Chapter 15: Mitigation

A. INTRODUCTION

In accordance with the *New York City Environmental Quality Review (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. As discussed in the analyses in Chapters 3 through 13, the Proposed Project has the potential to result in significant adverse impacts in the areas of transportation and noise. As described in Chapter 10, "Noise," the Proposed Project could result in significant adverse impacts at open space locations immediately adjacent to certain ferry landings and at sensitive land uses that could be located immediately adjacent to school playgrounds. However, there are no feasible or practicable measures to mitigate these impacts. Therefore, this chapter focuses on potential mitigation measures related to transportation, which are discussed below.

B. TRANSPORTATION

TRAFFIC

As discussed in Chapter 7, "Transportation," traffic conditions were evaluated at 14 intersections in Manhattan for the weekday AM, midday, PM, and Saturday peak hours and at seven intersections in Brooklyn for the weekday AM, midday, and PM peak hours. In Manhattan, as summarized in **Table 15-1**, there would be significant adverse impacts at five approaches/lane groups during the weekday AM peak hour, two approaches/lane groups during the weekday midday peak hour, two approaches/lane groups during the PM peak hour, and four approaches/lane groups during Saturday peak hours. In Brooklyn, as summarized in **Table 15-2**, there would be significant adverse impacts at one approach/lane group during the weekday AM peak hour, three approaches/lane groups during the weekday midday peak hour, and seven approaches/lane groups during PM peak hours.

Subject to approvals of the relevant agencies, including the New York City Department of Transportation (NYCDOT), with the implementation of standard mitigation measures (~~including~~ primarily signal timing changes ~~and daylighting~~), the significant adverse traffic impacts identified could be fully mitigated except at one intersection during the Saturday peak hour in Manhattan and one intersection during the weekday PM peak hour in Brooklyn.

Tables 15-3 and **15-4** summarize the recommended mitigation measures that are subject to review and approval by NYCDOT.

Tables 15-5 to **15-11** compare the level of service (LOS) conditions for the 2022 No Build, Build, and Mitigation conditions for the weekday AM, midday, PM and Saturday peak hours. Provided below is a discussion of each intersection with significant adverse traffic impacts and its recommended mitigation.

Table 15-1
Summary of Significant Adverse Traffic Impacts—Manhattan Intersections

Intersection		AM Peak Hour		Midday Peak Hour		PM Peak Hour		Saturday Peak Hour	
EB/WB Street	NB/SB Street	Significant Impacts	Mit	Significant Impacts	Mit	Significant Impacts	Mit	Significant Impacts	Mit
Water Street	Whitehall Street	EB-LT	Yes					EB-LT	Yes
Water Street	Broad Street							EB-LTR	Yes
South Street	Broad Street							SB – R	No
South Street	Old Slip	WB-TR	Yes	WB-TR	Yes	WB-TR	Yes		
		NB-TR	Yes						
South Street	Wall Street	SB-LR	Yes	SB-LR	Yes	SB-LR	Yes	SB-LR	Yes
South Street	Maiden Lane	EB-LT	Yes						

Notes:
EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left Turn; T = Through; R = Right Turn;
MIT = Mitigation Provided

Table 15-2
Summary of Significant Adverse Traffic Impacts—Brooklyn Intersections

Intersection		AM Peak Hour		Midday Peak Hour		PM Peak Hour	
EB/WB Street	NB/SB Street	Significant Impacts	Mit	Significant Impacts	Mit	Significant Impacts	Mit
Joralemon Street	Furman Street	EB-LR	Yes	EB-LR	Yes	EB-LR	Yes
				NB-LT	Yes	NB-LT	Yes
Atlantic Ave	Court Street					EB-TR	Yes
				SB-LTR	Yes		
Atlantic Ave	BQE EB Ramps					EB-L	Yes
Atlantic Ave	Columbia Street					WB-L	No
						WB-LT	No
BQE Ramps	Columbia Street					SB-L	Yes

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left Turn; T = Through; R = Right Turn; MIT = Mitigation Provided; BQE = Brooklyn-Queens Expressway.
Unmitigatable Impacts are Highlighted

Table 15-3
Recommended Mitigation Measures—Manhattan Intersections

Intersection	Weekday AM	Weekday Midday	Weekday PM	Saturday
Water Street and Whitehall Street	~~1) Shift 2 seconds from the All Ped phase to the EB/WB phase.~~ Shift ~~1~~ 3 seconds of green time from NB phase to the EB/WB phase.	No significant Impact	No significant Impact	Shift 1 second ~~shift the All Ped phase~~ of green time from the NB phase to the EB/WB phase.
Water Street and Broad Street	No significant Impact	No significant Impact	No significant Impact	Shift 1 second of green time from the NB/SB phase to the EB/WB phase.
South Street and Broad Street	No Significant Impact	No Significant Impact	No Significant Impact	Unmitigated
South Street and Old Slip [(1)]	1) Re-stripe northbound approach to provide an exclusive though lane and exclusive right-turn lane; 2) Shift one second of green time from the WB to the NB/SB Phase ~~2) Shift 3 seconds of time from the ped phase to the WB phase.~~ ~~3) Shift 1 second of time from the ped phase to the NB/SB phase.~~	1) Re-stripe northbound approach to provide an exclusive though lane and exclusive right-turn lane; 2) Shift 2 seconds of green time from the NB/SB phase to the WB phase.	1) Re-stripe northbound approach to provide an exclusive though lane and exclusive right-turn lane; 2) Shift 2 seconds of green time from the NB/SB phase to the WB phase.	Re-stripe northbound approach to provide an exclusive though lane and exclusive right-turn lane.
South Street and Wall Street	Shift 2 seconds of green time from the EB/WB phase to the SB phase.	Shift 1 seconds of green time from the EB/WB phase to the SB phase.	Shift 2 seconds of green time from the EB/WB phase to the SB phase.	Shift 1 seconds of green time from the EB/WB phase to the SB phase.
South Street and Maiden Lane	Shift 4 seconds of green time from the SB phase to the EB/WB phase.	No significant Impact	No significant Impact	No significant Impact

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
[(1)] Mitigation measure not required for the Saturday peak hour

Table 15-4
Recommended Mitigation Measures—Brooklyn Intersections

Intersection	Weekday AM	Weekday Midday	Weekday PM
Joralemon Street and Furman Street	Provide a left-turn lane and a right-turn lane on the eastbound approach of Furman Street and Joralemon Street.	1) Provide a left-turn lane and a right-turn lane on the eastbound approach of Furman Street and Joralemon Street 2) Shift 1 second of green time from the NB/SB phase to the EB/WB phase	1) Provide a left-turn lane and a right-turn lane on the eastbound approach of Furman Street and Joralemon Street 2) Shift 1 second of green time from the NB/SB phase to the EB/WB phase
Atlantic Avenue and Court Street	No Significant Impact	Shift 1 second of green time from the WB lead phase to the SB phase.	Shift 1 second of green time from the WB lead phase to the EB/WB phase.
Atlantic Avenue and BQE Eastbound Ramps	No Significant Impact	No Significant Impact	Shif1 1 second of green time from the NB phase to the EB/WB right-turn phase.
Atlantic Avenue and Columbia Street	No Significant Impact	No Significant Impact	Unmitigated
BQE Ramps and Columbia Street	No Significant Impact	No Significant Impact	Shift 1 second of green time from the NB/SB phase to the SB phase.

Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; BQE = Brooklyn-Queens Expressway

Table 15-5
2022 No Build, Build, and Mitigation Conditions Level of Service Analysis
Manhattan Intersections
Weekday AM Peak Hour

	2022 No Build				2022 Build				2022 Mitigation			
Intersection	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS
Whitehall Street and Water Street												
Eastbound	LT	1.01	66.0	E	LT	1.10	94.8	F+	LT	1.01	63.5	E
Westbound	TR	0.63	28.2	C	TR	0.63	28.2	C	TR	0.58	24.5	C
Northbound	L	0.51	34.1	D	L	0.60	36.8	D	L	0.70	44.2	D
	TR	0.32	29.8	C	TR	0.33	30.1	C	TR	0.38	33.5	C
	Intersection		47.8	D	Intersection		62.9	E	Intersection		48.0	D
South Street and Old Slip												
Westbound	TR	0.72	36.0	D	TR	0.88	48.8	D+	TR	0.85	44.3	D
Northbound	L	0.32	24.6	C	L	0.38	25.6	C	L	0.39	26.6	C
	TR	0.87	44.9	D	TR	1.00	67.8	E+	T	0.35	25.8	C
	-	-	-	-	-	-	-	-	R	0.87	48.8	D
Southbound	R	0.24	23.8	C	R	0.29	24.6	C	R	0.30	25.2	C
	Intersection		37.3	D	Intersection		51.6	D	Intersection		38.7	D
South Street and Wall Street												
Eastbound	T	0.43	16.0	B	T	0.49	17.1	B	T	0.51	18.5	B
Westbound	T	0.40	15.6	B	T	0.50	17.4	B	T	0.52	18.8	B
Southbound	LR	0.86	86.9	F	LR	0.96	105.9	F+	LR	0.84	79.8	E
	Intersection		28.9	C	Intersection		32.4	C	Intersection		29.1	C
South Street and Maiden Lane												
Eastbound	LT	0.80	29.1	C	LT	1.08	85.4	F+	LT	0.93	43.7	D
Westbound	TR	0.59	17.6	B	TR	0.67	19.9	B	TR	0.61	15.7	B
Southbound	LR	0.43	25.9	C	LR	0.46	26.6	C	LR	0.53	31.6	C
	Intersection		24.0	C	Intersection		48.9	D	Intersection		30.3	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
+ Denotes a significant adverse traffic impact

Table 15-6
2022 No Build, Build, and Mitigation Conditions Level of Service Analysis
Manhattan Intersections
Weekday Midday Peak Hour

	2022 No Build				2022 Build				2022 Mitigation			
Intersection	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS
South Street and Old Slip												
Westbound	TR	0.83	43.8	D	TR	0.91	53.7	D+	TR	0.85	43.9	D
Northbound	L	0.14	22.3	C	L	0.17	22.6	C	L	0.18	24.2	C
	TR	0.70	34.0	C	TR	0.78	38.2	D	T	0.18	24.1	C
	-	-	-	-	-	-	-	-	R	0.80	44.4	D
Southbound	R	0.36	26.0	C	R	0.38	26.5	C	R	0.41	28.7	C
	Intersection		35.8	D	Intersection		41.3	D	Intersection		38.8	D
South Street and Wall Street												
Eastbound	L	0.31	14.1	B	T	0.34	14.5	B	T	0.34	15.1	B
Westbound	TR	0.37	14.9	B	T	0.40	15.4	B	T	0.40	16.0	B
Southbound	R	0.86	86.0	F	LR	0.94	101.7	F+	LR	0.89	88.8	F
	Intersection		29.9	C	Intersection		33.5	C	Intersection		31.2	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
+ Denotes a significant adverse traffic impact

Table 15-7
2022 No Build, Build, and Mitigation Conditions Level of Service Analysis
Manhattan Intersections
Weekday PM Peak Hour

	2022 No Build				2022 Build				2022 Mitigation			
Intersection	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS
South Street and Old Slip												
Westbound	TR	0.93	57.9	E	TR	1.02	78.0	E+	TR	0.95	59.7	E
Northbound	L	0.15	22.3	C	L	0.18	22.7	C	L	0.19	24.3	C
	TR	0.42	26.3	C	TR	0.59	30.1	C	T	0.12	23.4	C
	-	-	-	-	-	-	-	-	R	0.62	34.0	C
Southbound	R	0.47	28.4	C	R	0.50	29.0	C	R	0.53	31.7	C
	Intersection		40.9	D	Intersection		49.7	D	Intersection		43.1	D
South Street and Wall Street												
Eastbound	T	0.22	13.0	B	T	0.30	14.0	B	T	0.31	15.2	B
Westbound	T	0.41	15.6	B	T	0.44	16.1	B	T	0.45	17.4	B
Southbound	LR	0.92	96.6	F	LR	0.99	114.4	F+	LR	0.89	86.8	F
	Intersection		34.5	C	Intersection		37.4	D	Intersection		32.2	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
+ Denotes a significant adverse traffic impact

Table 15-8
2022 No Build, Build, and Mitigation Conditions Level of Service Analysis
Manhattan Intersections
Saturday Peak Hour

Intersection	2022 No Build				2022 Build				2022 Mitigation			
	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS
Whitehall Street and Water Street												
Eastbound	LT	1.04	74.5	E	LT	1.06	81.6	F+	LT	1.03	71.3	E
Westbound	TR	0.46	23.6	C	TR	0.46	23.6	C	TR	0.44	22.7	C
Northbound	L	0.58	37.0	D	L	0.63	38.7	D	L	0.66	41.1	D
	TR	0.39	31.5	C	TR	0.46	32.9	C	TR	0.48	34.3	C
	Intersection		52.3	D	Intersection		56.0	E	Intersection		51.3	D
Broad Street and Water Street												
Eastbound	LTR	0.91	38.6	D	LTR	0.98	50.4	D+	LTR	0.95	44.5	D
Westbound	LTR	0.72	30.8	C	LTR	0.73	31.5	C	LTR	0.61	23.9	C
Northbound	LT	0.27	16.8	B	LT	0.27	16.8	B	LT	0.24	16.9	B
	R	0.38	19.3	B	R	0.38	19.4	B	R	0.38	19.9	B
Southbound	LTR	0.84	39.5	D	LTR	0.86	41.9	D	LTR	0.86	42.7	D
	Intersection		33.6	C	Intersection		39.6	D	Intersection		35.9	D
South Street and Old Slip												
Westbound	TR	0.74	36.6	D	TR	0.78	39.4	D	TR	0.78	39.4	D
Northbound	L	0.15	22.4	C	L	0.16	22.5	C	L	0.16	22.5	C
	TR	0.48	27.8	C	TR	0.54	29.0	C	T	0.10	21.8	C
	-	-	-	-	-	-	-	-	R	0.53	29.6	C
Southbound	R	0.23	23.8	C	R	0.25	24.0	C	R	0.25	24.0	C
	Intersection		30.9	C	Intersection		32.6	C	Intersection		32.3	C
South Street and Wall Street												
Eastbound	T	0.22	13.0	B	T	0.24	13.3	B	T	0.25	13.8	B
Westbound	T	0.35	14.7	B	T	0.36	14.8	B	T	0.37	15.4	B
Southbound	LR	0.62	60.9	E	LR	0.70	67.0	E+	LR	0.66	62.7	E
	Intersection		22.7	C	Intersection		24.4	C	Intersection		24.0	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
+ Denotes a significant adverse traffic impact
(1) Mitigation measure not required for the Saturday peak hour

Table 15-9
2022 No Build, Build, and Mitigation Conditions Level of Service Analysis
Brooklyn Intersections
Weekday AM Peak Hour

Intersection	2022 No Build				2022 Build				2022 Mitigation			
	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS
Joralemon Street and Furman Street												
Eastbound	-	-	-	-	-	-	-	-	L	0.14	32.2	C
	LR	0.75	54.6	D	LR	0.80	61.2	E+	-	-	-	-
	-	-	-	-	-	-	-	-	R	0.57	44.1	D
Westbound	LTR	0.18	32.8	C	LTR	0.20	33.3	C	LTR	0.20	33.3	C
Northbound	LT	0.89	36.6	D	LT	0.89	37.8	D	LT	0.89	37.8	D
Southbound	TR	0.42	12.9	B	TR	0.43	13.1	B	TR	0.43	13.1	B
	Intersection		32.3	C	Intersection		33.9	C	Intersection		30.3	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
+ Denotes a significant adverse traffic impact

Table 15-10
2022 No Build, Build, and Mitigation Conditions Level of Service Analysis
Brooklyn Intersections
Weekday Midday Peak Hour

Intersection	2022 No Build				2022 Build				2022 Mitigation			
	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS
Joralemon Street and Furman Street												
Eastbound	-	-	-	-	-	-	-	-	L	0.25	30.2	C
	LR	1.36	227.7	F	LR	1.42	253.0	F+	-	-	-	-
	-	-	-	-	-	-	-	-	R	1.21	177.2	F
Westbound	LTR	0.24	29.6	C	LTR	0.26	29.9	C	LTR	0.28	31.1	C
Northbound	LT	1.08	84.6	F	LT	1.10	88.9	F+	LT	1.06	76.0	E
Southbound	TR	0.77	17.6	B	TR	0.78	18.3	B	TR	0.77	17.0	B
	Intersection		74.8	E	Intersection		80.6	F	Intersection		56.1	E
Atlantic Avenue and Court Street												
Eastbound	TR	0.91	41.2	D	TR	0.92	43.1	D	TR	0.92	43.1	D
Westbound	L	0.59	21.6	C	L	0.60	22.2	C	L	0.64	25.3	C
	T	0.89	38.1	D	T	0.90	39.4	D	T	0.92	43.4	D
Southbound	LTR	1.07	89.4	F	LTR	1.08	95.4	F+	LTR	1.04	79.7	E
	Intersection		52.3	D	Intersection		55.0	E	Intersection		52.0	D

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
+ Denotes a significant adverse traffic impact

Table 15-11
2022 No Build, Build, and Mitigation Conditions Level of Service Analysis
Brooklyn Intersections
Weekday PM Peak Hour

Intersection	2022 No Build				2022 Build				2022 Mitigation			
	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS	Lane Group	V/C Ratio	Delay (spv)	LOS
Joralemon Street and Furman Street												
Eastbound	-	-	-	-	-	-	-	-	L	0.18	33.6	C
	LR	0.91	80.2	F	LR	1.07	122.9	F+	-	-	-	-
	-	-	-	-	-	-	-	-	R	0.86	77.0	E
Westbound	LTR	0.22	33.8	C	LTR	0.25	34.5	C	LTR	0.26	35.5	D
Northbound	LT	1.11	102.9	F	LT	1.13	109.5	F+	LT	1.10	97.9	F
Southbound	TR	0.83	25.9	C	TR	0.84	26.6	C	TR	0.82	25.1	C
	Intersection		55.9	E	Intersection		65.1	E	Intersection		52.1	D
Atlantic Avenue and Court Street												
Eastbound	TR	0.97	60.2	E	TR	1.01	70.0	E+	TR	0.99	63.5	E
Westbound	L	0.60	30.3	C	L	0.63	33.0	C	L	0.65	34.6	C
	T	0.98	62.9	E	T	0.99	64.9	E	T	0.99	64.9	E
Southbound	LTR	1.05	86.5	F	LTR	1.06	88.9	F	LTR	1.06	88.9	F
	Intersection		67.3	E	Intersection		72.5	E	Intersection		70.0	E
Atlantic Avenue and BQE Eastbound Ramps												
Eastbound	L	0.69	55.1	E	L	0.70	61.3	E+	L	0.67	58.1	E
	T	0.17	3.4	A	T	0.19	3.5	A	T	0.19	3.2	A
Westbound	T	1.01	57.6	E	T	1.03	60.6	E	T	1.03	60.6	E
	R	0.41	9.3	A	R	0.41	9.3	A	R	0.41	9.3	A
Northbound	L	0.41	54.2	D	L	0.42	54.4	D	L	0.45	56.6	E
	Intersection		37.1	D	Intersection		38.6	D	Intersection		38.3	D
Atlantic Avenue and Columbia Street												
Eastbound	T	0.24	26.4	C	T	0.29	27.0	C	Unmitigated			
Westbound	L	1.18	147.1	F	L	1.52	290.0	F+				
	LT	1.10	117.3	F	LT	1.38	230.6	F+				
Northbound	LR	0.44	18.5	B	LR	0.44	18.6	B				
	R	0.25	15.4	B	R	0.25	15.4	B				
	Intersection		76.6	E	Intersection		138.1	F				
BQE Westbound Ramps and Columbia Street												
Westbound	L	0.58	23.4	C	L	0.58	23.4	C	L	0.58	23.4	C
Northbound	T	0.76	28.0	C	T	0.76	28.3	C	T	0.80	32.0	C
Southbound	L	1.12	95.9	F	L	1.13	100.1	F+	L	1.12	93.4	F
	T	1.00	43.9	D	T	1.00	46.0	D	T	1.00	46.0	D
	Intersection		52.9	D	Intersection		54.9	D	Intersection		53.7	D

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, LOS = Level of Service
BQE = Brooklyn-Queens Expressway

Note: + Denotes a significant adverse traffic impact

WATER STREET AND WHITEHALL STREET

The significant adverse impacts at the eastbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting ~~two seconds of time from All Pedestrian phase and one~~ three seconds of green time from the northbound phase to the eastbound/westbound phase.

The significant adverse impact at the eastbound approach of the intersection during the Saturday peak hour could be fully mitigated by shifting one second of green time from ~~All Pedestrian~~ the northbound phase to the eastbound/westbound phase.

WATER STREET AND BROAD STREET

The significant adverse impact at the eastbound approach of this intersection during the Saturday peak hour could be fully mitigated by shifting one second of green time from the northbound/southbound approach to the eastbound/westbound approach.

~~Per NYCDOT, plans are in development to install neckdowns along the Water Street corridor. Between Draft and Final EIS, if plans are finalized, the No Build and Build analyses at this intersection will be revisited to determine if impacts would still occur and if they can be mitigated. As the final design is unknown at this time, there is a potential for the identified impacts at this intersection to be unmitigated.~~

SOUTH STREET AND BROAD STREET

Mitigation of the southbound approach would include installing a signal at the South Street and Broad Street intersection. However, given the proximity of this intersection to the FDR off-ramp, installing a signal ~~may~~ is not ~~be~~ feasible.

SOUTH STREET AND OLD SLIP

The significant adverse impacts at the westbound approach and northbound through/right-turn of this intersection during the weekday AM peak hour could be fully mitigated by restriping the northbound approach to provide an exclusive through lane and exclusive right-turn lane, ~~shifting three seconds of time from the all pedestrian phase to the westbound phase,~~ and by shifting one second of green time from the ~~all pedestrian phase~~ westbound phase to the northbound/southbound phase.

The significant adverse impact at the westbound approach of this intersection during the weekday midday and PM peak hours could be fully mitigated by restriping the northbound approach to provide an exclusive through lane and exclusive right-turn lane and by shifting two seconds of green time from the northbound/southbound phase to the westbound phase.

~~Per NYCDOT, plans are in development to change the roadway markings at this intersection. Between Draft and Final EIS, if plans are finalized, the No Build and Build analyses at this intersection will be revisited to determine if impacts would still occur and if they can be mitigated. As the final design is unknown at this time, there is a potential for the identified impacts at this intersection to be unmitigated.~~

SOUTH STREET AND WALL STREET

The significant adverse impact at the southbound approach of this intersection during the weekday AM and PM peak hours could be fully mitigated by shifting two seconds of green time from the eastbound/westbound phase to the southbound phase.

The significant adverse impact at the southbound approach of this intersection during the midday and Saturday peak hours could be fully mitigated by shifting one second of green time from the eastbound/westbound phase to the southbound phase.

SOUTH STREET AND MAIDEN LANE

The significant adverse impact at the eastbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting ~~three~~ four seconds of green time from the southbound phase to the eastbound/westbound phase.

JORALEMON STREET AND FURMAN STREET

The significant adverse impact at the eastbound approach of this intersection during the weekday AM peak hour could be fully mitigated by restriping the eastbound approach to provide an exclusive left-turn and an exclusive right-turn lane.

The significant adverse impacts at the eastbound approach and northbound approach of this intersection during the weekday midday and PM peak hours could be fully mitigated by restriping the eastbound approach to provide an exclusive left-turn and an exclusive right-turn lane and by shifting one second of green time from the northbound/southbound phase to the eastbound/westbound phase.

ATLANTIC AVENUE AND COURT STREET

The significant adverse impact at the southbound approach of this intersection during the weekday midday peak hour could be fully mitigated by shifting one second of green time from the westbound lead phase to the southbound phase.

The significant adverse impact at the eastbound approach of this intersection during the weekday PM peak hour could be fully mitigated by shifting one second of green time from the westbound lead phase to the eastbound/westbound phase.

ATLANTIC AVENUE AND BQE EASTBOUND RAMPS

The significant adverse impact at the eastbound left-turn of this intersection during the PM peak hour could be fully mitigated by shifting one second of green time from the northbound phase to the eastbound/westbound phase.

ATLANTIC AVENUE AND COLUMBIA STREET

The significant adverse impacts at the westbound left-turn and westbound left-turn/through of this intersection during the weekday PM peak hour could not be mitigated.

Adjustments to signal timings are not feasible since the signal works in tandem with the Atlantic Avenue and Furman Street intersection, and any changes to timings at Columbia Street would adversely impact Furman Street. In addition, limited right-of-way beneath the BQE overpass prohibits both lane widening and the addition of turn lanes.

BQE RAMPS AND COLUMBIA STREET

The significant adverse impact at the southbound left-turn of this intersection during the weekday PM peak hour could be fully mitigated by shifting one second of green time from the northbound/southbound phase to the southbound phase.

EFFECTS OF TRAFFIC MITIGATION ON PEDESTRIAN OPERATIONS

As described above, intersection operations would alter with the implementation of the recommended traffic mitigation measures. These measures would include changes to existing signal timings and lane utilizations. A review of the effects of these changes on pedestrian circulation and service levels at intersection corners and crosswalks showed that they would not alter the conclusions made for the pedestrian impact analyses, nor would they result in the potential for any additional significant adverse pedestrian impacts.

TRANSIT

As discussed in Chapter 7, "Transportation," the Proposed Project would result in a significant adverse impact to the State Street stairway at the Bowling Green subway station. Potential measures to mitigate this significant adverse impact are described below.

SUBWAY STATION OPERATIONS

With the Proposed Project, during the AM peak period the State Street stairway between Battery Place and Bridge Street would decline from LOS D (v/c = 1.06) under the 2022 No Build condition to LOS D (v/c = 1.27) under the 2022 Build condition. This decline constitutes a significant adverse subway station impact. To fully mitigate this impact, the effective width would need to be increased to 92 inches to bring the stairway back to its No-Action v/c ratio.

Standardizing the existing stairway (removing grounded handrails, channels, and the center rail, and installing standard wall mounted handrails) would improve stairway operations~~, but would only~~ and partially mitigate the projected significant adverse impact. To fully mitigate the impact, the stairway would need to be widened; however, given the physical and structural constraints at this location, widening the stairs ~~may~~ is not ~~be~~ feasible. ~~Between Draft and Final EIS, further investigation will be conducted in coordination with New York City Transit to determine if there are practical measures that would fully mitigate the projected significant adverse impact at this stairway. If no practical measures are identified, this significant adverse impact would not be fully mitigated.~~ While not fully mitigating the impact, standardizing the stairway has been accepted by New York City Transit as an appropriate mitigation measure.

PEDESTRIANS

As discussed in Chapter 7, "Transportation," the Proposed Project would result in significant adverse pedestrian impacts at the following locations in Manhattan:

- The east and west crosswalks at State Street and Whitehall Street;
- The east crosswalk at Whitehall Street and South Street; and
- The sidewalk along the Battery Maritime Building (BMB) frontage.

Subject to approvals of the relevant agencies, including NYCDOT, measures to mitigate these significant adverse impacts are described below.

WHITEHALL STREET AND STATE STREET—EAST CROSSWALK

The east crosswalk at this intersection would deteriorate from LOS E (12.4 SFP) to LOS E (9.9 SFP), LOS D (16.9 SFP) to LOS E (14.0 SFP), and LOS D (18.9 SFP) to LOS E (14.3 SFP), during the AM, midday, and PM peak hours, respectively. Restriping the width of this crosswalk from its existing width of 17 feet to 20 feet would be required to fully mitigate the projected significant adverse crosswalk impacts. The mitigated conditions are summarized in **Table 15-12**.

WHITEHALL STREET AND STATE STREET—WEST CROSSWALK

The west crosswalk at this intersection would deteriorate from LOS F (7.1 SFP) to LOS F (6.1 SFP), LOS E (10.1 SFP) to LOS F (8.8 SFP), and LOS F (6.5 SFP) to LOS F (5.5 SFP), during the AM, midday, and PM peak hours, respectively. Restriping the width of this crosswalk from its existing width of 15 feet to 17 feet would be required to fully mitigate the projected significant adverse crosswalk impacts. The mitigated conditions are summarized in **Table 15-12**.

Table 15-12
2022 No Build, Build, and Mitigated Build Conditions
Pedestrian Level of Service Analysis—Whitehall Street and State Street

Location	Mitigation Measures	No Build		Build		Mitigated Build	
		SFP	LOS	SFP	LOS	SFP	LOS
Weekday AM Peak 15-Minutes							
Whitehall Street and State Street–East Crosswalk	Widening by 3 feet to 20 feet	12.4	E	9.9	E	12.0	E
Whitehall Street and State Street–West Crosswalk	Widening by ~~1.5~~ 2.0 feet to ~~16.5~~ 17.0 feet	7.1	F	6.1	F	7.1	F
Weekday Midday Peak 15-Minutes							
Whitehall Street and State Street–East Crosswalk	Widening by 3 feet to 20 feet	16.9	D	14.0	E	16.8	D
Whitehall Street and State Street–West Crosswalk	Widening by ~~1.5~~ 2.0 feet to ~~16.5~~ 17.0 feet	10.1	E	8.8	E	10.1	E
Weekday PM Peak 15-Minutes							
Whitehall Street and State Street–East Crosswalk	Widening by 3 feet to 20 feet	18.9	D	14.3	E	17.2	D
Whitehall Street and State Street–West Crosswalk	Widening by ~~1.5~~ 2.0 feet to ~~16.5~~ 17.0 feet	6.5	F	5.5	F	6.4	F

Note: SFP = square feet per pedestrian.

WHITEHALL STREET AND SOUTH STREET—EAST CROSSWALK

The east crosswalk at this intersection would deteriorate from LOS B (47.4 SFP) to LOS E (8.3 SFP), LOS B (54.4 SFP) to LOS E (13.2 SFP), LOS A (69.9 SFP) to LOS E (9.6 SFP), and LOS C (26.4 SFP) to LOS E (11.6 SFP), during the AM, midday, and PM peak hours, respectively. Mitigation measures for this impact would typically involve widening the crosswalk. However, based on observations, pedestrians do not stay in the crosswalk at this location. During the All Pedestrian signal phase, pedestrians use the whole area of the intersections to cross Whitehall Street and South Street. This is expected to continue under future conditions. Discussions with NYCDOT are needed to determine is the crosswalk markings should not be changed or if feasible to add pavement markings to the intersection to formally allow pedestrians to use the intersection area as a crossing zone.

BATTERY MARITIME BUILDING SIDEWALK

The existing sidewalk in front of the BMB is approximately five feet in width. Currently, during peak visitation, The Trust regulates visitor queuing in front of the BMB using part of the adjacent roadway and deployment of traffic control agents. As part of the BMB Redevelopment project, the sidewalk along the building frontage is proposed to be widened to 10 feet. The proposed 10-foot sidewalk along the BMB frontage would deteriorate from LOS B (1.83 PMF) to LOS D (9.61 SFP), LOS B (1.43 PMF) to LOS D (8.74 PMF), and LOS D (7.85 PMF) to LOS E (11.65 PMF), during the AM, PM, and Saturday peak hours, respectively. Widening the proposed 10-foot sidewalk to 12 feet and prohibiting parking along the first 100 feet of the BMB frontage to allow trucks to turn would be required to fully mitigate the projected significant adverse sidewalk impacts. The mitigated conditions are summarized in **Table 15-13**.

Table 15-13
2022 No Build, Build, and Mitigated Conditions Sidewalk Analysis
Battery Maritime Building Frontage

Mitigation Measures	No Build		Build		Mitigated Build	
	PMF	LOS	PMF	LOS	PMF	LOS
Weekday AM						
Widen the proposed 10 foot sidewalk by 2 feet to 12 feet	1.83	B	9.61	D	7.69	D
Weekday PM						
Widen the proposed 10 foot sidewalk by 2 feet to 12feet	1.43	B	8.74	D	6.99	D
Saturday						
Widen the proposed 10 foot sidewalk by 2 feet to 12 feet	7.85	D	11.65	E	9.32	D

Note: PMF = pedestrians per minute per foot

C. NOISE

Noise generated by ferries associated with the Proposed Project could result in significant adverse impacts in the 2022 analysis year at open space locations immediately adjacent to ferry landings at Soissons dock on the Island and at Pier 6 in Brooklyn during weekday time periods. There would be no feasible or practicable measures to mitigate these impacts. Noise barriers or berms are impractical because of space constraints, and would not be effective, because of the relatively long distance between the ferry landing and the receptor. As a result, these would be unmitigated significant adverse impacts.

School playgrounds created by 2022 and 2030 could have significant adverse noise impacts if located immediately adjacent to an existing open space area. Potential mitigation could include providing separation between the proposed playground and existing open space areas via landscaping or positioning of the playground and/or school building. ✷