



17

Mitigation

In accordance with the *2014 City Environmental Quality Review (CEQR) Technical Manual*, where significant adverse impacts are identified, mitigation measures to reduce or eliminate the impacts to the fullest extent practicable are to be developed and evaluated.

17.1 Introduction

In accordance with the *2014 City Environmental Quality Review (CEQR) Technical Manual*, where significant adverse impacts are identified, mitigation measures to reduce or eliminate the impacts to the fullest extent practicable are to be developed and evaluated.

As detailed in the preceding chapters, upon completion, the proposed project has the potential to result in significant adverse traffic and pedestrian impacts at certain locations. During construction, the proposed project has the potential to result in temporary significant adverse traffic and noise impacts. Therefore, measures to reduce or eliminate the impacts were explored and are discussed here.

17.2 Principal Conclusions

Traffic

Of the six intersections analyzed, the proposed project would result in significant adverse traffic impacts at two intersections during the weekday AM and Saturday midday peak hours, one intersection during the weekday midday peak hour, and three intersections during the weekday PM peak hour. Four of the intersections analyzed would either not be significantly impacted or could be fully mitigated with readily implementable traffic improvement measures described below in this chapter. Traffic impacts at the intersection of Delancey Street and Essex Street would be unmitigated during the weekday PM peak hour and traffic impacts at the intersection of Grand Street and Clinton Street would be unmitigated during the weekday AM, midday, and PM and Saturday midday peak hours.

~~There is potential for additional impacts to be identified between Draft and Final of this EIS, and if so, additional measures will be explored, where feasible, to further mitigate the identified impacts. The proposed mitigation measures are subject to review and approval by the NYCDOT, and if certain proposed mitigation measures are deemed infeasible by NYCDOT, alternatives will be analyzed. If no other alternative mitigation measures can be identified, those impact locations would be unmitigated.~~

Pedestrians

Of the 17 pedestrian elements analyzed, the proposed project would result in a significant adverse impact on one pedestrian element during the weekday PM peak hour; no significant impacts are projected during the weekday AM, midday, or Saturday midday peak hours. The single pedestrian impact would occur on the north crosswalk at the intersection of Broome Street and Norfolk Street during the weekday PM peak hour. Mitigation measures, consisting of a combination of crosswalk widening and signal timing modifications, were identified to mitigate this significant impact. Implementation of the recommended traffic engineering improvements is subject to review and approval by NYCDOT.

Construction

Traffic

As discussed in **Chapter 15, "Construction,"** three key intersections were analyzed for potentially significant traffic impacts during the peak construction traffic hours. During the AM construction peak hour, the westbound through movement at the intersection of Delancey Street and Clinton Street would be significantly impacted and could be mitigated with a one second shift in signal timing from the northbound Clinton Street phase to the westbound Williamsburg Bridge/northbound Clinton Street phase. During the PM construction peak hour, the northbound approach at the intersection of Grand Street and Clinton Street would be significantly impacted and could not be mitigated.

~~There is potential for additional impacts to be identified between Draft and Final Implementation of this EIS, and if so, additional measures will be explored, where~~

~~feasible, to further mitigate the recommended traffic engineering improvements is identified impacts. The proposed mitigation measures are subject to review and approval by the NYCDOT, and if certain proposed mitigation measures are deemed infeasible by NYCDOT, alternatives will be analyzed. If no other alternative mitigation measures can be identified, those impact locations would be unmitigated.~~

Noise

As discussed in **Chapter 15, "Construction,"** construction at Projected Development Site 1 ~~without additional mitigation measures~~ has the potential to result in a temporary significant adverse construction-period noise impact because of the duration and magnitude of the projected construction-period noise levels. The applicants are committed to implementing certain controls ~~(use of quieter equipment and 12-foot perimeter noise barrier)~~ that exceed the noise control measures required by the New York City Noise Control Code, ~~including the use of a 12-foot perimeter noise barrier.~~ However, even with these measures, elevated construction-period noise levels are predicted to occur at certain locations. Additional measures, as feasible, to avoid potential significant adverse noise impacts ~~have been~~ will be explored between the Draft and Final EIS in consultation with DCP. ~~These mitigation measures consist of the use of enclosures around compressors and generators and acoustic shrouds around pile drivers. If these~~ ~~if no feasible and practicable~~ mitigation measures are implemented, construction noise levels would be below the threshold for significant adverse noise impact. ~~In the event that the implementation of the additional path control mitigation measures may not be feasible or practicable to mitigate project-related construction noise, the applicant shall offer tenants with units located along the north and east facades of the Hong Ning building and the north façade of 384 Grand Street that do not have through-window air conditioning units or an alternate means of ventilation, where significant adverse noise impacts are predicted to occur, one air-conditioning unit per dwelling unit to mitigate project-related construction noise impacts. This chapter presents the results of the construction noise analysis including the use of these additional mitigation measures. If additional path control mitigation measures are not able to be implemented because they are not feasible and practicable mitigation, there would be~~ identified, the significant adverse construction-period noise impacts ~~that~~ would remain unmitigated. ~~See Chapter 18, "Unavoidable Adverse Impacts."~~

17.3 Transportation

As discussed in **Chapter 9, "Transportation,"** the proposed project would result in significant adverse impacts at a number of locations in the study area. This section describes the mitigation measures that could be advanced to reduce or eliminate significant impacts and identified locations that would remain unmitigated.

Traffic

As discussed in **Chapter 9, "Transportation,"** while the proposed project would generate only a modest amount of vehicle trips, at the six analyzed intersections, the proposed project would result in significant adverse traffic impacts at two intersections during the weekday

AM and Saturday midday peak hours, one intersection during the weekday midday peak hour, and three intersections during the weekday PM peak hour. **Table 17-1** summarizes the significant traffic impacts and identifies whether they could be fully or partially mitigated, and **Table 17-2** summarizes the significantly impacted traffic movements. The proposed traffic mitigation measures are summarized in **Tables 17-3 through 17-6**.

Table 17-1 Traffic Impact Mitigation Summary

Intersections	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
No significant impact	4	5	3	4
Impact could be fully mitigated	1	0	1	1
Impact could be partially mitigated	0	0	0	0
Unmitigated Impact	1	1	2	1

Table 17-2 Summary of Impacted Traffic Movements

Intersection	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Delancey Street and Essex Street	WBR		WBR	
Broome Street and Norfolk Street			EBL	EBL
Grand Street and Clinton Street	WBR NBLTR	WBR NBLTR	WBR NBLTR	WBR NBLTR
Number of impacted traffic movements	3	2	4	3
Number of unmitigated traffic movements	2	2	3	2

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left turn; T = Through; R = Right turn; DefL = De facto left turn movement

Table 17-3
 GO Broome Street Development EIS
 NO ACTION VS WITH ACTION VS WITH ACTION W/ IMPROVEMENTS TRAFFIC LEVELS OF SERVICE COMPARISON - WEEKDAY AM PEAK HOUR

INTERSECTION & APPROACH	2023 No Action				2023 With Action				2023 With Action w/ Improvements				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS														
Delancey St and Essex St														
Delancey St	EB	TR	0.69	20.4	C	TR	0.70	20.5	C	TR	0.68	19.5	B	- Modify signal timing. Shift 1 sec of green time from NB/SB phase to EB/WB phase. [NB/SB green time shifts from 30 sec to 29 sec; EB/WB green time shifts from 43 sec to 44 sec.]
	WB	T	0.89	23.3	C	T	0.89	23.3	C	T	0.87	22.0	C	
	R	1.21	128.5	F	R	1.22	133.5	F	R	1.19	117.0	F		
Essex St	NB	LT	0.75	39.0	D	LT	0.76	39.8	D	LT	0.79	42.8	D	
	R	0.33	25.3	C	R	0.33	25.4	C	R	0.34	26.5	C		
	SB	TR	0.57	27.9	C	TR	0.58	28.1	C	TR	0.60	29.4	C	
Overall Intersection	-	1.02	29.8	C	-	1.02	32.2	C	-	1.02	30.6	C		
Delancey St and Norfolk St														
Delancey Street	EB	T	0.73	20.7	C	T	0.74	20.8	C					- Mitigation not required.
	WB	TR	0.97	30.8	C	TR	0.97	31.0	C					
Norfolk Street	NB	LTR	0.35	19.9	B	LTR	0.37	20.2	C					
	R	0.19	17.7	B	R	0.21	17.9	B						
Overall Intersection	-	0.68	26.0	C	-	0.69	26.3	C						
Delancey St and Suffolk St														
Delancey St	EB	TR	0.67	19.0	B	TR	0.68	19.2	B					- Mitigation not required.
	WB	T	0.83	20.7	C	T	0.83	20.7	C					
Suffolk St	SB	R	0.06	16.4	B	R	0.06	16.4	B					
Overall Intersection	-	0.48	19.9	B	-	0.48	20.0	B						
Delancey St and Clinton St														
Delancey St	EB	T	0.73	24.5	C	T	0.73	24.6	C					- Mitigation not required.
	R	0.47	24.2	C	R	0.47	24.2	C						
	WB	T	1.08	95.5	F	T	1.09	96.3	F					
	R	1.04	98.9	F	R	1.04	98.9	F						
Clinton St	NB	R	0.96	46.0	D	R	0.96	47.1	D					
Delancey St Service Road	WB	R	0.54	54.4	D	R	0.54	54.4	D					
Overall Intersection	-	1.11	65.8	E	-	1.11	66.3	E						
Broome St and Norfolk St														
Broome St	EB	L	0.51	18.0	B	L	0.55	19.6	B					- Mitigation not required.
	WB	R	0.06	10.1	B	R	0.07	10.2	B					
Norfolk St	NB	T	0.21	21.6	C	T	0.24	22.0	C					
Overall Intersection	-	0.40	18.8	B	-	0.43	19.9	B						
Grand St and Clinton St														
Grand St	EB	TR	0.52	18.4	B	TR	0.54	19.0	B					- Unmitigatable impact
	WB	LT	0.35	15.0	B	LT	0.35	15.1	B					
	R	1.12	108.6	F	R	1.16	124.1	F						
Clinton St	NB	LTR	0.85	47.7	D	LTR	0.92	57.5	E					
Overall Intersection	-	1.01	44.1	D	-	1.07	60.1	E						

(1) Control delay is measured in seconds per vehicle.
 (2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
 (3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
 Highlighting denotes a significantly impacted movement.

**Table 17-4
GO Broome Street Development EIS
NO ACTION VS WITH ACTION VS WITH ACTION W/ IMPROVEMENTS TRAFFIC LEVELS OF SERVICE COMPARISON - WEEKDAY MIDDAY PEAK HOUR**

INTERSECTION & APPROACH	2023 No Action				2023 With Action				2023 With Action w/ Improvements				Mitigation Measures
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED INTERSECTIONS													
Delancey St and Essex St Delancey St	EB	TR	0.80	23.6	C	TR	0.81	23.7	C				- Mitigation not required.
	WB	T	0.72	20.1	C	T	0.72	20.1	C				
	R	1.04	79.5	E	R	1.05	82.2	F					
Essex St	NB	LT	0.42	26.1	C	LT	0.42	26.2	C				
	R	0.43	27.7	C	R	0.44	28.1	C					
	SB	TR	0.73	32.8	C	TR	0.74	33.2	C				
	Overall Intersection	-	0.90	27.0	C	-	0.92	27.3	C				
Delancey St and Norfolk St Delancey Street	EB	T	0.86	24.2	C	T	0.86	24.3	C				- Mitigation not required.
	WB	TR	0.79	21.7	C	TR	0.79	21.8	C				
	NB	LTR	0.41	20.8	C	LTR	0.42	21.2	C				
Norfolk Street	R	0.32	19.6	B	R	0.34	19.8	B					
	Overall Intersection	-	0.65	22.6	C	-	0.66	22.7	C				
Delancey St and Suffolk St Delancey St	EB	TR	0.77	20.5	C	TR	0.78	20.7	C				- Mitigation not required.
	WB	T	0.69	18.4	B	T	0.69	18.4	B				
	SB	R	0.27	19.8	B	R	0.27	19.9	B				
Suffolk St													
	Overall Intersection	-	0.54	19.5	B	-	0.54	19.6	B				
Delancey St and Clinton St Delancey St	EB	T	0.87	28.2	C	T	0.87	28.2	C				- Mitigation not required.
	R	0.25	19.2	B	R	0.25	19.2	B					
	WB	T	1.07	91.5	F	T	1.07	92.6	F				
Clinton St	NB	R	0.87	34.1	C	R	0.88	34.2	C				
Delancey St Service Road	WB	R	0.52	52.0	D	R	0.52	52.0	D				
	Overall Intersection	-	0.99	59.7	E	-	0.99	60.2	E				
Broome St and Norfolk St Broome St	EB	L	0.67	24.5	C	L	0.71	27.2	C				- Mitigation not required.
	WB	R	0.04	9.7	A	R	0.05	9.9	A				
	NB	T	0.29	22.8	C	T	0.31	23.1	C				
Norfolk St													
	Overall Intersection	-	0.52	23.4	C	-	0.55	24.8	C				
Grand St and Clinton St Grand St	EB	TR	0.39	16.0	B	TR	0.43	16.7	B				- Unmitigatable impact
	WB	LT	0.31	14.5	B	LT	0.31	14.5	B				
	R	1.26	163.5	F	R	1.37	212.1	F					
Clinton St	NB	LTR	0.90	55.2	E	LTR	0.94	61.4	E				
	Overall Intersection	-	1.12	75.3	E	-	1.21	91.6	F				

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
 Highlighting denotes a significantly impacted movement.

Table 17-5
GO Broome Street Development EIS
NO ACTION VS WITH ACTION VS WITH ACTION W/ IMPROVEMENTS TRAFFIC LEVELS OF SERVICE COMPARISON - WEEKDAY PM PEAK HOUR

INTERSECTION & APPROACH	2027 No Action				2027 With Action				2027 With Action w/ Improvements				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS														
Delancey St and Essex St														
Delancey St	EB	TR	0.85	25.6	C	TR	0.86	25.8	C				- Unmitigatable impact	
	WB	T	0.73	20.1	C	T	0.73	20.1	C					
	R	R	0.98	59.2	E	R	1.00	64.3	E					
Essex St	NB	LT	0.37	25.1	C	LT	0.38	25.3	C					
	R	R	0.94	69.2	E	R	0.95	72.4	E					
	SB	TR	0.85	38.5	D	TR	0.86	39.9	D					
Overall Intersection	-	0.96	30.0	C	-	0.99	30.9	C						
Delancey St and Norfolk St														
Delancey Street	EB	T	1.00	38.4	D	T	1.01	39.6	D				- Mitigation not required.	
	WB	TR	0.80	21.8	C	TR	0.80	22.0	C					
Norfolk Street	NB	LTR	0.67	26.8	C	LTR	0.70	27.8	C					
	R	R	0.56	23.8	C	R	0.58	24.3	C					
Overall Intersection	-	0.85	29.4	C	-	0.86	30.1	C						
Delancey St and Suffolk St														
Delancey St	EB	TR	0.95	24.3	C	TR	0.97	25.5	C				- Mitigation not required.	
	WB	T	0.69	18.5	B	T	0.70	18.5	B					
Suffolk St	SB	R	0.17	17.9	B	R	0.18	17.9	B					
Overall Intersection	-	0.59	21.7	C	-	0.60	22.4	C						
Delancey St and Clinton St														
Delancey St	EB	T	1.07	62.8	E	T	1.07	63.6	E				- Mitigation not required.	
	R	0.33	22.0	C	R	0.33	22.0	C						
	T	1.07	86.3	F	T	1.08	90.5	F						
Clinton St	NB	R	1.03	92.8	F	R	1.03	92.8	F					
Delancey St Service Road	WB	R	0.90	33.8	C	R	0.90	34.1	C					
	WB	R	0.73	71.7	E	R	0.73	71.7	E					
Overall Intersection	-	1.02	70.6	E	-	1.02	71.7	E						
Broome St and Norfolk St														
Broome St	EB	L	1.41	222.6	F	L	1.58	294.8	F	L	1.41	218.4	F	- Modify signal timing. Shift 4 sec of green time from NB/SB phase to EB/WB phase. [NB/SB green time shifts from 31 sec to 27 sec; EB/WB green time shifts from 49 sec to 53 sec.]
	WB	R	0.06	10.1	B	R	0.09	10.6	B	R	0.08	8.6	A	
Norfolk St	NB	T	0.42	25.0	C	T	0.45	25.6	C	T	0.52	30.1	C	
Overall Intersection	-	1.03	155.4	F	-	1.14	198.3	F	-	1.11	150.6	F		
Grand St and Clinton St														
Grand St	EB	TR	0.45	17.1	B	TR	0.53	19.2	B				- Unmitigatable impact	
	WB	LT	0.41	16.0	B	LT	0.41	16.0	B					
	R	R	1.19	138.2	F	R	1.24	156.7	F					
Clinton St	NB	LTR	0.97	68.1	E	LTR	1.03	81.1	F					
Overall Intersection	-	1.11	65.4	E	-	1.16	73.9	E						

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
 Highlighting denotes a significantly impacted movement.

Table 17-6
GO Broome Street Development EIS
NO ACTION VS WITH ACTION VS WITH ACTION W/ IMPROVEMENTS TRAFFIC LEVELS OF SERVICE COMPARISON - SATURDAY PEAK HOUR

INTERSECTION & APPROACH	2023 No Action				2023 With Action				2023 With Action w/ Improvements				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
SIGNALIZED INTERSECTIONS														
Delancey St and Essex St Delancey St	EB	TR	0.94	32.9	C	TR	0.95	33.5	C				- Mitigation not required.	
	WB	T	0.73	19.8	B	T	0.73	19.8	B					
	R	1.06	76.3	E	R	1.07	79.8	E						
Essex St	NB	LT	0.43	26.0	C	LT	0.44	26.2	C					
	R	0.72	40.2	D	R	0.73	41.0	D						
	SB	TR	0.82	36.5	D	TR	0.83	37.3	D					
Overall Intersection	-	0.96	32.0	C	-	0.97	32.6	C						
Delancey St and Norfolk St Delancey Street	EB	T	0.99	33.0	C	T	1.00	33.6	C				- Mitigation not required.	
	WB	TR	0.86	23.9	C	TR	0.87	24.0	C					
	NB	LTR	0.46	21.6	C	LTR	0.48	22.0	C					
Norfolk Street	R	0.41	20.8	C	R	0.43	21.0	C						
Overall Intersection	-	0.75	27.7	C	-	0.76	28.0	C						
Delancey St and Suffolk St Delancey St	EB	TR	0.96	25.7	C	TR	0.97	26.7	C				- Mitigation not required.	
	WB	T	0.71	18.7	B	T	0.71	18.8	B					
	SB	R	0.19	18.0	B	R	0.19	18.1	B					
Suffolk St														
Overall Intersection	-	0.60	22.6	C	-	0.61	23.2	C						
Delancey St and Clinton St Delancey St	EB	T	1.04	49.3	D	T	1.04	50.0	D				- Mitigation not required.	
	R	0.22	18.2	B	R	0.22	18.2	B						
	WB	T	1.05	87.0	F	T	1.05	88.3	F					
Clinton St	NB	R	1.01	56.9	E	R	1.01	57.6	E					
Delancey St Service Road	WB	R	0.68	64.4	E	R	0.68	64.4	E					
Overall Intersection	-	1.06	66.9	E	-	1.07	67.8	E						
Broome St and Norfolk St Broome St	EB	L	0.83	35.5	D	L	0.92	51.5	D	L	0.88	41.2	D	- Modify signal timing. Shift 2 sec of green time from NB/SB phase to EB/WB phase. [NB/SB green time shifts from 31 sec to 29 sec; EB/WB green time shifts from 49 sec to 51 sec.]
	WB	R	0.06	10.0	A	R	0.10	10.5	B	R	0.09	9.5	A	
	NB	T	0.42	24.8	C	T	0.44	25.2	C	T	0.47	27.3	C	
Norfolk St														
Overall Intersection	-	0.67	30.0	C	-	0.74	38.2	D	-	0.73	33.7	C		
Grand St and Clinton St Grand St	EB	TR	0.48	17.6	B	TR	0.54	18.9	B				- Unmitigatable impact	
	WB	LT	0.39	15.6	B	LT	0.39	15.6	B					
	R	1.17	123.9	F	R	1.20	136.9	F						
Clinton St	NB	LTR	1.01	77.5	E	LTR	1.07	92.9	F					
Overall Intersection	-	1.16	64.9	E	-	1.20	73.1	E						

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
(3) Movement delay and overall delay cannot be calculated; exceeds the HCS software threshold.
 Highlighting denotes a significantly impacted movement.

As shown in **Table 17-1**, one of the six study intersections would remain unmitigated during the weekday AM, midday, and Saturday midday peak hours, and two of the study intersections would remain unmitigated during the weekday PM peak hour. The following two intersections could not be mitigated during at least one peak hour:

- › Delancey Street and Essex Street (weekday PM peak hour)
- › Grand Street and Clinton Street (weekday AM, midday, PM and Saturday midday peak hours)

Delancey Street and Essex Street

Significant impacts at this intersection would occur during the weekday AM and PM peak hours. The significant impact during the weekday AM peak hour could be mitigated with signal timing modifications. Significant impacts during the weekday PM peak hour could not be mitigated.

Broome Street and Norfolk Street

Significant impacts at this intersection would occur during the weekday PM and Saturday midday peak hours and could be mitigated with signal timing modifications.

Grand Street and Clinton Street

Significant impacts at this intersection would occur during the weekday AM, midday, PM, and Saturday midday peak hours. These impacts would remain unmitigated during all peak hours analyzed.

Implementation

~~There is potential for additional impacts to be identified between Draft and Final of this Environmental Impact Statement (EIS), and if so, additional measures will be explored, where feasible, to further mitigate the identified impacts. The proposed mitigation measures are subject to review and approval by the NYCDOT, and if certain proposed mitigation measures are deemed infeasible by NYCDOT, alternatives will be analyzed. If no other alternative mitigation measures can be identified, those impact locations would be unmitigated and would therefore be considered unavoidable adverse impacts. See Chapter 18, "Unavoidable Adverse Impacts."~~

Pedestrians

As discussed in **Chapter 9, "Transportation"**, the proposed project would result in significant impacts at one pedestrian element (crosswalk) during the weekday PM peak hour; no significant impacts are expected to occur during the weekday AM, midday, and Saturday midday peak hours. The significantly impacted crosswalk element and the traffic improvements identified to mitigate this impact are described below.

Broome Street and Norfolk Street

The north crosswalk at the intersection of Broome Street and Norfolk Street would be significantly impacted during the weekday PM peak hour. Impacts to the north crosswalk would be mitigated by restriping the north crosswalk from 14 feet to 15 feet in width, and by modifying the signal timing during the weekday PM peak hour.

Detailed pedestrian levels of services and mitigation measures identified are summarized in **Table 17-7**.

Table 17-7 Crosswalk Impact Mitigation Summary

Location		No Action		With Action		Mitigated With Action		Mitigation measures
		sf/p	LOS	sf/p	LOS	sf/p	LOS	
Weekday PM Peak Hour								
Broome Street and Norfolk Street	North Crosswalk	23.2	D	16.7	D	20.8	D	Widen crosswalk by 1 foot to 15 feet Shift four seconds of green time from the northbound phase to the eastbound/ westbound phase

17.4 Construction

Transportation

As discussed in **Chapter 15, "Construction,"** three key intersections were analyzed for potentially significant traffic impacts during the peak construction traffic hours. During the AM construction peak hour, the westbound through movement at the intersection of Delancey Street and Clinton Street would be significantly impacted and could be mitigated with a one second shift in signal timing from the northbound Clinton Street phase to the westbound Williamsburg Bridge/northbound Clinton Street phase. During the PM construction peak hour, the northbound approach at the intersection of Grand Street and Clinton Street would be significantly impacted and could not be mitigated. [Implementation of the recommended traffic engineering improvements is subject to review and approval by NYCDOT.](#)

~~There is potential for additional impacts to be identified between Draft and Final of this EIS, and if so, additional measures will be explored, where feasible, to further mitigate the identified impacts. The proposed mitigation measures are subject to review and approval by the NYCDOT, and if certain proposed mitigation measures are deemed infeasible by NYCDOT, alternatives will be analyzed. If no other alternative mitigation measures can be identified, those impact locations would be unmitigated, and would therefore be considered unavoidable adverse impacts. See **Chapter 18, "Unavoidable Adverse Impacts."**~~

Noise

As discussed in **Chapter 15, "Construction,"** construction at Projected Development Site 1 has the potential to result in a significant adverse construction-period noise impact at the north and east facades of the Hong Ning building, 384 Grand Street and the south façade of the podium building at 202 Broome Street because of the duration and magnitude of the projected construction-period noise levels. The applicants are committed to implementing certain controls (use of quieter equipment and 12-foot perimeter noise barrier) that exceed the noise control measures required by the New York City Noise Control Code, ~~including the use of a 12-foot perimeter noise barrier.~~ However, even with these measures, elevated construction-period noise levels are predicted to occur, ~~at the following locations: the north and east facades of the Hong Ning building, 384 Grand Street, and the podium portion of the 202 Broome Street building during excavation/foundation and superstructure phases of construction.~~

Additional measures, as feasible, to avoid potential significant adverse noise impacts have been ~~will be~~ identified between the Draft and Final EIS in consultation with DCP. ~~These~~ if no ~~feasible and practicable~~ mitigation measures consist of ~~are identified,~~ the use of enclosures around compressors and generators and acoustic shrouds around pile drivers. This chapter presents the results of the ~~significant adverse~~ construction-period noise analysis including the use of these additional mitigation measures ~~impact would remain unmitigated.~~

Table 17-8 presents the type of equipment, the maximum sound level at 50 feet, the proposed noise reduction measure and the maximum sound level at 50 feet including the proposed noise reduction measure. The mitigation measures that have been included in the analysis include the use of acoustic enclosures around compressors and generators and acoustic shrouds around pile drivers which both typically provide 5 dBA of noise reduction.

Table 17-8 Equipment Sound Levels with Proposed Mitigation

<u>Equipment</u>	<u>Maximum Sound Level at 50 feet (dBA, Lmax)</u>	<u>Project-Specific Maximum Sound Level at 50 feet (dBA, Lmax)</u>	<u>Project-Specific Construction Practices</u>
<u>Pickup Truck¹</u>	<u>55</u>	<u>N/A</u>	<u>N/A</u>
<u>Pile Driver/Caisson Rig</u>	<u>95</u>	<u>90</u>	<u>Acoustic Shroud</u>
<u>Excavator/Backhoe</u>	<u>85</u>	<u>N/A</u>	<u>N/A</u>
<u>Tie-Back Drill Rig</u>	<u>84</u>	<u>N/A</u>	<u>N/A</u>
<u>Compressor</u>	<u>80</u>	<u>75</u>	<u>Portable Enclosure³</u>
<u>Dump Truck¹</u>	<u>84</u>	<u>N/A</u>	<u>N/A</u>
<u>Generator</u>	<u>82</u>	<u>77</u>	<u>Portable Enclosure³</u>
<u>Concrete Mixer Truck</u>	<u>85</u>	<u>N/A</u>	<u>N/A</u>
<u>Concrete Pump</u>	<u>82</u>	<u>N/A</u>	<u>N/A</u>
<u>Tower Crane</u>	<u>85</u>	<u>80²</u>	<u>N/A</u>
<u>Hydraulic Crane</u>	<u>85</u>	<u>N/A</u>	<u>N/A</u>

Source: VHB, 2019.

1: Since dump trucks and pickup trucks are not allowed to idle more than three minutes in accordance with New York City Administrative Code §24-163, they have been excluded from the construction noise predictions.

2: Noise levels achieved by using quieter equipment will be incorporated into a Restrictive Declaration

3: Portable noise enclosures provide 5 dBA of insertion loss according to the New York City Administrative Code §28-101 "Citywide Construction Noise Mitigation".

Construction noise was predicted using the CadnaA model. The construction noise predictions include the equipment described in **Table 17-8**; a 12-foot solid perimeter noise barrier that would shield stationary construction equipment within the site as well as the construction trucks accessing Projected Development Site 1; and mitigation measures identified by the applicant, which include the use of acoustic enclosures around compressors and generators and acoustic shrouds around pile drivers.

The assessment results, shown in **Table 17-9**, present the range of construction noise levels at each building (or building façade) including the results at all floors. Construction noise levels would range from the low 60's to low 80's dBA (L_{eq}) at all receptor locations during excavation and foundation. Exterior construction noise levels would increase by 15 dBA or more at the north and east façades of the Hong Ning Building (R2 and R3), 384 Grand Street (R4), and the south façade of the 202 Broome Street base building (R15). Exterior construction noise levels would not increase by 20 dBA or more at any receptor location during the excavation and foundation phase.

Construction noise levels would range from the low 60's to upper 70's dBA (L_{eq}) at all receptor locations during superstructure construction. Superstructure construction noise levels would not increase by 15 dBA or more at any receptor location during the superstructure phase.

Table 17-9 Construction Sound Levels with Noise Control Measures

Receptor	Location	Existing Ambient Sound Level (dBA, Leq)	Excavation		Superstructure	
			Construction Sound Level (dBA, Leq)	Increase over Existing (dBA)	Construction Sound Level (dBA, Leq)	Increase over Existing (dBA)
R1	Hong Ning – West	62.2 – 63.0	63.9 – 67.9	4.9	65.4 – 67.8	5.6
R2	Hong Ning – North	62.2	68.9 – 79.8	17.5	67.7 – 76.9	14.7
R3	Hong Ning – East	62.2	68.3 – 78.8	16.6	66.6 – 74.8	12.5
R4	384 Grand Street	62.2	68.3 – 79.2	17.0	68.1 – 76.0	13.8
R5	145 Clinton Street Base Building (Under Development)	62.2	67.7 – 74.8	12.5	68.0 – 71.6	9.4
R6	145 Clinton Street Tower Building (Under Development)	64.4 – 64.9	70 – 75.1	10.4	68.2 – 71.9	7.2
R7	The Park at Essex Crossing	63.9	69.3	5.5	72.3	8.4
R8	Gill Apartments	62.2 – 63.3	62.7 – 67.9	5.3	62.6 – 65.4	2.3
R9	Grand Street Guild (Future Development)	66.3 – 68.8	68.5 – 74.1	7.6	68.6 – 71.2	3.7
R10	175 Delancey Street Base Building (Under Development)	66.2 – 67.5	67.5 – 72.7	6.0	67.5 – 69.7	3.0
R11	175 Delancey Street Tower Building (Under Development)	66.5 – 68.8	67.3 – 74.1	7.6	66.8 – 71.2	3.7
R12	180 Broome Street Base Building (Under Development)	66.3 – 66.9	69.7 – 77.6	11.2	71.0 – 78.7	12.1
R13	180 Broome St Tower Building	62.2 – 65.1	64.9 – 73.1	10.8	64.0 – 70.4	7.3
R14	202 Broome St - East Façade (Under Development)	66.9 – 67.5	70.4 – 79.5	12.2	71.5 – 79.2	11.9
R15	202 Broome St - South Façade	62.2 – 64.9	68.9 – 80.5	18.0	68.3 – 76.1	13.5
R16	202 Broome St - West Façade	68.7 – 69.3	71.2 – 78.7	9.6	71.2 – 75.5	6.5
R17	202 Broome St Tower Building	64.9 – 65.4	66.0 – 72.3	7.0	66.2 – 70.4	5.0
R18	115 Delancey St Base Building	68.3 – 69.3	70.8 – 76.7	8.0	70.8 – 74.1	5.5
R19	115 Delancey St Tower Building	69.8 – 70.7	70.5 – 73.2	3.3	70.2 – 71.9	1.9
R20	242 Broome St Base Building (Under Development)	72.7 – 73.4	73.2 – 73.6	0.7	73.1 – 73.7	0.8
R21	242 Broome St Tower Building	64.5 – 69.0	65.2 – 70.5	1.6	65.5 – 70.2	1.6
R22	350 Grand Street	68.5 – 68.8	68.9 – 70.5	1.8	69.0 – 69.9	1.2
R23	62 Essex Street	62.2	67.7 – 76.3	14.0	67.1 – 75.1	12.9
R24	62 Essex Street Annex	62.2	63.9	1.7	65.0	2.8
R25	Grand Street Commercial – West Façade	62.2	63.2	1.0	64.0	1.8
R26	357 Grand Street	62.2	64.0 – 72.3	10.0	64.1 – 68.2	5.9
R27	Grand Street Commercial – East Façade	62.2	64.7	2.4	65.4	3.2

Source: VHB, 2019.

Note: Bold values exceed 15 dBA increase

Construction sound levels would increase by 15 dBA or more at four receptor locations (R2, R3, R4, R15) during the excavation/foundation phase but not during the superstructure phase. Therefore, based on the limited duration and magnitude of predicted construction noise associated with the proposed actions, there would be no significant adverse noise impact when including the additional path control mitigation measures..

With mitigation, construction sound levels would not increase by 20 dBA or more at any location during construction. Maximum interior construction noise levels would be up to 58 dBA L₁₀ (55 dBA L_{eq}) along the north and east facades of the Hong Ning building with air conditioning units, up to 78 dBA L₁₀ (75 dBA L_{eq}) at residences along north and east facades of the Hong Ning building without alternate means of ventilation, up to 62 dBA L₁₀ (59 dBA L_{eq}) at residences along the north façade of 384 Grand Street with air conditioning units, and up to 77 dBA L₁₀ (74 dBA L_{eq}) at residences along the north façade of 384 Grand Street without alternate means of ventilation which would exceed the residential interior noise goal of 45 dBA L₁₀ by 13, 33, 17 and 32 dBA, respectively. With mitigation, maximum interior construction noise levels at the base building of 202 Broome Street would be up to 54 dBA L₁₀, (51 dBA L_{eq}) which would exceed the interior noise for offices of 50 dBA L₁₀ by up to 4 dBA.

Overall, construction noise would be below the thresholds for significant adverse noise impact with the adherence to existing construction noise regulations and the use of a quieter equipment and 12-foot perimeter noise barrier, as well as the implementation of additional mitigation measures that include acoustic enclosures around compressors and generators and acoustic shrouds around pile drivers. In the event that implementation of the additional path control mitigation measures is not be feasible or practicable to mitigate project-related construction noise, the applicant shall offer tenants with units located along the north and east facades of the Hong Ning building and the north façade of 384 Grand Street that do not have through-window air conditioning units or an alternate means of ventilation, where significant adverse noise impacts are predicted to occur, one air-conditioning unit per dwelling unit to mitigate project-related construction noise impacts. In the event additional path control noise mitigation measures, such as the pile driver shroud and acoustic enclosures are determined not to be feasible or practicable because they pose a risk to safety (i.e., overheating equipment), would substantially delay construction activities, or are not able to be implemented, there is the potential for unavoidable adverse impacts. See **Chapter 18, "Unavoidable Adverse Impacts."**