A. INTRODUCTION

In accordance with the City Environmental Quality Review (CEQR) and the State Environmental Equality Review Act (SEQRA), this chapter presents and evaluates mitigation to reduce or eliminate to the fullest extent practicable the impacts associated with the Proposed Action, where significant adverse impacts were identified in the preceding chapters.

As described below, measures to further mitigate adverse impacts will be refined and evaluated between the Draft and Final Environmental Impact Statement (EIS). Therefore, in addition to the measures described and evaluated below, the Final EIS (FEIS) may include more complete information and commitments on all practicable mitigation measures to be implemented with the Proposed Action.

B. COMMUNITY FACILITIES

Public Elementary Schools

As discussed in Chapter 4, "Community Facilities," the Proposed Action would include a 456-seat elementary school, which would add much-needed elementary school capacity to Community School District (CSD) 30, Sub-district 3 and lower the future elementary school utilization rate, compared to the 2023 No-Action condition. The elementary school shall be constructed pursuant to a certain Letter of Intent, dated April 17, 2014, entered into between the Applicant and the School Construction Authority (SCA). The Restrictive Declaration entered into in connection with the project shall require the Applicant to work with the SCA in accordance with the terms set forth in the Letter of Intent to implement the construction of the elementary school, which is currently contemplated in the final phase of the proposed project's development, as outlined in the Uniform Land Use Review Procedure (ULURP) Phasing Plan. Therefore, as outlined in Chapter 4, the Proposed Action could result in a temporary significant adverse impact on CSD 30, Sub-district 3 elementary schools upon occupancy of Building 2. The Proposed Action would not result in any potential significant adverse impacts on intermediate or high school students.

Based on the public school student generation rates provided in the *CEQR Technical Manual*, Buildings 2, 3, 4, and 5 (residential portion) would generate approximately 248 net elementary school students prior to construction of the proposed 456-seat elementary school and would therefore result in a temporary 5.67 percent increase in the elementary school utilization rate (to 125.4 percent). To mitigate the potential temporary significant adverse elementary school impact, the proposed 456-seat elementary school would need to be constructed prior to completion and occupancy of Building 2. Absent this change in the proposed project's phasing schedule, a temporary unmitigated significant adverse impact to elementary schools could result.

However, it should be noted that the analysis of public elementary school conditions relies on conservative assumptions regarding both background growth in the student population and the development of new residential units in future conditions. Should this level of background growth in the sub-district and residential development in the study area not occur, the temporary impact on elementary

school seats in Sub-district 3 of CSD 30 could be reduced or potentially eliminated. It should also be noted that the above analysis does not account for the 1,057 seat PS/IS school that is expected to be developed on the nearby Halletts Point site to mitigate the school impacts identified in the 2013 *Halletts Point Rezoning FEIS.* This future No-Action school is anticipated to be built and operational by 2018.

Child Care Centers

As discussed in Chapter 4, "Community Facilities," the Proposed Action would result in a potential significant adverse impact to publicly funded group child care facilities based on *CEQR Technical Manual* methodology.

Within the study area, which extends approximately 1.5 miles from the project site, there are three publicly funded group child care facilities. As of June 2013, these facilities had a collective utilization rate of approximately 100 percent. In the 2023 future with the Proposed Action, the proposed project would generate up to 295 low- and moderate-income housing units. Based on *CEQR Technical Manual* Table 6-1b, it is estimated that these 295 units would generate 41 children under the age of six eligible for publicly funded child care services. The additional children would decrease the available slots and increase the utilization rate by 17 percent from the No-Action condition (to approximately 153 percent), exceeding the CEQR impact threshold of a five percent increase.

In order to avoid a significant adverse impact, the number of affordable units introduced by the proposed project would need to be reduced to 89, which would generate an estimated 12 eligible children. This would represent a reduction of 206 affordable dwelling units (a 70 percent reduction), compared to the proposed project.

As the proposed project would be developed sequentially, the potential to result in a deficiency of available publicly funded group child care slots by five percent or more would occur when the proposed project completes construction of approximately 90 affordable residential units (or approximately 13 children eligible for publicly funded group child care). Based on the proposed phasing schedule, it is therefore anticipated that the significant adverse child care impact would occur upon completion and occupancy of Building 2 in the third phase of the project's construction.

However, as the demand for publicly funded child care depends not only on the amount of residential development in the area but also on the proportion of new residents who are children of low-income families (not all children meet the social and income eligibility criteria), at this point it is not possible to know exactly what type of mitigation would be appropriate or when its implementation would be necessary. The child care analysis is conservatively based on the existing inventory of public child care providers in the area and does not reflect likely shifts in demand or the creation of new child care capacity.

The analysis conservatively accounts for the potential child care-eligible children that would be generated by the nearby Halletts Point project (approximately 68 children in 2022) without accounting for the mitigation measures identified in that project's own environmental review. As stated in the 2013 *Halletts Point Rezoning FEIS,* the Halletts Point project would need to provide 37 child care slots to fully mitigate their identified significant adverse child care impact. If this mitigation measure was accounted for in the child care analysis in this EIS, the shortfall of slots would be smaller.

Furthermore, several factors may limit the number of children in need of publicly funded child care slots in New York City Administration of Children's Services- (ACS-) contracted child care facilities. Families in the study area could make use of alternatives to the publicly funded child care facilities included in the analysis, such as family child care center in the study area; child care centers located outside of the study

area (as parents of eligible children are not restricted to enrolling their children in child care facilities in a specific geographic area); the use of ACS vouchers to finance care at private child care centers in the study area; or the use of ACS vouchers for private child care providers beyond the 1.5-mile study area.

Mitigation measures for this impact would possibly include adding capacity to existing facilities if determined feasible through consultation with ACS or providing a new child care facility within or near the project site. As a City agency, ACS does not directly provide new child care facilities, but, rather, contracts with providers in areas of need. ACS is also working to create public-private partnerships to facilitate the development of new child care facilities where there is an area of need. As part of this initiative, ACS may be able to contribute capital funding, if it is available, towards such projects to facilitate the provision of new facilities. Mitigation measures for this significant adverse impact will continue to be explored by the Applicant in consultation with the lead agency, the New York City Department of City Planning (DCP), and the SCA, and will be refined between the Draft and Final EIS.

The Restrictive Declaration for the proposed project will require the Applicant implement the mitigation measures identified between Draft and Final EIS. Absent the implementation of such needed mitigation measures, the proposed project could have an unmitigated significant adverse impact on publicly funded child care facilities.

C. OPEN SPACE

As discussed in Chapter 1, "Project Description," the proposed project would include the development of 1.92 acres of publicly accessibly open space, including a waterfront esplanade and an upland connection along the proposed 8th Street Mews. The proposed waterfront esplanade would include landscaping and seating, as well as play equipment. New visual corridors and physical public access would be provided along the 8th Street Mews, as well as the proposed 4th Street extension.

The proposed project would also include approximately 1,689 residential units, which would place new demands on the area's open space resources, as discussed in Chapter 5, "Open Space." As the Proposed Action would result in a substantial decrease in the active open space ratio in the residential study area, and the active open space ratio would be below the City's guideline ratio in the future, the Proposed Action would result in a significant adverse active open space impact. The significant adverse active open space impact would occur with completion of 688 residential units, and therefore would occur upon completion and occupancy of Building 2 in the third phase of the proposed project's construction.

Potential partial mitigation measures for this significant adverse impact are currently being explored by the Applicant in consultation with the lead agency, DCP, and the New York City Department of Parks and Recreation (DPR) and will be refined between the Draft and Final EIS. The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures may include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to meet identified open space needs in the area, such as through the provision of additional active open space facilities. If feasible mitigation is found, the impacts will be considered partially mitigated. As the significant adverse impact on open space would not be fully mitigated, the Proposed Action would result in an unavoidable adverse impact on open space.

D. URBAN DESIGN

Pedestrian Wind

As outlined in Chapter 8, "Urban Design and Visual Resources," the proposed project could potentially result in significant adverse pedestrian wind impacts at the northeast corner of Building 3. The results of the computational fluid dynamics (CFD) wind analysis indicate that during both the winter (December through February) and summer (June through August) months there is the potential for pedestrian wind conditions to exceed criterion levels at the northeast corner of Building 3 adjacent to entrances and other amenity space with high anticipated pedestrian volumes.

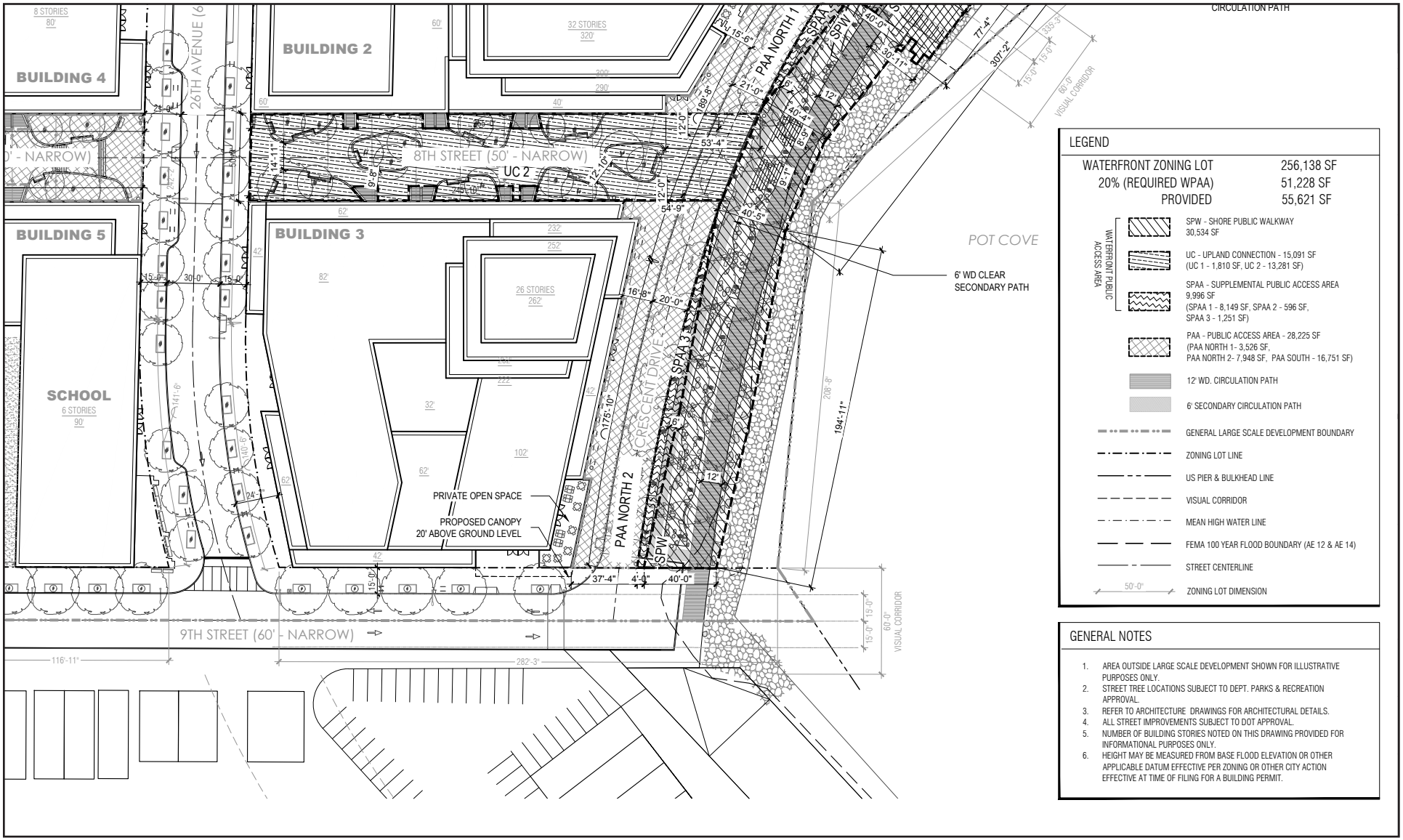
Due to the massing and orientation of adjacent Shore Towers and its exposure to the prevailing northwest winds, accelerated wind conditions likely already exist at this location under existing conditions. As such, any building form on the Building 3 site would be faced with similar pre-existing wind conditions and would require special design considerations. Such considerations have been incorporated in the proposed Building 3 design, which situates the proposed building's tower to the northeast, away from the existing winds near Shore Towers. However, even with such measures incorporated into Building 3's massing, wind conditions during both summer and winter months at the building's northeast corner, as discussed above.

Potential measures that could be employed that have been shown to reduce or minimize the effects of winds at ground level include the development of one or more protective canopies; chamfering building corners; the incorporation of setbacks or terraces; the incorporation of vertical wind screens; and/or the incorporation of hard and soft landscaping (see Appendix E). At the northeast corner of Building 3, where there are minimal opportunities for additional landscaping features, a protective canopy could be incorporated along the building's north façade, adjacent to the northeast corner (see Figure 20-1). Further analysis will be undertaken between the Draft and Final EIS to determine which of the aforementioned measures would best address the potential pedestrian wind conditions at this location. Incorporation of a canopy or alternate mitigation, such as the measures outlined above, would fully mitigate the potential significant adverse pedestrian wind impact.

E. TRANSPORTATION

Traffic

As discussed in Chapter 13, "Transportation," in the 2023 future, vehicle volumes in the traffic study area are expected to increase due to both the Astoria Cove and nearby Halletts Point projects. As such, in addition to the reasonable worst-case development scenario (RWCDS) No-Action and With-Action conditions, an alternate future condition without the Halletts Point development and the associated traffic mitigation measures identified in the 2013 *Halletts Point Rezoning FEIS* was analyzed to determine whether the disclosed impacts would occur absent the Halletts Point development. The alternate future scenario was analyzed per New York City Department of Transportation (NYCDOT) and DCP request in consideration of the possibility of the nearby Halletts Point project developing on a time table different from that presented in the 2013 *Halletts Point Rezoning FEIS*. Potential significant adverse traffic impacts were identified at a number of locations in the traffic study area under the future With-Action condition, with slightly fewer impact locations anticipated absent the Halletts Point development. This section describes traffic improvements that could help mitigate those impacts. These measures will continue to be explored with the lead agency, DCP, and NYCDOT between the Draft and Final EIS.



Source: Studio V

Astoria Cove

Figure 20-1

Potential Canopy at Building 3's Northeast Corner

Table 20-1 as well as Figures 20-2 and 20-3 summarize the potential significant adverse traffic impacts under both future With-Action conditions and (the RWCDS With-Action condition and the Alternate With-Action condition [without Halletts Point]) and whether the identified impacts could be fully or partially mitigated with the implementation of traffic improvement measures or could not be mitigated. It should be noted that an analysis of Saturday peak hour conditions will be conducted between the DEIS and the FEIS, as requested by NYCDOT. This analysis may result in additional significant adverse impacts and the need for additional and/or alternate mitigation measures. The findings of this additional analysis will be documented in the FEIS.

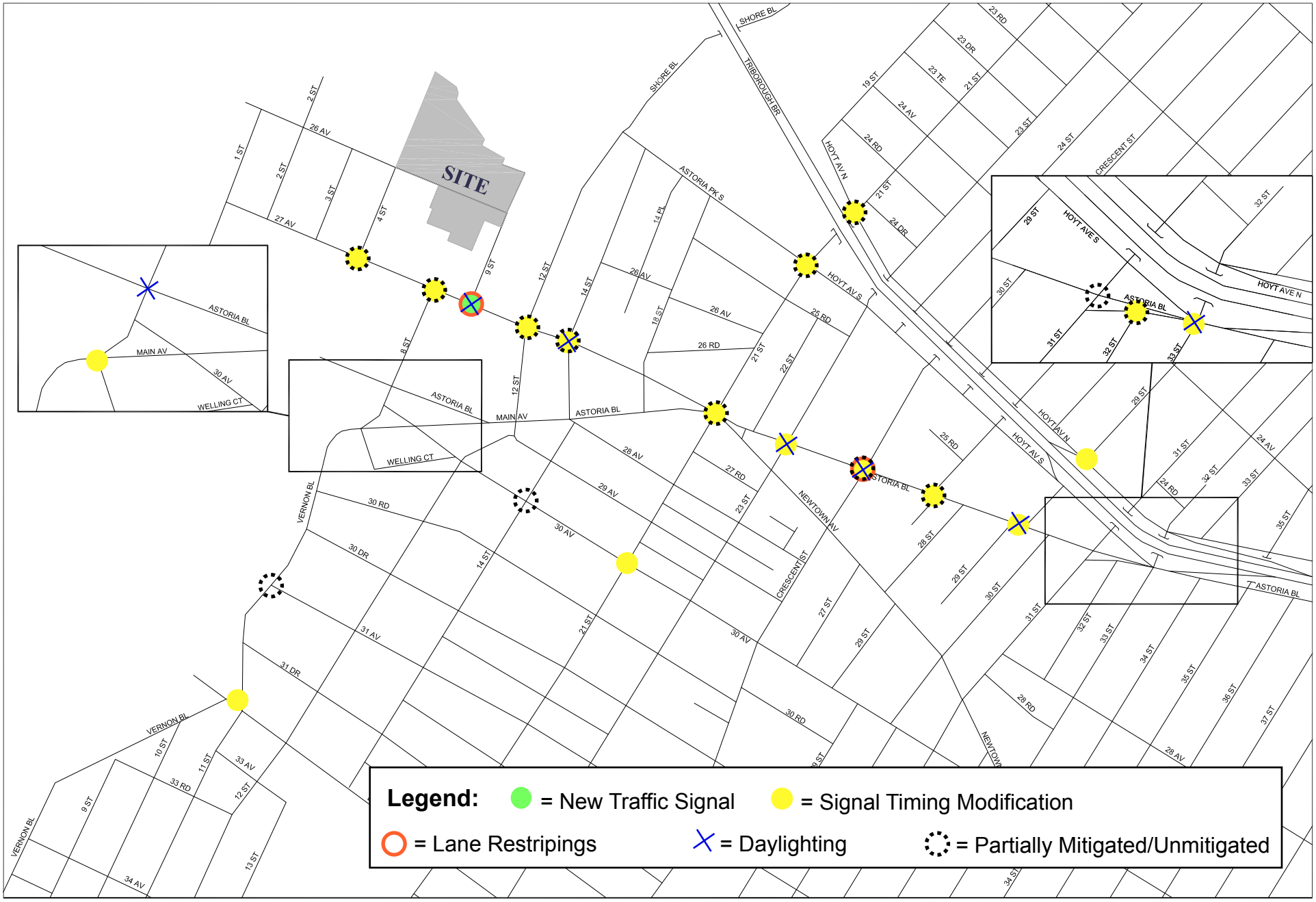
Table 20-1
Comparison of Traffic Impact Mitigation under the RWCDS With-Action Condition and the Alternate With-Action Condition

	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
	With-Action Condition	Alternate With-Action Condition	With-Action Condition	Alternate With-Action Condition	With-Action Condition	Alternate With-Action Condition
No significant impact	10	11	21	22	14	16
Impact could be fully mitigated	10	14	8	7	9	11
Impact could be partially mitigated	6	4	0	1	3	3
Unmitigated impact	4	1	1	0	4	0

In the RWCDS future with the Proposed Action, the traffic network study area would experience increased volumes due to the Halletts Point development, and more intersections were identified as potential significant adverse impact locations in all peak hours than under the Alternate With-Action condition. In the weekday AM peak hour, 20 of the 30 analyzed intersections would experience significant adverse impacts, ten of which could be fully mitigated, six of which could be partially mitigated, and four of which could not be mitigated. In the weekday midday peak hour, there would be the potential for significant adverse impacts at nine of the 30 analyzed intersections, eight of which could be fully mitigated and one of which could not be mitigated. Lastly, in the weekday PM peak hour, there would be the potential for significant adverse impacts at 16 of the 30 analyzed intersections, 9 of which could be fully mitigated, three of which could be partially mitigated, and four of which could not be mitigated.

Alternately, should Halletts Point not be completed by the 2023 Build Year (the "Alternate With-Action condition") there would be a potential for significant adverse impacts at 19 of the 30 analyzed intersections in the weekday AM peak hour, 14 of which could be fully mitigated, four of which could be partially mitigated, and one of which could not be mitigated. In the weekday midday peak hour, there would be a potential for significant adverse impacts at eight of the 30 analyzed intersections, seven of which could be fully mitigated and one of which could be partially mitigated. Lastly, in the weekday PM peak hour under the Alternative With-Action condition, there would be the potential for significant adverse impacts at 14 of the 30 analyzed intersections, 11 of which could be fully mitigated and three of which could be partially mitigated.

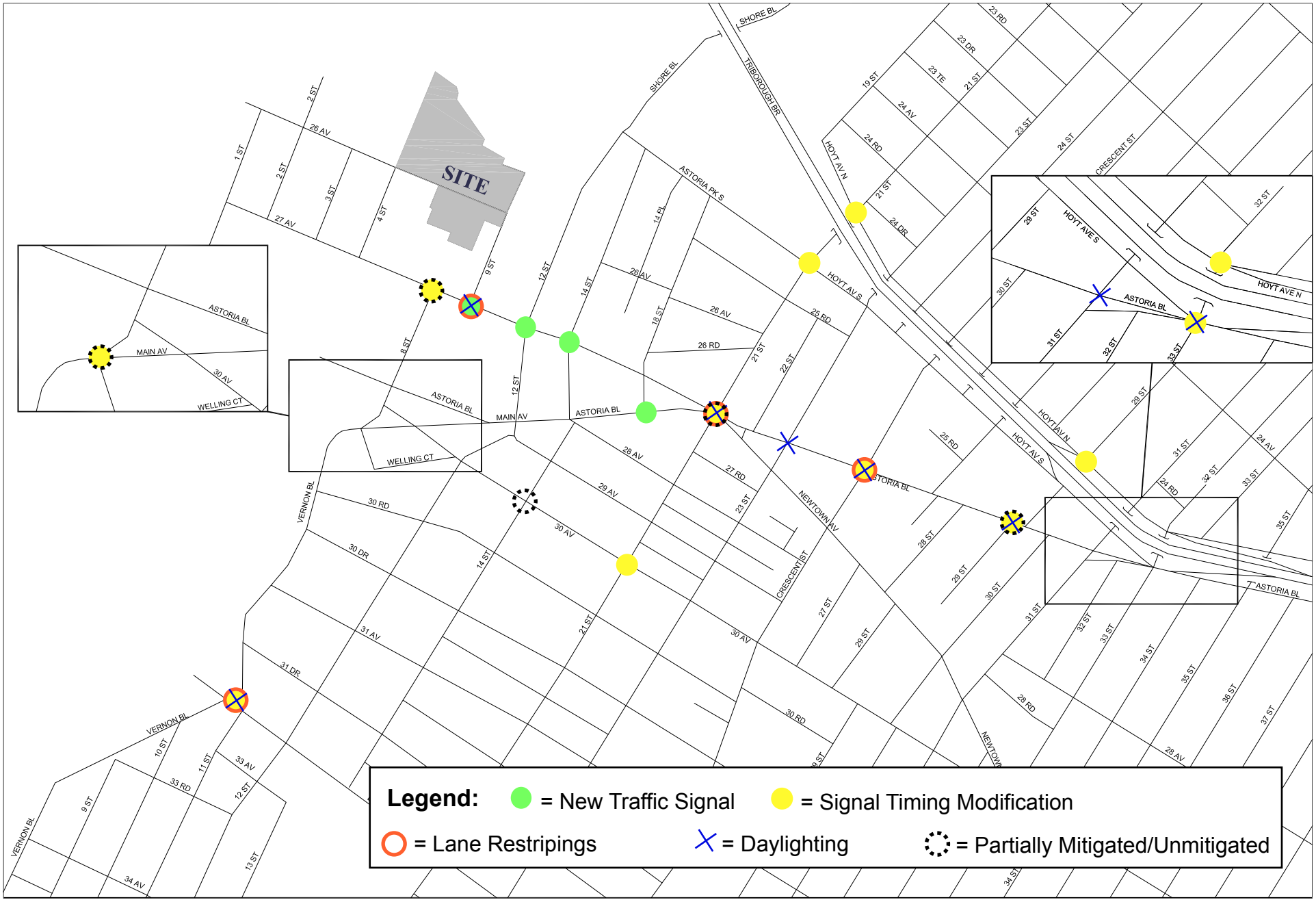
The overall finding of the traffic mitigation analysis is that in the RWCDS With-Action condition 17 of the 30 analyzed intersections would either not experience significant impacts or could be fully mitigated with readily implementable traffic improvement measures, including installing a traffic signal at a currently unsignalized intersection, signal timing changes, parking regulation changes to gain a travel lane at key intersections, and lane restripings. In comparison, should Halletts Point not be completed by the 2023 Build Year, 24 of the 30 analyzed intersections would either not experience significant impacts or could be fully mitigated with readily implementable traffic improvement measures. Illustrative overviews of the proposed mitigation measures both with and without the nearby Halletts Point development are shown in Figures 20-2 and 20-3. These measures represent standard capacity improvements that are



Astoria Cove

Figure 20-2

RWCDS With-Action Condition Mitigation Measures



Astoria Cove

Figure 20-3

Alternate With-Action Condition Mitigation Measures

typically implemented by NYCDOT. Additional review of potential mitigation measures that may fully or partially mitigate other significant adverse impact locations that are identified as unmitigatable in the DEIS will be undertaken for the FEIS.

Tables 20-2 through 20-7 provide a comparison of the v/c ratios, delays, and levels of service (LOS) at potentially impacted intersections with implementation of these mitigation measures to the No-Action and With-Action conditions; Tables 20-2 through 20-4 correspond to the RWCDS With-Action condition (with the nearby Halletts Point development and implementation their associated traffic mitigation measures), and Tables 20-5 through 20-7 present mitigation measures for the Alternate With-Action condition, which acknowledges the possibility of the Halletts Point project being developed on a time table different from that presented in the 2013 *Halletts Point Rezoning FEIS* (after the proposed project's 2023 Build Year). A detailed description of the potential traffic mitigation measures for each intersection identified as a potential significant adverse impact location follows.

RWCDS With-Action Condition (with Halletts Point)

Under the RWCDS With-Action condition, 22 of the 30 analyzed intersections would experience significant adverse impacts during one or more peak hour. Impacts at nine of the intersections could be fully mitigated with traffic capacity improvements, and impacts at 13 intersections could not be mitigated or could only be partially mitigated during one or more peak hour. A discussion of the proposed mitigation measures under the RWCDS With-Action condition is presented below.

27th Avenue and 4th Street

Impacts would occur on the 27th Avenue westbound right-turn movement during the weekday PM peak hour. These impacts could be partially mitigated through signal timing modifications.

27th Avenue and 8th Street

Impacts would occur on the 27th Avenue westbound approach during the weekday AM, midday, and PM peak hours. These impacts could be partially mitigated in the weekday AM and PM peak hours through signal timing modifications. The weekday midday impacts could not be mitigated.

27th Avenue and 9th Street

Impacts would occur on the 9th Street southbound approach during the weekday AM, midday, and PM peak hours. These impacts could be fully mitigated through implementation of the following measures: installing a traffic signal; installing "No Standing Anytime" regulations along the total western length of 9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic; and restriping the southbound approach from one 16.5-foot wide travel lane with parking and one 15.5-foot wide northbound receiving lane with parking to one southbound 10-foot wide right turn lane, one 10-foot wide left-turn lane, and one 12-foot wide northbound receiving lane for 100 feet. A signal warrant analysis was prepared for the intersection and was submitted to NYCDOT for review. The analysis indicated that the intersection would meet the Manual of Uniform Traffic Control Devices' (MUTCD's) four-hour criteria in the future With-Action condition.

27th Avenue and 12th Street

Impacts would occur on the 27th Avenue eastbound approach during the weekday AM peak hour and along the northbound approach during the PM peak hour. These impacts could fully mitigated in the weekday AM peak hour through signal timing modifications. The weekday PM impacts could not be mitigated.

Table 20-2: RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
3. 27th Avenue & 8th Street[2]	EB-T	0.53	14.9	B	0.53	14.9	B	0.51	13.4	B	Partially Mitigated Modify signal timing: Shift 2s of green from the NB phase to the EB/WB phase [NB phase green shifts from 30s to 28s; EB/WB phase green shifts from 50s to 52s].
	EB-R	0.66	21.2	C	0.66	21.2	C	0.63	18.5	B	
	WB-LT	1.32	179.6	F	1.87	417.7	F*	1.75	362.9	F*	
	NB-L	0.52	28.4	C	0.71	35.2	D	0.76	40.1	D	
	NB-R	0.57	34.6	C	0.57	34.6	C	0.65	42.0	D	
4. 27th Avenue & 12th Street[2]	EB-LT	0.64	9.9	A	1.10	70.9	E*	1.07	60.4	E	Modify signal timing: Shift 1s of green from the NB phase to the EB/WB phase [NB phase green shifts from 16s to 15s; EB/WB phase green shifts from 64s to 65s].
	WB-TR	0.47	6.2	A	0.60	7.4	A	0.59	6.9	A	
	NB-LTR	0.57	43.1	D	0.59	44.1	D	0.63	47.5	D	
5. 27th Avenue & 14th Street[2]	EB-TR	0.61	19.4	B	1.15	95.3	F*	1.07	58.4	E*	Partially Mitigated -Install "No Standing 7AM-10AM Mon-Fri" regulations along the WB approach for 250 feet and along the SB approach on the west side for 250 feet. -Modify signal timing: Shift 3s of green time from the SB phase to the EB/WB phase [SB phase green shift from 40s to 37s; EB/WB phase green shift from 40s to 43s]
	WB-LT	0.66	22.9	C	1.27	157.2	F*	0.92	36.5	D	
	SB-LTR	0.89	41.0	D	0.89	41.0	D	0.77	31.0	C	
7. Astoria Boulevard & 21st Street[2]	EB-L	1.20	156.4	F	1.22	165.5	F*	1.08	110.2	F	Partially Mitigated Modify signal timing: Shift 3s of green time from the NB/SB phase to the EB phase [NB/SB phase green shift from 51s to 48s; EB phase green shift from 24s to 27s; WB phase green time remains the same].
	EB-TR	1.70	365.9	F	2.08	535.6	F*	1.84	428.2	F*	
	WB-L	1.01	69.0	E	1.01	69.0	E	1.01	69.0	E	
	WB-TR	0.82	45.2	D	0.90	48.2	D	0.90	48.2	D	
	NB-LT	0.71	31.5	C	0.80	35.2	D	0.87	42.1	D	
	NB-R	0.37	24.7	C	0.37	24.7	C	0.40	27.1	C	
	SB-LT	0.86	30.8	C	0.85	30.7	C	0.91	34.0	C	
	SB-R	0.59	26.9	C	0.67	28.5	C	0.72	31.3	C	
8. Astoria Boulevard & 23rd Street[1]	EB-LT	1.21	127.5	F	1.47	243.1	F*	1.22	127.1	F	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 100 feet to daylight the approach. -Modify signal timing: Shift 2s of green time from the NB phase to the EB/WB phase [NB phase green shift from 43s to 41s; EB/WB phase green shift from 67s to 69s].
	WB-TR	0.91	29.7	C	0.95	34.1	C	0.92	29.7	C	
	NB-LTR	0.50	33.5	C	0.50	33.5	C	0.52	35.6	D	

Table 20-2 (cont'd): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
9. Astoria Boulevard & Crescent Street[1]	EB-TR	1.28	159.6	F	1.53	270.4	F*	1.26	149.8	F	Partially Mitigated -Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 250 feet to daylight the approach. -Install "No Standing 4pm-7pm Mon-Fri" regulations along the WB approach for 250 feet to daylight the approach. -Install "No Standing Anytime" regulations along the SB approach for 250 feet on the west side to allow for two moving lanes at the approach. -Restripe the SB approach from one 30-foot wide travel lane with parking on both sides to one 11-foot wide right-turn lane, and one 19-foot wide left-through lane with parking for 250 feet.
	WB-LT	1.24	139.4	F	1.41	213.7	F*	1.41	213.7	F*	
	SB-LTR	1.11	89.1	F	1.19	124.6	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	1.06	70.0	E	
	SB-R	-	-	-	-	-	-	0.20	26.7	C	
10. Astoria Boulevard & 27th Street	EB-LT	0.96	38.2	D	1.15	100.0	F*	1.12	86.3	F*	Partially Mitigated Modify signal timing: Shift 2s of green from the SB phase to the EB/WB phase [SB phase green shifts from 37s to 35s; EB/WB phase green shifts from 73s to 75s].
	WB-TR	0.84	23.0	C	0.85	23.8	C	0.83	21.4	C	
	NB-LTR	0.83	41.1	D	0.83	41.1	D	0.89	44.5	D	
12. Astoria Boulevard & 29th Street	EB-T	1.63	328.2	F	1.93	460.9	F*	1.63	322.2	F	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 200 feet to daylight the approach. -Modify signal timing: Shift 2s of green time form the SB phase to the EB/WB phase [SB phase green shift from 60s to 58s; EB/WB phase green shift from 50s to 52s].
	WB-T	0.44	27.5	C	0.44	27.5	C	0.43	25.8	C	
	SB-L	0.18	17.0	B	0.18	17.0	B	0.19	18.2	B	
	SB-R	0.75	31.3	C	0.77	32.3	C	0.80	35.7	D	
14. Astoria Boulevard & 31st Street[2]	EB-LTR	0.83	37.5	D	1.00	53.0	D*	N/A			Unmitigatable Impact
	NB-T	0.52	41.8	D	0.52	41.8	D				
	NB-R	0.67	16.5	B	0.67	16.5	B				
	SB-T	1.10	85.7	F	1.10	85.7	F				
	SB-R	0.30	14.9	B	0.30	14.9	B				
15. Hoyt Avenue South/Astoria Boulevard & 33rd Street[1]	Astoria Blvd EB-LT	1.32	192.2	F	1.49	269.1	F*	1.30	183.0	F	-Install "No Standing 7AM-10AM" regulations along the EB Astoria Boulevard approach for 250 feet to daylight the approach. -Modify signal timing: Shift 3s of green time from the EB Hoyt Avenue S. phase to the EB Astoria Boulevard phase [EB Hoyt Avenue S. phase green time shift from 52s to 49s; EB Astoria Boulevard phase green time shift from 31s to 34s; NB phase green time remains the same].
	NB-TR	1.09	94.2	F	1.09	94.2	F	1.09	94.2	F	
	NB-R	1.08	92.9	F	1.08	92.9	F	1.08	92.9	F	
	Hoyt Ave EB-LT	0.63	27.1	C	0.63	27.1	C	0.67	29.6	C	

Table 20-2 (cont'd): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
16. Hoyt Avenue North & 29th Street[2]	WB-L	0.80	14.6	B	0.80	14.6	B	0.82	16.2	B	Modify signal timing: Shift 2s of green time from the WB phase to the SB phase [WB phase green time shift from 82s to 80s; SB phase green time shift from 21s to 23s; the bus queue jump phase green time remains the same].
	WB-LT	0.82	14.6	B	0.84	15.1	B	0.86	16.9	B	
	SB-R	1.03	98.5	F	1.13	130.5	F*	1.03	95.5	F	
18. Astoria Boulevard North & 32nd Street[1]	WB-T (Main)	0.53	8.9	A	0.53	8.9	A	0.53	8.4	A	Modify signal timing: Shift 1s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shift from 25s to 24s; WB phase green time shift from 85s to 86s].
	WB-T (Ramp)	1.17	127.2	F	1.19	136.2	F*	1.18	129.4	F	
	NB-L	0.66	45.3	D	0.67	45.4	D	0.69	46.7	D	
	SB-R	0.03	38.0	D	0.03	28.0	D	0.03	38.8	D	
20. 30th Avenue & 14th Street	EB-LTR	N/A	13.0	B	N/A	15.5	C	N/A			Unmitigatable Impact
	WB-LTR	N/A	13.4	B	N/A	16.3	C				
	SB-LTR	N.A	28.5	D	N/A	60.5	F*				
21. 30th Avenue & 21st Street	EB-LTR	0.52	39.0	D	0.77	51.2	D*	0.71	44.7	D	Modify signal timing: Shift 3s of green time from the NB/SB phase to the EB/WB phase [NB/SB phase green time shift from 73s to 70s; EB/WB phase green time shift from 37s to 40s].
	WB-LTR	0.48	38.0	D	0.55	40.3	D	0.50	36.4	D	
	NB-LTR	0.53	15.0	B	0.55	15.3	B	0.57	17.3	B	
	SB-LTR	0.75	19.8	B	0.75	19.9	B	0.79	22.9	C	
22. Vernon Boulevard & Welling Court/8th Street[2]	EB-LT	1.18	116.5	F	1.26	152.3	F*	1.14	99.0	F	Modify signal timing: Shift 3s of green time from the NB phase to the EB/SB phase [NB phase green time shift from 17s to 14s; EB/SB phase green time shift from 29s to 32 s; WB phase green time remains the same].
	WB-TR	0.04	21.1	C	0.04	21.1	C	0.04	21.1	C	
	NB-LTR	0.33	36.1	D	0.33	36.1	D	0.41	42.0	D	
	SB-R	1.01	68.7	E	1.11	99.9	F*	1.01	63.7	E	
24. Hoyt Avenue North & 21st Street[1]	EB-L	0.02	40.4	D	0.02	40.4	D	0.02	42.1	D	<u>Partially Mitigated</u> Modify signal timing: Shift 1s of green time from the EB/WB phase to the NB/SB phase; Shift 1s of green time from the EB/WB phase to the WB lag phase [EB/WB phase green time shift from 22s to 20s; NB/SB phase green time shift from 45s to 46s; WB lag phase green time shift from 38s to 39s].
	EB-R	0.37	47.5	D	0.37	47.5	D	0.41	50.9	D	
	WB-L	1.07	78.5	E	1.10	90.7	F*	1.07	79.0	E	
	WB-TR	0.25	14.8	B	0.25	14.8	B	0.25	15.4	B	
	NB-L	0.31	32.3	C	0.32	33.1	C	0.30	31.3	C	
	NB-T	1.20	143.8	F	1.30	184.4	F*	1.27	171.4	F*	
	SB-TR	1.04	65.0	E	1.06	73.8	E*	1.04	64.7	E	
25. Hoyt Avenue South/Astoria Park South & 21st Street[2]	EB-LTR	0.84	41.9	D	0.93	44.9	D	N/A			Unmitigatable Impact
	NB-LTR	0.60	14.2	B	0.63	14.7	B				
	SB-LTR	1.11	75.4	E	1.15	90.7	F*				

Table 20-2 (cont'd): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
26. 27th Avenue & 9th Street	EB-LT	0.02	8.5	A	0.01	8.9	A	0.63	20.2	C	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 45s; SB phase green time is 35s; all phases have 3s of amber and 2s of all red time]. -Install "No Standing Anytime" regulations along the total western length of 9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic. -Restripe the SB approach from one 16.5 foot wide travel lane with parking and one 15.5 foot wide NB receiving lane with parking to one 10-foot wide right-turn lane, one 10-foot wide left-turn lane, and one 12-foot wide NB receiving lane for 100 feet.
	WB-TR	-	-	-	-	-	-	0.85	31.5	C	
	SB-LR	0.56	29.6	C	2.35	651.8	F*	-	-	-	
	SB-L	-	-	-	-	-	-	0.75	32.0	C	
	SB-R	-	-	-	-	-	-	0.28	20.3	C	
27. Vernon Boulevard & 31st Avenue	WB-LR	0.66	38.2	E	0.72	45.7	E*	N/A			Unmitigatable Impact
	SB-LT	0.02	8.3	A	0.02	8.3	A				
28. Vernon Boulevard & Broadway/11th Street[2]	EB-LTR	0.01	28.2	C	0.01	28.2	C	0.01	29.0	C	Modify signal timing: Shift 1s of green time from the EB/WB phase to the NB/SB Vernon Boulevard phase; Shift 2s of green time from the NB 11th Street phase to the NB/SB Vernon Boulevard phase [EB/WB phase green time shift from 25s to 24s; NB/SB Vernon Boulevard phase green time shift from 43s to 46s; NB 11th Street phase green time sift from 17s to 15s].
	WB-LT	0.87	38.9	D	0.87	38.9	D	0.91	41.3	D	
	WB-R	0.16	29.4	C	0.20	29.7	C	0.27	31.2	C	
	WB-LTR		37.7	D		37.5	D		39.7	D	
	Vernon Blvd NB-LT	0.28	8.2	A	0.29	8.3	A	0.28	7.8	A	
	Vernon Blvd NB-R	0.11	6.8	A	0.11	6.8	A	0.11	6.4	A	
	11th Street NB-LTR	0.38	41.1	D	0.38	41.1	D	0.43	44.7	D	
	SB-LTR	1.36	195.9	F	1.46	241.9	F*	1.35	192.2	F	

Notes: EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, L=Left, T=Through, R=Right, V/C Ratio=Volume-to-Capacity Ratio, sec=Seconds, LOS=Level of Service

* Denotes significant adverse impact.

[1] Unmitigated in either the 2013 *Halletts Point Rezoning FEIS* and/or the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

[2] Partially and/or fully mitigated in either the 2013 *Halletts Point Rezoning FEIS* and/or the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

Table 20-3: RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday Midday Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
3. 27th Avenue & 8th Street[2]	EB-T	0.24	11.9	B	0.24	11.9	B	N/A			Unmitigatable Impact
	EB-R	0.61	22.5	C	0.61	22.5	C				
	WB-LT	1.25	151.3	F	1.72	354.1	F*				
	NB-L	0.36	23.3	C	0.45	25.1	C				
	NB-R	0.73	47.7	D	0.73	47.7	D				
7. Astoria Boulevard & 21st Street[2]	EB-L	0.33	36.9	D	0.36	37.7	D	0.36	37.7	D	Modify signal timing: Shift 1s of green time from the WB phase to the NB/SB phase [WB phase green shift from 34s to 33s; NB/SB phase green shift from 38s to 39s; EB phase green time remains the same].
	EB-TR	0.61	41.5	D	0.69	44.0	D	0.69	44.0	D	
	WB-L	0.86	53.2	D	0.86	53.2	D	0.88	56.6	E	
	WB-TR	0.46	36.4	D	0.56	38.0	D	0.57	39.1	D	
	NB-LT	0.79	38.2	D	0.95	44.7	D	0.92	41.7	D	
	NB-R	0.65	36.1	D	0.65	36.1	D	0.63	35.1	D	
	SB-LT	0.76	38.1	D	0.76	38.1	D	0.74	37.0	D	
	SB-R	0.75	39.7	D	0.91	47.9	D*	0.88	45.0	D	
9. Astoria Boulevard & Crescent Street[1]	EB-TR	0.83	25.1	C	0.91	32.0	C	0.87	26.8	C	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 250 feet to daylight the approach. -Install "No Standing 4pm-7pm Mon-Fri" regulations along the WB approach for 250 feet to daylight the approach. -Install "No Standing Anytime" regulations along the SB approach for 250 feet on the west side to allow for two moving lanes at the approach. -Restripe the SB approach from one 30-foot wide travel lane with parking on both sides to one 11-foot wide right-turn lane, and one 19-foot wide left-through lane with parking for 250 feet. -Modify signal timing: Shift 2s of green time from the SB phase to the EB/WB phase [SB phase green time shift from 31s to 29s; EB/WB phase green time shift from 49s to 51s].
	WB-LT	1.27	143.1	F	1.35	181.2	F*	1.24	132.2	F	
	SB-LTR	1.09	73.8	E	1.18	115.8	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	1.08	71.2	E	
	SB-R	-	-	-	-	-	-	0.27	22.8	C	
12. Astoria Boulevard & 29th Street	EB-T	0.97	48.8	D	1.06	72.4	E*	0.99	51.2	D	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 200 feet to daylight the approach. -Modify signal timing: Shift 3s of green time form the SB phase to the EB/WB phase [SB phase green shift from 35s to 32s; EB/WB phase green shift from 45s to 48s].
	WB-T	0.23	13.5	B	0.23	13.5	B	0.22	11.7	B	
	SB-L	0.12	18.1	B	0.12	18.1	B	0.13	20.1	C	
	SB-R	0.70	30.5	C	0.72	31.7	C	0.80	39.5	D	

Table 20-3 (cont'd): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday Midday Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
15. Hoyt Avenue South/Astoria Boulevard & 33rd Street[2]	Astoria Blvd EB-LT	1.02	62.4	E	1.09	83.5	F*	1.01	57.3	E	-Install "No Standing 7AM-10AM" regulations along the EB Astoria Boulevard approach for 250 feet to daylight the approach. -Modify signal timing: Shift 2s of green time from the EB Hoyt Avenue S. phase to the EB Astoria Boulevard phase [EB Hoyt Avenue S. phase green time shift from 29s to 27s; EB Astoria Boulevard phase green time shift from 24s to 26s; NB phase green time remains the same].
	NB-TR	0.81	38.6	D	0.81	38.6	D	0.22	12.3	B	
	NB-R	0.79	42.6	D	0.79	42.6	D	0.13	19.4	B	
	Hoyt Ave EB-LT	0.78	30.4	C	0.78	30.4	C	0.77	36.5	D	
18. Astoria Boulevard North & 32nd Street[1]	WB-T (Main)	0.37	7.9	A	0.37	7.9	A	0.36	7.0	A	Modify signal timing: Shift 2s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shift from 22s to 20s; WB phase green time shift from 58s to 60s].
	WB-T (Ramp)	1.03	45.5	D	1.06	54.9	D*	1.03	42.0	D	
	NB-L	0.38	29.0	C	0.39	29.1	C	0.43	31.0	C	
	SB-R	0.02	25.9	C	0.02	25.9	C	0.02	27.5	C	
22. Vernon Boulevard & Welling Court/8th Street[2]	EB-LT	0.91	45.7	D	0.99	58.7	E*	0.92	44.8	D	Modify signal timing: Shift 2s of green time from the WB phase to the EB/SB phase [WB phase green time shift from 29s to 27s; EB/SB phase green time shift from 28s to 30s; NB phase green time remains the same].
	WB-TR	0.04	21,1	C	0.04	21.1	C	0.05	22.6	C	
	NB-LTR	0.17	31.0	C	0.17	31.0	C	0.17	31.0	C	
	SB-R	0.71	35.1	D	0.76	37.8	D	0.71	33.5	C	
26. 27th Avenue & 9th Street	EB-LT	0.01	8.1	A	0.00	8.6	A	0.36	15.0	B	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 45s; SB phase green time is 35s; all phases have 3s of amber and 2s of all red time]. -Install "No Standing Anytime" regulations along the total western length of 9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic. -Restripe the SB approach from one 16.5 foot wide travel lane with parking and one 15.5 foot wide NB receiving lane with parking to one 10-foot wide right-turn lane, one 10-foot wide left-turn lane, and one 12-foot wide NB receiving lane for 100 feet.
	WB-TR	-	-	-	-	-	-	0.71	23.2	C	
	SB-LR	0.43	15.9	C	1.01	79.1	F*	-	-	-	
	SB-L	-	-	-	-	-	-	0.42	22.1	C	
	SB-R	-	-	-	-	-	-	0.26	20.0	B	

Table 20-3 (cont'd): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday Midday Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
28. Vernon Boulevard & Broadway/11th Street[2]	EB-LTR	0.02	25.4	C	0.02	25.4	C	0.02	24.7	C	Modify signal timing: Shift 1s of green time from the NB 11th Street phase to the EB/WB phase [NB 11th Street phase green time shift from 20s to 19s; EB/WB phase green time shift from 26s to 27s; NB/SB Vernon Boulevard phase green time remains the same].
	WB-LT	-	-	-	-	-	-	-	-	-	
	WB-R	-	-	-	-	-	-	-	-	-	
	WB-LTR	0.96	55.5	E	1.01	67.6	E*	0.97	57.3	E	
	Vernon Blvd NB-LT	0.29	9.0	A	0.30	9.1	A	0.31	9.6	A	
	Vernon Blvd NB-R	0.21	8.3	A	0.21	8.3	A	0.21	8.7	A	
	11th Street NB-LTR	0.22	32.8	C	0.22	32.8	C	0.23	33.9	C	
	SB-LTR	0.67	31.5	C	0.72	33.5	C	0.72	33.5	C	

Notes: EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, L=Left, T=Through, R=Right, V/C Ratio=Volume-to-Capacity Ratio, sec=Seconds, LOS=Level of Service

* Denotes significant adverse impact.

[1] Unmitigated in either the 2013 *Halletts Point Rezoning FEIS* and/or the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

[2] Partially and/or fully mitigated in either the 2013 *Halletts Point Rezoning FEIS* and/or the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

Table 20-4: RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday PM Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
2. 27th Avenue & 4th Street[2]	EB-LT	0.56	15.0	B	0.56	15.0	B	0.53	12.7	B	Partially mitigated Modify signal timing: Shift 3s of green time from the SB phase to the EB/WB phase [SB phase green time shifts from 29s to 26s; EB/WB phase green time shifts from 51s to 54s].
	WB-T	0.65	15.6	B	0.65	15.6	B	0.61	13.2	B	
	WB-R	0.29	11.8	B	1.42	216.9	F*	1.29	161.5	F*	
	SB-LR	0.08	21.7	C	0.08	21.6	C	0.09	23.8	C	
3. 27th Avenue & 8th Street[2]	EB-T	0.36	13.2	B	0.36	13.2	B	N/A			Unmitigatable Impact
	EB-R	0.42	15.9	B	0.42	15.9	B				
	WB-LT	1.22	138.6	F	1.91	437.1	F*				
	NB-L	0.48	25.8	C	0.68	32.0	C				
	NB-R	0.75	47.4	D	0.75	47.4	D				
4. 27th Avenue & 12th Street[2]	EB-LT	0.54	8.2	A	0.99	40.5	D	N/A			Unmitigatable Impact
	WB-TR	0.66	8.8	A	1.01	35.0	C				
	NB-LTR	0.86	65.8	E	0.90	70.6	E*				
7. Astoria Boulevard & 21st Street[2]	EB-L	0.61	46.8	D	0.67	48.9	D	N/A			Unmitigatable Impact
	EB-TR	1.13	118.0	F	1.29	186.0	F*				
	WB-L	0.92	68.3	E	0.91	66.7	E				
	WB-TR	0.99	73.3	E	1.26	172.6	F*				
	NB-LT	1.10	80.8	F	1.28	160.1	F*				
	NB-R	0.44	22.9	C	0.44	22.9	C				
	SB-LT	0.77	29.6	C	0.77	29.6	C				
	SB-R	0.80	33.1	C	1.02	62.3	E*				
8. Astoria Boulevard & 23rd Street[2]	EB-LT	0.95	35.5	D	1.06	63.7	E*	0.90	29.1	C	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 100 feet to daylight the approach.
	WB-TR	0.84	22.7	C	1.01	37.9	D	1.01	37.9	D	
	NB-LTR	0.61	37.4	D	0.61	37.4	D	0.61	37.4	D	
9. Astoria Boulevard & Crescent Street[1]	EB-TR	1.11	88.2	F	1.23	136.4	F*	1.01	52.6	D	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 250 feet to daylight the approach. -Install "No Standing 4pm-7pm Mon-Fri" regulations along the WB approach for 250 feet to daylight the approach. -Install "No Standing Anytime" regulations along the SB approach for 250 feet on the west side to allow for two moving lanes at the approach. -Restripe the SB approach from one 30-foot wide travel lane with parking on both sides to one 11-foot wide right-turn lane, and one 19-foot wide left-through lane with parking for 250 feet.
	WB-LT	1.53	267.6	F	1.74	362.6	F*	1.48	244.4	F	
	SB-LTR	1.07	74.4	E	1.33	188.3	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	0.94	41.3	D	
	SB-R	-	-	-	-	-	-	0.45	29.8	C	

Table 20-4 (cont'd): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday PM Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
12. Astoria Boulevard & 29th Street	EB-T	1.30	179.5	F	1.44	238.1	F*	1.26	159.5	F	Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 200 feet to daylight the approach.
	WB-T	0.22	20.3	C	0.22	20.3	C	0.22	20.3	C	
	SB-L	0.16	19.5	B	0.16	19.5	B	0.16	19.5	B	
	SB-R	0.66	30.4	C	0.71	32.9	C	0.71	32.9	C	
15. Hoyt Avenue South/Astoria Boulevard & 33rd Street[2]	Astoria Blvd EB-LT	1.17	121.1	F	1.24	154.2	F*	1.17	122.7	F	-Install "No Standing 7AM-10AM" regulations along the EB Astoria Boulevard approach for 250 feet to daylight the approach. -Modify signal timing: Shift 2s of green time from the EB Hoyt Avenue S. phase to the EB Astoria Boulevard phase [EB Hoyt Avenue S. phase green time shift from 40s to 38s; EB Astoria Boulevard phase green time shift from 34s to 36s; NB phase green time remains the same].
	NB-TR	1.09	86.7	F	1.09	86.7	F	1.09	86.7	F	
	NB-R	1.08	86.6	F	1.08	86.6	F	1.08	86.6	F	
	Hoyt Ave EB-LT	0.87	41.3	D	0.87	41.3	D	0.91	45.2	D	
18. Astoria Boulevard North & 32nd Street[1]	WB-T (Main)	0.32	9.2	A	0.32	9.2	A	0.31	7.9	A	Partially Mitigated Modify signal timing: Shift 3s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shifts from 31s to 28s; WB phase green time shifts from 79s to 82s].
	WB-T (Ramp)	1.13	84.7	F	1.20	116.1	F*	1.16	95.6	F*	
	NB-L	0.57	39.2	D	0.58	39.3	D	0.64	42.2	D	
	SB-R	0.02	33.3	C	0.02	33.3	C	0.02	35.6	D	
19. Astoria Boulevard & 8th Street[2]	EB-L	0.17	29.0	C	0.17	29.0	C	0.17	29.0	C	Install "No Standing 4PM-7PM Mon-Fri" regulations along the NB approach for 70 feet to daylight the approach.
	EB-R	0.66	40.6	D	0.66	40.6	D	0.66	40.6	D	
	WB-L	0.31	31.0	C	0.31	30.1	C	0.31	31.0	C	
	WB-TR	0.50	35.3	D	0.50	35.3	D	0.50	35.3	D	
	NB-LT	0.87	27.7	C	1.04	59.0	E*	0.91	30.4	C	
	SB-TR	0.39	15.1	B	0.44	15.9	B	0.44	15.9	B	
22. Vernon Boulevard & Welling Court/8th Street[1]	EB-LT	1.43	229.6	F	1.59	300.3	F*	1.42	224.5	F	Modify signal timing: Shift 3s of green time from the WB phase to the EB/SB phase [WB phase green time shift from 29s to 26s; EB/SB phase green time shift from 26s to 29s; NB phase green time remains the same].
	WB-TR	0.06	21.3	C	0.06	21.3	C	0.07	23.5	C	
	NB-LTR	0.78	29.5	C	0.18	29.5	C	0.18	29.5	C	
	SB-R	0.48	37.9	D	0.79	42.2	D	0.71	34.6	C	
24. Hoyt Avenue North & 21st Street[2]	EB-L	0.11	43.9	D	0.11	43.9	D	0.13	47.3	D	Partially Mitigated Modify signal timing: Shift 3s of green time from the EB/WB phase to the WB lag phase [EB/WB phase green time shift from 20s to 17s; WB lag phase green time shift from 38s to 41s; NB/SB phase green time remains the same.
	EB-R	0.19	45.3	D	0.19	45.3	D	0.23	49.1	D	
	WB-L	0.97	58.9	E	1.06	82.3	F*	0.98	58.6	E	
	WB-TR	0.30	16.9	B	0.30	16.9	B	0.30	16.9	B	
	NB-L	0.17	24.7	C	0.17	24.8	C	0.17	24.8	C	
	NB-T	1.12	99.0	F	1.17	119.4	F*	1.17	119.4	F*	
	SB-TR	0.77	37.9	d	0.80	39.4	D	0.8	39.4	D	

Table 20-4 (cont'd): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday PM Peak Hour

Intersection	Lane Group	No-Action Condition			With-Action Condition			With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
25. Hoyt Avenue South/Astoria Park South & 21st Street[2]	EB-LTR	0.58	37.9	D	0.63	39.0	D	0.69	42.5	D	Modify signal timing: Shift 3s of green time from the EB phase to the NB/SB phase [EB phase green time shift from 35s to 33s; NB/SB phase green time shift from 75s to 78s].
	NB-LT	0.72	16.8	B	0.75	17.7	B	0.71	15.0	B	
	NB-R	0.51	13.3	B	0.52	13.4	B	0.50	11.7	B	
	NB-LTR		15.7	B		16.3	B		14.0	B	
	SB-LTR	0.99	38.1	D	1.05	56.1	E*	1.00	39.2	D	
26. 27th Avenue & 9th Street	EB-LT	0.01	8.8	A	0.01	10.1	B	0.44	10.7	B	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 55s; SB phase green time is 25s; all phases have 3s of amber and 2s of all red time]. -Install "No Standing Anytime" regulations along the total western length of 9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic. -Restripe the SB approach from one 16.5 foot wide travel lane with parking and one 15.5 foot wide NB receiving lane with parking to one 10-foot wide right-turn lane, one 10-foot wide left-turn lane, and one 12-foot wide NB receiving lane for 100 feet.
	WB-TR	-	-	-	-	-	-	0.94	32.7	C	
	SB-LR	0.60	31.2	C	2.53	744.3	F*	-	-	-	
	SB-L	-	-	-	-	-	-	0.77	41.9	D	
	SB-R	-	-	-	-	-	-	0.35	29.0	C	
27. Vernon Boulevard & 31st Avenue	WB-LR	0.51	29.2	D	0.59	36.0	E*	N/A			Unmitigatable Impact
	SB-LT	0.02	8.9	A	0.03	9.0	A				
28. Vernon Boulevard & Broadway/11th Street[2]	EB-LTR	0.03	33.2	C	0.03	33.2	C	0.03	33.2	C	Modify signal timing: Shift 3s of green time form the NB 11th Street phase to the NB/SB Vernon Boulevard phase [NB 11th Street phase green time shift from 25s to 22s; NB/SB Vernon Boulevard phase green time shift from 45s to 48s; EB/WB phase green time remains the same].
	WB-LT	0.77	47.0	D	0.77	47.0	D	0.77	47.0	D	
	WB-R	0.18	34.8	C	0.28	36.1	D	0.37	37.9	D	
	WB-LTR		45.0	D		44.4	D		44.9	D	
	Vernon Blvd NB-LT	0.52	10.1	B	0.54	10.4	B	0.54	10.4	B	
	Vernon Blvd NB-R	0.18	6.7	A	0.18	6.7	A	0.18	6.7	A	
	11th Street NB-LTR	0.33	38.2	D	0.33	38.2	D	0.38	41.9	D	
	SB-LTR	0.88	45.4	D	1.01	70.5	E*	0.92	49.3	D	

Notes: EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, L=Left, T=Through, R=Right, V/C Ratio=Volume-to-Capacity Ratio, sec=Seconds, LOS=Level of Service

* Denotes significant adverse impact.

[1] Unmitigated in either the 2013 *Halletts Point Rezoning FEIS* and/or the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

[2] Partially and/or fully mitigated in either the 2013 *Halletts Point Rezoning FEIS* and/or the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

Table 20-5: Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
3. 27th Avenue & 8th Street	EB-TR	0.54	17.2	B	0.54	17.2	B	0.51	14.7	B	Partially Mitigated Modify signal timing: Shift 3s of green time from the NB phase to the EB/WB phase [NB phase green time shifts from 32s to 29s; EB/WB phase green time shifts from 48s to 51s].
	WB-LT	0.98	57.1	E	1.46	237.9	F*	1.34	183.1	F*	
	NB-L	0.43	24.9	C	0.61	29.5	C	0.67	34.4	C	
	NB-R	0.28	22.3	C	0.28	22.3	C	0.31	24.9	C	
4. 27th Avenue & 12th Street	EB-LT	0.08	8.7	A	0.12	9.4	A	0.72	14.9	B	Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time = 58s; NB phase time = 22 s; all phases have 3s of amber and 2s of all red time]
	WB-TR	-	-	-	-	-	-	0.67	11.3	B	
	NB-LTR	0.51	31.3	D	1.14	192.2	F*	0.46	33.5	C	
5. 27th Avenue & 14th Street	EB-TR	N/A	11.9	B	N/A	92.8	F*	0.84	23.4	C	Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time = 40s; SB phase time = 40 s; all phases have 3s of amber and 2s of all red time]
	WB-LT	N/A	13.3	B	N/A	35.8	E*	0.87	33.2	C	
	SB-LTR	N/A	20.0	C	N/A	52.3	F*	0.86	37.1	D	
7. Astoria Boulevard & 21st Street[1]	EB-L	1.08	111.5	F	1.11	122.3	F*	1.06	104.9	F	Partially Mitigated -Install "No Standing Anytime" regulations along the NB approach for 165 feet, along the NB receiving side for 135 feet, along the SB approach for 340 feet, and along the SB receiving side for 125 feet to allow for three moving lanes at the NB and SB approaches. -Shift the NB approach centerline 3 feet to the west and restripe the NB approach from one 11-foot wide travel lane, one 20-foot wide travel lane with parking, one 12-foot wide receiving lane, and one 18-foot wide receiving lane with parking to two 11-foot wide travel lanes, one 12-foot wide right-turn lane, and one 15-foot wide receiving lane for 125 feet from the intersection. -Shift the SB approach centerline 4 feet to the east and restripe the SB approach from one 11-foot wide travel lane, one 19-foot wide travel lane with parking, one 11-foot wide receiving lane, and one 19-foot wide receiving land with parking to two 11-foot wide travel lanes, one 12-foot wide right turn lane, one 11-foot wide receiving lane, and one 15-foot wide receiving lane for 135 feet from the intersection. -Modify signal timing: Shift 1s of green time from NB/SB phase to the EB phase [NB/SB phase green shift from 51s.
	EB-TR	1.03	85.1	F	1.43	247.8	F*	1.37	220.7	F*	
	WB-L	1.01	69.0	E	1.01	69.0	E	1.01	69.0	E	
	WB-TR	0.77	43.9	D	0.85	46.0	D	0.85	46.0	D	
	NB-LTR	0.99	56.0	F	1.18	124.1	F*	-	-	-	
	NB-LT	-	-	-	-	-	-	0.72	32.4	C	
	NB-R	-	-	-	-	-	-	0.38	25.4	C	
	SB-LTR	1.13	94.1	F	1.17	112.1	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	0.87	31.7	C	
	SB-R	-	-	-	-	-	-	0.53	26.5	C	
8. Astoria Boulevard & 23rd Street	EB-LT	0.80	25.3	C	1.06	67.4	E*	0.90	30.8	C	Install "No Standing 7AM – 10AM Mon-Fri" regulations along the EB approach for 100 feet to daylight the approach.
	WB-TR	0.87	27.2	C	0.91	30.2	C	0.91	30.2	C	
	NB-LTR	0.50	33.5	C	0.50	33.5	C	0.50	33.5	C	

Table 20-5 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
9. Astoria Boulevard & Crescent Street	EB-TR	0.88	33.9	C	1.14	99.3	F*	0.92	35.7	D	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 250 feet to daylight the approach. -Install "No Standing 4PM-7PM Mon-Fri" regulations along the WB approach for 250 feet to daylight the approach. -Install "No Standing Anytime" regulations along the SB approach for 250 feet on the west side to allow for two moving lanes at the approach. -Restripe the SB approach from one 30-foor wide travel lane with parking on both sides to one 11-foot wide right-turn lane, and one 19-foot wide left-through lane with parking for 250 feet. -Modify signal timing: Shift 1s of green time from the SB phase to the EB/WB phase [SB phase green time shift from 43s to 42s; EB/WB phase green time shift from 67s to 68s].
	WB-LT	1.01	48.0	D	1.05	60.3	E*	1.02	50.2	D	
	SB-LTR	1.10	88.2	F	1.19	124.6	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	1.09	81.1	F	
	SB-R	-	-	-	-	-	-	0.20	27.4	C	
12. Astoria Boulevard & 29th Street	EB-T	1.17	127.2	F	1.46	253.2	F*	1.38	215.7	F*	Partially Mitigated Modify signal timing: Shift 3s of green time from the SB phase to the EB/WB phase [SB phase green time shifts from 60s to 57s; EB/WB phase green time shifts from 50s to 53s].
	WB-T	0.44	27.5	C	0.44	27.5	C	0.42	25	C	
	SB-L	0.18	17.0	B	0.18	17.0	B	0.19	18.8	B	
	SB-R	0.71	29.0	C	0.73	30.0	C	0.77	34.4	C	
14. Astoria Boulevard & 31st Street	EB-LTR	1.11	98.1	F	1.45	245.5	F*	0.73	24.8	C	-Install "No Standing Anytime" regulations along the EB approach for 200 feet to allow for two moving lanes at the approach. -Restripe the EB approach from one 25-foor wide travel lane with parking to one 12-foot wide through lane and one 13-foot wide through-right lane for 200 feet.
	NB-T	0.52	41.8	D	0.52	41.8	D	0.52	41.8	D	
	NB-R	0.67	16.5	B	0.67	16.5	B	0.67	16.5	B	
	SB-T	1.10	85.7	F	1.10	85.7	F	1.1	85.7	F	
	SB-R	0.30	14.9	B	0.30	14.9	B	0.3	14.9	B	
15. Hoyt Avenue South/Astoria Boulevard & 33rd Street	Astoria Blvd EB-LT	1.05	77.8	E	1.22	147.0	F*	1.06	81.4	F	-Install "No Standing 7AM-10AM regulations along the EB Astoria Boulevard approach for 250 feet to daylight the approach. -Modify signal timing: Shift 3s of green time from the EB Hoyt Avenue S. phase to the EB Astoria Boulevard phase [EB Hoyt Avenue phase green time shift from 52s to 49s; EB Astoria Boulevard phase green time shift from 31s to 34 s; NB phase green time remains the same].
	NB-TR	1.09	94.2	F	1.09	94.2	F	1.09	94.2	F	
	NB-R	1.08	92.9	F	1.08	92.9	F	1.08	92.9	F	
	Hoyt Ave EB-LT	0.59	26.4	C	0.59	26.4	C	0.63	28.9	C	
16. Hoyt Avenue North & 29th Street	WB-L	0.76	12.6	B	0.76	12.6	B	0.78	14.0	B	Modify signal timing: Shift 2s of green time from the WB phase to the SB phase [WB phase green time shift from 84s to 82s; SB phase green time shift from 19s to 21s].
	WB-LT	0.76	12.2	B	0.78	12.6	B	0.8	14.1	B	
	SB-R	1.04	104.0	F	1.15	140.3	F*	1.04	100.5	F	

Table 20-5 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
18. Astoria Boulevard North & 32nd Street	WB-T (Main)	0.53	8.8	A	0.53	8.8	A	0.52	8.3	A	Modify signal timing: Shift 1s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shift from 25s to 24s; WB phase green time shift from 85s to 86s].
	WB-T (Ramp)	1.13	109.3	F	1.15	118.0	F*	1.14	111.3	F	
	NB-L	0.61	44.5	D	0.62	44.6	D	0.65	45.8	D	
	SB-R	0.03	38.0	D	0.03	38.0	D	0.03	38.8	D	
20. 30th Avenue & 14th Street	EB-LTR	N/A	12.1	B	N/A	14.1	B	N/A			Unmitigatable Impact
	WB-LTR	N/A	12.9	B	N/A	15.3	C				
	SB-LTR	N/A	26.5	D	N/A	54.0	F*				
21. 30th Avenue & 21st Street	EB-LTR	0.45	37.2	D	0.70	47.1	D*	0.67	43.3	D	Modify signal timing: Shift 2s of green time form the NB/SB phase to the EB/WB phase [NB/SB phase green time shift from 73s to 71s; EB/WB phase green time shift from 37s to 39s].
	WB-LTR	0.45	37.2	D	0.52	39.1	D	0.49	36.7	D	
	NB-LTR	0.53	15.0	B	0.55	15.3	B	0.56	16.6	B	
	SB-LTR	0.75	19.8	B	0.75	19.9	B	0.78	21.8	C	
22. Vernon Boulevard & Welling Court/8th Street	EB-LT	1.21	132.9	F	1.30	171.8	F*	1.21	129.6	F	Modify signal timing: Shift 2s of green time from the NB phase to the EB/SB phase [NB phase green time shift from 20s to 18s; EB/SB phase green time shift from 26s to 28s; WB phase green time remains the same].
	WB-TR	0.04	21.1	C	0.04	21.1	C	0.04	21.1	C	
	NB-LTR	0.28	32.0	C	0.28	32.0	C	0.31	34.6	C	
	SB-R	0.85	44.3	D	0.96	59.7	E*	0.89	46.4	D	
23. Astoria Boulevard & 18th Street	EB-T	-	-	-	-	-	-	0.69	28.1	C	Install a traffic signal with 120-second cycle length and two phases [EB/WB phase green time is 55s; SB phase green time is 55s; all phases have 3s of amber and 2s of all red time].
	WB-T	-	-	-	-	-	-	0.59	25.5	C	
	SB-LR	0.51	32.5	D	1.43	253.4	F*	0.61	29.1	C	
24. Hoyt Avenue North & 21st Street	EB-L	0.02	40.4	D	0.02	40.4	D	0.02	42.1	D	Partially Mitigated Modify signal timing: Shift 1s of green time from the EB/WB phase to the WB phase; Shift 1s of green time from the EB/WB phase to the NB/SB phase [EB phase green time shift from 22s to 20s; WB lag phase green time shift from 38s to 39s; NB/SB phase green time shift from 45s to 46s].
	EB-R	0.37	47.5	D	0.37	47.5	D	0.41	50.8	D	
	WB-L	0.98	52.8	D	1.01	59.8	E*	0.98	53.1	D	
	WB-TR	0.25	14.8	B	0.25	14.8	B	0.25	15.4	B	
	NB-L	0.31	32.2	C	0.32	32.8	C	0.3	31.2	C	
	NB-T	1.08	98.0	F	1.17	133.9	F*	1.15	122.8	F*	
	SB-TR	1.03	61.9	E	1.06	71.0	E*	1.03	62.2	E	
25. Hoyt Avenue South/Astoria Park South & 21st Street	EB-LTR	0.61	36.3	D	0.69	37.6	D	0.74	39.5	D	Modify signal timing: Shift 2s of green time from the EB phase to the NB/SB phase [EB phase green time shift from 36s to 34s; NB/SB phase green time shift from 74s to 76s].
	NB-LTR	0.61	15.8	B	0.63	16.4	B	0.61	14.7	B	
	SB-LTR	1.10	72.7	E	1.14	88.9	F*	1.1	71.3	E	

Table 20-5 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday AM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
26. 27th Avenue & 9th Street	EB-LT	0.01	8.2	A	0.01	8.7	A	0.26	13.7	B	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 45s; SB phase green time is 35s; all phases have 3s of amber and 2s of all red time]. -Install "No Standing Anytime" regulations along the total western length of 9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic. -Restripe the SB approach from one 16.5 foot wide travel lane with parking and one 15.5 foot wide NB receiving lane with parking to one 10-foot wide right-turn lane, one 10-foot wide left-turn lane, and one 12-foot wide NB receiving lane for 100 feet.
	WB-TR	-	-	-	-	-	-	0.72	23.6	C	
	SB-LR	0.34	15.3	C	1.50	264.3	F*	-	-	-	
	SB-L	-	-	-	-	-	-	0.75	32.0	C	
	SB-R	-	-	-	-	-	-	0.28	20.2	C	
28. Vernon Boulevard & Broadway/11th Street	EB-LTR	0.01	28.2	C	0.01	28.2	C	0.01	27.5	C	-Install "No Standing Anytime" regulations along the WB approach for 100 feet to allow for two moving lanes at the approach. -Restripe the WB approach from one 21-foot wide travel lane with parking to one 11-foot wide through lane and one 10-foot wide right-turn lane for 100 feet. -Modify signal timing: Shift 3s of green time from the EB/WB phase to the NB/SB Vernon Boulevard phase; Shift 1s of green time from the NB 11th Street phase to the NB/SB Vernon Boulevard phase [EB/WB phase green time shift from 25s to 22s; NB/SB Vernon Boulevard phase green time shift from 43s to 47s; NB 11th Street phase green time shift from 17s to 16s].
	WB-LTR	1.13	99.5	F	1.17	115.9	F*	-	-	-	
	WB-LT	-	-	-	-	-	-	1.07	76.9	E	
	WB-R	-	-	-	-	-	-	0.22	32.2	C	
	Vernon Blvd NB-T	0.26	8.0	A	0.27	8.1	A	0.26	6.8	A	
	Vernon Blvd NB-R	0.11	6.8	A	0.11	6.8	A	0.1	5.7	A	
	11th Street NB-LTR	0.28	41.1	D	0.38	41.1	D	0.4	42.8	D	
	SB-LTR	1.08	80.8	F	1.22	136.6	F*	1.08	77.6	E	

Notes: EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, L=Left, T=Through, R=Right, V/C Ratio=Volume-to-Capacity Ratio, sec=Seconds, LOS=Level of Service

* Denotes significant adverse impact.

[1] Partially and/or fully mitigated in the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

Table 20-6: Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday Midday Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
3. 27th Avenue & 8th Street	EB-TR	0.38	14.1	B	0.38	14.1	B	0.35	12.1	B	Partially Mitigated Modify signal timing: Shift 3s of green time from the NB phase to the EB/WB phase [NB phase green time shifts from 32s to 29s; EB/WB phase green time shifts from 48s to 51s].
	WB-LT	0.89	41.5	D	1.34	188.3	F*	1.24	142.9	F	
	NB-L	0.31	22.6	C	0.40	24.1	C	0.44	27.1	C	
	NB-R	0.30	22.7	C	0.30	22.7	C	0.33	25.5	C	
4. 27th Avenue & 12th Street	EB-LT	0.06	8.1	A	0.08	8.7	A	0.48	11.3	B	Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 55s; NB phase green time is 25s; all phases have 3s of amber and 2s of all red time].
	WB-TR	-	-	-	-	-	-	0.41	10.4	B	
	NB-LTR	0.26	16.9	C	0.47	32.1	D*	0.37	29.0	C	
5. 27th Avenue & 14th Street	EB-TR	N/A	9.5	A	N/A	14.1	B	0.55	20.3	C	Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time = 40s; SB phase time = 40s; all phases have 3s of amber and 2s of all red time] (Measures reflect improvements needed for the AM and PM peak periods)
	WB-LT	N/A	9.2	A	N/A	12.7	B	0.45	18.5	B	
	SB-LTR	N/A	9.5	A	N/A	11.3	B	0.33	17.7	B	
7. Astoria Boulevard & 21st Street[1]	EB-L	0.29	36.1	D	0.32	36.8	D	0.32	36.8	D	-Install "No Standing Anytime" regulations along the NB approach for 165 feet, along the NB receiving side for 135 feet, along the SB approach for 340 feet, and along the SB receiving side for 125 feet to allow for three moving lanes at the NB and SB approaches. -Shift the NB approach centerline 3 feet to the west and restripe the NB approach from one 11-foot wide travel lane, one 20-foot wide travel lane with parking, one 12-foot wide receiving lane, and one 18-foot wide receiving lane with parking to two 11-foot wide travel lanes, one 12-foot wide right-turn lane, and one 15-foot wide receiving lane for 125 feet from the intersection. -Shift the SB approach centerline 4 feet to the east and restripe the SB approach from one 11-foot wide travel lane, one 19-foot wide travel lane with parking, one 11-foot wide receiving lane, and one 19-foot wide receiving land with parking to two 11-foot wide travel lanes, one 12-foot wide right turn lane, one 11-foot wide receiving lane, and one 15-foot wide receiving lane for 135 feet from the intersection.
	EB-TR	0.45	37.9	D	0.53	39.6	D	0.53	39.6	D	
	WB-L	0.86	53.2	D	0.86	53.2	D	0.86	53.2	D	
	WB-TR	0.40	35.6	D	0.50	37.1	D	0.5	37.1	D	
	NB-LTR	1.21	136.0	F	1.55	287.3	F*	-	-	-	
	NB-LT	-	-	-	-	-	-	0.85	39.6	D	
	NB-R	-	-	-	-	-	-	0.64	36.0	D	
	SB-LTR	1.06	72.6	E	1.14	108.5	F*	-	-	-	
	SB-LT							0.76	38.1	D	
	SB-R	-	-	-	-	-	-	0.61	36.4	D	

Table 20-6 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday Midday Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
9. Astoria Boulevard & Crescent Street	EB-TR	0.72	19.6	B	0.79	22.8	C	0.76	20.0	B	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 250 feet to daylight the approach. -Install "No Standing 4PM-7PM Mon-Fri" regulations along the WB approach for 250 feet to daylight the approach. -Install "No Standing Anytime" regulations along the SB approach for 250 feet on the west side to allow for two moving lanes at the approach. -Restripe the SB approach from one 30-foor wide travel lane with parking on both sides to one 11-foot wide right-turn lane, and one 19-foot wide left-through lane with parking for 250 feet. -Modify signal timing: Shift 2s of green time from the SB phase to the EB/WB phase [SB phase green time shift from 31s to 29s; EB/WB phase green time shift from 49s to 51s].
	WB-LT	1.11	75.0	E	1.19	109.7	F*	1.1	70.0	E	
	SB-LTR	1.09	73.8	E	1.18	115.8	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	1.08	71.2	E	
	SB-R	-	-	-	-	-	-	0.36	22.8	C	
14. Astoria Boulevard & 31st Street	EB-LTR	0.97	43.8	D	1.08	74.3	E*	0.54	22.0	C	-Install "No Standing Anytime" regulations along the EB approach for 200 feet to allow for two moving lanes at the approach. -Restripe the EB approach from one 25-foor wide travel lane with parking to one 12-foot wide through lane and one 13-foot wide through-right lane for 200 feet.
	NB-T	0.54	33.7	C	0.54	33.7	C	0.54	33.7	C	
	NB-R	0.53	8.9	A	0.53	8.9	A	0.53	8.9	A	
	SB-T	0.65	19.8	B	0.65	19.8	B	0.65	19.8	B	
	SB-R	0.31	14.3	B	0.31	14.3	B	0.31	14.3	B	
15. Hoyt Avenue South/Astoria Boulevard & 33rd Street	Astoria Blvd EB-LT	1.02	62.1	E	1.08	83.6	F*	0.99	53.9	D	-Install "No Standing 7AM-10AM regulations along the EB Astoria Boulevard approach for 250 feet to daylight the approach. -Modify signal timing: Shift 2s of green time from the EB Hoyt Avenue S. phase to the EB Astoria Boulevard phase [EB Hoyt Avenue phase green time shift from 31s to 29s; EB Astoria Boulevard phase green time shift from 22s to 24s; NB phase green time remains the same].
	NB-TR	0.81	38.6	D	0.81	38.6	D	0.81	38.6	D	
	NB-R	0.79	42.6	D	0.79	42.6	D	0.79	42.6	D	
	Hoyt Ave EB-LT	0.71	27.5	C	0.71	27.5	C	0.76	30.0	C	
22. Vernon Boulevard & Welling Court/8th Street	EB-LT	0.90	45.7	D	0.98	59.5	E*	0.91	45.4	D	Modify signal timing: Shift 2s of green time from the NB phase to the EB/SB phase [NB phase green time shift from 20s to 18s; EB/SB phase green time shift from 26s to 28s; WB phase green time remains the same].
	WB-TR	0.04	21.1	C	0.04	21.1	C	0.04	21.1	C	
	NB-LTR	0.15	29.1	C	0.15	29.1	C	0.17	31.0	C	
	SB-R	0.65	34.6	C	0.71	36.9	D	0.66	33.0	C	
23. Astoria Boulevard & 18th Street	EB-T	-	-	-	-	-	-	0.32	21.6	C	Install a traffic signal with 120-second cycle length and two phases [EB/WB phase green time is 55s; SB phase green time is 55s; all phases have 3s of amber and 2s of all red time]. (Measures reflect improvements needed for the AM peak period).
	WB-T	-	-	-	-	-	-	0.33	21.5	C	
	SB-LR	0.24	13.9	B	0.38	15.9	C	0.36	22.9	C	

Table 20-6 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday Midday Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
26. 27th Avenue & 9th Street	EB-LT	0.00	7.8	A	0.00	8.2	A	0.21	13.1	B	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 45s; SB phase green time is 35s; all phases have 3s of amber and 2s of all red time]. -Install "No Standing Anytime" regulations along the total western length of 9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic. -Restripe the SB approach from one 16.5 foot wide travel lane with parking and one 15.5 foot wide NB receiving lane with parking to one 10-foot wide right-turn lane, one 10-foot wide left-turn lane, and one 12-foot wide NB receiving lane for 100 feet. (Measures reflect improvements needed for the AM and PM peak periods).
	WB-TR	-	-	-	-	-	-	0.52	17.9	B	
	SB-LR	0.33	12.1	B	0.73	27.4	D	-	-	-	
	SB-L	-	-	-	-	-	-	0.42	22.1	C	
	SB-R	-	-	-	-	-	-	0.26	19.9	B	
28. Vernon Boulevard & Broadway/11th Street	EB-LTR	0.02	26.1	C	0.02	26.1	C	0.02	26.1	C	-Install "No Standing Anytime" regulations along the WB approach for 100 feet to allow for two moving lanes at the approach. -Restripe the WB approach from one 21-foot wide travel lane with parking to one 11-foot wide through lane and one 10-foot wide right-turn lane for 100 feet.
	WB-LTR	0.96	55.7	E	1.01	68.8	E*	-	-	-	
	WB-LT	-	-	-	-	-	-	0.75	37.5	D	
	WB-R	-	-	-	-	-	-	0.24	28.4	C	
	Vernon Blvd NB-T	0.27	8.4	A	0.28	8.5	A	0.28	8.5	A	
	Vernon Blvd NB-R	0.20	7.8	A	0.20	7.8	A	0.20	7.8	A	
	11th Street NB-LTR	0.22	32.8	C	0.22	32.8	C	0.22	32.8	C	
	SB-LTR	0.58	27.9	C	0.62	29.2	C	0.62	29.2	C	

Notes: EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, L=Left, T=Through, R=Right, V/C Ratio=Volume-to-Capacity Ratio, sec=Seconds, LOS=Level of Service

* Denotes significant adverse impact.

[1] Partially and/or fully mitigated in the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

Table 20-7: Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday PM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
3. 27th Avenue & 8th Street	EB-TR	0.39	14.0	B	0.39	14.0	B	0.36	12.1	B	Partially Mitigated Modify signal timing: Shift 3s of green time from the NB phase to the EB/WB phase [NB phase green time shifts from 32s to 29s; EB/WB phase green time shifts from 48s to 51s].
	WB-LT	0.59	19.3	B	1.26	154.6	F*	1.17	112.6	F*	
	NB-L	0.36	23.4	C	0.56	27.8	C	0.62	32.0	C	
	NB-R	0.33	23.1	C	0.33	23.1	C	0.36	25.9	C	
4. 27th Avenue & 12th Street	EB-LT	0.09	8.5	A	0.14	10.0	B	0.94	36.4	D	Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time = 56s; NB phase time = 24s; all phases have 3s of amber and 2s of all red time].
	WB-TR	-	-	-	-	-	-	0.74	17.2	B	
	NB-LTR	0.79	52.9	F	2.04	562.5	F*	0.73	42.0	D	
5. 27th Avenue & 14th Street	EB-TR	N/A	10.6	B	N/A	30.5	D*	0.69	21.8	C	Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time = 40s; SB phase time = 40s; all phases have 3s of amber and 2s of all red time]
	WB-LT	N/A	10.3	B	N/A	36.1	E*	0.76	21.9	C	
	SB-LTR	N/A	11.2	B	N/A	17.5	C	0.58	23.1	C	
7. Astoria Boulevard & 21st Street[1]	EB-L	0.56	45.3	D	0.62	47.1	D	0.62	47.1	D	Partially Mitigated -Install "No Standing Anytime" regulations along the NB approach for 165 feet, along the NB receiving side for 135 feet, along the SB approach for 340 feet, and along the SB receiving side for 125 feet to allow for three moving lanes at the NB and SB approaches. -Shift the NB approach centerline 3 feet to the west and restripe the NB approach from one 11-foot wide travel lane, one 20-foot wide travel lane with parking, one 12-foot wide receiving lane, and one 18-foot wide receiving lane with parking to two 11-foot wide travel lanes, one 12-foot wide right-turn lane, and one 15-foot wide receiving lane for 125 feet from the intersection. -Shift the SB approach centerline 4 feet to the east and restripe the SB approach from one 11-foot wide travel lane, one 19-foot wide travel lane with parking, one 11-foot wide receiving lane, and one 19-foot wide receiving land with parking to two 11-foot wide travel lanes, one 12-foot wide right turn lane, one 11-foot wide receiving lane, and one 15-foot wide receiving lane for 135 feet from the intersection.
	EB-TR	0.87	55.1	E	1.04	84.0	F*	1.04	84.0	F*	
	WB-L	0.92	68.3	E	0.91	66.7	E	0.91	66.7	E	
	WB-TR	0.79	52.1	D	1.07	94.9	F*	1.07	94.9	F*	
	NB-LTR	1.23	138.8	F	1.76	374.2	F*	-	-	-	
	NB-LT	-	-	-	-	-	-	1.10	80.8	F	
	NB-R	-	-	-	-	-	-	0.44	22.9	C	
	SB-LTR	1.02	54.1	D	1.17	112.1	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	0.77	29.6	C	
	SB-R	-	-	-	-	-	-	0.54	25.5	C	

Table 20-7 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday PM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
9. Astoria Boulevard & Crescent Street	EB-TR	0.93	38.6	D	1.05	66.6	E*	0.85	28.1	C	-Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the EB approach for 250 feet to daylight the approach. -Install "No Standing 4PM-7PM Mon-Fri" regulations along the WB approach for 250 feet to daylight the approach. -Install "No Standing Anytime" regulations along the SB approach for 250 feet on the west side to allow for two moving lanes at the approach. -Restripe the SB approach from one 30-foor wide travel lane with parking on both sides to one 11-foot wide right-turn lane, and one 19-foot wide left-through lane with parking for 250 feet. -Modify signal timing: Shift 1s of green time from the SB phase to the EB/WB phase [SB phase green time shift from 43s to 42s; EB/WB phase green time shift from 67s to 68s].
	WB-LT	1.20	119.5	F	1.37	195.7	F*	1.13	86.3	F	
	SB-LTR	1.07	73.5	E	1.32	185.9	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	0.96	43.6	D	
	SB-R	-	-	-	-	-	-	0.46	30.6	C	
12. Astoria Boulevard & 29th Street	EB-T	1.10	96.4	F	1.23	150.1	F*	1.08	88.4	F	Install "No Standing 4PM-7PM Mon-Fri" regulations along the EB approach for 200 feet to daylight the approach.
	WB-T	0.22	20.3	C	0.22	20.3	C	0.22	20.3	C	
	SB-L	0.16	19.5	B	0.16	19.5	B	0.16	19.5	B	
	SB-R	0.55	26.8	C	0.60	28.6	C	0.60	28.6	C	
14. Astoria Boulevard & 31st Street	EB-LTR	1.03	86.5	F	1.24	148.9	F*	0.71	33.9	C	-Install "No Standing Anytime" regulations along the EB approach for 200 feet to allow for two moving lanes at the approach. -Restripe the EB approach from one 25-foor wide travel lane with parking to one 12-foot wide through lane and one 13-foot wide through-right lane for 200 feet.
	NB-T	0.52	41.6	D	0.52	41.6	D	0.52	41.6	D	
	NB-R	0.84	24.2	C	0.84	24.2	C	0.84	24.2	C	
	SB-T	0.69	22.8	C	0.69	22.8	C	0.69	22.8	C	
	SB-R	0.31	15.1	B	0.31	15.1	B	0.31	15.1	B	
15. Hoyt Avenue South/Astoria Boulevard & 33rd Street	Astoria Blvd EB-LT	1.16	117.8	F	1.24	154.0	F*	1.13	104.1	F	-Install "No Standing 7AM-10AM regulations along the EB Astoria Boulevard approach for 250 feet to daylight the approach. -Modify signal timing: Shift 3s of green time from the EB Hoyt Avenue S. phase to the EB Astoria Boulevard phase [EB Hoyt Avenue phase green time shift from 43s to 40s; EB Astoria Boulevard phase green time shift from 31s to 34s; NB phase green time remains the same].
	NB-TR	1.09	86.7	F	1.09	86.7	F	1.09	86.7	F	
	NB-R	1.08	86.6	F	1.08	86.6	F	1.08	86.6	F	
	Hoyt Ave EB-LT	0.78	36.4	D	0.78	36.4	D	0.84	40.3	D	
18. Astoria Boulevard North & 32nd Street	WB-T (Main)	0.32	9.2	A	0.32	9.2	A	0.31	7.5	A	Modify signal timing: Shift 1s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shift from 31s to 27s; WB phase green time shift from 79s to 83s].
	WB-T (Ramp)	0.99	38.1	D	1.07	60.4	E*	1.01	41.4	D	
	NB-L	0.55	39.0	D	0.56	39.1	D	0.64	42.9	D	
	SB-R	0.02	33.3	C	0.02	33.3	C	0.02	36.4	D	

Table 20-7 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday PM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
22. Vernon Boulevard & Welling Court/8th Street	EB-LT	1.22	136.0	F	1.37	204.2	F*	1.23	139.9	F*	Partially Mitigated Modify signal timing: Shift 3s of green time from the WB phase to the EB/SB phase [WB phase green time shifts from 29s to 26s; EB/SB phase green time shifts from 26s to 29s; NB phase green time remains the same].
	WB-TR	0.06	21.3	C	0.06	21.3	C	0.07	23.5	C	
	NB-LTR	0.18	29.5	C	0.18	29.5	C	0.18	29.5	C	
	SB-R	0.59	32.6	C	0.66	34.9	C	0.59	30.2	C	
23. Astoria Boulevard & 18th Street	EB-T	-	-	-	-	-	-	0.66	28.1	C	Install a traffic signal with 120-second cycle length and two phases [EB/WB phase green time is 55s; SB phase green time is 55s; all phases have 3s of amber and 2s of all red time]. (Measures reflect improvements needed for the AM peak period).
	WB-T	-	-	-	-	-	-	0.25	20.0	B	
	SB-LR	0.29	17.2	C	0.60	27.2	D	0.38	23.1	C	
24. Hoyt Avenue North & 21st Street	EB-L	0.09	41.8	D	0.09	41.8	D	0.10	43.9	D	Modify signal timing: Shift 2s of green time from the EB/WB phase to the NB/SB phase [EB phase green time shift from 22s to 20s; NB/SB phase green time shift from 45s to 47s; WB lag phase green time remains the same].
	EB-R	0.17	43.1	D	0.17	43.1	D	0.18	45.3	D	
	WB-L	0.71	39.6	D	0.80	42.9	D	0.82	42.9	D	
	WB-TR	0.29	15.7	B	0.29	15.7	B	0.30	16.8	B	
	NB-L	0.18	26.1	C	0.18	26.3	C	0.17	24.7	C	
	NB-T	1.12	101.6	F	1.17	123.0	F*	1.12	102.6	F	
	SB-TR	0.78	39.9	D	0.81	41.6	D	0.78	38.2	D	
25. Hoyt Avenue South/Astoria Park South & 21st Street	EB-LTR	0.47	34.6	C	0.52	35.5	D	0.57	38.4	D	Modify signal timing: Shift 3s of green time from the EB phase to the NB/SB phase [EB phase green time shift from 37s to 34s; NB/SB phase green time shift from 73s to 76s].
	NB-LTR	1.01	42.5	D	1.07	62.7	E*	1.01	40.1	D	
	SB-LTR	0.99	42.6	D	1.07	66.2	E*	1.01	45.3	D	
26. 27th Avenue & 9th Street	EB-LT	0.01	7.9	A	0.01	8.9	A	0.33	14.6	B	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 45s; SB phase green time is 35s; all phases have 3s of amber and 2s of all red time]. -Install "No Standing Anytime" regulations along the total western length of 9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic. -Restripe the SB approach from one 16.5 foot wide travel lane with parking and one 15.5 foot wide NB receiving lane with parking to one 10-foot wide right-turn lane, one 10-foot wide left-turn lane, and one 12-foot wide NB receiving lane for 100 feet.
	WB-TR	-	-	-	-	-		0.88	34.6	C	
	SB-LR	0.33	14.2	B	1.36	210.9	F*	-	-	-	
	SB-L	-	-	-	-	-	-	0.55	24.8	C	
	SB-R	-	-	-	-	-	-	0.23	19.6	B	

Table 20-7 (cont'd): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Weekday PM Peak Hour

Intersection	Lane Group	Alternate No-Action Condition			Alternate With-Action Condition			Alternate With-Action Condition with Mitigation			Alternate Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
28. Vernon Boulevard & Broadway/11th Street	EB-LTR	0.03	33.2	C	0.03	33.2	C	0.03	33.2	C	-Install "No Standing Anytime" regulations along the WB approach for 100 feet to allow for two moving lanes at the approach. -Restripe the WB approach from one 21-foot wide travel lane with parking to one 11-foot wide through lane and one 10-foot wide right-turn lane for 100 feet.
	WB-LTR	0.97	69.3	E	1.08	99.5	F*	-	-	-	
	WB-LT	-	-	-	-	-	-	0.83	50.7	D	
	WB-R	-	-	-	-	-	-	0.22	35.5	D	
	Vernon Blvd NB-T	0.48	9.5	A	0.49	9.7	A	0.49	9.7	A	
	Vernon Blvd NB-R	0.18	6.7	A	0.18	6.7	A	0.18	6.7	A	
	11th Street NB-LTR	0.33	38.2	D	0.33	38.2	D	0.33	38.3	D	
	SB-LTR	0.66	30.7	C	0.75	34.6	C	0.75	34.6	C	

Notes: EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, L=Left, T=Through, R=Right, V/C Ratio=Volume-to-Capacity Ratio, sec=Seconds, LOS=Level of Service

* Denotes significant adverse impact.

[1] Partially and/or fully mitigated in the 2012 *Cornell NYC Tech FEIS* (2018 analysis year).

27th Avenue and 14th Street

Impacts would occur on the 27th Avenue eastbound and westbound approaches during the weekday AM peak hour. The westbound approach impact could be fully mitigated by modifying signal timing and installing "No Standing 7AM-10AM Mon-Fri" regulations along the westbound approach for 250 feet and along the west side of the southbound approach for 250 feet. The impact on the eastbound approach would not be mitigated.

Astoria Boulevard and 21st Street

Impacts on the Astoria Boulevard eastbound left-turn movement would occur during the weekday AM and PM peak hours; impacts on the Astoria Boulevard eastbound through and right-turn movement would occur during the weekday AM peak hour; impacts on the 21st Street southbound right-turn movement would occur during the weekday midday and PM peak hours; and impacts on the westbound through and right-turn movement and the northbound left-turn and through movement would occur during the weekday PM peak hour.

The weekday AM impacts to the eastbound movements and the weekday midday impacts to the southbound right-turn movement could be partially and fully mitigated, respectively, by modifying signal timing. The weekday PM impacts could not be mitigated.

Astoria Boulevard and 23rd Street

Impacts on the Astoria Boulevard eastbound approach would occur during the weekday AM and PM peak hours and could be fully mitigated by modifying signal timing during the AM peak hour and installing "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the eastbound approach for 100 feet to daylight the approach.

Astoria Boulevard and Crescent Street

Impacts on the Astoria Boulevard westbound approach and the Crescent Street southbound approach would occur during the weekday AM, midday, and PM peak hours; impacts on the Astoria Boulevard eastbound approach would occur during the weekday AM and PM peak hours. The weekday PM impacts could be fully mitigated through implementation of the following measures: installing "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the eastbound approach for 250 feet and "No Standing 4PM-7PM Mon-Fri" regulations along the westbound approach for 250 feet to daylight these approaches; installing "No Standing Anytime" regulations along the west side of the southbound approach for 250 feet to allow for two moving lanes at the approach; restriping the southbound approach from one 30-foot wide travel lane with parking on both sides to one 11-foot wide right-turn lane and one 19-foot wide left-through lane with parking for 250 feet; and modifying signal timing during the weekday midday peak hour.

Through implementation of the aforementioned mitigation measures, the significant adverse traffic impact at this intersection during the weekday AM peak hour would only be partially impacted.

Astoria Boulevard and 27th Street

Impacts on the Astoria Boulevard eastbound approach would occur during the weekday AM peak hour. These impacts could be partially mitigated through signal timing modifications.

Astoria Boulevard and 29th Street

Impacts on the Astoria Boulevard eastbound approach would occur during the weekday AM, midday, and PM peak hours and could be fully mitigated by modifying signal timing during the weekday AM and midday peak hours and installing "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the eastbound approach for 200 feet to daylight the approach.

Astoria Boulevard and 31st Street

Impacts on the Astoria Boulevard eastbound approach would occur during the weekday AM peak hour. These impacts could not be mitigated.

Hoyt Avenue South/Astoria Boulevard and 33rd Street

Impacts on the Astoria Boulevard eastbound approach would occur during the weekday AM, midday, and PM peak hours. These impacts could be fully mitigated by modifying signal timing and installing "No Standing 7AM-10AM" regulations along the eastbound Astoria Boulevard approach for 250 feet to daylight the approach.

Hoyt Avenue North and 29th Street

Impacts on the 29th Street southbound approach would occur during the weekday AM peak hour and could be fully mitigated through signal timing modifications.

Astoria Boulevard North and 32nd Street

Impacts on the Astoria Boulevard North ramp's westbound approach would occur during the weekday AM, midday, and PM peak hours. These impacts could be fully mitigated in the weekday AM and midday peak hours through signal timing modifications. The weekday PM impact would only be partially mitigated.

Astoria Boulevard and 8th Street

Impacts on the 8th Street northbound approach would occur during the weekday PM peak hour and could be fully mitigated by installing "No Standing 4PM-7PM Mon-Fri" regulations along the northbound approach for 70 feet to daylight the approach.

30th Avenue and 14th Street

Impacts on the 14th Street southbound approach would occur during the weekday AM peak hour. These impacts could not be mitigated.

30th Avenue and 21st Street

Impacts on the 30th Avenue eastbound approach would occur during the weekday AM peak hour and could be fully mitigated through signal timing modifications.

Vernon Boulevard and Welling Court/8th Street

Impacts on the Vernon Boulevard eastbound approach would occur during the weekday AM, midday, and PM peak hours; impacts on the 8th Street southbound approach would occur during the weekday AM peak hour. These impacts could be fully mitigated through signal timing modifications.

Hoyt Avenue North and 21st Street

Impacts on the Hoyt Avenue North westbound left-turn movement and 21st Street northbound through movement would occur during the weekday AM and PM peak hours; impacts on the 21st Street southbound movement would occur during the weekday AM peak hour. These impacts could be partially mitigated through signal timing modifications.

Hoyt Avenue South/Astoria Park South and 21st Street

Impacts on the 21st Street southbound approach would occur during the weekday AM and PM peak hours. The weekday PM impact could be fully mitigated by modifying signal timing; the weekday AM impact could not be mitigated.

Vernon Boulevard and 31st Avenue

Impacts on the 31st Avenue westbound approach would occur during the weekday AM and PM peak hours. These impacts could not be mitigated.

Vernon Boulevard and Broadway/11th Street

Impacts on the Vernon Boulevard southbound approach would occur during the weekday AM and PM peak hours; impacts on the Broadway westbound approach would occur during the weekday midday peak hour. These impacts could be fully mitigated by modifying signal timing.

Alternate With-Action Condition (without Halletts Point)

As previously stated, per guidance by NYCDOT and DCP, an alternate With-Action condition was analyzed in consideration of the possibility of the nearby Halletts Point project being developed on a different time table from that presented in the 2013 *Halletts Point Rezoning FEIS.* Under the Alternate With-Action condition, 19 of the 30 analyzed intersections would experience significant adverse impacts during one or more peak hour. Impacts at 14 of the intersections could be fully mitigated with traffic capacity improvements, and impacts at five intersections could not be mitigated or could only be partially mitigated during one or more peak hour. A discussion of the proposed mitigation measures under the Alternate With-Action condition is presented below.

27th Avenue and 8th Street

Impacts on the 27th Avenue westbound approach would occur during the weekday AM, midday, and PM peak hours. These impacts could be partially mitigated through signal timing modifications.

27th Avenue and 9th Street

Impacts would occur on the southbound approach of 27th Avenue during the weekday AM and PM peak hours. These impacts could be fully mitigated through implementation of the following measures: installing a traffic signal; installing "No Standing Anytime" regulations along the total western length of

9th Street and along the east curb of 9th Street for 150 feet to allow for two-way traffic; and restriping the southbound approach from one 16.5-foot wide travel lane with parking and one 15.5-foot wide northbound receiving lane with parking to one southbound 10-foot wide right-turn lane, one 10-foot wide left-turn lane, and one 12-foot wide northbound receiving lane for 100 feet. A signal warrant analysis was prepared for the intersection and was submitted to NYCDOT for review. The analysis indicated that the intersection would meet the Manual of Uniform Traffic Control Devices' (MUTCD's) four-hour criteria in the future With-Action condition.

27th Avenue and 12th Street

Impacts on the 12th Street northbound approach would occur during the weekday AM, midday, and PM peak hours. These impacts could be mitigated by installing a new traffic signal at the intersection. A preliminary analysis shows that the intersection would meet the four-hour criteria of the Manual of Uniform Traffic Control Devices' (MUTCD) signal warrant analysis. Should this analysis indicate that a traffic signal is not warranted, other mitigation measures would need to be identified or the significant adverse impacts may only be partially mitigated or remain unmitigated.

27th Avenue and 14th Street

Impacts on the 27th Avenue eastbound and westbound approaches would occur during the weekday AM and PM peak hours; impacts on the 14th Street southbound approach would occur during the weekday AM peak hour. These impacts could be mitigated by installing a new traffic signal at the intersection. A preliminary analysis shows that the intersection would meet the four-hour criteria of the Manual of Uniform Traffic Control Devices' (MUTCD) signal warrant analysis. Should this analysis indicate that a traffic signal is not warranted, other mitigation measures would need to be identified or the significant adverse impacts may only be partially mitigated or remain unmitigated.

Astoria Boulevard and 21st Street

Impacts on the 21st Street northbound and southbound approaches would occur during the weekday AM, midday, and PM peak hours; impacts on the Astoria Boulevard eastbound through and right-turn movement would occur during the weekday AM and PM peak hours; impacts on the Astoria Boulevard eastbound left-turn movement would occur during the weekday AM peak hour; and impacts on the Astoria Boulevard westbound through and right-turn movement would occur during the weekday PM peak hour. Impacts during the weekday midday peak hour could be fully mitigated through installing "No Standing Anytime" regulations along the northbound approach for 165 feet, along the northbound receiving side for 135 feet, along the southbound approach for 340 feet, and along the southbound receiving side for 125 feet to allow for three moving lanes at the northbound and southbound approaches; shifting the northbound approach centerline three feet to the west and restriping the northbound approach from one 11-foot wide travel lane, one 20-foot wide travel lane with parking, one 12-foot wide receiving lane, and one 18-foot wide receiving lane with parking to two 11-foot wide travel lanes, one 12-foot wide right-turn lane, and one 15-foot wide receiving lane for 125 feet from the intersection; and shifting the southbound approach centerline four feet to the east and restriping the southbound approach from one 11-foot wide travel lane, one 19-foot wide travel lane with parking, one 11-foot wide receiving lane, and one 19-foot wide receiving lane with parking to two 11-foot wide travel lanes, one 12-foot wide right turn lane, one 11-foot wide receiving lane, and one 15-foot wide receiving lane for 135 feet from the intersection.

The weekday AM and PM impacts could partially mitigated through implementation of the aforementioned daylighting and restriping measures, in addition to modifying signal timing in the AM peak hour.

Astoria Boulevard and 23rd Street

Impacts on the Astoria Boulevard eastbound approach would occur during the weekday AM peak hour and could be fully mitigated by installing "No Standing 7AM-10AM Mon-Fri" regulations along the eastbound approach for 100 feet to daylight the approach.

Astoria Boulevard and Crescent Street

Impacts on the Astoria Boulevard westbound approach and Crescent Street southbound approach would occur during the weekday AM, midday, and PM peak hours; impacts on the Astoria Boulevard eastbound approach would occur in the weekday AM and PM peak hours. Impacts in all peak hours could be fully mitigated through the following measures: installing "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulations along the eastbound approach for 250 feet, "No Standing 4PM-7PM Mon-Fri" regulations along the westbound approach for 250 feet, and "No Standing Anytime" regulations along the southbound approach for 250 feet to daylight the approaches; restriping the southbound approach from one 30-foot wide travel lane with parking on both sides to one 11-foot wide right-turn lane and one 19-foot wide left-through lane with parking for 250 feet; and modifying signal timing.

Astoria Boulevard and 29th Street

Impacts would occur on the Astoria Boulevard eastbound approach during the weekday AM and PM peak hours. During the weekday AM peak hour, this impact could be partially mitigated through signal timing modifications. During the weekday PM peak hour, this impact could be fully mitigated by installing "No Standing 4PM-7PM Mon-Fri" regulations along the eastbound approach for 200 feet to daylight the approach.

Astoria Boulevard and 31st Street

Impacts would occur on the Astoria Boulevard eastbound approach during the weekday AM, midday, and PM peak hours and could be fully mitigated through the following measures: installing "No Standing Anytime" regulations along the eastbound approach for 200 feet to allow for two moving lanes at the approach; and restriping the eastbound approach from one 25-foot wide travel lane with parking to one 12-foot wide through lane and one 13-foot wide through-right lane for 200 feet.

Hoyt Avenue South/Astoria Boulevard and 33rd Street

Impacts would occur on the Astoria Boulevard eastbound approach during the weekday AM, midday, and PM peak hours and could be fully mitigated through the following measures: installing "No Standing 7AM-10AM" regulations along the eastbound Astoria Boulevard approach for 250 feet to daylight the approach; and modifying signal timing.

Hoyt Avenue North and 29th Street

Impacts would occur on the 29th Street southbound approach during the weekday AM peak hour and could be fully mitigated by modifying signal timing.

Hoyt Avenue North and 32nd Street

Impacts would occur on the westbound approach of the Astoria Boulevard North ramp during the weekday PM peak hour and could be fully mitigated through signal timing modifications.

30th Avenue and 14th Street

Impacts would occur on the 14th Street southbound approach during the weekday AM peak hour. This impact could not be mitigated.

30th Avenue and 21st Street

Impacts would occur on the 30th Avenue eastbound approach during the weekday AM peak hour and could be fully mitigated through signal timing modifications.

Vernon Boulevard and Welling Court/8th Street

Impacts would occur on the Vernon Boulevard eastbound approach during the weekday AM, midday, and PM peak hours; impacts would occur on the 8th Street southbound approach during the weekday AM peak hour. The impacts during the weekday AM and midday peak hours could be fully mitigated through signal timing modifications. The weekday PM peak hour impact could only be partially mitigated.

Astoria Boulevard and 18th Street

Impacts would occur on the 18th Street southbound approach during the weekday AM peak hour and could be fully mitigated by installing a new traffic signal at the intersection. A preliminary analysis shows that the intersection would meet the four-hour criteria of the Manual of Uniform Traffic Control Devices' (MUTCD) signal warrant analysis. Should this analysis indicate that a traffic signal is not warranted, other mitigation measures would need to be identified or the significant adverse impacts may only be partially mitigated or remain unmitigated.

Hoyt Avenue North and 21st Street

Impacts would occur on the 21st Street northbound through approach during the weekday PM peak hour and could be mitigated through signal timing modifications.

Hoyt Avenue South/Astoria Park South and 21st Street

Impacts would occur on the southbound approach of 21st Street during the weekday AM and PM peak hours; impacts would occur on the northbound approach of 21st Street during the weekday PM peak hour. These impacts could be fully mitigated through signal timing modifications.

Vernon Boulevard and Broadway/11th Street

Impacts would occur on the Broadway westbound approach during the weekday AM, midday, and PM peak hours and on the Vernon Boulevard southbound approach during the weekday AM peak hour. These impacts could be fully mitigated through implementation of the following measures: installing "No Standing Anytime" regulations along the westbound approach for 100 feet to allow for two moving lanes at the approach; restriping the westbound approach from one 21-foot wide travel lane with parking to one 11-foot wide through lane and one 10-foot wide right-turn lane for 100 feet; and modifying signal timing in the AM peak hour.

Implementation

Each of the traffic capacity improvements described above fall within the jurisdiction of NYCDOT for implementation. An analysis will be performed between the DEIS and FEIS to determine if the proposed mitigation measures would be needed before project completion in 2023 and, if so, when they would be needed under both the RWCDS With-Action condition and the Alternate With-Action condition, dependent on the development of the nearby Halletts Point development. It is anticipated that, of the mitigation proposed for the RWCDS With-Action condition, the new traffic signal at the intersection of 27th Avenue and 9th Street would likely be needed in conjunction with build-out of 26th Avenue west of 9th Street. Regarding lane restripings and daylighting measures proposed at other intersections where significant adverse impacts are anticipated, it is anticipated that the physical improvements at intersections along this Astoria Boulevard would likely be needed towards the early part of the proposed project's build-out due to the existing and anticipated No-Action congested traffic conditions along this roadway. As further analyses of the mitigation measures take place between the DEIS and FEIS, discussions will be held with representatives of NYCDOT to determine the extent that both the proposed project and the nearby Halletts Point development contribute to the identified impacts generating the need for mitigation measures, based on a comparison of the results of the RWCDS With-Action and Alternate With-Action condition mitigation measures discussed above. In addition, the Applicant will conduct a traffic monitoring plan in order to verify the need for new traffic signals and to evaluate the need for the proposed traffic mitigation measures.

The implementation of the RWCDS With-Action condition mitigation measures would result in the loss of approximately 84 parking spaces during the weekday AM peak hour, 44 parking spaces in the weekday midday peak hour, and 88 parking spaces in the weekday PM peak hour. Implementation of the alternate mitigation measures would result in the loss of approximately 97 parking spaces in the weekday AM peak hour, 90 parking spaces in the weekday midday peak hour, and 108 parking spaces in the weekday PM peak hour. 9th Street would lose approximately 36 parking spaces due to capacity improvements needed at the intersection of 9th Street and 27th Avenue; the remaining parking space reductions would be scattered throughout the remainder of the traffic study area. No designated truck loading/unloading zones or bus layover space would be affected by the proposed parking modifications for mitigation. If it is determined that on-street parking should be retained at locations where such mitigation was assumed, additional significant unmitigated traffic impacts could result.

Effect of Traffic Mitigation on Pedestrian Operations

As described in Chapter 13, "Transportation," no significant adverse pedestrian impacts are anticipated in the future With-Action condition. As no traffic mitigation measures are proposed at any of the analyzed pedestrian intersections, the results of the pedestrian analysis remain unchanged.

Effects of Traffic Mitigation Measures on Mobile Source Air Quality

The proposed traffic mitigation measures, which include new roadway configurations, signalization, and signal timing measures, seek to avoid or reduce the levels of congestions and delays at study area intersection, and therefore would result in an overall improvement in area traffic conditions, as compared to With-Action conditions. As such, the conclusions presented in Chapter 14, "Air Quality," remain unchanged, and the Proposed Action would not result in significant adverse mobile source air quality impacts.

Transit

As described in Chapter 13, "Transportation," the proposed project would result in potential significant adverse subway impacts at the 30th Avenue (N and Q line) Station's northwest street stair in the PM peak hour and at the northbound fare array in the AM peak hour. In addition, significant adverse bus line haul impacts on the Q103 bus route are anticipated as the projected passenger volumes in the future With-Action condition would exceed the New York City Transit/Metropolitan Transportation Authority (MTA/NYCT) guideline capacity during the weekday AM and PM peak hours. Potential measures to mitigate these impacts are described below.

Subway Station Operations

During the PM peak hour the 30th Avenue Station stairway at the northwest corner of30th Avenue and 31st Street (S3-M3) would decline from LOS C (v/c = 0.97) under the 2023 No-Action condition to LOS E (v/c = 1.42) under the 2023 With-Action condition. During the AM peak period the northbound fare array would decline from LOS C (v/c = 0.87) under the 2023 No-Action condition to LOS D (v/c = 1.02) under the 2023 With-Action condition. Both subway station operation impacts would occur upon completion of the final phase of the proposed project's construction. These declines constitute significant adverse subway station impacts that require an evaluation of potential mitigation measures.

As outlined in the *CEQR Technical Manual*, stairway widening is the most common form of mitigation for projected significant impacts, provided that NYCT deems it practical (i.e., that it is worthwhile to disrupt service on an existing stairway to widen it and that a given platform affected by such mitigation is wide enough to accommodate the stairway widening. It may also be possible to mitigate stairway impacts by adding vertical capacity (i.e., adding an elevator, escalator, or additional stairways) in the vicinity of the impacted stairway. However, as the identified potential impact at the northwest stairway is largely due to the high No-Action and With-Action volumes expected at the stairway due to its proximity to an existing bus stop and the proposed shuttle bus stop, alternate mitigation measures, such as relocating the proposed shuttle bus route and/or providing additional shuttle service to other area subway stations will be explored, in consultation with NYCT, between the Draft and Final EIS, and the pedestrian and traffic analysis will be updated as warranted.

The most logical and readily available measure to mitigate projected impacts on turnstiles is to add more turnstiles, provided that there is sufficient space within the station to accommodate them. As the identified potential fare array impacts are due to the conservatively high percentage of project site residents and workers assumed to travel to/from the project site via the N/Q lines (80 percent), other mitigation measures to reduce volumes at the 30th Avenue Station, such as providing a shuttle bus to an alternate station in the area will be explored in consultation with NYCT between the Draft and Final EIS, and the pedestrian and traffic analysis will be updated as warranted.

In addition, it should be noted that the provision of ferry service to the project site is currently being contemplated by the City. The provision of an alternate form of public transit in close proximity to both existing and anticipated future residents on and adjacent to the Halletts Point peninsula is expected to reduce subway demand in the area (see Chapter 21, "Alternatives"). As potential plans for the ferry are evaluated in the future, subway station ridership will be monitored, and the need for the implementation of mitigation at the 30th Avenue Station will be reevaluated.

Bus Line Haul

The Q103 bus route would experience significant adverse impacts in the southbound direction during the weekday AM and PM peak hours, as well as in the northbound direction during the weekday PM peak

hour. Table 20-8 provides a comparison of existing service and the number of buses required to fully mitigate the identified potential significant adverse line haul impacts along the Q103 bus route in both impacted peak hours. While NYCT and MTA Bus Company routinely monitor changes in bus ridership and would make the necessary service adjustments where warranted, these service adjustments are subject to the agencies' fiscal and operational constraints and, if implemented, are expected to take place over time.

Table 20-8: 2023 Mitigated Bus Line Haul Levels

Route	Direction	Peak Hour Buses	No-Action Available Capacity[1]	Project Increment	With-Action Available Capacity[2]	Additional Peak Hour Buses Needed (Mitigation)	With-Action Available Capacity with Mitigation
Weekday AM Peak Hour							
Q103	Southbound	7	4	126	-117	3	45
Weekday PM Peak Hour							
Q103	Northbound	6	10	128	-118	3	44
	Southbound	4	26	82	-56	2	52

Notes:
[1] Assumes service levels adjusted to address capacity shortfalls in the No-Action condition.
[2] Available capacity based on MTA/NYCT loading guidelines of 54 passengers per standard bus.

E. NOISE

As discussed in Chapter 16, "Noise," the Proposed Action would result in incremental noise increases at the intersection of 26th Avenue and 4th Street in exceedance of the CEQR impact criteria during the weekday AM and midday peak hours, and therefore would constitute a significant adverse impact, pursuant to CEQR. With implementation of the attenuation measures to be mandated through a noise (E) designation assigned to the project site, no significant adverse impacts would result on project site buildings.

However, two existing sensitive receptors are located in close proximity to Receptor Location 2 (at the intersection of 26th Avenue and 4th Street), and therefore potential measures to mitigate noise impacts at these locations will be examined, in consultation with DCP, between the Draft and Final EIS. Potential mitigation measures for mobile source noise impacts may include the rerouting of traffic where feasible, and/or traffic calming measures, which could result in lower noise levels than predicted in the analysis, and/or other measures including installation of new attenuated windows, air conditioning units, or other measures in non-Applicant owned buildings where such measures are not available. While the identified significant adverse impact may be able to be mitigated by the above measures, additional evaluation and analysis will be done between Draft and Final EIS to determine the extent of the noise level increases that would be experienced at these nearby sensitive receptors, in consideration of their distance from the impacted receptor and/or their existing window/wall attenuation. If any impacts are determined to be unmitigatable between Draft and Final EIS, they will be identified as such and a discussion will be included in Chapter 22, "Unavoidable Adverse Impacts."

It should also be noted that the estimated With-Action noise levels conservatively reflect existing background noise levels, which include noise-generating industrial uses on and adjacent to the project site, it is likely that actual future With-Action noise levels would be less than the levels projected. In addition, worst-case noise levels at Receptor Location 2 would remain in the "marginally unacceptable" category, as under both existing and No-Action conditions, and the resultant L_{eq} levels would remain below the worst-case maximum existing and No-Action L_{eq} conditions at this location during both peak

hours. As such, nearby existing sensitive receptors would not be exposed to noise levels greater than those currently experienced at this location. Further analyses will take place between the DEIS and the FEIS to precisely determine the future noise levels at these locations and determine the appropriate mitigation measures, as needed.

F. CONSTRUCTION

Transportation

As discussed in Chapter 19, "Construction," the highest amount of construction traffic associated with construction of the proposed project is anticipated in the fourth quarter of 2022. During this peak construction traffic period, the total number of construction-related and operational vehicle trips generated from the proposed project would be approximately 59 percent and 34 percent less than the total number of vehicle trips generated by the proposed project in the 2023 Build Year's AM and PM peak hours, respectively. Nevertheless, incremental vehicle trips in the 2022 (Q4) construction traffic period are expected to result in significant adverse impacts at three of the five intersections analyzed for potential construction traffic-related impacts: 27th Avenue at 4th Street; 27th Avenue at 8th Street; and 27th Avenue at 9th Street. At all other study area intersections where significant adverse traffic impacts are anticipated for the proposed project's full build, similar or lesser impacts are anticipated. By early implementation of the same mitigation measures as those proposed for mitigation in section E, "Transportation," above, two of the three impacted intersections would be fully mitigated (refer to Table 19-5 in Chapter 19, "Construction." A description of the mitigation measures to be applied at the three impacted intersections is provided below:

- ***27th Avenue at 4th Street:*** The 3-4 PM significant adverse impact at the 27th Avenue westbound right-turn movement would be fully mitigated by modifying signal timing.
- ***27th Avenue at 8th Street:*** The significant adverse impact at the 27th Avenue westbound approach would be partially mitigated during the 6-7AM construction peak hour by modifying signal timing. The westbound approach impact would be unmitigated in the 3-4PM peak hour.
- ***27th Avenue at 9th Street:*** The 9th Street southbound approach impact could be fully mitigated by installing a traffic signal as well as daylighting and restriping on 9th Street.

Noise

Construction noise is regulated by the requirements of the New York City Noise Control Code (also known as Chapter 24 of the Administrative Code of the City of New York, or Local Law 113), the New York City Department of Environmental Protection (DEP) Notice of Adoption Rules for Citywide Construction Noise Mitigation (also known as Chapter 28), and the United States Environmental Protection Agency's (EPA's) noise emission standards. These local and Federal requirements mandate that specific construction equipment and motor vehicles meet specified noise emission standards; that construction activities be limited to weekdays between the hours of 7AM and 6 PM; and that construction materials be handled and transported in such a manner as not to create unnecessary noise. For weekend and after hours work, permits would be required to be obtained, as specified in the New York City Noise Control Code. In addition, EPA requirements mandate that certain classifications of construction equipment meet specified noise emission standards. Beyond the EPA construction equipment noise emission standards, equipment noise levels quieter than those of typical construction equipment would be achieved for certain construction equipment through better engine mufflers, refinements in fan design and/or improved hydraulic systems. Path controls (e.g., the placement of equipment and implementation

of barriers between equipment and sensitive receptors) could include portable noise barriers, enclosures, acoustical panels, and curtains, dependent on feasibility and practicality.

However, even with these noise control measures, construction activities would be expected to result in substantially elevated noise levels that would exceed CEQR impact criteria at nine existing residential/community facility buildings and one existing open space. In addition, noise levels in exceedance of the CEQR noise impact criteria are anticipated on the proposed project's open space. Between the DEIS and FEIS, a more refined construction noise analysis will be undertaken to more precisely determine the magnitude and duration of the elevated noise levels resulting from construction at these locations.

Existing Receptors

A visual survey will be performed between the DEIS and FEIS to confirm which existing locations may not currently have double-glazed windows and an alternate means of ventilation. For buildings with double-glazed windows and window air conditioners, interior noise levels would be approximately 20 to 25 dBA less than exterior noise levels. For buildings with double-glazed windows and well-sealed through-the-wall/sleeve/packaged terminal air conditioner (PTAC), interior noise levels would be approximately 25 to 30 dBA less than exterior noise levels. Any identified existing building that currently has double-glazed windows and an alternate means of ventilation would consequently be expected to experience interior $L_{10(1)}$ values less than 45 dBA (the CEQR acceptable noise level criteria) during most of the time. As such, no additional mitigation would be warranted at these locations.

However, existing buildings that may not have an alternate means of ventilation could experience significant adverse noise impact for certain limited periods during construction requiring mitigation. Potential mitigation measures for these locations are currently being explored by the Applicant in consultation with the lead agency, DCP, and will be refined between the Draft and Final EIS. The *CEQR Technical Manual* lists potential mitigation measures for construction noise impacts. These measures include, but are not limited to, noise barriers, the use of low noise emission equipment, locating stationary equipment as far as feasible away from receptors, enclosing areas, limiting the duration of activities, specifying quiet equipment, scheduling activities to minimize impacts (either time of day or seasonal considerations), and/or locating noise equipment near natural or existing barriers that would shield sensitive receptors. Additionally, potential mitigation measures for non-Applicant owned sites could include installation of new attenuated windows, air conditioning units and/or other measures.

In addition, as presented in Chapter 19, "Construction," noise levels at the Shore Towers waterfront esplanade would exceed the CEQR-recommended open space noise level of 55 dBA during certain periods of the proposed project's construction, as under the full build conditions (see Chapter 16, "Noise"). While this is not desirable, noise levels in many parks and open space areas located near heavily trafficked roadways and/or construction sites throughout the City experience comparable, and sometimes higher, noise levels. Potential mitigation measures, such as noise barriers or relocating some equipment within the construction sites to add distance and/or shielding between the equipment and the Shore Towers waterfront esplanade will be examined between the DEIS and FEIS.

While the identified significant adverse construction noise impacts may be able to be mitigated by the above measures, additional evaluation and analysis will be done between Draft and Final EIS to determine the practicality and feasibility of implementing these measure to minimize or avoid the potential significant adverse impacts, taking into account the practicability relative to project goals. If any impacts are determined to be unmitigatable between Draft and Final EIS, they will be identified as such and a discussion will be included in Chapter 22, "Unavoidable Adverse Impacts."

Project Site Receptors

As previously stated, while high levels of construction noise from construction of adjacent buildings are anticipated on the west façade of Building 3 and the north façade of Building 4, absent further analysis prior to the project's construction indicating that window/wall attenuation on these facades is unwarranted, the Applicant would provide 25 dBA of attenuation and alternate means of ventilation (i.e., air conditioners) that do not degrade the acoustical performance of the façade. With these measures in place the number of consecutive months of noise increases over 3 dBA would be less than the two year impact threshold and therefore no significant adverse construction noise impact would occur.

However, construction activities would produce $L_{10(1)}$ noise levels at project site open space areas that would exceed the level recommended by CEQR for passive open spaces (55 dBA L_{10}), as under the full build conditions (see Chapter 16, "Noise"). While this is not desirable, noise levels in many parks and open space areas located near heavily trafficked roadways and/or construction sites throughout the City experience comparable, and sometimes higher, noise levels. Potential mitigation measures, such as noise barriers or relocating some equipment within the construction sites to add distance and/or shielding between the equipment and the proposed project's waterfront open space will be examined between the DEIS and FEIS. Absent implementation of such measures, this existing open space would experience temporary unmitigated significant adverse noise impacts during the proposed project's construction.