

A. INTRODUCTION

The preceding chapters of this Environmental Impact Statement (EIS) discuss the potential for significant adverse impacts to result from the proposed actions. Where such potential impacts have been identified—in the areas of community facilities (public schools and public day care centers), traffic, transit and pedestrians, and noise—measures are examined to minimize or eliminate the anticipated impacts to the fullest extent practicable. These mitigation measures are discussed below. Areas in which the proposed actions would result in significant adverse impacts that cannot be fully mitigated through reasonably practicable measures are discussed in Chapter 23, “Unavoidable Adverse Impacts.”

In addition, this chapter analyzes the potential effects of the proposed traffic mitigation measures on pedestrian conditions, noise, and air quality.

B. COMMUNITY FACILITIES

PUBLIC SCHOOLS

The project sites are located in Planning Zone 3 (Zone 3) of Community School District 30 (CSD 30). Since the proposed actions would result in the introduction of a new residential population, which would generate a demand on local school resources, the EIS assessed the effects on elementary and intermediate school capacity within a 1½-mile study area, within Zone 3 of CSD 30, and within CSD 30 as a whole. For the analysis of high schools, school capacity within the borough of Queens was assessed. The analysis in Chapter 4, “Community Facilities,” concludes that the proposed actions would result in significant adverse impacts on elementary school enrollment within the 1½-mile study area, within Zone 3 of CSD 30, and within CSD 30. The proposed actions would also result in a significant adverse impact on intermediate schools within the 1½-mile study area. The proposed actions would not result in significant adverse impacts on intermediate school enrollment within either Zone 3 or CSD 30, nor on high school enrollment within Queens.

The quantitative analysis of schools did not account for the school that would be constructed as part of the proposed actions, which is anticipated to provide 1,250 school seats for intermediate and high school students, nor did it account for 1,219 elementary/intermediate seats that are budgeted for CSD 30 in the New York City Department of Education (DOE) five-year capital plan and which are likely to include approximately 665 seats for elementary and intermediate level students at Queens West. However, even with the addition of these seats, the proposed actions would result in a significant adverse impact on elementary schools in the 1½-mile study area, where there would be a deficit of 1,265 seats (153 percent utilization); in Zone 3, where there would be a shortage of 807 seats (115 percent utilization); and in CSD 30, where there would be a deficit of 1,486 seats (108 percent utilization). With the additional planned intermediate school seats to be included in the future without the proposed actions, there would

be a deficit of 949 intermediate school seats in the 1½-mile study area (358 percent utilization) in the future with the proposed actions. Some of the needed seats would be provided in the new intermediate school included as part of the proposed actions.

Potential mitigation measures for the proposed actions' impacts on elementary school enrollment, and for the potential impact on intermediate school enrollment, could include administrative actions undertaken by DOE, such as shifting the boundaries of school catchment areas within the CSD to move students to schools with available capacity, or creating new satellite facilities in less crowded schools. As an alternative, the school to be constructed as part of the proposed actions could be programmed with elementary school seats if this better meets the needs of Zone 3 in CSD 30 as identified by DOE. If none of these potential mitigation measures are undertaken, the proposed actions would result in an unmitigated significant adverse impact on elementary school enrollment and potentially on intermediate school enrollment.

PUBLIC DAY CARE CENTERS

According to the *CEQR Technical Manual*, a significant adverse impact to public day care centers could result if a proposed action results in: (1) a demand for day care slots greater than the remaining capacity of day care centers serving the area of the proposed action; and (2) that demand constitutes an increase of 5 percent or more of the collective capacity of the day care centers in the study area. As described in Chapter 4, "Community Facilities," the below-market rate units for low-income households at Site B would house an estimated 59 children eligible for publicly funded daycare. While the day care centers in the area near the project sites currently have adequate capacity to meet additional demand, the analysis predicted that these facilities will be over capacity in the future because of other proposed development projects. Because of future developments planned for the study area, day care facilities in the vicinity of the project sites will already be operating well above capacity in the future independent of the proposed actions. If no new day care facilities are added in the study area to respond to this new demand, the 59 new children from the proposed actions would exacerbate a predicted shortage in day care slots would constitute 26 percent of the collective capacity of day care centers serving the area. This increase may result in a potential significant adverse impact on day care capacity in the area.

Possible mitigation measures for this significant adverse impact include adding capacity to existing facilities if determined feasible through consultation with the Administration for Children's Services (ACS) or providing a new day care facility within or near the project sites. At this point, however, it is not possible to know exactly which type of mitigation would be most appropriate or when its implementation would be necessary, because the demand for publicly funded day care depends not only on the amount of residential development in the area but on the proportion of new residents who are children of low-income families (not all children meet the social and income eligibility criteria). Furthermore, several factors may limit the number of children in need of publicly funded day care slots. For example, families in the 1½-mile study area could make use of alternatives to publicly funded day care facilities. There are slots at homes licensed to provide family day care that families of eligible children could elect to use instead of public day care centers. Parents of eligible children may use ACS vouchers to finance care at private day care centers in the study area. Additionally, parents of eligible children are not restricted to enrolling their children in day care facilities in a specific geographical area, and could use the ACS voucher system to make use of public and private day care providers beyond the 1½-mile study area (some parent/guardians choose a day care center close to their employment rather than their residence). However, if additional day care facilities are not added

to the study area, the proposed actions would result in a significant adverse impact on day care facilities.

The proposed actions would provide 45,000 gross square feet of space for community facility use. A portion of this space might be leased as a public or private day care center. A typical ACS day care center requires 10,000 gross square feet of space, which typically can accommodate approximately 125 children.¹ If the center is privately run, these slots could be used by the children of income-eligible households with ACS vouchers. Absent the implementation of any needed mitigation measures, the proposed actions could have an unmitigated significant adverse impact on day care facilities.

C. TRAFFIC

As discussed in Chapter 16, “Traffic and Parking,” the proposed actions would result in significant adverse traffic impacts at a number of locations in the traffic study area. This section describes the mitigation measures needed at each of these locations to reduce or eliminate the significant impacts (see **Figures 22-1** to **22-3** for a graphic overview of the traffic improvements identified to mitigate significant traffic impacts). **Table 22-1** summarizes the significant adverse traffic impacts and whether they could be fully or partially mitigated, or remain unmitigated, with the implementation of traffic improvement measures. Details of the intersection capacity analyses and all traffic mitigation measures (e.g., signal timing changes, parking regulation changes, lane reconfigurations, etc.) are presented in **Appendix 22**.

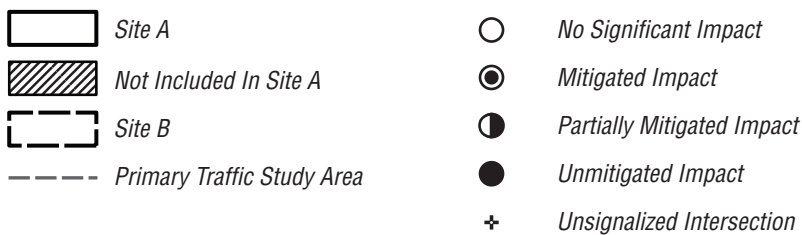
Table 22-1
Traffic Impact Mitigation Summary

| Intersections | AM Peak Hour | Midday Peak Hour | PM Peak Hour |
|----------------------------|-----------------|---------------------|-----------------|
| No significant impact | 28 | 32 | 28 |
| Fully mitigated impact | 15 | 14 | 13 |
| Partially mitigated impact | 3 | 1 | 4 |
| Unmitigated impact | 5 | 4 | 6 |

The major overall finding of the traffic mitigation analysis is that the vast majority of the 51 study area locations analyzed for the future with the proposed actions in the weekday AM, midday, and PM peak hours would either not be significantly impacted or could be mitigated with traffic improvement measures, including:

- Signal phasing and/or timing changes;
- Parking regulation changes to gain a travel lane at key intersections;
- Intersection or street channelization improvements;
- Lane markings and signage;
- Prohibition of turn movements; and
- Installation of traffic signals at currently unsignalized intersections.

¹ A minimum of 30 square feet per child of usable interior classroom space is required for an early childhood education center to be administered by the New York City Administration for Children's Services (usable activity space does not include bathrooms, halls, offices, food preparation, storage areas, and space occupied by fixed furniture and fixtures).



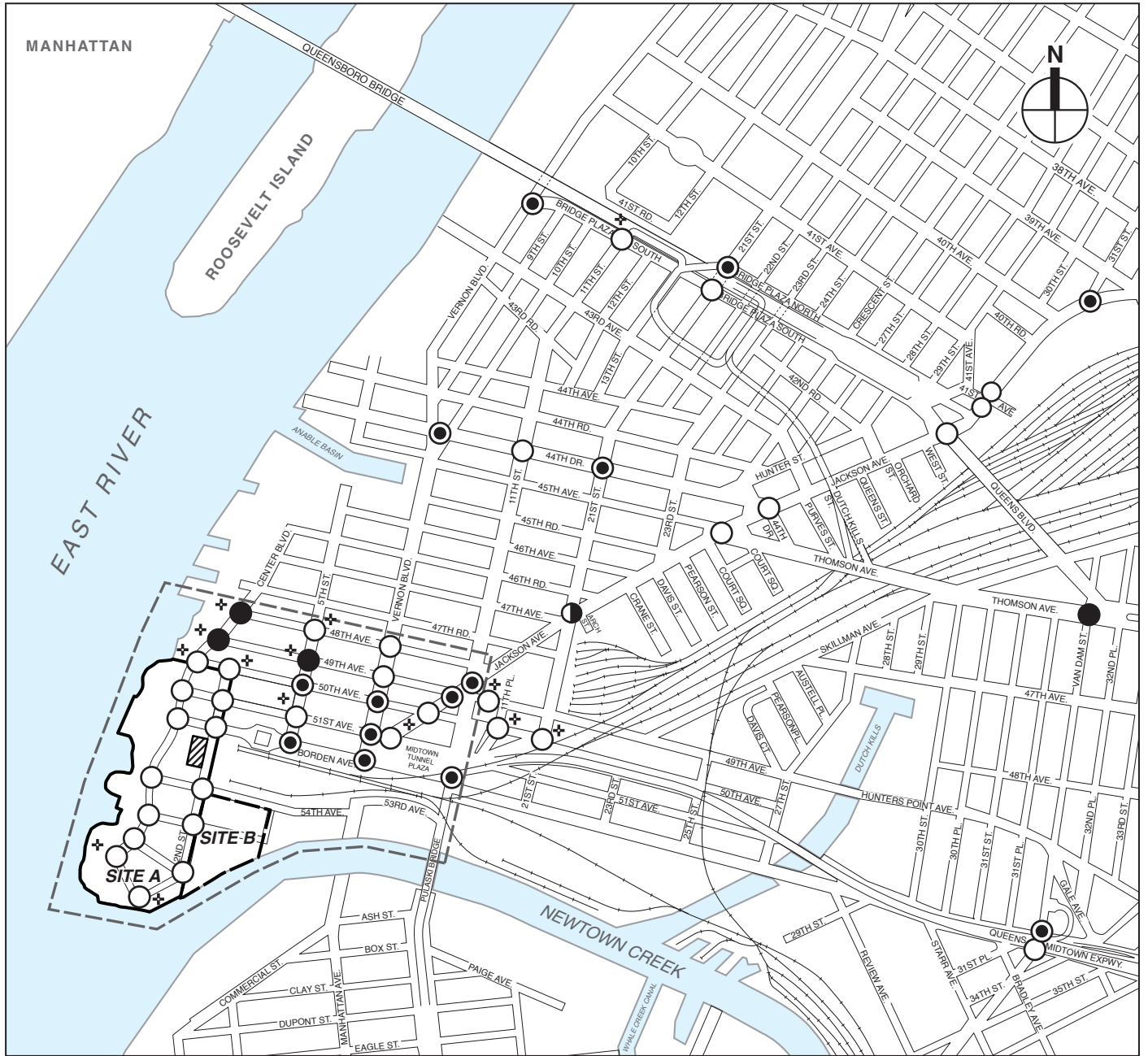
0 1000 2000 FEET

SCALE

Traffic Mitigation Overview

AM Peak Hour

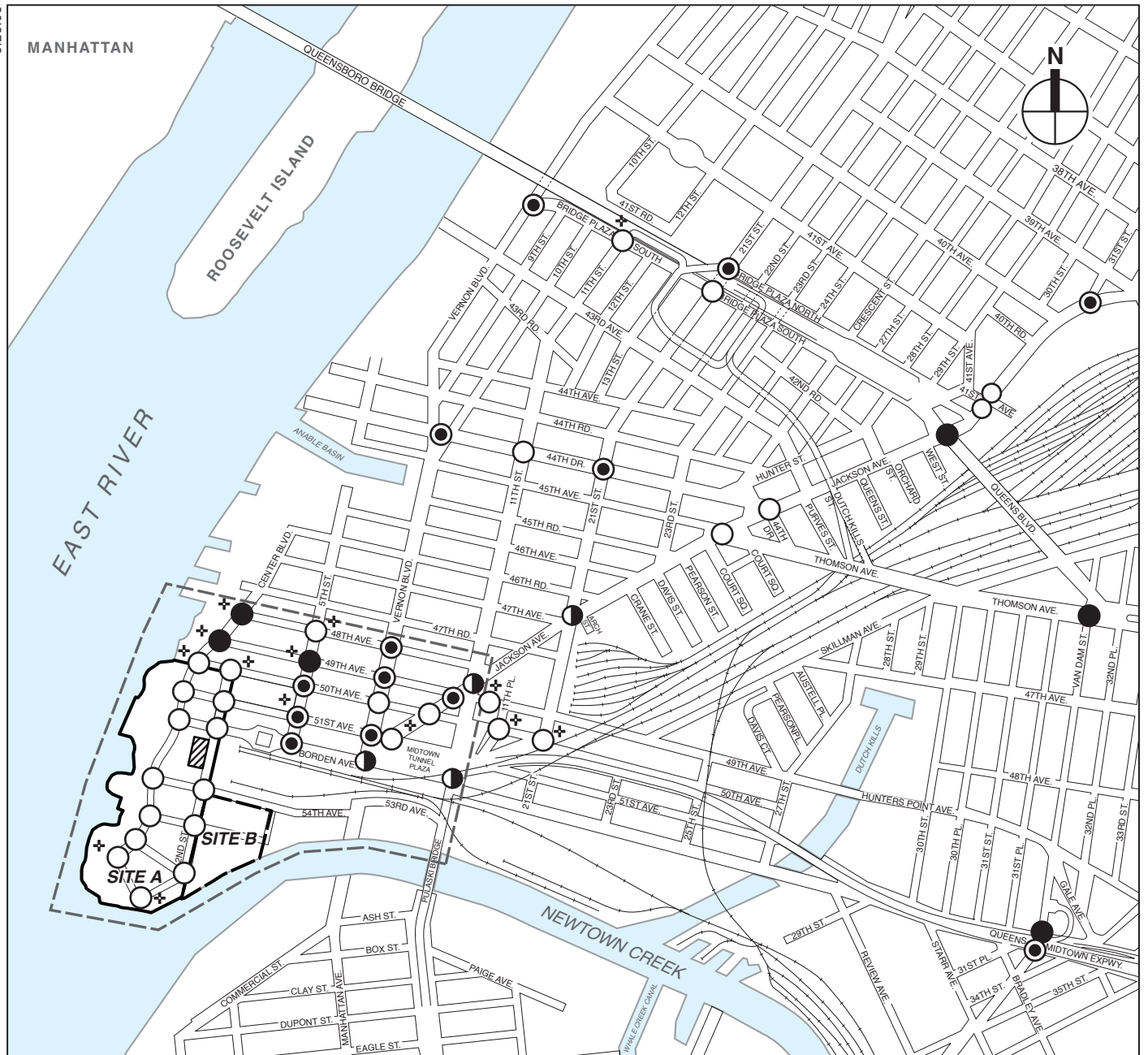
Figure 22-1



- Site A
- Not Included In Site A
- Site B
- Primary Traffic Study Area
- No Significant Impact
- Mitigated Impact
- Partially Mitigated Impact
- Unmitigated Impact
- Unsignalized Intersection

0 1000 2000 FEET
SCALE

Traffic Mitigation Overview
Midday Peak Hour
Figure 22-2



- Site A
- Not Included In Site A
- Site B
- Primary Traffic Study Area

- No Significant Impact
- Mitigated Impact
- Partially Mitigated Impact
- Unmitigated Impact
- + Unsignalized Intersection

0 1000 2000 FEET
SCALE

Traffic Mitigation Overview
PM Peak Hour
Figure 22-3

These measures represent the standard range of traffic capacity improvements to improve operating conditions and mitigate impacts and are implemented by the New York City Department of Transportation (NYCDOT). In addition, the conversion of a two-way street to a one-way street for one block was also proposed as a mitigation measure at one intersection.

Significant adverse traffic impacts that would result from the proposed actions could not be fully mitigated at the following intersections:

- In the weekday AM peak hour, three intersections (Vernon Boulevard and Borden Avenue, Jackson Avenue and 21st Street, and 11th Street and Borden Avenue at Queens-Midtown Tunnel [QMT] Toll Plaza Exit Ramp) could only be partially mitigated, and five intersections (Jackson Avenue and 44th Drive, Northern Boulevard/Queens Plaza East and Bridge Plaza, Van Dam Street and Thomson Avenue/Queens Boulevard, Center Boulevard and 48th Avenue, and 5th Street and 49th Avenue) could not be mitigated at all.
- In the weekday midday peak hour, there would be one partially mitigated intersection (Jackson Avenue and 21st Street), while four intersections (Van Dam Street and Thomson Avenue/Queens Boulevard, Center Boulevard and 48th Avenue, Center Boulevard at 49th Avenue, and 5th Street and 49th Avenue) could not be mitigated at all.
- In the weekday PM peak hour, four intersections (Vernon Boulevard and Borden Avenue, Jackson Avenue and 11th Street, Jackson Avenue and 21st Street, and 11th Street and Borden Avenue at Queens-Midtown Tunnel (QMT) Toll Plaza Exit Ramp) could only be partially mitigated, and six intersections (Jackson Avenue/Queens Plaza East and Queens Boulevard, the intersections of Van Dam Street with Thomson Avenue/Queens Boulevard, and the LIE exit ramp, the intersections of Center Boulevard with 48th Avenue and 49th Avenue, and 5th Street and 49th Avenue) could not be mitigated at all.

The traffic mitigation measures needed for each intersection are detailed below.

VERNON BOULEVARD CORRIDOR

All seven intersections analyzed along Vernon Boulevard would be significantly impacted during the AM peak hour, five would be significantly impacted during the midday peak hour, and six would be significantly impacted during the PM peak hour. Each of these impacts could be fully mitigated with traffic capacity improvements with the exception of Vernon Boulevard and Borden Avenue which could be partially mitigated in the AM and PM peak hours.

Vernon Boulevard and 48th Avenue: Signal timing modifications could fully mitigate impacts during the AM and PM traffic analysis hours, and there would be no significant impacts (and, therefore, no mitigation needed) during the midday peak hour.

Vernon Boulevard and 49th Avenue: Significant impacts during the AM and PM peak hours could be fully mitigated by signal timing changes. There would be no significant impacts for the midday peak hour, but the same shifts in signal timings would take effect during all time periods.

Vernon Boulevard and 50th Avenue: Significant impacts would occur during the AM and midday peak hours. The following measures would be needed to fully mitigate these impacts: (1) installing “No Standing” regulations from 7 to 10 AM (four parking spaces lost) along the west side of southbound Vernon Boulevard for the entire block to gain an additional travel lane; (2) modifying the cycle length to 90 seconds; and (3) installing “No Standing” regulations from 7 to 10 AM (3 spaces lost) along the west side of southbound Vernon Boulevard receiving for 80

feet and restripe as two receiving lanes. Even though significant impacts are not expected in the PM peak hour, signal timing changes would be in place for the PM peak hour.

Vernon Boulevard and 51st Avenue: Significant adverse impacts would occur during all peak hours analyzed. Modifying the cycle length would fully mitigate the impact and help coordinate the traffic operation with other intersections along Vernon Boulevard.

Vernon Boulevard and Borden Avenue: Significant impacts would occur during all three peak analysis hours. The following mitigation measures would be needed to fully mitigate these impacts during the midday peak hour and to partially mitigate them during the AM and PM peak hours: (1) installing “No Standing” regulations from 7 AM to 7 PM (seven parking spaces lost) along the south side of eastbound Borden Avenue for 250 feet from the intersection to gain an additional travel lane; concurrently, the centerline on the east side of the intersection would be shifted 6 feet to the north to provide two eastbound receiving lanes; (2) installing “No Standing Anytime” regulations (three parking spaces lost) along the west side of southbound Vernon Boulevard for 120 feet from the intersection concurrently with converting the angle parking along the east side of the central parking island to parallel parking (ten parking spaces lost), and shifting the central parking island (including the metered parking) 9 feet to the east to reconfigure the southbound approach as two left turn lanes and one right turn lane; (3) reconfigure the westbound approach as one through lane and one through-right lane with the receiving side for the westbound approach striped as two lanes; and (4) modifying the signal timing plan.

Vernon Boulevard and 44th Drive: Significant impacts during all three peak analysis hours would be fully mitigated by modifying the cycle length to 90 seconds.

Vernon Boulevard and Queens Plaza South: Significant impacts during all peak hours analyzed would be fully mitigated by modifying the cycle length to 90 seconds.

JACKSON AVENUE/NORTHERN BOULEVARD CORRIDOR

Seven of the 11 (10 signalized and one unsignalized) intersections analyzed along Jackson Avenue/Northern Boulevard would be significantly impacted during the AM peak hour, four would be significantly impacted during the midday peak hour, and five would be significantly impacted during the PM peak hour. Each of these impacts could be fully mitigated with traffic capacity improvements, except for the intersection of Jackson Avenue and 21st Street, which could only be partially mitigated during all peak hours, the intersection of Jackson Avenue with 11th Street/Pulaski Bridge, which could only be partially mitigated during the PM peak hour, the intersections of Jackson Avenue and 44th Drive and Northern Boulevard/Queens Plaza East and Bridge Plaza, which could not be mitigated during the AM peak hour, and the intersection of Jackson Avenue/Queens Plaza East and Queens Boulevard, which could not be mitigated during the PM peak hour.

Jackson Avenue and 50th Avenue: Significant impacts would occur during the AM peak hour and could be fully mitigated by installing “No Standing Anytime” regulations (three parking spaces lost) along the north side of eastbound 50th Avenue for 150 feet from the intersection to gain an exclusive left turn lane. Even though significant impacts are not expected in the midday and PM peak hours, the same physical mitigation measures would be in place during these peak hours.

Jackson Avenue and 49th Avenue: Significant impacts would occur during the AM, midday, and PM peak hours and could be fully mitigated by the following measures: (1) Installing “No

Standing Anytime” regulations (five parking spaces lost) on the south side of eastbound Jackson Avenue for the entire block and shifting the centerline of eastbound Jackson Avenue 5 feet to the north to provide two through lanes and one exclusive right turn lane for vehicles turning onto the Pulaski Bridge. (2) Restriping westbound Jackson Avenue from one shared left-through lane and one through lane to one through lane by prohibiting the left turn movement onto the 11th Street service road. The maximum number of vehicles expected to turn left during any peak hour is 23 vehicles per hour (vph). These vehicles would travel south on Jackson Avenue and turn left onto 50th Avenue at its intersection with Jackson Avenue to access the 11th Street service road. (3) Restriping the receiving side of westbound Jackson Avenue from two lanes to one lane and retaining the curbside parking for 120 feet. (4) Modifying the signal phasing.

Jackson Avenue and 11th Street (Pulaski Bridge): Significant impacts would occur during all three peak hours analyzed. The impacts would be fully mitigated during the AM and midday peak hours but could only be partially mitigated during the PM peak hour by the following measures: (1) directing right turning traffic from 11th Street (Pulaski Bridge) toward Jackson Avenue/Northern Boulevard/Queens Boulevard to the 11th Street service road via the existing slip ramp via new signage; (2) installing “No Standing Anytime” regulations (four parking spaces lost) along the west side of the 11th Street service road for the entire block to restripe it as two exclusive right turn lanes; (3) designating the shared through and left turn lane from northbound 11th Street (Pulaski Bridge) as an exclusive left turn lane; (4) posting signs along westbound Jackson Avenue to direct traffic heading to the Pulaski Bridge to use two left turn lanes; (5) installing “No Standing Anytime” regulations (11 parking spaces lost) along the north side of the Jackson Avenue westbound approach for the entire block; the approach would be restriped as one through lane and two left turn lanes; and (6) modifying the signal phasing and timing plan.

Jackson Avenue and 21st Street: Significant impacts would occur during all three peak analysis hours and could only be partially mitigated. The following measures would be needed: (1) modifying the signal timing plan; (2) installing “No Standing” regulations from 7 to 10 AM and 4 to 7 PM (four parking spaces lost) along the north side of westbound Jackson Avenue for the entire block; and (3) installing “No Standing” regulations from 7 AM to 7 PM (seven parking spaces lost) along the east side of northbound 21st Street for 250 feet from the intersection.

Jackson Avenue and Thomson Avenue: Significant impacts are not expected during any of the analysis periods.

Jackson Avenue and 44th Drive: Significant impacts during the AM peak hour could not be mitigated. Significant impacts are not expected during the midday and PM peak hours.

Jackson Avenue/Queens Plaza East and Queens Boulevard: Significant impacts are not expected during the AM and midday peak hours. Significant impacts during the PM peak hour could not be mitigated.

Jackson Avenue and 51st Avenue (Unsignalized): Significant impacts are not expected during any of the analysis periods.

Northern Boulevard/Queens Plaza East and Bridge Plaza: Significant impacts are not expected during the midday and PM peak hours. Significant impacts during the AM peak hour could not be mitigated.

Northern Boulevard and Queens Plaza North/41st Avenue: Significant impacts are not expected during any of the analysis periods.

Northern Boulevard/31st Street and 40th Avenue: Significant impacts during all three peak hours could be fully mitigated by signal timing modifications.

21ST STREET CORRIDOR

Two of the four (three signalized and one unsignalized) intersections analyzed along 21st Street would be significantly impacted during the AM, midday and PM peak hours. All significant impacts could be fully mitigated.

21st Street and Queens Plaza North: Significant impacts are not expected during the AM peak hour. Significant impacts during the midday and PM peak hour could be fully mitigated by signal timing modifications.

21st Street and Queens Plaza South: Significant impacts during the AM peak hour could be fully mitigated by signal timing modifications and restriping southbound 21st Street to one 12 foot wide left-through lane and one 14 foot wide through-right lane with a 6 foot hatched area along the west curb. No significant impacts are expected during the midday and PM peak hours; however, the geometric improvements required to mitigate the AM peak hour impacts would apply for all time periods.

21st Street and 44th Drive: Significant impacts would occur during all three peak analysis hours. The impacts could be mitigated for all analysis periods by installing “No Standing Anytime” regulation (four parking spaces lost) along the west side of southbound 21st Street for 120 feet to restripe it as one exclusive left turn lane and one shared through-right lane.

21st Street and 50th Avenue (Unsignalized): Significant impacts are not expected during any of the analysis periods.

VAN DAM STREET CORRIDOR

Significant impacts would occur at two of the three intersections analyzed along Van Dam Street during the AM and midday peak hours, and at all three intersections in the PM peak hour. Since the signal phasing and timing of the intersections of Van Dam Street with the LIE exit ramp and Borden Avenue work in conjunction with each other, some measures would need to be implemented at the intersection of Van Dam Street and Borden Avenue to mitigate the impacts at the intersection of Van Dam Street and the LIE exit ramp. Significant traffic impacts at the intersection of Van Dam Street and Thomson Avenue/Queens Boulevard could not be mitigated during all three peak analysis hours, and significant impacts at the intersection of Van Dam Street with the LIE exit ramp could not be mitigated during the PM peak hour.

Van Dam Street and Thomson Avenue/Queens Boulevard: Significant traffic impacts during the AM, midday, and PM peak hours could not be mitigated.

Van Dam Street and LIE Exit Ramp: Significant impacts during the AM and midday peak hours could be fully mitigated by modifying the signal phasing and timing plan, and restriping the north curb lane of the westbound approach of the LIE exit ramp as an exclusive right turn lane. Significant traffic impacts during the PM peak hour could not be mitigated.

Van Dam Street and Borden Avenue: No significant impacts would occur during the AM and midday peak hours. Signal timing modification at this intersection was needed to mitigate the

impact at the intersection of Van Dam Street and the LIE exit ramp during the AM peak hour. Significant traffic impacts during the PM peak hour could be mitigated by signal timing modifications.

CENTER BOULEVARD CORRIDOR

One of the nine intersections analyzed (five signalized and four unsignalized) along Center Boulevard would be significantly impacted during the AM peak hour, and two would be significantly impacted during the midday and PM peak hours. The intersection of Center Boulevard and 48th Avenue could not be mitigated during any of the peak analysis hours, and Center Boulevard and 49th Avenue could not be mitigated during the midday and PM peak hours.

Center Boulevard and 48th Avenue (Unsignalized): Installation of a traffic signal at this intersection would fully mitigate impacts during all peak hours analyzed; however, a detailed signal warrant analysis indicated that the warrant criteria would not be satisfied. Hence, this intersection could not be mitigated during any of the analysis periods.

Center Boulevard and 49th Avenue (Unsignalized): Significant impacts are not expected during the AM peak hour. Significant impacts during the midday and PM peak hours could not be mitigated. Installation of a traffic signal could mitigate all impacts; however, a detailed signal warrant analysis indicated that the warrant criteria would not be satisfied.

Significant impacts are not expected during any peak analysis hour at any of the seven additional intersections analyzed (five signalized and two unsignalized) along Center Boulevard. These include the intersections of Center Boulevard with 50th Avenue (unsignalized), 51st Avenue (new/signalized), Borden Avenue (new/signalized), 54th Avenue (new/signalized), 55th Avenue (new/signalized), 56th Avenue (new/signalized), and 57th Avenue (new/unsignalized).

2ND STREET CORRIDOR

Significant impacts are not expected during any peak analysis hour at the seven intersections analyzed (five signalized and two unsignalized) along 2nd Street. These include the intersections of 2nd Street with 50th Avenue (unsignalized), 51st Avenue (signalized), Borden Avenue (signalized), 54th Avenue (signalized), 55th Avenue (new/signalized), 56th Avenue (new/signalized), and 57th Avenue (new/unsignalized).

11TH STREET/11TH PLACE CORRIDOR

One of the five intersections analyzed (one signalized and four unsignalized) along 11th Street/11th Place would be significantly impacted during all three analysis periods.

11th Street and 44th Drive: Significant impacts would not occur during any of the peak hours analyzed.

11th Street and Borden Avenue at Queens-Midtown Tunnel (QMT) Toll Plaza Exit Ramp (Unsignalized): Significant impacts with significantly high delays along all approaches are expected during the three peak analysis hours. Traffic improvements could mitigate all impacts during the midday peak hour, and could partially mitigate impacts during the AM and PM peak hours, and are described below.

The mitigation measures would include: (1) installing a traffic signal¹; (2) restriping eastbound Borden Avenue as an exclusive left turn lane and a shared through-right lane; (3) restriping westbound Borden Avenue as a shared through-right turn lane and a shared left-through lane; (4) prohibiting the through and left turn movements from the QMT exit ramp onto 11th Street and eastbound Borden Avenue. This traffic was assumed to use the 21st Street exit east of the QMT Toll Plaza/11th Street, proceed north on 21st Street and then turn onto 50th Avenue and continue southwest on Jackson Avenue and eventually use Vernon Boulevard en route to eastbound Borden Avenue. Signage would be provided along the QMT to direct traffic headed to 11th Street and eastbound Borden Avenue to use the 21st Street ramp; (5) allowing southbound right turns from the QMT toll plaza exit ramp to make “right turns on red” to reduce the potential for queuing into the QMT toll plaza area; and (6) prohibiting through and left turning movements along northbound 11th Street. Vehicles were assumed to divert back to 54th Avenue and Center Boulevard to subsequently access Borden Avenue and the LIE.

A variation to this plan would be to channelize southbound right turns from the QMT exit ramp and allow this movement to be free flow. This could potentially be achieved by using approximately 12 feet from the north sidewalk along Borden Avenue to add a westbound lane west of the intersection. This could eliminate the potential for queuing into the QMT toll plaza since these right turns would not be controlled by the proposed traffic signal and sufficient width for two receiving lanes would be available for the westbound Borden Avenue through movement.

Significant impacts are not expected during any peak analysis hour at any of the three additional unsignalized intersections analyzed along 11th Street/11th Place corridor: 11th Place and 50th Avenue; 11th Street service road and 49th Avenue; and 11th Street and Queens Plaza South.

5TH STREET CORRIDOR

Three of the five intersections analyzed (all unsignalized) along 5th Street would be significantly impacted during the AM and midday peak hours, and four would be significantly impacted during the PM peak hour. Each of these impacts could be fully mitigated with traffic capacity improvements, except the intersection of 5th Street and 49th Avenue, which could not be mitigated during any of the three peak analysis hours.

5th Street and 48th Avenue (Unsignalized): Significant impacts are not expected during any of the analysis periods.

5th Street and 49th Avenue (Unsignalized): Installation of a traffic signal at this intersection would fully mitigate impacts during all peak hours analyzed; however, a detailed signal warrant analysis indicated that the warrant criteria would not be satisfied. Hence, this intersection could not be mitigated during any of the analysis periods.

5th Street and 50th Avenue (Unsignalized): Significant impacts during all three peak hours could be mitigated by installing a traffic signal at this intersection. This would occur concurrently with installing “No Standing Anytime” regulations along the east side of northbound 5th Street for the entire block (seven parking spaces lost) and installing “No Standing Anytime” regulations along the east side of southbound 5th Street for 120 feet (four

¹ An analysis performed using the CORSIM simulation model indicates that approximately three to four vehicles would result at the 95th percentile level at the back of queue for the southbound right turns from the QMT.

parking spaces lost). A detailed signal warrant analysis indicated that the peak hour warrant would be satisfied.

5th Street and 51st Avenue (Unsignalized): Significant impacts are not expected during the AM and midday peak periods. Impacts during the PM peak period could be mitigated by installing an “All Way” stop sign on each approach and the conversion of 51st Avenue to a one-way westbound street between 2nd Street and 5th Street. For one block between 2nd Street and 5th Street, 51st Avenue is currently a two-way roadway. It carries one-way westbound traffic to the west of 2nd Street and to the east of 5th Street. At this intersection, it is expected that a maximum of 15 vph would turn right and 2 vph would turn left (in the eastbound direction) in the future with the proposed actions. As a result of the proposed mitigation, these vehicles would use 2nd Street to travel to their destination.

5th Street and Borden Avenue (Unsignalized): Installation of a traffic signal at this intersection would fully mitigate impacts during all peak hours analyzed. This would occur concurrently with installing “No Standing Anytime” regulations along the west side of southbound 5th Street for the entire block (seven parking spaces lost) and shifting the centerline 4 feet to the west, to gain one 11-foot travel lane, and restriping eastbound Borden Avenue to one 14.5 foot exclusive left turn lane and one 14.5-foot through lane. A detailed signal warrant analysis indicated that the peak hour warrant would be satisfied.

IMPLEMENTATION

Each of the traffic capacity improvements described above requires the approval of NYCDOT. Mitigation measures identified at the LIE entrance at 11th Street and Borden Avenue just east of the QMT toll booths might also require approval from NYSDOT and/or the Metropolitan Transportation Authority (MTA) Bridges and Tunnels. Except for redesign of this intersection at the entry/exit to the LIE, the other traffic improvements, including signal timing and phasing changes, parking prohibitions, and intersection restriping and channelization modifications, are typical measures employed by NYCDOT to improve traffic conditions in New York City.

With the implementation of the traffic mitigation measures described above, several new parking prohibitions would result in the removal of approximately 85 to 90 parking or “standing” spaces, including approximately 32 parking meters. Vernon Boulevard would lose approximately 20 spaces (including 10 meters) near Queens Plaza South and between 49th Avenue and Borden Avenue. Jackson Avenue would lose about 20 spaces (including approximately 16 meters) between 50th Avenue and 21st Street. 5th Street would lose about 25 spaces between 49th Avenue and Borden Avenue. 21st Street would lose approximately 11 non-metered spaces near 44th Drive and Jackson Avenue. On 50th Avenue, three metered spaces would be lost at the intersection with Jackson Avenue. The 11th Street service road would lose approximately four non-metered spaces at Jackson Avenue. Borden Avenue would lose about seven metered spaces. No designated truck loading/unloading zones or bus layover space would be affected by the proposed parking modifications for mitigation. If it is determined that on-street parking should be retained at locations where such mitigation was assumed, additional unmitigated traffic impacts could result.

Of the traffic mitigation measures discussed in this chapter, new traffic signals are proposed at the following currently unsignalized intersections: 5th Street at 50th Avenue; 5th Street at Borden Avenue; and 11th Street and Borden Avenue at Queens-Midtown Tunnel (QMT) Toll Plaza Exit Ramp). One signalized intersection (Van Dam Street and LIE exit ramp) would require new signal equipment since new exclusive phases would be proposed at these locations.

Also, it is expected that the intersection of Vernon Boulevard and Borden Avenue would require traffic signal equipment upgrades from the current mechanical systems to computerized systems to accommodate variable signal phase green times among the three analysis time periods.

While the original Hunters Point Waterfront Development Project FEIS was being completed in 1990, a broader range of capital cost improvements were identified in a parallel study, the Long Island City Regional and Local Street Network Transportation Study (i.e., “Long Island City Mitigation Study,” or “LICMIT”). Among its recommendations was to build a new exit ramp from the westbound LIE and entrance ramp to the eastbound LIE to alleviate congestion along the LIE corridor and its access/egress points. This was, and should still be, considered a longer-term strategy that could help mitigate adverse levels of service and delays at the Borden Avenue/11th Street/QMT toll plaza location mentioned above, and the intersection of Borden Avenue/Van Dam Street/LIE westbound exit ramp. The construction of two new ramps—which would undoubtedly require a detailed design and analysis effort by the New York State Department of Transportation (NYSDOT)—would be a significant asset to regional/local access for the proposed actions’ development as well as other existing and proposed developments in the area.

Also, if the Metropolitan Transportation Authority (MTA) New York City Transit (NYCT) extends the Q103 or another bus route into the project sites, it is possible that the magnitude of the impacts and mitigation measures identified may be reduced if such actions encourage a significant shift from auto to transit use. Since such decisions have not yet been made, the impact analyses in Chapter 16 and mitigation assessments in this chapter may be considered conservative.

In order to verify the need for, and effectiveness of, the proposed mitigation measures identified in the FEIS, the lead agency will develop and conduct a detailed traffic monitoring plan at full buildout of Site A in 2017. The lead agency will inform NYCDOT of the progress of the plan’s development and submit for NYCDOT’s review and approval a scope of work that will include all locations where significant traffic impacts have been identified in the FEIS and any locations analyzed in the FEIS where NYCDOT believes improvement measures may be warranted. Data collection conducted for the monitoring plan will include 24-hour Automatic Traffic Recorder (ATR) machine counts, manual turning movement counts, vehicle classification counts, pedestrian counts, intersection geometry and field information, signal timing and signal progression and any relevant information necessary for conducting the traffic monitoring plan.

The lead agency will submit to NYCDOT design drawings for any mitigation measures as per American Association of State Highway and Transportation Officials (AASHTO) and NYCDOT specifications. NYCDOT will participate in the review process relating to all future modifications to geometric alignment, striping, and signage during the preliminary and final design phases. In addition, the lead agency or the future developer will be responsible for any cost associated with the monitoring effort. The City or future developer will be responsible for the cost of the design and construction of any or all improvement measures identified in the FEIS or through the traffic monitoring plan as warranted due to project-generated traffic.

D. TRANSIT AND PEDESTRIANS

OVERVIEW

As discussed in Chapter 17, “Transit and Pedestrians,” the proposed actions would result in significant adverse impacts to two stairways at the Vernon Boulevard-Jackson Avenue subway

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station on the No. 7 line, bus line-haul on the B61 and Q103 routes, and street level pedestrian facilities (one sidewalk, one corner, and four crosswalks) at the Vernon Boulevard and 50th Avenue, and the 2nd Street and Borden Avenue intersections, primarily because of high volumes of pedestrians headed to and from the No. 7 subway station. Potential measures to mitigate these impacts are described below.

The first section describes recommended measures to mitigate the significant adverse impacts on two subway station stairways. The remaining discussion describes two different strategies to mitigate significant adverse impacts identified for bus line-haul and street-level pedestrian facilities, as follows:

- The “Capacity Improvement Option,” which would increase the number of buses on impacted bus routes and augment the physical capacity at impacted street-level pedestrian facilities.
- The “Enhanced Bus Service Option,” which accounts for the extension of the Q103 service south into the Hunter's Point South district, and would result in a different travel patterns in the neighborhood and therefore would alter the conclusions made for the Build condition. In this scenario, subway patrons would have the option and some would choose to ride the bus rather than walk between the subway and the project sites. In addition, bus-only riders would not need to walk to or from Vernon Boulevard to connect with the Q103 bus route. The resulting shift would increase bus ridership on the Q103 but would also eliminate or diminish impacts at pedestrian facilities in the study area.

Another long-term capital improvement that would improve conditions at the Vernon Boulevard-Jackson Avenue subway station and street-level pedestrian conditions near the station (at 50th Avenue and Vernon Boulevard) would be the construction of a new subway stair to the Manhattan-bound No. 7 train on the opposite side of Vernon Boulevard from the existing entrance—i.e., on the northwest corner of Vernon Boulevard and 50th Avenue within the existing open lot currently used for private parking. This mitigation would eliminate the need for pedestrians to cross Vernon Boulevard to reach the Manhattan-bound trains. By greatly improving pedestrian conditions at this location, this new stair would also in turn eliminate or reduce the proposed actions' significant adverse traffic impacts at this intersection. However, because the feasibility of this mitigation cannot be realistically determined at this time due to its need to acquire private property or to secure a transit easement and the possibility of physical constraints in tunneling underneath Vernon Boulevard, its potential benefits in mitigating significant adverse impacts are not presented. Based on the findings made in this FEIS and the actual growth in ridership realized from completed developments in the area, the MTA and NYCT will in the future evaluate this and/or other potential station improvements, subject to available funding and MTA's long-term capital plans.

SUBWAY STATION OPERATIONS

The proposed actions would result in a projected decline in service levels at the street-level S7 and S8 stairways at the Vernon Boulevard-Jackson Avenue No. 7 subway station. During the AM peak period, the S8 stairway, which is on the northeast corner of Vernon Boulevard and 50th Avenue, would decline from LOS E under the No Build condition to LOS F under the Build condition. During the PM peak period, the S7 stairway, which is located on the southwest corner of the same intersection, would decline from LOS C under the No Build condition to LOS D under the Build condition. These declines would constitute significant adverse impacts on the subway station. As shown in **Table 22-2**, the S7 stairway would have to be widened by

approximately 1.6 feet, from its current width of 5.8 feet to 7.4 feet. The S8 stairway would also have to be widened by 1.6 feet, from its current width of 4.8 feet to 6.4 feet. These widenings would mitigate the projected significant adverse impacts at these stairways to their No Build or guideline levels, while having minimal effects on the available pedestrian space on the east sidewalk between 49th and 50th Avenues and the west sidewalk between 50th and 51st Avenues along Vernon Boulevard.

Table 22-2

2017 Mitigated Build Condition: Subway Station Stairway Analysis

| Vernon Boulevard—Jackson Avenue No. 7 Train Station Street-Level Stairway | Width (feet) | Effective Width (feet) | 15-Minute Pedestrian Volumes | | Friction Factor | 15-Minute | | | |
|--|-----------------|------------------------------|------------------------------------|------|--------------------|------------------|-----------------|-----|--|
| | | | Up | Down | | SVCD Capacity | V/SVCD Ratio | LOS | |
| | | | | | | | | | |
| AM Peak Period | | | | | | | | | |
| 50th Ave/Vernon Blvd (S8, NE Corner) | 6.4 | 5.4 | 64 | 881 | 0.80 | 646 | 1.46 | E | |
| PM Peak Period | | | | | | | | | |
| 50th Ave/Vernon Blvd (S7, SW Corner) | 7.4 | 6.4 | 675 | 84 | 0.80 | 768 | 0.99 | C | |
| Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> . | | | | | | | | | |

To improve S8 stairway operations to better than LOS E and return them to acceptable levels (LOS C/D), the stairway would have to be further widened, for a total widening of approximately 4 feet. This widening, however, would yield unacceptable pedestrian service levels on the Vernon Boulevard east sidewalk between 49th and 50th Avenues and would require the consideration of other design options, such as creating a sidewalk extension, which may have implications on traffic flow, or as discussed above, constructing a new stairway connection on the northwest corner of the intersection.

The implementation of the above mitigation measures would be coordinated with the MTA and NYCT to allow enough time for design and specification approvals and for the construction in order to address the increased demand that would result from development of the proposed actions by 2017. If the stairway widenings or other alternate measures are determined infeasible, the projected significant stairway impacts would remain unmitigated.

CAPACITY IMPROVEMENT OPTION

EFFECTS OF CAPACITY IMPROVEMENT OPTION ON BUS LINE HAUL LEVELS

The proposed actions would result in significant adverse impacts on the northbound and southbound B61 bus route during the AM and PM peak periods, respectively, and on the northbound and southbound Q103 during both peak periods.

More specifically, the B61 route would experience the following increases in passengers per bus between No Build and Build conditions:

- Northbound line-haul increasing from 43 to 61 average passengers per bus in the AM peak period (compared with a NYCT guideline capacity of 54 passengers per bus); and
- Southbound line-haul increasing from 73 to 96 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts, two additional northbound buses, for a total of 11 northbound buses, would be required during the AM peak period. During the PM peak period,

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two additional southbound buses, for a total of eight southbound buses, would be required to mitigate the projected impact back to the No Build level. However, since the PM peak period southbound B61 line-haul level would already be over NYCT guideline capacity (54 passengers per bus) under the No Build condition, five additional southbound buses, for a total of 11 southbound buses, would be needed to adequately accommodate the projected ridership under the Build condition.

The Q103 route would experience the following increases in average passengers per bus between the No Build and Build conditions:

- Northbound line-haul increasing from 30 to 86 average passengers per bus in the AM peak period (compared with a NYCT guideline capacity of 54 passengers per bus);
- Southbound line-haul increasing from 16 to 108 average passengers per bus in the AM peak period;
- Northbound line-haul increasing from 38 to 102 average passengers per bus in the PM peak period; and
- Southbound line-haul increasing from 48 to 121 average passengers per bus in the PM peak period.

To mitigate these significant adverse impacts, two additional northbound buses, for a total of four northbound buses; and two additional southbound buses, for a total of four southbound buses, would be required during the AM peak period. During the PM peak period, two additional northbound buses, for a total of four northbound buses; and three additional southbound buses, for a total of five southbound buses, would be required. **Table 22-3** provides a comparison of the existing service and the numbers of buses required to fully mitigate the identified significant adverse line haul impacts along the B61 and Q103 bus routes.

Table 22-3
2017 Mitigated Build Condition (Capacity Improvement):
Bus Line Haul Levels

| Route | Peak Period | Northbound Buses per Hour | | Southbound Buses per Hour | |
|---|-------------|---------------------------|------------------------------------|---------------------------|------------------------------------|
| | | Existing | Mitigation via Increase in Service | Existing | Mitigation via Increase in Service |
| B61 | AM | 9 | <u>11</u> | 7 | -- |
| | PM | 8 | -- | 6 | <u>8</u> <u>11</u> * |
| Q103 | AM | 2 | <u>4</u> | 2 | <u>4</u> |
| | PM | 2 | <u>4</u> | 2 | <u>5</u> |
| Notes: Both B61 and Q103 operate standard buses with a guideline capacity of 54 passengers per bus. * Number of buses required to operate within NYCT guideline capacity. | | | | | |

While the MTA and NYCT routinely monitors changes in bus ridership and would make the necessary service adjustments where warranted, these service adjustments are subject to the agencies' fiscal and operational constraints and, if implemented, are expected to take place over time.

EFFECTS OF CAPACITY IMPROVEMENT OPTION ON STREET LEVEL PEDESTRIAN OPERATIONS

Significant adverse pedestrian impacts were identified for the Vernon Boulevard west sidewalk between 50th and 51st Avenues, the northwest corner of Vernon Boulevard and 50th Avenue, and crosswalks at Vernon Boulevard and 50th Avenue (north and west crosswalks), and 2nd Street and Borden Avenue (east and west crosswalks). Measures that could be implemented to mitigate these impacts are discussed below.

Vernon Boulevard between 50th and 51st Avenues

- The west sidewalk would deteriorate from LOS B (5.0 pedestrians per foot per minute [PFM]) to LOS D (13.9 PFM) during the AM peak period. This same sidewalk would deteriorate from LOS B (5.4 PFM) to LOS D (12.1 PFM) during the midday peak period and from LOS B (5.1 PFM) to LOS D (14.2 PFM) during the PM peak period. Currently, a raised platform at the entrance to the restaurant, Tournesol, takes up part of the sidewalk space. During the summer, the restaurant uses this platform for outdoor seating, and in the winter, the extension is enclosed as an entrance foyer. Increasing the effective sidewalk width at this location from 5.0 to 5.7 feet would mitigate the identified significant adverse impact. This mitigation would require reducing the size of the restaurant raised platform and winter enclosure by 0.7 feet. If and when the need for the sidewalk mitigation is realized in the future, the restaurant could be asked to remove or narrow the extension.

Vernon Boulevard and 50th Avenue

- The northwest corner at this intersection would deteriorate from LOS B (49.8 SFP) to LOS E (13.2 SFP) during the AM peak period and from LOS B (51.3 SFP) to LOS D (18.9 SFP) during the PM peak period. The identified significant adverse impacts could be mitigated with constructing 2-foot corner “bulb-outs” or extensions on both Vernon Boulevard and 50th Avenue. In accordance with NYCDOT intersection neck-down standards and to accommodate proposed traffic mitigation at this intersection, a 6-foot half corner “bulb-out” is instead recommended along 50th Avenue. This corner capacity improvement would necessitate the removal of one parking space on the eastbound approach of 50th Avenue.
- The north crosswalk at this intersection would deteriorate from LOS E (11.8 SFP) to LOS F (3.6 SFP) during the AM peak period. It would deteriorate from LOS D (18.4 SFP) to LOS F (6.6 SFP) during the midday peak period and from LOS D (20.3 SFP) to LOS F (6.1 SFP) during the PM peak period. Restriping the width of this crosswalk from its existing width of 13.0 feet to 33.7 feet would be required to mitigate the projected significant adverse crosswalk impacts. However, because such widening exceeds the width of the adjoining sidewalks, the maximum typically permitted by NYCDOT, only a two-foot widening to 15 feet is recommended for this crosswalk, and the projected significant adverse crosswalk impact would be unmitigated. As described above, the provision of a new stairway access to the Manhattan bound No. 7 trains at the northwest corner of Vernon Boulevard and 50th Avenue would eliminate the need for many pedestrians to cross Vernon Boulevard at this location and possibly the identified significant adverse crosswalk impact. Based on the findings made in this FEIS and the actual growth in ridership realized from completed developments in the area, the MTA and NYCT will in the future evaluate this and/or other potential station improvements, subject to available funding and MTA’s long-term capital plans.

- The west crosswalk at this intersection would deteriorate from LOS A (64.2 SFP) to LOS D (18.0 SFP) during the AM peak period and from LOS C (33.5 SFP) to LOS D (16.2 SFP) during the PM peak period. Restriping the width of this crosswalk from its existing width of 15.5 feet to 19.6 feet, along with the above corner area extension, would be required to mitigate the projected significant adverse crosswalk impacts. However, as with the north crosswalk at this intersection, such widening would exceed the maximum width typically permitted by NYCDOT. Since the width of this crosswalk is already approximately the same as its adjoining sidewalk north of the intersection, no additional widening is recommended, and the projected significant adverse crosswalk impact would be unmitigated.

2nd Street and Borden Avenue

- The east crosswalk at this intersection would operate at LOS D (16.8 and 15.8 SFP, respectively) during the AM and PM peak periods. Also, the west crosswalk would operate at LOS E (13.5, 12.8, and 9.7 SFP, respectively) during the AM, midday, and PM peak periods. Widening the east and west crosswalks to 18.5 and 28.5 feet, respectively, would mitigate the projected significant adverse crosswalk impacts. However, because such widenings exceed the widths of the adjoining sidewalks, the maximum typically permitted by NYCDOT, the projected significant adverse crosswalk impacts would be unmitigated.

ENHANCED BUS SERVICE OPTION

Recognizing that the new development anticipated as a result of the proposed actions would be better served with more nearby bus service, discussions were initiated with the MTA and MTA Bus to explore opportunities to extend the Q103 route from Vernon Boulevard to the project sites. One possible route would be to extend the Q103 route east-west along Borden Avenue, looping it through the project sites southbound along 2nd Street to 54th Avenue, westbound towards the newly extended Center Boulevard, then northbound back towards Borden Avenue. To accommodate this potential service improvement, new bus stops and layover areas would be needed in and around the project sites. This bus routing option, developed in concert with the City, the Queens West Development Corporation, MTA, NYCT and MTA Bus, was analyzed, and the findings are presented below. However, according to the MTA, extension of the Q103 will require a significant expansion of service levels, and operating funds for this increase have not yet been identified.

This enhanced bus service option would provide subway patrons the opportunity to connect to and from the Vernon Boulevard-Jackson Avenue subway station via Q103 bus transfer. To assess the ramifications of the potential bus extension, it was assumed that 50 percent of the project-generated No. 7 train riders would, instead of walking, use the Q103 bus if it is extended to serve the future development. This anticipated change in travel to and from the Vernon Boulevard-Jackson Avenue subway station would result in increased ridership and additional line haul impacts on the Q103 bus route, but at the same time, would reduce pedestrian volumes along routes to and from the Vernon Boulevard-Jackson Avenue subway station. The discussion below details the likely effects of the Q103 route extension on bus line haul and pedestrian conditions in the study area.

EFFECTS OF ENHANCED BUS SERVICE OPTION ON BUS LINE HAUL LEVELS

Based on the above assumptions, the proposed extension of the Q103 bus route would attract over 1,300 new northbound passengers and approximately 700 new southbound passengers

during the AM peak hour, and approximately 700 new northbound and 1,300 new southbound passengers during the PM peak hour. As summarized in **Table 22-4**, 28 northbound and 18 southbound Q103 buses would need to be scheduled during the AM peak period, while 18 northbound and 30 southbound Q103 buses would need to be scheduled during the PM peak period to maintain guideline service levels.

Table 22-4
2017 Mitigated Build Condition (Q103 Extension): Bus Line Haul Levels

| Route | Peak Period | Northbound Buses per Hour | | Southbound Buses per Hour | |
|--|-------------|---------------------------|--|---------------------------|--|
| | | Existing | Mitigation via Route Extension and Increase in Service | Existing | Mitigation via Route Extension and Increase in Service |
| Q103 | AM | 2 | 28 | 2 | 18 |
| | PM | 2 | 18 | 2 | 30 |
| Notes: The Q103 operates standard buses with a guideline capacity of 54 passengers per bus. | | | | | |

Although the MTA and NYCT routinely monitor changes in bus ridership and would make the necessary service adjustments where warranted, the projected service demand on the extended Q103 route is significant in magnitude. These service adjustments are subject to the agencies' fiscal and operational constraints and are expected to take place over time.

EFFECTS OF ENHANCED BUS SERVICE OPTION ON STREET LEVEL PEDESTRIAN OPERATIONS

The reduced pedestrian levels associated with the Enhanced Bus Service Option would eliminate the significant adverse impacts associated with the proposed actions for the following locations:

- Vernon Boulevard west sidewalk between 50th and 51st Avenues;
- Vernon Boulevard and 50th Avenue northwest corner; and
- 2nd Street and Borden Avenue east crosswalk.

For the north and west crosswalks at Vernon Boulevard and 50th Avenue, and the west crosswalk at 2nd Street and Borden Avenue, the projected significant adverse impacts would remain unmitigated with the Enhanced Bus Service Option.

MITIGATED BUILD CONDITION WITH TRAFFIC MITIGATION MEASURES

As described above, intersection operations would alter with the implementation of various traffic mitigation measures. These measures, which include signal cycle/phasing/timing changes, could affect pedestrian circulation and service levels at intersection corners and crosswalks. The discussion below provides a comparison of the affected pedestrian elements and identifies the changes in pedestrian mitigation requirements.

EFFECTS OF CAPACITY IMPROVEMENT OPTION WITH TRAFFIC MITIGATION MEASURES ON STREET LEVEL PEDESTRIAN OPERATIONS

The implementation of the recommended traffic mitigation measures would not result in new significantly impacted pedestrian locations. The pedestrian impact identified at the northwest corner of Vernon Boulevard and 50th Avenue would still be fully mitigated with a 6-foot half corner "bulb-out." Similarly, the significant adverse impacts at the north and west crosswalks of

Vernon Boulevard and 50th Avenue, and at the east and west crosswalks of 2nd Street and Borden Avenue would remain unmitigated.

*EFFECTS OF ENHANCED BUS SERVICE OPTION WITH TRAFFIC MITIGATION
MEASURES ON STREET LEVEL PEDESTRIAN OPERATIONS*

The implementation of the recommended traffic mitigation measures would result in a new significant adverse pedestrian impact at the east crosswalk of Vernon Boulevard and 50th Avenue. This impact can be fully mitigated with a 1.5-foot widening of that crosswalk. However, the significant adverse impacts at the north and west crosswalks of Vernon Boulevard and 50th Avenue, and at the west crosswalk of 2nd Street and Borden Avenue would remain unmitigated.

**E. EFFECTS OF PROPOSED TRAFFIC MITIGATION MEASURES ON
AIR QUALITY**

Chapter 18, "Air Quality" reported the maximum predicted carbon monoxide (CO) and particulate matter (PM₁₀ and PM_{2.5}) concentrations for the proposed actions and concluded that there would be no potential for any significant adverse air quality impacts. Therefore, no air quality mitigation is required. This section considers the effects on air quality of the proposed actions with implementation of the traffic mitigation measures discussed above.

The tables presented below illustrate the effect that proposed traffic mitigation measures, developed as part of the traffic analysis, would have on maximum predicted pollutant concentrations in the future with the proposed actions. **Table 22-5** summarizes the maximum CO concentrations for the 2017 build year with the proposed actions with and without the traffic mitigation measures.

Table 22-5

**Future Modeled 8-Hour Average CO Concentrations With the Proposed
Actions With and Without Traffic Mitigation**

| Receptor Site | Location | Time Period | 8-Hour Concentration (ppm) | |
|---------------|---|-------------|----------------------------|---|
| | | | With the Actions | With the Actions and Traffic Mitigation |
| 1 | 49th Ave and Jackson Avenue / 11th Street | AM | 3.6 | 3.6 |
| | | PM | 3.5 | <u>3.6</u> |
| 2 | Borden Avenue and Vernon Boulevard | AM | <u>3.3</u> | <u>3.1</u> |
| | | PM | 3.2 | <u>3.1</u> |
| 3 | Borden Avenue and 2nd Street | AM | 2.7 | <u>2.7</u> |
| | | PM | 2.9 | <u>2.7</u> |
| 4 | Borden Avenue and Van Dam Street | AM | 5.9 | 4.5 |
| | | PM | 6.3 | 5.0 |

Note: 8-hour standard (NAAQS) is 9 ppm.

The results show that with the proposed traffic mitigation measures, future concentrations of CO with the proposed actions would be below the National Ambient Air Quality Standards (NAAQS). In addition, the incremental increases in 8-hour average CO concentrations are very small, and consequently would not result in a violation of the CEQR *de minimis* CO criteria.

Table 22-6 summarizes the maximum PM₁₀ concentrations with the proposed actions with and without the traffic mitigation measures. The results show that with the proposed traffic mitigation measures, future concentrations of PM₁₀ with the proposed actions would not result in any significant air quality impacts.

Table 22-6
Future Modeled 24-Hour Average PM₁₀ Concentrations (2017)

| Receptor Site | Location | 24-Hour Concentration (µg/m ³) ¹ | |
|---|------------------------------|---|---|
| | | With the Actions | With the Actions and Traffic Mitigation |
| 3 | Borden Avenue and 2nd Street | 52.79 | 56.75 |
| Note: ¹ NAAQS—24-hour average 150 µg/m ³ . | | | |

Tables 22-7 and 22-8 show the incremental change in PM_{2.5} concentrations that would result from the proposed actions with traffic mitigation measures compared to the future concentrations without the proposed actions. The results show that the daily (24-hour) and neighborhood scale annual PM_{2.5} increments are predicted to be well below the updated NYCDEP interim guidance criteria and, therefore, the proposed actions with traffic mitigation measures would not result in significant PM_{2.5} impacts at the analyzed receptor locations.

Table 22-7
**Future (2017) Modeled
24-Hour Average PM_{2.5} Concentration Increments**

| Receptor Site | Location | Increment |
|--|------------------------------|-----------|
| 3 | Borden Avenue and 2nd Street | 0.18 |
| Notes: EPA has lowered the NAAQS to 35 µg/m ³ , effective December 18, 2006. PM _{2.5} interim guidance criteria—24-hour average, < 2 µg/m ³ (5 µg/m ³ not-to-exceed value), based on the magnitude, frequency duration, location, and size of the area of the predicted concentrations. | | |

Table 22-8
**Future (2017) Neighborhood Scale
PM_{2.5} Concentration Increments**

| Receptor Site | Location | Increment |
|---|------------------------------|-----------|
| 3 | Borden Avenue and 2nd Street | 0.02 |
| Notes: NAAQS—annual average 15 µg/m ³ . PM _{2.5} interim guidance criteria—annual average (neighborhood scale) 0.1 µg/m ³ . | | |

In conclusion, predicted pollutant concentrations from the proposed actions with traffic mitigation would be comparable to the concentrations presented in Chapter 18, for the future with the proposed actions, without mitigation. Specifically, the predicted 24-hour particulate matter concentration increment would be slightly higher under the traffic mitigation scenario, but would not exceed the applicable thresholds. For most time periods and receptor sites analyzed, the CO concentrations resulting from the mobile sources associated with the proposed

actions with traffic mitigation would be lower than the corresponding concentrations without traffic mitigation. For time periods and receptor locations for which marginally higher CO concentrations were predicted under the traffic mitigation scenario, it was determined that those concentrations would be in compliance with the NAAQS and would not exceed the CO *de minimis* criteria, as shown in **Table 22-5**. Therefore, traffic mitigation would not result in any significant adverse impacts on air quality.

F. NOISE

EFFECTS OF PROPOSED TRAFFIC MITIGATION MEASURES

The proposed traffic mitigation measures would not substantially alter the vehicular speed, roadway geometry, or project-generated traffic routes to have any appreciable effect on noise levels at any of the four receptor sites used for the mobile source noise analysis. All four noise receptor locations used in the mobile source noise analysis are located on traffic routes that project-generated traffic would use to access and egress the project sites. At the locations where traffic mitigation measures are proposed, the proposed traffic mitigation measures would not significantly affect noise levels.

NOISE MITIGATION AT SIGNIFICANTLY IMPACTED LOCATIONS

The noise analysis provided in Chapter 19, "Noise," concludes that when completed in 2017, traffic generated by the reasonable worst-case development scenario would noticeably increase noise levels ($L_{eq(1)}$) at one analysis location, receptor 4, located on 51st Avenue between Vernon Boulevard and 2nd Street. The change in noise levels from project-generated traffic would exceed the *CEQR Technical Manual* impact criteria and result in significant noise impact during the weekday PM time period at this receptor location. The noise level increase would be due to project-generated vehicles that would use 51st Avenue, which is a lightly trafficked street in existing and No Build conditions, to travel to the project sites. The impact at this location would affect pedestrians and residences on 51st Avenue between Vernon Boulevard and 2nd Street.

With this increase in traffic, interior noise levels at residences facing 51st Avenue on this block could meet CEQR interior noise level requirements if the buildings' 51st Avenue facades have properly fitted, well-sealed, double-glazed windows and alternative means of ventilation (i.e., air conditioning) so that the windows could remain closed. Therefore, one mitigation measure to eliminate the noise impact predicted at this location for residential buildings would be the installation of properly fitted and well-sealed, double-glazed windows and a means of alternative ventilation (i.e., air conditioning) so that noise levels within these buildings would satisfy CEQR interior noise level requirements. A survey of residences at this location showed that the majority of the residences already have either double-glazed windows or storm windows, and many have some form of alternative ventilation (air conditioning). At existing residences where project impacts are predicted to occur, to mitigate project impacts, the City of New York would make storm windows and/or window air conditioners available, at no cost to owners of existing residences on 51st Avenue between 2nd Street and Vernon Boulevard, where such measures are not already installed. With these measures, interior noise levels would meet CEQR interior requirements and project impacts would be mitigated at residences.

There are no feasible or practicable mitigation measures that could be implemented to eliminate the noise impact predicted at this location for pedestrians. Consequently, the predicted impacts at this location would be considered as unmitigated significant impacts. However, predicted noise

levels on 51st Avenue adjacent to receptor 4 for Build conditions would still fall within CEQR's "marginally acceptable" range.

G. CONSTRUCTION IMPACTS

The highest amount of construction traffic associated with construction of the proposed actions is anticipated in the second and third quarters of 2012. However, the total number of vehicle trips generated during construction would still be approximately 45 to 50 percent lower than the total number of vehicle trips generated by the completed proposed actions during the AM and PM peak hours, respectively. Nonetheless, because existing and No Build traffic conditions at some study area intersections through which construction-related traffic would also travel would operate at unacceptable levels during commuter peak hours, it is possible that significant adverse traffic impacts could occur at some of these locations during construction, possibly at lower magnitudes than the operational impacts identified. Where traffic-related impacts during construction may occur, measures recommended to mitigate impacts of the proposed actions could be implemented early to aid in alleviating congested traffic conditions. However, where unmitigatable operational impacts are identified, there is also the potential for such impacts to occur during construction. *