Chapter 16: Traffic and Parking

A. INTRODUCTION

This chapter addresses the potential traffic and parking impacts of the proposed actions. The project sites (Sites A and B) are located in the Hunter's Point neighborhood of Queens. Site A is bounded by 50th Avenue to the north, the East River to the west, Newtown Creek to the south, and 2nd Street to the east. Site B is east of 2nd Street between 54th Avenue and Newtown Creek. Both sites are located west of the existing street network grid of east-west avenues and north-south streets to the north and east of the project sites. The project sites can be reached by vehicular traffic primarily via the Long Island Expressway (LIE) and other arterials from Queens and Brooklyn, such as Jackson Avenue/Northern Boulevard, Queens Boulevard/ Thomson Avenue, 21st Street, 11th Street/Pulaski Bridge, and Vernon Boulevard. A small amount of project-related vehicular traffic would be oriented to and from Manhattan via the Queensboro Bridge (QBB) and the Queens-Midtown Tunnel (QMT).

The vast majority of the streets in the primary study area surrounding the project sites are currently only modestly trafficked and typically uncongested. The traffic analyses also encompass key locations within a secondary study area in the Queens Plaza area and along routes to and from the LIE and QBB that carry substantial volumes of traffic en route to and from Manhattan and are prone to serious congestion in peak commuter periods.

The traffic and parking analysis covers a total study area that includes 41 intersection analysis locations under existing conditions and an additional nine locations under future Build conditions, as Center Boulevard and 2nd Street would be extended through the project sites as part of the proposed actions. These analysis locations are situated primarily in the immediate area near the project sites, but they also extend to key intersections near the QBB, QMT, and LIE. Three peak hours on a typical weekday (AM, midday, and PM peak traffic hours) have been analyzed to determine whether the proposed actions would cause any significant adverse traffic impacts at these intersection locations.

This analysis begins with an assessment of existing traffic and parking conditions in the study area. Next, it examines future No Build conditions without the proposed actions but with a substantial number of other development projects currently expected to be built and occupied by the proposed actions' 2017 Build year. The analysis then assesses future Build conditions with the proposed actions in 2017 and identifies potential significant adverse traffic impacts in accordance with *City Environmental Quality Review* (*CEQR) Technical Manual* guidelines. The identification and evaluation of traffic capacity improvements needed to mitigate the proposed actions' significant adverse traffic impacts are presented in Chapter 22, "Mitigation."

PRINCIPAL CONCLUSIONS

The reasonable worst-case development scenario (RWCDS) that would be built as a result of the proposed actions is expected to generate a significant volume of vehicular traffic. In the weekday AM peak hour, it would generate 456 vehicle trips arriving at the project sites and 922 vehicle trips leaving the sites, for a total of 1,378 vehicle trips. In the weekday midday peak hour, it would generate 359 inbound vehicle trips plus 360 outbound vehicle trips for a total of 719 vehicle trips. In the weekday PM peak hour, it would generate 824 inbound vehicle trips plus 445 outbound vehicle trips for a total of 1,269 vehicle trips.

Of the 41 existing study area intersections analyzed, the proposed actions would cause significant traffic impacts at 23 intersections in the AM peak hour, 18 in the midday peak hour, and 24 in the PM peak hour. (Traffic capacity improvements that would be needed to mitigate these significant impacts are addressed in Chapter 22, "Mitigation.") All nine new intersections that would be created as part of the proposed actions are expected to operate at acceptable levels of service.

The proposed actions would include a site plan and roadway network that would provide for a one-way roadway loop around the project sites and that would promote non-motorized modes of transportation, specifically, a Class 1 bikeway along 2nd Street and Center Boulevard, wide sidewalks, and crosswalks to and from the proposed waterfront park. It is assumed that several of the newly created intersections would require traffic signals to provide for the safe and efficient movement of vehicular and pedestrian traffic.

The proposed actions would also include the construction of parking garages with a total of 2,000 parking spaces in buildings on Site A and 660 parking spaces in buildings on Site B. This number of parking spaces would be sufficient to accommodate daytime needs in the area (i.e., from about 8 AM to 7 PM). However, there would be a shortfall of approximately 500 spaces during the nighttime/overnight hours that would only be partially compensated by the approximately 145 on-street parking spaces created as part of the proposed actions. As a result, project residents returning home after about 7 PM would need to find additional on-street parking spaces elsewhere in the surrounding neighborhood to the north and east of the project sites.

B. EXISTING CONDITIONS

ROADWAY NETWORK AND TRAFFIC STUDY AREA

The roadway network around the project sites is generally a grid of local streets through the residential neighborhood of Hunter's Point, Long Island City, which also contains access points to major roadways, including the QMT, LIE, and QBB. Key north-south roadways within the study area include Vernon Boulevard, Jackson Avenue, 11th Street, 21st Street, Center Boulevard, and Van Dam Street. Key east-west roadways in the study area include Borden Avenue, the QMT, the LIE, Queens Boulevard, and Thomson Avenue.

Jackson Avenue extends southwest to northeast between 51st Avenue and Queens Boulevard, north of which Jackson Avenue is named Queens Plaza East (until 41st Avenue) and then becomes Northern Boulevard. The Jackson Avenue/Northern Boulevard corridor extends into and through Long Island City and functions as a major traffic route along an important commercial strip. Jackson Avenue is a major connector to the Queens Plaza area, which contains the entrance to the QBB, providing access to Manhattan. Jackson Avenue/Northern Boulevard is a two-way street of generally consistent width; however, the allocation of moving lanes and parking lanes differs by direction and location. Jackson Avenue/Northern Boulevard typically contains either two travel lanes and a parking lane or three travel lanes and no parking lane in each direction. At its south end, Jackson Avenue provides access to the QMT and the LIE.

Vernon Boulevard is an important corridor for traffic between Borden Avenue and the QMT to the south, and to the QBB and Astoria Boulevard to the north. Vernon Boulevard is a two-way street and typically has one travel lane and a parking lane in each direction, and bypasses much of the congestion that prevails in the Queens Plaza area leading to the lower level of the QBB. Within Hunter’s Point, Vernon Boulevard is a primary commercial and retail street for the neighborhood.

Eleventh Street extends south from Queens Plaza through Hunter’s Point. It provides access in the north to the upper level of the QBB and in the south to the Pulaski Bridge, LIE, and QMT. North of the Pulaski Bridge, 11th Street’s northbound and southbound roadways are separated by a narrow raised median and lead directly to and from the Pulaski Bridge. Eleventh Street is not continuous, as it is “interrupted” by the QBB to the north and the Pulaski Bridge and then the LIE to the south. Eleventh Street typically contains either one travel lane and a parking lane or two travel lanes and a parking lane in each direction.

Twenty-First Street also connects Queens Plaza and the QBB to Long Island City neighborhoods both north and south of the QBB, and it is one of a few north-south streets that crosses through the QBB/Queens Plaza area. Twenty-First Street typically has two travel lanes and a parking lane in each direction. Ramps to and from the QMT at 21st Street and 50th Avenue, and its extension all the way north through the Triborough Bridge area, make 21st Street a significantly trafficked roadway.

Center Boulevard currently extends from 50th Avenue to 48th Avenue and is unsignalized. Significant construction of new residential towers as part of the Queens West North development is ongoing along Center Boulevard, along with the extension of Center Boulevard to the north to 47th Avenue. Center Boulevard is the westernmost roadway in Hunter’s Point and extends parallel to Gantry Plaza State Park, overlooking Manhattan. Center Boulevard is a two-way street and typically has two travel lanes and a parking lane in each direction. It was newly created as part of the Queens West North project.

Van Dam Street extends south from Queens Boulevard, connecting to Borden Avenue and the LIE. Within the overall study area, Van Dam Street provides a critical link to many other key roadways, including Queens Boulevard; Thomson Avenue; and, ultimately, to Northern Boulevard, the Queens Plaza area, and both the upper and lower levels of the QBB. Van Dam Street is a heavily trafficked two-way roadway that generally contains either two or three travel lanes in each direction with no parking.

Borden Avenue, the southernmost full cross street within the study area, is an east-west street with typically one or two travel lanes in each direction and no parking. Borden Avenue operates parallel to the LIE and acts as the equivalent of an LIE service road through much of the area east of 11th Street. It serves as an important traffic carrier to and from the waterfront sites in Long Island City, connecting to many key roadways, including Vernon Boulevard, 21st Street, and Van Dam Street.

Thomson Avenue is an east-west feeder route to the upper roadway of the QBB and to parts of Long Island City west of Sunnyside Yard. It is one of the few roadways that cross over Sunnyside Yard, with two to three lanes of traffic in each direction.

The LIE connects all of central and eastern Queens with Long Island City as well as the QMT en route to Manhattan. It is a major carrier of traffic from eastern Queens and Long Island to the study area through its local exits to Van Dam Street and Greenpoint Avenue for westbound traffic, and through additional on/off slip ramps near 21st Street and the QMT toll plaza.

Queens Boulevard and Queens Plaza North and South link the QBB's main lower level roadway with central Queens. Queens Boulevard is the primary arterial through central Queens, leading into Long Island City via the Queens Boulevard viaduct over the Sunnyside Rail Yard. It functions as a major east-west arterial consisting of three travel lanes in each direction separated by a wide median that carries New York City Transit's elevated No. 7 Flushing line train.

The QMT consists of two "tubes" that transport traffic between Queens and Manhattan, with each of the two tubes carrying two lanes of traffic. The directionality of each tube varies by time of day, providing balanced capacity in each direction when traffic volumes in each direction are relatively equal, and providing three lanes in the peak direction and just one in the non-peak direction when conditions warrant it.

Other local north-south streets in the immediate study area include the unsignalized 2nd Street and 5th Street corridors. These are relatively narrow two-way streets with one travel lane and a parking lane in each direction. Fifth Street is characterized by residential uses, while 2nd Street contains some commercial buildings as well as access to the New York Water Taxi west of Borden Avenue. Other local east-west streets in the study area include 51st Avenue, 50th Avenue, 49th Avenue, 48th Avenue, and 44th Drive. Within the project site vicinity (west of 5th Street), these are two-way roadways with the exception of 50th Avenue, which is one-way eastbound to the east of 2nd Street. Individual one-way blocks are spread throughout the study area. The two-way roadways typically contain one or two travel lanes and a parking lane in each direction, while one-way roads are one to two travel lanes with parking on both sides of the street. These east-west streets are primarily residential, feeding and receiving traffic to and from the key north-south roadways.

New York City-designated truck routes in the primary and secondary study areas include Vernon Boulevard, 21st Street, Jackson Avenue, Northern Boulevard, Queens Boulevard, Van Dam Street, Thomson Avenue, and Borden Avenue.

The overall traffic study area addressed in this EIS encompasses 22 intersections within a primary traffic study area generally bounded by 48th Avenue to the north, 11th Street to the east, Newtown Creek to the south, and the East River to the west, and which includes all of the street network to be created as part of the proposed actions, plus an additional 19 intersections within a secondary traffic study area to the north and east. The specific traffic analysis locations are shown in **Figure 16-1**. Because some of the intersections to be constructed as part of the proposed actions do not currently exist, they are not part of the existing conditions analyses below.

EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

Traffic counts were conducted for this EIS in May 2007 for weekday AM, midday, and PM peak periods using manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. These volumes were used along with observations of traffic conditions to determine levels of service for the weekday 7:45 to 8:45 AM, 1:00 to 2:00 PM midday, and 4:45 to 5:45 PM peak hours. Levels of service were determined using *2000 Highway Capacity Manual (HCM)* procedures, which is the analysis methodology approved for use by the New

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

Intersection Analyzed

Traffic Study Area

Figure 16-1

York City Department of Transportation (NYCDOT) and Department of City Planning (NYCDCP).

For signalized intersections, levels of service (LOS) are defined in terms of average vehicle control delay, as follows:

- LOS A describes operations with very low delays, i.e., 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.
- LOS B describes operations with delays in the range of 10.1 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 the range of 20.1 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 the range of 35.1 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 the range of 55.1 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 guidance in the *CEQR Technical Manual*, LOS A, B, and C are considered acceptable, LOS D is generally considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections) and unacceptable above mid-LOS D, and LOS E and F indicate congestion. These guidelines are applicable to individual traffic movements and lane group levels of service.

For unsignalized intersections, delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line: LOS A describes operations with very low delay, i.e., 10.0 seconds or less per vehicle; LOS B describes operations with delays in the range of 10.1 to 15.0 seconds; LOS C has delays in the range of 15.1 to 25.0 seconds; LOS D, 25.1 to 35.0 seconds per vehicle; and LOS E, 35.1 to 50.0 seconds per vehicle, which is considered to be the limit of acceptable delay. LOS F describes operation with delays in excess of 50.0 seconds per vehicle, which is considered problematic to most drivers. This condition exists when there are insufficient gaps of suitable duration to allow side street traffic to cross safely through a major vehicular traffic stream.

Table 16-1 provides an overview of the levels of service that characterize existing “overall” intersection conditions during the AM, midday, and PM peak hours on a typical weekday. Overall levels of service of an intersection represent a weighted average of individual traffic movements’ levels of service.

Table 16-1
Existing Traffic Level of Service Summary

	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Overall LOS A/B/C	35	37	34
Overall LOS D	3	4	5
Overall LOS E	3	0	2
Overall LOS F	0	0	0
Number of movements at LOS E or F (of approximately 148 movements analyzed)	11	8	14

Note: Includes 41 signalized and unsignalized intersections (all 19 unsignalized intersections operate at overall LOS A or B during all three traffic analysis hours).

This summary overview of existing conditions indicates that:

- In the AM peak hour, three of the 22 signalized intersections analyzed are operating at overall LOS E or F, and three intersections are operating at marginally acceptable/unacceptable LOS D. "Overall" LOS E or F means that serious congestion exists—either one specific traffic movement has severe delays or two or more of the specific traffic movements at the intersection are at LOS E or F with very significant delays (the overall intersection LOS is a weighted average of all the individual traffic movements). The three intersections operating at overall LOS E or F, as shown in **Figure 16-2**, are Jackson Avenue/11th Street/Pulaski Bridge, Jackson Avenue/Queens Boulevard and Queens Boulevard/Thomson Avenue/Van Dam Street. Eleven individual traffic movements out of approximately 148 such movements analyzed are at LOS E or F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.). All intersections west of 11th Street are operating at acceptable levels of service.
- In the midday peak hour, no intersections operate at overall LOS E or F, and four intersections operate at marginally acceptable/unacceptable LOS D. Eight individual traffic movements operate at LOS E or F. **Figure 16-3** shows the location of these intersections.
- In the PM peak hour, two of the 22 signalized intersections analyzed operate at overall LOS E, and five intersections—located along Jackson Avenue and Van Dam Street—operate at marginally acceptable/unacceptable LOS D, as shown in **Figure 16-4**. Fourteen individual traffic movements operate at LOS E or F. All intersections west of 11th Street operate at acceptable levels of service.

Two of the three intersections operating at overall LOS E or F are located in the secondary traffic study area, at major intersections where substantial commuter traffic volumes pass through en route to or from the upper or lower levels of the Queensboro Bridge.

Detailed traffic levels of service, volume-to-capacity (v/c) ratios, and average vehicle delays for each traffic movement at each traffic study area analysis location are presented at the end of this chapter.

Within the network of unsignalized streets along 5th Street, 2nd Street, and Center Boulevard south of 48th Avenue, traffic volumes are typically less than 150 vehicles per hour (vph) in the AM and PM peak hours, and close to 100 vph in the midday peak hour.

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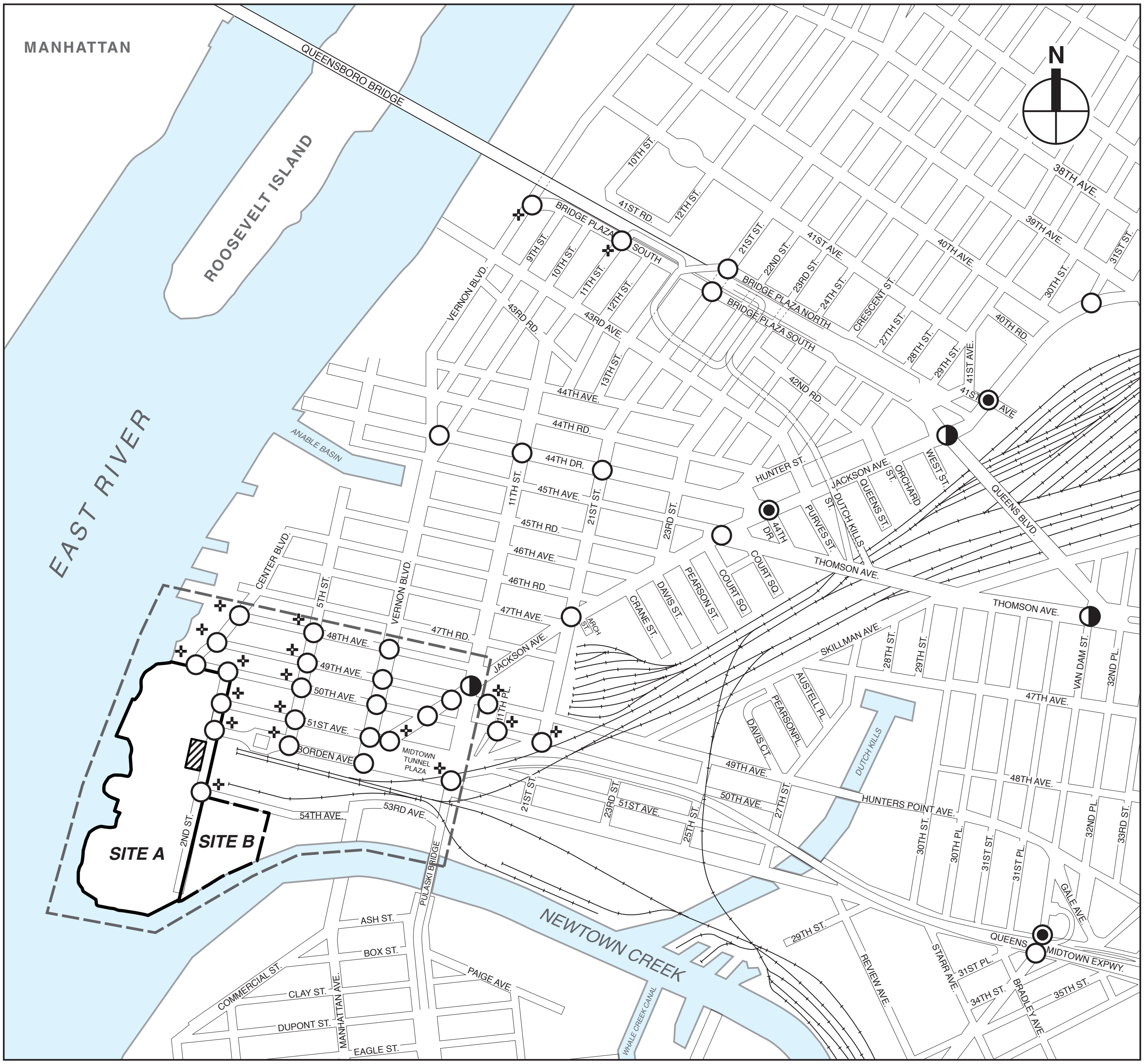

0 1000 2000 FEET

SCALE

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

LOS F

Unsignalized Intersection

NOTE: Overall intersection LOS is shown

Existing Traffic Levels of Service
AM Peak Hour

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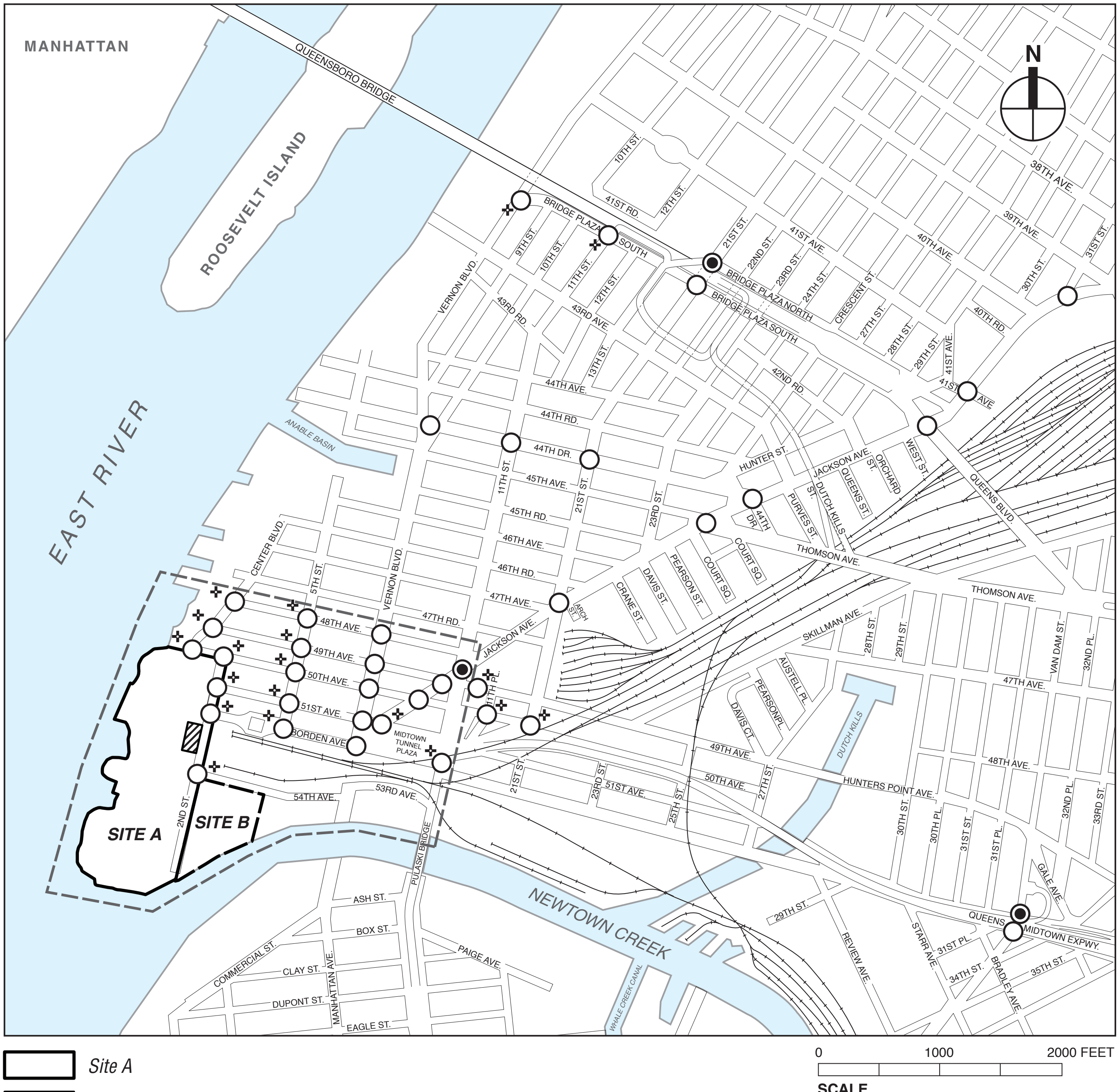


Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

LOS F

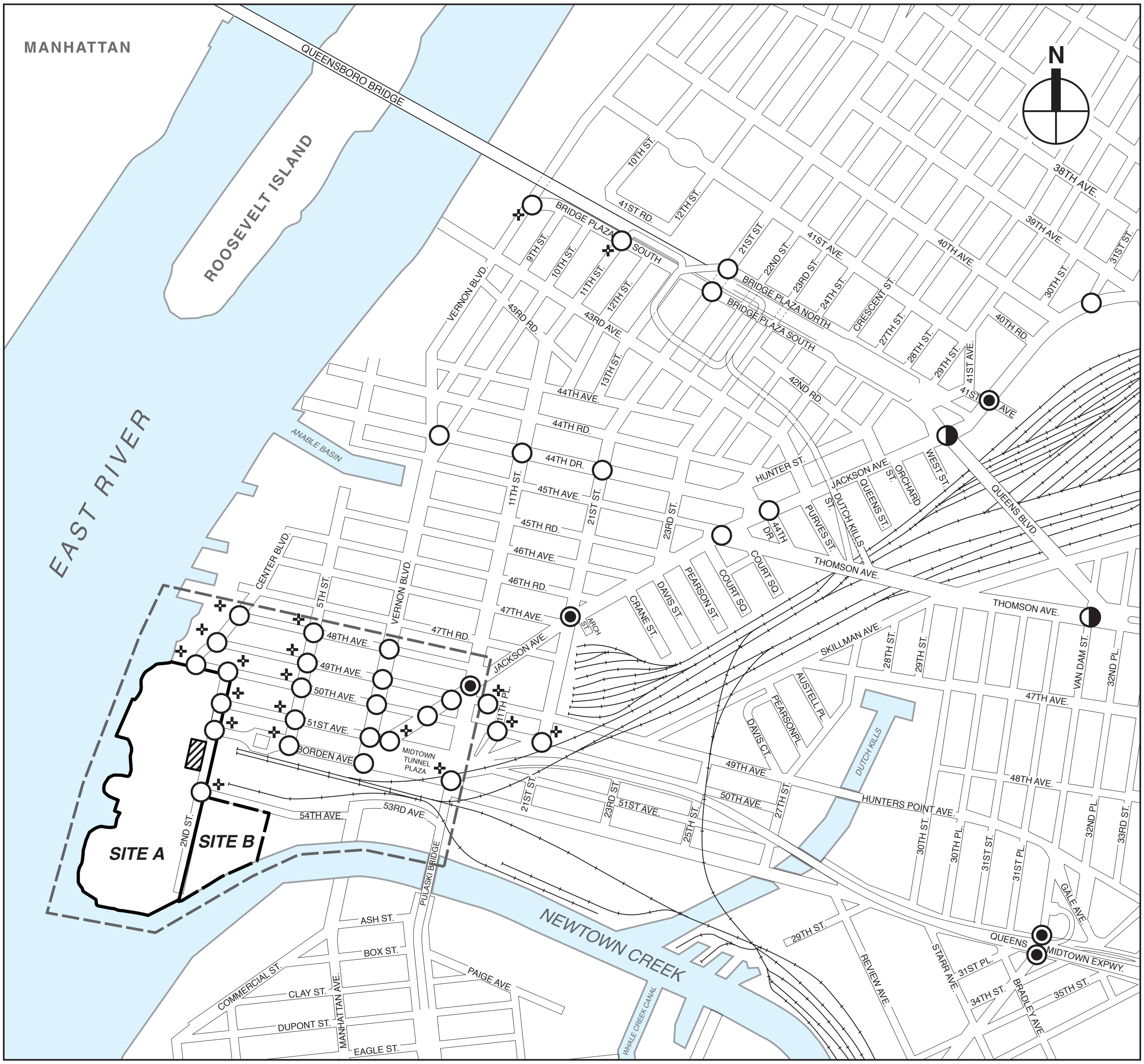
Unsignalized Intersection

NOTE: Overall intersection LOS is shown

Existing Traffic Levels of Service
Midday Peak Hour

Figure 16-3

4.1.08



0 1000 2000 FEET

SCALE

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

LOS F

Unsignalized Intersection

NOTE: Overall intersection LOS is shown

Existing Traffic Levels of Service
PM Peak Hour

HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS **Figure 16-4**

Vernon Boulevard between 47th Road and 51st Avenue is traveled by approximately 200 and 300 vph in each direction in the AM and midday peak hours, respectively, and 225 to 400 vph per direction in the PM peak hour. At the intersection of Vernon Boulevard and Borden Avenue, Vernon Boulevard volumes in all three peak hours are between approximately 500 and 600 vph southbound, and 225 to 300 vph northbound.

Volumes along Borden Avenue increase from west to east, with volumes at 2nd and 5th Streets at typically less than 150 vph per direction in all three peak hours. Traffic volumes of 500 to 700 vph per direction at 11th Street (near the QMT) are prevalent during all three peak hours where Borden Avenue provides direct access to and from the eastbound LIE.

Jackson Avenue, in the area near Vernon Boulevard, Borden Avenue, and 11th Street, is traveled by 125 to 300 vph northeastbound in all three peak periods; 325 to 700 vph southwestbound in the AM and midday peak hours; and 300 to 1,050 vph southwestbound in the PM peak hour. Farther north, near 21st Street, northeastbound volumes are typically 470 to 600 vph in the three traffic analysis hours, while southwestbound volumes are typically 600 to 650 vph in the AM and midday peak hours and close to 900 vph in the PM peak hour. Farther north between 44th Drive and Queens Boulevard, northeastbound Jackson Avenue volumes are typically about 450 vph in the AM and midday peak hours and about 670 vph in the PM peak hour, while southwestbound volumes are typically about 1,000 vph in the AM peak hour and 650 to 760 vph in the midday and PM peak hours.

Volumes on 11th Street are typically about 730 vph approaching 44th Drive northbound in the AM peak hour and 530 vph northbound in the midday and PM peak hours, while southbound volumes are generally about 200 to 400 vph at this same location during the three traffic analysis hours.

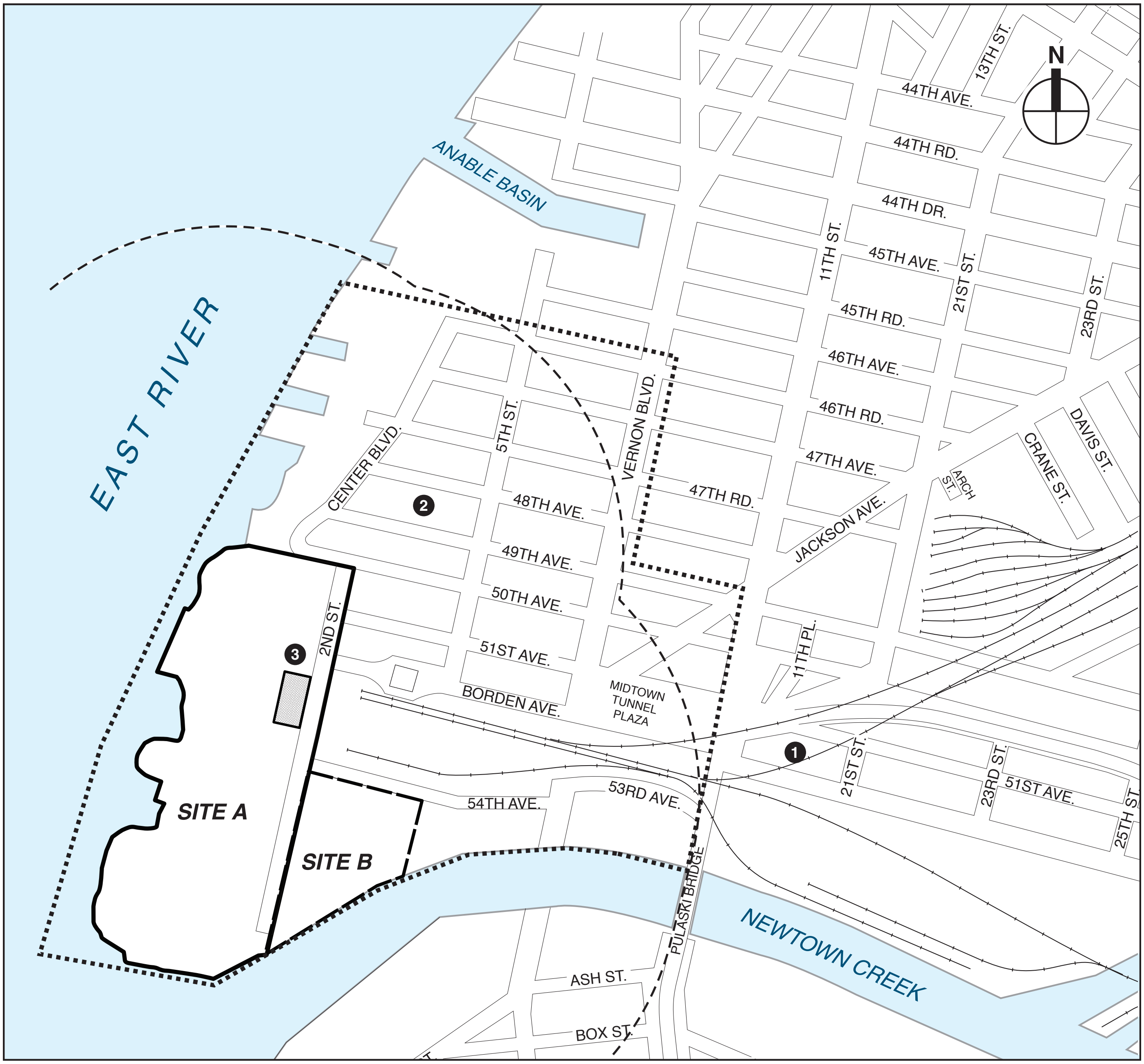
Volumes on 21st Street approaching 44th Drive are typically about 365 to 425 vph northbound in all three traffic analysis peak hours, while southbound volumes are typically about 365 vph in the AM peak hour, 475 vph at midday, and 700 vph in the PM peak hours.

The major streets that lead to the overall study area—Northern Boulevard from areas to the north, Queens Boulevard/Thomson Avenue and Borden Avenue near the LIE at Van Dam Street from areas to the east, and the Pulaski Bridge leading into the Long Island City area from Brooklyn areas to the south—are much more substantial traffic carriers. Volumes on these major roadways and all intersections analyzed as part of the EIS are presented in **Appendix 16**.

PARKING

A detailed inventory of on-street parking and off-street public parking lots and garages within approximately one-quarter mile of the project sites was conducted on a typical weekday in May 2007. This quarter-mile distance was used as an acceptable walking distance to from the project sites to parking. Overall, there are three public parking lots or garages in the area, as shown in **Figure 16-5**: the Long Island Rail Road (LIRR) parking lot on Borden Avenue, east of Vernon Boulevard (140 spaces); the Citylights parking garage with entrances on 48th and 49th Avenues, west of 5th Street (527 spaces); and the New York Water Taxi parking lot west of the intersection of 2nd Street and Borden Avenue (156 spaces).

Table 16-2 presents the capacity and occupancy of these off-street public parking facilities during the AM, midday, and PM peak hours. The occupancy for the Citylights parking garage is 100 percent in the AM peak hour and drops to 40 percent in the PM peak hour. The LIRR parking lot is filled to capacity by midday, while the New York Water Taxi parking lot was



Site A

Not Included In Site A

Site B

1 Off-Street Parking

1/4-Mile Perimeter

Parking Study Area Boundary

Parking Study Area

Figure 16-5

observed at a maximum of 87 percent capacity. Overall, there are approximately 488 unoccupied spaces available at 6 PM, compared with only 67 spaces at about 9 AM. Late evening parking vacancies likely diminish as returning residents use some of the spaces (within the Citilights garage) for overnight parking.

Table 16-2
Inventory of Existing Public Parking Lots and Garages

Location	Capacity	Occupancy at 8-9 AM	Occupancy at 1–2 PM	Occupancy at 5–6 PM
LIRR parking lot	140	122	140	90
(Borden Avenue at Vernon Blvd.)		87%	100%	64%
Citylights parking garage	527	527	448	211
(48-18 5th Street)		100%	85%	40%
New York Water Taxi parking lot	156	107	135	34
(52-00 2nd Street at Borden Ave.)		69%	87%	22%
Total	**823**	**756**	**723**	**335**
Percent occupied (%)		**92%**	**88%**	**41%**

On-street parking regulations, capacity, and occupancy were also inventoried for the same quarter-mile study area on a block-by-block basis. A majority of area streets have no posted parking regulations on either side of the street. It should be noted that most streets in the area do not have street cleaning parking restrictions. Metered spaces are found along Vernon Boulevard, Jackson Avenue, and Borden Avenue, and restricted or no-parking regulations are found on certain streets due to extensive construction in the area. There are a total of 1,087 (216 metered and 871 non-metered) legal on-street parking spaces, out of which approximately 96 percent are occupied during the AM and midday peak periods. At 6 PM-7 PM, the occupancy level drops to 83 percent.

On the streets adjacent to the project sites, illegal parking was observed. On the extension of 2nd Street between 54th Avenue and the "dead end" at the southern end of the street, there is no parking allowed on either side of the street. However, at all times, there were a number of delivery trucks parked on the street. Similarly, on 54th Avenue between 2nd Street and Vernon Boulevard, significant double parking was observed associated with adjacent businesses. Illegal parking was also observed in no-standing zones along Vernon Boulevard.

There are two other on-street parking characteristics in the area: New York City Police Department (NYPD) parking and construction worker parking. There is restricted parking for NYPD along Vernon Boulevard between 50th Avenue and Borden Avenue. Most of these spaces are occupied at all times, along with spaces on 50th Avenue and on Borden Avenue between 5th Street and Vernon Boulevard. In addition, due to extensive construction in the area, there is currently a significant demand for parking by construction workers. Some streets, such as the western portions of 47th Road, 47th Avenue, and 51st Avenue between 2nd Street and 5th Street, are closed or parking is inaccessible, thus reducing the number of total available parking spaces in existing conditions.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

BACKGROUND DEVELOPMENTS AND TRIP GENERATION

Future conditions without the proposed actions, i.e., the future No Build conditions, are established in order to provide the baseline against which the impacts of the proposed actions can be compared and to account for changes in traffic conditions between existing conditions and the future analysis year. Future year conditions were analyzed for 2017. Future No Build traffic volumes were developed by applying a background traffic growth rate of 0.5 percent per year, as stated in the *CEQR Technical Manual* for Long Island City (and as per discussion with NYCDOT), and by adding trips expected to be generated by study area development projects expected to be built and occupied by 2017.

A list of background developments expected to be built in the Long Island City area by 2017 was developed in coordination with NYCDCP (see **Table 16-3**).[1] Trip generation and traffic assignments were developed for these background projects expected to generate peak hour trips through the traffic study area. No Build project sites are shown in **Figure 16-6**, and a summary of vehicle trips generated by No Build projects is presented in **Table 16-4**.

Overall, approximately 8,737 dwelling units, 666 hotel rooms, 635 dormitory suites, 2.6 million square feet of office space, 342,850 square feet of retail space, 231,000 square feet of community facility space, and 271,000 square feet of film center space are assumed to be built by 2017, a total of approximately 13 million square feet of development. This represents a substantial amount of new development in the 10-year period from 2007 to 2017. As a result of this development, 2,452, 2,193, and 3,099 vehicles are projected to be added to the street network during the weekday AM, midday, and PM peak hours, respectively.

The No Build project-generated trips were assigned to the roadway network and, together with the background traffic growth, constitute the 2017 No Build traffic volume baseline. Detailed No Build traffic volume maps are provided in **Appendix 16**. A summary of traffic volume increases along selected streets within the study area is described below under “2017 No Build Traffic Conditions.”

The traffic analyses for the 2017 No Build conditions include changes from two approved roadway improvement projects: the Queens Plaza Bicycle and Pedestrian Improvement Project and the Jackson Avenue Improvements Project. Both of these projects will be implemented by 2017.

The Queens Plaza Bicycle and Pedestrian Improvement Project seeks to improve bicycle and pedestrian safety throughout the Queens Plaza area. The project includes relocating roadways and ramps, providing bike lanes within medians or on the roadway, widening sidewalks through

[1] Subsequent to preparation of the analyses presented in this chapter, two additional projects were identified within the traffic study area. The first project is the CUNY project, which will be located at 5th Street and 46th Avenue and which will contain 169 residential units, 220 graduate student dormitory units, 12 faculty housing units, approximately 13,000 square feet of retail use and accessory space, and 87 parking spaces. The second project is the Dutch Kills Rezoning and Related Actions project, which is located north of Queens Plaza in a 40-block area. This project consists of zoning map and text amendments to encourage moderate and higher density development in an approximately 70-acre area. Traffic that could be generated by these two proposed developments may be included and incorporated within the traffic analyses between the Draft and Final EISs, should they be determined to add a significant volume of traffic beyond background traffic growth and any other changes in the No Build development scenario.

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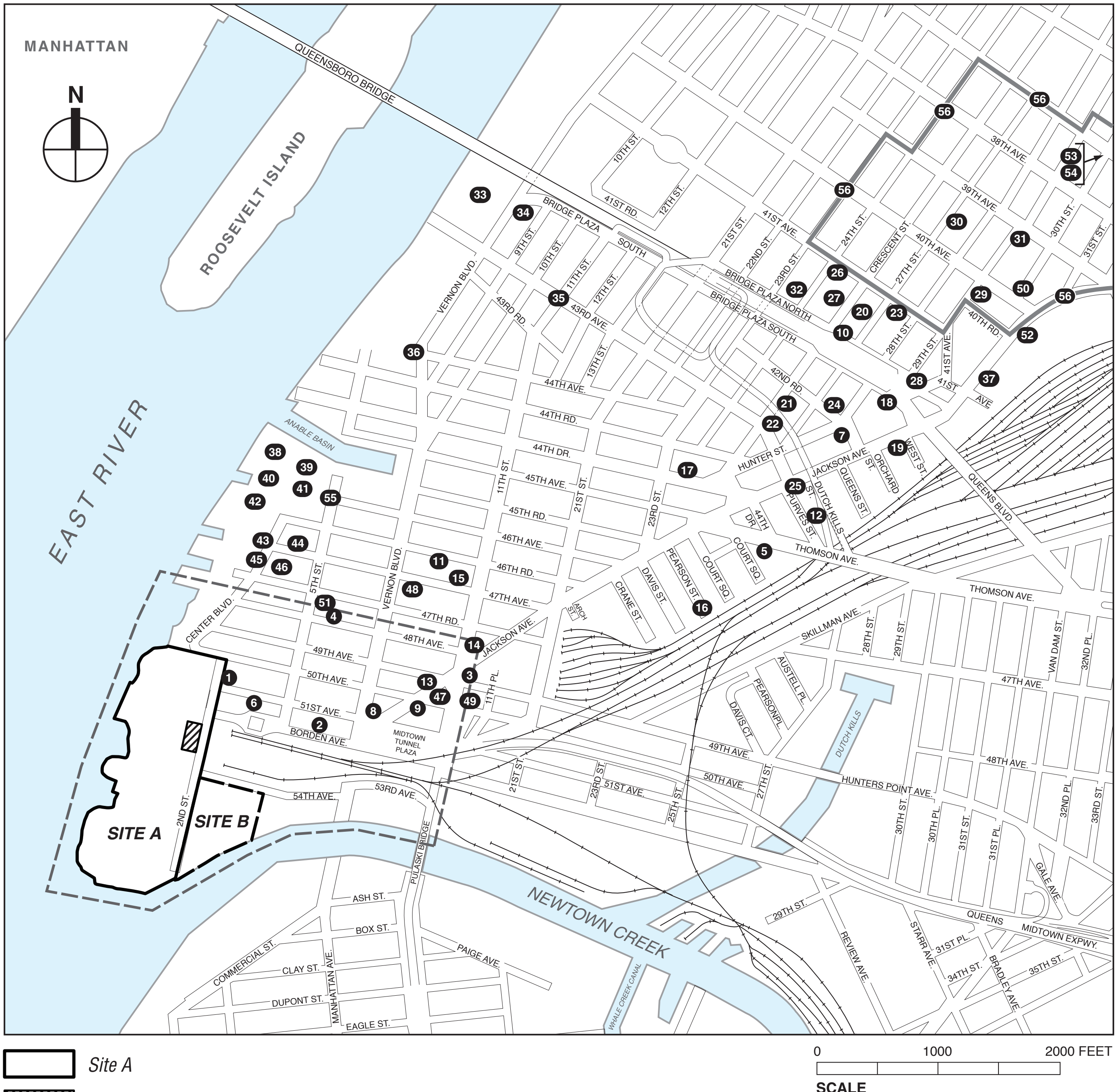


Site A

Not Included In Site A

Site B

Primary Traffic Study Area

No Build Project Site (see Tables 16-3 and 16-4)

* NOTE: Projects 55 and 56 may be added to the quantitative traffic analysis between publications of the Draft and Final EIS

Background Development Projects

Figure 16-6

curb extensions, widening and extending medians, adding new signalized pedestrian crossings, changing parking regulations or parking facility locations, and making signal timing adjustments. Most significantly, the complicated junction of Queens Plaza, Queens Boulevard, Jackson Avenue, Northern Boulevard, and 41st Avenue will be completely reconfigured to improve vehicular flow and pedestrian safety. These roadway changes are included in the No Build analysis, along with changes at all other intersections within the scope of the Queens Plaza Bicycle and Pedestrian Improvement Project.

The Jackson Avenue Improvements Project will improve this key corridor in Long Island City through pedestrian environment improvements, such as landscaping, street furniture, and other aesthetic elements. Additionally, roadway changes, such as widened medians with pedestrian refuge islands, expanded sidewalks, parking regulation changes, and elimination and restriping or reconfiguration of traffic lanes (including creation of exclusive left turn lanes), are included in the project. These roadway changes are included within the No Build conditions analysis.

NO BUILD VOLUMES AND LEVELS OF SERVICE

Projected traffic volume increases in the study area roadway network due to the cumulative effect of background projects are quantified and discussed below, exclusive of the general 0.5 percent per year growth rate that has been applied to the existing traffic volumes (which would add about 5 percent more traffic to all streets). However, the 0.5 percent increase is included in the No Build volume totals.

Center Boulevard traffic volumes would be expected to increase by up to 100 vph in the southbound direction in the AM and PM peak hours, and by about 30 vph in the midday peak hour, with northbound volumes expected to be much smaller in all three peak hours.

Along 2nd Street, traffic volumes can generally be expected to increase by up to 125 vph southbound in the AM peak hour, by 30 to 50 vph in the midday peak hour in each direction, and by up to 100 vph northbound in the PM peak hour.

Fifth Street volumes will increase by a somewhat higher amount—by about 150 to 175 vph southbound in the AM peak hour and northbound in the PM peak hour, and 70 vph in the midday peak hour in each direction.

Eleventh and 21st Streets and Vernon Boulevard are expected to have similar traffic volume increases. Eleventh Street volumes are expected to increase by up to about 100 vph northbound in the AM and midday peak hours and southbound in the PM peak hour. Northbound traffic volumes on 11th Street are expected to increase by up to 160 vph in the PM peak hour. Volume increases along 21st Street will be similar in each direction, with up to 130 vph per direction in the AM peak hour, 100 vph in the midday peak hour, and 140 vph per direction in the PM peak hour.

Vernon Boulevard traffic volumes are expected to increase by up to 140 vph per direction in all three peak hours except for northbound traffic in the PM peak hour, when volumes are expected to increase by 150 to 165 vph.

On the east-west avenues in the area near the project sites (i.e., 48th, 49th, 50th, and 51st Avenues) traffic volumes are expected to increase only slightly, generally less than 25 vph per direction during any peak hour.

Table 16-3
Background Development Projects

Map ID No.	Project Name/Address	Status/Anticipated Completion Year	Office (sf)	Retail (sf)	Residential (Units)	Hotel (Rooms)	Dormitory (Rooms)	Parking (spaces)	Community Facility (sf)	Film Center/ Studio (sf)
1	PowerHouse (5-09 Second Street)	Under construction (2008)		17,275	190					
2	One Hunters Point (5-35 Borden Avenue)	Scheduled for completion in 2008			138					
3	Hunters View (48-15 11th Street)	Scheduled for completion in 2009			73					
4	Fifth Street Lofts (5-09 48th Avenue)	Under construction (2008)			78					
5	Arris Lofts (27-28 Thomson Avenue)	Completed		20,000	238			200		
6	The Foundry (2-30 51st Avenue)	Under construction			61					
7	Fusion LIC (42-51 Hunter Street)	Completed			24					
8	50-15 Vernon Jackson	Under construction (2008)		1,000	28					
9	10-50 Jackson Avenue	Under construction (2008)			37					
10	View 59 (25-15 Queens Plaza N)	Under construction			39					
11	Casa Vizcaya (10-40 46th Road)	Under construction			24			Yes		
12	44-27 Purves Street	Completed			64			Yes		
13	10-63 Jackson Avenue	Under construction (2008)			74					
14	12-01 Jackson Avenue	Under construction			37					
15	Badge Building (10-55 47th Ave)	Under construction (2008)			44			Yes		
16	45-56 Pearson Street	Construction Not Yet Started			120					
17	Court Square II/Citicorp (23-21 44th Drive)	Completed	528,000							
18	Queens Plaza South (28-10 Queens Plaza South)		1,500,000					Yes		
19	42-16 West Street				700					
20	Crescent Club (41-17-23 Crescent Street)	Summer 2008			140					
21	42-37 Crescent Street				16					
22	42-59 Crescent Street				22					
23	27-14 41st Ave	Unknown			26			Yes		
24	27-11 42nd Road	Unknown/plans approved			184					
25	26-26 Jackson Avenue	Unknown			43					
26	41-02 24th Street	Unknown			42					
27	41-34 25th Street	Unknown			141					
28	29-07 Queens Plaza North Hotel	Unknown				200				
29	40-01 29th Street Hotel	Unknown				87				
30	39-35 27th Street Hotel	Unknown				54				
31	29-02 39th Avenue Hotel	Unknown				107				
32	Queens Plaza North/24th (Venus) (41-50 24th Street)	Unknown			292					
33	Silvercup West (Vernon Boulevard and 43rd Avenue)	2009	589,590	75,815 48,815 catering 42,422 health club	1,000				106,014	271,191

Table 16-3 (cont’d)
Background Development Projects

Map ID No.	Project Name/Address	Status/Anticipated Completion Year	Office (sf)	Retail (sf)	Residential (Units)	Hotel (Rooms)	Dormitory (Rooms)	Parking (spaces)	Community Facility (sf)	Film Center/ Studio (sf)
34	Ravel Hotel (42-11 Vernon Boulevard)					70		Yes		
35	Z Hotel (11th Street and 43rd Avenue)	2009				100				
36	River East (44-02 Vernon Boulevard)			20,000	910			900		
37	LIRR Vent Building (29-50 Northern Boulevard)									
38	Queens West 1				287					
39	Queens West 2	2010			809					
40	Queens West 3	2008			279					
41	Queens West 4				482				100,000	
42	Queens West 5: East Coast III	Under construction (2008)		800	279					
43	Queens West 6: East Coast I	Completed		5,000	521					
44	Queens West 7: East Coast II	Completed		35,000	481			825		
45	Queens West 8			35,000					25,000	
46	Queens West 9: Riverview North	Completed		30,000	602					
47	10-59 50th Avenue	Under construction			10					
48	10-12 47th Avenue	Under construction			7					
49	11-11 50 Avenue	Under construction			120					
50	Quality Inn Hotel (30-01 40th Avenue)	Completed				48				
51	Corrieri Building (47-33 5th Street)	2009			14					
52	30-30 Northern Boulevard	2010		50,000			635			
53	Kaufman Astoria Studios (34-12 36th Street)	2009			60					33,000
54	AMMI (Museum of Moving Image)									35,000
55	CUNY Project			12,835	181		220	87		
56	Dutch Kills Rezoning and Related Actions			(104,350)	1,555			410	(41,697)	
TOTAL			**2,617,590**	**381,127**	**8,737**	**666**	**635**	**1,925**	**231,014**	**339,191**

Notes: Projects 55 and 56 may be added to the traffic analysis between completion of the Draft and Final EISs should they contribute a significant volume of additional traffic beyond background traffic growth and any other changes in the No Build development scenario. Project 56 would also result in a net decrease of 180,536 sf of industrial space.

Table 16-4
Projected Vehicle Trip Generation from Background Development Projects

Map No.	Project	AM Peak Hour		Midday Peak Hour		PM Peak Hour	
		In	Out	In	Out	In	Out
1	PowerHouse	8	25	22	22	27	16
2	One Hunters Point	3	15	4	4	15	7
3	Hunters View	2	8	2	2	8	3
4	Fifth Street Lofts (5SL)	2	10	3	3	8	4
5	Arris Lofts	14	36	52	52	47	32
6	The Foundry	1	7	2	2	7	3
7	Fusion LIC	1	3	1	1	3	1
8	50-15 Vernon Jackson	1	3	1	1	3	1
9	10-50 Jackson Avenue	1	4	1	1	4	2
10	View 59 (25-15 Queens Plaza North)	1	4	1	1	4	2
11	Casa Vizcaya	1	3	1	1	3	1
12	44-27 Purves Street	2	7	2	2	7	3
13	10-63 Jackson Avenue	1	8	3	3	8	3
14	12-01 Jackson Avenue	1	4	1	1	4	2
15	Badge Building	1	5	2	2	5	2
16	45-56 Pearson Street	3	14	4	4	13	6
17	Court Square II/Citicorp	127	21	52	54	18	138
18	28-10 Queens Plaza South	361	59	146	153	49	392
19	42-16 West Street	19	84	27	27	78	34
20	Crescent Club	3	16	5	5	15	7
21	42-37 Crescent Street	0	2	1	1	2	1
22	42-59 Crescent Street	0	2	1	1	2	1
23	27-14 41st Ave	1	3	1	1	3	1
24	27-11 42nd Road	6	22	8	8	20	9
25	26-26 Jackson Avenue	1	5	1	1	5	2
26	41-02 24th Street	2	6	1	1	6	2
27	41-34 25th Street	3	16	5	5	15	7
28	29-07 Queens Plaza North Hotel	26	31	57	40	45	39
29	40-01 29th Street Hotel	12	13	25	17	19	16
30	39-35 27th Street Hotel	7	8	15	11	12	10
31	29-02 39th Avenue Hotel	14	17	30	21	24	21
32	Queens Plaza North/24th Street (Venus)	8	35	11	11	33	15
33	Silvercup West	252	113	220	176	301	334
34	Ravel Hotel	9	11	21	15	15	13
35	Z Hotel	14	16	28	20	21	18
36	River East	28	112	50	50	110	54
37	LIRR vent building	0	0	0	0	0	0
38-46	Queens West Sites 1-9	141	462	239	242	470	241
47	10-59 50th Avenue	1	3	1	1	1	1
48	10-12 47th Avenue	0	1	0	0	1	1
49	11-11 50th Avenue	3	14	4	4	13	6
50	Quality Inn Hotel	6	7	13	9	10	9
51	Corrieri Building	1	2	1	1	2	1
52	30-30 Northern Boulevard	42	64	59	49	69	39
53, 54	Kaufman Astoria Studios/Museum of Moving Image	7	14	22	19	40	34
	Total	**1,137**	**1,315**	**1,147**	**1,046**	**1,565**	**1,534**

Note: See Figure 16-6 for map numbers. Between completion of the Draft and Final EISs, two additional projects may be added to the traffic analysis—the CUNY project and the Dutch Kills Rezoning and Related Actions project—as noted previously.

Borden Avenue, as a key east-west roadway, is expected to have traffic volume increases of 115 to 400 vph eastbound and 20 to 140 vph westbound in the AM peak hour. Midday peak hour volumes will range up to 175 vph westbound and 95 vph eastbound. In the PM peak hour, volumes are expected to increase by 100 to 575 westbound vph and 50 to 250 eastbound vph. The larger volume increases will occur east of the primary study area, at the entrance to the LIE near the QMT toll plaza, and at the intersection with Van Dam Street. Volume increases would be lower west of Vernon Boulevard.

Jackson Avenue is expected to carry traffic volume increases between 11th Street and Northern Boulevard/31st Street in the range of up to 200 vph northbound in the AM and midday peak hours, and up to 360 vph northbound in the PM peak hour. Southbound volumes from Northern Boulevard/31st Street to 11th Street are expected to increase by up to 190 vph in the AM peak hour and up to 150 vph in the midday and PM peak hours.

Along 44th Drive, volumes are expected to increase by 50 to 70 vph in each direction during the AM and midday peak hours. During the PM peak hour, traffic volumes are expected to increase by up to 130 vph westbound and 115 vph eastbound.

Thomson Avenue is expected to have traffic volume increases of up to 150 vph eastbound and 300 vph westbound in the AM peak hour, and by 200 vph or less per direction in the midday and PM peak hours.

Traffic volumes along Van Dam Street are expected to increase by 75 to 130 vph per direction in the AM and midday peak hours, and northbound in the PM peak hour. Southbound in the PM peak hour, volumes are expected to increase by about 260 vph.

Along Queens Plaza South, traffic volumes are expected to increase by 20 to 60 vph per direction in all three peak hours at the intersections with Vernon Boulevard, 11th Street, and 21st Street.

Along Queens Boulevard, traffic volume increases will range from 100 to 140 vph in each direction during both the AM and midday peak hours and the PM peak hour westbound near the intersections of Queens Boulevard and Jackson Avenue/Northern Boulevard and near its intersection with Van Dam Street. During the PM peak hour, eastbound volumes are expected to increase by up to 260 vph at its intersection with Jackson Avenue/Northern Boulevard.

Based on these traffic volume increases, future No Build traffic levels of service were determined for the 41 analysis locations. **Table 16-5** shows a comparison of traffic levels of service for existing and future No Build conditions. **Figures 16-7 through 16-9** provide an illustrative overview of overall intersection traffic levels of service throughout the study area. In comparing overall intersection levels of service and individual traffic movement levels of service, it is clear that considerably more locations will operate at LOS E or F under 2017 No Build conditions than in existing conditions, given the substantial volume of new traffic expected to be generated by the No Build development in the area.

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

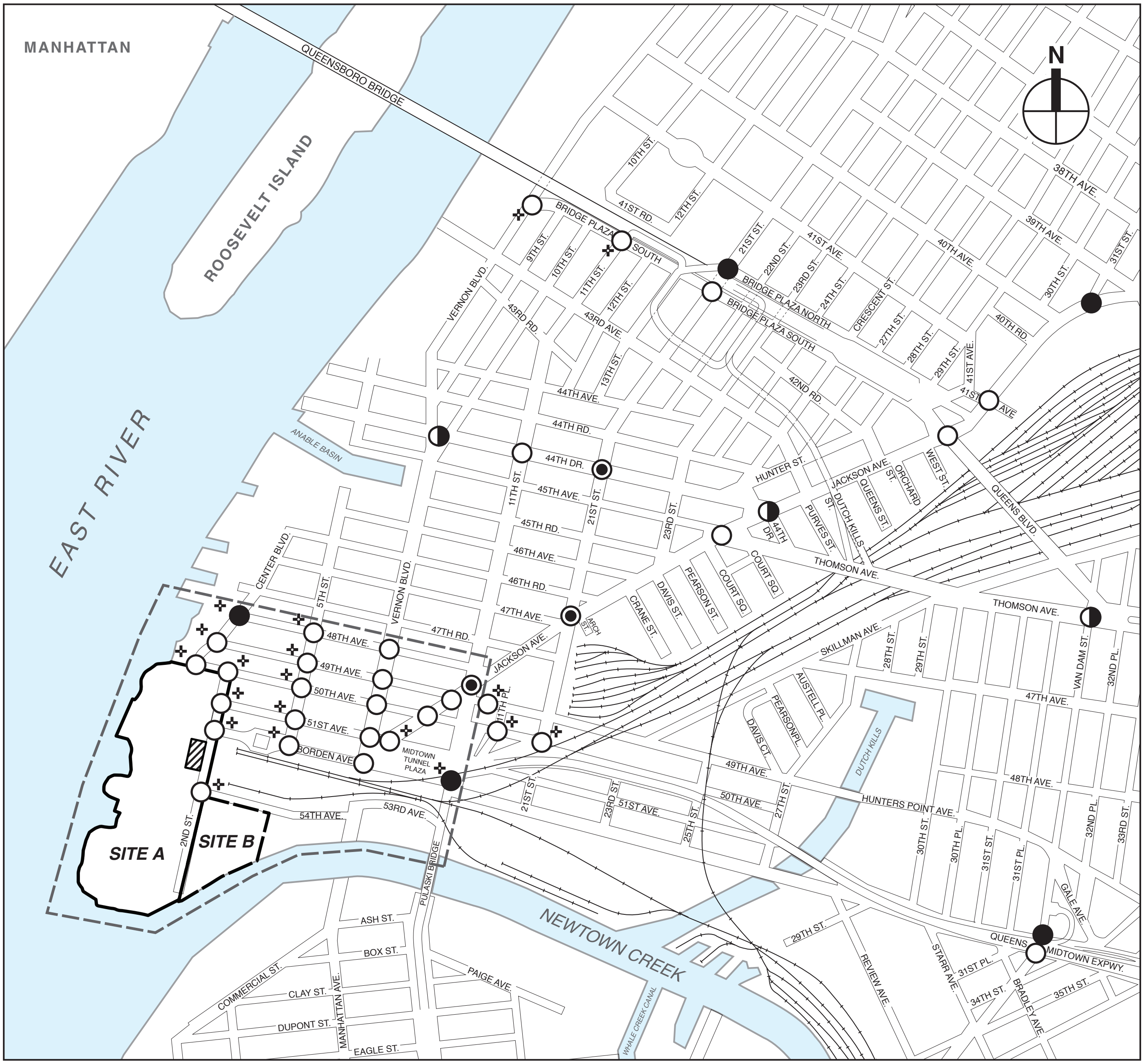
LOS F

Unsignalized Intersection

NOTE: Overall intersection LOS is shown

2017 No Build Traffic Levels of Service
AM Peak Hour

3.31.08



0 1000 2000 FEET

SCALE

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

LOS F

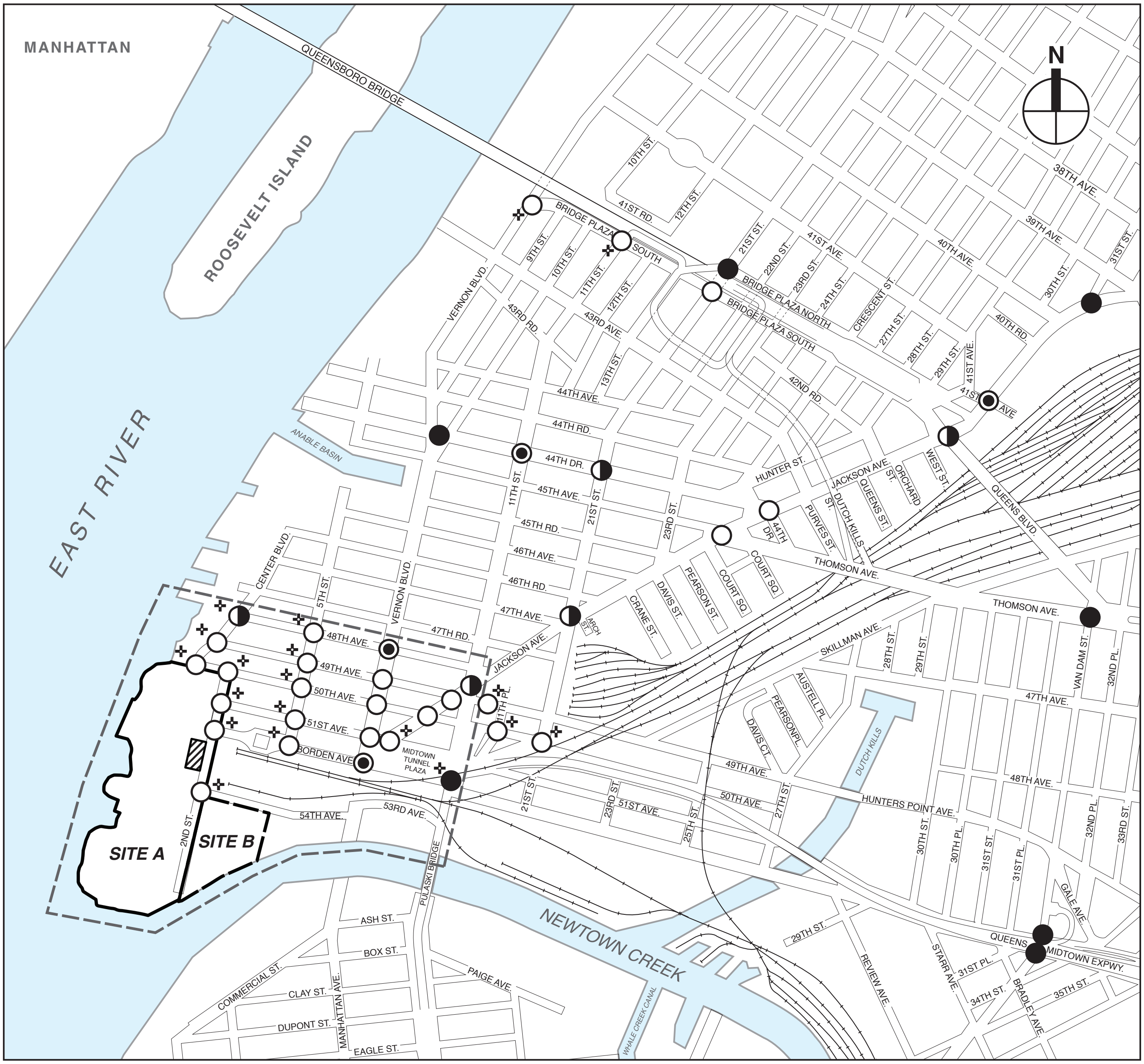
Unsignalized Intersection

NOTE: Overall intersection LOS is shown

2017 No Build Traffic Levels of Service
Midday Peak Hour

HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS **Figure 16-8**

3.31.08



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SCALE

- Site A
- Not Included In Site A
- Site B
- Primary Traffic Study Area
- LOS A, B or C
- LOS D
- LOS E
- LOS F
- Unsignalized Intersection

NOTE: Overall intersection LOS is shown

2017 No Build Traffic Levels of Service
PM Peak Hour

HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS **Figure 16-9**

Table 16-5
Traffic Level of Service Summary Comparison
Existing vs. Future No Build Conditions (2017)

	Existing			2017 No Build		
	AM	Midday	PM	AM	Midday	PM
Overall LOS A/B/C	35	37	34	24	30	25
Overall LOS D	3	4	5	4	3	4
Overall LOS E	3	0	2	3	3	5
Overall LOS F	0	0	0	10	5	7
Number of movements at LOS E or F (of approximately 151 movements analyzed)	11	8	14	33	24	37

Note: Includes 41 signalized and unsignalized intersections. Of the 19 unsignalized locations, one will operate at LOS F during the AM peak hour, and two will operate at LOS E/F during the midday and PM peak hours (the 17 others will operate at overall LOS A or B during all three traffic analysis hours).

This summary overview of future No Build conditions indicates that:

- In the AM peak hour, 13 of the 41 study area intersections analyzed will operate at overall LOS E or F, as compared to three under existing conditions, and four intersections will operate at marginally acceptable/unacceptable LOS D, as compared to three under existing conditions. As shown in **Figure 16-7**, these intersections are located along the key roadways in the study area, including Vernon Boulevard, 11th Street, 21st Street, Jackson Avenue, Queens Boulevard and Queens Plaza North/South, and Van Dam Street. Overall, 33 individual traffic movements out of approximately 151 such movements analyzed will be at LOS E or F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc), as compared to 11 under existing conditions.
- In the midday peak hour, eight intersections will operate at overall LOS E or F, as compared to none under existing conditions, and three intersections will operate at marginally acceptable/unacceptable LOS D, as compared to four under existing conditions. There will be 24 individual traffic movements operating at LOS E or F, as compared to eight under existing conditions. **Figure 16-8** illustrates the location of these intersections. Only two intersections west of 11th Street will operate at an unacceptable level of service.
- In the PM peak hour, 12 intersections analyzed will operate at overall LOS E or F, as compared to two under existing conditions, and four intersections will operate at marginally acceptable/unacceptable LOS D, as compared to five under existing conditions. As in the AM peak hour, these intersections (shown in **Figure 16-9**) are located along the key study area roadways, with one location west of Vernon Boulevard (at 48th Avenue) operating at an unacceptable level of service. There will be 37 individual traffic movements operating at LOS E or F, as compared to 14 under existing conditions.

PARKING

To estimate future parking conditions, existing occupancy at public parking facilities and on-street parking was increased by the background traffic growth rate of 0.5 percent per year. Vehicle trips generated by No Build project sites within the study area were assigned to park on-site or assumed to find parking nearby.

Table 16-6 presents the capacity and projected occupancy for the three study area off-street parking facilities for No Build conditions. Two facilities (the LIRR parking lot and the Citylights parking garage) are at 100 percent capacity in existing conditions in the midday and AM peak hours, respectively. Under No Build conditions, occupancy of the off-street parking facilities was increased by 0.5 percent per year except where the parking facility was already at 100 percent capacity. During these peak times, vehicles would have to park elsewhere in the area. Occupancy during each of the peak hours shown below is expected to rise by 1 to 4 percent overall.

Table 16-6
2017 No Build Public Parking Lots and Garages

Location	Capacity	Existing Occupancy			No Build Occupancy		
		8-9 AM	1–2 PM	5–6 PM	8-9 AM	1–2 PM	5–6 PM
LIRR Parking Lot (Borden Avenue at Vernon Boulevard)	140	87%	100%	64%	91%	100%+	68%
Citylights Parking Garage (48-18 5th Street)	527	100%	85%	40%	100%+	89%	42%
New York Water Taxi Parking Lot (52-00 2nd Street at Borden Avenue)	156	69%	87%	22%	72%	91%	23%
Total Capacity / Percent Occupancy	**823**	**92%**	**88%**	**41%**	**93%**	**92%**	**43%**

Available on-street parking is also expected to decrease under future No Build conditions due to the substantial projected increase of traffic in the area. Projected on-street parking occupancy under No Build conditions will range from 94 percent to 96 percent in the AM and midday peak periods, with parking shortfalls expected during some times of the day. In the PM peak hour, on-street parking occupancy will range from 81 percent to 86 percent. The availability of on-street parking will increase slightly under No Build conditions due to construction-related parking prohibitions that will no longer prevail.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

This section presents an analysis of future traffic and parking conditions under Build conditions in 2017. As described in Chapter 1, "Project Description," the reasonable worst-case development scenario (RWCDS) that would result from the proposed actions on Sites A and B consists of approximately 6,650 dwelling units, 126,500 square feet of local retail space, 45,000 square feet of community space, 180,000 square feet (1,600 seats) of intermediate/high school space, 13.42 acres of park space, and 2,660 parking spaces (2,000 at Site A, representing 40 percent of the housing units, and 660 at Site B, also representing 40 percent of the housing units at that site). This section includes a determination of the volume of vehicle trips generated under the Build conditions, their distribution within the study area roadway network, the analysis of future traffic levels of service, the identification of significant impacts as per *CEQR Technical Manual* guidelines, and hour-by-hour parking accumulation estimates for the proposed actions. Mitigation measures are discussed in Chapter 22, "Mitigation."

TRIP GENERATION AND MODAL SPLIT

To estimate the volume of traffic generated by the proposed actions during the traffic peak hours, a detailed trip generation analysis was performed. Travel demand factors used to calculate the projected number of trips were obtained primarily from previously approved EIS studies (such as Silvercup West FEIS [2006], Number 7 Subway Extension—Hudson Yards Rezoning and Development Program FGEIS [2004], Arverne Urban Renewal FEIS [2003], Downtown Brooklyn Rezoning FEIS [2006], Greenpoint-Williamsburg Rezoning FEIS [2005], and The High School of Information Technology EAS [2001]), the *CEQR Technical Manual*, U.S. Census 2000 data, and reasonable planning assumptions. Travel demand factors used to calculate trips generated by each of these land uses are summarized in **Table 16-7** and described in detail below.

Table 16-7
Weekday Travel Demand Characteristics: Build Condition

	Residential	Local Retail	Intermediate/High School (Student)	(Staff)	Community Facility	Open Space
Size	6,650 DU	126,500 SF	1,600 seats	145 staff	45,000 SF	13.42 acres
Person Trip Generation Rate	8.075[1]	205[1]	2.0[8]	2.0[8]	34[10]	139[1]
	per DU	per 1,000 SF	per seat	per staff	per 1,000 SF	per acre
Temporal Distribution						
AM Peak	9.1%[1]	3.1%[6]	45.0%[8]	45.0%[8]	7.2%[11]	7.0%[1]
Midday Peak	4.7%[1]	19.0%[6]	0.0%[8]	0.0%[8]	7.1%[11]	17.0%[1]
PM Peak	10.7%[1]	9.6%[6]	10.0%[8]	10.0%[8]	8.3%[11]	14.0%[1]
Linked Trip Credit	0.0%	15.0%	0.0%	0.0%	0.0%	0.0%
Modal Split						
	(AM/ MD/ PM)[2]					
Auto	21.0%/21.0%/21.0%	2.0%[7]	15.0%[8]	85.0%[8]	12.0%[12]	5.0%[13]
Taxi	0.5%/ 0.5%/ 0.5%	3.0%[7]	0.0%[8]	0.0%[8]	1.0%[12]	0.0%[13]
Subway	57.0%/ 58.5%/ 57.0%	10.0%[7]	20.0%[8]	5.0%[8]	28.0%[12]	5.0%[13]
Bus	4.5%/ 4.5%/ 4.5%	10.0%[7]	20.0%[8]	5.0%[8]	2.0%[12]	5.0%[13]
LIRR	1.5%/ 0.0%/ 1.5%	0.0%[7]	0.0%[8]	0.0%[8]	0.0%[12]	0.0%[13]
Ferry	1.0%/ 1.0%/ 1.0%	0.0%[7]	0.0%[8]	0.0%[8]	0.0%[12]	0.0%[13]
Walk Only	14.5%/ 14.5%/ 14.5%	75.0%[7]	45.0%[8]	5.0%[8]	57.0%[12]	85.0%[13]
Vehicle Occupancy						
Auto	1.17[2]	1.65[7]	1.30[8]	1.30[8]	1.50[11]	2.80[13]
Taxi	1.17[2]	1.40[7]	NA	NA	1.50[11]	2.80[13]
Directional Split (Ins)						
AM Peak	15.0%[3]	50.0%[6]	100.0%[8]	100.0%[8]	94.0%[11]	55.0%[13]
Midday Peak	50.0%[3]	50.0%[6]	0.0%[8]	0.0%[8]	45.0%[11]	50.0%[13]
PM Peak	70.0%[3]	50.0%[6]	0.0%[8]	0.0%[8]	42.0%[11]	45.0%[13]
Truck Trip Generation Rate	0.06[4]	0.70[7]	0.04[9]		0.38[11]	0.02[14]
	per DU	per 1,000 SF	per seat		per 1,000 SF	per acre
Truck Temporal Distribution						
AM Peak	12.0%[5]	7.7%[6]	9.7%[8]		6.0%[11]	6.0%[14]
Midday Peak	9.0%[5]	11.0%[6]	7.8%[8]		11.0%[11]	6.0%[14]
PM Peak	2.0%[5]	1.0%[6]	5.1%[8]		1.0%[11]	1.0%[14]
Truck Trip Directional Split (Ins)						
AM Peak	50.0%	50.0%	50.0%		50.0%	50.0%
Midday Peak	50.0%	50.0%	50.0%		50.0%	50.0%
PM Peak	50.0%	50.0%	50.0%		50.0%	50.0%

Trip Generation References
1. *CEQR Technical Manual*
2. Journey-to-work data – *Census 2000* (U.S. Department of Commerce: Bureau of the Census, 2000)
3. *Number 7 Subway Extension—Hudson Yards Rezoning and Development Program FGEIS* (2004)
4. *Motor Trucks in the Metropolis,* Wilber Smith Associates, 1969
5. *Curbside Pickup and Delivery Operations and Arterial Traffic Impacts*, USDOT/Federal Highway Administration (1981)
6. *Coliseum FEIS (1997)*
7. *Silvercup West FEIS (2006*)
8. *High School for Information Technology EAS (2001)* – modal split slightly modified.
9. Based on community facility truck trip generation rate; assuming 9 students per 1,000 sf.
10. *Arverne Urban Renewal FEIS (2003)*
11. *Downtown Brooklyn Development FEIS (2005)*
12. Adjusted journey-to-work data – *Census 2000* (U.S. Department of Commerce: Bureau of the Census, 2000)
13. *Greenpoint-Williamsburg Rezoning FEIS (2005)*
14. Project assumption

RESIDENTIAL

For residential space, a trip generation rate of 8.075 trips per dwelling unit and temporal distribution of 9.1 percent, 4.7 percent, and 10.7 percent (during the weekday AM, midday, and PM peak hours, respectively) were obtained from the *CEQR Technical Manual*. A weekday modal split of 21 percent by auto, 0.5 percent by taxi, 57 percent by subway, 4.5 percent by bus, 1.5 percent by the LIRR, 1 percent by ferry, and 14.5 percent by walk was derived from U.S. Census 2000 journey-to-work data for Queens Census Tracts 1, 7, and 19, and Brooklyn Census Tracts 563, 565, 575, and 579.

Because the project area currently is undeveloped with the proposed land uses, census tracts from the Greenpoint section of Brooklyn, immediately to the south, and those in adjacent Long Island City were considered because these areas contain land uses similar to those included in the proposed actions, as well as collectively similar transit access characteristics. The weekday midday modal split was adjusted slightly to reflect no LIRR trips since there is no midday service at the nearby station.

Vehicle occupancy (1.17 persons per vehicle) was also obtained from U.S. Census data. Directional distributions of 15 percent "in" during the weekday AM peak hour, 50 percent "in" during the midday peak hour, and 70 percent "in" during the PM peak hour were obtained from the *No.7 Train Extension-Hudson Yards Rezoning and Development FGEIS* rates for residential use.

For weekday delivery trips, a trip generation rate of 0.06 trips per dwelling unit was obtained from *Motortrucks in the Metropolis (1969)* while a temporal distribution of 12 percent, 9 percent, and 2 percent (for weekday AM, midday, PM peak hours) came from *Curbside Pickup and Delivery Operations and Arterial Traffic Impacts (1981).*

LOCAL RETAIL

For the local retail component, a weekday trip generation rate of 205 trips per 1,000 square feet was obtained from the *CEQR Technical Manual*. A 15 percent linked trip credit was assumed for all local retail trips. Weekday temporal distribution (3.1 percent during the AM peak hour, 19 percent during the midday peak hour, and 9.6 percent during the PM peak hour) and directional split (50 percent "in"/50 percent "out" during all periods) were obtained from the *Coliseum FEIS (1997)*. Modal split (2 percent by auto, 3 percent by taxi, 10 percent by subway, 10 percent by bus, and 75 percent by walk) and vehicle occupancy rates (1.65 persons per auto, 1.4 persons per taxi) came from the *Silvercup West FEIS* for retail use.

For local retail delivery trips, a trip generation rate of 0.35 trips per 1,000 square feet was also obtained from the *Silvercup West FEIS*. The weekday delivery temporal distribution (7.7 percent during the AM peak hour, 11 percent during the midday peak hour, and 1 percent during the PM peak hour) came from the *Coliseum FEIS (1997).*

INTERMEDIATE/HIGH SCHOOL

All weekday intermediate/high school travel demand factors were obtained from (or based on) *The High School for Information Technology EAS (2001)*. The school component would generate trips during the AM peak hour. Although classes would let out well before the PM peak hour, some students and staff are expected to stay for after-school events. Therefore, trips would be generated during the PM peak hour as well.

For student-related school trips, a weekday trip generation rate of two daily trips per seat (approximately 1,600) was used and a temporal distribution of 45 percent during the AM peak hour, 0 percent during the midday peak hour, and 10 percent during the PM peak hour was applied. A modal split of 5 percent driving by auto, 10 percent dropped off/picked up by auto, 20 percent by subway, 20 percent by bus, and 45 percent by walk was based on *The High School for Information Technology EAS (2001)*. Since the proposed school would be a general public school (as opposed to the High School for Information Technology, which is specialized), the walk share was increased and subway and bus shares were decreased to reflect a higher proportion of neighborhood students.

A vehicle occupancy rate of 1.3 persons per auto and a directional split of 100 percent “in” during the AM peak hour and 0 percent “in” during midday and PM peak hours were also applied.

For faculty/staff-related school trips, a trip generation rate of two daily person trips per faculty/staff member (approximately 145) and a modal split of 85 percent by auto, 5 percent by subway, 5 percent by bus, and 5 percent by walk were used. All other travel demand factors used are similar to student related rates.

For intermediate/high school delivery trips, a weekday trip generation rate of .04 daily trips per seat was used based on the community facility delivery rate. To apply this rate from per square feet (for community facility) to per student (for school), it was estimated that there are approximately nine students/seats per 1,000 square feet. A weekday temporal distribution of 9.7 percent during the AM peak hour, 7.8 percent during the midday peak hour, and 5.1 during the PM peak hour was obtained from *The High School for Information Technology EAS (2001)*.

Recent discussions with the School Construction Authority on the operating characteristics of and student attendance at New York City high schools may result in some changes to the assumptions made above. Where appropriate, these changes and relevant revisions to the transportation analyses will be made for the FEIS.

COMMUNITY FACILITY

To calculate trips generated by community facility space, a weekday trip generation rate of 34 daily person trips per 1,000 square feet was obtained from the *Arverne Urban Renewal FEIS (2003)* for community facility use. A modal split of 12 percent by auto, 1 percent by taxi, 28 percent by subway, 2 percent bus, and 57 percent walk was based on U.S. Census reverse journey-to-work data. However, since it is assumed that the majority of community facility trips would be made by the project’s residents, the census data were adjusted to reflect a larger percentage of walk trips and a smaller percentage by other modes. Weekday temporal distribution (7.2 percent, 7.1 percent, and 8.3 percent during the AM, midday, and PM peak hours, respectively), vehicle occupancy (1.5 persons per auto and taxi), and directional split (94 percent “in,” 45 percent “in,” and 42 percent “in” during the AM, midday, and PM peak hours) were all obtained from *Downtown Brooklyn Development FEIS (2004)* for community facility use.

For delivery trips, a weekday trip generation rate of 0.70 daily trips per 1,000 square feet and temporal distribution of 6 percent during the AM peak hour, 11 percent during the midday peak hour, and 1 percent during the PM peak hour was obtained from the *Downtown Brooklyn Development FEIS (2004)*.

OPEN SPACE

For open space-related trips, a weekday trip generation rate of 139 daily person trips per acre and a temporal distribution of 7 percent, 17 percent, and 14 percent during the weekday AM, midday, and PM peak hours, respectively, were used from the *CEQR Technical Manual*. Modal split (5 percent by auto, 5 percent by subway, 5 percent by bus, and 85 percent by walk), vehicle occupancy (2.8 persons per auto and 2.0 persons per taxi), and directional split (55 percent "in," 50 percent "in," and 45 percent "in" during the weekday AM, midday, and PM peak hours, respectively) rates were all obtained (or derived) from the parkland rates in the *Greenpoint-Williamsburg Rezoning FEIS (2005)*.

For open space-related delivery trips, a trip generation rate of 0.02 daily trips per acre and a temporal distribution of 6 percent during weekday AM and midday peak hours and 1 percent during the PM peak hour were used based on guidance from NYCDOT.

GENERATED TRAFFIC VOLUMES

As shown in **Table 16-8**, the proposed actions would generate a total of 1,378 vehicles per hour (vph), 719 vph, and 1,269 vph during the weekday AM, midday, and PM peak hours, respectively.

Table 16-8
2017 Build Vehicle Trip Generation

Use	Weekday AM			Weekday Midday			Weekday PM		
	In	Out	Total	In	Out	Total	In	Out	Total
Autos/Trucks									
Residential	156	769	925	244	244	488	726	313	1,039
Local retail	7	7	14	30	30	60	13	13	26
Intermediate/high school	254	114	368	2	2	4	27	58	85
Community/public facility	8	1	9	4	5	9	4	6	10
Open space	1	1	2	3	3	6	2	3	5
Taxis (all uses)	30	30	60	76	76	152	52	52	104
Total	456	922	1,378	359	360	719	824	445	1,269

TRIP DISTRIBUTION AND ASSIGNMENT

The volume of vehicular traffic generated by the RWCDS was assigned to the roadway network. A description of vehicular traffic assignments (for autos, taxis, and trucks) is provided below.

AUTOS

Residential

Residential auto assignments were based on U.S. Census 2000 journey-to-work data. Most residential trips would occur within Queens (56 percent) or would be to Long Island (15 percent). Trips would also be made to New Jersey (10 percent), Manhattan (6 percent), Brooklyn (5 percent), Staten Island (4 percent), and Bronx/Westchester County (4 percent).

Of the 56 percent of trips within Queens, approximately 31 percent were assigned to the BQE, the Grand Central Parkway, and the Van Wyck Expressway via the LIE; 17 percent were assigned to local Queens arterials (including Queens Boulevard, Northern Boulevard, Skillman

Avenue, 21st Street, and 31st Street); and 8 percent were assigned to parts of eastern Queens using the LIE.

Residential auto trips from outside Queens would travel on different routes to reach the project sites. Long Island trips (17 percent) would primarily use the LIE. Of the 10 percent of trips destined to New Jersey, 6 percent would reach their destination using the Triborough Bridge, 2 percent would use the Pulaski Bridge to access the BQE, and another 2 percent would use the QMT. Most Brooklyn trips (4 percent) and Staten Island trips (5 percent) were assigned to the Pulaski Bridge, while some were assigned to the BQE (via the LIE interchange). Manhattan trips (6 percent) were distributed evenly to the Queensboro Bridge and the QMT (approximately 3 percent each); a small percentage was also assigned to the Triborough Bridge. Bronx and Westchester trips (4 percent) were assigned to routes leading to the Triborough Bridge.

Reverse trips were expected to return along the same general routes on which they departed. Residential auto trips were assigned to one of the accessory parking garages included as part of the proposed development plan.

Intermediate/High School (Faculty/Staff)

Staff trips generated by the intermediate/high school were assigned according to U.S. Census 2000 reverse-journey-to-work data for the study area. Regional origin-destination percentages for school faculty/staff were approximately 56 percent from Queens, 17 percent from Long Island, 11 percent from Brooklyn, 9 percent from the Bronx/Westchester County, 4 percent from Staten Island, and 3 percent from Manhattan.

These trips were assigned to the site using logical travel routes. Faculty/staff autos generated within Queens (56 percent) were assigned to the LIE (approximately 17 percent), and the Grand Central Parkway (12 percent) via Steinway and 31st Streets. Approximately 27 percent of auto trips within Queens were assigned to major local roads including Queens Boulevard (12 percent), Northern Boulevard (10 percent), Skillman Avenue (4 percent), and Jackson Avenue (1 percent).

For faculty/staff-related auto trips generated from outside of Queens, typical commuting routes were used. Long Island trips (17 percent) were assigned to the LIE (12 percent) and to Northern Boulevard via the Grand Central Parkway (5 percent). Brooklyn- and Staten Island-generated trips (15 percent) were assigned to either the LIE via the BQE interchange or to the Pulaski Bridge. All Bronx and Westchester County trips (9 percent) were assigned to routes to/from the Triborough Bridge. For Manhattan trips (3 percent), an even amount (1 percent each) was assigned to the QMT, the Queensboro Bridge, and the Triborough Bridge.

Intermediate/High School (Students)

As a general (non-specialized) intermediate/high school, student trips were assigned mostly from nearby Queens and Brooklyn neighborhoods. AM peak hour student auto trips were assigned to the school site as follows: 20 percent on Vernon Boulevard; 15 percent each along 21st Street, the LIE via Borden Avenue, and the Pulaski Bridge; 10 percent each on Queens Boulevard and Northern Boulevard; and 5 percent each on Skillman Avenue, 31st Street, and Borden Avenue (locally generated trips).

Student-related auto trips would primarily be parent drop-offs en route to their places of work; therefore, student-related weekday AM peak hour "out" trips (or drop-off return trips) were assigned according to morning commuter patterns (i.e., weekday residential "out" trip assignments).

All school auto parking trips (faculty/staff and parking students) were assigned to the parking garage in Parcel C where there would be available parking space for school-related autos.

Local Retail/Community Facility

Local retail and community facility land uses are expected to serve the immediate surrounding area. Therefore, auto trips were generally assigned from local origins within the neighborhood and adjacent residential areas. Auto trips were assigned along Jackson Avenue, 21st Street, Vernon Boulevard, Borden Avenue, and 5th Street. A small number of Brooklyn trips (approximately 5 percent) were assigned over the Pulaski Bridge. Departing local retail and community facility were generally assigned along the same routes as arrivals.

Open Space

Auto trips associated with the new open spaces were assigned to the sites from nearby residential areas, such as the Sunnyside neighborhood and the Queensbridge Houses. These trips were assigned to the site along Vernon Boulevard, 21st Street, and Queens Boulevard via Jackson Avenue.

TAXIS

Taxi pick-ups and drop-offs for all land uses were distributed mostly to local streets that serve the surrounding neighborhoods, such as 5th Street, Vernon Boulevard, 11th Street, 21st Street, Jackson Avenue, Borden Avenue, 50th Avenue, and 51st Avenue.

TRUCKS

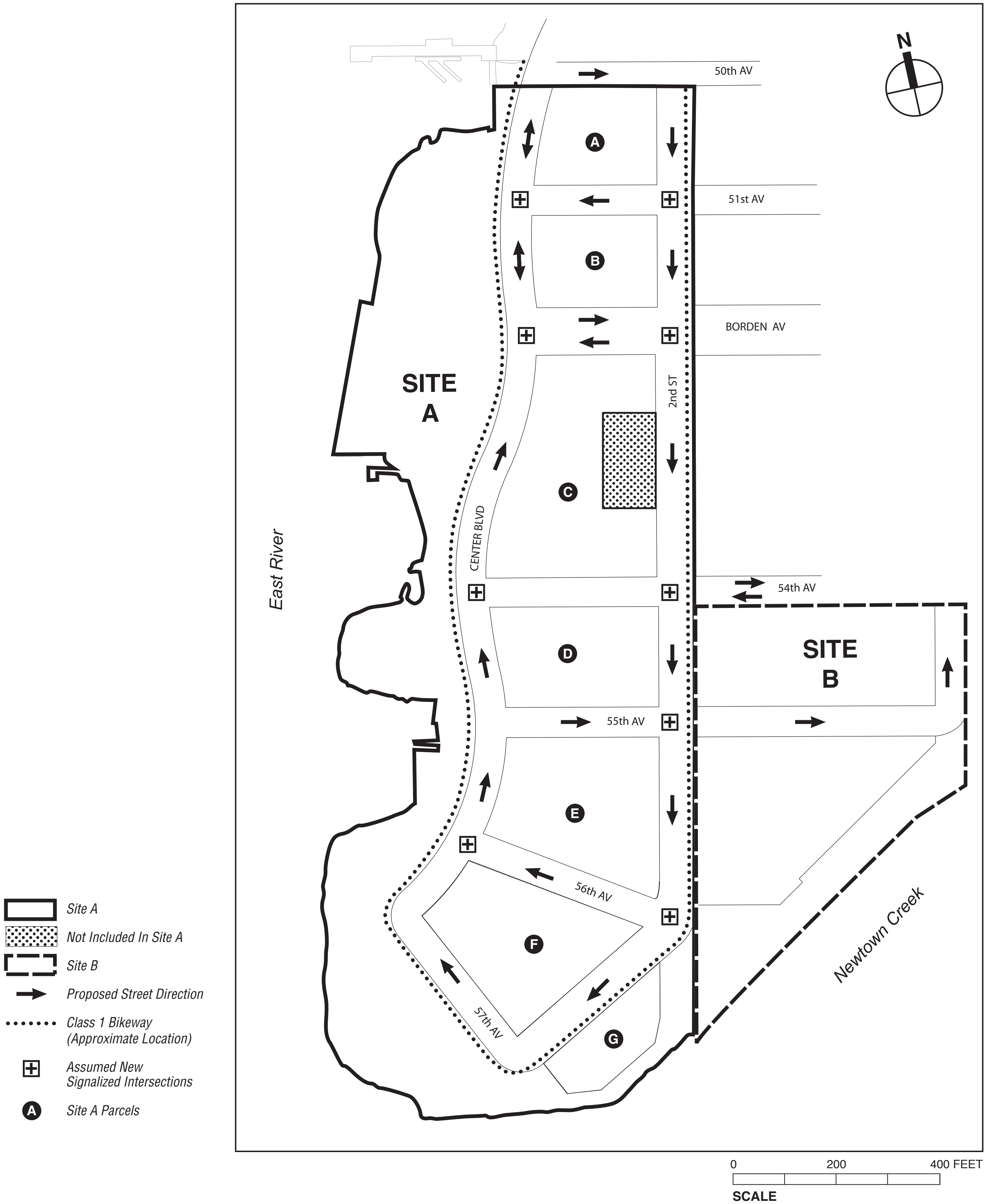
Truck delivery trips for all land uses were assigned to NYCDOT-designated truck routes. Trucks were assigned to the study area from regional origins via the LIE (approximately 25 percent), the QMT (10-15 percent), the Triborough Bridge (15-20 percent), the BQE (10-20 percent), the Pulaski Bridge (10-15 percent), and the Queensboro Bridge (5-10 percent). Trucks were assigned along regional and local truck routes as long as possible until reaching their destination. Local truck routes used for the truck trip assignments include Vernon Boulevard, 21st Street, Steinway Street, Jackson Avenue, Northern Boulevard, Queens Boulevard, Thomson Avenue, and Borden Avenue.

NEW ROADWAY DESIGN

As part of the proposed actions, a new roadway network and circulation system would be constructed to accommodate the proposed development. The circulation system would provide a one-way clockwise loop of a newly configured southbound 2nd Street leading into a newly configured northbound Center Boulevard, including special treatments to encourage bicycle use and walking. The circulation system includes an exclusive Class 1 bikeway along both Center Boulevard and 2nd Street, buffered from vehicle traffic by a raised, planted median, establishing a context for non-motorized systems within the development area. The proposed roadway and bikeway layout is depicted in **Figure 16-10** and described further below.

VEHICULAR ACCESS AND CIRCULATION

Sites A and B are located near access routes to the LIE and QMT. The make-up of the proposed roadway network, which includes the creation of new streets, would provide access to and from the project sites and circulation within the sites. This aspect would be shaped by the



Proposed Site Plan
Roadway Configuration
Figure 16-10

configuration of Center Boulevard, 2nd Street, and the east-west cross-streets between them. **Figure 16-10** provides the proposed roadway layout and street directions.

Center Boulevard is currently a two-way north-south roadway north of Site A, terminating at 50th Avenue. In the future, Center Boulevard would be extended farther south as a two-way roadway to Borden Avenue; south of Borden Avenue it would be configured as a one-way northbound street with two travel lanes. Curbside parking would be allowed along the east curb and an exclusive bikeway would be provided to the west of Center Boulevard within the park area (see “Bicycle and Pedestrian Access and Circulation” below). Center Boulevard would consist of two 11-foot-wide travel lanes and one 10-foot-wide parking lane that would allow for bus stops.

Second Street is currently a two-way north-south roadway that extends between 50th Avenue and Newtown Creek. In the future, 2nd Street would be configured as a one-way southbound street with two travel lanes, curbside parking along the west curb, and an exclusive bikeway along the east curb (see below). The cross section along 2nd Street would consist of two 11-foot-wide travel lanes and one 10-foot-wide parking lane that would incorporate bus stops.

The existing street grid would be extended into the site: 50th Avenue, 51st Avenue, Borden Avenue, and 54th Avenue would all be extended west to intersect with Center Boulevard. In addition, a number of new east-west streets would be created: 55th Avenue, 56th Avenue, and 57th Avenue. Fiftieth and 55th Avenues would be one-way eastbound streets; 51st, 54th, 56th, and 57th Avenues would travel one-way westbound between 2nd Street and Center Boulevard. Fifty-first and 54th Avenues would be two-way streets to the east of 2nd Street.

Borden Avenue would be the major east-west access route to the LIE and QMT. All cross streets on Site A except Borden Avenue would have a 14-foot-wide travel lane and curbside parking on one side. Borden Avenue would generally have two 11-foot-wide travel lanes in each direction. A school pick-up/drop-off area would be provided along the north curb of westbound Borden Avenue at its intersection with 2nd Street.

In total, there would be 14 intersections encompassing the project site: five existing intersections (some of which would be reconfigured) and nine proposed new intersections. The key intersections of Borden Avenue with Center Boulevard and 2nd Street would be signalized, as would seven other intersections. A total of five intersections within the site are currently expected to be unsignalized. Traffic operations at project site intersections are discussed in further detail in the “Traffic Level of Service and Impacts” section later in this chapter.

As depicted in **Figure 16-10**, parking garages would be provided in the buildings to be developed on Parcels A, C, D, E, and F, available to all project trips. The access/egress point for the Parcel A garage would be on 51st Avenue. For Parcel C, two garage entry/exit points would be provided along 54th Avenue. The garage entry/exit point for the Parcel D garage would be on 55th Avenue, while entry/exit points for Parcel E and F garages would be on 56th Avenue.

BICYCLE AND PEDESTRIAN ACCESS AND CIRCULATION

NYCDCP and NYCDOT have developed a Queens East River and North Shore Greenway Master Plan. This plan proposed a 10.6-mile urban shared use trail intended to provide access to the shoreline in Queens and improve non-motorized commuter options. The plan recommends the development of a network of pedestrian and bicycle pathways that would link four parks on the Queens East River waterfront and the neighborhoods of Hunter’s Point, Long Island City, Ravenswood and Astoria to the inland neighborhoods of Steinway, Jackson Heights and East

Elmhurst. As set forth in the plan, the greenway route will include signed bike lanes (Class 3) along 2nd Street and along the street network that would have been constructed on Site A pursuant to the General Project Plan in place for the area. In addition, cycling is envisioned to be permitted along the waterfront esplanade that would have been constructed pursuant to the General Project Plan.

Consistent with this Master Plan, the 2006 New York City Cycling Map, designed by the NYCDCP and NYCDOT Bicycle Program, shows two proposed bicycle routes in the Hunter's Point neighborhood:

- Proposed Greenway along the waterfront from Hunter's Point North to Queensbridge Park.
- Proposed route along 2nd Street, connecting to Vernon Boulevard via 51st, 50th, and 48th Avenues. This route would also connect to the existing bike route over the Pulaski Bridge.

The bikeway to be included as part of the proposed actions is in accordance with the Queens East River and North Shore Greenway Master Plan and the New York City Cycling Map. It would serve as a recreational route for cyclists as well as provide access to Vernon Boulevard, the Pulaski Bridge, and the Vernon Boulevard-Jackson Avenue subway station (No. 7 train).

The proposed actions include creation of a 12-foot-wide Class 1 bikeway straddling the waterfront park and the west curb area of Center Boulevard, between 50th Avenue and 57th Avenue and continuing onto 2nd Street. Second Street would be characterized by the 12-foot-wide Class 1 bikeway along the east curb continuing into Center Boulevard. The bikeway along 2nd Street would generally be separated from the travel lanes by a 6-foot-wide buffer.

Sidewalks would be present along 50th, 51st, and Borden Avenues to provide access to the 7 train, which is approximately a half mile from the southern end of 2nd Street. Also, bulb-outs (i.e., widened sidewalk areas at the corner of the intersection) are proposed at the intersection of Borden Avenue and 2nd Street to reduce the pedestrian crossing distance across 2nd Street. The new sidewalks would be 15 feet wide, with a 5-foot-wide planting zone and a 10-foot-wide walking zone.

NEW TRAFFIC SIGNALS

For the purposes of this EIS's Build analyses, it has been assumed that the following intersections within or adjacent to the project sites would be signalized to facilitate vehicular flow and/or facilitate pedestrian crossing (these new traffic signal locations are also shown in **Figure 16-10**):

- 2nd Street and 51st Avenue
- 2nd Street and Borden Avenue
- 2nd Street and 54th Avenue
- 2nd Street and 55th Avenue (proposed new intersection)
- 2nd Street and 56th Avenue (proposed new intersection)
- Center Street and 51st Avenue (proposed new intersection)
- Center Street and Borden Avenue (proposed new intersection)
- Center Street and 54th Avenue (proposed new intersection)
- Center Street and 56th Avenue (proposed new intersection)

These assumptions were based on a preliminary review of major and minor street volumes at each intersection, projected average vehicle delays should the intersections be unsignalized rather than signalized, and the likely need for traffic signals at the corners of the proposed school block. Signal warrant analyses have not been conducted in making these assumptions, but NYCDOT signal warrant criteria were considered in making the signalized vs. unsignalized assumptions.

TRAFFIC DIVERSIONS

As a result of the redesigned street network, existing traffic traveling northbound on 2nd Street was assumed to be re-routed in the Build condition to follow the one-way loop direction. Some existing traffic (especially south of 54th Street) would presumably no longer occur due to the displacement of existing activity on Site B (i.e., the Anheuser-Busch and NBC operations). Since it is difficult to determine how much existing traffic is generated by these activities, and to be conservative for analysis purposes, no volume was removed from the network.

Some of the vehicle trips generated by No Build background developments (primarily the Queens West North developments) that would be expected to travel along 5th Street to access Borden Avenue (i.e., trips to/from the LIE) in the No Build condition would instead be assumed to travel along Center Boulevard under the 2017 Build condition. As part of the Queens West North plan, Center Boulevard will be extended north to 46th Avenue, while with the proposed actions it would also be extended south and intersect with the extended Borden Avenue. Under such a scenario, Center Boulevard would be a direct and logical route for a site that is close to the future (extended) Center Boulevard.

PROJECT-GENERATED TRAFFIC VOLUMES

The aforementioned trip generation-assignment process produced specific roadway-by-roadway and intersection-by-intersection traffic volume projections within the study area, an overview of which is provided below. Specific turning movement volume projections are provided in detail in **Appendix 16**.

The Build traffic volume increments would make up the majority of the overall 2017 Build condition traffic volumes at Sites A and B. Center Boulevard would have increases of approximately 400 to 750 vph during the weekday AM peak hour and 200 to 400 vph during the midday and PM peak hours. Second Street would experience volume increases of up to 325 vph, 400 vph, and 700 vph during the weekday AM, midday, and PM peak hours, respectively.

Along the project sites’ east-west cross streets, the proposed actions would add approximately 75 to 180 vph to 50th Avenue, 200 to 400 vph to 54th and 56th Avenues, and 20 to 60 vph to 51st, 55th, 57th Avenues during weekday peak hours. Within Site A, Borden Avenue would experience an increase of 235 to 600 vph in the eastbound direction and 35 to 120 vph in the westbound direction during weekday peak hours.

The increases to traffic volumes along roadways that lead to the project sites and to other major roadways throughout the Long Island City vicinity under the Build condition are discussed below.

Along 5th Street, traffic would increase by up to 35 vph in the northbound direction during the AM peak hour and in the southbound direction during the PM peak hour. All other time periods/directions would experience increases of 5 to 10 vph. Forty-ninth Avenue would experience an increase of 10 to 35 vph during weekday peak hours.

Borden Avenue, near 11th Street, would have an approximate increase of up to 630, 240, and 305 vph in the eastbound direction and 350, 250, and 580 in the westbound direction during the AM, midday, and PM peak hours, respectively.

An additional 80 to 150 vph would use Vernon Boulevard to access Jackson Avenue during peak hours, while approximately 25 to 60 vph would be added to Vernon Boulevard in each direction north of 50th Avenue.

Jackson Avenue southwest of 11th Street would experience increases of approximately 200 to 220 vph in each direction during the weekday AM peak hour, 120 to 160 vph during the weekday midday peak hour, and 125 vph in the northbound direction and 300 vph in the southbound direction during the PM peak hour under the Build condition. Northeast of 11th Street, Jackson Avenue would have increases of 220, 110, and 125 vph northbound and 175, 115, and 200 vph southbound during the AM, midday, and PM peak hours, respectively.

Under the Build condition, 11th Street would experience increases of 5 to 15 vph in each direction during weekday peak hours, while volumes to and from the Pulaski Bridge would increase by 30 to 80 vph in the northbound (inbound) direction and 10 to 35 vph in the southbound (outbound) direction. Twenty-first Street would have an additional 70 to 80 vph in the peak direction (northbound during the AM peak hour and southbound during the PM peak hour), 30 to 35 vph in the off-peak direction, and 20 to 25 vph in each direction during the midday peak hour.

Thomson Avenue and Queens Boulevard would each experience an increase of 75 to 100 vph, 30 to 35 vph, and 50 to 85 vph in each direction during the AM, midday, and PM peak hours under the Build condition.

At the Queens Plaza area, a range of 15 to 40 vph would be generated in the northbound and southbound directions along Jackson Avenue/Queens Plaza East/Northern Boulevard under the Build condition.

TRAFFIC LEVELS OF SERVICE AND IMPACTS

The assessment of potential significant traffic impacts of the proposed actions is based on significant impact criteria defined in the *CEQR Technical Manual*. No Build LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future Build conditions are considered a significant traffic impact. For future No Build LOS A, B, or C conditions that deteriorate to LOS D, mitigation to mid-LOS D (45.0 seconds of delay for signalized intersections and 30.0 seconds of delay for unsignalized intersections) needs to be considered to fully mitigate the impact.

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

The remainder of this section provides an overview of significant traffic impacts that would be generated under the 2017 Build condition, primarily through the use of figures indicating overall levels of service intersection-by-intersection and significantly impacted locations. Detailed volume-to-capacity (v/c) ratios, average vehicle delay, and levels of service movement-by-movement at each intersection under the Build condition are provided at the end of this chapter. Generated traffic volume increment maps and total Build volume maps are provided in **Appendix 16**.

A summary of the 41 existing intersections is presented below. This is followed by a discussion of traffic operations at the nine new intersections that would be created by the proposed actions. Future traffic levels of service for intersections analyzed under the 2017 Build condition are shown in **Figures 16-11 through 16-13** and in **Tables 16-9** and **16-10**.

EXISTING INTERSECTIONS

All 41 intersections analyzed under existing and No Build conditions would continue to operate with similar geometric/stop control characteristics under the 2017 Build condition, except for five intersections that would be reconfigured (three of which would become signalized) as part of the proposed actions. The intersection of Center Boulevard and 50th Avenue would be converted from a two-leg (90-degree) free-flow location to a three-legged intersection with a crosswalk on the east side. At the intersection of 50th Avenue and 2nd Street, a south crosswalk would be added. Both of these intersections would remain unsignalized. The intersections of 2nd Street at 51st, Borden, and 54th Avenues, which currently operate as unsignalized intersections, would be signalized as part of the proposed actions.

As shown in **Table 16-9**, the proposed actions would have significant traffic impacts at 17 of the 25 signalized intersections analyzed during the AM peak hour, 11 of 25 during the midday peak hour, and 16 of 25 during the PM peak hour. Of the 16 unsignalized intersections analyzed under the 2017 Build condition, six would be significantly impacted during the AM peak hour, seven would be significantly impacted during the midday peak hour, and eight would be significantly impacted during the PM peak hour.

Table 16-9
Traffic Level of Service Summary Comparison
No Build vs. Build Conditions (2017)

	2017 No Build			2017 Build		
	AM	**Midday**	**PM**	**AM**	**Midday**	**PM**
Overall LOS A/B/C	24	30	25	19	25	18
Overall LOS D	4	3	4	3	4	6
Overall LOS E	3	3	5	5	4	2
Overall LOS F	10	5	7	14	8	15
Number of intersections with significant impacts	—	—	—	23	18	24
No. of movements at LOS E or F (of approximately 151 traffic movements under the No Build condition and 153 traffic movements under the Build condition).	33	24	37	46	34	55

Note: Three unsignalized intersections (2nd Street at 51st, Borden, and 54th Avenues) would be signalized under the Build condition.

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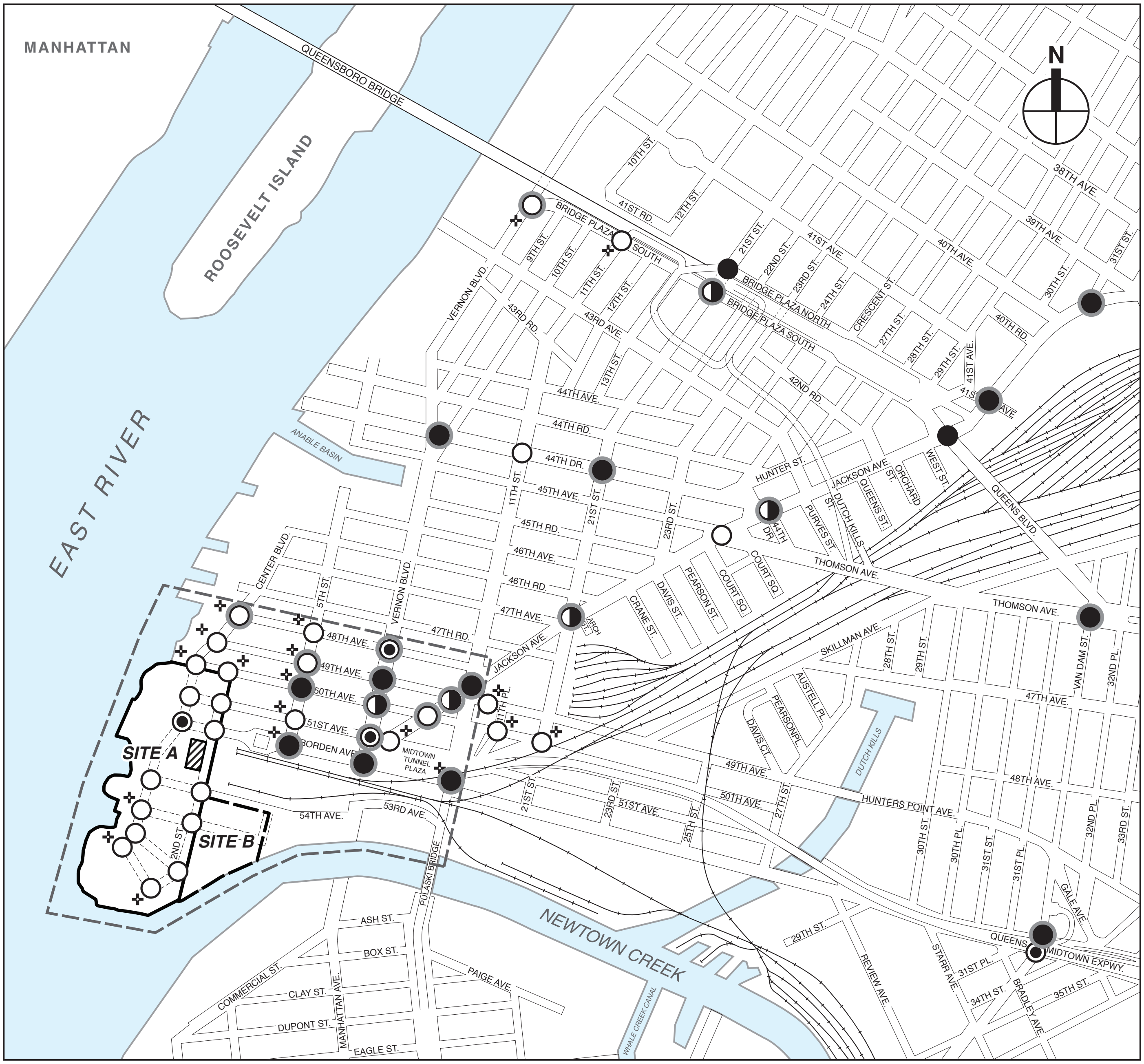

0 1000 2000 FEET

SCALE

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

LOS F

Unsignalized Intersection

Significant Traffic Impact

NOTE: Overall intersection LOS is shown

2017 Build Traffic Levels of Service
AM Peak Hour

HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS

Figure 16-11

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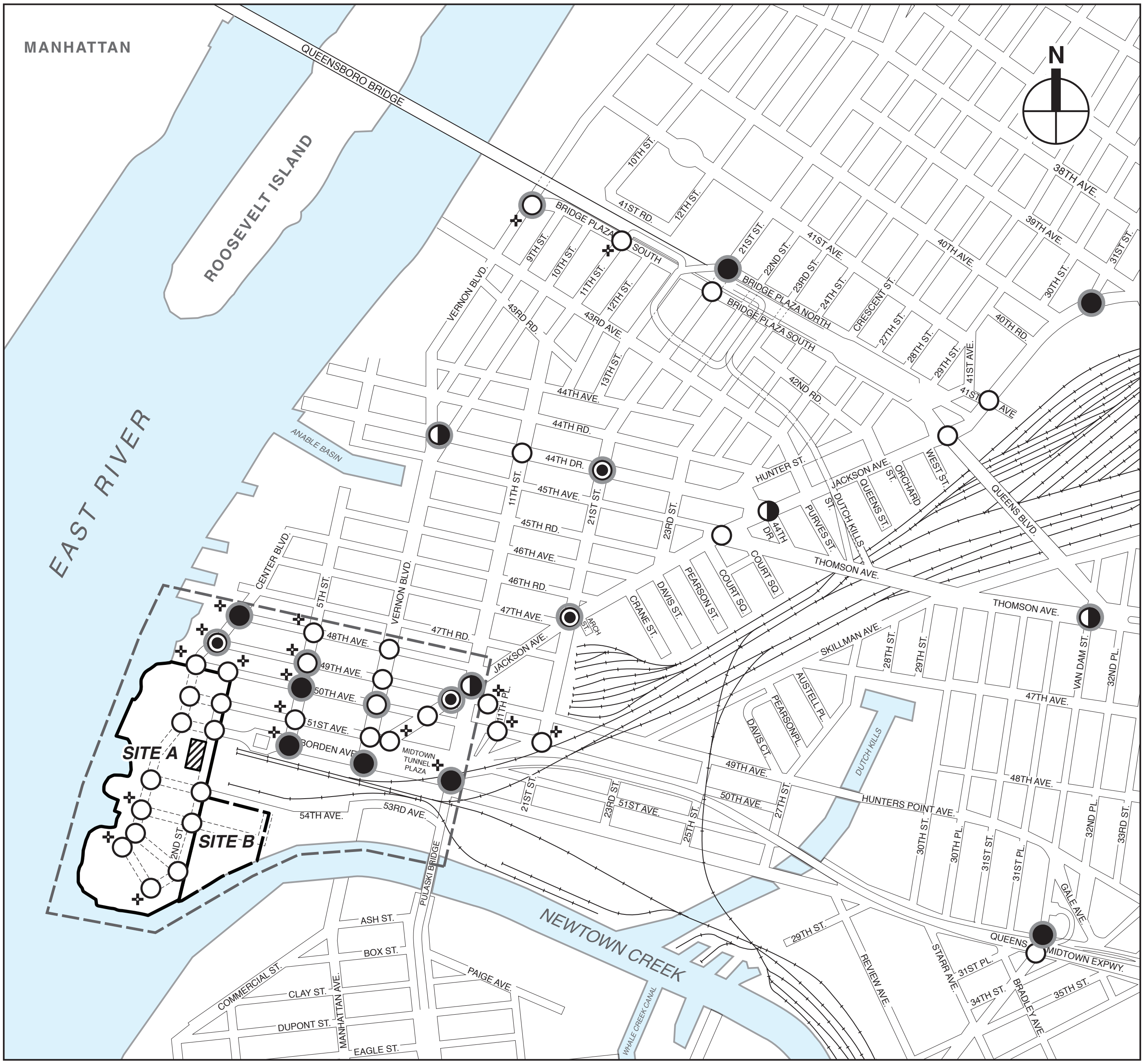

0 1000 2000 FEET

SCALE

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

LOS F

Unsignalized Intersection

Significant Traffic Impact

NOTE: Overall intersection LOS is shown

2017 Build Traffic Levels of Service
Midday Peak Hour

Figure 16-12

3.31.08

Site A

Not Included In Site A

Site B

Primary Traffic Study Area

LOS A, B or C

LOS D

LOS E

LOS F

Unsignalized Intersection

Significant Traffic Impact

NOTE: Overall intersection LOS is shown

2017 Build Traffic Levels of Service
PM Peak Hour

HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS

Figure 16-13

This summary overview of the Build condition indicates that:

- During the AM peak hour, the number of signalized intersections analyzed that are projected to operate at overall LOS E or F would increase from 12 under the No Build condition to 16 under the Build condition, while unsignalized intersections operating at LOS E or F would increase from one to three. Overall, 23 of the 41 intersections would have significant impacts. The number of traffic movements projected to operate at LOS E or F would increase from 33 under the No Build condition to 46 under the Build condition. **Figure 16-11** shows overall levels of service and intersections where significant impacts would occur.
- During the midday peak hour, the number of intersections that would operate at overall LOS E or F would increase from eight under the No Build condition to 12 under the Build condition, with 18 intersections significantly impacted, as shown in **Figure 16-12**. The number of traffic movements at LOS E or F would increase from 24 to 34.
- During the PM peak hour, the number of signalized intersections that are projected to operate at overall LOS E or F would increase from 10 under the No Build condition to 12 under the Build condition. The number of unsignalized intersections operating at LOS E or F would increase from two to five. As shown in **Figure 16-13**, 24 intersections would experience significant impacts. The number of traffic movements projected to operate at LOS E or F would increase from 37 to 55.
- Nine of the signalized intersections where significant impacts would occur would have those impacts during AM, midday, and PM peak hours. These intersections include Vernon Boulevard and 44th Drive; Vernon Boulevard at Borden Avenue; Jackson Avenue at intersections with 11th Street (Pulaski Bridge), 21st Street, and 49th Avenue; Northern Boulevard and 31st Street/40th Avenue; 21st Street and 44th Drive; and on Van Dam Street at intersections with Thomson Avenue and the Queens-Midtown Expressway (LIE) westbound exit ramp.
- Six of the unsignalized intersections where significant impacts would occur would have those impacts during all time periods, including Center Boulevard and 48th Avenue; 5th Street at intersections with 49th, 50th, and Borden Avenues; Borden Avenue at 11th Street/QMT toll plaza exit ramp; and Vernon Boulevard and Queens Plaza South.

NEW INTERSECTIONS

As part of the new roadway development of the proposed actions, nine new intersections would be created within the project sites; six of these intersections are assumed to be signalized and three are assumed to be unsignalized. Future 2017 Build condition levels of service for the proposed new intersections are summarized in **Table 16-10** below. As shown in the table, all intersections would operate at overall LOS C or better during all time periods except for Center Boulevard and Borden Avenue, which would operate at overall LOS D during the weekday AM peak hour. All individual traffic movements would operate at LOS mid-D or better.

PARKING

This section addresses the ability of on-site parking spaces to accommodate projected parking demands under the 2017 Build condition. The RWCDS assumes full build out of the parking allowed by zoning (parking for 40 percent of the new residential units). Therefore, the RWCDS analyzed in the EIS assumes that the proposed actions would provide a total of 2,660 off-street parking spaces, with 2,000 spaces to be provided within the new buildings on Site A and 660 spaces to be built on Site B. Parking garages would be built on Parcels A, C, D, E, and G and at Site B. It is anticipated that residents and employees at developments on Site A could park in the garages on parcels throughout Site A and residents and employees on Site B could park in the garage(s) on Site B.

Table 16-10
2017 Build Condition—New Intersections Overall Levels of Service

Location	Weekday Peak Hour Level of Service		
	AM	Midday	PM
Signalized Intersections			
2nd Street and 55th Avenue	B	B	B
2nd Street and 56th Avenue	A	A	A
Center Boulevard and 56th Avenue	B	A	A
Center Boulevard and 54th Avenue	B	B	B
Center Boulevard and Borden Avenue	D	C	C
Center Boulevard and 51st Avenue	B	B	B
Unsignalized Intersections			
2nd Street and 57th Avenue	A	A	A
Center Street and 57th Avenue	A	A	A
Center Street and 55th Avenue	B	B	C

In addition, approximately 145 on-street parking spaces would be created by the new street network. It is assumed that off-street parking would primarily be used by the residential development but would also be available in garage space on Site A to school parking trips during daytime hours. Local retail, community facility, and parkland-generated parking trips would be accommodated by on-street parking spaces.

As shown in **Table 16-11**, weekday AM, midday, and PM peak hour off-street parking demands at Site A and Site B would be fully accommodated by the provided parking. However, there would be an overall parking shortfall during nighttime to early morning hours (7 PM-8 AM) of approximately 500 spaces. This shortfall could be partially relieved by the approximately 145 on-street spaces created as part of the proposed actions, but there would still be a substantial overnight shortfall. As a result, vehicles would need to search beyond the ¼-mile radius of the project sites to find available parking. A nighttime survey will be conducted during the period between completion of the Draft and Final EISs for a ½-mile radius to determine the extent to which additional on-street spaces may be available and to determine whether any resulting shortfall would be considered a significant impact.

Although the proposed actions would create new parking, the 156-space New York Water Taxi surface parking lot currently located at 2nd Street near Borden Avenue would be displaced. Under future 2017 No Build conditions, this parking facility would have a peak hour occupancy (1-2 PM) of as many as 142 autos. It is assumed that all displaced parking would be accommodated by the project’s parking garages within Site A during the hours of 8 AM-7 PM from spaces vacated by residential commuters. A survey will be conducted at the Water Taxi facility between completion of the Draft and Final EIS to determine the split of commuters, construction workers, and others parking at this facility.

Table 16-11
Weekday Parking Accumulation - 2017 Build Condition

Time	Site A				Site B				Overall			
	Autos In	Autos Out	Accumulated Parking Demand		Autos In	Autos Out	Accumulated Parking Demand		Autos In	Autos Out	Accumulated Parking Demand	
			No.	%			No.	%			No.	%
Midnight - 1 AM	62	62	2,300	115	20	20	759	115	82	82	3,059	115
1–2 AM	26	25	2,301	115	8	8	759	115	34	33	3,060	115
2–3 AM	14	15	2,300	115	5	5	759	115	19	20	3,059	115
3–4 AM	11	11	2,299	115	3	4	759	115	14	15	3,058	115
4–5 AM	11	11	2,298	115	3	4	759	115	14	15	3,057	115
5–6 AM	11	11	2,298	115	3	4	758	115	14	15	3,056	115
6–7 AM	22	22	2,298	115	7	7	758	115	29	29	3,056	115
7–8 AM	45	254	2,088	104	9	84	684	104	54	338	2,772	104
8–9 AM	239	560	1,767	88	33	185	532	81	272	745	2,299	86
9–10 AM	95	383	1,480	74	32	126	437	66	127	509	1,917	72
10–11 AM	90	272	1,298	65	30	90	377	57	120	362	1,675	63
11 AM–Noon	127	191	1,234	62	42	63	356	54	169	254	1,590	60
12–1 PM	170	170	1,234	62	56	56	356	54	226	226	1,590	60
1–2 PM	166	166	1,234	62	55	55	356	54	221	221	1,590	60
2–3 PM	152	152	1,234	62	50	50	356	54	202	202	1,590	60
3–4 PM	350	300	1,284	64	115	63	408	62	465	363	1,692	64
4–5 PM	313	225	1,372	69	103	69	442	67	416	294	1,814	68
5–6 PM	543	263	1,651	83	179	77	545	83	722	340	2,196	83
6–7 PM	443	238	1,856	93	146	79	612	93	589	317	2,468	93
7–8 PM	421	180	2,096	105	139	60	692	105	560	240	2,788	105
8–9 PM	183	78	2,201	110	60	26	726	110	243	104	2,927	110
9–10 PM	147	69	2,279	114	49	23	752	114	196	92	3,031	114
10–11 PM	168	71	2,375	119	55	24	784	119	223	95	3,159	119
11 PM–Midnight	122	53	2,300	115	40	18	759	115	162	71	3,059	115
Total Parking Spaces	2,000				660				2,660			

Notes:
1. Garages within Site A would include all Site A generated residential parkers and all school parkers.
2. Garages within Site B would include all Site B generated residential parkers.

TRAFFIC AND SAFETY

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

During this period, a total of 273 reportable accidents, no fatalities, 256 injuries, and 19 pedestrian-related accidents occurred at the study area intersections. A rolling total of accident data identifies no study area intersections as high-pedestrian-accident locations in the 2004 to 2007 period. **Table 16-12** depicts total accident characteristics by intersection during the study period, as well as, a breakdown of pedestrian and bicycle accidents by year and location.

Existing and future traffic conditions are described above. Where necessary, mitigation measures are recommended in Chapter 22, "Mitigation." Since none of the study area intersections are considered high-pedestrian-accident locations and congested conditions would be alleviated to the extent practicable, the proposed actions are not expected to result in significant adverse safety impacts to pedestrians.

Table 16-12
Accident Data

Intersection		Study Period			Accidents by Year							
					Pedestrian				Bicycle			
North-South Roadway	East-West Roadway	Reportable Accidents	Total Fatalities	Total Injuries	2004	2005	2006	2007	2004	2005	2006	2007
Center Boulevard	48th Avenue	0	0	0	0	0	0	0	0	0	0	0
Center Boulevard	49th Avenue	0	0	0	0	0	0	0	0	0	0	0
Center Boulevard	50th Avenue	0	0	0	0	0	0	0	0	0	0	0
2nd Street	50th Avenue	0	0	0	0	0	0	0	0	0	0	0
2nd Street	51st Avenue	0	0	0	0	0	0	0	0	0	0	0
2nd Street	Borden Avenue	4	0	1	0	0	0	0	0	0	0	0
2nd Street	54th Avenue	0	0	0	0	0	0	0	0	0	0	0
5th Street	48th Avenue	1	0	1	0	1	0	0	0	0	0	0
5th Street	49th Avenue	1	0	0	0	0	0	0	0	0	0	0
5th Street	50th Avenue	1	0	0	0	0	0	0	0	0	0	0
5th Street	51st Avenue	2	0	0	0	0	0	0	0	0	0	0
5th Street	Borden Avenue	0	0	0	0	0	0	0	0	0	0	0
Vernon Boulevard	48th Avenue	5	0	4	0	0	0	0	0	0	0	0
Vernon Boulevard	49th Avenue	5	0	3	1	1	0	0	0	0	1	0
Vernon Boulevard	50th Avenue	3	0	0	0	0	0	0	0	0	0	0
Vernon Boulevard	51st Avenue	3	0	1	0	0	0	1	0	0	0	0
Vernon Boulevard	Borden Avenue	3	0	1	0	0	0	0	0	0	0	0
Borden Ave/11th St	QMT Ramps	2	0	0	0	0	0	0	0	0	0	0
21st St/50th Ave	Ramps to QMT	0	0	0	0	0	0	0	0	0	0	0
50 Ave/11th Pl	QMT WB Ramp	1	0	0	0	0	0	0	0	0	0	0
Jackson Avenue	51st Avenue	3	0	1	0	0	0	0	0	0	0	0
Jackson Avenue	50th Avenue	2	0	2	0	0	0	0	0	0	0	0
Jackson Avenue	49th Avenue	8	0	8	0	1	0	0	0	0	1	0
Jackson Ave/11th St	Pulaski Bridge Rd	3	0	2	0	0	0	0	0	0	0	0
49th Ave/11th St	Pulaski Bridge Rd	1	0	1	0	0	0	0	0	0	0	0
Jackson Avenue	21st Street	10	0	4	0	0	0	0	0	0	0	0
Jackson Avenue	Thomson Avenue	6	0	5	0	0	0	1	0	0	0	0
Jackson Avenue	44th Drive	20	0	23	2	1	0	0	0	2	0	0
Jackson Avenue	Qns Plz/Qns Blvd	68	0	63	1	0	1	0	0	1	0	0
Jackson Avenue	Qns Plz N/41st St	7	0	7	0	0	0	0	0	0	0	0
21st Street	Queens Plaza N	5	0	2	0	0	0	0	0	0	0	0
21st Street	Queens Plaza S	11	0	12	0	1	0	0	0	0	0	0
11th Street	Queens Plaza N	3	0	3	0	0	0	0	0	0	0	0
Vernon Boulevard	Queens Plaza S	2	0	2	0	0	0	0	0	0	1	0
21st Street	44th Drive	4	0	7	1	0	0	0	0	0	0	0
11th Street	44th Drive	12	0	13	0	1	1	0	0	0	0	0
Vernon Boulevard	44th Drive	2	0	3	0	0	0	0	0	0	0	0
Northern Blvd/31st	40th Avenue	11	0	9	0	0	0	0	0	0	0	0
Van Dam Street	Qns B/Thomson	25	0	14	0	0	0	0	0	0	0	0
Van Dam Street	Borden N of LIE	39	0	64	0	0	0	0	0	0	0	0
Van Dam Street	Borden S of LIE	1	0	0	0	0	0	0	0	0	0	0

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