

## A. INTRODUCTION

The preceding chapters of this Environmental Impact Statement (EIS) discuss the potential for significant adverse impacts to result from the proposed project. Where such potential impacts have been identified—as they were in the area of traffic—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 project would result in significant adverse impacts that cannot be fully mitigated through reasonably practicable measures are discussed in Chapter 8, “Unavoidable Adverse Impacts.”

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

## B. TRAFFIC

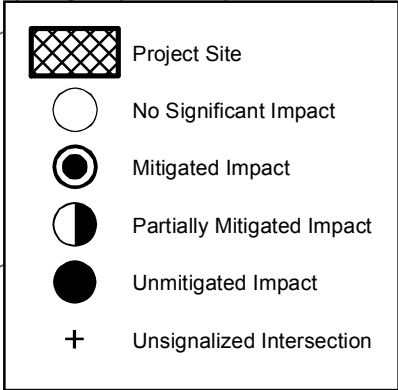
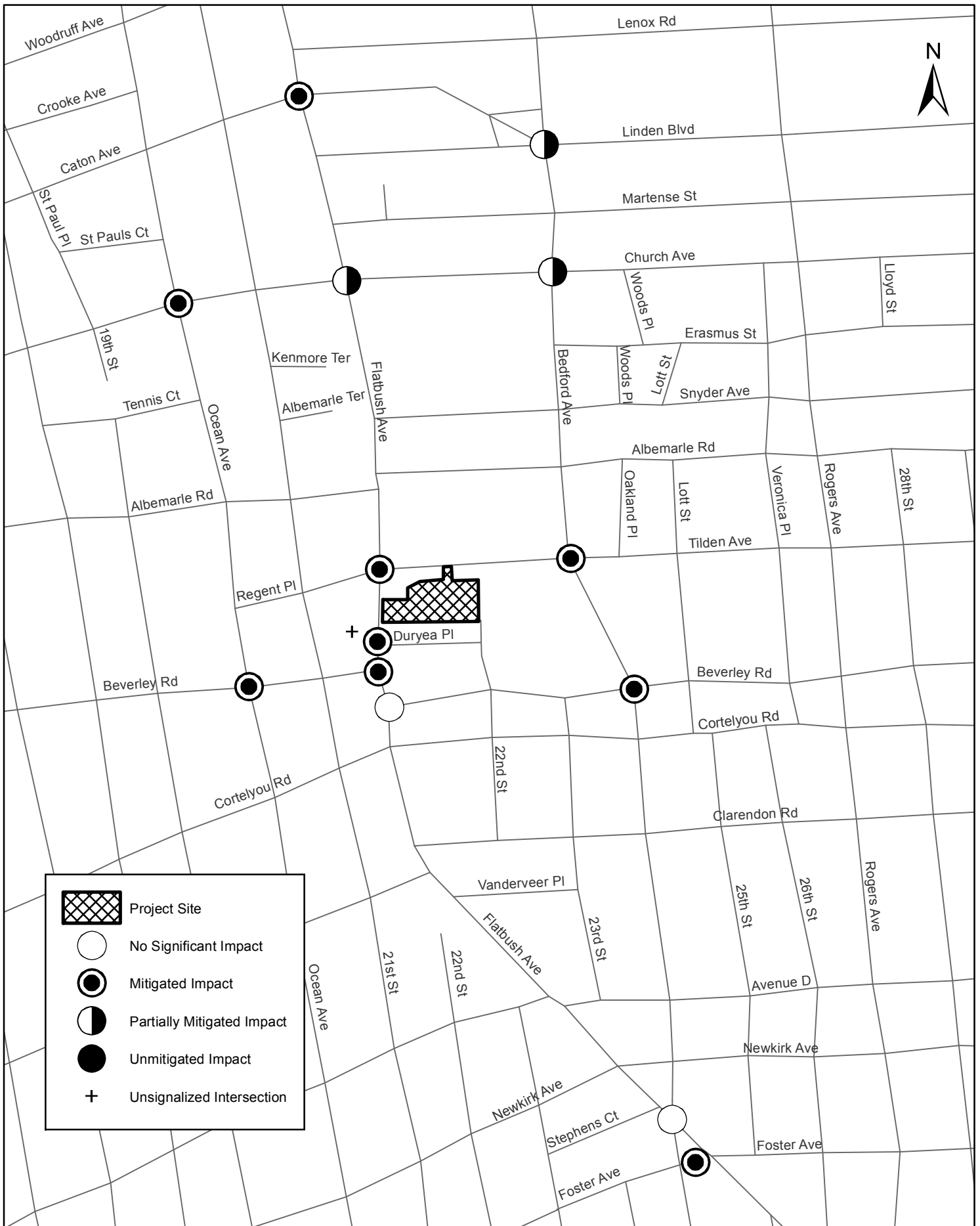
As discussed in Chapter 3, “Transportation,” the proposed project would result in significant adverse traffic impacts at a number of locations in the traffic study area. This section describes the mitigation measures needed at each of these locations to reduce or eliminate the significant impacts, or whether they would remain unmitigated (**Figures 8-1 through 8-3** provide a graphic overview of these findings). **Table 8-1** summarizes the significant adverse traffic impacts and whether they could be fully or partially mitigated 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 at the end of this chapter.

**Table 8-1**  
**Traffic Impact Mitigation Summary**

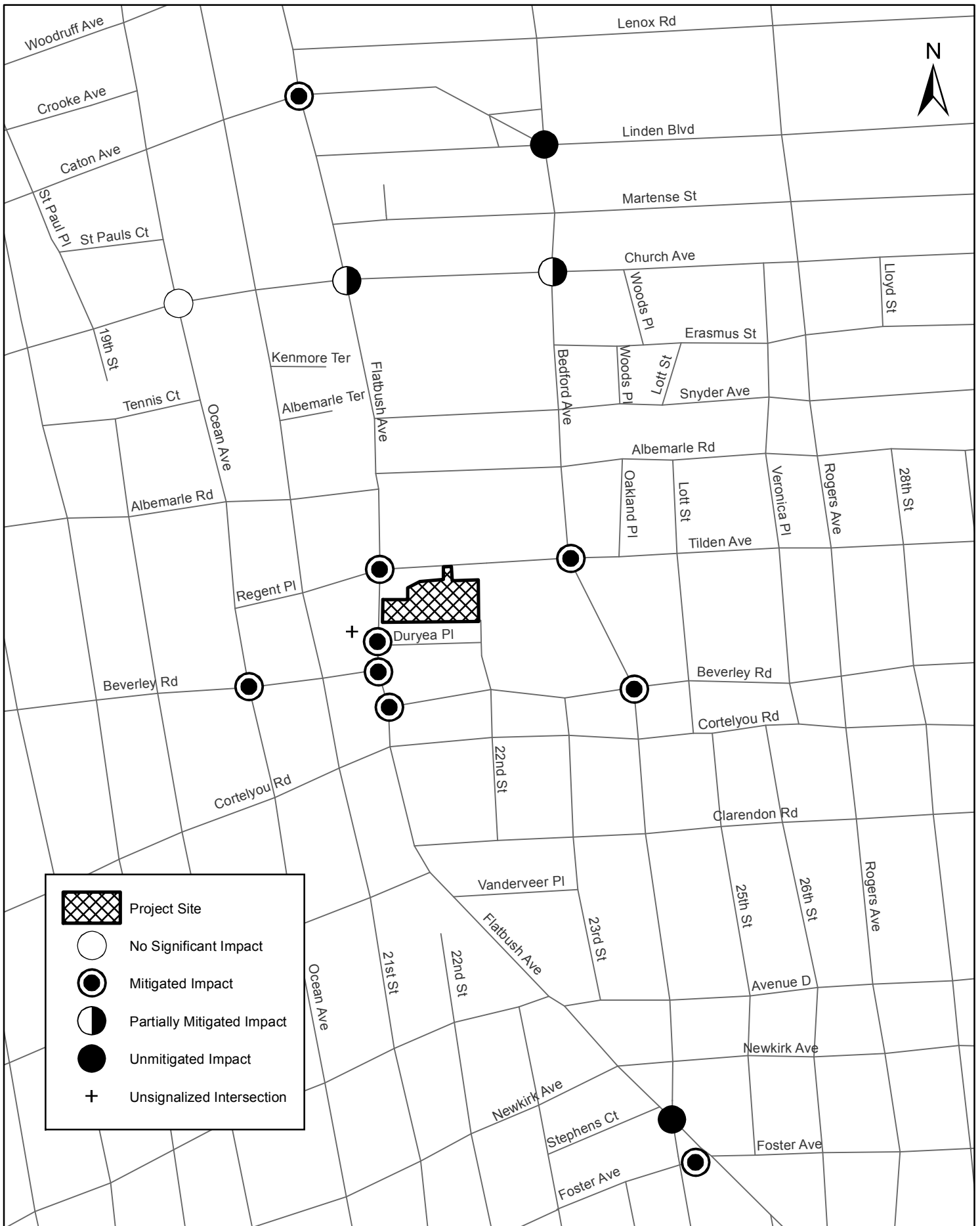
Intersections	Saturday Peak Hour		
	Midday Arrival	Midday Departure	Evening Arrival
No significant impact	2	1	4
Fully mitigated impact	9	9	7
Partially mitigated impact	3	2	2
Unmitigated impact	0	2	1

The major overall finding is that the majority of the 14 intersections analyzed would either not be significantly impacted or could be mitigated with readily implementable traffic improvement measures, including signal timing changes, parking regulation changes to gain or widen a travel lane at key intersections, lane markings and signage. These measures represent some of the standard traffic capacity improvements that are typically implemented by the New York City Department of Transportation (NYCDOT).

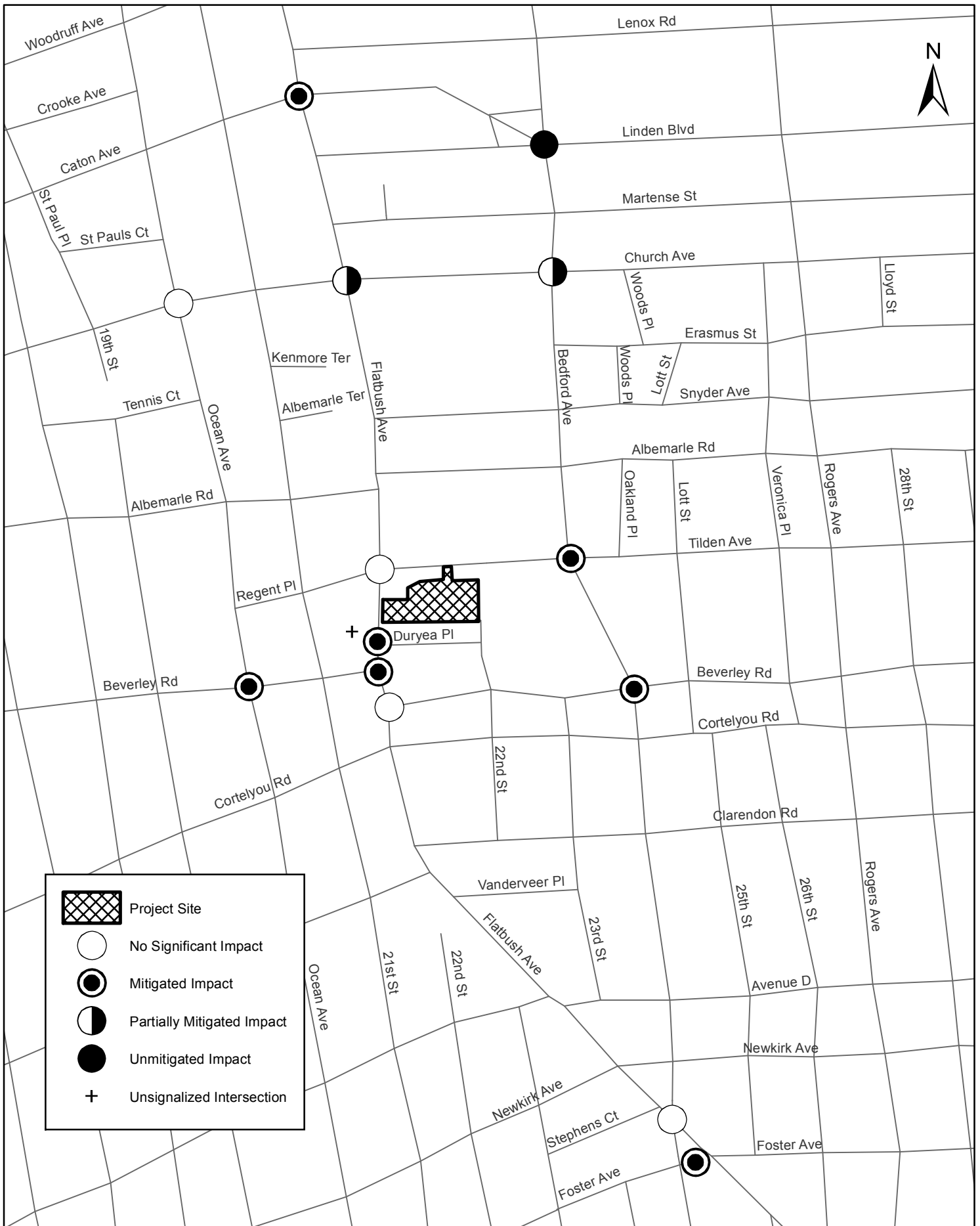
As shown in **Table 8-1**, in the Saturday midday arrival peak hour, three of the 14 intersections could only be partially mitigated; in the Saturday midday departure peak hour, two intersections









Traffic Mitigation Overview  
 Saturday Midday Arrival Peak Hour  
 Figure 8-1



Traffic Mitigation Overview  
 Saturday Midday Departure Peak Hour  
 Figure 8-2



	Project Site
	No Significant Impact
	Mitigated Impact
	Partially Mitigated Impact
	Unmitigated Impact
	Unsignalized Intersection

Traffic Mitigation Overview  
 Saturday Evening Arrival Peak Hour  
 Figure 8-3

would remain unmitigated and two intersections could be partially mitigated; and in the Saturday evening arrival peak hour, one intersection would remain unmitigated, and two intersections could be partially mitigated.

Four of the fourteen intersections have significant adverse traffic impacts that would result from the Proposed Actions which could not be fully mitigated in at least one peak hour, including:

- Flatbush Avenue and Church Avenue (partially mitigated during all three peak hours).
- Bedford Avenue and Linden Boulevard/Caton Avenue (partially mitigated during the Saturday midday arrival peak hour; unmitigated during the Saturday midday departure and evening arrival peak hours).
- Bedford Avenue and Church Avenue (partially mitigated during all three peak hours).
- Flatbush Avenue and Bedford Avenue/Stephens Court (unmitigated during the Saturday midday departure peak hour).

Three of these intersections are along Bedford Avenue which has one narrow travel lane with a bicycle lane and parking in each direction.

These unmitigatable and partially mitigated traffic impacts reflect a worst-case condition where an event is sold-out and 84 percent of all patrons arrive in one hour, and 100 percent of all departures leave in one hour. Traffic conditions would be less severe for non-sellout events since fewer patrons would attend.

Traffic mitigation measures needed for each intersection are described below.

### **FLATBUSH AVENUE CORRIDOR**

Six of the eight intersections analyzed along Flatbush Avenue would be significantly impacted during the Saturday midday arrival peak hour, all eight would be significantly impacted during the Saturday midday departure peak hour, and five would be significantly impacted during the Saturday evening departure peak hour. Each of these impacts could be fully mitigated with traffic capacity improvements with the exception of Flatbush Avenue and Church Avenue, which could only be partially mitigated during all peak hours, and Flatbush Avenue and Bedford Avenue/Stephens Court which could not be mitigated during the Saturday midday departure peak hour.

#### *FLATBUSH AVENUE AND CATON AVENUE*

Significant impacts would occur at this location during all three peak hours. These impacts could be fully mitigated during the Saturday midday and evening arrival peak hours with the following measures: (1) restripe the eastbound approach from one 20-foot wide lane with parking to one 10-foot wide left turn lane and one 10-foot wide through-right lane for 75 feet from the stop bar; (2) install “No Standing Anytime” regulations along the north curb of the westbound receiving side for 25 feet (entailing the loss of approximately one parking space); and (3) shift the centerline of westbound Caton Avenue one foot to the south, and restripe the westbound approach from one 27-foot wide lane with parking to one 10-foot wide left turn lane and one 18-foot wide through-right lane with parking. In addition to these measures, signal timing modifications would be needed to mitigate the Saturday midday departure peak hour.

#### *FLATBUSH AVENUE AND CHURCH AVENUE*

Significant impacts would occur at this intersection during all three peak hours and could only be partially mitigated. The following measures would be needed to partially mitigate this

intersection: (1) install “No Standing 12 PM to 8 PM Saturday” regulations along the north curb of the westbound approach for 100 feet (entailing a loss of approximately three parking spaces) to allow for two travel lanes; (2) restripe the westbound approach from one 21-foot wide lane with parking to one 10-foot wide lane and one 11-foot wide through-right lane for 100 feet from the stop bar; (3) restripe the westbound receiving side from one 21-foot wide lane to one 10-foot wide lane and one 11-ft wide curb lane; (4) restripe the northbound approach from one 10-foot wide left turn lane, one 11-foot wide through lane and one 11-foot wide right-turn lane to one 10-foot wide left turn lane, one 11-foot wide through lane and one 11-foot wide through-right lane; and (5) restripe the northbound receiving side from one 22-foot wide lane to two 11-foot wide lanes.

*FLATBUSH AVENUE AND TILDEN AVENUE/REGENT PLACE*

This intersection would have significant impacts during Saturday midday arrival and departure peak hours, and could be fully mitigated during both periods. The following measures would be needed: (1) install “No Standing Anytime” regulations along the north and south curbs of the westbound approach for 150 feet (entailing a loss of approximately twelve parking spaces) to allow for two westbound travel lanes; (2) stripe the westbound approach as one 11-foot wide left-through lane, one 11-foot wide right turn lane, and the eastbound receiving side as one 13-foot wide lane for 150 feet from the stop bar; and (3) stripe the westbound approach centerline to taper to the middle of the roadway beginning 150 feet east of the stop bar.

*FLATBUSH AVENUE AND BEVERLEY ROAD NORTH*

This intersection would have significant impacts during all three peak hours, and could be fully mitigated with the following measures: (1) install “No Standing 12 PM to 8 PM Saturday” regulations along the south curb of the eastbound approach for 150 feet (entailing a loss of approximately four parking spaces) to allow for two travel lanes; (2) restripe the eastbound approach from one 22-foot wide lane with parking to one 11-foot wide travel lane and one 11-foot wide lane which would serve as a travel lane for the peak analysis periods (Saturday 12 PM to 8 PM) and allow for parking during all other time periods; (3) install "No Standing 12 PM to 8 PM Saturday" regulations along the east curb of the northbound approach for 100 feet (entailing a loss of approximately four parking spaces) to increase the lane width of the approach; and (4) modify the signal timing.

*FLATBUSH AVENUE AND BEVERLEY ROAD SOUTH*

Significant impacts during the Saturday midday departure peak hour could be fully mitigated by installing “No Standing 4 PM to 6 PM Saturday” regulations along the north curb of the westbound approach for 100 feet (entailing a loss of approximately four parking spaces) to increase the lane width of the approach.

*FLATBUSH AVENUE AND BEDFORD AVENUE/STEPHEN COURT*

Significant impacts would occur only during the Saturday midday departure peak hour and could not be mitigated. Signal timing modifications would be needed at this intersection due to mitigation measures needed at the adjacent intersection of Flatbush Avenue and Bedford Avenue/Foster Avenue, since these two intersections have coordinated signal timing plans.

*FLATBUSH AVENUE AND BEDFORD AVENUE/FOSTER AVENUE*

This intersection would have significant impacts during all three peak hours analyzed and could be fully mitigated with the following measures: (1) install "No Standing Anytime" regulations along the south curb of the eastbound approach for the entire block (230 feet, entailing a loss of

approximately 10 parking spaces) to allow for two moving lanes; (2) restripe the eastbound approach from one 22-foot wide lane with parking to one 11-foot wide left turn lane and one 11-foot wide through-right lane for 230 feet from the stop bar; (3) restripe the westbound approach from one 22-foot wide lane to one 11-foot wide left-through lane and one 11-foot wide right turn lane for 75 feet from the stop bar; (4) install "No Standing 12 PM to 6 PM Saturday" along the east curb of the northbound Flatbush Avenue approach for 100 feet (entailing a loss of approximately four parking spaces) to increase the lane width of the approach; (5) install "No Standing 6 PM to 8 PM Saturday" along the east curb of the northbound Flatbush Avenue approach for 250 feet (entailing a loss of approximately 11 parking spaces) to increase the lane width of the approach; and (7) modify the signal timing.

*FLATBUSH AVENUE AND DURYEA PLACE*

Significant impacts would occur at this intersection during all three peak hours and could be mitigated by installing "No Left Turns 12 PM – 8 PM Saturday" signage along the southbound approach to prohibit left turns from Flatbush Avenue to Duryea Place. Southbound left turns would be diverted to adjacent streets such as Tilden Avenue, Beverley Road, and Cortelyou Road. No significant changes in traffic levels of service would result from the diverted trips.

**BEDFORD AVENUE CORRIDOR**

Significant impacts would occur at all four intersections analyzed along Bedford Avenue during all peak hours. Impacts at two of the intersections could be fully mitigated with traffic capacity improvements. The intersection of Bedford Avenue and Linden Boulevard/Caton Avenue could only be partially mitigated during the Saturday midday arrival peak hour and could not be mitigated during the other peak hours. Also, the intersection of Bedford Avenue and Church Avenue could only be partially mitigated during all peak hours.

*BEDFORD AVENUE AND LINDEN BOULEVARD/CATON AVENUE*

Significant impacts would occur at this intersection during all three peak hours and could be partially mitigated by modifying the signal timing during the Saturday midday arrival peak hour. This intersection could not be mitigated during the Saturday midday departure and evening arrival peak hours.

*BEDFORD AVENUE AND CHURCH AVENUE*

Significant impacts would occur at this intersection during all peak hours and could be partially mitigated. The measures needed to partially mitigate this intersection are as follows: (1) restripe the eastbound approach from one 22-foot wide lane with parking to one 11-foot wide left-through lane and one 11-foot wide right turn lane for 75 feet from the stop bar; (2) install "No Standing 12 PM to 8 PM Saturday" regulations along the north curb of the westbound approach for 75 feet (entailing a loss of approximately three parking spaces) to allow for two moving lanes; (3) restripe the westbound approach from one 22-foot wide lane with parking to one 11-foot wide travel lane and one 11-foot wide lane which would serve as a travel lane for the peak analysis periods (Saturday 12 PM to 8 PM) and allow for parking lane for all other time periods; (4) install "No Standing 4 PM to 6 PM Saturday" regulations along the west curb of the southbound approach for 250 feet (entailing a loss of approximately eight parking spaces) to reduce the effect of parking friction; and (5) install "No Standing 6 PM to 8 PM Saturday" regulations along the east curb of the northbound approach for 250 feet (entailing a loss of approximately 11 parking spaces) to reduce the effect of parking friction.

*BEDFORD AVENUE AND TILDEN AVENUE*

Significant impacts during all peak hours could be fully mitigated by the following measures: (1) install “No Standing Anytime” regulations along the north and south curb of the eastbound approach for 150 feet (entailing a loss of approximately seven parking spaces) to allow for two eastbound travel lanes; (2) stripe the eastbound approach as one 11-foot wide left-through lane, one 11-foot wide right turn lane, and the westbound approach (receiving side) as one 12-foot wide lane for 150 feet from the stop bar; and (3) stripe the eastbound approach centerline to taper to the middle of the roadway beginning 150 feet west of the stop bar.

*BEDFORD AVENUE AND BEVERLEY ROAD*

Significant impacts during all three peak hours could be fully mitigated with the following measures: (1) install "No Standing Anytime" regulations along the south curb of the eastbound approach for 125 feet (entailing a loss of approximately six parking spaces) to allow for two moving lanes; (2) restripe the eastbound approach from one 21-foot wide lane with parking and one 21-foot wide westbound receiving lane with parking to one 10-foot wide left turn lane tapered back 125 feet to the centerline, one 11-foot wide through-right lane with a 5-foot wide buffer, and one 16-foot wide westbound receiving lane; (3) install "No Standing Anytime" regulations along the north curb of the westbound approach for 75 feet (entailing a loss of approximately four parking spaces) to allow for two moving lanes; (4) restripe the westbound approach from one 21-foot wide lane with parking and one 21-foot wide eastbound receiving lane with parking to one 10-foot wide left turn lane tapered back 125 feet to the centerline, one 11-foot wide through-right lane with a 5-foot wide buffer, and one 16-foot wide eastbound receiving lane.

**OCEAN AVENUE CORRIDOR**

Both intersections analyzed along Ocean Avenue would be significantly impacted during the Saturday midday arrival peak hour, and one of the two intersections - Ocean Avenue and Beverley Road - would be significantly impacted during the Saturday midday departure and evening arrival peak hours. Each of these impacts could be fully mitigated with traffic capacity improvements.

*OCEAN AVENUE AND CHURCH AVENUE*

Significant impacts would occur at this location during the Saturday midday arrival peak hour and could be fully mitigated by installing "No Standing 12 PM to 2 PM Saturday" regulations along the south curb of the eastbound approach for 100 feet (entailing a loss of approximately four parking spaces) to increase the lane width of the approach, and by modifying the signal timing.

*OCEAN AVENUE AND BEVERLEY ROAD*

This intersection would have significant impacts during all three peak hours, and could be fully mitigated during all peak hours analyzed. The following measures would be needed to mitigate this intersection during the Saturday midday and evening arrival peak hours: (1) install "No Standing 12 PM to 8 PM Saturday" regulations along the south curb of the eastbound approach for 125 feet (entailing a loss of approximately five parking spaces) to allow for two moving lanes; (2) restripe the eastbound approach from one 22-foot wide lane with parking to one 11-foot wide travel lane and one 11-foot wide lane which would serve as a travel lane for the peak analysis periods (12 PM to 8 PM Saturday) and allow for parking at all other times; (3) install "No Standing 12 PM to 8 PM Saturday" regulations along the north curb of the westbound approach for 100 feet (entailing a loss of approximately four parking spaces) to allow for two moving lanes; and (4) restripe the westbound approach from one 22-foot wide lane with parking



to one 11-foot wide travel lane and one 11-foot wide lane which would serve as a travel lane only for the peak analysis periods and allow for parking for all other time periods. In order to mitigate this intersection during the Saturday midday departure peak hour, signal timing modifications would be needed in addition to these measures.

### **IMPLEMENTATION**

Each of the traffic capacity improvements described above fall within the jurisdiction of NYCDOT for implementation. The implementation of these measures would result in the loss of approximately 71 to 89 parking or “standing” spaces during peak event arrival and departure periods, including up to 32 metered spaces. Flatbush Avenue would lose up to 15 spaces (including meters) between Beverley Road and East 26th Street; Church Avenue would lose up to ten spaces (including meters) between East 19th Street and Veronica Place; Tilden Avenue would lose up to 19 spaces (including meters) between Flatbush Avenue and Bedford Avenue; and Bedford Avenue would lose up to 19 spaces between Martense Street and Erasmus Street. Approximately 38 spaces (including meters) would be lost along other streets, such as Caton Avenue, Beverley Road, and Foster Avenue. 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.

## **C. EFFECTS OF PROPOSED TRAFFIC MITIGATION MEASURES ON AIR QUALITY AND NOISE**

### **AIR QUALITY**

Chapter 4, “Air Quality,” presents the maximum predicted carbon monoxide (CO) and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) concentrations related to traffic generated by the proposed actions, and concludes that the proposed actions would not result in significant adverse air quality impacts. Therefore, no air quality mitigation is required.

Since the proposed traffic mitigation measures described above would alter traffic conditions when compared with the proposed actions, the localized air quality impacts with mitigation were modeled for each of the intersections analyzed in Chapter 4, “Air Quality.” The results of this modeling analysis (performed in accordance with methodologies described in Chapter 4) indicate that CO and particulate matter concentrations would not exceed National Ambient Air Quality Standards (NAAQS) or the city’s interim guidance criteria for PM<sub>2.5</sub>, and therefore would not affect the conclusions in Chapter 4 (see **Tables 8-2 through 8-5**). Therefore, no significant adverse air quality impacts would occur as a result of the proposed traffic mitigation measures.

### **NOISE**

The proposed traffic mitigation measures would not substantially alter the project-generated traffic routes to have any appreciable effect on noise levels at any of the three locations used in the mobile source noise analysis. All three noise locations used in the mobile source noise analysis are located adjacent to the development site. At the locations where traffic mitigation measures are proposed, the proposed traffic mitigation measures would not significantly affect noise levels.

**Table 8-2**  
**Maximum Predicted Future (2014) Eight-Hour Average**  
**No Action and Future with the Proposed Actions**  
**CO Concentrations with Traffic Mitigation**

Receptor Site	Location	Time Period	8-Hour Concentration (ppm)		
			No Action	Future with the Proposed Actions	Future with the Proposed Actions with Mitigation
1	Bedford Avenue and Tilden Avenue	SAT PM	2.4	2.6	2.8
2	Flatbush Avenue and Tilden Avenue	SAT PM	2.9	3.3	3.1
<b>Note:</b> 8-hour standard is 9 ppm.					

**Table 8-3**  
**Maximum Predicted Future (2014) 24-Hour Average**  
**No Action and Future with the Proposed Actions**  
**PM<sub>10</sub> Concentrations with Traffic Mitigation**

Receptor Site	Location	24-Hour Concentration ( $\mu\text{g}/\text{m}^3$ )		
		No Action	Future with the Proposed Actions	Future with the Proposed Actions with Mitigation
1	Bedford Avenue and Tilden Avenue	74.9	79.7	79.8
<b>Note:</b> National Ambient Air Quality Standard—24-hour, 150 $\mu\text{g}/\text{m}^3$ .				

**Table 8-4**  
**Maximum Predicted Future (2014) 24-Hour Average**  
**PM<sub>2.5</sub> Concentrations with Traffic Mitigation**

Receptor Site	Location	Annual Concentration ( $\mu\text{g}/\text{m}^3$ )	
		Increment	Increment (with Mitigation)
1	Bedford Avenue and Tilden Avenue	0.3	0.3
<b>Note:</b> PM <sub>2.5</sub> interim guidance criteria—24-hour average, 2 $\mu\text{g}/\text{m}^3$ (5 $\mu\text{g}/\text{m}^3$ not-to-exceed value).			

**Table 8-5**  
**Maximum Predicted Future (2014) Annual Average**  
**PM<sub>2.5</sub> Concentrations with Traffic Mitigation**

Receptor Site	Location	Annual Concentration ( $\mu\text{g}/\text{m}^3$ )	
		Increment	Increment (with Mitigation)
1	Bedford Avenue and Tilden Avenue	0.04	0.04
<b>Note:</b> PM <sub>2.5</sub> interim guidance criteria—annual (neighborhood scale), 0.1 $\mu\text{g}/\text{m}^3$ .			

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