5		56.4	54.0	0.4		56.5	54.2	0.7		56.7	54.2	0.2		56.7	0.7		56.7
50C	3	8-07 Astoria Blvd	53.4	55.9	53.8	0.3		56.3	54.0	0.6		56.5	54.3	0.6		56.8	54.2	0.6		56.7	54.5	0.8		57.0	54.5	0.2		57.0	0.8		57.0
50C	4	8-07 Astoria Blvd	62.0	64.5	62.2	0.2		64.7	62.3	0.3		64.8	62.4	0.4		64.9	62.3	0.3		64.8	62.4	0.4		64.9	62.4	0.2		64.9	0.4		64.9
51A	1	8-09 Astoria Blvd	68.7	71.2	69.3	0.6		71.8	69.3	0.6		71.8	69.3	0.6		71.8	69.3	0.6		71.8	69.3	0.6		71.8	69.3	0.6		71.8	0.6	0.6	71.8
51A	2	8-09 Astoria Blvd	68.7	71.2	69.2	0.5		71.7	69.2	0.5		71.7	69.3	0.6		71.8	69.3	0.6		71.8	69.3	0.6		71.8	69.3	0.6		71.8	0.6		71.8
51A	3	8-09 Astoria Blvd	68.5	71.0	69.0	0.5		71.5	69.0	0.5		71.5	69.0	0.5		71.5	69.0	0.5		71.5	69.0	0.5		71.5	69.0	0.5		71.5	0.5		71.5
51A	4	8-09 Astoria Blvd	68.5	71.0	68.9	0.4		71.4	69.0	0.5		71.5	69.0	0.4		71.5	69.0	0.4		71.5	69.0	0.5		71.5	69.0	0.5		71.5	0.5		71.5
51B	1	8-09 Astoria Blvd	64.2	66.7	64.6	0.4		67.1	64.6	0.4		67.1	64.7	0.4		67.2	64.7	0.4		67.2	64.7	0.5		67.2	64.7	0.4		67.2	0.5	0.5	67.2
51B	2	8-09 Astoria Blvd	65.0	67.5	65.4	0.4		67.9	65.5	0.4		68.0	65.5	0.5		68.0	65.5	0.4		68.0	65.5	0.5		68.0	65.5	0.4		68.0	0.5		68.0
51B	3	8-09 Astoria Blvd	64.6	67.1	65.1	0.4		67.6	65.1	0.5		67.6	65.1	0.5		67.6	65.1	0.5		67.6	65.1	0.5		67.6	65.1	0.4		67.6	0.5		67.6
51B	4	8-09 Astoria Blvd	66.0	68.5	66.3	0.3		68.8	66.4	0.4		68.9	66.4	0.3		68.9	66.3	0.3		68.8	66.5	0.5		69.0	66.5	0.5		69.0	0.5		69.0
51C	1	8-09 Astoria Blvd	53.3	55.8	53.5	0.1		56.0	53.7	0.3		56.2	53.8	0.4		56.3	53.9	0.3		56.4	54.1	0.6		56.6	54.1	0.1		56.6	0.6	0.8	56.6
51C	2	8-09 Astoria Blvd	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	53.9	0.5		56.4	54.0	0.4		56.5	54.2	0.7		56.7	54.2	0.2		56.7	0.7		56.7
51C	3	8-09 Astoria Blvd	53.3	55.8	53.6	0.3		56.1	53.8	0.5		56.3	54.0	0.5		56.5	54.0	0.4		56.5	54.3	0.8		56.8	54.3	0.2		56.8	0.8		56.8
51C	4	8-09 Astoria Blvd	63.4	65.9	63.6	0.2		66.1	63.6	0.2		66.1	63.7	0.3		66.2	63.7	0.2		66.2	63.7	0.3		66.2	63.7	0.2		66.2	0.3		66.2
52B	1	8-13 Astoria Blvd	53.3	55.8	53.5	0.1		56.0	53.6	0.2		56.1	53.7	0.3		56.2	53.8	0.2		56.3	54.0	0.4		56.5	53.9	-0.2		56.4	0.4	0.4	56.5
52B	2	8-13 Astoria Blvd	57.7	60.2	58.0	0.3		60.5	58.0	0.3		60.5	58.1	0.3		60.6	58.1	0.3		60.6	58.2	0.4		60.7	58.2	0.2		60.7	0.4		60.7
52C	1	8-13 Astoria Blvd	63.7	66.2	64.1	0.4		66.6	64.1	0.4		66.6	64.1	0.4		66.6	64.1	0.4		66.6	64.2	0.4		66.7	64.2	0.4		66.7	0.4	0.5	66.7
52C	2	8-13 Astoria Blvd	64.8	67.3	65.2	0.4		67.7	65.2	0.4		67.7	65.2																		

53D	2	Astoria Houses Building 1	63.1	65.6	63.1	0.0		65.6	63.2	0.1		65.7	63.3	0.1		65.8	63.2	0.1		65.7	64.7	1.6		67.2	64.7	1.5		67.2	1.6	
53D	3	Astoria Houses Building 1	63.1	65.6	63.2	0.1		65.7	63.2	0.1		65.7	63.3	0.2		65.8	63.2	0.1		65.7	64.6	1.5		67.1	64.6	1.4		67.1	1.5	
53D	4	Astoria Houses Building 1	63.0	65.5	63.1	0.1		65.6	63.1	0.1		65.6	63.3	0.3		65.8	63.1	0.1		65.6	64.5	1.5		67.0	64.5	1.4		67.0	1.5	
53D	5	Astoria Houses Building 1	62.8	65.3	62.9	0.1		65.4	62.9	0.1		65.4	63.2	0.4		65.7	63.0	0.2		65.5	64.3	1.5		66.8	64.3	1.4		66.8	1.5	
53D	6	Astoria Houses Building 1	62.6	65.1	62.7	0.1		65.2	63.6	1.0		66.1	63.2	0.6		65.7	62.9	0.2		65.4	64.2	1.6		66.7	64.2	1.5		66.7	1.6	
53D	7	Astoria Houses Building 1	62.4	64.9	62.6	0.2		65.1	64.1	1.7		66.6	63.7	1.3		66.2	63.1	0.7		65.6	64.4	2.0		66.9	64.4	1.9		66.9	2.0	
54A	1	Astoria Houses Building 2	53.3	55.3	54.1	0.7		56.1	60.9	7.5	YES	62.9	56.1	2.6		58.1	54.8	1.0		56.8	61.1	7.4	YES	63.1	61.1	6.6	YES	63.1	7.5	
54A	2	Astoria Houses Building 2	53.3	55.3	54.2	0.8		56.2	61.2	7.8	YES	63.2	56.4	2.9		58.4	55.0	1.1		57.0	62.7	8.9	YES	64.7	62.7	8.0	YES	64.7	8.9	
54A	3	Astoria Houses Building 2	53.3	55.3	54.5	1.1		56.5	62.8	9.4	YES	64.8	56.8	3.3		58.8	55.2	1.2		57.2	63.4	9.6	YES	65.4	63.4	8.6	YES	65.4	9.6	
54A	4	Astoria Houses Building 2	53.3	55.3	54.8	1.4		56.8	63.7	10.3	YES	65.7	57.3	3.8		59.3	55.5	1.4		57.5	63.4	9.5	YES	65.4	63.4	8.1	YES	65.4	10.3	
54A	5	Astoria Houses Building 2	53.3	55.3	55.2	1.8		57.2	64.7	11.2	YES	66.7	57.9	4.4		59.9	56.2	1.6		58.2	63.9	9.9	YES	65.9	63.9	8.3	YES	65.9	11.2	
54A	6	Astoria Houses Building 2	53.3	55.3	56.0	2.5		58.0	65.6	12.0	YES	67.6	58.6	4.9		60.6	57.1	1.5		59.1	64.2	9.9	YES	66.2	64.0	7.7	YES	66.0	12.0	
54A	7	Astoria Houses Building 2	53.4	55.4	57.3	3.4		59.3	66.0	12.1	YES	68.0	60.4	6.2	YES	62.4	58.6	2.1		60.6	64.8	10.0	YES	66.8	64.6	7.1	YES	66.6	12.1	
54B	1	Astoria Houses Building 2	61.7	63.7	63.5	1.8		65.5	63.6	1.8		65.6	63.6	1.9		65.6	64.0	1.6		66.0	63.7	1.9		65.7	63.7	1.8		65.7	1.9	
54B	2	Astoria Houses Building 2	62.8	64.8	64.7	1.8		66.7	64.7	1.8		66.7	64.7	1.9		66.7	65.0	1.7		67.0	64.8	1.9		66.8	64.8	1.8		66.8	1.9	
54B	3	Astoria Houses Building 2	62.9	64.9	64.7	1.8		66.7	64.8	1.8		66.8	64.8	1.8		66.8	65.1	1.6		67.1	64.9	1.9		66.9	64.8	1.8		66.8	1.9	
54B	4	Astoria Houses Building 2	62.8	64.8	64.6	1.8		66.6	64.7	1.8		66.7	64.7	1.8		66.7	65.1	1.6		67.1	64.8	1.9		66.8	64.8	1.8		66.8	1.9	
54B	5	Astoria Houses Building 2	62.7	64.7	64.6	1.7		66.6	64.5	1.8		66.5	64.5	1.8		66.5	65.0	1.5		67.0	64.7	1.9		66.7	64.7	1.7		66.7	1.9	
54B	6	Astoria Houses Building 2	62.5	64.5	64.4	1.6		66.4	64.4	1.8		66.4	64.4	1.8		66.4	64.9	1.4		66.9	64.7	2.0		66.7	64.6	1.6		66.6	2.0	
54B	7	Astoria Houses Building 2	62.8	64.8	65.0	1.7		67.0	65.9	2.9		67.9	65.2	2.2		67.2	65.4	1.5		67.4	66.0	2.9		68.0	66.0	2.1		68.0	2.9	
54C	1	Astoria Houses Building 2	59.5	61.5	61.3	1.8		63.3	61.3	1.8		63.3	61.4	1.8		63.4	61.4	1.8		63.4	61.5	1.9		63.5	61.5	1.7		63.5	1.9	
54C	2	Astoria Houses Building 2	60.3	62.3	62.1	1.8		64.1	62.2	1.9		64.2	62.2	1.9		64.2	62.2	1.8		64.2	62.2	1.9		64.2	62.2	1.7		64.2	1.9	
54C	3	Astoria Houses Building 2	60.1	62.1	61.9	1.8		63.9	62.0	1.9		64.0	62.0	1.9		64.0	62.0	1.8		64.0	62.1	1.9		64.1	62.1	1.7		64.1	1.9	
54C	4	Astoria Houses Building 2	59.9	61.9	61.6	1.7		63.6	61.7	1.8		63.7	61.8	1.9		63.8	61.8	1.8		63.8	61.8	1.9		63.8	61.8	1.7		63.8	1.9	
54C	5	Astoria Houses Building 2	59.7	61.7	61.4	1.7		63.4	61.5	1.8		63.5	61.6	1.9		63.6	61.5	1.7		63.5	61.6	1.9		63.6	61.6	1.7		63.6	1.9	
54C	6	Astoria Houses Building 2	59.6	61.6	61.3	1.6		63.3	61.4	1.8		63.4	61.5	1.9		63.5	61.4	1.7		63.4	61.5	1.8		63.5	61.5	1.6		63.5	1.9	
54C	7	Astoria Houses Building 2	60.9	62.9	63.1	1.6		65.1	64.1	3.0		66.1	63.4	2.3		65.4	63.4	1.4		65.4	65.0	3.8	YES	67.0	65.0	3.2	YES	67.0	3.8	
54D	1	Astoria Houses Building 2	53.3	55.3	55.5	2.1		57.5	63.9	10.5	YES	65.9	56.1	2.7		58.1	54.6	0.9		56.6	63.9	10.3	YES	65.9	63.6	9.3	YES	65.6	10.5	
54D	2	Astoria Houses Building 2	53.3	55.3	55.8	2.4		57.8	64.4	11.1	YES	66.4	56.4	3.0		58.4	54.8	1.1		56.8	64.5	10.9	YES	66.5	64.3	9.9	YES	66.3	11.1	
54D	3	Astoria Houses Building 2	53.3	55.3	56.1	2.7		58.1	64.6	11.3	YES	66.6	56.7	3.3		58.7	54.9	1.2		56.9	64.9	11.3	YES	66.9	64.5	10.2	YES	66.5	11.3	
54D	4	Astoria Houses Building 2	53.3	55.3	57.1	3.8		59.1	64.7	11.3	YES	66.7	57.1	3.6		59.1	55.0	1.3		57.0	65.4	11.7	YES	67.4	65.0	10.5	YES	67.0	11.7	
54D	5	Astoria Houses Building 2	53.3	55.3	57.7	4.4		59.7	65.2	11.8	YES	67.2	57.6	4.2		59.6	55.3	1.6		57.3	66.5	12.8	YES	68.5	66.2	11.7	YES	68.2	12.8	
54D	6	Astoria Houses Building 2	53.3	55.3	58.0	4.6		60.0	66.5	13.1	YES	68.5	58.3	4.9		60.3	55.6	1.9		57.6	67.2	13.5	YES	69.2	67.0	12.5	YES	69.0	13.5	
54D	7	Astoria Houses Building 2	53.3	55.3	57.9	4.5		59.9	67.8	14.2	YES	69.8	59.1	5.5	YES	61.1	56.8	2.4		58.8	68.2	14.3	YES	70.2	67.8	12.4	YES	69.8	14.3	
55A	1	Astoria Houses Building 12	58.6	60.6	62.9	4.3		64.9	63.8	5.1	YES	65.8	66.1	7.3	YES	68.1	67.8	9.2	YES	69.8	77.0	18.3	YES	79.0	77.0	18.3	YES	79.0	18.3	
55A	2	Astoria Houses Building 12	59.4	61.4	63.8	4.3		65.8	64.5	5.1	YES	66.5	66.9	7.4	YES	68.9	69.2	9.7	YES	71.2	77.5	18.0	YES	79.5	77.5	18.0	YES	79.5	18.0	
55A	3	Astoria Houses Building 12	59.1	61.1	63.5	4.3		65.5	64.4	5.3	YES	66.4	67.0	7.7	YES	69.0	69.2	10.1	YES	71.2	78.0	18.8	YES	80.0	78.0	18.7	YES	80.0	18.8	
55A	4	Astoria Houses Building 12	58.7	60.7	63.2	4.5		65.2	64.2	5.4	YES	66.2	66.9	8.0	YES	68.9	69.0	10.3	YES	71.0	78.1	19.4	YES	80.1	78.1	19.3	YES	80.1	19.4	
55A	5	Astoria Houses Building 12	58.2	60.2	62.8	4.6		64.8	63.9	5.6	YES	65.9	67.1	8.5	YES	69.1	69.1	10.8	YES	71.1	78.3	20.1	YES	80.3	78.3	20.0	YES	80.3	20.1	
55A	6	Astoria Houses Building 12	57.7	59.7	62.6	4.8		64.6	63.5	5.8	YES	65.5	67.2	9.0	YES	69.2	69.8	12.0	YES	71.8	78.3	20.6	YES	80.3	78.3	20.5	YES	80.3	20.6	
55A	7	Astoria Houses Building 12	57.4	59.4	62.5	5.0		64.5	63.5	6.0	YES	65.5	67.8	9.7	YES	69.8	70.4	12.8	YES	72.4	78.4	20.9	YES	80.4	78.4	20.6	YES	80.4	20.9	
55B	1	Astoria Houses Building 12	53.3	55.3	55.3	1.9		57.3	54.6	1.2		56.6	64.8	11.4	YES	66.8	63.8	10.2	YES	65.8	63.0	9.6	YES	65.0	63.0	9.3	YES	65.0	11.4	
55B	2	Astoria Houses Building 12	53.3	55.3	55.7	2.4		57.7	54.8	1.4		56.8	66.3	12.9	YES	68.3	64.6	11.0	YES	66.6	63.9	10.5	YES	65.9	63.9	10.2	YES	65.9	12.9	
55B	3	Astoria Houses Building 12	53.3	55.3	56.8	3.4		58.8	55.0	1.6		57.0	66.8	13.3	YES	68.8	65.4	11.7	YES	67.4	66.3	12.9	YES	68.3	66.3	12.5	YES	68.3	13.3	
55B	4	Astoria Houses Building 12	53.3	55.3	57.1	3.8		59.1	55.3	1.9		57.3	67.1	13.5	YES	69.1	65.6	11.8	YES	67.6	66.7	13.2	YES	68.7	66.7	12.8	YES	68.7	13.5	
55B	5	Astoria Houses Building 12	53.3	55.3	58.0	4.6		60.0	56.1	2.6		58.1	68.0	14.4	YES	70.0	66.3	12.5	YES	68.3	67.6	14.0	YES	69.6	67.6	13.6	YES	69.6	14.4	
55B	6	Astoria Houses Building 12	53.3	55.3	58.6	5.2	YES	60.6	56.7	3.2		58.7	69.8	15.9	YES	71.8	66.9	13.0	YES	68.9	68.1	14.5	YES	70.1	68.1	14.0	YES	70.1	15.9	
55B	7	Astoria Houses Building 12	53.3	55.3	60.7	7.2	YES	62.7	59.3	5.7	YES	61.3	70.1	15.9	YES	72.1	68.0	14.0	YES	70.0	71.8	18.0	YES	73.8	71.8	17.5	YES	73.8	18.0	
55C	1	Astoria Houses Building 12	58.0	60.0	61.7	3.6		63.7	61.8	3.8		63.8	62.2	4.2		64.2	61.9	3.9		63.9	74.0	16.0	YES	76.0	74.0	15.9	YES	76.0	16.0	
55C	2	Astoria Houses Building 12	58.9	60.9	62.5	3.6		64.5	62.7	3.8		64.7	63.0	4.1		65.0	62.8	3.8		64.8	75.7	16.8	YES	77.7	75.7	16.7	YES	77.7	16.8	
55C	3	Astoria Houses Building 12	58.7	60.7	62.4	3.6																								

56B	6	Astoria Houses Building 3	64.4	66.4	66.6	1.4	68.6	66.7	1.6	68.7	66.7	1.5	68.7	68.2	1.0	70.2	67.9	1.3	69.9	67.9	-2.1	69.9	1.6	70.2					
56B	7	Astoria Houses Building 3	65.2	67.2	67.4	1.3	69.4	68.9	3.0	70.9	68.5	2.2	70.5	69.1	0.9	71.1	70.0	1.9	72.0	70.0	-1.6	72.0	3.0	72.0					
56C	1	Astoria Houses Building 3	61.7	63.7	63.6	1.9	65.6	63.6	1.9	65.6	63.6	1.9	65.6	63.6	1.9	65.6	63.8	2.0	65.8	63.8	1.8	65.8	2.0	65.8					
56C	2	Astoria Houses Building 3	62.8	64.8	64.7	1.9	66.7	64.7	1.9	66.7	64.7	1.9	66.7	64.7	1.9	66.7	64.9	2.1	66.9	64.9	1.9	66.9	2.1	66.9					
56C	3	Astoria Houses Building 3	62.9	64.9	64.7	1.8	66.7	64.8	1.9	66.8	64.8	1.9	66.8	64.8	1.8	66.8	65.0	2.1	67.0	65.0	1.9	67.0	2.1	67.0					
56C	4	Astoria Houses Building 3	62.7	64.7	64.6	1.8	66.6	64.6	1.9	66.6	64.6	1.9	66.6	64.6	1.9	66.6	64.9	2.1	66.9	64.9	1.9	66.9	2.1	66.9					
56C	5	Astoria Houses Building 3	62.5	64.5	64.4	1.8	66.4	64.5	1.9	66.5	64.5	1.9	66.5	64.4	1.8	66.4	64.7	2.1	66.7	64.7	1.9	66.7	2.1	66.7					
56C	6	Astoria Houses Building 3	62.2	64.2	64.1	1.8	66.1	64.2	1.9	66.2	64.2	1.9	66.2	64.2	1.8	66.2	64.4	2.2	66.4	64.4	1.9	66.4	2.2	66.4					
56C	7	Astoria Houses Building 3	62.7	64.7	64.9	1.6	66.9	65.0	2.0	67.0	64.9	1.6	66.9	65.6	1.2	67.6	66.1	2.1	68.1	66.1	0.5	68.1	2.1	68.1					
56D	1	Astoria Houses Building 3	53.3	55.3	53.8	0.4	55.8	54.5	1.1	56.5	54.6	1.1	56.6	54.7	0.7	56.7	59.2	5.4	YES	61.2	59.2	4.3	61.2	5.4	61.2				
56D	2	Astoria Houses Building 3	53.3	55.3	53.9	0.5	55.9	55.2	1.7	57.2	54.8	1.3	56.8	54.9	0.9	56.9	60.3	6.4	YES	62.3	60.3	5.3	YES	62.3	6.4	62.3			
56D	3	Astoria Houses Building 3	53.3	55.3	54.0	0.7	56.0	56.0	2.5	58.0	54.9	1.4	56.9	54.9	0.9	56.9	60.3	6.4	YES	62.3	60.2	4.9	62.2	6.4	62.3				
56D	4	Astoria Houses Building 3	53.3	55.3	54.3	0.9	56.3	56.2	2.8	58.2	55.1	1.6	57.1	55.0	1.0	57.0	60.4	6.6	YES	62.4	60.4	5.0	YES	62.4	6.6	62.4			
56D	5	Astoria Houses Building 3	53.3	55.3	54.9	1.5	56.9	56.6	3.2	58.6	55.6	2.0	57.6	55.2	1.2	57.2	60.8	6.9	YES	62.8	60.7	5.3	YES	62.7	6.9	62.8			
56D	6	Astoria Houses Building 3	53.3	55.3	56.2	2.8	58.2	58.6	5.2	YES	60.6	56.0	2.4	58.0	55.5	1.4	57.5	61.9	7.9	YES	63.9	61.7	6.1	YES	63.7	7.9	63.9		
56D	7	Astoria Houses Building 3	53.3	55.3	57.6	4.1	59.6	59.7	6.1	YES	61.7	57.4	3.6	59.4	57.0	2.3	59.0	62.6	7.9	YES	64.6	62.4	5.5	YES	64.4	7.9	64.6		
57A	1	Astoria Houses Building 4	66.7	69.2	67.8	1.1	70.3	71.1	4.4	YES	73.6	67.8	1.0	70.3	67.8	1.1	70.3	75.3	8.6	YES	77.8	75.0	8.2	YES	77.5	8.6	77.8		
57A	2	Astoria Houses Building 4	67.8	70.3	68.9	1.1	71.4	74.9	7.0	YES	77.4	69.1	1.3	71.6	68.9	1.1	71.4	79.3	11.5	YES	81.8	78.9	11.0	YES	81.4	11.5	81.8		
57A	3	Astoria Houses Building 4	67.9	70.4	69.1	1.2	71.6	78.0	10.1	YES	80.5	69.3	1.4	71.8	69.0	1.1	71.5	82.6	14.6	YES	85.1	82.0	14.0	YES	84.5	14.6	85.1		
57A	4	Astoria Houses Building 4	67.9	70.4	69.1	1.2	71.6	78.0	10.0	YES	80.5	69.3	1.4	71.8	69.0	1.1	71.5	83.6	15.7	YES	86.1	83.1	15.2	YES	85.6	15.7	86.1		
57A	5	Astoria Houses Building 4	67.7	70.2	69.0	1.3	71.5	77.8	10.1	YES	80.3	69.1	1.4	71.6	68.8	1.1	71.3	83.5	15.8	YES	86.0	83.1	15.4	YES	85.6	15.8	86.0		
57A	6	Astoria Houses Building 4	67.4	69.9	68.7	1.3	71.2	77.7	10.3	YES	80.2	68.9	1.5	71.4	68.6	1.1	71.1	82.8	15.4	YES	85.3	82.4	15.0	YES	84.9	15.4	85.3		
57A	7	Astoria Houses Building 4	67.4	69.9	68.8	1.4	71.3	77.7	10.3	YES	80.2	69.0	1.6	71.5	68.6	1.1	71.1	82.5	15.1	YES	85.0	82.1	14.6	YES	84.6	15.1	85.0		
57B	1	Astoria Houses Building 4	66.6	69.1	67.6	0.9	70.1	67.7	1.1	70.2	67.7	1.0	70.2	67.7	0.9	70.2	67.9	1.3		70.4	67.9	1.2	70.4	1.3	70.4				
57B	2	Astoria Houses Building 4	67.8	70.3	68.8	0.9	71.3	69.2	1.4	71.7	68.9	1.0	71.4	69.0	0.9	71.5	70.5	2.6		73.0	70.2	2.2	72.7	2.6	73.0				
57B	3	Astoria Houses Building 4	68.1	70.6	69.1	0.9	71.6	69.5	1.4	72.0	69.1	1.0	71.6	69.3	0.9	71.8	71.5	3.4	YES	74.0	70.6	2.2	73.1	3.4	74.0				
57B	4	Astoria Houses Building 4	68.2	70.7	69.2	0.9	71.7	69.7	1.5	72.2	69.2	1.0	71.7	69.4	0.9	71.9	71.6	3.4	YES	74.1	70.8	2.3	73.3	3.4	74.1				
57B	5	Astoria Houses Building 4	68.2	70.7	69.2	0.9	71.7	69.8	1.6	72.3	69.2	1.0	71.7	69.3	0.8	71.8	71.8	3.5	YES	74.3	71.0	2.4	73.5	3.5	74.3				
57B	6	Astoria Houses Building 4	68.4	70.9	69.4	0.9	71.9	70.0	1.5	72.5	69.3	0.9	71.8	69.5	0.8	72.0	72.2	3.7	YES	74.7	71.5	2.7	74.0	3.7	74.7				
57B	7	Astoria Houses Building 4	69.1	71.6	70.2	1.0	72.7	72.0	2.8	74.5	70.6	1.4	73.1	70.3	0.8	72.8	74.7	5.5	YES	77.2	74.3	4.8	YES	76.8	5.5	77.2			
57C	1	Astoria Houses Building 4	53.3	55.8	54.0	0.6	56.5	55.7	2.2	58.2	55.2	1.7	57.7	54.9	0.9	57.4	57.3	3.5		59.8	57.2	2.3	59.7	3.5	59.8				
57C	2	Astoria Houses Building 4	53.6	56.1	54.4	0.7	56.9	56.2	2.5	58.7	55.6	1.7	58.1	55.3	0.9	57.8	57.9	3.4		60.4	57.8	1.6	60.3	3.4	60.4				
57C	3	Astoria Houses Building 4	54.7	57.2	55.4	0.7	57.9	57.2	2.3	59.7	56.4	1.5	58.9	56.5	0.8	59.0	58.7	3.3		61.2	58.5	1.6	61.0	3.3	61.2				
57C	4	Astoria Houses Building 4	55.6	58.1	56.3	0.7	58.8	57.8	2.1	60.3	57.2	1.4	59.7	57.3	0.7	59.8	59.5	3.2		62.0	59.4	1.7	61.9	3.2	62.0				
57C	5	Astoria Houses Building 4	56.3	58.8	57.0	0.7	59.5	58.3	1.9	60.8	57.8	1.3	60.3	57.9	0.7	60.4	59.9	2.9		62.4	59.7	1.4	62.2	2.9	62.4				
57C	6	Astoria Houses Building 4	57.2	59.7	57.9	0.6	60.4	59.0	1.7	61.5	58.6	1.1	61.1	58.8	0.6	61.3	60.6	2.6		63.1	60.4	1.0	62.9	2.6	63.1				
57C	7	Astoria Houses Building 4	63.3	65.8	64.6	1.0	67.1	66.2	2.4	68.7	64.7	1.0	67.2	65.0	0.6	67.5	67.3	3.2	YES	69.8	67.0	0.8	69.5	3.2	69.8				
57D	1	Astoria Houses Building 4	55.4	57.9	57.3	1.8	59.8	69.5	14.0	YES	72.0	58.6	3.0	61.1	57.2	1.4	59.7	70.8	15.2	YES	73.3	70.2	14.0	YES	72.7	15.2	73.3		
57D	2	Astoria Houses Building 4	55.9	58.4	58.0	2.1	60.5	71.7	15.7	YES	74.2	59.5	3.5	62.0	57.7	1.4	60.2	73.6	17.4	YES	76.1	72.8	16.1	YES	75.3	17.4	76.1		
57D	3	Astoria Houses Building 4	56.5	59.0	58.7	2.2	61.2	75.8	19.2	YES	78.3	61.0	4.4	63.5	58.3	1.5	60.8	78.0	21.3	YES	80.5	77.6	20.4	YES	80.1	21.3	80.5		
57D	4	Astoria Houses Building 4	57.1	59.6	60.1	3.0	62.6	75.8	18.6	YES	78.3	63.1	5.9	YES	65.6	58.9	1.5	61.4	78.5	21.2	YES	81.0	77.6	19.9	YES	80.1	21.2	81.0	
57D	5	Astoria Houses Building 4	57.6	60.1	60.7	3.0	63.2	76.0	18.3	YES	78.5	63.9	6.3	YES	66.4	59.4	1.5	61.9	78.5	20.8	YES	81.0	77.7	19.6	YES	80.2	20.8	81.0	
57D	6	Astoria Houses Building 4	58.1	60.6	61.4	3.3	63.9	76.0	17.8	YES	78.5	64.8	6.7	YES	67.3	60.6	2.3	63.1	78.3	20.1	YES	80.8	77.6	19.0	YES	80.1	20.1	80.8	
57D	7	Astoria Houses Building 4	58.9	61.4	62.0	3.1	64.5	75.8	16.9	YES	78.3	64.1	5.2	YES	66.6	61.5	2.2	64.0	78.3	19.2	YES	80.8	77.6	18.2	YES	80.1	19.2	80.8	
58A	1	Astoria Houses Building 5	53.3	56.1	54.1	0.6	56.9	57.9	4.5		60.7	59.8	6.4	YES	62.6	61.8	6.9	YES	64.6	66.4	12.5	YES	69.2	66.3	11.3	YES	69.1	12.5	69.2
58A	2	Astoria Houses Building 5	53.3	56.1	54.1	0.7	56.9	57.2	3.8		60.0	60.0	6.6	YES	62.8	62.2	7.2	YES	65.0	67.6	14.0	YES	70.4	67.4	13.3	YES	70.2	14.0	70.4
58A	3	Astoria Houses Building 5	53.3	56.1	54.2	0.8	57.0	57.6	4.2		60.4	60.4	6.9	YES	63.2	62.5	7.2	YES	65.3	67.8	14.2	YES	70.6	67.7	13.5	YES	70.5	14.2	70.6
58A	4	Astoria Houses Building 5	53.3	56.1	54.4	1.0	57.2	57.9	4.4		60.7	60.8	7.4	YES	63.6	62.8	7.4	YES	65.6	68.0	14.4	YES	70.8	67.8	13.6	YES	70.6	14.4	70.8
58A	5	Astoria Houses Building 5	53.3	56.1	54.6	1.2	57.4	59.4	6.0	YES	62.2	61.4	8.0	YES	64.2	63.1	7.7	YES	65.9	68.1	14.6	YES	70.9	68.0	13.8	YES	70.8	14.6	70.9
58A	6	Astoria Houses Building 5	53.3	56.1	55.0	1.6	57.8	60.9	7.5	YES	63.7	61.8	8.3	YES	64.6	63.3	7.8	YES	66.1	68.5	15.0	YES	71.3	68.2	14.1	YES	71.0	15.0	71.3
58A	7	Astoria Houses Building 5	53.7	56.5	55.8	2.0	58.6	62.2	8.3	YES	65.0	62.6	8.8	YES	65.4	63.8	7.6	YES	66.6	70.0	16.1	YES	72.8	69.8	15.3	YES	72.6	16.1	72.8
58B	1	Astoria Houses Building 5	53.3	56.1	54.1	0.7	56.9	60.8	7.2	YES	63.6	55.0	1.4	57.8	55.4	0.8	58.2	62.9	8.9	YES	65.7	62.6	6.4	YES	65.4	8.9	65.7		
58B	2	Astoria Houses Building 5	53.3	56.1	54.2	0.8	57.0	61.5	7.9	YES	64.3	55.2	1.5	58.0	55.8	0.8	58.6	63.9	8.7	YES	66.7	63.6	6.7	YES	66.4				

59A	3	Astoria Houses Building 6	57.2	60.0	59.2	2.0		62.0	78.2	21.0	YES	81.0	76.1	18.8	YES	78.9	59.1	1.7		61.9	65.0	7.7	YES	67.8	63.4	5.8	YES	66.2	21.0		81.0
59A	4	Astoria Houses Building 6	58.2	61.0	60.2	2.0		63.0	79.9	21.7	YES	82.7	76.8	18.5	YES	79.6	60.1	1.8		62.9	65.3	7.0	YES	68.1	63.7	5.2	YES	66.5	21.7		82.7
59A	5	Astoria Houses Building 6	58.7	61.5	60.8	2.1		63.6	79.8	21.1	YES	82.6	77.8	19.0	YES	80.6	60.8	2.0		63.6	65.4	6.6	YES	68.2	63.9	5.0		66.7	21.1		82.6
59A	6	Astoria Houses Building 6	58.8	61.6	61.1	2.3		63.9	79.9	21.1	YES	82.7	78.5	19.7	YES	81.3	61.5	2.5		64.3	65.4	6.5	YES	68.2	64.0	4.9		66.8	21.1		82.7
59A	7	Astoria Houses Building 6	59.0	61.8	61.6	2.6		64.4	79.8	20.8	YES	82.6	78.4	19.3	YES	81.2	63.4	4.2		66.2	65.7	6.6	YES	68.5	64.4	5.1	YES	67.2	20.8	21.7	82.6
59B	1	Astoria Houses Building 6	56.1	58.9	58.1	1.9		60.9	70.8	14.7	YES	73.6	62.2	6.0	YES	65.0	58.0	1.5		60.8	71.8	15.5	YES	74.6	71.3	14.7	YES	74.1	15.5		74.6
59B	2	Astoria Houses Building 6	57.3	60.1	59.3	2.0		62.1	74.0	16.6	YES	76.8	63.6	6.2	YES	66.4	59.1	1.5		61.9	75.2	17.7	YES	78.0	74.6	16.8	YES	77.4	17.7		78.0
59B	3	Astoria Houses Building 6	58.4	61.2	60.4	2.0		63.2	77.7	19.2	YES	80.5	65.1	6.7	YES	67.9	60.1	1.4		62.9	78.1	19.6	YES	80.9	77.8	19.0	YES	80.6	19.6		80.9
59B	4	Astoria Houses Building 6	59.4	62.2	61.4	2.0		64.2	78.8	19.3	YES	81.6	66.8	7.3	YES	69.6	61.0	1.4		63.8	79.9	20.4	YES	82.7	79.4	19.7	YES	82.2	20.4		82.7
59B	5	Astoria Houses Building 6	60.0	62.8	62.2	2.2		65.0	78.8	18.7	YES	81.6	67.4	7.3	YES	70.2	61.5	1.3		64.3	80.0	20.0	YES	82.8	79.4	19.1	YES	82.2	20.0		82.8
59B	6	Astoria Houses Building 6	60.4	63.2	62.7	2.3		65.5	78.9	18.4	YES	81.7	69.6	9.2	YES	72.4	61.8	1.3		64.6	79.8	19.4	YES	82.6	79.2	18.5	YES	82.0	19.4		82.6
59B	7	Astoria Houses Building 6	61.0	63.8	63.3	2.3		66.1	78.8	17.8	YES	81.6	70.3	9.3	YES	73.1	63.5	2.2		66.3	79.6	18.5	YES	82.4	79.0	17.7	YES	81.8	18.5	20.4	82.4
59C	1	Astoria Houses Building 6	53.3	56.1	53.7	0.3		56.5	55.6	2.2		58.4	58.4	5.0		61.2	57.3	3.5		60.1	56.5	2.9		59.3	56.4	2.2		59.2	5.0		61.2
59C	2	Astoria Houses Building 6	53.3	56.1	53.7	0.4		56.5	55.7	2.3		58.5	58.5	5.0	YES	61.3	57.4	3.6		60.2	56.9	3.3		59.7	56.7	2.5		59.5	5.0		61.3
59C	3	Astoria Houses Building 6	53.3	56.1	53.7	0.4		56.5	56.3	2.8		59.1	58.6	5.2	YES	61.4	57.6	3.7		60.4	59.5	5.9	YES	62.3	59.4	5.2	YES	62.2	5.9		62.3
59C	4	Astoria Houses Building 6	53.3	56.1	53.8	0.4		56.6	56.8	3.4		59.6	58.7	5.2	YES	61.5	57.6	3.8		60.4	62.6	9.0	YES	65.4	62.6	8.4	YES	65.4	9.0		65.4
59C	5	Astoria Houses Building 6	53.3	56.1	53.8	0.5		56.6	56.9	3.5		59.7	58.7	5.2	YES	61.5	57.7	3.9		60.5	63.2	9.6	YES	66.0	63.2	9.0	YES	66.0	9.6		66.0
59C	6	Astoria Houses Building 6	53.3	56.1	53.9	0.5		56.7	57.0	3.6		59.8	58.8	5.3	YES	61.6	58.0	3.6		60.8	63.9	10.3	YES	66.7	63.5	9.3	YES	66.3	10.3		66.7
59C	7	Astoria Houses Building 6	53.3	56.1	55.8	2.5		58.6	60.6	7.2	YES	63.4	63.3	9.8	YES	66.1	61.6	6.6	YES	64.4	68.2	14.6	YES	71.0	67.9	13.6	YES	70.7	14.6	14.6	71.0
59D	1	Astoria Houses Building 6	53.3	56.1	53.8	0.5		56.6	56.0	2.6		58.8	63.6	10.2	YES	66.4	64.7	11.0	YES	67.5	58.7	5.1	YES	61.5	58.7	4.7		61.5	11.0		67.5
59D	2	Astoria Houses Building 6	53.3	56.1	53.9	0.5		56.7	56.2	2.8		59.0	64.3	10.8	YES	67.1	65.4	11.6	YES	68.2	59.0	5.5	YES	61.8	59.0	4.9		61.8	11.6		68.2
59D	3	Astoria Houses Building 6	53.3	56.1	53.9	0.6		56.7	56.9	3.5		59.7	64.6	11.2	YES	67.4	65.8	12.1	YES	68.6	59.0	5.5	YES	61.8	59.0	4.9		61.8	12.1		68.6
59D	4	Astoria Houses Building 6	53.3	56.1	54.0	0.6		56.8	57.6	4.2		60.4	65.6	12.1	YES	68.4	66.3	12.6	YES	69.1	59.4	5.9	YES	62.2	59.3	5.3	YES	62.1	12.6		69.1
59D	5	Astoria Houses Building 6	53.3	56.1	54.1	0.7		56.9	58.5	5.1	YES	61.3	66.7	13.2	YES	69.5	67.2	13.4	YES	70.0	60.0	6.4	YES	62.8	60.0	5.9	YES	62.8	13.4		70.0
59D	6	Astoria Houses Building 6	53.3	56.1	54.2	0.9		57.0	58.8	5.4	YES	61.6	68.6	15.2	YES	71.4	68.3	14.6	YES	71.1	60.4	6.9	YES	63.2	60.4	6.3	YES	63.2	15.2		71.4
59D	7	Astoria Houses Building 6	53.3	56.1	54.9	1.6		57.7	59.7	6.3	YES	62.5	69.4	16.0	YES	72.2	69.3	15.6	YES	72.1	61.6	8.1	YES	64.4	61.5	7.5	YES	64.3	16.0		72.2
60A	1	Astoria Houses Building 7	63.1	65.9	64.8	1.7		67.6	65.4	2.2		68.2	70.3	7.1	YES	73.1	72.3	9.1	YES	75.1	65.1	1.9		67.9	65.1	1.7		67.9	9.1		75.1
60A	2	Astoria Houses Building 7	64.1	66.9	65.8	1.7		68.6	66.4	2.3		69.2	72.2	8.0	YES	75.0	74.3	10.1	YES	77.1	66.1	1.9		68.9	66.1	1.6		68.9	10.1		77.1
60A	3	Astoria Houses Building 7	64.1	66.9	65.8	1.7		68.6	66.7	2.5		69.5	73.8	9.5	YES	76.6	75.4	11.2	YES	78.2	66.1	1.9		68.9	66.1	1.6		68.9	11.2		78.2
60A	4	Astoria Houses Building 7	63.9	66.7	65.7	1.8		68.5	66.5	2.6		69.3	75.9	11.6	YES	78.7	77.2	13.2	YES	80.0	65.9	1.9		68.7	65.9	1.4		68.7	13.2		80.0
60A	5	Astoria Houses Building 7	63.5	66.3	65.4	1.9		68.2	66.6	3.0	YES	69.4	75.8	11.8	YES	78.6	78.2	14.5	YES	81.0	65.5	1.9		68.3	65.5	1.3		68.3	14.5		81.0
60A	6	Astoria Houses Building 7	63.1	65.9	65.7	2.5		68.5	66.4	3.2	YES	69.2	75.7	12.1	YES	78.5	78.7	15.4	YES	81.5	65.2	1.9		68.0	65.1	1.2		67.9	15.4		81.5
60A	7	Astoria Houses Building 7	63.9	66.7	66.7	2.7		69.5	68.8	4.8	YES	71.6	76.1	11.5	YES	78.9	79.0	14.9	YES	81.8	66.3	2.1		69.1	66.3	1.2		69.1	14.9	15.4	81.8
60B	1	Astoria Houses Building 7	63.3	66.1	65.4	2.1		68.2	73.7	10.4	YES	76.5	76.3	12.9	YES	79.1	65.8	2.4		68.6	65.6	2.3		68.4	65.6	2.1		68.4	12.9		79.1
60B	2	Astoria Houses Building 7	64.3	67.1	66.4	2.1		69.2	77.3	13.0	YES	80.1	78.6	14.2	YES	81.4	66.8	2.4		69.6	66.9	2.5		69.7	66.9	2.3		69.7	14.2		81.4
60B	3	Astoria Houses Building 7	64.3	67.1	66.4	2.1		69.2	80.9	16.6	YES	83.7	81.4	16.9	YES	84.2	66.8	2.4		69.6	67.0	2.6		69.8	66.9	2.2		69.7	16.9		84.2
60B	4	Astoria Houses Building 7	64.2	67.0	66.3	2.1		69.1	82.0	17.7	YES	84.8	82.3	17.7	YES	85.1	66.8	2.5		69.6	66.9	2.6		69.7	66.9	2.1		69.7	17.7		85.1
60B	5	Astoria Houses Building 7	63.8	66.6	66.0	2.2		68.8	82.0	18.1	YES	84.8	85.1	20.9	YES	87.9	66.4	2.5		69.2	66.5	2.6		69.3	66.5	2.0		69.3	20.9		87.9
60B	6	Astoria Houses Building 7	63.4	66.2	65.7	2.3		68.5	81.8	18.3	YES	84.6	84.8	21.0	YES	87.6	66.4	2.8		69.2	66.2	2.6		69.0	66.2	1.9		69.0	21.0		87.6
60B	7	Astoria Houses Building 7	63.8	66.6	66.5	2.7		69.3	81.7	17.8	YES	84.5	84.4	20.2	YES	87.2	70.9	6.9	YES	73.7	66.8	2.7		69.6	66.7	2.1		69.5	20.2	21.0	87.2
60C	1	Astoria Houses Building 7	53.3	56.1	55.0	1.6		57.8	68.2	14.8	YES	71.0	67.1	13.6	YES	69.9	56.3	2.5		59.1	63.4	9.9	YES	66.2	62.1	8.0	YES	64.9	14.8		71.0
60C	2	Astoria Houses Building 7	53.3	56.1	55.2	1.9		58.0	71.3	17.8	YES	74.1	69.3	15.8	YES	72.1	56.4	2.6		59.2	65.0	11.4	YES	67.8	63.3	9.1	YES	66.1	17.8		74.1
60C	3	Astoria Houses Building 7	53.9	56.7	55.9	1.9		58.7	76.4	22.4	YES	79.2	72.1	18.0	YES	74.9	56.7	2.4		59.5	66.7	12.6	YES	69.5	65.5	10.9	YES	68.3	22.4		79.2
60C	4	Astoria Houses Building 7	54.7	57.5	56.6	1.9		59.4	76.6	21.8	YES	79.4	73.2	18.3	YES	76.0	57.3	2.3		60.1	69.8	14.9	YES	72.6	68.0	12.7	YES	70.8	21.8		79.4
60C	5	Astoria Houses Building 7	55.4	58.2	57.3	1.9		60.1	77.1	21.7	YES	79.9	76.3	20.8	YES	79.1	58.0	2.3		60.8	69.9	14.3	YES	72.7	68.1	12.2	YES	70.9	21.7		79.9
60C	6	Astoria Houses Building 7	56.0	58.8	57.9	1.9		60.7	77.3	21.3	YES	80.1	76.3	20.2	YES	79.1	58.5	2.3		61.3	69.9	13.7	YES	72.7	68.2	11.7	YES	71.0	21.3		80.1
60C	7	Astoria Houses Building 7	58.5	61.3	61.5	2.9		64.3	77.9	19.3	YES	80.7	77.7	18.6	YES	80.5	64.8	6.2	YES	67.6	70.1	10.8	YES	72.9	68.5	8.3	YES	71.3	19.3	22.4	80.7
60D	1	Astoria Houses Building 7	53.3	56.1	54.2	0.8		57.0	57.9	4.5		60.7	67.7	14.2	YES	70.5	68.9	15.1	YES	71.7	56.1	2.5		58.9	56.1	1.7		58.9</			

61C	7	Astoria Houses Building 8	53.3	55.8	58.5	5.0	YES	61.0	68.0	14.6	YES	70.5	63.8	9.6	YES	66.3	61.9	7.9	YES	64.4	64.5	10.5	YES	67.0	63.9	8.0	YES	66.4	14.6	14.6	70.5
61D	1	Astoria Houses Building 8	53.3	55.8	54.0	0.6		56.5	55.3	1.9		57.8	62.4	9.0	YES	64.9	62.9	9.3	YES	65.4	63.2	9.6	YES	65.7	63.2	9.2	YES	65.7	9.6		65.7
61D	2	Astoria Houses Building 8	53.3	55.8	54.0	0.7		56.5	55.4	2.0		57.9	63.8	10.4	YES	66.3	63.9	10.3	YES	66.4	63.8	10.3	YES	66.3	63.8	9.8	YES	66.3	10.4		66.4
61D	3	Astoria Houses Building 8	53.3	55.8	54.4	1.1		56.9	55.5	2.1		58.0	66.5	13.1	YES	69.0	64.3	10.7	YES	66.8	64.4	10.8	YES	66.9	64.4	10.3	YES	66.9	13.1		69.0
61D	4	Astoria Houses Building 8	53.3	55.8	54.7	1.3		57.2	55.6	2.2		58.1	69.1	15.7	YES	71.6	63.7	10.1	YES	66.2	64.6	11.1	YES	67.1	64.6	10.6	YES	67.1	15.7		71.6
61D	5	Astoria Houses Building 8	53.3	55.8	54.9	1.6		57.4	56.6	3.2		59.1	68.6	15.2	YES	71.1	64.4	10.8	YES	66.9	65.0	11.5	YES	67.5	65.0	11.0	YES	67.5	15.2		71.1
61D	6	Astoria Houses Building 8	53.3	55.8	56.2	2.8		58.7	57.0	3.6		59.5	70.0	16.6	YES	72.5	64.4	10.9	YES	66.9	65.4	11.8	YES	67.9	65.4	11.3	YES	67.9	16.6		72.5
61D	7	Astoria Houses Building 8	53.3	55.8	62.3	8.7	YES	64.8	62.3	8.6	YES	64.8	72.7	17.9	YES	75.2	67.3	12.9	YES	69.8	66.8	12.7	YES	69.3	66.7	11.2	YES	69.2	17.9	17.9	75.2
62A	1	Astoria Houses Building 9	53.3	54.6	58.3	5.0	YES	59.6	55.1	1.7		56.4	65.0	11.6	YES	66.3	64.1	10.5	YES	65.4	65.7	12.2	YES	67.0	65.7	12.0	YES	67.0	12.2		67.0
62A	2	Astoria Houses Building 9	53.3	54.6	58.8	5.5	YES	60.1	55.3	1.9		56.6	66.1	12.7	YES	67.4	64.8	11.2	YES	66.1	66.4	13.0	YES	67.7	66.4	12.7	YES	67.7	13.0		67.7
62A	3	Astoria Houses Building 9	53.3	54.6	59.6	6.2	YES	60.9	55.6	2.2		56.9	66.7	13.3	YES	68.0	65.4	11.7	YES	66.7	67.1	13.7	YES	68.4	67.1	13.3	YES	68.4	13.7		68.4
62A	4	Astoria Houses Building 9	53.9	55.2	60.2	6.3	YES	61.5	56.2	2.2		57.5	67.5	13.4	YES	68.8	65.9	11.6	YES	67.2	68.9	14.9	YES	70.2	68.9	14.6	YES	70.2	14.9		70.2
62A	5	Astoria Houses Building 9	54.5	55.8	60.6	6.1	YES	61.9	56.9	2.3		58.2	69.3	14.6	YES	70.6	66.1	11.2	YES	67.4	69.6	15.0	YES	70.9	69.6	14.6	YES	70.9	15.0		70.9
62A	6	Astoria Houses Building 9	54.9	56.2	61.6	6.7	YES	62.9	57.5	2.5		58.8	70.1	14.9	YES	71.4	66.6	11.3	YES	67.9	69.7	14.7	YES	71.0	69.7	14.2	YES	71.0	14.9		71.4
62A	7	Astoria Houses Building 9	56.0	57.3	63.3	7.2	YES	64.6	59.9	3.7		61.2	71.1	14.6	YES	72.4	68.3	11.9	YES	69.6	71.3	15.2	YES	72.6	71.3	14.7	YES	72.6	15.2	15.2	72.6
62B	1	Astoria Houses Building 9	53.3	54.6	58.5	5.1	YES	59.8	60.6	7.2	YES	61.9	64.9	11.5	YES	66.2	62.6	9.1	YES	63.9	58.7	5.2	YES	60.0	58.7	4.9		60.0	11.5		66.2
62B	2	Astoria Houses Building 9	53.3	54.6	59.2	5.9	YES	60.5	61.3	8.0	YES	62.6	65.9	12.5	YES	67.2	63.4	9.9	YES	64.7	59.0	5.5	YES	60.3	59.0	5.2	YES	60.3	12.5		67.2
62B	3	Astoria Houses Building 9	53.3	54.6	60.0	6.7	YES	61.3	61.6	8.2	YES	62.9	66.5	13.1	YES	67.8	64.0	10.4	YES	65.3	59.8	6.3	YES	61.1	59.8	6.0	YES	61.1	13.1		67.8
62B	4	Astoria Houses Building 9	53.3	54.6	60.8	7.4	YES	62.1	62.1	8.7	YES	63.4	67.2	13.7	YES	68.5	64.4	10.7	YES	65.7	60.1	6.6	YES	61.4	60.1	6.2	YES	61.4	13.7		68.5
62B	5	Astoria Houses Building 9	53.3	54.6	61.3	7.9	YES	62.6	62.5	9.1	YES	63.8	68.4	14.9	YES	69.7	65.7	11.9	YES	67.0	60.4	6.8	YES	61.7	60.3	6.0	YES	61.6	14.9		69.7
62B	6	Astoria Houses Building 9	53.3	54.6	61.9	8.5	YES	63.2	63.1	9.6	YES	64.4	69.2	15.5	YES	70.5	66.0	12.2	YES	67.3	60.7	6.9	YES	62.0	60.6	5.8	YES	61.9	15.5		70.5
62B	7	Astoria Houses Building 9	54.3	55.6	62.4	8.0	YES	63.7	64.4	9.9	YES	65.7	70.3	15.4	YES	71.6	68.4	13.7	YES	69.7	65.1	10.3	YES	66.4	65.0	8.9	YES	66.3	15.4	15.4	71.6
62C	1	Astoria Houses Building 9	56.6	57.9	58.2	1.6		59.5	58.4	1.8		59.7	58.8	2.1		60.1	58.7	2.0		60.0	64.4	7.7	YES	65.7	64.4	7.6	YES	65.7	7.7		65.7
62C	2	Astoria Houses Building 9	57.6	58.9	59.2	1.6		60.5	59.3	1.7		60.6	59.7	2.1		61.0	59.6	1.9		60.9	65.6	8.0	YES	66.9	65.6	7.9	YES	66.9	8.0		66.9
62C	3	Astoria Houses Building 9	57.3	58.6	58.9	1.6		60.2	59.1	1.7		60.4	59.4	2.1		60.7	59.3	1.9		60.6	67.0	9.7	YES	68.3	67.0	9.5	YES	68.3	9.7		68.3
62C	4	Astoria Houses Building 9	57.0	58.3	58.6	1.6		59.9	58.8	1.7		60.1	59.1	2.1		60.4	59.0	1.9		60.3	67.2	10.2	YES	68.5	67.2	10.1	YES	68.5	10.2		68.5
62C	5	Astoria Houses Building 9	56.6	57.9	58.2	1.6		59.5	59.8	3.2		61.1	58.8	2.2		60.1	58.7	2.0		60.0	67.8	11.2	YES	69.1	67.8	11.1	YES	69.1	11.2		69.1
62C	6	Astoria Houses Building 9	56.4	57.7	57.9	1.5		59.2	61.0	4.6		62.3	58.7	2.3		60.0	58.6	2.1		59.9	68.1	11.6	YES	69.4	68.0	11.4	YES	69.3	11.6		69.4
62C	7	Astoria Houses Building 9	56.5	57.8	59.0	2.4		60.3	63.0	6.5	YES	64.3	60.6	4.0		61.9	59.2	2.5		60.5	68.8	12.1	YES	70.1	68.8	11.7	YES	70.1	12.1	12.1	70.1
62D	1	Astoria Houses Building 9	63.0	64.3	64.6	1.6		65.9	64.7	1.7		66.0	64.8	1.8		66.1	64.7	1.7		66.0	72.9	9.9	YES	74.2	72.9	9.8	YES	74.2	9.9		74.2
62D	2	Astoria Houses Building 9	63.8	65.1	65.4	1.6		66.7	65.4	1.6		66.7	65.6	1.8		66.9	65.5	1.7		66.8	73.9	10.1	YES	75.2	73.9	10.1	YES	75.2	10.1		75.2
62D	3	Astoria Houses Building 9	63.6	64.9	65.2	1.6		66.5	65.3	1.7		66.6	65.4	1.8		66.7	65.3	1.7		66.6	75.4	11.8	YES	76.7	75.4	11.8	YES	76.7	11.8		76.7
62D	4	Astoria Houses Building 9	63.2	64.5	64.8	1.6		66.1	64.9	1.7		66.2	65.0	1.8		66.3	65.0	1.7		66.3	77.2	14.0	YES	78.5	77.2	13.9	YES	78.5	14.0		78.5
62D	5	Astoria Houses Building 9	62.8	64.1	64.4	1.6		65.7	64.4	1.6		65.7	64.6	1.8		65.9	64.6	1.7		65.9	77.2	14.4	YES	78.5	77.2	14.3	YES	78.5	14.4		78.5
62D	6	Astoria Houses Building 9	62.3	63.6	63.9	1.6		65.2	63.9	1.6		65.2	64.1	1.8		65.4	64.2	1.9		65.5	78.1	15.8	YES	79.4	78.1	15.8	YES	79.4	15.8		79.4
62D	7	Astoria Houses Building 9	61.8	63.1	63.5	1.7		64.8	63.5	1.7		64.8	63.9	2.1		65.2	63.9	2.1		65.2	77.8	16.0	YES	79.1	77.8	15.9	YES	79.1	16.0	16.0	79.1
63A	1	Astoria Houses Building 10	65.5	67.0	67.5	2.0		69.0	68.4	2.9		69.9	74.9	9.4	YES	76.4	74.6	9.1	YES	76.1	72.3	6.8	YES	73.8	72.3	6.8	YES	73.8	9.4		76.4
63A	2	Astoria Houses Building 10	66.0	67.5	68.2	2.2		69.7	69.0	3.0	YES	70.5	75.6	9.6	YES	77.1	75.8	9.8	YES	77.3	73.5	7.5	YES	75.0	73.5	7.5	YES	75.0	9.8		77.3
63A	3	Astoria Houses Building 10	65.5	67.0	68.3	2.8		69.8	69.3	3.8	YES	70.8	76.0	10.5	YES	77.5	76.8	11.3	YES	78.3	74.8	9.3	YES	76.3	74.8	9.3	YES	76.3	11.3		78.3
63A	4	Astoria Houses Building 10	64.9	66.4	69.4	4.5	YES	70.9	69.1	4.2	YES	70.6	76.4	11.5	YES	77.9	77.8	12.9	YES	79.3	75.4	10.5	YES	76.9	75.4	10.5	YES	76.9	12.9		79.3
63A	5	Astoria Houses Building 10	64.2	65.7	69.2	5.0	YES	70.7	69.0	4.8	YES	70.5	77.4	13.2	YES	78.9	78.6	14.3	YES	80.1	76.3	12.1	YES	77.8	76.3	12.0	YES	77.8	14.3		80.1
63A	6	Astoria Houses Building 10	63.4	64.9	69.8	6.4	YES	71.3	69.7	6.3	YES	71.2	77.7	14.3	YES	79.2	78.6	15.2	YES	80.1	77.8	14.3	YES	79.3	77.8	14.2	YES	79.3	15.2		80.1
63A	7	Astoria Houses Building 10	63.2	64.7	70.6	7.3	YES	72.1	70.1	6.9	YES	71.6	77.8	14.4	YES	79.3	78.8	15.5	YES	80.3	78.0	14.6	YES	79.5	78.0	14.2	YES	79.5	15.5	15.5	80.3
63B	1	Astoria Houses Building 10	64.7	66.2	66.7	2.0		68.2	67.2	2.5		68.7	73.3	8.5	YES	74.8	69.3	4.6	YES	70.8	67.0	2.3		68.5	67.0	2.2		68.5	8.5		74.8
63B	2	Astoria Houses Building 10	65.2	66.7	67.7	2.4		69.2	68.0	2.8		69.5	75.6	10.4	YES	77.1	70.6	5.3	YES	72.1	67.5	2.3		69.0	67.5	2.2		69.0	10.4		77.1
63B	3	Astoria Houses Building 10	64.9	66.4	68.4	3.5	YES	69.9	68.6	3.7	YES	70.1	78.1	13.2	YES	79.6	71.7	6.7	YES	73.2	67.3	2.3		68.8	67.3	2.2		68.8	13.2		79.6
63B	4	Astoria Houses Building 10	64.5	66.0	68.6	4.0	YES	70.1	69.3	4.7	YES	70.8	79.3	14.7	YES	80.8	72.7	8.1	YES	74.2	67.1	2.5		68.6	67.1	2.2		68.6	14.7		80.8
63B	5	Astoria Houses Building 10	64.1	65.6	68.7	4.5	YES	70.2	69.4	5.3	YES	70.9	79.7	15.4																	

64B	4	Astoria Houses Building 11	54.3	55.8	59.7	5.0		61.2	57.1	2.4		58.6	76.7	21.3	YES	78.2	67.8	13.3	YES	69.3	64.9	10.5	YES	66.4	64.9	10.3	YES	66.4	21.3		78.2
64B	5	Astoria Houses Building 11	54.9	56.4	60.3	5.0		61.8	58.0	2.7		59.5	76.7	20.6	YES	78.2	69.0	13.9	YES	70.5	65.4	10.4	YES	66.9	65.4	10.2	YES	66.9	20.6		78.2
64B	6	Astoria Houses Building 11	55.4	56.9	61.5	5.7	YES	63.0	58.9	3.2		60.4	76.8	20.0	YES	78.3	69.6	14.0	YES	71.1	66.0	10.5	YES	67.5	66.0	10.3	YES	67.5	20.0		78.3
64B	7	Astoria Houses Building 11	56.2	57.7	63.1	6.5	YES	64.6	61.4	5.0		62.9	77.3	19.8	YES	78.8	71.3	15.0	YES	72.8	70.9	14.7	YES	72.4	70.9	14.5	YES	72.4	19.8	21.3	78.8
64C	1	Astoria Houses Building 11	53.3	54.8	54.3	0.8		55.8	55.0	1.4		56.5	57.5	3.7		59.0	57.2	3.4		58.7	64.9	11.3	YES	66.4	64.9	10.6	YES	66.4	11.3		66.4
64C	2	Astoria Houses Building 11	53.3	54.8	54.4	0.9		55.9	55.2	1.6		56.7	58.0	4.1		59.5	57.6	3.7		59.1	66.8	13.1	YES	68.3	66.8	12.3	YES	68.3	13.1		68.3
64C	3	Astoria Houses Building 11	53.3	54.8	54.6	1.0		56.1	55.4	1.7		56.9	63.4	9.3	YES	64.9	57.7	3.8		59.2	66.9	13.0	YES	68.4	66.9	12.1	YES	68.4	13.0		68.4
64C	4	Astoria Houses Building 11	53.3	54.8	54.9	1.2		56.4	55.6	1.9		57.1	63.7	9.3	YES	65.2	62.9	9.0	YES	64.4	67.0	12.9	YES	68.5	67.0	11.4	YES	68.5	12.9		68.5
64C	5	Astoria Houses Building 11	53.3	54.8	55.1	1.4		56.6	55.9	2.2		57.4	63.9	9.4	YES	65.4	63.6	9.7	YES	65.1	67.2	13.1	YES	68.7	67.1	11.3	YES	68.6	13.1		68.7
64C	6	Astoria Houses Building 11	53.3	54.8	55.4	1.7		56.9	56.3	2.5		57.8	64.1	9.5	YES	65.6	64.0	10.0	YES	65.5	67.3	13.1	YES	68.8	67.3	11.4	YES	68.8	13.1		68.8
64C	7	Astoria Houses Building 11	54.3	55.8	62.0	7.3	YES	63.5	59.9	5.2	YES	61.4	69.9	13.9	YES	71.4	67.2	12.4	YES	68.7	69.7	14.7	YES	71.2	69.7	13.1	YES	71.2	14.7	14.7	71.4
64D	1	Astoria Houses Building 11	61.5	63.0	63.6	2.1		65.1	63.7	2.2		65.2	63.9	2.4		65.4	65.2	3.7	YES	66.7	71.6	10.0	YES	73.1	71.6	10.0	YES	73.1	10.0		73.1
64D	2	Astoria Houses Building 11	62.2	63.7	64.3	2.1		65.8	64.4	2.2		65.9	64.6	2.4		66.1	66.1	3.9	YES	67.6	73.1	10.9	YES	74.6	73.1	10.8	YES	74.6	10.9		74.6
64D	3	Astoria Houses Building 11	62.0	63.5	64.1	2.1		65.6	64.2	2.2		65.7	64.5	2.4		66.0	66.1	4.0	YES	67.6	75.9	13.9	YES	77.4	75.9	13.8	YES	77.4	13.9		77.4
64D	4	Astoria Houses Building 11	61.6	63.1	63.8	2.2		65.3	63.8	2.2		65.3	64.2	2.6		65.7	67.5	5.9	YES	69.0	76.5	14.9	YES	78.0	76.5	14.9	YES	78.0	14.9		78.0
64D	5	Astoria Houses Building 11	61.2	62.7	63.3	2.1		64.8	63.5	2.3		65.0	64.0	2.8		65.5	67.7	6.5	YES	69.2	76.9	15.7	YES	78.4	76.9	15.7	YES	78.4	15.7		78.4
64D	6	Astoria Houses Building 11	60.7	62.2	62.9	2.2		64.4	63.1	2.4		64.6	63.7	2.9		65.2	67.6	6.9	YES	69.1	77.2	16.5	YES	78.7	77.2	16.4	YES	78.7	16.5		78.7
64D	7	Astoria Houses Building 11	60.3	61.8	62.8	2.4		64.3	63.3	2.9		64.8	64.8	4.4		66.3	68.1	7.8	YES	69.6	77.9	17.5	YES	79.4	77.9	17.4	YES	79.4	17.5	17.5	79.4
65A	1	Astoria Houses Building 22	53.4	55.9	57.1	3.7		59.6	58.6	5.2	YES	61.1	61.6	8.2	YES	64.1	63.8	10.2	YES	66.3	71.2	17.7	YES	73.7	71.2	17.5	YES	73.7	17.7		73.7
65A	2	Astoria Houses Building 22	54.1	56.6	57.9	3.8		60.4	59.1	5.0	YES	61.6	62.4	8.2	YES	64.9	65.1	10.8	YES	67.6	73.5	19.3	YES	76.0	73.5	19.1	YES	76.0	19.3		76.0
65A	3	Astoria Houses Building 22	54.7	57.2	58.4	3.6		60.9	59.5	4.7		62.0	62.5	7.7	YES	65.0	65.0	10.1	YES	67.5	75.9	21.2	YES	78.4	75.9	21.0	YES	78.4	21.2		78.4
65A	4	Astoria Houses Building 22	55.3	57.8	58.8	3.5		61.3	59.8	4.5		62.3	62.6	7.2	YES	65.1	65.2	9.6	YES	67.7	77.5	22.1	YES	80.0	77.5	21.9	YES	80.0	22.1		80.0
65A	5	Astoria Houses Building 22	55.9	58.4	59.2	3.2		61.7	60.1	4.2		62.6	62.9	6.9	YES	65.4	65.2	9.1	YES	67.7	78.0	22.0	YES	80.5	78.0	21.8	YES	80.5	22.0		80.5
65A	6	Astoria Houses Building 22	56.5	59.0	59.6	3.1		62.1	60.6	4.0		63.1	63.2	6.6	YES	65.7	65.2	8.5	YES	67.7	78.3	21.7	YES	80.8	78.3	21.4	YES	80.8	21.7		80.8
65A	7	Astoria Houses Building 22	57.3	59.8	60.0	2.7		62.5	61.8	4.5		64.3	64.0	6.6	YES	66.5	65.5	8.0	YES	68.0	78.2	20.8	YES	80.7	78.2	20.5	YES	80.7	20.8	22.1	80.7
65B	1	Astoria Houses Building 22	53.3	55.8	55.3	2.0		57.8	56.8	3.5		59.3	59.6	6.3	YES	62.1	56.3	2.8		58.8	66.6	13.2	YES	69.1	66.6	13.1	YES	69.1	13.2		69.1
65B	2	Astoria Houses Building 22	53.3	55.8	55.6	2.3		58.1	57.0	3.7		59.5	60.0	6.6	YES	62.5	57.0	3.4		59.5	68.2	14.8	YES	70.7	68.2	14.7	YES	70.7	14.8		70.7
65B	3	Astoria Houses Building 22	53.3	55.8	56.0	2.7		58.5	57.1	3.7		59.6	60.1	6.7	YES	62.6	57.0	3.4		59.5	70.8	17.4	YES	73.3	70.8	17.1	YES	73.3	17.4		73.3
65B	4	Astoria Houses Building 22	53.3	55.8	56.2	2.9		58.7	57.2	3.8		59.7	60.3	6.8	YES	62.8	57.2	3.5		59.7	72.8	19.4	YES	75.3	72.8	19.1	YES	75.3	19.4		75.3
65B	5	Astoria Houses Building 22	53.3	55.8	56.5	3.1		59.0	57.3	3.9		59.8	60.5	7.0	YES	63.0	57.3	3.7		59.8	73.4	19.9	YES	75.9	73.4	19.6	YES	75.9	19.9		75.9
65B	6	Astoria Houses Building 22	53.7	56.2	57.0	3.2		59.5	57.5	3.8		60.0	61.1	7.1	YES	63.6	57.8	3.8		60.3	73.6	19.7	YES	76.1	73.6	19.3	YES	76.1	19.7	19.9	76.1
65B	7	Astoria Houses Building 22	55.4	57.9	58.6	3.2		61.1	60.0	4.5		62.5	63.5	7.9	YES	66.0	62.3	6.6	YES	64.8	75.2	19.7	YES	77.7	75.2	19.3	YES	77.7	19.7		77.7
65C	1	Astoria Houses Building 22	53.3	55.8	53.5	0.1		56.0	53.6	0.3		56.1	53.9	0.5		56.4	53.8	0.4		56.3	55.8	2.4		58.3	55.8	2.3		58.3	2.4		58.3
65C	2	Astoria Houses Building 22	53.3	55.8	53.5	0.2		56.0	53.6	0.3		56.1	53.9	0.5		56.4	53.9	0.4		56.4	55.8	2.4		58.3	55.8	2.3		58.3	2.4		58.3
65C	3	Astoria Houses Building 22	53.3	55.8	53.5	0.2		56.0	53.6	0.3		56.1	53.9	0.5		56.4	53.9	0.4		56.4	56.1	2.7		58.6	56.1	2.6		58.6	2.7		58.6
65C	4	Astoria Houses Building 22	53.3	55.8	53.5	0.2		56.0	53.6	0.3		56.1	53.9	0.5		56.4	53.9	0.4		56.4	56.2	2.8		58.7	56.2	2.7		58.7	2.8		58.7
65C	5	Astoria Houses Building 22	53.3	55.8	53.5	0.2		56.0	53.6	0.3		56.1	53.9	0.5		56.4	53.9	0.4		56.4	56.2	2.9		58.7	56.2	2.7		58.7	2.9		58.7
65C	6	Astoria Houses Building 22	53.3	55.8	53.5	0.2		56.0	53.6	0.3		56.1	53.9	0.6		56.4	53.9	0.5		56.4	56.3	2.9		58.8	56.3	2.8		58.8	2.9		58.8
65C	7	Astoria Houses Building 22	53.3	55.8	55.9	2.6		58.4	57.9	4.5		60.4	59.9	6.3	YES	62.4	59.4	5.7	YES	61.9	64.0	10.4	YES	66.5	64.0	10.0	YES	66.5	10.4	10.4	66.5
65D	1	Astoria Houses Building 22	53.3	55.8	53.5	0.1		56.0	53.6	0.3		56.1	53.9	0.6		56.4	53.8	0.4		56.3	56.1	2.8		58.6	56.1	2.6		58.6	2.8		58.6
65D	2	Astoria Houses Building 22	53.3	55.8	53.5	0.1		56.0	53.6	0.3		56.1	53.9	0.6		56.4	53.9	0.5		56.4	56.3	2.9		58.8	56.2	2.7		58.7	2.9		58.8
65D	3	Astoria Houses Building 22	53.3	55.8	53.5	0.2		56.0	53.7	0.3		56.2	54.1	0.7		56.6	54.1	0.7		56.6	59.5	6.1	YES	62.0	59.5	6.0	YES	62.0	6.1		62.0
65D	4	Astoria Houses Building 22	53.3	55.8	53.5	0.2		56.0	53.8	0.4		56.3	54.2	0.9		56.7	54.3	0.9		56.8	63.4	10.1	YES	65.9	63.4	9.9	YES	65.9	10.1		65.9
65D	5	Astoria Houses Building 22	53.3	55.8	53.6	0.3		56.1	54.0	0.7		56.5	54.7	1.3		57.2	54.6	1.2		57.1	64.3	10.9	YES	66.8	64.3	10.8	YES	66.8	10.9		66.8
65D	6	Astoria Houses Building 22	53.3	55.8	53.8	0.5		56.3	54.7	1.4		57.2	55.9	2.5		58.4	55.4	1.9		57.9	64.6	11.3	YES	67.1	64.6	11.1	YES	67.1	11.3		67.1
65D	7	Astoria Houses Building 22	53.3	55.8	56.3	2.9		58.8	57.5	4.1		60.0	59.2	5.6	YES	61.7	59.9	6.2	YES	62.4	69.2	15.6	YES	71.7	69.2	15.0	YES	71.7	15.6	15.6	71.7
66A	1	Astoria Houses Building 13	60.1	61.6	60.2	0.1		61.7	61.7	1.6		63.2	60.4	0.2		61.9	60.5	0.4		62.0	62.1	2.0		63.6	62.0	1.8		63.5	2.0		63.6
66A	2	Astoria Houses Building 13	60.8	62.3	60.9	0.1		62.4	62.3	1.5		63.8	61.0	0.2		62.5	61.2	0.4		62.7	62.8	1.9		64.3	62.7	1.7		64.2	1.9</		

67A	1	Astoria Houses Building 23	53.3	55.8	58.9	5.6	YES	61.4	59.6	6.2	YES	62.1	61.1	7.7	YES	63.6	61.8	8.4	YES	64.3	66.1	12.8	YES	68.6	66.1	12.6	YES	68.6	12.8		68.6
67A	2	Astoria Houses Building 23	53.3	55.8	59.8	6.5	YES	62.3	60.1	6.8	YES	62.6	61.4	8.1	YES	63.9	62.3	8.9	YES	64.8	67.1	13.7	YES	69.6	67.1	13.6	YES	69.6	13.7		69.6
67A	3	Astoria Houses Building 23	53.3	55.8	59.9	6.6	YES	62.4	60.4	7.1	YES	62.9	61.5	8.2	YES	64.0	62.5	9.0	YES	65.0	67.6	14.2	YES	70.1	67.6	14.1	YES	70.1	14.2		70.1
67A	4	Astoria Houses Building 23	53.3	55.8	59.9	6.6	YES	62.4	60.4	7.1	YES	62.9	61.5	8.2	YES	64.0	62.6	9.2	YES	65.1	68.6	15.3	YES	71.1	68.6	15.1	YES	71.1	15.3		71.1
67A	5	Astoria Houses Building 23	53.3	55.8	60.0	6.6	YES	62.5	60.5	7.2	YES	63.0	61.6	8.2	YES	64.1	62.7	9.3	YES	65.2	70.0	16.6	YES	72.5	70.0	16.5	YES	72.5	16.6		72.5
67A	6	Astoria Houses Building 23	53.3	55.8	60.1	6.8	YES	62.6	60.6	7.2	YES	63.1	61.8	8.4	YES	64.3	62.9	9.5	YES	65.4	70.5	17.1	YES	73.0	70.5	17.0	YES	73.0	17.1		73.0
67A	7	Astoria Houses Building 23	54.1	56.6	60.4	6.2	YES	62.9	61.0	6.8	YES	63.5	62.3	7.7	YES	64.8	63.6	9.2	YES	66.1	71.6	17.2	YES	74.1	71.6	16.7	YES	74.1	17.2	17.2	74.1
67B	1	Astoria Houses Building 23	58.2	60.7	61.0	2.8		63.5	61.7	3.5		64.2	63.4	5.2	YES	65.9	64.5	6.2	YES	67.0	72.9	14.7	YES	75.4	72.9	14.7	YES	75.4	14.7		75.4
67B	2	Astoria Houses Building 23	59.5	62.0	62.2	2.7		64.7	62.7	3.2		65.2	64.3	4.8		66.8	65.5	6.0	YES	68.0	76.0	16.5	YES	78.5	76.0	16.4	YES	78.5	16.5		78.5
67B	3	Astoria Houses Building 23	60.6	63.1	63.1	2.4		65.6	63.5	2.9		66.0	64.8	4.2		67.3	66.0	5.3	YES	68.5	79.5	18.8	YES	82.0	79.5	18.8	YES	82.0	18.8		82.0
67B	4	Astoria Houses Building 23	61.0	63.5	63.4	2.4		65.9	63.8	2.8		66.3	65.1	4.1	YES	67.6	66.2	5.1	YES	68.7	80.7	19.7	YES	83.2	80.7	19.7	YES	83.2	19.7		83.2
67B	5	Astoria Houses Building 23	61.2	63.7	63.6	2.4		66.1	64.0	2.8		66.5	65.1	3.9	YES	67.6	66.2	5.0	YES	68.7	81.2	20.0	YES	83.7	81.2	20.0	YES	83.7	20.0		83.7
67B	6	Astoria Houses Building 23	61.3	63.8	63.8	2.4		66.3	64.1	2.7		66.6	65.3	4.0	YES	67.8	66.3	4.9	YES	68.8	80.7	19.3	YES	83.2	80.7	19.3	YES	83.2	19.3	20.0	83.2
67B	7	Astoria Houses Building 23	61.4	63.9	63.9	2.5		66.4	64.6	3.1		67.1	65.8	4.3	YES	68.3	67.0	5.5	YES	69.5	80.8	19.4	YES	83.3	80.8	19.3	YES	83.3	19.4	20.0	83.3
67C	1	Astoria Houses Building 23	53.3	55.8	55.6	2.3		58.1	55.6	2.2		58.1	55.8	2.4		58.3	56.1	2.5		58.6	70.7	17.3	YES	73.2	70.7	17.1	YES	73.2	17.3		73.2
67C	2	Astoria Houses Building 23	54.0	56.5	56.3	2.3		58.8	56.3	2.2		58.8	56.6	2.5		59.1	57.0	2.8		59.5	73.7	19.7	YES	76.2	73.7	19.5	YES	76.2	19.7		76.2
67C	3	Astoria Houses Building 23	54.7	57.2	57.0	2.3		59.5	57.1	2.3		59.6	57.2	2.3		59.7	57.6	2.7		60.1	78.1	23.4	YES	80.6	78.1	23.2	YES	80.6	23.4		80.6
67C	4	Astoria Houses Building 23	55.4	57.9	57.6	2.2		60.1	57.7	2.3		60.2	57.8	2.3		60.3	58.3	2.6		60.8	79.0	23.6	YES	81.5	79.0	23.4	YES	81.5	23.6		81.5
67C	5	Astoria Houses Building 23	56.0	58.5	58.2	2.2		60.7	58.4	2.3		60.9	58.5	2.4		61.0	59.1	2.9		61.6	79.4	23.4	YES	81.9	79.4	23.2	YES	81.9	23.4		81.9
67C	6	Astoria Houses Building 23	56.5	59.0	58.7	2.1		61.2	59.0	2.5		61.5	59.6	2.8		62.1	60.3	3.6		62.8	79.3	22.8	YES	81.8	79.3	22.6	YES	81.8	22.8	23.6	81.8
67C	7	Astoria Houses Building 23	57.9	60.4	61.6	3.6		64.1	62.0	4.0		64.5	63.9	5.9	YES	66.4	64.8	6.7	YES	67.3	79.8	21.9	YES	82.3	79.8	21.7	YES	82.3	21.9	23.6	82.3
67D	1	Astoria Houses Building 23	53.3	55.8	53.5	0.2		56.0	53.7	0.4		56.2	54.1	0.7		56.6	54.0	0.6		56.5	57.4	4.0		59.9	57.4	3.9		59.9	4.0		59.9
67D	2	Astoria Houses Building 23	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	54.2	0.8		56.7	54.1	0.6		56.6	57.5	4.1		60.0	57.5	4.0		60.0	4.1		60.0
67D	3	Astoria Houses Building 23	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	54.2	0.8		56.7	54.1	0.6		56.6	58.4	5.0	YES	60.9	58.4	4.9		60.9	5.0		60.9
67D	4	Astoria Houses Building 23	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	54.2	0.8		56.7	54.1	0.6		56.6	58.7	5.3	YES	61.2	58.7	5.2	YES	61.2	5.3		61.2
67D	5	Astoria Houses Building 23	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	54.2	0.8		56.7	54.1	0.7		56.6	58.8	5.5	YES	61.3	58.8	5.3	YES	61.3	5.5		61.3
67D	6	Astoria Houses Building 23	53.3	55.8	53.6	0.3		56.1	53.8	0.5		56.3	54.3	0.9		56.8	54.2	0.7		56.7	59.5	6.1	YES	62.0	59.5	6.0	YES	62.0	6.1	12.6	62.0
67D	7	Astoria Houses Building 23	53.3	55.8	57.2	3.8		59.7	57.9	4.4		60.4	59.9	6.0	YES	62.4	60.3	6.6	YES	62.8	66.0	12.6	YES	68.5	66.0	12.1	YES	68.5	12.6	12.6	68.5
68A	1	Astoria Houses Building 15	53.3	55.8	54.0	0.7		56.5	57.6	4.2		60.1	61.2	7.2	YES	63.7	56.4	2.0		58.9	59.0	4.9		61.5	59.0	4.8		61.5	7.2		63.7
68A	2	Astoria Houses Building 15	53.3	55.8	54.1	0.8		56.6	57.8	4.4		60.3	61.5	8.1	YES	64.0	56.6	2.0		59.1	59.6	6.1	YES	62.1	59.6	5.6	YES	62.1	8.1		64.0
68A	3	Astoria Houses Building 15	53.3	55.8	54.2	0.9		56.7	58.0	4.6		60.5	61.9	8.5	YES	64.4	56.6	2.1		59.1	59.6	6.2	YES	62.1	59.6	5.9	YES	62.1	8.5		64.4
68A	4	Astoria Houses Building 15	53.3	55.8	54.4	1.0		56.9	58.3	4.9		60.8	62.3	8.9	YES	64.8	56.7	2.2		59.2	60.8	7.4	YES	63.3	60.8	7.1	YES	63.3	8.9		64.8
68A	5	Astoria Houses Building 15	53.3	55.8	54.6	1.3		57.1	58.5	5.1	YES	61.0	62.6	9.2	YES	65.1	56.8	2.2		59.3	60.8	7.4	YES	63.3	60.8	7.1	YES	63.3	9.2		65.1
68A	6	Astoria Houses Building 15	53.3	55.8	54.9	1.6		57.4	59.2	5.8	YES	61.7	62.8	9.4	YES	65.3	57.1	2.2		59.6	61.7	8.2	YES	64.2	61.7	7.9	YES	64.2	9.4		65.3
68A	7	Astoria Houses Building 15	54.9	57.4	56.6	1.6		59.1	60.1	5.1	YES	62.6	63.4	8.4	YES	65.9	58.3	2.1		60.8	62.7	7.7	YES	65.2	62.7	7.4	YES	65.2	8.4	9.4	65.9
68B	1	Astoria Houses Building 15	57.3	59.8	57.6	0.3		60.1	57.8	0.5		60.3	58.3	0.8		60.8	58.4	1.0		60.9	60.8	3.5		63.3	60.6	3.1		63.1	3.5		63.3
68B	2	Astoria Houses Building 15	58.6	61.1	58.8	0.2		61.3	59.0	0.4		61.5	59.4	0.7		61.9	59.6	0.8		62.1	61.7	3.1		64.2	61.5	2.7		64.0	3.1		64.2
68B	3	Astoria Houses Building 15	59.2	61.7	59.4	0.2		61.9	59.7	0.4		62.2	59.9	0.7		62.4	60.1	0.7		62.6	62.2	3.0		64.7	62.0	2.6		64.5	3.0		64.7
68B	4	Astoria Houses Building 15	59.4	61.9	59.7	0.3		62.2	59.8	0.4		62.3	60.2	0.8		62.7	60.3	0.7		62.8	62.5	3.0		65.0	62.2	2.7		64.7	3.0		65.0
68B	5	Astoria Houses Building 15	59.6	62.1	59.9	0.3		62.4	60.1	0.4		62.6	60.5	0.9		63.0	60.6	0.7		63.1	62.7	3.0		65.2	62.4	2.7		64.9	3.0		65.2
68B	6	Astoria Houses Building 15	59.7	62.2	60.2	0.5		62.7	60.2	0.5		62.7	60.8	1.1		63.3	60.8	0.7		63.3	62.8	3.1		65.3	62.5	2.7		65.0	3.1		65.3
68B	7	Astoria Houses Building 15	60.5	63.0	61.1	0.6		63.6	61.1	0.6		63.6	62.1	1.6		64.6	62.0	1.1		64.5	64.6	4.0		67.1	64.4	3.8		66.9	4.0	4.0	67.1
68C	1	Astoria Houses Building 15	56.8	59.3	56.9	0.1		59.4	57.1	0.2		59.6	57.2	0.4		59.7	57.2	0.3		59.7	57.5	0.7		60.0	57.5	0.5		60.0	0.7		60.0
68C	2	Astoria Houses Building 15	57.5	60.0	57.6	0.1		60.1	57.7	0.2		60.2	57.9	0.3		60.4	57.8	0.2		60.3	58.2	0.6		60.7	58.1	0.5		60.6	0.6		60.7
68C	3	Astoria Houses Building 15	58.1	60.6	58.2	0.1		60.7	58.3	0.2		60.8	58.4	0.3		60.9	58.4	0.2		60.9	58.7	0.6		61.2	58.7	0.5		61.2	0.6		61.2
68C	4	Astoria Houses Building 15	58.4	60.9	58.5	0.1		61.0	58.6	0.2		61.1	58.7	0.3		61.2	58.7	0.2		61.2	59.0	0.6		61.5	59.0	0.5		61.5	0.6		61.5
68C	5	Astoria Houses Building 15	58.9	61.4	59.0	0.1		61.5	59.1	0.2		61.6	59.2	0.3		61.7	59.1	0.2		61.6	59.6	0.6		62.1	59.6	0.5		62.1	0.6		62.1
68C	6	Astoria Houses Building 15	59.3	61.8	59.4	0.1		61.9	59.5	0.2		62.0	59.6	0.3		62.1	59.6	0.2		62.1	60.1	0.7		62.6	60.1	0.6		62.6	0.7		62.6
68C	7	Astoria Houses Building 15	60.3	62.8	60.7	0.4																									

69C	5	Astoria Houses Building 16	60.3	62.8	60.4	0.1		62.9	60.4	0.1		62.9	60.5	0.2		63.0	60.5	0.1		63.0	60.6	0.2		63.1	60.6	0.2		63.1	0.2					63.1
69C	6	Astoria Houses Building 16	60.8	63.3	60.9	0.1		63.4	60.9	0.1		63.4	61.0	0.2		63.5	61.0	0.1		63.5	61.0	0.2		63.5	61.0	0.2		63.5	0.2					63.5
69C	7	Astoria Houses Building 16	61.8	64.3	62.1	0.3		64.6	62.2	0.3		64.7	62.5	0.7		65.0	62.2	0.2		64.7	63.8	2.0		66.3	63.8	1.8		66.3	2.0					66.3
69D	1	Astoria Houses Building 16	53.3	55.8	53.4	0.1		55.9	53.7	0.3		56.2	53.9	0.6		56.4	53.9	0.4		56.4	60.2	6.8	YES	62.7	60.2	6.6	YES	62.7	6.8					62.7
69D	2	Astoria Houses Building 16	53.3	55.8	53.4	0.1		55.9	53.7	0.3		56.2	53.9	0.6		56.4	53.9	0.4		56.4	60.4	7.0	YES	62.9	60.4	6.8	YES	62.9	7.0					62.9
69D	3	Astoria Houses Building 16	53.3	55.8	53.4	0.1		55.9	53.7	0.3		56.2	53.9	0.6		56.4	53.9	0.4		56.4	60.7	7.3	YES	63.2	60.7	7.0	YES	63.2	7.3					63.2
69D	4	Astoria Houses Building 16	53.3	55.8	53.5	0.1		56.0	53.7	0.3		56.2	53.9	0.6		56.4	53.9	0.5		56.4	61.2	7.8	YES	63.7	61.2	7.5	YES	63.7	7.8					63.7
69D	5	Astoria Houses Building 16	53.3	55.8	53.5	0.1		56.0	53.7	0.3		56.2	53.9	0.6		56.4	53.9	0.5		56.4	61.4	8.0	YES	63.9	61.4	7.8	YES	63.9	8.0					63.9
69D	6	Astoria Houses Building 16	53.3	55.8	53.5	0.1		56.0	53.7	0.4		56.2	54.0	0.6		56.5	53.9	0.5		56.4	61.9	8.5	YES	64.4	61.9	8.3	YES	64.4	8.5					64.4
69D	7	Astoria Houses Building 16	54.7	57.2	55.8	1.1		58.3	56.8	2.0		59.3	58.5	3.7		61.0	56.1	0.5		58.6	63.9	9.1	YES	66.4	63.9	8.8	YES	66.4	9.1					66.4
70A	1	Astoria Houses Building 17	53.3	55.8	53.9	0.6		56.4	55.2	1.8		57.7	56.5	3.2		59.0	54.0	0.5		56.5	55.5	2.1		58.0	55.5	1.9		58.0	3.2					59.0
70A	2	Astoria Houses Building 17	53.3	55.8	54.0	0.7		56.5	55.4	2.0		57.9	56.8	3.4		59.3	54.1	0.6		56.6	55.7	2.3		58.2	55.7	2.1		58.2	3.4					59.3
70A	3	Astoria Houses Building 17	53.3	55.8	54.2	0.9		56.7	55.7	2.3		58.2	57.0	3.6		59.5	54.1	0.6		56.6	55.9	2.5		58.4	55.9	2.3		58.4	3.6					59.5
70A	4	Astoria Houses Building 17	53.3	55.8	54.4	1.0		56.9	55.8	2.5		58.3	57.1	3.8		59.6	54.2	0.7		56.7	56.5	3.1		59.0	56.5	2.9		59.0	3.8					59.6
70A	5	Astoria Houses Building 17	53.3	55.8	54.6	1.2		57.1	56.0	2.6		58.5	57.4	4.0		59.9	54.5	0.7		57.0	57.1	3.7		59.6	57.1	3.4		59.6	4.0					59.9
70A	6	Astoria Houses Building 17	53.3	55.8	54.8	1.4		57.3	56.2	2.7		58.7	57.6	4.2		60.1	54.8	0.7		57.3	57.7	4.3		60.2	57.7	3.9		60.2	4.3					60.2
70A	7	Astoria Houses Building 17	53.3	55.8	55.2	1.8		57.7	56.5	2.9		59.0	57.9	4.5		60.4	55.1	0.8		57.6	59.0	5.5	YES	61.5	58.9	4.9		61.4	5.5					61.5
70B	1	Astoria Houses Building 17	55.3	57.8	55.5	0.2		58.0	55.6	0.3		58.1	55.8	0.4		58.3	56.1	0.3		58.6	57.7	2.3		60.2	57.5	1.9		60.0	2.3					60.2
70B	2	Astoria Houses Building 17	56.0	58.5	56.2	0.2		58.7	56.3	0.3		58.8	56.5	0.4		59.0	56.7	0.3		59.2	58.3	2.1		60.8	58.1	1.6		60.6	2.1					60.8
70B	3	Astoria Houses Building 17	56.5	59.0	56.7	0.2		59.2	56.8	0.3		59.3	56.9	0.4		59.4	57.2	0.3		59.7	58.7	2.0		61.2	58.5	1.7		61.0	2.0					61.2
70B	4	Astoria Houses Building 17	57.1	59.6	57.3	0.2		59.8	57.4	0.3		59.9	57.5	0.4		60.0	57.8	0.3		60.3	59.1	1.9		61.6	58.9	1.5		61.4	1.9					61.6
70B	5	Astoria Houses Building 17	57.6	60.1	57.9	0.2		60.4	58.0	0.3		60.5	58.1	0.5		60.6	58.2	0.3		60.7	59.7	2.0		62.2	59.5	1.6		62.0	2.0					62.2
70B	6	Astoria Houses Building 17	58.1	60.6	58.4	0.3		60.9	58.5	0.4		61.0	58.8	0.6		61.3	58.7	0.3		61.2	60.1	1.9		62.6	60.0	1.5		62.5	1.9					62.6
70B	7	Astoria Houses Building 17	58.8	61.3	59.3	0.5		61.8	59.5	0.6		62.0	59.9	1.0		62.4	59.4	0.3		61.9	62.4	3.5		64.9	62.3	3.1		64.8	3.5					64.9
70C	1	Astoria Houses Building 17	54.3	56.8	54.5	0.2		57.0	54.6	0.3		57.1	54.8	0.4		57.3	54.7	0.3		57.2	55.0	0.6		57.5	55.0	0.5		57.5	0.6					57.5
70C	2	Astoria Houses Building 17	54.9	57.4	55.1	0.2		57.6	55.2	0.3		57.7	55.3	0.4		57.8	55.3	0.3		57.8	55.6	0.6		58.1	55.6	0.4		58.1	0.6					58.1
70C	3	Astoria Houses Building 17	55.6	58.1	55.8	0.2		58.3	55.9	0.3		58.4	56.0	0.4		58.5	56.0	0.3		58.5	56.2	0.5		58.7	56.2	0.4		58.7	0.5					58.7
70C	4	Astoria Houses Building 17	56.2	58.7	56.4	0.2		58.9	56.5	0.2		59.0	56.5	0.3		59.0	56.6	0.3		59.1	56.7	0.5		59.2	56.7	0.4		59.2	0.5					59.2
70C	5	Astoria Houses Building 17	56.8	59.3	57.0	0.2		59.5	57.0	0.2		59.5	57.1	0.3		59.6	57.1	0.2		59.6	57.3	0.4		59.8	57.3	0.4		59.8	0.4					59.8
70C	6	Astoria Houses Building 17	57.2	59.7	57.4	0.2		59.9	57.4	0.2		59.9	57.5	0.3		60.0	57.5	0.2		60.0	57.7	0.4		60.2	57.7	0.3		60.2	0.4					60.2
70C	7	Astoria Houses Building 17	57.9	60.4	58.5	0.5		61.0	58.7	0.7		61.2	59.0	1.0		61.5	58.6	0.3		61.1	59.8	1.7		62.3	59.7	1.2		62.2	1.7					62.3
70D	1	Astoria Houses Building 17	53.3	55.8	53.4	0.1		55.9	53.6	0.2		56.1	53.7	0.4		56.2	53.7	0.3		56.2	54.3	0.9		56.8	54.3	0.7		56.8	0.9					56.8
70D	2	Astoria Houses Building 17	53.3	55.8	53.4	0.1		55.9	53.6	0.2		56.1	53.8	0.4		56.3	53.7	0.3		56.2	54.4	1.0		56.9	54.4	0.8		56.9	1.0					56.9
70D	3	Astoria Houses Building 17	53.3	55.8	53.4	0.1		55.9	53.6	0.2		56.1	53.8	0.4		56.3	53.7	0.3		56.2	54.5	1.1		57.0	54.5	0.9		57.0	1.1					57.0
70D	4	Astoria Houses Building 17	53.3	55.8	53.4	0.1		55.9	53.6	0.2		56.1	53.8	0.4		56.3	53.7	0.3		56.2	54.7	1.3		57.2	54.7	1.1		57.2	1.3					57.2
70D	5	Astoria Houses Building 17	53.3	55.8	53.4	0.1		55.9	53.6	0.2		56.1	53.8	0.4		56.3	53.7	0.3		56.2	55.3	1.9		57.8	55.3	1.7		57.8	1.9					57.8
70D	6	Astoria Houses Building 17	53.3	55.8	53.4	0.1		55.9	53.6	0.3		56.1	53.8	0.4		56.3	53.7	0.3		56.2	55.6	2.2		58.1	55.6	2.0		58.1	2.2					58.1
70D	7	Astoria Houses Building 17	53.3	55.8	55.1	1.6		57.6	56.2	2.6		58.7	57.5	4.1		60.0	54.9	0.6		57.4	57.3	3.8		59.8	57.2	3.1		59.7	4.1					60.0
71A	1	Astoria Houses Building 18	53.3	55.8	53.9	0.6		56.4	55.5	2.1		58.0	54.9	1.6		57.4	55.3	1.8		57.8	65.2	11.8	YES	67.7	65.2	11.5	YES	67.7	11.8					67.7
71A	2	Astoria Houses Building 18	53.3	55.8	54.1	0.7		56.6	55.6	2.2		58.1	55.2	1.8		57.7	55.6	2.0		58.1	66.0	12.6	YES	68.5	66.0	12.4	YES	68.5	12.6					68.5
71A	3	Astoria Houses Building 18	53.3	55.8	54.2	0.8		56.7	55.7	2.4		58.2	55.4	2.0		57.9	55.7	2.0		58.2	66.5	13.1	YES	69.0	66.5	12.9	YES	69.0	13.1					69.0
71A	4	Astoria Houses Building 18	53.3	55.8	54.3	1.0		56.8	55.8	2.5		58.3	55.6	2.3		58.1	55.9	2.1		58.4	67.2	13.8	YES	69.7	67.2	13.5	YES	69.7	13.8					69.7
71A	5	Astoria Houses Building 18	53.3	55.8	54.6	1.2		57.1	56.1	2.7		58.6	56.0	2.6		58.5	56.2	2.2		58.7	69.5	16.1	YES	72.0	69.5	15.8	YES	72.0	16.1					72.0
71A	6	Astoria Houses Building 18	53.3	55.8	54.9	1.6		57.4	56.5	3.1		59.0	56.5	3.1		59.0	56.4	2.3		58.9	70.2	16.8	YES	72.7	70.2	16.5	YES	72.7	16.8					72.7
71A	7	Astoria Houses Building 18	53.3	55.8	55.4	2.1		57.9	57.5	4.1		60.0	57.1	3.7		59.6	56.9	2.9		59.4	70.4	17.0	YES	72.9	70.4	16.7	YES	72.9	17.0					72.9
71B	1	Astoria Houses Building 18	53.3	55.8	53.5	0.2		56.0	53.7	0.3		56.2	54.0	0.6		56.5	54.7	0.4		57.2	58.5	5.0	YES	61.0	58.5	4.4		61.0	5.0					61.0
71B	2	Astoria Houses Building 18	53.3	55.8	53.5	0.2		56.0	53.7	0.4		56.2	54.0	0.6		56.5	54.4	0.4		56.9	59.1	5.7	YES	61.6	59.1	5.5	YES	61.6	5.7					61.6
71																																		

72B	2	Astoria Houses Building 19	53.3	55.8	53.7	0.3		56.2	53.9	0.5		56.4	54.2	0.9		56.7	54.6	0.7		57.1	55.7	2.3		58.2	55.7	2.1		58.2	2.3		58.2
72B	3	Astoria Houses Building 19	53.3	55.8	53.7	0.4		56.2	53.9	0.6		56.4	54.3	1.0		56.8	54.7	0.7		57.2	58.8	5.4	YES	61.3	58.8	5.2	YES	61.3	5.4		61.3
72B	4	Astoria Houses Building 19	53.3	55.8	53.8	0.5		56.3	54.1	0.7		56.6	54.6	1.2		57.1	54.9	0.8		57.4	60.2	6.8	YES	62.7	60.2	6.6	YES	62.7	6.8		62.7
72B	5	Astoria Houses Building 19	53.3	55.8	54.1	0.7		56.6	54.4	1.0		56.9	55.1	1.7		57.6	55.1	0.9		57.6	61.8	8.4	YES	64.3	61.8	8.2	YES	64.3	8.4		64.3
72B	6	Astoria Houses Building 19	53.3	55.8	54.6	1.2		57.1	55.0	1.6		57.5	56.1	2.8		58.6	55.4	1.1		57.9	61.9	8.5	YES	64.4	61.9	8.3	YES	64.4	8.5		64.4
72B	7	Astoria Houses Building 19	53.3	55.8	56.5	3.1		59.0	57.6	4.2		60.1	59.0	5.7	YES	61.5	56.2	1.8		58.7	67.1	13.7	YES	69.6	67.1	13.4	YES	69.6	13.7	13.7	69.6
72C	1	Astoria Houses Building 19	53.3	55.8	53.5	0.2		56.0	53.7	0.3		56.2	54.0	0.6		56.5	54.0	0.5		56.5	54.9	1.5		57.4	54.9	1.3		57.4	1.5		57.4
72C	2	Astoria Houses Building 19	53.3	55.8	53.5	0.2		56.0	53.7	0.3		56.2	54.0	0.6		56.5	54.2	0.5		56.7	54.9	1.5		57.4	54.9	1.3		57.4	1.5		57.4
72C	3	Astoria Houses Building 19	53.3	55.8	53.5	0.2		56.0	53.7	0.3		56.2	54.0	0.6		56.5	54.3	0.5		56.8	55.0	1.7		57.5	55.0	1.4		57.5	1.7		57.5
72C	4	Astoria Houses Building 19	53.3	55.8	53.5	0.2		56.0	53.7	0.3		56.2	54.0	0.6		56.5	54.3	0.5		56.8	55.1	1.7		57.6	55.1	1.5		57.6	1.7		57.6
72C	5	Astoria Houses Building 19	53.3	55.8	53.5	0.2		56.0	53.7	0.3		56.2	54.0	0.7		56.5	54.3	0.4		56.8	55.1	1.7		57.6	55.1	1.6		57.6	1.7		57.6
72C	6	Astoria Houses Building 19	53.3	55.8	53.5	0.2		56.0	53.7	0.4		56.2	54.0	0.7		56.5	54.4	0.4		56.9	55.2	1.8		57.7	55.2	1.6		57.7	1.8		57.7
72C	7	Astoria Houses Building 19	53.3	55.8	55.7	2.3		58.2	56.8	3.5		59.3	57.5	4.1		60.0	55.5	1.4		58.0	61.9	8.5	YES	64.4	61.9	8.3	YES	64.4	8.5	8.5	64.4
72D	1	Astoria Houses Building 19	53.3	55.8	53.5	0.2		56.0	53.7	0.4		56.2	54.0	0.7		56.5	54.0	0.5		56.5	64.3	10.9	YES	66.8	64.3	10.7	YES	66.8	10.9		66.8
72D	2	Astoria Houses Building 19	53.3	55.8	53.6	0.2		56.1	53.7	0.4		56.2	54.1	0.7		56.6	54.1	0.6		56.6	65.1	11.7	YES	67.6	65.1	11.5	YES	67.6	11.7		67.6
72D	3	Astoria Houses Building 19	53.3	55.8	53.6	0.2		56.1	53.7	0.4		56.2	54.1	0.7		56.6	54.1	0.6		56.6	66.2	12.8	YES	68.7	66.2	12.7	YES	68.7	12.8		68.7
72D	4	Astoria Houses Building 19	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	54.1	0.7		56.6	54.1	0.6		56.6	69.0	15.6	YES	71.5	69.0	15.5	YES	71.5	15.6		71.5
72D	5	Astoria Houses Building 19	53.3	55.8	53.6	0.2		56.1	53.8	0.4		56.3	54.1	0.7		56.6	54.1	0.6		56.6	69.7	16.3	YES	72.2	69.7	16.2	YES	72.2	16.3		72.2
72D	6	Astoria Houses Building 19	53.3	55.8	53.6	0.3		56.1	53.8	0.4		56.3	54.1	0.7		56.6	54.1	0.6		56.6	69.9	16.5	YES	72.4	69.9	16.4	YES	72.4	16.5		72.4
72D	7	Astoria Houses Building 19	53.3	55.8	55.6	2.3		58.1	56.0	2.6		58.5	56.9	3.5		59.4	56.9	2.8		59.4	70.7	17.3	YES	73.2	70.7	17.0	YES	73.2	17.3	17.3	73.2
73A	1	Astoria Houses Building 20	53.3	55.8	56.5	3.1		59.0	59.3	5.9	YES	61.8	61.1	7.7	YES	63.6	57.1	3.5		59.6	67.9	14.3	YES	70.4	67.9	14.1	YES	70.4	14.3		70.4
73A	2	Astoria Houses Building 20	53.3	55.8	57.0	3.7		59.5	59.7	6.4	YES	62.2	61.7	8.3	YES	64.2	57.7	4.0		60.2	68.8	15.3	YES	71.3	68.8	15.0	YES	71.3	15.3		71.3
73A	3	Astoria Houses Building 20	54.1	56.6	57.8	3.6		60.3	60.2	6.1	YES	62.7	62.2	8.0	YES	64.7	58.3	3.9		60.8	69.4	15.1	YES	71.9	69.4	14.8	YES	71.9	15.1		71.9
73A	4	Astoria Houses Building 20	54.4	56.9	58.1	3.7		60.6	60.5	6.1	YES	63.0	62.6	8.1	YES	65.1	58.7	4.0		61.2	71.8	17.1	YES	74.3	71.8	16.8	YES	74.3	17.1		74.3
73A	5	Astoria Houses Building 20	54.6	57.1	58.8	4.2		61.3	60.8	6.1	YES	63.3	63.2	8.5	YES	65.7	58.9	3.9		61.4	72.4	17.5	YES	74.9	72.4	17.2	YES	74.9	17.5		74.9
73A	6	Astoria Houses Building 20	54.7	57.2	59.3	4.5		61.8	61.4	6.6	YES	63.9	63.9	9.1	YES	66.4	59.2	4.1		61.7	73.1	18.0	YES	75.6	73.1	17.7	YES	75.6	18.0		75.6
73A	7	Astoria Houses Building 20	55.2	57.7	60.4	5.2	YES	62.9	62.1	6.9	YES	64.6	64.9	9.6	YES	67.4	60.4	4.8		62.9	73.7	18.2	YES	76.2	73.7	17.8	YES	76.2	18.2	18.2	76.2
73B	1	Astoria Houses Building 20	53.3	55.8	55.6	2.3		58.1	59.1	5.7	YES	61.6	61.0	7.6	YES	63.5	55.1	1.2		57.6	56.0	2.5		58.5	56.0	2.1		58.5	7.6		63.5
73B	2	Astoria Houses Building 20	53.3	55.8	56.0	2.6		58.5	59.5	6.1	YES	62.0	61.4	8.1	YES	63.9	55.2	1.3		57.7	56.3	2.9		58.8	56.3	2.6		58.8	8.1		63.9
73B	3	Astoria Houses Building 20	53.3	55.8	56.8	3.4		59.3	60.0	6.7	YES	62.5	61.8	8.4	YES	64.3	55.4	1.3		57.9	56.6	3.1		59.1	56.6	2.9		59.1	8.4		64.3
73B	4	Astoria Houses Building 20	53.3	55.8	57.0	3.7		59.5	60.3	6.9	YES	62.8	62.1	8.7	YES	64.6	55.4	1.3		57.9	56.8	3.4		59.3	56.8	3.1		59.3	8.7		64.6
73B	5	Astoria Houses Building 20	53.3	55.8	57.4	4.0		59.9	60.5	7.1	YES	63.0	62.4	9.0	YES	64.9	55.4	1.4		57.9	57.0	3.5		59.5	57.0	3.2		59.5	9.0		64.9
73B	6	Astoria Houses Building 20	53.3	55.8	57.7	4.3		60.2	60.8	7.5	YES	63.3	62.6	9.2	YES	65.1	55.7	1.4		58.2	57.1	3.6		59.6	57.1	3.3		59.6	9.2		65.1
73B	7	Astoria Houses Building 20	53.3	55.8	58.3	5.0		60.8	61.4	8.1	YES	63.9	63.9	10.5	YES	66.4	57.2	3.0		59.7	62.6	9.2	YES	65.1	62.6	8.9	YES	65.1	10.5	10.5	66.4
73C	1	Astoria Houses Building 20	53.3	55.8	53.5	0.2		56.0	53.8	0.4		56.3	54.2	0.9		56.7	54.2	0.7		56.7	55.2	1.8		57.7	55.2	1.6		57.7	1.8		57.7
73C	2	Astoria Houses Building 20	53.3	55.8	53.5	0.2		56.0	53.8	0.5		56.3	54.2	0.9		56.7	54.3	0.7		56.8	55.3	1.9		57.8	55.2	1.6		57.7	1.9		57.8
73C	3	Astoria Houses Building 20	53.3	55.8	53.5	0.2		56.0	53.8	0.5		56.3	54.3	0.9		56.8	54.6	0.6		57.1	55.7	2.3		58.2	55.7	2.1		58.2	2.3		58.2
73C	4	Astoria Houses Building 20	53.3	55.8	53.5	0.2		56.0	53.8	0.5		56.3	54.3	0.9		56.8	54.6	0.6		57.1	56.0	2.6		58.5	56.0	2.4		58.5	2.6		58.5
73C	5	Astoria Houses Building 20	53.3	55.8	53.6	0.2		56.1	53.8	0.5		56.3	54.3	0.9		56.8	54.7	0.6		57.2	56.2	2.8		58.7	56.2	2.6		58.7	2.8		58.7
73C	6	Astoria Houses Building 20	53.3	55.8	53.6	0.3		56.1	53.9	0.6		56.4	54.3	1.0		56.8	54.7	0.6		57.2	56.2	2.8		58.7	56.2	2.6		58.7	2.8		58.7
73C	7	Astoria Houses Building 20	53.3	55.8	56.7	3.3		59.2	58.5	5.1	YES	61.0	60.0	6.6	YES	62.5	55.7	1.4		58.2	62.2	8.8	YES	64.7	62.2	8.5	YES	64.7	8.8	8.8	64.7
73D	1	Astoria Houses Building 20	53.3	55.8	54.2	0.9		56.7	54.4	1.1		56.9	54.8	1.5		57.3	54.8	1.3		57.3	67.1	13.7	YES	69.6	67.1	13.5	YES	69.6	13.7		69.6
73D	2	Astoria Houses Building 20	53.3	55.8	54.3	1.0		56.8	54.5	1.2		57.0	54.9	1.6		57.4	54.9	1.4		57.4	68.2	14.8	YES	70.7	68.2	14.6	YES	70.7	14.8		70.7
73D	3	Astoria Houses Building 20	53.3	55.8	54.5	1.1		57.0	54.7	1.3		57.2	55.0	1.6		57.5	55.0	1.5		57.5	68.8	15.4	YES	71.3	68.8	15.2	YES	71.3	15.4		71.3
73D	4	Astoria Houses Building 20	53.3	55.8	54.6	1.2		57.1	54.8	1.4		57.3	55.1	1.8		57.6	55.1	1.6		57.6	71.6	18.2	YES	74.1	71.6	18.0	YES	74.1	18.2		74.1
73D	5	Astoria Houses Building 20	53.3	55.8	54.7	1.4		57.2	54.9	1.6		57.4	55.3	1.9		57.8	55.2	1.8		57.7	72.2	18.8	YES	74.7	72.2	18.6	YES	74.7	18.8		74.7
73D	6	Astoria Houses Building 20	53.3	55.8	54.9	1.5		57.4	55.1	1.8		57.6	55.4	2.0		57.9	55.3	1.8		57.8	72.7	19.3	YES	75.2	72.7	19.0	YES	75.2	19.3		75.2
73D	7	Astoria Houses Building 20	53.3	55.8	58.1	4.7		60.6	58.6	5.2	YES	61.1	60.1	6.7	YES	62.6	57.7	3.6		60.2	73.3	19.9	YES	75.8	73.3	19.6	YES	75.8	19.9	19.9	75.8
74A	1	Astoria Houses Building 21	53.3	55.8	55.3	2.0		57.8	56.7	3.3		59.2	58.5	5.1</																	

74D	6	Astoria Houses Building 21	53.3	55.8	53.5	0.2		56.0	53.6	0.3		56.1	54.6	1.2		57.1	55.5	2.1		58.0	59.3	6.0	YES		61.8	59.3	5.9	YES		61.8	6.0		
74D	7	Astoria Houses Building 21	53.3	55.8	54.3	1.0		56.8	55.9	2.6		58.4	58.3	4.9		60.8	57.4	3.9		59.9	63.4	10.0	YES		65.9	63.4	9.8	YES		65.9	10.0	10.0	65.9
75A	1	4-57 26th Avenue	75.0	76.2	75.0	0.0		76.2	75.0	0.0		76.2	75.0	0.0		76.2	75.0	0.0		76.2	75.0	0.0			76.2	75.0	-27.5		76.2	0.0		76.2	
75A	2	4-57 26th Avenue	75.9	77.1	75.9	0.0		77.1	75.9	0.0		77.1	75.9	0.0		77.1	75.9	0.0		77.1	75.9	0.0			77.1	75.9	-23.9		77.1	0.0		77.1	
75A	3	4-57 26th Avenue	76.8	78.0	76.8	0.0		78.0	76.8	0.0		78.0	76.8	0.0		78.0	76.8	0.0		78.0	76.8	0.0			78.0	76.8	-21.0		78.0	0.0		78.0	
75A	4	4-57 26th Avenue	77.1	78.3	77.1	0.0		78.3	77.1	0.0		78.3	77.1	0.0		78.3	77.1	0.0		78.3	77.1	0.0			78.3	77.1	-19.4		78.3	0.0		78.3	
75A	5	4-57 26th Avenue	77.0	78.2	77.0	0.0		78.2	77.0	0.0		78.2	77.0	0.0		78.2	77.0	0.0		78.2	77.0	0.0			78.2	77.0	-18.6		78.2	0.0		78.2	
75A	6	4-57 26th Avenue	76.9	78.1	76.9	0.0		78.1	76.9	0.0		78.1	76.9	0.0		78.1	76.9	0.0		78.1	76.9	0.0			78.1	76.9	-17.8		78.1	0.0		78.1	
75A	7	4-57 26th Avenue	76.4	77.6	76.4	0.0		77.6	76.4	0.0		77.6	76.4	0.0		77.6	76.4	0.0		77.6	76.4	0.0			77.6	76.4	-17.5		77.6	0.0		77.6	
75A	8	4-57 26th Avenue	76.2	77.4	76.2	0.0		77.4	76.2	0.0		77.4	76.2	0.0		77.4	76.2	0.0		77.4	76.2	0.0			77.4	76.2	-16.9		77.4	0.0		77.4	
75B	1	4-57 26th Avenue	70.3	71.5	70.3	0.0		71.5	70.3	0.0		71.5	70.3	0.0		71.5	70.3	0.0		71.5	70.3	0.0			71.5	70.3	-0.4		71.5	0.0		71.5	
75B	2	4-57 26th Avenue	72.4	73.6	72.4	0.0		73.6	72.4	0.0		73.6	72.4	0.0		73.6	72.4	0.0		73.6	72.4	0.0			73.6	72.4	-0.3		73.6	0.0		73.6	
75B	3	4-57 26th Avenue	73.7	74.9	73.7	0.0		74.9	73.7	0.0		74.9	73.7	0.0		74.9	73.7	0.0		74.9	73.7	0.0			74.9	73.7	-0.3		74.9	0.0		74.9	
75B	4	4-57 26th Avenue	74.5	75.7	74.5	0.0		75.7	74.5	0.0		75.7	74.5	0.0		75.7	74.5	0.0		75.7	74.5	0.0			75.7	74.5	-0.3		75.7	0.0		75.7	
75B	5	4-57 26th Avenue	75.5	76.7	75.5	0.0		76.7	75.5	0.0		76.7	75.5	0.0		76.7	75.5	0.0		76.7	75.5	0.0			76.7	75.5	-0.3		76.7	0.0		76.7	
75B	6	4-57 26th Avenue	76.5	77.7	76.5	0.0		77.7	76.5	0.0		77.7	76.5	0.0		77.7	76.5	0.0		77.7	76.5	0.0			77.7	76.5	-0.3		77.7	0.0		77.7	
75B	7	4-57 26th Avenue	77.4	78.6	77.4	0.0		78.6	77.4	0.0		78.6	77.4	0.0		78.6	77.4	0.0		78.6	77.4	0.0			78.6	77.4	-0.2		78.6	0.0		78.6	
75B	8	4-57 26th Avenue	77.2	78.4	77.2	0.0		78.4	77.2	0.0		78.4	77.2	0.0		78.4	77.2	0.0		78.4	77.2	0.0			78.4	77.2	-0.2		78.4	0.0		78.4	
75C	1	4-57 26th Avenue	93.7	94.9	93.7	0.0		94.9	93.7	0.0		94.9	93.7	0.0		94.9	93.7	0.0		94.9	93.7	0.0			94.9	93.7	0.0		94.9	0.0		94.9	
75C	2	4-57 26th Avenue	92.5	93.7	92.5	0.0		93.7	92.5	0.0		93.7	92.5	0.0		93.7	92.5	0.0		93.7	92.5	0.0			93.7	92.5	-0.3		93.7	0.0		93.7	
75C	3	4-57 26th Avenue	90.8	92.0	90.8	0.0		92.0	90.8	0.0		92.0	90.8	0.0		92.0	90.8	0.0		92.0	90.8	0.0			92.0	90.8	-0.5		92.0	0.0		92.0	
75C	4	4-57 26th Avenue	89.1	90.3	89.1	0.0		90.3	89.1	0.0		90.3	89.1	0.0		90.3	89.1	0.0		90.3	89.1	0.0			90.3	89.1	-0.9		90.3	0.0		90.3	
75C	5	4-57 26th Avenue	87.6	88.8	87.6	0.0		88.8	87.6	0.0		88.8	87.6	0.0		88.8	87.6	0.0		88.8	87.6	0.0			88.8	87.6	-1.2		88.8	0.0		88.8	
75C	6	4-57 26th Avenue	86.2	87.4	86.2	0.0		87.4	86.2	0.0		87.4	86.2	0.0		87.4	86.2	0.0		87.4	86.2	0.0			87.4	86.2	-1.6		87.4	0.0		87.4	
75C	7	4-57 26th Avenue	84.9	86.1	84.9	0.0		86.1	84.9	0.0		86.1	84.9	0.0		86.1	84.9	0.0		86.1	84.9	0.0			86.1	84.9	-2.0		86.1	0.0		86.1	
75C	8	4-57 26th Avenue	83.9	85.1	83.9	0.0		85.1	83.9	0.0		85.1	83.9	0.0		85.1	83.9	0.0		85.1	83.9	0.0			85.1	83.9	-2.4		85.1	0.0		85.1	
76A	1	8-51 26th Avenue	64.9	66.1	64.9	0.0		66.1	64.9	0.0		66.1	64.9	0.0		66.1	64.9	0.0		66.1	64.9	0.0			66.1	64.9	-0.3		66.1	0.0		66.1	
76A	2	8-51 26th Avenue	65.6	66.8	65.6	0.0		66.8	65.6	0.0		66.8	65.6	0.0		66.8	65.6	0.0		66.8	65.6	0.0			66.8	65.6	-0.2		66.8	0.0		66.8	
76A	3	8-51 26th Avenue	66.0	67.2	66.0	0.0		67.2	66.0	0.0		67.2	66.0	0.0		67.2	66.0	0.0		67.2	66.0	0.0			67.2	66.0	-0.2		67.2	0.0		67.2	
76A	4	8-51 26th Avenue	66.3	67.5	66.3	0.0		67.5	66.3	0.0		67.5	66.3	0.0		67.5	66.3	0.0		67.5	66.3	0.0			67.5	66.3	-0.2		67.5	0.0		67.5	
76A	5	8-51 26th Avenue	66.6	67.8	66.6	0.0		67.8	66.6	0.0		67.8	66.6	0.0		67.8	66.6	0.0		67.8	66.6	0.0			67.8	66.6	-0.2		67.8	0.0		67.8	
76A	6	8-51 26th Avenue	66.9	68.1	66.9	0.0		68.1	66.9	0.0		68.1	66.9	0.0		68.1	66.9	0.0		68.1	66.9	0.0			68.1	66.9	-0.2		68.1	0.0		68.1	
76A	7	8-51 26th Avenue	67.2	68.4	67.2	0.0		68.4	67.2	0.0		68.4	67.2	0.0		68.4	67.2	0.0		68.4	67.2	0.0			68.4	67.2	-0.2		68.4	0.0		68.4	
76A	8	8-51 26th Avenue	67.4	68.6	67.4	0.0		68.6	67.4	0.0		68.6	67.4	0.0		68.6	67.4	0.0		68.6	67.4	0.0			68.6	67.4	-0.2		68.6	0.0		68.6	
76A	9	8-51 26th Avenue	67.6	68.8	67.6	0.0		68.8	67.6	0.0		68.8	67.6	0.0		68.8	67.6	0.0		68.8	67.6	0.0			68.8	67.6	-0.2		68.8	0.0		68.8	
76A	10	8-51 26th Avenue	67.9	69.1	67.9	0.0		69.1	67.9	0.0		69.1	67.9	0.0		69.1	67.9	0.0		69.1	67.9	0.0			69.1	67.9	-0.2		69.1	0.0		69.1	
76A	11	8-51 26th Avenue	68.2	69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0			69.4	68.2	-0.1		69.4	0.0		69.4	
76A	12	8-51 26th Avenue	68.3	69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0			69.5	68.3	-0.1		69.5	0.0		69.5	
76A	13	8-51 26th Avenue	68.2	69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0			69.4	68.2	-0.2		69.4	0.0		69.4	
76A	14	8-51 26th Avenue	68.2	69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0			69.4	68.2	-0.2		69.4	0.0		69.4	
76A	15	8-51 26th Avenue	68.1	69.3	68.1	0.0		69.3	68.1	0.0		69.3	68.1	0.0		69.3	68.1	0.0		69.3	68.1	0.0			69.3	68.1	-0.2		69.3	0.0		69.3	
76A	16	8-51 26th Avenue	68.0	69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0			69.2	68.0	-0.2		69.2	0.0		69.2	
76A	17	8-51 26th Avenue	68.0	69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0			69.2	68.0	-0.2		69.2	0.0		69.2	
76A	18	8-51 26th Avenue	67.9	69.1	67.9	0.0		69.1	67.9	0.0		69.1	67.9	0.0		69.1	67.9	0.0		69.1	67.9	0.0			69.1	67.9	-0.2		69.1	0.0		69.1	
76A	19	8-51 26th Avenue	67.8	69.0	67.8	0.0		69.0	67.8	0.0		69.0	67.8	0.0		69.0	67.8	0.0		69.0	67.8	0.0			69.0	67.8	-0.2		69.0	0.0		69.0	
76A	20	8-51 26th Avenue	67.7	68.9	67.7	0.0		68.9	67.7	0.0		68.9	67.7	0.0		68.9	67.7	0.0		68.9	67.7	0.0			68.9	67.7	-0.2		68.9	0.0		68.9	
76A	21	8-51 26th Avenue	67.7	68.9	67.7	0.0		68.9	67.7	0.0		68.9	67.7	0.0		68.9	67.7	0.0		68.9	67.7	0.0			68.9	67.7	-0.2		68.9	0.0		68.9	
76A	22	8-51 26th Avenue	67.6	68.8	67.6	0.0		68.8	67.6	0.0		68.8	67.6	0.0		68.8	67.6	0.0		68.8	67.6	0.0			68.8	67.6	-0.2		68.8	0.0		68.8	
76A	23	8-51 26th Avenue	67.5	68.7	67.5	0.0		68.7	67.5																								

76B	19	8-51 26th Avenue	71.1	72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	-7.1		72.3	0.0		72.3
76B	20	8-51 26th Avenue	70.9	72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	-7.5		72.1	0.0		72.1
76B	21	8-51 26th Avenue	70.8	72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	-7.6		72.0	0.0		72.0
76B	22	8-51 26th Avenue	70.7	71.9	70.7	0.0		71.9	70.7	0.0		71.9	70.7	0.0		71.9	70.7	0.0		71.9	70.7	-7.9		71.9	0.0		71.9
76B	23	8-51 26th Avenue	70.5	71.7	70.5	0.0		71.7	70.5	0.0		71.7	70.5	0.0		71.7	70.5	0.0		71.7	70.5	-8.0		71.7	0.0		71.7
76B	24	8-51 26th Avenue	70.4	71.6	70.4	0.0		71.6	70.4	0.0		71.6	70.4	0.0		71.6	70.4	0.0		71.6	70.4	-8.1		71.6	0.0		71.6
76B	25	8-51 26th Avenue	70.2	71.4	70.2	0.0		71.4	70.2	0.0		71.4	70.2	0.0		71.4	70.2	0.0		71.4	70.2	-8.2		71.4	0.0		71.4
76B	26	8-51 26th Avenue	70.1	71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.1	-8.3		71.3	0.0		71.3
76B	27	8-51 26th Avenue	69.9	71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	-8.4		71.1	0.0		71.1
76B	28	8-51 26th Avenue	69.7	70.9	69.7	0.0		70.9	69.7	0.0		70.9	69.7	0.0		70.9	69.7	0.0		70.9	69.7	-8.5		70.9	0.0		70.9
76B	29	8-51 26th Avenue	69.6	70.8	69.6	0.0		70.8	69.6	0.0		70.8	69.6	0.0		70.8	69.6	0.0		70.8	69.6	-8.5		70.8	0.0		70.8
76B	30	8-51 26th Avenue	69.4	70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.4	-8.6		70.6	0.0	0.0	70.6
76C	13	8-51 26th Avenue	72.4	73.6	72.4	0.0		73.6	72.4	0.0		73.6	72.4	0.0		73.6	72.4	0.0		73.6	72.4	-1.7		73.6	0.0		73.6
76C	14	8-51 26th Avenue	72.3	73.5	72.3	0.0		73.5	72.3	0.0		73.5	72.3	0.0		73.5	72.3	0.0		73.5	72.3	-3.0		73.5	0.0		73.5
76C	15	8-51 26th Avenue	72.1	73.3	72.1	0.0		73.3	72.1	0.0		73.3	72.1	0.0		73.3	72.1	0.0		73.3	72.1	-3.8		73.3	0.0		73.3
76C	16	8-51 26th Avenue	72.0	73.2	72.0	0.0		73.2	72.0	0.0		73.2	72.0	0.0		73.2	72.0	0.0		73.2	72.0	-4.6		73.2	0.0		73.2
76C	17	8-51 26th Avenue	71.9	73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	-5.5		73.1	0.0		73.1
76C	18	8-51 26th Avenue	71.7	72.9	71.7	0.0		72.9	71.7	0.0		72.9	71.7	0.0		72.9	71.7	0.0		72.9	71.7	-6.3		72.9	0.0		72.9
76C	19	8-51 26th Avenue	71.6	72.8	71.6	0.0		72.8	71.6	0.0		72.8	71.6	0.0		72.8	71.6	0.0		72.8	71.6	-6.7		72.8	0.0		72.8
76C	20	8-51 26th Avenue	71.4	72.6	71.4	0.0		72.6	71.4	0.0		72.6	71.4	0.0		72.6	71.4	0.0		72.6	71.4	-7.1		72.6	0.0		72.6
76C	21	8-51 26th Avenue	71.3	72.5	71.3	0.0		72.5	71.3	0.0		72.5	71.3	0.0		72.5	71.3	0.0		72.5	71.3	-7.5		72.5	0.0		72.5
76C	22	8-51 26th Avenue	71.1	72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	-7.7		72.3	0.0		72.3
76C	23	8-51 26th Avenue	70.9	72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	-7.9		72.1	0.0		72.1
76C	24	8-51 26th Avenue	70.8	72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	-8.0		72.0	0.0		72.0
76C	25	8-51 26th Avenue	70.6	71.8	70.6	0.0		71.8	70.6	0.0		71.8	70.6	0.0		71.8	70.6	0.0		71.8	70.6	-8.1		71.8	0.0		71.8
76C	26	8-51 26th Avenue	70.4	71.6	70.4	0.0		71.6	70.4	0.0		71.6	70.4	0.0		71.6	70.4	0.0		71.6	70.4	-8.1		71.6	0.0		71.6
76C	27	8-51 26th Avenue	70.3	71.5	70.3	0.0		71.5	70.3	0.0		71.5	70.3	0.0		71.5	70.3	0.0		71.5	70.3	-8.1		71.5	0.0		71.5
76C	28	8-51 26th Avenue	70.1	71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.1	-8.1		71.3	0.0		71.3
76C	29	8-51 26th Avenue	69.9	71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	-8.2		71.1	0.0		71.1
76C	30	8-51 26th Avenue	69.8	71.0	69.8	0.0		71.0	69.8	0.0		71.0	69.8	0.0		71.0	69.8	0.0		71.0	69.8	-8.1		71.0	0.0	0.0	71.0
76D	13	8-51 26th Avenue	70.0	71.2	70.0	0.0		71.2	70.0	0.0		71.2	70.0	0.0		71.2	70.0	0.0		71.2	70.0	-0.2		71.2	0.0		71.2
76D	14	8-51 26th Avenue	69.9	71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	-0.2		71.1	0.0		71.1
76D	15	8-51 26th Avenue	69.8	71.0	69.8	0.0		71.0	69.8	0.0		71.0	69.8	0.0		71.0	69.8	0.0		71.0	69.8	-0.3		71.0	0.0		71.0
76D	16	8-51 26th Avenue	69.7	70.9	69.7	0.0		70.9	69.7	0.0		70.9	69.7	0.0		70.9	69.7	0.0		70.9	69.7	-0.3		70.9	0.0		70.9
76D	17	8-51 26th Avenue	69.6	70.8	69.6	0.0		70.8	69.6	0.0		70.8	69.6	0.0		70.8	69.6	0.0		70.8	69.6	-0.5		70.8	0.0		70.8
76D	18	8-51 26th Avenue	69.5	70.7	69.5	0.0		70.7	69.5	0.0		70.7	69.5	0.0		70.7	69.5	0.0		70.7	69.5	-0.7		70.7	0.0		70.7
76D	19	8-51 26th Avenue	69.4	70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.4	-0.9		70.6	0.0		70.6
76D	20	8-51 26th Avenue	69.3	70.5	69.3	0.0		70.5	69.3	0.0		70.5	69.3	0.0		70.5	69.3	0.0		70.5	69.3	-1.1		70.5	0.0		70.5
76D	21	8-51 26th Avenue	69.2	70.4	69.2	0.0		70.4	69.2	0.0		70.4	69.2	0.0		70.4	69.2	0.0		70.4	69.2	-1.7		70.4	0.0		70.4
76D	22	8-51 26th Avenue	69.1	70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	-2.2		70.3	0.0		70.3
76D	23	8-51 26th Avenue	69.0	70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	-2.6		70.2	0.0		70.2
76D	24	8-51 26th Avenue	68.9	70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	-2.9		70.1	0.0		70.1
76D	25	8-51 26th Avenue	68.8	70.0	68.8	0.0		70.0	68.8	0.0		70.0	68.8	0.0		70.0	68.8	0.0		70.0	68.8	-3.3		70.0	0.0		70.0
76D	26	8-51 26th Avenue	68.7	69.9	68.7	0.0		69.9	68.7	0.0		69.9	68.7	0.0		69.9	68.7	0.0		69.9	68.7	-3.7		69.9	0.0		69.9
76D	27	8-51 26th Avenue	68.5	69.7	68.5	0.0		69.7	68.5	0.0		69.7	68.5	0.0		69.7	68.5	0.0		69.7	68.5	-4.0		69.7	0.0		69.7
76D	28	8-51 26th Avenue	68.4	69.6	68.4	0.0		69.6	68.4	0.0		69.6	68.4	0.0		69.6	68.4	0.0		69.6	68.4	-4.2		69.6	0.0		69.6
76D	29	8-51 26th Avenue	68.3	69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	-4.4		69.5	0.0		69.5
76D	30	8-51 26th Avenue	68.2	69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	-4.6		69.4	0.0	0.0	69.4
76E	1	8-51 26th Avenue	71.9	73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	-5.7		73.1	0.0		73.1
76E	2	8-51 26th Avenue	72.5	73.7	72.5	0.0		73.7	72.5	0.0		73.7	72.5	0.0		73.7	72.5	0.0		73.7	72.5	-7.1		73.7	0.0		73.7
76E	3	8-51 26th Avenue	72.9	74.1	72.9	0.0		74.1	72.9	0.0		74.1	72.9	0.0		74.1	72.9	0.0		74.1	72.9	-9.2		74.1	0.0		74.1
76E	4	8-51 26th Avenue	73.4	74.6	73.4	0.0		74.6	73.4	0.0		74.6	73.4	0.0		74.6	73.4	0.0		74.6	73.4	-9.3		74.6	0.0		74.6
76E	5	8-51 26th Avenue	74.0	75.2	74.0	0.0		75.2	74.0	0.0		75.2	74.0	0.0		75.2	74.0	0.0		75.2	74.0	-9.2		75.2	0.0		75.2
76E	6	8-51 26th Avenue	74.0	75.2	74.0	0.0		75.2	74.0	0.0		75.2	74.0	0.0		75.2	74.0	0.0		75.2	74.0	-9.2		75.2	0.0		75.2
76E	7	8-51 26th Avenue	73.9	75.1	73.9	0.0		75.1	73.9	0.0		75.1	73.9	0.0		75.1	73.9	0.0		75.1	73.9	-9.3		75.1	0.0		75.1
76E	8	8-51 26th Avenue	73.8	75.0	73.8	0.0		75.0	73.8	0.0		75.0	73.8	0.0		75.0	73.										

76G	3	8-51 26th Avenue	66.6	67.8	66.6	0.0		67.8	66.6	0.0		67.8	66.6	0.0		67.8	66.6	0.0		67.8	66.6	-0.2	67.8	0.0		67.8
76G	4	8-51 26th Avenue	67.1	68.3	67.1	0.0		68.3	67.1	0.0		68.3	67.1	0.0		68.3	67.1	0.0		68.3	67.1	-0.2	68.3	0.0		68.3
76G	5	8-51 26th Avenue	67.5	68.7	67.5	0.0		68.7	67.5	0.0		68.7	67.5	0.0		68.7	67.5	0.0		68.7	67.5	-0.2	68.7	0.0		68.7
76G	6	8-51 26th Avenue	68.0	69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	0.0		69.2	68.0	-0.2	69.2	0.0		69.2
76G	7	8-51 26th Avenue	68.3	69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	-0.2	69.5	0.0		69.5
76G	8	8-51 26th Avenue	68.7	69.9	68.7	0.0		69.9	68.7	0.0		69.9	68.7	0.0		69.9	68.7	0.0		69.9	68.7	-0.1	69.9	0.0		69.9
76G	9	8-51 26th Avenue	68.9	70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	-0.1	70.1	0.0		70.1
76G	10	8-51 26th Avenue	69.1	70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	-0.1	70.3	0.0		70.3
76G	11	8-51 26th Avenue	69.0	70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	-0.1	70.2	0.0		70.2
76G	12	8-51 26th Avenue	69.0	70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	-0.1	70.2	0.0	0.0	70.2
77A	1	14-55 26th Avenue	65.5	66.7	65.5	0.0		66.7	65.5	0.0		66.7	65.5	0.0		67.1	65.6	0.0		66.8	65.6	-0.2	66.8	0.0		67.1
77A	2	4-55 26th Avenue	66.2	67.4	66.2	0.0		67.4	66.2	0.0		67.4	66.2	0.0		67.7	66.3	0.0		67.5	66.3	-0.2	67.5	0.0		67.7
77A	3	4-55 26th Avenue	66.8	68.0	66.8	0.0		68.0	66.8	0.0		68.0	66.8	0.0		68.0	67.1	0.0		68.3	66.9	-0.2	68.1	0.0		68.3
77A	4	4-55 26th Avenue	67.2	68.4	67.2	0.0		68.4	67.2	0.0		68.4	67.2	0.0		68.4	67.5	0.0		68.7	67.3	-0.2	68.5	0.0		68.7
77A	5	4-55 26th Avenue	67.5	68.7	67.5	0.0		68.7	67.5	0.0		68.7	67.5	0.0		68.7	67.8	0.0		69.0	67.6	-0.2	68.8	0.0		69.0
77A	6	4-55 26th Avenue	67.8	69.0	67.8	0.0		69.0	67.8	0.0		69.0	67.8	0.0		69.0	68.1	0.0		69.3	67.9	-0.1	69.1	0.0		69.3
77A	7	4-55 26th Avenue	68.2	69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.5	0.0		69.7	68.3	-0.1	69.5	0.0		69.7
77A	8	4-55 26th Avenue	68.5	69.7	68.5	0.0		69.7	68.5	0.0		69.7	68.5	0.0		69.7	68.8	0.0		70.0	68.6	-0.1	69.8	0.0		70.0
77A	9	4-55 26th Avenue	68.8	70.0	68.8	0.0		70.0	68.8	0.0		70.0	68.8	0.0		70.0	69.0	0.0		70.2	69.0	-0.2	70.2	0.0		70.2
77A	10	4-55 26th Avenue	69.1	70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.3	0.0		70.5	69.4	-0.1	70.6	0.0		70.6
77A	11	4-55 26th Avenue	69.2	70.4	69.2	0.0		70.4	69.2	0.0		70.4	69.2	0.0		70.4	69.4	0.0		70.6	69.5	-0.2	70.7	0.0		70.7
77A	12	4-55 26th Avenue	69.1	70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.4	0.0		70.6	69.5	-0.2	70.7	0.0		70.7
77A	13	4-55 26th Avenue	69.1	70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.4	0.0		70.6	69.5	-0.2	70.7	0.0		70.7
77A	14	4-55 26th Avenue	69.0	70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.3	0.0		70.5	69.5	-0.2	70.7	0.0		70.7
77A	15	4-55 26th Avenue	68.9	70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	0.0		70.1	69.2	0.0		70.4	69.5	-0.2	70.7	0.0		70.7
77A	16	4-55 26th Avenue	68.9	70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	0.0		70.1	69.2	0.0		70.4	69.6	-0.3	70.8	0.0		70.8
77A	17	4-55 26th Avenue	68.8	70.0	68.8	0.0		70.0	68.8	0.0		70.0	68.8	0.0		70.0	69.1	0.0		70.3	69.6	-0.2	70.8	0.0		70.8
77A	18	4-55 26th Avenue	68.7	69.9	68.7	0.0		69.9	68.7	0.0		69.9	68.7	0.0		69.9	69.0	0.0		70.2	69.6	-0.2	70.8	0.0		70.8
77A	19	4-55 26th Avenue	68.6	69.8	68.6	0.0		69.8	68.6	0.0		69.8	68.6	0.0		69.8	68.9	0.0		70.1	69.6	-0.1	70.8	0.0		70.8
77A	20	4-55 26th Avenue	68.5	69.7	68.5	0.0		69.7	68.5	0.0		69.7	68.5	0.0		69.7	68.8	0.0		70.0	69.5	-0.1	70.7	0.0		70.7
77A	21	4-55 26th Avenue	68.4	69.6	68.4	0.0		69.6	68.4	0.0		69.6	68.4	0.0		69.6	68.7	0.0		69.9	69.4	-0.1	70.6	0.0		70.6
77A	22	4-55 26th Avenue	68.4	69.6	68.4	0.0		69.6	68.4	0.0		69.6	68.4	0.0		69.6	68.7	0.0		69.9	69.4	-0.1	70.6	0.0		70.6
77A	23	4-55 26th Avenue	68.3	69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.3	0.0		69.5	68.6	0.0		69.8	69.3	-0.2	70.5	0.0		70.5
77A	24	4-55 26th Avenue	68.2	69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.2	0.0		69.4	68.5	0.0		69.7	69.3	-0.2	70.5	0.0	0.0	70.5
77B	1	4-55 26th Avenue	71.2	72.4	71.2	0.0		72.4	71.2	0.0		72.4	71.2	0.0		72.4	76.1	0.0		77.3	71.5	-1.3	72.7	0.0		77.3
77B	2	4-55 26th Avenue	71.5	72.7	71.5	0.0		72.7	71.5	0.0		72.7	71.5	0.0		72.7	76.8	0.0		78.0	72.3	-0.9	73.5	0.0		78.0
77B	3	4-55 26th Avenue	71.6	72.8	71.6	0.0		72.8	71.6	0.0		72.8	71.6	0.0		72.8	77.7	0.0		78.9	72.4	-1.2	73.6	0.0		78.9
77B	4	4-55 26th Avenue	71.7	72.9	71.7	0.0		72.9	71.7	0.0		72.9	71.7	0.0		72.9	78.4	0.0		79.6	72.5	-1.6	73.7	0.0		79.6
77B	5	4-55 26th Avenue	71.9	73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	0.0		73.1	79.0	0.0		80.2	72.7	-1.9	73.9	0.0		80.2
77B	6	4-55 26th Avenue	72.1	73.3	72.1	0.0		73.3	72.1	0.0		73.3	72.1	0.0		73.3	79.6	0.0		80.8	73.0	-2.0	74.2	0.0		80.8
77B	7	4-55 26th Avenue	72.1	73.3	72.1	0.0		73.3	72.1	0.0		73.3	72.1	0.0		73.3	81.0	0.0		82.2	73.2	-2.0	74.4	0.0		82.2
77B	8	4-55 26th Avenue	72.1	73.3	72.1	0.0		73.3	72.1	0.0		73.3	72.1	0.0		73.3	81.7	0.0		82.9	73.2	-2.2	74.4	0.0		82.9
77B	9	4-55 26th Avenue	72.0	73.2	72.0	0.0		73.2	72.0	0.0		73.2	72.0	0.0		73.2	81.8	0.0		83.0	73.2	-2.5	74.4	0.0		83.0
77B	10	4-55 26th Avenue	71.9	73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	0.0		73.1	81.7	0.0		82.9	73.1	-2.7	74.3	0.0		82.9
77B	11	4-55 26th Avenue	71.8	73.0	71.8	0.0		73.0	71.8	0.0		73.0	71.8	0.0		73.0	81.1	0.0		82.3	73.1	-2.7	74.3	0.0		82.3
77B	12	4-55 26th Avenue	71.7	72.9	71.7	0.0		72.9	71.7	0.0		72.9	71.7	0.0		72.9	80.4	0.0		81.6	73.0	-2.8	74.2	0.0		81.6
77B	13	4-55 26th Avenue	71.7	72.9	71.7	0.0		72.9	71.7	0.0		72.9	71.7	0.0		72.9	79.9	0.0		81.1	73.1	-2.9	74.3	0.0		81.1
77B	14	4-55 26th Avenue	71.6	72.8	71.6	0.0		72.8	71.6	0.0		72.8	71.6	0.0		72.8	79.7	0.0		80.9	73.3	-2.8	74.5	0.0		80.9
77B	15	4-55 26th Avenue	71.5	72.7	71.5	0.0		72.7	71.5	0.0		72.7	71.5	0.0		72.7	79.5	0.0		80.7	73.4	-2.5	74.6	0.0		80.7
77B	16	4-55 26th Avenue	71.4	72.6	71.4	0.0		72.6	71.4	0.0		72.6	71.4	0.0		72.6	79.4	0.0		80.6	73.4	-2.4	74.6	0.0		80.6
77B	17	4-55 26th Avenue	71.3	72.5	71.3	0.0		72.5	71.3	0.0		72.5	71.3	0.0		72.5	79.4	0.0		80.6	73.5	-2.3	74.7	0.0		80.6
77B	18	4-55 26th Avenue	71.3	72.5	71.3	0.0		72.5	71.3	0.0		72.5	71.3	0.0		72.5	79.3	0.1		80.5	73.5	-2.3	74.7	0.1		80.5
77B	19	4-55 26th Avenue	71.2	72.4	71.2	0.0		72.4	71.2	0.0		72.4	71.2	0.0		72.4	79.2	0.1		80.4	73.6	-2.3	74.8	0.1		80.4
77B	20	4-55 26th Avenue	71.1	72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	0.0		72.3	78.9	0.0		80.1	73.6	-2.5	74.8	0.0		80.1
77B	21	4-55 26th Avenue	70.9	72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	0.0		72.1	78.7	0.1		79.9	73.3	-2.9	74.5	0.1		79.9
77B	22	4-55 26th Avenue	70.8	72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	0.0		72.0	78.5	0.1		79.7	73.4	-2.8	74.6	0.1		79.7
77B	23	4-55 26th Avenue	70.7	71.9	70.7	0.0		71.9	70.7	0.0		71.9	70.7	0.0		71.9	78.3	0.1		79.5						

77E	9	4-55 26th Avenue	72.0	73.2	72.0	0.0		73.2	72.0	0.0		73.2	72.0	0.0		73.2	73.0	0.0		74.2	72.6	0.0		73.8	72.6	-1.0		73.8	0.0		74.2
77E	10	4-55 26th Avenue	72.0	73.2	72.0	0.0		73.2	72.0	0.0		73.2	72.0	0.0		73.2	73.3	0.0		74.5	73.3	0.0		74.5	73.3	-1.9		74.5	0.0		74.5
77E	11	4-55 26th Avenue	71.9	73.1	71.9	0.0		73.1	71.9	0.0		73.1	71.9	0.0		73.1	74.1	0.0		75.3	73.7	0.0		74.9	73.7	-2.5		74.9	0.0		75.3
77E	12	4-55 26th Avenue	71.8	73.0	71.8	0.0		73.0	71.8	0.0		73.0	71.8	0.0		73.0	75.6	0.0		76.8	74.1	0.0		75.3	74.1	-2.7		75.3	0.0		76.8
77E	13	4-55 26th Avenue	71.8	73.0	71.8	0.0		73.0	71.8	0.0		73.0	71.8	0.0		73.0	77.5	0.0		78.7	74.6	0.0		75.8	74.6	-2.6		75.8	0.0		78.7
77E	14	4-55 26th Avenue	71.7	72.9	71.7	0.0		72.9	71.7	0.0		72.9	71.7	0.0		72.9	78.4	0.0		79.6	74.9	0.0		76.1	74.9	-2.9		76.1	0.0		79.6
77E	15	4-55 26th Avenue	71.6	72.8	71.6	0.0		72.8	71.6	0.0		72.8	71.6	0.0		72.8	78.4	0.1		79.6	75.1	0.0		76.3	75.1	-3.0		76.3	0.1		79.6
77E	16	4-55 26th Avenue	71.6	72.8	71.6	0.0		72.8	71.6	0.0		72.8	71.6	0.0		72.8	78.3	0.0		79.5	75.6	0.0		76.8	75.6	-2.8		76.8	0.0		79.5
77E	17	4-55 26th Avenue	71.5	72.7	71.5	0.0		72.7	71.5	0.0		72.7	71.5	0.0		72.7	78.2	0.1		79.4	75.3	0.0		76.5	75.3	-3.3		76.5	0.1		79.4
77E	18	4-55 26th Avenue	71.4	72.6	71.4	0.0		72.6	71.4	0.0		72.6	71.4	0.0		72.6	77.7	0.1		78.9	75.5	0.1		76.7	75.5	-3.3		76.7	0.1		78.9
77E	19	4-55 26th Avenue	71.3	72.5	71.3	0.0		72.5	71.3	0.0		72.5	71.3	0.0		72.5	77.3	0.1		78.5	75.4	0.0		76.6	75.4	-3.5		76.6	0.1		78.5
77E	20	4-55 26th Avenue	71.2	72.4	71.2	0.0		72.4	71.2	0.0		72.4	71.2	0.0		72.4	76.9	0.1		78.1	75.4	0.0		76.6	75.4	-3.6		76.6	0.1		78.1
77E	21	4-55 26th Avenue	71.1	72.3	71.1	0.0		72.3	71.1	0.0		72.3	71.1	0.0		72.3	76.6	0.1		77.8	75.1	0.0		76.3	75.1	-4.0		76.3	0.1		77.8
77E	22	4-55 26th Avenue	71.0	72.2	71.0	0.0		72.2	71.0	0.0		72.2	71.0	0.0		72.2	76.5	0.1		77.7	75.0	0.0		76.2	75.0	-4.0		76.2	0.1		77.7
77E	23	4-55 26th Avenue	70.9	72.1	70.9	0.0		72.1	70.9	0.0		72.1	70.9	0.0		72.1	76.4	0.1		77.6	75.0	0.0		76.2	75.0	-3.9		76.2	0.1		77.6
77E	24	4-55 26th Avenue	70.8	72.0	70.8	0.0		72.0	70.8	0.0		72.0	70.8	0.0		72.0	76.2	0.1		77.4	74.9	0.1		76.1	74.9	-3.8		76.1	0.1		77.4
77F	9	4-55 26th Avenue	70.2	71.4	70.2	0.0		71.4	70.2	0.0		71.4	70.2	0.0		71.4	70.4	0.0		71.6	70.7	0.0		71.9	70.7	-0.4		71.9	0.0	0.1	71.9
77F	10	4-55 26th Avenue	70.2	71.4	70.2	0.0		71.4	70.2	0.0		71.4	70.2	0.0		71.4	70.5	0.0		71.7	70.9	0.0		72.1	70.9	-0.8		72.1	0.0		72.1
77F	11	4-55 26th Avenue	70.1	71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.1	0.0		71.3	70.5	0.0		71.7	71.4	0.0		72.6	71.4	-0.8		72.6	0.0		72.6
77F	12	4-55 26th Avenue	70.0	71.2	70.0	0.0		71.2	70.0	0.0		71.2	70.0	0.0		71.2	70.4	0.0		71.6	71.5	0.0		72.7	71.5	-0.9		72.7	0.0		72.7
77F	13	4-55 26th Avenue	70.0	71.2	70.0	0.0		71.2	70.0	0.0		71.2	70.0	0.0		71.2	70.4	0.0		71.6	71.7	0.0		72.9	71.7	-1.0		72.9	0.0		72.9
77F	14	4-55 26th Avenue	69.9	71.1	69.9	0.0		71.1	69.9	0.0		71.1	69.9	0.0		71.1	70.3	0.0		71.5	72.1	0.0		73.3	72.1	-1.0		73.3	0.0		73.3
77F	15	4-55 26th Avenue	69.8	71.0	69.8	0.0		71.0	69.8	0.0		71.0	69.8	0.0		71.0	70.2	0.0		71.4	72.3	0.0		73.5	72.3	-1.4		73.5	0.0		73.5
77F	16	4-55 26th Avenue	69.7	70.9	69.7	0.0		70.9	69.7	0.0		70.9	69.7	0.0		70.9	70.1	0.0		71.3	72.5	0.0		73.7	72.5	-1.7		73.7	0.0		73.7
77F	17	4-55 26th Avenue	69.6	70.8	69.6	0.0		70.8	69.6	0.0		70.8	69.6	0.0		70.8	70.0	0.0		71.2	72.8	0.0		74.0	72.8	-1.9		74.0	0.0		74.0
77F	18	4-55 26th Avenue	69.5	70.7	69.5	0.0		70.7	69.5	0.0		70.7	69.5	0.0		70.7	69.9	0.0		71.1	73.2	0.0		74.4	73.2	-2.0		74.4	0.0		74.4
77F	19	4-55 26th Avenue	69.4	70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.4	0.0		70.6	69.8	0.0		71.0	73.2	0.0		74.4	73.2	-2.4		74.4	0.0		74.4
77F	20	4-55 26th Avenue	69.3	70.5	69.3	0.0		70.5	69.3	0.0		70.5	69.3	0.0		70.5	69.8	0.0		71.0	73.4	0.0		74.6	73.4	-2.5		74.6	0.0		74.6
77F	21	4-55 26th Avenue	69.2	70.4	69.2	0.0		70.4	69.2	0.0		70.4	69.2	0.0		70.4	69.7	0.0		70.9	73.5	0.0		74.7	73.5	-2.4		74.7	0.0		74.7
77F	22	4-55 26th Avenue	69.1	70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.1	0.0		70.3	69.6	0.0		70.8	73.5	0.0		74.7	73.5	-2.7		74.7	0.0		74.7
77F	23	4-55 26th Avenue	69.0	70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.0	0.0		70.2	69.5	0.0		70.7	73.1	0.0		74.3	73.1	-3.3		74.3	0.0		74.3
77F	24	4-55 26th Avenue	68.9	70.1	68.9	0.0		70.1	68.9	0.0		70.1	68.9	0.0		70.1	69.4	0.0		70.6	73.1	0.0		74.3	73.1	-3.3		74.3	0.0	0.0	74.3
79A	1	Halletts Point Building 1						65.8				65.8				78.1				70.4				66.6				66.6			78.1
79A	2	Halletts Point Building 1						66.8				66.8				78.5				71.3				68.1				68.1			78.5
79A	3	Halletts Point Building 1						66.9				66.9				79.3				71.9				69.7				69.7			79.3
79A	4	Halletts Point Building 1						66.8				66.8				80.3				72.9				70.1				70.1			80.3
79A	5	Halletts Point Building 1						66.8				66.8				80.3				73.8				70.5				70.5			80.3
79A	6	Halletts Point Building 1						66.6				66.6				80.4				74.6				70.7				70.7			80.4
79A	7	Halletts Point Building 1						66.4				66.4				80.4				75.0				70.9				70.9			80.4
79A	8	Halletts Point Building 1						66.3				66.3				80.4				75.4				71.2				71.2			80.4
79A	9	Halletts Point Building 1						66.2				66.2				80.4				75.8				72.2				72.2			80.4
79A	10	Halletts Point Building 1						66.1				66.1				80.3				76.6				71.4				71.4			80.3
79A	11	Halletts Point Building 1						66.0				66.0				80.2				77.4				71.7				71.7			80.2
79A	12	Halletts Point Building 1						65.9				65.9				80.1				77.7				71.7				71.7			80.1
79A	13	Halletts Point Building 1						65.8				65.8				80.0				77.7				71.9				71.9			80.0
79A	14	Halletts Point Building 1						65.8				65.8				79.9				77.7				72.5				72.5			79.9
79A	15	Halletts Point Building 1																													

79C	17	Halletts Point Building 1	63.4	63.4	70.1	63.4	66.9	66.7	70.1
79C	18	Halletts Point Building 1	63.4	63.4	70.1	63.4	67.1	66.8	70.1
79C	19	Halletts Point Building 1	63.3	63.3	69.9	63.3	67.2	67.0	69.9
79C	20	Halletts Point Building 1	63.3	63.3	70.0	63.3	67.3	67.1	70.0
79C	21	Halletts Point Building 1	63.3	63.3	69.6	63.3	67.4	67.2	69.6
79D	1	Halletts Point Building 1	66.7	66.7	67.4	66.9	66.8	66.8	67.4
79D	2	Halletts Point Building 1	68.1	68.1	68.7	68.3	68.2	68.2	68.7
79D	3	Halletts Point Building 1	68.2	68.2	68.8	68.4	68.3	68.3	68.8
79D	4	Halletts Point Building 1	68.1	68.1	68.8	68.3	68.2	68.2	68.8
79D	5	Halletts Point Building 1	67.9	67.9	69.0	68.1	68.0	68.0	69.0
79D	6	Halletts Point Building 1	67.6	67.6	69.1	67.8	67.7	67.7	69.1
79D	7	Halletts Point Building 1	67.3	67.3	68.9	67.6	67.5	67.4	68.9
79D	8	Halletts Point Building 1	67.1	67.1	68.9	67.4	67.3	67.3	68.9
79D	9	Halletts Point Building 1	66.8	66.8	68.8	67.1	67.0	67.0	68.8
79D	10	Halletts Point Building 1	66.6	66.6	68.8	66.9	66.8	66.8	68.8
79D	11	Halletts Point Building 1	66.4	66.4	68.7	66.7	66.6	66.6	68.7
79D	12	Halletts Point Building 1	66.2	66.2	68.7	66.6	66.4	66.4	68.7
79D	13	Halletts Point Building 1	66.1	66.1	68.6	66.5	66.3	66.3	68.6
79D	14	Halletts Point Building 1	65.9	65.9	68.6	66.3	66.1	66.1	68.6
79D	15	Halletts Point Building 1	65.8	65.8	68.5	66.2	66.1	66.1	68.5
79D	16	Halletts Point Building 1	65.7	65.7	68.5	66.1	66.0	66.0	68.5
79D	17	Halletts Point Building 1	65.6	65.6	68.5	66.0	65.9	65.9	68.5
79D	18	Halletts Point Building 1	65.5	65.5	68.4	66.0	65.8	65.8	68.4
79D	19	Halletts Point Building 1	65.4	65.4	68.4	65.9	65.8	65.8	68.4
79D	20	Halletts Point Building 1	65.3	65.3	68.2	65.8	65.7	65.7	68.2
79D	21	Halletts Point Building 1	65.2	65.2	68.2	65.7	65.6	65.6	68.2
79E	5	Halletts Point Building 1	66.7	66.7	70.9	67.3	66.9	66.9	70.9
79E	6	Halletts Point Building 1	66.7	66.7	73.3	68.0	66.9	66.9	73.3
79E	7	Halletts Point Building 1	66.6	66.6	75.1	69.5	66.8	66.8	75.1
79E	8	Halletts Point Building 1	66.5	66.5	75.5	69.8	66.7	66.7	75.5
79E	9	Halletts Point Building 1	66.3	66.3	75.5	70.0	66.5	66.5	75.5
79E	10	Halletts Point Building 1	66.3	66.3	75.5	70.2	66.7	66.7	75.5
79E	11	Halletts Point Building 1	66.2	66.2	75.5	70.4	66.7	66.7	75.5
79E	12	Halletts Point Building 1	66.1	66.1	75.5	70.6	66.9	66.9	75.5
79E	13	Halletts Point Building 1	66.0	66.0	75.5	71.0	66.9	66.9	75.5
79E	14	Halletts Point Building 1	65.9	65.9	75.4	71.5	66.8	66.8	75.4
79E	15	Halletts Point Building 1	65.8	65.8	75.4	71.9	66.8	66.8	75.4
79E	16	Halletts Point Building 1	65.7	65.7	75.4	72.4	67.2	67.2	75.4
79E	17	Halletts Point Building 1	65.7	65.7	75.4	72.6	67.6	67.6	75.4
79E	18	Halletts Point Building 1	65.6	65.6	75.4	72.7	68.5	68.5	75.4
79E	19	Halletts Point Building 1	65.6	65.6	75.5	73.3	69.4	69.4	75.5
79E	20	Halletts Point Building 1	65.5	65.5	75.6	73.9	70.7	70.7	75.6
80A	1	Halletts Point Building 2	71.7	71.7	71.7	73.3	72.1	72.1	73.3
80A	2	Halletts Point Building 2	70.3	70.3	70.3	73.0	71.3	71.3	73.0
80A	3	Halletts Point Building 2	69.2	69.2	69.2	73.1	70.3	70.3	73.1
80A	4	Halletts Point Building 2	68.3	68.3	68.3	74.0	69.8	69.8	74.0
80A	5	Halletts Point Building 2	67.2	67.2	67.2	70.8	68.1	68.1	70.8
80A	6	Halletts Point Building 2	66.8	66.8	66.8	72.9	67.9	67.9	72.9
80A	7	Halletts Point Building 2	66.5	66.5	66.5	72.9	67.7	67.7	72.9
80A	8	Halletts Point Building 2	66.2	66.2	66.2	74.7	67.8	67.8	74.7
80A	9	Halletts Point Building 2	65.9	65.9	65.9	74.8	67.9	67.9	74.8
80A	10	Halletts Point Building 2	65.7	65.7	65.7	74.9	68.2	68.2	74.9
80A	11	Halletts Point Building 2	65.5	65.5	65.5	74.9	68.5	68.5	74.9
80A	12	Halletts Point Building 2	65.3	65.3	65.3	74.9	68.6	68.6	74.9
80A	13	Halletts Point Building 2	65.2	65.2	65.2	74.9	68.7	68.7	74.9
80A	14	Halletts Point Building 2	65.1	65.1	65.1	74.8	69.0	69.0	74.8
80A	15	Halletts Point Building 2	65.0	65.0	65.0	74.6	69.2	69.2	74.6
80A	16	Halletts Point Building 2	65.0	65.0	65.0	74.5	69.4	69.4	74.5
80A	17	Halletts Point Building 2	64.9	64.9	64.9	74.4	69.5	69.5	74.4
80A	18	Halletts Point Building 2	64.8	64.8	64.8	74.3	69.8	69.8	74.3
80A	19	Halletts Point Building 2	64.7	64.7	64.7	74.3	69.9	69.9	74.3
80A	20	Halletts Point Building 2	64.7	64.7	64.7	74.3	70.2	70.2	74.3
80A	21	Halletts Point Building 2	64.6	64.6	64.6	74.3	70.6	70.6	74.3
80A	22	Halletts Point Building 2	64.6	64.6	64.6	74.1	70.7	70.7	74.1
80A	23	Halletts Point Building 2	64.6	64.6	64.6	74.0	70.9	70.9	74.0
80A	24	Halletts Point Building 2	64.6	64.6	64.6	73.8	71.0	71.0	73.8
80A	25	Halletts Point Building 2	64.6	64.6	64.6	73.8	71.2	71.2	73.8
80B	1	Halletts Point Building 2	63.0	63.0	63.0	63.4	63.3	63.3	63.4
80B	2	Halletts Point Building 2	64.7	64.7	64.7	65.0	64.9	64.9	65.0
80B	3	Halletts Point Building 2	65.1	65.1	65.1	65.3	65.3	65.3	65.3
80B	4	Halletts Point Building 2	65.2	65.2	65.2	65.5	65.4	65.4	65.5
80B	5	Halletts Point Building 2	65.1	65.1	65.1	65.4	65.3	65.3	65.4
80B	6	Halletts Point Building 2	65.1	65.1	65.1	65.4	65.3	65.3	65.4
80B	7	Halletts Point Building 2	64.9	64.9	64.9	65.2	65.1	65.1	65.2

80B	8	Halletts Point Building 2	64.8	64.8	64.8	65.1	65.0	65.0	65.1
80C	1	Halletts Point Building 2	60.4	60.4	60.4	61.2	60.9	60.9	61.2
80C	2	Halletts Point Building 2	61.2	61.2	61.2	61.8	61.6	61.6	61.8
80C	3	Halletts Point Building 2	61.9	61.9	61.9	62.4	62.3	62.3	62.4
80C	4	Halletts Point Building 2	62.4	62.4	62.4	62.9	62.7	62.7	62.9
80C	5	Halletts Point Building 2	62.7	62.7	62.7	63.2	63.0	63.0	63.2
80C	6	Halletts Point Building 2	62.9	62.9	62.9	63.4	63.2	63.2	63.4
80C	7	Halletts Point Building 2	63.0	63.0	63.0	63.5	63.3	63.3	63.5
80C	8	Halletts Point Building 2	63.1	63.1	63.1	63.6	63.4	63.4	63.6
80C	9	Halletts Point Building 2	63.1	63.1	63.1	63.6	63.4	63.4	63.6
80C	10	Halletts Point Building 2	63.2	63.2	63.2	64.0	63.5	63.5	64.0
80C	11	Halletts Point Building 2	63.2	63.2	63.2	64.1	63.5	63.5	64.1
80C	12	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.6	63.6	64.4
80C	13	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.6	63.6	64.4
80C	14	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.7	63.7	64.4
80C	15	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.7	63.7	64.4
80C	16	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.7	63.7	64.4
80C	17	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.7	63.7	64.4
80C	18	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.7	63.7	64.4
80C	19	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.7	63.7	64.4
80C	20	Halletts Point Building 2	63.3	63.3	63.3	64.4	63.7	63.7	64.4
80C	21	Halletts Point Building 2	63.2	63.2	63.2	64.3	63.6	63.6	64.3
80C	22	Halletts Point Building 2	63.2	63.2	63.2	64.3	63.6	63.6	64.3
80C	23	Halletts Point Building 2	63.2	63.2	63.2	64.3	63.6	63.6	64.3
80C	24	Halletts Point Building 2	63.2	63.2	63.2	64.3	63.6	63.6	64.3
80C	25	Halletts Point Building 2	63.2	63.2	63.2	64.3	63.6	63.6	64.3
80D	1	Halletts Point Building 2	62.8	62.8	62.8	65.5	63.6	63.6	65.5
80D	2	Halletts Point Building 2	64.5	64.5	64.5	67.3	65.0	65.0	67.3
80D	3	Halletts Point Building 2	65.1	65.1	65.1	68.2	65.6	65.6	68.2
80D	4	Halletts Point Building 2	65.3	65.3	65.3	70.0	65.9	65.9	70.0
80D	5	Halletts Point Building 2	65.4	65.4	65.4	72.3	65.9	65.9	72.3
80D	6	Halletts Point Building 2	65.4	65.4	65.4	72.2	66.0	66.0	72.2
80D	7	Halletts Point Building 2	65.2	65.2	65.2	72.0	65.8	65.8	72.0
80D	8	Halletts Point Building 2	65.2	65.2	65.2	71.9	66.1	66.1	71.9
81A	1	Halletts Point Building 3	70.4	70.4	70.4	70.4	71.7	71.7	71.7
81A	2	Halletts Point Building 3	70.1	70.1	70.1	70.1	72.2	72.2	72.2
81A	3	Halletts Point Building 3	69.5	69.5	69.5	69.5	72.5	72.5	72.5
81A	4	Halletts Point Building 3	68.9	68.9	68.9	68.9	75.4	75.4	75.4
81A	5	Halletts Point Building 3	68.4	68.4	68.4	68.4	76.4	76.4	76.4
81A	6	Halletts Point Building 3	68.0	68.0	68.0	68.0	76.6	76.6	76.6
81A	7	Halletts Point Building 3	67.2	67.2	67.2	67.2	76.4	76.4	76.4
81A	8	Halletts Point Building 3	66.9	66.9	66.9	66.9	76.8	76.8	76.8
81A	9	Halletts Point Building 3	66.7	66.7	66.7	66.7	77.0	77.0	77.0
81A	10	Halletts Point Building 3	66.5	66.5	66.5	66.5	77.3	77.3	77.3
81A	11	Halletts Point Building 3	66.2	66.2	66.2	66.2	79.0	79.0	79.0
81A	12	Halletts Point Building 3	66.1	66.1	66.1	66.1	78.8	78.8	78.8
81A	13	Halletts Point Building 3	65.9	65.9	65.9	65.9	78.6	78.6	78.6
81A	14	Halletts Point Building 3	65.8	65.8	65.8	65.8	78.4	78.4	78.4
81A	15	Halletts Point Building 3	65.7	65.7	65.7	65.7	78.2	78.2	78.2
81A	16	Halletts Point Building 3	65.6	65.6	65.6	65.6	78.0	78.0	78.0
81A	17	Halletts Point Building 3	65.5	65.5	65.5	65.5	77.6	77.6	77.6
81A	18	Halletts Point Building 3	65.4	65.4	65.4	65.4	77.3	77.3	77.3
81A	19	Halletts Point Building 3	65.3	65.3	65.3	65.3	77.0	77.0	77.0
81A	20	Halletts Point Building 3	65.2	65.2	65.2	65.2	76.8	76.8	76.8
81A	21	Halletts Point Building 3	65.1	65.1	65.1	65.1	76.6	76.6	76.6
81A	22	Halletts Point Building 3	65.1	65.1	65.1	65.1	76.2	76.2	76.2
81A	23	Halletts Point Building 3	65.0	65.0	65.0	65.0	76.1	76.1	76.1
81A	24	Halletts Point Building 3	64.9	64.9	64.9	64.9	76.0	76.0	76.0
81A	25	Halletts Point Building 3	64.9	64.9	64.9	64.9	75.8	75.8	75.8
81A	26	Halletts Point Building 3	64.9	64.9	64.9	64.9	75.6	75.6	75.6
81A	27	Halletts Point Building 3	64.9	64.9	64.9	64.9	75.5	75.5	75.5
81A	28	Halletts Point Building 3	65.0	65.0	65.0	65.0	75.3	75.3	75.3
81A	29	Halletts Point Building 3	65.0	65.0	65.0	65.0	75.2	75.2	75.2
81A	30	Halletts Point Building 3	64.9	64.9	64.9	64.9	75.1	75.1	75.1
81B	1	Halletts Point Building 3	66.5	66.5	66.5	66.5	66.8	66.8	66.8
81B	2	Halletts Point Building 3	67.3	67.3	67.3	67.3	67.6	67.5	67.6
81B	3	Halletts Point Building 3	67.4	67.4	67.4	67.4	67.6	67.6	67.6
81B	4	Halletts Point Building 3	67.4	67.4	67.4	67.4	67.7	67.7	67.7
81B	5	Halletts Point Building 3	66.9	66.9	66.9	66.9	67.2	67.2	67.2
81B	6	Halletts Point Building 3	66.7	66.7	66.7	66.7	67.1	67.1	67.1
81B	7	Halletts Point Building 3	66.5	66.5	66.5	66.5	66.9	66.9	66.9
81B	8	Halletts Point Building 3	66.2	66.2	66.2	66.2	66.7	66.7	66.7
81C	1	Halletts Point Building 3	59.1	59.1	59.1	59.1	60.2	60.2	60.2
81C	2	Halletts Point Building 3	60.3	60.3	60.3	60.3	61.2	61.2	61.2

81C	3	Halletts Point Building 3	61.4	61.4	61.4	61.4	62.1	62.1	62.1
81C	4	Halletts Point Building 3	62.3	62.3	62.3	62.3	63.0	63.0	63.0
81C	5	Halletts Point Building 3	62.9	62.9	62.9	62.9	63.6	63.6	63.6
81C	6	Halletts Point Building 3	63.2	63.2	63.2	63.2	63.9	63.9	63.9
81C	7	Halletts Point Building 3	63.5	63.5	63.5	63.5	64.2	64.2	64.2
81C	8	Halletts Point Building 3	63.5	63.5	63.5	63.5	64.2	64.2	64.2
81C	9	Halletts Point Building 3	63.5	63.5	63.5	63.5	64.2	64.2	64.2
81C	10	Halletts Point Building 3	63.7	63.7	63.7	63.7	64.4	64.4	64.4
81C	11	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.4	64.4	64.4
81C	12	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.4	64.4	64.4
81C	13	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.4	64.4	64.4
81C	14	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.4	64.4	64.4
81C	15	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.4	64.4	64.4
81C	16	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.4	64.4	64.4
81C	17	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.7	64.7	64.7
81C	18	Halletts Point Building 3	63.8	63.8	63.8	63.8	64.8	64.8	64.8
81C	19	Halletts Point Building 3	63.8	63.8	63.8	63.8	65.0	65.0	65.0
81C	20	Halletts Point Building 3	63.7	63.7	63.7	63.7	64.9	64.9	64.9
81C	21	Halletts Point Building 3	63.8	63.8	63.8	63.8	65.0	65.0	65.0
81C	22	Halletts Point Building 3	63.8	63.8	63.8	63.8	65.6	65.6	65.6
81C	23	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.5	65.5	65.5
81C	24	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.5	65.5	65.5
81C	25	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.5	65.5	65.5
81C	26	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.5	65.5	65.5
81C	27	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.4	65.4	65.4
81C	28	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.4	65.4	65.4
81C	29	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.7	65.7	65.7
81C	30	Halletts Point Building 3	63.7	63.7	63.7	63.7	65.6	65.6	65.6
81D	1	Halletts Point Building 3	65.6	65.6	65.6	65.6	73.3	73.3	73.3
81D	2	Halletts Point Building 3	66.8	66.8	66.8	66.8	75.7	75.7	75.7
81D	3	Halletts Point Building 3	67.2	67.2	67.2	67.2	77.3	77.3	77.3
81D	4	Halletts Point Building 3	67.3	67.3	67.3	67.3	79.7	79.7	79.7
81D	5	Halletts Point Building 3	67.1	67.1	67.1	67.1	80.7	80.7	80.7
81D	6	Halletts Point Building 3	67.0	67.0	67.0	67.0	80.6	80.6	80.6
81D	7	Halletts Point Building 3	66.8	66.8	66.8	66.8	80.5	80.5	80.5
81D	8	Halletts Point Building 3	66.6	66.6	66.6	66.6	80.6	80.6	80.6
81D	9	Halletts Point Building 3	66.2	66.2	66.2	66.2	80.3	80.3	80.3
81D	10	Halletts Point Building 3	66.0	66.0	66.0	66.0	80.0	80.0	80.0
81D	11	Halletts Point Building 3	65.9	65.9	65.9	65.9	79.7	79.7	79.7
81D	12	Halletts Point Building 3	65.7	65.7	65.7	65.7	79.5	79.5	79.5
81D	13	Halletts Point Building 3	65.6	65.6	65.6	65.6	79.3	79.3	79.3
81D	14	Halletts Point Building 3	65.5	65.5	65.5	65.5	78.7	78.7	78.7
81D	15	Halletts Point Building 3	65.3	65.3	65.3	65.3	78.4	78.4	78.4
81D	16	Halletts Point Building 3	65.2	65.2	65.2	65.2	78.1	78.1	78.1
81D	17	Halletts Point Building 3	65.2	65.2	65.2	65.2	77.7	77.7	77.7
81D	18	Halletts Point Building 3	65.1	65.1	65.1	65.1	77.4	77.4	77.4
81D	19	Halletts Point Building 3	65.0	65.0	65.0	65.0	77.1	77.1	77.1
81D	20	Halletts Point Building 3	65.0	65.0	65.0	65.0	76.9	76.9	76.9
81D	21	Halletts Point Building 3	64.9	64.9	64.9	64.9	76.6	76.6	76.6
81D	22	Halletts Point Building 3	64.8	64.8	64.8	64.8	76.4	76.4	76.4
81D	23	Halletts Point Building 3	64.7	64.7	64.7	64.7	76.2	76.2	76.2
81D	24	Halletts Point Building 3	64.6	64.6	64.6	64.6	76.0	76.0	76.0
81D	25	Halletts Point Building 3	64.6	64.6	64.6	64.6	75.7	75.7	75.7
81D	26	Halletts Point Building 3	64.5	64.5	64.5	64.5	75.6	75.6	75.6
81D	27	Halletts Point Building 3	64.5	64.5	64.5	64.5	75.4	75.4	75.4
81D	28	Halletts Point Building 3	64.5	64.5	64.5	64.5	75.1	75.1	75.1
81D	29	Halletts Point Building 3	64.6	64.6	64.6	64.6	74.9	74.9	74.9
81D	30	Halletts Point Building 3	64.6	64.6	64.6	64.6	74.7	74.7	74.7
82A	1	Halletts Point Building 4	70.4	70.4	70.4	70.4	70.4	70.4	70.4
82A	2	Halletts Point Building 4	69.8	69.8	69.8	69.8	69.8	69.8	69.8
82A	3	Halletts Point Building 4	68.9	68.9	68.9	68.9	68.9	68.9	68.9
82A	4	Halletts Point Building 4	68.2	68.2	68.2	68.2	68.2	68.2	68.2
82A	5	Halletts Point Building 4	67.6	67.6	67.6	67.6	67.6	67.6	67.6
82A	6	Halletts Point Building 4	67.2	67.2	67.2	67.2	67.2	67.2	67.2
82A	7	Halletts Point Building 4	66.8	66.8	66.8	66.8	66.8	66.8	66.8
82A	8	Halletts Point Building 4	66.4	66.4	66.4	66.4	66.4	66.4	66.4
82A	9	Halletts Point Building 4	65.8	65.8	65.8	65.8	65.8	65.8	65.8
82A	10	Halletts Point Building 4	65.5	65.5	65.5	65.5	65.5	65.5	65.5
82A	11	Halletts Point Building 4	65.3	65.3	65.3	65.3	65.3	65.3	65.3
82A	12	Halletts Point Building 4	65.0	65.0	65.0	65.0	65.0	65.0	65.0
82A	13	Halletts Point Building 4	64.8	64.8	64.8	64.8	64.8	64.8	64.8
82A	14	Halletts Point Building 4	64.6	64.6	64.6	64.6	64.6	64.6	64.6
82A	15	Halletts Point Building 4	64.5	64.5	64.5	64.5	64.5	64.5	64.5
82A	16	Halletts Point Building 4	64.4	64.4	64.4	64.4	64.4	64.4	64.4

82A	17	Halletts Point Building 4	64.4	64.4	64.4	64.4	64.4	64.4
82A	18	Halletts Point Building 4	64.2	64.2	64.2	64.2	64.2	64.2
82A	19	Halletts Point Building 4	64.1	64.1	64.1	64.1	64.1	64.1
82A	20	Halletts Point Building 4	64.1	64.1	64.1	64.1	64.1	64.1
82A	21	Halletts Point Building 4	64.0	64.0	64.0	64.0	64.0	64.0
82B	1	Halletts Point Building 4	63.2	63.2	63.2	63.2	63.2	63.2
82B	2	Halletts Point Building 4	64.8	64.8	64.8	64.8	64.8	64.8
82B	3	Halletts Point Building 4	65.5	65.5	65.5	65.5	65.5	65.5
82B	4	Halletts Point Building 4	65.7	65.7	65.7	65.7	65.7	65.7
82B	5	Halletts Point Building 4	65.8	65.8	65.8	65.8	65.8	65.8
82B	6	Halletts Point Building 4	65.7	65.7	65.7	65.7	65.7	65.7
82B	7	Halletts Point Building 4	65.6	65.6	65.6	65.6	65.6	65.6
82B	8	Halletts Point Building 4	65.5	65.5	65.5	65.5	65.5	65.5
82B	9	Halletts Point Building 4	65.3	65.3	65.3	65.3	65.3	65.3
82B	10	Halletts Point Building 4	65.2	65.2	65.2	65.2	65.2	65.2
82B	11	Halletts Point Building 4	64.9	64.9	64.9	64.9	64.9	64.9
82B	12	Halletts Point Building 4	64.7	64.7	64.7	64.7	64.7	64.7
82B	13	Halletts Point Building 4	64.6	64.6	64.6	64.6	64.6	64.6
82B	14	Halletts Point Building 4	64.5	64.5	64.5	64.5	64.5	64.5
82B	15	Halletts Point Building 4	64.4	64.4	64.4	64.4	64.4	64.4
82B	16	Halletts Point Building 4	64.3	64.3	64.3	64.3	64.3	64.3
82B	17	Halletts Point Building 4	64.2	64.2	64.2	64.2	64.2	64.2
82B	18	Halletts Point Building 4	64.1	64.1	64.1	64.1	64.1	64.1
82B	19	Halletts Point Building 4	64.0	64.0	64.0	64.0	64.0	64.0
82B	20	Halletts Point Building 4	63.9	63.9	63.9	63.9	63.9	63.9
82B	21	Halletts Point Building 4	63.8	63.8	63.8	63.8	63.8	63.8
82C	1	Halletts Point Building 4	57.7	57.7	57.7	57.7	57.7	57.7
82C	2	Halletts Point Building 4	58.5	58.5	58.5	58.5	58.5	58.5
82C	3	Halletts Point Building 4	59.3	59.3	59.3	59.3	59.3	59.3
82C	4	Halletts Point Building 4	60.1	60.1	60.1	60.1	60.1	60.1
82C	5	Halletts Point Building 4	61.1	61.1	61.1	61.1	61.1	61.1
82C	6	Halletts Point Building 4	61.6	61.6	61.6	61.6	61.6	61.6
82C	7	Halletts Point Building 4	61.8	61.8	61.8	61.8	61.8	61.8
82C	8	Halletts Point Building 4	62.0	62.0	62.0	62.0	62.0	62.0
82C	9	Halletts Point Building 4	63.3	63.3	63.3	63.3	63.3	63.3
82C	10	Halletts Point Building 4	63.3	63.3	63.3	63.3	63.3	63.3
82C	11	Halletts Point Building 4	63.3	63.3	63.3	63.3	63.3	63.3
82C	12	Halletts Point Building 4	63.3	63.3	63.3	63.3	63.3	63.3
82C	13	Halletts Point Building 4	63.2	63.2	63.2	63.2	63.2	63.2
82C	14	Halletts Point Building 4	63.1	63.1	63.1	63.1	63.1	63.1
82C	15	Halletts Point Building 4	63.1	63.1	63.1	63.1	63.1	63.1
82C	16	Halletts Point Building 4	63.0	63.0	63.0	63.0	63.0	63.0
82C	17	Halletts Point Building 4	63.0	63.0	63.0	63.0	63.0	63.0
82C	18	Halletts Point Building 4	62.9	62.9	62.9	62.9	62.9	62.9
82C	19	Halletts Point Building 4	63.0	63.0	63.0	63.0	63.0	63.0
82C	20	Halletts Point Building 4	62.9	62.9	62.9	62.9	62.9	62.9
82C	21	Halletts Point Building 4	62.9	62.9	62.9	62.9	62.9	62.9
82D	1	Halletts Point Building 4	62.2	62.2	62.2	62.2	62.2	62.2
82D	2	Halletts Point Building 4	63.9	63.9	63.9	63.9	63.9	63.9

83A	7	Halletts Point Building 6A and 6B	63.9	63.9	63.9	63.9	68.9	68.9	68.9
83A	8	Halletts Point Building 6A and 6B	63.5	63.5	63.5	63.5	69.6	69.6	69.6
83A	9	Halletts Point Building 6A and 6B	63.2	63.2	63.2	63.2	69.7	69.7	69.7
83A	10	Halletts Point Building 6A and 6B	62.9	62.9	62.9	62.9	69.6	69.6	69.6
83B	1	Halletts Point Building 6A and 6B	61.4	61.4	61.4	61.4	65.0	65.0	65.0
83B	2	Halletts Point Building 6A and 6B	62.8	62.8	62.8	62.8	66.1	66.1	66.1
83B	3	Halletts Point Building 6A and 6B	63.1	63.1	63.1	63.1	67.1	67.1	67.1
83B	4	Halletts Point Building 6A and 6B	63.1	63.1	63.1	63.1	67.4	67.4	67.4
83B	5	Halletts Point Building 6A and 6B	63.0	63.0	63.0	63.0	67.8	67.8	67.8
83B	6	Halletts Point Building 6A and 6B	62.8	62.8	62.8	62.8	68.1	68.1	68.1
83B	7	Halletts Point Building 6A and 6B	62.6	62.6	62.6	62.6	68.3	68.3	68.3
83B	8	Halletts Point Building 6A and 6B	62.4	62.4	62.4	62.4	68.7	68.7	68.7
83B	9	Halletts Point Building 6A and 6B	62.1	62.1	62.1	62.1	68.9	68.9	68.9
83B	10	Halletts Point Building 6A and 6B	61.9	61.9	61.9	61.9	69.5	69.5	69.5
83C	1	Halletts Point Building 6A and 6B	59.7	59.7	59.7	59.7	67.9	67.9	67.9
83C	2	Halletts Point Building 6A and 6B	60.6	60.6	60.6	60.6	68.7	68.7	68.7
83C	3	Halletts Point Building 6A and 6B	61.4	61.4	61.4	61.4	69.8	69.8	69.8
83C	4	Halletts Point Building 6A and 6B	62.2	62.2	62.2	62.2	71.0	71.0	71.0
83C	5	Halletts Point Building 6A and 6B	62.7	62.7	62.7	62.7	71.4	71.4	71.4
83C	6	Halletts Point Building 6A and 6B	63.0	63.0	63.0	63.0	71.9	71.9	71.9
83C	7	Halletts Point Building 6A and 6B	63.1	63.1	63.1	63.1	72.4	72.4	72.4
83C	8	Halletts Point Building 6A and 6B	63.2	63.2	63.2	63.2	72.7	72.7	72.7
83C	9	Halletts Point Building 6A and 6B	63.2	63.2	63.2	63.2	73.2	73.2	73.2
83C	10	Halletts Point Building 6A and 6B	63.1	63.1	63.1	63.1	73.4	73.4	73.4
83D	1	Halletts Point Building 6A and 6B	62.2	62.2	62.2	62.2	63.5	63.5	63.5
83D	2	Halletts Point Building 6A and 6B	63.5	63.5	63.5	63.5	64.5	64.5	64.5
83D	3	Halletts Point Building 6A and 6B	64.4	64.4	64.4	64.4	65.4	65.4	65.4
83D	4	Halletts Point Building 6A and 6B	64.8	64.8	64.8	64.8	65.8	65.8	65.8
83D	5	Halletts Point Building 6A and 6B	65.0	65.0	65.0	65.0	66.0	65.9	66.0
83D	6	Halletts Point Building 6A and 6B	65.1	65.1	65.1	65.1	66.1	66.1	66.1
83D	7	Halletts Point Building 6A and 6B	65.1	65.1	65.1	65.1	66.2	66.2	66.2
83D	8	Halletts Point Building 6A and 6B	65.1	65.1	65.1	65.1	66.3	66.3	66.3
83D	9	Halletts Point Building 6A and 6B	65.0	65.0	65.0	65.0	66.3	66.3	66.3
83D	10	Halletts Point Building 6A and 6B	64.8	64.8	64.8	64.8	66.5	66.5	66.5
83E	1	Halletts Point Building 6A and 6B	63.7	63.7	63.7	63.7	63.7	63.7	63.7
83E	2	Halletts Point Building 6A and 6B	65.4	65.4	65.4	65.4	65.4	65.4	65.4
83E	3	Halletts Point Building 6A and 6B	66.0	66.0	66.0	66.0	66.0	66.0	66.0
83E	4	Halletts Point Building 6A and 6B	66.3	66.3	66.3	66.3	66.3	66.3	66.3
83E	5	Halletts Point Building 6A and 6B	66.4	66.4	66.4	66.4	66.4	66.4	66.4
83E	6	Halletts Point Building 6A and 6B	66.3	66.3	66.3	66.3	66.3	66.3	66.3
83E	7	Halletts Point Building 6A and 6B	66.3	66.3	66.3	66.3	66.3	66.3	66.3
83E	8	Halletts Point Building 6A and 6B	66.1	66.1	66.1	66.1	66.1	66.1	66.1
83E	9	Halletts Point Building 6A and 6B	66.0	66.0	66.0	66.0	66.0	66.0	66.0
83E	10	Halletts Point Building 6A and 6B	65.7	65.7	65.7	65.7	65.7	65.7	65.7
83F	1	Halletts Point Building 6A and 6B	65.9	65.9	65.9	65.9	65.9	65.9	65.9
83F	2	Halletts Point Building 6A and 6B	67.3	67.3	67.3	67.3	67.3	67.3	67.3
83F	3	Halletts Point Building 6A and 6B	67.5	67.5	67.5	67.5	67.5	67.5	67.5
83F	4	Halletts Point Building 6A and 6B	67.6	67.6	67.6	67.6	67.6	67.6	67.6
83F	5	Halletts Point Building 6A and 6B	67.4	67.4	67.4	67.4	67.4	67.4	67.4
83F	6	Halletts Point Building 6A and 6B	67.2	67.2	67.2	67.2	67.2	67.2	67.2
83F	7	Halletts Point Building 6A and 6B	67.1	67.1	67.1	67.1	67.1	67.1	67.1
83F	8	Halletts Point Building 6A and 6B	66.8	66.8	66.8	66.8	66.8	66.8	66.8
83F	9	Halletts Point Building 6A and 6B	66.5	66.5	66.5	66.5	66.5	66.5	66.5
83F	10	Halletts Point Building 6A and 6B	66.2	66.2	66.2	66.2	66.2	66.2	66.2
84A	1	Halletts Point Building 7A	66.2	66.2	66.2	71.7	78.7	78.7	78.7
84A	2	Halletts Point Building 7A	66.6	66.6	66.6	72.3	80.0	80.0	80.0
84A	3	Halletts Point Building 7A	66.3	66.3	66.3	72.1	80.0	80.0	80.0
84A	4	Halletts Point Building 7A	65.9	65.9	65.9	71.9	79.9	79.8	79.9
84A	5	Halletts Point Building 7A	65.2	65.2	65.2	71.9	79.6	79.6	79.6
84A	6	Halletts Point Building 7A	64.8	64.8	64.8	72.0	79.4	79.3	79.4
84A	7	Halletts Point Building 7A	64.1	64.1	64.1	68.7	69.5	69.4	69.5
84A	8	Halletts Point Building 7A	63.7	63.7	63.7	71.3	72.2	72.1	72.2
84A	9	Halletts Point Building 7A	63.3	63.3	63.3	71.6	74.6	74.6	74.6
84A	10	Halletts Point Building 7A	63.0	63.0	63.0	71.6	75.5	75.5	75.5
84B	1	Halletts Point Building 7A	62.6	62.6	62.6	65.7	64.4	64.4	65.7
84B	2	Halletts Point Building 7A	63.8	63.8	63.8	67.0	66.5	66.4	67.0
84B	3	Halletts Point Building 7A	64.1	64.1	64.1	67.2	67.0	66.9	67.2
84B	4	Halletts Point Building 7A	64.2	64.2	64.2	67.5	67.1	67.0	67.5
84B	5	Halletts Point Building 7A	63.9	63.9	63.9	67.7	66.8	66.8	67.7
84B	6	Halletts Point Building 7A	63.6	63.6	63.6	67.7	66.3	66.3	67.7
84B	7	Halletts Point Building 7A	63.3	63.3	63.3	68.1	65.2	65.1	68.1
84B	8	Halletts Point Building 7A	63.2	63.2	63.2	70.6	66.1	66.1	70.6
84B	9	Halletts Point Building 7A	62.9	62.9	62.9	71.7	66.2	66.1	71.7
84B	10	Halletts Point Building 7A	62.5	62.5	62.5	72.6	66.0	65.9	72.6

84C	1	Halletts Point Building 7A	63.4	63.4	63.4	63.9	71.5	70.8	71.5
84C	2	Halletts Point Building 7A	65.2	65.2	65.2	65.5	72.7	72.0	72.7
84C	3	Halletts Point Building 7A	66.0	66.0	66.0	66.3	72.7	72.1	72.7
84C	4	Halletts Point Building 7A	66.4	66.4	66.4	66.7	72.7	72.1	72.7
84C	5	Halletts Point Building 7A	66.5	66.5	66.5	66.8	72.5	72.0	72.5
84C	6	Halletts Point Building 7A	66.3	66.3	66.3	66.7	72.3	71.7	72.3
84C	7	Halletts Point Building 7A	66.3	66.3	66.3	66.7	72.2	71.5	72.2
84C	8	Halletts Point Building 7A	66.2	66.2	66.2	66.7	72.0	71.4	72.0
84C	9	Halletts Point Building 7A	66.1	66.1	66.1	66.7	71.8	71.2	71.8
84C	10	Halletts Point Building 7A	66.0	66.0	66.0	66.7	71.7	71.1	71.7
84D	1	Halletts Point Building 7A	70.2	70.2	70.2	73.3	86.3	86.1	86.3
84D	2	Halletts Point Building 7A	70.7	70.7	70.7	74.0	87.0	86.8	87.0
84D	3	Halletts Point Building 7A	70.4	70.4	70.4	73.7	86.7	86.6	86.7
84D	4	Halletts Point Building 7A	70.1	70.1	70.1	73.5	86.2	86.1	86.2
84D	5	Halletts Point Building 7A	69.5	69.5	69.5	73.2	85.7	85.5	85.7
84D	6	Halletts Point Building 7A	69.1	69.1	69.1	73.2	85.1	84.9	85.1
84D	7	Halletts Point Building 7A	68.5	68.5	68.5	71.0	84.2	84.0	84.2
84D	8	Halletts Point Building 7A	68.1	68.1	68.1	71.8	83.6	83.3	83.6
84D	9	Halletts Point Building 7A	67.7	67.7	67.7	72.7	82.9	82.7	82.9
84E	1	Halletts Point Building 7A	63.6	63.6	63.6	64.9	83.9	83.2	83.9
84E	2	Halletts Point Building 7A	65.3	65.3	65.3	65.7	84.6	83.9	84.6
84E	3	Halletts Point Building 7A	66.2	66.2	66.2	66.5	84.1	83.3	84.1
84E	4	Halletts Point Building 7A	66.6	66.6	66.6	66.9	83.7	82.9	83.7
84E	5	Halletts Point Building 7A	66.7	66.7	66.7	67.0	83.3	82.6	83.3
84E	6	Halletts Point Building 7A	66.6	66.6	66.6	67.0	82.8	82.1	82.8
84E	7	Halletts Point Building 7A	66.6	66.6	66.6	67.0	82.4	81.7	82.4
84E	8	Halletts Point Building 7A	66.5	66.5	66.5	66.9	81.9	81.2	81.9
84E	9	Halletts Point Building 7A	66.4	66.4	66.4	66.9	81.5	80.9	81.5

Halletts Point Construction

Noise Receptor Sites		Elevation (floor)	Governing Measurement Loc	dBA							
				Existing							
				ExAM Leq at Meas	ExAM L10 at Meas	Cadna ExAM Leq	Adjustment Factor at Meas Loc	Min Level (avg Meas L90)	Existing Leq	L10 Difference	Existing L10
1	1.5	1	1	66.0	63.1	66.1	-0.1	53.3	66.0	3.0	69.0
2	1.5	1	2	68.8	70.1	67.1	1.7	53.3	68.8	1.3	70.1
3	1.5	1	3	63	64.2	64.3	-1.3	53.3	63	1.2	64.2
4	1.5	1	4	56	58.5	57	-1	53.3	56	2.5	58.5
5	1.5	1	5	60.6	62.1	60.2	0.4	53.3	60.6	1.5	62.1
6	1.5	1	6	63.2	65.2	66.1	-2.9	53.3	63.2	2	65.2
7	1.5	1	7	59	61.8	58.6	0.4	53.3	59	2.8	61.8
8	1.5	1	8	54.1	56.6	51	3.1	53.3	54.1	2.5	56.6
0A	1.5	1	1			62.1	-0.1	53.3	62	3	65
0B	1.5	1	5			59.1	0.4	53.3	59.5	1.5	61
1A	1.5	1	2			62.3	1.7	53.3	64	1.3	65.3
1A	4.55	2	2			63.7	1.7	53.3	65.4	1.3	66.7
1A	7.6	3	2			63.9	1.7	53.3	65.6	1.3	66.9
1A	10.65	4	2			64.7	1.7	53.3	66.4	1.3	67.7
1B	1.5	1	2			47	1.7	53.3	53.313	1.3	54.6125
1B	4.55	2	2			52.9	1.7	53.3	54.6	1.3	55.9
1B	7.6	3	2			54.8	1.7	53.3	56.5	1.3	57.8
1B	10.65	4	2			61	1.7	53.3	62.7	1.3	64
1C	7.6	3	2			59.6	1.7	53.3	61.3	1.3	62.6
1C	10.65	4	2			62.7	1.7	53.3	64.4	1.3	65.7
1D	1.5	1	2			52.1	1.7	53.3	53.8	1.3	55.1
1D	4.55	2	2			57.9	1.7	53.3	59.6	1.3	60.9
1D	7.6	3	2			60.4	1.7	53.3	62.1	1.3	63.4
1D	10.65	4	2			62	1.7	53.3	63.7	1.3	65
2A	1.5	1	3			64.9	-1.3	53.3	63.6	1.2	64.8
2A	4.55	2	3			64.9	-1.3	53.3	63.6	1.2	64.8
2A	7.6	3	3			64.3	-1.3	53.3	63	1.2	64.2
2A	10.65	4	3			64.5	-1.3	53.3	63.2	1.2	64.4
2B	1.5	1	3			62.6	-1.3	53.3	61.3	1.2	62.5
2B	4.55	2	3			63.4	-1.3	53.3	62.1	1.2	63.3
2B	7.6	3	3			63.4	-1.3	53.3	62.1	1.2	63.3
2B	10.65	4	3			63.6	-1.3	53.3	62.3	1.2	63.5
2C	1.5	1	3			67.8	-1.3	53.3	66.5	1.2	67.7
2C	4.55	2	3			67.6	-1.3	53.3	66.3	1.2	67.5
2C	7.6	3	3			66.8	-1.3	53.3	65.5	1.2	66.7
2C	10.65	4	3			66.5	-1.3	53.3	65.2	1.2	66.4
3A	1.5	1	3			63.3	-1.3	53.3	62	1.2	63.2
3A	4.55	2	3			63.6	-1.3	53.3	62.3	1.2	63.5
3A	7.6	3	3			63.2	-1.3	53.3	61.9	1.2	63.1
3A	10.65	4	3			63.7	-1.3	53.3	62.4	1.2	63.6

3B	1.5	1	3		59.6	-1.3	53.3	58.3	1.2	59.5
3B	4.55	2	3		61.3	-1.3	53.3	60	1.2	61.2
3B	7.6	3	3		61.5	-1.3	53.3	60.2	1.2	61.4
3B	10.65	4	3		62.3	-1.3	53.3	61	1.2	62.2
4A	1.5	1	3		62.7	-1.3	53.3	61.4	1.2	62.6
4A	4.55	2	3		62.9	-1.3	53.3	61.6	1.2	62.8
4A	7.6	3	3		62.5	-1.3	53.3	61.2	1.2	62.4
4A	10.65	4	3		63.3	-1.3	53.3	62	1.2	63.2
4B	1.5	1	3		57.6	-1.3	53.3	56.3	1.2	57.5
4B	4.55	2	3		59.6	-1.3	53.3	58.3	1.2	59.5
4B	7.6	3	3		60.4	-1.3	53.3	59.1	1.2	60.3
4B	10.65	4	3		61.5	-1.3	53.3	60.2	1.2	61.4
5A	1.5	1	3		62.3	-1.3	53.3	61	1.2	62.2
5A	4.55	2	3		62.3	-1.3	53.3	61	1.2	62.2
5A	7.6	3	3		62	-1.3	53.3	60.7	1.2	61.9
5A	10.65	4	3		63.2	-1.3	53.3	61.9	1.2	63.1
5B	1.5	1	3		57.1	-1.3	53.3	55.8	1.2	57
5B	4.55	2	3		59.4	-1.3	53.3	58.1	1.2	59.3
5B	7.6	3	3		60.5	-1.3	53.3	59.2	1.2	60.4
5B	10.65	4	3		61.6	-1.3	53.3	60.3	1.2	61.5
5C	1.5	1	3		57.8	-1.3	53.3	56.5	1.2	57.7
5C	4.55	2	3		59.4	-1.3	53.3	58.1	1.2	59.3
5C	7.6	3	3		59.9	-1.3	53.3	58.6	1.2	59.8
5C	10.65	4	3		60.9	-1.3	53.3	59.6	1.2	60.8
6A	1.5	1	3		51.5	-1.3	53.3	53.313	1.2	54.5125
6A	4.55	2	3		53.7	-1.3	53.3	53.313	1.2	54.5125
6A	7.6	3	3		55.6	-1.3	53.3	54.3	1.2	55.5
6B	1.5	1	3		55.2	-1.3	53.3	53.9	1.2	55.1
6B	4.55	2	3		57	-1.3	53.3	55.7	1.2	56.9
6B	7.6	3	3		58.7	-1.3	53.3	57.4	1.2	58.6
6C	1.5	1	3		61.5	-1.3	53.3	60.2	1.2	61.4
6C	4.55	2	3		62.1	-1.3	53.3	60.8	1.2	62
6C	7.6	3	3		62.6	-1.3	53.3	61.3	1.2	62.5
6D	1.5	1	3		54.6	-1.3	53.3	53.313	1.2	54.5125
6D	4.55	2	3		56.2	-1.3	53.3	54.9	1.2	56.1
6D	7.6	3	3		57.1	-1.3	53.3	55.8	1.2	57
7A	1.5	1	3		50.1	-1.3	53.3	53.313	1.2	54.5125
7A	4.55	2	3		52.1	-1.3	53.3	53.313	1.2	54.5125
7B	1.5	1	3		55.4	-1.3	53.3	54.1	1.2	55.3
7B	4.55	2	3		57.1	-1.3	53.3	55.8	1.2	57
7C	1.5	1	3		60	-1.3	53.3	58.7	1.2	59.9
7C	4.55	2	3		60.7	-1.3	53.3	59.4	1.2	60.6
7D	1.5	1	3		52.9	-1.3	53.3	53.313	1.2	54.5125
7D	4.55	2	3		55.2	-1.3	53.3	53.9	1.2	55.1
8A	1.5	1	3		62.2	-1.3	53.3	60.9	1.2	62.1
8A	4.55	2	3		62.4	-1.3	53.3	61.1	1.2	62.3
8A	7.6	3	3		61.4	-1.3	53.3	60.1	1.2	61.3

8A	10.65	4	3		61.1	-1.3	53.3	59.8	1.2	61
8A	13.7	5	3		61.4	-1.3	53.3	60.1	1.2	61.3
8B	1.5	1	3		49.8	-1.3	53.3	53.313	1.2	54.5125
8B	4.55	2	3		54.7	-1.3	53.3	53.4	1.2	54.6
8B	7.6	3	3		56.7	-1.3	53.3	55.4	1.2	56.6
8B	10.65	4	3		57.8	-1.3	53.3	56.5	1.2	57.7
8B	13.7	5	3		58.6	-1.3	53.3	57.3	1.2	58.5
8C	7.6	3	3		57.2	-1.3	53.3	55.9	1.2	57.1
8C	10.65	4	3		58.6	-1.3	53.3	57.3	1.2	58.5
8C	13.7	5	3		59.8	-1.3	53.3	58.5	1.2	59.7
9A	1.5	1	3		62	-1.3	53.3	60.7	1.2	61.9
9A	4.55	2	3		61.9	-1.3	53.3	60.6	1.2	61.8
9A	7.6	3	3		61.5	-1.3	53.3	60.2	1.2	61.4
9A	10.65	4	3		61.2	-1.3	53.3	59.9	1.2	61.1
9A	13.7	5	3		61.5	-1.3	53.3	60.2	1.2	61.4
9B	1.5	1	3		53.7	-1.3	53.3	53.313	1.2	54.5125
9B	4.55	2	3		56.3	-1.3	53.3	55	1.2	56.2
9B	7.6	3	3		57.9	-1.3	53.3	56.6	1.2	57.8
9B	10.65	4	3		58.8	-1.3	53.3	57.5	1.2	58.7
9B	13.7	5	3		59.6	-1.3	53.3	58.3	1.2	59.5
9C	1.5	1	3		56.2	-1.3	53.3	54.9	1.2	56.1
9C	4.55	2	3		57.5	-1.3	53.3	56.2	1.2	57.4
9C	7.6	3	3		58	-1.3	53.3	56.7	1.2	57.9
9C	10.65	4	3		58.4	-1.3	53.3	57.1	1.2	58.3
9C	13.7	5	3		59.7	-1.3	53.3	58.4	1.2	59.6
10A	1.5	1	3		55.7	-1.3	53.3	54.4	1.2	55.6
10A	4.55	2	3		57.4	-1.3	53.3	56.1	1.2	57.3
10A	7.6	3	3		58.4	-1.3	53.3	57.1	1.2	58.3
10A	10.65	4	3		58.6	-1.3	53.3	57.3	1.2	58.5
10A	13.7	5	3		59.1	-1.3	53.3	57.8	1.2	59
10B	1.5	1	3		61.8	-1.3	53.3	60.5	1.2	61.7
10B	4.55	2	3		62.5	-1.3	53.3	61.2	1.2	62.4
10B	7.6	3	3		62.4	-1.3	53.3	61.1	1.2	62.3
10B	10.65	4	3		62.1	-1.3	53.3	60.8	1.2	62
10B	13.7	5	3		62	-1.3	53.3	60.7	1.2	61.9
10C	1.5	1	3		65.1	-1.3	53.3	63.8	1.2	65
10C	4.55	2	3		65.7	-1.3	53.3	64.4	1.2	65.6
10C	7.6	3	3		65.3	-1.3	53.3	64	1.2	65.2
10C	10.65	4	3		64.8	-1.3	53.3	63.5	1.2	64.7
10C	13.7	5	3		64.5	-1.3	53.3	63.2	1.2	64.4
11A	1.5	1	3		65.2	-1.3	53.3	63.9	1.2	65.1
11A	4.55	2	3		65.9	-1.3	53.3	64.6	1.2	65.8
11A	7.6	3	3		65.6	-1.3	53.3	64.3	1.2	65.5
11A	10.65	4	3		65.2	-1.3	53.3	63.9	1.2	65.1
11A	13.7	5	3		64.8	-1.3	53.3	63.5	1.2	64.7
11B	1.5	1	3		54.5	-1.3	53.3	53.313	1.2	54.5125
11B	4.55	2	3		56.5	-1.3	53.3	55.2	1.2	56.4

11B	7.6	3	3		58	-1.3	53.3	56.7	1.2	57.9
11B	10.65	4	3		57.6	-1.3	53.3	56.3	1.2	57.5
11B	13.7	5	3		58.3	-1.3	53.3	57	1.2	58.2
12A	1.5	1	3		65.4	-1.3	53.3	64.1	1.2	65.3
12A	4.55	2	3		65.9	-1.3	53.3	64.6	1.2	65.8
12A	7.6	3	3		65.6	-1.3	53.3	64.3	1.2	65.5
12A	10.65	4	3		65.2	-1.3	53.3	63.9	1.2	65.1
12A	13.7	5	3		64.9	-1.3	53.3	63.6	1.2	64.8
12B	1.5	1	3		53.6	-1.3	53.3	53.313	1.2	54.5125
12B	4.55	2	3		55.6	-1.3	53.3	54.3	1.2	55.5
12B	7.6	3	3		57.1	-1.3	53.3	55.8	1.2	57
12B	10.65	4	3		56.7	-1.3	53.3	55.4	1.2	56.6
12B	13.7	5	3		57.6	-1.3	53.3	56.3	1.2	57.5
13A	1.5	1	6		65.6	-2.9	53.3	62.7	2	64.7
13A	4.55	2	6		66.1	-2.9	53.3	63.2	2	65.2
13A	7.6	3	6		65.8	-2.9	53.3	62.9	2	64.9
13A	10.65	4	6		65.3	-2.9	53.3	62.4	2	64.4
13A	13.7	5	6		65	-2.9	53.3	62.1	2	64.1
13B	1.5	1	6		50.7	-2.9	53.3	53.313	2	55.3125
13B	4.55	2	6		54	-2.9	53.3	53.313	2	55.3125
13B	7.6	3	6		55.7	-2.9	53.3	53.313	2	55.3125
13B	10.65	4	6		56.6	-2.9	53.3	53.7	2	55.7
13B	13.7	5	6		57.5	-2.9	53.3	54.6	2	56.6
14A	1.5	1	6		65.8	-2.9	53.3	62.9	2	64.9
14A	4.55	2	6		66.3	-2.9	53.3	63.4	2	65.4
14A	7.6	3	6		66	-2.9	53.3	63.1	2	65.1
14A	10.65	4	6		65.5	-2.9	53.3	62.6	2	64.6
14A	13.7	5	6		65.2	-2.9	53.3	62.3	2	64.3
14B	1.5	1	6		51.4	-2.9	53.3	53.313	2	55.3125
14B	4.55	2	6		55.5	-2.9	53.3	53.313	2	55.3125
14B	7.6	3	6		57.8	-2.9	53.3	54.9	2	56.9
14B	10.65	4	6		58.7	-2.9	53.3	55.8	2	57.8
14B	13.7	5	6		59.5	-2.9	53.3	56.6	2	58.6
15A	1.5	1	6		65.4	-2.9	53.3	62.5	2	64.5
15A	4.55	2	6		65.9	-2.9	53.3	63	2	65
15A	7.6	3	6		65.8	-2.9	53.3	62.9	2	64.9
15B	7.6	3	6		58.6	-2.9	53.3	55.7	2	57.7
15C	7.6	3	6		60.5	-2.9	53.3	57.6	2	59.6
16A	1.5	1	3		51.9	-1.3	53.3	53.313	1.2	54.5125
16A	4.55	2	3		54.7	-1.3	53.3	53.4	1.2	54.6
16B	1.5	1	3		55.3	-1.3	53.3	54	1.2	55.2
16B	4.55	2	3		57.9	-1.3	53.3	56.6	1.2	57.8
16C	1.5	1	3		62.6	-1.3	53.3	61.3	1.2	62.5
16C	4.55	2	3		63.1	-1.3	53.3	61.8	1.2	63
17A	1.5	1	3		66.6	-1.3	53.3	65.3	1.2	66.5
17A	4.55	2	3		66.6	-1.3	53.3	65.3	1.2	66.5
17A	7.6	3	3		66.3	-1.3	53.3	65	1.2	66.2

17A	10.65	4	3		66	-1.3	53.3	64.7	1.2	65.9
17B	1.5	1	3		50.8	-1.3	53.3	53.313	1.2	54.5125
17B	4.55	2	3		56.3	-1.3	53.3	55	1.2	56.2
17B	7.6	3	3		58.8	-1.3	53.3	57.5	1.2	58.7
17B	10.65	4	3		60.3	-1.3	53.3	59	1.2	60.2
17C	4.55	2	3		59.1	-1.3	53.3	57.8	1.2	59
17C	7.6	3	3		61.5	-1.3	53.3	60.2	1.2	61.4
17C	10.65	4	3		62.7	-1.3	53.3	61.4	1.2	62.6
18A	1.5	1	3		67.5	-1.3	53.3	66.2	1.2	67.4
18A	4.55	2	3		67.4	-1.3	53.3	66.1	1.2	67.3
18A	7.6	3	3		66.8	-1.3	53.3	65.5	1.2	66.7
18A	10.65	4	3		66.7	-1.3	53.3	65.4	1.2	66.6
18B	1.5	1	3		47.2	-1.3	53.3	53.313	1.2	54.5125
18B	4.55	2	3		52	-1.3	53.3	53.313	1.2	54.5125
18B	7.6	3	3		55.6	-1.3	53.3	54.3	1.2	55.5
18B	10.65	4	3		59.6	-1.3	53.3	58.3	1.2	59.5
19A	1.5	1	3		65.5	-1.3	53.3	64.2	1.2	65.4
19A	4.55	2	3		66	-1.3	53.3	64.7	1.2	65.9
19A	7.6	3	3		65.7	-1.3	53.3	64.4	1.2	65.6
19A	10.65	4	3		65.5	-1.3	53.3	64.2	1.2	65.4
19B	1.5	1	3		51.4	-1.3	53.3	53.313	1.2	54.5125
19B	4.55	2	3		54.8	-1.3	53.3	53.5	1.2	54.7
19B	7.6	3	3		57.7	-1.3	53.3	56.4	1.2	57.6
19B	10.65	4	3		59.4	-1.3	53.3	58.1	1.2	59.3
20A	1.5	1	3		65.6	-1.3	53.3	64.3	1.2	65.5
20A	4.55	2	3		66	-1.3	53.3	64.7	1.2	65.9
20A	7.6	3	3		65.8	-1.3	53.3	64.5	1.2	65.7
20A	10.65	4	3		65.8	-1.3	53.3	64.5	1.2	65.7
20B	1.5	1	3		51.8	-1.3	53.3	53.313	1.2	54.5125
20B	4.55	2	3		54.8	-1.3	53.3	53.5	1.2	54.7
20B	7.6	3	3		57.6	-1.3	53.3	56.3	1.2	57.5
20B	10.65	4	3		60.2	-1.3	53.3	58.9	1.2	60.1
20C	1.5	1	3		60.2	-1.3	53.3	58.9	1.2	60.1
20C	4.55	2	3		61.6	-1.3	53.3	60.3	1.2	61.5
20C	7.6	3	3		62	-1.3	53.3	60.7	1.2	61.9
20C	10.65	4	3		62.8	-1.3	53.3	61.5	1.2	62.7
21A	1.5	1	3		62.1	-1.3	53.3	60.8	1.2	62
21A	4.55	2	3		62.8	-1.3	53.3	61.5	1.2	62.7
21A	7.6	3	3		62.5	-1.3	53.3	61.2	1.2	62.4
21A	10.65	4	3		62.1	-1.3	53.3	60.8	1.2	62
21A	13.7	5	3		65.7	-1.3	53.3	64.4	1.2	65.6
21B	1.5	1	3		67.4	-1.3	53.3	66.1	1.2	67.3
21B	4.55	2	3		67.3	-1.3	53.3	66	1.2	67.2
21B	7.6	3	3		66.7	-1.3	53.3	65.4	1.2	66.6
21B	10.65	4	3		66	-1.3	53.3	64.7	1.2	65.9
21B	13.7	5	3		68	-1.3	53.3	66.7	1.2	67.9
21C	1.5	1	3		58.1	-1.3	53.3	56.8	1.2	58

21C	4.55	2	3		60.2	-1.3	53.3	58.9	1.2	60.1
21C	7.6	3	3		62.4	-1.3	53.3	61.1	1.2	62.3
21C	10.65	4	3		65.3	-1.3	53.3	64	1.2	65.2
21C	13.7	5	3		66.5	-1.3	53.3	65.2	1.2	66.4
21D	1.5	1	3		55.7	-1.3	53.3	54.4	1.2	55.6
21D	4.55	2	3		57.5	-1.3	53.3	56.2	1.2	57.4
21D	7.6	3	3		57.9	-1.3	53.3	56.6	1.2	57.8
21D	10.65	4	3		58.4	-1.3	53.3	57.1	1.2	58.3
21D	13.7	5	3		65.7	-1.3	53.3	64.4	1.2	65.6
21E	1.5	1	3		62.7	-1.3	53.3	61.4	1.2	62.6
21E	4.55	2	3		64.3	-1.3	53.3	63	1.2	64.2
21E	7.6	3	3		65.1	-1.3	53.3	63.8	1.2	65
21E	10.65	4	3		66.7	-1.3	53.3	65.4	1.2	66.6
21E	13.7	5	3		67.4	-1.3	53.3	66.1	1.2	67.3
22A	1.5	1	3		60.7	-1.3	53.3	59.4	1.2	60.6
22A	4.55	2	3		60.9	-1.3	53.3	59.6	1.2	60.8
22A	7.6	3	3		61	-1.3	53.3	59.7	1.2	60.9
22A	10.65	4	3		64.3	-1.3	53.3	63	1.2	64.2
22B	1.5	1	3		54.2	-1.3	53.3	53.313	1.2	54.5125
22B	4.55	2	3		56.7	-1.3	53.3	55.4	1.2	56.6
22B	7.6	3	3		59.2	-1.3	53.3	57.9	1.2	59.1
22B	10.65	4	3		63.5	-1.3	53.3	62.2	1.2	63.4
22C	1.5	1	3		52.8	-1.3	53.3	53.313	1.2	54.5125
22C	4.55	2	3		56.4	-1.3	53.3	55.1	1.2	56.3
22C	7.6	3	3		60.9	-1.3	53.3	59.6	1.2	60.8
22C	10.65	4	3		63.6	-1.3	53.3	62.3	1.2	63.5
22D	1.5	1	3		54.6	-1.3	53.3	53.313	1.2	54.5125
22D	4.55	2	3		56	-1.3	53.3	54.7	1.2	55.9
22D	7.6	3	3		58.7	-1.3	53.3	57.4	1.2	58.6
22D	10.65	4	3		64	-1.3	53.3	62.7	1.2	63.9
23A	1.5	1	3		61.2	-1.3	53.3	59.9	1.2	61.1
23A	4.55	2	3		61.1	-1.3	53.3	59.8	1.2	61
23A	7.6	3	3		60.7	-1.3	53.3	59.4	1.2	60.6
23A	10.65	4	3		60.5	-1.3	53.3	59.2	1.2	60.4
23A	13.7	5	3		64.3	-1.3	53.3	63	1.2	64.2
23B	1.5	1	3		56.6	-1.3	53.3	55.3	1.2	56.5
23B	4.55	2	3		59	-1.3	53.3	57.7	1.2	58.9
23B	7.6	3	3		61.2	-1.3	53.3	59.9	1.2	61.1
23B	10.65	4	3		62.9	-1.3	53.3	61.6	1.2	62.8
23B	13.7	5	3		64.3	-1.3	53.3	63	1.2	64.2
23C	1.5	1	3		48.9	-1.3	53.3	53.313	1.2	54.5125
23C	4.55	2	3		51.3	-1.3	53.3	53.313	1.2	54.5125
23C	7.6	3	3		55	-1.3	53.3	53.7	1.2	54.9
23C	10.65	4	3		60.1	-1.3	53.3	58.8	1.2	60
23C	13.7	5	3		64.6	-1.3	53.3	63.3	1.2	64.5
24A	1.5	1	3		61.1	-1.3	53.3	59.8	1.2	61
24A	4.55	2	3		61.1	-1.3	53.3	59.8	1.2	61

24A	7.6	3	3		60.5	-1.3	53.3	59.2	1.2	60.4
24A	10.65	4	3		60.2	-1.3	53.3	58.9	1.2	60.1
24A	13.7	5	3		64.1	-1.3	53.3	62.8	1.2	64
24B	1.5	1	3		47	-1.3	53.3	53.313	1.2	54.5125
24B	4.55	2	3		49.6	-1.3	53.3	53.313	1.2	54.5125
24B	7.6	3	3		52.7	-1.3	53.3	53.313	1.2	54.5125
24B	10.65	4	3		57.3	-1.3	53.3	56	1.2	57.2
24B	13.7	5	3		63.8	-1.3	53.3	62.5	1.2	63.7
24C	7.6	3	3		52.6	-1.3	53.3	53.313	1.2	54.5125
24C	10.65	4	3		57.8	-1.3	53.3	56.5	1.2	57.7
24C	13.7	5	3		63.2	-1.3	53.3	61.9	1.2	63.1
25A	1.5	1	3		46.1	-1.3	53.3	53.313	1.2	54.5125
25A	4.55	2	3		48.7	-1.3	53.3	53.313	1.2	54.5125
25A	7.6	3	3		52.3	-1.3	53.3	53.313	1.2	54.5125
25A	10.65	4	3		52.5	-1.3	53.3	53.313	1.2	54.5125
25A	13.7	5	3		64.8	-1.3	53.3	63.5	1.2	64.7
25B	1.5	1	3		48.9	-1.3	53.3	53.313	1.2	54.5125
25B	4.55	2	3		51.5	-1.3	53.3	53.313	1.2	54.5125
25B	7.6	3	3		55.3	-1.3	53.3	54	1.2	55.2
25B	10.65	4	3		55.7	-1.3	53.3	54.4	1.2	55.6
25B	13.7	5	3		65.5	-1.3	53.3	64.2	1.2	65.4
25C	1.5	1	3		61	-1.3	53.3	59.7	1.2	60.9
25C	4.55	2	3		63.1	-1.3	53.3	61.8	1.2	63
25C	7.6	3	3		65.2	-1.3	53.3	63.9	1.2	65.1
25C	10.65	4	3		66.4	-1.3	53.3	65.1	1.2	66.3
25C	13.7	5	3		67.4	-1.3	53.3	66.1	1.2	67.3
25D	7.6	3	3		56.8	-1.3	53.3	55.5	1.2	56.7
25D	10.65	4	3		59.1	-1.3	53.3	57.8	1.2	59
25D	13.7	5	3		65.5	-1.3	53.3	64.2	1.2	65.4
26A	1.5	1	3		61.1	-1.3	53.3	59.8	1.2	61
26A	4.55	2	3		61.1	-1.3	53.3	59.8	1.2	61
26A	7.6	3	3		61.2	-1.3	53.3	59.9	1.2	61.1
26B	1.5	1	3		51.5	-1.3	53.3	53.313	1.2	54.5125
26B	4.55	2	3		55.4	-1.3	53.3	54.1	1.2	55.3
26B	7.6	3	3		58.7	-1.3	53.3	57.4	1.2	58.6
26C	7.6	3	3		60.1	-1.3	53.3	58.8	1.2	60
27A	1.5	1	3		63.1	-1.3	53.3	61.8	1.2	63
27A	4.55	2	3		62.2	-1.3	53.3	60.9	1.2	62.1
27A	7.6	3	3		62.3	-1.3	53.3	61	1.2	62.2
27B	1.5	1	3		54.4	-1.3	53.3	53.313	1.2	54.5125
27B	4.55	2	3		57.1	-1.3	53.3	55.8	1.2	57
27B	7.6	3	3		59.4	-1.3	53.3	58.1	1.2	59.3
27C	1.5	1	3		53.2	-1.3	53.3	53.313	1.2	54.5125
27C	4.55	2	3		55.3	-1.3	53.3	54	1.2	55.2
27C	7.6	3	3		59.4	-1.3	53.3	58.1	1.2	59.3
28A	1.5	1	3		52.9	-1.3	53.3	53.313	1.2	54.5125
28A	4.55	2	3		55.9	-1.3	53.3	54.6	1.2	55.8

28B	4.55	2	3		60.3	-1.3	53.3	59	1.2	60.2
28B	7.6	3	3		61.9	-1.3	53.3	60.6	1.2	61.8
28C	1.5	1	3		62.6	-1.3	53.3	61.3	1.2	62.5
28C	4.55	2	3		63.3	-1.3	53.3	62	1.2	63.2
28D	1.5	1	3		54.9	-1.3	53.3	53.6	1.2	54.8
28D	4.55	2	3		57.2	-1.3	53.3	55.9	1.2	57.1
29A	1.5	1	3		65.9	-1.3	53.3	64.6	1.2	65.8
29A	4.55	2	3		65	-1.3	53.3	63.7	1.2	64.9
29A	7.6	3	3		65	-1.3	53.3	63.7	1.2	64.9
29B	1.5	1	3		57.1	-1.3	53.3	55.8	1.2	57
29B	4.55	2	3		61.8	-1.3	53.3	60.5	1.2	61.7
29B	7.6	3	3		67.9	-1.3	53.3	66.6	1.2	67.8
29C	1.5	1	3		64.1	-1.3	53.3	62.8	1.2	64
29D	1.5	1	3		57.8	-1.3	53.3	56.5	1.2	57.7
29D	4.55	2	3		64.8	-1.3	53.3	63.5	1.2	64.7
30A	1.5	1	6		63.3	-2.9	53.3	60.4	2	62.4
30A	4.55	2	6		63.2	-2.9	53.3	60.3	2	62.3
30A	7.6	3	6		62.7	-2.9	53.3	59.8	2	61.8
30A	10.65	4	6		62.2	-2.9	53.3	59.3	2	61.3
30A	13.7	5	6		61.8	-2.9	53.3	58.9	2	60.9
30A	16.75	6	6		61.3	-2.9	53.3	58.4	2	60.4
30A	19.8	7	6		61.1	-2.9	53.3	58.2	2	60.2
30A	22.85	8	6		60.9	-2.9	53.3	58	2	60
30A	25.9	9	6		60.6	-2.9	53.3	57.7	2	59.7
30A	28.95	10	6		60.4	-2.9	53.3	57.5	2	59.5
30A	32	11	6		60.1	-2.9	53.3	57.2	2	59.2
30A	35.05	12	6		59.9	-2.9	53.3	57	2	59
30A	38.1	13	6		59.7	-2.9	53.3	56.8	2	58.8
30B	1.5	1	6		67.1	-2.9	53.3	64.2	2	66.2
30B	4.55	2	6		66.9	-2.9	53.3	64	2	66
30B	7.6	3	6		66.4	-2.9	53.3	63.5	2	65.5
30B	10.65	4	6		65.9	-2.9	53.3	63	2	65
30B	13.7	5	6		65.4	-2.9	53.3	62.5	2	64.5
30B	16.75	6	6		65	-2.9	53.3	62.1	2	64.1
30B	19.8	7	6		64.6	-2.9	53.3	61.7	2	63.7
30B	22.85	8	6		64.2	-2.9	53.3	61.3	2	63.3
30B	25.9	9	6		63.8	-2.9	53.3	60.9	2	62.9
30B	28.95	10	6		63.5	-2.9	53.3	60.6	2	62.6
30B	32	11	6		63.1	-2.9	53.3	60.2	2	62.2
30B	35.05	12	6		62.8	-2.9	53.3	59.9	2	61.9
30B	38.1	13	6		62.5	-2.9	53.3	59.6	2	61.6
30C	7.6	3	3		63	-1.3	53.3	61.7	1.2	62.9
30C	10.65	4	3		64.6	-1.3	53.3	63.3	1.2	64.5
30C	13.7	5	3		66	-1.3	53.3	64.7	1.2	65.9
30C	16.75	6	3		67.4	-1.3	53.3	66.1	1.2	67.3
30C	19.8	7	3		68.8	-1.3	53.3	67.5	1.2	68.7
30C	22.85	8	3		70	-1.3	53.3	68.7	1.2	69.9

30C	25.9	9	3		70.6	-1.3	53.3	69.3	1.2	70.5
30C	28.95	10	3		71.4	-1.3	53.3	70.1	1.2	71.3
30C	32	11	3		71.7	-1.3	53.3	70.4	1.2	71.6
30C	35.05	12	3		71.6	-1.3	53.3	70.3	1.2	71.5
30C	38.1	13	3		71.5	-1.3	53.3	70.2	1.2	71.4
30D	1.5	1	6		61	-2.9	53.3	58.1	2	60.1
30D	4.55	2	6		62.6	-2.9	53.3	59.7	2	61.7
30D	7.6	3	6		64.1	-2.9	53.3	61.2	2	63.2
30D	10.65	4	6		65.4	-2.9	53.3	62.5	2	64.5
30D	13.7	5	6		66.7	-2.9	53.3	63.8	2	65.8
30D	16.75	6	6		67.6	-2.9	53.3	64.7	2	66.7
30D	19.8	7	6		68.8	-2.9	53.3	65.9	2	67.9
30D	22.85	8	6		69.6	-2.9	53.3	66.7	2	68.7
30D	25.9	9	6		70.8	-2.9	53.3	67.9	2	69.9
30D	28.95	10	6		71.1	-2.9	53.3	68.2	2	70.2
30D	32	11	6		71.7	-2.9	53.3	68.8	2	70.8
30D	35.05	12	6		71.8	-2.9	53.3	68.9	2	70.9
30D	38.1	13	6		72	-2.9	53.3	69.1	2	71.1
31A	1.5	1	6		60.5	-2.9	53.3	57.6	2	59.6
31A	4.55	2	6		62.1	-2.9	53.3	59.2	2	61.2
31A	7.6	3	6		62.7	-2.9	53.3	59.8	2	61.8
31A	10.65	4	6		63.3	-2.9	53.3	60.4	2	62.4
31B	1.5	1	6		67.5	-2.9	53.3	64.6	2	66.6
31B	4.55	2	6		67.8	-2.9	53.3	64.9	2	66.9
31B	7.6	3	6		67.3	-2.9	53.3	64.4	2	66.4
31B	10.65	4	6		67	-2.9	53.3	64.1	2	66.1
31C	1.5	1	6		61.1	-2.9	53.3	58.2	2	60.2
31C	4.55	2	6		62.7	-2.9	53.3	59.8	2	61.8
31C	7.6	3	6		64.2	-2.9	53.3	61.3	2	63.3
31C	10.65	4	6		65.5	-2.9	53.3	62.6	2	64.6
32A	1.5	1	6		67.6	-2.9	53.3	64.7	2	66.7
32A	4.55	2	6		67.8	-2.9	53.3	64.9	2	66.9
32A	7.6	3	6		67.4	-2.9	53.3	64.5	2	66.5
32A	10.65	4	6		67.3	-2.9	53.3	64.4	2	66.4
32B	1.5	1	6		61.6	-2.9	53.3	58.7	2	60.7
32B	4.55	2	6		63.4	-2.9	53.3	60.5	2	62.5
32B	7.6	3	6		64.8	-2.9	53.3	61.9	2	63.9
32B	10.65	4	6		66.1	-2.9	53.3	63.2	2	65.2
33A	1.5	1	6		67.7	-2.9	53.3	64.8	2	66.8
33A	4.55	2	6		67.8	-2.9	53.3	64.9	2	66.9
33A	7.6	3	6		67.4	-2.9	53.3	64.5	2	66.5
33A	10.65	4	6		67.3	-2.9	53.3	64.4	2	66.4
33B	1.5	1	6		61.7	-2.9	53.3	58.8	2	60.8
33B	4.55	2	6		63.7	-2.9	53.3	60.8	2	62.8
33B	7.6	3	6		65.1	-2.9	53.3	62.2	2	64.2
33B	10.65	4	6		66.3	-2.9	53.3	63.4	2	65.4
34A	1.5	1	6		68	-2.9	53.3	65.1	2	67.1

34A	4.55	2	6		68	-2.9	53.3	65.1	2	67.1
34A	7.6	3	6		67.5	-2.9	53.3	64.6	2	66.6
34A	10.65	4	6		67.8	-2.9	53.3	64.9	2	66.9
34B	1.5	1	6		61.6	-2.9	53.3	58.7	2	60.7
34B	4.55	2	6		63.9	-2.9	53.3	61	2	63
34B	7.6	3	6		65.3	-2.9	53.3	62.4	2	64.4
34B	10.65	4	6		66.3	-2.9	53.3	63.4	2	65.4
35A	1.5	1	6		68.2	-2.9	53.3	65.3	2	67.3
35A	4.55	2	6		68.3	-2.9	53.3	65.4	2	67.4
35A	7.6	3	6		67.9	-2.9	53.3	65	2	67
35A	10.65	4	6		68.4	-2.9	53.3	65.5	2	67.5
35B	1.5	1	6		61.7	-2.9	53.3	58.8	2	60.8
35B	4.55	2	6		64.2	-2.9	53.3	61.3	2	63.3
35B	7.6	3	6		65.3	-2.9	53.3	62.4	2	64.4
35B	10.65	4	6		66.3	-2.9	53.3	63.4	2	65.4
36A	1.5	1	6		68.3	-2.9	53.3	65.4	2	67.4
36A	4.55	2	6		68.4	-2.9	53.3	65.5	2	67.5
36A	7.6	3	6		68	-2.9	53.3	65.1	2	67.1
36A	10.65	4	6		68.3	-2.9	53.3	65.4	2	67.4
36B	1.5	1	6		63.6	-2.9	53.3	60.7	2	62.7
36B	4.55	2	6		65.5	-2.9	53.3	62.6	2	64.6
36B	7.6	3	6		66.6	-2.9	53.3	63.7	2	65.7
36B	10.65	4	6		67.4	-2.9	53.3	64.5	2	66.5
36C	1.5	1	6		66.5	-2.9	53.3	63.6	2	65.6
36C	4.55	2	6		67.8	-2.9	53.3	64.9	2	66.9
36C	7.6	3	6		68.1	-2.9	53.3	65.2	2	67.2
36C	10.65	4	6		68.5	-2.9	53.3	65.6	2	67.6
37A	1.5	1	6		66.1	-2.9	53.3	63.2	2	65.2
37A	4.55	2	6		66.5	-2.9	53.3	63.6	2	65.6
37A	7.6	3	6		66.2	-2.9	53.3	63.3	2	65.3
37A	10.65	4	6		65.8	-2.9	53.3	62.9	2	64.9
37A	13.7	5	6		65.3	-2.9	53.3	62.4	2	64.4
37A	16.75	6	6		64.9	-2.9	53.3	62	2	64
37A	19.8	7	6		65	-2.9	53.3	62.1	2	64.1
37A	22.85	8	6		65.4	-2.9	53.3	62.5	2	64.5
37B	1.5	1	6		62	-2.9	53.3	59.1	2	61.1
37B	4.55	2	6		63.7	-2.9	53.3	60.8	2	62.8
37B	7.6	3	6		64.5	-2.9	53.3	61.6	2	63.6
37B	10.65	4	6		64.8	-2.9	53.3	61.9	2	63.9
37B	13.7	5	6		64.9	-2.9	53.3	62	2	64
37B	16.75	6	6		64.9	-2.9	53.3	62	2	64
37B	19.8	7	6		65.1	-2.9	53.3	62.2	2	64.2
37B	22.85	8	6		65.5	-2.9	53.3	62.6	2	64.6
37C	1.5	1	6		67.8	-2.9	53.3	64.9	2	66.9
37C	4.55	2	6		68.9	-2.9	53.3	66	2	68
37C	7.6	3	6		69.2	-2.9	53.3	66.3	2	68.3
37C	10.65	4	6		69.7	-2.9	53.3	66.8	2	68.8

37C	13.7	5	6		69.9	-2.9	53.3	67	2	69
37C	16.75	6	6		70.2	-2.9	53.3	67.3	2	69.3
37C	19.8	7	6		70.5	-2.9	53.3	67.6	2	69.6
37C	22.85	8	6		72.1	-2.9	53.3	69.2	2	71.2
37D	1.5	1	6		66.5	-2.9	53.3	63.6	2	65.6
37D	4.55	2	6		68.4	-2.9	53.3	65.5	2	67.5
37D	7.6	3	6		69.7	-2.9	53.3	66.8	2	68.8
37D	10.65	4	6		70.7	-2.9	53.3	67.8	2	69.8
37D	13.7	5	6		71.5	-2.9	53.3	68.6	2	70.6
37D	16.75	6	6		72.1	-2.9	53.3	69.2	2	71.2
37D	19.8	7	6		73.1	-2.9	53.3	70.2	2	72.2
37D	22.85	8	6		72.7	-2.9	53.3	69.8	2	71.8
37E	1.5	1	6		65.2	-2.9	53.3	62.3	2	64.3
37E	4.55	2	6		67.1	-2.9	53.3	64.2	2	66.2
37E	7.6	3	6		68.8	-2.9	53.3	65.9	2	67.9
37E	10.65	4	6		69.9	-2.9	53.3	67	2	69
37E	13.7	5	6		70.8	-2.9	53.3	67.9	2	69.9
37E	16.75	6	6		72.1	-2.9	53.3	69.2	2	71.2
37E	19.8	7	6		73.6	-2.9	53.3	70.7	2	72.7
37E	22.85	8	6		74.1	-2.9	53.3	71.2	2	73.2
38	1.5	1	6		76.7	-2.9	53.3	73.8	2	75.8
38	4.55	2	6		78.5	-2.9	53.3	75.6	2	77.6
38	7.6	3	6		80	-2.9	53.3	77.1	2	79.1
39	1.5	1	6		71.6	-2.9	53.3	68.7	2	70.7
39	4.55	2	6		76.1	-2.9	53.3	73.2	2	75.2
39	7.6	3	6		79.2	-2.9	53.3	76.3	2	78.3
40	1.5	1	6		66.9	-2.9	53.3	64	2	66
40	4.55	2	6		71.2	-2.9	53.3	68.3	2	70.3
40	7.6	3	6		74.7	-2.9	53.3	71.8	2	73.8
41	1.5	1	6		65.9	-2.9	53.3	63	2	65
41	4.55	2	6		70.1	-2.9	53.3	67.2	2	69.2
41	7.6	3	6		73.2	-2.9	53.3	70.3	2	72.3
42	1.5	1	6		65.8	-2.9	53.3	62.9	2	64.9
42	4.55	2	6		69.6	-2.9	53.3	66.7	2	68.7
42	7.6	3	6		71.8	-2.9	53.3	68.9	2	70.9
43	1.5	1	6		65.4	-2.9	53.3	62.5	2	64.5
43	4.55	2	6		68.8	-2.9	53.3	65.9	2	67.9
43	7.6	3	6		70.6	-2.9	53.3	67.7	2	69.7
44	1.5	1	6		65	-2.9	53.3	62.1	2	64.1
44	4.55	2	6		68.1	-2.9	53.3	65.2	2	67.2
44	7.6	3	6		69.8	-2.9	53.3	66.9	2	68.9
45A	7.6	3	6		67.4	-2.9	53.3	64.5	2	66.5
45A	10.65	4	6		67.1	-2.9	53.3	64.2	2	66.2
45A	13.7	5	6		66.7	-2.9	53.3	63.8	2	65.8
45A	16.75	6	6		66.4	-2.9	53.3	63.5	2	65.5
45A	19.8	7	6		66	-2.9	53.3	63.1	2	65.1
45A	22.85	8	6		65.8	-2.9	53.3	62.9	2	64.9

45A	25.9	9	6		66	-2.9	53.3	63.1	2	65.1
45A	28.95	10	6		66	-2.9	53.3	63.1	2	65.1
45A	32	11	6		66.1	-2.9	53.3	63.2	2	65.2
45A	35.05	12	6		66.2	-2.9	53.3	63.3	2	65.3
45B	1.5	1	6		65.3	-2.9	53.3	62.4	2	64.4
45B	4.55	2	6		66.4	-2.9	53.3	63.5	2	65.5
45B	7.6	3	6		66.5	-2.9	53.3	63.6	2	65.6
45B	10.65	4	6		66.4	-2.9	53.3	63.5	2	65.5
45B	13.7	5	6		66.4	-2.9	53.3	63.5	2	65.5
45B	16.75	6	6		66.3	-2.9	53.3	63.4	2	65.4
45B	19.8	7	6		66.2	-2.9	53.3	63.3	2	65.3
45B	22.85	8	6		66	-2.9	53.3	63.1	2	65.1
45B	25.9	9	6		65.9	-2.9	53.3	63	2	65
45B	28.95	10	6		65.9	-2.9	53.3	63	2	65
45C	1.5	1	6		54.1	-2.9	53.3	53.313	2	55.3125
45C	4.55	2	6		55.3	-2.9	53.3	53.313	2	55.3125
45C	7.6	3	6		56.3	-2.9	53.3	53.4	2	55.4
45C	10.65	4	6		57.3	-2.9	53.3	54.4	2	56.4
45C	13.7	5	6		57.9	-2.9	53.3	55	2	57
45C	16.75	6	6		58.3	-2.9	53.3	55.4	2	57.4
45C	19.8	7	6		58.6	-2.9	53.3	55.7	2	57.7
45C	22.85	8	6		58.9	-2.9	53.3	56	2	58
45C	25.9	9	6		59.6	-2.9	53.3	56.7	2	58.7
45C	28.95	10	6		60.4	-2.9	53.3	57.5	2	59.5
45D	1.5	1	6		52.2	-2.9	53.3	53.313	2	55.3125
45D	4.55	2	6		53.2	-2.9	53.3	53.313	2	55.3125
45D	7.6	3	6		53.2	-2.9	53.3	53.313	2	55.3125
45D	10.65	4	6		53.9	-2.9	53.3	53.313	2	55.3125
45D	13.7	5	6		54.6	-2.9	53.3	53.313	2	55.3125
45D	16.75	6	6		55.3	-2.9	53.3	53.313	2	55.3125
45D	19.8	7	6		55.8	-2.9	53.3	53.313	2	55.3125
45D	22.85	8	6		56.9	-2.9	53.3	54	2	56
45D	25.9	9	6		58.7	-2.9	53.3	55.8	2	57.8
45D	28.95	10	6		59.9	-2.9	53.3	57	2	59
45E	1.5	1	6		51.5	-2.9	53.3	53.313	2	55.3125
45E	4.55	2	6		53.1	-2.9	53.3	53.313	2	55.3125
45E	7.6	3	6		54	-2.9	53.3	53.313	2	55.3125
45E	10.65	4	6		54.7	-2.9	53.3	53.313	2	55.3125
45E	13.7	5	6		55.4	-2.9	53.3	53.313	2	55.3125
45E	16.75	6	6		55.5	-2.9	53.3	53.313	2	55.3125
45E	19.8	7	6		55.8	-2.9	53.3	53.313	2	55.3125
45E	22.85	8	6		56.6	-2.9	53.3	53.7	2	55.7
45E	25.9	9	6		57.8	-2.9	53.3	54.9	2	56.9
45E	28.95	10	6		58.9	-2.9	53.3	56	2	58
46A	1.5	1	8		60.1	3.1	53.3	63.2	2.5	65.7
46A	4.55	2	8		61.6	3.1	53.3	64.7	2.5	67.2
46A	7.6	3	8		62.4	3.1	53.3	65.5	2.5	68

46A	10.65	4	8		62.9	3.1	53.3	66	2.5	68.5
46A	13.7	5	8		64.3	3.1	53.3	67.4	2.5	69.9
46B	1.5	1	8		58.5	3.1	53.3	61.6	2.5	64.1
46B	4.55	2	8		60.3	3.1	53.3	63.4	2.5	65.9
46B	7.6	3	8		61.1	3.1	53.3	64.2	2.5	66.7
46B	10.65	4	8		61.4	3.1	53.3	64.5	2.5	67
46B	13.7	5	8		63.2	3.1	53.3	66.3	2.5	68.8
46C	1.5	1	8		50.4	3.1	53.3	53.5	2.5	56
46C	4.55	2	8		53.5	3.1	53.3	56.6	2.5	59.1
46C	7.6	3	8		55.1	3.1	53.3	58.2	2.5	60.7
46C	10.65	4	8		58.6	3.1	53.3	61.7	2.5	64.2
46C	13.7	5	8		62.1	3.1	53.3	65.2	2.5	67.7
47A	1.5	1	8		53.9	3.1	53.3	57	2.5	59.5
47A	4.55	2	8		55.1	3.1	53.3	58.2	2.5	60.7
47A	7.6	3	8		56.6	3.1	53.3	59.7	2.5	62.2
47A	10.65	4	8		58.3	3.1	53.3	61.4	2.5	63.9
47A	13.7	5	8		62.5	3.1	53.3	65.6	2.5	68.1
47B	1.5	1	8		51.5	3.1	53.3	54.6	2.5	57.1
47B	4.55	2	8		53.5	3.1	53.3	56.6	2.5	59.1
47B	7.6	3	8		55.7	3.1	53.3	58.8	2.5	61.3
47B	10.65	4	8		58.5	3.1	53.3	61.6	2.5	64.1
47B	13.7	5	8		60.9	3.1	53.3	64	2.5	66.5
47C	1.5	1	8		50.4	3.1	53.3	53.5	2.5	56
47C	4.55	2	8		53.7	3.1	53.3	56.8	2.5	59.3
47C	7.6	3	8		55.8	3.1	53.3	58.9	2.5	61.4
47C	10.65	4	8		59.7	3.1	53.3	62.8	2.5	65.3
47C	13.7	5	8		62	3.1	53.3	65.1	2.5	67.6
48A	1.5	1	8		59.6	3.1	53.3	62.7	2.5	65.2
48A	4.55	2	8		60.7	3.1	53.3	63.8	2.5	66.3
48A	7.6	3	8		61.8	3.1	53.3	64.9	2.5	67.4
48B	1.5	1	8		47	3.1	53.3	53.313	2.5	55.8125
48B	4.55	2	8		48.6	3.1	53.3	53.313	2.5	55.8125
48B	7.6	3	8		51.7	3.1	53.3	54.8	2.5	57.3
48C	1.5	1	8		53.5	3.1	53.3	56.6	2.5	59.1
48C	4.55	2	8		55.4	3.1	53.3	58.5	2.5	61
48C	7.6	3	8		57.1	3.1	53.3	60.2	2.5	62.7
48D	1.5	1	8		42.5	3.1	53.3	53.313	2.5	55.8125
48D	4.55	2	8		45	3.1	53.3	53.313	2.5	55.8125
48D	7.6	3	8		49.4	3.1	53.3	53.313	2.5	55.8125
49A	1.5	1	8		48	3.1	53.3	53.313	2.5	55.8125
49A	4.55	2	8		49.3	3.1	53.3	53.313	2.5	55.8125
49A	7.6	3	8		51.7	3.1	53.3	54.8	2.5	57.3
49A	10.65	4	8		61.1	3.1	53.3	64.2	2.5	66.7
49B	1.5	1	8		58	3.1	53.3	61.1	2.5	63.6
49B	4.55	2	8		59.2	3.1	53.3	62.3	2.5	64.8
49B	7.6	3	8		59.8	3.1	53.3	62.9	2.5	65.4
49B	10.65	4	8		61.4	3.1	53.3	64.5	2.5	67

49C	1.5	1	8		66.3	3.1	53.3	69.4	2.5	71.9
49C	4.55	2	8		66.5	3.1	53.3	69.6	2.5	72.1
49C	7.6	3	8		66.2	3.1	53.3	69.3	2.5	71.8
49C	10.65	4	8		66	3.1	53.3	69.1	2.5	71.6
49D	1.5	1	8		60.7	3.1	53.3	63.8	2.5	66.3
49D	4.55	2	8		62	3.1	53.3	65.1	2.5	67.6
49D	7.6	3	8		62.6	3.1	53.3	65.7	2.5	68.2
49D	10.65	4	8		63.6	3.1	53.3	66.7	2.5	69.2
50A	1.5	1	8		66.1	3.1	53.3	69.2	2.5	71.7
50A	4.55	2	8		65.9	3.1	53.3	69	2.5	71.5
50A	7.6	3	8		65.7	3.1	53.3	68.8	2.5	71.3
50A	10.65	4	8		65.5	3.1	53.3	68.6	2.5	71.1
50B	1.5	1	8		58.3	3.1	53.3	61.4	2.5	63.9
50B	4.55	2	8		59.4	3.1	53.3	62.5	2.5	65
50B	7.6	3	8		60	3.1	53.3	63.1	2.5	65.6
50B	10.65	4	8		60.9	3.1	53.3	64	2.5	66.5
50C	1.5	1	8		40.5	3.1	53.3	53.313	2.5	55.8125
50C	4.55	2	8		48	3.1	53.3	53.313	2.5	55.8125
50C	7.6	3	8		50.3	3.1	53.3	53.4	2.5	55.9
50C	10.65	4	8		58.9	3.1	53.3	62	2.5	64.5
51A	1.5	1	8		65.6	3.1	53.3	68.7	2.5	71.2
51A	4.55	2	8		65.6	3.1	53.3	68.7	2.5	71.2
51A	7.6	3	8		65.4	3.1	53.3	68.5	2.5	71
51A	10.65	4	8		65.4	3.1	53.3	68.5	2.5	71
51B	1.5	1	8		61.1	3.1	53.3	64.2	2.5	66.7
51B	4.55	2	8		61.9	3.1	53.3	65	2.5	67.5
51B	7.6	3	8		61.5	3.1	53.3	64.6	2.5	67.1
51B	10.65	4	8		62.9	3.1	53.3	66	2.5	68.5
51C	1.5	1	8		44.3	3.1	53.3	53.313	2.5	55.8125
51C	4.55	2	8		48.5	3.1	53.3	53.313	2.5	55.8125
51C	7.6	3	8		49.7	3.1	53.3	53.313	2.5	55.8125
51C	10.65	4	8		60.3	3.1	53.3	63.4	2.5	65.9
52B	1.5	1	8		43.5	3.1	53.3	53.313	2.5	55.8125
52B	4.55	2	8		54.6	3.1	53.3	57.7	2.5	60.2
52C	1.5	1	8		60.6	3.1	53.3	63.7	2.5	66.2
52C	4.55	2	8		61.7	3.1	53.3	64.8	2.5	67.3
52D	1.5	1	8		47.1	3.1	53.3	53.313	2.5	55.8125
52D	4.55	2	8		50.9	3.1	53.3	54	2.5	56.5
53A	1.5	1	8		48.2	3.1	53.3	53.313	2.5	55.8125
53A	4.55	2	8		49.5	3.1	53.3	53.313	2.5	55.8125
53A	7.6	3	8		50.1	3.1	53.3	53.313	2.5	55.8125
53A	10.65	4	8		50.8	3.1	53.3	53.9	2.5	56.4
53A	13.7	5	8		51.4	3.1	53.3	54.5	2.5	57
53A	16.75	6	8		52.1	3.1	53.3	55.2	2.5	57.7
53A	19.8	7	8		54.9	3.1	53.3	58	2.5	60.5
53B	1.5	1	8		56.4	3.1	53.3	59.5	2.5	62
53B	4.55	2	8		58.3	3.1	53.3	61.4	2.5	63.9

53B	7.6	3	8		59.4	3.1	53.3	62.5	2.5	65
53B	10.65	4	8		59.9	3.1	53.3	63	2.5	65.5
53B	13.7	5	8		60.5	3.1	53.3	63.6	2.5	66.1
53B	16.75	6	8		61	3.1	53.3	64.1	2.5	66.6
53B	19.8	7	8		62.4	3.1	53.3	65.5	2.5	68
53C	1.5	1	8		61.8	3.1	53.3	64.9	2.5	67.4
53C	4.55	2	8		63	3.1	53.3	66.1	2.5	68.6
53C	7.6	3	8		63.3	3.1	53.3	66.4	2.5	68.9
53C	10.65	4	8		63.4	3.1	53.3	66.5	2.5	69
53C	13.7	5	8		63.4	3.1	53.3	66.5	2.5	69
53C	16.75	6	8		63.4	3.1	53.3	66.5	2.5	69
53C	19.8	7	8		63.3	3.1	53.3	66.4	2.5	68.9
53D	1.5	1	8		59.1	3.1	53.3	62.2	2.5	64.7
53D	4.55	2	8		60	3.1	53.3	63.1	2.5	65.6
53D	7.6	3	8		60	3.1	53.3	63.1	2.5	65.6
53D	10.65	4	8		59.9	3.1	53.3	63	2.5	65.5
53D	13.7	5	8		59.7	3.1	53.3	62.8	2.5	65.3
53D	16.75	6	8		59.5	3.1	53.3	62.6	2.5	65.1
53D	19.8	7	8		59.3	3.1	53.3	62.4	2.5	64.9
54A	1.5	1	6		48	-2.9	53.3	53.313	2	55.3125
54A	4.55	2	6		48.9	-2.9	53.3	53.313	2	55.3125
54A	7.6	3	6		49.8	-2.9	53.3	53.313	2	55.3125
54A	10.65	4	6		50.7	-2.9	53.3	53.313	2	55.3125
54A	13.7	5	6		51.6	-2.9	53.3	53.313	2	55.3125
54A	16.75	6	6		52.6	-2.9	53.3	53.313	2	55.3125
54A	19.8	7	6		56.3	-2.9	53.3	53.4	2	55.4
54B	1.5	1	6		64.6	-2.9	53.3	61.7	2	63.7
54B	4.55	2	6		65.7	-2.9	53.3	62.8	2	64.8
54B	7.6	3	6		65.8	-2.9	53.3	62.9	2	64.9
54B	10.65	4	6		65.7	-2.9	53.3	62.8	2	64.8
54B	13.7	5	6		65.6	-2.9	53.3	62.7	2	64.7
54B	16.75	6	6		65.4	-2.9	53.3	62.5	2	64.5
54B	19.8	7	6		65.7	-2.9	53.3	62.8	2	64.8
54C	1.5	1	6		62.4	-2.9	53.3	59.5	2	61.5
54C	4.55	2	6		63.2	-2.9	53.3	60.3	2	62.3
54C	7.6	3	6		63	-2.9	53.3	60.1	2	62.1
54C	10.65	4	6		62.8	-2.9	53.3	59.9	2	61.9
54C	13.7	5	6		62.6	-2.9	53.3	59.7	2	61.7
54C	16.75	6	6		62.5	-2.9	53.3	59.6	2	61.6
54C	19.8	7	6		63.8	-2.9	53.3	60.9	2	62.9
54D	1.5	1	6		49	-2.9	53.3	53.313	2	55.3125
54D	4.55	2	6		49.6	-2.9	53.3	53.313	2	55.3125
54D	7.6	3	6		50.1	-2.9	53.3	53.313	2	55.3125
54D	10.65	4	6		50.7	-2.9	53.3	53.313	2	55.3125
54D	13.7	5	6		51.4	-2.9	53.3	53.313	2	55.3125
54D	16.75	6	6		52.3	-2.9	53.3	53.313	2	55.3125
54D	19.8	7	6		52.9	-2.9	53.3	53.313	2	55.3125

55A	1.5	1	6		61.5	-2.9	53.3	58.6	2	60.6
55A	4.55	2	6		62.3	-2.9	53.3	59.4	2	61.4
55A	7.6	3	6		62	-2.9	53.3	59.1	2	61.1
55A	10.65	4	6		61.6	-2.9	53.3	58.7	2	60.7
55A	13.7	5	6		61.1	-2.9	53.3	58.2	2	60.2
55A	16.75	6	6		60.6	-2.9	53.3	57.7	2	59.7
55A	19.8	7	6		60.3	-2.9	53.3	57.4	2	59.4
55B	1.5	1	6		48.8	-2.9	53.3	53.313	2	55.3125
55B	4.55	2	6		49.4	-2.9	53.3	53.313	2	55.3125
55B	7.6	3	6		49.9	-2.9	53.3	53.313	2	55.3125
55B	10.65	4	6		50.5	-2.9	53.3	53.313	2	55.3125
55B	13.7	5	6		51.1	-2.9	53.3	53.313	2	55.3125
55B	16.75	6	6		51.6	-2.9	53.3	53.313	2	55.3125
55B	19.8	7	6		53.4	-2.9	53.3	53.313	2	55.3125
55C	1.5	1	6		60.9	-2.9	53.3	58	2	60
55C	4.55	2	6		61.8	-2.9	53.3	58.9	2	60.9
55C	7.6	3	6		61.6	-2.9	53.3	58.7	2	60.7
55C	10.65	4	6		61.2	-2.9	53.3	58.3	2	60.3
55C	13.7	5	6		60.7	-2.9	53.3	57.8	2	59.8
55C	16.75	6	6		60.2	-2.9	53.3	57.3	2	59.3
55C	19.8	7	6		60	-2.9	53.3	57.1	2	59.1
55D	1.5	1	6		64	-2.9	53.3	61.1	2	63.1
55D	4.55	2	6		64.2	-2.9	53.3	61.3	2	63.3
55D	7.6	3	6		63.6	-2.9	53.3	60.7	2	62.7
55D	10.65	4	6		62.9	-2.9	53.3	60	2	62
55D	13.7	5	6		62.1	-2.9	53.3	59.2	2	61.2
55D	16.75	6	6		61.3	-2.9	53.3	58.4	2	60.4
55D	19.8	7	6		60.9	-2.9	53.3	58	2	60
56A	1.5	1	6		63	-2.9	53.3	60.1	2	62.1
56A	4.55	2	6		64.5	-2.9	53.3	61.6	2	63.6
56A	7.6	3	6		64.8	-2.9	53.3	61.9	2	63.9
56A	10.65	4	6		65	-2.9	53.3	62.1	2	64.1
56A	13.7	5	6		65.1	-2.9	53.3	62.2	2	64.2
56A	16.75	6	6		65.3	-2.9	53.3	62.4	2	64.4
56A	19.8	7	6		65.5	-2.9	53.3	62.6	2	64.6
56B	1.5	1	6		66.1	-2.9	53.3	63.2	2	65.2
56B	4.55	2	6		67.3	-2.9	53.3	64.4	2	66.4
56B	7.6	3	6		67.6	-2.9	53.3	64.7	2	66.7
56B	10.65	4	6		67.7	-2.9	53.3	64.8	2	66.8
56B	13.7	5	6		67.7	-2.9	53.3	64.8	2	66.8
56B	16.75	6	6		67.3	-2.9	53.3	64.4	2	66.4
56B	19.8	7	6		68.1	-2.9	53.3	65.2	2	67.2
56C	1.5	1	6		64.6	-2.9	53.3	61.7	2	63.7
56C	4.55	2	6		65.7	-2.9	53.3	62.8	2	64.8
56C	7.6	3	6		65.8	-2.9	53.3	62.9	2	64.9
56C	10.65	4	6		65.6	-2.9	53.3	62.7	2	64.7
56C	13.7	5	6		65.4	-2.9	53.3	62.5	2	64.5

56C	16.75	6	6		65.1	-2.9	53.3	62.2	2	64.2
56C	19.8	7	6		65.6	-2.9	53.3	62.7	2	64.7
56D	1.5	1	6		48.7	-2.9	53.3	53.313	2	55.3125
56D	4.55	2	6		49.1	-2.9	53.3	53.313	2	55.3125
56D	7.6	3	6		49.6	-2.9	53.3	53.313	2	55.3125
56D	10.65	4	6		50.1	-2.9	53.3	53.313	2	55.3125
56D	13.7	5	6		50.8	-2.9	53.3	53.313	2	55.3125
56D	16.75	6	6		51.8	-2.9	53.3	53.313	2	55.3125
56D	19.8	7	6		53.4	-2.9	53.3	53.313	2	55.3125
57A	1.5	1	8		63.6	3.1	53.3	66.7	2.5	69.2
57A	4.55	2	8		64.7	3.1	53.3	67.8	2.5	70.3
57A	7.6	3	8		64.8	3.1	53.3	67.9	2.5	70.4
57A	10.65	4	8		64.8	3.1	53.3	67.9	2.5	70.4
57A	13.7	5	8		64.6	3.1	53.3	67.7	2.5	70.2
57A	16.75	6	8		64.3	3.1	53.3	67.4	2.5	69.9
57A	19.8	7	8		64.3	3.1	53.3	67.4	2.5	69.9
57B	1.5	1	8		63.5	3.1	53.3	66.6	2.5	69.1
57B	4.55	2	8		64.7	3.1	53.3	67.8	2.5	70.3
57B	7.6	3	8		65	3.1	53.3	68.1	2.5	70.6
57B	10.65	4	8		65.1	3.1	53.3	68.2	2.5	70.7
57B	13.7	5	8		65.1	3.1	53.3	68.2	2.5	70.7
57B	16.75	6	8		65.3	3.1	53.3	68.4	2.5	70.9
57B	19.8	7	8		66	3.1	53.3	69.1	2.5	71.6
57C	1.5	1	8		49.7	3.1	53.3	53.313	2.5	55.8125
57C	4.55	2	8		50.5	3.1	53.3	53.6	2.5	56.1
57C	7.6	3	8		51.6	3.1	53.3	54.7	2.5	57.2
57C	10.65	4	8		52.5	3.1	53.3	55.6	2.5	58.1
57C	13.7	5	8		53.2	3.1	53.3	56.3	2.5	58.8
57C	16.75	6	8		54.1	3.1	53.3	57.2	2.5	59.7
57C	19.8	7	8		60.2	3.1	53.3	63.3	2.5	65.8
57D	1.5	1	8		52.3	3.1	53.3	55.4	2.5	57.9
57D	4.55	2	8		52.8	3.1	53.3	55.9	2.5	58.4
57D	7.6	3	8		53.4	3.1	53.3	56.5	2.5	59
57D	10.65	4	8		54	3.1	53.3	57.1	2.5	59.6
57D	13.7	5	8		54.5	3.1	53.3	57.6	2.5	60.1
57D	16.75	6	8		55	3.1	53.3	58.1	2.5	60.6
57D	19.8	7	8		55.8	3.1	53.3	58.9	2.5	61.4
58A	1.5	1	7		47.8	0.4	53.3	53.313	2.8	56.1125
58A	4.55	2	7		48.4	0.4	53.3	53.313	2.8	56.1125
58A	7.6	3	7		49	0.4	53.3	53.313	2.8	56.1125
58A	10.65	4	7		49.6	0.4	53.3	53.313	2.8	56.1125
58A	13.7	5	7		50.3	0.4	53.3	53.313	2.8	56.1125
58A	16.75	6	7		51	0.4	53.3	53.313	2.8	56.1125
58A	19.8	7	7		53.3	0.4	53.3	53.7	2.8	56.5
58B	1.5	1	7		51.1	0.4	53.3	53.313	2.8	56.1125
58B	4.55	2	7		51.8	0.4	53.3	53.313	2.8	56.1125
58B	7.6	3	7		52.5	0.4	53.3	53.313	2.8	56.1125

58B	10.65	4	7		53	0.4	53.3	53.4	2.8	56.2
58B	13.7	5	7		53.6	0.4	53.3	54	2.8	56.8
58B	16.75	6	7		54.1	0.4	53.3	54.5	2.8	57.3
58B	19.8	7	7		56	0.4	53.3	56.4	2.8	59.2
58C	1.5	1	7		59.3	0.4	53.3	59.7	2.8	62.5
58C	4.55	2	7		60.2	0.4	53.3	60.6	2.8	63.4
58C	7.6	3	7		60.3	0.4	53.3	60.7	2.8	63.5
58C	10.65	4	7		60.2	0.4	53.3	60.6	2.8	63.4
58C	13.7	5	7		60	0.4	53.3	60.4	2.8	63.2
58C	16.75	6	7		59.9	0.4	53.3	60.3	2.8	63.1
58C	19.8	7	7		59.8	0.4	53.3	60.2	2.8	63
58D	1.5	1	7		56.6	0.4	53.3	57	2.8	59.8
58D	4.55	2	7		57.5	0.4	53.3	57.9	2.8	60.7
58D	7.6	3	7		57.3	0.4	53.3	57.7	2.8	60.5
58D	10.65	4	7		57	0.4	53.3	57.4	2.8	60.2
58D	13.7	5	7		56.7	0.4	53.3	57.1	2.8	59.9
58D	16.75	6	7		56.4	0.4	53.3	56.8	2.8	59.6
58D	19.8	7	7		56.4	0.4	53.3	56.8	2.8	59.6
59A	1.5	1	7		54.6	0.4	53.3	55	2.8	57.8
59A	4.55	2	7		55.8	0.4	53.3	56.2	2.8	59
59A	7.6	3	7		56.8	0.4	53.3	57.2	2.8	60
59A	10.65	4	7		57.8	0.4	53.3	58.2	2.8	61
59A	13.7	5	7		58.3	0.4	53.3	58.7	2.8	61.5
59A	16.75	6	7		58.4	0.4	53.3	58.8	2.8	61.6
59A	19.8	7	7		58.6	0.4	53.3	59	2.8	61.8
59B	1.5	1	7		55.7	0.4	53.3	56.1	2.8	58.9
59B	4.55	2	7		56.9	0.4	53.3	57.3	2.8	60.1
59B	7.6	3	7		58	0.4	53.3	58.4	2.8	61.2
59B	10.65	4	7		59	0.4	53.3	59.4	2.8	62.2
59B	13.7	5	7		59.6	0.4	53.3	60	2.8	62.8
59B	16.75	6	7		60	0.4	53.3	60.4	2.8	63.2
59B	19.8	7	7		60.6	0.4	53.3	61	2.8	63.8
59C	1.5	1	7		45.4	0.4	53.3	53.313	2.8	56.1125
59C	4.55	2	7		46.4	0.4	53.3	53.313	2.8	56.1125
59C	7.6	3	7		47.1	0.4	53.3	53.313	2.8	56.1125
59C	10.65	4	7		47.7	0.4	53.3	53.313	2.8	56.1125
59C	13.7	5	7		48.5	0.4	53.3	53.313	2.8	56.1125
59C	16.75	6	7		49.3	0.4	53.3	53.313	2.8	56.1125
59C	19.8	7	7		52.1	0.4	53.3	53.313	2.8	56.1125
59D	1.5	1	7		45.9	0.4	53.3	53.313	2.8	56.1125
59D	4.55	2	7		46.2	0.4	53.3	53.313	2.8	56.1125
59D	7.6	3	7		46.6	0.4	53.3	53.313	2.8	56.1125
59D	10.65	4	7		47	0.4	53.3	53.313	2.8	56.1125
59D	13.7	5	7		47.5	0.4	53.3	53.313	2.8	56.1125
59D	16.75	6	7		48	0.4	53.3	53.313	2.8	56.1125
59D	19.8	7	7		49.2	0.4	53.3	53.313	2.8	56.1125
60A	1.5	1	7		62.7	0.4	53.3	63.1	2.8	65.9

60A	4.55	2	7		63.7	0.4	53.3	64.1	2.8	66.9
60A	7.6	3	7		63.7	0.4	53.3	64.1	2.8	66.9
60A	10.65	4	7		63.5	0.4	53.3	63.9	2.8	66.7
60A	13.7	5	7		63.1	0.4	53.3	63.5	2.8	66.3
60A	16.75	6	7		62.7	0.4	53.3	63.1	2.8	65.9
60A	19.8	7	7		63.5	0.4	53.3	63.9	2.8	66.7
60B	1.5	1	7		62.9	0.4	53.3	63.3	2.8	66.1
60B	4.55	2	7		63.9	0.4	53.3	64.3	2.8	67.1
60B	7.6	3	7		63.9	0.4	53.3	64.3	2.8	67.1
60B	10.65	4	7		63.8	0.4	53.3	64.2	2.8	67
60B	13.7	5	7		63.4	0.4	53.3	63.8	2.8	66.6
60B	16.75	6	7		63	0.4	53.3	63.4	2.8	66.2
60B	19.8	7	7		63.4	0.4	53.3	63.8	2.8	66.6
60C	1.5	1	7		51.8	0.4	53.3	53.313	2.8	56.1125
60C	4.55	2	7		52.7	0.4	53.3	53.313	2.8	56.1125
60C	7.6	3	7		53.5	0.4	53.3	53.9	2.8	56.7
60C	10.65	4	7		54.3	0.4	53.3	54.7	2.8	57.5
60C	13.7	5	7		55	0.4	53.3	55.4	2.8	58.2
60C	16.75	6	7		55.6	0.4	53.3	56	2.8	58.8
60C	19.8	7	7		58.1	0.4	53.3	58.5	2.8	61.3
60D	1.5	1	7		49.3	0.4	53.3	53.313	2.8	56.1125
60D	4.55	2	7		49.8	0.4	53.3	53.313	2.8	56.1125
60D	7.6	3	7		50.3	0.4	53.3	53.313	2.8	56.1125
60D	10.65	4	7		50.8	0.4	53.3	53.313	2.8	56.1125
60D	13.7	5	7		51.3	0.4	53.3	53.313	2.8	56.1125
60D	16.75	6	7		51.9	0.4	53.3	53.313	2.8	56.1125
60D	19.8	7	7		54.9	0.4	53.3	55.3	2.8	58.1
61A	1.5	1	4		55.8	-1	53.3	54.8	2.5	57.3
61A	4.55	2	4		56.7	-1	53.3	55.7	2.5	58.2
61A	7.6	3	4		57.7	-1	53.3	56.7	2.5	59.2
61A	10.65	4	4		58.5	-1	53.3	57.5	2.5	60
61A	13.7	5	4		58.9	-1	53.3	57.9	2.5	60.4
61A	16.75	6	4		59.2	-1	53.3	58.2	2.5	60.7
61A	19.8	7	4		59.5	-1	53.3	58.5	2.5	61
61B	1.5	1	4		55	-1	53.3	54	2.5	56.5
61B	4.55	2	4		56	-1	53.3	55	2.5	57.5
61B	7.6	3	4		57	-1	53.3	56	2.5	58.5
61B	10.65	4	4		57.9	-1	53.3	56.9	2.5	59.4
61B	13.7	5	4		58.3	-1	53.3	57.3	2.5	59.8
61B	16.75	6	4		58.6	-1	53.3	57.6	2.5	60.1
61B	19.8	7	4		58.9	-1	53.3	57.9	2.5	60.4
61C	1.5	1	4		47.6	-1	53.3	53.313	2.5	55.8125
61C	4.55	2	4		48	-1	53.3	53.313	2.5	55.8125
61C	7.6	3	4		48.4	-1	53.3	53.313	2.5	55.8125
61C	10.65	4	4		48.8	-1	53.3	53.313	2.5	55.8125
61C	13.7	5	4		49.1	-1	53.3	53.313	2.5	55.8125
61C	16.75	6	4		49.6	-1	53.3	53.313	2.5	55.8125

61C	19.8	7	4		51.3	-1	53.3	53.313	2.5	55.8125
61D	1.5	1	4		45.2	-1	53.3	53.313	2.5	55.8125
61D	4.55	2	4		45.6	-1	53.3	53.313	2.5	55.8125
61D	7.6	3	4		46	-1	53.3	53.313	2.5	55.8125
61D	10.65	4	4		46.5	-1	53.3	53.313	2.5	55.8125
61D	13.7	5	4		46.9	-1	53.3	53.313	2.5	55.8125
61D	16.75	6	4		47.4	-1	53.3	53.313	2.5	55.8125
61D	19.8	7	4		52.5	-1	53.3	53.313	2.5	55.8125
62A	1.5	1	2		50.4	1.7	53.3	53.313	1.3	54.6125
62A	4.55	2	2		51	1.7	53.3	53.313	1.3	54.6125
62A	7.6	3	2		51.6	1.7	53.3	53.313	1.3	54.6125
62A	10.65	4	2		52.2	1.7	53.3	53.9	1.3	55.2
62A	13.7	5	2		52.8	1.7	53.3	54.5	1.3	55.8
62A	16.75	6	2		53.2	1.7	53.3	54.9	1.3	56.2
62A	19.8	7	2		54.3	1.7	53.3	56	1.3	57.3
62B	1.5	1	2		48.5	1.7	53.3	53.313	1.3	54.6125
62B	4.55	2	2		48.9	1.7	53.3	53.313	1.3	54.6125
62B	7.6	3	2		49.3	1.7	53.3	53.313	1.3	54.6125
62B	10.65	4	2		49.7	1.7	53.3	53.313	1.3	54.6125
62B	13.7	5	2		50.1	1.7	53.3	53.313	1.3	54.6125
62B	16.75	6	2		50.6	1.7	53.3	53.313	1.3	54.6125
62B	19.8	7	2		52.6	1.7	53.3	54.3	1.3	55.6
62C	1.5	1	2		54.9	1.7	53.3	56.6	1.3	57.9
62C	4.55	2	2		55.9	1.7	53.3	57.6	1.3	58.9
62C	7.6	3	2		55.6	1.7	53.3	57.3	1.3	58.6
62C	10.65	4	2		55.3	1.7	53.3	57	1.3	58.3
62C	13.7	5	2		54.9	1.7	53.3	56.6	1.3	57.9
62C	16.75	6	2		54.7	1.7	53.3	56.4	1.3	57.7
62C	19.8	7	2		54.8	1.7	53.3	56.5	1.3	57.8
62D	1.5	1	2		61.3	1.7	53.3	63	1.3	64.3
62D	4.55	2	2		62.1	1.7	53.3	63.8	1.3	65.1
62D	7.6	3	2		61.9	1.7	53.3	63.6	1.3	64.9
62D	10.65	4	2		61.5	1.7	53.3	63.2	1.3	64.5
62D	13.7	5	2		61.1	1.7	53.3	62.8	1.3	64.1
62D	16.75	6	2		60.6	1.7	53.3	62.3	1.3	63.6
62D	19.8	7	2		60.1	1.7	53.3	61.8	1.3	63.1
63A	1.5	1	5		65.1	0.4	53.3	65.5	1.5	67
63A	4.55	2	5		65.6	0.4	53.3	66	1.5	67.5
63A	7.6	3	5		65.1	0.4	53.3	65.5	1.5	67
63A	10.65	4	5		64.5	0.4	53.3	64.9	1.5	66.4
63A	13.7	5	5		63.8	0.4	53.3	64.2	1.5	65.7
63A	16.75	6	5		63	0.4	53.3	63.4	1.5	64.9
63A	19.8	7	5		62.8	0.4	53.3	63.2	1.5	64.7
63B	1.5	1	5		64.3	0.4	53.3	64.7	1.5	66.2
63B	4.55	2	5		64.8	0.4	53.3	65.2	1.5	66.7
63B	7.6	3	5		64.5	0.4	53.3	64.9	1.5	66.4
63B	10.65	4	5		64.1	0.4	53.3	64.5	1.5	66

63B	13.7	5	5		63.7	0.4	53.3	64.1	1.5	65.6
63B	16.75	6	5		63.3	0.4	53.3	63.7	1.5	65.2
63B	19.8	7	5		63.1	0.4	53.3	63.5	1.5	65
63C	1.5	1	5		52.4	0.4	53.3	53.313	1.5	54.8125
63C	4.55	2	5		53.2	0.4	53.3	53.6	1.5	55.1
63C	7.6	3	5		53.8	0.4	53.3	54.2	1.5	55.7
63C	10.65	4	5		54.5	0.4	53.3	54.9	1.5	56.4
63C	13.7	5	5		55	0.4	53.3	55.4	1.5	56.9
63C	16.75	6	5		55.4	0.4	53.3	55.8	1.5	57.3
63C	19.8	7	5		56.9	0.4	53.3	57.3	1.5	58.8
63D	1.5	1	5		60.2	0.4	53.3	60.6	1.5	62.1
63D	4.55	2	5		61.3	0.4	53.3	61.7	1.5	63.2
63D	7.6	3	5		61.2	0.4	53.3	61.6	1.5	63.1
63D	10.65	4	5		61	0.4	53.3	61.4	1.5	62.9
63D	13.7	5	5		60.6	0.4	53.3	61	1.5	62.5
63D	16.75	6	5		60.3	0.4	53.3	60.7	1.5	62.2
63D	19.8	7	5		60.4	0.4	53.3	60.8	1.5	62.3
64A	1.5	1	5		60.7	0.4	53.3	61.1	1.5	62.6
64A	4.55	2	5		61.6	0.4	53.3	62	1.5	63.5
64A	7.6	3	5		61.4	0.4	53.3	61.8	1.5	63.3
64A	10.65	4	5		61.2	0.4	53.3	61.6	1.5	63.1
64A	13.7	5	5		60.8	0.4	53.3	61.2	1.5	62.7
64A	16.75	6	5		60.6	0.4	53.3	61	1.5	62.5
64A	19.8	7	5		60.6	0.4	53.3	61	1.5	62.5
64B	1.5	1	5		52.1	0.4	53.3	53.313	1.5	54.8125
64B	4.55	2	5		52.7	0.4	53.3	53.313	1.5	54.8125
64B	7.6	3	5		53.3	0.4	53.3	53.7	1.5	55.2
64B	10.65	4	5		53.9	0.4	53.3	54.3	1.5	55.8
64B	13.7	5	5		54.5	0.4	53.3	54.9	1.5	56.4
64B	16.75	6	5		55	0.4	53.3	55.4	1.5	56.9
64B	19.8	7	5		55.8	0.4	53.3	56.2	1.5	57.7
64C	1.5	1	5		47.4	0.4	53.3	53.313	1.5	54.8125
64C	4.55	2	5		48	0.4	53.3	53.313	1.5	54.8125
64C	7.6	3	5		48.7	0.4	53.3	53.313	1.5	54.8125
64C	10.65	4	5		49.4	0.4	53.3	53.313	1.5	54.8125
64C	13.7	5	5		50	0.4	53.3	53.313	1.5	54.8125
64C	16.75	6	5		50.5	0.4	53.3	53.313	1.5	54.8125
64C	19.8	7	5		53.9	0.4	53.3	54.3	1.5	55.8
64D	1.5	1	5		61.1	0.4	53.3	61.5	1.5	63
64D	4.55	2	5		61.8	0.4	53.3	62.2	1.5	63.7
64D	7.6	3	5		61.6	0.4	53.3	62	1.5	63.5
64D	10.65	4	5		61.2	0.4	53.3	61.6	1.5	63.1
64D	13.7	5	5		60.8	0.4	53.3	61.2	1.5	62.7
64D	16.75	6	5		60.3	0.4	53.3	60.7	1.5	62.2
64D	19.8	7	5		59.9	0.4	53.3	60.3	1.5	61.8
65A	1.5	1	8		50.3	3.1	53.3	53.4	2.5	55.9
65A	4.55	2	8		51	3.1	53.3	54.1	2.5	56.6

65A	7.6	3	8		51.6	3.1	53.3	54.7	2.5	57.2
65A	10.65	4	8		52.2	3.1	53.3	55.3	2.5	57.8
65A	13.7	5	8		52.8	3.1	53.3	55.9	2.5	58.4
65A	16.75	6	8		53.4	3.1	53.3	56.5	2.5	59
65A	19.8	7	8		54.2	3.1	53.3	57.3	2.5	59.8
65B	1.5	1	8		47.7	3.1	53.3	53.313	2.5	55.8125
65B	4.55	2	8		48.4	3.1	53.3	53.313	2.5	55.8125
65B	7.6	3	8		48.9	3.1	53.3	53.313	2.5	55.8125
65B	10.65	4	8		49.4	3.1	53.3	53.313	2.5	55.8125
65B	13.7	5	8		50	3.1	53.3	53.313	2.5	55.8125
65B	16.75	6	8		50.6	3.1	53.3	53.7	2.5	56.2
65B	19.8	7	8		52.3	3.1	53.3	55.4	2.5	57.9
65C	1.5	1	8		34.9	3.1	53.3	53.313	2.5	55.8125
65C	4.55	2	8		35.4	3.1	53.3	53.313	2.5	55.8125
65C	7.6	3	8		35.9	3.1	53.3	53.313	2.5	55.8125
65C	10.65	4	8		36.5	3.1	53.3	53.313	2.5	55.8125
65C	13.7	5	8		37.3	3.1	53.3	53.313	2.5	55.8125
65C	16.75	6	8		38.7	3.1	53.3	53.313	2.5	55.8125
65C	19.8	7	8		46.4	3.1	53.3	53.313	2.5	55.8125
65D	1.5	1	8		27.3	3.1	53.3	53.313	2.5	55.8125
65D	4.55	2	8		28.1	3.1	53.3	53.313	2.5	55.8125
65D	7.6	3	8		29	3.1	53.3	53.313	2.5	55.8125
65D	10.65	4	8		30.1	3.1	53.3	53.313	2.5	55.8125
65D	13.7	5	8		31.5	3.1	53.3	53.313	2.5	55.8125
65D	16.75	6	8		34.2	3.1	53.3	53.313	2.5	55.8125
65D	19.8	7	8		47.3	3.1	53.3	53.313	2.5	55.8125
66A	1.5	1	5		59.7	0.4	53.3	60.1	1.5	61.6
66A	4.55	2	5		60.4	0.4	53.3	60.8	1.5	62.3
66A	7.6	3	5		60.2	0.4	53.3	60.6	1.5	62.1
66A	10.65	4	5		59.9	0.4	53.3	60.3	1.5	61.8
66A	13.7	5	5		59.6	0.4	53.3	60	1.5	61.5
66A	16.75	6	5		59.2	0.4	53.3	59.6	1.5	61.1
66A	19.8	7	5		59.4	0.4	53.3	59.8	1.5	61.3
66B	1.5	1	5		64.9	0.4	53.3	65.3	1.5	66.8
66B	4.55	2	5		65.8	0.4	53.3	66.2	1.5	67.7
66B	7.6	3	5		65.7	0.4	53.3	66.1	1.5	67.6
66B	10.65	4	5		65.5	0.4	53.3	65.9	1.5	67.4
66B	13.7	5	5		65.2	0.4	53.3	65.6	1.5	67.1
66B	16.75	6	5		64.9	0.4	53.3	65.3	1.5	66.8
66B	19.8	7	5		64.9	0.4	53.3	65.3	1.5	66.8
66C	1.5	1	5		66.5	0.4	53.3	66.9	1.5	68.4
66C	4.55	2	5		67.4	0.4	53.3	67.8	1.5	69.3
66C	7.6	3	5		67.6	0.4	53.3	68	1.5	69.5
66C	10.65	4	5		67.5	0.4	53.3	67.9	1.5	69.4
66C	13.7	5	5		67.3	0.4	53.3	67.7	1.5	69.2
66C	16.75	6	5		67	0.4	53.3	67.4	1.5	68.9
66C	19.8	7	5		66.9	0.4	53.3	67.3	1.5	68.8

66D	1.5	1	5		57.5	0.4	53.3	57.9	1.5	59.4
66D	4.55	2	5		58.5	0.4	53.3	58.9	1.5	60.4
66D	7.6	3	5		59.5	0.4	53.3	59.9	1.5	61.4
66D	10.65	4	5		60.3	0.4	53.3	60.7	1.5	62.2
66D	13.7	5	5		60.6	0.4	53.3	61	1.5	62.5
66D	16.75	6	5		60.7	0.4	53.3	61.1	1.5	62.6
66D	19.8	7	5		61.1	0.4	53.3	61.5	1.5	63
67A	1.5	1	8		46.6	3.1	53.3	53.313	2.5	55.8125
67A	4.55	2	8		47.1	3.1	53.3	53.313	2.5	55.8125
67A	7.6	3	8		47.6	3.1	53.3	53.313	2.5	55.8125
67A	10.65	4	8		48	3.1	53.3	53.313	2.5	55.8125
67A	13.7	5	8		48.4	3.1	53.3	53.313	2.5	55.8125
67A	16.75	6	8		48.9	3.1	53.3	53.313	2.5	55.8125
67A	19.8	7	8		51	3.1	53.3	54.1	2.5	56.6
67B	1.5	1	8		55.1	3.1	53.3	58.2	2.5	60.7
67B	4.55	2	8		56.4	3.1	53.3	59.5	2.5	62
67B	7.6	3	8		57.5	3.1	53.3	60.6	2.5	63.1
67B	10.65	4	8		57.9	3.1	53.3	61	2.5	63.5
67B	13.7	5	8		58.1	3.1	53.3	61.2	2.5	63.7
67B	16.75	6	8		58.2	3.1	53.3	61.3	2.5	63.8
67B	19.8	7	8		58.3	3.1	53.3	61.4	2.5	63.9
67C	1.5	1	8		50.1	3.1	53.3	53.313	2.5	55.8125
67C	4.55	2	8		50.9	3.1	53.3	54	2.5	56.5
67C	7.6	3	8		51.6	3.1	53.3	54.7	2.5	57.2
67C	10.65	4	8		52.3	3.1	53.3	55.4	2.5	57.9
67C	13.7	5	8		52.9	3.1	53.3	56	2.5	58.5
67C	16.75	6	8		53.4	3.1	53.3	56.5	2.5	59
67C	19.8	7	8		54.8	3.1	53.3	57.9	2.5	60.4
67D	1.5	1	8		35.2	3.1	53.3	53.313	2.5	55.8125
67D	4.55	2	8		35.7	3.1	53.3	53.313	2.5	55.8125
67D	7.6	3	8		36.2	3.1	53.3	53.313	2.5	55.8125
67D	10.65	4	8		36.9	3.1	53.3	53.313	2.5	55.8125
67D	13.7	5	8		37.7	3.1	53.3	53.313	2.5	55.8125
67D	16.75	6	8		38.6	3.1	53.3	53.313	2.5	55.8125
67D	19.8	7	8		46.9	3.1	53.3	53.313	2.5	55.8125
68A	1.5	1	8		46.5	3.1	53.3	53.313	2.5	55.8125
68A	4.55	2	8		47	3.1	53.3	53.313	2.5	55.8125
68A	7.6	3	8		47.4	3.1	53.3	53.313	2.5	55.8125
68A	10.65	4	8		47.9	3.1	53.3	53.313	2.5	55.8125
68A	13.7	5	8		48.3	3.1	53.3	53.313	2.5	55.8125
68A	16.75	6	8		48.9	3.1	53.3	53.313	2.5	55.8125
68A	19.8	7	8		51.8	3.1	53.3	54.9	2.5	57.4
68B	1.5	1	8		54.2	3.1	53.3	57.3	2.5	59.8
68B	4.55	2	8		55.5	3.1	53.3	58.6	2.5	61.1
68B	7.6	3	8		56.1	3.1	53.3	59.2	2.5	61.7
68B	10.65	4	8		56.3	3.1	53.3	59.4	2.5	61.9
68B	13.7	5	8		56.5	3.1	53.3	59.6	2.5	62.1

68B	16.75	6	8		56.6	3.1	53.3	59.7	2.5	62.2
68B	19.8	7	8		57.4	3.1	53.3	60.5	2.5	63
68C	1.5	1	8		53.7	3.1	53.3	56.8	2.5	59.3
68C	4.55	2	8		54.4	3.1	53.3	57.5	2.5	60
68C	7.6	3	8		55	3.1	53.3	58.1	2.5	60.6
68C	10.65	4	8		55.3	3.1	53.3	58.4	2.5	60.9
68C	13.7	5	8		55.8	3.1	53.3	58.9	2.5	61.4
68C	16.75	6	8		56.2	3.1	53.3	59.3	2.5	61.8
68C	19.8	7	8		57.2	3.1	53.3	60.3	2.5	62.8
68D	1.5	1	8		39.2	3.1	53.3	53.313	2.5	55.8125
68D	4.55	2	8		39.7	3.1	53.3	53.313	2.5	55.8125
68D	7.6	3	8		40.3	3.1	53.3	53.313	2.5	55.8125
68D	10.65	4	8		41	3.1	53.3	53.313	2.5	55.8125
68D	13.7	5	8		41.6	3.1	53.3	53.313	2.5	55.8125
68D	16.75	6	8		43.1	3.1	53.3	53.313	2.5	55.8125
68D	19.8	7	8		51.8	3.1	53.3	54.9	2.5	57.4
69A	1.5	1	8		44	3.1	53.3	53.313	2.5	55.8125
69A	4.55	2	8		44.6	3.1	53.3	53.313	2.5	55.8125
69A	7.6	3	8		45.1	3.1	53.3	53.313	2.5	55.8125
69A	10.65	4	8		45.7	3.1	53.3	53.313	2.5	55.8125
69A	13.7	5	8		46.5	3.1	53.3	53.313	2.5	55.8125
69A	16.75	6	8		47.7	3.1	53.3	53.313	2.5	55.8125
69A	19.8	7	8		52	3.1	53.3	55.1	2.5	57.6
69B	1.5	1	8		55	3.1	53.3	58.1	2.5	60.6
69B	4.55	2	8		55.7	3.1	53.3	58.8	2.5	61.3
69B	7.6	3	8		56.2	3.1	53.3	59.3	2.5	61.8
69B	10.65	4	8		56.7	3.1	53.3	59.8	2.5	62.3
69B	13.7	5	8		57.2	3.1	53.3	60.3	2.5	62.8
69B	16.75	6	8		57.6	3.1	53.3	60.7	2.5	63.2
69B	19.8	7	8		58.8	3.1	53.3	61.9	2.5	64.4
69C	1.5	1	8		55.1	3.1	53.3	58.2	2.5	60.7
69C	4.55	2	8		55.8	3.1	53.3	58.9	2.5	61.4
69C	7.6	3	8		56.3	3.1	53.3	59.4	2.5	61.9
69C	10.65	4	8		56.7	3.1	53.3	59.8	2.5	62.3
69C	13.7	5	8		57.2	3.1	53.3	60.3	2.5	62.8
69C	16.75	6	8		57.7	3.1	53.3	60.8	2.5	63.3
69C	19.8	7	8		58.7	3.1	53.3	61.8	2.5	64.3
69D	1.5	1	8		38.3	3.1	53.3	53.313	2.5	55.8125
69D	4.55	2	8		38.9	3.1	53.3	53.313	2.5	55.8125
69D	7.6	3	8		39.4	3.1	53.3	53.313	2.5	55.8125
69D	10.65	4	8		40.1	3.1	53.3	53.313	2.5	55.8125
69D	13.7	5	8		40.9	3.1	53.3	53.313	2.5	55.8125
69D	16.75	6	8		42.2	3.1	53.3	53.313	2.5	55.8125
69D	19.8	7	8		51.6	3.1	53.3	54.7	2.5	57.2
70A	1.5	1	4		42.3	-1	53.3	53.313	2.5	55.8125
70A	4.55	2	4		43.3	-1	53.3	53.313	2.5	55.8125
70A	7.6	3	4		43.9	-1	53.3	53.313	2.5	55.8125

70A	10.65	4	4		44.5	-1	53.3	53.313	2.5	55.8125
70A	13.7	5	4		45.3	-1	53.3	53.313	2.5	55.8125
70A	16.75	6	4		46.6	-1	53.3	53.313	2.5	55.8125
70A	19.8	7	4		53.5	-1	53.3	53.313	2.5	55.8125
70B	1.5	1	4		56.3	-1	53.3	55.3	2.5	57.8
70B	4.55	2	4		57	-1	53.3	56	2.5	58.5
70B	7.6	3	4		57.5	-1	53.3	56.5	2.5	59
70B	10.65	4	4		58.1	-1	53.3	57.1	2.5	59.6
70B	13.7	5	4		58.6	-1	53.3	57.6	2.5	60.1
70B	16.75	6	4		59.1	-1	53.3	58.1	2.5	60.6
70B	19.8	7	4		59.8	-1	53.3	58.8	2.5	61.3
70C	1.5	1	4		55.3	-1	53.3	54.3	2.5	56.8
70C	4.55	2	4		55.9	-1	53.3	54.9	2.5	57.4
70C	7.6	3	4		56.6	-1	53.3	55.6	2.5	58.1
70C	10.65	4	4		57.2	-1	53.3	56.2	2.5	58.7
70C	13.7	5	4		57.8	-1	53.3	56.8	2.5	59.3
70C	16.75	6	4		58.2	-1	53.3	57.2	2.5	59.7
70C	19.8	7	4		58.9	-1	53.3	57.9	2.5	60.4
70D	1.5	1	4		33.8	-1	53.3	53.313	2.5	55.8125
70D	4.55	2	4		34.3	-1	53.3	53.313	2.5	55.8125
70D	7.6	3	4		35	-1	53.3	53.313	2.5	55.8125
70D	10.65	4	4		35.8	-1	53.3	53.313	2.5	55.8125
70D	13.7	5	4		37	-1	53.3	53.313	2.5	55.8125
70D	16.75	6	4		39	-1	53.3	53.313	2.5	55.8125
70D	19.8	7	4		50.6	-1	53.3	53.313	2.5	55.8125
71A	1.5	1	4		45.1	-1	53.3	53.313	2.5	55.8125
71A	4.55	2	4		45.7	-1	53.3	53.313	2.5	55.8125
71A	7.6	3	4		46.1	-1	53.3	53.313	2.5	55.8125
71A	10.65	4	4		46.6	-1	53.3	53.313	2.5	55.8125
71A	13.7	5	4		47.1	-1	53.3	53.313	2.5	55.8125
71A	16.75	6	4		47.7	-1	53.3	53.313	2.5	55.8125
71A	19.8	7	4		49.9	-1	53.3	53.313	2.5	55.8125
71B	1.5	1	4		45.9	-1	53.3	53.313	2.5	55.8125
71B	4.55	2	4		46.3	-1	53.3	53.313	2.5	55.8125
71B	7.6	3	4		46.7	-1	53.3	53.313	2.5	55.8125
71B	10.65	4	4		47.1	-1	53.3	53.313	2.5	55.8125
71B	13.7	5	4		47.6	-1	53.3	53.313	2.5	55.8125
71B	16.75	6	4		48.3	-1	53.3	53.313	2.5	55.8125
71B	19.8	7	4		50.5	-1	53.3	53.313	2.5	55.8125
71C	1.5	1	4		42.8	-1	53.3	53.313	2.5	55.8125
71C	4.55	2	4		43.2	-1	53.3	53.313	2.5	55.8125
71C	7.6	3	4		43.6	-1	53.3	53.313	2.5	55.8125
71C	10.65	4	4		44.1	-1	53.3	53.313	2.5	55.8125
71C	13.7	5	4		44.7	-1	53.3	53.313	2.5	55.8125
71C	16.75	6	4		45.6	-1	53.3	53.313	2.5	55.8125
71C	19.8	7	4		48.6	-1	53.3	53.313	2.5	55.8125
71D	1.5	1	4		31.1	-1	53.3	53.313	2.5	55.8125

71D	4.55	2	4		31.7	-1	53.3	53.313	2.5	55.8125
71D	7.6	3	4		32.4	-1	53.3	53.313	2.5	55.8125
71D	10.65	4	4		33.2	-1	53.3	53.313	2.5	55.8125
71D	13.7	5	4		34.4	-1	53.3	53.313	2.5	55.8125
71D	16.75	6	4		36.3	-1	53.3	53.313	2.5	55.8125
71D	19.8	7	4		47.6	-1	53.3	53.313	2.5	55.8125
72A	1.5	1	4		48.8	-1	53.3	53.313	2.5	55.8125
72A	4.55	2	4		49.4	-1	53.3	53.313	2.5	55.8125
72A	7.6	3	4		50	-1	53.3	53.313	2.5	55.8125
72A	10.65	4	4		50.7	-1	53.3	53.313	2.5	55.8125
72A	13.7	5	4		51.3	-1	53.3	53.313	2.5	55.8125
72A	16.75	6	4		51.9	-1	53.3	53.313	2.5	55.8125
72A	19.8	7	4		53	-1	53.3	53.313	2.5	55.8125
72B	1.5	1	4		44.5	-1	53.3	53.313	2.5	55.8125
72B	4.55	2	4		45.5	-1	53.3	53.313	2.5	55.8125
72B	7.6	3	4		46	-1	53.3	53.313	2.5	55.8125
72B	10.65	4	4		46.5	-1	53.3	53.313	2.5	55.8125
72B	13.7	5	4		47.1	-1	53.3	53.313	2.5	55.8125
72B	16.75	6	4		48	-1	53.3	53.313	2.5	55.8125
72B	19.8	7	4		50.9	-1	53.3	53.313	2.5	55.8125
72C	1.5	1	4		44.6	-1	53.3	53.313	2.5	55.8125
72C	4.55	2	4		45.1	-1	53.3	53.313	2.5	55.8125
72C	7.6	3	4		45.5	-1	53.3	53.313	2.5	55.8125
72C	10.65	4	4		46	-1	53.3	53.313	2.5	55.8125
72C	13.7	5	4		46.6	-1	53.3	53.313	2.5	55.8125
72C	16.75	6	4		47.8	-1	53.3	53.313	2.5	55.8125
72C	19.8	7	4		49.9	-1	53.3	53.313	2.5	55.8125
72D	1.5	1	4		42.1	-1	53.3	53.313	2.5	55.8125
72D	4.55	2	4		42.6	-1	53.3	53.313	2.5	55.8125
72D	7.6	3	4		43	-1	53.3	53.313	2.5	55.8125
72D	10.65	4	4		43.6	-1	53.3	53.313	2.5	55.8125
72D	13.7	5	4		44.3	-1	53.3	53.313	2.5	55.8125
72D	16.75	6	4		45.2	-1	53.3	53.313	2.5	55.8125
72D	19.8	7	4		49.1	-1	53.3	53.313	2.5	55.8125
73A	1.5	1	4		52.8	-1	53.3	53.313	2.5	55.8125
73A	4.55	2	4		54.2	-1	53.3	53.313	2.5	55.8125
73A	7.6	3	4		55.1	-1	53.3	54.1	2.5	56.6
73A	10.65	4	4		55.4	-1	53.3	54.4	2.5	56.9
73A	13.7	5	4		55.6	-1	53.3	54.6	2.5	57.1
73A	16.75	6	4		55.7	-1	53.3	54.7	2.5	57.2
73A	19.8	7	4	56.2	-1	53.3	55.2	2.5	57.7	
73B	1.5	1	4	46.5	-1	53.3	53.313	2.5	55.8125	
73B	4.55	2	4	46.9	-1	53.3	53.313	2.5	55.8125	
73B	7.6	3	4	47.3	-1	53.3	53.313	2.5	55.8125	
73B	10.65	4	4	47.7	-1	53.3	53.313	2.5	55.8125	
73B	13.7	5	4	48.2	-1	53.3	53.313	2.5	55.8125	
73B	16.75	6	4	48.8	-1	53.3	53.313	2.5	55.8125	

73B	19.8	7	4		50.9	-1	53.3	53.313	2.5	55.8125
73C	1.5	1	4		44.8	-1	53.3	53.313	2.5	55.8125
73C	4.55	2	4		45.2	-1	53.3	53.313	2.5	55.8125
73C	7.6	3	4		45.6	-1	53.3	53.313	2.5	55.8125
73C	10.65	4	4		46.1	-1	53.3	53.313	2.5	55.8125
73C	13.7	5	4		46.7	-1	53.3	53.313	2.5	55.8125
73C	16.75	6	4		47.5	-1	53.3	53.313	2.5	55.8125
73C	19.8	7	4		49.7	-1	53.3	53.313	2.5	55.8125
73D	1.5	1	4		48.2	-1	53.3	53.313	2.5	55.8125
73D	4.55	2	4		48.8	-1	53.3	53.313	2.5	55.8125
73D	7.6	3	4		49.5	-1	53.3	53.313	2.5	55.8125
73D	10.65	4	4		50.1	-1	53.3	53.313	2.5	55.8125
73D	13.7	5	4		50.8	-1	53.3	53.313	2.5	55.8125
73D	16.75	6	4		51.3	-1	53.3	53.313	2.5	55.8125
73D	19.8	7	4		52.9	-1	53.3	53.313	2.5	55.8125
74A	1.5	1	4		47.4	-1	53.3	53.313	2.5	55.8125
74A	4.55	2	4		48.1	-1	53.3	53.313	2.5	55.8125
74A	7.6	3	4		48.6	-1	53.3	53.313	2.5	55.8125
74A	10.65	4	4		49	-1	53.3	53.313	2.5	55.8125
74A	13.7	5	4		49.5	-1	53.3	53.313	2.5	55.8125
74A	16.75	6	4		50	-1	53.3	53.313	2.5	55.8125
74A	19.8	7	4		51.1	-1	53.3	53.313	2.5	55.8125
74B	1.5	1	4		46.3	-1	53.3	53.313	2.5	55.8125
74B	4.55	2	4		46.9	-1	53.3	53.313	2.5	55.8125
74B	7.6	3	4		47.4	-1	53.3	53.313	2.5	55.8125
74B	10.65	4	4		47.9	-1	53.3	53.313	2.5	55.8125
74B	13.7	5	4		48.4	-1	53.3	53.313	2.5	55.8125
74B	16.75	6	4		49.1	-1	53.3	53.313	2.5	55.8125
74B	19.8	7	4		50.3	-1	53.3	53.313	2.5	55.8125
74C	1.5	1	4		29.2	-1	53.3	53.313	2.5	55.8125
74C	4.55	2	4		30.5	-1	53.3	53.313	2.5	55.8125
74C	7.6	3	4		32	-1	53.3	53.313	2.5	55.8125
74C	10.65	4	4		33.9	-1	53.3	53.313	2.5	55.8125
74C	13.7	5	4		36.4	-1	53.3	53.313	2.5	55.8125
74C	16.75	6	4		40	-1	53.3	53.313	2.5	55.8125
74C	19.8	7	4		44.3	-1	53.3	53.313	2.5	55.8125
74D	1.5	1	4		29.9	-1	53.3	53.313	2.5	55.8125
74D	4.55	2	4		30.6	-1	53.3	53.313	2.5	55.8125
74D	7.6	3	4		31.3	-1	53.3	53.313	2.5	55.8125
74D	10.65	4	4		32.3	-1	53.3	53.313	2.5	55.8125
74D	13.7	5	4		33.6	-1	53.3	53.313	2.5	55.8125
74D	16.75	6	4		36	-1	53.3	53.313	2.5	55.8125
74D	19.8	7	4		44	-1	53.3	53.313	2.5	55.8125
75A	1.5	1	3		76.3	-1.3	53.3	75	1.2	76.2
75A	4.55	2	3		77.2	-1.3	53.3	75.9	1.2	77.1
75A	7.6	3	3		78.1	-1.3	53.3	76.8	1.2	78
75A	10.65	4	3		78.4	-1.3	53.3	77.1	1.2	78.3

75A	13.7	5	3		78.3	-1.3	53.3	77	1.2	78.2
75A	16.75	6	3		78.2	-1.3	53.3	76.9	1.2	78.1
75A	19.8	7	3		77.7	-1.3	53.3	76.4	1.2	77.6
75A	22.85	8	3		77.5	-1.3	53.3	76.2	1.2	77.4
75B	1.5	1	3		71.6	-1.3	53.3	70.3	1.2	71.5
75B	4.55	2	3		73.7	-1.3	53.3	72.4	1.2	73.6
75B	7.6	3	3		75	-1.3	53.3	73.7	1.2	74.9
75B	10.65	4	3		75.8	-1.3	53.3	74.5	1.2	75.7
75B	13.7	5	3		76.8	-1.3	53.3	75.5	1.2	76.7
75B	16.75	6	3		77.8	-1.3	53.3	76.5	1.2	77.7
75B	19.8	7	3		78.7	-1.3	53.3	77.4	1.2	78.6
75B	22.85	8	3		78.5	-1.3	53.3	77.2	1.2	78.4
75C	1.5	1	3		95	-1.3	53.3	93.7	1.2	94.9
75C	4.55	2	3		93.8	-1.3	53.3	92.5	1.2	93.7
75C	7.6	3	3		92.1	-1.3	53.3	90.8	1.2	92
75C	10.65	4	3		90.4	-1.3	53.3	89.1	1.2	90.3
75C	13.7	5	3		88.9	-1.3	53.3	87.6	1.2	88.8
75C	16.75	6	3		87.5	-1.3	53.3	86.2	1.2	87.4
75C	19.8	7	3		86.2	-1.3	53.3	84.9	1.2	86.1
75C	22.85	8	3		85.2	-1.3	53.3	83.9	1.2	85.1
76A	1.5	1	3		66.2	-1.3	53.3	64.9	1.2	66.1
76A	4.55	2	3		66.9	-1.3	53.3	65.6	1.2	66.8
76A	7.6	3	3		67.3	-1.3	53.3	66	1.2	67.2
76A	10.65	4	3		67.6	-1.3	53.3	66.3	1.2	67.5
76A	13.7	5	3		67.9	-1.3	53.3	66.6	1.2	67.8
76A	16.75	6	3		68.2	-1.3	53.3	66.9	1.2	68.1
76A	19.8	7	3		68.5	-1.3	53.3	67.2	1.2	68.4
76A	22.85	8	3		68.7	-1.3	53.3	67.4	1.2	68.6
76A	25.9	9	3		68.9	-1.3	53.3	67.6	1.2	68.8
76A	28.95	10	3		69.2	-1.3	53.3	67.9	1.2	69.1
76A	32	11	3		69.5	-1.3	53.3	68.2	1.2	69.4
76A	35.05	12	3		69.6	-1.3	53.3	68.3	1.2	69.5
76A	38.1	13	3		69.5	-1.3	53.3	68.2	1.2	69.4
76A	41.15	14	3		69.5	-1.3	53.3	68.2	1.2	69.4
76A	44.2	15	3		69.4	-1.3	53.3	68.1	1.2	69.3
76A	47.25	16	3		69.3	-1.3	53.3	68	1.2	69.2
76A	50.3	17	3		69.3	-1.3	53.3	68	1.2	69.2
76A	53.35	18	3		69.2	-1.3	53.3	67.9	1.2	69.1
76A	56.4	19	3		69.1	-1.3	53.3	67.8	1.2	69
76A	59.45	20	3		69	-1.3	53.3	67.7	1.2	68.9
76A	62.5	21	3		69	-1.3	53.3	67.7	1.2	68.9
76A	65.55	22	3		68.9	-1.3	53.3	67.6	1.2	68.8
76A	68.6	23	3		68.8	-1.3	53.3	67.5	1.2	68.7
76A	71.65	24	3		68.7	-1.3	53.3	67.4	1.2	68.6
76A	74.7	25	3		68.6	-1.3	53.3	67.3	1.2	68.5
76A	77.75	26	3		68.5	-1.3	53.3	67.2	1.2	68.4
76A	80.8	27	3		68.5	-1.3	53.3	67.2	1.2	68.4

76A	83.85	28	3		68.4	-1.3	53.3	67.1	1.2	68.3
76A	86.9	29	3		68.3	-1.3	53.3	67	1.2	68.2
76A	89.95	30	3		68.2	-1.3	53.3	66.9	1.2	68.1
76B	1.5	1	3		72.2	-1.3	53.3	70.9	1.2	72.1
76B	4.55	2	3		72.7	-1.3	53.3	71.4	1.2	72.6
76B	7.6	3	3		73	-1.3	53.3	71.7	1.2	72.9
76B	10.65	4	3		73.2	-1.3	53.3	71.9	1.2	73.1
76B	13.7	5	3		73.5	-1.3	53.3	72.2	1.2	73.4
76B	16.75	6	3		73.9	-1.3	53.3	72.6	1.2	73.8
76B	19.8	7	3		74	-1.3	53.3	72.7	1.2	73.9
76B	22.85	8	3		73.8	-1.3	53.3	72.5	1.2	73.7
76B	25.9	9	3		73.6	-1.3	53.3	72.3	1.2	73.5
76B	28.95	10	3		73.5	-1.3	53.3	72.2	1.2	73.4
76B	32	11	3		73.4	-1.3	53.3	72.1	1.2	73.3
76B	35.05	12	3		73.3	-1.3	53.3	72	1.2	73.2
76B	38.1	13	3		73.2	-1.3	53.3	71.9	1.2	73.1
76B	41.15	14	3		73.1	-1.3	53.3	71.8	1.2	73
76B	44.2	15	3		72.9	-1.3	53.3	71.6	1.2	72.8
76B	47.25	16	3		72.8	-1.3	53.3	71.5	1.2	72.7
76B	50.3	17	3		72.7	-1.3	53.3	71.4	1.2	72.6
76B	53.35	18	3		72.5	-1.3	53.3	71.2	1.2	72.4
76B	56.4	19	3		72.4	-1.3	53.3	71.1	1.2	72.3
76B	59.45	20	3		72.2	-1.3	53.3	70.9	1.2	72.1
76B	62.5	21	3		72.1	-1.3	53.3	70.8	1.2	72
76B	65.55	22	3		72	-1.3	53.3	70.7	1.2	71.9
76B	68.6	23	3		71.8	-1.3	53.3	70.5	1.2	71.7
76B	71.65	24	3		71.7	-1.3	53.3	70.4	1.2	71.6
76B	74.7	25	3		71.5	-1.3	53.3	70.2	1.2	71.4
76B	77.75	26	3		71.4	-1.3	53.3	70.1	1.2	71.3
76B	80.8	27	3		71.2	-1.3	53.3	69.9	1.2	71.1
76B	83.85	28	3		71	-1.3	53.3	69.7	1.2	70.9
76B	86.9	29	3		70.9	-1.3	53.3	69.6	1.2	70.8
76B	89.95	30	3		70.7	-1.3	53.3	69.4	1.2	70.6
76C	38.1	13	3		73.7	-1.3	53.3	72.4	1.2	73.6
76C	41.15	14	3		73.6	-1.3	53.3	72.3	1.2	73.5
76C	44.2	15	3		73.4	-1.3	53.3	72.1	1.2	73.3
76C	47.25	16	3		73.3	-1.3	53.3	72	1.2	73.2
76C	50.3	17	3		73.2	-1.3	53.3	71.9	1.2	73.1
76C	53.35	18	3		73	-1.3	53.3	71.7	1.2	72.9
76C	56.4	19	3		72.9	-1.3	53.3	71.6	1.2	72.8
76C	59.45	20	3		72.7	-1.3	53.3	71.4	1.2	72.6
76C	62.5	21	3		72.6	-1.3	53.3	71.3	1.2	72.5
76C	65.55	22	3		72.4	-1.3	53.3	71.1	1.2	72.3
76C	68.6	23	3		72.2	-1.3	53.3	70.9	1.2	72.1
76C	71.65	24	3		72.1	-1.3	53.3	70.8	1.2	72
76C	74.7	25	3		71.9	-1.3	53.3	70.6	1.2	71.8
76C	77.75	26	3		71.7	-1.3	53.3	70.4	1.2	71.6

76C	80.8	27	3		71.6	-1.3	53.3	70.3	1.2	71.5
76C	83.85	28	3		71.4	-1.3	53.3	70.1	1.2	71.3
76C	86.9	29	3		71.2	-1.3	53.3	69.9	1.2	71.1
76C	89.95	30	3		71.1	-1.3	53.3	69.8	1.2	71
76D	38.1	13	3		71.3	-1.3	53.3	70	1.2	71.2
76D	41.15	14	3		71.2	-1.3	53.3	69.9	1.2	71.1
76D	44.2	15	3		71.1	-1.3	53.3	69.8	1.2	71
76D	47.25	16	3		71	-1.3	53.3	69.7	1.2	70.9
76D	50.3	17	3		70.9	-1.3	53.3	69.6	1.2	70.8
76D	53.35	18	3		70.8	-1.3	53.3	69.5	1.2	70.7
76D	56.4	19	3		70.7	-1.3	53.3	69.4	1.2	70.6
76D	59.45	20	3		70.6	-1.3	53.3	69.3	1.2	70.5
76D	62.5	21	3		70.5	-1.3	53.3	69.2	1.2	70.4
76D	65.55	22	3		70.4	-1.3	53.3	69.1	1.2	70.3
76D	68.6	23	3		70.3	-1.3	53.3	69	1.2	70.2
76D	71.65	24	3		70.2	-1.3	53.3	68.9	1.2	70.1
76D	74.7	25	3		70.1	-1.3	53.3	68.8	1.2	70
76D	77.75	26	3		70	-1.3	53.3	68.7	1.2	69.9
76D	80.8	27	3		69.8	-1.3	53.3	68.5	1.2	69.7
76D	83.85	28	3		69.7	-1.3	53.3	68.4	1.2	69.6
76D	86.9	29	3		69.6	-1.3	53.3	68.3	1.2	69.5
76D	89.95	30	3		69.5	-1.3	53.3	68.2	1.2	69.4
76E	1.5	1	3		73.2	-1.3	53.3	71.9	1.2	73.1
76E	4.55	2	3		73.8	-1.3	53.3	72.5	1.2	73.7
76E	7.6	3	3		74.2	-1.3	53.3	72.9	1.2	74.1
76E	10.65	4	3		74.7	-1.3	53.3	73.4	1.2	74.6
76E	13.7	5	3		75.3	-1.3	53.3	74	1.2	75.2
76E	16.75	6	3		75.3	-1.3	53.3	74	1.2	75.2
76E	19.8	7	3		75.2	-1.3	53.3	73.9	1.2	75.1
76E	22.85	8	3		75.1	-1.3	53.3	73.8	1.2	75
76E	25.9	9	3		75	-1.3	53.3	73.7	1.2	74.9
76E	28.95	10	3		74.9	-1.3	53.3	73.6	1.2	74.8
76E	32	11	3		74.7	-1.3	53.3	73.4	1.2	74.6
76E	35.05	12	3		74.5	-1.3	53.3	73.2	1.2	74.4
76F	1.5	1	3		67	-1.3	53.3	65.7	1.2	66.9
76F	4.55	2	3		68	-1.3	53.3	66.7	1.2	67.9
76F	7.6	3	3		68.9	-1.3	53.3	67.6	1.2	68.8
76F	10.65	4	3		69.7	-1.3	53.3	68.4	1.2	69.6
76F	13.7	5	3		70.6	-1.3	53.3	69.3	1.2	70.5
76F	16.75	6	3		70.8	-1.3	53.3	69.5	1.2	70.7
76F	19.8	7	3		71	-1.3	53.3	69.7	1.2	70.9
76F	22.85	8	3		71.2	-1.3	53.3	69.9	1.2	71.1
76F	25.9	9	3		71.4	-1.3	53.3	70.1	1.2	71.3
76F	28.95	10	3		71.5	-1.3	53.3	70.2	1.2	71.4
76F	32	11	3		71.5	-1.3	53.3	70.2	1.2	71.4
76F	35.05	12	3		71.3	-1.3	53.3	70	1.2	71.2
76G	1.5	1	3		67	-1.3	53.3	65.7	1.2	66.9

76G	4.55	2	3		67.5	-1.3	53.3	66.2	1.2	67.4
76G	7.6	3	3		67.9	-1.3	53.3	66.6	1.2	67.8
76G	10.65	4	3		68.4	-1.3	53.3	67.1	1.2	68.3
76G	13.7	5	3		68.8	-1.3	53.3	67.5	1.2	68.7
76G	16.75	6	3		69.3	-1.3	53.3	68	1.2	69.2
76G	19.8	7	3		69.6	-1.3	53.3	68.3	1.2	69.5
76G	22.85	8	3		70	-1.3	53.3	68.7	1.2	69.9
76G	25.9	9	3		70.2	-1.3	53.3	68.9	1.2	70.1
76G	28.95	10	3		70.4	-1.3	53.3	69.1	1.2	70.3
76G	32	11	3		70.3	-1.3	53.3	69	1.2	70.2
76G	35.05	12	3		70.3	-1.3	53.3	69	1.2	70.2
77A	1.5	1	3		66.8	-1.3	53.3	65.5	1.2	66.7
77A	4.55	2	3		67.5	-1.3	53.3	66.2	1.2	67.4
77A	7.6	3	3		68.1	-1.3	53.3	66.8	1.2	68
77A	10.65	4	3		68.5	-1.3	53.3	67.2	1.2	68.4
77A	13.7	5	3		68.8	-1.3	53.3	67.5	1.2	68.7
77A	16.75	6	3		69.1	-1.3	53.3	67.8	1.2	69
77A	19.8	7	3		69.5	-1.3	53.3	68.2	1.2	69.4
77A	22.85	8	3		69.8	-1.3	53.3	68.5	1.2	69.7
77A	25.9	9	3		70.1	-1.3	53.3	68.8	1.2	70
77A	28.95	10	3		70.4	-1.3	53.3	69.1	1.2	70.3
77A	32	11	3		70.5	-1.3	53.3	69.2	1.2	70.4
77A	35.05	12	3		70.4	-1.3	53.3	69.1	1.2	70.3
77A	38.1	13	3		70.4	-1.3	53.3	69.1	1.2	70.3
77A	41.15	14	3		70.3	-1.3	53.3	69	1.2	70.2
77A	44.2	15	3		70.2	-1.3	53.3	68.9	1.2	70.1
77A	47.25	16	3		70.2	-1.3	53.3	68.9	1.2	70.1
77A	50.3	17	3		70.1	-1.3	53.3	68.8	1.2	70
77A	53.35	18	3		70	-1.3	53.3	68.7	1.2	69.9
77A	56.4	19	3		69.9	-1.3	53.3	68.6	1.2	69.8
77A	59.45	20	3		69.8	-1.3	53.3	68.5	1.2	69.7
77A	62.5	21	3		69.7	-1.3	53.3	68.4	1.2	69.6
77A	65.55	22	3		69.7	-1.3	53.3	68.4	1.2	69.6
77A	68.6	23	3		69.6	-1.3	53.3	68.3	1.2	69.5
77A	71.65	24	3		69.5	-1.3	53.3	68.2	1.2	69.4
77B	1.5	1	3		72.5	-1.3	53.3	71.2	1.2	72.4
77B	4.55	2	3		72.8	-1.3	53.3	71.5	1.2	72.7
77B	7.6	3	3		72.9	-1.3	53.3	71.6	1.2	72.8
77B	10.65	4	3		73	-1.3	53.3	71.7	1.2	72.9
77B	13.7	5	3		73.2	-1.3	53.3	71.9	1.2	73.1
77B	16.75	6	3		73.4	-1.3	53.3	72.1	1.2	73.3
77B	19.8	7	3		73.4	-1.3	53.3	72.1	1.2	73.3
77B	22.85	8	3		73.4	-1.3	53.3	72.1	1.2	73.3
77B	25.9	9	3		73.3	-1.3	53.3	72	1.2	73.2
77B	28.95	10	3		73.2	-1.3	53.3	71.9	1.2	73.1
77B	32	11	3		73.1	-1.3	53.3	71.8	1.2	73
77B	35.05	12	3		73	-1.3	53.3	71.7	1.2	72.9

77B	38.1	13	3		73	-1.3	53.3	71.7	1.2	72.9
77B	41.15	14	3		72.9	-1.3	53.3	71.6	1.2	72.8
77B	44.2	15	3		72.8	-1.3	53.3	71.5	1.2	72.7
77B	47.25	16	3		72.7	-1.3	53.3	71.4	1.2	72.6
77B	50.3	17	3		72.6	-1.3	53.3	71.3	1.2	72.5
77B	53.35	18	3		72.6	-1.3	53.3	71.3	1.2	72.5
77B	56.4	19	3		72.5	-1.3	53.3	71.2	1.2	72.4
77B	59.45	20	3		72.4	-1.3	53.3	71.1	1.2	72.3
77B	62.5	21	3		72.2	-1.3	53.3	70.9	1.2	72.1
77B	65.55	22	3		72.1	-1.3	53.3	70.8	1.2	72
77B	68.6	23	3		72	-1.3	53.3	70.7	1.2	71.9
77B	71.65	24	3		71.9	-1.3	53.3	70.6	1.2	71.8
77C	1.5	1	3		74.4	-1.3	53.3	73.1	1.2	74.3
77C	4.55	2	3		75.1	-1.3	53.3	73.8	1.2	75
77C	7.6	3	3		75.8	-1.3	53.3	74.5	1.2	75.7
77C	10.65	4	3		76.3	-1.3	53.3	75	1.2	76.2
77C	13.7	5	3		76.7	-1.3	53.3	75.4	1.2	76.6
77C	16.75	6	3		76.2	-1.3	53.3	74.9	1.2	76.1
77C	19.8	7	3		76	-1.3	53.3	74.7	1.2	75.9
77C	22.85	8	3		75.9	-1.3	53.3	74.6	1.2	75.8
77D	1.5	1	3		70.2	-1.3	53.3	68.9	1.2	70.1
77D	4.55	2	3		70.4	-1.3	53.3	69.1	1.2	70.3
77D	7.6	3	3		70.8	-1.3	53.3	69.5	1.2	70.7
77D	10.65	4	3		71.2	-1.3	53.3	69.9	1.2	71.1
77D	13.7	5	3		71.4	-1.3	53.3	70.1	1.2	71.3
77D	16.75	6	3		71.8	-1.3	53.3	70.5	1.2	71.7
77D	19.8	7	3		72.1	-1.3	53.3	70.8	1.2	72
77D	22.85	8	3		72.6	-1.3	53.3	71.3	1.2	72.5
77E	25.9	9	3		73.3	-1.3	53.3	72	1.2	73.2
77E	28.95	10	3		73.3	-1.3	53.3	72	1.2	73.2
77E	32	11	3		73.2	-1.3	53.3	71.9	1.2	73.1
77E	35.05	12	3		73.1	-1.3	53.3	71.8	1.2	73
77E	38.1	13	3		73.1	-1.3	53.3	71.8	1.2	73
77E	41.15	14	3		73	-1.3	53.3	71.7	1.2	72.9
77E	44.2	15	3		72.9	-1.3	53.3	71.6	1.2	72.8
77E	47.25	16	3		72.9	-1.3	53.3	71.6	1.2	72.8
77E	50.3	17	3		72.8	-1.3	53.3	71.5	1.2	72.7
77E	53.35	18	3		72.7	-1.3	53.3	71.4	1.2	72.6
77E	56.4	19	3		72.6	-1.3	53.3	71.3	1.2	72.5
77E	59.45	20	3		72.5	-1.3	53.3	71.2	1.2	72.4
77E	62.5	21	3		72.4	-1.3	53.3	71.1	1.2	72.3
77E	65.55	22	3		72.3	-1.3	53.3	71	1.2	72.2
77E	68.6	23	3		72.2	-1.3	53.3	70.9	1.2	72.1
77E	71.65	24	3		72.1	-1.3	53.3	70.8	1.2	72
77F	25.9	9	3		71.5	-1.3	53.3	70.2	1.2	71.4
77F	28.95	10	3		71.5	-1.3	53.3	70.2	1.2	71.4
77F	32	11	3		71.4	-1.3	53.3	70.1	1.2	71.3

77F	35.05	12	3		71.3	-1.3	53.3	70	1.2	71.2
77F	38.1	13	3		71.3	-1.3	53.3	70	1.2	71.2
77F	41.15	14	3		71.2	-1.3	53.3	69.9	1.2	71.1
77F	44.2	15	3		71.1	-1.3	53.3	69.8	1.2	71
77F	47.25	16	3		71	-1.3	53.3	69.7	1.2	70.9
77F	50.3	17	3		70.9	-1.3	53.3	69.6	1.2	70.8
77F	53.35	18	3		70.8	-1.3	53.3	69.5	1.2	70.7
77F	56.4	19	3		70.7	-1.3	53.3	69.4	1.2	70.6
77F	59.45	20	3		70.6	-1.3	53.3	69.3	1.2	70.5
77F	62.5	21	3		70.5	-1.3	53.3	69.2	1.2	70.4
77F	65.55	22	3		70.4	-1.3	53.3	69.1	1.2	70.3
77F	68.6	23	3		70.3	-1.3	53.3	69	1.2	70.2
77F	71.65	24	3		70.2	-1.3	53.3	68.9	1.2	70.1
79A	1.5	1	1		62.9	-0.1	53.3	62.8	3	65.8
79A	4.55	2	1		63.9	-0.1	53.3	63.8	3	66.8
79A	7.6	3	1		64	-0.1	53.3	63.9	3	66.9
79A	10.65	4	1		63.9	-0.1	53.3	63.8	3	66.8
79A	13.7	5	1		63.9	-0.1	53.3	63.8	3	66.8
79A	16.75	6	1		63.7	-0.1	53.3	63.6	3	66.6
79A	19.8	7	1		63.5	-0.1	53.3	63.4	3	66.4
79A	22.85	8	1		63.4	-0.1	53.3	63.3	3	66.3
79A	25.9	9	1		63.3	-0.1	53.3	63.2	3	66.2
79A	28.95	10	1		63.2	-0.1	53.3	63.1	3	66.1
79A	32	11	1		63.1	-0.1	53.3	63	3	66
79A	35.05	12	1		63	-0.1	53.3	62.9	3	65.9
79A	38.1	13	1		62.9	-0.1	53.3	62.8	3	65.8
79A	41.15	14	1		62.9	-0.1	53.3	62.8	3	65.8
79A	44.2	15	1		62.8	-0.1	53.3	62.7	3	65.7
79B	1.5	1	1		57.6	-0.1	53.3	57.5	3	60.5
79B	4.55	2	1		58.9	-0.1	53.3	58.8	3	61.8
79B	7.6	3	1		59.6	-0.1	53.3	59.5	3	62.5
79B	10.65	4	1		60.8	-0.1	53.3	60.7	3	63.7
79B	13.7	5	1		61.6	-0.1	53.3	61.5	3	64.5
79B	16.75	6	1		62.1	-0.1	53.3	62	3	65
79B	19.8	7	1		62.4	-0.1	53.3	62.3	3	65.3
79B	22.85	8	1		62.5	-0.1	53.3	62.4	3	65.4
79B	25.9	9	1		62.6	-0.1	53.3	62.5	3	65.5
79B	28.95	10	1		62.7	-0.1	53.3	62.6	3	65.6
79B	32	11	1		62.9	-0.1	53.3	62.8	3	65.8
79B	35.05	12	1		63	-0.1	53.3	62.9	3	65.9
79B	38.1	13	1		63.1	-0.1	53.3	63	3	66
79B	41.15	14	1		63.1	-0.1	53.3	63	3	66
79B	44.2	15	1		63.1	-0.1	53.3	63	3	66
79C	13.7	5	3		64.1	-1.3	53.3	62.8	1.2	64
79C	16.75	6	3		64	-1.3	53.3	62.7	1.2	63.9
79C	19.8	7	3		64	-1.3	53.3	62.7	1.2	63.9
79C	22.85	8	3		63.9	-1.3	53.3	62.6	1.2	63.8

79C	25.9	9	3		63.8	-1.3	53.3	62.5	1.2	63.7
79C	28.95	10	3		63.7	-1.3	53.3	62.4	1.2	63.6
79C	32	11	3		63.7	-1.3	53.3	62.4	1.2	63.6
79C	35.05	12	3		63.6	-1.3	53.3	62.3	1.2	63.5
79C	38.1	13	3		63.6	-1.3	53.3	62.3	1.2	63.5
79C	41.15	14	3		63.5	-1.3	53.3	62.2	1.2	63.4
79C	44.2	15	3		63.5	-1.3	53.3	62.2	1.2	63.4
79C	47.25	16	3		63.5	-1.3	53.3	62.2	1.2	63.4
79C	50.3	17	3		63.5	-1.3	53.3	62.2	1.2	63.4
79C	53.35	18	3		63.5	-1.3	53.3	62.2	1.2	63.4
79C	56.4	19	3		63.4	-1.3	53.3	62.1	1.2	63.3
79C	59.45	20	3		63.4	-1.3	53.3	62.1	1.2	63.3
79C	62.5	21	3		63.4	-1.3	53.3	62.1	1.2	63.3
79D	1.5	1	1		63.8	-0.1	53.3	63.7	3	66.7
79D	4.55	2	1		65.2	-0.1	53.3	65.1	3	68.1
79D	7.6	3	1		65.3	-0.1	53.3	65.2	3	68.2
79D	10.65	4	1		65.2	-0.1	53.3	65.1	3	68.1
79D	13.7	5	1		65	-0.1	53.3	64.9	3	67.9
79D	16.75	6	1		64.7	-0.1	53.3	64.6	3	67.6
79D	19.8	7	1		64.4	-0.1	53.3	64.3	3	67.3
79D	22.85	8	1		64.2	-0.1	53.3	64.1	3	67.1
79D	25.9	9	1		63.9	-0.1	53.3	63.8	3	66.8
79D	28.95	10	1		63.7	-0.1	53.3	63.6	3	66.6
79D	32	11	1		63.5	-0.1	53.3	63.4	3	66.4
79D	35.05	12	1		63.3	-0.1	53.3	63.2	3	66.2
79D	38.1	13	1		63.2	-0.1	53.3	63.1	3	66.1
79D	41.15	14	1		63	-0.1	53.3	62.9	3	65.9
79D	44.2	15	1		62.9	-0.1	53.3	62.8	3	65.8
79D	47.25	16	1		62.8	-0.1	53.3	62.7	3	65.7
79D	50.3	17	1		62.7	-0.1	53.3	62.6	3	65.6
79D	53.35	18	1		62.6	-0.1	53.3	62.5	3	65.5
79D	56.4	19	1		62.5	-0.1	53.3	62.4	3	65.4
79D	59.45	20	1		62.4	-0.1	53.3	62.3	3	65.3
79D	62.5	21	1		62.3	-0.1	53.3	62.2	3	65.2
79E	13.7	5	1		63.8	-0.1	53.3	63.7	3	66.7
79E	16.75	6	1		63.8	-0.1	53.3	63.7	3	66.7
79E	19.8	7	1		63.7	-0.1	53.3	63.6	3	66.6
79E	22.85	8	1		63.6	-0.1	53.3	63.5	3	66.5
79E	25.9	9	1		63.4	-0.1	53.3	63.3	3	66.3
79E	28.95	10	1		63.4	-0.1	53.3	63.3	3	66.3
79E	32	11	1		63.3	-0.1	53.3	63.2	3	66.2
79E	35.05	12	1		63.2	-0.1	53.3	63.1	3	66.1
79E	38.1	13	1		63.1	-0.1	53.3	63	3	66
79E	41.15	14	1		63	-0.1	53.3	62.9	3	65.9
79E	44.2	15	1		62.9	-0.1	53.3	62.8	3	65.8
79E	47.25	16	1		62.8	-0.1	53.3	62.7	3	65.7
79E	50.3	17	1		62.8	-0.1	53.3	62.7	3	65.7

79E	53.35	18	1		62.7	-0.1	53.3	62.6	3	65.6
79E	56.4	19	1		62.7	-0.1	53.3	62.6	3	65.6
79E	59.45	20	1		62.6	-0.1	53.3	62.5	3	65.5
80A	1.5	1	1		68.8	-0.1	53.3	68.7	3	71.7
80A	4.55	2	1		67.4	-0.1	53.3	67.3	3	70.3
80A	7.6	3	1		66.3	-0.1	53.3	66.2	3	69.2
80A	10.65	4	1		65.4	-0.1	53.3	65.3	3	68.3
80A	13.7	5	1		64.3	-0.1	53.3	64.2	3	67.2
80A	16.75	6	1		63.9	-0.1	53.3	63.8	3	66.8
80A	19.8	7	1		63.6	-0.1	53.3	63.5	3	66.5
80A	22.85	8	1		63.3	-0.1	53.3	63.2	3	66.2
80A	25.9	9	1		63	-0.1	53.3	62.9	3	65.9
80A	28.95	10	1		62.8	-0.1	53.3	62.7	3	65.7
80A	32	11	1		62.6	-0.1	53.3	62.5	3	65.5
80A	35.05	12	1		62.4	-0.1	53.3	62.3	3	65.3
80A	38.1	13	1		62.3	-0.1	53.3	62.2	3	65.2
80A	41.15	14	1		62.2	-0.1	53.3	62.1	3	65.1
80A	44.2	15	1		62.1	-0.1	53.3	62	3	65
80A	47.25	16	1		62.1	-0.1	53.3	62	3	65
80A	50.3	17	1		62	-0.1	53.3	61.9	3	64.9
80A	53.35	18	1		61.9	-0.1	53.3	61.8	3	64.8
80A	56.4	19	1		61.8	-0.1	53.3	61.7	3	64.7
80A	59.45	20	1		61.8	-0.1	53.3	61.7	3	64.7
80A	62.5	21	1		61.7	-0.1	53.3	61.6	3	64.6
80A	65.55	22	1		61.7	-0.1	53.3	61.6	3	64.6
80A	68.6	23	1		61.7	-0.1	53.3	61.6	3	64.6
80A	71.65	24	1		61.7	-0.1	53.3	61.6	3	64.6
80A	74.7	25	1		61.7	-0.1	53.3	61.6	3	64.6
80B	1.5	1	1		60.1	-0.1	53.3	60	3	63
80B	4.55	2	1		61.8	-0.1	53.3	61.7	3	64.7
80B	7.6	3	1		62.2	-0.1	53.3	62.1	3	65.1
80B	10.65	4	1		62.3	-0.1	53.3	62.2	3	65.2
80B	13.7	5	1		62.2	-0.1	53.3	62.1	3	65.1
80B	16.75	6	1		62.2	-0.1	53.3	62.1	3	65.1
80B	19.8	7	1		62	-0.1	53.3	61.9	3	64.9
80B	22.85	8	1		61.9	-0.1	53.3	61.8	3	64.8
80C	1.5	1	1		57.5	-0.1	53.3	57.4	3	60.4
80C	4.55	2	1		58.3	-0.1	53.3	58.2	3	61.2
80C	7.6	3	1		59	-0.1	53.3	58.9	3	61.9
80C	10.65	4	1		59.5	-0.1	53.3	59.4	3	62.4
80C	13.7	5	1		59.8	-0.1	53.3	59.7	3	62.7
80C	16.75	6	1		60	-0.1	53.3	59.9	3	62.9
80C	19.8	7	1		60.1	-0.1	53.3	60	3	63
80C	22.85	8	1		60.2	-0.1	53.3	60.1	3	63.1
80C	25.9	9	1		60.2	-0.1	53.3	60.1	3	63.1
80C	28.95	10	1		60.3	-0.1	53.3	60.2	3	63.2
80C	32	11	1		60.3	-0.1	53.3	60.2	3	63.2

80C	35.05	12	1		60.4	-0.1	53.3	60.3	3	63.3
80C	38.1	13	1		60.4	-0.1	53.3	60.3	3	63.3
80C	41.15	14	1		60.4	-0.1	53.3	60.3	3	63.3
80C	44.2	15	1		60.4	-0.1	53.3	60.3	3	63.3
80C	47.25	16	1		60.4	-0.1	53.3	60.3	3	63.3
80C	50.3	17	1		60.4	-0.1	53.3	60.3	3	63.3
80C	53.35	18	1		60.4	-0.1	53.3	60.3	3	63.3
80C	56.4	19	1		60.4	-0.1	53.3	60.3	3	63.3
80C	59.45	20	1		60.4	-0.1	53.3	60.3	3	63.3
80C	62.5	21	1		60.3	-0.1	53.3	60.2	3	63.2
80C	65.55	22	1		60.3	-0.1	53.3	60.2	3	63.2
80C	68.6	23	1		60.3	-0.1	53.3	60.2	3	63.2
80C	71.65	24	1		60.3	-0.1	53.3	60.2	3	63.2
80C	74.7	25	1		60.3	-0.1	53.3	60.2	3	63.2
80D	1.5	1	1		59.9	-0.1	53.3	59.8	3	62.8
80D	4.55	2	1		61.6	-0.1	53.3	61.5	3	64.5
80D	7.6	3	1		62.2	-0.1	53.3	62.1	3	65.1
80D	10.65	4	1		62.4	-0.1	53.3	62.3	3	65.3
80D	13.7	5	1		62.5	-0.1	53.3	62.4	3	65.4
80D	16.75	6	1		62.5	-0.1	53.3	62.4	3	65.4
80D	19.8	7	1		62.3	-0.1	53.3	62.2	3	65.2
80D	22.85	8	1		62.3	-0.1	53.3	62.2	3	65.2
81A	1.5	1	2		67.4	1.7	53.3	69.1	1.3	70.4
81A	4.55	2	2		67.1	1.7	53.3	68.8	1.3	70.1
81A	7.6	3	2		66.5	1.7	53.3	68.2	1.3	69.5
81A	10.65	4	2		65.9	1.7	53.3	67.6	1.3	68.9
81A	13.7	5	2		65.4	1.7	53.3	67.1	1.3	68.4
81A	16.75	6	2		65	1.7	53.3	66.7	1.3	68
81A	19.8	7	2		64.2	1.7	53.3	65.9	1.3	67.2
81A	22.85	8	2		63.9	1.7	53.3	65.6	1.3	66.9
81A	25.9	9	2		63.7	1.7	53.3	65.4	1.3	66.7
81A	28.95	10	2		63.5	1.7	53.3	65.2	1.3	66.5
81A	32	11	2		63.2	1.7	53.3	64.9	1.3	66.2
81A	35.05	12	2		63.1	1.7	53.3	64.8	1.3	66.1
81A	38.1	13	2		62.9	1.7	53.3	64.6	1.3	65.9
81A	41.15	14	2		62.8	1.7	53.3	64.5	1.3	65.8
81A	44.2	15	2		62.7	1.7	53.3	64.4	1.3	65.7
81A	47.25	16	2		62.6	1.7	53.3	64.3	1.3	65.6
81A	50.3	17	2		62.5	1.7	53.3	64.2	1.3	65.5
81A	53.35	18	2		62.4	1.7	53.3	64.1	1.3	65.4
81A	56.4	19	2		62.3	1.7	53.3	64	1.3	65.3
81A	59.45	20	2		62.2	1.7	53.3	63.9	1.3	65.2
81A	62.5	21	2		62.1	1.7	53.3	63.8	1.3	65.1
81A	65.55	22	2		62.1	1.7	53.3	63.8	1.3	65.1
81A	68.6	23	2		62	1.7	53.3	63.7	1.3	65
81A	71.65	24	2		61.9	1.7	53.3	63.6	1.3	64.9
81A	74.7	25	2		61.9	1.7	53.3	63.6	1.3	64.9

81A	77.75	26	2		61.9	1.7	53.3	63.6	1.3	64.9
81A	80.8	27	2		61.9	1.7	53.3	63.6	1.3	64.9
81A	83.85	28	2		62	1.7	53.3	63.7	1.3	65
81A	86.9	29	2		62	1.7	53.3	63.7	1.3	65
81A	89.95	30	2		61.9	1.7	53.3	63.6	1.3	64.9
81B	1.5	1	1		63.6	-0.1	53.3	63.5	3	66.5
81B	4.55	2	1		64.4	-0.1	53.3	64.3	3	67.3
81B	7.6	3	1		64.5	-0.1	53.3	64.4	3	67.4
81B	10.65	4	1		64.5	-0.1	53.3	64.4	3	67.4
81B	13.7	5	1		64	-0.1	53.3	63.9	3	66.9
81B	16.75	6	1		63.8	-0.1	53.3	63.7	3	66.7
81B	19.8	7	1		63.6	-0.1	53.3	63.5	3	66.5
81B	22.85	8	1		63.3	-0.1	53.3	63.2	3	66.2
81C	1.5	1	2		56.1	1.7	53.3	57.8	1.3	59.1
81C	4.55	2	2		57.3	1.7	53.3	59	1.3	60.3
81C	7.6	3	2		58.4	1.7	53.3	60.1	1.3	61.4
81C	10.65	4	2		59.3	1.7	53.3	61	1.3	62.3
81C	13.7	5	2		59.9	1.7	53.3	61.6	1.3	62.9
81C	16.75	6	2		60.2	1.7	53.3	61.9	1.3	63.2
81C	19.8	7	2		60.5	1.7	53.3	62.2	1.3	63.5
81C	22.85	8	2		60.5	1.7	53.3	62.2	1.3	63.5
81C	25.9	9	2		60.5	1.7	53.3	62.2	1.3	63.5
81C	28.95	10	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	32	11	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	35.05	12	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	38.1	13	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	41.15	14	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	44.2	15	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	47.25	16	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	50.3	17	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	53.35	18	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	56.4	19	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	59.45	20	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	62.5	21	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	65.55	22	2		60.8	1.7	53.3	62.5	1.3	63.8
81C	68.6	23	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	71.65	24	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	74.7	25	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	77.75	26	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	80.8	27	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	83.85	28	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	86.9	29	2		60.7	1.7	53.3	62.4	1.3	63.7
81C	89.95	30	2		60.7	1.7	53.3	62.4	1.3	63.7
81D	1.5	1	2		62.6	1.7	53.3	64.3	1.3	65.6
81D	4.55	2	2		63.8	1.7	53.3	65.5	1.3	66.8
81D	7.6	3	2		64.2	1.7	53.3	65.9	1.3	67.2
81D	10.65	4	2		64.3	1.7	53.3	66	1.3	67.3

81D	13.7	5	2		64.1	1.7	53.3	65.8	1.3	67.1
81D	16.75	6	2		64	1.7	53.3	65.7	1.3	67
81D	19.8	7	2		63.8	1.7	53.3	65.5	1.3	66.8
81D	22.85	8	2		63.6	1.7	53.3	65.3	1.3	66.6
81D	25.9	9	2		63.2	1.7	53.3	64.9	1.3	66.2
81D	28.95	10	2		63	1.7	53.3	64.7	1.3	66
81D	32	11	2		62.9	1.7	53.3	64.6	1.3	65.9
81D	35.05	12	2		62.7	1.7	53.3	64.4	1.3	65.7
81D	38.1	13	2		62.6	1.7	53.3	64.3	1.3	65.6
81D	41.15	14	2		62.5	1.7	53.3	64.2	1.3	65.5
81D	44.2	15	2		62.3	1.7	53.3	64	1.3	65.3
81D	47.25	16	2		62.2	1.7	53.3	63.9	1.3	65.2
81D	50.3	17	2		62.2	1.7	53.3	63.9	1.3	65.2
81D	53.35	18	2		62.1	1.7	53.3	63.8	1.3	65.1
81D	56.4	19	2		62	1.7	53.3	63.7	1.3	65
81D	59.45	20	2		62	1.7	53.3	63.7	1.3	65
81D	62.5	21	2		61.9	1.7	53.3	63.6	1.3	64.9
81D	65.55	22	2		61.8	1.7	53.3	63.5	1.3	64.8
81D	68.6	23	2		61.7	1.7	53.3	63.4	1.3	64.7
81D	71.65	24	2		61.6	1.7	53.3	63.3	1.3	64.6
81D	74.7	25	2		61.6	1.7	53.3	63.3	1.3	64.6
81D	77.75	26	2		61.5	1.7	53.3	63.2	1.3	64.5
81D	80.8	27	2		61.5	1.7	53.3	63.2	1.3	64.5
81D	83.85	28	2		61.5	1.7	53.3	63.2	1.3	64.5
81D	86.9	29	2		61.6	1.7	53.3	63.3	1.3	64.6
81D	89.95	30	2		61.6	1.7	53.3	63.3	1.3	64.6
82A	1.5	1	2		67.4	1.7	53.3	69.1	1.3	70.4
82A	4.55	2	2		66.8	1.7	53.3	68.5	1.3	69.8
82A	7.6	3	2		65.9	1.7	53.3	67.6	1.3	68.9
82A	10.65	4	2		65.2	1.7	53.3	66.9	1.3	68.2
82A	13.7	5	2		64.6	1.7	53.3	66.3	1.3	67.6
82A	16.75	6	2		64.2	1.7	53.3	65.9	1.3	67.2
82A	19.8	7	2		63.8	1.7	53.3	65.5	1.3	66.8
82A	22.85	8	2		63.4	1.7	53.3	65.1	1.3	66.4
82A	25.9	9	2		62.8	1.7	53.3	64.5	1.3	65.8
82A	28.95	10	2		62.5	1.7	53.3	64.2	1.3	65.5
82A	32	11	2		62.3	1.7	53.3	64	1.3	65.3
82A	35.05	12	2		62	1.7	53.3	63.7	1.3	65
82A	38.1	13	2		61.8	1.7	53.3	63.5	1.3	64.8
82A	41.15	14	2		61.6	1.7	53.3	63.3	1.3	64.6
82A	44.2	15	2		61.5	1.7	53.3	63.2	1.3	64.5
82A	47.25	16	2		61.4	1.7	53.3	63.1	1.3	64.4
82A	50.3	17	2		61.4	1.7	53.3	63.1	1.3	64.4
82A	53.35	18	2		61.2	1.7	53.3	62.9	1.3	64.2
82A	56.4	19	2		61.1	1.7	53.3	62.8	1.3	64.1
82A	59.45	20	2		61.1	1.7	53.3	62.8	1.3	64.1
82A	62.5	21	2		61	1.7	53.3	62.7	1.3	64

82B	1.5	1	2		60.2	1.7	53.3	61.9	1.3	63.2
82B	4.55	2	2		61.8	1.7	53.3	63.5	1.3	64.8
82B	7.6	3	2		62.5	1.7	53.3	64.2	1.3	65.5
82B	10.65	4	2		62.7	1.7	53.3	64.4	1.3	65.7
82B	13.7	5	2		62.8	1.7	53.3	64.5	1.3	65.8
82B	16.75	6	2		62.7	1.7	53.3	64.4	1.3	65.7
82B	19.8	7	2		62.6	1.7	53.3	64.3	1.3	65.6
82B	22.85	8	2		62.5	1.7	53.3	64.2	1.3	65.5
82B	25.9	9	2		62.3	1.7	53.3	64	1.3	65.3
82B	28.95	10	2		62.2	1.7	53.3	63.9	1.3	65.2
82B	32	11	2		61.9	1.7	53.3	63.6	1.3	64.9
82B	35.05	12	2		61.7	1.7	53.3	63.4	1.3	64.7
82B	38.1	13	2		61.6	1.7	53.3	63.3	1.3	64.6
82B	41.15	14	2		61.5	1.7	53.3	63.2	1.3	64.5
82B	44.2	15	2		61.4	1.7	53.3	63.1	1.3	64.4
82B	47.25	16	2		61.3	1.7	53.3	63	1.3	64.3
82B	50.3	17	2		61.2	1.7	53.3	62.9	1.3	64.2
82B	53.35	18	2		61.1	1.7	53.3	62.8	1.3	64.1
82B	56.4	19	2		61	1.7	53.3	62.7	1.3	64
82B	59.45	20	2		60.9	1.7	53.3	62.6	1.3	63.9
82B	62.5	21	2		60.8	1.7	53.3	62.5	1.3	63.8
82C	1.5	1	2		54.7	1.7	53.3	56.4	1.3	57.7
82C	4.55	2	2		55.5	1.7	53.3	57.2	1.3	58.5
82C	7.6	3	2		56.3	1.7	53.3	58	1.3	59.3
82C	10.65	4	2		57.1	1.7	53.3	58.8	1.3	60.1
82C	13.7	5	2		58.1	1.7	53.3	59.8	1.3	61.1
82C	16.75	6	2		58.6	1.7	53.3	60.3	1.3	61.6
82C	19.8	7	2		58.8	1.7	53.3	60.5	1.3	61.8
82C	22.85	8	2		59	1.7	53.3	60.7	1.3	62
82C	25.9	9	2		60.3	1.7	53.3	62	1.3	63.3
82C	28.95	10	2		60.3	1.7	53.3	62	1.3	63.3
82C	32	11	2		60.3	1.7	53.3	62	1.3	63.3
82C	35.05	12	2		60.3	1.7	53.3	62	1.3	63.3
82C	38.1	13	2		60.2	1.7	53.3	61.9	1.3	63.2
82C	41.15	14	2		60.1	1.7	53.3	61.8	1.3	63.1
82C	44.2	15	2		60.1	1.7	53.3	61.8	1.3	63.1
82C	47.25	16	2		60	1.7	53.3	61.7	1.3	63
82C	50.3	17	2		60	1.7	53.3	61.7	1.3	63
82C	53.35	18	2		59.9	1.7	53.3	61.6	1.3	62.9
82C	56.4	19	2		60	1.7	53.3	61.7	1.3	63
82C	59.45	20	2		59.9	1.7	53.3	61.6	1.3	62.9
82C	62.5	21	2		59.9	1.7	53.3	61.6	1.3	62.9
82D	1.5	1	2		59.2	1.7	53.3	60.9	1.3	62.2
82D	4.55	2	2		60.9	1.7	53.3	62.6	1.3	63.9
82D	7.6	3	2		61.4	1.7	53.3	63.1	1.3	64.4
82D	10.65	4	2		61.6	1.7	53.3	63.3	1.3	64.6
82D	13.7	5	2		61.7	1.7	53.3	63.4	1.3	64.7

82D	16.75	6	2		61.6	1.7	53.3	63.3	1.3	64.6
82D	19.8	7	2		61.7	1.7	53.3	63.4	1.3	64.7
82D	22.85	8	2		61.7	1.7	53.3	63.4	1.3	64.7
82D	25.9	9	2		61.5	1.7	53.3	63.2	1.3	64.5
82D	28.95	10	2		61.4	1.7	53.3	63.1	1.3	64.4
82D	32	11	2		61.2	1.7	53.3	62.9	1.3	64.2
82D	35.05	12	2		61.1	1.7	53.3	62.8	1.3	64.1
82D	38.1	13								

Appendix F
Comments on the DSEIS

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NEW YORK CITY
DEPARTMENT OF CITY PLANNING
-----X
CALENDAR NOS. 38, 39, 40, 41 and 42
WILLETS POINT

PUBLIC HEARING

-----X
Spector Hall
22 Reade Street
New York, New York
July 10, 2013
12:40 p.m.

BEFORE:

AMANDA M. BURDEN,
The Chair

1

2 COMMISSION MEMBERS PRESENT:

3 Amanda M. Burden, FAICP, Chair

4 Kenneth J. Knuckles, Esq., Vice Chairman

5 Angela M. Battaglia

6 Rayann Besser

7 Irwin G. Cantor, P.E.

8 Alfred C. Cerullo, III

9 Michelle R. De La Uz

10 Maria M. Del Toro

11 Joseph I. Douek

12 Anna Levin

13 Orlando Marin

14

15 Also Present:

16 Robert R. Kulikowski, Mayor's Office of
Environmental Coordination

17

Yvette V. Gruel, Calendar Officer

18

Members of the Staff

19

20

The Public

21

The Press

22

The Media

23

24

Reported by:
Kari L. Reed

25

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P R O C E E D I N G S

THE CALENDAR OFFICER: Borough of Queens, calendar numbers 38 through 42. Calendar number 38, N 130220 ZRQ. Calendar number 39, C 130222 ZSQ. Calendar number 40, C 130223 ZSQ. Calendar number 41, C 130224 ZSQ. Calendar number 42, C 130225 ZSQ.

THE CHAIR: Since it is located on parkland, we felt it was important for Bob to be here to listen to any public comments regarding the Willets West aspect of the project, and as well as general comments regarding the environmental review.

Just to make it clear, our purview of City Planning Commission really is on the Willets East part of the project, and the temporary term uses there. But Mr. Kulikowski is hearing testimony on any components to deal with the Willets West component of the project.

Now we'll begin to call speakers. As is our custom, since there are speakers for and against, we will go for 30 minutes for speakers in favor, then we will switch to speakers in

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2 opposition. And the first speaker in favor is Rob
3 Goldrich, who will be followed by David Quart,
4 Richard Browne, Jesse Masyr and John Clifford.

5 MR. GOLDRICH: Thank you, Madam
6 Commissioner, hello. Hello, Commissioners. Hello
7 Bob Kulikowski from the panel, very exciting to
8 see you there.

9 I'm Bob Goldrich, senior policy
10 advisor from the mayor's office. And I'm here on
11 behalf of Deputy Mayor Bob Steel to speak in favor
12 of this project today, and introduce the City
13 speakers and the development team.

14 The administration is very excited
15 to have a real way forward and finally feasibly
16 realize the vision that the City, along with the
17 City Planning Commission support, approved back in
18 2008. As you know, the Willets Point development
19 plan is an historic redevelopment effort that will
20 finally transform and revitalize a polluted and
21 neglected neighborhood, a goal that has alluded
22 the City for generations. The plan will clean up
23 decades of toxic pollution, and help improve the
24 quality of nearby waterways. It will provide the
25 Willets Point district, located in one of the most

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2 vibrant parts of Queens, with basic infrastructure
3 that it now lacks. In addition, it will establish
4 a major new, mixed income neighborhood and
5 commercial destination, while creating thousands
6 of jobs and infusing billions in private
7 investment into the local community.

8 The City's agreement with the
9 joint venture development team will result in
10 construction as originally envisioned in the
11 Special Willets Point District and urban renewal
12 plan when environmental remediation on even more
13 acreage than was originally anticipated in the
14 2011 RFP. The plan will activate significant
15 acreage on both sides of City Field to create a
16 true center of economic growth for Queens.

17 The first phase of the project will
18 encompass 23 of the 62 acres which will make up
19 the district, will result in \$3 million in private
20 investment, create 7,100 permanent jobs, and
21 12,000 direct construction jobs, with MW/BE and
22 local hiring goals at 25 percent. During
23 construction the project will generate over \$310
24 million in tax revenue. And once operational,
25 will account for over \$150 million in new annual

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2 tax revenue. You will hear from the applicants
3 and New York City's Economic Development
4 Corporation in a joint venture between Related and
5 Sterling Equities, as well as their consultants
6 who are here today to address questions and
7 concerns that you may have.

8 So I'm here to answer any
9 questions as well or just hand it off to the next
10 speakers.

11 THE CHAIR: Let me see if there are
12 any for Rob Goldrich. Yes, Michelle and then
13 Angela.

14 COMM. DE LA UZ: Thanks for being
15 here.

16 MR. GOLDRICH: Thanks, Commissioner.

17 COMM. DE LA UZ: I'm wondering if
18 you could speak to what efforts the City has made
19 to work with the existing business owners that are
20 going to be displaced as a result of the
21 remediation.

22 MR. GOLDRICH: The City has been
23 working very closely with City Council Member
24 Julissa Ferreras, and HPD, who is both property
25 manager, and with EDC, to come up with a plan to

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2 fairly relocate and help to relocate the existing
3 businesses. The City owns about 95 percent of the
4 land currently in Willets Point, maybe a little
5 bit more than that right now. We're the property
6 manager for those properties. And we've been
7 engaging with Cornerstones, and David Quart will
8 be here to speak afterwards, and probably give a
9 little more detail, who is a broker and a
10 consultant that helps source properties and
11 relocations for the businesses. They have been
12 engaged with the businesses for a period of time
13 already, and will continue to do so. The council
14 member has also been very active with us to see if
15 we can come up with any kind of supplemental
16 relocation on top of what the City would normally
17 provide, as obligated under the law to relocate
18 businesses who will be evicted. So we are in
19 current discussions with OMB and with the council
20 member to come up with a plan to supplement what
21 was already agreed upon.

22 THE CHAIR: Angela.

23 COMM. BATTAGLIA: So that would have
24 been my question, but it gives me an opportunity
25 to say welcome.

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MR. GOLDRICH: Thanks.

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COMM. BATTAGLIA: I always like when
the mayor's office presents. That's how I got to
meet Matt LaBule (phonetic) when I was --

6

7

8

MR. GOLDRICH: I sit in Matt
LaBule's old chair. I have his old phone number,
so.

9

(Laughter)

10

11

COMM. BATTAGLIA: Thank you for
coming today.

12

MR. GOLDRICH: Thanks.

13

THE CHAIR: Vice Chair Knuckles.

14

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THE VICE CHAIR: Sir, approximately
how many businesses are impacted by this? I'm
sure we were told this at one point but I just
don't remember.

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MR. GOLDRICH: I'm going to let
David Quart get into that, but it's -- I believe
it's less than a hundred businesses that will have
to be re -- that will have to move. Willets Point
is sort of -- it's an area where there are -- in
one property you could have a number of different
businesses. You may have one business that's on
the lease, but you also have many other smaller

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2 businesses that sit within a building. So it's
3 very complicated. So to answer the numbers
4 exactly I think is a moving target, but David
5 Quart can probably give you more.

6 THE VICE CHAIR: Is it the sense
7 of the City, without perhaps knowing specifically
8 where, but is it the sense of the City that all of
9 these businesses can ultimately be relocated
10 somewhere?

11 MR. GOLDRICH: There have been -- a
12 number of the businesses have tried to, are
13 interested in co-locating. There are a lot of
14 auto businesses there. Some of the businesses
15 will do tires, some other businesses will do other
16 parts of the car. So it's been great for them to
17 all be located currently in Willets Point where
18 someone can come to the windshield place and the
19 tire to another place and so on.

20 Cornerstone has been working to find
21 sites to co-locate businesses, and have also been
22 working to find smaller sites to locate businesses
23 individually. There are -- there have been a
24 whole analysis as to rents, how -- where they are
25 now, what they are in other locations. And

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2 clearly, Willets Point and the conditions that
3 there are, the rents are lower than they are in
4 other parts of the City, but there are options
5 that are available. I'm not sure if everyone will
6 be able to find a new place in terms of being --
7 the economic feasibility to the specific business.
8 But that is the hope and that's what we have been
9 working with, working towards.

10 THE VICE CHAIR: Thank you.

11 THE CHAIR: Any other questions?

12 COMM. CANTOR: Good afternoon. You
13 made the observation that the City owned about 95
14 percent of the parcels?

15 MR. GOLDRICH: In phase one.

16 COMM. CANTOR: In phase one.

17 MR. GOLDRICH: Yes, sir.

18 COMM. CANTOR: And then you
19 responded that there are about a hundred
20 businesses affected. Is that the remaining five
21 percent?

22 MR. GOLDRICH: No, that's -- I think
23 that would include -- that roughly a hundred
24 businesses is -- would be the entire 23 acres in
25 phase one. The businesses that we have been

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2 engaged with so far have only been the ones where
3 we are currently the property manager. We're not
4 allowed to work to relocate tenants in businesses
5 in buildings that we do not own yet. That's -- we
6 are forbidden to sort of get between a landlord
7 and a business. So we are pretty close to almost
8 the entire piece of the phase one build point.

9 COMM. CANTOR: But at the end of
10 the day, if everyone stonewalled, okay, are there
11 a hundred businesses that are exposed to eminent
12 domain?

13 MR. GOLDRICH: No. The eminent
14 domain only is -- would involve properties that we
15 do not own. So we have engaged in negotiations
16 and successful acquisition without eminent domain
17 for a little more than 95 percent of the property.
18 The remaining businesses, EDC is engaged with
19 them, and it is the hope of the City that we can
20 come to an agreement and not have to use eminent
21 domain.

22 COMM. CANTOR: But how many
23 businesses does that incorporate?

24 MR. GOLDRICH: Oh, the remaining,
25 I'm not sure exactly. I think I'll leave that to

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2 David Quart to answer that exact number.

3 COMM. CANTOR: But it's not the
4 100.

5 MR. GOLDRICH: No. Those are --
6 there are just a couple of properties that are
7 left, so it's a very small piece.

8 COMM. CANTOR: Thank you.

9 THE CHAIR: Michelle.

10 COMM. DE LA UZ: Since you touched
11 on the tax revenue piece of it, do you happen to
12 know the breakdown in terms of tax revenue that's
13 generated from the Willets West versus Willets
14 East?

15 MR. GOLDRICH: No, I don't.
16 Subsequent speakers may have that, but I don't
17 have the split between the two.

18 COMM. DE LA UZ: Thank you.

19 THE CHAIR: Any other questions for
20 Rob Goldrich?

21 (No response)

22 THE CHAIR: Rob, thanks for coming,
23 nice to see you.

24 MR. GOLDRICH: Thank you, nice to
25 see you.

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THE CHAIR: David Quart is our next speaker.

MR. QUART: Good morning, Chair Burden, good morning, Commissioners. My name is David Quart, and I'm a senior vice president with the New York State Economic Development Corporation. I'm very pleased to be a co-applicant for the Willets Points development project.

As you know, the Willets Point plan created by EDC, in close collaboration with the community, the Department of City Planning, and other key agencies as well as area elected officials, was adopted in November 2008. The actions before you today will allow this most important project to move forward to clean up and transform the Willets Point district into the vibrant mixed-use community in addition to that plan, creating a whole new neighborhood in Queens. I want to take this opportunity to discuss the progress the City has made on several fronts since the 2008 approvals to help show what Rob talked about.

1
2 infrastructure work a couple of years ago to
3 support the future development. This work is
4 along 126th Street and other adjacent areas near
5 the district, and that work will be substantially
6 complete at the end of this year. We worked to
7 acquire properties in the phase one area. As Rob
8 stated, we currently own or are in contract to
9 purchase about 95 percent of the area phase one.
10 And we are continuing to negotiate with the
11 existing property owner, and I'll have to talk
12 about that some more.

13 The first full phase of the
14 project also requires construction of new ramps at
15 the Van Wyck Expressway to enable better access to
16 the area. The City has taken significant steps to
17 progress the ramps. Receiving key approval from
18 the Federal High Administration last year was a
19 major milestone, and it has committed to fund the
20 ramps to ensure the project is fully realized.

21 The City also established the
22 Willets Point Workers Assistance Program to
23 provide a variety of services to workers in the
24 district. To date over 600 workers are
25 registered, with about 470 taking advantages of

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the vocational skill training, ESL, computer classes and other programs.

The relocation of existing businesses at Willets Point has always been part of the project plan. The City, as Rob mentioned also, has brought on relocation experts with Cornerstone Crew, and they are working intensely with businesses free of charge to understand their space needs, identify relocation sites, and help make offers on their behalf, and their work is ongoing and will continue.

We now have a clear path forward to achieve the development envisioned under the '08 approvals. The proposal for the initial 23 acres fulfills the first phase of the original vision for the area and more, as the development team will attest. Through the RFP process that we initiated in 2011, the City learned some very important lessons, that the transformation of Willets Point is not possible all at the same time. None of the proposals we initially received offered development that could feasibly realize the goals of the plan. The developer proposal -- the developer's proposal in its final form

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2 conformed fully with the vision, addressing two
3 key challenges. The absence of development
4 activity in the general area surrounding Willets
5 Point, and the need to remediate environmental
6 contamination on a large portion of the district.

7 Cleaning up the site, a critical
8 public purpose underlining the entire project, and
9 establishing economic activity to support the full
10 vision must happen first. The actions before the
11 Commission today would allow for initial uses that
12 are critical to create the economic environment
13 necessary to achieve the full vision at Willets
14 Point.

15 (Bell rung)

16 MR. QUART: Thank you.

17 (Laughter)

18 MR. QUART: I'm happy to take any
19 questions.

20 THE CHAIR: Thanks, David, nice to
21 see you.

22 MR. QUART: You too.

23 THE CHAIR: Questions from the
24 Commission. Irwin?

25 COMM. CANTOR: Your timing is

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2 perfect.

3 Question. Why do we have a wait
4 of almost ten years before we reach the housing
5 component?

6 MR. QUART: Good question. So a
7 couple things I'll say on that. First, and I'll
8 just mention, you know, I think while we certainly
9 would all -- we all want to see this project
10 happen as quickly as possible, but what we have
11 learned through the RFP process is that it really
12 needs to happen in phases. And it's a -- this is
13 a, as you all know, major transformation of an
14 area which currently really has no -- no there
15 there. There are many businesses there, and
16 obviously we are working with them, but there is
17 no there there in terms of a neighborhood. And so
18 cleaning up the site initially and then creating
19 those -- creating an economic engine to establish
20 this environment is really key first. And that
21 will take -- that will take several years. And
22 until that happens, it will -- there's no way to
23 really bring the housing on. So I think that's
24 why there's some time for it.

25 In addition, as I mentioned because

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2 it's come up, the ramps as well must be built in
3 order to achieve the full phase one of the
4 project. And, you know, we're making a lot of
5 progress on that. The City is committed to
6 funding it. But that also is a multi-year process
7 for, as I'm sure you know or can imagine, an
8 incredibly complicated piece of infrastructure
9 that will require multiple years of designs and
10 approvals ultimately. But the key is really what
11 I've said initially, which is creating that
12 economic environment and establishing it, and to
13 have seen that initial transformation take place
14 really has to happen before the other uses,
15 including the housing, which we know is so
16 critical to the Queens community, can be built.

17 COMM. CANTOR: Okay. But to
18 follow up, the remediation of course is obvious.
19 The number of years that it takes to do the
20 remediation is also pretty obvious. And the
21 landfill is pretty obvious. But why cannot -- it
22 seems to me, if you put that aside for a moment,
23 that you've described a critical path, if you
24 will, of the ramps system. Why cannot that be
25 accelerated?

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2 MR. QUART: I think right now, you
3 know, as we think about -- I don't have the full
4 schedule in front of me -- as we think about
5 various steps that need to take place, it will
6 take many years in order for us to actually start
7 the construction of the ramps. And so at this
8 point our best estimate is that we would begin
9 construction of the ramps in 2021 and complete
10 construction of the ramps in 2024, after which the
11 full development can progress.

12 COMM. CANTOR: Could you fill me in
13 on why that should take, quote, many years to
14 start the construction of the ramps?

15 MR. QUART: I mean I think you can
16 certainly -- I guess certain pieces of the
17 milestone -- I mean, for example, the approval
18 that we achieved last year from the Federal
19 Highway Administration, which was a major
20 approval, the access modification report, that was
21 two years of incredible amounts of efforts and
22 resources to get that initial approval. And
23 that's really the key initial approval to allow
24 the project to move forward. And that was two
25 years in and of itself. There are a series of

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2 steps that we need to take with local, state and
3 federal authorities in order to ultimately improve
4 the design of the ramp. Where the footings are
5 going to land and doing all the site investigation
6 of that. All the coordination we'll need to do
7 with DEC and DEP and the Federal Highway
8 Administration going forward. You know, just
9 submitting our specs and estimates of the project
10 as we move along. So each of those things takes a
11 significant amount of work, a significant amount
12 of time.

13 COMM. CANTOR: Are they
14 sequential, as opposed to the opportunity to be in
15 parallel?

16 MR. QUART: The ramp design and sort
17 of testing and approval schedule is largely
18 sequential, yes.

19 COMM. CANTOR: Thank you.

20 MR. QUART: Okay, thank you.

21 THE CHAIR: Other questions for
22 David Quart? I'm sorry, Michelle.

23 COMM. DE LA UZ: I thank you for
24 being here.

25 You stated -- obviously one of the

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2 significant goals of the project is to clean up
3 the site. And I'm just wondering if you could
4 provide more detail -- although maybe I should
5 turn to my right -- to provide more detail about
6 the cleanup. I'm assuming that it's under New
7 York State DEC and that it's under the voluntary
8 cleanup program, and I'm wondering if it's
9 anticipated that the development will qualify for
10 brownfield tax credits, assuming that they still
11 exist at the time that this project moves forward.

12 MR. QUART: Yes. Yes, I believe
13 that's all accurate and that the plan is that the
14 developer will be applying for the brownfield
15 program. I think after me a couple of
16 representatives from the development team will
17 speak, and they can speak more specifically to
18 that, but that's accurate.

19 THE CHAIR: Yes, Anna.

20 COMM. LEVIN: And on the
21 environmental cleanup, is the City imposing any
22 kind of timetable on the developer for completing
23 or milestones for completing the cleanup? And
24 also, is the City contributing financially to the
25 cost of the cleanup.

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2 MR. QUART: Yes, thank you,
3 Commissioner Levin. The City, to your first
4 question, the City's agreement with the developer
5 requires that they begin commencement of the
6 cleanup as soon as the property is conveyed. So
7 as soon as what we hope is a ULURP approval, and
8 after what we need to do in order to close on the
9 properties, the cleanup would begin as quickly as
10 possible after that. The anticipated timeline for
11 the cleanup is approximately two years. And I
12 think everyone is motivated to get that done
13 quickly because nothing else is going to happen on
14 the site until the remediation is done. That has
15 to happen first.

16 In terms of funding, there is a
17 funding agreement that the City has with the
18 developer, and a portion of that funding will go
19 to or can go to fund the remediation of the site.

20 COMM. LEVIN: So are you able to
21 say, roughly speaking, of the total cost of the
22 cleanup how much of it will be paid for by the
23 developer and how much by the public sector?

24 MR. QUART: I mean it's hard to know
25 exactly because a lot more investigation work

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2 needs to be done, which the development team will
3 be doing. So it's certainly possible that the
4 City's funding will cover the cost of the
5 remediation. But I think we need to sort of see
6 how far -- I mean we need to have more information
7 I think from the investigation to know.

8 COMM. LEVIN: So who then bears
9 the risk of those investigations turning up really
10 scary stuff?

11 MR. QUART: The developer.

12 COMM. LEVIN: That's the
13 developer's undertaking.

14 MR. QUART: Right.

15 COMM. LEVIN: So the public
16 commitment is fixed?

17 MR. QUART: Yes, that's right.

18 THE CHAIR: Any other questions for
19 David?

20 (No response)

21 THE CHAIR: Thank you, David. Nice
22 to see you.

23 MR. QUART: Thank you, you too.
24 Thank you very much, commissioners.

25 THE CHAIR: The next speaker is

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2 Richard Browne, and then Jesse Masyr.

3

MR. BROWNE: Good afternoon,
4 Madam Chair, Commissioners, ladies and gentlemen.
5 Thank you for your time today. My name is Richard
6 Browne. I'm a partner at Sterling Equities and a
7 principal in the entity QDG, which is a joint
8 venture between Sterling Equities and the Related
9 companies, and the designated developer for
10 Willets Point.

11

I'm joined today by my colleagues,
12 Jean Vanderberg from Related, as well as our land
13 use counsel, Stroock, Stroock & Lavan, Rothschild,
14 Jesse Masyr, and he just moved firms to Fox
15 Rothschild. We're joined by our other consultants
16 on traffic, and our environmental impact from AKRF
17 and VHB. So if you have follow up questions that
18 I can't answer, I've got some folks here that can
19 help clarify.

20

Rather than be redundant and
21 restate all the reasons why, you know, the time is
22 long since past to revitalize Willets Point and
23 this community, I thought I would take a few
24 moments and explain the genesis and thinking
25 behind our ideas, and why I think our plan is

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2 certainly by far the most viable of any that came
3 across the City's desk and came across our minds
4 as we were trying to find the best way to
5 revitalize the area but still preserve the
6 original plan that was approved here in 2008.
7 And, as you correctly mentioned earlier, while
8 your function is just to approve the interim use
9 part on Willets Point, obviously there are many
10 questions that are needed to be asked and answered
11 and that we actually have been asked and answered
12 over the last nine months as we have gone through
13 our process. And those being why are you building
14 a retail facility, why aren't you building it in
15 Willets Point, and where is the housing, you know,
16 why are we waiting yet longer for our vision to be
17 executed. So let me take those quickly one at a
18 time, and then I welcome your follow up questions.

19 It's been stated here, and I
20 don't really need to reiterate, the economic
21 climate that this project was born in was quite a
22 difficult one, resulting in instead of a 61 acre
23 transformation it became a rolling -- a rolling
24 transformation. So the first 23 acres is being
25 transferred to private ownership and to be cleaned

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2 up. And obviously that is in and of itself is a
3 gargantuan effort. I'll be able to talk more if
4 you like about the brownfield program and what our
5 contemplated protocol is at this point, what we
6 know and what we don't know at this point.

7 (Bell rung)

8 MR. BROWNE: Sorry, I rambled.

9 THE CHAIR: No, you posed some very
10 good questions.

11 MR. BROWNE: Okay.

12 The CHAIR: You were beginning with
13 the first one, with housing, et cetera, so why
14 don't you continue.

15 MR. BROWNE: Okay.

16 THE CHAIR: Because I know those
17 questions, even though we're looking at this side,
18 each of those questions are pertinent.

19 MR. BROWNE: Shall do, okay.

20 So why aren't -- why are we
21 building -- why are we leading with a retail
22 facility. And that's been answered here. In
23 order to make any of this project viable at this
24 point, we do need to create an income stream that
25 we feel is most reliable and is something that we

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2 as a group know very well. And I should add the
3 reason why Sterling brought in Related -- as you
4 know, Sterling is an affiliate of the New York
5 Mets. Why Sterling brought in Related was for
6 several reasons. Number one, they're a resource
7 in depth and integrity as one of the first class
8 developers in this country. But number two, their
9 retail experience and depth. Number three, their
10 commitment and track record to affordable housing.
11 They have developed over 45,000 affordable housing
12 units over the last 40 years. They own and
13 continue to own and operate affordable housing in
14 all five boroughs of the City. And we remain
15 fully committed to the original vision that was
16 approved here in 2008. We are not interested in
17 seeing a parking lot across the street from our
18 main entrance on 126th, and we put a team together
19 in order to execute that vision.

20 So the retail facility, of all
21 the things that we could come up with, and we
22 actually had a proposal that was leading with a
23 convention center as another alternative, the
24 retail facility we believe is by far the most
25 economically viable engine that could help support

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2 the development at Willets Point. One statistic
3 that rings true in my mind is that Queens, the
4 borough of Queens residents, they spend over five
5 billion dollars a year on retail shopping outside
6 of Queens. They go to Roosevelt Field, they go to
7 Woodbury Commons. And while we all think there's
8 enough retail around, the statistics really point
9 otherwise. Queens is actually underserved by good
10 quality retail. And so we really believe in this
11 project as a means to an end.

12 Why did we do it in Willets
13 Point, why are we putting it in the middle of our
14 parking lot where Shea Stadium was. And I
15 understand the sensitivity that this is mapped
16 parkland, although this is an approved use, just
17 given the designation of it, and I won't get into
18 the semantics of it, but it's analyzed and
19 reanalyzed.

20 When you, number one, first and
21 foremost, putting a retail mall on this 23 acres
22 would shatter the original vision from 2008 and
23 what Willets Point ultimately wants to be. So
24 that's a non starter certainly from your point of
25 view. I can tell you from a retailer and business

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2 person's point of view, trying to convince the
3 chairman of Macy's or Nordstroms or whoever, you
4 go down the list, to establish a retail facility
5 in 23 acres when it's still surrounded by what
6 it's surrounded by, and you combine that with the
7 lack of access on 126th Street and that corridor,
8 versus right in the middle of the City Field
9 parking lot where we've got 50 acres of
10 undeveloped land that sat as a parking lot, and
11 it's right next to the train, it's just overly
12 compelling as to why it wants to be where we have
13 it located. And inasmuch as our affiliate has a
14 long term lease, with the City's permission we are
15 able to at least offer up this scenario. And it
16 beared (sic) fruit and obviously we are standing
17 here today because the amount of subsidy that we
18 have asked for, which is dedicated for really just
19 to the Willets Point district, is by far the
20 lowest of any other developer because we're able
21 to look at these 100 plus acres wholistically.

22 The housing part I think I've
23 addressed. We are interested in seeing it happen,
24 we are committed to seeing it happen. We need two
25 things to happen. We need an income stream to be

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2 able to support it. And then of course we need
3 the ramps. And we expect both of those to happen.

4 THE CHAIR: Okay, now then I'll
5 take questions.

6 So it's important that you actually
7 pose the questions that's on everybody's mind,
8 even though our purview is --

9 MR. BROWNE: Understood.

10 THE CHAIR: -- on the east side of
11 the line.

12 So are there questions for
13 Mr. Browne on issues that relate to what is before
14 us?

15 COMM. CANTOR: Ladies first.

16 THE CHAIR: Start with Queens or --

17 COMM. CANTOR: No, ladies first.

18 COMM. DE LA UZ: You started to
19 answer the question about the brownfield tax
20 credits.

21 MR. BROWNE: Yeah.

22 COMM. DE LA UZ: So if you don't
23 mind --

24 MR. BROWNE: Sure.

25 COMM. DE LA UZ: Providing that.

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MR. BROWNE: Okay. We --

COMM. DE LA UZ: Because I think that's part of the potential income stream which might, at least in our mind, my mind, answer some of the questions.

MR. BROWNE: I wish, but not really. Let me explain why.

First of all, just to give you some background, I was the owner's representative for the development of City Field. The Willets west portion of land is not a brownfield site nor will it be. It's regulated, it's a regulated site because it used to be ash fill, but it's not contaminated, it would not qualify as a brownfield site. So there's no application, no credits, no nothing over in Willets west, if you will. Willets Point certainly will qualify. And we do expect just in terms of timeline, we expect to be enrolled in the program prior to closing.

We then have -- I'll address your question on the tax credits first. As you correctly said, there is a chance that we will receive tax credits if the sunset provisions in the plan are extended beyond the dates that are

2 currently contemplated, although those credits are
3 really limited to 25 percent of your cost of
4 remediation. Our budget to build the retail
5 facility is over a billion dollars. So there
6 isn't going to be any -- if it costs, let's just
7 use round numbers, if it costs all hundred million
8 dollars to remediate, and we get \$25 million in
9 tax credits, number one, it's a credit off of the
10 cleanup effort in Willets west, in the Willets
11 Point district. It wouldn't do much to offset a
12 billion dollar income producing retail project
13 across the street.

14 We are enrolling in the program
15 really because of the administrative nightmare
16 involved in trying to clean up 23 acres which has
17 been -- with about 120 different tax lots. We
18 want to work under one permit, one protocol, one
19 governing body, one sign-off, that type of thing.

20 Timeline. As soon as we close, we
21 will be in there doing investigative work of all
22 23 acres, both above grade and below grade. There
23 has been very limited work done at this time,
24 rightly so, because the City has not had
25 possession. We are to be delivered vacant

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2 possession. So whenever that happens, day one,
3 day two we go in and we start all of our testing,
4 which is a big effort.

5 We then have to get DOB permit
6 approval to do demolition and above-grade
7 remediation, but then we need to file with DEC to
8 have them approve our work plan and protocol based
9 on what we find. So it's when you get into how
10 long this is all going to take, two years to clean
11 up from when you start, then you build a parking
12 lot, which isn't an overly long exercise, which
13 then enables you to start construction in City
14 Field, because we have to relocate the parking
15 before we can start disturbing the Mets parking
16 lot, you're looking at commencing construction in
17 the mall approximately, you know, two, two and a
18 half, three years after you first take possession.
19 And then it's about a three year build to do the
20 retail facility.

21 So that's why we're -- it's
22 longer than we all want it to be, but it's a
23 massive job, and again, the only way that we could
24 get this ball moving forward instead of leaving it
25 the way it is.

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THE CHAIR: Irwin.

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COMM. CANTOR: Mr. Browne, perhaps I should have asked this question of Mr. Quart, but with regard to the -- you're doing 23 and you're leaving the other for tomorrow.

MR. BROWNE: The City is, yes.

COMM. CANTOR: Right. Do we know, do you know whether the businesses in the remaining acreage are going to be allowed to stay or are they going to be moved out?

MR. BROWNE: David, are you here, David?

THE CHAIR: Well, David can get back --

MR. BROWNE: Oh. Oh. As far as I know, they are not disturbed by this. Anybody that's outside the 23 acres is staying and doing what they've been doing or whatever they want to do.

COMM. CANTOR: Thank you.

MR. BROWNE: Yeah.

THE CHAIR: Okay. Any other questions for Mr. Browne?

(No response)

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THE CHAIR: Thanks very much.

MR. BROWNE: Thanks for your time.

THE CHAIR: We're actually going to -- Jesse, we are going to switch to speakers in opposition now, we are running out of time. So we'll see you in a little while.

So speakers in opposition, beginning with Ben Haber. Then Joseph Ardizzone. Ardizzone. Ardizzone. And then Edwin Westley, and then Sunny Hoffman.

MR. HABER: Madam chairman, members of the Commission. My name is Ben Haber.

The Willets Point plan approved by this Commission in 2008 was clear and unambiguous. The City would acquire 62 acres of Willets Point either through voluntary sale by property owners or, if need be, through eminent domain. A real estate developer will be selected based upon input from the community, and the one selected would then construct on the site upscale retail stores, office buildings, a convention center, a school and luxury housing with a small portion set aside for affordable housing. The developer will be required to remove whatever contamination existed

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2 on the 23 acre area.

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4 There was no mention, I repeat,
5 no mention of a 1.4 million square foot shopping
6 mall at City Field or any connection to City
7 Field.

8

9 There was no mention the City will
10 pay tens of millions of taxpayer dollars to
11 acquire the property -- and may well spend more
12 millions -- to sell the property to the developer
13 for one dollar. That's right, one dollar.

14

15 There was no mention the City would
16 subsidize the development to the tune of \$99
17 million. There was no mention that a fix was in,
18 that the Mets and their Related Companies would be
19 selected so to seek a huge shopping mall. Hence,
20 the reason the community was shut out of the
21 developer selection process.

22

23 There was no mention that a shopping
24 mall would be given priority over Willets Point,
25 and that the housing is placed on the backburner
until 2025, if indeed ever built.

26

27 And Mr. Cantor, the only area in the
28 area that can be used is the highways. They
29 cannot be enlarged. There's never going to be

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2 ramps. The housing building is never going to
3 happen.

4 There was no mention Fred Wilpon,
5 a multimillionaire, needs the shopping mall to
6 earn money to complete the approved 2008 Willets
7 Point plan.

8 There was no mention that without a
9 mall, Willets Point would never be completed.
10 Absolute nonsense. Other developers would be
11 happy to get the land for one dollar and receive
12 \$99 million to boot and the job without a mall.

13 The claim that all the application
14 seeks is a minor change to the 2008 plan to
15 construct a parking area in Willets Point and that
16 it has nothing to do with the 1.4 million square
17 foot shopping mall in City Field is nonsense. If
18 it looks like a duck, walks like a duck and quacks
19 like a duck, it is a duck. To claim this
20 application has nothing to do with the shopping
21 mall is a hoax.

22 If there's something it has nothing
23 to do with, it's the 2008 Willets Point plan. Has
24 anybody explained to you what has changed from the
25 plan that you approved? Nothing has changed.

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2 They're just injecting a mall. That's ridiculous.

3 Keep in mind, Community Board 7

4 and 3 considered this item. Community Board 7

5 approved it, 22 to 18. Board 3 rejected it, 30 to

6 one, overwhelmingly.

7 If you allow the applicant to get

8 away with a mall without a ULURP, which is what's

9 happening here, you will be making a mockery of

10 the ULURP process, which was instituted to ensure

11 transparency in government. They should get up

12 and tell you it's really the mall they're talking

13 about.

14 (Bell rung)

15 MR. HABER: It has nothing at all to

16 do with Willets Point.

17 Now, I'm not against big business,

18 nor should you be. I'm against shady business,

19 under the table backroom political deals that make

20 a mockery of ULURP. You should send the word out

21 the City Planning Commission takes seriously not

22 just the word of the law but the spirit of the

23 law, that you will not permit an applicant to come

24 here and blindside you with a phony claim of a

25 minor change for a parking area when in fact it

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2 seeks the mall.

3

4 Now, I sent to each of you a
5 complete statement about this. And also it
6 appeared in the Queens Chronicle, and I'm leaving
7 it with each of you again.

7

8 THE CHAIR: Okay, so leave it with
9 the secretary.

9

10 MR. BROWNE: If you have any
11 questions, I'll be glad to answer them.

11

12 THE CHAIR: Let me find out.

12

13 Are there questions from the
14 Commission for Mr. Haber?

14

15 (No response)

15

16 THE CHAIR: There are not. But we
17 do thank you for your testimony.

17

18 Joseph Ardizzone. And then Edwin
19 Westley.

19

20 MR. ARDIZZONE: Hi. My name is
21 Joseph Ardizzone. I was born and raised on
22 Willets Point. I am now 81 years of age. And I
23 wish to let's you all know that what's been
24 presented to you is not really so.

24

25 I was born and raised in that area,
and I'm proud to be in that area, for now and for

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2 always. Right now this bargain is robbing me of
3 my past, my present and my future. I wish you
4 would take note of that. And also, what they say
5 to you is not so.

6 Thank you.

7 THE CHAIR: Thank you for coming.

8 Edwin Westley.

9 MR. ARDIZZONE: Did you want to ask
10 me some questions?

11 THE CHAIR: Are there questions?

12 (No response)

13 THE CHAIR: No, there were no
14 questions.

15 MR. ARDIZZONE: No questions,
16 thanks.

17 THE CHAIR: Edwin Westley, and then
18 Sunny Hahn.

19 MR. WESTLEY: Thank you, Madam Chair
20 and Commissioners, for giving me this opportunity
21 to talk to you. My name is Ed Westley. I am
22 president of the Jackson Heights Beautification
23 Group, and also a member of Community Board 3.

24 The Queens development group plan is
25 to clear the Willets Point junkyards from the site

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2 line of City Field with a parking lot and a hotel
3 built on the Special Willets Point District. That
4 was approved in 2008. There would be very little
5 discussion if it stopped there. But now, they
6 have moved out of the approved special district
7 and into mapped parkland. They have requested
8 30.7 acres to build a 1.4 million square foot
9 shopping mall.

10 They referred to this land as
11 Willets West. Let's be honest, it's Corona. They
12 would also like us to believe that Willets Point
13 is downtown Flushing. This is like referring to
14 Washington Heights as upstate Manhattan.

15 Community Boards 3 and 7 have held
16 public hearings on the application. The vote at
17 Community Board 3 was 30 against, one for, and one
18 abstention. Community Board 7 voted 22 for and 18
19 against. We request you to break the tie and say
20 no.

21 There are several solid reasons to
22 say no. First, there is no plan to replace the
23 30.7 acres of parkland.

24 Second, the 1961 law referenced in
25 the application as justification for the mega-mall

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2 is wishful thinking. The Urban Justice Center has
3 issued an opinion that there is nothing in the law
4 that even hints of the building of a mall. It
5 does address possible development, but only as it
6 relates to a sports venue.

7 Third, the demolition of the
8 Empire Millwork Corporation building, which is on
9 the State and National Registers of Historic
10 Places.

11 Four, the traffic increase will be
12 beyond the capacities of both highways and side
13 streets.

14 Fifth, transit and pedestrians. The
15 number 7 train will need to be now a double decker
16 train to handle the volume of people.

17 Promises are made but not kept.
18 Affordable housing was a key element in voting for
19 the 2008 application. It was the number one
20 priority. Now, phase two, with the promise of 35
21 percent for affordable housing, has been -- has a
22 scheduled completion for 2032.

23 The Economic Development
24 Corporation, the sponsoring agency, they are
25 responsible for two contrary statements in the

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2 body of the application.

3

4 One, capture retail spending
5 currently lost to surrounding suburbs. But then
6 they go on to say it would not raise retail
7 capture rates within a five mile primary trade
8 area. If the second statement is correct, then
9 they will put existing Queens malls into
10 bankruptcy, like Atlas Mall in Middle Village.

10

(Bell rung)

11

12 THE CHAIR: Do you have a concluding
13 sentence? It's okay.

13

MR. WESTLEY: Yes, I do.

14

15 The estimated cost is \$3 billion for
16 phase one A and B. But they have an out clause
17 that cost \$35 million. These developers are
18 kicking the can down the road. This housing is
19 never going to be built.

19

Thank you.

20

21 THE CHAIR: Okay. Thank you. Let
22 me see if there are questions for you.

22

(No response)

23

24 THE CHAIR: No, there are not.
25 Thank you for being here.

25

MR. WESTLEY: Okay, thank you.

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THE CHAIR: Sunny Hahn. Is Sunny
Hahn here?

(No response)

THE CHAIR: Irene Presti. And then
after Ms. Presti, Joanne Marie and Gerald
Antonacci.

Are you Ms. Presti?

MS. PRESTI: Yes.

THE CHAIR: Come on up.

MS. PRESTI: I thought I was farther
down on the list.

Thank you, Madam Chair and
Commissioners. My name is Irene Presti, and I own
property at Willets Point, and I'm here to voice
my strenuous opposition to this toxic development
deal that the City has proposed for Willets Point.

This all began seven years ago, when
the City decided that I am not a good enough
person to own my own property and that they had
what they called a higher and better use for it.
To put this simply, they wanted to take my
property, violate my constitutional rights, and
hand it over to a well-connected developer.

This was a deal, however, that

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2 generated a great deal of controversy down at the
3 City Council, the legislative body that needed to
4 approve the project. Most of the time the use of
5 condemnation is seen as a drastic act and is used
6 sparingly, and only for a tangible public use.
7 Not seeing any great public use in the City's
8 proposal, the City Council balked, sending EDC
9 scrambling.

10 Here's where the dealmaking began
11 and various interests came into the negotiations,
12 and thousands of units of public housing, along
13 with an agreement to provide a so-called living
14 wage to retail workers was added to give this land
15 grab a public flavor. I remember an old saying,
16 that if you're going to bake a lie, you need to
17 frost it with the truth. And so it went, with the
18 land grab being frosted with the adding on of
19 these perceived public interests.

20 Fast forward to today. Gone is the
21 housing, pushed way back into the distant future
22 with no guarantee that it will ever get built.
23 Gone also is the pledge to provide the workers
24 with a living wage. The only thing that is left
25 is something that was never there in the first

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2 place, a massive traffic generating nightmare of a
3 retail mall that was never part of the original
4 deal. And would never have passed the smell test
5 with council members concerned with the use of
6 eminent domain to take away property from small
7 owners like myself.

8 The City has rejected a request
9 from our legal counsel to look at the project
10 without eminent domain. This is a classic bait
11 and switch, one that will cause considerable harm
12 to all of the neighborhoods surrounding Willets
13 Point. Because you see, when the City put forward
14 its original plan, it said that it would provide
15 ramps off of the Van Wyck to mitigate the tens of
16 thousands of weekly car and truck trips. Now,
17 even with an added 1.4 million square feet of
18 mall, there are no immediate plans to build those
19 ramps. Just like the housing, they are relegated
20 to an uncertain future. And without them, heaven
21 help those trying to navigate streets like
22 Roosevelt Avenue, near where my property lies
23 today. The City still refuses to disclose
24 anything about the cost of the Van Wyck ramps,
25 though they have agreed to pay for them.

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This unneeded, unnecessary mall will
be built on the site of the current City Field
parking lot.

(Bell rung)

MS. PRESTI: So where will the Mets
fans park?

May I finish?

THE CHAIR: If you can just do a
short, conclude --

MS. PRESTI: Sure, I'll do it fast.

They will park on the land that the
City has purchased from Willets Point property
owners for \$200 million. So the City used the
threat of eminent domain to grab land that will
now be used for a parking lot.

Back when the mayor extolled the
virtues of this deal, he called Willets Point the
City's first green neighborhood. Not in our
lifetime. What the City is getting for its
overall investment of around \$500 million is a
mall and a parking lot. Everything else is simply
smoke and mirrors, with no guarantees whatsoever.
Making all of this so much worse is that the City
administration told the City Council that it would

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recoup its investment when the selected developer was chosen. And instead, the City has decided to gift the property to Related and Sterling Equities for one dollar.

THE CHAIR: Okay, that's --

MS. PRESTI: When the City came for my property and the rest of the land owned by small owners like me --

THE CHAIR: You have to conclude.

MS. PRESTI: They claimed it was for the purpose of cleaning up Willets Point, alleging that it was essentially a toxic waste dump.

THE CHAIR: All right.

MS. PRESTI: I have hired with my own money a chemist with great credentials. And he came to me through an angel I guess, to test my property, because I don't believe that the toxicity is what they say.

And I'd just like to say one thing, please, for both the citizens of New York and the property owners of Willets Point, please do the right thing. Don't be a rubber stamp for the mayor. Say no to Willets Point West.

THE CHAIR: Don't go away. Let me

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2 see if there are any questions for you. Anna.

3 COMM. LEVIN: Yes. Mrs. Presti,
4 I'm sure this is an alternate universe for you,
5 but are you able to locate your property roughly
6 on that plan so we know where your property is?

7 MS. PRESTI: I'm not in the new --
8 this phase one.

9 COMM. LEVIN: Okay.

10 MS. PRESTI: I'm outside of it. But
11 I'm just been notified by different legal people
12 that mine is coming up for eminent domain. So
13 they've already started to let us hear that we are
14 going to take your property away from you. And my
15 tenants have been harassed.

16 THE CHAIR: Other questions for
17 Ms. Presti? Michelle.

18 COMM. DE LA UZ: Ms. Presti, are you
19 connected to other property owners, how many other
20 property owners are you aware of that are in
21 similar circumstances as you?

22 MS. PRESTI: Oh, everybody in this
23 section that's not in the phase -- the first where
24 they're trying to develop now.

25 THE CHAIR: Joe.

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COMM. DOUEK: Just can you give us
what's the nature of your property?

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MS. PRESTI: I took the property
over when my husband passed away.

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COMM. DOUEK: What kind of property
is it?

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MS. PRESTI: And it's now rental for
auto businesses.

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COMM. DOUEK: Auto repair?

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MS. PRESTI: Yes.

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COMM. DOUEK: Thank you.

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THE CHAIR: Irwin.

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COMM. CANTOR: You heard earlier
testimony to the fact that the 2008 plan didn't
attract any enthusiasm from the construction
community, the development community, and as a
result they came back and asked for alternate
proposals, and apparently this is the best
alternate proposal they have. If you accept the
premise of redevelopment of the area, what would
you suggest be done, considering that there has
been no interest in the original plan?

24

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MS. PRESTI: I think there was
interest. It was all just wiped away by the

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2 parties that are interested here. There are three
3 or four other developers that have very good
4 plans. They don't call for eminent domain, they
5 don't have to go through any of this. And they
6 had viable plans for economic improvement of the
7 area.

8 And cleanup also is a big thing,
9 really big thing. And I'm so tired of hearing
10 about it because I don't believe -- and I hired a
11 chemist, and unfortunately I don't have enough
12 stuff to be able to -- enough paperwork and
13 information to be able to hand it in now. But I'm
14 hoping to hand something in by the 22nd, which I
15 believe is the written deadline for you -- a place
16 for written material for the Commission to see.

17 COMM. CANTOR: And these three or
18 four developers that you're speaking about never
19 presented to the City?

20 MS. PRESTI: Oh, yeah. Yes, they
21 were.

22 COMM. CANTOR: And they were
23 summarily rejected?

24 MS. PRESTI: Just -- yeah. I don't
25 know what happened to them. I mean the

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2 information is there, all the statistics are
3 there, it's all available. The facts are the
4 facts.

5

COMM. CANTOR: Thank you.

6

THE CHAIR: Joe.

7

COMM. DOUEK: Those developers went
8 through the RFP process?

9

MS. PRESTI: Yeah.

10

COMM. DOUEK: And through EDC?

11

MS. PRESTI: Yes. I don't have all
12 of that information with me but it's all
13 available.

14

COMM. DOUEK: Thank you.

15

THE CHAIR: Thank you so much,
16 Ms. Presti --

17

MS. PRESTI: Thank you.

18

THE CHAIR: -- for coming in.

19

Joran Ree. Joran Ree?

20

(No response)

21

THE CHAIR: Gerald Antonacci, and
22 then Ted Barbieri.

23

MR. ANTONACCI: Hello. I'm Gerald
24 Antonacci. I'm a land owner and a business owner
25 at Willets Point.

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The only reason we're here is because of they're putting an application for a parking lot. If it's approved, it's just to build a mall. And that's all this is about, just to get a mall approved.

At a recent session over here on Monday, somebody mentioned that perhaps Sterling and Related needed the profits from the mall to pay for the remediation. That's totally incorrect because they were given a \$99 million grant for cleanup. And they were given \$20 million in sales tax exemptions. Make no mistakes, any profits from that mall go straight to Sterling and Related, and the remediation is paid for by the tax paying people.

This mall is a bad idea for the following reasons. Nobody wanted the mall. Nobody asked for the mall. It's taking away 30 acres of parkland. Even though they say it's not parkland, it's parkland.

It's a traffic nightmare. We've seen on the studies that there's intersections where you have to wait 15 minutes before you can get through the light. Traffic is going to be

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2 backed up for miles and miles and miles. The Van
3 Wyck ramps and the highway ramps, they are never
4 getting built. There's a clause in the contract
5 that says if Sterling and Related want to build
6 them, they can build them by themselves. There's
7 also a line in the contract that says under no
8 circumstances is it to be assumed that the City is
9 obligated to build these ramps. They'll come and
10 say they're committed to do it, that's their
11 famous word, they're committed to do it. I'm
12 committed to winning the lottery, but I haven't
13 done so so far. Unless the contract is changed
14 and it's put in stone that it has to be done and
15 it has to be done soon, it's just, you know, we'll
16 hand you one of our famous letters that don't
17 worry, the mayor says he's committed to doing it.

18 Housing. You can forget about
19 housing, housing ain't never getting built.
20 There's too many out clauses, like somebody said
21 before. There's a \$30 million out clause. And if
22 the City doesn't build the ramps, they don't have
23 to build the housing. They don't want to build
24 housing, housing doesn't make money.

25 The cost of this has shifted to the

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2 taxpayers. They've gotten 23 acres for one
3 dollar. That's \$250 million dollars in land for
4 one dollar. They've gotten \$100 million grant,
5 \$20 million in sales tax, and it just goes on and
6 on and on. Why don't we just build a mall for
7 them too. I mean, you know.

8 The remediation charade. At
9 Community Board 7, Dr. Savino, the environmental
10 chairman, voted no against this. He voted no for
11 this project. He thought the taking of parkland
12 was more important than the remediation. So that
13 shows you how much a guy that is so remediated
14 oriented thought about remediation, that he
15 thought it was that bad that he voted for the park
16 instead of remediation.

17 And eminent domain. Don't
18 believe for a second if there is a chance to use
19 eminent domain they won't use it. They tried it
20 already. We had to go to court to sue them, and
21 then at the last minute when they awarded it to
22 Sterling and Related, they pulled it back --

23 (Bell rung)

24 MR. ANTONACCI: -- because they
25 couldn't go forward at that time.

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Thanks.

THE CHAIR: Let me see if there
are questions for you.

(No response)

THE CHAIR: Okay. Thank you.

Ted Barbieri.

MR. BARBIERI: Thanks for the
opportunity to speak here today. My name is Ted
Barbieri. I'm a senior staff attorney at the
Community Development Project of the Urban Justice
Center. I just have one point to make that I'd
like the Commission to consider today, and that's
the tenant -- commercial tenant relocation plan in
phase one.

We have been involved with the
Sunrise Cooperative, which is an organization of
about 60 auto repair shops that have been doing
business in phase one for many years, in some
cases multiple decades. We have known, the
writing has been on the wall since 2008, we
recognize that. We have approached the EDC, the
developer, and we have worked with Council Member
Ferrerias to get a relocation plan that's
meaningful and workable for the members of the

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cooperative. Unfortunately, we don't have a viable relocation plan, and that's a serious flaw in this project.

The LaGuardia retraining program unfortunately doesn't work. The workers already have jobs, they're running businesses. All they're asking for is to be relocated somewhere else where they can continue to operate their business.

Cornerstone recently has been helpful in terms of analyzing the market and finding places to relocate to. Unfortunately, the ask is to relocate all the businesses. They benefit from co-location, they're asking to be relocated together, and Cornerstone hasn't been able to help us get to that point.

We came up with an alternate relocation plan. We revised the plan after discussions with EDC. Still we don't have a commitment from the City to help out in relocation. We have approached the developer. Unfortunately, that hasn't resulted in a viable relocation plan either.

We ask the Commission not to support

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2 the project unless there's a meaningful relocation
3 plan for the commercial tenants. Who in this
4 instance really are the most vulnerable citizens
5 of the City because they're being forced to
6 relocate, they have no viable option to relocate,
7 and frankly, most likely they're going to go
8 bankrupt and die because as a result of this
9 project.

10 THE CHAIR: Thank you. Let me
11 see if there are questions for you.

12 MR. BARBIERI: Sure.

13 THE CHAIR: Michelle and then
14 Angela.

15 COMM. DE LA UZ: Hi Ted, thanks for
16 being here.

17 MR. BARBIERI: Sure.

18 COMM. DE LA UZ: Do you have
19 something in writing that outlines what you
20 believe a meaningful and viable relocation plan
21 would look like, because you specifically
22 mentioned that specific elements would be included
23 in that, and that certainly would be helpful to
24 get from your perspective and from the
25 perspective -- and how many different businesses

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2 are you all representing in the cooperative?

3 MR. BARBIERI: It's approximately
4 60 in phase one on the Willets -- in the district.

5 COMM. DE LA UZ: Okay. And it was
6 mentioned earlier, perhaps you can speak to UJC's
7 analysis of the 1961 law, I don't know if that's
8 best addressed by you or someone else, but if
9 there's -- about what might be allowed to be
10 built, that would be helpful information that
11 could be shared with the Commission.

12 MR. BARBIERI: Yeah, sure.

13 To your first point about a viable
14 relocation alternative, it's one that would permit
15 the existing businesses to relocate elsewhere in
16 Queens. We've looked at other properties, we have
17 identified a couple. There is -- we have worked
18 very hard to come -- to meet with consultants to
19 come up with a project that's viable financially
20 obviously. And we think that there's a gap
21 between what we can borrow and provide in terms of
22 debt service. And we've asked for a financial
23 commitment from the City. We've been talking
24 about some numbers but we haven't gotten that
25 commitment. I have it in writing, I can share it

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2 with the Commission.

3 The second point about the
4 statute, the 1961 statute, it doesn't specifically
5 permit the use that's contemplated in --
6 respectfully we would say it doesn't permit the
7 use that the City interpreted -- that this project
8 provides on the Willets West. It doesn't
9 specifically allow a mall to be built there. It
10 talks about promoting trade and commerce, but not
11 specifically permitting this. So respectfully we
12 disagree with the interpretation of the City's
13 lawyers.

14 THE CHAIR: Other questions?
15 Angela?

16 COMM. BATTAGLIA: My question was
17 basically the same.

18 THE CHAIR: You do?

19 COMM. BATTAGLIA: The same question
20 as Michelle's, so we are doing good.

21 THE CHAIR: Any other questions for
22 Mr. Barbieri?

23 (No response)

24 THE CHAIR: Thank you so much for
25 coming.

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MR. BARBIERI: Thank you.

THE CHAIR: We will now switch to speakers in favor. And the first will be Jesse Masyr, who will be followed by John Clifford and I then Linh, I think Linh Do. Hi, Jesse.

MR. MASYR: Good afternoon, Madam Chair, members of the Commission, Dr. Kulikowski. My name is Jesse Masyr, and I'm land use counsel for the joint venture.

We are here today before you seeking special permits to the text change to facilitate the transactional uses necessary to implement the 2008 Willets Point plan in phases. As you know, the zoning plan that you passed in 2008 did not foresee a phased development for Willets Point, nor did it foresee that the marketplace would require a major destination to create the economic conditions necessary to facilitate the vision of the 2008 plan. However, the joint venture has determined that to create this initial destination retail as an economic generator, it needs to recharacterize the area before the Willets Point development can occur. Combined with the fact that the Willets Point district cannot be fully

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2 developed until the Van Wyck ramps are built has
3 led to the placement of the interim parking on the
4 Willets Point site. So, therefore, what we are
5 seeking today is a special permit for what was not
6 anticipated and could not be anticipated in 2008,
7 namely, to allow parking and interim recreation to
8 occur on the Willets Point property.

9

Once we have remediated and
10 cleaned the lot, development will then be
11 facilitated. The first development,
12 interestingly, will be actually in the Willets
13 Point district itself. We will be constructing as
14 part of the initial phase of this project a hotel
15 and retail along 126th Street as part of our need
16 to recharacterize this area. This is a very harsh
17 edge of the City which needs to be changed in both
18 perception and in its economic reality.

19

The Draft Supplemental EIS
20 identifies no categories of significant impacts
21 beyond those identified in the 2008. And I think
22 it's also important to point out to you that in
23 doing this new Supplemental Environmental Impact
24 Statement, we were able to reduce the number of
25 unmitigated traffic impacts in the 2008 report by

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2 65 percent. And local intersections have been
3 reduced by 75 percent. And highway times and
4 ramps, the overwhelming number of locations have
5 not had substantial reductions in speed as a
6 result of this project. And we have done this at
7 our own expense. We will be funding the major
8 capital improvement necessary to do the mitigation
9 that was not identified in the 2008 approval. I
10 think that is among the reasons that we were able
11 to get both the support of the Borough President
12 and Community Board 7, because we will have the
13 first real viable opportunity and roadway to clean
14 up what has been a hundred years of contamination
15 in one of the most densely populated areas of our
16 City.

17 We have our other experts here to
18 continue, but if there are any questions I would
19 be glad to answer.

20 THE CHAIR: So what would be the
21 earliest time that the new interim recreation
22 areas could be provided, two years of cleanup and
23 then the interim uses would be -- how long would
24 it -- what's the time frame?

25 MR. MASYSR: Once the cleanup -- once

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the cleanup --

THE CHAIR: I know you don't have
a long timeline, but --

MR. MASYSR: We lose it sometimes,
that's correct.

Once -- we believe it's reasonable
to estimate that the cleanup will take two years.
Part of it is a bit of a leap of faith on our part
because we don't know exactly what the text in
front of us is and what DEC and the various
regulatory agencies will require from us in terms
of how we will clean up and the methodologies.
But based on our past experience, we believe two
years is reasonable. Immediately thereafter, we
will be able to have reclaimed the property, and
the interim recreation will become immediately
available at that point. So if you think of the
two years, we would say two years and three months
for the interim recreation to be available.

THE CHAIR: Other questions for
Jesse Masysr?

(No response)

THE CHAIR: All right, thanks,
Jesse.

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John Clifford. And then Linh Do,
and then Babu Veeregowda.

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MR. CLIFFORD: Hi. Good afternoon
everyone. My name is John Clifford, Perkins
Eastman Architects. We are working on both the
buildings in phase 1A as well as the retail and
entertainment complex on the west side of City
Field. And I am here just to talk a little bit
about the resiliency efforts that we're
investigating for both sides, as well as the
sustainable initiatives that the project will
undertake.

You probably all know that both
sides of City Field as well as City Field are in
the flood zone. Ironically, this area did not
flood during Sandy. It did not get any of the
devastating floods that some of the other areas of
the city did receive. Nonetheless, we are still
planning to make sure that this area remains
resilient during future storm events and rising
sea levels. And that way, all buildings will be
raised at least one foot above the newly mapped
flood zones. As you know, FEMA came out with some
new flood maps for New York City. The building

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2 finished floors will all be one foot above, both
3 for the retail entertainment complex as well as
4 the buildings in phase 1A.

5 For the first part of phase 1A,
6 when the Mets interim parking is constructed, that
7 area will be below the flood plain and would flood
8 if we had a historic flood event. However, any
9 subsequent buildings or streets that are built as
10 phase one is built out will be built above the
11 flood plain.

12 At the ends of the district and
13 along the edge of the retail entertainment complex
14 where the streets are going to remain in the flood
15 plain, primarily 126th Street and Roosevelt
16 Avenue, there's a series of transitional
17 sidewalks, almost a dual sidewalk that was
18 proposed and adopted as part of the Willets Point
19 Special District. And the design guidelines have
20 public amenity areas on the higher area, a public
21 pedestrian sidewalk along the street right-of-way,
22 and then a series of ramps and stairs to make up
23 the grade difference.

24 All life safety and critical
25 support systems will be above -- built above the

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2 flood plain elevation for all of the buildings.
3 Or they will be -- where they can't be where they
4 come out of the ground, they will be in
5 flood-proof enclosures.

6 In terms of sustainability, all
7 of the development on both sides of City Field,
8 whether it's in phase 1A or the retail and
9 entertainment complex, will be built to a minimum
10 of LEED Silver Certification standards.

11 THE CHAIR: It's my understanding
12 that the state has passed a law that all
13 development needs to be built -- allow for two
14 foot free board above the flood elevation. And
15 that therefore the Department of Buildings here in
16 the City is requiring two feet above flood
17 elevation.

18 MR. CLIFFORD: That I'm not a
19 hundred percent sure of. But gratuitously the new
20 maps for the area actually lowered the flood
21 elevation from what was previously there.

22 THE CHAIR: So we'll check to make
23 sure. I mean I know from --

24 MR. CLIFFORD: Right.

25 THE CHAIR: -- the plans that we all

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2 worked with is that you have elevated everything,
3 so it was -- but I wanted to make sure that it
4 allows for it.

5 MR. CLIFFORD: We'll definitely
6 ensure that. Just for information, the average
7 amount of fill that we have to place here is
8 between three and four feet across both sites.

9 THE CHAIR: Yeah, I know you're
10 elevating everything.

11 MR. CLIFFORD: Right.

12 THE CHAIR: Just need to clarify
13 that.

14 Are there questions for John
15 Clifford? Yes, Anna.

16 COMM. LEVIN: Yes. This is a
17 complete non sequitur, but you mentioned you're
18 working on the shopping mall as well?

19 MR. CLIFFORD: We are working on the
20 retail complex as well.

21 COMM. LEVIN: So everyone calls it a
22 retail complex or a shopping mall, but I notice
23 here it's also an entertainment and retail
24 development. What kind of entertainment uses are
25 you designing in there?

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MR. CLIFFORD: The uses that are proposed are things like a cinema, bowling alley, maybe a music venue, that kind of thing, restaurants.

COMM. LEVIN: Music venue like a concert facility?

MR. CLIFFORD: Like a restaurant that might have live music. Not necessarily a Madison Square Garden kind of concert halls, yes.

COMM. LEVIN: Thank you.

THE CHAIR: Any other questions for Mr. Clifford?

(No response)

THE CHAIR: Okay. Thanks so much.

MR. CLIFFORD: Thank you.

THE CHAIR: Linh Do and then Babu Veeregowda.

MS. DO: Good afternoon, Commissioners. I'm Linh Do, back here again, senior vice president at AKRF. And Babu and I had, our firms had helped prepare the Supplemental EIS draft. And we are just here to answer any questions the Commissioners may have.

THE CHAIR: Okay. Any questions for

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2 Linh Do?

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(No response)

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5 THE CHAIR: All righty, thanks again

6

for being here.
Babu Veeregowda.

7

8 MR. VEEREGOWDA: Good afternoon,
9 Madam Chair Burden. My name is Babu Veeregowda.
10 I'm a traffic engineer at VHB. I was the one who
11 was responsible for all the traffic study data
12 collection and analysis, both with the draft
13 supplemental EIS and the data that was an aid in
14 completing the final EIS. If there's any, you
15 know, questions or anything about the traffic
16 impacts, I'll be more than happy to answer.

17

THE CHAIR: Questions from the
Commission? Yes, Michelle.

18

COMM. DE LA UZ: Obviously the issue
19 of traffic impacts has been brought up
20 substantially. Did you do -- can you maybe do a
21 compare and contrast on the traffic impacts with
22 and without the Willets West component?

23

MR. VEEREGOWDA: No, we did not
24 include that, we didn't look at Willets West.

25

COMM. DE LA UZ: So you included --

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2 you didn't look at a scenario in terms of traffic
3 impacts if the mall were not there?

4

MR. VEEREGOWDA: That's correct.

5

COMM. DE LA UZ: Thanks.

6

THE CHAIR: Other questions?

7

(No response)

8

THE CHAIR: Thank you for being

9

here.

10

MR. VEEREGOWDA: Thank you.

11

THE CHAIR: Tom McKnight and then

12

Ethan Goodman and then James Conway.

13

MR. McKNIGHT: Hello, Chair and

14

Commissioners. I'm Tom McKnight, executive vice

15

president for EDC. Regarding cleanup, a lot of

16

questions have been raised by the Commission along

17

the way. I'm happy to provide clarification or

18

additional information if you need it.

19

THE CHAIR: Yes, Michelle.

20

COMM. DE LA UZ: So a lot has been

21

said about when the RFP was issued that there

22

really wasn't interest in the original proposal or

23

scheme or scope that was issued. I mean obviously

24

2008 was a very, very different economic time than

25

we are today. Did EDC consider postponing a

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2 decision and reissuing the RFP in the current
3 economic environment to see if the original plan
4 would be viable?

5

MR. McKNIGHT: Well, actually
6 that process extended beyond 2008. The developer
7 agreement was reached last year. And the
8 proposals we received came in the fall of the
9 previous year. So it was more current. We felt
10 like the issues that came up did reflect the
11 current economic conditions, and were not
12 reflective of the economic downturn.

13

COMM. DE LA UZ: And it was
14 mentioned earlier by one of the speakers in
15 opposition that there were perhaps two or three
16 other applicants that were considered or who
17 responded to the RFP. Can you maybe just speak to
18 why EDC decided to go with the current applicant?

19

MR. McKNIGHT: Sure. There were
20 really two fundamental issues that we looked at.
21 One was -- I guess I would say three. The core
22 being is the primary vision accomplished under the
23 proposal.

24

The second was really about
25 financial viability. Each of the proposals did

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require a contribution from the City. The other two were far out of range with what could be accomplished by the City.

And the third is we looked at -- I guess kind of required to -- connected to accomplishing the vision is what additional approvals are necessary. And both the other proposals require -- would have required significant changes to the development plan approved in 2008.

THE CHAIR: Angela?

COMM. BATTAGLIA: Good afternoon. We get to hear from Cornerstone on the relocation plan.

MR. McKNIGHT: Yeah.

COMM. BATTAGLIA: My question is, is EDC supervising them in their day-to-day or week to week --

MR. McKNIGHT: Yes, indeed we are, very closely.

COMM. BATTAGLIA: Thank you.

THE CHAIR: Any other questions for Tom? Yes, Anna.

COMM. LEVIN: Yes. I'd like to ask

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2 about the role of the active recreation plan as
3 part of this. How does EDC -- I mean I can see
4 that it is a useful use for a parking lot that
5 isn't used for half the year. But it's in a
6 location where its audience is not immediately in
7 the neighborhood. What kind of economic vitality
8 or even recreational vitality do you see this
9 facility really producing?

10

MR. McKNIGHT: Well, the JV has
11 proposed a range of recreational uses, whether
12 it's basketball courts or a driving range or other
13 things that are -- that could be more substantial
14 in the off season. But that will be prepared in
15 consultation with the Parks Department, with the
16 community, to ensure that there are uses that are
17 attractive, there are uses that work well with the
18 existing uses within the park. We do think that
19 you can create a viable recreational facility
20 here, but it needs to be thoughtful about the
21 conditions and about what is going to be
22 attractive to the community.

23

COMM. LEVIN: Where do you think
24 the -- who would be the community users for this
25 facility?

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MR. McKNIGHT: We think it's similar to the very, very large community that comes to Flushing Meadows Park today. Yes, it is, as you point out, it's not right there in the community, but nor is Flushing Meadows. And it draws in a very, very large audience from the surrounding neighborhoods.

COMM. LEVIN: I'm intrigued to see if stick ball is part of the plan. I thought stick ball needed a stoop, but --

(Laughter)

THE CHAIR: Any other questions for Tom?

(No response)

THE CHAIR: Okay. Thanks for being here.

MR. McKNIGHT: Thank you very much.

THE CHAIR: Ethan Goodman. And then James Conway.

MR. GOODMAN: Good afternoon, Commissioners, Madam Chair, Dr. Kulikowski. I'm really just sort of on behalf of the joint venture just going to finish up in case anybody has any questions for the JV.

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2 I did want to augment one thing that
3 our traffic engineer said in response to
4 Commissioner De La Uz's question, the study of the
5 retail center versus no retail center. This
6 supplemental EIS did not study that because it
7 wasn't -- that plan was no longer a part of this
8 project. However, if you do look back at the '08
9 study, right, you can see what the traffic impacts
10 were in '08, which did not have a retail center
11 and envisioned 61 acres of development, versus the
12 traffic impacts that we showed now. And actually,
13 with the substantial traffic improvements that we
14 have proposed now that were actually not proposed
15 in 2008, the traffic impacts themselves have gone
16 down. Even though we have added about ten percent
17 to the overall floor area, the overall traffic
18 impacts both from the highway network and in the
19 local intersections has actually been reduced.

20 Other than that I'll just see if
21 anybody has got questions.

22 THE CHAIR: Okay, let me see.
23 Angela and then Irwin.

24 COMM. BATTAGLIA: This isn't a
25 question, and I realize we're only looking at

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2 phase one right now, but I just want to say since
3 you're up here now that I was pleased to see that
4 JV and the City both in writing committed to the
5 affordable -- that 35 percent of the housing be
6 affordable. It may not be tomorrow, but I do
7 believe it will happen, and I'm glad to see that
8 it's up there. So thank you.

9 THE CHAIR: Irwin.

10 COMM. CANTOR: Your comment
11 regarding the effectively improved conditions as
12 proposed now, does that include projected forward
13 to the other acreage that is not yet on the table?

14 MR. GOODMAN: Correct. Jesse Masyr
15 cited a statistic, which actually was regarding
16 the project in front of you, and that was a 65
17 percent reduction in number of impacts. The
18 reduction, once the ultimate build-out occurs, is
19 not up to 65 percent reduction, but it is still a
20 substantial reduction in impacts on the
21 intersections of the highways. So overall this is
22 still a reduction on the highways.

23 COMM. CANTOR: Okay, thank you.

24 THE CHAIR: Any other questions for
25 Ethan?

1

2

(No response)

3

THE CHAIR: Thank you.

4

James Conway and then Dan Hendrick.

5

MR. CONWAY: Good afternoon,

6

Honorable Chair and Honorable Commissioners. My

7

name is James Conway. I'm with the International

8

Union of Operating Engineers, Local 14.

9

I'm here in favor of this

10

application. And the main reason why I am here to

11

speak in favor is that this project will create

12

20,000 sustainable jobs. Jobs that will have

13

apprenticeship training, jobs that will have

14

safety and health training, jobs that will have

15

re-skilled -- training improvements, and jobs that

16

will have technological training. It will also

17

lead to middle class jobs for our young people in

18

Queens.

19

Currently we have about 80,000

20

people unemployed in Queens. We have several

21

thousand that are returning from military service

22

to Queens. We need to create jobs for these young

23

bright people that are returning home. And this

24

is a great project, this is a great economic

25

engine to create middle class jobs for young

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2 people of Queens and New York City. So please
3 consider approving this project.

4

Thank you.

5

6

THE CHAIR: Thanks so much for
coming, I appreciate it.

7

MR. CONWAY: Thank you.

8

THE CHAIR: Dan Hendrick.

9

MR. HENDRICK'S REP: Hi. I'm
10 actually here on behalf of Dan Hendrick, who is
11 the VP for the New York League of Conservation
12 Voters, which is a statewide organization of the
13 New York City chapter.

14

(Reading:) On behalf of the more
15 than 12,000 members of the League throughout New
16 York City, I would like to voice our support for
17 the proposal to redevelop Willets Point, and I'd
18 like to explain why.

19

Despite its proximity to downtown
20 Flushing and Corona, the Iron Triangle as it is
21 now is virtually a no-go zone for the local
22 community. As we all know, residents of this area
23 are clamoring for open space and recreational
24 opportunities. And the current use of Willets
25 Point means that the waterfront of Flushing Creek

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2 and Flushing Bay is drastically underutilized by
3 the public.

4 Second are the brownfield
5 concerns. Willets Point suffers from
6 well-documented and widespread petroleum
7 contamination, with additional potential
8 contamination from paints, cleaning solvents, and
9 automotive fluids. These environmental hazards
10 are made worse by a high water table that spreads
11 pollution throughout the site. The simple fact of
12 the matter is that every day the contamination is
13 allowed to remain in the soil and groundwater is
14 another day that Flushing Creek and Flushing Bay
15 are made worse.

16 Third, the proposal for Willets
17 Point reflects a truly 21st century way of
18 thinking about urban planning. It's close to the
19 number 7 train, so people don't have to take their
20 cars everywhere. It's close to the highways, so
21 residents can get in and out quickly without
22 straining traffic further in the congested
23 downtown areas.

24 In addition to the jobs it will
25 create and the economic investment it will make in

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2 Queens, this project presents what is probably the
3 best hope to finally improve the water quality in
4 Flushing Creek and Flushing Bay, while creating
5 new access points and green spaces for residents.

6 This is an important project
7 where economic growth and environmental
8 improvements go hand in hand to benefit the
9 health, well-being and vibrancy of the local
10 economy and local community.

11 Thank you very much.

12 THE CHAIR: Thank you very much.

13 Now we will switch back again to
14 speakers in opposition. First is Marco Neira.
15 Then Sergio Ageri (phonetic). And Phil
16 Konigsberg.

17 MR. NEIRA: Good afternoon,
18 everyone. My name is Marco Neira. I'm the
19 president for Sunrise Cooperative. I represent --
20 Sunrise Cooperative represents all the small
21 businesses and workers in Willets Point. The
22 reason that we are here is in order to find out
23 what's going on with our application for the small
24 businesses and workers in Willets Point. Because
25 I heard from everybody a lot of things, but

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2 nothing for us.

3

4 I want to refresh the minds after
5 the plan was approved in 2008, and I'm going to
6 read something that I have here.

7

8 (Reading:) In November 2005, the
9 entire Fulton Fish Market, the largest consortium
10 of seafood wholesalers in the country, 37
11 businesses employing 650 workers, was relocated
12 from lower Manhattan to a new facility at Hunts
13 Point in the Bronx. The example of the relocated
14 Fulton Fish Market as an appropriate model for the
15 City to follow when relocating the Willets Point
16 tenant automotive businesses has been recognized
17 by New York City Planning Commissioners. During
18 the public hearing held by the New York City
19 Planning Commission on August 13th, 2008, for the
20 proposed Willets Point development, the following
21 exchange took place between Commissioners Karen
22 Phillips, Irwin Cantor and Angela Battaglia, and
23 New York City Economic Development Corporation
24 vice president Jonathan Gouveia. And this is what
25 they said.

26

27 Commissioner Phillips: The work
28 that you are doing with the 225 tenant businesses,

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2 are the majority of those tenant businesses in
3 auto related uses? And my other question was if
4 there was any effort to identify sites, and
5 perhaps, because I know we do have the industrial
6 parks that were set up and the industrial strategy
7 that the Mayor put together a couple of years ago,
8 but in a way of creating a kind of automotive
9 related center where they could relocate, because
10 some of them benefit from, quote, "co-location."

11 Jonathan Gouveia say right.

12 Commissioner Phillips say is that
13 something that has been looked at at all in terms
14 of the areas that have been set aside for
15 industrial areas?

16 Jonathan Gouveia/EDC said, as I
17 mentioned, we haven't gotten into in-depth
18 discussions with the tenants. We've hired or
19 we're in the process of hiring a tenant
20 re-location specialist. So this sort of ongoing
21 conversation about what their businesses want,
22 where they want to locate, whether they want to
23 relocate, will become apparent through that
24 process, which will begin later or towards the end
25 of the summer.

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(Bell rung)

3

MR. NEIRA: Through the process

4

which will begin later.

5

My last point is, we are looking for

6

a relocation because if you see by those -- by

7

that days, everything is on video and the

8

commissioner say we are going to help relocation.

9

But at this time we don't have nothing. And they

10

are serious that in sending the letters that we

11

have to leave by August. So where are we going to

12

be, on the streets. We have families, we have to

13

live. So please look for us.

14

Thank you.

15

THE CHAIR: Let me see if there are

16

any questions for you.

17

MR. NEIRA: Can he have a

18

translator.

19

COMM. LEVIN: Hold on, hold on,

20

hold on.

21

COMM. BATTAGLIA: I just want to ask

22

that you leave us a copy of your testimony. Can

23

you leave us a copy of your testimony?

24

MR. NEIRA: Oh, sure, I'm sorry, I

25

forgot. Thank you for reminding me.

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COMM. BATTAGLIA: And sir, do you have a copy of the letter that the City sent asking you or telling you you had to relocate by August? I'd like to see that too. Can you send it to us?

MR. NEIRA: Unfortunately I don't have it with me right now but I will going to send you.

COMM. BATTAGLIA: Gracias.

MR. NEIRA: You're welcome.

THE CHAIR: Yes, Rayann.

COMM. BESSER: I wanted to ask this gentleman, have you been contacted by Cornerstone to assist you with relocating?

MR. NEIRA: Not -- they didn't contact to me because I'm in the phase two. That's why they didn't contact to me. But they contacted to my -- people in my group. And the reason that Cornerstone wants to do the relocation is individual. I told EDC we don't want the relocation individual because that way if they're going do it individually, they move one person to a certain location, and that's it, they clean their hands. If after one month the tenant can't

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2 survive in that place, then he has to close that
3 place and go out of the business. So we don't
4 want that way. We want together like we are -- we
5 are only one family, so we want to continue that.
6 And I know it's big fishes against us, to let it
7 as continue doing business as a Willets Point --
8 as a Willets Point automotive repairs, because the
9 big company like trade shop companies like
10 automotive companies, they don't want to let us
11 keep going doing business as affordable places we
12 have, because it's not good for them. That's why
13 they're trying to push us out of the business.

14 We are investigating all of those
15 things. And I see Queens Chamber of Commerce,
16 they are in a group with Helen Marshall, which,
17 you know, they are working together in order to
18 kill our business. And I know they have a meeting
19 with Mayor Bloomberg in Queens. So that's why we
20 escape -- I mean we are afraid they're going to
21 kill it that way.

22 COMM. BATTAGLIA: Thank you.

23 THE CHAIR: Michelle, you had a
24 question.

25 COMM. DE LA UZ: I did.

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I'm sorry, I forgot your name.

MR. NEIRA: Marco.

COMM. DE LA UZ: Marco, thank you very much for coming to testify on behalf of the Sunrise Cooperative. I think that would be helpful, if you could just share how much business between the different small Sunrise operators currently exists, because I think that's part of your reasoning for co-location.

MR. NEIRA: Yes. I mean we are -- since the project was approved we are fighting for all the businesses on Willets Point. But after they say they're going to -- they're only going to relocate that first phase, we only have 60 businesses in the first phase. Because we are 250 businesses in the whole area at Willets Point. But we cannot, like those guys say, we cannot bring those people from phase two in order to get a relocation. And I know once they start phase one, they're going to kill the other phases because that construction is going to be big, so they're going to close all the roads -- they're going to kill all the businesses. That's the way.

THE CHAIR: Other questions for

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2 Mr. Neira.

3

(No response)

4

THE CHAIR: Okay. Thank you very

5

much.

6

MR. NEIRA: Thank you so much.

7

THE CHAIR: Phil Konigsberg. I'm

8

sorry, now is our next -- the next speaker is

9

now Sergio Ageri.

10

(Mr. Ageri speaks in Spanish)

11

THE CHAIR: You need a translator.

12

Do we have a translator? Jim?

13

STAFF MEMBER: Yeah.

14

THE CHAIR: Maybe we'll take the

15

next speaker and then --

16

MR. AGERI: Okay.

17

THE CHAIR: So Phil Konigsberg is

18

the next speaker and then we'll go back to Mr. --

19

MR. KONIGSBERG: Hello again. First

20

before -- I'm speaking against the proposal but I

21

first would like to publicly thank Related

22

Companies for recently coming out and declaring

23

nationally all their rental properties, housing

24

will be smoke free. So thank you very much

25

Related Companies.

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I'm a member -- my name is Phil
Konigsberg. I'm a vice president of the Bay
Terrace Community Alliance, and a member of
Community Board 7. I was on the land use
committee in 2008. I was on the land use
committee this past year. I voted against the
project several years ago. And again just
recently.

And the one sticking point that has
remained is the option for eminent domain. And I
can't accept that. I've gotten to know the people
that are affected by this personally over the last
several years, and we can't allow that to
continue.

Just as it was mentioned before,
when you combine Community Board 7 and 3, the
votes were 48 against the proposal, 23 were for.

I also would like to read a
statement for the Queens Civic Congress, Richard
Hellenbrecht is the president, and he asked me to
read the following.

(Reading:) The Queens Civic
Congress is an umbrella organization consisting of
over 100 civic associations throughout the

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2 borough. The congress has been active with
3 Flushing Meadows Park Conservancy, the Fairness
4 Coalition of Queens Safe, Flushing Meadows Corona
5 Park, and a New York City Parks advocate over the
6 past several months. The congress has in the past
7 opposed commercial development in the park and
8 remains adamantly opposed to any further
9 encroachment of public places.

10

Flushing Meadows Park is the
11 largest park in Queens and ought to serve as the
12 flagship park in Queens, but instead it has become
13 the dumping ground of last resort for placing
14 projects that no other area will accept. City
15 Field has used many acres of parkland on a deal
16 that benefits only the Mets' owners and returns
17 very little direct financial benefit to the City,
18 to Queens or to the park.

19

Parking lots surrounding the stadium
20 sit on parkland. And any change in use should be
21 subject to alienation requirements. As parking
22 lots they could be easily returned to public use
23 as open space were no longer needed. But the
24 introduction of massive steel and a concrete mall
25 to these western parking lots would permanently

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destroy a public park amenity the community should
enjoy for recreation and fun.

I'm much better when I don't
read.

Not only will the mall remove
forever land that could be used by the thousands
of nearby residents, but a mall will destroy
hundreds of nearby mom and pop businesses and
surrounding neighborhoods, introducing potentially
devastating competition to existing struggling
malls such as the malls at Atlas Park, Rego Park
and Queens Center Mall.

(Bell rung)

MR. KONIGSBERG: Furthermore --

THE CHAIR: Can you conclude your
remarks?

MR. KONIGSBERG: Sure.

Basically Queens Civic Congress,
which speaks for all the civic associations in the
Borough of Queens, has adamantly come out against
it, and we hope that you will take that into
consideration. And thank you.

THE CHAIR: Let me see if there are
any questions for you.

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MR. KONIGSBERG: Sure.

3

(No response)

4

5

THE CHAIR: No. Thank you for coming, thanks for staying with this.

6

7

We do have a translator now, Jim? Jim, do we have a translator?

8

9

STAFF MEMBER: We're getting one now.

10

11

THE CHAIR: So we'll take another speaker, Mr. David Schwartz.

12

MR. SCHWARTZ: Yes.

13

THE CHAIR: And then Geoffrey Croft.

14

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MR. SCHWARTZ: Good afternoon. I'm David Schwartz. I represent Willets Point United. And many of the arguments that I want to make have been articulated by the property owners. So I just want to try to put this in perspective without being too repetitive.

20

21

22

23

24

25

But if you think about it, you know, one of the comments made by the developer was, you know, we are going to transfer this land to private internship. And it just stuck with me. You know, think about what that means. It means stealing land from private owners, private

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2 businesses, stealing the land, okay, transferring
3 it, the City taking it over, building a parking
4 lot, which has no public use whatsoever, just so a
5 private developer can buy other land for a dollar,
6 which is really parkland, okay, they buy it for a
7 dollar, and now they want to build a mall. You
8 know, you're really -- you just couldn't even make
9 this up if you thought about it. These are
10 families, these are business owners. At Willets
11 Point United we represent many of the business
12 owners in this area. And it's just scary to think
13 that the City could steal land from these private
14 businesses, people that are building the American
15 dream, people that are providing for their
16 families.

17 And I walked the district the
18 other day, I walked through the entire district.
19 There are no plans to relocate these businesses.
20 I mean the most that they've gotten is a business
21 card in the mail saying that there's some broker
22 somewhere that's going to look to relocate them.

23 And then if you go into this area,
24 you'll see the vibrancy. I mean it's been talked
25 about as a toxic waste land. Anything but. This

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2 is really a jewel when you think about it, because
3 these businesses are all interrelated with each
4 other, and they all are working in conjunction
5 with each other. And that's why it's so important
6 for the relocation that these businesses are kept
7 together. And there is really, as was articulated
8 before, there is no plan to do that.

9 And also, you know, the basis of
10 this whole plan back in 2008 were two basic
11 conceptions. Living wage for retail workers,
12 which is now not part of the current plan, and of
13 course the affordable housing, the 2,000 units of
14 affordable housing, which you've heard about. And
15 there really is no plan. Had those -- had it been
16 stated back in 2008 that the affordable housing
17 would be put off for ten years on some speculation
18 that maybe our ramps will be built off the Van
19 Wyck Expressway, this plan would have never been
20 approved. This is a bamboozle which is going on
21 here.

22 And I just want to make, you know,
23 some key points which I know you've heard already
24 but I just want to bring home.

25 First, the housing. The key

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2 affordable housing agreement has been abrogated,
3 pushed off into the indefinite future by the
4 developer selected by the City. As Senator
5 Peralta stated, if City Hall put a wrecking ball
6 to 2,000 units of affordable housing to make room
7 for a shopping mall, it would have been front page
8 news and there would have been no end to the
9 outrage.

10 (Bell rung)

11 MR. SCHWARTZ: And really, when you
12 think about it, that's what's happened.

13 I'm just going to state my last
14 points.

15 Living wage I spoke about. The Van
16 Wyck ramps you've heard about. Complete fiction.
17 The parkland you've heard about. Taking parkland
18 from the residents of Queens in the City of New
19 York? Outrageous. That's what they have done.

20 Corporate welfare. Two hundred
21 million dollars to buy out Willets Point, giving
22 them another \$99, and then they bought it for one
23 dollar. I mean, this is just outrageous.

24 You should reject this proposal.

25 Thank you very much.

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THE CHAIR: Let me see if there are questions for you. Michelle.

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MR. SCHWARTZ: Yeah.

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COMM. DE LA UZ: Can you just -- you said Willets Point United. Who is that group?

7

MR. SCHWARTZ: Yeah.

8

COMM. DE LA UZ: Briefly.

9

MR. SCHWARTZ: Yeah. Willets Point United, there are hundreds of private businesses, entities, property owners in this area. So Willets Point United is an organization representing all of those interests. And these are real people, families, hard working people who can't believe that they own land and having the City stealing that land to give to a private developer. It's outrageous. Thank you.

18

THE CHAIR: Yes, Irwin.

19

COMM. CANTOR: Earlier in this process, I raised the question regarding the issue of eminent domain and how many parcels were yet to be, I'll use the word acquired. The indication from the City was nominally a handful. How many people do you represent who are -- who have not yet made a deal with the City on the basis of --

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have not yet made a deal with the City?

MR. SCHWARTZ: Well, certainly in
all phases --

COMM. CANTOR: All phases?

MR. SCHWARTZ: Yeah. There's
hundreds of businesses and landowners.

COMM. CANTOR: Did you hear the
testimony earlier today?

MR. SCHWARTZ: Yes, I did.

COMM. CANTOR: He said that 95
percent of the property was taken.

MR. SCHWARTZ: Yeah. That's in
phase one. And 95 percent of the property, you
know, the tactics that were used to get these
people out of the property -- I'm not sure about
that number in phase one, by the way, but I don't
have the exact number in phase one specifically.
But the bottom line is, there are multiple phases
to this project, there are notices being given out
already. And the businesses that I spoke to in
phase one have not received any relocation advice
whatsoever. There are better ways of doing this
than to ruin an entire community in support of a
private developer.

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COMM. CANTOR: But I don't think you responded to my question. And that is, within phase one --

MR. SCHWARTZ: Right.

COMM. CANTOR: -- one part at a time, how many affected owners are there who have not made a deal with the City? And how many of those do you represent?

MR. SCHWARTZ: Okay. I don't know how many of those people are in phase one. It could be -- it could be five percent in phase one, I'm not disputing that number on how they got to that. But I do know partially the way they got to that is they took \$200 million of our money and made sweetheart deals with the most powerful people that were in all the phases -- and some of them were in phase one -- the most powerful opposition basically bought off, and I don't blame them for taking the deal, it's a good deal for them, right. So \$200 million spent on buying those businesses off so they wouldn't be part of the opposition anymore. That's also outrageous.

COMM. CANTOR: He still didn't answer my question, did he.

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MR. SCHWARTZ: Specifically I can't answer your question as to the percentage and how many businesses are in there. I know the vast majority of the people in Willets Point United are in the other phases besides phase one.

THE CHAIR: Are there other questions for Mr. Schwartz?

(No response)

THE CHAIR: Okay, thank you.

MR. SCHWARTZ: Thank you, chairwoman, sure.

THE CHAIR: We do have a translator now. So Mr. Ageri, we'll have somebody to translate.

So would you tell Mr. Ageri (phonetic) that he has five minutes? Cinco minutos.

MR. AGERI: (Through the translator:) He's been working for six years helping the small businesses in Willets Point. In the past few years in this final moments of the project they have been suffering a lot from all of -- they have been closing twenty shops, tire shops. Then in the past --

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THE CHAIR: Can you pull the speaker, can you pull the microphone a little closer to you?

THE TRANSLATOR: Oh, sorry.

MR. AGERI: They arrested 54 of the owners and the workers.

They've been having a lot of constraint and frustration, repression of -- yeah, the City has just been trying to push them out of Willets Point. They have been trying to basically make a business plan to, you know --

MR. AGERI: (In English:) We found land --

MR. AGERI: (Through the translator:) You know, they have been talking to the small businesses around there and offering, you know -- that pretty much everybody has just been playing a game with all their business plans and nobody has taken them seriously and they haven't found anywhere else to relocate.

They want to basically know about their relocation and basically where they're going to relocate, how is that going to follow through. They're basically -- because they're, you know,

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2 they're poor, they're not as affluent -- they're
3 not as -- what's the word -- right, they don't
4 have funds for relocation basically.

5 So basically they made up their
6 own plan. They found land where they can
7 relocate, but nobody is taking them seriously. So
8 basically their interests are being pushed behind
9 and that other interests are being at play. So
10 basically they want you to find a solution so they
11 don't -- just don't get kicked out. And basically
12 all the other projects, like the fish market and
13 the plan up in the Bronx, they all have their own
14 plans and stuff, but why are they kicking them
15 out.

16 (Bell rung)

17 MR. AGERI: (Through the
18 translator:) In five more days they are going to
19 get their eviction and then they don't know what
20 to do. Basically please help us. They're just
21 playing games.

22 THE CHAIR: So ask him to wait and
23 maybe there are questions from the Commission.

24 COMM. CANTOR: Yes.

25 THE CHAIR: Irwin.

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COMM. CANTOR: He made the observation, he said they found some property but no one is taking them seriously. Could we get that expanded upon?

MR. AGERI: (In English:) Yeah.

MR. AGERI: (Through the translator): Basically in 2008 they asked EDC about relocating people, they found some land. But they told them that no, it wasn't -- they can't use it. But they went back to their own study?

MR. AGERI: (In English:) Yeah.

MR. AGERI: (Through the translator:) They found their own --

AUDIENCE MEMBER: They found their own sites, but EDC didn't help them out.

MR. AGERI: (In English:) Yeah.

MR. AGERI: (Through the translator:) So they just didn't ask for the business plan.

MR. AGERI: (In English:) Yeah.

You'll see it in this plan. I'll give you a copy of it.

THE TRANSLATOR: He has a copy of

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it.

COMM. CANTOR: They were ignored?

MR. AGERI: (In English:) Yeah,

they never answered to us.

THE TRANSLATOR: Yeah, they never

answered to us.

MR. AGERI: (In English:) We wanted

relocation. We want to talk about relocation,

where is the site, how much they are going to put,

how many people we have available to move over

there. We don't have that kind of a cushion. We

have manipulation but we don't have answer. In

five days we are going to receive a letter from

the EDC, everybody have to go in phase one,

because of this.

COMM. CANTOR: Thank you.

THE TRANSLATOR: From what it sounds

like, he just never got an answer.

THE CHAIR: Maria. You want to do

it in Spanish?

(Dialogue between Comm. Del Toro and

Mr. Ageri in Spanish)

COMM. DEL TORO: Yeah, 60 shops.

MR. AGERI: (In English:) Yeah.

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2 (Dialogue between Comm. Del Toro and
3 Mr. Ageri in Spanish)

4 COMM. DEL TORO: And 300 jobs.

5 (Dialogue between Comm. Del Toro and
6 Mr. Ageri in Spanish)

7 COMM. DEL TORO: He said 54 --

8 COMM. CANTOR: How many of those
9 sites has the City already taken over?

10 THE CHAIR: What were you going to
11 ask?

12 COMM. CANTOR: I was going to ask
13 Maria how many of those 50 or 60 sites that are
14 currently being affected have already made deals
15 with the City.

16 (Dialogue between Comm. Del Toro and
17 Mr. Ageri in Spanish)

18 COMM. DEL TORO: Collectively as a
19 group they have not accepted Cornerstone.

20 THE CHAIR: So I think what we'd
21 like to have from the Economic Development
22 Corporation is kind of a summary of where we were
23 in 2008 when the plan was approved, because the
24 understanding was that there would be --
25 Cornerstone would do a massive engagement with the

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2 local businesses and do everything they could to
3 relocate them. So let us get a update on that and
4 where -- how many were relocated, how many are not
5 relocated, just the status of where the businesses
6 are. And what the time frame is, because we're
7 hearing five days, we are not going -- we don't
8 understand why that is. We're not even through
9 ULURP. So I don't know if you can tell him that,
10 but ask for a status report, if you could explain
11 that to him. Thanks, Maria.

12 (Dialogue between Comm. Del Toro
13 and Mr. Ageri in Spanish)

14 MR. AGERI: Mucho gracias. Thank
15 you so much.

16 COMM. DEL TORO: Mucho gracias.

17 THE CHAIR: Orlando Marin has a
18 question.

19 (Dialogue between Comm. Marin and
20 Mr. Ageri in Spanish)

21 COMM. MARIN: They're looking for
22 relocation as a group because of the fact that as
23 a business entity they do better as a group. And
24 that legal cooperative has 50 members out of 54,
25 which is why four of them may have chosen to go

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separately.

THE CHAIR: So it's important for
them to be in a cooperative.

(Dialogue between Comm. Marin and
Mr. Ageri in Spanish)

MR. AGERI: (In English:) Yeah.

COMM. MARIN: Gracias, thank you.

MR. AGERI: (In English:) Okay,
thank you.

THE CHAIR: We have a few more
speakers. Geoffrey Croft. Geoffrey Croft, yes.
And Giovanna Reid. Geoffrey Croft.

MR. CROFT: Good afternoon. My name
is Geoffrey Croft, president and founder of New
York City Park Advocates.

It is truly a sad day in City
Planning when we are talking about a plan that
seizes more than 30 acres of public parkland to
allow one of the country's largest developers to
build the largest mall in New York City. It
sounds inconceivable, right? Just when you
thought this administration couldn't get any
lower, here we are today.

Let's not forget the Related

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2 Companies and Sterling's original plan for our
3 public parkland, building a massive casino and
4 retail complex. Let's be very clear. The 1961
5 statute that the City and the applicants are so
6 desperately trying to rely on in order to justify
7 being allowed to develop the public parkland for
8 non-park purposes does not permit any shopping
9 mall, much less a 1.4 million square foot mall.
10 Administrative Code 18-118 explicitly states that
11 any moneys gained from a temporary lease on the
12 property must go back into the property. Back
13 into the property. Not line the pockets of
14 Related or Sterling Equity.

15 To quote the law directly, the
16 revenue must, quote, "Aid in the financing of the
17 construction and operation of such stadium,
18 grounds, parking areas and facilities and any
19 additions, alterations or improvements thereto or
20 to the equivalent thereof." Clearly, this is not
21 the case, unless the applicant is representing
22 that this is being done to offset unfortunate
23 investments made by the Wilpons. Is that the
24 plan?

25 Clearly, the intention of the law

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2 was not to allow any project to make a permanent
3 claim on parkland or its facilities because the
4 revenue was supposed to fund the property. The
5 law simply does not authorize the Willets Point
6 West project. It does not enable use of the
7 parking lot or authorize retail stores, and
8 certainly something that is not primarily --
9 something that is primarily a shopping mall.

10 The parkland we are talking about
11 here today for this irresponsible project was
12 never alienated as required under state law, nor
13 are they planning to. Nor are they planning to
14 replace if approved.

15 The language in your calendar today
16 states that the project would, quote,
17 "Incorporate, aid, develop the development
18 substantially similar to that anticipated and
19 analyzed in the 2008 Willets Point development
20 plan", et cetera. Is that a joke? Who wrote
21 that, the applicant?

22 The public parkland was never part
23 of the original plan in any way. In any way. And
24 it certainly was never approved by the City
25 Council. There is just no getting around the fact

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2 that this 1.4 million square foot mall is a
3 totally new project than what was approved by City
4 Council. And as you -- this is nothing but an
5 end-run around the law, and the City Planning will
6 be complicit if you rubber stamp its approval.
7 This is public parkland. It does not belong to
8 Mayor Bloomberg or EDC or the Related Companies or
9 the Wilpons. It belongs to the people of the City
10 of New York. If the 30 plus acres of public
11 parkland they are now attempting to seize for the
12 project were no longer needed for parking for the
13 Mets, then it should revert back to its original
14 use.

15 (Bell rung)

16 MR. CROFT: This is what our elected
17 officials should be pushing and what any
18 legitimate city planning agency would insist on,
19 and not instead allow our public spaces to be
20 given away to politically connected developers.
21 It's disgraceful. This is about greed, pure and
22 simple, and it's a nightmare for the communities
23 on so many different levels. We do hope you
24 seriously look at this project.

25 THE CHAIR: Thanks. Let me see if

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2 there are any questions for you, Mr. Croft.

3 (No response)

4 THE CHAIR: There are not, but we
5 appreciate -- was there one?

6 COMM. LEVIN: Well, I was --

7 THE CHAIR: Anna. I'm sorry, Anna,
8 I didn't see your hand.

9 COMM. LEVIN: Well, it was going up
10 slowly.

11 (Laughter)

12 COMM. LEVIN: I think you've heard
13 from the developer and the City, and I'm sure
14 you've seen the City Law Department's analysis of
15 the --

16 MR. CROFT: Recommendation?

17 COMM. LEVIN: -- administrative
18 code.

19 MR. CROFT: Yes.

20 COMM. LEVIN: I think this really is
21 the long hand of Robert Moses here, because in
22 addition to allowing stadiums, which is what the
23 regulation was all about, you read through a long
24 list of other things and you get down to one of
25 the -- the last permitted use is the approvment

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2 of trade and commerce. How do you square that
3 piece of language with what you're urging us to
4 do?

5 MR. CROFT: Again, it's, you
6 know, that was one part. I have all of the
7 language here as well. Robert Moses was, you
8 know, for better or for worse certainly protecting
9 parkland. But again, the funds were supposed to
10 be -- were supposed to go back to this property
11 and -- unless the Wilpons and Related are saying,
12 you know, that -- if they're claiming that this is
13 being used for those purposes. We certainly do
14 not agree with the City's interpretation of that
15 1961 statute. There's certainly enough language
16 in that statute we think that bolsters our claim.

17 COMM. LEVIN: It certainly makes it
18 clear that the purpose at that time was a stadium,
19 but --

20 MR. CROFT: Right. And now, and
21 now --

22 COMM. LEVIN: Very widely written.

23 MR. CROFT: Well, it is wide, it
24 is -- I mean you can interpret it that way. But
25 if you actually look line by line, we think it's

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2 very clear that it was not supposed to be used for
3 these purposes. And clearly there's no, you know,
4 part -- no allowing it to be used for a shopping
5 mall. And I think that's very, very obvious. I
6 mean again, we're reading straight from that.
7 And, you know, we feel that it should definitely
8 be -- I mean look, this is going to wind up in
9 court anyway, which is sad. But, and we feel
10 very, very strongly that if -- again, if the Mets
11 no longer need this then, this 30 acres of public
12 parkland, and if any of the Commissioners, which
13 I'm sure you have been reading about what's going
14 on in Flushing Meadows, Corona park, this is one
15 project out of three potential projects. And that
16 community has been -- and those parklands have
17 been, you know, used for more and more commercial
18 purposes. And a mall -- and again, which no one
19 else has mentioned, there is a mall a half a mile
20 from this site. So, you know, giving it away for
21 a dollar, and clearly -- and Commissioner Cantor,
22 I appreciated your questions early on in this
23 about asking why, you know, to the City -- I mean
24 clearly if you're giving 30 acres of free land,
25 this is the money tree. I mean that's why they're

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2 able to. Who, you know, who knows if this housing
3 will ever be built. But this is the low hanging
4 fruit for the Related Company and for the
5 applicants. The problem is that we're all paying
6 for that. So taking away from the parkland is not
7 a good idea, I mean in many different ways. But
8 you know, again, that land should be restored if
9 it's no longer needed.

10 THE CHAIR: Yes, Michelle.

11 COMM. DE LA UZ: Thanks for your
12 testimony, I was hearing it over there. Just I'm
13 just wondering if in the process, either the ULURP
14 process or the borough president's process, if the
15 City has actually shared in writing the
16 interpretation of the statute that you've talked
17 about, or is everything that you've stated about
18 the interpretation based on statements that they
19 have made publicly.

20 MR. CROFT: We have -- I mean I
21 didn't -- my testimony is that -- you guys always
22 run over the three minute mark, so we always
23 appreciate your questions. I mean I can certainly
24 email you the statements from the Law Department.

25 We are always, as you guys know, we

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2 are very diligent about our facts. So we do have
3 quotes directly from them about, you know, the
4 whole parkland alienation stuff.

5 You know, they feel that they,
6 you know, don't have to and that that language
7 wasn't in there and that's -- often that is the
8 case, which is not accurate as well. Because, as
9 we know in the Yankee Stadium project which came
10 before you here and the Bryant Park and the Van
11 Cortlandt, and that's, you know, the alienation
12 language is very explicit.

13 And getting back to your -- I think
14 that definitely speaks to that. The language was
15 never meant to be alienated. And again, if you
16 look at the language, you know, in total, I think
17 that is clear. And, you know, the City would love
18 to -- you know, obviously they're going to argue
19 very differently about that interpretation. But
20 certainly from a policy thing we would hope that
21 City Planning would table this at least until, you
22 know, this, you know, this gets worked out. But,
23 you know, yeah.

24 THE CHAIR: Other questions for
25 Mr. Croft?

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(No response)

THE CHAIR: Thank you for being
here.

MR. CROFT: Thank you very much for
your questions.

THE CHAIR: Giovanna Reid.

MS. REID: Good afternoon,
Commissioners. I want to thank you for this
opportunity to speak to you this afternoon about
the needs and concerns of Community Board 3 in
respect to the Willets Point project.

Under ULURP Section 2-03, item G,
which allows for the review and vote of actions
not in a community board district, Community Board
3 took up this matter. For the reason that while
Willets Point may be geographically located within
Community Board 7, the proposed action will
directly impact more than 250,000 residents in
Community Board 3. Our border is merely a couple
of blocks from the site, and therefore, any and
all actions that take place at Willets Point will
directly impact the residents of our board.
Therefore, on May 23rd, 2013, we held a public
hearing and then voted, without the benefit of a

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2 presentation by the applicant. After careful
3 review of the proposal, the board concluded that
4 the plan in its present form be disapproved for
5 the following reasons.

6 CB3 is opposed to constructing a
7 mall on active parkland. We are opposed to the
8 planned development schedule. The plan calls for
9 soil remediation of 23 out of 62 acres of the
10 proposed site, which would be in phase 1A of the
11 project. The anticipated completion date would be
12 2018. That is the mall and the hotels and all
13 those wonderful things. However, affordable
14 housing and the construction of a high school and
15 an elementary school, which is sorely needed in
16 this area, won't come about until 2028, a whole
17 ten years from the initial project. Mind you,
18 that is all contingent upon the expansion of the
19 expressway and all of that. The aforementioned,
20 as I said, is sorely needed.

21 What is not addressed in the
22 proposal are the impacts, and the impacts of
23 traffic as it relates to Community Board 3. While
24 the applicant did do a study, it did not look at
25 the concerns in the immediate areas, Community

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Board 3 and 4.

Let me also make note of the fact that the portion of Community Board 7, there is only one resident. Whereas, a couple of blocks away, we're talking about 250,000 residents. And the paperwork that we saw does not reflect any of the concerns affecting Community Board 3 and 4.

The traffic studies that were conducted did not include mitigation for 114th Street, Astoria Boulevard, 34th Avenue, Roosevelt Avenue and Northern Boulevard, just to mention a few. It did not consider the impact of public transportation, solely our number 7 train, which is already overtaxed.

(Bell rung)

MS. REID: And difficult to provide services.

Just in general, there was no discussion about the displacement of the residents and the businesses, the impacts it's going to have. We have small mom and pop stores that are going to be impacted by this proposed plan.

If I can just take one more moment.

In 2008, the borough president in her

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recommendation suggested that --

THE CHAIR: Okay, you do need to
wind up.

MS. REID: Right.

THE CHAIR: I know that you're --

MS. REID: All I'm going to talk
about is the advisory -- advisory board, which
entailed discussions with the applicants of
what -- Community Board 7, 3, 4, local officials.
That did not happen this time around. And I
implore City Council, City Council, City Planning,
all involved in the process to seriously look at
that. Perhaps go back to the table and
incorporate all of the things that this body has
been presented this afternoon.

I thank you for the opportunity to
speak with you.

THE CHAIR: Let me see if there are
questions for you, Ms. Reid.

(No response)

THE CHAIR: There are not.

MS. REID: Okay.

THE CHAIR: But we thank you so much
for being here.

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MS. REID: Thank you.

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THE CHAIR: And for your testimony.

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Is there anyone else who would like
to speak on this item who hasn't done so already?

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Yes, you'd like to speak? Then fill
out a speaker card. And just introduce yourself.

8

9

MS. HACK: I'm Sylvia Hack,
president of the Kew Gardens Improvement
Association. I'm also co-chair of the land use
committee of Community Board 9, and a past chair.
You may remember the community board, and I was a
member of the community board that voted against
further alienation of parkland for the USTA, and
that was 1.68 acres.

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Unfortunately, I don't know why,
normally we are always involved when parkland for
Flushing Meadow Park comes into play. But we were
not involved; therefore, I cannot speak for the
board. But we did defeat for .68 acres. So I can
honestly say that my board thought it was a joke
when we first read about a mall.

23

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You know, this is like murder. This
park is being murdered piece by piece by piece.
And it's all for greed. Now, if it's so wonderful

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2 to have these things, I don't understand why
3 Central Park never gets looked at or Prospect Park
4 never gets looked at. This never happens.

5 And the issue of alienation of
6 parkland. You know, in this state you can't
7 transfer a liquor license. In other words, if I
8 bought a store that was a liquor store or a bar, I
9 couldn't simply pick up that license. I have to
10 go back and I have to get new approval from the
11 SLA and have advice from the community board.

12 So how is it that property, 30 acres
13 or so, which was alienated for City Field, is now
14 being blithely thought of as translated -- I'm
15 sorry, transferred for the use of a mall? That is
16 outrageous and it's -- really it's -- I have sat
17 here, you know, and I've been involved in civics
18 for 40 years, and I have rarely sat in two such
19 diametrically opposed hearings. You know, the
20 Hallets Cove hearing, everybody was working
21 together to accomplish something. You have here
22 I'm listening to people who are going to lose
23 their businesses, their jobs. This city managed
24 to move the fish market. It built the Essex
25 Market and renewed it for people. This city also

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2 needs people and companies that repair cars. So I
3 don't understand.

4 And as far as EDC is concerned, I
5 can tell you we've had lots of dealings with EDC.
6 EDC does not follow up. We now have a particular
7 issue that we are going to bring back to EDC
8 because they don't really pay close attention
9 after they have finished with what they're doing.

10 I can only say that I am rarely at a
11 loss for words. But after hearing everything
12 that's gone on here today, and listening to the
13 developers and listening to the people, I really
14 am at a loss for words. And if we can't transfer
15 a liquor license in this state, we shouldn't be
16 transferring 30 acres of public parkland.

17 THE CHAIR: Let me see if there any
18 questions for you just before you move on.

19 (No response)

20 THE CHAIR: There are not. But
21 thank you for being here, thank you for staying.

22 Is there anyone else who would like
23 to speak who hasn't done so?

24 (No response)

25 THE CHAIR: All right.

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So the record will remain open for
ten days, to July 22nd, and to receive written
testimony on the Draft Environmental Impact
Statement. And this hearing is closed.

(Time noted: 2:49 p.m.)

C E R T I F I C A T E

STATE OF NEW YORK)
COUNTY OF ORANGE) SS:

I, KARI L. REED, a Registered
Professional Reporter (Stenotype) and Notary
Public with and for the State of New York, do
hereby certify:

I reported the proceedings in the
within-entitled matter and that the within
transcript is a true record of such proceedings.

I further certify that I am not
related, by blood or marriage, to any of the
parties in this matter and that I am in no way
interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto
set my hand this ___ day of July, 2013.

KARI L. REED, RPR

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Auburndale Improvement Association, Inc.
P.O. Box 580331, Station A
Flushing, NY 11358
July 10, 2013

New York City Department of City Planning
22 Reade Street
New York, NY 10007

To the City Planning Commission:

My name is Henry Euler and I am the First Vice President of the Auburndale Improvement Association, Inc. My testimony today is on behalf of my civic organization. We are the oldest and geographically the largest civic group in Queens County and our membership numbers close to six hundred families and individuals living in Auburndale Flushing and western Bayside.

We are very concerned about the three proposed projects to be constructed on parkland at Flushing Meadows Corona Park. These projects include expansion of the tennis center, the building of a soccer stadium and the construction of a huge mall. We oppose all three proposals.

Today you are considering the proposal dealing with the 1.4 million square foot mall to be constructed on the parking lot to the west of Citi Field. This land is parkland and should be off limits to any private development. Parkland is sacrosanct. It belongs to the people, not private developers. With the rate of intense development in Queens, we need all of the green space we can spare.

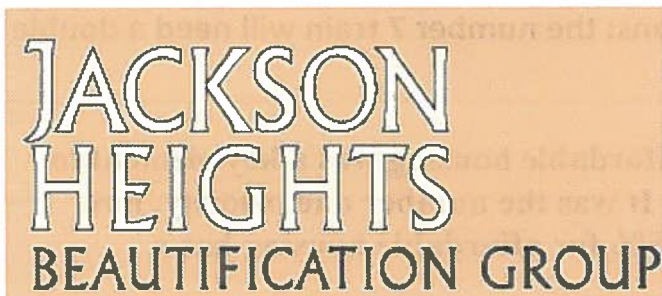
The asphalt on the unused part of the parking lot to the west of Citi Field should be removed and trees and other vegetation should be planted on the site in order to make it look more like a park once again. There is no shortage of people living in close proximity to the park, or even further away, who could use that refurbished parkland.

Have you seen how many people use Flushing Meadows Corona Park? It is staggering. How could anyone think of usurping land for private gain when people living in overcrowded neighborhoods look to the park as their backyard and a source of relaxation, exercise and tranquility?

And what will happen to local businesses if this mall is completed? And what is the impact on traffic and quality of life in the surrounding community if the mall is built? Is this land, where the mall is to be built, stable enough to support the structures to be built on the site? This area was originally wetland.

There are so many questions to consider in this case, and so many concerns. We stand with the coalition known as Save Flushing Meadows Corona Park and our neighbors in western Flushing and Corona. No mall in this location! Just preserve the parkland and find additional funds to sustain and maintain our precious park. Thank you!

Henry Euler, First Vice President 
Auburndale Improvement Association, Inc.



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Supplemental Environmental Impact Statement Special Willets Point District

The Queens Development Group plan is to clear the Willets Point junkyards from the sightline of CITI field with a parking lot, and a hotel built on the Special Willets Point District, that was approved in 2008.

There would be very little discussion if it stopped there. But now they have moved out of the approved special district into mapped parkland. They have requested 30.7 acres to build a 1.4 msf. SHOPPING MALL.

They refer to this land as Willets West; let's be honest this is Corona. They would also like us to believe that Willets Point is Downtown Flushing. This is like referring to Washington Heights as Upstate Manhattan.

Community boards 3 and 7 have held public hearings on the application. The vote at CB 3 was 30 against, 1 for and one abstention. CB 7 voted 22 for and 18 against. We request you to break the tie and say no.

There are a several solid reasons to say no:

- 1. First, there is no plan to replace the 30.7 acres of parkland**
- 2. Second, the 1961 law referenced in the application as justification for the Mega Mall is wishful thinking. The Urban Justice Center has issued an opinion that there is nothing in the law that even hints of the building of a Mall. It does address possible development but only as it relates to a Sports venue**
- 3. Third, the demolition of the Empire Millwork Corporation building, which is on the State and National registers of historic places**
- 4. Fourth, the traffic increase will be beyond the capacities of both highways and side streets**

5. Fifth, transit and pedestrians: the number 7 train will need a double deck

Promises made but not kept. Affordable housing was a key element in voting for the 2008 application. It was the number one priority, now Phase 2 with the promise of a 35% for affordable housing has a scheduled completion of 2032.

The Economic Development Corporation is the sponsoring agency. They are responsible for two contrary statements in the body of the application:

- 1. "... capture retail spending currently lost to surrounding suburbs"**
- 2. "It would not raise retail capture rates within a 5-mile Primary Trade Area"**

If the second statement is correct then they are willing to put existing Queens Malls into bankruptcy , like Atlas Mall in Middle Village.

The city estimate for remediation in 2008 was \$400m for the entire 63.1 acres of the Special Willets Point District. The developers at the CB 7 public hearing said between \$30 to \$40m but could be considerably higher. It becomes obvious that no serious remediation will occur until Phase 2; that is not part of this application.

The estimated cost is \$3B for Phase 1 A & B but they have an out clause of \$35m. These developers are "kicking the can" down the road.

We urge you to say no.

Submitted by,

Edwin O'Keefe Westley, President



**Statement of Dan Hendrick
Vice President for External Affairs
New York League of Conservation Voters**

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**City Planning Commission
July 10, 2013**

My name is Dan Hendrick, and I am Vice President at the New York League of Conservation Voters, a statewide organization with a New York City Chapter.

On behalf of the more than 12,000 members of the League throughout New York City, I would like to voice our support for the proposal to redevelop Willets Point and I'd like to explain why.

Despite its proximity to downtown Flushing and Corona, the Iron Triangle as it is now is a virtual "no-go" zone for the local community. As we all know, residents of this area are clamoring for open space and recreational opportunities, and the current use of Willets Point means that the waterfront of Flushing Creek and Flushing Bay is vastly underutilized by the public.

Second are the brownfield concerns. Willets Point suffers from well-documented and widespread petroleum contamination, with additional potential contamination from paints, cleaning solvents, and automotive fluids. These environmental hazards are made worse by a high water table that spreads pollution throughout the site. The simple fact of the matter is that every day that contamination is allowed to remain in the soil and groundwater is another day that Flushing Creek and Flushing Bay are made worse.

Third, the proposal for Willets Point reflects a truly 21st century way of thinking about urban planning. It is close to the Number 7 Train, so people don't have to take their cars everywhere. It is close to the highways so residents can get in and out quickly without straining traffic further in the congested downtown area.

In addition to the jobs it will create and the economic investment it will make in Queens, this project presents what is probably the best hope to finally improve water quality in Flushing Creek and Flushing Bay – while creating new access points and green spaces for residents.

This is an important project where economic growth and environmental improvements go hand-in-hand to benefit the health, well-being and vibrancy of the local economy and local community.

Thank you.



Queens Civic Congress
Testimony Concerning Proposed Willets Point West Mall
at Flushing Meadows Corona Park

June 6, 2013

The Queens Civic Congress is an umbrella organization consisting of over 100 civic associations throughout Queens. The Congress has been active with the Flushing Meadows Corona Park Conservancy, the Fairness Coalition of Queens, and Save Flushing Meadows Corona Park over the past several months. The Congress has in the past and remains adamantly opposed to any further commercial development in the Park. The Queens Civic Congress Platform, entitled Civic 2030, adopted and endorsed by the full Congress in 2008 and ratified by resolution in December 2012, includes the following statements:

15. Support the Flushing Meadows Corona Park Conservancy.
16. Protect Flushing Meadows Corona Park from any further commercial and corporate exploitation.
17. Impose a moratorium on all new construction/development of non-public-benefit projects in Flushing Meadows Corona Park pending completion of a Master Plan by a Commission that has public members.

Flushing Meadows Corona Park is the largest park in Queens and ought to serve as the flagship park in Queens, but instead has become the dumping ground of last resort for placing any project that no other area will accept. While we gladly accept the long standing cultural facilities such as the Queens Museum and Theater and Hall of Science and Zoo, the more recent move of the US Tennis Center and US Tennis Open to the park and its recent expansion has been a serious encroachment on precious parkland that could and should be enjoyed by residents of Queens. CitiField has taken additional acres of public land on a deal that benefits only the Mets owners with very little direct financial benefit to the City and no benefit to Queens or to the Park. The parking lots surrounding the stadium sit on parkland and any change in use should be subject to alienation requirements. As parking lots they could be easily removed and returned to public use.

But the introduction of a massive steel and concrete, brick and mortar mall to these western parking lots would permanently destroy what the community should enjoy as a public park amenity. In addition to removing forever land that could be used by the thousands of nearby residents, the mall would destroy hundreds of nearby "mom-and-pop" businesses, small boutiques and restaurants in surrounding neighborhoods and would introduce significant and possibly devastating competition to existing, struggling malls, such as the beautiful Atlas Park Mall in Glendale and even Queens Center Mall.

Queens Civic Congress and fellow organizations believe that FMCP has been intentionally neglected by the City by providing inadequate maintenance budgets and minimal capital improvements over decades, resulting in a untidy and disorganized park. None-the-less, the Park serves as the backyard to tens of thousands of working class and middle income workers from nearby neighborhoods. The lack of upkeep seems to justify to the city its ability to propose commercial and corporate projects such as a Major League Soccer Stadium, the tennis center and this mall. Despite the terrible condition of the Park, on this Memorial Day there was not a square inch of space available to put down a blanket or park a car.

People with barbeques and badminton, boom boxes and soccer were everywhere enjoying the outdoors space that is not available on their blocks.

If, as the City is proposing, the CitiField parking lots could be repurposed, the space could better be used by the people for additional picnic and recreation space, not for stores and movie theaters that have questionable demand and little or no access. There is no pedestrian traffic nearby to support a mall and residential development plans for Willets Point remain unclear and far in the future.

Queens Civic Congress urges the Borough President to oppose this project unequivocally. Willets Point West is an unjustified, unnecessary and inexcusable abuse of the City's land use powers. We believe that the project is also in violation of parkland alienation regulations and should be reviewed by the State. The justification to avoid these regulations seems to be that a lease agreement provides to a private entity unrestricted use of the land, but we contest that a lease could supersede contradictory parkland alienation legislation.

Borough President Marshall, please continue to make your permanent and lasting mark on Queens by preserving open space at Flushing Meadows Corona Park and just say "No."

Richard C. Hellenbrecht, President

president@gccnyc.org

347-722-1872

Testimony of Gerald Antonacci
at public hearing of City Planning Commission
re: proposed Willets West mall / Willets Point development
July 10, 2013

Hello. I'm Gerald Antonacci, the owner of Crown Container Company and a member of Willets Point United.

Let's get one thing straight: The ONLY reason there's an application to put a parking lot at Willets Point, is to accommodate building a 1.4 million square foot shopping mall on parkland located next to Citi Field. The effect of this application – if approved – is to allow that mall to be built.

At the review session on Monday, a commissioner mentioned that perhaps Sterling and Related need the profits from the mall, to pay the cost of remediation at Willets Point. That is totally incorrect, because there is a \$99 million dollar grant of taxpayer funds to Sterling and Related that they will use to pay for remediation. Make no mistake: Any profits from the mall go straight to Sterling and Related, and remediation does NOT depend on the mall because WE are paying for it.

The entire proposal of Sterling and Related is a bad idea for the following reasons:

UNNECESSARY MALL IS PRIORITIZED

We don't need any shopping mall at that location. If one is built, it will destroy existing shopping districts in Corona and Jackson Heights.

PARKLAND SACRIFICE: 30+ ACRES

Building a shopping mall on public parkland is not appropriate.

TRAFFIC NIGHTMARE

Even with the hypothetical mitigation measures in place, there will be very severe traffic impacts – including gridlock conditions at local intersections. From the developer's own mitigation report (DSEIS chapter 21): Delays of 821 seconds, 273 seconds and 226 seconds – even WITH the most optimistic mitigation measures in place.

Meanwhile, the report does not even guarantee the "feasibility" or "effectiveness" of the recommended mitigation measures – but proceeds to rely on them.

Back in 2008, the City Planning Commission's report noted that the city would "monitor" traffic impacts of this development. But when people are frozen at intersections during the project's 821 second delays, what difference will it make if the city is "monitoring" those delays? At what point, as city planners, do you wake up and say, "This will not work?"

For more detailed information, see the report of engineer Brian Ketcham that is attached to this testimony.

NO VAN WYCK EXPRESSWAY RAMPS

Despite all the talk about new access ramps to and from the Van Wyck Expressway, the project contract specifies that, "for the avoidance of doubt, in no event shall EDC or the City be required to construct the Ramps as part of the development". And without those ramps, ONLY Phase 1A (essentially, the mall) can be built.

NO HOUSING

Housing and affordable housing were touted as the linchpins of this project during 2008. But their construction is being delayed until the year 2025, while the mall is prioritized instead. There's also a contractual "out" clause, allowing Sterling/Related to pay a "cost-of-doing-business" penalty and then build NO housing. In addition, NO housing can be built unless the Van Wyck ramps are built first – but no one is obligated to build the ramps. The developers and the city have deliberately structured their contract to prioritize the mall, while delaying the housing and not ensuring that the ramps – which are prerequisites for the housing – will ever be built. That is tantamount to eliminating the housing.

COSTS SHIFTED TO TAXPAYERS

Contrary to what the City Council was told during 2008, the city will not recoup the value of the Willets Point Phase One property – in excess of \$200 million – but instead, will give it to Sterling/Related for the price of \$1 (one dollar). Also contrary to what the City Council was told, remediation and other costs will not be paid by the developers, but by the taxpayers – as Sterling/Related will receive a \$99 million grant of taxpayer funds, to cover their development costs.

REMEDICATION CHARADE

Several weeks ago at community board 7, Sterling/Related and the city were challenged to produce any scientific reports proving the existence of alleged hazardous contamination at Willets Point. Given that the city claims to own over 90 percent of Phase One property, the city is certainly able to conduct tests on that land. Not only did Sterling/Related and the city not produce any such report, but for several years the city has rented Phase One properties to scores of tenant businesses – which the city could not do, if the area was actually hazardous to anyone. Significantly, Dr. James Cervino – a geochemist who is affiliated with the Woods Hole Oceanographic Institution and is also Chair of the CB7 environmental committee – voted to DENY this Willets West mall / Willets Point development application. If there really was an urgent need to remediate any hazardous contamination at Willets Point, a scientist such as Dr. Cervino would be expected to have approved this application instead of rejecting it.

EMINENT DOMAIN ABUSED FOR PRIVATE ENRICHMENT

43 states other than New York have enacted laws to prohibit or curtail the use of eminent domain for economic development. Last year, the U.S. House of Representatives passed a bill that would cancel federal economic development funds to any state where eminent domain is used for economic development. The rest of the country and Congress have sided with property owners on this, and it is Mayor Bloomberg and the city administration that are out on a limb and using inappropriate, un-American tactics for this project.

Is it any wonder that there is strong public opposition to this application?

The Queens Civic Congress, an umbrella group representing more than 100 Queens civic organizations, has issued a letter opposing this application.

Queens Community Board 7 initially DENIED this application in its committee by a vote of 7-2, then the full board later approved it by a narrow margin of 22-18 only after arm-twisting by the city.

Community Board 3 also held a public hearing and voted pursuant to ULURP, with a near-unanimous vote of 31-1 to DENY this application. They do not want the mall on parkland, and they reject the developers' claim that a mall will not impact existing shopping districts.

Please reject this application. Let the city issue a new RFP, and let the respondents conform to the parameters and goals of the project that was approved during 2008.

Finally, please use your own judgment and conscience to decide this application – not favoritism to Mayor Bloomberg or anyone else who appointed you to the Commission.

APPROVE THIS PROJECT ???

- ✓ **Unnecessary Mall Prioritized**
 - ✓ **Parkland Sacrifice: 30+ acres**
 - ✓ **Traffic Nightmare**
 - ✓ **No Van Wyck Expressway Ramps**
 - ✓ **No Housing**
 - ✓ **Clever Contractual “Out” Clauses**
 - ✓ **Costs Shifted to Taxpayers**
 - ✓ **PROPERTY GIVE-AWAY: 23 ACRES FOR \$1**
 - ✓ **\$99 MILLION GRANT TO STERLING/RELATED**
 - ✓ **Remediation Charade**
 - ✓ **Eminent Domain Abused for Private Enrichment**
-

“For the avoidance of doubt, in no event shall EDC or the City be required to construct the Ramps as part of the Development.”

– Contract Section 3.3

Queens Civic Congress

Testimony Concerning Proposed Willets Point West Mall at Flushing Meadows Corona Park

June 6, 2013

The Queens Civic Congress is an umbrella organization consisting of over 100 civic associations throughout Queens. The Congress has been active with the Flushing Meadows Corona Park Conservancy, the Fairness Coalition of Queens, and Save Flushing Meadows Corona Park over the past several months. The Congress has in the past and remains adamantly opposed to any further commercial development in the Park. The Queens Civic Congress Platform, entitled Civic 2030, adopted and endorsed by the full Congress in 2008 and ratified by resolution in December 2012, includes the following statements:

15. Support the Flushing Meadows Corona Park Conservancy.
16. Protect Flushing Meadows Corona Park from any further commercial and corporate exploitation.
17. Impose a moratorium on all new construction/development of non-public-benefit projects in Flushing Meadows Corona Park pending completion of a Master Plan by a Commission that has public members.

Flushing Meadows Corona Park is the largest park in Queens and ought to serve as the flagship park in Queens, but instead has become the dumping ground of last resort for placing any project that no other area will accept. While we gladly accept the long standing cultural facilities such as the Queens Museum and Theater and Hall of Science and Zoo, the more recent move of the US Tennis Center and US Tennis Open to the park and its recent expansion has been a serious encroachment on precious parkland that could and should be enjoyed by residents of Queens. CitiField has taken additional acres of public land on a deal that benefits only the Mets owners with very little direct financial benefit to the City and no benefit to Queens or to the Park. The parking lots surrounding the stadium sit on parkland and any change in use should be subject to alienation requirements. As parking lots they could be easily removed and returned to public use.

But the introduction of a massive steel and concrete, brick and mortar mall to these western parking lots would permanently destroy what the community should enjoy as a public park amenity. In addition to removing forever land that could be used by the thousands of nearby residents, the mall would destroy hundreds of nearby "mom-and-pop" businesses, small boutiques and restaurants in surrounding neighborhoods and would introduce significant and possibly devastating competition to existing, struggling malls, such as the beautiful Atlas Park Mall in Glendale and even Queens Center Mall.

Queens Civic Congress and fellow organizations believe that FMCP has been intentionally neglected by the City by providing inadequate maintenance budgets and minimal capital improvements over decades, resulting in a untidy and disorganized park. None-the-less, the Park serves as the backyard to tens of thousands of working class and middle income workers from nearby neighborhoods. The lack of upkeep seems to justify to the city its ability to propose commercial and corporate projects such as a Major League Soccer Stadium, the tennis center and this mall. Despite the terrible condition of the Park, on this Memorial Day there was not a square inch of space available to put down a blanket or park a car.

People with barbeques and badminton, boom boxes and soccer were everywhere enjoying the outdoors space that is not available on their blocks.

If, as the City is proposing, the CitiField parking lots could be repurposed, the space could better be used by the people for additional picnic and recreation space, not for stores and movie theaters that have questionable demand and little or no access. There is no pedestrian traffic nearby to support a mall and residential development plans for Willets Point remain unclear and far in the future.

Queens Civic Congress urges the Borough President to oppose this project unequivocally. Willets Point West is an unjustified, unnecessary and inexcusable abuse of the City's land use powers. We believe that the project is also in violation of parkland alienation regulations and should be reviewed by the State. The justification to avoid these regulations seems to be that a lease agreement provides to a private entity unrestricted use of the land, but we contest that a lease could supersede contradictory parkland alienation legislation.

Borough President Marshall, please continue to make your permanent and lasting mark on Queens by preserving open space at Flushing Meadows Corona Park and just say "No."

Richard C. Hellenbrecht, President

president@qccnyc.org

347-722-1872

Queens Community Board 3
on the Willets West mall / Willets Point development

Public hearing and vote held May 23, 2013

Blog post of Willets Point United Inc., including transcription of resolution adopted by CB3:

Queens Community Board 3 nixes Mets mall

By a wide margin of 30-1 (plus 1 abstention), CB3 voted on Thursday night to disapprove the proposed "Willets West" mall / Willets Point development. The landslide vote endorsed the earlier recommendation, on Tuesday night, of several CB3 committees, and took place after a public hearing on the matter. Reasons for CB3's disapproval include the project's huge and unaddressed traffic congestion and related negative impacts, failure to prioritize housing and a school, overcrowding of subway and bus lines as a consequence of the project, and disregarding the Advisory Committee and Queens officials when selecting the plan and the developers. CB3 concluded: "The proposed project would change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses."

Likely aware of the committees' Tuesday recommendation to disapprove the project, no representative of developers Sterling Equities and Related Companies, or the city, bothered to attend the Thursday night public hearing.

Although CB7 voted last week to approve the same development project by a very slim margin of 22-18 (notoriously, after the CB7 committee had rejected it the week before by a vote of 7-2), the city's Uniform Land Use Review Procedure ("ULURP") entitles other affected community boards to also evaluate a land use application that "may significantly affect the welfare of the district or borough served by such board". CB3 has exercised that right, and decided to disapprove the application. So at the moment, the Willets West mall / Willets Point development has been approved by CB7 by a very slim margin, and rejected by CB3 almost unanimously. ULURP does not give any greater weight to any particular community board's recommendation – so both boards' recommendations must be equally considered by the next decision-makers.

Donovan Finn, a former CB3 member and university professor who teaches urban planning, urban policy and environmental design, stated during the public hearing: "There are too many holes in this contract. It is completely designed to make Related and the Wilpons be able to build their mall, build their new parking lot, do a few nice things along the edges of the development, and if they choose – to pay what for them will be a piddly amount of money and walk away. The affordable housing will never get built. ... I'm not a psychic, but that's the future I

see. This is not just a vote against a really bad plan, which it is, I think. Something will happen on that site – It just should be something better; it should be something that whoever builds it should come and ask us what we need, and what we think should be there, instead of just deciding and telling us that it's in our best interest."

The CB3 Chairperson, Marta Lebreton, read the following statement prior to the board's vote on Thursday night:

"I'm going to read the recommendation that was made on Tuesday night. ... ULURP section 203, item (g.), allows for the review and vote on actions not in a community district. Willets Point may be geographically located within Community Board 7, but the proposed action will directly impact more than 250,000 residents in Community Board 3. Our board is merely a couple of blocks from the site, and therefore any and all actions that take place at Willets Point will directly impact the residents of our board.

On Tuesday, May 21, 2013, Community Board 3 convened a joint committee meeting of the business, economic development, parks, land use and traffic/transportation [committees] to review the Willets Point redevelopment project, which includes 'Willets West' [mall] and the Willets Point Special District. After careful review of the proposal, the committee concluded that the plan in its present form be disapproved.

Community Board 3 Queens is opposed to constructing a mall on mapped public parkland; the demolition of the Empire Millwork Corporation building – a historic site listed in the state and national registries; and the proposed development schedule. The plan calls for soil remediation of 23 out of 62 acres of the proposed site, which will be in Phase One of the project. The anticipated completion date would be 2018, when retail and hotel space would be constructed. Affordable housing and the construction of a school would not come until 2028 – ten years later, in Phase 1B. The aforementioned school and housing should be included in the first phase.

The impacts that are not addressed in the current proposal are:

Traffic: Although a commitment was made to provide \$1.87 million to establish an infrastructure and traffic mitigation fund for traffic improvements, there was no mention of how traffic congestion would be mitigated in Community Board 3 Queens, particularly at 114th Street, Astoria Boulevard, 34th Avenue, Roosevelt Avenue and Northern Boulevard.

Transit and pedestrians: Community Board 3 Queens will be impacted by the increase of ridership on the subway line number 7 and the bus lines of Q48, Q66 and Q19.

Public health concerns: Community Board 3 Queens has been identified as one of the districts that has the highest incidence of asthma and other respiratory ailments. The applicants report that the increase in traffic would have no impact on Community Board 3 Queens. The increase in traffic volumes will surely adversely affect our fragile constituents. The committee strongly recommends that a complete environmental cleanup on all the acres in Willets Point be conducted, not just in the Special District. Further, cleanup of Flushing Bay and installation of a new sewer system so that Flushing Bay will no longer remain a dumping ground.

Environmental and social justice: The current plans do not consider our community needs, nor acknowledge the impact the proposed plan will have on the commercial and residential displacement of our most vulnerable residents in Community Board 3 Queens.

In conclusion, the Willets Point proposal – the city's largest development project in this section of Queens: The impacts of this major undertaking will affect not only the residents of Community Board 7, but all of the surrounding board areas. In July, 2008, the Borough President's recommendation approved the application with the condition that the Willets Point Advisory Committee be comprised of the Queens Borough President, local elected officials, representatives from Community Boards 3, 4 and 7, and other community leaders, should be continued for the duration of the project, including during developer selection, construction, implementation and all other phases of the Willets Point development. We strongly suggest that the Borough President's recommendation be complied with. Community Board 3 Queens recommends that the application be disapproved as presented. The proposed project would change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses. That is the recommendation of the committee. Do I have a motion – a motion is on the floor. Do I have a second? Okay. Any discussion? Okay; we're going to call the question. The motion on the floor, seconded by Ed Westley, is to disapprove the application as presented. And we are going to include everything that I read."

A "Yes" vote is for denial.

Vote tally: 30 "Yes" [for denial of the application]; 1 "No"; 1 abstention.

[End.]

Land deal shameful steal

ONLY in Michael Bloomberg's New York are we asked to believe that giving away huge swaths of city-owned land to millionaires is a wonderful deal.

The mayor announced Wednesday that the city had selected the Wilpons, of the Mets and Sterling Equities, and Steve Ross of The Related Companies, to develop 23 acres of land in the Willets Point redevelopment area in Queens.

The Wilpon-Ross partnership, Queens Development Group, will be handed this land completely free of charge, so it can build its own new retail, entertainment and hotel complex adjacent to the Mets' Citi Field.

Yes, free land, even though the city is on track to spend nearly \$500 million buying that very land from scores of industries and auto repair firms that operated there for decades, putting in new sewer lines, and erecting new Long Island Expressway ramps.

Free land, even though

Queens Development has committed to developing only one-third of the entire 60-acre Willets Points project City Council approved back in 2008.

Queens Development won't even have to begin construction on a single unit of residential housing — part of the original lure of the project — until 2025.

"How do you give away 23

acres of land for nothing?" Jerry Antonacci wants to know. He has run Crown Container, a waste hauling and recycling plant in Willets Point for nearly 40 years and has been battling the city's efforts to move him out.

"This is like the biggest heist ever," Antonacci said. "We all knew the Wilpons wanted our land for themselves all along, and now they got it."

But when City Hall originally got Council's approval for Willets Point, there was no mention of giveaways or of the Wilpons as a possible developer.

Just the opposite.

Back then, Bloomberg's aides assured the Council that any

taxpayer money spent on Willets Point would be recouped when the city sold the land to a developer that would be chosen later.

Council was understandably skeptical. For one thing, all previous development projects always had a developer's name attached to them when they came up for vote. This one didn't.

Then there was the big city money upfront for acquiring private land.

On Oct. 17, 2008, for instance, then-Deputy Mayor Robert Lieber was grilled by former City Councilman Hiram Monserrate about the land sales.

"Our goal would be to get the city taxpayer money back out of this," Lieber said.

"In the sale of the properties?" Monserrate asked.

"That's correct," Lieber said.

Lieber conceded that if potential developers claimed the cost of cleaning up the polluted land was too high, the city might agree to "get less for land." He never said anything about free land.

Back then, the city's skin in the game was \$400 million. That has now gone up by another \$80 million to build the LIE ramps for the project.

Back then, the project's



Mets chairman and CEO Fred Wilpon will receive 23 acres of land, free of charge, to redevelop in Willets Point, Queens. Photo by Getty Images

timeline was five to 10 years. It included a convention center, a new school, twice as much housing.

Now, you won't see any housing open for maybe 15 years.

No convention center. No school. And two-thirds of the Willets Point site will remain undeveloped and polluted possibly for decades.

"We are thrilled to have been selected by the City to . . . rejuvenate Willets Points into a stunning, new, mixed-use neighborhood," Jeff Wilpon said as he stood next to Bloomberg.

Sure, they're thrilled. You'd be, too, if you had just been handed 23 acres of land paid for by taxpayers, right next door to your own new baseball stadium.

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The Willets Point plan: a bad deal in every way

by Benjamin M. Haber

Good and responsible government does not exist in the absence of transparency, and in particular when it involves land use matters which have been notorious in favoring real estate interests and those with political connections. Years ago Daniel Doctoroff, then Mayor Bloomberg's economic czar, bragged before a group of real estate moguls that under the Bloomberg administration they received about 90 percent of all zoning requests they wanted.

When it comes to transparency the Bloomberg administration earns a failing grade. A case in point is Willets Point. For decades, and most of Mayor Bloomberg's term in office, the city collected sewer rent from the owners of property in Willets Point, notwithstanding there were no sewers. It collected real estate and other taxes and did not spend any money on the area's infrastructure.

A body and fender shop's operations, which for the most part serve the needs of the poor and the middle class, cannot be as spotless as a Bloomingdale's department store, which makes it all the more important government take care of the infrastructure.

As a coverup for his failure in doing so, Bloomberg declared the site a blight that must go, even though it would mean removing more than 200 small businesses, terminating employment for their 1,000 employees and causing havoc to their thousands of dependents. Cleanup of the so-called blight, which the city will pay for for the benefit of a developer, could have been done for Willets Point businesses. But it will not be, since they are not real estate moguls with tentacles in the city treasury.

The cost to correct the area and repair the infrastructure, to alienate parkland, free of charge, and to provide subsidies, will be several hundreds of millions of dollars, all to be paid for by taxpayers for the benefit of a private developer. For Bloomberg to allow this taxpayer ripoff ignores his responsibility to be fair and above-board with the public. It's unacceptable.

It was Bloomberg's original plan to develop Willets Point into a huge shopping mall, with yet another convention center, luxury housing with a small portion of affordable housing for the middle class, a small park and a school. Building a school next door to LaGuardia Airport, the Mets' stadium, the United States Tennis Association and a huge mall would be absurd, a feigned icing on the cake to make it appear the proposal was not a private commercial development but a needed public undertaking.

Willets Point and its surrounding areas

have automobile access only through the Van Wyck Expressway, Grand Central Parkway, Northern Boulevard and Roosevelt Avenue, private streets being out of the question. These arteries have been

and are choked to capacity. Queens was ranked as having one of the most congested vehicular arteries in the country and there is no way — I repeat, no way — to increase their capacity to absorb the tens of thousands of additional vehicles the Bloomberg plan would bring.

Faced with a vehicular nightmare and unable to come up with a solution, Mayor Bloomberg has devised what can be described as the mother of all lack of transparencies. The original Willets Point plan has suddenly been split into two phases. His much-heralded original Willets Point plan is now relegated to phase two, which for all practical purposes will be on the back burner and probably not accomplished for decades.

The reason for the so-called split is not just the vehicular problem, but Bloomberg's desire to help out his billionaire friend Fred Wilpon, the owner of the Mets, who have not been doing well financially. Phase one will allow Wilpon to move his parking lots — which are on parkland, as is Citi Field — to Willets Point and to construct a huge mall on the current Mets parking lots. Parking in Willets Point and the mall will not address the vehicular problem, but will destroy the small businesses on Northern Boulevard, Roosevelt Avenue and 108th Street, the malls in Rego Park and on 20th Avenue in Whitestone, and the shops in downtown Flushing. Were I in business in any of those areas, I would hesitate to sign a long-term lease. Unless these merchants and the public make known to the mayor, their City Council members and community boards their opposition, the mayor's plans will be a fait accompli.

Former President Franklin D. Roosevelt once said he wished to be remembered for what he did for the poor and not for the rich. Notwithstanding some laudable philanthropic acts Bloomberg has accomplished as a private individual, as mayor he has viewed his constituents as the wealthy and powerful and not the poor and middle class. I do not believe he will leave a legacy as noteworthy as that of President Roosevelt.

Benjamin M. Haber is a civic activist and retired attorney who lives in Flushing.



EDC and Shulman's Queens LDC admit illegal lobbying

BY VERA CHINESE
NEW YORK DAILY NEWS

TWO city economic development agencies have admitted to illegally lobbying the City Council to support a plan to overhaul gritty Willets Point.

A three-year probe by the state Attorney General's office confirmed what many property owners in the so-called Iron Triangle had long complained about — that these agencies were exerting undue influence on the Council.

The findings, unveiled Tuesday, found both the city Economic Development Corp. and the Flushing-Willets Point-Corona Local Development Corp. unlawfully lobbied the Council in 2008 to approve the redevelopment.

The investigation extended to the Coney Island Development Corp., which also admitted to soliciting support for a project there.

The agreement between the city EDC, the two other LDCs and the AG validates years of complaints from Willets Point business owners who charged the Flushing-Willets Point-Corona LDC and specifically, its president, Claire Shulman, curried favor for a plan to take properties through eminent domain.

Mayor Bloomberg announced a different plan last month, when he said the city had reached a deal with Sterling Equities and Related Cos. to build a 1 million-square-foot mall on land already owned by the city.

Under state law, "no such corporation shall attempt to influ-



Flushing-Willets Point-Corona Local Development Corp., headed by Claire Shulman, found to have illegally lobbied City Council. Christie M. Farriella

ence legislation by propaganda or otherwise." The law does not list monetary penalties for violations, so the LDCs will not pay fines.

The agreement stipulates that each LDC will not employ out-

side lobbyists, draft testimony for third parties to submit to the Council and directors will have to undergo compliance training.

Members of Willets Point Unit-

been harsher.

"There was a crime committed here," said Willets Point United President Gerald Antonacci. "People ran for the hills when they were threatened with eminent domain. A lot of people who sold their properties would have never have sold it."

Shulman, the former Queens Borough President, could not be reached for comment. Flushing-Willets Point-Corona LDC officials said they were "glad the matter was behind them."

The EDC will also have to restructure, losing its status as an LDC.

LDCs are quasi-city agencies that have the power to buy or lease city land without undergoing the public bidding process.

An EDC spokesman downplayed the ruling, stating the law did not clearly define what constituted lobbying.

"The restructuring should be seamless from the perspective of third parties and should have little to no impact on the day-to-day operations of the company," the spokesman said in a statement.

Some of the transgressions included ghost-writing op-ed pieces, preparing testimony for third parties and providing transportation for supporters at hearings.

"These local development corporations flouted the law by lobbying elected officials, both directly and through third parties, to win approval of their favored projects," Attorney General Eric Schneiderman said.

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**New York City Planning Commissioners Recommended
That EDC Follow the Obvious Precedent:
Relocation of the Fulton Fish Market**

In November, 2005, the entire Fulton Fish Market (the largest consortium of seafood wholesalers in the country; 37 businesses employing 650 workers) was relocated from lower Manhattan to a new facility at Hunts Point in the Bronx.

The example of the relocated Fulton Fish Market as an appropriate model for the City to follow when relocating the Willets Point tenant automotive businesses has been recognized by New York City Planning Commissioners. During the public hearing held by the New York City Planning Commission on August 13, 2008 for the proposed Willets Point Development, the following exchange took place between Commissioners Karen Phillips, Irwin Cantor and Angela Battaglia, and New York City Economic Development Corporation Vice President Jonathan Gouveia:

Commissioner Phillips: "The work that you are doing with the 225 tenant businesses – Are the majority of those tenant businesses in auto-related uses? And my other question was, if there was any effort to identify sites and perhaps – because I know we do have the industrial parks that were set up and the industrial strategy that the Mayor put together a couple of years ago – but in a way of **creating a kind of auto-related center** where they could relocate? Because some of them benefit from co-location."

Jonathan Gouveia / EDC: "Right."

Commissioner Phillips: "Is that something that's been looked at, at all? In terms of the areas that have been set aside for industrial areas?"

Jonathan Gouveia / EDC: "As I mentioned, we haven't gotten into in-depth discussions with the tenants. We've hired, or we're in the process of hiring, a tenant relocation specialist. So this sort of ongoing conversation about what their businesses want, where they want to locate, whether they want to co-locate, will become apparent through that process, which will begin later, or towards the end of the summer; early fall [2008]. In preliminary conversations that we've had, not all businesses want that. So what we're really trying to do is place businesses where they think it makes the most sense for them. We're certainly open to looking at what works for the businesses."

Commissioner Cantor: "Further to the other question, which I think was a great question: **We created new areas for the fish market; we created a new area for the grocery market; so conceptually, would it not be an easier sell if you – if I may – to find an area where these auto-related organizations can go to?** You know, and we know, businesses tend to congregate. They feed off each other."

Jonathan Gouveia / EDC: "Right."

Commissioner Cantor: "Whether it be the fish, whether it be the wholesale grocery, whether it be the diamond district; and your answer did not seem to be positive. It was kind of, 'We'll see what develops'. And I would follow commissioner Phillips, and encourage you guys to try and find an area that can accommodate a large number of these businesses who may wish to continue to feed off each other." . . .

Commissioner Battaglia: "I think the idea of moving all the businesses to one location, or finding a suitable location for many of them, would be probably the way to go. What type of assistance will they be given? Would they be given relocation assistance? Would they be given start-up money to configure their new space?"

The 2008 final report of the New York City Planning Commission concerning the proposed Willets Point development refers to "subsequent assurances from EDC":

"During the CPC public hearing, the Commission raised questions regarding the feasibility of relocating the area's similar and complementary businesses together in another single location. The Commission acknowledges subsequent assurances from EDC that the City will attempt to facilitate such a co-relocation effort, should there be businesses that are both interested in and have the capacity to co-locate." (*Report of the New York City Planning Commission concerning the proposed Willets Point development, ULURP application N 080382 ZRQ; September 24, 2008.*)

Willets Point United Inc.
P.O. Box 560191 • College Point, New York 11356

July 19, 2013

New York City Planning Commissioners
c/o Calendar Information Office – Room 2E
22 Reade Street
New York, New York 10007

Robert R. Kulikowski, Ph. D.
Mayor's Office of Environmental Coordination
100 Gold Street, 2nd Floor
New York, New York 10038

Re: **Proposed Willets Point / Willets West development**
CEQR No. 07DME014Q
Comments pertaining to pending ULURP application and DSEIS

Dear City Planning Commissioners and Dr. Kulikowski:

I am writing on behalf of Willets Point United Inc. to supplement my oral and written testimony delivered on July 10, 2013 at the public hearing associated with the Uniform Land Use Review Procedure ("ULURP") and the Draft Supplemental Environmental Impact Statement ("DSEIS") pertaining to the proposed Willets Point / Willets West development, CEQR No. 07DME014Q. The following information addresses certain questions and issues raised by the City Planning Commission ("Commission") during the public hearing on July 10, 2013.

(1.) What is Willets Point United Inc.?

Willets Point United Inc. ("WPU") is a coalition of Willets Point property and business owners, formed in 2008, that wants the City to stop its decades-long deliberate withholding of municipal services from Willets Point which hinders the operation of the existing industrial businesses here; that opposes the redevelopment of Willets Point in the manner being promulgated by the Bloomberg administration, which includes the forcible acquisition of our properties via eminent domain to transfer to other private parties to facilitate a non-essential, speculative, alleged economic development project; and that holds project proponents accountable for disseminating false information to decision-makers and the public, abrogating their written guarantees, and engaging in plainly illegal activity to push this project; among other WPU initiatives. For example:

- WPU discovered that the draft Access Modification Report ("AMR") pertaining to proposed new highway access ramps to and from the Van Wyck Expressway (ramps that are essential to the entire proposed Willets Point development), submitted by the New York City Economic Development Corporation ("NYCEDC") with the intent that it be approved by the New York State Department of Transportation ("NYSDOT") and the Federal Highway Administration ("FHWA"), relied upon traffic presumptions that

differed dramatically from those contained within the Final Generic Environmental Impact Statement ("FGEIS") previously prepared for the proposed Willets Point development. As the *New York Times* reported: "State officials have repeatedly expressed frustration with the city's inability to provide reliable information and the pressure it was placing on them to expedite their analysis, according to a review of hundreds of e-mails involving the Willets Point project that were provided to *The New York Times*" by WPU. (Santos, Fernanda. 2010. E-Mails Show State Officials' Skepticism About Willets Point Project. *New York Times*, August 13; p. A17.) WPU's traffic engineer, Brian Ketcham, formally interceded with both NYSDOT and FHWA, challenging the AMR during two all-agency meetings convened for that purpose and by submitting hundreds of pages of independent expert analysis. Thereafter, NYSDOT and FHWA did not approve the draft AMR, but rejected it; restructured the ramp approval process to require an Environmental Assessment prior to approval of any AMR; and sent NYCEDC back to the drawing board to draft a new AMR, which took two years.

- WPU discovered that former Queens Borough President Claire Shulman and her local development corporation ("LDC") conducted a lengthy, unlawful, unregistered lobbying campaign advocating approval of the proposed Willets Point development. The Office of the City Clerk agreed with WPU, resulting in a then-record penalty of \$59,090.00 imposed upon Shulman's LDC.
- WPU discovered that not only Shulman's LDC, but also the New York City Economic Development Corporation ("NYCEDC"), violated state law by attempting to influence legislation authorizing the proposed Willets Point development – activity that is absolutely prohibited to all local development corporations. Moreover, NYCEDC disbursed City funds totaling \$450,000.00 to Shulman's LDC, then directed unlawful lobbying by Shulman's LDC. The New York Mets, owned by the owners of Sterling Equities (which has since been designated by the City as a developer of Willets Point phase one), also financed Shulman's LDC. The New York State Office of the Attorney General conducted a three-year investigation and ultimately agreed with WPU, declaring in 2012: "These local development corporations flouted the law by lobbying elected officials, both directly and through third parties, to win approval of their favored projects." (<http://www.ag.ny.gov/press-release/ag-schneiderman-ends-illegal-lobbying-nyc-officials-three-local-development>) New York City Comptroller John Liu wrote to Mayor Bloomberg: "Last week your Administration admitted in a settlement with the New York State Attorney General that the New York City Economic Development Corporation (EDC) knowingly and illegally lobbied City Council members about your development agenda. ... I urge you to move swiftly to identify those senior officials from City Hall and the EDC responsible for the flagrant and repeated law-breaking activities, and hold them accountable." (http://www.comptroller.nyc.gov/press/2012_releases/pr12-07-083.shtm) As a consequence of its illegal lobbying for the Willets Point development, NYCEDC has had to cease operating as a local development corporation and has been compelled to restructure as a different type of not-for-profit entity. The 2008 approvals of the proposed Willets Point development – procured in the context of lobbying so illegal that it required the restructuring of NYCEDC to ensure it will never happen again – still

are the bases of the proposed Willets Point phase one / Willets West development being considered now.

- WPU sued the City because of the inadequacy of the environmental review conducted for the proposed Willets Point development. Among other things, WPU alleged that the City could not pursue a phased development pursuant to its *Technical Memorandum for the Willets Point Development Plan FGEIS*, TM004, dated February 11, 2011 ("Technical Memorandum 4"), and that the City instead must prepare a Supplemental Environmental Impact Statement ("SEIS"). In that court proceeding, on July 24, 2012, the City finally stipulated that "the City will not proceed with development in Willets Point under Technical Memorandum 4"; and the City is now taking steps to finalize a Supplemental Environmental Impact Statement, just as WPU had said was necessary.
- WPU again sued the City to challenge its attempted use of eminent domain to forcibly acquire Willets Point phase one properties. In that court proceeding, on May 2, 2012, the City finally stipulated that it "would not proceed under its [eminent domain] Determination and Findings, adopted by the City on May 2, 2011", and abandoned the particular attempt to use eminent domain that was the subject of that court proceeding. The City may still attempt to use eminent domain again in the future to acquire Willets Point properties.

In each of the above instances, when WPU took a position and the relevant facts were properly taken into account, WPU's position was vindicated.

Presently, it is the position of WPU that the proposed Willets Point phase one / Willets West plan of Sterling Equities and Related Companies ("Sterling/Related") is inappropriate and cannot be implemented.

(2.) The Commission must consider that the purpose of the special permit to which the ULURP application pertains is to facilitate the shopping mall, and none other.

At the outset of the public hearing held on July 10, 2013, Commission Chair Amanda Burden stated: "... an important element of the project analyzed in the Draft Supplemental Environmental Impact Statement – the retail development at Willets West on the Citi Field site – is not subject to the land use jurisdiction of the Commission since it is located on parkland. ... Just to make it clear, our purview as City Planning Commission really is on the Willets East part of the project and the temporary interim uses there."

We emphasize that the ULURP application now being considered, which pertains to the prospective use of Willets Point phase one property as a parking lot, has but one purpose: to facilitate the construction of a 1.4 million square foot shopping mall / entertainment center on parkland property. Except for the intent to construct that shopping mall and to relocate the existing parking lot, there would be no pending ULURP application for any special permit to modify the use of Willets Point phase one property. It would be both inappropriate and an abdication of the Commission's responsibilities, for the Commission to narrowly consider just

the parking lot application, while disregarding the specific intended larger effect of that application – the construction of a huge shopping mall on parkland – that will "change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses", as Queens Community Board 3 wrote when it disapproved this application by its vote of 30-1.

The Commission cannot allow the proposed site of the mall – which just happens to be parkland – to circumvent the Commission's responsible analysis of an application that will obviously "change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses". In any other circumstance where an application will "change the character of the surrounding neighborhoods" the Commission certainly would be involved in assessing the potential changes in character, and would necessarily factor them into any decision for or against the application. The Commission's responsibility to the public is to do so here, as well.

WPU and the public-at-large are not the only ones who recognize that this parking lot ULURP application is inseparable from the intent to construct a 1.4 million square foot mall, and that the application must be evaluated in that context. The notice of the public hearing published by Queens Community Board 7 describes this application as: "ULURP APPLICATION #C 130223 ZSQ – To allow for a 1.4 million square foot retail and entertainment development known as 'Willets West'." (See Attachment A.) As the local community board has formally characterized this ULURP application as allowing for the mall (while not even mentioning the modified parking use at Willets Point), the Commission is able to do the same.

Do not permit an end-run around the Commission's planning oversight – which is what this ULURP application aims to do.

(3.) The 1961 amendment to the City's administrative code provides no basis to construct a shopping mall on the parkland at issue.

Since the purpose of the pending ULURP application to allow a parking lot on Willets Point phase one property is to facilitate the construction of a mall on other parkland property, if the construction of that mall is unlawful then there is no legitimate basis for the pending parking lot ULURP application.

Please review the attached letter from attorney Harvey Epstein, Associate Director of the Urban Justice Center, addressed to land use counsel for Sterling/Related (see Attachment B), which sets forth legal reasoning why the 1961 provision of the City's administrative code provides no basis to construct a shopping mall on the parkland at issue, and why the proposed project of Sterling/Related is therefore "fatally flawed".

If the analysis within the Urban Justice Center letter is correct (and we believe it is), then the Commission is being asked to approve a ULURP application to facilitate construction of a mall that is unlawful and cannot occur. The Commission must not approve a ULURP application that is intended to facilitate an unlawful land use that cannot occur.

(4.) Three other developers submitted proposals that kept within the bounds of the Willets Point Special District and did not add any mall on parkland.

In response to the Request for Proposals ("RFP") seeking developers for Willets Point phase one, three respondents other than Sterling/Related submitted proposals to implement development consistent with the provisions of the RFP, within the bounds of the 23-acre phase one site inside the Willets Point Special District. One of those proposals – submitted by Silverstein Properties, Inc. and Taubman Centers, Inc. – even committed "100% of the residential units in Phase 1 to the affordable housing program".

But the City administration rejected all of those proposals, and instead selected the proposal of Sterling/Related – initially a proposal to construct a casino and gaming facility on the parkland property located west of Citi Field beyond the boundaries of the Willets Point Special District, and which included no housing component whatsoever. The Sterling/Related proposal is said to have been modified such that the parkland property where the casino would have been constructed is now designated as the site of a retail mall and entertainment center, and housing is to be constructed within the Special District in the year 2028 (but only if new highway access ramps to and from the Van Wyck Expressway are constructed first – ramps that no one is obligated to construct, and that the project contract specifies the City is not responsible to build). The plan of Sterling/Related also expands the total size of the Willets Point development from 62 acres as approved during 2008, to 108.9 acres as intended now. The Draft SEIS ("DSEIS") explicitly admits this.

The decision to select the plan of Sterling/Related to the exclusion of all others was made by the City administration via a process that violated written guarantees within the Willets Point FGEIS and elsewhere, that the Willets Point Advisory Committee, led by Queens Borough President Helen Marshall, as well as Queens Community Board 7, would participate in and help to guide developer selection. Instead, those Queens entities were completely excluded from the developer selection process. As we now know, the developer selection process was also an opportunity to choose a plan that would not expand the size of the development from 62 acres to 108.9 acres (with associated increased impacts), and that would not sacrifice 30+ acres of Queens' public parkland for use as a retail mall. It is no wonder that the City administration circumvented the promised involvement of Queens entities, and instead dictated the choice of developers.

In the event that the pending ULURP application of Sterling/Related is disapproved, the City can issue a new RFP for development within the Willets Point Special District that does not sacrifice parkland for use as a mall, and that otherwise respects the goals of the Willets Point development as approved in 2008. If the prior RFP responses are any indication, there will be proposals that respect the property boundaries while realizing the goals established in 2008.

Attached is an informative flyer prepared by WPU (see Attachment C) that summarizes the three rejected development proposals. Also attached is a CD-R disc containing the three rejected RFP responses (see Attachment D), so that the Commission may appreciate that Sterling/Related was not the only available choice, and would not be in the future.

(5.) The City and Sterling/Related are deliberately avoiding conducting any environmental tests at this time on Willets Point phase one property.

During the public hearing held on July 10, 2013, Sterling Equities' representative Richard Brown testified: "As soon as we close, we will be in there doing investigative work of all 23 acres, both above grade and below grade. There's been very limited work done at this time – rightly so, because the city has not had possession. We are to be delivered vacant possessions. So whenever that happens, day one, day two, we go in and we start all of our testing."

But the City claims to already own 95 percent of the Willets Point phase one property. Contrary to the misleading testimony of Richard Brown, nothing prevents the City from performing borings, obtaining soil samples, and conducting environmental tests **right now** throughout the 23-acre phase one site. That the City has not done so is very telling.

The City administration spent upwards of \$200 million of taxpayer funds to acquire the Willets Point phase one property, but intends to gift that phase one property to Sterling/Related for the price of \$1 (one dollar). It is bad enough that such a deal is contrary to what City officials told the City Council during 2008: that the City would recoup the cost of acquiring the property, through the sale of the property to the developer. As we understand it, the new rationale for the steeply discounted \$1 price is that the property has "negative value", because it is allegedly contaminated. But with no scientific tests performed, how can the taxpayers be certain that a discount of \$200+ million is actually warranted?

The City and Sterling/Related are deliberately delaying any environmental testing of Willets Point phase one property until after Sterling/Related have closed the property transaction and taken possession of the property. WPU alleges that they are doing so, because (a) if testing was performed now and it determined that the property is not severely contaminated and required little or no remediation, then there would be no justification to transfer the property to Sterling/Related at the sweetheart deal price of \$1, when they should instead pay the going market rate (as the City Council was promised would be the case during 2008); and (b) if testing was performed now and it determined that the property is very severely contaminated, Sterling/Related might conclude that implementing the proposed development is not financially viable – precluding transferring the property to them at all. For those two reasons, the City and Sterling/Related cleverly prefer not to perform any environmental tests at this time, but to delay any tests until after Sterling/Related have taken possession of the property for the price of \$1. That way, no matter what the test results ultimately show, Sterling/Related will possess the property that they covet – even if it can only be paved over for use as a parking lot. But to delay important environmental tests that could be performed now is not in the taxpayers' interest, and constitutes reckless non-planning.

Is the \$1 price justified? Is the proposed remediation and development feasible? Without scientific environmental testing throughout the Willets Point phase one property, it is impossible to answer those key questions. Therefore, the first order of business – before establishing the price of the property, and before transferring ownership of it – must be to perform the environmental tests that are being purposefully delayed until later.

(6.) **Unknown "feasibility" and "effectiveness" of traffic mitigation measures – despite relying completely on them.**

DSEIS chapter 21 describes traffic mitigation measures. It acknowledges that not every traffic impact can be mitigated. In our opinion, the remaining unmitigated impacts are collectively so severe as to make this proposed development inappropriate and unworthy of approval. Even with the most optimistic mitigation measures in place, a number of intersections at major entry points to the proposed development will operate at Level of Service "F" (fail), with delays of between 100 seconds and more than 800 seconds (13 minutes!).

DSEIS chapter 21 also describes circumstances in which very severe traffic impacts caused by the proposed development (described within DSEIS chapter 14) are completely reversed by the recommended hypothetical mitigation. We think it is dangerous to trust this self-serving mitigation report.

First, DSEIS chapter 21 (the mitigation report) quietly states: "The effectiveness and feasibility of proposed mitigation measures will be further assessed between the draft and final SEIS" (page 21-2).

In other words, no one is committing to the "effectiveness" and "feasibility" of the specific mitigation measures that are being touted now to decision-makers, and which so miraculously improve traffic conditions. Rather, a future, final version of the mitigation report may conclude that all or some of the recommended mitigation measures are simply not effective, or even "feasible" – in which case improvements in traffic flow shown in the present mitigation report will **not** occur, and those impacts may instead be unmitigated.

How can anyone rely upon a report that cannot vouch for even the "feasibility" of the alleged solutions that it presents?

How can the report represent that certain mitigations are essential – without knowing if they are even feasible?

Second, per the mitigation report, some of the recommended mitigations are "measures that may call for detailed review by both NYCDOT and NYSDOT and which represent preferred improvements that would benefit the overall traffic network. As discussed above, if these mitigation measures are modified or rejected by the review agencies, significant adverse impacts identified above would be **unmitigated**" (emphasis added; page 21-29).

In other words, achieving the vastly improved traffic flows described in the mitigation report requires measures that NYCDOT and NYSDOT have not yet reviewed or approved, and which they may eventually reject. At the present time, no one can guarantee that any such mitigation measure will actually be implemented.

Please refer to the analysis of WPU's traffic engineer, Brian Ketcham, submitted together with my written testimony at the public hearing held on July 10, 2013, to understand the severity

of the actual traffic impacts of the proposed project. DSEIS chapter 14 also sets forth what the traffic impacts of the proposed project will be, in the event that mitigation measures cannot be implemented or turn out to be ineffective.

(7.) The Commission has bent its rules to accommodate immediate proxy testimony in favor of the proposed development, while enforcing its rules and delaying proxy testimony opposed to the proposed development.

At the public hearing pertaining to the proposed Willets Point development held on August 13, 2008 – during a section of that hearing dedicated to testimony in opposition to the proposed project – the name "Kevin Loyst" was called to testify. In place of Kevin Loyst, a person named Kevin Phillips came to the podium, identified himself, and stated that he was "here to speak on behalf of Kevin Loyst, who's a colleague" who had to depart the hearing after several hours.

Commission Chair Amanda Burden prohibited Kevin Phillips from testifying at that time as a proxy for Kevin Loyst, telling Phillips unambiguously: "You have to sign up on your own. It's a rule, we have to do – You can't substitute for somebody else. Sorry. So if you just sign up on your own. ... Just sign up on a new card. **You have to sign up for yourself. You can't substitute for somebody else.** ... We will definitely call you, later."

Kevin Phillips then left the podium, and the Commission called a different speaker.

We would have expected consistent enforcement of the Commission's rules at the public hearing recently held on July 10, 2013, when – during a section of the hearing dedicated to testimony in favor of the application – the name "Dan Hendrick" was called to testify, and an unidentified person who was not Dan Hendrick came to the podium. The unidentified person stated that he was "actually here on behalf of Dan Hendrick, who is the V.P. for the New York League of Conservation Voters".

Neither Commission Chair Amanda Burden nor any other Commission member stopped this unidentified person from testifying "on behalf of Dan Hendrick", or enforced the Commission's strict rules that "you have to sign up for yourself" and "you can't substitute for somebody else". The unidentified person proceeded to deliver testimony as a proxy for the absent Dan Hendrick, in favor of the application.

The Commission has treated unequally those who would provide proxy testimony opposed to the Willets Point development, versus those who would provide proxy testimony in favor of the Willets Point development. Kevin Phillips, who was opposed, was relegated to filling out a new speaker's card and beginning the long wait to testify, again; whereas the unidentified person who appeared on July 10, 2013, who was in favor of the application, was welcomed and testified immediately.

WPU intends to post video recordings showing the Commission's unequal treatment of the two above-described speakers on our YouTube channel

(<http://www.youtube.com/user/WilletsPoint>) by Monday, July 22, 2013.

The ULURP process must be neutral and devoid of any such bias. It is no less appropriate that a proxy speaker in favor of the Willets Point development be given a special privilege, than it is that the City should fund an unlawful lobbying scheme to influence decision-makers to approve the project. Both of those tactics, and many others, large and small, have been leveraged by powers-that-be against Willets Point property and business owners – and the WPU membership will not tolerate it.

(8.) The application has significant opposition and virtually no public support.

Significantly, during the public hearing held on July 10, 2013, **no one** from the public ever requested that the Commission approve the pending ULURP application so that they may shop at a Willets West mall built on parkland, park their vehicle on Willets Point phase one property, use a golf driving range at Willets Point during the Mets off-season (i.e., during wintertime), or do anything else that is associated with the ill-conceived, unwanted Sterling/Related project. Indeed, there was a very obvious lack of public enthusiasm for this proposed project during the Commission's public hearing.

Testifiers opposed to the Sterling/Related application outnumbered those in favor. And it must be noted that those in favor merely consisted of NYCEDC employees, AKRF employees, developers' attorneys, and one union member. Simply put, there is virtually no public support for the project which the ULURP application would enable.

(9.) The DSEIS relies upon plainly inaccurate "No Action" baseline conditions.

The DSEIS states: "For the purposes of a conservative impact disclosure, this SEIS assumes that the **existing uses on the project site would be maintained** in each of the three No Action scenarios" (emphasis added; page 1-12).

However, that assumption is inaccurate, for at least two reasons:

First, the City intends, and is already taking steps, to evict tenant businesses that operate throughout the Willets Point phase one property. Tenant businesses are receiving telephone calls from representatives of the New York City Department of Housing Preservation and Development, informing the businesses that they will receive written vacate notices after July 22, 2013. That the City is issuing vacate notices even before obtaining any approval from the Commission or from the City Council that would enable the Sterling/Related proposal to proceed, indicates that the City intends that the tenant businesses vacate the phase one site, regardless of whether the pending ULURP application is approved or any development ever occurs.

The City cannot inform tenant businesses that it will evict them, and proceed to do so, while falsely assuming in the DSEIS exactly the opposite – that "existing uses on the project site would be maintained". Rather, the text of the SEIS must reflect the reality of the circumstances

in the Special District, and the intention of the City. If it does not, then the SEIS is inaccurate.

Moreover, the City has not disclosed what will become of the City-owned Willets Point property in the event that the City's proposed Willets Point development does not occur, but it must do so now in order to ensure an accurate SEIS analysis.

Second, the SEIS must account for the likely future effects of the newly-installed sanitary and storm water sewer lines along 126th Street directly adjacent to Willets Point property, which will be complete by the time the SEIS is finalized, or shortly thereafter.

Whereas during 2008 when the FGEIS was prepared no new sewer main lines actually existed at Willets Point, that is not the case now at the time that the SEIS is being prepared. The existence of the long-sought sewer lines is a significant change in background conditions affecting the entire Willets Point site. All "no action" scenarios described in the SEIS must take into account the likelihood that some existing Willets Point property owners will seek to connect to the new sewer main lines, especially as doing so would facilitate the development of their properties which they have consistently said time and again they would do, if sewer lines existed. It is inconceivable that the sewer lines, having been installed, will not be used.

As part of the SEIS analysis, the City must assess what owner-development would likely occur, even "without action" on the part of the City, now that the sewer main lines exist. The conclusion cannot be that "no change" would be made to any portion of the project site, and that "the existing uses on the project site would be maintained". The sewer lines are bound to inspire changes, and the City is responsible for assessing what those changes might be, as part of the SEIS analysis. That analysis should include outreach to all Willets Point private property owners, to discuss whatever intentions they may have to connect to the sewer systems and enhance the uses of their properties beyond those existing today, in the event that the City's proposed Willets Point development does not occur. To presume that nothing about the area will change despite the presence of the long-sought sewer lines, is to severely underestimate the ambition of the private property owners; and guarantees an inaccurate SEIS analysis.

(10.) More tenant businesses are impacted than the Commission has been led to believe.

The public hearing on July 10, 2013 included testimony from representatives of the Sunrise Cooperative, an association of approximately 60 tenant businesses that are seeking to relocate together (co-locate) in a group or groups. It is our understanding that some of those 60 businesses are located within Willets Point but beyond the 23-acre phase one area that would be affected if the present Sterling/Related plan proceeds.

In the recent eminent domain court case pertaining to a first phase of Willets Point property that was substantially similar to the phase one that is presently contemplated, the City's "Response to EDPL Comments" dated May, 2011 acknowledged that 139 auto related businesses in the first phase would be displaced.

Accordingly, it is important to recognize that the majority of tenant businesses to be

displaced by the present plan are **not** members of the Sunrise Cooperative, and that even if all 60 businesses that are Sunrise Cooperative members would be successfully relocated (and there is no indication that they will be), there are still 79 or more other business within the phase one area – in fact, the majority of affected businesses – that would still need to be relocated, and that would **not** be helped by any Sunrise Cooperative plan.

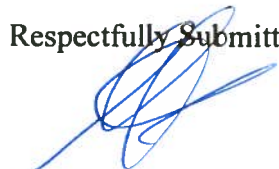
The 79+ businesses that are not members of the Sunrise Cooperative for whatever reason (for example, because they decline to pay the membership dues charged by Sunrise Cooperative) are just as dependent upon co-location for their future survival as are the members of the Sunrise Cooperative. A City administration that is truly interested in preserving businesses, jobs and livelihoods would implement a co-location plan that treats all affected businesses equally, instead of favoring a subset of businesses that have joined a particular group; and would not pretend that other businesses do not also need co-location.

Even as City representatives have told the Commission that the tenant businesses will be relocated, the tenant businesses are receiving telephone calls from representatives of the New York City Department of Housing Preservation and Development, informing the businesses that they will receive written vacate notices after July 22, 2013. At the public hearing held on July 10, 2013, a Commissioner remarked that "we don't understand" why the City would send any such letters now, especially considering that the project for which the property would be needed has not yet been approved. The City presumptively sending vacate notices to tenant businesses indicates a disrespect for the decision-making authority of the Commission and the City Council, and confirms that the City's priority is to see the approximately 139 businesses gone from the phase one site, regardless of whether this application is approved or any development ever occurs.

That is a far cry from the Commission's suggestions, during the 2008 public hearing for the proposed Willets Point development, that the Willets Point businesses should be relocated elsewhere together, as the City did for the Fulton Fish Market businesses and in other cases.

For all of the foregoing reasons, the ULURP application of Sterling/Related is inappropriate and should be denied.

Respectfully Submitted,



Gerald Antonacci
On behalf of Willets Point United Inc.

4 enclosures

Attachment A



Community Board 7

Borough of Queens

Bay Terrace, College Point, Beechhurst, Flushing,
Malba, Queensborough Hill, Whitestone and Willets Point

133-32 41st ROAD • 3rd FLOOR • FLUSHING, NY 11355

(718) 359-2800

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Helen Marshall
Borough President

Barry Grodenchik
Deputy Borough President/Community Boards

Eugene T. Kelty, Jr.
Chairperson

Marilyn Bitterman
District Manager

PUBLIC HEARING AND REGULAR MEETING

DATE: MONDAY, MAY 13 2013

TIME: *** 7:00 P.M. SHARP ***

PLACE: UNION PLAZA CARE CENTER
33-23 UNION STREET, FLUSHING

A G E N D A

- | | |
|---|------------------|
| 1) Pledge of Allegiance | 7:00 - 7:05 P.M. |
| 2) Roll Call Attendance | 7:05 - 7:10 P.M. |
| 3) Announcements From The Chair | 7:10 - 7:25 P.M. |
| 4) Approval of the Minutes - March 11, 2013 | 7:25 - 7:30 P.M. |

PUBLIC HEARING

- 5) **WILLETS POINT REDEVELOPMENT – ULURP APPLICATION #C 130223 ZSQ - To allow for a 1.4 million square foot retail and entertainment development known as “Willets West”**

CHARLES APELIAN

7:30 – 9:30 P.M.

REGULAR MEETING

- 6) **Public Participation** – Community should sign up for speaking time. Sign up sheets will be available the evening of the meeting. 9:30 – 10:30 P.M.

REGULAR MEETING – The public is invited for information purposes only, not to participate in the discussion.

PUBLIC HEARING – Please sign up for speaking time in advance of the meeting. Sign up sheets will be at the back of the room. All speakers must respect the 3-minute time limit. Presentation will first be made by the applicant or Board Committee. Civic Associations are responsible for notifying their communities. Smoking is not allowed in the auditorium.

A sign language interpreter is available upon request. Please call the Community Board Office on or before May 6, 2013 at 718-359-2800. The next scheduled Public Hearing is Monday, June 10, 2013.

TIMES ARE APPROXIMATE.

Attachment B



Urban Justice Center

123 William Street, 16th Floor, New York, NY 10038
Tel: (646) 602-5600 • Fax: (212) 533-4598
www.urbanjustice.org

May 14, 2013

Jesse Masyr
Wachtel, Masyr, and Missry LLP
One Dag Hammarskjold Plaza
885 Second Avenue
New York, NY 10017

Ross Moskowitz
Stroock, Stooch, and Lavan LLP
180 Maiden Lane
New York, NY 10038

Re: Willets Point Development ULURP

Jesse and Ross:

We write to you regarding your client's pending ULURP application, which we believe to be fatally flawed. As the site of the potential redevelopment is part of Flushing Meadows Corona Park, it is covered by New York State's public trust doctrine. That doctrine prevents the use of parkland for non-park purposes unless it has been alienated pursuant to an appropriate state statute:

[D]edicated park areas in New York are impressed with a public trust for the benefit of the people of the State. Their use for other than park purposes, either for a period of years or permanent, requires the direct or specific approval of the State Legislature, plainly conferred.

Friends of Van Cortlandt Park v. City of New York, 95 N.Y.2d 623, 631-32 (N.Y. 2001).

The 1961 law which authorized the construction and financing of Shea Stadium on the lot that your client currently is seeking to redevelop, and which supporters of the redevelopment have cited as providing sufficient authority for the plan, does not explicitly allow the alienation of the parkland upon which the stadium was built. NYC Administrative Code 18-118. The statute also does not specifically refer to the alienation of the parkland in question; nor does it provide for replacement parkland or restitution, as do alienation statutes generally. See New York State Office of Parks, Recreation and Historic Preservation, *Handbook on the Alienation and Conversion of Municipal Parkland in New York*, at 27 (revised March 2012). For this reason alone, Administrative Code 18-118 is insufficient to support the proposed project and the state must pass additional legislation before any redevelopment of this land moves forward.

Even if Administrative Code 18-1118 were sufficient legislative action to alienate the Flushing Meadows Corona parkland in question, the statute does not provide specific authorization for the city's contemplated use today: a shopping mall. New York courts have long held that legislative action permitting alienation of parkland and setting forth the permitted uses must be plain and explicit. As the New York Supreme Court Queens County made clear over a half-century ago in *Aldrich v. City of New York*:

It has been held that legislative authority permitting encroachment upon park purposes must be "plainly conferred." (*Williams v. Gallatin*, 229 N.Y. 248, 253.) When speaking of the legislative authority to alienate public parks, language varying only slightly has been used. Some have said that the legislative authority must be "special" others, that such authority must be "specific" ... or "direct" or "express" Add to the foregoing the well-settled rule that "When there is a fair, reasonable and substantial doubt concerning the existence of an alleged power in a municipality, the power should be denied" (*Matter of City of New York [Piers Old Nos. 8-11]*, 228 N.Y. 140, 152), and it seems clear that the legislative authority required to enable a municipality to sell its public parks must be plain.

208 Misc. 930, 939 (N.Y. Sup. Ct., Queens Cty. 1955).

Administrative Code 18-118 *does not* permit the city to sell or lease the parkland at issue to construct a mall, let alone authorize such activity plainly or expressly. Rather, its very title indicates its express intent: "Renting of stadium in Flushing Meadow". In furtherance thereof Subsection 118(b) sets forth two groups of permitted uses for the land. The first states as follows:

(1) for any purpose or purposes which is of such a nature as to furnish to, or foster or promote among, or provide for the benefit of, the people of the city, recreation, entertainment, amusement, education, enlightenment, cultural development or betterment, and improvement of trade and commerce, including professional, amateur and scholastic sports and athletic events, theatrical, musical or other entertainment presentations, and meetings, assemblages, conventions, and exhibitions for any purpose, including meetings assemblages, conventions and exhibitions held for business or trade purposes, and other events of civic, community and general public interest . . .

Subsection (2) states that the land may also be used "for any business or commercial purpose which aids in the financing of the construction and operation of such stadium, grounds, parking" and other permitted uses set forth in subsection (1).

May 14, 2013

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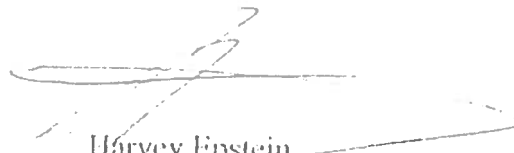
Although a shopping mall is a "business or commercial purpose" contemplated by subsection (2), it has not been proposed that any of the proceeds from the venture would aid in the financing of the other endeavors currently located on the applicable parkland. Indeed, all of the provisions of the 1961 Act addressing financing for Shea Stadium (a stadium, we might add, that no longer exists) are obsolete today. Likewise, the contemplated commercial use does not fall under the more narrow range of uses outlined in subsection (1) of the provision. That subsection requires that any proposed use of the land provide *all* of the following benefits to the "people of the city": "recreation, entertainment, amusement, education, enlightenment, cultural development or betterment, and improvement of trade and commerce." (emphasis added). The legislators undoubtedly could have used the term "or" rather than "and" when walking through the scope of permitted uses, but they choose not to do so.

The mall that has been proposed to fill the Citi Field parking lot does not provide any of the benefits contemplated by the statute, let alone all of them. The only language in subsection (1) that even remotely suggests your client's contemplated use is that which allows uses that "promote" "improvement of trade and commerce." However, that language plainly assumes that the contemplated use would *not* be trade or commerce itself. This assumption is further supported by the long list of explicitly contemplated uses in the subsection, a list which includes "professional, amateur and scholastic sports and athletic events, theatrical, musical or other entertainment presentations, and meetings, assemblages, conventions, and exhibitions for any purpose, including meetings assemblages, conventions and exhibitions held for business or trade purposes." Wholly commercial uses—such as a shopping mall—are absent from the provision.

Further, if the state had intended subsection (1) to cover all forms of trade and commerce, such as a shopping mall, it easily could have included the phrase "any business or commercial purpose" in that subsection, as it did in subsection (2). To read the two differently-worded phrases as permitting the same range of activities, however, would essentially be to make subsection (2) entirely superfluous. Norms of statutory construction prevent such a result. *See, e.g., Cohen v. Lord, Day & Lord*, 75 N.Y.2d 95, 100 (N.Y. 1989) ("Words are not to be rejected as superfluous where it is practicable to give each a distinct and separate meaning."). Therefore, there is simply no basis to read the phrase "improvement of trade and commerce" to cover the contemplated shopping mall.

In light of the above arguments, we are confident that the ULURP, as presented jointly by your client and the EDC, would not withstand judicial scrutiny. Accordingly, we urge you not to attempt to move forward as currently contemplated.

Sincerely yours,



Harvey Epstein
Associate Director

May 14, 2013
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Cc: Seth Pinsky, President NYC Economic Development Corporation
Council Member Julissa Ferreras

Attachment C

**DEVELOP WILLETS POINT,
WITHOUT ADDING A HUGE MALL ON 30+ ACRES OF PARKLAND,
AND WITHOUT EXPANDING THE DEVELOPMENT FROM 62 TO 108.9 ACRES?
THAT'S EXACTLY WHAT THREE OTHER DEVELOPER FIRMS PROPOSED TO DO!**

**THE CITY REJECTED THOSE PROPOSALS –
IN A SELECTION PROCESS THAT SHUT OUT CB7,
DESPITE PROMISING CB7 IN WRITING THAT IT WOULD PARTICIPATE.**

Sterling/Related, and their expanded plan which adds the 1.4 million square foot
"Willets West" mall on parkland, were designated by the City administration.

Here are the three proposals that required no parkland mall and no expansion of the project –
and which CB7 was denied the opportunity to participate in evaluating:

Macerich



Features:

- "A True Retail Destination"
- Food & Beverage
- Entertainment
- Housing
- Hotel
- Public Open Space
- Parking
- "A Model Green Community"

Silverstein Properties, Inc. and Taubman Centers, Inc.



Features:

- "Entertainment Corridor & Urban Room"
- 126th Street Retail
- Restaurant Row
- Neighborhood Retail Street
- Eco-Promenade
- 100 percent affordable housing (400 units)
- "A Model Sustainable Community"

TDC Development and Construction Corp.



Features:

- "World Trade Center Queens"
- Hotel
- Restaurant
- Trade Mart
- Convention Center
- Retail Complex
- Entertainment District
- Office Building
- Neighborhood Park

Among the reasons given for rejecting those proposals:

- "Would have required public subsidies." – And yet, Sterling/Related are set to receive public subsidies worth nearly half a billion dollars: 23 acres of Willets Point Phase One property, worth more than \$200 million, for the price of just \$1; a capital grant in the amount of \$99 million to cover numerous project costs, including remediation; and \$20 million in sales tax exemption.
- "Would have required rezoning." – Really? Perhaps rezoning the Willets Point Phase One property would have been preferable to expanding the project to 108.9 acres and adding a 1.4 million square foot mall to be constructed on parkland, with increased traffic impacts. Had CB7 been allowed to participate in developer selection as was promised, it could have expressed a preference to proceed with rezoning instead of expanding the project and sacrificing parkland to include a huge mall, with its untenable traffic impacts.

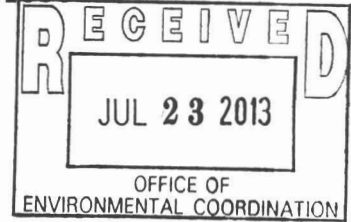
Development of Willets Point need not depend on constructing a mall on 30+ acres of public parkland, and need not expand beyond the boundaries of the 62-acre Special District established in 2008.

Deny the present application of Sterling/Related. Make the City publish a new Request for Proposals, and insist that the City fulfill its written commitments to include CB7 in the developer selection process. In that way, CB7 can do its part to ensure that proposals of all developers – not just those who have special access to property beyond the boundaries specified within an RFP – are fairly considered.

Attachment D

The commenter attached the developer Request for Proposals responses as Attachment D.

Willets Point United Inc.
P.O. Box 560191 • College Point, New York 11356



July 19, 2013

Robert R. Kulikowski, Ph. D.
Mayor's Office of Environmental Coordination
100 Gold Street, 2nd Floor
New York, New York 10038

Re: **Proposed Willets Point / Willets West development**
CEQR No. 07DME014Q
Comments pertaining to DSEIS

Dear Dr. Kulikowski:

Attached hereto please find the following materials, all of which constitute and are hereby submitted to you as comments on the above-referenced Draft Supplemental Environmental Impact Statement pertaining to the proposed Willets Point / Willets West development:

- Testimony, comments and attachments thereto originally submitted to the New York City Planning Commission during the public hearing that you attended on July 10, 2013, including a 12 page report on the topic of traffic authored by Brian T. Ketcham, P.E. and its associated exhibits;
- Supplemental written testimony and attachments thereto dated July 19, 2013.

Respectfully Submitted,

A handwritten signature in black ink, appearing to be "G. Antonacci", written over a horizontal line.

Gerald Antonacci
On behalf of Willets Point United Inc.

2 enclosures

Testimony of Gerald Antonacci
at public hearing of City Planning Commission
re: proposed Willets West mall / Willets Point development
July 10, 2013

Hello. I'm Gerald Antonacci, the owner of Crown Container Company and a member of Willets Point United.

Let's get one thing straight: The ONLY reason there's an application to put a parking lot at Willets Point, is to accommodate building a 1.4 million square foot shopping mall on parkland located next to Citi Field. The effect of this application – if approved – is to allow that mall to be built.

At the review session on Monday, a commissioner mentioned that perhaps Sterling and Related need the profits from the mall, to pay the cost of remediation at Willets Point. That is totally incorrect, because there is a \$99 million dollar grant of taxpayer funds to Sterling and Related that they will use to pay for remediation. Make no mistake: Any profits from the mall go straight to Sterling and Related, and remediation does NOT depend on the mall because WE are paying for it.

The entire proposal of Sterling and Related is a bad idea for the following reasons:

UNNECESSARY MALL IS PRIORITIZED

We don't need any shopping mall at that location. If one is built, it will destroy existing shopping districts in Corona and Jackson Heights.

PARKLAND SACRIFICE: 30+ ACRES

Building a shopping mall on public parkland is not appropriate.

TRAFFIC NIGHTMARE

Even with the hypothetical mitigation measures in place, there will be very severe traffic impacts – including gridlock conditions at local intersections. From the developer's own mitigation report (DSEIS chapter 21): Delays of 821 seconds, 273 seconds and 226 seconds – even WITH the most optimistic mitigation measures in place.

Meanwhile, the report does not even guarantee the "feasibility" or "effectiveness" of the recommended mitigation measures – but proceeds to rely on them.

Back in 2008, the City Planning Commission's report noted that the city would "monitor" traffic impacts of this development. But when people are frozen at intersections during the project's 821 second delays, what difference will it make if the city is "monitoring" those delays? At what point, as city planners, do you wake up and say, "This will not work?"

For more detailed information, see the report of engineer Brian Ketcham that is attached to this testimony.

NO VAN WYCK EXPRESSWAY RAMPS

Despite all the talk about new access ramps to and from the Van Wyck Expressway, the project contract specifies that, "for the avoidance of doubt, in no event shall EDC or the City be required to construct the Ramps as part of the development". And without those ramps, ONLY Phase 1A (essentially, the mall) can be built.

NO HOUSING

Housing and affordable housing were touted as the linchpins of this project during 2008. But their construction is being delayed until the year 2025, while the mall is prioritized instead. There's also a contractual "out" clause, allowing Sterling/Related to pay a "cost-of-doing-business" penalty and then build NO housing. In addition, NO housing can be built unless the Van Wyck ramps are built first – but no one is obligated to build the ramps. The developers and the city have deliberately structured their contract to prioritize the mall, while delaying the housing and not ensuring that the ramps – which are prerequisites for the housing – will ever be built. That is tantamount to eliminating the housing.

COSTS SHIFTED TO TAXPAYERS

Contrary to what the City Council was told during 2008, the city will not recoup the value of the Willets Point Phase One property – in excess of \$200 million – but instead, will give it to Sterling/Related for the price of \$1 (one dollar). Also contrary to what the City Council was told, remediation and other costs will not be paid by the developers, but by the taxpayers – as Sterling/Related will receive a \$99 million grant of taxpayer funds, to cover their development costs.

REMEDATION CHARADE

Several weeks ago at community board 7, Sterling/Related and the city were challenged to produce any scientific reports proving the existence of alleged hazardous contamination at Willets Point. Given that the city claims to own over 90 percent of Phase One property, the city is certainly able to conduct tests on that land. Not only did Sterling/Related and the city not produce any such report, but for several years the city has rented Phase One properties to scores of tenant businesses – which the city could not do, if the area was actually hazardous to anyone. Significantly, Dr. James Cervino – a geochemist who is affiliated with the Woods Hole Oceanographic Institution and is also Chair of the CB7 environmental committee – voted to DENY this Willets West mall / Willets Point development application. If there really was an urgent need to remediate any hazardous contamination at Willets Point, a scientist such as Dr. Cervino would be expected to have approved this application instead of rejecting it.

EMINENT DOMAIN ABUSED FOR PRIVATE ENRICHMENT

43 states other than New York have enacted laws to prohibit or curtail the use of eminent domain for economic development. Last year, the U.S. House of Representatives passed a bill that would cancel federal economic development funds to any state where eminent domain is used for economic development. The rest of the country and Congress have sided with property owners on this, and it is Mayor Bloomberg and the city administration that are out on a limb and using inappropriate, un-American tactics for this project.

Is it any wonder that there is strong public opposition to this application?

The Queens Civic Congress, an umbrella group representing more than 100 Queens civic organizations, has issued a letter opposing this application.

Queens Community Board 7 initially DENIED this application in its committee by a vote of 7-2, then the full board later approved it by a narrow margin of 22-18 only after arm-twisting by the city.

Community Board 3 also held a public hearing and voted pursuant to ULURP, with a near-unanimous vote of 31-1 to DENY this application. They do not want the mall on parkland, and they reject the developers' claim that a mall will not impact existing shopping districts.

Please reject this application. Let the city issue a new RFP, and let the respondents conform to the parameters and goals of the project that was approved during 2008.

Finally, please use your own judgment and conscience to decide this application – not favoritism to Mayor Bloomberg or anyone else who appointed you to the Commission.

**“For the avoidance of doubt,
in no event shall EDC or the
City be required to construct
the Ramps as part of the
Development.”**

– Contract Section 3.3

APPROVE THIS PROJECT ???

- ✓ **Unnecessary Mall Prioritized**
- ✓ **Parkland Sacrifice: 30+ acres**
- ✓ **Traffic Nightmare**
- ✓ **No Van Wyck Expressway Ramps**
- ✓ **No Housing**
- ✓ **Clever Contractual “Out” Clauses**
- ✓ **Costs Shifted to Taxpayers**
 - ✓ **PROPERTY GIVE-AWAY: 23 ACRES FOR \$1**
 - ✓ **\$99 MILLION GRANT TO STERLING/RELATED**
- ✓ **Remediation Charade**
- ✓ **Eminent Domain Abused for Private Enrichment**

Queens Civic Congress

Testimony Concerning Proposed Willets Point West Mall at Flushing Meadows Corona Park

June 6, 2013

The Queens Civic Congress is an umbrella organization consisting of over 100 civic associations throughout Queens. The Congress has been active with the Flushing Meadows Corona Park Conservancy, the Fairness Coalition of Queens, and Save Flushing Meadows Corona Park over the past several months. The Congress has in the past and remains adamantly opposed to any further commercial development in the Park. The Queens Civic Congress Platform, entitled Civic 2030, adopted and endorsed by the full Congress in 2008 and ratified by resolution in December 2012, includes the following statements:

15. Support the Flushing Meadows Corona Park Conservancy.
16. Protect Flushing Meadows Corona Park from any further commercial and corporate exploitation.
17. Impose a moratorium on all new construction/development of non-public-benefit projects in Flushing Meadows Corona Park pending completion of a Master Plan by a Commission that has public members.

Flushing Meadows Corona Park is the largest park in Queens and ought to serve as the flagship park in Queens, but instead has become the dumping ground of last resort for placing any project that no other area will accept. While we gladly accept the long standing cultural facilities such as the Queens Museum and Theater and Hall of Science and Zoo, the more recent move of the US Tennis Center and US Tennis Open to the park and its recent expansion has been a serious encroachment on precious parkland that could and should be enjoyed by residents of Queens. CitiField has taken additional acres of public land on a deal that benefits only the Mets owners with very little direct financial benefit to the City and no benefit to Queens or to the Park. The parking lots surrounding the stadium sit on parkland and any change in use should be subject to alienation requirements. As parking lots they could be easily removed and returned to public use.

But the introduction of a massive steel and concrete, brick and mortar mall to these western parking lots would permanently destroy what the community should enjoy as a public park amenity. In addition to removing forever land that could be used by the thousands of nearby residents, the mall would destroy hundreds of nearby "mom-and-pop" businesses, small boutiques and restaurants in surrounding neighborhoods and would introduce significant and possibly devastating competition to existing, struggling malls, such as the beautiful Atlas Park Mall in Glendale and even Queens Center Mall.

Queens Civic Congress and fellow organizations believe that FMCP has been intentionally neglected by the City by providing inadequate maintenance budgets and minimal capital improvements over decades, resulting in a untidy and disorganized park. None-the-less, the Park serves as the backyard to tens of thousands of working class and middle income workers from nearby neighborhoods. The lack of upkeep seems to justify to the city its ability to propose commercial and corporate projects such as a Major League Soccer Stadium, the tennis center and this mall. Despite the terrible condition of the Park, on this Memorial Day there was not a square inch of space available to put down a blanket or park a car.

People with barbeques and badminton, boom boxes and soccer were everywhere enjoying the outdoors space that is not available on their blocks.

If, as the City is proposing, the CitiField parking lots could be repurposed, the space could better be used by the people for additional picnic and recreation space, not for stores and movie theaters that have questionable demand and little or no access. There is no pedestrian traffic nearby to support a mall and residential development plans for Willets Point remain unclear and far in the future.

Queens Civic Congress urges the Borough President to oppose this project unequivocally. Willets Point West is an unjustified, unnecessary and inexcusable abuse of the City's land use powers. We believe that the project is also in violation of parkland alienation regulations and should be reviewed by the State. The justification to avoid these regulations seems to be that a lease agreement provides to a private entity unrestricted use of the land, but we contest that a lease could supersede contradictory parkland alienation legislation.

Borough President Marshall, please continue to make your permanent and lasting mark on Queens by preserving open space at Flushing Meadows Corona Park and just say "No."

Richard C. Hellenbrecht, President

president@gccnyc.org

347-722-1872

Queens Community Board 3
on the Willets West mall / Willets Point development

Public hearing and vote held May 23, 2013

Blog post of Willets Point United Inc., including transcription of resolution adopted by CB3:

Queens Community Board 3 nixes Mets mall

By a wide margin of 30-1 (plus 1 abstention), CB3 voted on Thursday night to disapprove the proposed "Willets West" mall / Willets Point development. The landslide vote endorsed the earlier recommendation, on Tuesday night, of several CB3 committees, and took place after a public hearing on the matter. Reasons for CB3's disapproval include the project's huge and unaddressed traffic congestion and related negative impacts, failure to prioritize housing and a school, overcrowding of subway and bus lines as a consequence of the project, and disregarding the Advisory Committee and Queens officials when selecting the plan and the developers. CB3 concluded: "The proposed project would change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses."

Likely aware of the committees' Tuesday recommendation to disapprove the project, no representative of developers Sterling Equities and Related Companies, or the city, bothered to attend the Thursday night public hearing.

Although CB7 voted last week to approve the same development project by a very slim margin of 22-18 (notoriously, after the CB7 committee had rejected it the week before by a vote of 7-2), the city's Uniform Land Use Review Procedure ("ULURP") entitles other affected community boards to also evaluate a land use application that "may significantly affect the welfare of the district or borough served by such board". CB3 has exercised that right, and decided to disapprove the application. So at the moment, the Willets West mall / Willets Point development has been approved by CB7 by a very slim margin, and rejected by CB3 almost unanimously. ULURP does not give any greater weight to any particular community board's recommendation – so both boards' recommendations must be equally considered by the next decision-makers.

Donovan Finn, a former CB3 member and university professor who teaches urban planning, urban policy and environmental design, stated during the public hearing: "There are too many holes in this contract. It is completely designed to make Related and the Wilpons be able to build their mall, build their new parking lot, do a few nice things along the edges of the development, and if they choose – to pay what for them will be a piddly amount of money and walk away. The affordable housing will never get built. ... I'm not a psychic, but that's the future I

see. This is not just a vote against a really bad plan, which it is, I think. Something will happen on that site – It just should be something better; it should be something that whoever builds it should come and ask us what we need, and what we think should be there, instead of just deciding and telling us that it's in our best interest."

The CB3 Chairperson, Marta Lebreton, read the following statement prior to the board's vote on Thursday night:

"I'm going to read the recommendation that was made on Tuesday night. ... ULURP section 203, item (g.), allows for the review and vote on actions not in a community district. Willets Point may be geographically located within Community Board 7, but the proposed action will directly impact more than 250,000 residents in Community Board 3. Our board is merely a couple of blocks from the site, and therefore any and all actions that take place at Willets Point will directly impact the residents of our board.

On Tuesday, May 21, 2013, Community Board 3 convened a joint committee meeting of the business, economic development, parks, land use and traffic/transportation [committees] to review the Willets Point redevelopment project, which includes 'Willets West' [mall] and the Willets Point Special District. After careful review of the proposal, the committee concluded that the plan in its present form be disapproved.

Community Board 3 Queens is opposed to constructing a mall on mapped public parkland; the demolition of the Empire Millwork Corporation building – a historic site listed in the state and national registries; and the proposed development schedule. The plan calls for soil remediation of 23 out of 62 acres of the proposed site, which will be in Phase One of the project. The anticipated completion date would be 2018, when retail and hotel space would be constructed. Affordable housing and the construction of a school would not come until 2028 – ten years later, in Phase 1B. The aforementioned school and housing should be included in the first phase.

The impacts that are not addressed in the current proposal are:

Traffic: Although a commitment was made to provide \$1.87 million to establish an infrastructure and traffic mitigation fund for traffic improvements, there was no mention of how traffic congestion would be mitigated in Community Board 3 Queens, particularly at 114th Street, Astoria Boulevard, 34th Avenue, Roosevelt Avenue and Northern Boulevard.

Transit and pedestrians: Community Board 3 Queens will be impacted by the increase of ridership on the subway line number 7 and the bus lines of Q48, Q66 and Q19.

Public health concerns: Community Board 3 Queens has been identified as one of the districts that has the highest incidence of asthma and other respiratory ailments. The applicants report that the increase in traffic would have no impact on Community Board 3 Queens. The increase in traffic volumes will surely adversely affect our fragile constituents. The committee strongly recommends that a complete environmental cleanup on all the acres in Willets Point be conducted, not just in the Special District. Further, cleanup of Flushing Bay and installation of a new sewer system so that Flushing Bay will no longer remain a dumping ground.

Environmental and social justice: The current plans do not consider our community needs, nor acknowledge the impact the proposed plan will have on the commercial and residential displacement of our most vulnerable residents in Community Board 3 Queens.

In conclusion, the Willets Point proposal – the city's largest development project in this section of Queens: The impacts of this major undertaking will affect not only the residents of Community Board 7, but all of the surrounding board areas. In July, 2008, the Borough President's recommendation approved the application with the condition that the Willets Point Advisory Committee be comprised of the Queens Borough President, local elected officials, representatives from Community Boards 3, 4 and 7, and other community leaders, should be continued for the duration of the project, including during developer selection, construction, implementation and all other phases of the Willets Point development. We strongly suggest that the Borough President's recommendation be complied with. Community Board 3 Queens recommends that the application be disapproved as presented. The proposed project would change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses. That is the recommendation of the committee. Do I have a motion – a motion is on the floor. Do I have a second? Okay. Any discussion? Okay; we're going to call the question. The motion on the floor, seconded by Ed Westley, is to disapprove the application as presented. And we are going to include everything that I read."

A "Yes" vote is for denial.

Vote tally: 30 "Yes" [for denial of the application]; 1 "No"; 1 abstention.

[End.]

Land deal shameful steal

ONLY in Michael Bloomberg's New York are we asked to believe that giving away huge swaths of city-owned land to millionaires is a wonderful deal.

The mayor announced Wednesday that the city had selected the Wilpons, of the Mets and Sterling Equities, and Steve

Ross of The Related Companies, to develop 23 acres of land in the Willets Point redevelopment area in Queens.

The Wilpon-Ross partnership, Queens Development Group, will be handed this land completely free of charge, so it can build its own new retail, entertainment and hotel complex adjacent to the Mets' Citi Field.

Yes, free land, even though the city is on track to spend nearly \$500 million buying that very land from scores of industries and auto repair firms that operated there for decades, putting in new sewer lines, and erecting new Long Island Expressway ramps. Freeland, even though

Queens Development has committed to developing only one-third of the entire 60-acre Willets Point project City Council approved back in 2008.

Queens Development won't even have to begin construction on a single unit of residential housing — part of the original lure of the project — until 2025.

"How do you give away 23

acres of land for nothing?"

Jerry Antonacci wants to know. He has run Crown Container, a waste hauling and recycling plant in Willets Point for nearly

40 years and has been battling the city's efforts to move him out.

"This is like the biggest heist ever," Antonacci said. "We all knew the Wilpons wanted our land for themselves all along, and now they got it."

But when City Hall originally got Council's approval for Willets Point, there was no mention of giveaways or of the Wilpons as a possible developer.

Just the opposite.

Back then, Bloomberg's aides assured the Council that any

taxpayer money spent on Willets Point would be recouped when the city sold the land to a developer that would be chosen later.

Council was understandably skeptical. For one thing, all previous development projects always had a developer's name attached to them when they came up for vote. This one didn't.

Then there was the big city money upfront for acquiring private land.

On Oct. 17, 2008, for instance, then-Deputy Mayor Robert Lieber was grilled by former City Councilman Hiram Monserrate about the land sales.

"Our goal would be to get the city taxpayer money back out of this," Lieber said.

"In the sale of the properties?" Monserrate asked.

"That's correct," Lieber said.

Lieber conceded that if potential developers claimed the cost of cleaning up the polluted land was too high, the city might agree to "get less for land." He never said anything about free land.

Back then, the city's skin in the game was \$400 million. That has now gone up by another \$80 million to build the LIE ramps for the project.

Back then, the project's



Mets chairman and CEO Fred Wilpon will receive 23 acres of land, free of charge, to redevelop in Willets Point, Queens. Photo by Getty Images

timeline was five to 10 years. It included a convention center, a new school, twice as much housing.

Now, you won't see any housing open for maybe 15 years.

No convention center. No school. And two-thirds of the Willets Point site will remain undeveloped and polluted possibly for decades.

"We are thrilled to have been selected by the City to . . . rejuvenate Willets Points into a stunning, new, mixed-use neighborhood," Jeff Wilpon said as he stood next to Bloomberg.

Sure, they're thrilled. You'd be, too, if you had just been handed 23 acres of land paid for by taxpayers, right next door to your own new baseball stadium.

jgonzalez@nydailynews.com

The Willets Point plan: a bad deal in every way

by Benjamin M. Haber

Good and responsible government does not exist in the absence of transparency, and in particular when it involves land use matters which have been notorious in favoring real estate interests and those with political connections. Years ago Daniel Doctoroff, then Mayor Bloomberg's economic czar, bragged before a group of real estate moguls that under the Bloomberg administration they received about 90 percent of all zoning requests they wanted.

When it comes to transparency the Bloomberg administration earns a failing grade. A case in point is Willets Point. For decades, and most of Mayor Bloomberg's term in office, the city collected sewer rent from the owners of property in Willets Point, notwithstanding there were no sewers. It collected real estate and other taxes and did not spend any money on the area's infrastructure.

A body and fender shop's operations, which for the most part serve the needs of the poor and the middle class, cannot be as spotless as a Bloomingdale's department store, which makes it all the more important government take care of the infrastructure.

As a coverup for his failure in doing so, Bloomberg declared the site a blight that must go, even though it would mean removing more than 200 small businesses, terminating employment for their 1,000 employees and causing havoc to their thousands of dependents. Cleanup of the so-called blight, which the city will pay for, for the benefit of a developer, could have been done for Willets Point businesses. But it will not be, since they are not real estate moguls with tentacles in the city treasury.

The cost to correct the area and repair the infrastructure, to alienate parkland, free of charge, and to provide subsidies, will be several hundreds of millions of dollars, all to be paid for by taxpayers for the benefit of a private developer. For Bloomberg to allow this taxpayer ripoff ignores his responsibility to be fair and above-board with the public. It's unacceptable.

It was Bloomberg's original plan to develop Willets Point into a huge shopping mall, with yet another convention center; luxury housing with a small portion of affordable housing for the middle class; a small park and a school. Building a school next door to LaGuardia Airport, the Mets' stadium, the United States Tennis Association and a huge mall would be absurd, a feigned icing on the cake to make it appear the proposal was not a private commercial development, but a needed public undertaking.

Willets Point and its surrounding areas

have automobile access only through the Van Wyck Expressway, Grand Central Parkway, Northern Boulevard and Roosevelt Avenue, private streets being out of the question. These arteries have been and are choked to capacity. Queens was ranked as having one of the most congested vehicular arteries in the country and there is no way — I repeat, no way — to increase their capacity to absorb the tens of thousands of additional vehicles the Bloomberg plan would bring.

Faced with a vehicular nightmare and unable to come up with a solution, Mayor Bloomberg has devised what can be described as the mother of all lack of transparencies. The original Willets Point plan has suddenly been split into two phases. His much-heralded original Willets Point plan is now relegated to phase two, which for all practical purposes will be on the back burner and probably not accomplished for decades.

The reason for the so-called split is not just the vehicular problem, but Bloomberg's desire to help out his billionaire friend Fred Wilpon, the owner of the Mets, who have not been doing well financially. Phase one will allow Wilpon to move his parking lots — which are on parkland, as is Citi Field — to Willets Point and to construct a huge mall on the current Mets parking lots. Parking in Willets Point and the mall will not address the vehicular problem, but will destroy the small businesses on Northern Boulevard, Roosevelt Avenue and 108th Street, the malls in Rego Park and on 20th Avenue in Whitestone, and the shops in downtown Flushing. Were I in business in any of those areas, I would hesitate to sign a long-term lease. Unless these merchants and the public make known to the mayor, their City Council members and community boards their opposition, the mayor's plans will be a fait accompli.

Former President Franklin D. Roosevelt once said he wished to be remembered for what he did for the poor and not for the rich. Notwithstanding some laudable philanthropic acts Bloomberg has accomplished as a private individual, as mayor he has viewed his constituents as the wealthy and powerful and not the poor and middle class. I do not believe he will leave a legacy as noteworthy as that of President Roosevelt.

Benjamin M. Haber is a civic activist and retired attorney who lives in Flushing.



EDC and Shulman's Queens LDC admit illegal lobbying

BY VERA CHINESE
NEW YORK DAILY NEWS

TWO city economic development agencies have admitted to illegally lobbying the City Council to support a plan to overhaul gritty Willets Point.

A three-year probe by the state Attorney General's office confirmed what many property owners in the so-called Iron Triangle had long complained about — that these agencies were exerting undue influence on the Council.

The findings, unveiled Tuesday, found both the city Economic Development Corp. and the Flushing-Willets Point-Corona Local Development Corp. unlawfully lobbied the Council in 2008 to approve the redevelopment.

The investigation extended to the Coney Island Development Corp., which also admitted to soliciting support for a project there.

The agreement between the city EDC, the two other LDCs and the AG validates years of complaints from Willets Point business owners who charged the Flushing-Willets Point-Corona LDC and specifically, its president, Claire Shulman, curried favor for a plan to take properties through eminent domain.

Mayor Bloomberg announced a different plan last month, when he said the city had reached a deal with Sterling Equities and Related Cos. to build a 1 million-square-foot mall on land already owned by the city.

Under state law, "no such corporation shall attempt to influ-



Flushing-Willets Point-Corona Local Development Corp., headed by Claire Shulman, found to have illegally lobbied City Council. Christie M. Farriella

ence legislation by propaganda or otherwise." The law does not list monetary penalties for violations, so the LDCs will not pay fines.

The agreement stipulates that each LDC will not employ out-

side lobbyists, draft testimony for third parties to submit to the Council and directors will have to undergo compliance training.

Members of Willets Point Unit-

been harsher.

"There was a crime committed here," said Willets Point United President Gerald Antonacci. "People ran for the hills when they were threatened with eminent domain. A lot of people who sold their properties would have never have sold it."

Shulman, the former Queens Borough President, could not be reached for comment. Flushing-Willets Point-Corona LDC officials said they were "glad the matter was behind them."

The EDC will also have to restructure, losing its status as an LDC.

LDCs are quasi-city agencies that have the power to buy or lease city land without undergoing the public bidding process.

An EDC spokesman downplayed the ruling, stating the law did not clearly define what constituted lobbying.

"The restructuring should be seamless from the perspective of third parties and should have little to no impact on the day-to-day operations of the company," the spokesman said in a statement.

Some of the transgressions included ghost-writing op-ed pieces, preparing testimony for third parties and providing transportation for supporters at hearings.

"These local development corporations flouted the law by lobbying elected officials, both directly and through third parties, to win approval of their favored projects," Attorney General Eric Schneiderman said.

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BRIAN KETCHAM ENGINEERING, PC

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Submission by Brian T. Ketcham, P.E., July 10, 2013
to the City Planning Commission regarding the evaluation of the Willets “West” Mall/Willets
Point Development Plan

I am a transportation and environmental engineer. For the last four years I have been assisting Willets Point United in discovering the truth about this project. It is these analyses and the lies we uncovered that have delayed this project for more than three years.

I am writing to encourage the New York City Planning Commission to reject this project. There are good reasons for doing so:

1. NYCEDC claims that by adding the Willets “West” Mall they will actually reduce traffic congestion—this is a preposterous claim; the Willets “West” Mall will make traffic congestion far more severe than what was reported in the WP FGEIS.
2. The plan is too big for the area; Willets Point is surrounded by what are already the nation’s most congested expressways; the Willets “West” Mall/Willets Point Project will only make condition’s worse.
3. Project impacts reported in the SDEIS are extremely severe and it is unlikely many can be mitigated.
4. Mitigation for expressways is not described in the SDEIS; major changes to expressways take years and require their own individual engineering and environmental assessments delaying project implementation.
5. Proposed mitigation still leaves intersections and expressways gridlocked; this is especially true for Astoria Blvd., Northern Blvd. and Roosevelt Avenue.
6. The SDEIS low balls the number of trips this project will generate; a great deal more traffic will in fact be produced than reported further gridlocking the area.
7. For example, the SDEIS reports that less than 60% of shoppers will use autos to access the site; today 85% of Queens’s shopping trips are by auto; 95% of shoppers to large malls arrive by auto; for destination retail the SDEIS under reports auto trips by 50%.
8. Destination retail would be responsible for more than half of total trips reported for this project; there is no justification for nearly 2 million square feet of new destination retail in the Willets Point area.
9. The project proposes relatively little parking for the size of the project; proposed parking cannot accommodate parking demand; spillover traffic will intensify gridlock conditions.
10. The project relies on substantial public transit service; there is no way the MTA can meet proposed transit demand; the No. 7 line will be gridlocked if this project is built; commuters will face huge delays.
11. The Willets “West” Mall will add another 28,000 car and truck trips to the 80,000 reported in the FGEIS adding 61 million miles of travel each year in proximity to the project increasing traffic accidents by 496 and costing motorists and the surrounding communities nearly \$40 million each year in increased health care and property damage costs.
12. The addition of 61 million miles of vehicular travel produces considerable externality costs, not just traffic accidents costs but the health costs of added air pollution, traffic noise, water pollution and so forth. These costs are not trivial: for full Willets Point build out including

the Willets “West” Mall these costs total \$120 million every year—costs that are far greater than any benefits provided to NYC by the Willets Point project.

13. Assuming the assumptions reported in the SDEIS are correct (and we do not believe they are) total project build out will generate 194 million added vehicle miles of travel, increase traffic accidents by 1,578 at a cost to motorists and Queens residents of \$124 million annually; externality costs for total build out including accident costs in 2032 would total \$382 million annually.

Attached are more details about what is wrong with the SDEIS and what information is still needed by the City Planning Commission to make an informed judgment about this project. Just remember, once the full Willets “West” Mall/Willets Point Project is completed the area will suffer extreme congestion levels that cannot be mitigated.

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QUESTIONS THAT MUST BE ANSWERED IF NEW YORK CITY PLANNING COMMISSION IS TO FULLY UNDERSTAND THE TRANSPORTATION IMPACTS OF THE PROPOSED WILLETS “WEST” MALL/ WILLETS POINT DEVELOPMENT PLAN

I have been asked by Willets Point United (WPU) to comment on the transportation component of the Supplemental Draft Environmental Impact Statement (SDEIS) for the proposed Willets “West” Mall/Willets Point Development Plan. The following comments refer to the SDEIS and to related documents listed at various web sites.

My name is Brian T. Ketcham. I am a licensed Professional Engineer, licensed in the State of New York. I am currently retired. Before retiring I worked for more than 4 decades on various transportation engineering projects. I still operate Brian Ketcham Engineering, PC, assisting low and moderate income communities in analyzing proposed projects and holding developers and government officials accountable for compliance with environmental laws and regulations. My most recent project is the Willets Point Development Plan, in which I performed detailed technical analyses. I have participated in dozens of other similar projects, some as large as Willets Point. I also was Vice President of Konheim & Ketcham, a full service environmental engineering firm with projects for the New York State Thruway Authority, the New York State Department of Transportation and the New York City Department of Transportation, among many other agencies and private clients, for which we prepared full environmental impact statements along with detailed traffic plans and models. K&K was closed at the end of 2006. I was also Executive Director of Community Consulting Services over twenty years during which we undertook hundreds of projects supporting low income communities on a pro-bono basis, providing more than 65,000 hours of free engineering services on projects like the Atlantic Yards project in Brooklyn and Hunts Point in The Bronx. Before this I was Executive Director of Citizens for Clean Air, an organization responsible in the 1960’s for New York City’s clean air programs and for bringing the first law suit against the Westside Highway Project in which the federal courts denied the City, State and federal government’s permits to proceed with this project in 1975. This was the first and last time such a suit was undertaken against so large a highway project and was actually won in the public’s interest. The Westside Highway Project was again defeated two years later when NYCDEC refused, based on my demonstration in evidentiary hearings, to again issue a permit for the construction of Westway. And before this I was director of the Bureau of Motor Vehicle Pollution Control for the New York City Department of Air Resources. For this organization I set up a new emissions test facility which, in 1971, had more cars equipped with catalytic emissions controls than the entire world’s automotive industry. Along the way I built (as a private citizens and at my own expense) a three-way catalyst equipped car demonstrating we could meet Clean Air Act emissions standards and improve fuel economy, showing the Congress of the United States that if two young engineers using their own funds to accomplish what the auto industry said could not be done,

certainly auto makers with billions of dollars in resources could at least match what we could do. The result was that Congress did not cave in to demands by auto makers to extend or relax emissions control deadlines. Finally, I was asked by the New York State Department of Environmental Conservation and the United States Environmental Protection Agency in 1972 to prepare New York's Clean Air Plan required by the 1970 CAA. I completed this work in less than 9 months meeting the stringent federal requirements. New York's Clean Air Plan is the most comprehensive transportation plan that has ever been completed for New York City. For this work I was honored in 1993 by Mayor John Lindsay as the most effective manager in New York City government under the age of 35.

The following are examples of what is wrong with the SDEIS supporting this project. More problems and questions will be identified over the coming months.

NYCEDC CLAIMS THEY CAN MITIGATE 65% OF WILLETS POINT TRAFFIC IMPACTS WITH THE ADDITION OF WILLETS "WEST" MALL. THIS IS NOT TRUE.

The developer has reported he will add another 1.4 million square feet of shopping mall/entertainment facilities to the already oversized Willets Point Development project. The developer claims he will actually reduce the impact of this added traffic on the severe congestion along access roads and on nearby expressways already reported in the Willets Point FGEIS. According to the FGEIS the 11 million square feet Willets Point project will add 80,000 car and truck trips to the project area producing "significant" impacts at 78% of all intersections analyzed. Adding Willets "West" Mall will increase project traffic by about 25% impacting even more severely nearby intersections, expressways and expressway entry/exit ramps creating even worse congestion than reported in the FGEIS. Mitigation including the public expenditure of tens of millions of dollars on traffic improvement measures will reduce impacts slightly. However, for many locations full mitigation cannot be achieved and breakdown conditions will prevail. LOS F is reported at many mitigated intersections—for full intersections (many that cannot be mitigated at all) and/or at many intersections they claim to mitigate that retains one or more intersections approaches that remain LOS F or worse. This is what was reported in the FGEIS for Willets Point and the addition of the Willets "West" Mall will make these conditions worse. To claim that adding the Willets "West" Mall will actually make traffic congestion along access roads and on expressways and expressway access/egress ramps is simply not true—it is a lie intended to trick the host community and the New York City Planning Commission into accepting this new project. The consequences of building a 13 million square foot development in so isolated a site will have consequences far beyond the illusion provided by NYCEDC and the developers (see more below).

THE DEVELOPER MUST EXPLAIN THE CONSEQUENCES OF LEAVING MOST INTERSECTIONS ALONG MAJOR ACCESS ROUTES TO WILLETS POINT IN GRIDLOCK CONDITIONS AFTER APPLYING ALL AVAILABLE MITIGATION

The SDEIS reports operating conditions at approximately 30 key intersections affected by the Willets Point project. While relatively few intersections are examined in the SDEIS, project impacts are clear: adding 8,000 to 10,000 hourly car and truck trips to peak travel hours will impose severe restrictions on travel. This can be seen by examining Table 14-59 which shows

project impact for virtually every intersection examined in the SDEIS. More detail can be found by looking at the data presented in Table 22 from Chapter 21 on mitigation.

A review of all results for peak hours with available mitigation shows that during evening peak hours, access roads to Willets Point (Northern Blvd., Roosevelt Avenue, Astoria Blvd.) will be gridlocked. Table 21-6, which I have marked up and attached, shows how severe the developer will leave these major access arterials to Willets Point. With all the mitigation the developer can muster he leaves critical intersections with overall average vehicle delay of 100 to 200 seconds. And these conditions do not get any better on Saturday. Table 27 illustrates the point for a couple of critical intersections. While Table 22 shows some locations along these access roads can be fully or partially mitigated, the community is still faced with gridlock traffic conditions with cars facing two or three signal cycles to move through an intersection with traffic spilling back into adjacent intersections. Certainly the developer has modeled this condition. But he does not provide or describe the results.

Again, looking at Table 22 for 126th Street at Roosevelt Avenue and 34th Street, we find a number of intersection approach movements at LOS F, with delays of between 100 to more than 800 seconds. These are the major entry points to the Willets Point Development. Project traffic creating huge delays will create a huge impediment to the operation of Willets Point and will be of even greater consequence on a METS game day. And, of course, these conditions are only for “average” days not Fridays. Destination retail will experience 19% more traffic on days in December when traffic will be 42% higher than reported. How can the developer justify so large a project with the horrible traffic conditions reported in the SDEIS that cannot be mitigated? And, because we think the developer has under reported trip generation, traffic conditions will be worse than reported.

For example, the complexity of the Roosevelt Avenue/126th Street intersection – a main entry point into the Willets Point project – is not discussed in any detail (this problem is mentioned briefly). How do the columns supporting the overhead No. 7 transit line impede the efficient movement of traffic or reduce sight distance and thus affect safety? As noted elsewhere, the City Planning Commission needs intersection expressway drawings to make this review more effective.

When faced with breakdown conditions in all directions can the developer honestly say that this project will not create huge traffic delays along access roads spilling back onto the surrounding expressway system even with all the mitigation that he can dream up? Can he not admit that this project will have a huge negative effect on this community, imposing greater traffic delays, more traffic injuries and deaths and other costly externalities borne by the million motorists already passing by Willets Point each day on nearby expressways and arterials even with his most optimistic assumptions?

THE ENVIRONMENTAL ASSESSMENT FOR THE VAN WYCK RAMPS MUST BE UPDATED/REVISED

Why did not NYCEDC and/or the developer revise the Environmental Assessment (EA) for the Van Wyck ramps? The SDEIS reports the Willets “West” Mall will be adding about 28,000 car and truck trips to the WP area (and a great deal more if their assumptions are wrong) for average weekdays. Adding the Willets “West” Mall traffic results in significant differences in

background traffic that will affect travel conditions with the ramps. These trips, as many as 3,000 an hour entering or leaving the Willets “West” Mall, will get onto nearby expressways affecting the baseline conditions examined to determine the environmental impacts of the Van Wyck ramps to be constructed. The SDEIS itself reports that the Willets “West” Mall will produce significant traffic impacts on surrounding expressways requiring costly mitigation (should funds be available) (SDEIS Page 21-27). The EA must be updated.

WHAT GUARANTEE CAN THE DEVELOPER PROVIDE THE COMMUNITY THAT THE MTA CAN ACCOMMODATE WP TRANSIT DEMAND?

The developer is relying on the MTA to provide additional bus service to the WP “West” location. WP “West” Mall will produce about 14,000 additional bus riders on an average weekday. At 56 people per bus (capacity) that would require the addition of 250 weekday buses (most spread out from 10 am to 8 pm). What guarantee can the developer provide that the MTA can provide this level of added bus service?

At the third meeting of the Building/Zoning Committee of Queens CB7 the developer mentioned that they were working with the LIRR on using that service to provide some relief for the overcrowding their project will create on the No. 7 subway line. Has the developer analyzed the potential for utilizing the LIRR? If so, what have they found? And, how realistic is using the LIRR during peak commute hours?

CAN THE PROJECT EAST OF 126TH STREET ACCOMMODATE NEARLY 600,000 SF OF LOCAL RETAIL AND, IF SO, HOW?

What is the basis for assuming 593,000 SF of local retail east of 126th Street? This assumption appears very high for a project with just 5,850 residences, approximately 12,000 residents (plus workers and others, although local retail is nowhere close to the Willets “West” Mall and entertainment center and additional retail would be redundant for the Willets Point “West” shopping mall). Moreover, assuming stores are 60 feet deep the developer is looking at installing nearly 2 miles of store front space in the original Willets Point project. We don’t think there is enough space for this much local retail. And, with all this local retail using curb space where will 657,000 SF of additional destination retail go if all frontage is occupied by local retail? So, what’s the point of so much local retail? Considering that just 15% of shoppers are assumed to arrive by auto for local retail we believe this is the developer’s way of hiding auto trips and minimizing traffic impacts. We are convinced that more than half of this “local retail” space will, in fact, end up as destination retail. The SDEIS must be revised to account for this worst case condition. See Table 4, attached, that reports the impact on travel.

WHAT IS THE BASIS FOR ASSUMING JUST 59% OF DESTINATION RETAIL SHOPPERS WILL USE AUTOS TO ACCESS THE SITE?

A comparison of the rates used in the SDEIS with those reported in the 1991, 2001 and 2012 CEQR Technical Manuals shows little change in trip generation rates over this period. We know that many of the assumed trip generation rates date to the Regional Plan Association that did counts in the early 1960’s in Manhattan. How can the developer justify using these antiquated rates especially outside Manhattan? The CEQR Technical Manual advises that if rates are over 3 years old the developer should take counts at representative locations. WPU has repeatedly

requested that the developer undertake such counts. For a project of this size with the severe traffic impacts that the developer has reported in the SDEIS how can they continue to rely on ancient data? We believe that the rates used in the SDEIS significantly under report traffic impacts.

For example, take Willets “West” Mall: The developer assumes that 59% of shopping trips will be made by auto with the rest by walking or transit. This number appears incredibly low when compared to other isolated shopping malls like Gateway Plaza in Brooklyn or Palisades Mall in West Nyack, both of which exceed 95% of shoppers arriving by auto; and both of which provide double the parking per 1,000 SF of retail space. The developer must provide its source justifying this 59% assumption. Would it not be wise to plan for higher auto use in so isolated a site, especially in Phase 1 of this project? The consequences of under reporting auto use on parking and traffic are very significant to this community.

The effects of using reported auto use for isolated destination malls compared to 59% are striking. Tables 1 and 2 (attached) provide a comparison. Table 1 reports the data provided in the SDEIS for Phase 1A. It shows that average daily vehicle trips for Phase 1A would total 28,524 with destination retail making up 81% of this total. Table 2, assuming 90% of shoppers at destination retail arrive by auto, shows an increase in total average daily car and truck trips of 39,345 with destination retail responsible for 86% of total. Table 2 reports a 38% increase in the number of trips from just this one reasonable change, increasing shopper trips to destination retail from 59% to 90%. Vehicle miles of travel would increase by 36% to 83 million miles of vehicular travel annually, from 61 million estimated using SDEIS assumptions.

Another hypothetical, along these same lines, is presented in Tables 3 and 4. Table 3 reports total vehicle trip generation for full project build out, Phase 2, (again for an average weekday) of 87,532 trips, with destination retail producing 50% of this total. However, we dispute not just the use of 59% for shoppers accessing the Willets Point site by car; we dispute the total amount of local retail (there just does not appear to be enough space to accommodate even half what is proposed as discussed above). Table 4 assumes that for Willets Point “West” we stick with 90% of shoppers accessing destination retail by auto (it is an isolated site with poor transit access). However, we assume that for destination retail east of 126th Street 80% of shoppers will arrive by auto. We also assume that the additional local retail proposed for Phase 2 is assumed to be destination retail. The result is an overall increase in average weekday vehicular travel to 109,386, an increase of 21,864 trips, and an increase of 25%. This is a conservative adjustment. We have not tinkered with other trip generation assumptions, most of which do not have supporting documentation.

THE DEVELOPER HAS OVERLOOKED WORST CASE TRAFFIC CONDITIONS

The SDEIS reports average weekday and average Saturday traffic impacts. Not disclosed are the weekly and seasonal variations. For example, the Institute of Transportation Engineers *Trip Generation Manual* reports that for shopping malls Friday traffic is 19% greater than weekly averages and for Saturday, 51% greater. It also reports that Decembers produce 42% more traffic during the month than for annual averages. None of this is reported in the SDEIS although WPU has repeatedly brought this issue to NYCEDC’s attention (and, allegedly, the SDEIS is claiming to “report” “worst case” conditions). Were these differences to be accounted

for you would find true “worst case” conditions would be significantly worse than reported. Parking would also be significantly over-capacity. Surely your traffic engineers understand these effects. Annual average project impacts are severe enough. What can we expect when auto trips are half again higher, holiday effects kick in and parking supply is good for only half of demand? This condition has to be accounted for.

THE DEVELOPER IS NOT PROVIDING ADEQUATE PARKING FOR THIS PROJECT. PLUS THE SDEIS MANIPULATES TEMPORAL ASSUMPTIONS TO MINIMIZE PEAK HOUR PARKING DEMAND.

As suggested by what has already been said, parking is critical. Yet, the developer is providing half what other similar locations are providing. The developer appears to justify this on the basis of extremely optimistic trip generation rates and the heavy use of public transit that really does not exist. Could this project be built if the developer had to provide double the number of parking spaces promised? Can the developer provide this community a guarantee that, should our worst fears come to pass, that parking is not adequate, that they will actually build additional parking garages to supplement the meagre supply of parking promised?

As noted above, experience elsewhere at large malls suggests not only that they attract many more auto trips per 1,000 square feet of retail space, but they typically provide double the number of parking spaces per 1,000 square feet of retail space than is being provided at either the Willets “West” Mall or for the destination retail proposed for Phase 2 of the project. These differences must be addressed by NYCEDC and the developer.

Also, on Table 14-39 the developer loads 15% of daily destination retail travel onto the weekday 1 to 2 pm hour, moving a substantial amount of traffic away from peak travel hours. Tables 14-50 and 14-60 are consistent with this assumption. What is the basis for this assumption? It does not agree with ITE numbers for large shopping malls. What is the basis for all parking temporal characteristics for all land use types? The developer’s source is “Based on travel demand estimates.” That “source” is not good enough. This needs explanation! Has the developer done surveys for parking conditions at other locations and, if so, can he provide the raw data to Willets Point United and to the City Planning Commission? The developer must provide documentation justifying the assumptions made for hourly parking arrivals and departures for the eight land use types evaluated in the SDEIS.

THE DEVELOPER HAS LEFT OUT THE LONG ISLAND EXPRESSWAY IN HIS EXPRESSWAY ANALYSIS

Why did the developer not include the LIE in his traffic analysis? They assign about a sixth of WP traffic to the LIE (and a third of WP traffic to the Van Wyck Expressway). The LIE is already one of the ten most congested roads in the entire United States (so is the Van Wyck and the Grand Central Parkway). The GCP is also not included in the SDEIS, at least that portion of the Grand Central south of the LIE where NYSDOT engineers report it cannot take “one more new vehicle trip from the WP project” even after they spend \$1 billion realigning that expressway near the Jackie Robinson Parkway. Both will be heavily impacted by the expanded Willets Point project (another 28,000 daily car and truck trips from what was examined in the FGEIS). Both should be examined in a revised EA for the Van Wyck ramps.

What is equally incredible is that expressway data are totally missing from the SDEIS; internal site specific traffic movements for the WP project are no longer provided as well. How does NYCEDC expect anyone to evaluate the SDEIS when the traffic network has been simplified so greatly, removing critical data that was originally provided in the FGEIS? This, by the way is how the developer can claim they are mitigating a greater number of intersections—they simply eliminate those reported in the FDEIS and presto, you have fewer affected intersections. It is all a game!

Still, Chapter 21 on mitigation provides considerable insight on project impacts and how hard it is to mitigate so large a project as Willets Point. Table 21-23 attached shows the significant impact for Phase 2 for an average weekday with no games underway. It shows that, while some improvements can be made (very little is described about what, precisely, mitigation involves) it also shows the traffic mess that is left. Table 21-24, also attached, just reaffirms the huge region wide impact the Willets Point project will impose on the surrounding residential communities as well as on the million or so daily motorists who try to thread their way north and south, east and west. The impacts are severe and the SDEIS provides little confidence that much real mitigation can be accomplished and reinforces the communities concern of the mess the developer will leave behind.

THE SDEIS HAS NO DRAWINGS OF EITHER INTERSECTIONS OR EXPRESSWAYS AND RAMPS SHOWING HOW THE DEVELOPER PLANS ON MITIGATING IMPACTS

With the exception of one location we cannot find detailed descriptions of what mitigation the developer is proposing for various expressways or expressway ramps. No description, no drawings. How can the City Planning Commission assess this project without more detail? The developer must provide drawings illustrating each mitigation location. Written descriptions are too brief and just not good enough for public review. And, the 2-point type used in the summary sheets is not legible!

Much of the mitigation proposed in the SDEIS requires the preparation of a site specific Environmental Assessment along with traffic analysis and engineering drawings all subject to NYSDOT and FHWA approval. Each action requires new counts specific to each location. Many of these EAs take from 3 to 10 years to complete and get approved. I have been involved in dozens of these traffic improvement studies – some have taken two decades and 3 or 4 full detailed revisions costing \$10's of millions – more than half these projects never materialized. The SDEIS warns of this problem on page 21-29: mitigation "...measures that may call for detailed review by both NYCDOT and NYSDOT...if these mitigation measures are modified or rejected by the review agencies, significant adverse impacts identified above would be unmitigated." What guarantees can the developer provide that the WP project will not experience the same delays and what impact would that have on project completion schedules? And what if the developer cannot mitigate traffic impacts as promised repeatedly in the SDEIS? What guarantee does the WP community have that this developer will not just gridlock this community 24/7?

And, who is going to pay for mitigation? Including intersection expansion plus modifications to expressways and ramps (plus \$70 million for just the Van Wyck ramps) we are looking at

hundreds of millions of dollars in reconstruction. Is the developer expecting NYC taxpayers to foot this bill?

The developer must provide maps showing vehicular trip assignments by land use type for new no-build construction and for full build out trips including the local project road network. The developer must also provide maps showing traffic volumes along all expressways and expressway ramps on which all Willets Point vehicular trips have been assigned with and without WP Phases 1A, 1B and 2.

THE EFFECTS OF WILLETS POINT ON TRAFFIC ACCIDENTS HAVE BEEN IGNORED. THEY ARE SIGNIFICANT

The FGEIS for the Willets Point Development Plan reports that the project will add 80,000 car and truck trips a day, 365 days a year, generating 116 million additional miles of travel annually. Based on NYSDOT traffic accident rates for NYC the WP project will thereby increase auto and truck accidents by 944 a year including 2 dead and 316 injured. Including the cost of property damage the cost to motorists and society total \$41 million in 2017. Adding another 28,000 car and truck trips a day for the Willets “West” Mall will increase this number to 1,578 crashes annually with 3 dead and 528 injured and approximately 2,500 more cars and trucks damaged. The total cost of the combined effect of Willets “West” Mall and the Willets Point Development Plan in 2032 would be \$124 million annually. And this is only part of the cost of adding daily 108,000 more cars and truck to Queen’s roads. See Table 5 for more detail.

THE ADDITION OF WILLETS POINT TRAFFIC PRODUCES HUGE EXTERNALITY COSTS. THEY CONTINUE TO BE IGNORED BY NYCEDC. IT IS TIME THEY WERE ACKNOWLEDGED

It was earlier demonstrated that the Willets Point Development Plan will produce 80,000 more car and truck trips a day generating \$156 million in externality costs annually. The external or hidden costs to motorists, their passengers, and visitors, residents and workers of the area due to increased vehicular use by travel to and from the Willets Point project include the costs of lost travel time, physical injury, health effects, noise impacts, damage to our roads and utilities. Other costs are paid through taxes such as the control of water pollution, oil spills, greenhouse emissions, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and defense costs of protecting the supply of imported oil (why did we spend a trillion dollars in Iraq?). These harms to society and to households and to the general economy are not well recognized by the public because they increase by a small margin with each added mile of travel and because they are spread among the entire public, both vehicle users and non-users, buried in items such as lower productivity, higher consumer prices and higher insurance costs. But taking them together, even using a low range of vehicle related costs due to the Willets Point project car and truck use greatly reduce the realistic local economic benefits of the project. The costs are based on the well-documented costs per vehicle of mile travel published by the Victoria Transport Policy Institute (VTPI)¹ as well as independent cost accounting that I have undertaken over the last three decades. For this report, the most conservative (i.e., lowest) results have been reported for the social costs of the Willets “West” Mall and the total build out

¹ Litman, T., “Transportation Cost and Benefit Analysis, Techniques, Estimates and Implications,” Tables 6, 7 and 8, Victoria Transport Policy Institute, June 2003, www.vtpi.org/htm.

of the Willets Point Development Project including Willets “West”. The addition of Willets “West” Mall’s 28,000 daily car and truck trips would increase total externality costs to \$382 million a year, an increase of \$120 million just for Willets “West” Mall alone. These totals significantly exceed any benefits of these projects to the communities in and around the Willets Point area. And this does not account for the billions of dollars in public tax payer assistance to the developer, more than a half billion of which has already been spent. A full cost-benefit analysis must be completed for this project before any action can be taken. Without a fully vetted cost-benefit analysis neither the NYCDP, the City Planning Commission nor the City Council can, in good conscience, act on this project. See Tables 6, 7 and 8 for details.

THE CEQR TECHNICAL MANUAL IS NOT THE “HOLY BIBLE” FOR PREPARING ENVIRONMENTAL IMPACT STATEMENTS

In projects like Willets Point as well as during the recent Queens CB7 Building/Zoning Committee meetings, the CEQR Technical Manual has been cited as the “bottom line” in preparing environmental impact statements. It is not! It is a guideline and developers can and should go beyond the minimal requirements spelled out in the Technical Manual. Preparation of the manual was a collaboration between AKRF and the NY City Dept. of Planning. The objective was to create a process that would best facilitate project approvals with the least effort on the part of developers. For the last two decades it has worked brilliantly to accomplish this goal. The CEQR Technical Manual recommends conservative (optimistic) assumptions that are presumed to be gospel by consultants like AKRF. One example is the selection of trip generation characteristics for traffic projections. The numbers recommended in the Technical Manual date from two to three decades back in time when demographics and travel behavior were very different from today. These are the same numbers used in the FGEIS and now in the SDEIS to under report traffic impacts. In recognition of this problem in 1977 the USEPA provided NYC with a million dollar grant to assemble up to date trip generation data. The City assembled consultants like me to voluntarily contribute what they had collected in the field for various land uses. However, after about 6 months it became obvious that the City had no intention of assembling this data; that they were assuming the consulting community would do this for free. The program quickly fell apart. What happened to the million dollars is unknown but no up-to-date trip generation factors for NYC ever materialized. The lowest common denominator should not be the bottom line for this project.

PUBLIC PARTICIPATION IN THE WILLETS POINT ENVIRONMENTAL ANALYSIS IS A FARCE

Over the past five years more than a thousand pages of comments have been generated on the FGEIS, the Access Modification Report, the Phase 1 Report, the Van Wyck Ramp EA and the Final Scoping Document for Willets Point “West”. Thousands of pages containing thousands of comments have had no effect on the outcome of these analyses. NYCEDC, with the help of AKRF, concoct responses to comments that are meaningless: responses that claim that since the comments were not covered in the scope of work or in the CEQR Technical Manual, they require no response, or, if the comment really hits the mark they simply disagree with the commenter. It is all BS and it is intended to frustrate and discourage public involvement. This practice has been followed for three decades. Occasionally something really awful is identified that has to be addressed—somehow. For example, in 2010 I met with the FHWA, the NYSDOT, NYCEDC,

and a host of lawyers and laid out problems that were so significant that it forced a two year delay in the Willets Point project while EDC and their lawyers tried to come to terms with what we disclosed. What did we find? That EDC with the help of AKRF was lying about the project. Presenting one story in the FGEIS and another in the Environmental Assessment for the Van Wyck Ramps. They were also lying about project impacts, hiding traffic volume to under report project impacts. This sad story is all summarized in the 286 page report that I prepared for WPU and that I presented to NYSDOT as part of my testimony on the Willets Point “West” scope of work. It was completely ignored. Very few times over the last five decades have we been able to expose this behavior. The first was the West Side Highway Project or Westway in which I was able to demonstrate to a Federal judge that the consultants were lying about that project. The consultant, Parsons Brinckerhoff, could not explain their work and could not counter my own testimony sufficiently to convince the judge to approve that project. Some of the people representing Parsons Brinckerhoff in that proceeding were the same engineers and administrators who started AKRF in 1982. They lied about Westway and they are lying now about the Willets Point project. I hope WPU can accomplish for Willets Point what I did with Westway 38 years ago.

Brian T. Ketcham, P.E.
July 8, 2013

TABLE 1
Estimating Total Annual Vehicle Trips for the Willets Point WEST Development Plan
(Based on assumptions provided in the FEIS)

WEEKDAY PERSON/VEHICLE TRIPS - PHASE 1A

	Residential	Office	Destination		Local	Convention	Movie	Hotel	Community	PS/IS	PS/IS	TOTALS
			Retail	Retail	Retail	Expo Facility	Theatre		Facility	Students	Faculty	
Size	0	0	915,000	30,000	0	4,000	200	0	0	0	0	
Trip Gen Rate	8.075/DU	18	78.2	205	46.2	3.26	9.4	2	34	2	2	
Modal Split-Bus	10%	14%	18%	10%	12%	18%	5%	10%	5%	10%	0%	
Modal Split-Subway	52%	16%	15%	3%	2%	8%	5%	15%	26%	15%	50%	
Modal Split-Auto	26%	51%	59%	15%	68%	56%	70%	15%	16%	15%	50%	
Modal Split-Taxi	1%	1%	3%	0%	8%	7%	15%	1%	1%	0%	0%	
Auto Occupancy	1.39	1.14	2.05	2	2.3	2.52	1.6	1.3	1.5	1.3	1.2	
Taxi Occupancy	1.39	1.14	2.05	2	1.8	2.3	1.4	1.3	1.5	1.3	1.2	
Truck Trip Gen Rate	0.06/DU	0.32	0.35	0.35	0.7	0.02	0.24	0.38	0.04	0	0	
Total Truck Trips	0	0	320	11	0	80	48	0	0	0	0	
Total Auto/Taxi Trips	0	0	22,688	461	0	3,692	1,225	0	0	0	0	
BUS (person trips)	0	0	12,880	615	0	2	0	0	0	0	0	13,497
SUBWAY (person trips)	0	0	10,733	185	0	1	0	0	0	0	0	10,919
AUTOS (vehicles)	0	0	20,593	461	0	2,898	823	0	0	0	0	24,775
TAXI (vehicles)	0	0	2,094	0	0	794	403	0	0	0	0	3,291
TRUCK (vehicles)	0	0	320	11	0	80	48	0	0	0	0	459
TOTAL WEEKDAY VEHICLE TRIPS	0	0	23,008	472	0	3,772	1,273	0	0	0	0	28,524
PERCENT OF TOTAL VEH TRIPS	0%	0%	81%	2%	0%	13%	4%	0%	0%	0%	0%	
Reference Table 14-29 SDEIS												
ESTIMATE OF VMT												
TRIP DISTANCE												
AUTO	8	8	6	4	2	4	8	2	2	4	2	
TAXI	6	6	6	6	6	6	6	6	6	6	6	
TRUCK	38	38	38	38	38	38	38	38	38	38	38	
VMT												WEEKDAY
AUTO	0	0	123,560	1,845	0	11,591	6,580	0	0	0	0	143,576
TAXI	0	0	12,565	0	0	4,762	2,417	0	0	0	0	19,745
TRUCK	0	0	12,170	399	0	3,040	1,824	0	0	0	0	17,435
TOTALS	0	0	148,295	2,244	0	19,394	10,821	0	0	0	0	180,751

Brian Ketcham Engineering, PC, May 7, 2013

TABLE 2
ASSUMES 90% OF SHOPPER ACCESS VIA AUTO
Estimating Total Annual Vehicle Trips for the Willets Point WEST Development Plan
(Based on assumptions provided in the FEIS)

WEEKDAY PERSON/VEHICLE TRIPS - PHASE 1A

	Residential	Office	Destination		Local Retail	Convention Expo Facility	Movie Theatre	Hotel	Community Facility	PS/IS		TOTALS
			Retail	Retail						Students	Faculty	
Size	0	0	915,000	30,000	0	4,000	200	0	0	0	0	0
Trip Gen Rate	8.075/DU	18	78.2	205	46.2	3.26	9.4	34	2	2	2	2
Modal Split-Bus	10%	14%	4%	10%	12%	18%	5%	5%	10%	0%	0%	0%
Modal Split-Subway	52%	16%	3%	3%	2%	8%	5%	26%	15%	50%	50%	50%
Modal Split-Auto	26%	51%	90%	15%	68%	56%	70%	16%	15%	50%	50%	50%
Modal Split-Taxi	1%	1%	3%	0%	8%	7%	15%	1%	0%	0%	0%	0%
Auto Occupancy	1.39	1.14	2.05	2	2.3	2.52	1.6	1.5	1.3	1.2	1.2	1.2
Taxi Occupancy	1.39	1.14	2.05	2	1.8	2.3	1.4	1.5	1.3	1.2	1.2	1.2
Truck Trip Gen Rate	0.06/DU	0.32	0.35	0.35	0.7	0.02	0.24	0.38	0.04	0	0	0
Total Truck Trips	0	0	320	11	0	80	48	0	0	0	0	0
Total Auto/Taxi Trips	0	0	33,508	461	0	3,692	1,225	0	0	0	0	0
BUS (person trips)	0	0	2,862	615	0	2	0	0	0	0	0	3,480
SUBWAY (person trips)	0	0	2,147	185	0	1	0	0	0	0	0	2,332
AUTOS (vehicles)	0	0	31,414	461	0	2,898	823	0	0	0	0	35,595
TAXI (vehicles)	0	0	2,094	0	0	794	403	0	0	0	0	3,291
TRUCK (vehicles)	0	0	320	11	0	80	48	0	0	0	0	459
TOTAL WEEKDAY VEHICLE TRIPS	0	0	33,828	472	0	3,772	1,273	0	0	0	0	39,345
PERCENT OF TOTAL VEH TRIPS	0%	0%	86%	1%	0%	10%	3%	0%	0%	0%	0%	38%
Reference Table 14-29 SDEIS												
ESTIMATE OF VMT												
TRIP DISTANCE												
AUTO	8	8	6	4	2	4	8	2	2	4	2	2
TAXI	6	6	6	6	6	6	6	6	6	6	6	6
TRUCK	38	38	38	38	38	38	38	38	38	38	38	38
VMT												
AUTO	0	0	188,481	1,845	0	11,591	6,580	0	0	0	0	208,497
TAXI	0	0	12,565	0	0	4,762	2,417	0	0	0	0	19,745
TRUCK	0	0	12,170	399	0	3,040	1,824	0	0	0	0	17,433
TOTALS	0	0	213,216	2,244	0	19,394	10,821	0	0	0	0	245,675
												ANNUAL
												70,472,048
												6,673,804
												5,892,185
												83,038,037
												36%

TABLE 3
Estimating Total Annual Vehicle Trips for the Willets "WEST" Mall Development Plan
(Based on assumptions provided in the SDEIS)

TABLE 4
WITH MORE REALISTIC % SHOPPERS USING AUTOS
Estimating Total Annual Vehicle Trips for the Willets "WEST" Mall Development Plan
(Based on assumptions provided in the SDEIS)

PHASE 1A (2018) WITH ACTION PARKING

In Phase 1A, the proposed project would provide approximately 2,500 off-street accessory parking spaces to satisfy the projected parking demand due to the development in Willets West and 75 accessory spaces for project demand in the District.¹ As shown in **Table 14-39**, the projected weekday and Saturday peak parking demands for Willets West (1,127 and 2,238 spaces, respectively) is anticipated to be satisfied entirely by the off-street parking facility provided within the site.

Table 14-39
Willets West Phase 1A (2018)
Weekday and Saturday Parking Accumulation

Time Begin	Weekday							Saturday						
	Destination Retail			Movie Theater			Total	Destination Retail			Movie Theater			Total
	In	Out	Acc.	In	Out	Acc.		In	Out	Acc.	In	Out	Acc.	
Midnight	0	0	0	0	14	14	14	0	0	0	0	28	28	28
1 AM	0	0	0	0	14	0	0	0	0	0	0	28	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	0	0	0	0
7 AM	62	62	0	14	0	14	14	100	0	100	28	0	28	128
8 AM	377	241	136	27	2	39	175	191	10	281	53	3	78	359
9 AM	292	120	308	32	6	65	373	180	20	441	94	17	155	596
10 AM	393	184	517	58	14	109	626	321	80	682	111	28	238	920
11 AM	591	439	669	55	23	141	810	1,263	541	1,404	108	58	288	1,692
Noon	1,020	834	855	54	33	162	1,017	881	763	1,522	172	106	354	1,876
1 PM	1,581	1,549	887	70	46	186	1,073	1,125	1,081	1,566	172	106	420	1,986
2 PM	1,008	1,114	781	101	73	214	995	1,074	992	1,648	183	150	453	2,101
3 PM	939	832	888	114	89	239	1,127	1,043	963	1,728	214	175	492	2,220
4 PM	855	937	806	143	117	265	1,071	579	625	1,682	153	125	520	2,202
5 PM	871	982	695	125	107	283	978	902	902	1,682	240	204	556	2,238
6 PM	896	1,040	551	188	160	311	862	812	993	1,501	360	307	609	2,110
7 PM	803	803	551	200	177	334	885	632	1,173	960	376	347	638	1,598
8 PM	436	533	454	178	257	255	709	562	1,042	480	342	492	488	968
9 PM	175	629	0	59	145	169	169	361	841	0	113	276	325	325
10 PM	0	0	0	23	94	98	98	0	0	0	44	179	190	190
11 PM	0	0	0	9	79	28	28	0	0	0	17	151	56	56
Total	10,299	10,299		1,450	1,450			10,026	10,026		2,780	2,780		

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

As shown in **Tables 14-40** and **14-41**, parking demand from development within the District would not be fully accommodated by the 75 accessory spaces on weekdays or on Saturdays. During the Mets off-season, there would be an additional parking demand of 5 to 131 spaces on weekdays and Saturdays. During the off-season when the recreational uses would be in place, the additional recreational accessory parking demand, if needed, would be provided in Lot B, the north lot, or within the Willets Point District property itself to satisfy this demand.

¹ Additional parking spaces may be provided for off-season recreation uses within the District if they are warranted.

Table 14-60
Phase 2 (2032) Special Willets Point District
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.
Midnight	66	66	3,101	0	0	0	0	0	0	0	0	0	0	0	0
1 AM	31	31	3,101	0	0	0	0	0	0	0	0	0	0	0	0
2 AM	18	18	3,101	0	0	0	0	0	0	0	0	0	0	0	0
3 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
4 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
5 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
6 AM	27	27	3,101	0	0	0	0	0	0	0	0	0	27	0	27
7 AM	34	310	2,825	41	3	38	44	44	0	26	1	25	191	0	218
8 AM	177	707	2,295	465	18	485	271	173	98	103	103	25	300	0	518
9 AM	117	467	1,945	395	68	812	210	86	222	45	30	40	696	14	1,200
10 AM	110	331	1,724	85	68	829	282	132	372	118	81	77	418	74	1,544
11 AM	156	233	1,647	34	97	766	424	315	481	171	178	70	350	87	1,807
Noon	225	217	1,655	145	157	754	732	599	614	650	650	70	283	105	1,985
1 PM	203	203	1,655	172	104	822	1,135	1,113	636	513	534	49	264	310	1,939
2 PM	186	186	1,655	89	56	855	723	800	559	342	356	35	44	146	1,837
3 PM	243	234	1,664	63	77	841	674	598	635	292	303	24	68	308	1,597
4 PM	382	254	1,792	48	295	594	614	673	576	295	307	12	61	347	1,311
5 PM	632	340	2,084	28	535	87	625	705	496	342	342	12	21	673	659
6 PM	585	246	2,423	14	79	22	644	746	394	265	277	0	7	633	33
7 PM	514	220	2,717	7	29	0	577	577	394	260	260	0	0	33	0
8 PM	223	95	2,845	0	0	0	313	382	325	0	0	0	0	0	0
9 PM	179	77	2,947	0	0	0	126	451	0	0	0	0	0	0	0
10 PM	148	64	3,031	0	0	0	0	0	0	0	0	0	0	0	0
11 PM	124	54	3,101	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,419	4,419		1,586	1,586		7,394	7,394		3,422	3,422		2,730	2,730	
Time Begin	Hotel			Community Facility			School – Students			School – Staff			Total		
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.
Midnight	12	2	306	0	0	0	0	0	0	0	0	0			3,407
1 AM	13	1	318	0	0	0	0	0	0	0	0	0			3,419
2 AM	0	0	318	0	0	0	0	0	0	0	0	0			3,419
3 AM	0	0	318	0	0	0	0	0	0	0	0	0			3,419
4 AM	0	0	318	0	0	0	0	0	0	0	0	0			3,419
5 AM	0	0	318	0	0	0	0	0	0	0	0	0			3,419
6 AM	0	0	318	0	0	0	0	0	0	0	0	0			3,446
7 AM	8	12	314	17	1	16	8	8	0	6	0	6			3,442
8 AM	94	136	272	30	2	44	152	152	0	50	0	56			3,793
9 AM	45	84	233	22	9	57	8	8	0	0	0	56			4,565
10 AM	50	50	233	19	12	64	0	0	0	0	0	56			4,899
11 AM	65	65	233	14	17	61	0	0	0	0	0	56			5,121
Noon	274	129	378	14	17	58	0	0	0	0	0	56			5,570
1 PM	47	109	316	11	15	54	0	0	0	0	0	56			5,527
2 PM	37	86	267	9	13	50	0	0	0	0	0	56			5,314
3 PM	37	86	218	15	21	44	127	127	0	0	44	12			5,035
4 PM	43	101	160	17	23	38	16	16	0	0	6	6			4,489
5 PM	221	154	227	15	21	32	25	25	0	0	6	0			3,597
6 PM	137	206	158	19	26	25	0	0	0	0	0	0			3,055
7 PM	114	76	196	14	14	25	0	0	0	0	0	0			3,332
8 PM	103	84	215	4	18	11	0	0	0	0	0	0			3,396
9 PM	65	34	246	1	12	0	0	0	0	0	0	0			3,193
10 PM	50	18	278	0	0	0	0	0	0	0	0	0			3,309
11 PM	23	5	296	0	0	0	0	0	0	0	0	0			3,397
Total	1,438	1,438		221	221		336	336		56	56				

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

Table 21-23

Phase 2 (2032) Highway Level of Service Summary With Mitigation
Weekday PM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	33.0	45.4	F	33.6	35.8	E	32.9	47.6	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	37.7	25.8	C	0.4	194.9	F	36.9	32.0	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.2	34.1	D	35.3	54.0	F	43.9	37.2	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	33.7	39.8	E	22.4	67.9	F	32.6	49.2	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	17.3	69.7	F	38.9	36.1	E	38.6	41.5	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	35.1	50.1	F	35.5	36.4	E	35.1	52.4	F
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	31.8	36.2	E	11.2	89.6	F	31.6	38.9	E
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.1	20.0	B	33.3	18.3	B	33.0	32.9	D
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.8	19.1	B	10.4	44.1	F	21.1	26.2	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	24.3	18.1	B	7.2	58.7	F	23.8	31.0	D
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	19.5	40.5	E	38.6	19.9	B	35.2	31.9	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	14.9	41.2	E	24.6	29.2	D	3.5	197.0	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.9	21.0	C	38.9	20.2	C	39.0	20.6	C
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.1	33.9	D	33.1	30.3	D	32.9	35.6	E
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.8	16.9	B	31.7	17.8	B	32.0	22.1	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	32.0	11.1	B	32.1	8.7	A	31.9	12.0	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	34.8	25.8	C	3.1	138.6	F	23.8	50.3	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.4	5.4	A	0.0	235.0	F	40.0	19.3	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4	20.9	C	3.0	204.6	F	16.2	69.2	F
Note: Significant Impact									

Table 21-24
Phase 2 (2032) Highway Level of Service Summary With Mitigation
Saturday Non-Game Day

Mainlines	No Action			With Action			With Mitigation		
	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)	37.1	44.5	E	38.3	26.2	C	37.2	43.7	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	38.1	28.4	D	0.0	200.2	F	37.4	36.0	E
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	43.4	39.0	E	31.2	48.8	F	42.2	43.7	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.8	32.6	D	12.0	105.7	F	12.0	103.7	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	31.8	38.2	E	34.8	33.8	D	40.2	37.9	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	37.0	27.8	C	37.6	15.0	B	36.7	32.1	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	33.1	31.2	D	4.1	147.2	F	19.7	54.6	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.8	21.1	C	34.0	13.6	B	33.1	24.2	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.6	24.2	C	7.2	59.2	F	9.4	59.0	F
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	26.1	13.5	B	4.7	77.9	F	25.6	20.9	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	43.5	13.3	B	43.4	9.5	A	37.8	25.8	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.1	29.2	D	24.2	40.5	E	6.0	150.9	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	40.1	7.0	A	39.8	7.9	A	39.9	8.4	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3	32.7	D	33.7	22.7	C	33.3	31.8	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.4	11.7	B	30.6	10.8	B	32.5	14.9	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	39.3	8.9	A	39.6	5.2	A	39.1	9.1	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	29.6	25.9	C	1.8	141.2	F	7.4	130.4	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	43.3	7.3	A	0.0	243.5	F	32.8	28.3	D
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4	21.0	C	1.5	214.8	F	6.4	171.0	F
Note: Significant Impact									

Table 14-59

Phase 2 (2032) With Action 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	x	x	x	x
Northern Boulevard at 108th Street	x	x	x	x	x	x	x
Northern Boulevard at 114th Street	x	x	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	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		x	x	x	x	x	x
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		
Roosevelt Avenue at Main Street	x	x	x	x	x	x	x
Roosevelt Avenue at Union Street	x	x	x	x	x	x	x
Roosevelt Avenue at Parsons Boulevard	x	x	x	x	x		x
Kissena Boulevard at Main Street		x		x		x	
Sanford Avenue at College Point Boulevard			x	x			
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard	x	x	x	x	x		x
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard	x	x	x	x	x	x	
Boat Basin Road at Stadium Road	x	x	x	x	x	x	x
Boat Basin Road at World's Fair Marina	x	x	x	x	x	x	x
Stadium Road at Grand Central Parkway		x	x	x	x	x	x
Willels Point Boulevard at Northern Boulevard	x	x	x	x	x	x	x
New Willels Point Boulevard at 126th Street	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Roosevelt Avenue at CitiField / Lot B	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes: "x" means the intersection would be significantly impacted. n/a means the intersection is new for With Action conditions.

Parking demand for the proposed residential component would be satisfied through on-street and off-street parking opportunities. As in the 2008 FGEIS, 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 300 spaces. Given the anticipated residential demand of 3,101 spaces, approximately 2,800 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 convention center space—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 3,050 spaces and 2,900 spaces, respectively. These

they are found to be significantly impacted under the With Action condition, mitigation measures such as those typically implemented by NYCDOT would be further explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.

TRAFFIC—PHASE 2 (2032)

Table 21-5 presents a summary of significant adverse traffic impacts and their ability to be mitigated, and Table 21-6 summarizes the unmitigated traffic study area locations by time period. Details of the intersection capacity results and traffic mitigation measures are provided in tables at the back of this chapter.

Table 21-5
Traffic Impact Mitigation Summary—Phase 2 (2032)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
No Significant Impact	5	5	5	5	5	5	5
Fully Mitigated Impact	14	14	13	11	11	11	11
Partially Mitigated Impact	3	7	7	8	9	8	7
Unmitigated Impact	5	5	6	7	5	4	5

Table 21-6
Summary of Unmitigated Intersections—Phase 2 (2032)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
Astoria Boulevard at 108th Street			N	N	N		
Northern Boulevard at 108th Street							
Northern Boulevard at 114th Street							
Northern Boulevard at 126th Street							
Northern Boulevard at Prince Street	N		95.3				N
Northern Boulevard at Main Street	N	N	97.6	N	N	N	N
Northern Boulevard at Union Street	N		92.2				
Northern Boulevard at Parsons Boulevard							
34th Avenue at 114th Street							
34th Avenue at 126th Street			106.7				
Roosevelt Avenue at 108th Street							
Roosevelt Avenue at 114th Street			144.1	N	N	N	N
Roosevelt Avenue at 126th Street			156.1				
Roosevelt Avenue at College Point Boulevard			139.1				
Roosevelt Avenue at Prince Street							
Roosevelt Avenue at Main Street		N	98.9				
Roosevelt Avenue at Union Street	N	N	242.3	N	N	N	N
Roosevelt Avenue at Parsons Boulevard				N	N		
Kissena Boulevard at Main Street							
Sanford Avenue at College Point Boulevard							
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard							
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard	N	N		N		N	
Boat Basin Road at Stadium Road		N	452.5	N			N
Boat Basin Road at Whitt's Fair Marina							
Stadium Road at Grand Central Parkway							
Whitt's Point Boulevard at Northern Boulevard							
New Whitt's Point Boulevard at 126th Street							

Notes: "N" means the intersection would be unmitigated in the corresponding peak hour.

TABLE 22
CITYFIELD - WILLET'S POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH												No Action			With Action			Mitigation			Mitigation Measure																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH										No Action			With Action			Mitigation			Mitigation Measures
										Mv/L	V/C	Delay	LOS	Mv/L	V/C	Delay	LOS		
										Control			Control			Control			
11th Street at Roosevelt Avenue 11th Street Roosevelt Avenue										NB	LTR	0.86	57.2	E	LTR	0.86	57.2	E	-Unmitigatable impact
										EB	LTR	0.79	11.1	B	LTR	0.99	35.0	C	
										WB	LTR	1.25	133.7	F	LTR	1.51	251.7	F	
											-	-	-	-	-	-	-	-	
Overall Intersection										-	1.14	78.3	E	-	1.33	144.1	F		
114th Street at Roosevelt Avenue 114th Street										NB	LTR	0.99	64.9	E	LTR	0.99	64.9	E	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane -Shift center line of SB 114th Street approach 2 ft to the east. -Shift center line of SB 114th Street approach 2 ft to the east. Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection -Modify signal timing. Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s]. -Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 130-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.
										SB	LTR	1.09	91.4	F	LTR	1.24	152.6	F	
										EB	LTR	0.93	22.7	C	LTR	1.53	263.0	F	
										WB	LTR	0.74	15.7	B	LTR	1.18	108.2	F	
Overall Intersection										-	-	-	-	-	-	-	-		
126th Street at Roosevelt Avenue 126th Street										NB	-	-	-	-	-	-	-	-	-Partially mitigated -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan. EB/WB will have 64 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 34 s green time [each phase will have 3 s amber and 2 s all red time].
										SB	LTR	0.68	55.0	D	LTR	0.81	65.8	E	
											DefL	1.03	100.7	F	LTR	0.83	50.4	D	
											TR	0.66	48.0	D	L	2.70	821.6	F	
Roosevelt Avenue										EB	-	-	-	-	-	-	-	-	-Shift centerline of SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan. EB/WB will have 64 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 34 s green time [each phase will have 3 s amber and 2 s all red time].
											DefL	1.74	372.8	F	R	0.99	69.3	E	
											TR	0.69	8.1	A	DefL	1.10	127.7	F	
											LTR	0.70	8.0	A	TR	0.69	10.5	B	
Overall Intersection										-	0.79	27.1	C	-	1.99	136.1	F		
College Point Boulevard at Roosevelt Avenue College Point Boulevard										NB	L	1.25	176.0	F	L	1.04	100.0	F	-Partially Mitigated -Remove center median on east leg of Roosevelt Avenue -Restripe the WB Roosevelt Avenue approach from one 22-ft center median, one 13-ft travel lane, and one 17-ft travel lane to one 13-ft left-turn pocket, one 9-ft tapered hatched median, one 11-ft travel lane and one 19-ft travel lane for 80 ft -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place -Modify signal phasing and timing plan: WB-lead phase will have 9 s green time; EB/WB will have 25 s green time; EB-lag phase will have 16 s green time; NB/SB phase will have 26 s green time; NB lag phase will have 19 s green time [each phase will have 3 s amber and 2 s all red time].
											TR	0.76	31.3	C	TR	0.83	37.3	D	
											TR	1.33	193.8	F	T	1.18	134.5	F	
											L	0.48	37.2	D	L	0.53	38.4	D	
Roosevelt Avenue										WB	TR	1.22	133.8	F	LTR	1.50	262.4	F	-Shift centerline of SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan. EB/WB will have 64 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 34 s green time [each phase will have 3 s amber and 2 s all red time].
											L	1.25	43.7	D	L	0.25	907.1	F	
											TR	0.45	35.9	D	TR	0.60	39.7	D	
											TR	0.45	35.9	D	TR	0.34	31.7	C	
Overall Intersection										-	1.33	119.6	F	-	1.04	139.1	F		

TABLE 27
CITIFIELD - WILLET'S POINT DEVELOPMENT STUDY
2002 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH										No Action			With Action			Mitigation			Mitigation Measure			
										Mvt.	V/C	Control	Delay	LOS	Mvt.	V/C	Control	Delay	LOS			
												Delay					Delay					
11th Street at Roosevelt Avenue										NB	LTR	1.08	85.9	F	LTR	1.08	85.9	F				-Unmitigatable impact
Roosevelt Avenue										EB	LTR	0.75	17.9	B	LTR	0.93	32.0	C				
										WB	LTR	1.24	130.2	F	LTR	1.49	242.3	F				
											-	-	-	-	-	-	-	-				
Overall Intersection										-	1.20	84.4		F	-	1.38	140.7	F				
114th Street at Roosevelt Avenue										NB	LTR	0.69	46.6	D	LTR	0.69	46.6	D				
114th Street										SB	LTR	1.11	97.5	F	LTR	1.19	129.3	F				
											-	-	-	-	-	-	-	-				
Roosevelt Avenue										EB	LTR	1.33	170.5	F	LTR	2.09	511.8	F				
											-	-	-	-	-	-	-	-				
										WB	LTR	0.80	17.4	B	LTR	1.12	80.3	F				
											-	-	-	-	-	-	-	-				
											-	-	-	-	-	-	-	-				
Overall Intersection										-	1.26	71.4		E	-	1.82	192.3	F				
126th Street at Roosevelt Avenue										NB	-	-	-	-	-	-	-	-				
126th Street										LTR	0.22	37.4	D	LTR	2.71	832.9	D					
										SB	DefL	1.25	167.0	F	DefL	1.90	456.2	D				
										TR	0.52	30.4	C	TR	1.43	238.0	F					
											-	-	-	-	-	-	-	-				
										EB	-	-	-	-	-	-	-	-				
Roosevelt Avenue										LTR	0.62	23.0	C	DefL	3.00+	1000.0+	F					
										WB	LTR	0.51	20.2	C	TR	1.11	92.7	F				
											-	-	-	-	-	-	-	-				
Overall Intersection										-	0.89	56.0		E	-	3.00+	1000.0+	F				
College Point Boulevard at Roosevelt Avenue										NB	L	1.05	93.9	F	L	1.47	360.9	F				
College Point Boulevard										TR	0.78	26.3	C	TR	0.78	26.3	C					
											-	-	-	-	-	-	-	-				
										SB	TR	0.89	40.4	D	TR	1.14	105.3	F				
Roosevelt Avenue										EB	L	0.59	30.5	C	L	0.67	32.0	C				
										WB	TR	1.25	134.7	F	TR	1.55	272.4	F				
											L	0.25	32.9	C	L	0.25	32.9	C				
										TR	0.42	25.8	C	TR	0.55	28.3	C					
Overall Intersection										-	1.14	62.6		E	-	1.53	133.7	F				
<p>-Shift center line of WB Roosevelt Avenue approach 11 ft to the south</p> <p>-Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane</p> <p>-Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane</p> <p>-Shift centerline of NB 114th Street approach 3 ft to the east</p> <p>-Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane</p> <p>-Shift center line of SB 114th Street approach 2 ft to the east</p> <p>Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection</p> <p>Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection</p> <p>-Modify signal timing. Shift 1 s green time from EB WB phase to NB SB phase [EB/WB green time shifts from 80 s to 79 s; NB/SB green time shifts from 30 s to 31 s]</p> <p>-Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane</p> <p>-Partially mitigated</p> <p>-Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes</p> <p>-Shift centerline of SB 126th Street approach 9 ft to the east</p> <p>-Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft</p> <p>-Shift centerline of EB Roosevelt Avenue approach 1 ft to south</p> <p>-Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes</p> <p>-Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes</p> <p>-Modify signal phasing and timing plan. EB/WB will have 70 s green time. EB-lag/SB right phase will have 7 s green time. NB/SB phase will have 28 s green time [each phase will have 3 s amber and 2 s all red time].</p> <p>-Partially Mitigated</p> <p>-Remove center median on east leg of Roosevelt Avenue</p> <p>-Restripe the WB Roosevelt Avenue approach from one 22-ft center median, one 13-ft travel lane, and one 17-ft travel lane to one 13-ft left-turn pocket, one 9-ft tapered hatched median, one 11-ft travel lane and one 19-ft travel lane for 80 ft.</p> <p>-Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft.</p> <p>-Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft.</p> <p>-Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft.</p> <p>-Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft.</p> <p>-Diversi SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place.</p> <p>-Modify signal phasing and timing plan. WB-lag phase will have 8 s green time. EB/WB will have 28 s green time. EB-lag phase will have 17 s green time. NB/SB phase will have 28 s green time; NB lag phase will have 14 s green time [each phase will have 3 s amber and 2 s all red time].</p>																						

TABLE 5
ESTIMATION OF THE NUMBER OF TRAFFIC ACCIDENTS GENERATED
ANNUALLY BY 116 MILLION VMT PRODUCED BY THE ORIGINAL
WILLETS POINT DEVELOPMENT PLAN PROJECT IN 2017

ACCIDENT TYPE	RATE/100 MIL VMT (1)	NUMBER OF ACCIDENTS	EXTERNAL COSTS (2)
Fatal Accidents	1.5	2	\$8,910,262
Incapacitating Injury Accidents	41	48	\$16,722,809
Serious Injury Accidents	81	94	\$6,589,697
Minor Injury Accidents	150	174	\$6,482,370
Property-Damage-Only Accidents	540	626	\$2,478,665
TOTAL NUMBER OF ACCIDENTS EACH YEAR		944	\$41,183,802

(1) Rates based on accident data provided by NYMTC in their 2006 Transportation Safety Statistical Report adjusted for national figures presented in the NHTSA's Traffic Safety Facts 2006.

(2) Based on costs reported in "SafetyAnalyst: Software Tools for Safety Management of Specific Highway Sites, While Paper for Model 3-Economic Appraisal and Priority Ranking," prepared for FHWA by Midwest Research Institute, 2002, adjusted to 2017 dollars. Brian Ketcham Engineering, PC, November 2009

ESTIMATION OF THE NUMBER OF TRAFFIC ACCIDENTS GENERATED
ANNUALLY BY 61 MILLION VMT PRODUCED BY THE WILLETS "WEST"
PROJECT IN 2032

ACCIDENT TYPE	RATE/100 MIL VMT (1)	NUMBER OF ACCIDENTS	EXTERNAL COSTS (2)
Fatal Accidents	1.5	1	\$8,438,444
Incapacitating Injury Accidents	41	25	\$15,837,301
Serious Injury Accidents	81	49	\$6,240,758
Minor Injury Accidents	150	92	\$6,139,115
Property-Damage-Only Accidents	540	329	\$2,347,414
TOTAL NUMBER OF ACCIDENTS EACH YEAR		496	\$39,003,033

(1) Rates based on accident data provided by NYMTC in their 2006 Transportation Safety Statistical Report adjusted for national figures presented in the NHTSA's Traffic Safety Facts 2006.

(2) Based on costs reported in "SafetyAnalyst: Software Tools for Safety Management of Specific Highway Sites, While Paper for Model 3-Economic Appraisal and Priority Ranking," prepared for FHWA by Midwest Research Institute, 2002, adjusted to 2032 dollars. Brian Ketcham Engineering, PC, July 2013

ESTIMATION OF THE NUMBER OF TRAFFIC ACCIDENTS GENERATED
ANNUALLY BY 194 MILLION VMT PRODUCED BY THE WILLETS "WEST"
MALL PLUS THE ORIGINAL WILLETS POINT PROJECT IN 2032

ACCIDENT TYPE	RATE/100 MIL VMT (1)	NUMBER OF ACCIDENTS	EXTERNAL COSTS (2)
Fatal Accidents	1.5	3	\$26,837,020
Incapacitating Injury Accidents	41	80	\$50,367,810
Serious Injury Accidents	81	157	\$19,847,657
Minor Injury Accidents	150	291	\$19,524,398
Property-Damage-Only Accidents	540	1048	\$7,465,547
TOTAL NUMBER OF ACCIDENTS EACH YEAR		1,578	\$124,042,432

(1) Rates based on accident data provided by NYMTC in their 2006 Transportation Safety Statistical Report adjusted for national figures presented in the NHTSA's Traffic Safety Facts 2006.

(2) Based on costs reported in "SafetyAnalyst: Software Tools for Safety Management of Specific Highway Sites, While Paper for Model 3-Economic Appraisal and Priority Ranking," prepared for FHWA by Midwest Research Institute, 2002, adjusted to 2032 dollars. Brian Ketcham Engineering, PC, July 2013

TABLE 6**ANNUAL EXTERNALITY COSTS OF THE WILLETS POINT
DEVELOPMENT PLAN, 2017****SUMMARY OF RESULTS**

	Externality Costs
Added Travel Time Costs (Congestion)	\$30,624,000
Air Pollution (Health Costs)	\$16,182,000
Noise Impacts (Health Costs)	\$2,784,000
Accident Costs, Internal	\$26,494,038
Accident Costs, External	\$14,689,764
Pavement Wear & Tear	\$3,654,000
Vehicular Wear & Tear Costs	\$3,480,000
Other Externality Costs (1)	\$57,942,000
TOTALS	\$155,849,802

(1) Includes environmental degradation such as the control of water pollution, oil spills, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and military costs of ensuring an abundant supply of imported oil. Greenhouse gas emissions and their destabilizing effect on climate are another important environmental externality from motor vehicle use. Traffic generated by the Willets Point Development Plan will generate

Brian Ketcham Engineering, PC, November 29, 2009

TABLE 7**ANNUAL EXTERNALITY COSTS OF THE WILLETS "WEST"
MALL, 2032****SUMMARY OF RESULTS**

	Externality Costs
Added Travel Time Costs (Congestion)	\$2,438,052
Air Pollution (Health Costs)	\$2,321,954
Noise Impacts (Health Costs)	\$10,797,088
Accident Costs, Internal	\$25,091,123
Accident Costs, External	\$13,911,910
Pavement Wear & Tear	\$6,501,472
Vehicular Wear & Tear Costs	\$38,660,541
Other Externality Costs (1)	\$20,433,199
TOTALS	\$120,155,340

(1) Includes environmental degradation such as the control of water pollution, oil spills, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and military costs of ensuring an abundant supply of imported oil. Greenhouse gas emissions and their destabilizing effect on climate are another important environmental externality from motor vehicle use. Traffic generated by the Willets Point Development Plan will generate about 38,000 tons

Brian Ketcham Engineering, PC, July 8, 2013

TABLE 8**ANNUAL EXTERNALITY COSTS OF THE ENTIRE WILLETS
POINT BUILD OUT INCLUDING THE WILLETS "WEST" MALL
IN 2032 DOLLARS****SUMMARY OF RESULTS**

	Externality Costs
Added Travel Time Costs (Congestion)	\$7,763,478
Air Pollution (Health Costs)	\$7,393,788
Noise Impacts (Health Costs)	\$34,381,115
Accident Costs, Internal	\$79,797,998
Accident Costs, External	\$44,244,434
Pavement Wear & Tear	\$20,702,607
Vehicular Wear & Tear Costs	\$123,106,572
Other Externality Costs (1)	\$65,065,336
TOTALS	\$382,455,327

(1) Includes environmental degradation such as the control of water pollution, oil spills, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and military costs of ensuring an abundant supply of imported oil. Greenhouse gas emissions and their destabilizing effect on climate are another important environmental externality from motor vehicle use. Traffic generated by the Willets Point Development Plan will generate about 38,000 tons

Brian Ketcham Engineering, PC, July 8, 2013

Willets Point United Inc.
P.O. Box 560191 • College Point, New York 11356

July 19, 2013

New York City Planning Commissioners
c/o Calendar Information Office – Room 2E
22 Reade Street
New York, New York 10007

Robert R. Kulikowski, Ph. D.
Mayor's Office of Environmental Coordination
100 Gold Street, 2nd Floor
New York, New York 10038

Re: **Proposed Willets Point / Willets West development**
CEQR No. 07DME014Q
Comments pertaining to pending ULURP application and DSEIS

Dear City Planning Commissioners and Dr. Kulikowski:

I am writing on behalf of Willets Point United Inc. to supplement my oral and written testimony delivered on July 10, 2013 at the public hearing associated with the Uniform Land Use Review Procedure ("ULURP") and the Draft Supplemental Environmental Impact Statement ("DSEIS") pertaining to the proposed Willets Point / Willets West development, CEQR No. 07DME014Q. The following information addresses certain questions and issues raised by the City Planning Commission ("Commission") during the public hearing on July 10, 2013.

(1.) What is Willets Point United Inc.?

Willets Point United Inc. ("WPU") is a coalition of Willets Point property and business owners, formed in 2008, that wants the City to stop its decades-long deliberate withholding of municipal services from Willets Point which hinders the operation of the existing industrial businesses here; that opposes the redevelopment of Willets Point in the manner being promulgated by the Bloomberg administration, which includes the forcible acquisition of our properties via eminent domain to transfer to other private parties to facilitate a non-essential, speculative, alleged economic development project; and that holds project proponents accountable for disseminating false information to decision-makers and the public, abrogating their written guarantees, and engaging in plainly illegal activity to push this project; among other WPU initiatives. For example:

- WPU discovered that the draft Access Modification Report ("AMR") pertaining to proposed new highway access ramps to and from the Van Wyck Expressway (ramps that are essential to the entire proposed Willets Point development), submitted by the New York City Economic Development Corporation ("NYCEDC") with the intent that it be approved by the New York State Department of Transportation ("NYSDOT") and the Federal Highway Administration ("FHWA"), relied upon traffic presumptions that

differed dramatically from those contained within the Final Generic Environmental Impact Statement ("FGEIS") previously prepared for the proposed Willets Point development. As the *New York Times* reported: "State officials have repeatedly expressed frustration with the city's inability to provide reliable information and the pressure it was placing on them to expedite their analysis, according to a review of hundreds of e-mails involving the Willets Point project that were provided to *The New York Times*" by WPU. (Santos, Fernanda. 2010. E-Mails Show State Officials' Skepticism About Willets Point Project. *New York Times*, August 13; p. A17.) WPU's traffic engineer, Brian Ketcham, formally interceded with both NYSDOT and FHWA, challenging the AMR during two all-agency meetings convened for that purpose and by submitting hundreds of pages of independent expert analysis. Thereafter, NYSDOT and FHWA did not approve the draft AMR, but rejected it; restructured the ramp approval process to require an Environmental Assessment prior to approval of any AMR; and sent NYCEDC back to the drawing board to draft a new AMR, which took two years.

- WPU discovered that former Queens Borough President Claire Shulman and her local development corporation ("LDC") conducted a lengthy, unlawful, unregistered lobbying campaign advocating approval of the proposed Willets Point development. The Office of the City Clerk agreed with WPU, resulting in a then-record penalty of \$59,090.00 imposed upon Shulman's LDC.
- WPU discovered that not only Shulman's LDC, but also the New York City Economic Development Corporation ("NYCEDC"), violated state law by attempting to influence legislation authorizing the proposed Willets Point development – activity that is absolutely prohibited to all local development corporations. Moreover, NYCEDC disbursed City funds totaling \$450,000.00 to Shulman's LDC, then directed unlawful lobbying by Shulman's LDC. The New York Mets, owned by the owners of Sterling Equities (which has since been designated by the City as a developer of Willets Point phase one), also financed Shulman's LDC. The New York State Office of the Attorney General conducted a three-year investigation and ultimately agreed with WPU, declaring in 2012: "These local development corporations flouted the law by lobbying elected officials, both directly and through third parties, to win approval of their favored projects." (<http://www.ag.ny.gov/press-release/ag-schneiderman-ends-illegal-lobbying-nyc-officials-three-local-development>) New York City Comptroller John Liu wrote to Mayor Bloomberg: "Last week your Administration admitted in a settlement with the New York State Attorney General that the New York City Economic Development Corporation (EDC) knowingly and illegally lobbied City Council members about your development agenda. ... I urge you to move swiftly to identify those senior officials from City Hall and the EDC responsible for the flagrant and repeated law-breaking activities, and hold them accountable." (http://www.comptroller.nyc.gov/press/2012_releases/pr12-07-083.shtm) As a consequence of its illegal lobbying for the Willets Point development, NYCEDC has had to cease operating as a local development corporation and has been compelled to restructure as a different type of not-for-profit entity. The 2008 approvals of the proposed Willets Point development – procured in the context of lobbying so illegal that it required the restructuring of NYCEDC to ensure it will never happen again – still

are the bases of the proposed Willets Point phase one / Willets West development being considered now.

- WPU sued the City because of the inadequacy of the environmental review conducted for the proposed Willets Point development. Among other things, WPU alleged that the City could not pursue a phased development pursuant to its *Technical Memorandum for the Willets Point Development Plan FGEIS*, TM004, dated February 11, 2011 ("Technical Memorandum 4"), and that the City instead must prepare a Supplemental Environmental Impact Statement ("SEIS"). In that court proceeding, on July 24, 2012, the City finally stipulated that "the City will not proceed with development in Willets Point under Technical Memorandum 4"; and the City is now taking steps to finalize a Supplemental Environmental Impact Statement, just as WPU had said was necessary.
- WPU again sued the City to challenge its attempted use of eminent domain to forcibly acquire Willets Point phase one properties. In that court proceeding, on May 2, 2012, the City finally stipulated that it "would not proceed under its [eminent domain] Determination and Findings, adopted by the City on May 2, 2011", and abandoned the particular attempt to use eminent domain that was the subject of that court proceeding. The City may still attempt to use eminent domain again in the future to acquire Willets Point properties.

In each of the above instances, when WPU took a position and the relevant facts were properly taken into account, WPU's position was vindicated.

Presently, it is the position of WPU that the proposed Willets Point phase one / Willets West plan of Sterling Equities and Related Companies ("Sterling/Related") is inappropriate and cannot be implemented.

- (2.) The Commission must consider that the purpose of the special permit to which the ULURP application pertains is to facilitate the shopping mall, and none other.**

At the outset of the public hearing held on July 10, 2013, Commission Chair Amanda Burden stated: "... an important element of the project analyzed in the Draft Supplemental Environmental Impact Statement – the retail development at Willets West on the Citi Field site – is not subject to the land use jurisdiction of the Commission since it is located on parkland. ... Just to make it clear, our purview as City Planning Commission really is on the Willets East part of the project and the temporary interim uses there."

We emphasize that the ULURP application now being considered, which pertains to the prospective use of Willets Point phase one property as a parking lot, has but one purpose: to facilitate the construction of a 1.4 million square foot shopping mall / entertainment center on parkland property. Except for the intent to construct that shopping mall and to relocate the existing parking lot, there would be no pending ULURP application for any special permit to modify the use of Willets Point phase one property. It would be both inappropriate and an abdication of the Commission's responsibilities, for the Commission to narrowly consider just

the parking lot application, while disregarding the specific intended larger effect of that application – the construction of a huge shopping mall on parkland – that will "change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses", as Queens Community Board 3 wrote when it disapproved this application by its vote of 30-1.

The Commission cannot allow the proposed site of the mall – which just happens to be parkland – to circumvent the Commission's responsible analysis of an application that will obviously "change the character of the surrounding neighborhoods and impact the livelihoods of 250,000 residents and many small mom-and-pop businesses". In any other circumstance where an application will "change the character of the surrounding neighborhoods" the Commission certainly would be involved in assessing the potential changes in character, and would necessarily factor them into any decision for or against the application. The Commission's responsibility to the public is to do so here, as well.

WPU and the public-at-large are not the only ones who recognize that this parking lot ULURP application is inseparable from the intent to construct a 1.4 million square foot mall, and that the application must be evaluated in that context. The notice of the public hearing published by Queens Community Board 7 describes this application as: "ULURP APPLICATION #C 130223 ZSQ – To allow for a 1.4 million square foot retail and entertainment development known as 'Willets West.'" (See Attachment A.) As the local community board has formally characterized this ULURP application as allowing for the mall (while not even mentioning the modified parking use at Willets Point), the Commission is able to do the same.

Do not permit an end-run around the Commission's planning oversight – which is what this ULURP application aims to do.

(3.) The 1961 amendment to the City's administrative code provides no basis to construct a shopping mall on the parkland at issue.

Since the purpose of the pending ULURP application to allow a parking lot on Willets Point phase one property is to facilitate the construction of a mall on other parkland property, if the construction of that mall is unlawful then there is no legitimate basis for the pending parking lot ULURP application.

Please review the attached letter from attorney Harvey Epstein, Associate Director of the Urban Justice Center, addressed to land use counsel for Sterling/Related (see Attachment B), which sets forth legal reasoning why the 1961 provision of the City's administrative code provides no basis to construct a shopping mall on the parkland at issue, and why the proposed project of Sterling/Related is therefore "fatally flawed".

If the analysis within the Urban Justice Center letter is correct (and we believe it is), then the Commission is being asked to approve a ULURP application to facilitate construction of a mall that is unlawful and cannot occur. The Commission must not approve a ULURP application that is intended to facilitate an unlawful land use that cannot occur.

(4.) Three other developers submitted proposals that kept within the bounds of the Willets Point Special District and did not add any mall on parkland.

In response to the Request for Proposals ("RFP") seeking developers for Willets Point phase one, three respondents other than Sterling/Related submitted proposals to implement development consistent with the provisions of the RFP, within the bounds of the 23-acre phase one site inside the Willets Point Special District. One of those proposals – submitted by Silverstein Properties, Inc. and Taubman Centers, Inc. – even committed "100% of the residential units in Phase 1 to the affordable housing program".

But the City administration rejected all of those proposals, and instead selected the proposal of Sterling/Related – initially a proposal to construct a casino and gaming facility on the parkland property located west of Citi Field beyond the boundaries of the Willets Point Special District, and which included no housing component whatsoever. The Sterling/Related proposal is said to have been modified such that the parkland property where the casino would have been constructed is now designated as the site of a retail mall and entertainment center, and housing is to be constructed within the Special District in the year 2028 (but only if new highway access ramps to and from the Van Wyck Expressway are constructed first – ramps that no one is obligated to construct, and that the project contract specifies the City is not responsible to build). The plan of Sterling/Related also expands the total size of the Willets Point development from 62 acres as approved during 2008, to 108.9 acres as intended now. The Draft SEIS ("DSEIS") explicitly admits this.

The decision to select the plan of Sterling/Related to the exclusion of all others was made by the City administration via a process that violated written guarantees within the Willets Point FGEIS and elsewhere, that the Willets Point Advisory Committee, led by Queens Borough President Helen Marshall, as well as Queens Community Board 7, would participate in and help to guide developer selection. Instead, those Queens entities were completely excluded from the developer selection process. As we now know, the developer selection process was also an opportunity to choose a plan that would not expand the size of the development from 62 acres to 108.9 acres (with associated increased impacts), and that would not sacrifice 30+ acres of Queens' public parkland for use as a retail mall. It is no wonder that the City administration circumvented the promised involvement of Queens entities, and instead dictated the choice of developers.

In the event that the pending ULURP application of Sterling/Related is disapproved, the City can issue a new RFP for development within the Willets Point Special District that does not sacrifice parkland for use as a mall, and that otherwise respects the goals of the Willets Point development as approved in 2008. If the prior RFP responses are any indication, there will be proposals that respect the property boundaries while realizing the goals established in 2008.

Attached is an informative flyer prepared by WPU (see Attachment C) that summarizes the three rejected development proposals. Also attached is a CD-R disc containing the three rejected RFP responses (see Attachment D), so that the Commission may appreciate that Sterling/Related was not the only available choice, and would not be in the future.

(5.) The City and Sterling/Related are deliberately avoiding conducting any environmental tests at this time on Willets Point phase one property.

During the public hearing held on July 10, 2013, Sterling Equities' representative Richard Brown testified: "As soon as we close, we will be in there doing investigative work of all 23 acres, both above grade and below grade. There's been very limited work done at this time – rightly so, because the city has not had possession. We are to be delivered vacant possessions. So whenever that happens, day one, day two, we go in and we start all of our testing."

But the City claims to already own 95 percent of the Willets Point phase one property. Contrary to the misleading testimony of Richard Brown, nothing prevents the City from performing borings, obtaining soil samples, and conducting environmental tests **right now** throughout the 23-acre phase one site. That the City has not done so is very telling.

The City administration spent upwards of \$200 million of taxpayer funds to acquire the Willets Point phase one property, but intends to gift that phase one property to Sterling/Related for the price of \$1 (one dollar). It is bad enough that such a deal is contrary to what City officials told the City Council during 2008: that the City would recoup the cost of acquiring the property, through the sale of the property to the developer. As we understand it, the new rationale for the steeply discounted \$1 price is that the property has "negative value", because it is allegedly contaminated. But with no scientific tests performed, how can the taxpayers be certain that a discount of \$200+ million is actually warranted?

The City and Sterling/Related are deliberately delaying any environmental testing of Willets Point phase one property until after Sterling/Related have closed the property transaction and taken possession of the property. WPU alleges that they are doing so, because (a) if testing was performed now and it determined that the property is not severely contaminated and required little or no remediation, then there would be no justification to transfer the property to Sterling/Related at the sweetheart deal price of \$1, when they should instead pay the going market rate (as the City Council was promised would be the case during 2008); and (b) if testing was performed now and it determined that the property is very severely contaminated, Sterling/Related might conclude that implementing the proposed development is not financially viable – precluding transferring the property to them at all. For those two reasons, the City and Sterling/Related cleverly prefer not to perform any environmental tests at this time, but to delay any tests until after Sterling/Related have taken possession of the property for the price of \$1. That way, no matter what the test results ultimately show, Sterling/Related will possess the property that they covet – even if it can only be paved over for use as a parking lot. But to delay important environmental tests that could be performed now is not in the taxpayers' interest, and constitutes reckless non-planning.

Is the \$1 price justified? Is the proposed remediation and development feasible? Without scientific environmental testing throughout the Willets Point phase one property, it is impossible to answer those key questions. Therefore, the first order of business – before establishing the price of the property, and before transferring ownership of it – must be to perform the environmental tests that are being purposefully delayed until later.

(6.) Unknown "feasibility" and "effectiveness" of traffic mitigation measures – despite relying completely on them.

DSEIS chapter 21 describes traffic mitigation measures. It acknowledges that not every traffic impact can be mitigated. In our opinion, the remaining unmitigated impacts are collectively so severe as to make this proposed development inappropriate and unworthy of approval. Even with the most optimistic mitigation measures in place, a number of intersections at major entry points to the proposed development will operate at Level of Service "F" (fail), with delays of between 100 seconds and more than 800 seconds (13 minutes!).

DSEIS chapter 21 also describes circumstances in which very severe traffic impacts caused by the proposed development (described within DSEIS chapter 14) are completely reversed by the recommended hypothetical mitigation. We think it is dangerous to trust this self-serving mitigation report.

First, DSEIS chapter 21 (the mitigation report) quietly states: "The effectiveness and feasibility of proposed mitigation measures will be further assessed between the draft and final SEIS" (page 21-2).

In other words, no one is committing to the "effectiveness" and "feasibility" of the specific mitigation measures that are being touted now to decision-makers, and which so miraculously improve traffic conditions. Rather, a future, final version of the mitigation report may conclude that all or some of the recommended mitigation measures are simply not effective, or even "feasible" – in which case improvements in traffic flow shown in the present mitigation report will **not** occur, and those impacts may instead be unmitigated.

How can anyone rely upon a report that cannot vouch for even the "feasibility" of the alleged solutions that it presents?

How can the report represent that certain mitigations are essential – without knowing if they are even feasible?

Second, per the mitigation report, some of the recommended mitigations are "measures that may call for detailed review by both NYCDOT and NYSDOT and which represent preferred improvements that would benefit the overall traffic network. As discussed above, if these mitigation measures are modified or rejected by the review agencies, significant adverse impacts identified above would be **unmitigated**" (emphasis added; page 21-29).

In other words, achieving the vastly improved traffic flows described in the mitigation report requires measures that NYCDOT and NYSDOT have not yet reviewed or approved, and which they may eventually reject. At the present time, no one can guarantee that any such mitigation measure will actually be implemented.

Please refer to the analysis of WPU's traffic engineer, Brian Ketcham, submitted together with my written testimony at the public hearing held on July 10, 2013, to understand the severity

of the actual traffic impacts of the proposed project. DSEIS chapter 14 also sets forth what the traffic impacts of the proposed project will be, in the event that mitigation measures cannot be implemented or turn out to be ineffective.

- (7.) **The Commission has bent its rules to accommodate immediate proxy testimony in favor of the proposed development, while enforcing its rules and delaying proxy testimony opposed to the proposed development.**

At the public hearing pertaining to the proposed Willets Point development held on August 13, 2008 – during a section of that hearing dedicated to testimony in opposition to the proposed project – the name "Kevin Loyst" was called to testify. In place of Kevin Loyst, a person named Kevin Phillips came to the podium, identified himself, and stated that he was "here to speak on behalf of Kevin Loyst, who's a colleague" who had to depart the hearing after several hours.

Commission Chair Amanda Burden prohibited Kevin Phillips from testifying at that time as a proxy for Kevin Loyst, telling Phillips unambiguously: "You have to sign up on your own. It's a rule, we have to do – You can't substitute for somebody else. Sorry. So if you just sign up on your own. ... Just sign up on a new card. **You have to sign up for yourself. You can't substitute for somebody else.** ... We will definitely call you, later."

Kevin Phillips then left the podium, and the Commission called a different speaker.

We would have expected consistent enforcement of the Commission's rules at the public hearing recently held on July 10, 2013, when – during a section of the hearing dedicated to testimony in favor of the application – the name "Dan Hendrick" was called to testify, and an unidentified person who was not Dan Hendrick came to the podium. The unidentified person stated that he was "actually here on behalf of Dan Hendrick, who is the V.P. for the New York League of Conservation Voters".

Neither Commission Chair Amanda Burden nor any other Commission member stopped this unidentified person from testifying "on behalf of Dan Hendrick", or enforced the Commission's strict rules that "you have to sign up for yourself" and "you can't substitute for somebody else". The unidentified person proceeded to deliver testimony as a proxy for the absent Dan Hendrick, in favor of the application.

The Commission has treated unequally those who would provide proxy testimony opposed to the Willets Point development, versus those who would provide proxy testimony in favor of the Willets Point development. Kevin Phillips, who was opposed, was relegated to filling out a new speaker's card and beginning the long wait to testify, again; whereas the unidentified person who appeared on July 10, 2013, who was in favor of the application, was welcomed and testified immediately.

WPU intends to post video recordings showing the Commission's unequal treatment of the two above-described speakers on our YouTube channel

(<http://www.youtube.com/user/WilletsPoint>) by Monday, July 22, 2013.

The ULURP process must be neutral and devoid of any such bias. It is no less appropriate that a proxy speaker in favor of the Willets Point development be given a special privilege, than it is that the City should fund an unlawful lobbying scheme to influence decision-makers to approve the project. Both of those tactics, and many others, large and small, have been leveraged by powers-that-be against Willets Point property and business owners – and the WPU membership will not tolerate it.

(8.) The application has significant opposition and virtually no public support.

Significantly, during the public hearing held on July 10, 2013, **no one** from the public ever requested that the Commission approve the pending ULURP application so that they may shop at a Willets West mall built on parkland, park their vehicle on Willets Point phase one property, use a golf driving range at Willets Point during the Mets off-season (i.e., during wintertime), or do anything else that is associated with the ill-conceived, unwanted Sterling/Related project. Indeed, there was a very obvious lack of public enthusiasm for this proposed project during the Commission's public hearing.

Testifiers opposed to the Sterling/Related application outnumbered those in favor. And it must be noted that those in favor merely consisted of NYCEDC employees, AKRF employees, developers' attorneys, and one union member. Simply put, there is virtually no public support for the project which the ULURP application would enable.

(9.) The DSEIS relies upon plainly inaccurate "No Action" baseline conditions.

The DSEIS states: "For the purposes of a conservative impact disclosure, this SEIS assumes that the **existing uses on the project site would be maintained** in each of the three No Action scenarios" (emphasis added; page 1-12).

However, that assumption is inaccurate, for at least two reasons:

First, the City intends, and is already taking steps, to evict tenant businesses that operate throughout the Willets Point phase one property. Tenant businesses are receiving telephone calls from representatives of the New York City Department of Housing Preservation and Development, informing the businesses that they will receive written vacate notices after July 22, 2013. That the City is issuing vacate notices even before obtaining any approval from the Commission or from the City Council that would enable the Sterling/Related proposal to proceed, indicates that the City intends that the tenant businesses vacate the phase one site, regardless of whether the pending ULURP application is approved or any development ever occurs.

The City cannot inform tenant businesses that it will evict them, and proceed to do so, while falsely assuming in the DSEIS exactly the opposite – that "existing uses on the project site would be maintained". Rather, the text of the SEIS must reflect the reality of the circumstances

in the Special District, and the intention of the City. If it does not, then the SEIS is inaccurate.

Moreover, the City has not disclosed what will become of the City-owned Willets Point property in the event that the City's proposed Willets Point development does not occur, but it must do so now in order to ensure an accurate SEIS analysis.

Second, the SEIS must account for the likely future effects of the newly-installed sanitary and storm water sewer lines along 126th Street directly adjacent to Willets Point property, which will be complete by the time the SEIS is finalized, or shortly thereafter.

Whereas during 2008 when the FGEIS was prepared no new sewer main lines actually existed at Willets Point, that is not the case now at the time that the SEIS is being prepared. The existence of the long-sought sewer lines is a significant change in background conditions affecting the entire Willets Point site. All "no action" scenarios described in the SEIS must take into account the likelihood that some existing Willets Point property owners will seek to connect to the new sewer main lines, especially as doing so would facilitate the development of their properties which they have consistently said time and again they would do, if sewer lines existed. It is inconceivable that the sewer lines, having been installed, will not be used.

As part of the SEIS analysis, the City must assess what owner-development would likely occur, even "without action" on the part of the City, now that the sewer main lines exist. The conclusion cannot be that "no change" would be made to any portion of the project site, and that "the existing uses on the project site would be maintained". The sewer lines are bound to inspire changes, and the City is responsible for assessing what those changes might be, as part of the SEIS analysis. That analysis should include outreach to all Willets Point private property owners, to discuss whatever intentions they may have to connect to the sewer systems and enhance the uses of their properties beyond those existing today, in the event that the City's proposed Willets Point development does not occur. To presume that nothing about the area will change despite the presence of the long-sought sewer lines, is to severely underestimate the ambition of the private property owners; and guarantees an inaccurate SEIS analysis.

(10.) More tenant businesses are impacted than the Commission has been led to believe.

The public hearing on July 10, 2013 included testimony from representatives of the Sunrise Cooperative, an association of approximately 60 tenant businesses that are seeking to relocate together (co-locate) in a group or groups. It is our understanding that some of those 60 businesses are located within Willets Point but beyond the 23-acre phase one area that would be affected if the present Sterling/Related plan proceeds.

In the recent eminent domain court case pertaining to a first phase of Willets Point property that was substantially similar to the phase one that is presently contemplated, the City's "Response to EDPL Comments" dated May, 2011 acknowledged that 139 auto related businesses in the first phase would be displaced.

Accordingly, it is important to recognize that the majority of tenant businesses to be

displaced by the present plan are **not** members of the Sunrise Cooperative, and that even if all 60 businesses that are Sunrise Cooperative members would be successfully relocated (and there is no indication that they will be), there are still 79 or more other business within the phase one area – in fact, the majority of affected businesses – that would still need to be relocated, and that would **not** be helped by any Sunrise Cooperative plan.

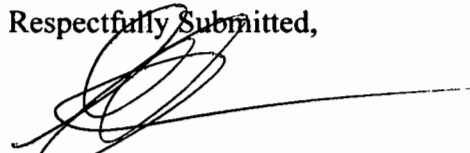
The 79+ businesses that are not members of the Sunrise Cooperative for whatever reason (for example, because they decline to pay the membership dues charged by Sunrise Cooperative) are just as dependent upon co-location for their future survival as are the members of the Sunrise Cooperative. A City administration that is truly interested in preserving businesses, jobs and livelihoods would implement a co-location plan that treats all affected businesses equally, instead of favoring a subset of businesses that have joined a particular group; and would not pretend that other businesses do not also need co-location.

Even as City representatives have told the Commission that the tenant businesses will be relocated, the tenant businesses are receiving telephone calls from representatives of the New York City Department of Housing Preservation and Development, informing the businesses that they will receive written vacate notices after July 22, 2013. At the public hearing held on July 10, 2013, a Commissioner remarked that "we don't understand" why the City would send any such letters now, especially considering that the project for which the property would be needed has not yet been approved. The City presumptively sending vacate notices to tenant businesses indicates a disrespect for the decision-making authority of the Commission and the City Council, and confirms that the City's priority is to see the approximately 139 businesses gone from the phase one site, regardless of whether this application is approved or any development ever occurs.

That is a far cry from the Commission's suggestions, during the 2008 public hearing for the proposed Willets Point development, that the Willets Point businesses should be relocated elsewhere together, as the City did for the Fulton Fish Market businesses and in other cases.

For all of the foregoing reasons, the ULURP application of Sterling/Related is inappropriate and should be denied.

Respectfully Submitted,



Gerald Antonacci
On behalf of Willets Point United Inc.

4 enclosures

Attachment A



Community Board 7

Borough of Queens

Bay Terrace, College Point, Beechhurst, Flushing,
Malba, Queensborough Hill, Whitestone and Willets Point

133-32 41st ROAD • 3rd FLOOR • FLUSHING, NY 11355

(718) 359-2800

Fax: (718) 463-3891

email: qn07@cb.nyc.gov

Helen Marshall
Borough President

Barry Grodenchik
Deputy Borough President/Community Boards

Eugene T. Kelty, Jr.
Chairperson

Marilyn Bitterman
District Manager

PUBLIC HEARING AND REGULAR MEETING

DATE: MONDAY, MAY 13 2013

TIME: *** 7:00 P.M. SHARP ***

PLACE: UNION PLAZA CARE CENTER
33-23 UNION STREET, FLUSHING

A G E N D A

- 1) Pledge of Allegiance
- 2) Roll Call Attendance
- 3) Announcements From The Chair
- 4) Approval of the Minutes - March 11, 2013

7:00 - 7:05 P.M.
7:05 - 7:10 P.M.
7:10 - 7:25 P.M.
7:25 - 7:30 P.M.

PUBLIC HEARING

- 5) **WILLETS POINT REDEVELOPMENT – ULURP APPLICATION #C 130223 ZSQ -** To allow for a 1.4 million square foot retail and entertainment development known as “Willets West”

CHARLES APELIAN

7:30 – 9:30 P.M.

REGULAR MEETING

- 6) **Public Participation** – Community should sign up for speaking time. Sign up sheets will be available the evening of the meeting.

9:30 – 10:30 P.M.

REGULAR MEETING – The public is invited for information purposes only, not to participate in the discussion.

PUBLIC HEARING – Please sign up for speaking time in advance of the meeting. Sign up sheets will be at the back of the room. All speakers must respect the 3-minute time limit. Presentation will first be made by the applicant or Board Committee. Civic Associations are responsible for notifying their communities. Smoking is not allowed in the auditorium.

A sign language interpreter is available upon request. Please call the Community Board Office on or before May 6, 2013 at 718-359-2800. The next scheduled Public Hearing is Monday, June 10, 2013.

TIMES ARE APPROXIMATE.

Attachment B



Urban Justice Center

123 William Street, 16th Floor, New York, NY 10038
Tel: (646) 602-5600 • Fax: (212) 533-4598
www.urbanjustice.org

May 14, 2013

Jesse Masyr
Wachtel, Masyr, and Missry LLP
One Dag Hammarskjold Plaza
885 Second Avenue
New York, NY 10017

Ross Moskowitz
Stroock, Stroock, and Lavan LLP
180 Maiden Lane
New York, NY 10038

Re: Willets Point Development ULURP

Jesse and Ross:

We write to you regarding your client's pending ULURP application, which we believe to be fatally flawed. As the site of the potential redevelopment is part of Flushing Meadows Corona Park, it is covered by New York State's public trust doctrine. That doctrine prevents the use of parkland for non-park purposes unless it has been alienated pursuant to an appropriate state statute:

[D]edicated park areas in New York are impressed with a public trust for the benefit of the people of the State. Their use for other than park purposes, either for a period of years or permanent, requires the direct or specific approval of the State Legislature, plainly conferred.

Friends of Van Cortlandt Park v. City of New York, 95 N.Y.2d 623, 631-32 (N.Y. 2001).

The 1961 law which authorized the construction and financing of Shea Stadium on the lot that your client currently is seeking to redevelop, and which supporters of the redevelopment have cited as providing sufficient authority for the plan, does not explicitly allow the alienation of the parkland upon which the stadium was built. NYC Administrative Code 18-118. The statute also does not specifically refer to the alienation of the parkland in question; nor does it provide for replacement parkland or restitution, as do alienation statutes generally. See New York State Office of Parks, Recreation and Historic Preservation, *Handbook on the Alienation and Conversion of Municipal Parkland in New York*, at 27 (revised March 2012). For this reason alone, Administrative Code 18-118 is insufficient to support the proposed project and the state must pass additional legislation before any redevelopment of this land moves forward.

Even if Administrative Code 18-1118 were sufficient legislative action to alienate the Flushing Meadows Corona parkland in question, the statute does not provide specific authorization for the city's contemplated use today: a shopping mall. New York courts have long held that legislative action permitting alienation of parkland and setting forth the permitted uses must be plain and explicit. As the New York Supreme Court Queens County made clear over a half-century ago in *Aldrich v. City of New York*:

It has been held that legislative authority permitting encroachment upon park purposes must be "plainly conferred." (*Williams v. Gallatin*, 229 N.Y. 248, 253.) When speaking of the legislative authority to alienate public parks, language varying only slightly has been used. Some have said that the legislative authority must be "special" others, that such authority must be "specific" ... or "direct" or "express" Add to the foregoing the well-settled rule that "When there is a fair, reasonable and substantial doubt concerning the existence of an alleged power in a municipality, the power should be denied" (*Matter of City of New York [Piers Old Nos. 8-11]*, 228 N.Y. 140, 152), and it seems clear that the legislative authority required to enable a municipality to sell its public parks must be plain.

208 Misc. 930, 939 (N.Y. Sup. Ct., Queens Cty. 1955).

Administrative Code 18-118 *does not* permit the city to sell or lease the parkland at issue to construct a mall, let alone authorize such activity plainly or expressly. Rather, its very title indicates its express intent: "Renting of stadium in Flushing Meadow". In furtherance thereof Subsection 118(b) sets forth two groups of permitted uses for the land. The first states as follows:

(1) for any purpose or purposes which is of such a nature as to furnish to, or foster or promote among, or provide for the benefit of, the people of the city, recreation, entertainment, amusement, education, enlightenment, cultural development or betterment, and improvement of trade and commerce, including professional, amateur and scholastic sports and athletic events, theatrical, musical or other entertainment presentations, and meetings, assemblages, conventions, and exhibitions for any purpose, including meetings assemblages, conventions and exhibitions held for business or trade purposes, and other events of civic, community and general public interest . . .

Subsection (2) states that the land may also be used "for any business or commercial purpose which aids in the financing of the construction and operation of such stadium, grounds, parking" and other permitted uses set forth in subsection (1).

May 14, 2013

Page 3


Although a shopping mall is a "business or commercial purpose" contemplated by subsection (2), it has not been proposed that any of the proceeds from the venture would aid in the financing of the other endeavors currently located on the applicable parkland. Indeed, all of the provisions of the 1961 Act addressing financing for Shea Stadium (a stadium, we might add, that no longer exists) are obsolete today. Likewise, the contemplated commercial use does not fall under the more narrow range of uses outlined in subsection (1) of the provision. That subsection requires that any proposed use of the land provide *all* of the following benefits to the "people of the city": "recreation, entertainment, amusement, education, enlightenment, cultural development or betterment, and improvement of trade and commerce." (emphasis added). The legislators undoubtedly could have used the term "or" rather than "and" when walking through the scope of permitted uses, but they choose not to do so.

The mall that has been proposed to fill the Citi Field parking lot does not provide any of the benefits contemplated by the statute, let alone all of them. The only language in subsection (1) that even remotely suggests your client's contemplated use is that which allows uses that "promote" "improvement of trade and commerce." However, that language plainly assumes that the contemplated use would *not* be trade or commerce itself. This assumption is further supported by the long list of explicitly contemplated uses in the subsection, a list which includes "professional, amateur and scholastic sports and athletic events, theatrical, musical or other entertainment presentations, and meetings, assemblages, conventions, and exhibitions for any purpose, including meetings assemblages, conventions and exhibitions held for business or trade purposes." Wholly commercial uses—such as a shopping mall—are absent from the provision.

Further, if the state had intended subsection (1) to cover all forms of trade and commerce, such as a shopping mall, it easily could have included the phrase "any business or commercial purpose" in that subsection, as it did in subsection (2). To read the two differently-worded phrases as permitting the same range of activities, however, would essentially be to make subsection (2) entirely superfluous. Norms of statutory construction prevent such a result. *See, e.g., Cohen v. Lord, Day & Lord*, 75 N.Y.2d 95, 100 (N.Y. 1989) ("Words are not to be rejected as superfluous where it is practicable to give each a distinct and separate meaning."). Therefore, there is simply no basis to read the phrase "improvement of trade and commerce" to cover the contemplated shopping mall.

In light of the above arguments, we are confident that the ULURP, as presented jointly by your client and the EDC, would not withstand judicial scrutiny. Accordingly, we urge you not to attempt to move forward as currently contemplated.

Sincerely yours,



Harvey Epstein
Associate Director

May 14, 2013
Page 4

Cc: Seth Pinsky, President NYC Economic Development Corporation
Council Member Julissa Ferreras

Attachment C

**DEVELOP WILLETS POINT,
WITHOUT ADDING A HUGE MALL ON 30+ ACRES OF PARKLAND,
AND WITHOUT EXPANDING THE DEVELOPMENT FROM 62 TO 108.9 ACRES?
THAT'S EXACTLY WHAT THREE OTHER DEVELOPER FIRMS PROPOSED TO DO!**

**THE CITY REJECTED THOSE PROPOSALS –
IN A SELECTION PROCESS THAT SHUT OUT CB7,
DESPITE PROMISING CB7 IN WRITING THAT IT WOULD PARTICIPATE.**

Sterling/Related, and their expanded plan which adds the 1.4 million square foot
"Willets West" mall on parkland, were designated by the City administration.

Here are the three proposals that required no parkland mall and no expansion of the project –
and which CB7 was denied the opportunity to participate in evaluating:

Macerich



Features:

- "A True Retail Destination"
- Food & Beverage
- Entertainment
- Housing
- Hotel
- Public Open Space
- Parking
- "A Model Green Community"

Silverstein Properties, Inc. and Taubman Centers, Inc.



Features:

- "Entertainment Corridor & Urban Room"
- 126th Street Retail
- Restaurant Row
- Neighborhood Retail Street
- Eco-Promenade
- 100 percent affordable housing (400 units)
- "A Model Sustainable Community"

TDC Development and Construction Corp.



Features:

- "World Trade Center Queens"
- Hotel
- Restaurant
- Trade Mart
- Convention Center
- Retail Complex
- Entertainment District
- Office Building
- Neighborhood Park

Among the reasons given for rejecting those proposals:

- "Would have required public subsidies." – And yet, Sterling/Related are set to receive public subsidies worth nearly half a billion dollars: 23 acres of Willets Point Phase One property, worth more than \$200 million, for the price of just \$1; a capital grant in the amount of \$99 million to cover numerous project costs, including remediation; and \$20 million in sales tax exemption.
- "Would have required rezoning." – Really? Perhaps rezoning the Willets Point Phase One property would have been preferable to expanding the project to 108.9 acres and adding a 1.4 million square foot mall to be constructed on parkland, with increased traffic impacts. Had CB7 been allowed to participate in developer selection as was promised, it could have expressed a preference to proceed with rezoning instead of expanding the project and sacrificing parkland to include a huge mall, with its untenable traffic impacts.

Development of Willets Point need not depend on constructing a mall on 30+ acres of public parkland, and need not expand beyond the boundaries of the 62-acre Special District established in 2008.

Deny the present application of Sterling/Related. Make the City publish a new Request for Proposals, and insist that the City fulfill its written commitments to include CB7 in the developer selection process. In that way, CB7 can do its part to ensure that proposals of all developers – not just those who have special access to property beyond the boundaries specified within an RFP – are fairly considered.

July 17, 2013

Robert R. Kulikowski, Ph.D.
Mayor's Office of Environmental Coordination
100 Gold Street, 2nd Floor
New York, New York 10038

Re: Willets Point Development Project

Dear Dr. Kulikowski:

I am writing on behalf of Willets Point United and individual members thereof to provide these comments on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Willets Point Development Project, CEQR No. 07DME014Q.

Traffic Impacts

Neither the Executive Summary nor the text makes clear (as they should) the magnitude of the traffic disruption that would be caused by the project at full build-out. However, a close examination of the tables in the DSEIS uncovers a disturbing picture. For example, in the year 2032, under the "no action" condition the average speeds on the westbound Grand Central Parkway between Roosevelt Avenue and the Long Island Expressway on non-game days would be 48.1 mph during the weekday morning run, 43.0 mph during the weekday midday, and 37.7 mph during the evening rush. (DSEIS Table 14-69, page 14-106.) If the project is built (including the Van Wyck ramps), the average speeds during those same periods on non-game days would be **6.7 mph, 0.0 mph, and 0.4 mph**, respectively. (DSEIS Table 14-75, page 14-119.)

In order for the reader to comprehend the implications of these sorts of speeds, the FSEIS (as previously requested) should calculate the travel *time* from one end of the studied segment to the other (i.e., between Roosevelt Avenue and the Long Island Expressway on the Grand Central Parkway). The CEQR Technical Manual neither mandates nor prohibits this kind of analysis; SEQRA and CEQR demand that decision-makers be provided with information sufficient to make informed decisions. The meaning of a 0.0 mph speed on a highway should also be explained. The FSEIS should also explain the impacts of these speeds (or, during the 0.0 mph condition, this stationary condition) on emergency response times and on airport access.

Robert R. Kulikowski, Ph.D.
July 17, 2013
Page 2

The DSEIS mentions a variety of mitigation measures but does not commit to them. If these mitigation measures are undertaken, the DSEIS projects speeds in 2032 under the “build” condition of up to 48.8 mph during the morning rush and 48.1 mph during the evening rush, but they would still be at 6.7 mph during midday. (DSEIS Table 21-21, p. 21-50.) The same pages show terrible traffic conditions for many other mainline intervals and intersections in 2032.

The mitigation to accomplish this would involve, among other things, adding lanes to various access roads. Pp. 21-27 - 21-29. It is highly speculative whether this could be done. Adding lanes would require acquisition of additional real estate and a variety of state and city approvals, in addition to additional environmental review and, presumably, condemnation. Even with this, the DSEIS concedes that many of the projected conditions cannot be mitigated. Pp. 21-4, 21-20, 21-31.

In 2032 on non-game days, if the project is not built, the number of signalized intersections with Level of Service F would be 1 during the weekday morning peak; 4 during weekday midday; 2 during the weekday evening peak; and 3 on Saturday midday. If the project is built, those numbers become 9, 12, 15, and 13. (Table 14-55, p. 14-84.) Numerous intersections cannot be mitigated at all. Pages 21-4 - 21-5, 21-19 - 21-21.

If the City approves the project, the SEQRA Findings Statement will have to explain why it is acceptable to undertake a lengthy and expensive action that will result in traffic speeds of 6.7 mph, 0.0 mph, and 0.4 mph on one of the City’s major arteries. If reliance is placed on the lane-widening and other mitigation measures, then 1) those measures should be explained in detail, 2) their collateral consequences (e.g. condemnation of real property and consequent loss of housing and jobs) should be enumerated, and 3) they should be committed to.

The traffic impacts may actually be more severe than revealed in the DSEIS. The reasons for this are set forth in the comments of Brian Ketcham, which are incorporated herein by reference. To pick one notable example, it appears that the DSEIS uses trip generation factors that are considerably lower than real world experience with comparable uses would show are appropriate.

Ramps

The City still refuses to disclose anything about the cost of the Van Wyck ramps, though they say the City has agreed to pay for them (Response to Comments p. 32).

It appears that the traffic methodology used for the DSEIS was similar to that employed by the City in the original FEIS. That FEIS also projected terrible traffic

ARNOLD & PORTER LLP

Robert R. Kulikowski, Ph.D.

July 17, 2013

Page 3

consequences, though not nearly as bad as those in the DSEIS (at least in part because of the considerable enlargement of the project). The City then abandoned that methodology when it prepared an Access Modification Report (AMR) in its successful effort to persuade the State Department of Transportation and the Federal Highway Administration to approve the Van Wyck ramps. Now the City is going back to its original methodology. In view of this new information, the prior approvals by the State DOT and the FHWA are invalid, and those agencies need to undertake a fresh review under the National Environmental Policy Act.

My comments of September 27 on the draft scope for this DSEIS stated, "The City has a history of releasing wildly contradictory reports about the traffic impacts of this project, without ever clearly explaining the reasons for these discrepancies. The supplemental EIS should include a table comparing the assumptions, methodologies and other inputs of the traffic study used there and all the prior traffic studies for this project, so that readers can understand the differences and draw their own conclusions as to which, if any, is valid." The DSEIS failed to include this table. The FSEIS should include it.

Mass Transit Impacts

The tables in the DSEIS (though not the text, except euphemistically) reveal that conditions within the Mets-Willets Point No. 7 subway station would also become horrible; especially the stairs from the Roosevelt Avenue entrances down to the mezzanine. Conditions in 2032 on non-game days without the project show a Level of Service A for these stairs (Table 14-111, p. 14-156); in 2032 with the project, the Level of Service is E+ for one staircase and D+ for two. (Table 14-141, p. 14-187.) The DSEIS says that wider staircases could help alleviate this condition, but that it is not clear whether this would be feasible, there is no indication of how much they would cost or who would pay for them, and they are not committed to (p. 14-189, 21-57).

The DSEIS says that in 2032 with the project built, on the Manhattan-bound express #7 train, the volume/capacity ratio would be 1.20, and the available capacity would be -3,673 (minus 3,673). In other words, the subway would be able to carry 3,673 *fewer* people per hour than want to take it, even with the subways running at the maximum capacity that the signal system will allow. (Table 14-143, p. 14-190.) In order to alleviate some of the subway crowding, the DSEIS suggests providing more LIRR service there (p. 14-156). Again, there is no discussion of whether this is feasible, what it would entail, or how much it would cost, and there is no commitment to do it.

ARNOLD & PORTER LLP

Robert R. Kulikowski, Ph.D.

July 17, 2013

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Relocation

The DSEIS still does not identify relocation sites for the remaining businesses that have not agreed to sell. The Response to Comments on the Draft Scope (p. 20) says the City is still working on this, but there is no indication that any progress has been made for the last several years.

The original EIS assumed that all the businesses could be readily relocated. Five years later, relocation sites have not yet been found for my clients and others. The supplemental EIS must acknowledge this reality.

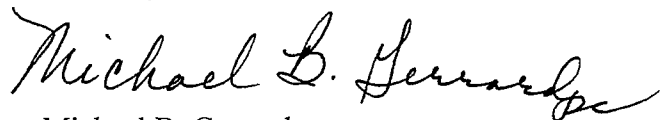
The City rejected my request to study an alternative that looks at the project without any eminent domain (pp. 51-52). This alternative should have been studied, for only that way can the reader understand whether or not this condemnation is truly necessary. The possibility of leaving untouched any properties whose owners will not sell voluntarily becomes more feasible in view of the City's new plan to use much of Willets Point as a parking lot.

Other Comments

The DSEIS does not satisfactorily address the comments raised by a number of commentators that the land that the City acquired for park purposes cannot lawfully be utilized for a shopping mall and associated parking, in particular that there is no, or insufficient, legislative authorization to abrogate the public trust doctrine in this instance, and that the Administrative Code does not permit the City to sell or lease the parkland at issue to construct a mall.

A major rationale for the City's insistence that the entire project be done at once, without phases, was that soil contamination all needed to be remediated at once. The City has now decided to adopt a phased approach. The FSEIS should explain this change in position, and how it envisions that contamination will be addressed on a phased basis. If phasing is now possible, the FSEIS should consider an alternative in which certain properties (especially those being acquired from private parties) are excluded from the early phases.

Sincerely,



Michael B. Gerrard

BRIAN KETCHAM ENGINEERING, PC

175 Pacific Street, Brooklyn, NY 11201, 718-330-0550, btch@konheimketcham.com

Submission by Brian T. Ketcham, P.E., July 10, 2013
to the City Planning Commission regarding the evaluation of the Willets "West" Mall/Willets
Point Development Plan

I am a transportation and environmental engineer. For the last four years I have been assisting Willets Point United in discovering the truth about this project. It is these analyses and the lies we uncovered that have delayed this project for more than three years.

I am writing to encourage the New York City Planning Commission to reject this project. There are good reasons for doing so:

1. NYCEDC claims that by adding the Willets "West" Mall they will actually reduce traffic congestion—this is a preposterous claim; the Willets "West" Mall will make traffic congestion far more severe than what was reported in the WP FGEIS.
2. The plan is too big for the area; Willets Point is surrounded by what are already the nation's most congested expressways; the Willets "West" Mall/Willets Point Project will only make condition's worse.
3. Project impacts reported in the SDEIS are extremely severe and it is unlikely many can be mitigated.
4. Mitigation for expressways is not described in the SDEIS; major changes to expressways take years and require their own individual engineering and environmental assessments delaying project implementation.
5. Proposed mitigation still leaves intersections and expressways gridlocked; this is especially true for Astoria Blvd., Northern Blvd. and Roosevelt Avenue.
6. The SDEIS low balls the number of trips this project will generate; a great deal more traffic will in fact be produced than reported further gridlocking the area.
7. For example, the SDEIS reports that less than 60% of shoppers will use autos to access the site; today 85% of Queens's shopping trips are by auto; 95% of shoppers to large malls arrive by auto; for destination retail the SDEIS under reports auto trips by 50%.
8. Destination retail would be responsible for more than half of total trips reported for this project; there is no justification for nearly 2 million square feet of new destination retail in the Willets Point area.
9. The project proposes relatively little parking for the size of the project; proposed parking cannot accommodate parking demand; spillover traffic will intensify gridlock conditions.
10. The project relies on substantial public transit service; there is no way the MTA can meet proposed transit demand; the No. 7 line will be gridlocked if this project is built; commuters will face huge delays.
11. The Willets "West" Mall will add another 28,000 car and truck trips to the 80,000 reported in the FGEIS adding 61 million miles of travel each year in proximity to the project increasing traffic accidents by 496 and costing motorists and the surrounding communities nearly \$40 million each year in increased health care and property damage costs.
12. The addition of 61 million miles of vehicular travel produces considerable externality costs, not just traffic accidents costs but the health costs of added air pollution, traffic noise, water pollution and so forth. These costs are not trivial: for full Willets Point build out including

the Willets “West” Mall these costs total \$120 million every year—costs that are far greater than any benefits provided to NYC by the Willets Point project.

13. Assuming the assumptions reported in the SDEIS are correct (and we do not believe they are) total project build out will generate 194 million added vehicle miles of travel, increase traffic accidents by 1,578 at a cost to motorists and Queens residents of \$124 million annually; externality costs for total build out including accident costs in 2032 would total \$382 million annually.

Attached are more details about what is wrong with the SDEIS and what information is still needed by the City Planning Commission to make an informed judgment about this project. Just remember, once the full Willets “West” Mall/Willets Point Project is completed the area will suffer extreme congestion levels that cannot be mitigated.

BRIAN KETCHAM ENGINEERING, PC

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QUESTIONS THAT MUST BE ANSWERED IF NEW YORK CITY PLANNING COMMISSION IS TO FULLY UNDERSTAND THE TRANSPORTATION IMPACTS OF THE PROPOSED WILLETS “WEST” MALL/ WILLETS POINT DEVELOPMENT PLAN

I have been asked by Willets Point United (WPU) to comment on the transportation component of the Supplemental Draft Environmental Impact Statement (SDEIS) for the proposed Willets “West” Mall/Willets Point Development Plan. The following comments refer to the SDEIS and to related documents listed at various web sites.

My name is Brian T. Ketcham. I am a licensed Professional Engineer, licensed in the State of New York. I am currently retired. Before retiring I worked for more than 4 decades on various transportation engineering projects. I still operate Brian Ketcham Engineering, PC, assisting low and moderate income communities in analyzing proposed projects and holding developers and government officials accountable for compliance with environmental laws and regulations. My most recent project is the Willets Point Development Plan, in which I performed detailed technical analyses. I have participated in dozens of other similar projects, some as large as Willets Point. I also was Vice President of Konheim & Ketcham, a full service environmental engineering firm with projects for the New York State Thruway Authority, the New York State Department of Transportation and the New York City Department of Transportation, among many other agencies and private clients, for which we prepared full environmental impact statements along with detailed traffic plans and models. K&K was closed at the end of 2006. I was also Executive Director of Community Consulting Services over twenty years during which we undertook hundreds of projects supporting low income communities on a pro-bono basis, providing more than 65,000 hours of free engineering services on projects like the Atlantic Yards project in Brooklyn and Hunts Point in The Bronx. Before this I was Executive Director of Citizens for Clean Air, an organization responsible in the 1960's for New York City's clean air programs and for bringing the first law suit against the Westside Highway Project in which the federal courts denied the City, State and federal government's permits to proceed with this project in 1975. This was the first and last time such a suit was undertaken against so large a highway project and was actually won in the public's interest. The Westside Highway Project was again defeated two years later when NYCDEC refused, based on my demonstration in evidentiary hearings, to again issue a permit for the construction of Westway. And before this I was director of the Bureau of Motor Vehicle Pollution Control for the New York City Department of Air Resources. For this organization I set up a new emissions test facility which, in 1971, had more cars equipped with catalytic emissions controls than the entire world's automotive industry. Along the way I built (as a private citizens and at my own expense) a three-way catalyst equipped car demonstrating we could meet Clean Air Act emissions standards and improve fuel economy, showing the Congress of the United States that if two young engineers using their own funds to accomplish what the auto industry said could not be done,

certainly auto makers with billions of dollars in resources could at least match what we could do. The result was that Congress did not cave in to demands by auto makers to extend or relax emissions control deadlines. Finally, I was asked by the New York State Department of Environmental Conservation and the United States Environmental Protection Agency in 1972 to prepare New York's Clean Air Plan required by the 1970 CAA. I completed this work in less than 9 months meeting the stringent federal requirements. New York's Clean Air Plan is the most comprehensive transportation plan that has ever been completed for New York City. For this work I was honored in 1993 by Mayor John Lindsay as the most effective manager in New York City government under the age of 35.

The following are examples of what is wrong with the SDEIS supporting this project. More problems and questions will be identified over the coming months.

NYCEDC CLAIMS THEY CAN MITIGATE 65% OF WILLETS POINT TRAFFIC IMPACTS WITH THE ADDITION OF WILLETS "WEST" MALL. THIS IS NOT TRUE.

The developer has reported he will add another 1.4 million square feet of shopping mall/entertainment facilities to the already oversized Willets Point Development project. The developer claims he will actually reduce the impact of this added traffic on the severe congestion along access roads and on nearby expressways already reported in the Willets Point FGEIS. According to the FGEIS the 11 million square feet Willets Point project will add 80,000 car and truck trips to the project area producing "significant" impacts at 78% of all intersections analyzed. Adding Willets "West" Mall will increase project traffic by about 25% impacting even more severely nearby intersections, expressways and expressway entry/exit ramps creating even worse congestion than reported in the FGEIS. Mitigation including the public expenditure of tens of millions of dollars on traffic improvement measures will reduce impacts slightly. However, for many locations full mitigation cannot be achieved and breakdown conditions will prevail. LOS F is reported at many mitigated intersections—for full intersections (many that cannot be mitigated at all) and/or at many intersections they claim to mitigate that retains one or more intersections approaches that remain LOS F or worse. This is what was reported in the FGEIS for Willets Point and the addition of the Willets "West" Mall will make these conditions worse. To claim that adding the Willets "West" Mall will actually make traffic congestion along access roads and on expressways and expressway access/egress ramps is simply not true—it is a lie intended to trick the host community and the New York City Planning Commission into accepting this new project. The consequences of building a 13 million square foot development in so isolated a site will have consequences far beyond the illusion provided by NYCEDC and the developers (see more below).

THE DEVELOPER MUST EXPLAIN THE CONSEQUENCES OF LEAVING MOST INTERSECTIONS ALONG MAJOR ACCESS ROUTES TO WILLETS POINT IN GRIDLOCK CONDITIONS AFTER APPLYING ALL AVAILABLE MITIGATION

The SDEIS reports operating conditions at approximately 30 key intersections affected by the Willets Point project. While relatively few intersections are examined in the SDEIS, project impacts are clear: adding 8,000 to 10,000 hourly car and truck trips to peak travel hours will impose severe restrictions on travel. This can be seen by examining Table 14-59 which shows

project impact for virtually every intersection examined in the SDEIS. More detail can be found by looking at the data presented in Table 22 from Chapter 21 on mitigation.

A review of all results for peak hours with available mitigation shows that during evening peak hours, access roads to Willets Point (Northern Blvd., Roosevelt Avenue, Astoria Blvd.) will be gridlocked. Table 21-6, which I have marked up and attached, shows how severe the developer will leave these major access arterials to Willets Point. With all the mitigation the developer can muster he leaves critical intersections with overall average vehicle delay of 100 to 200 seconds. And these conditions do not get any better on Saturday. Table 27 illustrates the point for a couple of critical intersections. While Table 22 shows some locations along these access roads can be fully or partially mitigated, the community is still faced with gridlock traffic conditions with cars facing two or three signal cycles to move through an intersection with traffic spilling back into adjacent intersections. Certainly the developer has modeled this condition. But he does not provide or describe the results.

Again, looking at Table 22 for 126th Street at Roosevelt Avenue and 34th Street, we find a number of intersection approach movements at LOS F, with delays of between 100 to more than 800 seconds. These are the major entry points to the Willets Point Development. Project traffic creating huge delays will create a huge impediment to the operation of Willets Point and will be of even greater consequence on a METS game day. And, of course, these conditions are only for “average” days not Fridays. Destination retail will experience 19% more traffic or days in December when traffic will be 42% higher than reported. How can the developer justify so large a project with the horrible traffic conditions reported in the SDEIS that cannot be mitigated? And, because we think the developer has under reported trip generation, traffic conditions will be worse than reported.

For example, the complexity of the Roosevelt Avenue/126th Street intersection – a main entry point into the Willets Point project – is not discussed in any detail (this problem is mentioned briefly). How do the columns supporting the overhead No. 7 transit line impede the efficient movement of traffic or reduce sight distance and thus affect safety? As noted elsewhere, the City Planning Commission needs intersection expressway drawings to make this review more effective.

When faced with breakdown conditions in all directions can the developer honestly say that this project will not create huge traffic delays along access roads spilling back onto the surrounding expressway system even with all the mitigation that he can dream up? Can he not admit that this project will have a huge negative effect on this community, imposing greater traffic delays, more traffic injuries and deaths and other costly externalities borne by the million motorists already passing by Willets Point each day on nearby expressways and arterials even with his most optimistic assumptions?

THE ENVIRONMENTAL ASSESSMENT FOR THE VAN WYCK RAMPS MUST BE UPDATED/REVISED

Why did not NYCEDC and/or the developer revise the Environmental Assessment (EA) for the Van Wyck ramps? The SDEIS reports the Willets “West” Mall will be adding about 28,000 car and truck trips to the WP area (and a great deal more if their assumptions are wrong) for average weekdays. Adding the Willets “West” Mall traffic results in significant differences in

background traffic that will affect travel conditions with the ramps. These trips, as many as 3,000 an hour entering or leaving the Willets “West” Mall, will get onto nearby expressways affecting the baseline conditions examined to determine the environmental impacts of the Van Wyck ramps to be constructed. The SDEIS itself reports that the Willets “West” Mall will produce significant traffic impacts on surrounding expressways requiring costly mitigation (should funds be available) (SDEIS Page 21-27). The EA must be updated.

WHAT GUARANTEE CAN THE DEVELOPER PROVIDE THE COMMUNITY THAT THE MTA CAN ACCOMMODATE WP TRANSIT DEMAND?

The developer is relying on the MTA to provide additional bus service to the WP “West” location. WP “West” Mall will produce about 14,000 additional bus riders on an average weekday. At 56 people per bus (capacity) that would require the addition of 250 weekday buses (most spread out from 10 am to 8 pm). What guarantee can the developer provide that the MTA can provide this level of added bus service?

At the third meeting of the Building/Zoning Committee of Queens CB7 the developer mentioned that they were working with the LIRR on using that service to provide some relief for the overcrowding their project will create on the No. 7 subway line. Has the developer analyzed the potential for utilizing the LIRR? If so, what have they found? And, how realistic is using the LIRR during peak commute hours?

CAN THE PROJECT EAST OF 126TH STREET ACCOMMODATE NEARLY 600,000 SF OF LOCAL RETAIL AND, IF SO, HOW?

What is the basis for assuming 593,000 SF of local retail east of 126th Street? This assumption appears very high for a project with just 5,850 residences, approximately 12,000 residents (plus workers and others, although local retail is nowhere close to the Willets “West” Mall and entertainment center and additional retail would be redundant for the Willets Point “West” shopping mall). Moreover, assuming stores are 60 feet deep the developer is looking at installing nearly 2 miles of store front space in the original Willets Point project. We don’t think there is enough space for this much local retail. And, with all this local retail using curb space where will 657,000 SF of additional destination retail go if all frontage is occupied by local retail? So, what’s the point of so much local retail? Considering that just 15% of shoppers are assumed to arrive by auto for local retail we believe this is the developer’s way of hiding auto trips and minimizing traffic impacts. We are convinced that more than half of this “local retail” space will, in fact, end up as destination retail. The SDEIS must be revised to account for this worst case condition. See Table 4, attached, that reports the impact on travel.

WHAT IS THE BASIS FOR ASSUMING JUST 59% OF DESTINATION RETAIL SHOPPERS WILL USE AUTOS TO ACCESS THE SITE?

A comparison of the rates used in the SDEIS with those reported in the 1991, 2001 and 2012 CEQR Technical Manuals shows little change in trip generation rates over this period. We know that many of the assumed trip generation rates date to the Regional Plan Association that did counts in the early 1960’s in Manhattan. How can the developer justify using these antiquated rates especially outside Manhattan? The CEQR Technical Manual advises that if rates are over 3 years old the developer should take counts at representative locations. WPU has repeatedly

requested that the developer undertake such counts. For a project of this size with the severe traffic impacts that the developer has reported in the SDEIS how can they continue to rely on ancient data? We believe that the rates used in the SDEIS significantly under report traffic impacts.

For example, take Willets “West” Mall: The developer assumes that 59% of shopping trips will be made by auto with the rest by walking or transit. This number appears incredibly low when compared to other isolated shopping malls like Gateway Plaza in Brooklyn or Palisades Mall in West Nyack, both of which exceed 95% of shoppers arriving by auto; and both of which provide double the parking per 1,000 SF of retail space. The developer must provide its source justifying this 59% assumption. Would it not be wise to plan for higher auto use in so isolated a site, especially in Phase 1 of this project? The consequences of under reporting auto use on parking and traffic are very significant to this community.

The effects of using reported auto use for isolated destination malls compared to 59% are striking. Tables 1 and 2 (attached) provide a comparison. Table 1 reports the data provided in the SDEIS for Phase 1A. It shows that average daily vehicle trips for Phase 1A would total 28,524 with destination retail making up 81% of this total. Table 2, assuming 90% of shoppers at destination retail arrive by auto, shows an increase in total average daily car and truck trips of 39,345 with destination retail responsible for 86% of total. Table 2 reports a 38% increase in the number of trips from just this one reasonable change, increasing shopper trips to destination retail from 59% to 90%. Vehicle miles of travel would increase by 36% to 83 million miles of vehicular travel annually, from 61 million estimated using SDEIS assumptions.

Another hypothetical, along these same lines, is presented in Tables 3 and 4. Table 3 reports total vehicle trip generation for full project build out, Phase 2, (again for an average weekday) of 87,532 trips, with destination retail producing 50% of this total. However, we dispute not just the use of 59% for shoppers accessing the Willets Point site by car; we dispute the total amount of local retail (there just does not appear to be enough space to accommodate even half what is proposed as discussed above). Table 4 assumes that for Willets Point “West” we stick with 90% of shoppers accessing destination retail by auto (it is an isolated site with poor transit access). However, we assume that for destination retail east of 126th Street 80% of shoppers will arrive by auto. We also assume that the additional local retail proposed for Phase 2 is assumed to be destination retail. The result is an overall increase in average weekday vehicular travel to 109,386, an increase of 21,864 trips, and an increase of 25%. This is a conservative adjustment. We have not tinkered with other trip generation assumptions, most of which do not have supporting documentation.

THE DEVELOPER HAS OVERLOOKED WORST CASE TRAFFIC CONDITIONS

The SDEIS reports average weekday and average Saturday traffic impacts. Not disclosed are the weekly and seasonal variations. For example, the Institute of Transportation Engineers *Trip Generation Manual* reports that for shopping malls Friday traffic is 19% greater than weekly averages and for Saturday, 51% greater. It also reports that Decembers produce 42% more traffic during the month than for annual averages. None of this is reported in the SDEIS although WPU has repeatedly brought this issue to NYCEDC’s attention (and, allegedly, the SDEIS is claiming to “report” “worst case” conditions). Were these differences to be accounted

for you would find true “worst case” conditions would be significantly worse than reported. Parking would also be significantly over-capacity. Surely your traffic engineers understand these effects. Annual average project impacts are severe enough. What can we expect when auto trips are half again higher, holiday effects kick in and parking supply is good for only half of demand? This condition has to be accounted for.

THE DEVELOPER IS NOT PROVIDING ADEQUATE PARKING FOR THIS PROJECT. PLUS THE SDEIS MANIPULATES TEMPORAL ASSUMPTIONS TO MINIMIZE PEAK HOUR PARKING DEMAND.

As suggested by what has already been said, parking is critical. Yet, the developer is providing half what other similar locations are providing. The developer appears to justify this on the basis of extremely optimistic trip generation rates and the heavy use of public transit that really does not exist. Could this project be built if the developer had to provide double the number of parking spaces promised? Can the developer provide this community a guarantee that, should our worst fears come to pass, that parking is not adequate, that they will actually build additional parking garages to supplement the meagre supply of parking promised?

As noted above, experience elsewhere at large malls suggests not only that they attract many more auto trips per 1,000 square feet of retail space, but they typically provide double the number of parking spaces per 1,000 square feet of retail space than is being provided at either the Willets “West” Mall or for the destination retail proposed for Phase 2 of the project. These differences must be addressed by NYCEDC and the developer.

Also, on Table 14-39 the developer loads 15% of daily destination retail travel onto the weekday 1 to 2 pm hour, moving a substantial amount of traffic away from peak travel hours. Tables 14-50 and 14-60 are consistent with this assumption. What is the basis for this assumption? It does not agree with ITE numbers for large shopping malls. What is the basis for all parking temporal characteristics for all land use types? The developer’s source is “Based on travel demand estimates.” That “source” is not good enough. This needs explanation! Has the developer done surveys for parking conditions at other locations and, if so, can he provide the raw data to Willets Point United and to the City Planning Commission? The developer must provide documentation justifying the assumptions made for hourly parking arrivals and departures for the eight land use types evaluated in the SDEIS.

THE DEVELOPER HAS LEFT OUT THE LONG ISLAND EXPRESSWAY IN HIS EXPRESSWAY ANALYSIS

Why did the developer not include the LIE in his traffic analysis? They assign about a sixth of WP traffic to the LIE (and a third of WP traffic to the Van Wyck Expressway). The LIE is already one of the ten most congested roads in the entire United States (so is the Van Wyck and the Grand Central Parkway). The GCP is also not included in the SDEIS, at least that portion of the Grand Central south of the LIE where NYSDOT engineers report it cannot take “one more new vehicle trip from the WP project” even after they spend \$1 billion realigning that expressway near the Jackie Robinson Parkway. Both will be heavily impacted by the expanded Willets Point project (another 28,000 daily car and truck trips from what was examined in the FGEIS). Both should be examined in a revised EA for the Van Wyck ramps.

What is equally incredible is that expressway data are totally missing from the SDEIS; internal site specific traffic movements for the WP project are no longer provided as well. How does NYCEDC expect anyone to evaluate the SDEIS when the traffic network has been simplified so greatly, removing critical data that was originally provided in the FGEIS? This, by the way is how the developer can claim they are mitigating a greater number of intersections—they simply eliminate those reported in the FDEIS and presto, you have fewer affected intersections. It is all a game!

Still, Chapter 21 on mitigation provides considerable insight on project impacts and how hard it is to mitigate so large a project as Willets Point. Table 21-23 attached shows the significant impact for Phase 2 for an average weekday with no games underway. It shows that, while some improvements can be made (very little is described about what, precisely, mitigation involves) it also shows the traffic mess that is left. Table 21-24, also attached, just reaffirms the huge region wide impact the Willets Point project will impose on the surrounding residential communities as well as on the million or so daily motorists who try to thread their way north and south, east and west. The impacts are severe and the SDEIS provides little confidence that much real mitigation can be accomplished and reinforces the communities concern of the mess the developer will leave behind.

THE SDEIS HAS NO DRAWINGS OF EITHER INTERSECTIONS OR EXPRESSWAYS AND RAMPS SHOWING HOW THE DEVELOPER PLANS ON MITIGATING IMPACTS

With the exception of one location we cannot find detailed descriptions of what mitigation the developer is proposing for various expressways or expressway ramps. No description, no drawings. How can the City Planning Commission assess this project without more detail? The developer must provide drawings illustrating each mitigation location. Written descriptions are too brief and just not good enough for public review. And, the 2-point type used in the summary sheets is not legible!

Much of the mitigation proposed in the SDEIS requires the preparation of a site specific Environmental Assessment along with traffic analysis and engineering drawings all subject to NYSDOT and FHWA approval. Each action requires new counts specific to each location. Many of these EAs take from 3 to 10 years to complete and get approved. I have been involved in dozens of these traffic improvement studies – some have taken two decades and 3 or 4 full detailed revisions costing \$10's of millions – more than half these projects never materialized. The SDEIS warns of this problem on page 21-29: mitigation "...measures that may call for detailed review by both NYCDOT and NYSDOT...if these mitigation measures are modified or rejected by the review agencies, significant adverse impacts identified above would be unmitigated." What guarantees can the developer provide that the WP project will not experience the same delays and what impact would that have on project completion schedules? And what if the developer cannot mitigate traffic impacts as promised repeatedly in the SDEIS? What guarantee does the WP community have that this developer will not just gridlock this community 24/7?

And, who is going to pay for mitigation? Including intersection expansion plus modifications to expressways and ramps (plus \$70 million for just the Van Wyck ramps) we are looking at

hundreds of millions of dollars in reconstruction. Is the developer expecting NYC taxpayers to foot this bill?

The developer must provide maps showing vehicular trip assignments by land use type for new no-build construction and for full build out trips including the local project road network. The developer must also provide maps showing traffic volumes along all expressways and expressway ramps on which all Willets Point vehicular trips have been assigned with and without WP Phases 1A, 1B and 2.

THE EFFECTS OF WILLETS POINT ON TRAFFIC ACCIDENTS HAVE BEEN IGNORED. THEY ARE SIGNIFICANT

The FGEIS for the Willets Point Development Plan reports that the project will add 80,000 car and truck trips a day, 365 days a year, generating 116 million additional miles of travel annually. Based on NYSDOT traffic accident rates for NYC the WP project will thereby increase auto and truck accidents by 944 a year including 2 dead and 316 injured. Including the cost of property damage the cost to motorists and society total \$41 million in 2017. Adding another 28,000 car and truck trips a day for the Willets “West” Mall will increase this number to 1,578 crashes annually with 3 dead and 528 injured and approximately 2,500 more cars and trucks damaged. The total cost of the combined effect of Willets “West” Mall and the Willets Point Development Plan in 2032 would be \$124 million annually. And this is only part of the cost of adding daily 108,000 more cars and truck to Queen’s roads. See Table 5 for more detail.

THE ADDITION OF WILLETS POINT TRAFFIC PRODUCES HUGE EXTERNALITY COSTS. THEY CONTINUE TO BE IGNORED BY NYCEDC. IT IS TIME THEY WERE ACKNOWLEDGED

It was earlier demonstrated that the Willets Point Development Plan will produce 80,000 more car and truck trips a day generating \$156 million in externality costs annually. The external or hidden costs to motorists, their passengers, and visitors, residents and workers of the area due to increased vehicular use by travel to and from the Willets Point project include the costs of lost travel time, physical injury, health effects, noise impacts, damage to our roads and utilities. Other costs are paid through taxes such as the control of water pollution, oil spills, greenhouse emissions, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and defense costs of protecting the supply of imported oil (why did we spend a trillion dollars in Iraq?). These harms to society and to households and to the general economy are not well recognized by the public because they increase by a small margin with each added mile of travel and because they are spread among the entire public, both vehicle users and non-users, buried in items such as lower productivity, higher consumer prices and higher insurance costs. But taking them together, even using a low range of vehicle related costs due to the Willets Point project car and truck use greatly reduce the realistic local economic benefits of the project. The costs are based on the well-documented costs per vehicle of mile travel published by the Victoria Transport Policy Institute (VTPI)¹ as well as independent cost accounting that I have undertaken over the last three decades. For this report, the most conservative (i.e., lowest) results have been reported for the social costs of the Willets “West” Mall and the total build out

¹ Litman, T., “Transportation Cost and Benefit Analysis, Techniques, Estimates and Implications,” Tables 6, 7 and 8, Victoria Transport Policy Institute, June 2003, www.vtpi.org/htm.

of the Willets Point Development Project including Willets “West”. The addition of Willets “West” Mall’s 28,000 daily car and truck trips would increase total externality costs to \$382 million a year, an increase of \$120 million just for Willets “West” Mall alone. These totals significantly exceed any benefits of these projects to the communities in and around the Willets Point area. And this does not account for the billions of dollars in public tax payer assistance to the developer, more than a half billion of which has already been spent. A full cost-benefit analysis must be completed for this project before any action can be taken. Without a fully vetted cost-benefit analysis neither the NYCDCP, the City Planning Commission nor the City Council can, in good conscience, act on this project. See Tables 6, 7 and 8 for details.

THE CEQR TECHNICAL MANUAL IS NOT THE “HOLY BIBLE” FOR PREPARING ENVIRONMENTAL IMPACT STATEMENTS

In projects like Willets Point as well as during the recent Queens CB7 Building/Zoning Committee meetings, the CEQR Technical Manual has been cited as the “bottom line” in preparing environmental impact statements. It is not! It is a guideline and developers can and should go beyond the minimal requirements spelled out in the Technical Manual. Preparation of the manual was a collaboration between AKRF and the NY City Dept. of Planning. The objective was to create a process that would best facilitate project approvals with the least effort on the part of developers. For the last two decades it has worked brilliantly to accomplish this goal. The CEQR Technical Manual recommends conservative (optimistic) assumptions that are presumed to be gospel by consultants like AKRF. One example is the selection of trip generation characteristics for traffic projections. The numbers recommended in the Technical Manual date from two to three decades back in time when demographics and travel behavior were very different from today. These are the same numbers used in the FGEIS and now in the SDEIS to under report traffic impacts. In recognition of this problem in 1977 the USEPA provided NYC with a million dollar grant to assemble up to date trip generation data. The City assembled consultants like me to voluntarily contribute what they had collected in the field for various land uses. However, after about 6 months it became obvious that the City had no intention of assembling this data; that they were assuming the consulting community would do this for free. The program quickly fell apart. What happened to the million dollars is unknown but no up-to-date trip generation factors for NYC ever materialized. The lowest common denominator should not be the bottom line for this project.

PUBLIC PARTICIPATION IN THE WILLETS POINT ENVIRONMENTAL ANALYSIS IS A FARCE

Over the past five years more than a thousand pages of comments have been generated on the FGEIS, the Access Modification Report, the Phase 1 Report, the Van Wyck Ramp EA and the Final Scoping Document for Willets Point “West”. Thousands of pages containing thousands of comments have had no effect on the outcome of these analyses. NYCEDC, with the help of AKRF, concoct responses to comments that are meaningless: responses that claim that since the comments were not covered in the scope of work or in the CEQR Technical Manual, they require no response, or, if the comment really hits the mark they simply disagree with the commenter. It is all BS and it is intended to frustrate and discourage public involvement. This practice has been followed for three decades. Occasionally something really awful is identified that has to be addressed—somehow. For example, in 2010 I met with the FHWA, the NYSDOT, NYCEDC,

and a host of lawyers and laid out problems that were so significant that it forced a two year delay in the Willets Point project while EDC and their lawyers tried to come to terms with what we disclosed. What did we find? That EDC with the help of AKRF was lying about the project. Presenting one story in the FGEIS and another in the Environmental Assessment for the Van Wyck Ramps. They were also lying about project impacts, hiding traffic volume to under report project impacts. This sad story is all summarized in the 286 page report that I prepared for WPU and that I presented to NYSDOT as part of my testimony on the Willets Point "West" scope of work. It was completely ignored. Very few times over the last five decades have we been able to expose this behavior. The first was the West Side Highway Project or Westway in which I was able to demonstrate to a Federal judge that the consultants were lying about that project. The consultant, Parsons Brinckerhoff, could not explain their work and could not counter my own testimony sufficiently to convince the judge to approve that project. Some of the people representing Parsons Brinckerhoff in that proceeding were the same engineers and administrators who started AKRF in 1982. They lied about Westway and they are lying now about the Willets Point project. I hope WPU can accomplish for Willets Point what I did with Westway 38 years ago.

Brian T. Ketcham, P.E.
July 8, 2013

TABLE 1
Estimating Total Annual Vehicle Trips for the Willets Point WEST Development Plan
(Based on assumptions provided in the FEIS)

WEEKDAY PERSON/VEHICLE TRIPS - PHASE 1A

	Residential	Office	Retail	Retail	Local	Expo	Theatre	Hotel	Community	Students	Faculty	TOTALS
Size	0	0	915,000	30,000	0	4,000	200	0	0	0	0	
Trip Gen Rate	8.075/DU	18	78.2	205	46.2	3.26	9.4	34	2	10%	2	
Modal Split-Bus	10%	14%	18%	10%	12%	18%	5%	5%	10%	15%	0%	
Modal Split-Subway	52%	16%	15%	3%	2%	8%	5%	26%	15%	15%	50%	
Modal Split-Auto	26%	51%	59%	15%	68%	56%	70%	16%	15%	15%	50%	
Modal Split-Taxi	1%	1%	3%	0%	8%	7%	15%	1%	0%	0%	0%	
Auto Occupancy	1.39	1.14	2.05	2	2.3	2.52	1.6	1.5	1.3	1.3	1.2	
Taxi Occupancy	1.39	1.14	2.05	2	1.8	2.3	1.4	1.5	1.3	1.3	1.2	
Truck Trip Gen Rate	0.06/DU	0.32	0.35	0.35	0.7	0.02	0.24	0.38	0.04	0	0	
Total Truck Trips	0	0	320	11	0	80	48	0	0	0	0	
Total Auto/Taxi Trips	0	0	22,688	461	0	3,692	1,225	0	0	0	0	
BUS (person trips)	0	0	12,880	615	0	2	0	0	0	0	0	13,497
SUBWAY (person trips)	0	0	10,733	185	0	1	0	0	0	0	0	10,919
AUTOS (vehicles)	0	0	20,593	461	0	2,898	823	0	0	0	0	24,775
TAXI (vehicles)	0	0	2,094	0	0	794	403	0	0	0	0	3,291
TRUCK (vehicles)	0	0	320	11	0	80	48	0	0	0	0	459
TOTAL WEEKDAY VEHICLE TRIPS	0	0	23,008	472	0	3,772	1,273	0	0	0	0	28,524
PERCENT OF TOTAL VEH TRIPS	0%	0%	81%	2%	0%	13%	4%	0%	0%	0%	0%	
Reference Table 14-29 SDEIS												
ESTIMATE OF VMT												
TRIP DISTANCE												
AUTO	8	8	6	4	2	4	8	2	4	2	2	
TAXI	6	6	6	6	6	6	6	6	6	6	6	
TRUCK	38	38	38	38	38	38	38	38	38	38	38	
VMT												
AUTO	0	0	123,560	1,845	0	11,591	6,580	0	0	0	0	WEEKDAY
TAXI	0	0	12,565	0	0	4,762	2,417	0	0	0	0	ANNUAL
TRUCK	0	0	12,170	399	0	3,040	1,824	0	0	0	0	48,528,663
TOTALS	0	0	148,295	2,244	0	19,394	10,821	0	0	0	0	6,673,804
												5,892,185
												61,094,652

Brian Ketcham Engineering, PC, May 7, 2013

TABLE 2
ASSUMES 90% OF SHOPPER ACCESS VIA AUTO
Estimating Total Annual Vehicle Trips for the Willets Point WEST Development Plan
(Based on assumptions provided in the FEIS)

WEEKDAY PERSON/VEHICLE TRIPS - PHASE 1A										
	Residential	Destination		Local Retail	Convention Expo Facility	Movie Theatre	Hotel	Community Facility	PS/IS	
		Office	Retail						Students	Faculty
	0	0	915,000	30,000	0	4,000	200	0	0	0
Size	8.075/DU	18	78.2	205	46.2	3.26	9.4	34	2	2
Trip Gen Rate	10%	14%	4%	10%	12%	18%	5%	5%	10%	0%
Modal Split-Bus	52%	16%	3%	3%	2%	8%	5%	26%	15%	50%
Modal Split-Subway	26%	51%	90%	15%	68%	56%	70%	16%	15%	50%
Modal Split-Auto	1%	1%	3%	0%	8%	7%	15%	1%	0%	0%
Modal Split-Taxi	1.39	1.14	2.05	2	2.3	2.52	1.6	1.5	1.3	1.2
Auto Occupancy	1.39	1.14	2.05	2	1.8	2.3	1.4	1.5	1.3	1.2
Taxi Occupancy	0.06/DU	0.32	0.35	0.35	0.7	0.02	0.24	0.38	0.04	0
Truck Trip Gen Rate										
Total Truck Trips	0	0	320	11	0	80	48	0	0	0
Total Auto/Taxi Trips	0	0	33,508	461	0	3,692	1,225	0	0	0
BUS (person trips)	0	0	2,862	615	0	2	0	0	0	0
SUBWAY (person trips)	0	0	2,147	185	0	1	0	0	0	0
AUTOS (vehicles)	0	0	31,414	461	0	2,898	823	0	0	0
TAXI (vehicles)	0	0	2,094	0	0	794	403	0	0	0
TRUCK (vehicles)	0	0	320	11	0	80	48	0	0	0
TOTAL WEEKDAY VEHICLE TRIPS	0	0	33,828	472	0	3,772	1,273	0	0	0
PERCENT OF TOTAL VEH TRIPS	0%	0%	86%	1%	0%	10%	3%	0%	0%	38%
Reference Table 14-29 SDEIS										
ESTIMATE OF VMT										
TRIP DISTANCE										
AUTO	8	8	6	4	2	4	8	2	4	2
TAXI	6	6	6	6	6	6	6	6	6	6
TRUCK	38	38	38	38	38	38	38	38	38	38
WEEKDAY										
VMT										
AUTO	0	0	188,481	1,845	0	11,591	6,580	0	0	0
TAXI	0	0	12,565	0	0	4,762	2,417	0	0	0
TRUCK	0	0	12,170	399	0	3,040	1,824	0	0	0
TOTALS	0	0	213,216	2,244	0	19,394	10,821	0	0	0
208,497										
19,745										
17,433										
245,675										
Brian Ketcham Engineering, PC, May 7, 2013										

TABLE 3

Estimating Total Annual Vehicle Trips for the Willets "WEST" Mall Development Plan
(Based on assumptions provided in the SDEIS)

WEEKDAY PERSON/VEHICLE TRIPS - FULL PROJECT BUILD OUT 2032

	Residential	Office	Destination	Retail	Local	Convention	Movie	Hotel	Community	PS/IS	PS/IS	TOTALS
					Retail	Expo Facility	Theatre		Facility	Students	Faculty	
Size	5,850	780,000	1,756,500	593,000		400,000	4,000	700	150,000	1,463	900	
Trip Gen Rate	8.075/DU	18	78.2	205		46.2	3.26	9.4	34	2	2	
Modal Split-Bus	10%	14%	18%	10%		12%	18%	5%	5%	10%	0%	
Modal Split-Subway	52%	16%	15%	3%		2%	8%	5%	26%	15%	50%	
Modal Split-Auto	26%	51%	59%	15%		68%	56%	70%	16%	15%	50%	
Modal Split-Taxi	1%	1%	3%	0%		8%	7%	15%	1%	0%	0%	
Auto Occupancy	1.39	1.14	2.05	2		2.3	2.52	1.6	1.5	1.3	1.2	
Taxi Occupancy	1.39	1.14	2.05	2		1.8	2.3	1.4	1.5	1.3	1.2	
Truck Trip Gen Rate	0.06/DU	0.32	0.35	0.35		0.7	0.02	0.24	0.38	0.04	0	
Total Truck Trips	351	250	615	208		280	80	168	57	59	0	
Total Auto/Taxi Trips	9,516	6,527	43,553	9,117		7,106	3,692	4,289	578	338	750	
BUS (person trips)	4,724	1,966	24,724	12,157		2,218	2	0	255	0	0	46,046
SUBWAY (person trips)	24,564	2,246	20,604	3,647		370	1	0	1,326	0	1	52,760
AUTOS (vehicles)	8,836	6,281	39,532	9,117		5,464	2,898	2,879	544	338	750	76,639
TAXI (vehicles)	680	246	4,020	0		1,643	794	1,410	34	0	0	8,827
TRUCK (vehicles)	351	250	615	208		280	80	168	57	59	0	2,066
TOTAL WEEKDAY VEHICLE TRIPS	9,867	6,777	44,167	9,325		7,386	3,772	4,457	635	396	750	87,532
PERCENT OF TOTAL VEH TRIPS	11%	8%	50%	11%		8%	4%	5%	1%	0%	1%	

Reference Table 14-29 SDEIS

ESTIMATE OF VMT

TRIP DISTANCE

AUTO	8	8	6	4		2	4	8	2	4	2	
TAXI	6	6	6	6		6	6	6	6	6	6	
TRUCK	38	38	38	38		38	38	38	38	38	38	
VMT												
AUTO	70,688	50,248	237,194	36,470		10,927	11,591	23,030	1,088	1,350	1,500	WEEKDAY
TAXI	4,078	1,478	24,121	0		9,856	4,762	8,460	204	0	0	ANNUAL
TRUCK	13,338	9,485	23,361	7,887		10,640	3,040	6,384	2,166	2,224	0	150,101,518
TOTALS	88,104	61,211	284,677	44,356		31,423	19,394	37,874	3,458	3,574	1,500	17,900,464
												26,541,420
												575,572
												194,543,402

Brian Ketcham Engineering, PC, May 4, 2013

TABLE 4
WITH MORE REALISTIC % SHOPPERS USING AUTOS
Estimating Total Annual Vehicle Trips for the Willets "WEST" Mall Development Plan
(Based on assumptions provided in the SDEIS)

PHASE 1A (2018) WITH ACTION PARKING

In Phase 1A, the proposed project would provide approximately 2,500 off-street accessory parking spaces to satisfy the projected parking demand due to the development in Willets West and 75 accessory spaces for project demand in the District.¹ As shown in **Table 14-39**, the projected weekday and Saturday peak parking demands for Willets West (1,127 and 2,238 spaces, respectively) is anticipated to be satisfied entirely by the off-street parking facility provided within the site.

Table 14-39
Willets West Phase 1A (2018)
Weekday and Saturday Parking Accumulation

Time Begin	Weekday								Saturday							
	Destination Retail			Movie Theater			Total	Destination Retail			Movie Theater			Total		
	In	Out	Acc.	In	Out	Acc.		In	Out	Acc.	In	Out	Acc.			
Midnight	0	0	0	0	14	14	14	0	0	0	0	28	28	28		
1 AM	0	0	0	0	14	0	0	0	0	0	0	0	28	0	0	
2 AM	0	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	0	
4 AM	0	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	0	
6 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 AM	62	62	0	14	0	14	14	100	0	100	28	0	28	128		
8 AM	377	241	136	27	2	39	175	191	10	281	53	3	78	359		
9 AM	292	120	308	32	6	65	373	180	20	441	94	17	155	596		
10 AM	393	184	517	58	14	109	626	321	80	682	111	28	238	920		
11 AM	591	439	669	55	23	141	810	1,263	541	1,404	108	58	288	1,692		
Noon	1,020	834	855	54	33	162	1,017	881	763	1,522	172	106	354	1,876		
1 PM	1,581	1,549	887	70	46	186	1,073	1,125	1,081	1,566	172	106	420	1,986		
2 PM	1,008	1,114	781	101	73	214	995	1,074	992	1,648	183	150	453	2,101		
3 PM	939	832	888	114	89	239	1,127	1,043	963	1,728	214	175	492	2,220		
4 PM	855	937	806	143	117	265	1,071	579	625	1,682	153	125	520	2,202		
5 PM	871	982	695	125	107	283	978	902	902	1,682	240	204	556	2,238		
6 PM	896	1,040	551	188	160	311	862	812	993	1,501	360	307	609	2,110		
7 PM	803	803	551	200	177	334	885	632	1,173	960	376	347	638	1,598		
8 PM	436	533	454	178	257	255	709	562	1,042	480	342	492	488	968		
9 PM	175	629	0	59	145	169	169	361	841	0	113	276	325	325		
10 PM	0	0	0	23	94	98	98	0	0	0	44	179	190	190		
11 PM	0	0	0	9	79	28	28	0	0	0	17	151	56	56		
Total	10,299	10,299		1,450	1,450			10,026	10,026		2,780	2,780				
Note: Acc = Accumulation																
Source: Based on travel demand estimates																

As shown in **Tables 14-40** and **14-41**, parking demand from development within the District would not be fully accommodated by the 75 accessory spaces on weekdays or on Saturdays. During the Mets off-season, there would be an additional parking demand of 5 to 131 spaces on weekdays and Saturdays. During the off-season when the recreational uses would be in place, the additional recreational accessory parking demand, if needed, would be provided in Lot B, the north lot, or within the Willets Point District property itself to satisfy this demand.

¹ Additional parking spaces may be provided for off-season recreation uses within the District if they are warranted.

Table 14-60
Phase 2 (2032) Special Willets Point District
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.
Midnight	66	66	3,101	0	0	0	0	0	0	0	0	0	0	0	0
1 AM	31	31	3,101	0	0	0	0	0	0	0	0	0	0	0	0
2 AM	18	18	3,101	0	0	0	0	0	0	0	0	0	0	0	0
3 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
4 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
5 AM	13	13	3,101	0	0	0	0	0	0	0	0	0	0	0	0
6 AM	27	27	3,101	0	0	0	0	0	0	0	0	0	27	0	27
7 AM	34	310	2,825	41	3	38	44	44	0	26	1	25	191	0	218
8 AM	177	707	2,295	465	18	485	271	173	98	103	103	25	300	0	518
9 AM	117	467	1,945	395	68	812	210	86	222	45	30	40	696	14	1,200
10 AM	110	331	1,724	85	68	829	282	132	372	118	81	77	418	74	1,544
11 AM	156	233	1,647	34	97	766	424	315	481	171	178	70	350	87	1,807
Noon	225	217	1,655	145	157	754	732	599	614	650	650	70	283	105	1,985
1 PM	203	203	1,655	172	104	822	1,135	1,113	636	513	534	49	264	310	1,939
2 PM	186	186	1,655	89	56	855	723	800	559	342	356	35	44	146	1,837
3 PM	243	234	1,664	63	77	841	674	598	635	292	303	24	68	308	1,597
4 PM	382	254	1,792	48	295	594	614	673	576	295	307	12	61	347	1,311
5 PM	632	340	2,084	28	535	87	625	705	496	342	342	12	21	673	659
6 PM	585	246	2,423	14	79	22	644	746	394	265	277	0	7	633	33
7 PM	514	220	2,717	7	29	0	577	577	394	260	260	0	0	33	0
8 PM	223	95	2,845	0	0	0	313	382	325	0	0	0	0	0	0
9 PM	179	77	2,947	0	0	0	126	451	0	0	0	0	0	0	0
10 PM	148	64	3,031	0	0	0	0	0	0	0	0	0	0	0	0
11 PM	124	54	3,101	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,419	4,419		1,586	1,586		7,394	7,394		3,422	3,422		2,730	2,730	
Time Begin	Hotel			Community Facility			School – Students			School – Staff			Total Acc.		
	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.	In	Out	Acc.			
Midnight	12	2	306	0	0	0	0	0	0	0	0	0	3,407		
1 AM	13	1	318	0	0	0	0	0	0	0	0	0	3,419		
2 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
3 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
4 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
5 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,419		
6 AM	0	0	318	0	0	0	0	0	0	0	0	0	3,446		
7 AM	8	12	314	17	1	16	8	8	0	6	0	6	3,442		
8 AM	94	136	272	30	2	44	152	152	0	50	0	56	3,793		
9 AM	45	84	233	22	9	57	8	8	0	0	0	56	4,565		
10 AM	50	50	233	19	12	64	0	0	0	0	0	56	4,899		
11 AM	65	65	233	14	17	61	0	0	0	0	0	56	5,121		
Noon	274	129	378	14	17	58	0	0	0	0	0	56	5,570		
1 PM	47	109	316	11	15	54	0	0	0	0	0	56	5,527		
2 PM	37	86	267	9	13	50	0	0	0	0	0	56	5,314		
3 PM	37	86	218	15	21	44	127	127	0	0	44	12	5,035		
4 PM	43	101	160	17	23	38	16	16	0	0	6	6	4,489		
5 PM	221	154	227	15	21	32	25	25	0	0	6	0	3,597		
6 PM	137	206	158	19	26	25	0	0	0	0	0	0	3,055		
7 PM	114	76	196	14	14	25	0	0	0	0	0	0	3,332		
8 PM	103	84	215	4	18	11	0	0	0	0	0	0	3,396		
9 PM	65	34	246	1	12	0	0	0	0	0	0	0	3,193		
10 PM	50	18	278	0	0	0	0	0	0	0	0	0	3,309		
11 PM	23	5	296	0	0	0	0	0	0	0	0	0	3,397		
Total	1,438	1,438		221	221		336	336		56	56				
Note: Acc. = Accumulation															
Source: Based on travel demand estimates															

Table 21-23

Phase 2 (2032) Highway Level of Service Summary With Mitigation
Weekday PM Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS	Speed (mph)	Density (pc/mi/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	33.0	45.4	F	33.6	35.8	E	32.9	47.6	F
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	37.7	25.8	C	0.4	194.9	F	36.9	32.0	D
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	44.2	34.1	D	35.3	54.0	F	43.9	37.2	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	33.7	39.8	E	22.4	67.9	F	32.6	49.2	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	17.3	69.7	F	38.9	36.1	E	38.6	41.5	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	35.1	50.1	F	35.5	36.4	E	35.1	52.4	F
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	31.8	36.2	E	11.2	89.6	F	31.6	38.9	E
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	34.1	20.0	B	33.3	18.3	B	33.0	32.9	D
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	23.8	19.1	B	10.4	44.1	F	21.1	26.2	C
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	24.3	18.1	B	7.2	58.7	F	23.8	31.0	D
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	19.5	40.5	E	38.6	19.9	B	35.2	31.9	D
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	14.9	41.2	E	24.6	29.2	D	3.5	197.0	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	38.9	21.0	C	38.9	20.2	C	39.0	20.6	C
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.1	33.9	D	33.1	30.3	D	32.9	35.6	E
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.8	16.9	B	31.7	17.8	B	32.0	22.1	C
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	32.0	11.1	B	32.1	8.7	A	31.9	12.0	B
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	34.8	25.8	C	3.1	138.6	F	23.8	50.3	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	41.4	5.4	A	0.0	235.0	F	40.0	19.3	B
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4	20.9	C	3.0	204.6	F	16.2	69.2	F
Note: Significant Impact									

Table 21-24
Phase 2 (2032) Highway Level of Service Summary With Mitigation
Saturday Non-Game Day

	No Action			With Action			With Mitigation		
	Speed (mph)	Density (pc/ml/in)	LOS	Speed (mph)	Density (pc/ml/in)	LOS	Speed (mph)	Density (pc/ml/in)	LOS
Mainlines									
Grand Central Parkway EB Mainline (between Roosevelt Ave & Long Island Expwy)	37.1	44.5	E	38.3	26.2	C	37.2	43.7	E
Grand Central Parkway WB Mainline (east side) (between Roosevelt Ave & Long Island Expwy)	38.1	28.4	D	0.0	200.2	F	37.4	36.0	E
Grand Central Parkway WB Mainline (west side) (between Roosevelt Ave & Long Island Expwy)	43.4	39.0	E	31.2	48.8	F	42.2	43.7	E
Van Wyck Expressway NB Mainline (between Roosevelt Ave & Long Island Expwy)	38.8	32.6	D	12.0	105.7	F	12.0	103.7	F
Van Wyck Expressway SB Mainline (between Roosevelt Ave & Long Island Expwy)	31.8	38.2	E	34.8	33.8	D	40.2	37.9	E
Whitestone Expressway NB Mainline (between Northern Boulevard and Linden Place)	37.0	27.8	C	37.6	15.0	B	36.7	32.1	D
Whitestone Expressway SB Mainline (between Northern Boulevard and Linden Place)	33.1	31.2	D	4.1	147.2	F	19.7	54.6	F
Ramps									
Ramp from World's Fair Marina / Boat Basin Road to Grand Central Parkway WB	33.8	21.1	C	34.0	13.6	B	33.1	24.2	C
Ramp from Van Wyck Expressway NB to Northern Boulevard EB	22.6	24.2	C	7.2	59.2	F	9.4	59.0	F
Ramp from Van Wyck Expressway NB to Northern Boulevard WB	26.1	13.5	B	4.7	77.9	F	25.6	20.9	C
Ramp from Whitestone Expressway NB to Van Wyck Expressway SB	43.5	13.3	B	43.4	9.5	A	37.8	25.8	C
Ramp from Northern Boulevard WB to Van Wyck Expressway SB	28.1	29.2	D	24.2	40.5	E	6.0	150.9	F
Ramp from Astoria Boulevard EB & Northern Boulevard EB to Whitestone Expressway NB	40.1	7.0	A	39.8	7.9	A	39.9	8.4	A
Ramp from Whitestone Expressway SB to Grand Central Parkway WB	33.3	32.7	D	33.7	22.7	C	33.3	31.8	D
Ramp from Whitestone Expressway SB to Grand Central Parkway EB	31.4	11.7	B	30.6	10.8	B	32.5	14.9	B
Ramp from Northern Boulevard WB and Whitestone Expressway SB to Astoria Boulevard WB	39.3	8.9	A	39.6	5.2	A	39.1	9.1	A
Ramp from Astoria Blvd EB & Grand Central Pkwy to Whitestone Expwy NB / Northern Blvd EB	29.6	25.9	C	1.8	141.2	F	7.4	130.4	F
Ramp from Grand Central Parkway WB toward Stadium Road and Whitestone Expressway NB	43.3	7.3	A	0.0	243.5	F	32.8	28.3	D
Ramp from Whitestone Expressway SB to Northern Boulevard WB	30.4	21.0	C	1.5	214.8	F	6.4	171.0	F
Note: Significant Impact									

Table 14-59

Phase 2 (2032) With Action 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	x	x	x	x
Northern Boulevard at 108th Street	x	x	x	x	x	x	x
Northern Boulevard at 114th Street	x	x	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	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		x	x	x	x	x	x
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		
Roosevelt Avenue at Main Street	x	x	x	x	x	x	x
Roosevelt Avenue at Union Street	x	x	x	x	x	x	x
Roosevelt Avenue at Parsons Boulevard	x	x	x	x	x		x
Kissena Boulevard at Main Street		x		x		x	
Sanford Avenue at College Point Boulevard			x	x			
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard	x	x	x	x	x		x
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard	x	x	x	x	x	x	
Boat Basin Road at Stadium Road	x	x	x	x	x	x	x
Boat Basin Road at World's Fair Marina	x	x	x	x	x	x	x
Stadium Road at Grand Central Parkway		x	x	x	x	x	x
Willels Point Boulevard at Northern Boulevard	x	x	x	x	x	x	x
New Willels Point Boulevard at 126th Street	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Roosevelt Avenue at CitiField / Lot B	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes: "x" means the intersection would be significantly impacted. n/a means the intersection is new for With Action conditions.

Parking demand for the proposed residential component would be satisfied through on-street and off-street parking opportunities. As in the 2008 FGEIS, 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 300 spaces. Given the anticipated residential demand of 3,101 spaces, approximately 2,800 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 convention center space—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 3,050 spaces and 2,900 spaces, respectively. These

they are found to be significantly impacted under the With Action condition, mitigation measures such as those typically implemented by NYCDOT would be further explored to address the impacts, or if no practicable mitigation measures can be identified, the impacts would be disclosed as being unmitigatable.

TRAFFIC—PHASE 2 (2032)

Table 21-5 presents a summary of significant adverse traffic impacts and their ability to be mitigated, and Table 21-6 summarizes the unmitigated traffic study area locations by time period. Details of the intersection capacity results and traffic mitigation measures are provided in tables at the back of this chapter.

Table 21-5

Traffic Impact Mitigation Summary—Phase 2 (2032)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
No Significant Impact	9	5	5	5	6	8	8
Fully Mitigated Impact	14	14	13	11	11	11	11
Partially Mitigated Impact	3	7	7	8	9	8	7
Unmitigated Impact	5	5	6	7	5	4	5

Table 21-6

Summary of Unmitigated Intersections—Phase 2 (2032)

Intersection	Without a Mets Game				With a Mets Game		
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday	Weekday Pre-Game PM	Saturday Pre-Game Midday	Saturday Post-Game PM
Astoria Boulevard at 108th Street			X	X	X		
Northern Boulevard at 108th Street							
Northern Boulevard at 114th Street							
Northern Boulevard at 126th Street							
Northern Boulevard at Prince Street	X		95.3				X
Northern Boulevard at Main Street	X	X	91.6	X	X	X	X
Northern Boulevard at Union Street	X		92.2				
Northern Boulevard at Parsons Boulevard							
34th Avenue at 114th Street							
34th Avenue at 126th Street			106.7				
Roosevelt Avenue at 108th Street							
Roosevelt Avenue at 111th Street			144.1	X	X	X	X
Roosevelt Avenue at 114th Street							
Roosevelt Avenue at 126th Street			136.1				
Roosevelt Avenue at College Point Boulevard			139.1				
Roosevelt Avenue at Prince Street							
Roosevelt Avenue at Main Street		X	98.9				
Roosevelt Avenue at Union Street	X	X	212.3	X	X	X	X
Roosevelt Avenue at Parsons Boulevard				X	X		
Kissena Boulevard at Main Street							
Sanford Avenue at College Point Boulevard							
Sanford Avenue at Union Street							
Sanford Avenue at Parsons Boulevard							
32nd Avenue at College Point Boulevard							
Northern Boulevard at College Point Boulevard	X	X		X		X	
Boat Basin Road at Stadium Road		X	145.5	X			X
Boat Basin Road at World's Fair Marina							
Stadium Road at Grand Central Parkway							
Wilets Point Boulevard at Northern Boulevard							
New Wilets Point Boulevard at 126th Street							

Notes: "X" means the intersection would be unmitigated in the corresponding peak hour

TABLE 22
CITTFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH		No Action			With Action			Mitigation			Mitigation Measure			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.		V/C	Control Delay	LOS
Parsons Boulevard at Northern Boulevard (RT. 25A)														
Parsons Boulevard	NB	L	0.86	72.5	E	L	0.88	77.4	E	L	0.87	74.8	E	-Partially Mitigated.
		TR	0.50	35.4	D	TR	0.50	35.4	D	TR	0.49	34.4	C	-Install "No Standing Anytime" regulations along the north curb of the WB Northern Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
	SB	LTR	1.13	100.8	F	LTR	1.19	128.1	F	LTR	0.65	34.2	C	-Install "No Standing Anytime" regulations along the south curb of the EB Northern Blvd approach 200-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
Northern Boulevard (Rt. 25A)	EB	L	0.48	46.8	D	L	0.56	48.3	D	R	0.46	34.1	C	-Install "No Standing Anytime" regulations along the west curb of the SB Parsons Blvd approach 150-ft from the intersection to allow for one 10-ft daylighted right-turn lane.
		TR	0.98	38.8	D	TR	1.13	92.1	F	TR	0.57	50.6	D	-Modify Signal Timing: Shift 1 s green time from LPI phase (east and west crosswalks) to NB/SB phase [LPI shifts from 7 s to 6 s, NB/SB green time shifts from 36 s to 37 s].
	WB	L	0.40	40.8	D	L	0.40	43.7	D	L	0.40	43.7	D	
	TR	1.10	82.2	F	TR	1.29	164.6	F	TR	1.10	82.9	F		
	-	-	-	-	-	-	-	-	-	R	0.32	23.0	C	
Overall Intersection		-	1.09	60.6	E	-	1.18	114.2	F	-	1.00	76.8	E	
34TH AVENUE														
114th Street at 34th Avenue														
114th Street	SB	L	1.01	64.3	E	L	1.09	89.3	F	L	0.98	55.6	E	-Modify Signal Timing: Shift 3 s of green time from EB phase to SB phase [EB green time shifts from 52 s to 49 s, SB green time shifts from 28 s to 31 s].
		T	0.41	26.1	C	T	0.48	27.4	C	T	0.44	24.4	C	
	EB	TR	0.38	11.3	B	TR	0.39	11.3	B	TR	0.41	13.2	B	
Overall Intersection		-	0.60	38.2	D	-	0.63	50.6	D	-	0.63	35.0	D	
126th Street/GCP Ramp at 34th Avenue														
126th Street	NB	DeLL	0.36	23.9	C	DeLL	2.79	846.1	F	L	1.47	273.5	F	-Partially mitigated.
		TR	0.27	21.2	C	TR	0.71	29.8	C	TR	0.85	44.5	D	-Restripe the NB 126th Street approach from two 11-ft travel lanes, one 12-ft travel lane, and one 7-ft haunched median to one 12-ft exclusive left-turn lane, two 12-ft travel lanes and one 5-ft Class II bicycle lane.
	SB	LTR	0.28	21.7	C	LTR	0.82	41.0	D	L	0.81	63.0	D	
GCP Ramp	SB	LTR	0.76	60.2	E	LTR	3.00+	1000.0+	F	R	0.71	42.3	D	-Widen roadway on the east leg of the intersection to 44 ft to have two 11-ft WB approach lanes and two 11-ft EB receiving lanes.
	EB	-	-	-	-	DeLL	3.00+	1000.0+	F	DeLL	0.90	83.2	F	-Reconstruct and merge the GCP and Northern Boulevard ramp approaches to have one 11-ft exclusive left-turn lane, two 11-ft travel lanes and one 11-ft exclusive right-turn lane.
	WB	LTR	0.45	42.8	D	TR	2.34	656.6	F	TR	0.88	48.9	D	-Modify signal phasing and timing plan. EB/WB phase will have 37 s green time; EB lag phase will have 7 s green time; NB/SB phase will have 42 s green time; NB/SB lag left-turn phase will have 14 s green time [each phase will have 3 s amber and 2 s all red time]
Overall Intersection		-	0.62	44.1	D	-	3.00+	1000.0+	F	-	1.60	106.7	F	
ROOSEVELT AVENUE														
108th Street at Roosevelt Avenue														
108th Street	NB	LTR	1.13	113.2	F	LTR	1.19	138.5	F	LTR	0.95	58.8	E	-Partially mitigated.
		-	-	-	-	-	-	-	-	R	0.40	38.6	D	-Install "No Standing Anytime" regulations along the east curb of the NB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
	SB	LTR	1.20	138.5	F	LTR	1.22	147.9	F	LTR	0.97	55.9	E	-Install "No Standing Anytime" regulations along the west curb of the SB 108th Street approach 150-ft from the intersection to allow for one 11-ft left-through lane and one 11-ft right-turn lane.
Roosevelt Avenue	EB	LTR	0.75	10.1	B	LTR	0.93	21.9	C	LTR	0.93	21.9	C	
		-	-	-	-	-	-	-	-	-	-	-	-	
	WB	LTR	0.84	18.3	B	LTR	1.10	68.9	E	LTR	1.10	68.9	E	
Overall Intersection		-	0.94	52.6	D	-	1.13	75.8	E	-	1.06	49.0	D	

TABLE 22
CITIFIELD - WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 WEEKDAY NON-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

No Action										With Action				Mitigation				Mitigation Measure
Control										Control				Control				
Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS			
11th Street at Roosevelt Avenue																		
11th Street																-Unmitigatable impact.		
NB	LTR	0.86	57.2	E	LTR	0.86	57.2	E										
EB	LTR	0.79	11.1	B	LTR	0.99	33.0	C										
Roosevelt Avenue																		
WB	LTR	1.25	133.7	F	LTR	1.51	251.7	F										
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Overall Intersection	-	1.14	78.3	E	-	1.33	144.1	F										
114th Street at Roosevelt Avenue																		
114th Street																-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Restripe the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 11-ft exclusive right-turn lane. -Restripe the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Restripe the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane. -Shift center line of SB 114th Street approach 2 ft to the east. -Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 3 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 77 s; NB/SB green time shifts from 30 s to 33 s]. -Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.		
NB	LTR	0.99	64.9	E	LTR	0.99	64.9	E										
SB	LTR	1.09	91.4	F	LTR	1.24	152.6	F										
	-	-	-	-	-	-	-	-										
EB	LTR	0.93	22.7	C	LTR	1.53	263.0	F										
	-	-	-	-	-	-	-	-										
WB	LTR	0.74	15.7	B	LTR	1.18	108.2	F										
	-	-	-	-	-	-	-	-										
Overall Intersection	-	0.98	31.7	C	-	1.44	145.3	F										
126th Street at Roosevelt Avenue																		
126th Street																-Partially mitigated. -Reconfigure NB 126th Street approach to have one 10-ft exclusive left-turn and two 10-ft travel lanes. -Shift centerline of SB 126th Street approach 9 ft to the east. -Restripe the SB 126th Street approach from one 11-ft and one 12-ft travel lane to one 11-ft exclusive left-turn lane, one 10-ft through lane, and one 11-ft exclusive right-turn lane for 250 ft. -Shift centerline of EB Roosevelt Avenue approach 1 ft to north. -Shift centerline of WB Roosevelt Avenue approach 1 ft to south. -Restripe the EB Roosevelt Avenue approach from one 10-ft and 11-ft travel lane to two 11-ft travel lanes. -Restripe the WB Roosevelt Avenue approach from one 11-ft and 10-ft travel lane to two 11-ft travel lanes. -Modify signal phasing and timing plan: EB/WB will have 64 s green time; EB-lag/SB right phase will have 7 s green time; NB/SB phase will have 34 s green time [each phase will have 3 s amber and 2 s all red time].		
NB	LTR	0.68	55.0	D	LTR	3.00+	1000.0+	F										
SB	DeL	1.03	100.7	F	DeL	3.00+	1000.0+	F										
	TR	0.66	48.0	D	TR	2.91	912.9	F										
	-	-	-	-	-	-	-	-										
EB	LTR	0.70	8.0	A	DeL	1.74	372.8	F										
	-	-	-	-	-	-	-	-										
WB	LTR	0.60	12.7	B	LTR	0.89	24.0	C										
Overall Intersection	-	0.79	27.1	C	-	3.00+	1000.0+	F										
College Point Boulevard at Roosevelt Avenue																		
College Point Boulevard																-Partially Mitigated -Remove center median on east leg of Roosevelt Avenue -Restripe the WB Roosevelt Avenue approach from one 22-ft center median, one 13-ft travel lane, and one 17-ft travel lane to one 13-ft left-turn pocket, one 9-ft tapered hatched median, one 11-ft travel lane and one 19-ft travel lane for 80 ft. -Restripe the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Restripe the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Modify signal phasing and timing plan: WB-lag phase will have 9 s green time; EB/WB will have 25 s green time; EB-lag phase will have 16 s green time; NB/SB phase will have 26 s green time; NB lag phase will have 19 s green time [each phase will have 3 s amber and 2 s all red time].		
NB	L	1.25	176.0	F	L	1.70	368.8	F										
	TR	0.76	31.3	C	TR	0.76	31.3	C										
	-	-	-	-	-	-	-	-										
SB	TR	1.33	193.8	F	TR	1.53	284.5	F										
EB	L	0.48	37.2	D	L	0.53	38.4	D										
	TR	1.22	133.8	F	TR	1.61	307.1	F										
WB	L	0.25	43.7	D	L	0.25	43.7	D										
Overall Intersection	-	1.33	119.6	F	-	1.71	207.8	F										

TABLE 27
CITIFIELD- WILLETS POINT DEVELOPMENT STUDY
2032 PHASE 2 SATURDAY POST-GAME PM NO ACTION VS WITH ACTION TRAFFIC LEVELS OF SERVICE COMPARISON

INTERSECTION & APPROACH	No Action				With Action				Mitigation				Mitigation Measure	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
111th Street at Roosevelt Avenue	NB	LTR	1.08	85.9	F	LTR	1.08	85.9	F					-Unmitigatable impact.
	EB	LTR	0.75	17.9	B	LTR	0.93	32.0	C					
	WB	LTR	1.24	130.2	F	LTR	1.49	242.3	F					
			-	-	-		-	-	-					
Overall Intersection	-	1.20	84.4	F	F	-	1.38	140.7	F					
114th Street at Roosevelt Avenue	NB	LTR	0.69	46.6	D	LTR	0.69	46.6	D	LTR	0.53	39.0	D	-Shift center line of WB Roosevelt Avenue approach 11 ft to the south. -Reshape the WB Roosevelt Avenue approach from two 11-ft travel lanes to one 11-ft exclusive left-turn lane, one 11-ft through lane, and one 1-ft exclusive right-turn lane. -Reshape the EB Roosevelt Avenue approach from two 11-ft travel lanes to one 1-ft exclusive left-turn lane and one 11-ft travel lane. -Shift centerline of NB 114th Street approach 3 ft to the east. -Reshape the NB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane. -Shift centerline of SB 114th Street approach from one 16-ft travel lane to one 13-ft travel lane. -Shift center line of SB 114th Street approach 2 ft to the east. -Install "No Standing Anytime" regulations along the east curb of the NB 114th Street approach 250 ft from the intersection. -Install "No Standing Anytime" regulations along the south curb of the EB Roosevelt Avenue approach 250 ft from the intersection. -Modify signal timing: Shift 1 s green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 80 s to 79 s; NB/SB green time shifts from 30 s to 31 s]. -Install "No Standing 3 PM - 7 PM" regulations along the west curb of the SB 114th Street approach 150-ft from the intersection to allow for one 12-ft left-through lane and one 10-ft right-turn lane.
	SB	LTR	1.11	97.5	F	LTR	1.19	129.3	F	LTR	0.80	40.8	D	
			-	-	-		-	-	-	R	0.27	35.6	D	
	EB	LTR	1.33	170.5	F	LTR	2.09	511.8	F	L	0.54	12.1	B	
		-	-	-		-	-	-	TR	0.61	12.1	B		
WB	LTR	0.80	17.4	B	LTR	1.12	80.3	F	L	0.51	14.3	B		
		-	-	-		-	-	-	T	0.76	17.5	B		
		-	-	-		-	-	-	R	0.98	42.0	D		
Overall Intersection	-	1.26	71.4	E	F	-	1.82	192.3	F	-	0.93	26.5	C	
126th Street at Roosevelt Avenue	NB	LTR	0.22	37.4	D	LTR	2.71	832.9	D	LTR	0.19	38.9	D	
	SB	DeL	1.25	167.0	F	DeL	1.90	456.2	D	L	0.32	39.8	D	
		TR	0.52	30.4	C	TR	1.43	238.0	F	T	0.41	29.9	F	
			-	-	-		-	-	-	R	1.07	99.4	F	
EB	-	-	-	-	DeL	3.00+	1000.0+	F	DeL	3.00+	1000.0+	F		
		-	-	-	TR	1.11	92.7	F	TR	1.07	78.9	E		
WB	LTR	0.62	23.0	C	LTR	0.86	32.6	C	LTR	0.91	43.5	D		
	LTR	0.51	20.2	C										
Overall Intersection	-	0.89	56.0	E	F	-	3.00+	1000.0+	F	-	2.06	404.1	F	
College Point Boulevard at Roosevelt Avenue	NB	L	1.05	93.9	F	L	1.47	260.9	F	L	1.21	166.4	F	-Partially Mitigated. -Remove center median on east leg of Roosevelt Avenue -Reshape the WB Roosevelt Avenue approach from one 22-ft center median, one 13-ft travel lane, and one 17-ft travel lane to one 13-ft left-turn pocket, one 9-ft tapered hatched median, one 11-ft travel lane and one 19-ft travel lane for 80 ft. -Reshape the NB College Point Boulevard approach from one 9-ft exclusive left-turn lane, one 13-ft travel lane, and one 18-ft travel lane with parking to two 10-ft exclusive left-turn lanes, and two 10-ft travel lanes for 200 ft. -Reshape the SB College Point Boulevard approach from one 11-ft travel lane and one 19-ft travel lane to three 10-ft travel lanes for 200 ft. -Install "No Standing Anytime" regulations along the east curb of the NB approach of College Point Boulevard for 250 ft. -Install "No Standing Anytime" regulations along the west curb of the SB approach of College Point Boulevard for 200 ft. -Divert SB right-turn traffic on College Point Boulevard to 39th Avenue and Janet Place. -Modify signal phasing and timing plan: WB-lag phase will have 8 s green time; EB/WB will have 28 s green time; EB-lag phase will have 17 s green time; NB/SB phase will have 28 s green time; NB lag phase will have 14 s green time [each phase will have 3 s amber and 2 s all red time].
	TR	0.78	26.3	C	TR	0.78	26.3	C	TR	0.84	39.6	D		
			-	-	-		-	-	-		-	-	-	
	SB	TR	0.89	40.4	D	TR	1.14	105.3	F	T	0.65	44.1	D	
EB	L	0.59	30.5	C	L	0.67	32.0	C						
	TR	1.25	134.7	F	TR	1.55	272.4	F	LTR	1.51	264.5	F		
WB	L	0.25	32.9	C	L	0.25	32.9	C	L	0.60	43.7	D		
	TR	0.42	25.8	C	TR	0.55	28.3	C	TR	0.32	29.9	C		
Overall Intersection	-	1.14	62.6	E	F	-	1.53	133.7	F	-	0.92	142.3	F	

TABLE 5
ESTIMATION OF THE NUMBER OF TRAFFIC ACCIDENTS GENERATED
ANNUALLY BY 116 MILLION VMT PRODUCED BY THE ORIGINAL
WILLETS POINT DEVELOPMENT PLAN PROJECT IN 2017

ACCIDENT TYPE	RATE/100 MIL VMT (1)	NUMBER OF ACCIDENTS	EXTERNAL COSTS (2)
Fatal Accidents	1.5	2	\$8,910,262
Incapacitating Injury Accidents	41	48	\$16,722,809
Serious Injury Accidents	81	94	\$6,589,697
Minor Injury Accidents	150	174	\$6,482,370
Property-Damage-Only Accidents	540	626	\$2,478,665
TOTAL NUMBER OF ACCIDENTS EACH YEAR		944	\$41,183,802

(1) Rates based on accident data provided by NYMTC in their 2006 Transportation Safety Statistical Report adjusted for national figures presented in the NHTSA's Traffic Safety Facts 2006.

(2) Based on costs reported in "SafetyAnalyst: Software Tools for Safety Management of Specific Highway Sites, While Paper for Model 3-Economic Appraisal and Priority Ranking," prepared for FHWA by Midwest Research Institute, 2002, adjusted to 2017 dollars. Brian Ketcham Engineering, PC, November 2009

ESTIMATION OF THE NUMBER OF TRAFFIC ACCIDENTS GENERATED
ANNUALLY BY 61 MILLION VMT PRODUCED BY THE WILLETS "WEST"
PROJECT IN 2032

ACCIDENT TYPE	RATE/100 MIL VMT (1)	NUMBER OF ACCIDENTS	EXTERNAL COSTS (2)
Fatal Accidents	1.5	1	\$8,438,444
Incapacitating Injury Accidents	41	25	\$15,837,301
Serious Injury Accidents	81	49	\$6,240,758
Minor Injury Accidents	150	92	\$6,139,115
Property-Damage-Only Accidents	540	329	\$2,347,414
TOTAL NUMBER OF ACCIDENTS EACH YEAR		496	\$39,003,033

(1) Rates based on accident data provided by NYMTC in their 2006 Transportation Safety Statistical Report adjusted for national figures presented in the NHTSA's Traffic Safety Facts 2006.

(2) Based on costs reported in "SafetyAnalyst: Software Tools for Safety Management of Specific Highway Sites, While Paper for Model 3-Economic Appraisal and Priority Ranking," prepared for FHWA by Midwest Research Institute, 2002, adjusted to 2032 dollars. Brian Ketcham Engineering, PC, July 2013

ESTIMATION OF THE NUMBER OF TRAFFIC ACCIDENTS GENERATED
ANNUALLY BY 194 MILLION VMT PRODUCED BY THE WILLETS "WEST"
MALL PLUS THE ORIGINAL WILLETS POINT PROJECT IN 2032

ACCIDENT TYPE	RATE/100 MIL VMT (1)	NUMBER OF ACCIDENTS	EXTERNAL COSTS (2)
Fatal Accidents	1.5	3	\$26,837,020
Incapacitating Injury Accidents	41	80	\$50,367,810
Serious Injury Accidents	81	157	\$19,847,657
Minor Injury Accidents	150	291	\$19,524,398
Property-Damage-Only Accidents	540	1048	\$7,465,547
TOTAL NUMBER OF ACCIDENTS EACH YEAR		1,578	\$124,042,432

(1) Rates based on accident data provided by NYMTC in their 2006 Transportation Safety Statistical Report adjusted for national figures presented in the NHTSA's Traffic Safety Facts 2006.

(2) Based on costs reported in "SafetyAnalyst: Software Tools for Safety Management of Specific Highway Sites, While Paper for Model 3-Economic Appraisal and Priority Ranking," prepared for FHWA by Midwest Research Institute, 2002, adjusted to 2032 dollars. Brian Ketcham Engineering, PC, July 2013

TABLE 6**ANNUAL EXTERNALITY COSTS OF THE WILLETS POINT
DEVELOPMENT PLAN, 2017****SUMMARY OF RESULTS**

	Externality Costs
Added Travel Time Costs (Congestion)	\$30,624,000
Air Pollution (Health Costs)	\$16,182,000
Noise Impacts (Health Costs)	\$2,784,000
Accident Costs, Internal	\$26,494,038
Accident Costs, External	\$14,689,764
Pavement Wear & Tear	\$3,654,000
Vehicular Wear & Tear Costs	\$3,480,000
Other Externality Costs (1)	\$57,942,000
TOTALS	\$155,849,802

(1) Includes environmental degradation such as the control of water pollution, oil spills, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and military costs of ensuring an abundant supply of imported oil. Greenhouse gas emissions and their destabilizing effect on climate are another important environmental externality from motor vehicle use. Traffic generated by the Willets Point Development Plan will generate

Brian Ketcham Engineering, PC, November 29, 2009

TABLE 7

**ANNUAL EXTERNALITY COSTS OF THE WILLETS "WEST"
MALL, 2032**

SUMMARY OF RESULTS

	Externality Costs
Added Travel Time Costs (Congestion)	\$2,438,052
Air Pollution (Health Costs)	\$2,321,954
Noise Impacts (Health Costs)	\$10,797,088
Accident Costs, Internal	\$25,091,123
Accident Costs, External	\$13,911,910
Pavement Wear & Tear	\$6,501,472
Vehicular Wear & Tear Costs	\$38,660,541
Other Externality Costs (1)	\$20,433,199
TOTALS	\$120,155,340

(1) Includes environmental degradation such as the control of water pollution, oil spills, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and military costs of ensuring an abundant supply of imported oil. Greenhouse gas emissions and their destabilizing effect on climate are another important environmental externality from motor vehicle use. Traffic generated by the Willets Point Development Plan will generate about 38,000 tons

Brian Ketcham Engineering, PC, July 8, 2013

TABLE 8**ANNUAL EXTERNALITY COSTS OF THE ENTIRE WILLETS
POINT BUILD OUT INCLUDING THE WILLETS "WEST" MALL
IN 2032 DOLLARS****SUMMARY OF RESULTS**

	Externality Costs
Added Travel Time Costs (Congestion)	\$7,763,478
Air Pollution (Health Costs)	\$7,393,788
Noise Impacts (Health Costs)	\$34,381,115
Accident Costs, Internal	\$79,797,998
Accident Costs, External	\$44,244,434
Pavement Wear & Tear	\$20,702,607
Vehicular Wear & Tear Costs	\$123,106,572
Other Externality Costs (1)	\$65,065,336
TOTALS	\$382,455,327

(1) Includes environmental degradation such as the control of water pollution, oil spills, the lost value of highway land removed from tax rolls, and, most apparent today, the foreign policy and military costs of ensuring an abundant supply of imported oil. Greenhouse gas emissions and their destabilizing effect on climate are another important environmental externality from motor vehicle use. Traffic generated by the Willets Point Development Plan will generate about 38,000 tons

Brian Ketcham Engineering, PC, July 8, 2013

138-27 78th Drive
Flushing, New York 11367
July 5, 2013

OFFICE OF THE
CHAIRPERSON

City Planning Commission
New York City Department of Planning
22 Reade Street
New York 10007-1216

JUL 8 - 2013

26570

In Re: Willets Point N130220ZRQ; C130222ZSQ; C130223ZSQ; C130224ZSQ;
C130225ZSQ; Section 124-60
Hearing July 10, 2013

Dear Madams and Sirs:

In connection with the captioned matter, I enclose a statement in opposition which I request be a part of the record.

Please be further advised, I intend to be present at the hearing and to speak in opposition.

Respectfully,


Benjamin M. Haber

Encl.

cc: Amanda M. Burden, FAICP, Chair; Kenneth J. Knuckles, Esq. Vice Chair;
Angela M. Battaglia; Rayann Besser; Irwin G. Cantor, P.E.; Alfred C Cerullo,
III; Betty Y. Chan; Michelle de la Uz; Maria M. Del Toro; Joseph Douek;
Richard W. Eaddy; Anna Hayes Levin; Orlando Mann.

In Re: Willets Point N130220ZRQ; C130222ZRQ; C130223ZSQ; C130224ZSQ;
C130225ZSQ; Section 124-60 - Hearing July 19, 2013

**The Case Against a 1.4 Million Square Foot Shopping Mall
In The Citi-Field Parking Lot**

In 2008 the Bloomberg administration declared 62 acres of property located in Flushing to the East of Citi-Field called Willets Point, on which there were located over 200 small auto related businesses, a blight. Auto repair businesses in and of themselves cannot be considered a blight, much like a factory that manufactures soap. To the extent there was blight, it was caused by the City which for decades collected sewer rent from the owners notwithstanding there were no sewers and collected real estate and other taxes without in any way repairing the area's infrastructure.

... The Willets Point plan approved in 2008 was clear and unambiguous. The city would acquire 62 acres in Willets Point either through the voluntary sale by property owners or if need be through eminent domain. The property would then be turned over to a private developer who would construct on the site, retail stores, office buildings, a convention center, a school and luxury housing with a small portion set aside for affordable housing. The developer selected would be required to remove whatever contamination existed on a 23 acre area. There was no mention, I repeat no mention of a 1.4 million square foot shopping mall at Citi Field or any connection to Citi Field.

When the plan was approved in 2008 Bloomberg promised community input in the developer selection process. Bloomberg reneged on this promise, intentionally to keep in the dark a cabal he worked out with the Mets and Related Companies that while there would be several developers interested in the project, the Mets would be selected, and were in fact selected.

Of all the developers interested in the project, only the Mets had access to Citi Field property by virtue of their lease. The Bloomberg cabal envisioned a 1.4 million square foot shopping mall at Citi Field and it follows all the other developers not having access would be shut out. Hence Bloomberg's empty promise of community input in the developer selection process.

The cabal surfaced in 2013 when the Mets and Related Companies sought a change in the 2008 approved Willets Point plan. It sought through ULURP what it called a minor change in the 2008 plan. The change sought was to

change in the 2008 plan. The change sought was to construct on the 23 acre Willets Point site a parking area, something that would be considered minor and not met with much opposition. In fact the change was not minor but major and devious. The parking area has nothing to do with any meaningful connection to the 2008 Willets Point plan, but to enable the Mets to move their Citi-Field parking area to Willets Point and on the vacated Citi Field area construct a 1.4 million square foot shopping mall, something that by no stretch of the imagination had anything to do with the 2008 plan.

The developer selected for the 2008 plan knew it would be required to remove whatever contamination existed in the 23 acre Willets Point area. By accepting the plan, it is clear the Mets knew they would be obliged to clean up the site and it had nothing to do with a Citi-Field shopping mall. Ethan Goodman an attorney for the Mets at a hearing before Community Board 7 stated: "A vote against the plan is a vote against cleaning up Willets Point". Since under the 2008 plan the Mets accepted, they knew they were required to clean up Willets Point without a shopping mall, Mr. Goodman's statement was a scare tactic and misleading.

This was compounded by a additional misleading statements. The Mets now claim they need a the mall to generate a financial engine with which to construct the 2008 plan, this from Wilpon a multi billionaire. If they thought they did not have the financial ability to construct the 2008 plan, why did they bother to bid for it, unless they knew down the line Bloomberg would deliver the mall? And what if the speculation a mall will be a financial success is not, does that mean the financial engine sputters out and the 2008 plan abandoned?.

The Mets failed to point out under the new Bloomberg plan, it will only be required to pay the City \$1.00 dollar, that is right 1.00 for the Willets Point property. The City will also contribute \$99 million taxpayer dollars, of which \$40 million is earmarked for clean up, a sweetheart deal that would make the infamous Boss Tweed tip his hat in admiration. So the claim a mall is needed to ensure Willets Point gets completed, is a lie. Tens of millions of taxpayer dollars were used to acquire Willets Point property and perhaps even more in the future. That this property is being sold to the Mets a private for profit business for \$1.00, on top of which they are getting about \$100 million taxpayer dollars, is not just unacceptable. It is a raid on the city's treasury and the most outrageous governmental malfeasance being perpetrated upon the people of this City in decades, Were this the old West, Bloomberg as the architect of this taxpayer rip off, would be tarred and feathered and driven out of town together with all officials who sit idly by and let it happen.

It is the position of the Mets supported by Bloomberg that since the Mets have a lease on Citi Field, it could pursue any land change it wishes without a ULURP and in fact there is no ULURP pending with regard to the shopping mall. Citi-Field and its parking area are

located on Flushing Meadows Corona Park land and it is the position of the Mets supported by Bloomberg that because of the lease and notwithstanding a radical land use change from a parking area to a huge shopping mall, there is no obligation to replace park land. This is absurd and at least debatable which a transparent Mayor and Park Department would contest and litigate if necessary. Suffice it to say this will not occur given Bloomberg's indifference to FMCP and the less privileged people who need and use the park.

The recent survey which states the acreage of FMCP is not 1,225 as thought, but 897.62 acres, should make it even more clear it is vital that every square inch of the park must be protected.

The Mets claim without them and the mall, Willets Point will never get done. Nonsense. If the Mets walk away, that will demonstrate all they care about is a mall. Other developers will line up to do the job without a mall, and especially with a City contribution of \$99 million. It will get done without the Mets and without a mall. Further proof it is a mall that suddenly becomes paramount is evident from the Mets priority. (1) Clean up the 23 acre site. (2). Build a parking area there. (3). Move the Mets parking area to Willets Point. (4). Construct the 1.4 million square foot shopping mall. Housing goes on the back burner not to be done until 2025, if at all depending upon highway ramps getting built.

The only areas capable of serving the area are Northern Boulevard, Roosevelt Avenue, The Grand Central Parkway and The Van Wyck Expressway, arteries that cannot be enlarged, and are choked to capacity. Ramps to these arteries are akin to the infamous bridge to no where.

Queens has many shopping areas - small, large and malls. Do we really need a shopping mall at Citi Field, one that will cause a traffic nightmare and one that even if it does business it will be at the expense of our long term commercial merchants. If I were a merchant in downtown Flushing, Northern Boulevard or Roosevelt Avenue, I would hesitate to sign a long term lease.

Community Board 7 and 3 pursuant to ULURP rules conducted hearings on the application. Board 7 approved the application 22 to 18, hardly an overwhelming endorsement. Board 3 rejected it by a vote of 30 to 1 with 1 abstention, clearly overwhelming. If we add the votes of Boards 7 and 3, the result is 48 against and 23 in favor, clearly an indication of where the public stands. At a hearing before Queens Borough President Helen Marshall when this was brought out, she claimed the Board 3 vote was irrelevant. She is wrong both under the law and common sense principles. ULURP section 2-3 which permits involvement of other Community Boards makes it clear the relevancy of the Board 3 vote. Board 3 having proceeded pursuant to ULURP, its vote must be considered on an equal footing with that of Board 7 and in deed given its closer proximity



than most of the Board 7 area, even greater consideration.

When a land use change is being sought, relevant to that change is any fallout it may cause. Fallout may be purely local involving a small area or it may encompass a borough wide area. If the corner grocer wants to enlarge a parking area for his or her customers, that would be an example of a minor fallout limited to a small area. A 1.4 million square foot shopping mall which the Mets and Related Companies claim would attract a borough wide area is an example of a borough wide fallout that has great relevancy not just limited to Board 7

It follows both under ULURP and common sense principles, great weight must be given to a disapproval vote of 48 as compared to an approval vote of 23.

The application consists of falsehoods, political back room deals, has no merits and makes a mockery of the ULURP process. It should be rejected making clear the people are the constituents and not a coalition of big business and shady politics.

Benjamin M.Haber
138-27 78th Drive
Flushing, New York 11367

City Planning Commission
New York City Department of Planning
22 Reade Street
New York 1007-1216

CITY OF THE
CHAIRPERSON

JUL 16 2013

26591

Re: Willets Point N139220zrq; C130222ZSQ; C130223ZSQ; C130224ZSQ;
C130225ZSQ; Section 124-60

Dear Commission Members:

Please consider this as a supplement to my statement at the July 10, 2013 hearing in connection with the captioned matter.

This Commission should reject the application because it is deceptive, misleading and not in the public's interests.

The Willets Point plan approved by this Commission in 2008 was clear and unambiguous. The City would acquire 62 acres in Willets Point either through the voluntary sale by property owners or if need be, through eminent domain. A real estate developer would be selected with input from the community and the developer selected would then construct on the site, upscale retail stores, office buildings, a convention center, a school and luxury housing with a small portion set aside for affordable housing. The developer would be required to remove whatever contamination existed on a 23 acre area.

There was no mention of a 1.4 million square foot shopping mall at Citi Field or any connection to the Citi Field area. There was no mention the City which paid tens of millions of taxpayer dollars to acquire the property and may well spend many more millions, would sell the property to the developer for \$1.00, which is not a sale but in fact, a give away. There was no mention the City would subsidize the developer to the tune of \$99 million dollars.

Mayor Bloomberg reneged on his promise the community would have input in the developer selection process and the reason has now surfaced. While there were several developers interested in the project they had no chance of being selected because the fix was in, it would be the Mets and its Related Companies which had a lease on the Citi Field property and the ability to construct a huge shopping mall on its parking lots. Had there been community input as promised, the public would have been aware of the shopping mall, the give away of the Willets Point property

for \$1.00 and the \$99 million dollar subsidy. They could have insisted on any one of the other interested developers who would do the plan without a mall.

This deception in and of itself is sufficient to reject the application, but there exists a host of other reasons that warrant its rejection.

1. The amendment to the 2008 plan claims to seek a “minor” change, to wit: to have constructed on the 23 acre Willets Point area, a parking lot. Clearly a parking lot would be “minor” and unlikely to face much if any opposition. With due respect in making a decision on a matter before it, this Commission has the obligation to take into account not just any fall out of an approved application may cause, but even more importantly, whether the application’s underlying basis is legitimate and not a cover up for some other project. In the application in question, it is clear beyond any doubt, the change sought, is not “minor”, but “major”. The reason behind a Willets Point parking lot, would be to enable the Mets and their Related Companies to transfer the Mets Citi Field parking lot to Willets Point, thereby making the vacated area available for a 1.4 million square foot shopping mall. It is a mall which has nothing at all to do with the 2008 approved Willets Point plan that is the elephant in the room; that is what this application is deceptively all about, and warrants its rejection.

2. Under the 2008 plan which the Mets and its Related Companies bid for and were selected, they were aware and agreed they would be required to remove whatever contamination existed on the 23 acre site. The current claim that without a mall, the contamination would never be accomplished, the Willets Point plan at a dead end, is nonsense. If they wish to walk away other developers would line up to accept the property for \$1.00 with a \$99 million dollar subsidy and do the job without a mall.

3. The claim the Mets, their Related Companies and owner the multi billionaire Fred Wilpon, must have the mall to generate a financial engine with which to construct the original Willets Point plan, is more nonsense. If they did not have the financial ability to construct the 2008 plan to begin with, why did they seek to be the developer? As aforesaid other developers were prepared to do the job without a mall. Furthermore, there is no guarantee a mall would be a financial success. Does that mean if the financial engine sputters out, Willets Point also sputters out?

4. An integral part of the 2008 Willets Point plan was housing. Adding to the deceptiveness of the application is the priorities the applicant intends to pursue.

a) Remove the contamination from the 23 acre site. (b). Transfer the Citi Field parking lots to that area. (c). Build the 1.4 million square foot shopping mall on the vacated Citi-Field parking lot. (d). Construct commercial elements at Willets Point. This Commission will recall an important element of the 2008 plan was housing. Under the Mets and its Related Companies current plan housing has the least priority and is placed on the back burner until 2025 or almost 17 years since 2008. Furthermore housing will not be built until there is in place so called vehicular ramps to handle the huge increase in traffic. The only vehicular arteries that can service the area are the Grand Central Parkway, Van Wyck Expressway, Northern Boulevard and Roosevelt Avenue, arteries that are choked to capacity and cannot in any way be enlarged to handle a huge increase in traffic. So called ramps to these arteries are akin to the infamous bridge to no where. In short we may have a 1.4 million square foot shopping mall, but no housing,

Do we really need a mall that may will harm hundreds of small businesses on Northern Boulevard, Roosevelt Avenue; Downtown Flushing and the malls on 20th Avenue and Rego Park and elsewhere?

This matter was lawfully before two Community Boards. Board 7 approved the application with a vote of 22 to 18, hardly overwhelmingly. Board 3 rejected it with a 30 to 1 vote with 1 abstention. That means there was a 48 rejection vote with a 23 approval and that is overwhelmingly. At a hearing before Queens Borough President Helen Marshall it was pointed out that pursuant to ULURP section 2-3 as well as common sense principles that require consideration be given to fall out consequences, the impact on Board 3 geographically would be far greater than on Board 7 and that she was required to take that into account, She disputed this. This was followed up with written statements sent to her. Her approval makes it clear she fails to understand the law, her approval meaningless and should be excluded in your deliberations.

Were any or all of the above sufficient to justify rejection of the application, there are other elephants in the room that need to be addressed.

The Commission will note the only ULURP proceeding before it is to seek an amendment to the 2008 approved Willets Point plan so as to construct a parking area on the 23 acre Willets Point area. Apart from the fact as outlined above, you are required to look into any fall out a decision may cause and what the application is really all about, it is clear there is no ULURP proceeding seeking permission for the construction of 1.4 million square foot shopping mall on a vacated Citi Field parking lot. It is the position of the Mets and Related Companies that because of its

1961 lease of the Citi Field property it does not need any permission except from Parks Department to change the area from a parking lot to a huge mall; that ULURP does not apply and communities have no say in the matter. ULURP was enacted in 1975-1976 and is the current law that applies to all those who now seek a land use change. While it is debatable whether the applicant can make such a significant change, what is not debatable is that it must comply with current law and pursue a ULURP process. The other elephant in the room, is the fact Citi Field and its parking lot is located on Flushing Meadows Meadows Corona Park land. It cannot be seriously contested that there is a vast difference in land use between a parking lot on park property and a 1.4 million square foot shopping mall on park property. Yet the applicant contends that under its lease it can do as it pleases with the property and is not required to replace park land if it constructs a shopping mall.

In short, that by pretending all it seeks is a "minor" change to the 2008 Willets Point plan, to wit a parking lot on the 23 acre area, the applicant is attempting an end run around ULURP requirements and replacement of park land. This is unacceptable and if this Commission allows it to happen, it will be making a mockery of the ULURP process that was enacted to require transparency in government

I am not against big business, nor should you be. I am against shady business and dishonest applications as you should be. You should send the word out The City Planning Commission takes seriously not just the word of the law, but the spirit of the law as well. That you will not permit an applicant to attempt to blind side you with a phony claim that all it seeks is a minor change to build a parking area, when in fact it intends to make a major change and construct a 1.4 million square foot shopping mall.

The applicant sought and was given the right to construct the 2008 Willets Point plan you approved. That was 5 years ago and it has done nothing since then. Tell them to go ahead and do the 2008 plan without a mall or walk away and allow another developer to do the job.

Let right be done. reject the application and let the people know you take transparency in government seriously.

Benjamin M. Haber
138-27 78th Drive.
Flushing, N.Y 11367

Benjamin Haber 7-12-13

cc: Amanda M. Burden, FAICP, Chair; Kenneth J. Knuckles, Esq. Vice Chair; Angela M. Battaglia; Rayann Besser; Irwin G. Cantor, P.E.; Alfred C Cerullo, III; Betty Y. Chin; Michelle de la Uz; Maria M. Del Toro; Joseph Douek; Richard W. Eaddy; Anna Hayes Levin; Orlando Mann

Heather Russell-Loux
85-25 68th Avenue
Rego Park, NY 11374

July 17, 2013

New York City Planning Commission
22 Reade Street
New York, New York 10007

Re: Willets Point West Development

Dear Commissioners:

I write to testify *against* the proposed Willets Point West Development in Flushing Meadows Corona Park. I attended the Public Hearing on July 10, 2013 before the Commission concerning the Willets Point West Development. What I heard at the hearing compelled me to add my voice to those opposed to the proposed development. I am a long time Queens resident, I grew up in East Elmhurst and currently live in Rego Park. My family and I use Flushing Meadows Corona Park regularly. I can tell you that while the residents of Queens desperately need every precious inch of Flushing Meadows Corona Park, what we do not need is another shopping mall and/or entertainment center.

One of the supporters of the proposed development testified that Queens residents frequently go outside of Queens to do their shopping in locations such as Rosevelt Field or Woodbury Commons. This statement is simply not credible. The Queens Center Mall as well as the Mall at 63rd Drive and Queens Boulevard, and the Target Mall (also on Queens Boulevard) provide an abundance of retail shopping opportunities for Queens residents in the communities surrounding Flushing Meadows Corona Park. Moreover, all of these shopping areas are easily accessible by public transportation. Any proposed Shopping Mall in Willets Point West would not be so easily accessible by public transportation. Thus resulting in increased traffic congestion in the area. Moreover, given the multitude of retail stores within one mile from the proposed development site, the notion that retail stores such as Nordstrom and/or Macy's would have a presence on the proposed development site is truly fantasy. It is highly unlikely that Macy's would be willing to undercut it's sales from their store in the Queens Center Mall. With regard to Nordstrom, their price point is simply too high to be a viable business in the community.

Truly the proposed development is nothing more than a "land grab" by private investors with deep pockets whose claims of "improving" the community are

questionable at best. This is evident by their now expanded timetable for creating affordable housing as well as their abysmal efforts on behalf of the many businesses currently affected by the original Willets Point Development plan approved by the City Council in 2008. What happens to all these individuals who work hard to support their families is of little concern. Make no mistake the current proposed development is not to benefit the community but solely for the benefit of those who wish to attend events at Citi Field. Indeed, recent news reports on Chanel 11 during Major League Baseball's All Star Week confirmed that the proposed developments which Sterling Equities is trying to push through would allow baseball fans to have the "Manhattan experience" prior to and after attending a game at Citi Field.

The disruption to the community as well as to the users of Flushing Meadows Corona Park by the Willets Point West proposed development can not be stressed enough. Businesses and workers will be displaced, the park will be further divided with the potential for encroaching on even more green space.

My husband and I enjoy riding our bicycles throughout Flushing Meadows Corona Park with our two young children. We usually ride every weekend. The Park provides an excellent space for us to enjoy the outdoors and for the children to practice their cycling skills with minimal fear of vehicular traffic. Not only do we use the Park regularly but so do many members of the surrounding communities as well as people from all over Queens. In fact, many Queens residents use public transportation in order to get to Flushing Meadows Corona Park. On any given day you will encounter folks out for their morning run, families out on bicycles, people taking boating lessons and others playing soccer and cricket. It would be a tremendous disservice to the residents of Queens to rob them of even one acre of this precious space. Indeed, if anything Flushing Meadows Corona Park needs more space *not less*.

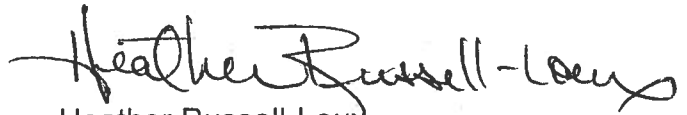
The proposed Willets Point West shopping mall can not be viewed in a vacuum but as part of the larger assault on Flushing Meadows Corona Park. There are currently *three* proposals to permanently annex public park land for private use. The land which is now the old Shea Stadium parking lot was formerly green space which should revert back to green space if it is no longer needed for the original purpose for which it was annexed. The land should not be allowed to be transferred further. In fact, the very thought that it is acceptable to confiscate any amount of park space for the building of a shopping mall, as well as the other proposed developments, *i.e.*, soccer stadium, increasing the USTA's allotment of park space, speaks volumes about the current mayor and our politicians' disregard for minorities and lower income residents of our community. Such a proposal would never have been tolerated much less suggested with regards to Prospect Park or Central Park. Apparently it is fair game to trample on the residents of Queens.

How ironic is it that Mayor Bloomberg wants us to live healthier lifestyles touting us to take the stairs as opposed to using an elevator, but he has no qualms about taking away much needed green space in one of the most heavily used parks in this City. Are the residents of Queens not entitled to healthier lifestyles? Or does our

health, our concerns take a back seat to those who wish to bring the "Manhattan experience" to Citi Field?

As I stated previously, I've lived in Queens all my life. I sincerely hope that in considering the proposed Willets Point West development the Commission will give due consideration to the residents of Queens and what is truly needed in the community. Public access to much needed and highly used green space is vitally important to the residents of Queens. Therefore, I strongly oppose any proposed development which will diminish the available green space now available in Flushing Meadows Corona Park and would advocate that space which was previously annexed if it is no longer needed should be returned as public park land.

Sincerely,



Heather Russell-Loux