

A. INTRODUCTION

This chapter considers mitigation measures to address significant adverse impacts resulting from the Proposed Project. Potential impacts were identified in the areas of transportation (traffic, transit, and pedestrians), ~~air quality~~, noise, and construction noise. Potential mitigation measures for each of these technical areas are discussed below.

B. TRANSPORTATION

As detailed in Chapter 13, “Transportation,” the analysis of potential effects to transportation elements concludes that the Proposed Project would result in potential significant adverse operational-period impacts to traffic, transit (subway station elements and subway line-haul), and pedestrians. Potential measures to mitigate these impacts to the extent practicable are described below. These measures were developed between the Draft and Final EIS, additional refinements and detailed analyses of the potential mitigation measures will be undertaken in coordination with the lead agency, the New York City Department of Transportation (DOT), and New York City Transit (NYCT). Where no feasible and practicable mitigation can be identified, the significant adverse impacts would remain unmitigated. ~~It is expected that some of the impacts identified in this DEIS as unmitigated could change and may be revised with the implementation of approved mitigation measures, thereby resulting in fewer unmitigated impacts. However, refinements to the analysis that will be conducted between Draft and Final EIS could also identify other impacts for traffic, transit, and pedestrians that may or may not be mitigatable, thereby yielding additional unmitigated impacts.~~

TRAFFIC

Traffic conditions were evaluated at 31 intersections for the 4 conventional operational peak hours—weekday AM, midday, and PM and Saturday midday/afternoon. An additional 11 intersections (for a total of 42 intersections) were also analyzed for the weekday and Saturday evening event peak hour conditions. Significant adverse traffic impacts were identified at ~~44~~ 12 intersections in the weekday AM peak hour, ~~6~~ five in the weekday midday peak hour, ~~11~~ 10 in the weekday PM peak hour, ~~23~~ 21 in the weekday evening peak hour, ~~9~~ nine in the Saturday midday/afternoon peak hour, and 20 in the Saturday evening peak hour. In total, significant adverse traffic impacts during one or more analysis peak hours were identified at 25 study area intersections.

Through the implementation of Measures, such as signal phasing and timing changes, some of these impacts could be fully mitigated, while others would be unmitigated. ~~new signals, lane re-striping, and parking regulation changes, will be explored between Draft and Final EIS to mitigate the projected significant adverse traffic impacts to the extent practicable. The implementation of these standard traffic mitigation measures would be subject to review and approval of by DOT.~~

Kingsbridge Armory Redevelopment

Additionally, an event day transportation management plan is under development to either be incorporated as part of the Proposed Project or as mitigation to accommodate security and crowd management and address congested conditions resulting from peak weekday and Saturday evening event activities. Potential strategies could include the use of traffic cones or other means to delineate traffic lanes, deployment of Traffic Enforcement Agents (TEAs) to regulate traffic and pedestrian circulation, and temporary installation of Variable Message Signs (VMSs) at critical decision points. Coordination with the New York City Police Department (NYPD) will be undertaken to preliminarily plan out these event day strategies, which may be refined over time based on actual conditions upon the operation of the Proposed Project. The Applicant has committed to conduct transportation monitoring efforts for the event venue that would include a reassessment of post-opening weekday and Saturday evening event peak traffic and pedestrian conditions and will be responsible for costs associated with DOT-approved mitigation measures and the deployment of TEAs and VMSs by the NYPD on event days.

The 2032 With Action traffic mitigation analysis results are summarized below in Table 22-1. This updated summary reflects DOT's guidance between Draft and Final EIS to eliminate the potential mitigation measures recommended for the event peak hours and classify the corresponding impacts as unmitigated.

Table 22-1
Summary of Traffic Mitigation Analysis Results

Analysis Peak Hour	With Action Condition		
	No. of Impacted Intersections	No. Fully Mitigated	No. Unmitigated
Weekday AM	12	4	8
Weekday Midday	5	2	3
Weekday PM	11	5	6
Weekday Evening	21	0	21
Saturday Midday/Afternoon	9	4	5
Saturday Evening	20	0	20

Notes: This table is new for the FEIS.

Table 22-2 presents the significant adverse traffic impacts identified for the Proposed Project. Measures recommended to address these impacts are detailed in Tables 22-3a through 22-3d. Signal timing modifications were recommended where appropriate to fully mitigate projected impacts. These potential mitigation measures are subject to modification and approval of DOT prior to implementation. At certain intersections, where no mitigation measures can be identified to address projected impacts, those impacts would remain unmitigated.

Table 22-2
2032 With Action Condition—Significant Adverse Traffic Impacts

Intersection		Analysis Peak Hour					
		Weekday				Saturday	
		AM	MD	PM	EVE	MD/AN	EVE
Major Deegan Expressway SB Ramp	West 230th Street						SB-LTR
Major Deegan Expressway SB Ramp	West Fordham Road				WB-L		
Major Deegan Expressway NB Ramp	West 230th Street				EB-DefL		
Major Deegan Expressway NB Ramp	West Fordham Road				NB-LTR		NB-LTR
Bailey Avenue	West 230th Street				NB-DefL		NB-DefL

Table 22-2

2032 With Action Condition—Significant Adverse Traffic Impacts

Intersection		Analysis Peak Hour					
		Weekday				Saturday	
North-South Roadway	East-West Roadway	AM	MD	PM	EVE	MD/AN	EVE
Bailey Avenue	West 225th Street/West Kingsbridge Road	EB-L		EB-L	EB-L	EB-L	
		WB-TR					
Sedgwick Avenue	West Kingsbridge Road				NB-LTR		NB-LTR
		SB-LTR		SB-LTR	SB-LTR	SB-LTR	SB-LTR
Bailey Avenue	Sedgwick Avenue				NB-R		NB-R
Sedgwick Avenue	West Fordham Road	EB-L	EB-L		EB-L	EB-L	EB-L
		EB-TR					
		NB-LTR		NB-LTR		NB-LTR	
		SB-L		SB-L			
Webb Avenue	West Kingsbridge Road	EB-TR			EB-TR		EB-TR
		WB-LT					
University Avenue	West Kingsbridge Road		WB-DefL	WB-DefL	WB-DefL		WB-DefL
					WB-TR		
		WB-LTR				WB-LTR	
		NB-L					
		NB-TR		NB-TR			
		SB-LTR					
University Avenue	West Fordham Road	NB-L					
				NB-T			
Reservoir Avenue	West 195th Street	WB-LTR		WB-LTR			
					NB-LTR SB-DefL		NB-LTR SB-DefL
Jerome Avenue	East 198th Street				WB-LR		WB-LR
Jerome Avenue	East 196th Street				SB-LT		SB-LT
Jerome Avenue	East 195th Street	EB-LR		EB-LR			
		NB-LT		NB-LT	NB-LT	NB-LT	NB-LT
Jerome Avenue	West Kingsbridge Road/East Kingsbridge Road			SB-TR	SB-TR		SB-TR
							EB-DefL
							EB-TR
		EB-LTR		EB-LTR	EB-LTR	EB-LTR	
					WB-LTR		WB-LTR
		NB-LTR	NB-LTR	NB-LTR	NB-LTR	NB-LTR	NB-LTR
Grand Concourse	East 198th Street						
Grand Concourse	East Kingsbridge Road			NB-L		NB-L	
Valentine Avenue	East 198th Street						WB-LT
Elm Place/Bainbridge Avenue/East Kingsbridge Road	East Fordham Road	WB-R		WB-R	WB-R		WB-R
		SB-L	SB-L	SB-L	SB-L	SB-L	SB-L
		SB-LT		SB-LT			
East Kingsbridge Road/Valentine Avenue	East Kingsbridge Road/East 194th Street			EB-R	EB-R		
		NB-L	NB-L	NB-L	NB-L	NB-L	NB-L
Goulden Avenue	West 197th Street				EB-LR		EB-LR
Marion Avenue	Bedford Park Boulevard				SB-TR		
Reservoir Avenue/Grand Avenue	West Kingsbridge Road				WB-DefL		WB-DefL
		EB-LTR			EB-LTR		EB-LTR
Total No. of Impacted Intersections/ Lane Groups		AM	MD	PM	EVE	MD/AN	EVE
		12/25	5/6	11/20	21/32	9/12	20/29
		Totals During Any Peak Hour			23/47		22/34
Notes: MD = Midday; EVE = Evening; AN = Afternoon; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left-turn; T = Through; R = Right Turn; DefL = Defacto Left Turn This table is new for the FEIS.							

Table 22-3a
Recommended Traffic Mitigation Measures
Weekday AM Peak Hour

Intersection	No Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Bailey Avenue and West 225th Street/West Kingsbridge Road	EB/WB: Green = 37 s NB: Green = 17 s NB T/SB L/SB T: Green = 29 s NB T/SB: Green = 17 s	Shift 1 second of green time from the NB T/SB L/SB T phase to the EB/WB phase	EB/WB: Green = 38 s NB: Green = 17 s NB T/SB L/SB T: Green = 28 s NB T/SB: Green = 17 s
Sedgwick Avenue and West Kingsbridge Road	EB/WB: Green = 60 s NB L/SB L: Green = 7 s NB/SB: Green = 38 s	Shift 2 seconds of green time from the EB/WB phase to the NB/SB phase	EB/WB: Green = 58 s NB L/SB L: Green = 7 s NB/SB: Green = 40 s
Sedgwick Avenue and West Fordham Road	EB: Green = 12 s EB/WB: Green = 51 s NB/SB: Green = 42 s	Unmitigated	N/A
Webb Avenue and West Kingsbridge Road	EB/WB: Green = 46 s NB/SB: Green = 34 s WB/NB R: Green = 15 s LPI: Green = 10 s	Shift 3 seconds of green time from the NB/SB phase to the EB/WB phase	EB/WB: Green = 49 s NB/SB: Green = 31 s WB/NB R: Green = 15 s LPI: Green = 10 s
University Avenue and West Kingsbridge Road	EB/WB: Green = 57 s LPI: Green = 10 s NB/SB: Green = 33 s LPI: Green = 10 s	Unmitigated	N/A
University Avenue and West Fordham Road	EB/WB: Green = 49 s NB/SB: Green = 42 s WB: Green = 6 s LPI: Green = 7 s	Unmitigated	N/A
Reservoir Avenue and West 195th Street	WB: Green = 31 s NB/SB: Green = 49 s	Shift 3 seconds of green time from the NB/SB phase to the WB phase	WB: Green = 34 s NB/SB: Green = 46 s
Jerome Avenue and East 195th Street	EB: Green = 29 s LPI: Green = 10 s NB/SB: Green = 59 s LPI: Green = 12 s	Unmitigated	N/A
Jerome Avenue and West Kingsbridge Road/East Kingsbridge Road	EB/WB: Green = 46 s LPI: Green = 10 s NB/SB: Green = 44 s LPI: Green = 10 s	Unmitigated	N/A
Elm Place/Bainbridge Avenue/East Kingsbridge Road and East Fordham Road	EB/WB: Green = 64 s EB: Green = 7 s SB: Green = 24 s LPI: Green = 8 s	Unmitigated	N/A
East Kingsbridge Road/East 194th Street and Valentine Avenue	EB: Green = 34 s NB/SB: Green = 28 s SB: Green = 37 s	Unmitigated	N/A
Reservoir Avenue/Grand Avenue and West Kingsbridge Road	Unsignalized	Unmitigated	N/A
Notes: <u>This table is new for the FEIS.</u> EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right; LPI = Lead Pedestrian Interval			

Table 22-3b
Recommended Traffic Mitigation Measures
Weekday Midday Peak Hour

Intersection	No Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Sedgwick Avenue and West Fordham Road	EB: Green = 8 s EB/WB: Green = 33 s NB/SB: Green = 34 s	Shift 2 seconds of green time from the NB/SB phase to the EB/WB phase	EB: Green = 8 s EB/WB: Green = 35 s NB/SB: Green = 32 s
University Avenue and West Kingsbridge Road	EB/WB: Green = 33 s LPI: Green = 10 s NB/SB: Green = 27 s LPI: Green = 10 s	Unmitigated	N/A
Jerome Avenue and West Kingsbridge Road	EB/WB: Green = 31 s LPI: Green = 10 s NB/SB: Green = 29 s LPI: Green = 10 s	Unmitigated* Shift 1 second of green time from the EB/WB phase to the NB/SB phase	EB/WB: Green = 30 s LPI: Green = 10 s NB/SB: Green = 30 s LPI: Green = 10 s
Elm Place/Bainbridge Avenue/East Kingsbridge Road and East Fordham Road	EB/WB: Green = 34 s EB: Green = 7 s SB: Green = 24 s LPI: Green = 8 s	Unmitigated	N/A
East Kingsbridge Road/East 194th Street and Valentine Avenue	EB: Green = 20 s NB/SB: Green = 18 s SB: Green = 31 s	Shift 2 seconds of green time from the EB phase to the NB/SB phase	EB: Green = 18 s NB/SB: Green = 20 s SB: Green = 31 s
Notes: <u>This table is new for the FFIS.</u> *The mitigation measures proposed would partially mitigate the intersection. EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right; LPI = Lead Pedestrian Interval			

Table 22-3c
Recommended Traffic Mitigation Measures
Weekday PM Peak Hour

Intersection	No Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Bailey Avenue and West 225th Street/West Kingsbridge Road	EB/WB: Green = 43 s NB: Green = 15 s NB T/SB L/SB T: Green = 29 s NB T/SB: Green = 13 s	Shift 2 seconds of green time from the NB T/SB L/SB T phase to the EB/WB phase	EB/WB: Green = 45 s NB: Green = 15 s NB T/SB L/SB T: Green = 27 s NB T/SB: Green = 13 s
Sedgwick Avenue and West Kingsbridge Road	EB/WB: Green = 60 s NB L/SB L: Green = 7 s NB/SB: Green = 38 s	Shift 1 second of green time from the EB/WB phase to the NB/SB phase	EB/WB: Green = 59 s NB L/SB L: Green = 7 s NB/SB: Green = 39 s
Sedgwick Avenue and West Fordham Road	EB: Green = 16 s EB/WB: Green = 52 s NB/SB: Green = 37 s	Shift 1 second of green time from the EB/WB phase to the NB/SB phase	EB: Green = 16 s EB/WB: Green = 51 s NB/SB: Green = 38 s
University Avenue and West Kingsbridge Road	EB/WB: Green = 57 s LPI: Green = 10 s NB/SB: Green = 33 s LPI: Green = 10 s	Unmitigated	N/A
University Avenue and West Fordham Road	EB/WB: Green = 46 s NB/SB: Green = 40 s WB: Green = 11 s LPI: Green = 7 s	Shift 1 second of green time from the EB/WB phase to the NB/SB phase	EB/WB: Green = 45 s NB/SB: Green = 41 s WB: Green = 11 s LPI: Green = 7 s
Reservoir Avenue and West 195th Street	WB: Green = 31 s NB/SB: Green = 49 s	Unmitigated	N/A
Jerome Avenue and East 195th Street	EB: Green = 29 s LPI: Green = 10 s NB/SB: Green = 59 s LPI: Green = 12 s	Unmitigated	N/A
Jerome Avenue and West Kingsbridge Road/East Kingsbridge Road	EB/WB: Green = 46 s LPI: Green = 10 s NB/SB: Green = 44 s LPI: Green = 10 s	Unmitigated	N/A
Grand Concourse and East Kingsbridge Road	EB/WB: Green = 34 s NB/SB: Green = 48 s NB L/SB L: Green = 14 s LPI: Green = 7 s	Shift 1 second of green time from the NB/SB phase to the NB L/SB L phase	EB/WB: Green = 34 s NB/SB: Green = 47 s NB L/SB L: Green = 15 s LPI: Green = 7 s

Table 22-3c
Recommended Traffic Mitigation Measures
Weekday PM Peak Hour

Intersection	No Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Elm Place/Bainbridge Avenue/East Kingsbridge Road and East Fordham Road	EB/WB: Green = 64 s EB: Green = 7 s SB: Green = 24 s LPI: Green = 8 s	Unmitigated	N/A
East Kingsbridge Road/East 194th Street and Valentine Avenue	EB: Green = 34 s NB/SB: Green = 28 s SB: Green = 37 s	Unmitigated	N/A
Notes: <u>This table is new for the FEIS.</u> EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right; LPI = Lead Pedestrian Interval			

Table 22-3d
Recommended Traffic Mitigation Measures
Saturday Midday/Afternoon Peak Hour

Intersection	No Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
Bailey Avenue and West 225th Street/West Kingsbridge Road	EB/WB: Green = 41 s NB: Green = 15 s NB T/SB L/SB T: Green = 29 s NB T/SB: Green = 15 s	Shift 1 second of green time from the NB T/SB L/SB T phase to the EB/WB phase	EB/WB: Green = 42 s NB: Green = 15 s NB T/SB L/SB T: Green = 28 s NB T/SB: Green = 15 s
Sedgwick Avenue and West Kingsbridge Road	EB/WB: Green = 41 s NB L/SB L: Green = 7 s NB/SB: Green = 27 s	Shift 1 second of green time from the EB/WB phase to the NB/SB phase	EB/WB: Green = 40 s NB L/SB L: Green = 7 s NB/SB: Green = 28 s
Sedgwick Avenue and West Fordham Road	EB: Green = 12 s EB/WB: Green = 51 s NB/SB: Green = 42 s	Unmitigated* Shift 3 seconds from the EB/WB phase to the EB phase	EB: Green = 15 s EB/WB: Green = 48 s NB/SB: Green = 42 s
University Avenue and West Kingsbridge Road	EB/WB: Green = 33 s LPI: Green = 10 s NB/SB: Green = 27 s LPI: Green = 10 s	Unmitigated	N/A
Jerome Avenue and East 195th Street	EB: Green = 21 s LPI: Green = 10 s NB/SB: Green = 37 s LPI: Green = 12 s	Unmitigated	N/A
Jerome Avenue and West Kingsbridge Road/East Kingsbridge Road	EB/WB: Green = 31 s LPI: Green = 10 s NB/SB: Green = 29 s LPI: Green = 10 s	Unmitigated	N/A
Grand Concourse and East Kingsbridge Road	EB/WB: Green = 34 s NB/SB: Green = 48 s NB L/SB L: Green = 14 s LPI: Green = 7 s	Shift 1 second of green time from the EB/WB phase to the NB L/SBL phase	EB/WB: Green = 34 s NB/SB: Green = 47 s NB L/SB L: Green = 15 s LPI: Green = 7 s
Elm Place/Bainbridge Avenue/East Kingsbridge Road and East Fordham Road	EB/WB: Green = 64 s EB: Green = 7 s SB: Green = 24 s LPI: Green = 8 s	Unmitigated	N/A
East Kingsbridge Road/East 194th Street and Valentine Avenue	EB: Green = 20 s NB/SB: Green = 18 s SB: Green = 31 s	Shift 2 seconds of green time from the SB phase to the NB/SB phase	EB: Green = 20 s NB/SB: Green = 20 s SB: Green = 29 s
Notes: <u>This table is new for the FEIS.</u> *The mitigation measures proposed would partially mitigate the intersection. EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right; LPI = Lead Pedestrian Interval			

As shown in Table 22-4, the Proposed Project would result in unmitigated impacts at eight, three, six, and five intersections during the non-event weekday AM, midday, PM, and Saturday midday/afternoon peak hours, respectively. As noted above, conditions associated with the weekday and Saturday evening event peak hours would be addressed

via event management strategies in coordination with the NYPD. Accordingly, for purposes of disclosure in this Final EIS, the significant adverse traffic impacts identified for 21 intersections during the weekday evening peak hour and for 20 intersections during the Saturday evening peak hour would remain unmitigated. Detailed comparisons of the levels-of-service (LOS), volume-to-capacity (v/c) ratios, and lane group delays for the impacted intersections under the No Action, With Action, and Mitigation conditions for each analysis peak hour are presented in **Appendix H**.

Table 22-4
Intersections with Unmitigated Impacts

Intersection		Analysis Peak Hour					
		Weekday				Saturday	
North-South Roadway	East-West Roadway	AM	MD	PM	EVE	MD/AN	EVE
Major Deegan Expressway SB Ramp	West 230th Street						X
Major Deegan Expressway SB Ramp	West Fordham Road				X		
Major Deegan Expressway NB Ramp	West 230th Street				X		
Major Deegan Expressway NB Ramp	West Fordham Road				X		X
Bailey Avenue	West 230th Street				X		X
Bailey Avenue	West 225th Street/West Kingsbridge Road				X		
Sedgwick Avenue	West Kingsbridge Road				X		X
Bailey Avenue	Sedgwick Avenue				X		X
Sedgwick Avenue	West Fordham Road	X			X	X	X
Webb Avenue	West Kingsbridge Road				X		X
University Avenue	West Kingsbridge Road	X	X	X	X	X	X
University Avenue	West Fordham Road	X					
Reservoir Avenue	West 195th Street			X	X		X
Jerome Avenue	East 198th Street				X		X
Jerome Avenue	East 196th Street				X		X
Jerome Avenue	East 195th Street	X		X	X	X	X
Jerome Avenue	West Kingsbridge Road/East Kingsbridge Road	X	X	X	X	X	X
Grand Concourse	East 198th Street				X		X
Valentine Avenue	East 198th Street						X
Elm Place/Bainbridge Avenue/East Kingsbridge Road	East Fordham Road	X	X	X	X	X	X
East Kingsbridge Road/Valentine Avenue	East Kingsbridge Road/East 194th Street	X		X	X		X
Goulden Avenue	West 197th Street				X		X
Marion Avenue	Bedford Park Boulevard				X		X
Reservoir Avenue/Grand Avenue	West Kingsbridge Road	X			X		X
Number of Intersections with Unmitigated Impacts		8	3	6	21	5	20

Notes:
This table is new for the FEIS.
MD = Midday; EVE = Evening; AN = Afternoon; "X" = impacts at the intersection would be unmitigated in the corresponding peak hour.

EFFECTS OF TRAFFIC MITIGATION ON PEDESTRIAN OPERATIONS

Intersection operations would improve overall with the implementation of the recommended traffic mitigation measures, such as signal timing shifts. A review of the effects of these changes on pedestrian circulation and service levels at intersection corners and crosswalks shows that they would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any significant adverse pedestrian impacts.

The anticipated effects of implementing the above mitigation measures/strategies will be presented in the Final EIS. For this Draft EIS, the impacts identified for the 25 study area intersections are all considered to be potentially unmitigated.

TRANSIT

As discussed in Chapter 13, “Transportation,” the Proposed Project is not expected to result in in significant adverse transit impacts during the conventional operational peak hours that are typically studied for transit operations—weekday AM and PM. The analysis of the weekday and Saturday evening event peak hours, however, concluded the potential for significant adverse impacts at ~~one~~ three of the stairways serving the Kingsbridge Road (No. 4) Station. Additionally, as part of the subway line-haul analyses prepared for the weekday and Saturday event peak hours between the Draft and Final EIS, a significant adverse line-haul impact is expected on the No. 4 subway line in the uptown direction during the weekday evening peak hour. ~~analysis of line-haul conditions on the No. 4 and/or B/D subway lines during these evening event peak hours may conclude significant adverse line-haul impacts.~~

Potential mitigation Measures—measures, as fully described below, include stairway widenings and subway train service improvements. If the necessary stairway widenings or service improvements are determined to be impracticable, or are otherwise not implemented, the identified significant adverse transit impacts would remain unmitigated.

~~to mitigate potential transit impacts will be developed between Draft and Final EIS in coordination with New York City Transit (NYCT). Because the identified impacts would occur only during evening event peak hours for high attendance events at the Project Site, permanent physical improvements may not be warranted. Rather, event day management strategies could be adopted to address peak ridership surges and high usage of nearby subway stations. These strategies could include NYCT deploying extra trains on event days corresponding with peak event activity time periods and the Applicants, in coordination with NYCT, providing staff at ground level and/or station mezzanines, where appropriate, to disperse pedestrian flow to stairways that are less used.~~

~~The anticipated effects of implementing the above mitigation measures/strategies will be presented in the Final EIS. For this Draft EIS, the impacts identified for the one stairway at the Kingsbridge Road (No. 4) Station and those possibly for the No. 4 and/or B/D subway lines are all considered to be potentially unmitigated.~~

SUBWAY STATION OPERATIONS

In the With Action condition, project-generated subway trips would result in significant adverse impacts for street-level and platform stairs at the Kingsbridge Road (No. 4 train) station, as summarized in **Table 22-5**.

Table 22-5

**Kingsbridge Road (No. 4 Train) Station—
Summary of Significant Adverse Subway Station Impacts**

Analysis Element		Weekday AM	Weekday PM	Weekday Evening	Saturday Evening
Stairways	S3/M3			X	
	P2/P4			X	
	P6/P8			X	
Notes: This table is new for the FEIS.					

These impacts could be mitigated by widening the effective widths of the S3/M3, P2/P4, and P6/P8 stairs from their current widths of 5 feet to 7.5 feet. In consultation with NYCT, stairs that are not fully weather-protected and over 5'-9" wide are required to be equipped with a center handrail for code compliance. To provide adequate 30" pedestrian lanes at each side of the handrail center, the three stairs are recommended to be reconstructed as 10' if feasible. As shown in **Table 22-6**, the stairway impacts could be fully mitigated by the stairway widenings. Developer will be responsible for future coordination with NYCT to determine feasibility, and for costs of proposed mitigation. If the stairway widenings are determined to be impracticable, or are otherwise not implemented, the identified significant adverse station impacts would remain unmitigated.

Table 22-6
Kingsbridge Road (No. 4 Train) Station
Stairway Analysis - With Action Mitigation Condition

Subway Stair	With Action Width (ft)	Mitigation Width (ft)	No Action V/C Ratio	With Action V/C Ratio	Mitigation V/C Ratio	Potential Mitigation Measures
Weekday Evening Peak Hour						
S3/M3	5.00	10.00	0.08	1.29	0.59	Reconstruct as a 10' wide stair
P2/P4	5.00	10.00	0.13	1.18	0.54	Reconstruct as a 10' wide stair
P6/P8	5.00	10.00	0.26	1.30	0.59	Reconstruct as a 10' wide stair
Notes: This table is new for the FEIS. Impacts at all three stairs can be mitigated by reconstructing as 7.5' stairs; however, per NYCT guidance, any stairs that are not fully weather protected and over 5'9" wide should be equipped with a center handrail. To provide adequate 30" pedestrian lanes at each side of the center handrail, all stairs will be reconstructed as 10' if feasible.						

SUBWAY LINE HAUL ANALYSIS

In the With Action condition, the Proposed Project would result in significant adverse impacts on the northbound No. 4 train in the weekday evening peak during event conditions. To mitigate this significant adverse impact, the No. 4 train would require one additional train (increasing from eight to nine total trains) in the northbound Bronx-bound direction during the weekday evening period during event conditions. The number of subway trains required to fully mitigate the identified significant adverse subway line-haul impact is summarized in Table 22-7. As a standard practice, NYCT monitors ridership and adjusts train frequency to meet its service criteria. The implementation of these service increases would be subject to NYCT's discretion as well as fiscal and operational constraints. If the service increases are not implemented, the identified significant adverse subway line-haul impact would remain unmitigated.

Table 22-7
Proposed Project—Mitigated Condition: Subway Line-Haul Levels

Route	Number of Trains per Hour		Passengers per Train Car		
	Existing	Mitigation	No Action	With Action	Mitigation
Weekday Evening Peak Period					
4	8	9	78	117	104
Notes: This table is new for the FEIS. No. 4 train has a guideline capacity of 110 passengers per car. Nine subway trains per hour would be needed for No. 4 train northbound to operate within guideline capacity in the weekday evening peak period under event conditions					

PEDESTRIANS

Pedestrian conditions were evaluated at 18 sidewalks, 17 corners, and 8 crosswalks for the weekday AM, midday, and PM and Saturday midday/afternoon peak hours. For the weekday and Saturday evening event peak hours, additional analysis locations were included to assess conditions along paths event attendees would likely traverse to/from potential off-site parking locations, resulting in total 25 sidewalks, 19 corners, and 12 crosswalks analyzed for these study time periods. Significant adverse pedestrian impacts were identified at:

- 1 One sidewalk pedestrian element (i.e., sidewalk, corner, or crosswalk) in the weekday PM peak hour;
- Five sidewalks, one corner, and six crosswalks in the weekday evening peak hour;
- One sidewalk in the Saturday midday/afternoon peak hour; and
- Four sidewalks, one corner, and six crosswalks in the Saturday evening peak hour.

12 in the weekday evening peak hour, 1 in the Saturday midday/afternoon peak hour, and 11 in the Saturday evening peak hour. In total, significant adverse pedestrian impacts during one or more analysis peak hours were identified at six five study area sidewalks, one two corners, and seven crosswalks. As shown in Table 22-8, none of the projected significant adverse pedestrian impacts could be fully mitigated.

Measures, such as sidewalk clear width improvements, corner bulbouts, signal timing changes, and crosswalk widenings, will be explored between Draft and Final EIS to mitigate the projected significant adverse pedestrian impacts to the extent practicable. As with traffic, the implementation of these standard pedestrian mitigation measures would be subject to review and approval of DOT. Potential mitigation measures, including signal timing shifts and sidewalk/crosswalk widenings, have been explored and identified as infeasible between Draft and Final EIS after consultation with DOT. For the one impacted sidewalk under non-event conditions (weekday PM and Saturday midday/afternoon peak hours), located along the north side of East Kingsbridge Road between Creston Avenue and the Grand Concourse, the Applicant will continue to work with DOT in the future to determine the practicability of implementing mitigation measures, including reconsidering the widening of this sidewalk. For event day periods, strategies developed through the event day transportation management plan may further enhance pedestrian operations during peak event day periods. As noted above, these conditions will be reassessed. The anticipated effects of implementing these measures/strategies will be presented in the Final EIS. For this Draft EIS, the impacts identified for the six study area sidewalks, one corner, and seven crosswalks are all considered to be potentially unmitigated, as part of the post-opening weekday and Saturday evening event peak monitoring efforts.

Table 22-8
Summary of Pedestrian Mitigation Analysis Results

Analysis Peak Hour	Sidewalks			Corners			Crosswalks		
	No. of Impacted Elements	No. Fully Mitigated	No. Unmitigated	No. of Impacted Elements	No. Fully Mitigated	No. Unmitigated	No. of Impacted Elements	No. Fully Mitigated	No. Unmitigated
Weekday AM	0	-	-	0	-	-	0	-	-
Weekday Midday	0	-	-	0	-	-	0	-	-
Weekday PM	1	0	1	0	-	-	0	-	-
Weekday Evening	5	0	5	1	0	1	6	0	6
Saturday Midday/Afternoon	1	0	1	0	-	-	0	-	-
Saturday Evening	4	0	4	1	0	1	6	0	6
Note: This table is new for the FEIS.									

C. AIR QUALITY

As described in Chapter 14, "Air Quality," the mobile source air quality analysis determined that compared to the No Action condition, the maximum annual incremental particulate matter (PM_{2.5}) concentration is predicted to potentially exceed the annual *de minimis* criterion at West Kingsbridge Road and Reservoir Avenue, and at West 195th Street and Reservoir Avenue.

As discussed in Section B, "Transportation," traffic mitigation measures will be explored between Draft and Final EIS to mitigate the projected significant adverse traffic impacts to the extent practicable. Therefore, since air quality mitigation measures have not been identified for the DEIS, at these locations, the significant adverse air quality impact is deemed as unavoidable, as discussed in Chapter 23, "Unavoidable Adverse Impacts."

Between the DEIS Draft and Final EIS, in consultation with DEP, additional review and evaluation will be performed which is expected to determine that the identified impacts related to mobile source annual average PM_{2.5} increments will be avoided. The additional review is expected to include a more refined microscale analysis which incorporates all of the traffic peak periods and accounts for the relative frequency of events that would take place. If required, additional modeling of PM_{2.5} concentrations (Grid Analysis) will be performed using more refined or comprehensive analysis procedures to determine the magnitude and extent of neighborhood-scale PM_{2.5} impacts from mobile sources. Other updates may include the use of newer vehicle emissions model data and projections. These updates confirmed that maximum incremental It is anticipated that these additional measures will reduce PM_{2.5} concentrations were below the annual *de minimis* criterion threshold.

D. NOISE

Chapter 16, "Noise," identifies the potential for traffic generated by the Proposed Project to result in a significant adverse noise impact at residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road during the Saturday Evening time period (i.e., 6 PM to 8 PM) on event days. At these receptors during this time period, vehicular traffic associated with the Proposed Project would result in a 4.4 dBA noise level increase; however, the total noise exposure at the residences would be

in the “marginally acceptable” range and interior noise levels at buildings with standard façade construction would be expected to experience interior noise levels less than 45 dBA L₁₀, which would be considered acceptable according to 2021 *City Environmental Quality Review (CEQR) Technical Manual* noise exposure guidance. Nonetheless, due to the predicted noise level increment during the weekend evening peak hour exceeding the 3 dBA noise impact criterion, these receptors would experience a significant adverse impact during that time. On non-event weekend evenings, the residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road would not experience a significant adverse impact. Specifically, the buildings and façades where significant adverse noise impacts are predicted to occur are shown in **Table 22-9** and Figure 16-2.

Table 22-9
Building Façades Eligible for Mitigation of Operational Noise

Address	Façade
2714 University Avenue	East
2745 Reservoir Avenue	South and East
2727 Reservoir Avenue	North, East, and South
2724 University Avenue	East
2704 University Avenue	East and Southeast
2690 University Avenue	East
2691 Reservoir Avenue	North and East
Note: This table is new for the FEIS.	

~~Possible mitigation measures would be explored by the Applicants in more detail between the DEIS and FEIS, in consultation with the lead agency. At the building facades shown in Table 22-9, but could the Applicant would include an offer compensation for provision and installation of of storm windows for façades that do not already have insulated glass windows and/or one window air conditioning unit per living room or bedroom on impacted façades of residences that do not already have alternative means of ventilation. receptor control measures (i.e., building façade improvement) for affected façades.~~ These mitigation measures could be implemented prior to the start of operations of the live event venue. Building façades with insulated glass windows or storm windows and alternative ventilation would provide sound attenuation such that even during warm weather conditions, interior noise levels would be approximately 28 to 30 dBA less than exterior noise levels. As such, with mitigation measures in place, the predicted operational noise impact would be completely mitigated. However, if the residences were to decline the offer of mitigation, the predicted impact would be considered unmitigated.

E. CONSTRUCTION NOISE

Chapter 19, “Construction,” identifies the potential for construction of the Proposed Project to result in significant adverse construction noise impacts at ~~six one~~ receptors near the Project Site, i.e., the south façade and southernmost portion of the east façade of the P.S. 86 school building on West 195th Street between Jerome Avenue and Reservoir Avenue including school buildings on West 195th Street between Jerome Avenue and Reservoir Avenue, residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road, residential building at 2755 Reservoir

~~Avenue, residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road, 2700 Jerome Avenue, 1 East Kingsbridge Road, residential buildings at 2614 to 2755 Grand Avenue and 2611 to 2650 Davidson Avenue, and commercial office buildings at 2 to 50 West Kingsbridge Road. At these this receptors, construction would produce noise level increases that would be noticeable and potentially intrusive during the most noise-intensive nearby construction activities; however, the predicted maximum levels would not persist throughout construction, and the noise levels would fluctuate over the course of the construction period. While the greatest levels of construction noise would not persist throughout construction, ~~these locations~~ this receptor would experience construction noise levels whose magnitude and duration could constitute significant adverse impacts, as shown in Figure 19-4.~~

However, construction would comply with New York City Noise Control Code regulations. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the New York City Noise Control Code. These measures would include a variety of source and path controls. The results of the construction noise analysis presented in Chapter 19, "Construction," assume that each of these measures ~~described below~~ would be implemented.

Mitigation measures to control noise at the receptors predicted to experience impacts could also be offered during construction of the Proposed Project. As described in Chapter 19, "Construction," the south façade and southernmost portion of the east façade of the P.S. 86 school building on West 195th Street between Jerome Avenue and Reservoir Avenue ~~school buildings on West 195th Street between Jerome Avenue and Reservoir Avenue, residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road, residential building at 2755 Reservoir Avenue, residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road, 2700 Jerome Avenue, 1 East Kingsbridge Road, residential buildings at 2614 to 2755 Grand Avenue and 2611 to 2650 Davidson Avenue, and commercial office buildings at 2 to 50 West Kingsbridge Road~~ are predicted to experience a temporary significant adverse construction noise impact. As mitigation for the predicted temporary construction noise impacts, the Applicant would offer compensation for provision and installation of storm windows for façades that do not already have insulated glass windows and/or one window air conditioning unit per classroom on impacted façades that do not already have alternative means of ventilation. ~~Possible mitigation measures would be explored by the Applicants in more detail between the DEIS and FEIS, in consultation with the lead agency, but could include an offer of receptor control measures (i.e., building façade improvement) for affected façades.~~ These mitigation measures could be implemented prior to the start of construction. Building façades with insulated glass windows or storm windows and alternative ventilation would provide sound attenuation such that even during warm weather conditions, interior noise levels would be approximately 28 to 30 dBA less than exterior noise levels. However, the most noise-intensive construction activity nearest the receptors experiencing significant adverse impacts would result in interior noise levels up to ~~59-52~~ 44-7 dBA L₁₀, which is 14-7 dBA greater than the level considered acceptable for classroom use according to *CEQR Technical Manual* noise exposure guidelines. Consequently, the temporary significant adverse noise impacts predicted to occur at the above-mentioned receptors would be only partially mitigated and thus unavoidable as discussed in Chapter 23, "Unavoidable Adverse Impacts." *