

Chapter 23: MITIGATION MEASURES

23.1 Introduction

In accordance with the *CEQR Technical Manual*, where significant adverse impacts are identified, mitigation to reduce or eliminate the impacts to the fullest extent practicable is developed and evaluated. Where impacts have been identified – in the areas of transportation (traffic and transit), community facilities (indirect impacts on child care centers), and construction-period noise – measures are examined to mitigate the anticipated impacts.

As described in this chapter, the anticipated significant adverse impacts on traffic could be fully mitigated through the modification of traffic signal phasing and/or timing, and significant adverse impacts on bus service could be fully mitigated by increasing the number of buses in the peak hours.

Required mitigation measures to address the identified significant adverse indirect impact to publicly funded child care centers would comprise consultation with New York City Administration for Children's Services ("NYCACS") to determine appropriate mitigation measures, which could include funding of vouchers for slots in private day care centers and/or provision of space that could be used for on-site day care services, the use of which would be determined through consultation with NYCACS. Specifically, as discussed in Chapter 1, "Project Description," the proposed action would include space that could be used for child care facilities within the Parcel B building area designated for commercial use. To the extent that the proposed mitigation measures described in this chapter may be practicable, an unavoidable significant adverse impact could result (see Chapter 24, "Unavoidable Adverse Impacts").

As described in Chapter 20, "Construction," construction activities associated with the proposed action could result in significant adverse impacts related to noise at neighboring Gateway Estates buildings, though these would be temporary and would be limited through use of best practices. While significant adverse impacts could occur, the main source of construction noise (pile driving) would migrate throughout the construction areas, such that the effects of construction noise on any particular sensitive receiver would change depending on the location of the noise source and the height of the receiver. Noise control measures that would partially mitigate significant adverse construction noise impacts at neighboring Gateway Estates buildings include contract specifications requiring (1) contractors to comply with all the requirements and regulations of the New York City Noise Code and United States Environmental Protection Agency ("USEPA") noise emission standards for construction equipment; (2)

devices and activities which are subject to the provisions of the New York City Noise Code to be operated, conducted, constructed or manufactured without causing a violation of the code; and (3) all work to be conducted in compliance with the regulations set forth in the code that control noise levels due to construction work.

Other mitigation measures and strategies that could reduce noise levels further include:

- Design considerations and project layout approaches, including measures such as construction of temporary noise barriers, placing construction equipment as far as practicable from noise sensitive receptors, constructing walled enclosures/sheds around especially noisy activities, such as pavement breaking, and sequencing operations to combine especially noisy equipment;
- Perimeter noise barriers constructed to the maximum height of 15 feet allowed by the New York City Noise Code;
- Alternative construction methods, such as using special low noise emission level equipment; and
- Use of noise enclosures or noise insulation fabric on compressors, generators, etc.

With mitigation measures and strategies in place to reduce noise levels during construction, as described in this chapter, the potential for significant adverse impacts related to noise would be mitigated. As discussed in Chapter 24, “Unavoidable Adverse Impacts,” to the extent that mitigation measures proposed as part of the proposed action may not be effective at fully mitigating the construction-period noise impacts to insignificant levels, then the proposed action may result in unavoidable temporary, but significant, adverse impacts related to noise.

23.2 Transportation

TRAFFIC

As described in Chapter 14, “Transportation,” the proposed action would result in significant adverse traffic impacts at four intersections during one or more analyzed peak hours; specifically, one lane group during the weekday AM peak hour, one lane group in the weekday midday peak hour, three lane groups in the weekday PM peak hour, and four lane groups in the Saturday peak hour.

As demonstrated below, most of these impacts could be mitigated to below significance thresholds established by the *CEQR Technical Manual* through the modification of traffic signal phasing and/or timing. All of these improvements are readily implementable measures that conform to the guidelines of the New York City Department of Transportation (“NYCDOT”) 2009 *Street Design Manual*. The types of mitigation measures proposed herein are standard measures that are routinely identified by the City

and considered feasible for implementation. Table 23-1, “Action With Mitigation Level of Service Conditions,” summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the weekday AM, midday and PM peak hours. Implementation of the recommended traffic engineering improvements is subject to review and approval by NYCDOT.

Table 23-1, “Action with Mitigation Level of Service Conditions,” lists the v/c ratios, delays, and levels of service (“LOS”) for impacted lane groups at each intersection with implementation of these mitigation measures and compares them to No-Action and With-Action conditions for the weekday AM, midday and PM peak hours, respectively. According to *CEQR Technical Manual* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action with Mitigation conditions compared to the No Action conditions is no longer deemed significant following the impact criteria described in Chapter 14, “Transportation.” Table 23-1 shows that all significant adverse impacts could be fully mitigated. As there would be no significant adverse impacts on pedestrian elements from the proposed action, there are no pedestrian mitigation measures needed that would alter the conclusions made for the traffic impact analyses nor result in the potential for any additional significant adverse traffic impacts.

Table 23-1: Action With Mitigation Level of Service Conditions

INTERSECTION & APPROACH	Mvt.	No Build			Build			Mitigated Build			Improvement Measures		
		V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS			
AM Peak Hour													
Linden Boulevard and Fountain / Loring avenues													
Linden Boulevard (Main Road)	EB	L	0.61	45.8	D	0.61	45.8	D	0.64	50.1	D	- Shift 2.0 seconds of green time from the Linden Boulevard westbound phase to the Fountain Avenue north and southbound phase.	
		T	0.39	23.9	C	0.39	23.9	C	0.39	23.9	C		
	WB	L	0.27	14.3	B	0.28	14.5	B	0.30	15.8	B		
		T	0.61	18.4	B	0.61	18.3	B	0.62	19.8	B		
Linden Boulevard (Service Road)	EB	TR	0.26	22.9	C	0.27	23.0	C	0.27	23.0	C		
		WB	0.38	15.7	B	0.38	15.7	B	0.39	16.9	B		
Fountain Avenue	NB	LTR	0.54	34.6	C	0.66	38.1	D	0.60	34.8	C		
		SB	L	0.59	42.9	D	0.67	49.5	D	0.61	43.4		D
			LTR	0.54	35.6	D	0.56	36.3	D	0.54	34.0		C
Overall Intersection	-		30.1	C		32.4	C		30.4	C			
Midday Peak Hour													
Seaview Avenue / Gateway Drive and Erskine Street													
Gateway Drive	EB	L	0.07	22.2	C	0.09	22.6	C	0.08	19.7	B	- Shift 3.0 seconds of green time from the Erskine Street north and southbound phase and 1.0 seconds of green time from the lagging northbound phase to add 4.0 seconds of green time to the Gateway Drive / Seaview Avenue east and westbound phase.	
		T	0.06	21.8	C	0.06	21.8	C	0.05	19.1	B		
	WB	R	0.59	13.5	B	0.67	16.0	B	0.62	12.9	B		
		L	0.66	36.3	D	0.92	63.3	E	0.79	41.4	D		
Erskine Street	NB	TR	0.13	22.6	C	0.19	23.2	C	0.16	20.2	C		
		L	0.57	32.7	C	0.57	32.7	C	0.59	34.1	C		
SB	LT	TR	0.38	10.8	B	0.42	11.3	B	0.45	13.8	B		
		L	0.50	28.7	C	0.53	29.2	C	0.61	32.9	C		
		R	0.03	23.8	C	0.04	23.9	C	0.04	26.2	C		
Overall Intersection	-		21.8	C		25.4	C		24.1	C			
PM Peak Hour													
Linden Boulevard and Fountain / Loring avenues													
Linden Boulevard (Main Road)	EB	L	0.59	42.0	D	0.59	42.0	D	0.62	45.8	D	- Shift 2.0 seconds of green time from the Linden Boulevard east and westbound phase to the Fountain Avenue north and southbound phase.	
		T	0.77	33.3	C	0.77	33.3	C	0.80	35.9	D		
	WB	L	0.42	23.4	C	0.45	24.4	C	0.47	26.3	C		
		T	0.52	18.4	B	0.52	18.4	B	0.54	19.8	B		
Linden Boulevard (Service Road)	EB	TR	0.48	28.5	C	0.50	28.8	C	0.52	30.8	C		
		WB	0.42	18.0	B	0.42	18.0	B	0.43	19.3	B		
Fountain Avenue	NB	LTR	0.76	39.7	D	0.85	45.5	D	0.79	39.9	D		
		SB	L	0.91	82.9	F	0.98	100.1	F	0.90	79.5		E
			LTR	0.76	42.9	D	0.83	48.0	D	0.79	42.8		D
Overall Intersection	-		39.0	D		43.9	D		39.3	D			
Seaview Avenue / Gateway Drive and Erskine Street													
Gateway Drive	EB	L	0.07	22.3	C	0.11	22.9	C	0.09	19.2	B		- Shift 5.0 seconds of green time from the Erskine Street north and southbound phase to add 5.0 seconds of green time to the Gateway Drive / Seaview Avenue east and westbound phase.
		T	0.05	21.7	C	0.05	21.8	C	0.04	18.4	B		
	WB	R	0.59	13.5	B	0.63	14.6	B	0.57	10.5	B		
		L	0.85	49.3	D	1.01	81.8	F	0.85	44.4	D		
Erskine Street	NB	TR	0.10	22.3	C	0.16	22.9	C	0.13	19.2	B		
		L	0.62	34.0	C	0.64	34.3	C	0.64	34.3	C		
SB	LT	TR	0.37	10.8	B	0.44	11.5	B	0.49	14.8	B		
		L	0.47	28.2	C	0.52	29.0	C	0.68	36.4	D		
		R	0.02	23.7	C	0.03	23.7	C	0.03	27.6	C		
Overall Intersection	-		24.1	C		28.5	C		25.5	C			

Table 23-1: Action With Mitigation Level of Service Conditions (continued)

INTERSECTION & APPROACH	Mvt.	No Build			Build			Mitigated Build			Improvement Measures		
		V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS			
Saturday Midday Peak Hour													
Linden Boulevard and Fountain / Loring avenues													
Linden Boulevard (Main Road)	EB	L	0.23	20.3	C	0.23	20.3	C	0.25	22.0	C	Shift 2.0 seconds of green time from the Linden Boulevard east and westbound phase to the Fountain Avenue north and southbound phase.	
		T	0.42	20.2	C	0.42	20.2	C	0.45	21.8	C		
	WB	L	0.31	13.9	B	0.32	14.1	B	0.34	15.5	B		
		T	0.33	12.3	B	0.33	12.3	B	0.35	13.5	B		
Linden Boulevard (Service Road)	EB	L	0.43	21.8	C	0.43	21.9	C	0.46	23.8	C		
		TR	0.33	13.0	B	0.33	13.0	B	0.35	14.3	B		
Fountain Avenue	NB	LTR	0.78	33.6	C	0.84	37.3	D	0.76	31.1	C		
		SB	L	0.82	56.2	E	0.86	64.7	E	0.78	49.3		D
			LTR	0.66	30.2	C	0.68	30.9	C	0.64	28.0		C
Overall Intersection	-		30.0	C		32.4	C		28.5	C			
Vandalia and Fountain avenues													
Vandalia Avenue	EB	LR	0.62	17.2	B	0.62	17.2	B	0.81	29.9	C		Shift 6.0 seconds of green time from the Vandalia Avenue eastbound phase to the Fountain Avenue north and southbound phase.
Fountain Avenue	NB	LT	0.27	12.3	B	0.31	12.7	B	0.25	8.6	A		
	SB	TR	1.12	86.3	F	1.40	206.5	F	1.07	67.7	E		
Overall Intersection	-		54.0	D		118.8	F		47.1	D			
Vandalia Avenue and Erskine Street													
Vandalia Avenue	EB	TR	0.26	12.0	B	0.32	12.6	B	0.64	27.0	C	Create a 6.0 second leading westbound phase and add 1.0 seconds to the northbound phase by reducing the eastbound and westbound phase by 12 seconds.	
		WB	DefL	0.92	43.5	D	1.00	63.2	E	0.80	30.5		C
		T	0.04	10.5	B	0.04	10.5	B	0.04	11.1	B		
Erskine Street	NB	L	0.35	13.3	B	0.42	14.2	B	0.41	13.3	B		
		R	0.95	46.0	D	0.97	50.3	D	0.93	41.4	D		
Overall Intersection	-		32.3	C		37.8	D		29.5	C			
Seaview Avenue / Gateway Drive and Erskine Street													
Gateway Drive	EB	L	0.15	23.4	C	0.20	24.5	C	0.18	22.2	C	Shift 2.0 seconds of green time from the Erskine Street north and southbound phase to add 2.0 seconds of green time to the Gateway Drive / Seaview Avenue east and westbound phase.	
		T	0.07	22.0	C	0.08	22.0	C	0.07	20.1	C		
		R	0.72	17.0	B	0.89	29.0	C	0.83	21.7	C		
Seaview Avenue	WB	L	0.72	39.2	D	0.80	46.8	D	0.72	38.0	D		
		TR	0.21	23.3	C	0.21	23.4	C	0.19	21.3	C		
Erskine Street	NB	L	0.88	46.0	D	0.92	50.4	D	0.91	48.4	D		
		TR	0.48	12.0	B	0.55	12.9	B	0.58	14.5	B		
		SB	LT	0.58	30.0	C	0.65	31.4	C	0.76	36.5		D
		R	0.09	24.5	C	0.11	24.8	C	0.13	26.9	C		
Overall Intersection	-		26.2	C		29.9	C		29.0	C			

Source: STV Incorporated, 2016

TRANSIT

Bus

As discussed in Chapter 14, "Transportation," the proposed action would add 756 and 1,001 new trips on the local bus services operating in proximity to the project site during the weekday AM and PM peak hours, respectively. This would result in a capacity shortfall on three bus lines in the AM peak hour and

one bus line in the PM peak hour. The northbound B13 service would experience a shortfall of 83 spaces in the AM peak hour. The B83 bus service would experience a shortfall of 131 spaces in the northbound direction in the AM peak hour and 517 spaces in the southbound direction in the PM peak hour. The eastbound Q8 would experience a shortfall of 17 spaces in the AM peak hour. Therefore, northbound B13 and B83, and eastbound Q8 service would be significantly adversely impacted in the AM peak hour, and the southbound B83 service would be significantly adversely impacted in the PM peak hour based on *CEQR Technical Manual* criteria. As shown in Table 23-2, “Action with Mitigation Local Bus Analysis,” these significant adverse impacts on bus service could be fully mitigated by the addition of six standard buses in the AM peak hour and ten standard buses in the PM peak hour. The general policy of New York City Transit (“NYCT”) is to provide additional bus service where demand warrants, taking into account financial and operational constraints.

Table 23-2: Action With Mitigation Local Bus Analysis

Peak Hour	Route	Direction	Maximum Load Point	Peak Hour Buses	No-Action Available Capacity ²	Project Increment	Available Capacity w/Proposed Action ²	Additional Peak Hour Buses Needed to Accommodate Project-Generated Demand	Available Capacity With Mitigation ²
AM	B13	NB	Euclid Ave & Sutter Ave	5	4	87	-83	2	25
AM	B83	NB	New Lots Ave & Van Siclen Ave	10	44	175	-131	3	31
AM	Q8	EB	101 st Ave & 133 rd St	13 ¹	27	33	-17	1	37
PM	B83	SB	Pennsylvania Ave & Livonia Ave	7	39	556	-517	10	23
Notes: 1. Assumes service levels would be adjusted to address capacity shortfalls in the No-Action conditions, as described in Chapter 14, "Transportation," of this EIS. 2. Available capacity based on Metropolitan Transportation Authority ("MTA") loading guidelines of 54 passengers per standard bus.									

Source: NYCT, 2016; STV Incorporated, 2016.

23.3 Community Facilities

CHILD CARE CENTERS

As described in Chapter 4, “Community Facilities and Services,” the proposed action would result in a significant adverse impact to publicly-funded group child care facilities. Based on child care multipliers provided in the *CEQR Technical Manual*, the proposed action would generate approximately 173 children under age six who would be eligible for publicly-funded group child care services. The additional 173 children would increase the shortfall of available slots that would be expected to exist in the study area in the future without the proposed action, resulting in a total shortfall of 282 slots in the study area with the proposed action. Exclusive of potential effects that may also result from the addition of some children to study area child care facilities as a result of the East New York Rezoning proposal, the collective demand for study area child care centers would increase approximately 14.2 percent from approximately 109 percent of capacity in the future without the proposed action to approximately 123.2 percent with the proposed action.

The *CEQR Technical Manual* states that mitigation measures may be warranted if a proposed action would increase the child care center utilization rate in the study area by at least 5 percent and the resulting utilization rate would measure over 100 percent; thus, per the guidance of the *CEQR Technical Manual*, mitigation measures would be warranted for the potential significant adverse impacts to child care centers that would be attributable to the proposed action.

Required mitigation measures would comprise consultation with NYCACS to determine appropriate mitigation measures, which could include funding of vouchers for slots in private day care centers and/or providing space that could be used for on-site day care services, the use of which would be determined through consultation with NYCACS. Specifically, as discussed in Chapter 1, “Project Description,” the proposed action would include space that could be used for child care facilities within the Parcel B building area designated for commercial use. The Restrictive Declaration governing the use of the project site would require that the developer, prior to the occupancy of Phase 1, consult with NYCACS to determine the appropriate mitigation measures for the significant adverse indirect impact of eligible children anticipated to be generated by the proposed action, which could include (1) funding a number of vouchers equal to the number of children projected to occupy the project site (or a portion thereof) eligible for day care; and/or (2) providing commercial space within Parcel B to a NYCACS contractor or other day care provider accepting vouchers sufficient to serve the eligible children projected to occupy the project site, or a portion thereof.

As noted previously, parents of eligible children are not restricted to enrolling their children in child care facilities in a specific geographic area but could use the NYCACS voucher system to make use of public and private child care providers beyond the study area. In addition, several factors may limit the number of children in need of publicly-funded group child care and Head Start slots in NYCACS-contracted child care facilities. For example, families in the study area could make use of alternatives; there are slots at homes licensed to provide family child care that families of eligible children could elect to use instead of publicly-funded group child care and Head Start centers. Parents of eligible children may also use NYCACS vouchers to finance care at private child care centers in the study area. Finally, the voucher system could spur the development of new child care facilities to meet the needs of eligible children that would result from the increase in the low-income and low- to moderate income housing units in the area in the future With Action conditions.

As described in Chapter 24, “Unavoidable Adverse Impacts,” were mitigation measures not fully effective in addressing the significant adverse impact to child care centers, for example if there were insufficient space in private day care centers in the study area accepting NYCACS vouchers or if a contractor could not be identified to occupy available commercial space on Parcel B, then there may be a potentially unavoidable adverse impact, which could represent a potential contribution to a significant adverse cumulative impact on child care centers. While these mitigation measures could potentially fully mitigate the significant adverse impact on publicly funded child care facilities that would result with the proposed action, there is no precise program delineating the mitigation measures; rather, the mitigation measures rely upon the direction of NYCACS and the ongoing monitoring that NYCACS must undertake to determine the appropriate mitigation measures as it is to be effectuated by the conditionally designated developer, pursuant to the terms of the Restrictive Declaration, as well as on the availability of providers. Therefore, there remains the potential for unavoidable significant adverse cumulative indirect impacts to child care centers with the proposed action.

23.4 Construction

NOISE

As described in Chapter 20, “Construction,” construction activities associated with the proposed action would be expected to result in significant adverse construction-period impacts related to noise in neighboring Gateway Estates buildings, though these impacts would be temporary and would be limited through use of best practices.

The effects of construction noise on the sensitive receptors would vary depending on the location of the noise source. Further, during most of the construction period for each phase, noise levels would

decrease significantly following the completion of pile driving activities, which would occur for up to approximately 12 weeks at the beginning of each of the five phases.

Noise control measures that would partially mitigate significant adverse construction noise impacts on the Gateway Estates development, and which would be required in the Restrictive Declaration for the developer to implement or consider are described below. The Restrictive Declaration would require contract specifications requiring (1) contractors to comply with all the requirements and regulations of the New York City Noise Code and USEPA noise emission standards for construction equipment; (2) devices and activities which are subject to the provisions of the New York City Noise Code to be operated, conducted, constructed or manufactured without causing a violation of the code; and (3) all work to be conducted in compliance with the regulations set forth in the code that control noise levels due to construction work. These New York City Noise Code requirements mandate:

- Certain classifications of construction equipment and motor vehicles must meet specified noise emissions standards;
- Except under exceptional circumstances, construction activities must be limited to weekdays between the hours of 7:00 AM and 6:00 PM; and
- A construction noise mitigation plan shall be developed and implemented in accordance with the New York City Noise Code (specifically, as it refers to the citywide construction noise mitigation rules as described in Title 15, Chapter 28 of the NYC Administrative Code). Some examples of these rules include:
 - Contractors and subcontractors are required to properly maintain their equipment and mufflers;
 - The quietest pile driving method shall be selected that allows work to be performed based on structural, geotechnical and pile friction requirements and ground conditions.
 - Construction of perimeter noise barriers when receptors are within 200 feet of the construction site. Barriers can be made from noise curtain material, plywood or other similar materials. Barriers can reduce noise by up to 10 dB when positioned closely to a noise producing activity.
- Limits on engine idling in accordance with NYC Administrative Code 24-163;
- Dump trucks shall be equipped with thick rubber bed liners;
- Minimal use of backup alarm devices and when necessary, use of only approved back up devices; and

- That construction material be handled and transported in such a manner as to not create unnecessary noise.

Other mitigation measures and strategies that could reduce noise levels, and which the Restrictive Declaration would require the developer to implement if and when practicable and effective, further include:

- Design considerations and project layout approaches, including measures such as construction of temporary noise barriers, placing construction equipment as far as practicable from noise sensitive receptors, constructing walled enclosures/sheds around especially noisy activities, such as pavement breaking, and sequencing operations to combine especially noisy equipment;
- Perimeter noise barriers constructed to the maximum height of 15 feet allowed by the New York City Noise Code;
- Alternative construction methods, such as using special low noise emission level equipment; and
- Use of noise enclosures or noise insulation fabric on compressors, generators, etc.

Therefore, in summary, significant adverse impacts related to noise and would occur with the proposed action during construction. With the use of double-glazed windows and provision of alternate ventilation in Parcel B buildings to be occupied during ongoing construction activities, and with the implementation of noise mitigation measures (per the Restrictive Declaration) to reduce noise levels during construction, the potential for significant adverse impacts related to noise would be minimized with the proposed action, though not entirely eliminated; there would remain the likely potential for significant adverse construction-period noise impacts during pile driving activities, but these activities would occur for a limited duration. As discussed in Chapter 24, "Unavoidable Adverse Impacts," to the extent that mitigation measures proposed as part of the proposed action may not be effective at fully mitigating the construction-period noise impacts, then the proposed action may result in unavoidable adverse impacts related to noise.