

A. INTRODUCTION

In accordance with the City Environmental Quality Review (CEQR) and the State Environmental Quality 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 have been evaluated between the Draft and Final Environmental Impact Statement (EIS). Therefore, in addition to the measures described and evaluated below, the Final EIS (FEIS) includes 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 Letter of Intent (LOI), dated April 17th, 2014, entered into between the Applicant and the School Construction Authority (SCA). The Restrictive Declaration entered into in connection with the proposed 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 contemplated for purposes of this environmental review 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 7.59 percent increase in the elementary school utilization rate (to 123.1 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 could 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 May 2014, 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 approximately 20 percent from the No-Action condition (to approximately 160 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 74, which would generate an estimated ten eligible children. This would represent a reduction of 221 affordable dwelling units (a 75 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 75 affordable residential units (or approximately 11 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.

The Restrictive Declaration for the proposed project will require the Applicant implement one or more of the mitigation measures identified above, if required, to mitigate the significant adverse impact on child care facilities. 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 were explored by the Applicant in consultation with the lead agency, DCP, and the New York City Department of Parks and Recreation (DPR) 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.

In order to address the significant adverse impact on active open space, the Applicant would be required to upgrade or replace adult fitness equipment and construct a comfort station at Whitey Ford Field. These improvements would increase the utility of Whitey Ford Field and its capacity to meet the active open space needs of the study area, and therefore would constitute partial mitigation of the potential significant adverse impact on active open space. Improvements to Whitey Ford Field would occur during Phase 3 of the proposed ULURP Phasing Plan (i.e., before a Temporary Certificate of Occupancy is granted for the 688th DU). As the implementation of the above-described measures would constitute partial mitigation of

the potential significant adverse impact on open space, the Proposed Action would result in an unavoidable adverse impact on open space.

D. TRANSPORTATION

Traffic

Weekday 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 weekday traffic impacts. These measures were refined in consultation with the lead agency, DCP, and NYCDOT between the Draft and Final EIS.

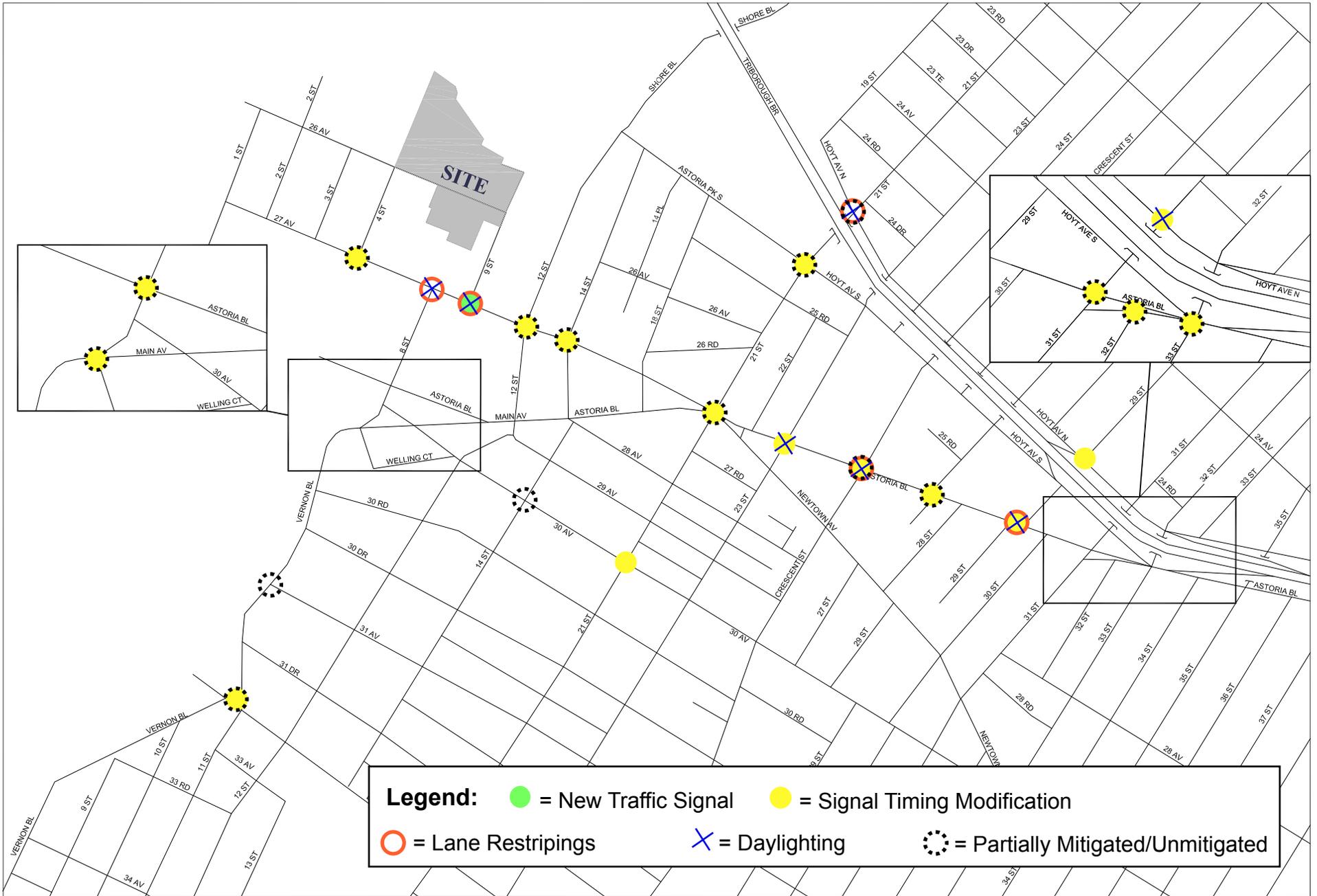
It should also be noted that, since certification of the DEIS, NYCDOT proposed improvements for Astoria Boulevard between 33rd and 31st Streets as part of the Vision Zero initiative. These planned improvements and the resultant traffic diversions (including future Halletts Point traffic diversions) were incorporated into the future conditions analyses presented in Chapter 13, “Transportation,” in consultation with NYCDOT. As a result of these proposed improvements and resultant traffic diversions, new mitigation measures and/or changes to the mitigation measures presented in the DEIS were warranted at two study area intersections. These changes have been incorporated into the mitigation measures presented below.

Table 20-1 as well as Figures 20-1 and 20-2 summarize the potential significant adverse weekday traffic impacts under both future With-Action conditions (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.¹

Table 20-1: Comparison of Weekday 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	<u>9</u>	<u>10</u>	21	22	<u>13</u>	16
Impact could be fully mitigated	<u>8</u>	<u>15</u>	<u>8</u>	<u>8</u>	<u>9</u>	<u>11</u>
Impact could be partially mitigated	<u>10</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>5</u>	<u>3</u>
Unmitigated impact	<u>3</u>	1	<u>0</u>	0	<u>3</u>	0

¹ A summary of the Saturday midday traffic mitigation, based on the weekend conditions assessment conducted between the DEIS and the FEIS is discussed separately in the “Weekday Conditions” subsection, below.

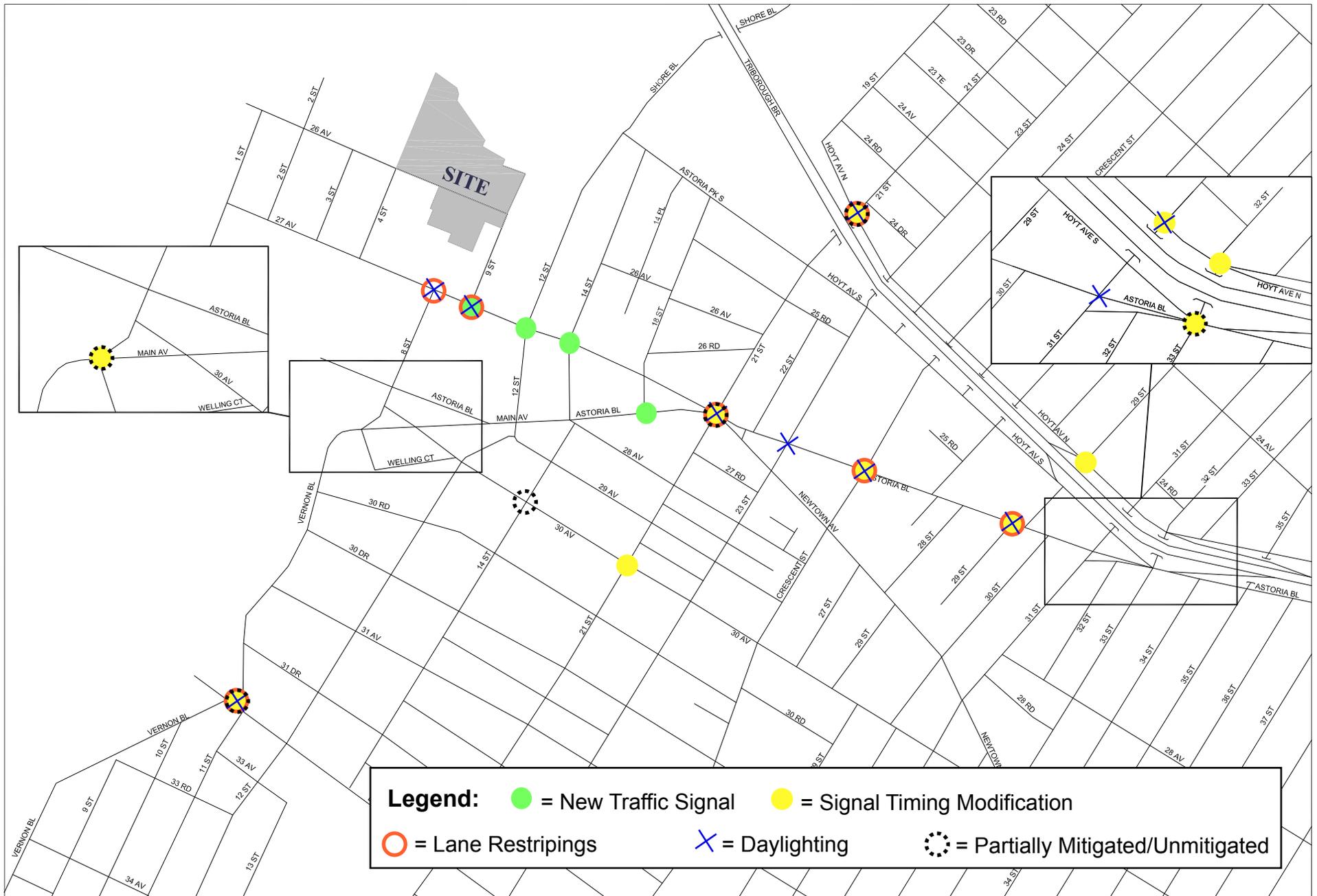


Astoria Cove

Figure 20-1

This figure has been updated for the FEIS.

RWCDS With-Action Condition Weekday Mitigation Measures



Astoria Cove

This figure has been updated for the FEIS.

Figure 20-2

Alternate With-Action Condition Weekday Mitigation Measures

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, 21 of the 30 analyzed intersections would experience significant adverse impacts, eight of which could be fully mitigated, ten of which could be partially mitigated, and three 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, one of which could be partially 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 17 of the 30 analyzed intersections, nine of which could be fully mitigated, five of which could be partially mitigated, and three 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 20 of the 30 analyzed intersections in the weekday AM peak hour, 15 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, all of which could be fully 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, eleven of which could be fully mitigated, and three of which could be partially mitigated.

The overall finding of the weekday traffic mitigation analysis is that in the RWCDs With-Action condition 14 of the 30 analyzed intersections would either not experience significant impacts or could be fully mitigated with readily implementable traffic improvement measures, including the installation of 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. The remaining 16 analyzed intersections would either be unmitigated or partially mitigated in one or more peak hour and, therefore, would be considered unavoidable significant adverse impacts. In comparison, should Halletts Point not be completed by the 2023 Build Year, 23 of the 30 analyzed intersections would either not experience significant impacts or could be fully mitigated with readily implementable traffic improvement measures during the weekday peak hours. The remaining seven analyzed intersections would either be unmitigated or partially mitigated in one or more peak hour and, therefore, would be considered unavoidable significant adverse impacts. Illustrative overviews of the proposed weekday mitigation measures both with and without the nearby Halletts Point development are shown in Figures 20-1 and 20-2. These measures represent standard capacity improvements that are typically implemented by NYCDOT.

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 weekday 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 weekday traffic mitigation measures for each intersection identified as a potential significant adverse impact location follows.

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. 27 th Avenue & 8 th Street ^{2,3}	EB-T	0.53	14.9	B	0.53	14.9	B	0.53	13.4	B	-Install “No Standing Anytime” regulations to daylight the WB approach along 27 th Avenue between 8 th and 9 th Streets. -Install “No Standing Anytime” regulations along the WB receiving lane for 100 feet to allow vehicles to realign with the receiving end. -Shift the WB approach centerline 1-foot to the south and restripe the WB approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn lane, and one 10-foot wide receiving lane.
	EB-R	0.66	21.2	C	0.66	21.2	C	0.66	18.5	B	
	WB-LT	1.32	179.6	F	1.87	417.7	F*	=	=	=	
	WB-L	=	=	=	=	=	=	0.89	47.6	D	
	WB-T	=	=	=	=	=	=	0.70	18.9	B	
	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. 27 th Avenue & 12 th Street ²	EB-LT	0.64	9.9	A	1.10	70.9	E*	1.07	60.4	E	Partially Mitigated 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. 27 th Avenue & 14 th Street ²	EB-TR	0.61	19.4	B	1.15	95.3	F*	1.12	82.2	F*	Partially Mitigated -Modify signal timing: Shift 1s of green time from the SB phase to the EB/WB phase [SB phase green shifts from 40s to 39s; EB/WB phase green shifts from 40s to 41s]
	WB-LT	0.66	22.9	C	1.27	157.2	F*	1.19	122.6	F*	
	SB-LTR	0.89	41.0	D	0.89	41.0	D	0.91	45.1	D	
7. Astoria Boulevard & 21 st 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 shifts 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	0.72	31.8	C	0.80	35.6	D	0.88	42.8	D	
	NB-R	0.37	24.7	C	0.37	24.7	C	0.40	27.1	C	
	SB-LT	0.86	31.3	C	0.87	31.2	C	0.92	34.7	C	
	SB-R	0.59	26.9	C	0.67	28.4	C	0.72	31.2	C	
8. Astoria Boulevard & 23 rd 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 approximately 100 feet to the existing bus stop to daylight the approach. -Modify signal timing: Shift 2s of green time from the NB phase to the EB/WB phase [NB phase green shifts from 43s to 41s; EB/WB phase green shifts 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*	1.24	141.5	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. <u>-Modify signal timing: Shift 1s of green from the SB phase to the EB/WB phase [SB phase green shifts from 43s to 42s; EB/WB phase green shifts from 67s to 68s].</u>
	WB-LT	1.24	139.4	F	1.41	213.7	F*	1.35	190.0	F*	
	SB-LTR	1.20	130.1	F	1.28	166.7	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	1.19	125.7	F	
	SB-R	-	-	-	-	-	-	0.21	27.4	C	
10. Astoria Boulevard & 27 th 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 & 29 th Street	EB-T	1.63	328.2	F	1.93	460.9	F*	1.53	279.5	F	-Install “No Standing 7AM-10AM, 4PM-7PM Mon-Fri” regulations along the EB approach for 250 feet to daylight the approach. -Install “No Standing Anytime” regulations along the EB approach downstream receiving segment to provide two receiving lanes. -Restripe the EB approach downstream receiving segment from one 17-foot wide receiving land with a ten-foot wide channel zone to one 14-foot wide receiving lane and one 13-foot wide receiving lane. -Modify signal timing: Shift 2s of green time from 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 & 31 st Street ²	EB-LTR	0.83	37.5	D	1.00	53.0	D*	0.97	47.6	D	Partially Mitigated Modify signal timing: Shift 1s of green time from the SB phase to the EB phase [SB phase green shifts from 36s to 35s; EB phase green shifts from 43s to 44s; SB/NB phase green time remains the same].
	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	15.7	B	
	SB-T	0.99	51.0	D	0.99	51.0	D	1.01	55.5	E	
	SB-R	0.30	14.9	B	0.30	14.9	B	0.31	15.5	B	

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	
15. Hoyt Avenue South/Astoria Boulevard & 33 rd Street ¹	Astoria Blvd EB-LT	1.32	192.2	F	1.49	269.1	F*	<u>1.36</u>	<u>208.3</u>	<u>F*</u>	<u>Partially Mitigated</u> 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 shifts from 52s to 49s; EB Astoria Boulevard phase green time shifts from 31s to 34s; NB phase green time remains the same].
	NB-TR	1.09	<u>91.5</u>	F	1.09	<u>91.5</u>	F	1.09	<u>91.5</u>	F	
	NB-R	<u>1.09</u>	<u>97.7</u>	F	<u>1.09</u>	<u>97.7</u>	F	<u>1.09</u>	<u>97.7</u>	F	
	Hoyt Ave EB-LT	0.63	27.1	C	0.63	27.1	C	0.67	29.6	C	
16. Hoyt Avenue North & 29 th 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 shifts from 82s to 80s; SB phase green time shifts from 21s to 23s; the bus queue jump phase green time remains the same].
	WB-LT	<u>0.94</u>	<u>19.4</u>	B	<u>0.96</u>	<u>21.1</u>	B	<u>0.98</u>	<u>25.4</u>	<u>C</u>	
	SB-R	1.03	98.5	F	1.13	130.5	F*	1.03	95.5	F	
17. Hoyt Avenue North & 31 st Street	WB-L	<u>0.81</u>	<u>37.5</u>	<u>D</u>	<u>0.81</u>	<u>37.5</u>	<u>D</u>	<u>0.79</u>	<u>35.9</u>	<u>D</u>	<u>-Install “No Standing 7AM-10AM Mon-Fri” regulations along the SB approach for 250 feet to daylight the approach.</u> <u>-Modify signal timing: Shift 1s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shifts from 32s to 31s; WB phase green time shifts from 78s to 79s].</u>
	WB-T	<u>1.15</u>	<u>91.2</u>	<u>F</u>	<u>1.16</u>	<u>98.1</u>	<u>F*</u>	<u>1.15</u>	<u>91.2</u>	<u>F</u>	
	WB-R	<u>0.02</u>	<u>7.5</u>	<u>A</u>	<u>0.02</u>	<u>7.5</u>	<u>A</u>	<u>0.02</u>	<u>7.1</u>	<u>A</u>	
	NB-LT	<u>0.32</u>	<u>36.4</u>	<u>D</u>	<u>0.32</u>	<u>36.4</u>	<u>D</u>	<u>0.33</u>	<u>37.4</u>	<u>D</u>	
	SB-T	<u>0.62</u>	<u>44.5</u>	<u>D</u>	<u>0.62</u>	<u>44.5</u>	<u>D</u>	<u>0.64</u>	<u>46.1</u>	<u>D</u>	
	SB-R	<u>0.74</u>	<u>57.8</u>	<u>E</u>	<u>0.77</u>	<u>60.1</u>	<u>E</u>	<u>0.70</u>	<u>54.1</u>	<u>D</u>	
18. Astoria Boulevard North & 32 nd Street ¹	WB-T (Main)	<u>0.74</u>	<u>13.3</u>	<u>B</u>	<u>0.74</u>	<u>13.3</u>	<u>B</u>	<u>0.73</u>	<u>12.5</u>	<u>B</u>	Modify signal timing: Shift 1s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shifts from 25s to 24s; WB phase green time shifts from 85s to 86s].
	WB-T (Ramp)	1.17	127.2	F	1.19	136.2	F*	1.18	129.4	F	
	NB-L	<u>0.65</u>	<u>45.2</u>	D	<u>0.66</u>	<u>45.3</u>	D	0.69	<u>46.5</u>	D	
	SB-R	0.03	38.0	D	0.03	28.0	D	0.03	38.8	D	
20. 30 th Avenue & 14 th 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. 30 th Avenue & 21 st 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 shifts from 73s to 70s; EB/WB phase green time shifts 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	<u>0.76</u>	<u>20.3</u>	B	<u>0.77</u>	<u>20.4</u>	<u>C</u>	<u>0.80</u>	<u>23.5</u>	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	
22. Vernon Boulevard & Welling Court/8 th Street ²	EB-LT	1.18	116.5	F	1.26	152.3	F*	<u>1.22</u>	<u>133.1</u>	F*	Partially Mitigated Modify signal timing: Shift <u>1s</u> of green time from the <u>WB</u> phase to the EB/SB phase [<u>WB</u> phase green time shifts from <u>29s</u> to <u>28s</u> ; EB/SB phase green time shifts from 29s to <u>30s</u> ; <u>NB</u> phase green time remains the same].
	WB-TR	0.04	21.1	C	0.04	21.1	C	0.04	<u>21.8</u>	C	
	NB-LTR	0.33	36.1	D	0.33	36.1	D	<u>0.33</u>	<u>36.1</u>	D	
	SB-R	1.01	68.7	E	1.11	99.9	F*	<u>1.08</u>	<u>86.1</u>	F*	
24. Hoyt Avenue North & 21 st Street ¹	EB-L	0.02	40.4	D	0.02	40.4	D	0.02	<u>40.4</u>	D	Partially Mitigated <u>-Install “No Standing 7AM-10AM Mon-Fri” regulations along the SB approach for 250 feet to daylight the approach.</u> <u>-Restripe WB approach from one five-foot wide bike lane, one 11-foot wide through-right lane and two 11-foot wide left-turn lanes to one five-foot wide bike lane, one 11-foot wide through-right lane, and two 12-foot wide left-turn lanes.</u>
	EB-R	0.37	47.5	D	0.37	47.5	D	<u>0.37</u>	<u>47.5</u>	D	
	WB-L	<u>1.09</u>	<u>88.0</u>	<u>F</u>	<u>1.12</u>	<u>100.7</u>	F*	<u>1.08</u>	<u>85.5</u>	<u>F</u>	
	WB-TR	0.25	14.8	B	0.25	14.8	B	0.25	<u>14.8</u>	B	
	NB-L	0.31	32.3	C	0.32	33.1	C	<u>0.32</u>	<u>33.1</u>	C	
	NB-T	1.20	143.8	F	1.30	184.4	F*	<u>1.30</u>	<u>184.4</u>	F*	
25. Hoyt Avenue South/Astoria Park South & 21 st Street ²	EB-LTR	0.84	41.9	D	0.93	44.9	D	N/A			Unmitigatable Impact
	NB-LTR	<u>0.61</u>	<u>14.3</u>	B	0.63	14.9	B				
	SB-LTR	<u>1.12</u>	<u>81.1</u>	<u>F</u>	<u>1.16</u>	<u>96.5</u>	F*				
26. 27 th Avenue & 9 th Street ³	EB-LT	0.02	8.5	A	0.01	8.9	A	=	=	=	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is <u>43s</u> ; SB phase green time is <u>37s</u> ; all phases have 3s of amber and 2s of all red time]. -Install “No Standing Anytime” regulations along the east curb of 9 th Street for 150 feet to allow for <u>traffic left-turn lane</u> . -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 20-foot wide right-turn lane, one 12-foot wide left-turn lane for 100 feet. <u>-Shift the EB approach centerline 1-foot to the south and restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes.</u> <u>[Two-way (NB/SB) 9th Street would be converted to a one-way SB roadway between 26th and 27th Avenue as a result of the proposed mitigation measures].</u>
	EB-T	=	=	=	=	=	=	<u>0.66</u>	<u>22.3</u>	<u>C</u>	
	WB-T	-	-	-	-	-	-	<u>0.87</u>	<u>35.0</u>	<u>D</u>	
	SB-LR	0.56	29.6	<u>D</u>	2.35	651.8	F*	-	-	-	
	SB-L	-	-	-	-	-	-	<u>0.87</u>	<u>41.2</u>	<u>D</u>	
	SB-R	-	-	-	-	-	-	0.28	<u>19.0</u>	<u>B</u>	

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	
27. Vernon Boulevard & 31 st 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/11 th Street ²	EB-LTR	0.01	28.2	C	0.01	28.2	C	0.01	29.0	C	<u>Partially Mitigated</u> Modify signal timing: Shift 1s of green time from the EB/WB phase to the NB/SB Vernon Boulevard phase; [EB/WB phase green time shifts from 25s to 24s; NB/SB Vernon Boulevard phase green time shifts from 43s to 44s; NB 11 th Street phase green time <u>remains the same</u>].
	WB-LT	0.87	38.9	D	0.87	38.9	D	0.91	41.3	D	
	WB-R	<u>0.21</u>	<u>29.9</u>	C	<u>0.23</u>	<u>30.3</u>	C	0.27	31.2	C	
	WB-LTR		37.7	D		<u>37.6</u>	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	
	11 th Street NB-LTR	0.38	41.1	D	0.38	41.1	D	<u>0.38</u>	<u>41.1</u>	D	
	SB-LTR	1.36	195.9	F	1.46	241.9	F*	<u>1.42</u>	<u>222.3</u>	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).

³ With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table has been updated for the FEIS.

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. 27 th Avenue & 8 th Street ^{2,3}	EB-T	0.24	11.9	B	0.24	11.9	B	<u>0.24</u>	<u>11.9</u>	<u>B</u>	-Install “No Standing Anytime” regulations to daylight the WB approach along 27 th Avenue between 8 th and 9 th Streets. -Install “No Standing Anytime” regulations along the WB receiving lane for 100 feet to allow vehicles to realign with the receiving end. -Shift the WB approach centerline 1-foot to the south and restripe the WB approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn lane, and one 10-foot wide receiving lane.
	EB-R	0.61	22.5	C	0.61	22.5	C	<u>0.61</u>	<u>22.5</u>	<u>C</u>	
	WB-LT	1.25	151.3	F	1.72	354.1	F*	=	=	=	
	WB-L	=	=	=	=	=	=	<u>0.94</u>	<u>57.8</u>	<u>E</u>	
	WB-T	=	=	=	=	=	=	<u>0.67</u>	<u>20.0</u>	<u>B</u>	
	NB-L	0.36	23.3	C	0.45	25.1	C	<u>0.46</u>	<u>25.2</u>	<u>C</u>	
	NB-R	0.73	47.7	D	0.73	47.7	D	<u>0.70</u>	<u>45.0</u>	<u>D</u>	
7. Astoria Boulevard & 21 st 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 shifts from 34s to 33s; NB/SB phase green shifts 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	<u>0.80</u>	<u>38.4</u>	D	<u>0.97</u>	<u>46.1</u>	D*	<u>0.93</u>	<u>42.4</u>	D	
	NB-R	0.65	36.1	D	0.65	36.1	D	0.63	35.1	D	
	SB-LT	<u>0.78</u>	<u>38.5</u>	D	<u>0.78</u>	<u>38.5</u>	D	<u>0.76</u>	<u>37.4</u>	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 shifts from 31s to 29s; EB/WB phase green time shifts from 49s to 51s].
	WB-LT	1.27	143.1	F	1.35	181.2	F*	1.24	132.2	F	
	SB-LTR	<u>1.17</u>	<u>110.1</u>	<u>F</u>	<u>1.27</u>	<u>154.1</u>	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	<u>1.17</u>	<u>112.4</u>	<u>F</u>	
		SB-R	-	-	-	-	-	-	-	-	
	SB-R	-	-	-	-	-	-	0.27	22.8	C	

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	
12. Astoria Boulevard & 29 th 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 <u>250</u> feet to daylight the approach. -Install “No Standing Anytime” regulations along the EB approach downstream receiving segment to provide two receiving lanes. -Restripe the EB approach downstream receiving segment from one 17-foot wide receiving lane with a ten-foot wide channel zone to one 14-foot wide receiving lane and one 13-foot wide receiving lane. -Modify signal timing: Shift 3s of green time from the SB phase to the EB/WB phase [SB phase green shifts from 35s to 32s; EB/WB phase green shifts 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	
15. Hoyt Avenue South/Astoria Boulevard & 33 rd Street ²	Astoria Blvd EB-LT	1.02	62.4	E	1.09	83.5	F*	<u>1.00</u>	<u>54.8</u>	<u>D</u>	-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 shifts from 29s to 27s; EB Astoria Boulevard phase green time shifts from 24s to 26s; NB phase green time remains the same].
	NB-TR	<u>0.76</u>	<u>36.6</u>	D	<u>0.76</u>	<u>36.6</u>	D	<u>0.76</u>	<u>36.6</u>	<u>D</u>	
	NB-R	<u>0.87</u>	<u>49.3</u>	D	<u>0.87</u>	<u>49.3</u>	D	<u>0.87</u>	<u>49.3</u>	<u>D</u>	
	Hoyt Ave EB-LT	0.78	30.4	C	0.78	30.4	C	<u>0.84</u>	<u>33.6</u>	<u>C</u>	
18. Astoria Boulevard North & 32 nd Street ¹	WB-T (Main)	<u>0.51</u>	<u>9.7</u>	A	<u>0.51</u>	<u>9.7</u>	A	<u>0.50</u>	<u>8.6</u>	A	Modify signal timing: Shift 2s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shifts from 22s to 20s; WB phase green time shifts from 58s to 60s].
	WB-T (Ramp)	1.03	45.5	D	1.06	54.9	D*	1.03	42.0	D	
	NB-L	<u>0.32</u>	<u>28.4</u>	C	<u>0.33</u>	<u>28.5</u>	C	<u>0.37</u>	<u>30.3</u>	C	
	SB-R	0.02	25.9	C	0.02	25.9	C	0.02	27.5	C	
22. Vernon Boulevard & Welling Court/8 th Street ²	EB-LT	0.91	45.7	D	0.99	58.7	E*	<u>0.95</u>	<u>50.9</u>	<u>D*</u>	<u>Partially Mitigated</u> Modify signal timing: Shift <u>1</u> s of green time from the WB phase to the EB/SB phase [WB phase green time shifts from 29s to <u>28</u> s; EB/SB phase green time shifts from 28s to <u>29</u> s; NB phase green time remains the same].
	WB-TR	0.04	21.1	C	0.04	21.1	C	0.05	<u>21.8</u>	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	<u>0.74</u>	<u>35.5</u>	<u>D</u>	

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		
26. 27 th Avenue & 9 th Street ³	EB-LT	0.01	8.1	A	0.00	8.6	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 east curb of 9 th Street for 150 feet to allow for <u>traffic left-turn lane</u> . -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 <u>20-foot wide right-turn lane with parking</u> one <u>12-foot wide left-turn lane</u> for 100 feet. -Shift the EB approach centerline 1-foot to the south and <u>restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes</u> . [Two-way (NB/SB) 9 th Street would be converted to a one-way SB roadway between 26 th and 27 th Avenue as a result of the proposed mitigation measures].	
	<u>EB-T</u>	=	=	=	=	=	=	<u>0.37</u>	<u>15.1</u>	<u>B</u>		
	WB-T	-	-	-	-	-	-	-	<u>0.71</u>	<u>23.1</u>		<u>C</u>
	SB-LR	0.43	15.9	C	1.01	79.1	F*	-	-	-		-
	SB-L	-	-	-	-	-	-	-	<u>0.52</u>	<u>24.7</u>		<u>C</u>
	SB-R	-	-	-	-	-	-	<u>0.28</u>	<u>20.3</u>	<u>C</u>		
28. Vernon Boulevard & Broadway/11 th 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 11 th Street phase to the EB/WB phase [NB 11 th Street phase green time shifts from 20s to 19s; EB/WB phase green time shifts 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		
	11 th 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).

³ With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table has been updated for the FEIS.

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. 27 th Avenue & 4 th Street ^{2,3}	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*	<u>1.42</u>	<u>217.2</u>	F*	
	SB-LR	0.08	<u>21.6</u>	C	0.08	21.6	C	0.09	23.8	C	
3. 27 th Avenue & 8 th Street ^{2,3}	EB-T	0.36	13.2	B	0.36	13.2	B	<u>0.36</u>	<u>13.2</u>	<u>B</u>	-Install "No Standing Anytime" regulations to daylight the WB approach along 27 th Avenue between 8 th and 9 th Streets. -Install "No Standing Anytime" regulations along the WB receiving lane for 100 feet to allow vehicles to realign with the receiving end. -Shift the WB approach centerline 1-foot to the south and restripe the WB approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn lane, and one 10-foot wide receiving lane.
	EB-R	0.42	15.9	B	0.42	15.9	B	<u>0.42</u>	<u>15.9</u>	<u>B</u>	
	WB-LT	1.22	138.6	F	1.91	437.1	F*	=	=	=	
	<u>WB-L</u>	=	=	=	=	=	=	<u>0.55</u>	<u>19.8</u>	<u>B</u>	
	<u>WB-T</u>	=	=	=	=	=	=	<u>1.04</u>	<u>65.0</u>	<u>E</u>	
	NB-L	0.48	25.8	C	0.68	32.0	C	<u>0.69</u>	<u>32.6</u>	<u>C</u>	
	NB-R	0.75	47.4	D	0.75	47.4	D	<u>0.71</u>	<u>43.6</u>	<u>D</u>	
4. 27 th Avenue & 12 th 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 & 21 st 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	<u>1.29</u>	<u>165.3</u>	F*				
	NB-R	0.44	22.9	C	0.44	22.9	C				
	SB-LT	0.77	<u>30.0</u>	C	<u>0.87</u>	<u>30.0</u>	C				
SB-R	0.80	33.1	C	1.02	62.3	E*					
8. Astoria Boulevard & 23 rd 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 approximately 100 feet to the existing bus stop 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	

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	
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	1.13	99.3	F	1.39	214.3	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	1.00	50.4	D	
	SB-R	-	-	-	-	-	-	0.45	29.8	C	
12. Astoria Boulevard & 29 th Street	EB-T	1.30	179.5	F	1.44	238.1	F*	<u>1.19</u>	<u>128.1</u>	F	-Install “No Standing 7AM-10AM, 4PM-7PM Mon-Fri” regulations along the EB approach for <u>250</u> feet to daylight the approach. -Install “No Standing Anytime” regulations along the EB approach downstream receiving segment to provide to receiving lanes. -Restripe the EB approach downstream receiving segment from one 17-foot wide receiving lane with a 10-foot wide channel zone to one 14-foot receiving lane and one 13-foot receiving lane.
	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 & 33 rd Street ²	Astoria Blvd EB-LT	1.17	121.1	F	1.24	154.2	F*	1.17	122.7	F	-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 shifts from 40s to 38s; EB Astoria Boulevard phase green time shifts from 34s to 36s; NB phase green time remains the same].
	NB-TR	<u>1.07</u>	<u>77.7</u>	<u>E</u>	<u>1.07</u>	<u>77.7</u>	<u>E</u>	<u>1.07</u>	<u>77.7</u>	<u>E</u>	
	NB-R	<u>1.13</u>	<u>108.5</u>	F	<u>1.13</u>	<u>108.5</u>	F	<u>1.13</u>	<u>108.5</u>	F	
	Hoyt Ave EB-LT	0.87	41.3	D	0.87	41.3	D	0.91	45.2	D	
17. Hoyt Avenue North & 31 st Street	WB-L	<u>0.34</u>	<u>15.0</u>	B	<u>0.34</u>	<u>15.0</u>	B	<u>0.33</u>	<u>13.4</u>	B	-Install “No Standing 7AM-10AM Mon-Fri” regulations along the SB approach for 250 feet to daylight the approach. -Modify signal timing: Shift 3s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shifts from 43s to 40s; WB phase green time shifts from 67s to 70s].
	WB-T	<u>0.99</u>	<u>40.1</u>	D	<u>1.05</u>	<u>56.1</u>	E*	<u>1.00</u>	<u>40.8</u>	D	
	WB-R	<u>0.15</u>	<u>13.3</u>	B	<u>0.15</u>	<u>13.3</u>	B	<u>0.14</u>	<u>11.9</u>	B	
	NB-LT	<u>0.29</u>	<u>28.3</u>	C	<u>0.29</u>	<u>28.3</u>	C	<u>0.31</u>	<u>30.6</u>	C	
	SB-T	<u>0.25</u>	<u>28.1</u>	C	<u>0.25</u>	<u>28.1</u>	C	<u>0.27</u>	<u>30.4</u>	C	
	SB-R	<u>0.49</u>	<u>34.6</u>	C	<u>0.52</u>	<u>35.5</u>	D	<u>0.57</u>	<u>39.8</u>	D	
18. Astoria Boulevard North & 32 nd Street ¹	WB-T (Main)	<u>0.46</u>	<u>10.9</u>	B	<u>0.46</u>	<u>10.9</u>	B	<u>0.29</u>	<u>7.8</u>	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	<u>0.52</u>	<u>38.6</u>	D	<u>0.53</u>	<u>38.7</u>	D	<u>0.59</u>	<u>41.5</u>	D	
	SB-R	0.02	33.3	C	0.02	33.3	C	0.02	35.6	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	
19. Astoria Boulevard & 8 th Street ²	EB-L	0.17	29.0	C	0.17	29.0	C	<u>0.18</u>	<u>30.7</u>	C	Partially Mitigated Modify signal timing: Shift 2s of green time from the EB/WB phase to the NB/SB phase [EB/WB phase green time shifts from 41s to 39s; NB/SB phase green time shifts from 69s to 71s].
	EB-R	0.66	40.6	D	0.66	40.6	D	<u>0.70</u>	<u>43.9</u>	D	
	WB-L	0.31	31.0	C	0.31	30.1	C	<u>0.32</u>	<u>32.7</u>	C	
	WB-TR	0.50	35.3	D	0.50	35.3	D	<u>0.53</u>	<u>37.5</u>	D	
	NB-LT	0.87	27.7	C	1.04	59.0	E*	<u>1.00</u>	<u>45.4</u>	<u>D*</u>	
	SB-TR	0.39	15.1	B	0.44	15.9	B	<u>0.42</u>	<u>14.7</u>	<u>B</u>	
22. Vernon Boulevard & Welling Court/8 th Street ¹	EB-LT	1.43	229.6	F	1.59	300.3	F*	<u>1.48</u>	<u>248.0</u>	<u>F*</u>	Partially Mitigated Modify signal timing: Shift 1s of green time from the WB phase to the EB/SB phase; Shift 1a of green time from the NB phase to the EB/SB phase [WB phase green time shift from 29s to 28s; EB/SB phase green time shift from 26s to 28s; NB phase green time shifts from 20s to 19s].
	WB-TR	0.06	21.3	C	0.06	21.3	C	<u>0.07</u>	<u>22.0</u>	C	
	NB-LTR	<u>0.18</u>	29.5	C	0.18	29.5	C	<u>0.19</u>	<u>30.5</u>	C	
	SB-R	<u>0.72</u>	37.9	D	0.79	42.2	D	<u>0.74</u>	<u>36.7</u>	<u>D</u>	
24. Hoyt Avenue North & 21 st Street ²	EB-L	0.11	43.9	D	0.11	43.9	D	<u>0.11</u>	<u>43.9</u>	D	Partially Mitigated -Install “No Standing 7AM-10AM Mon-Fri” regulations along the SB approach for 250 feet to daylight the approach. -Restripe the WB approach from one five-foot wide bike lane, one 11-foot wide through-right lane, and two 11-foot wide left-turn lanes to one five-foot wide bike lane, one 11-foot wide through-right lane and two 12-foot wide left-turn lanes.
	EB-R	0.19	45.3	D	0.19	45.3	D	<u>0.19</u>	<u>45.3</u>	D	
	WB-L	<u>0.98</u>	<u>62.2</u>	E	<u>1.07</u>	<u>87.8</u>	F*	<u>1.04</u>	<u>75.5</u>	<u>E*</u>	
	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	<u>D</u>	0.80	39.4	D	<u>0.80</u>	39.4	D	
25. Hoyt Avenue South/Astoria Park South & 21 st 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 shifts from 35s to 32s; NB/SB phase green time shifts 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		<u>16.4</u>	B		14.0	B	
	SB-LTR	<u>1.00</u>	<u>40.4</u>	D	<u>1.06</u>	<u>59.1</u>	E*	<u>1.01</u>	<u>41.3</u>	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		
26. 27 th Avenue & 9 th Street ³	EB-LT	0.01	8.8	A	0.01	10.1	B	-	-	-	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 52s; SB phase green time is 28s; all phases have 3s of amber and 2s of all red time]. -Install “No Standing 4PM-7PM Mon-Fri” regulations along the WB approach for 250 feet. -Install “No Standing Anytime” regulations along the east curb of 9 th Street for 150 feet to allow for a left-turn only lane. -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 20-foot wide right-turn lane with parking and one 12-foot wide left-turn lane for 100 feet. -Shift the EB approach centerline 1-foot to the south and restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes. [Two-way (NB/SB) 9 th Street would be converted to a one-way SB roadway between 26 th and 27 th Avenue as a result of the proposed mitigation measures].	
	EB-T	=	=	=	=	=	=	0.47	12.7	B		
	WB-T	-	-	-	-	-	-	-	0.98	43.9		D
	SB-LR	0.60	31.2	C	2.53	744.3	F*	-	-	-		
	SB-L	-	-	-	-	-	-	0.77	39.7	D		
	SB-R	-	-	-	-	-	-	0.33	26.3	C		
27. Vernon Boulevard & 31 st 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/11 th 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 from the NB 11 th Street phase to the NB/SB Vernon Boulevard phase [NB 11 th Street phase green time shifts from 25s to 22s; NB/SB Vernon Boulevard phase green time shifts 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	0.24	35.8	D	0.37	37.9	D	0.37	37.9	D		
	WB-LTR		45.1	D		44.9	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		
	11 th 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).

³ With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table has been updated for the FEIS.

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. 27 th Avenue & 8 th Street ²	EB-TR	0.54	17.2	B	0.54	17.2	B	0.51	<u>17.2</u>	B	-Install “No Standing Anytime” regulations to daylight the WB approach along 27 th Avenue between 8 th and 9 th Streets. -Install “No Standing Anytime” regulations along the WB receiving lane for 100 feet to allow vehicles to realign with the receiving end. -Shift the WB approach centerline 1-foot to the south and restripe the WB approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn lane, and one 10-foot wide receiving lane.
	WB-LT	0.98	57.1	E	1.46	237.9	F*	=	=	=	
	<u>WB-L</u>	=	=	=	=	=	=	<u>0.68</u>	<u>24.2</u>	<u>C</u>	
	<u>WB-T</u>	=	=	=	=	=	=	<u>0.59</u>	<u>17.2</u>	<u>B</u>	
	NB-L	0.43	24.9	C	0.61	29.5	C	<u>0.65</u>	<u>30.8</u>	C	
	NB-R	0.28	22.3	C	0.28	22.3	C	<u>0.24</u>	<u>21.7</u>	C	
4. 27 th Avenue & 12 th 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. 27 th Avenue & 14 th 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	

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	
7. Astoria Boulevard & 21 st 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 shifts from 51s to 50s; EB phase green time shifts from 24s to 25s].
	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	1.00	59.2	F	1.19	129.4	F*	-	-	-	
	NB-LT	-	-	-	-	-	-	0.73	32.7	C	
	NB-R	-	-	-	-	-	-	0.38	25.4	C	
	SB-LTR	1.15	102.4	F	1.19	120.5	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	0.89	32.3	C	
	SB-R	-	-	-	-	-	-	0.53	26.5	C	
8. Astoria Boulevard & 23 rd 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 approximately 100 feet to the existing bus stop 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-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 1s of green time from the SB phase to the EB/WB phase [SB phase green time shifts from 43s to 42s; EB/WB phase green time shifts from 67s to 68s].
	WB-LT	1.01	48.0	D	1.05	60.3	E*	1.02	50.2	D	
	SB-LTR	<u>1.20</u>	<u>129.1</u>	F	1.19	124.6	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	1.09	81.1	F	
	SB-R	-	-	-	-	-	-	0.20	27.4	C	
12. Astoria Boulevard & 29 th Street	EB-T	1.17	127.2	F	1.46	253.2	F*	<u>1.14</u>	<u>111.4</u>	F	<u>-Install “No Standing 7AM-10AM, 4PM-7PM Mon-Fri” regulations along the EB approach for 250 feet to daylight the approach.</u> <u>-Install “No Standing Anytime” regulations along the EB approach downstream receiving segment to provide two receiving lanes.</u> <u>-Restripe the EB approach downstream receiving segment from one 17-foot wide receiving lane with a 10-foot wide channel zone to one 14-foot wide receiving lane and one 13-foot wide receiving lane.</u> -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	

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	
14. Astoria Boulevard & 31 st Street	EB-LTR	<u>0.97</u>	<u>52.9</u>	D	<u>1.27</u>	<u>165.1</u>	F*	0.73	<u>34.8</u>	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-foot 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	<u>0.99</u>	<u>51.0</u>	<u>D</u>	<u>0.99</u>	<u>51.0</u>	<u>D</u>	<u>0.99</u>	<u>51.0</u>	<u>D</u>	
	SB-R	0.30	14.9	B	0.30	14.9	B	<u>0.30</u>	14.9	B	
15. Hoyt Avenue South/Astoria Boulevard & 33 rd Street	Astoria Blvd EB-LT	1.05	77.8	E	1.22	147.0	F*	<u>1.11</u>	<u>99.7</u>	<u>F*</u>	<u>Partially Mitigated</u> -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 shifts from 52s to 49s; EB Astoria Boulevard phase green time shifts from 31s to 34s; NB phase green time remains the same].
	NB-TR	1.09	<u>91.5</u>	F	1.09	<u>91.5</u>	F	1.09	<u>91.5</u>	F	
	NB-R	<u>1.09</u>	<u>97.7</u>	F	<u>1.09</u>	<u>97.7</u>	F	<u>1.09</u>	<u>97.7</u>	F	
	Hoyt Ave EB-LT	0.59	26.4	C	0.59	26.4	C	0.63	28.9	C	
16. Hoyt Avenue North & 29 th 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 shifts from 84s to 82s; SB phase green time shifts from 19s to 21s].
	WB-LT	<u>0.70</u>	<u>15.3</u>	B	<u>0.90</u>	<u>16.1</u>	B	<u>0.92</u>	<u>18.2</u>	B	
	SB-R	1.04	104.0	F	1.15	140.3	F*	1.04	100.5	F	
17. Hoyt Avenue North & 31 st Street	<u>WB-L</u>	<u>0.81</u>	<u>37.5</u>	<u>D</u>	<u>0.81</u>	<u>37.5</u>	<u>D</u>	<u>0.79</u>	<u>35.9</u>	<u>D</u>	<u>-Install “No Standing 7AM-10AM Mon-Fri” regulations along the SB approach for 250 feet to daylight the approach.</u> <u>-Modify signal timing: Shift 1s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shifts from 32s to 31s; WB phase green time shifts from 78s to 79s].</u>
	<u>WB-T</u>	<u>1.10</u>	<u>72.5</u>	<u>E</u>	<u>1.12</u>	<u>79.2</u>	<u>E*</u>	<u>1.11</u>	<u>72.7</u>	<u>E</u>	
	<u>WB-R</u>	<u>0.02</u>	<u>7.5</u>	<u>A</u>	<u>0.02</u>	<u>7.5</u>	<u>A</u>	<u>0.02</u>	<u>7.1</u>	<u>A</u>	
	<u>NB-LT</u>	<u>0.32</u>	<u>36.4</u>	<u>D</u>	<u>0.32</u>	<u>36.4</u>	<u>D</u>	<u>0.33</u>	<u>37.4</u>	<u>D</u>	
	<u>SB-T</u>	<u>0.62</u>	<u>44.5</u>	<u>D</u>	<u>0.62</u>	<u>44.5</u>	<u>D</u>	<u>0.64</u>	<u>46.1</u>	<u>D</u>	
	<u>SB-R</u>	<u>0.73</u>	<u>56.5</u>	<u>E</u>	<u>0.75</u>	<u>58.7</u>	<u>E</u>	<u>0.69</u>	<u>53.2</u>	<u>D</u>	
18. Astoria Boulevard North & 32 nd Street	WB-T (Main)	<u>0.74</u>	<u>13.2</u>	<u>B</u>	<u>0.74</u>	<u>13.2</u>	<u>B</u>	<u>0.73</u>	<u>12.5</u>	<u>B</u>	Modify signal timing: Shift 1s of green time from the NB/SB phase to the WB phase [NB/SB phase green time shifts from 25s to 24s; WB phase green time shifts 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	<u>44.4</u>	D	<u>0.61</u>	<u>44.5</u>	D	<u>0.64</u>	<u>45.6</u>	D	
	SB-R	0.03	38.0	D	0.03	38.0	D	0.03	38.8	D	
20. 30 th Avenue & 14 th 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*				

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	
21. 30 th Avenue & 21 st 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 from the NB/SB phase to the EB/WB phase [NB/SB phase green time shifts from 73s to 71s; EB/WB phase green time shifts 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	<u>0.76</u>	<u>20.3</u>	<u>C</u>	<u>0.77</u>	<u>20.4</u>	<u>C</u>	<u>0.79</u>	<u>22.4</u>	C	
22. Vernon Boulevard & Welling Court/8 th Street	EB-LT	1.21	132.9	F	1.30	171.8	F*	1.21	129.6	F	Modify signal timing: Shift <u>1</u> s of green time from the NB phase to the EB/SB phase; Shift <u>1</u> s of green time from the WB phase to the EB/SB phase [NB phase green time shifts from 20s to <u>19</u> s; EB/SB phase green time shifts from 26s to 28s; WB phase green time shifts from 29s to 28s].
	WB-TR	0.04	21.1	C	0.04	21.1	C	0.04	<u>21.8</u>	C	
	NB-LTR	0.28	32.0	C	0.28	32.0	C	<u>0.29</u>	<u>33.2</u>	C	
	SB-R	0.85	44.3	D	0.96	59.7	E*	0.89	46.4	D	
23. Astoria Boulevard & 18 th 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 & 21 st Street	EB-L	0.02	40.4	D	0.02	40.4	D	0.02	42.1	D	Partially Mitigated -Install "No Standing 7AM-10AM Mon-Fri" regulations along the SB approach for 250 feet to daylight the approach. -Restripe the WB approach from one 5-foot wide bike lane, one 11-foot wide through-right lane and two 11-foot wide left-turn lanes to one 5-foot wide bike lane, one 11-foot wide through-right lane and two 12-foot wide left-turn lanes.
	EB-R	0.37	47.5	D	0.37	47.5	D	0.41	50.8	D	
	WB-L	<u>1.00</u>	<u>58.1</u>	<u>E</u>	<u>1.03</u>	<u>66.9</u>	<u>E*</u>	<u>1.00</u>	<u>57.2</u>	<u>E</u>	
	WB-TR	0.25	14.8	B	0.25	14.8	B	0.25	<u>14.8</u>	B	
	NB-L	0.31	32.2	C	0.32	32.8	C	<u>0.32</u>	<u>32.8</u>	C	
	NB-T	1.08	98.0	F	1.17	133.9	F*	<u>1.17</u>	<u>133.9</u>	F*	
	SB-TR	1.03	61.9	E	1.06	71.0	E*	<u>0.93</u>	<u>41.0</u>	<u>D</u>	
25. Hoyt Avenue South/Astoria Park South & 21 st 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 shifts from 36s to 34s; NB/SB phase green time shifts from 74s to 76s].
	NB-LTR	0.61	<u>15.9</u>	B	<u>0.64</u>	<u>16.5</u>	B	0.61	<u>14.9</u>	B	
	SB-LTR	<u>1.12</u>	<u>79.0</u>	E	<u>1.15</u>	<u>95.0</u>	F*	<u>1.11</u>	<u>77.1</u>	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. 27 th Avenue & 9 th Street ²	EB-LT	0.01	8.2	A	0.01	<u>8.6</u>	A	=	=	=	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 43s; SB phase green time is 37s; all phases have 3s of amber and 2s of all red time]. -Install “No Standing Anytime” regulations along the east curb of 9 th Street for 150 feet to allow for a <u>left-turn lane</u> . -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 20-foot wide right-turn lane <u>with parking and</u> one 12-foot wide left-turn lane for 100 feet. -Shift the EB approach centerline 1-foot to the south and restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes. [<u>Two-way (NB/SB) 9th Street would be converted to a one-way SB roadway between 26th and 27th Avenue as a result of the proposed mitigation measures</u>].	
	<u>EB-T</u>	=	=	=	=	=	=	<u>0.26</u>	<u>14.8</u>	<u>B</u>		
	WB-T	-	-	-	-	-	-	-	<u>0.73</u>	<u>25.6</u>		C
	SB-LR	0.34	15.3	C	<u>1.43</u>	<u>232.7</u>	F*	-	-	-		
	SB-L	-	-	-	-	-	-	-	<u>0.87</u>	<u>41.2</u>		<u>D</u>
	SB-R	-	-	-	-	-	-	0.28	<u>19.0</u>	<u>B</u>		
28. Vernon Boulevard & Broadway/11 th Street	EB-LTR	0.01	28.2	C	0.01	28.2	C	0.01	<u>30.5</u>	C	Partially Mitigated -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 [EB/WB phase green time shifts from 25s to 22s; NB/SB Vernon Boulevard phase green time shifts from 43s to 46s; NB 11 th Street phase green time <u>remains the same</u>].	
	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		
	11 th Street NB-LTR	<u>0.38</u>	41.1	D	0.38	41.1	D	<u>0.38</u>	<u>41.1</u>	D		
SB-LTR	1.08	80.8	F	1.22	136.6	F*	<u>1.11</u>	<u>88.9</u>	<u>F</u>			

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).

² Alternate With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table has been updated for the FEIS.

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. 27 th Avenue & 8 th Street ²	EB-TR	0.38	14.1	B	0.38	14.1	B	0.38	14.1	B	<u>-Install “No Standing Anytime” regulations to daylight the WB approach along 27th Avenue between 8th and 9th Streets.</u> <u>-Install “No Standing Anytime” regulations along the WB receiving lane for 100 feet to allow vehicles to realign with the receiving end.</u> <u>-Shift the WB approach centerline 1-foot to the south and restripe the WB approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn lane, and one 10-foot wide receiving lane.</u>
	WB-LT	0.89	41.5	D	1.34	188.3	F*				
	<u>WB-L</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.68</u>	<u>24.5</u>	<u>C</u>	
	<u>WB-T</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>0.48</u>	<u>15.3</u>	<u>B</u>	
	NB-L	0.31	22.6	C	0.40	24.1	C	0.41	24.2	C	
	NB-R	0.30	22.7	C	0.30	22.7	C	0.29	22.5	C	
4. 27 th Avenue & 12 th 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. 27 th Avenue & 14 th 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	

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	
7. Astoria Boulevard & 21 st 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	0.50	37.1	D	
	NB-LTR	1.22	142.8	F	1.56	295.5	F*	-	-	-	
	NB-LT	-	-	-	-	-	-	0.86	39.9	D	
	NB-R	-	-	-	-	-	-	0.64	36.0	D	
	SB-LTR	1.08	80.7	F	1.16	117.0	F*	-	-	-	
SB-LT							0.78	38.5	D		
	SB-R	-	-	-	-	-	-	0.61	36.4	D	
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-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 shifts from 31s to 29s; EB/WB phase green time shifts from 49s to 51s].
	WB-LT	1.11	75.0	E	1.19	109.7	F*	1.1	70.0	E	
	SB-LTR	<u>1.12</u>	<u>129.1</u>	<u>F</u>	<u>1.27</u>	<u>153.0</u>	<u>F*</u>	-	-	-	
	SB-LT	-	-	-	-	-	-	<u>1.17</u>	<u>112.4</u>	<u>F</u>	
		SB-R	-	-	-	-	-	-	<u>0.26</u>	22.8	

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	
14. Astoria Boulevard & 31 st 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-foot 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	<u>0.55</u>	<u>17.7</u>	B	<u>0.55</u>	<u>17.7</u>	B	<u>0.55</u>	<u>17.7</u>	B	
	SB-R	0.31	14.3	B	0.31	14.3	B	0.31	14.3	B	
15. Hoyt Avenue South/Astoria Boulevard & 33 rd Street	Astoria Blvd EB-LT	1.02	62.1	E	1.08	83.6	F*	0.99	53.9	D	-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 shifts from 31s to 29s; EB Astoria Boulevard phase green time shifts from 22s to 24s; NB phase green time remains the same].
	NB-TR	<u>0.76</u>	<u>36.6</u>	D	<u>0.76</u>	<u>36.6</u>	D	<u>0.76</u>	<u>36.6</u>	D	
	NB-R	<u>0.87</u>	<u>49.3</u>	D	<u>0.87</u>	<u>49.3</u>	D	<u>0.87</u>	<u>49.3</u>	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/8 th Street	EB-LT	0.90	45.7	D	0.98	59.5	E*	0.91	45.4	D	Modify signal timing: Shift <u>1s</u> of green time from the NB phase to the EB/SB phase; <u>Shift 1s of green time from the WB phase to the EB/SB phase</u> [NB phase green time shifts from 20s to <u>19s</u> ; EB/SB phase green time shifts from 26s to 28s; WB phase green time shifts from 29s to 28s].
	WB-TR	0.04	21.1	C	0.04	21.1	C	<u>0.05</u>	<u>21.8</u>	C	
	NB-LTR	0.15	29.1	C	0.15	29.1	C	<u>0.16</u>	<u>30.0</u>	C	
	SB-R	0.65	34.6	C	0.71	36.9	D	0.66	33.0	C	
23. Astoria Boulevard & 18 th 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	
26. 27 th Avenue & 9 th Street ²	EB-LT	0.00	7.8	A	0.00	8.2	A	=	=	=	-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 east curb of 9 th Street for 150 feet to allow for a <u>left-turn lane</u> . -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 <u>20-foot wide right-turn lane with parking and</u> one 10-foot wide left-turn lane for 100 feet. - <u>Shift the EB approach centerline 1-foot to the south and restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes.</u> [Two-way (NB/SB) 9 th Street would be converted to a one-way SB roadway between 26 th and 27 th Avenue as a result of the proposed mitigation measures]. (Measures reflect improvements needed for the AM and PM peak periods).
	<u>EB-T</u>	=	=	=	=	=	=	<u>0.21</u>	<u>13.1</u>	<u>B</u>	
	WB-T	-	-	-	-	-	-	0.52	17.8	B	
	SB-LR	0.33	12.1	B	0.73	27.4	D	-	-	-	
	SB-L	-	-	-	-	-	-	<u>0.52</u>	<u>24.7</u>	C	
	SB-R	-	-	-	-	-	-	<u>0.27</u>	<u>20.3</u>	<u>C</u>	

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	
28. Vernon Boulevard & Broadway/11 th 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	
	11 th 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).

² Alternate With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table has been updated for the FEIS.

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. 27 th Avenue & 8 th Street ²	EB-TR	0.39	14.0	B	0.39	14.0	B	0.39	14.0	B	-Install “No Standing Anytime” regulations to daylight the WB approach along 27 th Avenue between 8 th and 9 th Streets. -Install “No Standing Anytime” regulations along the WB receiving lane for 100 feet to allow vehicles to realign with the receiving end. -Shift the WB approach centerline 1-foot to the south and restripe the WB approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn lane, and one 10-foot wide receiving lane.
	WB-LT	0.59	19.3	B	1.26	154.6	F*	-	-	-	
	WB-L	-	-	-	-	-	-	0.41	15.1	B	
	WB-T	-	-	-	-	-	-	0.67	20.0	C	
	NB-L	0.36	23.4	C	0.56	27.8	C	0.57	28.2	C	
	NB-R	0.33	23.1	C	0.33	23.1	C	0.31	22.7	C	
4. 27 th Avenue & 12 th 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. 27 th Avenue & 14 th 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 & 21 st 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 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.
	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	51.2	D	1.07	94.9	F*	1.07	94.9	F*	
	NB-LTR	1.25	144.2	F	1.77	381.2	F*	-	-	-	
	NB-LT	-	-	-	-	-	-	1.11	85.3	F	
	NB-R	-	-	-	-	-	-	0.44	22.9	C	
	SB-LTR	1.03	58.8	E	1.18	119.0	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	0.78	30.0	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-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 1s of green time from the SB phase to the EB/WB phase [SB phase green time shifts from 43s to 42s; EB/WB phase green time shifts from 67s to 68s].
	WB-LT	1.20	119.5	F	1.37	195.7	F*	1.13	86.3	F	
	SB-LTR	<u>1.13</u>	<u>98.3</u>	<u>E</u>	<u>1.38</u>	<u>211.8</u>	F*	-	-	-	
	SB-LT	-	-	-	-	-	-	<u>1.02</u>	<u>56.5</u>	<u>E</u>	
	SB-R	-	-	-	-	-	-	0.46	30.6	C	
12. Astoria Boulevard & 29 th Street	EB-T	1.10	96.4	F	1.23	150.1	F*	<u>1.02</u>	<u>67.8</u>	<u>E</u>	-Install “No Standing 7AM-10 AM, 4PM-7PM Mon-Fri” regulations along the EB approach for <u>250</u> feet to daylight the approach. -Install “No Standing Anytime” regulations along the EB approach downstream receiving segment to provide two receiving lanes. -Restripe EB approach downstream receiving segment from one 17-foot wide receiving lane with a 10-foot wide channel zone to one 14-foot wide receiving lane and one 13-foot wide receiving lane.
	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 & 31 st Street	EB-LTR	<u>1.09</u>	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-foot 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	<u>0.63</u>	<u>20.8</u>	<u>C</u>	<u>0.63</u>	<u>20.8</u>	<u>C</u>	<u>0.63</u>	<u>20.8</u>	<u>C</u>	
	SB-R	0.31	15.1	B	0.31	15.1	B	0.31	15.1	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	
15. Hoyt Avenue South/Astoria Boulevard & 33 rd Street	Astoria Blvd EB-LT	1.16	117.8	F	1.24	154.0	F*	1.13	104.1	F	-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 shifts from 43s to 40s; EB Astoria Boulevard phase green time shifts from 31s to 34s; NB phase green time remains the same].
	NB-TR	<u>1.07</u>	<u>77.7</u>	<u>E</u>	<u>1.07</u>	<u>77.7</u>	<u>E</u>	<u>1.07</u>	<u>77.7</u>	<u>E</u>	
	NB-R	<u>1.13</u>	<u>108.5</u>	F	<u>1.13</u>	<u>108.5</u>	F	<u>1.11</u>	<u>108.5</u>	F	
	Hoyt Ave EB-LT	0.78	36.4	D	0.78	36.4	D	0.84	40.3	D	
18. Astoria Boulevard North & 32 nd Street	WB-T (Main)	<u>0.45</u>	<u>10.9</u>	<u>B</u>	<u>0.45</u>	<u>10.9</u>	<u>B</u>	<u>0.43</u>	<u>8.9</u>	A	Modify signal timing: Shift 4s 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	<u>0.50</u>	<u>38.3</u>	D	<u>0.51</u>	<u>38.5</u>	D	<u>0.59</u>	<u>42.2</u>	D	
	SB-R	0.02	33.3	C	0.02	33.3	C	0.02	36.4	D	
22. Vernon Boulevard & Welling Court/8 th Street	EB-LT	1.22	136.0	F	1.37	204.2	F*	<u>1.28</u>	<u>159.8</u>	F*	<u>Partially Mitigated</u> Modify signal timing: <u>Shift 1s of green time from the NB phase to the EB/SB phase</u> ; Shift 1s of green time from the WB phase to the EB/SB phase [WB phase green time shifts from 29s to <u>28s</u> ; EB/SB phase green time shifts from 26s to <u>28s</u> ; NB phase green time <u>shifts from 20s to 19s</u>].
	WB-TR	0.06	21.3	C	0.06	21.3	C	0.07	<u>22.0</u>	C	
	NB-LTR	0.18	29.5	C	0.18	29.5	C	<u>0.19</u>	<u>30.5</u>	C	
	SB-R	0.59	32.6	C	0.66	34.9	C	<u>0.61</u>	<u>31.6</u>	C	
23. Astoria Boulevard & 18 th 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	

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	
24. Hoyt Avenue North & 21 st Street	EB-L	0.09	41.8	D	0.09	41.8	D	<u>0.09</u>	<u>41.8</u>	D	Partially Mitigated -Install “No Standing 7AM-10AM Mon-Fri” regulations along the SB approach for 250 feet to daylight the approach. -Restripe WB approach from one 5-foot wide bike lane, one 11-foot wide through-right lane, and two 11-foot wide left-turn lanes to one 5-foot wide bike lane, one 11-foot wide through-right lane, and two 12-foot wide left-turn lanes. -Modify signal timing: Shift 1s of green time from the WB lag phase to the NB/SB phase [WB lag phase green time shifts from 38s to 37s; NB/SB phase green time shifts from 45s to 46s; EB/WB phase green time remains the same].
	EB-R	0.17	43.1	D	0.17	43.1	D	<u>0.17</u>	<u>43.1</u>	D	
	WB-L	<u>0.73</u>	<u>40.1</u>	D	<u>0.82</u>	<u>43.7</u>	D	<u>0.81</u>	<u>43.9</u>	D	
	WB-TR	0.29	15.7	B	0.29	15.7	B	<u>0.29</u>	<u>16.3</u>	B	
	NB-L	0.18	26.1	C	0.18	26.3	C	0.17	<u>25.5</u>	C	
	NB-T	1.12	101.6	F	1.17	123.0	F*	<u>1.15</u>	<u>112.5</u>	F	
	SB-TR	0.78	39.9	D	0.81	41.6	D	<u>0.80</u>	<u>39.9</u>	D	
25. Hoyt Avenue South/Astoria Park South & 21 st 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	<u>1.02</u>	<u>44.2</u>	D	<u>1.08</u>	<u>65.3</u>	E*	1.01	<u>42.0</u>	D	
	SB-LTR	<u>1.00</u>	<u>45.2</u>	D	<u>1.08</u>	<u>70.3</u>	E*	<u>1.02</u>	<u>47.8</u>	D	
26. 27 th Avenue & 9 th Street ²	EB-LT	0.01	7.9	A	0.01	8.9	A	=	=	=	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 43s; SB phase green time is 37s; all phases have 3s of amber and 2s of all red time]. -Install “No Standing Anytime” regulations along the east curb of 9 th 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. -Shift the EB approach centerline 1-foot to the south and restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes. [Two-way (NB/SB) 9 th Street would be converted to a one-way SB roadway between 26 th and 27 th Avenue as a result of the proposed mitigation measures].
	EB-T	=	=	=	=	=	=	<u>0.33</u>	<u>14.6</u>	<u>B</u>	
	WB-T	-	-	-	-	-	-	<u>0.87</u>	<u>33.2</u>	<u>C</u>	
	SB-LR	0.33	14.2	B	1.36	210.9	F*	-	-	-	
	SB-L	-	-	-	-	-	-	<u>0.67</u>	<u>29.7</u>	<u>C</u>	
		SB-R	-	-	-	-	-	-	<u>0.25</u>	<u>19.9</u>	

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/11 th 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	
	11 th Street NB-LTR	0.33	38.2	D	0.33	38.2	D	0.33	<u>38.2</u>	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).

² Alternate With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table has been updated for the FEIS.

RWCDS With-Action Condition (with Halletts Point)

Under the RWCDS With-Action condition, 23 of the 30 analyzed intersections would experience significant adverse impacts during one or more weekday peak hour. Impacts at eight of the intersections could be fully mitigated with traffic capacity improvements, and impacts at 15 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 fully mitigated through implementation of the following measures: installing “No Standing Anytime” regulations to daylight the westbound approach along 27th Avenue between 8th and 9th Streets; installing “No Standing Anytime” regulations along the westbound receiving lane for 100 feet to allow vehicles to realign with the receiving end; shifting the westbound approach centerline one foot to the south and restriping the westbound approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn only lane, and one 10-foot wide receiving lane.

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 east curb of 9th Street for 150 feet to allow for two-way traffic; installing “No Standing 4 PM-7 PM Mon-Fri” regulations along the 27th Avenue westbound approach for 250 feet and along the 9th Street east curb for 250 feet; 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 20-foot wide right-turn lane with parking and one 12-foot wide left-turn lane for 100 feet; and shifting the eastbound approach centerline one foot to the south and restriping the eastbound approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one ten-foot wide through-only lane and two ten-foot wide receiving lanes. These proposed parking regulation and restriping measures would convert 9th Street from two-way (southbound/northbound) to one-way (southbound) between 26th and 27th Avenues. A signal warrant analysis was prepared for the intersection and was submitted to NYCDOT for review and approval. 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.

A discussion of the implication of the traffic diversions resulting from the one-way southbound conversion of 9th Street is provided below.

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 partially mitigated in the weekday AM peak hour through signal timing modifications. The weekday PM impacts could not be mitigated.

27th Avenue and 14th Street

Impacts would occur on the 27th Avenue eastbound and westbound approaches during the weekday AM peak hour. The impact would be partially mitigation through signal timing modifications.

Astoria Boulevard and 21st Street

Impacts on the Astoria Boulevard eastbound left-turn movement would occur during the weekday AM peak hour; impacts on the Astoria Boulevard eastbound through and right-turn movement would occur during the weekday AM and PM peak hours; impacts on the 21st Street southbound right-turn movement and northbound left-turn and through movement would occur during the weekday midday and PM peak hours; and impacts on the westbound through and right-turn 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 and northbound left-turn and through movements 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 approximately 100 feet to the existing bus stop 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 midday and 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 AM and 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 through implementation of the following measures:

modifying signal timing during the weekday AM and midday peak hours; installing “No Standing 7AM-10AM, 4PM-7PM Mon-Fri” regulations along the eastbound approach for 250 feet to daylight the approach; installing “No Standing Anytime” regulations along the eastbound approach downstream receiving segment to provide two receiving lanes; restriping the eastbound approach downstream receiving segment from one 17-foot wide receiving lane with a ten-foot wide channel zone to one 14-foot wide receiving lane and one 13-foot wide receiving lane.

Astoria Boulevard and 31st 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.

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 in the midday and PM peak hours by modifying signal timing. The weekday AM peak hour would only be partially mitigated.

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.

Hoyt Avenue North and 31st Street

Impacts on the Hoyt Avenue North westbound through-movement would occur during the weekday AM and PM peak hours and could be fully mitigated through implementation of the following measures: installing “No Standing 7AM-10AM Mon-Fri” regulations along the southbound approach for 250 feet to daylight the approach; and modifying signal timing.

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 partially mitigated through signal timing modifications.

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 partially 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 implementation of the following measures: installing “No Standing 7AM-10AM Mon-Fri” regulations along the southbound approach for 250 feet to daylight the approach; restriping the westbound approach from one five-foot wide bike lane, one 11-foot wide through-right lane, and two 11-foot wide left-turn lanes to one five-foot wide bike lane, one 11-foot wide through-right lane, and two 12-foot wide left-turn lanes.

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. The weekday midday and PM impacts could be fully mitigated by modifying signal timing; the weekday AM impact would only be partially mitigated.

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 13 of the intersections could be fully mitigated with traffic capacity improvements, and impacts at six 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 fully mitigated through implementation of the following measures: installing “No Standing Anytime” regulations to daylight the westbound approach along 27th Avenue

between 8th and 9th Streets; installing “No Standing Anytime” regulations along the westbound receiving lane for 100 feet to allow vehicles to realign with the receiving end; shifting the westbound approach centerline one foot to the south and restriping the westbound approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn only lane, and one 10-foot wide receiving lane.

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 east curb of 9th Street for 150 feet to allow for traffic left-turn lane; 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 20-foot wide right-turn lane with parking and one 12-foot wide left-turn lane for 100 feet; and shifting the eastbound approach centerline one foot to the south and restriping the eastbound approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one ten-foot wide through-only lane and two ten-foot wide receiving lanes. These proposed parking regulation and restriping measures would convert 9th Street from two-way (southbound/northbound) to one-way (southbound) between 26th and 27th Avenues. A signal warrant analysis was prepared for the intersection and was submitted to NYCDOT for review and approval. 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.

A discussion of the implication of the traffic diversions resulting from the one-way southbound conversion of 9th Street is provided below.

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. If future conditions merit implementation of this mitigation measure (i.e., if Halletts Point is not developed at the time when a signal is deemed necessary at this location), a signal warrant analysis will be prepared and submitted to NYCDOT for their review.

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. If future conditions merit implementation of this mitigation measure (i.e., if Halletts Point is not developed at the time when a signal is deemed necessary at this location), a signal warrant analysis will be prepared and submitted to NYCDOT for their review.

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 approximately 100 feet to the existing bus stop 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. This impact 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 to daylight the approach; installing “No Standing Anytime” regulations along the eastbound approach downstream receiving segment to provide two receiving lanes; restriping the eastbound approach downstream receiving segment from one 17-foot wide receiving lane with a ten-foot wide channel zone to one 14-foot wide receiving lane and one 13-foot wide receiving lane; and modifying signal timing in the AM peak hour.

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. The weekday midday and PM peak hour impacts could be fully mitigated through signal timing modifications. The weekday AM peak hour impact would only be partially mitigated.

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 31st Street

Impacts would occur on the Hoyt Avenue North westbound approach during the weekday AM peak hour and could be fully mitigated through implementation of the following measures: installing “No Standing 7AM-10AM Mon-Fri” regulations along the southbound approach for 250 feet to daylight the approach; and modifying signal timing.

Astoria Boulevard North and 32nd Street

Impacts would occur on the westbound approach of the Astoria Boulevard North ramp during the weekday AM and PM peak hours 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. If future conditions merit implementation of this mitigation measure (i.e., if Halletts Point is not developed at the time when a signal is deemed necessary at this location), a signal warrant analysis will be prepared and submitted to NYCDOT for their review

Hoyt Avenue North and 21st Street

Impacts would occur on the 21st Street northbound through approach during the weekday AM and PM peak hours and on the Hoyt Avenue North westbound left-turn movement and 21st Street southbound approach during the AM peak hour. These impacts could be partially mitigated through implementation of the following measures: installing "No Standing 7AM-10AM Mon-Fri" regulations along the southbound approach for 250 feet to daylight the approach; restriping the westbound approach from one five-foot wide bike lane, one 11-foot wide through-right lane, and two 11-foot wide left-turn lanes to one five-foot wide bike lane, one 11-foot wide through-right lane, and two 12-foot wide left-turn lanes; and modifying signal timing during the weekday PM peak hour.

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 in the midday and PM peak hours and partially mitigated in the weekday AM peak hour 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.

Saturday Traffic

As discussed in Chapter 13, "Transportation," subsequent to issuance of the DEIS, and in response to further NYCDOT comments, a Saturday transportation analysis was prepared, including a RWCDs future analysis and an alternate future analysis (without Halletts Point). Saturday peak hour traffic conditions were analyzed at thirteen of the 30 study area intersections, as requested by NYCDOT. Potential significant adverse traffic impacts were identified at seven locations under the future With-Action condition, with slightly fewer (six) impact locations anticipated absent the Halletts Point development. This section describes traffic improvements that could help mitigate those Saturday traffic impacts. These measures were refined in consultation with the lead agency, DCP, and NYCDOT between the Draft and Final EIS.

Table 20-8 as well as Figures 20-3 and 20-4 summarize the potential significant adverse Saturday traffic impacts under both future With-Action conditions (the RWCDs With-Action condition and the Alternate

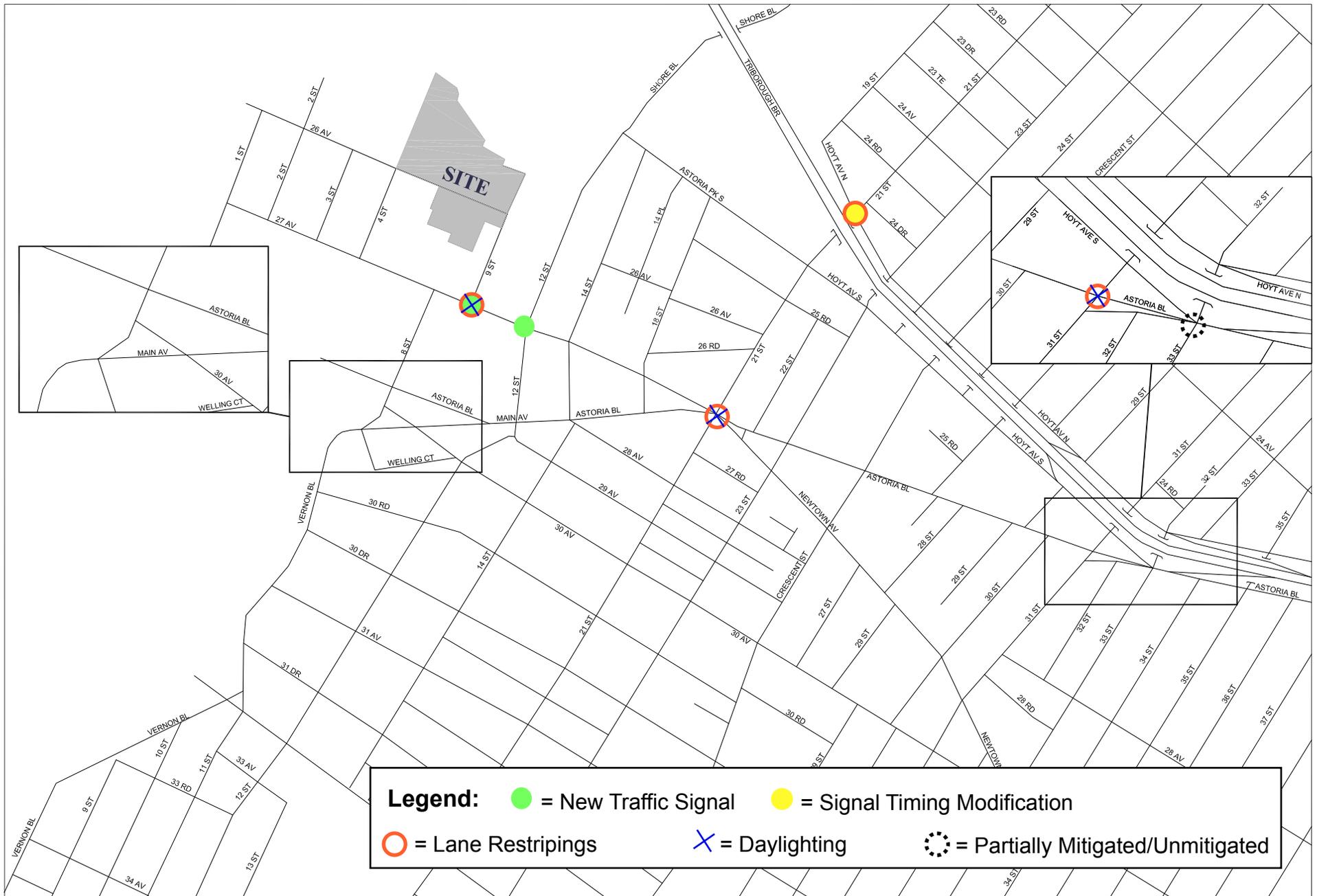


Astoria Cove

This figure is new to the FEIS.

Figure 20-3

RWCDS With-Action Condition Saturday Mitigation Measures



Astoria Cove

This figure is new to the FEIS.

Figure 20-4

Alternate With-Action Condition Saturday Mitigation Measures

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. As outlined in the table, under the RWCDs With-Action condition, seven of the 13 analyzed intersections would experience significant adverse impacts, three of which could be fully mitigated, three of which could be partially mitigated, and one of which could not be mitigated. In comparison, under the Alternate With-Action condition, six of the 13 analyzed intersections would experience significant adverse impacts, five of which could be fully mitigated and one of which could not be mitigated.

Table 20-8: Comparison of Saturday Traffic Impact Mitigation under the RWCDs With-Action Condition and the Alternate With-Action Condition

	With-Action Condition	Alternate With-Action Condition
No significant impact	6	7
Impact could be fully mitigated	3	5
Impact could be partially mitigated	3	0
Unmitigated impact	1	1

This table is new to the FEIS.

The overall finding of the Saturday traffic mitigation analysis is that in the RWCDs With-Action condition nine of the 13 analyzed intersections would either not experience significant impacts or could be fully mitigated with readily implementable traffic improvement measures, including the installation of 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. The remaining four analyzed intersections would either be unmitigated or partially mitigated in the Saturday midday peak hour and, therefore, would be considered unavoidable significant adverse impacts. In comparison, should Halletts Point not be completed by the 2023 Build Year, 12 of the 13 analyzed intersections would either not experience significant impacts or could be fully mitigated with readily implementable traffic improvement measures during the Saturday midday peak hour. The one remaining analyzed intersections would be unmitigated in the Saturday midday peak hour and, therefore, would be considered an unavoidable significant adverse impact. Illustrative overviews of the proposed Saturday mitigation measures both with and without the nearby Halletts Point development are shown in Figures 20-3 and 20-4. These measures represent standard capacity improvements that are typically implemented by NYCDOT.

Tables 20-9 and 20-10 provide a comparison of the v/c ratios, delays, and levels of service (LOS) at potentially impacted intersections with implementation of these Saturday mitigation measures to the No-Action and With-Action conditions; Table 20-9 corresponds to the RWCDs With-Action condition (with the nearby Halletts Point development and implementation of their associated weekday traffic mitigation measures, where applicable), and Table 20-10 presents 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 Saturday 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, seven of the 13 analyzed intersections would experience significant adverse impacts during one or more weekday peak hour. Impacts at three of the intersections could be fully mitigated with traffic capacity improvements, and impacts at four intersections could not be mitigated or could only be partially mitigated during the Saturday midday peak hour. A discussion of the proposed mitigation measures under the RWCDs With-Action condition is presented below.

Table 20-9: RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Saturday Midday Peak Hour

Intersection	Lane Group	RWCDS No-Action Condition			RWCDS With-Action Condition			RWCDS With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
2. 27 th Avenue & 4 th Street ¹	EB-LT	0.56	16.4	B	0.56	16.4	B	0.53	14.0	B	Partially Mitigated Modify signal timing: Shift 3s of green from the SB phase to the EB/WB phase [SB phase green shifts from 31s to 28s; EB/WB phase green shifts from 49s to 52s].
	WB-T	0.44	13.2	B	0.44	13.2	B	0.41	11.3	B	
	WB-R	0.20	11.4	B	1.23	138.9	F*	1.19	118.7	F*	
	SB-LR	0.06	20.0	C	0.06	20.0	C	0.07	22.1	C	
3. 27 th Avenue & 8 th Street ¹	EB-T	0.34	13.1	B	0.34	13.1	B	0.34	13.1	B	-Install “No Standing Anytime” regulations to daylight the WB approach along 27 th Avenue between 8 th and 9 th Streets. -Install “No Standing Anytime” regulations along the WB receiving lane for 100 feet to allow vehicles to realign with the receiving end. -Shift the WB approach centerline 1-foot to the south and restripe the WB approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn lane, and one 10-foot wide receiving lane.
	EB-R	0.26	12.3	B	0.26	12.3	B	0.26	12.3	B	
	WB-LT	0.63	19.0	B	1.21	130.6	F*	-	-	-	
	WB-L	-	-	-	-	-	-	0.29	13.1	B	
	WB-T	-	-	-	-	-	-	0.72	20.7	C	
	NB-L	0.22	21.1	C	0.36	23.0	C	0.37	23.2	C	
7. Astoria Boulevard & 21 st Street	EB-L	0.35	35.3	D	0.39	35.9	D	0.39	35.9	D	Partially Mitigated Modify signal timing: Shift 3s of green from the WB phase to the NB/SB phase [WB phase green shifts from 34s to 31s; NB/SB phase green shifts from 37s to 40s; EB phase green time remains the same].
	EB-TR	0.66	39.9	D	0.80	44.3	D	0.80	44.3	D	
	WB-L	0.67	40.2	D	0.67	40.2	D	0.73	43.9	D	
	WB-TR	0.45	35.8	D	0.62	38.3	D	0.69	41.4	D	
	NB-LT	1.08	90.5	F	1.39	223.6	F*	1.24	153.6	F*	
	NB-R	0.52	36.6	D	0.52	36.6	D	0.47	33.6	C	
	SB-LT	0.91	40.4	D	0.93	41.4	D	0.83	36.6	D	
15. Hoyt Avenue S./Astoria Boulevard & 33 rd Street	Astoria Blvd (EB-LT)	1.27	160.5	F	1.38	208.1	F*	N/A	Unmitigatable Impact		
	NB-TR	0.92	36.1	D	0.92	36.1	D				
	NB-R	1.10	83.3	F	1.10	83.3	F				
	Hoyt Ave (EB-LT)	1.00	43.4	D	1.00	43.4	D				
18. Astoria Boulevard & 32 nd Street	WB (Main)-T	0.38	8.1	A	0.38	8.1	A	0.36	6.7	A	Modify signal timing: Shift 3s of green from the NB phase to the WB phase [NB phase green shifts from 22s to 19s; WB phase green shifts from 58s to 61s].
	WB (Ramp)-T	1.05	50.8	D	1.11	72.4	E*	1.05	50.3	D	
	NB-L	0.49	29.8	C	0.50	29.9	C	0.58	33.0	C	
	SB-R	0.02	25.9	C	0.02	25.9	C	0.02	28.2	C	

Table 20-9 (continued): RWCDS With-Action Condition Mitigation Traffic Levels of Service Comparison—Saturday Midday Peak Hour

Intersection	Lane Group	RWCDS No-Action Condition			RWCDS With-Action Condition			RWCDS With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
24. Hoyt Avenue N. & 21 st Street	EB-L	0.05	40.9	D	0.05	40.9	D	0.05	40.9	D	<p><u>Partially Mitigated</u> Restripe the WB approach from one 5-foot wide bike lane, one 11-foot wide through-right lane, and two 11-foot wide left-turn lanes to one 5-foot wide bike lane, one 11-foot wide through-right lane, and two 12-foot wide left-turn lanes.</p>
	EB-R	0.27	44.6	D	0.27	44.6	D	0.27	44.6	D	
	WB-L	0.89	43.9	D	0.96	49.8	D*	0.92	46.1	D	
	WB-TR	0.27	15.1	B	0.27	15.1	B	0.27	15.1	B	
	NB-L	0.28	29.1	C	0.29	29.5	C	0.29	29.5	C	
	NB-T	0.99	70.7	E	1.05	87.2	F*	1.05	87.2	F*	
26. 27 th Avenue & 9 th Street ¹	SB-TR	0.74	33.9	C	0.77	34.7	C	0.77	34.7	C	<p>-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 50s; SB phase green time is 30s; all phases have 3s of amber and 2s of all red time]. -Install “No Standing Anytime” regulations along the east curb of 9th Street for 150 feet to allow for a left-turn lane. -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 20-foot wide right-turn lane with parking and one 12-foot wide left-turn lane for 100 feet. -Shift the EB approach centerline 1 foot to the south and restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes. [Two-way (NB/SB) 9th Street would be converted to a one-way SB roadway between 26th and 27th Avenue as a result of the proposed mitigation measures].</p>
	EB-LT	0.01	8.4	A	0.01	9.3	A	-	-	-	
	EB-T	-	-	-	-	-	-	0.46	13.6	B	
	WB-T	-	-	-	-	-	-	0.87	30.0	C	
	SB-LR	0.27	19.1	C	1.95	477.0	F*	-	-	-	
	SB-L	-	-	-	-	-	-	0.73	35.4	D	
	SB-R	-	-	-	-	-	-	0.19	22.3	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 RWCDS With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table is new to the FEIS.

Table 20-10: Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Saturday Midday Peak Hour

Intersection	Lane Group	RWCDS No-Action Condition			RWCDS With-Action Condition			Alternate With-Action Condition with Mitigation			Mitigation Measures
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS	
4. 27 th Avenue & 12 th Street	EB-LT	0.04	8.0	A	0.07	8.9	A	0.51	11.7	B	Install a traffic signal with 90-second 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	-	-	-	-	-	-	0.60	13.7	B	
	NB-LTR	0.29	15.3	C	0.64	44.3	E*	0.41	29.7	C	
5. 27 th Avenue & 14 th Street	EB-TR	N/A	9.6	A	N/A	18.4	C	0.64	22.4	C	Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 40s; NB phase green time is 40s; all phases have 3s of amber and 2s of all red time]. (Measures reflect improvements needed for the weekday AM and PM peak periods).
	WB-LT	N/A	9.0	A	N/A	16.9	C	0.51	19.2	B	
	SB-LTR	N/A	9.9	A	N/A	13.3	B	0.46	20.2	C	
7. Astoria Boulevard & 21 st Street	EB-L	0.26	34.0	C	0.33	35.0	C	0.33	35.0	C	<p>-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.</p> <p>-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, one 12-foot wide receiving lane, and one 15-foot wide receiving lane for 125 feet from the intersection.</p> <p>-Shifts 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 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 intersections.</p>
	EB-TR	0.37	35.1	D	0.58	38.4	D	0.58	38.3	D	
	WB-L	0.64	39.4	D	0.67	40.2	D	0.67	40.2	D	
	WB-TR	0.32	34.1	C	0.54	37.0	D	0.54	37.0	D	
	NB-LTR	1.05	79.7	E	1.97	481.9	F*	-	-	-	
	NB-LT	-	-	-	-	-	-	1.15	119.0	F	
	NB-R	-	-	-	-	-	-	0.52	36.6	D	
	SB-LTR	1.05	65.2	E	1.46	249.6	F*	-	-	-	
SB-LT	-	-	-	-	-	-	0.90	40.3	D		
14. Astoria Boulevard & 31 st Street	SB-R	-	-	-	-	-	-	0.55	35.0	D	
	EB-LTR	1.16	105.4	F	1.32	176.3	F*	0.67	23.6	C	<p>-Install "No Standing Anytime" regulations along the EB approach for 200 feet to allow for two moving lanes at the EB approach.</p> <p>-Restripe the EB 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.</p>
	NB-T	0.76	42.1	D	0.76	42.1	D	0.76	42.1	D	
	NB-R	0.60	10.1	B	0.60	10.1	B	0.60	10.1	B	
	SB-T	0.55	17.7	B	0.55	17.7	B	0.55	17.7	B	
SB-R	0.37	15.2	B	0.37	15.2	B	0.37	15.2	B		

Table 20-10 (continued): Alternate With-Action Condition Mitigation Traffic Levels of Service Comparison—Saturday Midday Peak Hour

Intersection	Lane Group	RWCDs No-Action Condition			RWCDs With-Action Condition			Alternate 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 S./Astoria Boulevard & 33 rd Street	Astoria Blvd (EB-LT)	1.02	58.2	E	1.23	140.8	F*	N/A		Unmitigatable Impact	
	NB-TR	0.89	35.1	D	0.92	36.1	C				
	NB-R	1.05	64.4	E	1.10	83.3	F				
	Hoyt Ave (EB-LT)	0.93	33.6	C	0.98	39.0	D				
24. Hoyt Avenue N. & 21 st Street	EB-L	0.05	40.9	D	0.05	40.9	D	0.05	40.9	D	-Restripe the WB approach from one 5-foot wide bike lane, one 11-foot wide through-right lane, and two 11-foot wide left-turn lanes to one 5-foot wide bike lane, one 11-foot wide through-right lane, and two 12-foot wide left-turn lanes. -Modify signal timing: Shift 2s of green from the WB lag phase to the NB/SB phase [WB lag phase green shifts from 38s to 36s; NB/SB phase green shifts from 45s to 47s; EB/WB phase green time remains the same].
	EB-R	0.27	44.6	D	0.27	44.6	D	0.27	44.6	D	
	WB-L	0.73	38.2	D	0.79	39.9	D	0.81	41.7	D	
	WB-TR	0.27	15.1	B	0.27	15.1	B	0.28	16.2	B	
	NB-L	0.27	28.8	C	0.28	29.2	C	0.25	27.1	C	
	NB-T	0.93	58.4	E	0.99	71.2	E*	0.95	59.7	E	
	SB-TR	0.72	33.4	C	0.75	34.1	C	0.72	32.1	C	
26. 27 th Avenue & 9 th Street ¹	EB-LT	0.00	7.8	A	0.01	8.6	A	-	-	-	-Install a traffic signal with 90-second cycle length and two phases [EB/WB phase green time is 48s; SB phase green time is 32s; all phases have 3s of amber and 2s of all red time]. -Install “No Standing Anytime” regulations along the east curb of 9 th Street for 150 feet to allow for a left-turn lane. -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 20-foot wide right-turn lane with parking and one 12-foot wide left-turn lane for 100 feet. -Shift the EB approach centerline 1 foot to the south and restripe the EB approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes. [Two-way (NB/SB) 9 th Street would be converted to a one-way SB roadway between 26 th and 27 th Avenue as a result of the proposed mitigation measures].
	EB-L	-	-	-	-	-	-	0.24	13.5	B	
	WB-T	-	-	-	-	-	-	0.71	23.3	C	
	SB-LR	0.15	12.2	B	1.16	128.6	F*	-	-	-	
	SB-L	-	-	-	-	-	-	0.67	29.2	C	
	SB-R	-	-	-	-	-	-	0.16	18.7	B	

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 Alternate With-Action Condition with Mitigation analysis reflects volumes diverted due to mitigation measures proposed for intersection 26.

This table is new to the FEIS

27th Avenue and 4th Street

Impacts would occur on the 27th Avenue westbound approach and could be partially mitigated through signal timing modifications.

27th Avenue and 8th Street

Impacts would occur on the 27th Avenue westbound approach and could be fully mitigated through implementation of the following measures: installing “No Standing Anytime” regulations to daylight the westbound approach along 27th Avenue between 8th and 9th Streets; installing “No Standing Anytime” regulations along the westbound receiving lane for 100 feet to allow vehicles to realign with the receiving end; shifting the westbound approach centerline one foot to the south and restriping the westbound approach from one 11-foot wide travel lane with parking and one 11-foot wide receiving lane to one 10-foot wide through-only lane, one 10-foot wide left-turn only lane, and one 10-foot wide receiving lane.

27th Avenue and 9th Street

Impacts would occur on the 9th Street southbound approach and could be fully mitigated through implementation of the same mitigation measures proposed to mitigate the weekday peak hour impacts, as follows: installing a traffic signal; installing “No Standing Anytime” regulations along the east curb of 9th Street for 150 feet to allow for a left-turn lane; restriping the 9th Street 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 20-foot wide right-turn lane with parking and one 12-foot wide left-turn lane for 100 feet; and shifting the eastbound approach centerline one foot to the south and restripe the eastbound approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes. These proposed parking regulation and restriping measures would convert 9th Street from two-way (southbound/northbound) to one-way (southbound) between 26th and 27th Avenues.

Astoria Boulevard and 21st Street

Impacts would occur on the 21st Street northbound left-turn and through movement and southbound right-turn movements and could be partially mitigated through signal timing modifications.

Hoyt Avenue South/Astoria Boulevard and 33rd Street

Impacts would occur on the Astoria Boulevard eastbound approach and would be unmitigated.

Astoria Boulevard North and 32nd Street

Impacts would occur on the Astoria Boulevard North ramp’s westbound approach and could be fully mitigated through signal timing modifications.

Hoyt Avenue North and 21st Street

Impacts would occur at the Hoyt Avenue North westbound left-turn movement and 21st Street northbound through movement and could be partially mitigated by restriping the westbound approach from one five-foot wide bike lane, one eleven-foot wide through-right lane, and two 11-foot wide left-turn lanes to one five-foot wide bike lane, one 11-foot wide through-right lane, and two 12-foot wide left-turn lanes. This mitigation measure was similarly proposed for the weekday peak hour impacts, as presented above.

Alternate With-Action Condition (without Halletts Point)

Under the Alternate With-Action condition, six of the 13 analyzed intersections would experience significant adverse impacts during one or more weekday peak hour. Impacts at five of the intersections could be fully mitigated with traffic capacity improvements, and impacts at one intersection could not be mitigated during the Saturday midday peak hour. A discussion of the proposed mitigation measures under the Alternate With-Action condition is presented below.

27th Avenue and 9th Street

Impacts would occur on the 9th Street southbound approach and could be fully mitigated through implementation of the same mitigation measures proposed to mitigate the weekday peak hour impacts, as follows: installing a traffic signal; installing “No Standing Anytime” regulations along the east curb of 9th Street for 150 feet to allow for a left-turn lane; restriping the 9th Street 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 20-foot wide right-turn lane with parking and one 12-foot wide left-turn lane for 100 feet; and shifting the eastbound approach centerline one foot to the south and restripe the eastbound approach from one 11-foot wide travel lane and one 19-foot wide receiving lane with parking to one 10-foot wide through-only lane and two 10-foot wide receiving lanes. These proposed parking regulation and restriping measures would convert 9th Street from two-way (southbound/northbound) to one-way (southbound) between 26th and 27th Avenues.

27th Avenue and 12th Street

Impacts would occur on the northbound approach and could be fully mitigated by installing a traffic signal. This is the same mitigation measure proposed to mitigate the weekday peak hour impacts, presented above.

Astoria Boulevard and 21st Street

Impacts would occur on the 21st Street northbound and southbound approaches and could be fully mitigated through implementation of the following measures: 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, one 12-foot wide receiving lane, and one 15-foot wide receiving lane for 125 feet from the intersection; 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. These are the same mitigation measures proposed to mitigate the weekday peak hour impacts, presented above.

Astoria Boulevard and 31st Street

Impacts would occur on the Astoria Boulevard eastbound approach and could be fully mitigated through implementation of the following measures: installing “No Standing Anytime” regulations along the eastbound approach for 200 feet to allow for two moving lanes at the approach; 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. These are the same mitigation measures proposed to mitigate the weekday peak hour impacts, presented above.

Hoyt Avenue South/Astoria Boulevard and 33rd Street

Impacts would occur at the Astoria Boulevard eastbound approach. This impact could not be mitigated.

Hoyt Avenue North and 21st Street

Impacts would occur at the 21st Street northbound through-movement and could be fully mitigated through implementation of the following measures: restriping the westbound approach from one five-foot wide bike lane, one 11-foot wide through-right lane, and two 11-foot wide left-turn lanes to one five-foot wide bike lane, on 11-foot wide through-right lane, and two 12-foot wide left-turn lanes; and modifying signal timing. These are the same mitigation measures proposed to mitigate the weekday peak hour impacts, presented above.

Implementation

Each of the traffic capacity improvements described above fall within the jurisdiction of NYCDOT for implementation. An analysis was 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. Because the proposed project would be developed sequentially, several of the potential significant adverse impacts on traffic conditions in the study area are expected to occur earlier in the project's 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, daylighting, and signal timing modification measures proposed at intersections where significant adverse impacts are anticipated, it is anticipated that some of these physical improvements could likely be needed upon completion and occupancy of Building 3, in the second phase of the proposed project's development, due both to traffic introduced by the proposed project and anticipated No-Action traffic conditions. Completion of the second phase of the proposed project's development corresponds with the construction of approximately 482 residential units, approximately 24,051 gsf of local retail space, approximately 302 accessory parking spaces, and the build-out of 26th Avenue to 9th Street, as well as the 8th Street Mews and a portion of the proposed waterfront open space. Therefore to improve traffic conditions in the study area, mitigation measures identified in Tables 20-2 through 20-7, 20-9, and 20-10 may have to be advanced upon completion and occupancy of Building 3 (analyzed as 2019).

It should be noted that the mitigation measures proposed for the 2023 With-Action conditions were developed by incorporating the traffic activities generated by the full build-out of the proposed project together with anticipated background growth, as well as completion of area No-Action developments. Therefore, there is a possibility that implementing the proposed mitigation measures earlier in the proposed project's development could "over-mitigate" the traffic conditions at some of the impact locations.

As part of the traffic mitigation, the Applicant has committed to conduct a traffic monitoring plan (TMP) upon completion and occupancy of Building 3 in the second phase of the proposed project's development

(analyzed as 2019) and the completion of Building 1, which corresponds to the proposed project's full build out (analyzed as 2023). The TMP will incorporate any future street network changes implemented in conjunction with DCP's Western Queens Transportation Study, as warranted. The Applicant will submit for NYCDOT's review and approval a proposed TMP scope for the monitoring of the interim and full build-out conditions, prior to undertaking these studies.

Effect of Traffic Mitigation on Parking

During the daytime hours, when parking demand in residential neighborhoods is typically the lowest (refer to Chapter 13, "Transportation"), implementation of the RWCDs With-Action condition mitigation measures would result in the loss of approximately 64 parking spaces during the weekday AM peak hour, 27 parking spaces in the weekday midday peak hour, 84 parking spaces in the weekday PM peak hour, and 27 parking spaces in the Saturday midday peak hour. Implementation of the alternate mitigation measures would result in the loss of approximately 93 parking spaces in the weekday AM peak hour, 67 parking spaces in the weekday midday peak hour, 90 parking spaces in the weekday PM peak hour, and 62 parking spaces in the Saturday midday peak hour. 9th Street would lose up to approximately 12 parking spaces in any daytime peak hour 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, which extends from 4th Street to 33rd Street (east-west) and from Hoyt Avenue North to Broadway (north-south).

During the overnight hours, when parking demand in residential neighborhoods is typically the highest, implementation of the proposed mitigation measures would result in the loss of substantially fewer parking spaces. Under the RWCDs With-Action condition, seven parking spaces would be displaced along the 9th Street southbound approach at the intersection of 27th Avenue and 9th Street; and eight spaces would be displaced along the Crescent Street southbound approach at the intersection of Astoria Boulevard and Crescent Street during the overnight hours. This would represent 80 percent fewer displaced parking spaces, as compared to the daytime peak hours. Under the Alternate With-Action condition, over 55 percent fewer parking spaces would be displaced, as compared to the maximum number of spaces displaced during the daytime peak hours. The overnight parking space reductions under the Alternate With-Action condition would be scattered throughout the traffic study area. Given the relatively small number of parking spaces that would be displaced during the overnight hours, when parking demand in residential neighborhoods typically peaks, and the large area over which the parking space reduction would occur, any potential on-street parking shortfall resulting from the recommended traffic mitigation would not be considered a significant adverse impact under CEQR Technical Manual criteria.

No designated truck loading/unloading zones or bus layover space would be affected by the proposed parking modifications for mitigation.

Effects of 27th Avenue/9th Street Mitigation on Analyzed Intersections

To fully mitigate the significant adverse impacts at 27th Avenue and 9th Street, a new signal and daylighting and restriping measures are proposed. Collectively, these proposed parking regulation and restriping measures would convert 9th Street from two-way (SB/NB) to one-way (SB) between 26th and 27th Avenues. As a result, 9th Street northbound traffic volumes would be diverted to 4th Street and would access 9th Street via 26th Avenue. An analysis of the anticipated increased traffic volumes at the intersections of 27th Avenue and 8th Street; 27th Avenue and 4th Street; 26th Avenue and 4th Street; and 26th Avenue and 9th Street was conducted. In conjunction with the 9th Street one-way southbound conversion and to accommodate the resultant diverted traffic, one second of signal timing modification would be implemented at the intersection of 27th Avenue and 4th Street in the weekday midday peak hour. With

implementation of this signal timing modification, no new significant adverse traffic impacts would result.

Effect of Traffic Mitigation on Pedestrian Operations

As proposed traffic mitigation measures may have direct implications on pedestrians, pedestrian safety and operational conditions must be taken into consideration when assessing possible improvements. As described in Chapter 13, “Transportation,” no significant adverse pedestrian impacts are anticipated in the future With-Action condition. As no traffic mitigation measures that could affect pedestrian operations (i.e., curb or crosswalk modifications; or signal timing modifications) 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 southbound 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 of 30th 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 southbound 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.

In consultation with DCP (the lead agency) and NYCT, and in consideration of the feasibility and practicality of potential mitigation measures, it was determined that the identified significant adverse 30th Avenue Station fare array and street stair impacts could be mitigated by relocating the proposed N/Q-line shuttle stop from the 30th Avenue Station to the Astoria Boulevard Station. It is anticipated that the Astoria Boulevard mitigation shuttle route would operate via Hoyt Avenue South en route to the station and via Astoria Boulevard/27th Avenue en route to the project site.

While the Proposed Action would not result in any significant adverse subway line haul impacts, NYCT expressed concerns about the future capacity of the N/Q lines due to the proposed project and other recently approved projects in the area. To address this concern, the Applicant has committed to provide

two mitigation shuttle routes: one to the Astoria Boulevard (N/Q) Station, and a second route to the 21st Street-Queensbridge (F) Station. It is anticipated that the 21st Street-Queensbridge (F) Station mitigation shuttle route would operate via 8th Street/Vernon Boulevard. LOS analyses at these subway stations indicated that they will operate with ample capacity in the future With-Action condition with implementation of the aforementioned alternate shuttle route mitigation measure.

Implementation

As the identified subway station impacts would occur upon completion and occupancy of Building 1 in the final phase of the project's development, the proposed shuttle rerouting mitigation would be required at this time. Implementation of the subway mitigation measure would be outlined in the Restrictive Declaration, to be recorded.

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 the aforementioned 30th Avenue Station mitigation measures will be reevaluated.

Effects of Subway Shuttle Rerouting on Traffic

As the shuttle service would be re-routed as a mitigation measure from the 30th Avenue (N/Q) Station to the Astoria Boulevard (N/Q) and 21st Street-Queensbridge (F) Stations, a sensitivity analysis was conducted to address the implications on future traffic conditions. As presented in the Chapter 16, "Transportation," approximately three shuttles, making up to 11 roundtrips during a weekday peak hour, are anticipated to serve the 30th Avenue Station under the Proposed Action. Under the proposed shuttle rerouting mitigation, approximately three and two shuttles, making up to eight and seven roundtrips, are anticipated to serve the Astoria Boulevard and 21st Street-Queensbridge Stations, respectively. This would represent an increase of four additional shuttle roundtrips over the With-Action condition analyzed in Chapter 16; an inbound/outbound vehicle trip increase over the Proposed Action traffic increment of no more than approximately 2.4 percent. Given this minimal level of increase, the proposed shuttle rerouting mitigation measure is not expected to significantly affect future With-Action traffic conditions.

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 20-11 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 20-11: 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	<u>9</u>	<u>127</u>	-118	3	<u>44</u>
Weekday PM Peak Hour							
Q103	Northbound	6	10	<u>127</u>	-117	3	<u>45</u>
	Southbound	4	26	<u>81</u>	-55	2	<u>53</u>

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. 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 during the construction traffic peak period. 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 19-6 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 partially mitigated by modifying signal timing.
- **27th Avenue at 8th Street:** The significant adverse impact at the 27th Avenue westbound approach would be fully mitigated through lane restriping and daylighting measures.
- **27th Avenue at 9th Street:** The 9th Street southbound approach impact could be fully mitigated by installing a traffic signal along with daylighting and restriping. These mitigation measures would covert two-way (northbound/southbound) 9th Street to a one-way southbound roadway between 26th and 27th Avenues.