A. INTRODUCTION

In accordance with the *City Environmental Quality Review* (CEQR) *Technical Manual*, where significant adverse impacts are identified, mitigation measures to reduce or eliminate the impacts to the fullest extent practicable are developed and evaluated. As discussed in previous chapters of this EIS, the Proposed Actions have the potential to result in significant adverse impacts to community facilities (elementary schools and early childhood programs), open space (active open space), transportation, noise, and construction (traffic and noise)**.**

In accordance with the *City Environmental Quality Review* (CEQR) *Technical Manual*, where significant adverse impacts are identified, mitigation measures to reduce or eliminate the impacts to the fullest extent practicable are developed and evaluated. This chapter considers mitigation measures to address the significant adverse impacts generated by the Proposed Actions. Measures to further mitigate significant adverse impacts will continue to be evaluated between the DEIS and FEIS. Therefore, the FEIS may include additional information and commitments on all practicable and feasible mitigation measures to be implemented with the Proposed Actions.

B. PRINCIPAL CONCLUSIONS

Community Facilities

Elementary Schools

As discussed in **Chapter 4, "Community Facilities and Services,"** the Proposed Actions would result in significant adverse impacts on public elementary schools. According to the updated 2021 *CEQR Technical Manual*, a significant adverse elementary school impact may result if a proposed action would result in both of the following: (1) A utilization rate of elementary schools that is equal to or greater than 100% in the With-Action Condition; and (2) 100 or more new students generated by the proposed development past the 100% utilization rate. As discussed in **Chapter 4**, the demand for elementary school seats with Community School District 30, Sub-District 3 would increase to 141.06 percent compared to the No-Action condition of 136.4 percent. Under the RWCDS, the Proposed Actions would introduce approximately 181 elementary school students. As such, the Proposed Actions would result in significant adverse impacts on elementary schools. The significant adverse elementary school impact would occur with completion of 909 residential units, and therefore would occur upon completion and occupancy of Tower 3 in the last phase of the Proposed Project's construction.

Potential mitigation measures are currently being explored by the Applicant in consultation with the lead agency, the New York City Department of City Planning (DCP), the New York City School Construction Authority (SCA), and the New York City Department of Education (DOE) and will be refined between the DEIS and FEIS. If feasible mitigation is found, the impacts upon elementary school seats in the study area will be considered mitigated. Absent the implementation of such measures, the Proposed Actions could result in an unmitigated significant adverse impact to elementary schools.

Early Childhood Programs

As described in **Chapter 4, "Community Facilities and Services,"** the Proposed Actions would result in significant adverse impacts on publicly funded early childhood programs. According to the *CEQR Technical Manual*, a significant adverse child care center impact could result if an action results in: (1) a collective utilization rate greater than 100 percent in the With-Action condition; and (2) the demand constitutes an increase of five percent or more in the collective capacity of early childhood programs serving the study area over the No-Action condition. Under the RWCDS, the Proposed Actions would introduce approximately 46 children potentially eligible for subsidized child care to the study area. The analysis of publicly funded early childhood programs found that under the With-Action condition, the child care study area would experience a utilization rate of 193.9 percent, an increase of 46.5 percentage points over No-Action conditions. As such, the Proposed Actions would result in significant adverse impacts on publicly funded early childhood programs. The significant adverse early childhood program impact would occur with completion of 34 affordable residential units, and therefore would occur upon completion and occupancy of Tower 1 in the first phase of the Proposed Project's construction.

Consideration of providing additional child care facility capacity and/or other measures is being explored in consultation with the lead agency, the DCP, and the New York City Department of Education (DOE) and will be further explored between the DEIS and FEIS.

Open Space

As described in **Chapter 5, "Open Space,"** the Proposed Actions would result in a significant adverse active open space impact. According to the *CEQR Technical Manual*, a significant adverse open space impact may occur if a proposed action would reduce the open space ratio by more than five percent in areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents over the No-Action conditions. The RWCDS for the Proposed Actions would result in approximately 1,665 residential units, which would place new demands on the area's open space resources. Given the anticipated decrease in the active open space ratio in the study area, which would exceed five percent, the Proposed Actions would result in a significant adverse impact to the active open space resources in the study area. The significant adverse active open space impact would occur with completion of 622 residential units, and therefore would occur upon completion and occupancy of Tower 2 in the second phase of the Proposed Project's construction.

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. Potential partial mitigation measures for this significant adverse impact are currently being explored by the Applicant in consultation with the lead agency, DCP, and the New York City Department of Parks and Recreation (DPR). As a part of those discussions, DPR has expressed a community need to improve and renovate the existing Triborough Bridge Playground B, located approximately 0.5 miles east of the Project Area, which could increase utility and provide additional active open space facilities in the neighborhood. Improvements and/or renovations at the Triborough Bridge Playground B as a potential mitigation measure will be further refined between the DEIS and FEIS.

Additional mitigation measures will be explored further by the Applicant in consultation with DCP and the DPR between the DEIS and FEIS. If no additional feasible mitigation measures are identified, the impacts would be considered partially mitigated.

Transportation

Traffic

As described in **Chapter 11, "Transportation,"** the Proposed Actions would result in significant adverse impacts at 20 study area intersection during one or more analyzed peak hour during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours. Implementation of traffic engineering improvements, such as signal timing changes would provide mitigation for most of the anticipated traffic impacts. Implementation of the recommended traffic engineering improvements is subject to review and approval by the New York City Department of Transportation (DOT) and will be further refined between the DEIS and FEIS. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative mitigation measure will be identified, if possible. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

Assuming all the proposed mitigation measures were implemented, **Table 18-1** shows that significant adverse impacts would be fully mitigated at 11 lane groups in the weekday AM peak hour, 4 lane groups in the midday peak hour, 7lane groups in the weekday PM peak hour, and 6lane groups in the Saturday peak hour. Intersections where all impacts would be fully mitigated would total 6, 4, 5, and 3 during these same periods, respectively. **Table 18-2** provides a more detailed summary of the intersections and lane groups that would have unmitigated significant adverse traffic impacts. In total, impacts to one or more lane groups would remain unmitigated in one or more peak hours at 16 intersections. The Applicant will commit to conducting a transportation monitoring program (TMP) at Projected Development Site 1, after the completion of Phases 1 and 2 and before the final Phase, to better estimate the transportation planning factors, the full build traffic demand generated by the Proposed Actions, and any future demand from No-Action developments. The TMP will revise traffic analyses where necessary to determine the likelihood of potential traffic impacts.

TABLE 18-1
Summary of Lane Groups/Intersections with Significant Adverse Traffic Impacts

Peak Hour	Lane Groups/ Intersections Analyzed	Lane Groups/ Intersections With No Significant Impacts	Lane Groups/ Intersections With Significant Impacts	Mitigated Lane Groups/ Intersections	Unmitigated Lane Groups/ Intersections
Weekday AM	91/26	59/8	32/18	11/6	21/12
Weekday Midday	89/26	75/16	14/10	4/4	10/6
Weekday PM	89/26	59/9	30/17	7/5	23/12
Saturday Midday	91/26	71/14	20/12	6/3	14/9

TABLE 18-2
Lane Groups With Unmitigated Significant Adverse Traffic Impacts

	Peak Hour			
	Weekday AM	**Weekday Midday**	**Weekday PM**	**Saturday**
Signalized Intersections				
26th Avenue & 21st Street				
27th Avenue & 4th Street				
27th Avenue & 8th Street			WB-T, NB-L	
27th Avenue & 9th Street	WB-T, SB-L		WB-T, SB-L	WB-T, SB-L
27th Avenue & 12th Street	EB-LT		EB-LT, WB-TR	EB-LT
27th Avenue & 14th Street			WB-LT	
Astoria Boulevard & 8th Street			NB-LT	
Astoria Boulevard & 18th Street	SB-LR			
Astoria Boulevard & 21st Street	EB-L,TR. WB-T. NB-LT.	EB-TR. WB-T. NB-LT. SB- R.	EB-L,TR. WB-T, R. NB-LT. SB-R.	EB-TR. WB-T. NB-LT, SB-R.
24th Avenue & 21st Street	NB-LTR. SB-LT	NB-LTR	NB-LTR	NB-LTR
Hoyt Avenue North & 21st Street	WB-L. NB-T. SB-TR	NB-T	WB-LT, NB-T	NB-T
Astoria Park S/Hoyt Avenue S & 21st Street				
30th Avenue & 21st Street				
Unsignalized Intersections				
26th Avenue & 3rd Street				
27th Avenue & 3rd Street	SB-LR	SB-LR	SB-LR	SB-LR
27th Avenue & 18th Street		EB-LTR	EB-LTR	EB-LTR
Astoria Boulevard & Newtown Avenue	NB-LR		NB-LR	NB-LR
30th Avenue & 8th Street	SB-LT, WB-LR	SB-LT, WB-LR	SB-LT, WB-LR	SB-LT, WB-LR
30th Avenue & Main Street	EB-LT		EB-LT	
30th Avenue & 12th Street	EB-LTR			
30th Avenue & 14th Street	EB-LTR. SB-LTR			

Notes: NB—northbound, SB—southbound, EB—eastbound, WB—westbound L—left-turn, T—through, R—right-turn

Pedestrians

As described in **Chapter 11, "Transportation,"** incremental demand from the Proposed Development would result in significant adverse impacts to the two sidewalks, three crosswalks, and one corner in one or more peak hours. Recommended mitigation measures consisting of the relocation/removal of impediments to sidewalk flow and the widening of crosswalks or corner areas would fully mitigate the impacts to one sidewalk (west sidewalk of 4th Street between 26th Avenue and 27th Avenue),one crosswalk and one corner (27th Avenue and 4th Street). One sidewalk (north sidewalk of 27th Avenue between 3rd Street and 4th Street) and two crosswalks (north and east crosswalks at 27th Avenue and 4th Street) would be remain unmitigated during the weekday midday and/or Saturday peak hours. In addition, the proposed traffic mitigation measures would result in a new impact on the northwest corner in the midday and Saturday peak hours that would remain unmitigated. Implementation of the proposed mitigation measures would be subject to review and approval by DOT, as well as NYC Parks if a street tree is to be removed. DCP, as lead agency, will explore potential mitigation measures in coordination with DOT and NYC Parks between publication of the DEIS and FEIS. Absent the identification and implementation of additional feasible mitigation measures that would mitigate the pedestrian impacts to the greatest extent practicable, the Proposed Actions would result in unmitigated significant adverse pedestrian impacts**.** The Applicant will commit to conducting a TMP at Projected Development Site 1, after the completion of Phases 1 and 2 and before the final Phase, to better estimate the transportation planning factors, the full build traffic demand generated by the Proposed Actions, and any future demand from No-Action developments. The TMP will revise traffic analyses where necessary to determine the likelihood of potential traffic impacts.

Transit

Subway

The Proposed Actions would result in significant adverse impacts to one platform stairs in the AM peak hour and two stairs in the PM peak hour at the 30th Avenue (N/W) station on the BMT Astoria Line. The Applicant will commit to conducting a TMP at Projected Development Site 1, after the completion of Phases 1 and 2 and before the final Phase, to better estimate the transportation planning factors, modal splits, subway station/line usage, bus route usage, the full build demand generated by the Proposed Actions, and any future demand from No-Action developments. The TMP will revise transit analyses based on findings of surveys and new data at the 30th Avenue station, and will be reviewed by New York City Transit (NYCT). Additionally, a preliminary study shows that a new street stair and elevator could potentially be located at the southwest corner of Newtown Avenue and 31st Street, adjacent to the 30th Avenue subway station's southbound platform. This measure would remove the impact the Manhattan-bound platform stairs (P1-P2) during the AM peak hour. The Applicant will continue to coordinate with NYCT to further explore mitigation measures between the DEIS and FEIS.

Bus

The Proposed Actions would result in significant adverse impacts adverse bus line haul impacts are on the eastbound Q18, northbound Q103, and southbound Q103 buses in the AM peak hour, as well as the northbound Q103 and southbound Q103 buses in the PM peak hour. The significant adverse impact to the Q18 could be fully mitigated by the addition of one additional bus in eastbound direction in the AM peak hour. The significant adverse impact to the Q103 could be fully mitigated by one additional bus in northbound and southbound directions in the AM peak hour. The significant adverse impacts to the Q103 could be fully mitigated by the addition of two buses in northbound direction in the PM peak hour and one additional bus in southbound direction in the PM peak hour. 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.

Noise

Significant adverse impacts related to traffic-generated noise are predicted to occur on 10 residential and commercial office buildings along 26th Avenue between 3rd and 4th Street, and along 3rd Street between 26th and 27th Avenue during various peak hours. Specifically, traffic-generated noise impacts are expected to occur at 3-04 – 3-06 26th Avenue, 3-08 – 3-10 26th Avenue, 26-38 3rd Street, 26-31 3rd Street, 26-24 3rd Street, 26-18 3rd Street, 26-19 3rd Street, 26-15 3rd Street, 26-11 3rd Street, and 26-35 3rd Street. As discussed in **Chapter 14, "Noise,"** practicable and feasible mitigations measures will be explored in consultation with DCP and additional work will be conducted between the DEIS and FEIS to provide a sufficient reduction to the identified noise increments to remain below the CEQR threshold (i.e., 3 dBA) or to lower interior noise levels at the identified impacted noise receptors to an acceptable range. If warranted, possible mitigation measures could include installing storm windows or providing an alternate means of ventilation (including, but not limited to, air conditioning) to impacted existing noise receptors where these measures are not already in use. However, if interior noise levels at the identified impacted noise receptors are still above the acceptable level (i.e., 45 dBA or lower for residential/community facility uses, and 50 dBA or lower for commercial office uses) and there are no other feasible and practicable mitigation measures that are identified, the significant adverse mobile source noise impacts would be considered either partially mitigated or would remain unmitigated.

Construction

Transportation (Traffic)

Construction traffic conditions during the 2027 Q3 and Q4 construction were evaluated at 21 intersections (10 signalized and 11 unsignalized) in the traffic study area where combined construction and incremental operational vehicle trips would exceed the 50-trips/hour *CEQR Technical Manual* analysis threshold in the AM and/or PM construction peak hours. As discussed in **Chapter 17, "Construction,"** the construction traffic impact analysis identified the potential for significant adverse impacts to two lane groups at one intersection in the weekday AM construction peak hour, and ten lane groups at five intersections in the weekday PM construction peak hour.

As shown in **Tables 18-3 and 18-4**, implementation of recommended traffic signal timing changes at an existing traffic signal would fully mitigate the significant adverse impacts to two lane groups at one intersection in the construction PM peak hour. However, significant adverse impacts to two lane groups at one intersection in the construction AM peak hour and eight lane groups at four intersections in the construction PM peak hour would remain unmitigated.

Implementation of the recommended traffic signal timing changes is subject to review and approval by DOT. If, prior to implementation, DOT determines that this mitigation measure is infeasible, an alternative and equivalent mitigation measure may be identified.

TABLE 18-3
Summary of Lane Groups/Intersections with Significant Adverse Construction Traffic Impacts

Peak Hour	Lane Groups/ Intersections Analyzed	Lane Groups/ Intersections With No Significant Impacts	Lane Groups/ Intersections With Significant Impacts	Mitigated Lane Groups/ Intersections	Unmitigated Lane Groups/ Intersections
Construction AM	66/21	64/20	2/1	0/0	2/1
Construction PM	66/21	56/16	10/5	2/1	8/4

TABLE 18-4
Lane Groups With Unmitigated Significant Adverse Construction Traffic Impacts

Signalized Intersections	Construction AM Peak Hour	Construction PM Peak Hour
27th Avenue & 3rd Street	---	SB-LR
27th Avenue & 18th Street	---	EB-LTR
Astoria Blvd & 21st Street	EB-TR, WB-T	EB-L, EB-TR, WB-T, NB-T
30th Avenue & 8th Street	---	SB-LT, WB-LR

NB – Northbound, SB – Southbound, EB – Eastbound, WB – Westbound
L – Left-turn, T – Through, R – Right-turn

Noise

As presented in **Chapter 17, "Construction,"** detailed quantitative construction noise modeling was completed for the Proposed Development to determine typical construction noise levels for excavation, superstructure, and interior fit-out construction phases. Significant adverse construction noise impacts at

sensitive receptors were identified in consideration of the magnitude of the noise level increase (three A-weighted decibels (dBA), a "noticeable" noise level increase per the *CEQR Technical Manual* methodology), the anticipated absolute noise level (45 dBA interior noise levels for residential, mixed-use, and public facilities/institutions), and the duration of the predicted elevated noise level.

As described below, there is potential for construction of the Proposed Project to result in significant impacts at several residential buildings. Overall, the highest impacts to residential buildings involve increments on the range of 19 to 27.5 dBA and total exterior noise levels from mid-70s dBA to low 80s dBA. Assuming a windows-closed condition and 28 dBA exterior to interior attenuation, these noise levels would exceed the CEQR- recommended 45 dBA interior standard. Increment durations could persist above 15 dBA for more than 12 months. Although there would be no impact to these locations on weekends, the high magnitude and duration of construction noise impacts on weekdays is considered a significant adverse impact that could only partially be mitigated; however, these impacts would occur intermittently. Although construction noise impacts would not occur at night and on weekends, the construction during the day near these locations may result in annoyance to building occupants.

Several residential buildings near Projected Development Site 1 do not have central air conditioning and typically rely on window air conditioning for cooling. Any units lacking a window AC would need to keep their windows open during summer months, which would substantially decrease window/wall noise attenuation. The exterior to interior attenuation provided by a building with windows open is approximately 10 dBA, compared to up to 28 dBA for closed double-glazed windows and window air conditioning units. Interior $L_{10(1)}$ noise levels would exceed the recommended threshold for residential use according to CEQR noise exposure guidelines for extended periods during construction; increment durations could persist above 15 dBA Leq for over 12 months. Considering the magnitude and duration, this would represent a significant adverse construction noise impact.

While the provision of window air conditioners to the affected buildings was explored, such a measure would only reduce the magnitude of temporary construction noise impacts, and the identified impacts would not be fully mitigated. Specifically, even with the provision of window air conditioners to these buildings, during certain periods of the Proposed Project's construction, interior noise levels would exceed 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria). For units that already have window ACs, further receptor controls would not be effective and the significant adverse impact would remain unmitigated. The feasibility of providing window ACs to any apartment units currently lacking them will be explored as a potential partial mitigation between the DEIS and FEIS.

Beyond the façade noise attenuation measures discussed above, the potential use of source or path controls beyond those that would be required are being explored as possible mitigation measures to the significant adverse noise impacts identified at the residential buildings across from Projected Development Site 1. Under the *New York City Noise Control Code*, noise barriers constructed from plywood or other materials are required to be provided at a height of 8 feet. For receptors that are shielded by the perimeter noise barrier (i.e., those at or below the height of the barrier), the height and treatment to the barrier would be expected to provide up to approximately 5 dBA of shielding from at-grade or below-grade sources of construction noise.[1]

[1] It should be noted that 8-foot-tall noise barriers around the perimeter of the Development Site, as would be required under the *New York City Noise Control Code*, were incorporated in the noise model and construction noise analysis presented in Chapter 17, "Construction."

Based on the results of more refined field observations, additional mitigation measures will be explored further by the Applicant in consultation with DCP between the DEIS and FEIS. If no additional practical and feasible mitigation measures are identified, the impacts would be considered partially mitigated.

C. COMMUNITY FACILITIES AND SERVICES

Elementary Schools

As discussed in **Chapter 4, "Community Facilities,"** the demand for elementary school seats within CSD 30, Sub-District 3 would increase to 141.06 percent utilization compared to No-Action conditions of 136.4 percent utilization. The 181 elementary school students generated by the Proposed Actions in CSD 30, Sub-District 3 would increase the shortfall of available seats to 1,596. This would constitute a significant adverse impact. As discussed in **Chapter 4,** the Proposed Actions would result in 1,665 dwelling units within CSD 30, Sub-District 3, of which 1,400 would be generated by the Applicant-controlled development site. In order for the Applicant to avoid a significant adverse impact, the project would have to be reduced to 900 units, which would generate 99 elementary school students. An increase of 99 elementary school students in CSD 30, Sub-District 3 would be below the CEQR threshold that would be considered a significant adverse impact. With the DEIS' assumption of 1,400 dwelling units on the Applicant-controlled development site, the Proposed Project would generate 152 elementary school students in CSD 30, Sub-District 3. The difference between the CEQR threshold for significance and the Proposed Actions results in a maximum shortfall of 53 students. The elementary school impact would be triggered and mitigation required after 909 dwelling units are constructed.

Measures to mitigate a significant impact on schools vary based on the size of the project and the capacity of the school sub-district. In general, mitigation measures for schools impacts may include, but are not limited to, the following: relocating administrative functions to another site, thereby freeing up space for classrooms; making space within the buildings associated with the proposed project or elsewhere in the school study area available to DOE; and/or restructuring or reprogramming existing school space within a district; or providing for new capacity (seats) by constructing a new school or an addition to an existing school. Other measures may be identified in consultation with DOE/SCA that do not create additional capacity but may nevertheless serve to alleviate capacity constraints.

Measures to mitigate the significant adverse impacts on public elementary schools will be explored by the Applicant in consultation with DOE/SCA between the DEIS and FEIS. DOE/SCA will continue to monitor trends in demand for school seats in the area. DOE/SCA responses to identified demand could take place in stages and include administrative actions and/or enlargement of existing schools, followed by the later construction or lease of new school facilities at an appropriate time.

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 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 1,196 elementary school seats that are expected to be developed on the nearby Halletts Point and Astoria Cove sites. These future No-Action schools are anticipated to be built and operational by the Proposed Action's build year of 2031.

Early Childhood Programs

The *CEQR Technical Manual* requires a detailed analysis of early childhood programs when a proposed action would produce substantial numbers of subsidized low- to moderate-income family housing units that may therefore generate a sufficient number of eligible children to affect the availability of slots at area publicly funded child care centers. As detailed in **Chapter 4, "Community Facilities,"** as requested by DCP, for conservative CEQR analysis purposes, 20 percent of the overall residential floor area (approximately 333 DUs) of the RWCDS is assumed to be set aside for "affordable" residential units, which refers to the amount residential units that would accommodate households earning 60 to 80 percent (or below) of AMI.

Based on Table 6-1b of the *CEQR Technical Manual*, these additional 333 affordable units would generate 46 children under age six eligible for publicly funded early childhood programs.

As described in **Chapter 4, "Community Facilities and Services,"** the Proposed Actions would result in significant adverse impacts on publicly funded early childhood programs. According to the *CEQR Technical Manual*, a significant adverse child care center impact could result if an action results in: (1) a collective utilization rate greater than 100 percent in the With-Action condition; and (2) the demand constitutes an increase of five percent or more in the collective capacity of early childhood programs serving the study area over the No-Action condition. Under the RWCDS, the Proposed Actions would introduce approximately 46 children potentially eligible for subsidized child care to the study area. The analysis of publicly funded early childhood programs found that under the With-Action condition the child care study area would experience a utilization rate of 193.9 percent, a 46.5 percent increase from No-Action conditions. As such, the Proposed Actions would result in significant adverse impacts on publicly funded early childhood programs.

This impact could be eliminated by reducing the RWCDS from 1,665 total DUs (with 333 affordable DUs) to 165 DUs (with 33 affordable DUs), a reduction of 300 affordable DUs. The impact to early childhood programs would occur above the 33rd affordable unit. This impact would therefore occur after the construction of Tower 1, which is expected to be completed by 2024. The significant adverse impact could also be mitigated by providing capacity for 27 publicly-funded early childhood program slots.

City programs could potentially avoid the anticipated impact by expanding the number of publicly funded child care slots in the study area. Since 2014, the City has made significant investments to provide free, full-day, high-quality early childhood education through the Pre-K for All and 3-K for All, as part of a broader effort to create a continuum of high-quality early care and education programs for New York City children from birth to five years old. By the Proposed Development's 2031 Build year, further investments could include the expansion of slots as part of the City's universal Pre-K for All and 3-K for All programs and possible new DOE facilities, reflecting the City's policy of providing early childhood education and care opportunities to all residents, regardless of family income. However, as such capacity expansions have not been identified at this time, they are not accounted for in the quantitative analysis and impact determination. Furthermore, the projected increase in demand for early childhood program slots in the With-Action Condition could be offset by private day care facilities and day care centers outside of the Child Care Study Area, which are not included in this analysis; some parents may choose day care providers that are closer to their workplace rather than their home.

Mitigation measures for this impact would possibly include funding or making program or physical improvements to support additional capacity at existing facilities if determined feasible through consultation with DOE or providing a new child care facility within or near the Project Area.

In connection with the approval of the Proposed Actions, a Restrictive Declaration will be recorded on the Development Site subject to CPC approval. The Applicant is currently coordinating with DCP and DOE and further mitigation measures will be explored between the DEIS and FEIS. The Applicant would re-evaluate the need for additional publicly-funded early childhood program seats at the triggering 33rd affordable unit, in consultation with DOE and other City agencies, as appropriate. If measures to fully mitigate the anticipated impact are not identified and implemented, this would remain an unavoidable significant adverse impact.

D. OPEN SPACE

As discussed in **Chapter 1, "Project Description,"** the Proposed Actions would result in the development of approximately 41,363 sf of publicly accessibly open space along the waterfront within Projected Development Site 1. The proposed waterfront esplanade would include landscaping and seating. New visual corridors and physical public access would be provided along 3rd Street.

The RWCDS for the Proposed Actions would also result in approximately 1,665 residential units, which would place new demands on the area's open space resources, as discussed in **Chapter 5, "Open Space."** As shown in **Table 5-10** in **Chapter 5,** the Proposed Actions 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 Actions would result in a significant adverse active open space impact. The significant adverse active open space impact would occur with completion of 622 residential units, and therefore would occur upon completion and occupancy of Tower 2 in the second phase of the Proposed Project's construction.

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

E. TRANSPORTATION

The Proposed Actions would result in significant adverse impacts to: a) vehicular traffic at 20 intersections, b) three subway stairs at the 30th Avenue (N/W) subway station, c) bus line haul conditions on eastbound Q18, northbound Q103, and southbound Q103 buses in the AM peak hour, as well as the northbound Q103 and southbound Q103 buses in the PM peak hour, and d) pedestrian conditions at two sidewalks, three crosswalks, and one corner. Mitigation measures that could address the significant adverse impacts are discussed below. The Applicant would be responsible for costs associated with the design and construction of the proposed mitigation measures involving capital funding. Details regarding the specific mitigation measures would be included in a Restrictive Declaration. **Traffic**

As described in **Chapter 11, "Transportation,"** the Proposed Actions would result in significant adverse traffic impacts at 20 study area intersections (13 signalized and 7 unsignalized) during one or more analyzed

peak hours; specifically 32 lane groups at 18 intersections during the weekday AM peak hour, 14 lane groups at 10 intersections during the midday peak hour, 30 lane groups at 17 intersections during the PM peak hour, and 20 lane groups at 12 intersections during the Saturday midday peak hour.

As demonstrated below, many of these impacts could be mitigated through the implementation of traffic engineering improvements, including:

- Modification of existing traffic signal phasing and/or timing,
- Installation of new traffic signals or all-way stop control,
- Elimination of on-street parking to add a travel lane, and
- Modifications to lane striping.

The types of mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. **Table 18-5** summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the weekday AM, midday, PM, and Saturday peak hours. Implementation of the recommended traffic engineering improvements is subject to review and approval by DOT. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

Tables 18-6 through **18-9** show the v/c ratios, delays, and levels of service (LOS) for impacted lane groups at each intersection with implementation of the recommended mitigation measures and compares them to No-Action and With Action conditions for the weekday AM, midday, PM, and Saturday midday peak hours, respectively. According to *CEQR Technical Manual* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action-with-Mitigation Condition compared with the No Action Condition is no longer deemed significant following the impact criteria described in **Chapter 11, "Transportation." Tables 18-6 through 18-9** show that significant adverse impacts would be fully mitigated at 11 lane groups in the weekday AM peak hour, 4 lane groups in the midday peak hour, 7 lane groups in the weekday PM peak hour, and 6 lane groups in the Saturday peak hour. Intersections where all impacts would be fully mitigated would total 6, 4, 5, and 3 during these same periods, respectively. In total, impacts to one or more lane group(s) would remain unmitigated in one or more peak hours at 17 intersections. Consequently, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the Proposed Actions (see also **Chapter 20, "Unavoidable Adverse Impacts"**).

Effects of Pedestrian Mitigation on Traffic Conditions

Proposed pedestrian mitigation measures would not affect traffic conditions at any analyzed intersection in any peak hour.

Effects of Traffic Mitigation on Parking Conditions

As discussed above, the proposed traffic mitigation plan would incorporate a number of modifications to curbside parking regulations. As shown in **Table 18-5**, new restrictions would be implemented along several streets within the study area. The new restrictions would displace approximately 30 on-street parking spaces from the area.

As discussed in **Chapter 11, "Transportation,"** in the future with the Proposed Actions there would be a deficit of approximately 348 on-street parking spaces within the ¼-mile radius of the Project Area, and a deficit of approximately 567 on-street parking spaces within the ½-mile radius of the Project Area during the overnight period. With the proposed traffic mitigation measures, these shortfalls would increase by 30 spaces during increasing the deficit to 378 spaces within the ¼-mile radius and 587 spaces within the ½-mile radius. As discussed in detail in **Chapter 11, "Transportation,"** given alternative modes of

transportation in the area, the fact that the majority of Proposed Actions' demand would be accommodated on-site, and the deficit in parking under the No-Action conditions, the shortfall in parking during the weekday overnight period under the Proposed Actions would not be considered a significant shortfall.

TABLE 18-5:
Proposed Traffic Mitigation Measures

Intersection	Peak Hour	Phase	No-Action Signal Timing (Seconds) (1) AM	MD	PM	SAT	Proposed Signal Timing (Seconds) (1) AM	MD	PM	SAT	Proposed Mitigation Measures
26th Ave (EB/WB) & 21st Street (NB/SB)	AM/PM	EB/WB NB/SB Ped	53 60 7	52 58 10	53 60 7	52 58 2	52 61 7	52 58 10	51 62 7	52 58 2	- Tranfer 1s/2s of green time from EB/WB to NB/SB in AM & PM.
27th Ave (EB/WB) & 3rd Street (NB/SB)	ALL	EB/WB NB/SB	Stop-Controlled				Stop-Controlled				- Unmitigatable.
27th Ave (EB/WB) & 4th Street (NB)	ALL	EB/WB NB/SB ped	54 36	55 35	59 31	57 33	60 30	60 30	60 30	60 30	- Adjust signal timing to provide 30s of protected pedestrian phase
27th Ave (EB/WB) & 8th Street (NB/SB)	AM/MD/PM	EB/WB NB/SB NB/SB/EBR	55 35	53 37	53 37	53 37	55 24 11	53 23 14	53 25 12	53 25 12	- Adjust signal timing to introduce an NB/EBR phase to increase the EB-R capacity
27th Ave (EB/WB) & 9th Street (NB/SB)	AM/PM/ SATMD	EB/WB NB/SB	48 42	50 40	57 33	55 35	48 42	50 40	57 33	55 35	- Unmitigatable.
27th Ave (EB/WB) & 12th Street (NB/SB)	AM/PM SATMD	EB/WB NB/SB	70 20	60 30	69 21	60 30	70 20	60 30	69 21	60 30	- Unmitigatable.
27th Ave (EB/WB) & 14th Street (SB)	AM/PM	EB/WB NB/SB	46 44	55 35	49 41	55 35	47 43	55 35	52 38	55 35	- Install "No Stopping Anytime" regulation along north curb, west of 14th St. - Install "No Stopping Anytime" regulation along north curb for 100' of WB. - Restripe EB/WB approaches with one 15' EB lane and one 15' WB lane. - Transfer 1s & 3s from SB to EB/WB in AM & PM
27th Ave (EB/WB) & 18th Street (SB)	MD/PM SATMD	EB/WB	Stop-Controlled								- Unmitigatable.
Astoria Blvd (EB/WB) & 8th St (SB)	PM	EB/WB NB/SB	52 68	48 72	48 72	48 72	52 68	48 72	48 72	48 72	- Unmitigatable
Astoria Blvd (EB/WB) & 18th St (SB)	AM	EB/WB SB	60 60	60 60	60 60	60 60	59 61	60 60	60 60	60 60	- Unmitigatable
Astoria Blvd (EB/WB) & 21st St (SB)	ALL	EB WB NB/SB PED	27 33 53 7	36 36 38 10	30 27 56 7	36 36 38 10					- Unmitigatable
Astoria Blvd (EB/WB) & Newtown Ave(NB)	AM/PM	EB/WB NB NB/SB	Stop-Controlled				Stop-Controlled				- Unmitigatable.
30th Ave (WB) & 8th Street (NB/SB)	ALL	WB SB NB/SB	Stop-Controlled				Stop-Controlled				- Unmitigatable.
30th Ave (EB/WB) & Main Street (SB)	AM/MD/PM	EB/WB NB	Stop-Controlled								- Unmitigatable
30th Ave (EB/WB) & 12th Street (NB)	AM	EB/WB NB	Stop-Controlled								- Unmitigatable
30th Ave (EB/WB) & 14th Street (SB)	AM	EB/WB NB/SB	Stop-Controlled								- Unmitigatable
24th Ave (EB/WB) & 21st Street NB/SB)	ALL	EB/WB NB/SB PED	22 31 7	22 28 10	22 31 7	22 28 10	22 31 7	22 28 10	22 31 7	22 28 10	-Umitigatable
Hoyt Avenue North & 21st Street	ALL	EB/WBT WB NB/SB	27 43 50	25 45 50	25 43 52	27 43 50	27 43 50	25 45 50	25 43 52	27 43 50	-Umitigatable
Astoria Park S/ Hoyt Ave 21st Street	ALL	EB NB/SB PED	53 60 7	52 58 10	53 60 7	52 58 10	50 63 7	50 60 10	51 62 7	50 60 10	- Install "No Stopping Anytime" regulation along 75' of south curb of EB approach - Restripe thru-right to a 11' thru & 9' right-turn lane. - Transfer 3s from EB to NB/SB in AM, and 2s in MD, PM, SATMD
30th Ave (EB/WB) & 21st Street (SB)	ALL	EB/WB NB/SB PED	43 70 7	42 68 10	43 70 7	42 68 10	43 70 7	42 68 10	42 71 7	42 68 10	- Install "No Stopping Anytime" regulation along 100' of south curb on EB approach. - Restripe EB to create a one 10' right turn lane. - Install "No Stopping Anytime" regulation along 100' of north curb of the WB approach. - Restripe WB approach to create 10' right turn lane. - Transfer 1s from EB/WB to NB/SB in the PM

Notes:
(1) Signal timings shown indicate green plus yellow (including all red) for each phase.

TABLE 18-6:
Action-With-Mitigation Conditions at Impacted Lane Groups –
Weekday AM Peak Hour

			No-Action AM			With-Action AM				With-Action AM Mitigation			
Intersections	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS		V/C Ratio	Delay (sec/veh)	LOS	
26th Ave &	EB	LR	0.09	22.7	C	0.09	22.7	C		0.09	23.3	C	
21st St	NB	T	0.60	26.2	C	0.64	27.3	C		0.63	26.4	C	
(Signalized)	SB	T	1.13	99.0	F	1.14	105.8	F	*	1.12	96.9	F	
27th Avenue &	EB	LT	0.00	9.0	A	0.00	9.7	A		0.00	9.7	A	
3rd St	SB	LR	0.26	35.6	E	1.26	227.4	F	*	1.26	227.4	F	*
(Stop-Control)													
27th Avenue &	EB	LT	0.99	49.1	D	1.14	99.9	F	*	1.02	52.6	D	
4th St	WB	T	0.50	14.8	B	0.58	16.4	B		0.52	11.9	B	
(Signalized)	WB	R	1.11	100.4	F	1.70	350.3	F	*	0.74	19.8	B	
27th Avenue &	EB	T	0.48	14.0	B	0.50	14.3	B		0.50	14.3	B	
8th Street	EB	R	0.70	22.1	C	0.99	59.3	E	*	0.81	22.0	C	
(Signalized)	WB	L	0.62	21.4	C	0.73	28.2	C		0.73	28.2	C	
	WB	T	0.67	18.1	B	0.76	21.5	C		0.76	21.5	C	
	NB	L	0.68	34.6	C	0.83	44.8	D		0.83	44.8	D	
	NB	R	0.37	26.8	C	0.45	29.8	C		0.45	29.8	C	
27th Avenue &	EB	T	0.68	22.7	C	0.70	23.5	C		0.70	23.5	C	
9th St	WB	T	1.00	56.9	E	1.12	94.1	F	*	1.12	94.1	F	*
(Signalized)	SB	L	0.75	30.9	C	1.00	64.2	E	*	1.00	64.2	E	*
	SB	R	0.21	17.9	B	0.25	18.4	B		0.25	18.4	B	
27th Avenue &	EB	LT	1.13	88.7	F	1.42	210.2	F	*	1.42	210.2	F	*
12th Street	WB	TR	0.65	9.5	A	0.73	11.5	B		0.73	11.5	B	
(Signalized)	NB	LTR	0.68	49.6	D	0.69	50.7	D		0.69	50.7	D	
27th Avenue &	EB	TR	1.08	82.9	F	1.28	160.6	F	*	1.10	84.8	F	
14th Street	WB	LT	0.76	28.2	C	0.96	51.0	D	*	0.93	44.7	D	
(Signalized)	SB	LTR	0.87	38.9	D	0.87	38.9	D		0.90	42.5	D	
Astoria Boulevard &	EB	T	0.91	46.3	D	0.91	46.3	D		0.91	46.3	D	
18th Street	WB	T	0.65	28.9	C	0.65	28.9	C		0.65	28.9	C	
(Signalized)	SB	LR	0.81	38.9	D	1.02	74.9	E	*	1.02	74.9	E	*
Astoria Boulevard &	EB	L	1.02	112.0	F	1.27	198.9	F	*	1.27	198.9	F	*
21st Street	EB	TR	2.50	733.3	F	2.90	909.7	F	*	2.90	909.7	F	*
(Signalized)	WB	L	1.11	124.7	F	1.11	124.7	F		1.11	124.7	F	
	WB	T	1.33	209.1	F	1.50	282.4	F	*	1.50	282.4	F	*
	WB	R	0.32	42.5	D	0.35	43.9	D		0.35	43.9	D	
	NB	Defl				1.83	468.3	F		1.83	468.3	F	
	NB	T				0.83	47.0	D		0.83	47.0	D	
	NB	LT	0.96	66.3	E		132.5	F	*	0.00	132.5	F	*
	NB	R	0.44	29.7	C	0.44	29.7	C		0.44	29.7	C	
	SB	LT	0.85	38.4	D	0.85	38.4	D		0.85	38.4	D	
	SB	R	0.69	36.2	D	0.74	38.7	D		0.74	38.7	D	
Astoria Blvd &	NB	LR	0.59	71.4	F	0.73	96.1	F	*	0.73	96.1	F	*
Newtown Ave													
(Stop-Control)													
30th Av &	SB	LT	0.72	22.8	C	1.04	76.8	F	*	1.04	76.8	F	*
8th St	WB	LR	1.20	201.5	F		9999.0	F	*		9999.0	F	*
(Stop-Control)													
30th Av &	NB	LTR	0.00	7.3	A	0.00	7.3	A		0.00	7.3	A	
Main St	WB	TR	0.30	15.2	C	0.34	14.7	B		0.34	14.7	B	
(Stop-Control)	EB	LT	0.99	69.4	F	1.19	130.3	F	*	1.19	130.3	F	*
30th Avenue &	EB	LTR	-	20.8	C	-	36.4	E	*	-	36.4	E	*
12th Street	WB	LTR	-	11.1	B	-	12.5	B		-	12.5	B	
(All-way Stop)	NB	LTR	-	12.9	B	-	14.8	B		-	14.8	B	
30th Avenue &	EB	LTR	-	43.6	E	-	91.0	F	*	-	91.0	F	*
14th Street	WB	LTR	-	18.3	C	-	21.8	C		-	21.8	C	
(All-way Stop)	NB	LTR	-	12.8	B	-	13.7	B		-	13.7	B	
	SB	LTR	-	58.2	F	-	72.8	F	*	-	72.8	F	*
24th Ave &	EB	LTR	0.08	16.1	B	0.08	16.1	B		0.08	16.1	B	
21st St	WB	LTR	0.57	25.8	C	0.57	25.8	C		0.57	25.8	C	
(Signalized)	NB	LTR	1.35	188.8	F	1.48	241.8	F	*	1.48	241.8	F	*
	SB	LT	1.11	91.1	F	1.20	128.0	F	*	1.20	128.0	F	*
	SB	R	0.00	9.6	A	0.00	9.6	A		0.00	9.6	A	
Hoyt Avenue North &	EB	L	0.00	40.0	D	0.00	40.0	D		0.00	40.0	D	
21st Street	EB	R	0.33	47.1	D	0.33	47.1	D		0.33	47.1	D	
(Signalized)	WB	L	1.05	81.3	F	1.06	85.0	F	*	1.06	85.0	F	*
	WB	TR	0.36	17.9	B	0.36	17.9	B		0.36	17.9	B	
	NB	L	0.17	28.4	C	0.18	28.6	C		0.18	28.6	C	
	NB	T	1.28	179.6	F	1.41	235.3	F	*	1.41	235.3	F	*
	SB	TR	0.98	69.0	E	1.00	74.1	E	*	1.00	74.1	E	*
Astoria Park S/ Hoyt Aven &	EB	L	0.18	23.9	C	0.18	24.0	C		0.20	26.1	C	
21st Street	EB	T								0.65	35.8	D	
(Signalized)	EB	R								0.76	45.7	D	
	EB	TR	1.27	170.9	F	1.32	191.2	F	*		39.9	D	
	NB	LTR	1.18	129.0	F	1.28	167.4	F	*	1.16	116.6	F	
	SB	LTR	1.27	161.1	F	1.32	182.6	F	*	1.23	140.1	F	
30th Avenue &	EB	LT								0.88	63.5	E	
21st Street	EB	R								0.73	51.4	D	
(Signalized)	EB	LTR	1.30	193.4	F	1.46	262.8	F	*		58.6	E	
	WB'	LT								0.96	83.8	F	
	WB	R								0.12	29.9	C	
	WB	LTR	1.03	103.4	F	1.17	150.0	F	*		77.4	E	
	NB	LTR	0.66	21.9	C	0.67	22.4	C		0.67	22.4	C	
	SB	LTR	1.01	53.5	D	1.01	53.5	D		1.01	53.5	D	

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a significant adverse impact
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

TABLE 18-7:
Action-With-Mitigation Conditions at Impacted Lane Groups –
Weekday Midday Peak Hour

			No-Action MD			With-Action MD				With-Action MD Mitigation			
Intersections	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS		V/C Ratio	Delay (sec/veh)	LOS	
27th Avenue &	EB	LT	0.00	12.9	B	0.00	14.2	B		0.00	14.2	B	
3rd St	SB	LR	0.53	75.7	F	1.47	349.0	F	*	1.47	349.0	F	*
(Stop-Control)													
27th Avenue &	EB	LT	0.75	22.1	C	0.84	27.4	C		0.75	18.1	B	
4th St	WB	T	0.51	14.9	B	0.58	16.4	B		0.52	11.8	B	
(Signalized)	WB	R	1.34	197.0	F	2.00	484.7	F	*	0.63	15.6	B	
27th Avenue &	EB	T	0.35	13.3	B	0.36	13.4	B		0.36	13.4	B	
8th Street	EB	R	0.99	68.8	E	1.33	192.2	F	*	1.03	68.1	E	
(Signalized)	WB	L	0.29	13.7	B	0.37	15.4	B		0.37	15.4	B	
	WB	T	0.65	18.9	B	0.77	23.8	C		0.77	23.8	C	
	NB	L	0.61	29.8	C	0.71	34.3	C		0.69	32.4	C	
	NB	R	0.50	33.7	C	0.55	37.5	D		0.52	34.5	C	
27th Avenue &	EB	TR	0.61	16.8	B	0.68	18.7	B		0.62	16.7	B	
14th Street	WB	LT	0.54	15.0	B	0.65	17.5	B		0.67	18.1	B	
(Signalized)	SB	LTR	0.49	27.6	C	0.49	27.6	C		0.49	27.6	C	
27th Avenue &	EB	LTR	0.51	47.4	E		9999.0	F	*		9999.0	F	*
18th Street (Stop-Control)	WB	LTR	0.06	16.7	C	0.11	29.5	D		0.11	29.5	D	
Astoria Boulevard &	EB	L	0.48	42.1	D	0.57	44.8	D		0.57	44.8	D	
21st Street	EB	TR	1.71	379.2	F	1.84	435.9	F	*	1.84	435.9	F	*
(Signalized)	WB	L	0.82	60.7	E	0.82	60.7	E		0.82	60.7	E	
	WB	T	1.35	224.0	F	1.49	284.7	F	*	1.49	284.7	F	*
	WB	R	0.37	41.3	D	0.38	42.1	D		0.38	42.1	D	
	NB	LT	1.06	95.2	F	1.17	136.2	F	*	1.17	136.2	F	*
	NB	R	0.61	44.7	D	0.66	47.5	D		0.66	47.5	D	
	SB	LT	0.85	50.1	D	0.85	50.1	D		0.85	50.1	D	
	SB	R	0.94	79.2	E	1.03	100.3	F	*	1.03	100.3	F	*
Astoria Blvd &	NB	LR	0.33	26.7	D	0.41	30.9	D		0.41	30.9	D	
Newtown Ave													
(Stop-Control)													
30th Av &	SB	LT	3.87	1405.0	F		9999.0	F	*		9999.0	F	*
8th St	WB	LR		9999.0	F		9999.0	F	*		9999.0	F	*
(Stop-Control)													
24th Ave &	EB	LTR	0.01	15.5	B	0.01	15.5	B		0.01	15.5	B	
21st St	WB	LTR	0.35	20.0	B	0.35	20.0	B		0.35	20.0	B	
(Signalized)	NB	LTR	1.24	142.7	F	1.34	184.4	F	*	1.34	184.4	F	*
	SB	LT	0.61	19.6	B	0.64	20.7	C		0.64	20.7	C	
	SB	R	0.00	11.4	B	0.00	11.4	B		0.00	11.4	B	
Hoyt Avenue North &	EB	L	0.07	42.8	D	0.07	42.8	D		0.07	42.8	D	
21st Street	EB	R	0.14	44.2	D	0.14	44.2	D		0.14	44.2	D	
(Signalized)	WB	L	0.79	42.0	D	0.81	42.9	D		0.81	42.9	D	
	WB	TR	0.17	14.4	B	0.17	14.4	B		0.17	14.4	B	
	NB	L	0.13	25.8	C	0.13	25.9	C		0.13	25.9	C	
	NB	T	1.24	163.0	F	1.31	189.9	F	*	1.31	189.9	F	*
	SB	TR	0.72	40.3	D	0.74	41.7	D		0.74	41.7	D	
Astoria Park S/ Hoyt Aven &	EB	L	0.18	24.6	C	0.19	24.7	C		0.20	26.1	C	
21st Street	EB	T								0.35	28.6	C	
(Signalized)	EB	R								0.11	24.9	C	
	EB	TR	0.47	30.0	C	0.48	30.2	C			27.9	C	
	NB	LTR	0.84	37.9	D	0.88	41.6	D		0.83	35.6	D	
	SB	LTR	1.14	108.3	F	1.19	126.7	F	*	1.12	100.1	F	
30th Avenue &	EB	LT								0.55	39.5	D	
21st Street		R								0.44	38.0	D	
(Signalized)	EB	LTR	0.82	55.1	E	0.95	74.8	E	*		39.0	D	
	WB	LT								0.39	35.3	D	
	WB	R								0.10	30.2	C	
	WB	LTR	0.48	38.1	D	0.53	39.8	D			34.5	C	
	NB	LTR	0.67	23.7	C	0.69	24.3	C		0.69	24.3	C	
	SB	LTR	0.56	20.9	D	0.56	20.9	C		0.56	20.9	C	

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a significant adverse impact
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

TABLE 18-8:
Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday PM Peak Hour

			No-Action PM			With-Action PM				With-Action PM Mitigation			
Intersections	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS		V/C Ratio	Delay (sec/veh)	LOS	
26th Ave &	EB	LR	0.08	22.6	C	0.08	22.6	C		0.08	23.8	C	
21st St	NB	T	0.82	33.3	C	0.84	34.6	C		0.81	31.7	C	
(Signalized)	SB	T	1.00	56.4	E	1.04	69.0	E	*	1.01	57.2	E	
27th Avenue &	EB	LT	0.01	11.9	B	0.01	13.2	B		0.01	13.2	B	
3rd St	SB	LR	0.91	134.2	F	2.20	648.4	F	*	2.20	648.4	F	*
(Stop-Control)													
27th Avenue &	EB	LT	0.76	19.2	B	0.87	26.1	C		0.85	24.0	C	
4th St	WB	T	0.66	15.3	B	0.77	19.1	B		0.76	17.9	B	
(Signalized)	WB	R	1.76	371.3	F	2.52	714.3	F	*	1.05	65.5	E	
27th Avenue &	EB	T	0.44	14.3	B	0.46	14.7	B		0.46	14.7	B	
8th Street	EB	R	0.53	18.1	B	0.83	36.8	D		0.66	16.3	B	
(Signalized)	WB	L	0.48	18.0	B	0.61	23.4	C		0.61	23.4	C	
	WB	T	1.11	89.1	F	1.33	176.8	F	*	1.33	176.8	F	*
	NB	L	0.73	35.6	D	0.92	55.1	E	*	0.92	55.1	E	*
	NB	R	0.58	33.9	C	0.62	36.9	D		0.62	36.9	D	
27th Avenue &	EB	T	0.53	13.5	B	0.55	13.9	B		0.55	13.9	B	
9th St	WB	T	1.15	101.1	F	1.35	186.4	F	*	1.35	186.4	F	*
(Signalized)	SB	L	0.68	35.1	D	0.87	48.3	D	*	0.87	48.3	D	*
	SB	R	0.20	23.9	C	0.25	24.7	C		0.25	24.7	C	
27th Avenue &	EB	LT	1.30	157.8	F	1.64	311.1	F	*	1.64	311.1	F	*
12th Street	WB	TR	0.93	25.6	C	1.08	65.6	E	*	1.08	65.6	E	*
(Signalized)	NB	LTR	0.98	88.6	F	1.00	91.5	F		1.00	91.5	F	
27th Avenue &	EB	TR	0.85	31.5	C	0.99	52.8	D	*	0.83	27.1	C	
14th Street	WB	LT	1.07	76.0	E	1.30	166.9	F	*	1.25	144.9	F	*
(Signalized)	SB	LTR	0.73	30.9	C	0.73	30.9	C		0.79	37.4	D	
27th Avenue &	EB	LTR	0.76	60.9	F	1.54	353.2	F	*	1.54	353.2	F	*
18th Street (Stop-Control)	WB	LTR	0.03	11.3	B	0.05	14.6	B		0.05	14.6	B	
Astoria Boulevard &	EB	L	0.14	27.3	C	0.14	27.3	C		0.14	27.3	C	
8th Street	EB	R	0.42	32.1	C	0.42	32.1	C		0.42	32.1	C	
(Signalized)	WB	LTR	0.62	37.5	D	0.62	37.5	D		0.62	37.5	D	
	NB	LT	0.87	40.7	D	1.08	90.4	F	*	1.08	90.4	F	*
	SB	T	0.45	17.2	B	0.56	19.4	B		0.56	19.4	B	
	SB	R	0.05	12.2	B	0.06	12.4	B		0.06	12.4	B	
Astoria Boulevard &	EB	L	0.71	58.3	E	0.84	69.7	E	*	0.84	69.7	E	*
21st Street	EB	TR	1.76	397.5	F	1.88	450.7	F	*	1.88	450.7	F	*
(Signalized)	WB	L	1.03	113.4	F	1.03	113.4	F		1.03	113.4	F	
	WB	T	2.52	750.7	F	2.84	890.8	F	*	2.84	890.8	F	*
	WB	R	0.84	88.9	F	0.88	96.7	F	*	0.88	96.7	F	*
	NB	LT	1.34	194.6	F	1.45	244.4	F	*	1.45	244.4	F	*
	NB	R	0.51	29.5	C	0.51	29.5	C		0.51	29.5	C	
	SB	LT	0.79	35.7	D	0.79	35.8	D		0.79	35.8	D	
	SB	R	1.10	108.6	F	1.23	158.9	F	*	1.23	158.9	F	*
Astoria Blvd & Newtown Ave (Stop-Control)	NB	LR	0.68	67.9	F	0.93	119.5	F	*	0.93	119.5	F	*
30th Av &	SB	LT	1.19	160.5	F	2.58	780.3	F	*	2.58	780.3	F	*
8th St	WB	LR		9999.0	F		9999.0	F	*		9999.0	F	*
(Stop-Control)													
30th Av &	NB	LTR	0.00	7.4	A	0.00	7.4	A		0.00	7.4	A	
Main St	WB	TR	0.39	16.1	C	0.50	18.5	C		0.50	18.5	C	
(Stop-Control)	EB	LT	0.68	28.3	D	0.85	44.3	E	*	0.85	44.3	E	*
24th Ave &	EB	LTR	0.03	15.6	B	0.03	15.6	B		0.03	15.6	B	
21st St	WB	LTR	0.42	21.1	C	0.42	21.1	C		0.42	21.1	C	
(Signalized)	NB	LTR	1.22	126.7	F	1.26	145.3	F	*	1.26	145.3	F	*
	SB	LT	0.67	19.1	B	0.70	19.9	B		0.70	19.9	B	
	SB	R	0.00	9.6	A	0.00	9.6	A		0.00	9.6	A	
Hoyt Avenue North &	EB	L	0.08	44.3	D	0.08	44.3	D		0.08	44.3	D	
21st Street	EB	R	0.18	44.8	D	0.18	44.8	D		0.18	44.8	D	
(Signalized)	WB	L	0.99	65.7	E	1.03	75.7	E	*	1.03	75.7	E	*
	WB	TR	0.28	16.8	B	0.28	16.8	B		0.28	16.8	B	
	NB	L	0.30	29.3	C	0.31	29.8	C		0.31	29.8	C	
	NB	T	1.18	131.0	F	1.23	150.1	F	*	1.23	150.1	F	*
	SB	TR	0.86	48.8	D	0.89	52.4	D		0.89	52.4	D	
Astoria Park S/ Hoyt Aven &	EB	L	0.20	24.2	C	0.20	24.3	C		0.21	25.7	C	
21st Street	EB	T								0.59	33.2	C	
(Signalized)	EB	R								0.14	24.8	C	
	EB	TR	0.74	38.5	D	0.76	39.5	D			32.2	C	
	NB	LTR	1.49	258.6	F	1.56	291.9	F	*	1.48	251.5	F	
	SB	LTR	1.53	274.1	F	1.60	306.8	F	*	1.51	266.6	F	
30th Avenue &	EB	LT								0.63	42.2	D	
21st Street	EB	R								0.39	36.2	D	
(Signalized)	EB	LTR	0.86	57.6	E	0.96	75.4	E	*	.	40.4	D	
	WB	LT								0.57	40.6	D	
	WB	R								0.12	30.5	C	
	WB	LTR	0.62	42.3	D	0.71	46.9	D			39.2	D	
	NB	LTR	1.00	52.4	D	1.03	59.4	E	*	1.01	54.4	D	
	SB	LTR	0.65	21.9	D	0.65	21.9	C		0.64	21.0	C	

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a significant adverse impact
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

TABLE 18-9:
Action-With-Mitigation Conditions at Impacted Lane Groups –
Saturday Peak Hour

			No-Action Saturday MD			With-Action Saturday MD				With-Action Saturday MD Mitigation			
Intersections	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS		V/C Ratio	Delay (sec/veh	LOS	
27th Avenue &	EB	LT	0.00	13.4	B	0.00	15.0	C		0.00	15.0	B	
3rd St	SB	LR	0.64	92.6	F	1.85	514.6	F	*	1.85	514.6	F	*
(Stop-Control/Signalized)													
27th Avenue &	EB	LT	0.64	16.3	B	0.73	19.3	B		0.69	16.0	B	
4th St	WB	T	0.43	12.0	B	0.51	13.2	B		0.48	11.2	B	
(Signalized)	WB	R	1.49	254.4	F	2.28	607.1	F	*	0.76	19.7	B	
27th Avenue &	EB	T	0.41	13.9	B	0.42	14.1	B		0.42	14.1	B	
8th Street	EB	R	0.48	17.2	B	0.78	32.5	C		0.62	15.2	B	
(Signalized)	WB	L	0.40	15.9	B	0.52	19.6	B		0.52	19.6	B	
	WB	T	0.75	21.6	C	0.89	30.5	C		0.89	30.5	C	
	NB	L	0.40	23.9	C	0.50	25.9	C		0.50	25.9	C	
	NB	R	0.38	26.4	C	0.41	27.7	C		0.41	27.7	C	
27th Avenue &	EB	T	0.49	14.1	B	0.50	14.3	B		0.50	14.3	B	
9th St	WB	T	0.93	36.9	D	1.09	79.4	E	*	1.09	79.4	E	*
(Signalized)	SB	L	0.77	38.6	D	1.01	74.7	E	*	1.01	74.7	E	*
	SB	R	0.20	22.6	C	0.27	23.7	C		0.27	23.7	C	
27th Avenue &	EB	LT	1.22	130.2	F	1.66	321.1	F	*	1.66	321.1	F	*
12th Street	WB	TR	0.85	24.0	C	0.99	44.9	D		0.99	44.9	D	
(Signalized)	NB	LTR	0.39	29.3	C	0.40	29.4	C		0.40	29.4	C	
27th Avenue &	EB	TR	0.77	22.6	C	0.90	32.5	C		0.82	24.5	C	
14th Street	WB	LT	0.60	15.9	B	0.67	17.5	B		0.69	18.2	B	
(Signalized)	SB	LTR	0.69	34.1	C	0.66	32.9	C		0.66	32.9	C	
27th Avenue &	EB	LTR	6.52	2819.0	F		9999.0	F	*		9999.0	F	*
18th Street (Stop-Control)	WB	LTR	0.06	17.4	C	0.12	30.0	D		0.12	30.0	D	
Astoria Boulevard &	EB	L	0.45	41.1	D	0.56	44.5	D		0.56	44.5	D	
21st Street	EB	TR	2.10	552.4	F	2.25	619.5	F	*	2.25	619.5	F	*
(Signalized)	WB	L	0.67	48.7	D	0.67	48.7	D		0.67	48.7	D	
	WB	T	1.41	249.5	F	1.58	320.7	F	*	1.58	320.7	F	*
	WB	R	0.23	37.5	D	0.24	37.8	D		0.24	37.8	D	
	NB	LT	1.39	227.7	F	1.47	262.3	F	*	1.47	262.3	F	*
	NB	R	0.53	43.2	D	0.54	43.8	D		0.54	43.8	D	
	SB	LT	0.92	58.2	E	0.91	56.7	E		0.91	56.7	E	
	SB	R	0.95	76.8	E	1.13	131.2	F	*	1.13	131.2	F	*
Astoria Blvd &	NB	LR	0.61	43.1	E	0.74	58.8	F	*	0.74	58.8	F	*
Newtown Ave													
(Stop-Control/Signalized)													
30th Av &	SB	LT		9999.0	F		9999.0	F	*		9999.0	F	*
8th St	WB	LR		9999.0	F		9999.0	F	*		9999.0	F	*
(Stop-Control/Signalized)													
24th Ave &	EB	LTR	0.48	23.3	C	0.48	23.3	C		0.48	23.3	C	
21st St	WB	LTR	0.13	16.7	B	0.13	16.7	B		0.13	16.7	B	
(Signalized)	NB	LTR	1.27	152.3	F	1.36	188.0	F	*	1.36	188.0	F	*
	SB	LT	0.72	22.9	C	0.74	23.7	C		0.74	23.7	C	
	SB	R	0.17	13.0	B	0.17	13.0	B		0.17	13.0	B	
Hoyt Avenue North &	EB	L	0.07	41.2	D	0.07	41.2	D		0.07	41.2	D	
21st Street	EB	R	0.29	45.4	D	0.29	45.4	D		0.29	45.4	D	
(Signalized)	WB	L	0.89	50.8	D	0.92	54.8	D		0.92	54.8	D	
	WB	TR	0.39	18.3	B	0.39	18.3	B		0.39	18.3	B	
	NB	L	0.31	30.9	C	0.32	31.3	C		0.32	31.3	C	
	NB	T	1.06	93.1	F	1.14	118.2	F	*	1.14	118.2	F	*
	SB	TR	0.78	43.3	D	0.80	44.7	D		0.80	44.7	D	
Astoria Park S/ Hoyt Aven &	EB	L	0.25	25.7	C	0.26	25.8	C		0.27	27.3	C	
21st Street	EB	T								0.40	29.5	C	
(Signalized)	EB	R								0.29	28.0	C	
	EB	TR	0.65	35.7	D	0.69	37.2	D			29.0	C	
	NB	DefL	2.18	611.5	F	2.18	611.5	F		2.18	610.5	F	
	NB	TR	1.04	77.5	E	1.09	93.6	F	*	1.05	79.2	E	
	NB	LTR		160.4	F		170.7	F	*		158.2	F	
	SB	LTR	1.28	164.5	F	1.34	191.1	F	*	1.28	162.9	F	
30th Avenue &	EB	LT								0.62	42.2	D	
21st Street	EB	R								0.45	38.1	D	
(Signalized)	EB	LTR	0.91	67.3	E	1.03	94.2	F	*		40.9	D	
	WB	LT								0.66	46.8	D	
	WB	R								0.10	30.3	C	
	WB	LTR	0.78	56.5	E	0.86	66.7	E	*		44.5	D	
	NB	LTR	0.67	23.7	C	0.69	24.3	C		0.69	24.3	C	
	SB	LTR	0.78	27.6	E	0.78	27.6	C		0.78	27.6	C	

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a significant adverse impact
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Pedestrians

As discussed in **Chapter 11, "Transportation,"** incremental demand from the Proposed Actions would result in significant adverse impacts to two sidewalks, one corner, and three crosswalks in one or more peak hours under the With-Action Condition (refer to **Table 18-10**).

TABLE 18-10:
Pedestrian Impact Summary

Corridor/Intersection	Impacted Element	Peak Hour			
		AM	Midday	PM	Saturday
27th Ave Btwn 3rd St and 4th St	North Sidewalk		X		
4th St Btwn 26th Ave and 27th Ave	West Sidewalk				X
27th Avenue and 4th Street	NE Corner		X		
	North Crosswalk		X		X
	East Crosswalk		X		X
	West Crosswalk		X		X

A significant adverse pedestrian impact is considered fully mitigated if measures return the anticipated conditions to an acceptable level, following the same criteria used in determining impacts. Standard mitigation for projected significant adverse pedestrian impacts can include providing additional signal green time or new signal phases; widening crosswalks; relocating or removing street furniture or other impediments to pedestrian flow; providing curb extensions, neck-downs or lane reductions to reduce pedestrian crossing distance; and sidewalk widening. Discussed below are recommended mitigation measures to address the Proposed Actions' significant adverse pedestrian impacts. The mitigation measures generally consist of the relocation/removal of impediments and crosswalk widenings. Mitigation measures will be explored in coordination with DOT between the publication of the DEIS and FEIS. The Proposed Actions would result in unmitigated significant adverse impacts to pedestrian conditions where no practicable mitigation measures are identified or where impacts would only be partially mitigated, and further, if the proposed mitigation measures are deemed infeasible and no alternate measures are identified.

Sidewalks

Out of the eleven sidewalks analyzed, two are expected to be significantly adversely impacted by incremental demand from the Proposed Actions. **Table 18-11** shows the recommended mitigation measures to address these impacts and their effectiveness. As shown in **Table 18-11** and discussed below, with implementation of the proposed mitigation measures, one of the two impacts would be fully mitigated in all analyzed peak hours.

With the removal of four tree curbside tree pits located on the northern half of the west sidewalk of 4th Street between 26th Avenue and 27th Avenue, this sidewalk would operate at an acceptable LOS C in the Saturday peak hour, and the Proposed Actions' significant adverse impacts would be mitigated based on the *CEQR Technical Manual*. The Proposed Actions would result in an unmitigated significant adverse impact at that sidewalk if the proposed tree pit removals are deemed infeasible and no alternate mitigation measure is identified.

TABLE 18-11:
Action-With-Mitigation Sidewalk Conditions

Location	Side	No-Action			With-Action			Action-with-Mitigation			
		Effective Width (ft.)	Average Pedestrian Space (ft^2/ped)	LOS	Effective Width (ft.)	Average Pedestrian Space (ft^2/ped)	LOS	Effective Width (ft.)	Average Pedestrian Space (ft^2/ped)	LOS	Mitigation Measures
Weekday MD Peak Hour											
(S8) 27th Ave Btwn 3rd St and 4th St	North	7.5	32.0	D	7.5	23.9	D *	7.5	23.9	D *	Unmitigated.
Saturday Peak Hour											
(S7) 4th St Btwn 26th Ave and 27th Ave	West	7.4	120.0	B	7.4	38.4	D *	10.5	55.3	C	Mitigated by removing four tree pits at existing constraint points.

* Denotes a significant impact

Crosswalks

As discussed in **Chapter 11, "Transportation,"** incremental demand from the Proposed Actions would result in significant adverse impacts on the north, east, and west crosswalks at 27th Avenue and 4th Street in the weekday midday and Saturday peak hours. As shown in **Table 18-12**, the signal timing is proposed to be adjusted to provide 30 seconds of protected pedestrian phase as part of the traffic mitigation for the intersection of 27th Avenue and 4th Street. With the implementation of this proposed mitigation measure (and measures for the corner impacts), the Proposed Actions' significant adverse impacts would be worsened on the all crosswalks (and corners) in both the weekday midday and Saturday peak hours based on the *CEQR Technical Manual*. With a 4-foot widening (to a total of 15.2 feet in width) on the west crosswalk, the Proposed Actions' significant adverse impacts (midday and Saturday) on west crosswalk would be mitigated (at LOS C) based on the *CEQR Technical Manual*. As it is not feasible to widen the north and east crosswalks based on DOT's guidance, the north and east crosswalks would remain the same width and unmitigated. As shown in **Table 18-12**, one of the three crosswalk impacts would be fully mitigated in the weekday midday and Saturday peak hours. Two crosswalks would remain unmitigated in both peak hours.

Corners

Out of the five corners analyzed, the northeast corner of 27th Avenue and 4th Street is expected to be significantly adversely impacted by incremental demand from the Proposed Actions in the weekday midday peak hour. As mentioned above, with the implementation of the proposed traffic mitigation measure, the levels of service would be worsened on the corners (and all crosswalks) during all analyzed peak hours. This would result in a new impact on the northwest corner during the weekday midday and Saturday peak hours. Based on DOT guidance, as a proposed signal pole would be introduced in the No-Action, it is not feasible to relocate the existing light pole as mitigation and the northwest corner would remain unmitigated. . As shown in **Table 18-13**, with the installation of a five-foot wide bulb-out extension along the N-S sidewalk of the northeast corner of 27th Avenue and 4th Street, the Proposed Actions' significant adverse impact during the weekday midday would be mitigated (at LOS C) based on the *CEQR Technical Manual*.

TABLE 18-12:
Action-With-Mitigation Crosswalk Conditions

Intersection	Crosswalk	No-Action			With-Action			Action-with-Mitigation			
		Width (ft.)	Average Pedestrian Space (ft^2/ped)	LOS	Width (ft.)	Average Pedestrian Space (ft^2/ped)	LOS	Width (ft.)	Average Pedestrian Space (ft^2/ped)	LOS	Mitigation Measures
Weekday MD Peak Hour											
27th Avenue and 4th Street	North	13.3	23.9	D	13.3	15.6	D *	13.3	7.1	F *	-Unmitigated. (Include corner mitigation for bulb-out)
	East	14.2	23.8	D	14.2	12.7	E *	14.2	10.2	E *	- Unmitigated.
	West	11.2	49.1	B	11.2	22.3	D *	15.2	25.1	C	- Widen crosswalk by 4 ft. - Signal timing adjusted to provide 30 sec of protected pedestrian phase as traffic mitigation
Saturday Peak Hour											
27th Avenue and 4th Street	North	13.3	30.8	C	13.3	17.8	D *	13.3	8.3	E *	-Unmitigated. (Include corner mitigation for bulb-out)
	East	14.2	52.3	B	14.2	20.7	D *	14.2	18.5	D *	- Unmitigated.
	West	11.2	71.6	A	11.2	20.1	D *	15.2	25.2	C	- Widen crosswalk by 4 ft. - Signal timing adjusted to provide 30 sec of protected pedestrian phase as traffic mitigation

Notes:
* Denotes a significant impact
Includes proposed 90-seocnd cycle length signal with EB/WB & SB/Ped phases for 27th Ave and 4th St from the Hallets Point No-Action development.

TABLE 18-13
Action-With-Mitigation Corner Conditions

Intersection	Corner	No-Action		With-Action		Action-with-Mitigation[1]		
		Average Pedestrian Space (ft^2/ped)	LOS	Average Pedestrian Space (ft^2/ped)	LOS	Average Pedestrian Space (ft^2/ped)	LOS	Mitigation Measures
Weekday MD Peak Hour								
27th Avenue and 4th St	NE	38.4	C	18.8	D *	24.7	C	- Install a 5 ft bulb-out on the N-S sidewalk.

Notes:
1 - Accounts for the proposed signal changes for traffic mitigation in all peak hours.
* Denotes a significant impact
Includes proposed 90-seocnd cycle length signal with EB/WB & SB/Ped phases for 27th Ave and 4th St from the Hallets Point No-Action development.

Effects of Traffic Mitigation on Pedestrian Conditions

Proposed traffic mitigation measures (discussed previously) would potentially affect pedestrian conditions at a total of four corners and three crosswalks at two intersections in one or more peak hours. The recommended traffic mitigation measure at 27th Avenue and 4th Street would consist of signal timing adjustments to provide 30 seconds of protected pedestrian phase for all three crosswalks. The recommended traffic mitigation measures at 27th Avenue and 8th Street would consist of signal timing adjustments to introduce a northbound/eastbound-right phase to increase the eastbound-right capacity.

With the implementation of the proposed signal timing adjustment at 27th Avenue and 4th Street, all analyzed crosswalks and corners at 27th Avenue and 4th Street would be worsened. The proposed pedestrian mitigation measures would provide sufficient pedestrian crossing time for the west crosswalk during all peak hours as shown in **Table 18-14**, if the pedestrian and traffic mitigation measures (discussed previously) are implemented. The proposed signal timing adjustment would also result in new impacts on

the northwest corner during the weekday midday and Saturday peak hours. As discussed above, this new corner impact cannot be mitigated as it is not feasible to relocate the light pole.

With the implementation of the proposed signal timing adjustment at 27th Avenue and 8th Street, only the northeast corner at 27th Avenue and 8th Street would operate with sufficient pedestrian crossing time if the traffic mitigation measures are implemented as shown in **Table 18-15**.

As shown in **Tables 18-14** and **18-15,** no new impacts would occur during the AM and PM peak hours as a result of the implementation of the traffic mitigation measures with the exception of the north crosswalk of 27th Avenue and 4th Street during the PM peak hour and the northwest corner during the midday and Saturday peak hours.

TABLE 18-14
Effects of Traffic Mitigation on Crosswalks

			No-Action Pedestrian Space (ft^2/ped)				No-Action Level of Service				With-Action Pedestrian Space (ft^2/ped)				With-Action Level of Service				Action w/ Mitigation Pedestrian Space				Action w/ Mitigation Level of Service				Proposed Traffic Mitigation
	Location	Crosswalk	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	
X1	27th Ave and 4th St	North	78.6	23.9	51.1	30.8	A	D	B	C	47.4	15.6	30.2	17.8	B	D	C	D	24.6	7.1	14.9	8.3	C	F	E	E	- Signal timing adjusted to provide 30 sec of protected pedestrian phase. (Includes corner mitigation for bulb-out)
X2		East	178.1	23.8	47.8	52.3	A	D	B	B	67.8	12.7	26.7	20.7	A	E	C	D	52.2	10.2	26.7	18.5	B	E	C	D	
X3		West	116.2	49.1	70.8	71.6	A	B	A	A	36.8	22.3	31.5	20.1	C	D	C	D	39.4	25.1	43.5	25.2	C	C	B	C	

Notes:
Accounts for the crosswalk widening for pedestrian mitigation in all peak hours.
Includes proposed 90-seocnd cycle length signal with EB/WB & SB/Ped phases for 27th Ave and 4th St from the Hallets Point No-Action development.

TABLE 18-15
Effects of Traffic Mitigation on Corners

			No-Action Avg Ped Space (ft^2/ped)				No-Action Level of Service				With-Action Avg Ped Space (ft^2/ped)				With-Action Level of Service				With-Action w/ Mitigation Avg Ped Space				Action w/ Mitigation Level of Service				Proposed Traffic Mitigation
	Location	Corner	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	
C1	27th Ave and 4th St	NE	188.1	38.4	90.4	69.4	A	C	A	A	100.8	18.8	50.3	31.2	A	D	B	C	139.6	24.7	67.6	41.7	A	C	A	B	- Signal timing adjusted to provide 30 sec of protected pedestrian phase.
C2		NW	161.4	51.0	107.9	67.6	A	B	A	A	73.0	28.8	60.5	28.7	A	C	A	C	65.2	22.7	54.5	21.1	A	D	B	D	
C3	27th Ave and 8th St	SE	132.8	52.2	79.9	42.9	A	B	A	B	97.6	41.0	59.1	31.8	A	B	B	C	97.6	41.0	59.1	31.8	A	B	B	C	- Adjust signal timing to introduce a NB/EBR phase to increase the EB-R capacity.
C4		SW	141.9	70.2	93.6	64.1	A	A	A	A	106.1	52.4	67.5	48.4	A	B	A	B	104.4	50.4	65.4	46.6	A	B	A	B	

Notes:
Accounts for the relocation of obstructions on the northwest corner of 27th Avenue and 4th Street as a result of the traffic mitigation.
Includes proposed 90-seocnd cycle length signal with EB/WB & SB/Ped phases for 27th Ave and 4th St from the Hallets Point No-Action development.

Transit

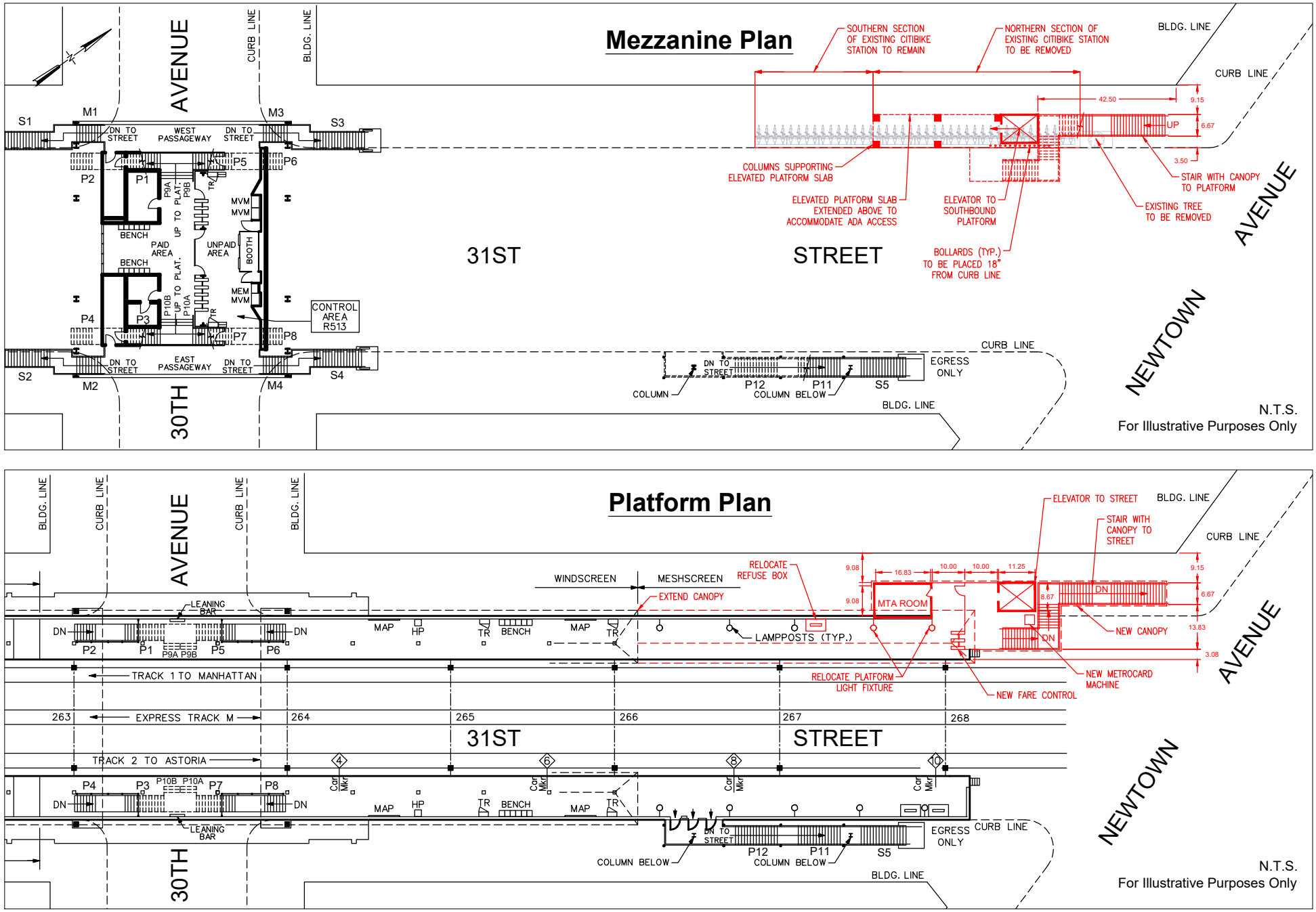
As described in **Chapter 11, "Transportation,"** the Proposed Actions would result in potential significant adverse subway impacts at the 30th Avenue (N/W) station's one Manhattan-bound (P1-P2) platform stairs in the AM as well as the northwest street stairs (M3-S3) and a Queens-bound (P3-P4) platform stairs in the PM peak hour. In addition, based on New York City Transit/Metropolitan Transportation Authority (MTA/NYCT) guideline capacity, the future With-Action condition would result in significant adverse bus line haul impacts are on the eastbound Q18, northbound Q103, and southbound Q103 buses in the AM peak hour, as well as the northbound Q103 and southbound Q103 buses in the PM peak hour. Potential measures to mitigate these impacts are described below.

Subway Station Operations

As shown in **Chapter 11, "Transportation,"** in **Tables 11-26** and **11-27,** during the AM peak hour, under With-Action conditions, the Manhattan-bound platform stair (P1-P2) at the 30th Avenue station is projected to operate at v/c ratios of 1.48 (LOS E), compared to v/c ratio of 1.34 (LOS E) in the No-Action conditions. During the PM peak hour, the 30th Avenue Station street stairway (M3-S3) at the northwest corner of 30th Avenue and 31st Street is projected to operate at LOS E with a v/c ratio of 1.45 in the With-Action conditions, compared to a v/c ratio of 1.06 (LOS D) in the No-Action conditions. During the same PM peak hour, under With-Action conditions, the Queens-bound platform stairs is projected to operate at v/c ratios of 1.46 (LOS E), compared to v/c ratio of 1.32 (LOS E), in the No-Action conditions. These declines constitute significant adverse subway station impacts that require an evaluation of potential mitigation measures. It should be noted that all subway station operation impacts would occur upon completion of the final phase of the Projected Development Sites' construction and following full occupancy of all buildings, including Projected Development Site 2, which is not under the control of the Applicant.

The Applicant will coordinate with NYCT to explore mitigation measures between the DEIS and FEIS in an effort to mitigate the three aforementioned stairway impacts at the 30th Avenue subway station. Typically, the most practiced form of mitigating a significant subway stairway impact is widening or adding stair capacity, provided that NYCT deems it practicable (i.e., that it is worthwhile to disrupt service on an existing stairway to widen it and that a given platform, mezzanine, and sidewalk affected by such mitigation are wide enough to accommodate a new stairway or a stairway widening). For the two impacted platform stairs and one street stairs impacts, stair widening could be explored to provide more effective stair width for improved movement of passengers. For potential stair widening, based on typical NYCT and CEQR guidelines, in order to overcome the potential impacts, stairs are widened in 30-inch (2.5 feet) pedestrian lane increments. As such, each impacted stairs would need to be widened by at least 2.5 feet to be considered mitigated. Alternatively, new staircases could also be explored to provide passengers with new capacity to enter and exit the platform. It should also be noted that the 30th Avenue station was recently renovated as part of the Station Enhanced Initiative (ESI) program and reopened in 2018. Any improvement to a subway station would trigger the Americans with Disabilities Act (ADA) compliance. Therefore, as the 30th Avenue subway station is not currently ADA compliant, any future physical modification at the station, like stairs widening or stairs addition, would also require the installation of ADA compliant elevators at this elevated station. A preliminary study and schematic drawings show that a new street stair and elevator could be located at the southwest corner of Newtown Avenue and 31st Street, adjacent to the 30th Avenue subway station's southbound platform (see **Figure 18-1**). Due to the tight clearance along the 31st Street sidewalk and to minimize impact to the adjacent commercial entrances, the stair would need to wrap around the street elevator and span over the 31st Street parking lane, maintaining the 14-foot minimum clearance over vehicular traffic. At the southbound platform level, the platform would need to be extended to the north and west to accommodate the street elevator queuing area, new fare control line (turnstiles and ADA Farecard Access System [AFAS] gate) and street elevator mechanical room.

If the above mitigation is implemented, it would mitigate the AM transit impact on the P1-P2 platform stairs. The new stairs would result in the diversion of some existing flows from S3-M3 stairs (on the northwest corner of 30th Avenue and 31st Street) and S4-M4 stairs (on the northeast corner of 30th Avenue and 31st Street) to the proposed stairs near Newtown Avenue. As shown in **Table 18-16**, with the implementation of the mitigation measure, the P1-P2 would operate at LOS E (same as With-Action conditions) but with a v/c ratio of 1.37 (compared to 1.48 in the With-Action conditions). Also shown in **Table 18-16**, under With-Action with mitigation, in the AM peak hour, the P1-P2 platform stairs would have a WIT of 1.1 inches, which does not exceed the five-inch impact threshold, and therefore would no longer be considered significantly adversely impacted with the proposed mitigation. In addition, the proposed



Halletts North

Figure 18-1

Proposed Subway Mitigation Schematic

mitigation would also relief pressure on other stairs including the S3-M3 street stairs (on the northwest corner of 30th Avenue and 31st Street), S4-M4 street stairs (on the northeast corner of 30th Avenue and 31st Street) , and the P5-P6 platform stairs (the other Manhattan-bound platform stairs). The proposed staircase, denoted as "P13-P14-S6" in **Table 18-16**, would function at LOS A during each analyzed peak hour. However, it should be noted that although proposed stairs would mitigate the AM impact and alleviate pressure on other stairs, in the PM peak hour, the M3-S3 street stairs and P3-P4 platform stairs would continue exceed thresholds for impact. As such, the M3-S3 street stairs and the P3-P4 platform stairs would remain significantly adversely impacted as a result of the Proposed Actions in the PM peak hour.

TABLE 18-16
Action-With-Mitigation - Subway Station Stair Analysis

Peak Hour	Station	Stair	Total Width (ft.)	Effective Width (ft.)	Project Increment		Peak Hour Volumes		Surging Factor		Friction Factor	V/C Ratio	LOS	WIT	Impact Threshold
					Up	Down	Up	Down	Up	Down					
AM	30th Ave (N/W)	M1-S1 (SW)	5.00	4.00	34	0	1,176	113	1.00	0.80	0.90	0.76	C	- - -	- - -
		M2-S2 (SE)	5.00	4.00	35	0	1,491	96	1.00	0.80	0.90	0.93	C	- - -	- - -
		M3-S3 (NW)	5.00	4.00	359	129	762	466	1.00	0.80	0.90	0.78	C	-	-
		P1-P2 (SB)	5.00	4.00	268	0	2,624	6	1.00	0.75	1.00	1.37	E	1.1	5
		P5-P6 (SB)	5.00	4.00	160	0	1,561	3	1.00	0.75	1.00	0.82	C	-	-
		P3-P4 (NB)	5.00	4.00	0	70	9	413	1.00	0.75	1.00	0.29	A	- - -	- - -
		P7-P8 (NB)	5.00	4.00	0	59	7	345	1.00	0.75	1.00	0.24	A	- - -	- - -
		P13-P14-S6 (SB)	5.00	4.00	0	0	331	1	1.00	0.75	1.00	0.17	A	- - -	- - -
PM	30th Ave (N/W)	M1-S1 (SW)	5.00	4.00	19	0	421	584	1.00	0.80	0.90	0.67	B	- - -	- - -
		M2-S2 (SE)	5.00	4.00	19	0	396	849	1.00	0.80	0.90	0.84	C	- - -	- - -
		M3-S3 (NW)	5.00	4.00	202	380	284	1,742	1.00	0.80	0.90	1.42	E *	17.2	4
		P1-P2 (SB)	5.00	4.00	140	0	725	51	1.00	0.75	0.90	0.46	B	- - -	- - -
		P5-P6 (SB)	5.00	4.00	100	0	519	19	1.00	0.75	1.00	0.28	A	- - -	- - -
		P3-P4 (NB)	5.00	4.00	0	207	15	2,092	1.00	0.75	1.00	1.46	E *	5.3	4
		P7-P8 (NB)	5.00	4.00	0	173	32	1,742	1.00	0.75	1.00	1.23	D	5.2	6
		P13-P14-S6 (SB)	5.00	4.00	0	0	61	3	1.00	0.75	1.00	0.03	A	- - -	- - -

As part of the plan for mitigating the subway station impacts, the Applicant will commit to conducting a TMP at Projected Development Site 1 to better estimate the transportation planning factors, modal splits, subway station/line usage, bus route usage, the full build demand generated by the Proposed Actions, and any future demand from No-Action developments. The TMP will revise transit analyses based on findings of surveys and new data at the 30th Avenue station, and will be reviewed by NYCT. Details on the TMP are discussed in detail below.

Effects of Subway Mitigation on Pedestrian Conditions

With the implementation of the proposed subway mitigation, the effective width of the west sidewalk between 30th Avenue and Newtown Avenue would be reduced, thereby affecting the level of service on that sidewalk. The southern portion of this sidewalk, where the existing S3-M3 stairs is located, was analyzed under Proposed Actions; however, given the reduction of sidewalk space on the northern portion of the sidewalk, where the new stairs is proposed as mitigation for the subway impact, the sidewalk's level of service is reevaluated. As shown in the **Table 18-17**, the sidewalk would perform at LOS C with the implementation of the stair and would not significantly and adversely impacted in any analyzed peak hour.

TABLE 18-17
Effects of Subway Mitigation on Sidewalk

	Location	Sidewalk	Effective Width (ft)	No-Action Pedestrian Space (ft^2/ped)				No-Action Level of Service				With-Action Pedestrian Space (ft^2/ped)				With-Action Level of Service				Effective Width (ft)	Action with Mitigation Pedestrian Space (ft^2/ped)				Action with Mitigation Level of Service			
				AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT		AM	MD	PM	SAT	AM	MD	PM	SAT
S9	31st St Btwn Newtown Ave and 30th Ave	West	9.5	173	165	93	175	B	B	B	B	108	136	67	133	B	B	C	B	6.1	67	80	40	79	C	C	D	C

Bus Line Haul

As discussed in **Chapter 11, "Transportation,"** the Proposed Actions would add approximately 67, 30 and 97 bus trips through the maximum load points of the eastbound Q18, northbound Q103, and southbound Q103, respectively, in the AM peak hour. The Proposed Actions would also add approximately 85 and 55 bus trips through the maximum load points of the northbound Q103 and southbound Q103, respectively, in the PM peak hour. This would result in a passenger capacity shortfall of 16, 12 and 46 on the eastbound Q18, northbound Q103, and southbound Q103, respectively, in the AM. It would also result in a passenger capacity shortfall of 63 and 45 on the northbound Q103 and southbound Q103, respectively, in the PM. Therefore, based on *CEQR Technical Manual* criteria, the eastbound Q18, northbound Q103, and southbound Q103 services would be significantly adversely impacted in the AM peak hour along with the westbound Q103 and southbound Q103 services in the PM peak hour. As shown in **Table 18-18**, the significant adverse impact to the Q18 could be fully mitigated by the addition of one additional bus in eastbound direction in the AM peak hour. The significant adverse impact to the Q103 could be fully mitigated by one additional bus in northbound and southbound directions in the AM peak hour. Also shown in **Table 18-18**, the significant adverse impact to the Q103 could be fully mitigated by two additional bus in northbound direction and one additional bus in the southbound direction in the PM peak hour. The general policy of NYCT is to provide additional bus service where demand warrants, taking into account financial and operational constraints.

Table 18-18
Action-With-Mitigation Local Bus Analysis

Peak Hour	Route	Direction	Maximum Load Point	Peak Hour Buses[1]	No Action Available Capacity[2]	Project Increment	Available Capacity w/ Proposed Actions[2]	Additional Buses Needed to Accommodate Project Demand	Available Capacity With Mitigation
AM	Q18	EB	30 AV & 27 ST	16.5	51	67	-16	1	38
	Q103	NB	21 ST-41 AV	6	18	30	-12	1	42
		SB	40 AV-10 ST	19	51	97	-46	1	8
PM	Q103	NB	21 ST-41 AV	15	22	85	-63	2	45
		SB	40 AV-12 ST	10	10	55	-45	1	9

Notes:
1. Assumes service levels adjusted to address capacity shortfalls in the No Action conditions.
2. Available capacity based on MTA loading guidelines of 54 passengers per standard bus.
* Denotes a significant adverse impact.

Street User Safety

As discussed in **Chapter 11, "Transportation,"** currently, the most direct route to the Project Area, across 26th Avenue, is via 3rd Street. This route is in close proximity to the demapped 3rd Street and site entrances (on the east side where the residential, community facility, and retail entrances are located). It is therefore likely that pedestrians en route to and from Proposed Development Site 1 would choose to cross 26th Avenue at this more proximate location where a crosswalk is not present (there are no existing crosswalks on 26th Avenue). This would result in a pedestrian safety concern. This safety concern would be alleviated by the installation of a new pedestrian crosswalk at one this location. A new crossing would involve the installation of a new traffic signal, a new all-way stop control, or an Enhanced Pedestrian Crossing.

However, warrants for these controls were explored but not warranted. In the absence of these potential improvement measures, the location would remain a safety concern. Between the DEIS and FEIS, potential measures to facilitate the safe and efficient movement of pedestrians crossing 26th Avenue will be considered in consultation with the NYCDOT and the lead agency.

Transportation Monitoring Plan (TMP)

As all identified transportation impacts would occur upon completion and occupancy of all three Towers on Projected Development Site 1 and the one building on Projected Development Site 2, any proposed mitigation measures would be required at this time. Construction on Projected Development Site 1 would occur in three phases (three Towers) over a total of approximately 80-months. It is anticipated that Phase 1 would include construction of Tower 1 starting in late 2022 and end in 2024 with occupancy in 2025. Phase 2 would include the construction of Tower 2 and starting in 2024 and end in 2026. As part of the mitigation, subsequent to the completion and occupancy of Phases 1 and 2 of Projected Development Site 1, two towers consisting of 809 dwelling units (approximately half the proposed units), 22,638 community facility space, and 1,887 local retail spaces, the post-implementation TMP will help to gauge and determine whether the recommended transportation mitigation measures (signal implementations, signal modification, curbside regulations, and additional bus line haul) are needed to accommodate the demand generated by the Proposed Actions. The appropriate timing to conduct the TMP will be finalized and coordinated with DOT between the DEIS and FEIS. Prior to undertaking the TMP, the Applicant will submit a scope of work for agency review and approval. The Applicant is committed to conducting this transportation monitoring program to determine the need for mitigation measures described in this EIS, provided that any such changes shall be the most cost-effective measures available; and provided further that the TMP is intended to be supplemental to and not in duplication or replacement of the EIS. The TMP would re-evaluate and update transportation analyses, including at driveways on the Development Sites, in a memorandum based on surveys to be conducted on the occupied development site to determine the definitive need for various mitigation measure. The TMP will also include the collection of additional traffic and pedestrian data, where necessary, in order to completed the analyses in the TMP. The TMP would be coordinated with various city agencies for review.

The Applicant will commit to conducting the TMP study to better estimate the actual transportation planning factors, modal splits, subway station/line usage, bus route usage, the full build demand generated by the Proposed Actions, and any future demand from No-Action developments. The TMP will include modal split and origin-destination surveys, trip generation of the Proposed Actions and No-Action developments, and some new data. The TMP would survey a reasonable sample of occupants of the two towers of the occupied development (809 DUs) to determine their mode and route of transportation to work, including subway stations, lines, buses, and bus stops. The surveys would also inquire about and study travel patterns, temporal distributions, directional splits, travel preferences, vehicle ownership, and work-from-home frequency. The TMP will revise analyses were necessary based on findings of these surveys and new data. The TMP and supporting documentations will be reviewed by applicable agencies, including DOT and NYCT, as appropriate. At the time of the TMP, if reviewing agencies determine that alternate mitigation measures would more adequately address the transportation conditions and impacts, the Applicant will work with DOT and alternate mitigation measures may be instated. The Applicant would be responsible for costs associated with the Transportation Monitoring Plan, including any subsequent design and implementation of mitigation measures determined in the plan. It should be noted that prior to building occupancy, final details of the shuttle service, including location of shuttle stops and the shuttle route, shall be subject to coordination with the NYCDOT.

The updated analysis mentioned above will also reassess the trip generation rates and modal splits assumed for the Proposed Actions in this EIS, some No-Action Sites, and the *Hallett's Point Rezoning* and *Astoria Cove Development* FEISs. It is important to note that the all analyses in **Chapter 11 "Transportation,"** the *Hallett's Point Rezoning FEIS*, and the *Astoria Cove Development FEIS* reflect a demand based on the residential planning factors (specifically trip generation rates and temporal distribution) from the 2020 *CEQR Technical Manual*. These include a weekday residential trips generation rate of 8.075 trips per dwelling unit (DU) and temporal distribution of 10% and 11% for the weekday AM and PM peak hours. The TMP would use residential rates are based on the latest *CEQR Technical Manual*. The residential weekday trip generation rate would be 8.18 trips per dwelling unit with temporal distributions of 9.3% and 8.5% for the weekday AM and PM peak hours. The aforementioned CEQR rates would reduce the demand forecast for the Proposed Actions' (and some future No-Action sites) when re-evaluated following the occupancy of Tower 2.

It should be noted that TMP will also help to better estimate the ferry usage on the Halletts Point peninsula, where the Astoria landing for the NYC Ferry is located, an approximately eight-minute walk from the Projected Development Sites. Previous FEISs, namely the *Halletts Point Rezoning FEIS* (2013) and the *Astoria Cove Development FEIS* (2014), did not consider the attractiveness or influence of the NYC Ferry system in their respective projects. The NYC Ferry began service in 2017, several years after the completion of those EISs, and has grown in ridership. The Astoria ferry currently provides service and access to Downtown Manhattan, Midtown, the Upper East Side, Long Island City, and the Brooklyn Navy Yard. The NYC Ferry service is expected to be expanded to include Staten Island, Coney Island, the west side of Manhattan, and the East Bronx in 2021. By the expected completion and occupancy of the projected developments and other developments in the Halletts Peninsula, ferry usage would likely further change. The proposed TMP would facilitate in determining a more appropriate ferry modal split for residents in the area, including those residing on the Projected Development Sites and No-Action Development Sites. The TMP would also better understand the recent trends and changes in the transportation, including the changes of increased work-from-home, vehicle ownership, and usage of alternate modes of transportation.

In the future, when the proposed TMP is conducted, demand from prospective No-Action developments would be better identified and comprehended. For instance, as of 2021, only one of the eight proposed buildings as part of the Hallett's Point Rezoning has been erected. The 2013 *Halletts Point Rezoning FEIS* assumed that all buildings would be constructed and occupied by 2022. Even further, the 2014 *Astoria Cove Development FEIS* proposed the construction and development of five buildings on the Halletts Cove peninsula by 2023, but as of 2021, no buildings have been constructed and there are no approvals for new construction. As such, the TMP will also reassess the forecasted demand identified for No-Action developments and adjust the analyses accordingly, as it is likely that some of the demand from developments like Halletts Point or Astoria Cove would not materialize to the magnitude initially forecasted in their respective FEISs. However, per NYCT direction, transit analyses in the Transportation Monitoring Plan should assume the full demand projections for any no-build projects (e.g. Halletts Point and Astoria Cove) as disclosed in their respective FEISs, regardless of completion status.

F. NOISE

As discussed in **Chapter 14, "Noise,"** significant adverse impacts related to traffic-generated noise are predicted to occur on 10 residential and commercial office buildings along 26th Avenue between 3rd and 4th Street, and along 3rd Street between 26th and 27th avenues during various peak hours. Significant mobile source noise impacts during the operation of the proposed development are predicted to occur at residential buildings at 3-04 - 3-06 26th Avenue, 3-08 - 3-10 26th Avenue, 26-38 3rd Street, 26-31 3rd Street,

26-24 3rd Street, 26-18 3rd Street, 26-19 3rd Street, 26-15 3rd Street, 26-11 3rd, and 26-35 3rd Street. As discussed in **Chapter 14, "Noise,"** practicable and feasible mitigations measures will be explored in consultation with DCP and additional work will be conducted between the DEIS and FEIS to provide a sufficient reduction to the identified noise increments to remain below the CEQR threshold (i.e., 3 dBA) or to lower interior noise levels at the identified impacted noise receptors to an acceptable range. If warranted, possible mitigation measures could include installing storm windows or providing an alternate means of ventilation (including, but not limited to, air conditioning) to impacted existing noise receptors where these measures are not already in use. However, if interior noise levels at the identified impacted noise receptors are still above the acceptable level (i.e., 45 dBA or lower for residential/community facility uses, and 50 dBA or lower for commercial office uses) and there are no other feasible and practicable mitigation measures that are identified, the significant adverse mobile source noise impacts would be considered either partially mitigated or would remain unmitigated.

F. CONSTRUCTION

As discussed in **Chapter 17, "Construction,"** construction of the Proposed Development would potentially result in significant adverse transportation (traffic) and noise impacts. Potential mitigation measures to address the significant adverse impacts are discussed below.

Transportation - Traffic

Construction traffic conditions during the 2027 Q3 and Q4 construction were evaluated at 21 intersections (10 signalized and 11 unsignalized) in the traffic study area where construction vehicle trips would exceed the 50-trips/hour *CEQR Technical Manual* analysis threshold in the AM and/or PM construction peak hours. As discussed in **Chapter 17, "Construction,"** the construction traffic impact analysis identified the potential for significant adverse impacts to two lane groups at one intersections in the weekday AM construction peak hour, and ten lane groups at five intersections in the weekday PM construction peak hour. These impacted lane groups are summarized in **Table 18-19**.

As discussed below, impacts two lane groups at one intersection could be mitigated by modifying the existing traffic signal timing (see **Table 18-20**). This is a standard mitigation measure that is routinely identified by the City and considered feasible for implementation. Implementation of the recommended traffic mitigation is subject to review and approval by DOT. If, prior to implementation, DOT determines that the identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

TABLE 18-19
Lane Groups With Significant Adverse Construction Traffic Impacts

Intersection		Construction Peak Hour	
Location	**Control**	**Weekday AM**	**Weekday PM**
27th Avenue (EB/WB) & 3rd Street (SB)	Stop-Control	---	SB-LR
27th Avenue (EB/WB) & 18th Street (NB/SB)	Stop-Control	---	EB-LTR
Astoria Boulevard (EB/WB) & 21st Street (NB/SB)	Signal	EB-TR, WB-T	EB-L, EB-TR, WB-T, NB-T
30th Avenue (EB/WB) & 8th Street (NB/SB)	Stop-Control	---	SB-LT, WB-LR
Astoria Park South (EB/WB)/Hoyt Avenue South (EB) & 21st Street (NB/SB)	Signal	---	NB-LTR, SB-LTR
	Total	2	10

NB – Northbound, SB – Southbound, EB – Eastbound, WB – Westbound
L – Left-turn, T – Through, R – Right-turn, DefL – Defacto left-turn

Table 18-21 shows the peak hour v/c ratios, delays, and levels of service (LOS) at impacted intersections with implementation of the recommended mitigation measures and compares them to No-Action and With-Action conditions for each analyzed peak hour. According to *CEQR Technical Manual* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action-with-Mitigation condition compared to the No-Action condition is no longer deemed significant following the impact criteria described in **Chapter 11, "Transportation." Table 18-21** shows that the significant adverse impacts to two lane groups at one intersection would be fully mitigated in the construction PM peak hour with the recommended mitigation measures. However, significant adverse impacts to two lane groups at one intersection in the construction AM peak hour and eight lane groups at four intersections in the construction PM peak hour would remain unmitigated. At these locations, standard mitigation measures such as the installation of a traffic signal, adjustments to signal phasing/timing, lane restriping and changes to curbside parking regulations were found to be infeasible and/or ineffective at mitigating the anticipated impacts. Consequently, the unmitigated impacts identified above would constitute unavoidable significant adverse construction traffic impacts as a result of the Proposed Actions (refer to **Chapter 20, "Unavoidable Adverse Impacts"**).

TABLE 18-20
Proposed Construction Traffic Mitigation Measures

Intersection	Peak Hour	Phase	No-Action Signal Timing (Seconds) (1) AM	No-Action Signal Timing (Seconds) (1) PM	Proposed Signal Timing (Seconds) (1) AM	Proposed Signal Timing (Seconds) (1) PM	Proposed Mitigation Measures
27th Ave (EB/WB) & 3rd Street (NB/SB)	ALL	EB/WB NB/SB	Stop-Controlled				- Unmitigatable.
27th Ave (EB/WB) & 18th Street (SB)	MD/PM SATMD	EB/WB	Stop-Controlled				- Unmitigatable.
Astoria Blvd (EB/WB) & 21st St (SB)	ALL	EB WB NB/SB PED	27 33 53 7	30 27 56 7	27 33 53 7	30 27 56 7	- Unmitigatable
30th Ave (WB) & 8th Street (NB/SB)	ALL	WB SB	Stop-Controlled				- Unmitigatable.
Astoria Park S/ Hoyt Ave 21st Street	ALL	EB NB/SB PED	53 60 7	53 60 7	53 60 7	52 61 7	- Transfer 1s from EB to NB/SB in PM

Notes:
(1) Signal timings shown indicate green plus yellow (including all red) for each phase.

TABLE 18-21
Construction Action-With-Mitigation Conditions at Impacted Lane Groups

			No-Action AM			With-Action AM				Action-With-Mitigation AM			
Intersections	Approach	Lane Group	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay (sec/veh)	LOS		V/C Ratio	Delay (sec/veh)	LOS	
27th Av &	EB	LT	0.00	7.9	A	0.00	8.1	A		0.00	8.1	A	
3rd St	SB	LR	0.04	13.5	B	0.12	14.9	B		0.12	14.9	B	
(Stop-Control)													
27th Av &	EB	LTR	0.07	9.1	A	0.08	9.7	A		0.08	9.7	A	
18th St	WB	LTR	0.01	8.1	A	0.01	8.2	A		0.01	8.2	A	
Astoria Blvd &	EB	L	0.61	55.7	E	0.64	57.7	E		0.64	57.7	E	
21st St	EB	TR	1.79	421.0	F	1.85	447.5	F	*	1.85	447.5	F	*
(Signalized)	WB	L	0.89	73.3	E	0.89	73.3	E		0.89	73.3	E	
	WB	T	1.22	169.2	F	1.41	245.8	F	*	1.41	245.8	F	*
	WB	R	0.19	38.8	D	0.19	38.8	D		0.19	38.8	D	
	NB	T	0.43	28.0	C	0.49	29.5	C		0.49	29.5	C	
	NB	R	0.33	27.2	C	0.33	27.2	C		0.33	27.2	C	
	SB	LT	0.77	36.1	D	0.77	36.1	D		0.77	36.1	D	
	SB	R	0.58	34.5	C	0.71	41.2	D		0.71	41.2	D	
30th Av &	SB	LT	0.16	8.4	A	0.17	8.6	A		0.17	8.6	A	
8th St	WB	LR	0.12	10.9	B	0.14	11.3	B		0.14	11.3	B	
(Stop-Control)													
Astoria Park S/ Hoyt Av &	EB	L	0.08	22.6	C	0.08	22.6	C		0.08	22.6	C	
21st St	EB	TR	0.77	41.5	D	0.77	41.7	D		0.77	41.7	D	
(Signalized)	NB	LTR	0.57	26.3	C	0.59	26.8	C		0.59	26.8	C	
	SB	LTR	0.93	43.5	D	0.96	48.3	D		0.96	48.3	D	

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a significant adverse impact
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

TABLE 18-21 (continued)
Construction Action-With-Mitigation Conditions at Impacted Lane Groups

			No-Action PM				With-Action PM				Action-With-Mitigation PM			
Intersections	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS		V/C Ratio	Delay (sec/veh)	LOS		V/C Ratio	Delay (sec/veh)	LOS	
27th Av &	EB	LT	0.01	9.3	A		0.01	9.5	A		0.01	9.5	A	
3rd St	SB	LR	0.37	28.0	D		0.83	68.7	F	*	0.83	68.7	E	*
(Stop-Control)														
27th Av &	EB	LTR	0.45	26.8	D		0.55	36.6	E	*	0.55	36.6	E	*
18th St	WB	LTR	0.02	10.3	B		0.03	11.2	B		0.03	11.2	B	
(Stop-Control)														
Astoria Blvd &	EB	L	0.60	51.8	D		0.75	61.2	E	*	0.75	61.2	E	*
21st St	EB	TR	1.38	233.7	F		1.54	303.3	F	*	1.54	303.3	F	*
(Signalized)	WB	L	0.91	84.4	F		0.91	84.4	F		0.91	84.4	F	
	WB	T	1.58	333.6	F		1.68	377.9	F	*	1.68	377.9	F	*
	WB	R	0.80	81.5	F		0.81	83.5	F		0.81	83.5	F	
	NB	T	1.07	83.5	F		1.15	114.7	F	*	1.15	114.7	F	*
	NB	R	0.53	30.5	C		0.53	30.5	C		0.53	30.5	C	
	SB	LT	0.74	33.2	C		0.74	33.3	C		0.74	33.3	C	
	SB	R	0.65	35.3	D		0.70	37.6	D		0.70	37.6	D	
30th Av &	SB	LT	0.59	27.6	C		0.77	44.4	E	*	0.77	44.4	E	*
8th St	WB	LR	1.18	199.3	F		1.95	537.3	F	*	1.95	537.3	F	*
(Stop-Control)														
Astoria Park S/ Hoyt Av &	EB	L	0.15	23.5	C		0.15	23.5	C		0.16	24.2	C	
21st St	EB	TR	0.64	34.0	C		0.66	35.0	C		0.68	36.3	D	
(Signalized)	NB	LTR	1.24	149.9	F		1.28	164.9	F	*	1.24	149.0	F	
	SB	LTR	1.30	176.4	F		1.33	189.7	F	*	1.30	172.3	F	

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a significant adverse impact
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Noise

As described in **Chapter 17, "Construction,"** construction of the Proposed Project would be required to follow the requirements of the *New York City Noise Control Code* (also known as Chapter 24 of the *Administrative Code of the City of New York,* or Local Law 113) for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s) as required under the *New York City Noise Control Code*. These measures could include a variety of source and path controls, including the following:

- The project would reduce the noise level at the source during the most time-sensitive time period per NYC Noise Code. An after-hour noise variance from DEP would be required for weekend and after-hours work.
- Appropriate usage and maintenance procedures should be followed for all construction equipment to limit noise emissions. The procedures include:
    - Employ the manufacturer's appropriate noise reduction procedures to maintain all equipment and mufflers.
    - Closure of engine's housing doors during operation.
    - Cover portable noise-generating equipment with noise-insulating fabric where feasible and practicable.
    - Use equipment that meets the sound level standards specified in Subchapter 5 of the New York City Noise Control Code from the start of construction.
- Where feasible and practicable, construction sites would be configured to minimize backup alarm noise.
- All trucks, other than trucks operate a loading, unloading, or processing device (e.g., concrete mixing trucks), would not be allowed to idle more than three minutes at the construction site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the NYC Administrative Code.
- Where logistics allow, path controls (such as portable barriers or shrouds around specific equipment) would be considered during the development of the construction noise mitigation plan.
- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations.
- As early in the construction period as logistics would allow diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welders, water pumps, bench saws, and table saws (i.e., early electrification) to the extent feasible and practicable.
- Noise barriers constructed from plywood or other materials would be utilized to provide shielding (e.g., the construction sites would have a minimum 8-foot barrier); and
- Where logistics allow, truck deliveries would take place behind the noise barriers.

Notwithstanding the above measures, construction activities generated by the Proposed Project that would have the potential to result in significant adverse construction noise impacts at sensitive receptors in the vicinity of the construction work areas.

As described in **Chapter 17, "Construction,"** the *CEQR Technical Manual* divides construction duration into "short-term" (less than two years) and long-term (two or more years)" and states that impacts resulting from short-term construction generally do not require detailed assessment. As with all construction in New York City, the Proposed Development would be required to adhere to the New York City Noise Control Code, which mandates that all construction be conducted in accordance with noise mitigation plans that address the specific location, type of work, and timing of a project. Specific noise control measures will be described in the construction noise mitigation plan. These measures could include a variety of source controls, path controls, and receptor controls. However, even with these measures, the analysis presented in **Chapter 17, "Construction,"** predicted noise levels due to construction-related activities associated with the Proposed Project whose magnitude and duration would constitute significant adverse impacts at the following existing residential buildings: 3-04 26th Avenue, 3-06 26th Avenue, 3-08 26th Avenue, 3-10 26th Avenue, and 26-02 4th Street, as well as the future No-Action Astoria Cove development, which would also experience significant adverse construction noise impacts at the podium and north and south tower of Building 1. The highest construction noise impacts occur primarily on the portions of buildings with direct line-of-sight to project-related construction activities.

With respect to the planned Astoria Cove Building 1 and recently constructed building at 26-02 4th Street, there are no feasible and practical measures to fully mitigate the construction noise impacts predicted to occur. These locations are planned to have an alternate means of ventilation allowing for the maintenance of a closed window condition (i.e., central air conditioning). Even with 30 dBA window/wall attenuation given to newly constructed luxury buildings, these locations would be expected to experience interior noise levels during portions of construction that would exceed the 45 dBA guideline recommended for residential spaces according to CEQR noise exposure guidelines. As such, with these noise attenuation measures already in place, further receptor controls at these locations would not be effective in substantially reducing noise levels. Therefore, the significant adverse construction-period noise impact would remain unmitigated.

With respect to 3-04 26th Avenue, 3-06 26th Avenue, 3-08 26th Avenue, and 3-10 26th Avenue, these buildings do not have central air conditioning and typically rely on window air conditioning for cooling. Any units lacking a window AC would need to keep their windows open during summer months, which would substantially decrease window/wall noise attenuation. The exterior to interior attenuation provided by a building with windows open is approximately 10 dBA, compared to up to 28 dBA for closed double-glazed windows and window air conditioning units. Interior $L_{10(1)}$ noise levels would exceed the recommended threshold for residential use according to CEQR noise exposure guidelines for extended periods during construction; increment durations could persist above 15 dBA Leq for 3 to 12 months. Considering the magnitude and duration, this would represent a significant adverse construction noise impact.

While the provision of window air conditioners to the affected buildings was explored, such a measure would only reduce the magnitude of temporary construction noise impacts, and the identified impacts would not be fully mitigated. Specifically, even with the provision of window air conditioners to these buildings, during certain periods of the Proposed Project's construction, interior noise levels would exceed 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria). For units that already have window ACs, further receptor controls would not be effective and the significant adverse impact would remain unmitigated. The feasibility of providing window ACs to any apartment units currently lacking them will be explored as a potential partial mitigation between the DEIS and FEIS.

Beyond the façade noise attenuation measures discussed above, the potential use of source or path controls beyond those that would be required are being explored as possible mitigation measures to the significant adverse noise impacts identified at the residential buildings across from the Proposed Project.

Under the *New York City Noise Control Code*, noise barriers constructed from plywood or other materials are required to be provided at a height of 8 feet For receptors that are shielded by the perimeter noise barrier (i.e., those at or below the height of the barrier), the height and treatment to the barrier would be expected to provide up to approximately 5 dBA of additional shielding from at-grade or below-grade sources of construction noise.

Project on Project Impacts

The Proposed Project is expected to be completed in 2028. Tower1 of Projected Development Site 1 is assumed be completed and occupied in 2024 as Tower 2 construction is underway. Towers 1 and 2 will be completed in and occupied in 2026 as Tower 3 construction is underway. Towers 1, 2, and 3 will be completed and occupied in 2029 as Projected Development Site 2 construction is underway.

Considering the modeling analysis and extrapolation of analyzed results, the project-on-project analysis concluded that construction associated with the Proposed Actions could increase noise levels by 15 dBA for 12 consecutive months or more and 20 dBA for three consecutive months or more for completed and occupied Phase 1 development and Phase 2 development. Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the Proposed Actions at completed and occupied Phase 1 and Phase 2 project buildings would have the potential to result in significant adverse construction noise impacts. There are no feasible and practical measures to fully mitigate the construction noise impacts predicted to occur. The Proposed Project is planned to have an alternate means of ventilation allowing for the maintenance of a closed window condition (i.e., central air conditioning). Even with 30 dBA window/wall attenuation given to newly constructed luxury buildings, these locations would be expected to experience interior noise levels during portions of construction that would exceed the 45 dBA guideline recommended for residential spaces according to CEQR noise exposure guidelines. As such, with these noise attenuation measures already in place, further receptor controls at these locations would not be effective in substantially reducing noise levels. Therefore, the significant adverse construction-period noise impact would remain unmitigated.

Based on the results of more refined field observations, additional mitigation measures will be explored further by the Applicant in consultation with DCP between the DEIS and FEIS. If no additional practicable and feasible mitigation measures are identified, the impacts would be considered partially mitigated.