East New York Rezoning Proposal
Chapter 20: Mitigation

A. INTRODUCTION

In accordance with the 2014 *City Environmental Quality Review* (CEQR) *Technical Manual*, where significant adverse impacts are identified, mitigation measures to reduce or eliminate the impacts to the fullest extent practicable are developed and evaluated. Measures to further mitigate adverse impacts may be evaluated between the DEIS and FEIS. Therefore, the FEIS will include more complete information and commitments on all practicable mitigation measures to be implemented with the Proposed Actions.

B. PRINCIPAL CONCLUSIONS

Community Facilities

Public Schools

Under the reasonable worst-case development scenario (RWCDS), 2,925 incremental DU would be developed within CSD 19, Sub-district 2 (compared to the No-Action condition), which would result in significant adverse impacts on elementary and intermediate schools within the sub-district that are projected to occur in year 2024. To avoid the significant adverse elementary school impact, the number of incremental dwelling units that could be developed in the sub-district would have to be reduced to 1,301, generating 377 elementary school students, as compared to No-Action conditions. This would represent a decrease of 1,624 DU (55.5 percent) in CSD 19, Sub-district 2. To avoid the identified significant adverse intermediate school impacts in Sub-district 2 of CSD 19, the number of incremental dwelling units that could be developed in the sub-district would have to be reduced to 1,295, generating 155 intermediate school students, as compared to No-Action conditions. This would represent a decrease of 1,630 DU (55.7 percent) in CSD 19, Sub-district 2. Alternately, based on the RWCDS for the Proposed Actions, an additional 454 elementary school seats and 183 intermediate school seats would be needed in order to reduce the incremental increase in utilization rates to less than the *CEQR Technical Manual* impact threshold of five percent.

To eliminate these impacts in CSD 19, Sub-district 2 (projected to occur in year 2024), the following mitigation measures could be applied in conjunction with the City's monitoring of capacity: a) restructure or reprogram existing school space under the Department of Education's control in order to make available more capacity in existing school buildings located within CSD 19, Sub-district 2; b) relocate administrative functions to another site, thereby freeing up space for classrooms; and/or c) create additional capacity in the area by constructing a new school(s), building additional capacity at existing schools, or leasing additional school space constructed as part of projected development within CSD 19, Sub-district 2. These preliminary mitigation options will continue to be explored between the DEIS and FEIS.

The Proposed Actions would not result in a significant adverse impact on CSD 19, Sub-district 1 elementary schools in the 2030 With-Action condition, as 682 elementary school seats would be introduced on projected development site 66 under the RWCDS. However, as the With-Action school is not expected to be completed until the 2020-2021 academic year, the elementary school utilization rate that would occur in 2020 (Q2) would constitute a significant adverse impact, but because the impact would last only until the school's anticipated 2020 (Q3) completion, the impact is considered to be temporary.

Child Care Services

To avoid the identified significant adverse child care center impact, the number of affordable DU that could be developed on the projected development sites would have to be reduced to 2,401, a 30 percent (1,046 DU) reduction in the number of affordable units anticipated under the RWCDS. The 2,401 affordable DU would generate 427 children under age six eligible for publicly funded child care and study area child care facilities would operate at capacity with no child care slot shortfall. Alternately, the provision of an additional 187 child care slots would mitigate the significant adverse child care center impact. With 187 additional child care slots, study area child care facilities would operate at capacity, with no child care slot shortfall.

Possible mitigation measures for this significant adverse impact will be developed in consultation with the New York City Administration for Children's Services (ACS). Mitigation for a significant child care impact may include provision of suitable space(s) for a child care center within new or existing buildings and within a reasonable distance (leased at a rate affordable to ACS or ACS providers) or funding, or making program improvements to support additional capacity.

Measures to mitigate the identified significant adverse impact on publicly funded child care centers will continue to be explored between the DEIS and FEIS in coordination with the lead agency, DCP, and ACS. However, a potential exists that sufficient measures may not be available to fully mitigate the identified adverse impacts. If after exploring all possible mitigation measures, it is determined that the significant adverse impact on publicly funded child care facilities would not be completely eliminated, an unavoidable significant adverse impact would result.

Open Space

To avoid the identified significant adverse residential study area open space impact, the number of residents that could be introduced on the projected development sites would have to be reduced to less than 10,747 (or less than approximately 3,608 residential units). This would represent an approximately 42.8 percent reduction in the number of residential units anticipated under the RWCDS. Alternately, in order to avoid a significant adverse open space impact, the Proposed Actions would have to provide approximately 4.69 acres of additional open space (including a minimum of 2.18 acres of passive open space and a minimum of 2.40 acres of active open space) to the study area.

Measures being considered to mitigate the Proposed Actions' significant adverse open space impact include: expanding existing parks; creating new open space on publicly-owned sites; pursuing opportunities to encourage owners of large privately-owned sites to create new open space as part of their redevelopment; making playgrounds accessible to the community after school hours through the Schoolyards to Playgrounds program, establishing new pedestrian plazas in streets through the City's Plaza Program, and/or improving existing parks to allow for more diverse programming and enhanced usability. These potential mitigation measures are currently being explored in coordination with the lead agency, DCP, and the New York City Department of Parks and Recreation (DPR) and will be refined between the DEIS and FEIS.

Although many of the mitigation measures being considered would substantially increase the amount and usability of open space resources for the additional population introduced by the Proposed Actions, opportunities to create new publically-accessible open space resources in sufficient amounts within the study area to fully mitigate the identified significant adverse open space impact are very limited. As a consequence, the Proposed Actions' significant adverse open space impact may not be completely eliminated and, as a result, an unavoidable significant adverse open space impact would occur.

Shadows

As discussed in Chapter 6, "Shadows," and Chapter 7, "Historic and Cultural Resources," the Proposed Actions would result in a significant shadows impact (and shadow-related historic resource impact) on the NYCL-eligible and S/NR-eligible Holy Trinity Russian Orthodox Church. It should be noted that the sites that would cast incremental shadows on this historic resources are potential, rather than a projected, development sites. As described in Chapter 1,

"Project Description," potential development sites are considered less likely to be developed than projected development sites. Consequently, the likelihood of this impact occurring is less than if it were to result from development on a projected development site.

A potential mitigation measure for the identified impact on this resource may include the use of artificial lighting to simulate the sunlit conditions. The provision of indirectly mounted lighting could simulate lost sunlight conditions at the affected stained glass windows of this resource. This and other feasible and practicable mitigation measures for this potential significant adverse impact will be explored by the lead agency, DCP, in consultation with the New York City Landmarks Preservation Commission (LPC) between the DEIS and FEIS. Absent the identification and implementation of feasible and practicable measures, the Proposed Actions could have an unmitigated significant adverse shadows impact on the Holy Trinity Russian Orthodox Church.

Historic and Cultural Resources

As described in Chapter 7, "Historic and Cultural Resources," the Proposed Actions could result in significant adverse historic resources impacts to one resource that is eligible for S/NR-listing and NYCL-designation. Projected development site 37, which is expected to be developed under RWCDS With-Action conditions, contains the S/NR- and NYCL-eligible Empire State Dairy Building. As the maximum permitted With-Action FAR on site 37 could be constructed without the demolition or enlargement of the Empire State Dairy Building, the structure is not projected to be demolished, either partially or entirely, or substantially altered under the RWCDS. However, the Proposed Actions do not include any measures that would prevent the demolition or alteration of the Empire State Dairy Building.

In the event that the structure was designated as a landmark by the LPC, the significant adverse impact would be fully mitigated. However, as the designation process is subject to LPC approval, and not CPC approval, it cannot be assumed or predicted with any certainty. The possibility of potential designation of this resource will be explored, in consultation with the LPC, between the DEIS and FEIS. Absent LPC's designation of the Empire State Dairy Building, the implementation of measures such as photographically documenting the eligible structure in accordance with the standards of the Historic American Buildings Survey (HABS) could partially mitigate the identified significant adverse direct impact to this historic architectural resource. However, a mechanism to require such measures is not available. Accordingly, this impact would not be completely eliminated, and, if the Empire State Dairy Building is not designated as a landmark, an unavoidable significant adverse impact on this historic resource would occur.

Transportation

Traffic

As described in Chapter 13, "Transportation," the Proposed Actions would result in significant adverse traffic impacts at 47 study area intersections during one or more analyzed peak hours; specifically 58 lane groups at 40 intersections during the weekday AM peak hour, 36 lane groups at 23 intersections during the midday peak hour, 63 lane groups at 40 intersections during the PM peak hour, and 37 lane groups at 25 intersections during the Saturday midday peak hour. Implementation of traffic engineering improvements such as signal timing changes or modifications to curbside parking regulations would provide mitigation for many of the anticipated traffic impacts. Implementation of the recommended traffic engineering improvements is subject to review and approval by DOT. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified.

Table 20-1 shows that significant adverse impacts would be fully mitigated at all but 15 lane groups at nine intersections during the weekday AM peak hour, ten lane groups at two intersections during the midday peak hour, 18 lane groups at nine intersections during the PM peak hour, and ten lane groups at four intersections during the Saturday midday peak hour. Table 20-2 provides a more detailed summary of the intersections and lane groups that would have significant adverse traffic impacts and indicates whether the impacts would be fully mitigated. No

practicable mitigation was identified for one or more lane groups at 14 impacted intersections, and impacts in one or more peak hours at these locations would remain unmitigated.

TABLE 20-1
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	269/74	211/34	58/40	43/31	15/9
Weekday Midday	267/74	231/51	36/23	26/21	10/2
Weekday PM	273/74	210/34	63/40	45/31	18/9
Saturday Midday	266/74	229/49	37/25	27/21	10/4

TABLE 20-2
Lane Groups With Unmitigated Significant Adverse Traffic Impacts

Intersection	Peak Hour			
	Weekday AM	Weekday Midday	Weekday PM	Saturday Midday
Signalized Intersections				
Atlantic Ave & Eastern Pkwy	WB-T (main)	---	---	---
Atlantic Ave & Pennsylvania Ave	WB-TR, NB-TR, SB-L	EB-TR, WB-TR, NB-L, NB-TR, SB-L, SB-TR	EB-T, WB-TR, NB-TR, SB-L	EB-TR, WB-TR, NB-L, NB-TR, SB-L
Atlantic Ave & Logan St	SB-LTR	---	SB-LTR	SB-LTR
Broadway & Eastern Pkwy	EB-TR, WB-LT	---	EB-L, EB-TR, WB-LT	---
Fulton St & Pennsylvania Ave	---	---	NB-TR, SB-L	---
Fulton St & Miller Ave	---	---	EB-TR	---
Fulton Street & Logan St	WB-LTR	---	WB-LTR	---
Bushwick Ave/Jamaica Ave & Pennsylvania Ave/Jackie Robinson Pkwy	EB-Jamaica-TR, WB-L, WB-T, NB-L	EB-Bushwick-R, WB-L, WB-T, NB-L	EB-Bushwick-R, WB-L, WB-T, NB-L	WB-LT, NB-L
Jamaica Ave & Highland Pl/Force Tube Ave	---	---	SB-TR	---
Pitkin Ave & Mother Gaston Blvd	WB-LTR	---	---	---
Pitkin Ave & Pennsylvania Ave	WB-LTR	---	---	---
Unsignalized Intersections				
Arlington Ave & Jamaica Ave	---	---	---	NB-LR
Fulton St & Elton St	NB-TR	---	---	---
Pitkin Ave & Elton St	---	---	NB-LTR	---

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

Transit

SUBWAY LINE HAUL

In the 2030 future with the Proposed Actions, AM peak hour demand on southbound J/Z trains would exceed practical capacity, and the Proposed Actions would increase this demand by an average of more than five passengers per car. Southbound J/Z trains would therefore be significantly impacted by the Proposed Actions based on *CEQR Technical Manual* criteria. This significant adverse impact could be fully mitigated by the addition of one southbound J or Z train during the AM peak hour. As standard practice, New York City Transit (NYCT) routinely conducts periodic ridership counts and adjusts subway frequency to meet its service criteria, within fiscal and operating constraints.

BUS

The Proposed Actions would result in a capacity shortfall of 17 spaces on westbound Q8 service in the PM peak hour. This significant adverse impact to Q8 local bus service could be fully mitigated by the addition of one standard bus in the westbound 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.

Pedestrians

Incremental demand from the Proposed Actions would significantly adversely impact a total of two sidewalks, one crosswalk and one corner area in one or more peak hours. Recommended mitigation measures to address these impacts are discussed below. Implementation of these measures would be subject to review and approval by DOT. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified.

SIDEWALKS

Two of the 79 analyzed sidewalks are expected to be significantly adversely impacted by the Proposed Actions—the north sidewalk on Atlantic Avenue between Logan and Chestnut streets in the weekday midday peak hour and the east sidewalk on Van Siclen Avenue between Pitkin and Glenmore avenues in the PM peak hour. Widening the north sidewalk on Atlantic Avenue between Logan and Chestnut streets by 0.5-foot in conjunction with the development of the adjacent site (projected development site 66) would fully mitigate the significant adverse impact to this sidewalk in the midday. Removing a tree pit at the most constrained point on the east sidewalk on Van Siclen Avenue between Pitkin and Glenmore avenues would fully mitigate the significant adverse impact to this sidewalk in the PM peak hour. No unmitigated significant adverse sidewalk impacts would remain upon incorporation of the recommended mitigation measures.

CROSSWALKS

One of the 67 analyzed crosswalks would be significantly adversely impacted by the Proposed Actions—the west crosswalk on Atlantic Avenue at Euclid Avenue in the weekday midday peak hour. This impact would be fully mitigated by shifting four seconds of green time from the eastbound/westbound traffic signal phase to the northbound/southbound phase. No unmitigated significant adverse crosswalk impacts would remain with implementation of the recommended mitigation measures.

CORNER AREAS

One of the 58 analyzed corner areas would be significantly adversely impacted by the Proposed Actions—the northeast corner at Liberty Avenue at Berriman Street in the weekday AM peak hour. To address this impact, it is proposed to widen one of the adjoining sidewalks by 0.5 feet in conjunction with the development of the adjacent site (projected development site 46). No unmitigated significant adverse corner impacts would remain with implementation of the recommended mitigation measure.

Air Quality

As described in Chapter 14, “Air Quality,” concentrations of particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) related to traffic generated by the Proposed Actions could result in a significant adverse air quality impact at the intersection of Atlantic Avenue and Logan Street. Traffic mitigation measures were developed to reduce congestion and increase speeds along Logan Street which would mitigate these impacts. No unmitigated significant adverse air quality impacts would remain upon incorporation of the mitigation measures.

Noise

Chapter 16, "Noise," concludes that the Proposed Actions would result in a significant adverse noise impact on Richmond Street between Fulton Street and Dinsmore Place, with predicted noise level increases of 4.9 dBA at this location. According to field observations, all of the residences at this location appear to have double-glazed windows, and most of the residences appear to have through-wall air conditioners or window air conditioners (i.e., an alternate means of ventilation). With respect to upgrades at the residential units with double-glazed windows and an alternate means of ventilation, there are no further practical or feasible mitigation measures that would fully or partially mitigate the significant adverse noise impact at these locations. Window air conditioners potentially could be installed at residential units with double-glazed windows and no alternate means of ventilation to provide an alternate means of ventilation, which would partially mitigate the significant adverse noise impact at these locations. With respect to upgrades at the residential units, there are no further practical or feasible mitigation measures that would fully mitigate the significant adverse noise impact at these locations. Other potential measures to fully mitigate the noise impact at these locations may be examined between the DEIS and FEIS. Potential mitigation measures may include rerouting traffic where feasible.

Construction

Historic and Cultural Resources

As described in Chapter 18, "Historic and Cultural Resources," development under the Proposed Actions—specifically, on projected development sites 7, 13, 35, 38, 39, 49, and 74 and potential development sites A3, A7, A8, A18, A40, A41, A50, A65, A70, A82, A86, A87, and A95—could result in inadvertent construction-related damage to ten NYCL- and/or S/NR-eligible historic resources, as they are located within 90 feet of one or more of the aforementioned projected and potential development sites. If these eligible resources are designated in the future prior to the initiation of construction, the protective measures of New York City Department of Buildings (DOB) Technical Policy and Procedure Notice (TPPN) #10/88 would apply and indirect significant adverse impact from construction would be avoided. Should they remain undesignated, however, the additional protective measures of TPPN #10/88 would not apply, and the potential for significant adverse construction-related impacts would not be mitigated.

In order to make TPPN #10/88 or similar measures applicable to historic resources in the absence of site-specific approval, a mechanism would have to be developed to ensure implementation and compliance, since it is not known and cannot be assumed that owners of these properties would voluntarily implement this mitigation. DCP, as lead agency, will explore the viability of this mitigation measure between DEIS and FEIS.

Noise

Chapter 19, "Construction," concludes that the Proposed Actions would have the potential to result in significant adverse construction noise impacts at several locations throughout the rezoning area. For all the smaller individual projected development sites throughout the rezoning area, significant adverse construction noise impacts were determined to potentially occur at receptors that are adjacent to two or more projected development sites. However, adjacent projected development sites may not be constructed consecutively, which would result in periods where there would be lower or no construction noise followed by periods of higher construction noise, but with a duration of less than two years. Construction of all buildings on projected development sites 66 and 67 is expected to occur over 67 months and construction of all buildings on projected development site 46 is expected to occur over 41 months. The worst-case month during the construction period was analyzed. Although the duration of construction activities would occur for two consecutive years or more, the type of activity occurring on a development site would progress through the major construction stages and noise generated during each of these construction stages could vary substantially and, as a consequence, noise levels which exceed the noise impact threshold criteria may not be sustained for the entirety of two consecutive years or more. An evaluation of construction noise during a representative two-year time period for these large development sites will be completed

between the DEIS and FEIS. If that analysis finds that a significant adverse construction noise impact would occur, mitigation measures will be explored and presented in the FEIS.

C. COMMUNITY FACILITIES

Public Schools

As discussed in Chapter 4, "Community Facilities and Services," in the 2030 future with the Proposed Actions, the elementary and intermediate school enrollment of Sub-district 2 of Community School District (CSD) 19 in 2024 is projected to exceed the projected capacity based on the conceptual construction schedule for the RWCDS. CSD 19, Sub-district 2 elementary schools would increase from a No-Action utilization rate of 98.8 percent to 110.1 percent in the With-Action condition (an 11.2 percentage point increase). In terms of intermediate schools, CSD 19, Sub-district 2 intermediate schools would increase from a No-Action utilization rate of 101.7 percent to 112.9 percent in the With-Action condition (an 11.3 percentage point increase). As CSD 19, Sub-district 2 elementary and intermediate schools would operate over capacity in the future with the Proposed Actions with an increase of five percentage points or more in their collective utilization rates between the No-Action and With-Action conditions, significant adverse impacts to this sub-district would result.

Under the reasonable worst-case development scenario (RWCDS), 2,925 incremental DU would be developed within CSD 19, Sub-district 2 (compared to the No-Action condition). While the Proposed Actions would also result in 170 and 172 incremental DU in Sub-districts 1 and 2 of CSD 23 and 3,045 incremental DU in CSD 19, Sub-district 1, no significant adverse public school impacts would occur in these sub-districts in the 2030 With-Action condition. To avoid the identified significant adverse elementary school impact in Sub-district 2 of CSD 19, the number of incremental dwelling units that could be developed in the sub-district would have to be reduced to 1,301, generating 377 elementary school students, as compared to No-Action conditions. This would represent a decrease of 1,624 DU (55.5 percent) in CSD 19, Sub-district 2. An increase of 377 elementary school students within Sub-district 2 of CSD 19, would increase the No-Action utilization rates in the sub-district by less than five percentage points and would be below the *CEQR Technical Manual* threshold and, thus, not a significant adverse impact.

To avoid the identified significant adverse intermediate school impacts in Sub-district 2 of CSD 19, the number of incremental dwelling units that could be developed in the sub-district would have to be reduced to 1,295, generating 155 intermediate school students, as compared to No-Action conditions. This would represent a decrease of 1,630 DU (55.7percent) in CSD 19, Sub-district 2. The 155 intermediate school students within CSD 19, Sub-district 2 would increase the No-Action utilization rate in the sub-districts by less than five percentage points and would similarly be below the *CEQR Technical Manual* threshold that would be considered a significant adverse impact.

Table 20-3, below, indicates the number of incremental dwelling units within CSD 19, Sub-district 2 that would result in a significant adverse impact requiring mitigation, as well as the number of additional elementary and intermediate school seats that would need to be provided in order to mitigate the identified significant adverse impacts. In accordance with *CEQR Technical Manual* impact criteria, the number of seats needed to mitigate the significant adverse impacts would either: (1) reduce the incremental increase in the sub-district's elementary or intermediate school capacity to less than five percentage points over the No-Action condition; or (2) reduce the With-Action utilization rate to less than 100 percent.

TABLE 20-3
CSD 19, Sub-district 2 Elementary and Intermediate School Impact Thresholds and Mitigation School Seats

Sub-District	Impact Threshold[1]	Mitigation Seats Needed to Fully Mitigate the Significant Adverse Impact
CSD 19, Sub-district 2	1,302 DU (378 students)	454
	1,296 DU (156 students)	183

Notes:
[1] Represents increment over No-Action condition.

As indicated in the table, based on the RWCDS for the Proposed Actions, an additional 454 elementary school seats and 183 intermediate school seats would be needed in order to reduce the incremental utilization increase in CSD 19, Sub-district 2 elementary and intermediate school utilization rates to less than the five percentage point *CEQR Technical Manual* impact threshold.

To eliminate this elementary and intermediate school impact in CSD 19, Sub-district 2, projected to occur in year 2024, the following mitigation measures could be applied:

- Restructure or reprogram existing school space under the Department of Education's control in order to make available more capacity in existing school buildings located within CSD 19, Sub-district 2;
- Relocate administrative functions to another site, thereby freeing up space for classrooms; and/or
- Create additional capacity in the area by constructing a new school(s), building additional capacity at existing schools, or leasing additional school space constructed as part of projected development within CSD 19, Sub-district 2.

Planning for school seats is conducted by the DOE which continually monitors school utilization throughout the City and identifies the need for new or expanded schools to be funded through the its Five-Year Capital Plan. The elementary and intermediate schools impact discussed above, which is projected to occur in year 2024, will fall beyond the DOE's current Five-Year Capital Plan for Fiscal Years 2015-2019, and would be considered in the context of planning for DOE's Five-Year Capital Plan for Fiscal Years 2020-2024. The New York City School Construction Authority (SCA) assists the DOE by annually developing and analyzing data by the DOE and other government agencies to update the Five-Year Capital Plans.

These preliminary mitigation options will be further explored between the DEIS and FEIS. In general, the Proposed Actions would allow for the development of community facility space, including new school facilities, within the project area. It should also be noted that any new school facility would be subject to its own site selection process and separate environmental review.

As also noted in Chapter 4, the Proposed Actions would not result in a significant adverse impact on CSD 19, Sub-district 1 elementary schools in the 2030 With-Action condition, as 682 elementary school seats would be introduced on projected development site 66 under the RWCDS. However, as the With-Action school is not expected to be completed until the 2020-2021 academic year, the elementary school utilization rate that would occur in 2020 (Q2) would constitute a significant adverse impact, but because the impact would last only until the school's anticipated 2020(Q3) completion, the impact is considered to be temporary.

Child Care Services

Under the RWCDS, the Proposed Actions would result in a significant adverse impact on publicly funded child care facilities. The RWCDS for the Proposed Actions are expected to introduce approximately 3,447 low- to moderate-income DU by 2030, which would generate approximately 614 children under the age of six eligible for publicly funded child care programs based on the *CEQR Technical Manual* child care multipliers. With the addition of these children, the combined utilization rate of child care facilities within the two-mile child care study area would increase to 103.1 percent, a 10.3 percentage point increase over the No-Action condition.

To avoid the identified significant adverse child care center impact, the number of affordable DU that could be developed on the projected development sites would have to be reduced to 2,401, a 30 percent (1,046 DU) reduction in the number of affordable units anticipated under the RWCDS. The 2,401 affordable DU would generate 427 children under age six eligible for publicly funded child care and study area child care facilities would operate at capacity with no child care slot shortfall.

Table 20-4, below, indicates the minimum number of affordable DUs that would result in a significant adverse child care center impact (2,402 affordable DU), as well as the number of additional child care slots that would need to be provided in order to mitigate the identified significant adverse impacts. In accordance with *CEQR Technical Manual* impact criteria, the number of slots needed to mitigate the significant adverse child care center impact would reduce the With-Action utilization rate to 100 percent. As indicated in the table, based on the RWCDS for the Proposed Actions, an additional 187 child care slots would be needed. With 187 additional child care slots, study area child care facilities would operate at capacity, with no child care slot shortfall.

TABLE 20-4
Child Care Center Impact Threshold and Mitigation Child Care Seats

Impact Threshold[1]	Mitigation Child Care Slots Needed to Fully Mitigate the Significant Adverse Impact
2,402 DU (428 child-care eligible children)	187

Notes:
[1] Represents increment over No-Action condition.

Possible mitigation measures for this significant adverse impact will be developed in consultation with the ACS. Mitigation for a significant child care impact may include provision of suitable space(s) for a child care center within new or existing buildings and within a reasonable distance (leased at a rate affordable to ACS or ACS providers) or funding, or making program improvements to support additional capacity.

Measures to mitigate the identified significant adverse impact on publicly funded child care centers will continue to be explored between the DEIS and FEIS in coordination with the lead agency, DCP, and ACS. However, a potential exists that sufficient measures may not be available to fully mitigate the identified adverse impact. If, after exploring all possible mitigation measures, it is determined that the significant adverse impact on publicly funded child care facilities would not be completely eliminated, an unavoidable significant adverse impact would result.

D. OPEN SPACE

As discussed in Chapter 5, "Open Space," given the anticipated decrease in the total, active, and passive open space ratios in the residential study area and the fact that open space ratios in the study area would remain below the City guideline ratios, the Proposed Actions would result in a significant adverse indirect impact to the total open space resources in the residential study area.

The Proposed Actions are expected to introduce 18,801 residents to the ½-mile residential study area under the RWCDS. To avoid the identified significant adverse residential study area open space impact, the number of residents that could be introduced on the projected development sites would have to be reduced to less than 10,747 (or less than approximately 3,608 residential units). This would represent an approximately 42.8 percent reduction in the number of residential units anticipated under the RWCDS. Alternately, in order to avoid a significant adverse open space impact, the Proposed Actions would have to provide approximately 4.69 acres of additional open space (including a minimum of 2.18 acres of passive open space and a minimum of 2.4 acres of active open space) to the study area.

The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures 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. Except for the creation of new open space, the other measures noted herein would only partially mitigate a significant adverse open space impact.

Measures being considered to mitigate the Proposed Actions' significant adverse open space impact include: expanding existing parks; creating new open space on publicly-owned sites; pursuing opportunities to encourage owners of large privately-owned sites to create new open space as part of their redevelopment; making playgrounds accessible to the community after school hours through the Schoolyards to Playgrounds program; establishing new pedestrian plazas in streets through the City's Plaza Program, and/or improving existing parks to allow for more diverse programming and enhanced usability. These potential mitigation measures are currently being explored in coordination with the lead agency, DCP, and DPR and will be refined between the DEIS and FEIS.

Although many of the mitigation measures being considered would substantially increase the amount or usability of open space resources for the additional population introduced by the Proposed Actions, opportunities to create new publically-accessible open space resources in sufficient amounts within the study area to fully mitigate the identified significant adverse open space impact are very limited. As a consequence, the Proposed Actions' significant adverse open space impact may not be completely eliminated and, as a result, an unavoidable significant adverse open space impact would occur.

E. SHADOWS

As discussed in Chapter 6, "Shadows," and Chapter 7, "Historic and Cultural Resources," the Proposed Actions would result in a significant shadows impact (and shadow-related historic resource impact) on the NYCL-eligible and S/NR-eligible Holy Trinity Russian Orthodox Church. Under RWCDS With-Action conditions, incremental shadows on sunlight-sensitive features of the Holy Trinity Russian Orthodox Church would occur on all four representative analysis days, with durations ranging from 36 minutes to one hour and 59 minutes; on the March 21, May 6, and June 21 analysis days, shadow coverage would be limited to the lower levels of the church's western and southern façades. On these days, incremental shadows would cover a maximum of two stained glass windows at any one time. On the December 21 analysis day, incremental shadows would reach sunlight-sensitive features on both the clerestory and lower level of the church's western and southern facades. At any given time between 10:41 AM and 12:40 PM on December 21, incremental shadows would cover parts of anywhere from one to eight stained glass windows. As project-generated incremental shadows would reach a maximum of eight of the church's twenty-two stained glass windows at any one time, incremental shadows would not result in the complete elimination of direct sunlight on all sunlight-sensitive features of this historic resource. However, as these incremental shadows may have the potential to affect the public's enjoyment of this feature, albeit for a brief duration of approximately 36 minutes on March 21, 45 minutes on May 6, 49 total minutes on June 21, and one hour and 59 minutes on December 21, this is being considered a significant adverse shadow impact. It should be noted that the sites that would cast incremental shadows on this historic resources are potential, rather than a projected, development sites. As described in Chapter 1, "Project Description," potential development sites are considered less likely to be developed than projected development sites. Consequently, the likelihood of this impact occurring is less than if it were to result from development on a projected development site.

A potential mitigation measure for the identified impact on this resource may include the use of artificial lighting to simulate the sunlit conditions. The provision of indirectly mounted lighting could simulate lost sunlight conditions at the affected stained glass windows of this resource. This and other feasible and practicable mitigation measures for this potential significant adverse impact will be explored by the lead agency, DCP, in consultation with the New York City Landmarks Preservation Commission (LPC) between the DEIS and FEIS. Absent the identification and implementation of feasible and practicable measures, the Proposed Actions could have an unmitigated significant adverse shadows impact on the Holy Trinity Russian Orthodox Church.

F. HISTORIC AND CULTURAL RESOURCES

As described in Chapter 7, "Historic and Cultural Resources," the Proposed Actions could result in significant adverse historic resources impacts to one resource that is eligible for S/NR-listing and NYCL-designation. Projected development site 37, which is expected to be developed under RWCDS With-Action conditions, contains the S/NR- and NYCL-eligible Empire State Dairy Building. As the maximum permitted With-Action FAR on site 37 could be constructed without the demolition or enlargement of the Empire State Dairy Building, the structure is not projected to be demolished, either partially or entirely, or substantially altered under the RWCDS. However, the Proposed Actions do not include any measures that would prevent the demolition or alteration of the Empire State Dairy Building.

In the event that the structure was designated as a landmark by the LPC, the significant adverse impact would be fully mitigated. However, as the designation process is subject to LPC approval, and not CPC approval, it cannot be assumed or predicted with any certainty. The possibility of potential designation of this resource will be explored, in consultation with the LPC, between the DEIS and FEIS. Absent LPC's designation of the Empire State Dairy Building, the implementation of measures such as photographically documenting the eligible structure in accordance with the standards of the Historic American Buildings Survey (HABS) could partially mitigate the identified significant adverse direct impact to this historic architectural resource. However, a mechanism to require such measures is not available. Accordingly, this impact would not be completely eliminated, and, if the Empire State Dairy Building is not designated as a landmark, an unavoidable significant adverse impact on this historic resource would occur.

G. TRANSPORTATION

Traffic

As described in Chapter 13, "Transportation," the Proposed Actions would result in significant adverse traffic impacts at 47 study area intersections during one or more analyzed peak hours; specifically 58 lane groups at 40 intersections during the weekday AM peak hour, 36 lane groups at 23 intersections during the midday peak hour, 63 lane groups at 40 intersections during the PM peak hour, and 37 lane groups at 25 intersections during the Saturday midday peak hour.

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

- Installation of new traffic signals;
- Modification of traffic signal phasing and/or timing;
- Elimination of on-street parking within 100 feet of intersections to add a limited travel lane, known as "daylighting";
- Channelization and lane designation changes to make more efficient use of available street widths; and
- Street widening to provide an additional travel lane at an intersection approach.

All of these improvements are readily implementable measures that conform to the guidelines of the New York City Department of Transportation (DOT)'s 2009 Street Design Manual. The types of mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. Table 20-5 summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the weekday AM, midday and PM and Saturday midday peak hours. Implementation of the recommended traffic engineering improvements is subject to review and approval by DOT. If, prior to implementation, DOT determines that an 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.

Tables 20-6 through 20-9 show the v/c ratios, delays, and levels of service (LOS) for impacted lane groups at each intersection with implementation of these mitigation measures and compares them to No-Action and With-Action conditions for the weekday AM, midday and PM and Saturday midday peak hours, respectively. (The Action-With-Mitigation level of service analyses for all lane groups at each impacted intersection are shown in Table E-6 in Appendix E.) 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 13, "Transportation." Tables 20-6 through 20-9 show that significant adverse impacts would be fully mitigated at all but 15 lane groups at nine intersections during the weekday AM peak hour, ten lane groups at two intersections during the midday peak hour, 18 lane groups at nine intersections during the PM peak hour, and ten lane groups at four intersections during the Saturday midday peak hour. All of the pedestrian mitigation measures would neither alter the conclusions made for the traffic impact analyses nor result in the potential for any additional significant adverse traffic impacts. No practicable mitigation was identified for one or more approach movements at 14 impacted intersections, and impacts in one or more peak hours at these locations would remain unmitigated. Consequentially, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the Proposed Action (refer to Chapter 22, "Unavoidable Adverse Impacts").

Effects of Pedestrian Mitigation on Traffic Conditions

Proposed pedestrian mitigation measures (discussed later in this chapter) would potentially affect traffic conditions at only one analyzed intersection. As noted in Table 20-5, a four-second change in signal timing in the weekday midday peak hour is proposed at the intersection of Atlantic Avenue and Euclid Avenue to facilitate pedestrian flow along the west crosswalk on Atlantic Avenue. As shown in Table 20-7, this signal timing change would not result in any new significant adverse traffic impacts at this intersection in the weekday midday peak hour.

Proposed Schedule for Traffic Mitigation Measures

Subject to the approval of DOT, the mitigation measures summarized in Table 20-5 would be implemented to mitigate the significant adverse traffic impacts resulting from full build-out of the Proposed Actions in 2030. As the development of the Proposed Actions would be expected to occur over an approximately 15-year period, it is possible that some of the significant adverse traffic impacts could occur prior to full build-out in 2030. Based on the anticipated construction schedule shown in Chapter 19, "Construction," incremental vehicle trips associated with traffic generated by projected development sites could potentially result in significant adverse traffic impacts beginning in the 2nd quarter of 2018 with the completion of the first phase of projected development site 67. This level of development would result in a net increase of 206 dwelling units, 16,072 gsf of office space, and 36,480 gsf of community facility (medical office) space along with a net reduction of 66,584 gsf of retail space, and would generate more than the CEQR Technical Manual analysis threshold of 50 peak hour vehicle trip ends in all peak periods. At this earlier point in time, implementation of some or all of the mitigation measures developed for full build-out of the Proposed Actions in 2030 would be considered at impacted intersections in proximity to projected development site 67, including four intersections along the Logan Street corridor at Atlantic and Liberty Avenues, Dinsmore Place, and Fulton Street, as well as the intersection of Fulton Street and Euclid Avenue.

TABLE 20-5
Proposed Traffic Mitigation Measures

Intersection	Signal Phase	No-Action Signal Timing (Seconds) (1)				Proposed Signal Timing (Seconds) (1)				Recommended Mitigation
		AM	MD	PM	SAT MD	AM	MD	PM	SAT MD	
Arlington Avenue &	EB/WB	-	-	-	-	-	-	-	-	No practicable mitigation identified for the significant impacts at this intersection.
Jamaica Avenue	NB/SB	-	-	-	-	-	-	-	-	
Atlantic Avenue &	EB-L/WB-L	15	12	15	15	15	12	15	15	- Install "No Standing Anytime" regulation along east and west curb of NB and SB approach for 150 feet.
Rockaway Avenue	EB/WB	56	33	56	56	59	34	57	56	- Restripe NB and SB approaches from one 22-foot-wide shared left-through-right lane to one 11-foot-wide left-turn only lane and one 11-foot-wide shared through-right lane.
	NB	13	11	13	13	13	11	13	13	- Transfer 3s of green time from NB/SB to EB/WB in AM; 1s in midday and PM.
	NB/SB	36	34	36	36	33	33	35	36	
Atlantic Avenue &	EB/WB	65	50	65	50	67	50	63	50	- Transfer 2s of green time from NB/SB to EB/WB in AM.
Eastern Parkway	NB/SB	55	40	55	40	53	40	57	40	- Transfer 2s of green time from EB/WB to NB/SB in PM.
Atlantic Avenue &	EB/WB	81	81	81	55	79	79	79	55	- Transfer 2s of green time from EB/WB to NB/SB in AM, midday, and PM.
Georgia Avenue	NB/SB	39	39	39	35	41	41	41	35	
Atlantic Avenue &	EB/WB	52	46	41	31	52	46	41	31	- Transfer 1s of green time from EB to NB/SB in AM.
Pennsylvania Avenue	EB	15	12	15	12	14	12	15	12	
	NB-L/SB-L	15	13	15	12	15	13	15	12	
	NB/SB	38	49	49	35	39	49	49	35	
Atlantic Avenue &	WB	-	-	-	-	12	14	11	12	- Introduce new WB leading signal phase.
Miller Avenue	EB/WB	81	81	81	59	68	67	68	47	- Transfer 1s of green time from EB/WB to SB in AM and 2s in PM.
	SB	39	39	39	31	40	39	41	31	
Atlantic Avenue &	EB/WB	81	81	81	59	81	81	81	59	- Install "No Standing 7AM-7PM Except Sunday" regulation along east curb of NB approach for 150 feet.
Schenck Avenue	NB	39	39	39	31	39	39	39	31	
Atlantic Avenue &	EB/WB	66	72	72	46	64	69	72	46	- Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulation along west curb of SB approach for 150 feet.
Warwick Street	WB	15	13	13	13	17	16	14	13	- Transfer 2s of green time from EB/WB to WB in AM and 3s in midday.
	SB	39	35	35	31	39	35	34	31	- Transfer 1s of green time from SB to WB in PM.
Atlantic Avenue &	EB	-	-	-	-	13	13	13	11	- Introduce new WB leading signal phase.
Elton Street	EB/WB	81	81	81	55	68	68	68	44	
	Ped	39	39	39	35	39	39	39	35	
Atlantic Avenue &	EB	-	-	-	-	13	13	13	11	- Introduce new EB leading signal phase.
Highland Place	EB/WB	81	76	81	58	68	63	68	47	- Stripe NB receiving-end and SB approach from an unstriped 2-way 30-foot-wide road with parking along SB approach to one 10-foot-wide SB left-turn only lane, one 10-foot-wide SB left-right turn lane with parking, and one 10-foot-wide NB receiving lane.
	SB	39	44	39	32	39	44	39	32	- Install "No Standing Anytime" regulation along west curb of SB approach for 150 feet.
Atlantic Avenue &	EB/WB	66	67	66	41	66	63	62	42	- Narrow west sidewalk along Logan Street by three feet (from 18 feet to 15 feet) for approximately 250 feet from the intersection with Atlantic Avenue.
Logan Street	NB/SB	54	53	54	49	54	57	58	48	- Install "No Standing Anytime" regulation along east curb of NB approach for 150 feet. - Restripe NB approach from one 11-foot-wide shared through-right lane with parking to one 10-foot-wide through lane and one 10-foot-wide right-turn only lane with 100 feet of storage. - Restripe SB approach and NB-receiving-end from one 15-foot-wide shared SB left-through-right lane and one 15-foot-wide NB receiving lane to one 11-foot-wide SB shared through-right lane, one 11-foot-wide SB left-turn only lane, and one 11-foot-wide NB receiving lane for approximately 250 feet. - Install "No Standing 4PM-7PM Mon-Fri" regulation along south curb of EB approach for 250 feet. - Transfer 4s of green time from EB/WB to NB/SB in midday and PM. - Transfer 1s of green time from NB/SB to EB/WB in Saturday midday.
Atlantic Avenue &	EB/WB	81	81	81	50	81	77	79	50	- Transfer 2s of green time from EB/WB to NB/SB in PM.
Euclid Avenue	NB/SB	39	39	39	40	39	43	41	40	- Per pedestrian mitigation, transfer 4s of green time from EB/WB to NB/SB in midday.
Atlantic Avenue &	WB	13	13	13	13	13	13	16	13	- Transfer 3s of green time from EB/WB to WB in PM.
Crescent Street	EB/WB	68	58	68	46	68	58	64	46	- Transfer 1s of green time from EB/WB to NB/SB in PM.
	NB/SB	39	49	39	31	39	49	40	31	
Atlantic Avenue &	WB	14	11	12	11	14	11	13	11	- Install "No Standing 4PM-7PM Mon-Fri" regulation along south curb of EB approach for 250 feet.
Rockaway Boulevard	EB/WB	62	38	67	38	62	39	66	39	- Transfer 1s of green time from NB/SB to EB/WB in midday and Saturday midday.
	NB/SB	44	41	41	41	44	40	41	40	- Transfer 1s of green time from EB/WB to WB in PM.
Broadway &	EB/WB	72	54	72	54	72	54	72	55	- Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulation along north curb of WB approach for 100 feet.
Rockaway Avenue/	NB/SB	48	36	48	36	48	36	48	35	- Transfer 1s of green time from NB/SB to EB/WB in Saturday midday.
Cooper Street										

TABLE 20-5 (continued)
Proposed Traffic Mitigation Measures

Intersection	Signal Phase	No-Action Signal Timing (Seconds) (1)				Proposed Signal Timing (Seconds) (1)				Recommended Mitigation
		AM	MD	PM	SAT MD	AM	MD	PM	SAT MD	
Broadway &	EB/WB	39	30	39	30	39	33	39	33	- Transfer 3s of green time from NB/SB to EB/WB in Midday and Saturday midday.
Eastern Parkway/	NB/SB	63	45	63	45	63	42	63	42	
Hull Street	NB-Hull Street	18	15	18	15	18	15	18	15	
Bushwick Avenue &	EB/WB	75	57	75	57	75	57	74	57	- Restripe WB approach from one 10-foot-wide left-turn only lane and 11-foot-wide shared left-through-right lane to one 10-foot-wide left-turn only lane and one 12-foot-wide shared left-through-right lane.
Eastern Parkway	WB-L/NB-R	34	22	34	22	34	22	35	22	
	EB/SB-R	11	11	11	11	11	11	11	11	- Transfer 1s of green time from EB/WB to WB-L/NB-R in PM.
Dinsmore Place &	WB	-	-	-	-	23	22	22	22	- Install new traffic signal with timing plan as shown.
Logan Street	SB	-	-	-	-	11	11	11	11	
	NB/SB	-	-	-	-	56	27	57	57	
Fulton Street &	EB/WB	60	40	60	40	60	60	58	60	- Transfer 2s of green time from EB/WB to NB/SB in PM.
Van Sinderen Avenue	NB/SB	40	30	40	30	40	40	42	40	
	SB-only (Bus Lane)	20	20	20	20	20	20	20	20	
Fulton Street &	EB	50	42	50	27	47	40	50	27	- Transfer 3s of green time from EB to NB/SB in AM and 2s in midday.
Pennsylvania Avenue	NB/SB	52	60	52	50	55	62	52	50	
	SB	18	18	18	13	18	18	18	13	
Fulton Street &	EB	54	54	54	54	53	54	54	54	- Transfer 1s of green time from EB to SB in AM.
Miller Avenue	SB	36	36	36	36	37	36	36	36	
Fulton Street &	EB	-	-	-	-	-	-	-	-	- Install "No Standing 7AM-7PM Except Sunday" regulation along east curb of NB approach for 150 feet to allow for two moving lanes.
Elton Street	NB	-	-	-	-	-	-	-	-	
Fulton Street &	EB	36	36	36	36	36	36	36	37	- Transfer 1s of green time from NB/SB to EB in Saturday midday.
Highland Place	NB/SB	24	24	24	24	24	24	24	23	
Fulton Street &	EB/WB	33	33	33	33	35	33	36	33	- Install "No Standing Anytime" regulation on west curb of SB receiving side for 150 feet.
Logan Street	NB/SB	27	27	27	27	25	27	24	27	- Install "No Standing 7AM-7PM Except Sunday" regulation on north curb of WB approach for 100 feet. - Restripe SB receiving-end and NB approach from one 15-foot-wide SB receiving lane with parking and one 15-foot-wide NB shared left-through-right lane to one 10-foot-wide SB receiving lane, one 10-foot-wide NB left-turn only lane with 100 feet of storage, and one 10-foot-wide NB shared through-right lane. - Transfer 2s of green time from NB/SB to EB/WB in AM and 3s in PM.
Fulton Street &	WB	-	-	-	-	30	32	32	32	- Install signal with timing plan shown. Stripe crosswalks as required.
Chestnut Street	SB	-	-	-	-	30	28	28	28	
Fulton Street &	EB/WB	36	36	36	36	34	36	34	36	- Transfer 2s of green time from EB/WB to SB in AM and PM.
Euclid Avenue	SB	24	24	24	24	26	24	26	24	
Glenmore Avenue &	EB/WB	39	39	39	30	39	39	39	30	- Install "No Standing 7AM-10AM Mon-Fri" regultion on south curb of WB approach for 60 feet.
Pennsylvania Avenue	NB/SB	81	81	81	60	81	81	81	60	
Glenmore Avenue &	WB	-	-	-	-	74	77	60	58	- Install signal with timing plan shown. Stripe crosswalks as required.
Miller Avenue	SB	-	-	-	-	46	43	60	32	
Bushwick/Jamaica Aves &	EB-Bushwick/NB	34	36	36	28	34	36	36	28	No practicable mitigation identified for the significant impacts at this intersection.
Pennsylvania Avenue/	EB-Jamaica	30	28	31	22	30	28	31	22	
Jackie Robinson Parkway	WB	17	21	17	15	17	21	17	15	
	NB/SB	39	35	36	25	39	35	36	25	
Jamaica Avenue &	EB/WB	30	30	30	30	30	31	30	31	- Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulation on south curb of EB approach for 80 feet.
Highland Place/	NB/SB	30	30	30	30	30	29	30	29	- Transfer 1s of green time from NB/SB to EB/WB in midday and Saturday midday.
Force Tube Avenue										
Jamaica Avenue &	EB/WB	37	37	37	37	37	37	37	37	- Install "No Standing Anytime" regulation on south curb of EB approach for length of block.
Euclid Avenue/	SB + WNR	23	23	23	23	23	23	23	23	
Cypress Hill Street										
Liberty Avenue &	EB/WB	39	39	39	30	39	41	41	34	- Install "No Standing 7PM-7PM Mon-Fri" regulation along north curb of WB approach for 100 feet.
Pennsylvania Avenue	NB-L/SB-L	11	11	11	11	11	11	11	11	-Transfer 2s of green time from NB/SB to EB/WB in midday and PM; 4s in Saturday midday.
	NB/SB	70	70	70	49	70	68	68	45	

TABLE 20-5 (continued)
Proposed Traffic Mitigation Measures

Intersection	Signal Phase	No-Action Signal Timing (Seconds) (1)				Proposed Signal Timing (Seconds) (1)				Recommended Mitigation
		AM	MD	PM	SAT MD	AM	MD	PM	SAT MD	
Liberty Avenue &	EB/WB	78	78	78	59	75	77	76	58	- Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulation along east curb of SB approach for 150 feet to allow for two moving lanes.
Miller Avenue	SB	42	42	42	31	45	43	44	32	- Transfer 3s of green time from EB/WB to SB in AM; 1s in midday and Saturday midday; and 2s in PM.
Liberty Avenue &	EB/WB	84	84	84	84	83	84	84	84	- Install "No Standing 7AM-10AM Mon-Fri" regulation along north curb of WB approach for 100 feet.
Schenck Avenue	NB	36	36	36	36	37	36	36	36	- Transfer 1s of green time from EB/WB to NB in AM.
Liberty Avenue &	EB/WB	78	78	78	59	75	78	76	58	- Install "No Standing 7AM-10AM Mon-Fri" regulation along north curb of WB approach for 100 feet.
Warwick Street	SB	42	42	42	31	45	42	44	32	- Transfer 3s of green time from EB/WB to SB in AM; 2s in PM; and 1s in Saturday midday.
Liberty Avenue &	EB/WB	79	79	79	59	79	79	76	59	- Install "No Standing 7AM-10AM Mon-Fri" regulation along north curb of WB approach for 100 feet.
Shepherd Avenue	SB	41	41	41	31	41	41	44	31	- Transfer 3s of green time from EB/WB to SB in PM.
Liberty Avenue &	EB/WB	78	78	78	59	77	78	77	58	- Install "No Standing 7AM-7PM Except Sunday" regulation along west curb of SB approach for 100 feet.
Montauk Avenue	NB/SB	42	42	42	31	43	42	43	32	- Transfer 1s of green time from EB/WB to NB/SB in AM, PM and Saturday midday.
Liberty Avenue &	EB/WB	77	77	77	58	77	77	80	58	- Install "No Standing 7-10AM, 4-7PM Mon-Fri" regulation along north curb of WB approach for 100 feet.
Milford Street	SB	43	43	43	32	43	43	40	32	- Transfer 3s of green time from SB to EB/WB in PM.
Liberty Avenue &	EB/WB	84	84	84	54	82	84	82	55	- Install "No Standing 7-10AM, 4-7PM Mon-Fri" regulation along south curb of EB approach for 200 feet.
Logan Street	NB/SB	36	36	36	36	38	36	38	35	- Shift stop bar on SB approach 30 feet back from its current position. - Install "No Standing Anytime" regulation along east curb of NB receiving end for 185 feet. - Restripe SB approach and NB receiving end from one 11-foot-wide SB left-right turn lane and one 11-foot-wide NB receiving lane with parking to one 10-foot-wide SB right-turn only lane, one 10 feet-wide SB left-turn only lane with 100 feet of storage, and one 10 feet-wide NB receiving lane. - Transfer 2s of green time from EB/WB to NB/SB in AM and PM. - Transfer 1s of green time from NB/SB to EB/WB in Saturday midday.
Liberty Avenue &	EB/WB	57	42	42	36	59	44	46	38	- Transfer 2s of green time from SB to EB/WB in AM, midday and Saturday midday; and 4s in PM.
South Conduit Boulevard	SB	63	78	78	54	61	76	74	52	
Liberty Avenue &	EB/WB	42	42	42	36	42	45	45	38	- Transfer 3s of green time from NB to EB/WB in midday and PM and 2s in Saturday midday.
North Conduit Boulevard	NB	78	78	78	54	78	75	75	52	
Pitkin Avenue &	EB/WB	66	66	66	66	68	66	66	66	- Transfer 2s of green time from NB/SB to EB/WB in AM.
Mother Gaston Boulevard	NB/SB	54	54	54	54	52	54	54	54	
Pitkin Avenue &	EB/WB	39	39	39	30	43	41	42	34	- Install "No Standing Anytime" regulation for 150 feet along west curb of SB approach to allow for three moving lanes.
Pennsylvania Avenue	NB/SB	81	81	81	60	77	79	78	56	- Install "No Standing Anytime" regulation for 150 feet along west curb of SB receiving end to allow for two receiving lanes and three NB approach lanes. - Restripe SB approach from two 11-foot-wide shared left-through-right-lanes with parking to one 10-foot-wide left-turn only lane with 50 feet of storage, one 10-foot-wide through lane and one 10-foot-wide shared through-right lane. - Restripe SB receiving-end and NB approach from two 11-foot-wide receiving lanes with parking and two 11-foot-wide NB approach shared left-through-right lanes with parking to two 10-foot-wide SB receiving lanes, one 10 feet-wide NB left-turn only lane with 50 feet of storage, one 11-foot-wide through lane and one 11-foot-wide shared through-right lane. - Transfer 4s of green time from NB/SB to EB/WB AM and Saturday midday; 2s in midday; and 3s in PM.
Pitkin Avenue &	EB/WB	-	-	-	-	-	-	-	-	- Install "No Standing Anytime" regulation for 100 feet along east and west curbs of NB approach to allow for two effective moving lanes.
Elton Street	NB	-	-	-	-	-	-	-	-	
Pitkin Avenue &	EB/WB	50	50	50	33	51	50	50	34	- Transfer 1s of green time from SB to EB/WB in AM and Saturday midday.
South Conduit Boulevard	SB	70	70	70	57	69	70	70	56	
Sutter Avenue &	EB/WB	39	39	39	30	40	39	39	30	- Transfer 1s of green time from NB/SB to EB/WB in AM.
Pennsylvania Avenue	NB/SB	81	81	81	60	80	81	81	60	
Sutter Avenue &	EB/WB	73	55	73	73	72	55	71	72	- Transfer 1s of green time from EB/WB to NB/SB in AM; and 2s in PM
Fountain Avenue	NB/SB	47	35	47	47	48	35	49	48	

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

TABLE 20-6
Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday AM Peak Hour

	Weekday AM Peak Hour No-Action					Weekday AM Peak Hour With-Action					Weekday AM Peak Hour Mitigation				
	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Signalized Intersection															
Atlantic Avenue &	WB	L	0.87	52.1	D	WB	L	0.89	57.2	E	WB	L	0.85	47.1	D
Rockaway Avenue	WB	TR	1.08	80.7	F	WB	TR	1.14	102.7	F	WB	TR	1.07	75.5	E
Atlantic Avenue &	WB-Main	T	0.96	44.0	D	WB-Main	T	1.03	61.0	E	WB-Main	T	1.00	50.5	D
Eastern Parkway															
Atlantic Avenue &	NB	LTR	1.14	128.9	F	NB	LTR	1.19	147.7	F	NB	LTR	1.12	119.9	F
Georgia Avenue															
Atlantic Avenue &	WB	TR	1.02	63.2	E	WB	TR	1.15	110.1	F	WB	TR	1.15	110.1	F
Pennsylvania Avenue	NB	TR	1.36	214.3	F	NB	TR	1.44	248.6	F	NB	TR	1.39	224.7	F
	SB	L	0.93	143.2	F	SB	L	1.06	214.2	F	SB	L	1.06	214.3	F
	SB	TR	1.14	120.7	F	SB	TR	1.16	127.4	F	SB	TR	1.12	113.1	F
Atlantic Avenue &	SB	LTR	1.22	161.0	F	SB	LTR	1.32	204.0	F	SB	LTR	1.21	154.7	F
Miller Avenue															
Atlantic Avenue &											NB	L	0.78	53.4	D
Schenck Avenue											NB	TR	1.19	159.8	F
	NB	LTR	1.28	186.8	F	NB	LTR	1.49	273.8	F	NB	LTR		107.0	F
Atlantic Avenue &	WB	L	0.79	54.5	D	WB	L	0.85	64.2	E	WB	L	0.80	57.5	E
Warwick Street											SB	L	0.62	45.3	D
											SB	TR	0.96	87.5	F
	SB	LTR	1.16	140.7	F	SB	LTR	1.22	163.1	F	SB	LTR		68.9	E
Atlantic Avenue &	EB	L	0.56	30.5	C	EB	L	0.79	63.5	E	EB	L	0.45	23.7	C
Elton Street															
Atlantic Avenue &	EB	L	0.63	37.6	D	EB	L	0.86	78.3	E	EB	L	0.47	25.4	C
Highland Place															
Atlantic Avenue &											NB	T	0.68	34.6	F
Logan Street											NB	R	0.23	24.5	C
	NB	TR	0.60	32.5	C	NB	TR	0.96	63.0	E	NB	TR		32.8	C
											SB	L	1.29	198.8	F
											SB	TR	0.67	35.7	D
	SB	LTR	0.91	61.8	E	SB	LTR	2.06	524.8	F	SB	LTR		113.1	F
Broadway &											WB	LT	0.87	34.3	C
Rockaway Avenue											WB	R	0.08	12.5	B
	WB	LTR	0.85	33.8	C	WB	LTR	0.99	57.1	E	WB	LTR		33.2	C
Broadway &	EB	TR	0.90	69.8	E	EB	TR	0.98	85.3	F	EB	TR	0.98	85.3	F
Eastern Parkway	WB	LT	1.12	123.2	F	WB	LT	1.58	316.3	F	WB	LT	1.58	316.3	F
Bushwick Avenue &	WB	TR	1.09	79.9	E	WB	TR	1.12	91.8	F	WB	TR	1.08	77.4	E
Eastern Parkway															
Fulton Street &	NB	TR	1.11	99.2	F	NB	TR	1.18	127.6	F	NB	TR	1.11	96.8	F
Pennsylvania Avenue															
Fulton Street &	SB	LT	0.92	51.1	D	SB	LT	0.96	58.5	E	SB	LT	0.93	51.6	D
Miller Avenue															
Fulton Street &	WB	LTR	0.80	26.5	C	WB	LTR	1.25	147.6	F	WB	LTR	0.97	45.8	D
Logan Street											NB	L	0.62	27.5	C
											NB	TR	0.96	50.4	D
	NB	LTR	0.96	46.6	D	NB	LTR	1.19	121.4	F	NB	LTR		45.0	D
Fulton Street &	SB	LTR	0.93	46.3	D	SB	LTR	1.02	66.6	E	SB	LTR	0.92	41.9	D
Euclid Avenue															
Glenmore Avenue &											WB	L	0.74	51.1	D
Pennsylvania Avenue											WB	R	1.09	126.9	F
	WB	LR	1.14	133.8	F	WB	LR	1.36	221.3	F	WB	LR		87.8	F
Bushwick /Jamaica Avenue &	EB-Jamaica	TR	1.11	115.3	F	EB-Jamaica	TR	1.13	123.3	F	EB-Jamaica	TR	1.13	123.3	F
Penn. /Jackie Robinson Pkwy	WB	L	1.11	152.8	F	WB	L	1.37	250.5	F	WB	L	1.37	250.5	F
	WB	T	1.11	150.9	F	WB	T	1.35	239.4	F	WB	T	1.35	239.4	F
	NB	L	1.16	142.9	F	NB	L	1.22	166.2	F	NB	L	1.22	166.2	F
Jamaica Avenue &	EB	LTR	1.12	97.5	F	EB	LTR	1.20	128.4	F	EB	LTR	1.06	75.7	E
Highland Pl/Force Tube Ave.															
Jamaica Avenue &	EB	LTR	1.18	112.2	F	EB	LTR	1.54	263.0	F	EB	LTR	1.19	110.4	F
Euclid Av/Cypress Hill Street															

TABLE 20-6 (continued)
Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday AM Peak Hour

	Weekday AM Peak Hour No-Action					Weekday AM Peak Hour With-Action					Weekday AM Peak Hour Mitigation					
	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	
Liberty Avenue & Pennsylvania Avenue	WB	LTR	0.91	70.5	E	WB	LTR	1.05	103.5	F	WB	LTR	0.86	60.4	E	
Liberty Avenue & Miller Avenue											SB	L	0.23	30.2	C	
											SB	TR	0.98	76.6	E	
	SB	LTR	0.93	66.7	E	SB	LTR	1.21	153.7	F	SB	LTR		69.3	E	
Liberty Avenue & Schenck Avenue	WB	TR	0.89	29.9	C	WB	TR	1.02	55.8	E	WB	TR	0.85	25.0	C	
	NB	LTR	0.68	49.2	D	NB	LTR	0.79	56.1	E	NB	LTR	0.77	53.4	D	
Liberty Avenue & Warwick Street	WB	LT	0.85	29.1	C	WB	LT	1.04	66.0	E	WB	LT	0.89	34.3	C	
	SB	LTR	1.38	227.7	F	SB	LTR	1.48	271.4	F	SB	LTR	1.36	218.6	F	
Liberty Avenue & Shepherd Avenue	WB	LT	0.84	27.9	C	WB	LT	0.98	49.1	D	WB	LT	0.81	24.3	C	
Liberty Avenue & Montauk Avenue	SB	LR	0.45	37.8	D	SB	LR	0.68	48.7	D	SB	LR	0.52	38.6	D	
Liberty Avenue & Milford Street	WB	LT	0.82	27.5	C	WB	LT	1.03	63.8	E	WB	LT	0.85	28.8	C	
Liberty Avenue & Logan Street	EB	LT	0.42	11.7	B	EB	LT	0.99	60.1	E	EB	LT	0.74	22.8	C	
	NB	LTR	0.77	54.1	D	NB	LTR	0.83	59.4	E	NB	LTR	0.78	52.9	D	
											SB	L	0.38	42.7	D	
											SB	R	0.64	46.6	D	
	SB	LR	0.45	42.4	D	SB	LR	1.09	126.2	F	SB	LR		45.9	D	
Liberty Avenue & South Conduit Boulevard	WB	L	1.09	110.4	F	WB	L	1.16	138.6	F	WB	L	1.09	111.9	F	
Pitkin Avenue & Mother Gaston Boulevard	EB	LTR	0.89	46.0	D	EB	LTR	0.95	57.8	E	EB	LTR	0.91	48.3	D	
	WB	LTR	0.95	55.3	E	WB	LTR	1.10	96.1	F	WB	LTR	1.06	80.3	F	
Pitkin Avenue & Pennsylvania Avenue	EB	TR	1.10	116.5	F	EB	TR	1.12	123.1	F	EB	TR	1.00	82.4	F	
	WB	LTR	0.87	57.4	E	WB	LTR		180.6	F	WB	LTR		121.4	F	
											SB	L	0.76	46.2	D	
											SB	TR	0.99	46.7	D	
	SB	LTR	1.05	62.0	E	SB	LTR	1.16	103.8	F	SB	LTR		46.6	D	
Pitkin Avenue & South Conduit Boulevard	WB	L	0.91	76.2	E	WB	L	0.94	83.3	F	WB	L	0.90	73.0	E	
Sutter Avenue & Pennsylvania Avenue	WB	LTR	1.14	133.8	F	WB	LTR	1.16	140.2	F	WB	LTR	1.12	125.5	F	
Sutter Avenue & Fountain Avenue	NB	L	0.54	40.5	D	NB	L	0.63	47.7	D	NB	L	0.60	44.5	D	
Unsignalized Intersection																
Dinsmore Place & Logan Street (Two-Way Stop Controlled)	WB	LR	0.19	22.7	C	WB	LR	9.42	4403.0	F	WB (Signalized)	LR	0.43	36.5	D	
Fulton Street & Elton Street											NB	T	1.23	152.0	F	
											NB	R	0.19	16.9	C	
(Two-Way Stop Controlled)	NB	TR	1.10	135.6	F	NB	TR	1.50	295.5	F	NB	TR		152.0	F	*
Fulton Street & Chestnut Street (Two-Way Stop Controlled)	NB	LTR	1.04	104.1	F	NB	LTR	2.28	620.1	F	NB (Signalized)	LTR	0.95	43.6	D	
Glenmore Avenue & Miller Avenue (Two-Way Stop Controlled)	SB	TR	1.08	114.5	F	SB	TR	1.48	267.5	F	SB (Signalized)	TR	0.76	44.5	D	
Pitkin Avenue & Elton Street											NB	L	0.06	24.2	C	
											NB	TR	0.36	29.9	D	
(Two-Way Stop Controlled)	NB	LTR	0.33	25.4	D	NB	LTR	0.42	32.6	D	NB	LTR		29.1	D	*

EB-eastbound, WB-westbound, NB-northbound, SB-southbound
L-left turn, T-through, R-right turn, DefL-defacto left turn
Shading denotes lane groups with unmitigated impacts.
* Impact could be mitigated by a new traffic signal; however, signalization is not proposed as future conditions would not satisfy required warrants.

TABLE 20-7

Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday Midday Peak Hour

	Weekday Midday Peak Hour No-Action					Weekday Midday Peak Hour With-Action					Weekday Midday Peak Hour Mitigation				
	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Signalized Intersection															
Atlantic Avenue &	EB	TR	0.92	41.6	D	EB	TR	0.96	46.8	D	EB	TR	0.92	41.2	D
Rockaway Avenue	WB	TR	1.04	67.0	E	WB	TR	1.08	79.7	E	WB	TR	1.04	66.1	E
Atlantic Avenue &	NB	LTR	1.05	100.1	F	NB	LTR	1.10	116.4	F	NB	LTR	1.03	94.3	F
Georgia Avenue															
Atlantic Avenue &	EB	TR	1.02	63.7	E	EB	TR	1.11	96.1	F	EB	TR	1.11	96.1	F
Pennsylvania Avenue	WB	TR	0.92	48.6	D	WB	TR	1.00	63.8	E	WB	TR	1.00	63.8	E
	NB	L	1.24	188.2	F	NB	L	1.27	198.3	F	NB	L	1.27	198.3	F
	NB	TR	1.31	187.9	F	NB	TR	1.46	250.9	F	NB	TR	1.46	250.9	F
	SB	L	1.22	181.3	F	SB	L	1.54	295.6	F	SB	L	1.54	295.6	F
	SB	TR	0.82	41.2	D	SB	TR	1.00	66.8	E	SB	TR	1.00	66.8	E
Atlantic Avenue &											NB	L	0.91	69.1	E
Schenck Avenue											NB	TR	0.68	50.5	D
	NB	LTR	1.19	148.1	F	NB	LTR	1.28	184.9	F	NB	LTR		62.8	E
Atlantic Avenue &	WB	L	0.76	50.1	D	WB	L	0.84	63.2	E	WB	L	0.76	53.5	D
Warwick Street															
Atlantic Avenue &	EB	L	0.69	39.6	D	EB	L	0.89	73.3	E	EB	L	0.60	28.2	C
Highland Place															
Atlantic Avenue &											NB	T	0.62	29.4	C
Logan Street											NB	R	0.36	26.2	C
	NB	TR	0.66	34.8	C	NB	TR	1.03	83.9	F	NB	TR		28.7	C
											SB	L	1.03	100.8	F
											SB	TR	0.61	30.8	C
	SB	LTR	1.01	86.1	F	SB	LTR	2.04	516.8	F	SB	LTR		62.9	E
Atlantic Avenue &	EB	TR	1.09	84.4	F	EB	TR	1.13	97.2	F	EB	TR	1.10	84.3	F
Rockaway Boulevard															
Broadway &	EB	TR	0.88	57.6	E	EB	TR	0.99	79.6	E	EB	TR	0.88	54.5	D
Eastern Parkway	WB	LT	0.69	38.8	D	WB	LT	0.86	52.6	D	WB	LT	0.73	37.8	D
Fulton Street &	NB	TR	1.00	58.5	E	NB	TR	1.05	72.1	E	NB	TR	1.01	59.5	E
Pennsylvania Avenue															
Fulton Street &	WB	LTR	0.56	16.2	B	WB	LTR	1.06	77.3	E	WB	LTR	0.87	33.7	C
Logan Street															
Bushwick /Jamaica Avenue &	EB-Bushwick	R	0.85	55.2	E	EB-Bushwick	R	0.89	59.5	E	EB-Bushwick	R	0.89	59.5	E
Penn. /Jackie Robinson Pkwy	WB	L	1.14	156.4	F	WB	L	1.20	178.4	F	WB	L	1.20	178.4	F
	WB	T	1.13	152.7	F	WB	T	1.21	180.7	F	WB	T	1.21	180.7	F
	NB	L	1.08	117.2	F	NB	L	1.13	132.3	F	NB	L	1.13	132.3	F
Jamaica Avenue &	EB	LTR	1.13	102.5	F	EB	LTR	1.15	109.4	F	EB	LTR	1.09	87.9	F
Highland Pl/Force Tube Ave.															
Jamaica Avenue &	EB	LTR	1.00	51.2	D	EB	LTR	1.13	93.8	F	EB	LTR	0.87	26.5	C
Euclid Av/Cypress Hill Street															
Liberty Avenue &	EB	LTR	0.75	55.5	E	EB	LTR	0.85	67.8	E	EB	LTR	0.79	57.2	E
Pennsylvania Avenue	WB	LTR	0.96	82.5	F	WB	LTR	1.22	167.8	F	WB	LTR	0.94	71.5	E
Liberty Avenue &	SB	LTR	0.75	48.2	D	SB	LTR	0.83	54.0	D	SB	LTR	0.81	51.2	D
Miller Avenue															
Liberty Avenue &	SB	LR	0.24	32.7	C	SB	LR	0.58	45.3	D	SB	LR	0.46	38.6	D
Montauk Avenue															
Liberty Avenue &											SB	L	0.28	40.0	D
Logan Street											SB	R	0.51	43.0	D
	SB	LR	0.35	39.6	D	SB	LR	0.80	62.2	E	SB	LR		42.5	D
Liberty Avenue &	WB	L	1.20	171.3	F	WB	L	1.33	223.4	F	WB	L	1.19	165.6	F
South Conduit Boulevard															
Liberty Avenue &	WB	TR	1.04	93.2	F	WB	TR	1.12	119.2	F	WB	TR	1.03	88.7	F
North Conduit Boulevard															
Pitkin Avenue &	EB	LTR	1.13	131.1	F	EB	LTR	1.25	178.1	F	EB	LTR	1.14	131.8	F
Pennsylvania Avenue											SB	L	0.73	38.0	D
											SB	TR	0.86	27.4	C
	SB	LTR	1.04	60.4	E	SB	LTR	1.10	81.5	F	SB	LTR		28.7	C
Unsignalized Intersection															
Dinsmore Place &	WB	LR	0.15	19.5	C	WB	LR	0.71	171.7	F	WB	LR	0.13	16.8	B
Logan Street											(Signalized)				
(Two-Way Stop Controlled)															
Fulton Street &	NB	LTR	0.56	28.2	D	NB	LTR	1.59	324.1	F	NB	LTR	0.69	23.3	C
Chestnut Street											(Signalized)				
(Two-Way Stop Controlled)															

EB-eastbound, WB-westbound, NB-northbound, SB-southbound

L-left turn, T-through, R-right turn, DefL-defacto left turn

Shading denotes lane groups with unmitigated impacts.

TABLE 20-8
Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday PM Peak Hour

	Weekday PM Peak Hour No-Action					Weekday PM Peak Hour With-Action					Weekday PM Peak Hour Mitigation				
	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Signalized Intersection															
Atlantic Avenue & Rockaway Avenue	EB	TR	0.94	43.3	D	EB	TR	0.99	51.8	D	EB	TR	0.97	47.2	D
Atlantic Avenue & Eastern Parkway	NB	R	0.86	49.0	D	NB	R	0.94	61.2	E	NB	R	0.91	52.9	D
Atlantic Avenue & Georgia Avenue	NB	LTR	1.11	121.3	F	NB	LTR	1.17	140.8	F	NB	LTR	1.10	114.6	F
Atlantic Avenue & Pennsylvania Avenue	EB	T	1.09	86.1	F	EB	T	1.22	141.5	F	EB	T	1.22	141.5	F
	WB	TR	1.12	108.1	F	WB	TR	1.24	154.8	F	WB	TR	1.24	154.8	F
	NB	TR	0.96	59.7	E	NB	TR	1.10	99.0	F	NB	TR	1.10	99.0	F
	SB	L	0.94	85.6	F	SB	L	1.27	179.1	F	SB	L	1.27	179.1	F
Atlantic Avenue & Miller Avenue	WB	DefL	1.76	412.7	F	WB	DefL	3.17	1039.0	F	WB	DefL	1.37	237.2	F
	SB	LTR	1.35	215.5	F	SB	LTR	1.44	252.4	F	SB	LTR	1.32	198.8	F
Atlantic Avenue & Schenck Avenue											NB	L	0.68	46.8	D
											NB	TR	1.10	126.6	F
	NB	LTR	1.08	107.0	F	NB	LTR	1.33	207.1	F	NB	LTR		88.8	F
Atlantic Avenue & Warwick Street	WB	L	0.99	104.8	F	WB	L	1.02	114.0	F	WB	L	0.96	98.1	F
											SB	L	0.83	64.7	E
											SB	TR	0.97	95.1	F
	SB	LTR	1.31	203.1	F	SB	LTR	1.38	232.4	F	SB	LTR		79.4	E
Atlantic Avenue & Elton Street	EB	L	0.66	36.5	D	EB	L	0.95	90.3	F	EB	L	0.59	27.9	C
	EB	T	0.76	17.4	B	EB	T	1.10	73.9	E	EB	T	0.83	19.8	B
Atlantic Avenue & Highland Place	EB	L	0.72	45.5	D	EB	L	0.89	79.1	E	EB	L	0.53	26.1	C
											SB	L	0.70	47.2	D
											SB	LR	0.70	47.6	D
	SB	LR	1.02	86.6	F	SB	LR	1.19	146.6	F	SB	LR		47.4	D
Atlantic Avenue & Logan Street											NB	T	0.68	31.5	C
											NB	R	0.25	22.6	C
	NB	TR	0.61	32.5	C	NB	TR	1.04	82.0	F	NB	TR		30.1	C
											SB	L	1.50	285.3	F
											SB	TR	0.54	27.4	C
	SB	LTR	0.99	79.5	E	SB	LTR	2.36	660.4	F	SB	LTR		156.6	F
Atlantic Avenue & Euclid Avenue	SB	L	0.71	47.3	D	SB	L	0.83	58.0	E	SB	L	0.78	51.2	D
Atlantic Avenue & Crescent Street	WB	DefL	0.90	45.0	D	WB	DefL	0.98	96.4	F	WB	DefL	0.90	47.5	D
	SB	LTR	1.15	146.5	F	SB	LTR	1.20	164.0	F	SB	LTR	1.14	143.2	F
Atlantic Avenue & Rockaway Boulevard	WB	L	1.14	137.9	F	WB	L	1.19	159.4	F	WB	L	1.14	139.9	F
Broadway & Rockaway Avenue											WB	LT	0.67	22.5	C
											WB	R	0.28	14.9	B
	WB	LTR	0.91	40.4	D	WB	LTR	0.97	49.6	D	WB	LTR		20.7	C
Broadway & Eastern Parkway	EB	L	0.36	40.6	D	EB	L	0.46	47.4	D	EB	L	0.46	47.4	D
	EB	TR	1.11	124.4	F	EB	TR	1.35	218.4	F	EB	TR	1.35	218.4	F
	WB	LT	0.97	84.3	F	WB	LT	1.60	333.4	F	WB	LT	1.60	333.4	F
Bushwick Avenue & Eastern Parkway	WB	L	1.14	120.4	F	WB	L	1.16	127.9	F	WB	L	1.14	120.1	F
Fulton Street & Van Sinderen Avenue	SB	LTR	0.62	42.2	D	SB	LTR	0.79	50.7	D	SB	LTR	0.75	46.1	D
Fulton Street & Pennsylvania Avenue	NB	TR	1.08	87.9	F	NB	TR	1.17	121.0	F	NB	TR	1.17	121.0	F
	SB	L	0.97	92.6	F	SB	L	1.21	170.1	F	SB	L	1.22	170.1	F
Fulton Street & Miller Avenue	EB	TR	0.95	41.0	D	EB	TR	1.15	102.3	F	EB	TR	1.15	102.3	F
Fulton Street & Logan Street	WB	LTR	0.69	20.5	C	WB	LTR	1.51	258.7	F	WB	LTR	1.08	77.3	E

TABLE 20-8 (continued)
Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday PM Peak Hour

	Weekday PM Peak Hour No-Action					Weekday PM Peak Hour With-Action					Weekday PM Peak Hour Mitigation					
	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	
Fulton Street & Euclid Avenue	SB	LTR	0.81	31.8	C	SB	LTR	1.04	72.2	E	SB	LTR	0.94	44.4	D	
Bushwick /Jamaica Avenue &	EB-Bushwick	R	1.09	104.7	F	EB-Bushwick	R	1.16	130.7	F	EB-Bushwick	R	1.16	130.7	F	
Penn. /Jackie Robinson Pkwy	WB	L	1.22	189.4	F	WB	L	1.35	240.6	F	WB	L	1.35	240.6	F	
	WB	T	1.23	194.1	F	WB	T	1.36	243.1	F	WB	T	1.36	243.1	F	
	NB	L	0.89	69.1	E	NB	L	0.95	79.6	E	NB	L	0.95	79.6	E	
Jamaica Avenue &	EB	LTR	0.94	44.1	D	EB	LTR	0.99	55.3	E	EB	LTR	0.87	32.9	C	
Highland Pl/Force Tube Ave.	SB	TR	1.13	99.6	F	SB	TR	1.25	146.7	F	SB	TR	1.25	146.7	F	
Jamaica Avenue &	EB	LTR	1.20	118.6	F	EB	LTR	1.46	231.3	F	EB	LTR	1.13	90.0	F	
Euclid Av/Cypress Hill Street																
Liberty Avenue &	EB	LTR	0.97	82.3	F	EB	LTR	1.05	102.2	F	EB	LTR	0.97	80.2	F	
Pennsylvania Avenue	WB	LTR	1.04	104.5	F	WB	LTR	1.34	217.2	F	WB	LTR	1.02	90.7	F	
Liberty Avenue &											SB	L	0.17	29.8	C	
Miller Avenue											SB	TR	1.05	95.4	F	
	SB	LTR	1.04	94.4	F	SB	LTR	1.19	147.4	F	SB	LTR		86.2	F	
Liberty Avenue &	SB	LTR	1.25	174.3	F	SB	LTR	1.33	206.3	F	SB	LTR	1.26	174.2	F	
Warwick Street																
Liberty Avenue &	SB	LTR	0.49	38.6	D	SB	LTR	0.77	51.7	D	SB	LTR	0.70	44.6	D	
Shepherd Avenue																
Liberty Avenue &	SB	LR	0.37	35.7	D	SB	LR	0.81	63.2	E	SB	LR	0.61	43.5	D	
Montauk Avenue																
Liberty Avenue &	WB	LT	0.70	23.2	C	WB	LT	1.22	143.4	F	WB	LT	0.93	42.9	D	
Milford Street																
Liberty Avenue &	EB	LT	0.54	13.3	B	EB	LT	1.15	104.8	F	EB	LT	0.86	28.0	C	
Logan Street	NB	LTR	0.82	58.0	E	NB	LTR	0.92	71.8	E	NB	LTR	0.87	61.3	E	
											SB	L	0.59	54.6	D	
											SB	R	0.54	42.5	D	
	SB	LR	0.50	44.7	D	SB	LR	1.23	178.6	F	SB	LR		46.0	D	
Liberty Avenue &	WB	L	0.75	54.8	D	WB	L	0.82	62.6	E	WB	L	0.72	48.0	D	
South Conduit Boulevard	WB	T	1.12	125.7	F	WB	T	1.25	174.9	F	WB	T	1.13	124.8	F	
Liberty Avenue &	WB	TR	1.36	221.1	F	WB	TR	1.46	263.4	F	WB	TR	1.35	213.2	F	
North Conduit Boulevard																
Pitkin Avenue &	EB	TR	0.92	70.2	E	EB	TR	0.96	77.7	E	EB	TR	0.88	60.5	E	
Pennsylvania Avenue	WB	LTR	0.66	42.8	D	WB	LTR	0.91	62.9	E	WB	LTR	0.79	47.7	D	
											NB	L	0.47	21.1	C	
											NB	TR	0.71	18.7	B	
	NB	LTR	1.00	47.9	D	NB	LTR	1.11	85.5	F	NB	LTR		18.9	B	
											SB	L	0.76	46.2	D	
											SB	TR	0.98	45.1	D	
	SB	LTR	1.08	72.8	E	SB	LTR	1.19	117.7	F	SB	LTR		45.2	D	
Sutter Avenue &	NB	L	0.85	67.7	E	NB	L	0.95	90.2	F	NB	L	0.87	70.4	E	
Fountain Avenue																
Unsignalized Intersection																
Dinsmore Place &	WB	LR	0.27	23.3	C	WB	LR	4.31	1794.0	F	WB	LR	0.42	36.8	D	
Logan Street											(Signalized)					
(Two-Way Stop Controlled)																
Fulton Street &											NB	T	0.95	125.4	F	
Elton Street											NB	R	0.23	18.7	C	
(Two-Way Stop Controlled)	NB	TR	0.99	112.8	F	NB	TR	1.24	200.8	F	NB	TR		86.1	F	*
Fulton Street &	NB	LTR	1.05	123.3	F	NB	LTR	3.01	962.2	F	NB	LTR	0.90	38.0	D	
Chestnut Street											(Signalized)					
(Two-Way Stop Controlled)																
Glenmore Avenue &	SB	TR	0.71	25.4	D	SB	TR	0.86	39.2	E	SB	TR	0.64	29.2	C	
Miller Avenue											(Signalized)					
(Two-Way Stop Controlled)																
Pitkin Avenue &											NB	L	0.14	27.3	D	
Elton Street											NB	TR	0.51	38.7	E	
(Two-Way Stop Controlled)	NB	LTR	0.44	29.4	D	NB	LTR	0.65	49.6	E	NB	LTR		36.4	E	*

EB-eastbound, WB-westbound, NB-northbound, SB-southbound
L-left turn, T-through, R-right turn, DefL-defacto left turn
Shading denotes lane groups with unmitigated impacts.
* Impact could be mitigated by a new traffic signal; however, signalization is not proposed as future conditions would not satisfy required warrants.

TABLE 20-9

Action-With-Mitigation Conditions at Impacted Lane Groups – Saturday Midday Peak Hour

	Saturday Midday Peak Hour No-Action					Saturday Midday Peak Hour With-Action					Saturday Midday Peak Hour Mitigation				
	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Signalized Intersection															
Atlantic Avenue &	EB	TR	1.03	59.5	E	EB	TR	1.12	90.3	F	EB	TR	1.12	90.3	F
Pennsylvania Avenue	WB	TR	1.07	77.7	E	WB	TR	1.18	120.8	F	WB	TR	1.18	120.1	F
	NB	L	1.13	120.8	F	NB	L	1.15	126.2	F	NB	L	1.15	126.2	F
	NB	TR	1.25	154.8	F	NB	TR	1.30	176.0	F	NB	TR	1.30	176.0	F
	SB	L	1.10	113.5	F	SB	L	1.23	163.4	F	SB	L	1.23	163.4	F
Atlantic Avenue &											NB	L	1.02	81.4	F
Schenck Avenue											NB	TR	0.63	37.8	D
	NB	LTR	1.20	142.6	F	NB	LTR	1.35	202.6	F	NB	LTR		67.5	E
Atlantic Avenue &	EB	L	1.12	140.4	F	EB	L	1.30	208.1	F	EB	L	0.67	31.6	C
Highland Place											SB	L	0.52	30.1	C
											SB	LR	0.53	30.4	C
	SB	LR	0.83	42.3	D	SB	LR	0.89	48.4	D	SB	LR		30.2	C
Atlantic Avenue &	WB	TR	0.99	44.9	D	WB	TR	1.03	55.9	E	WB	TR	1.00	47.5	D
Logan Street											SB	L	1.08	101.5	F
											SB	TR	0.49	19.0	B
	SB	LTR	0.84	37.0	D	SB	LTR	1.51	268.4	F	SB	LTR		61.4	E
Atlantic Avenue &	EB	TR	1.00	56.5	E	EB	TR	1.03	63.3	E	EB	TR	1.00	54.5	D
Rockaway Boulevard															
Broadway &	WB	LTR	0.91	36.3	D	WB	LTR	0.97	47.2	D	WB	LTR	0.95	42.0	D
Rockaway Avenue															
Broadway &	EB	TR	0.94	65.7	E	EB	TR	1.06	96.4	F	EB	TR	0.95	62.9	E
Eastern Parkway	WB	LT	0.57	34.3	C	WB	LT	0.80	49.1	D	WB	LT	0.63	33.7	C
Fulton Street &	EB	TR	0.96	38.1	D	EB	TR	1.02	52.6	D	EB	TR	0.99	43.2	D
Highland Place															
Fulton Street &	WB	LTR	0.65	18.9	B	WB	LTR	1.14	104.2	F	WB	LTR	0.93	43.0	D
Logan Street															
Bushwick /Jamaica Avenue &	WB	L	1.09	133.2	F	WB	L	1.19	166.9	F	WB	L	1.19	166.9	F
Penn. /Jackie Robinson Pkwy	WB	T	1.13	146.6	F	WB	T	1.24	184.4	F	WB	T	1.24	184.4	F
	NB	L	0.94	66.7	E	NB	L	0.98	76.1	E	NB	L	0.98	76.1	E
Jamaica Avenue &	EB	LTR	1.13	99.2	F	EB	LTR	1.17	115.6	F	EB	LTR	1.12	92.6	F
Highland Pl/Force Tube Ave.															
Jamaica Avenue &	EB	LTR	1.09	78.3	E	EB	LTR	1.29	157.8	F	EB	LTR	1.00	46.8	D
Euclid Av/Cypress Hill Street															
Liberty Avenue &	WB	LTR	0.94	65.6	E	WB	LTR	1.11	113.5	F	WB	LTR	0.94	61.0	E
Pennsylvania Avenue															
Liberty Avenue &	SB	LTR	0.74	39.0	D	SB	LTR	0.85	48.0	D	SB	LTR	0.82	43.8	D
Miller Avenue															
Liberty Avenue &	SB	LTR	0.97	69.3	E	SB	LTR	1.02	82.5	F	SB	LTR	0.98	71.0	E
Warwick Street															
Liberty Avenue &	SB	LR	0.44	31.0	C	SB	LR	0.95	83.6	F	SB	LR	0.71	42.8	D
Montauk Avenue															
Liberty Avenue &	EB	LT	0.46	14.7	B	EB	LT	0.95	48.6	D	EB	LT	0.93	42.8	D
Logan Street															
Liberty Avenue &	WB	L	1.18	149.3	F	WB	L	1.31	197.9	F	WB	L	1.15	135.1	F
South Conduit Boulevard	WB	T	0.87	48.9	D	WB	T	0.93	59.3	E	WB	T	0.88	48.1	D
Liberty Avenue &	WB	TR	1.30	182.2	F	WB	TR	1.37	213.8	F	WB	TR	1.29	176.0	F
North Conduit Boulevard															
Pitkin Avenue &	EB	LTR	0.76	43.4	D	EB	LTR	0.83	50.3	D	EB	LTR	0.68	34.7	C
Pennsylvania Avenue	WB	LTR	1.01	78.8	E	WB	LTR	1.27	173.0	F	WB	LTR	1.03	81.1	F
											NB	L	0.63	29.3	C
											NB	TR	0.93	30.9	C
	NB	LTR	0.98	38.5	D	NB	LTR	1.04	53.7	D	NB	LTR		30.8	C
Pitkin Avenue &	WB	L	1.20	163.4	F	WB	L	1.26	191.3	F	WB	L	1.16	149.2	F
South Conduit Boulevard															

TABLE 20-9 (continued)
Action-With-Mitigation Conditions at Impacted Lane Groups – Saturday Midday Peak Hour

	Saturday Midday Peak Hour No-Action					Saturday Midday Peak Hour With-Action					Saturday Midday Peak Hour Mitigation					
	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	
Unsignalized Intersection																
Arlington Avenue & Jamaica Avenue (Two-Way Stop Controlled)	NB	LR	0.65	25.5	D	NB	LR	0.77	34.0	D	NB	LR	0.77	34.0	D	*
Dinsmore Place & Logan Street (Two-Way Stop Controlled)	WB	LR	0.17	23.0	C	WB	LR	1.02	277.9	F	WB (Signalized)	LR	0.17	31.9	D	
Fulton Street & Elton Street (Two-Way Stop Controlled)	NB	TR	0.57	31.6	D	NB	TR	0.67	41.3	E	NB NB NB	T R TR	0.45 0.19	34.3 14.9 25.2	D B D	*
Fulton Street & Chestnut Street (Two-Way Stop Controlled)	NB	LTR	0.58	35.9	E	NB	LTR	1.88	467.2	F	NB (Signalized)	LTR	0.55	18.3	C	

EB-eastbound, WB-westbound, NB-northbound, SB-southbound
L-left turn, T-through, R-right turn, DefL-defacto left turn
Shading denotes lane groups with unmitigated impacts.
* Impact could be mitigated by a new traffic signal; however, signalization is not proposed as future conditions would not satisfy required warrants.

Transit

Subway

SUBWAY LINE HAUL

As shown in Table 13-49 in Chapter 13, "Transportation," development associated with the Proposed Actions would add approximately 893 new subway trips, or an average of approximately 9.15 passengers per car, to southbound J and Z trains in the AM peak hour, increasing the volume-to-capacity ratio from 0.94 in the No-Action condition to 1.01 in the future with the Proposed Actions. As AM peak hour demand on southbound J/Z trains would exceed practical capacity in the 2030 With-Action condition, and as the Proposed Actions would increase this demand by more than the five passengers per car *CEQR Technical Manual* impact threshold, southbound J/Z trains would be significantly impacted by the Proposed Actions based on *CEQR Technical Manual* criteria.

As standard practice, New York City Transit (NYCT) routinely conducts periodic ridership counts and adjusts subway frequency to meet its service criteria, within fiscal and operating constraints. As shown in Table 20-10, given the level of new demand generated by the Proposed Actions, the addition of one southbound J or Z train during the AM peak hour (increasing average frequency from 12.2 to 13.2 trains per hour) would be required to mitigate the potential AM peak hour impact to southbound J/Z service. The addition of one southbound train in the AM peak hour would return the Broadway Line to below capacity conditions, with a v/c ratio of 0.93.

Bus

As discussed in Chapter 13, "Transportation," the Proposed Actions would add approximately 18 trips through the maximum load point on the westbound Q8 service in the PM peak hour, resulting in a capacity shortfall of 17 spaces. Therefore, westbound Q8 service would be significantly adversely impacted in the PM peak hour based on *CEQR Technical Manual* criteria. As shown in Table 20-11, these significant adverse impacts to Q8 bus service could be fully mitigated by the addition of one standard bus in the westbound 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 20-10
Action-With-Mitigation Subway Line Haul Analysis

Peak Hour	Route	Direction	Maximum Load Point (leaving station)	Average Trains per Hour	Average Cars per Hour	Guideline Passengers per Car[1]	Average Passengers per Hour	Average Passengers per Car	V/C Ratio[2]	Average Additional Passengers per Car
2030 With-Action Condition										
AM	J/Z	SB	Marcy Av	12.2	97.6	135	13,289	136	1.01	9.15*
2030 Action-With-Mitigation Condition										
AM	J/Z	SB	Marcy Av	13.2	105.6	135	13,289	126	0.93	8.46

Notes:
[1] Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service.
[2] Volume to guideline capacity ratio.
***** denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

TABLE 20-11
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 Peak Hour Buses Needed to Accommodate Project-Generated Demand	Available Capacity With Mitigation[2]
PM	Q8	WB	101st Av & Cresskill Pl	9	1	18	-17 *	1	37

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

Pedestrians

As discussed in Chapter 13, "Transportation," the results of the analyses of pedestrian conditions show that demand from the Proposed Action would significantly adversely impact a total of two sidewalks, one crosswalk and one corner area in one or more peak hours under the With-Action condition (refer to Table 20-12, below).

TABLE 20-12
Summary of Significant Pedestrian Impacts

Corridor/Intersection	Impacted Element	Peak Hour		
		Weekday AM	Weekday Midday	Weekday PM
Atlantic Ave, Logan St to Chestnut St	North Sidewalk		X	
Van Siclen Ave, Pitkin Ave to Glenmore Ave	East Sidewalk			X
Atlantic Ave/Euclid Ave	West Crosswalk		X	
Liberty Ave/Berriman St	Northeast Corner	X		

A significant adverse pedestrian impact is considered mitigated if measures implemented return the anticipated conditions to an acceptable level, following the same impact 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; 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 sidewalk and crosswalk widening and minor signal timing changes. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified.

Sidewalks

Of the 79 sidewalks analyzed, two are expected to be significantly adversely impacted—the north sidewalk on Atlantic Avenue between Logan and Chestnut streets in the weekday midday peak hour and the east sidewalk on Van Siclen Avenue between Pitkin and Glenmore avenues in the PM. Table 20-13 shows the recommended mitigation measures to address these impacts and their effectiveness. As shown in Table 20-13 and discussed below, with implementation of the proposed mitigation measures, both of these sidewalks would operate at an acceptable LOS C in the impacted peak hours, and all significant adverse sidewalk impacts would be fully mitigated.

NORTH SIDEWALK ON ATLANTIC AVENUE BETWEEN LOGAN AND CHESTNUT STREETS

The existing sidewalk along the north side of Atlantic Avenue between Logan and Chestnut streets is a relatively narrow five feet in width (three feet of effective width) between an existing fence and a planted strip along the curb. Widening this sidewalk by 0.5-foot in conjunction with the development of the adjacent site (projected development site 66) would fully mitigate this significant impact.

EAST SIDEWALK ON VAN SICLEN AVENUE BETWEEN PITKIN AND GLENMORE AVENUES

The PM peak hour impact to the east sidewalk on Van Siclen Avenue between Pitkin and Glenmore avenues would occur at the most constrained point on the sidewalk where a tree pit is located at curbside opposite from an enclosure around a basement entrance for an adjacent building. Removal of this tree pit would fully mitigate the Proposed Actions' significant adverse impact to this sidewalk in the PM peak hour.

Crosswalks

One of the 67 analyzed crosswalks would be significantly adversely impacted by the Proposed Actions in the weekday midday peak hour—the west crosswalk on Atlantic Avenue at Euclid Avenue. As shown in Table 20-14, this significant adverse impact would be fully mitigated by shifting four seconds of green time from the eastbound/westbound traffic signal phase to the northbound/southbound phase.

Corner Areas

One of the 58 analyzed corner areas would be significantly adversely impacted by the Proposed Actions—the northeast corner at Liberty Avenue at Berriman Street in the weekday AM peak hour. The sidewalks adjacent to this corner area are each 7.5-feet in width between the curb and lawn areas surrounding the existing buildings on the block. Widening either one of these sidewalks by 0.5 feet (i.e., from 7.5 feet to eight feet in width) in conjunction with the development of the adjacent site (projected development site 46) would fully mitigate this significant corner area impact. As shown in Table 20-15, with implementation of this mitigation, the northeast corner area at Liberty Avenue/Berriman Street would operate at an acceptable LOS C in the AM peak hour under Action-with-Mitigation conditions, and the Proposed Actions' significant adverse impact would be fully mitigated.

TABLE 20-13
Action-With-Mitigation Sidewalk Conditions

Location	Side	No-Action			With-Action			Action-With-Mitigation			
		Effective Width (ft)	Average Space (ft^2/ped)	LOS	Effective Width (ft)	Average Space (ft^2/ped)	LOS	Effective Width (ft)	Average Space (ft^2/ped)	LOS	Mitigation Measures
Weekday Midday Peak Hour											
(S50) Atlantic Av Logan St to Chestnut St	North	3.0	205.2	B	3.0	34.3	D*	3.5	44.0	C	Mitigated through sidewalk widening.
Weekday PM Peak Hour											
(S69) Van Siclen Av Pitkin Av to Glenmore Av	East	3.5	38.8	D	3.5	34.5	D*	5.5	55.6	C	Mitigated by removing a tree pit.

Notes:
* denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

TABLE 20-14
Action-With-Mitigation Crosswalk Conditions

Intersection	Crosswalk	No-Action			With-Action			Action-With-Mitigation			
		Width (ft)	Average Space (ft^2/ped)	LOS	Width (ft)	Average Space (ft^2/ped)	LOS	Width (ft)	Average Space (ft^2/ped)	LOS	Mitigation Measures
Weekday Midday Peak Hour											
(X42) Atlantic Av @ Euclid Av	West	12	82.6	A	12	18.6	D*	15	24.5	C	Mitigated through signal timing changes.

Notes:
* denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

TABLE 20-15
Action-With-Mitigation Corner Conditions

Intersection	Corner	No-Action		With-Action		Action-With-Mitigation		
		Average Space (ft^2/ped)	LOS	Average Space (ft^2/ped)	LOS	Average Space (ft^2/ped)	LOS	Mitigation Measures
Weekday AM Peak Hour								
(C47) Liberty Av @ Berriman St	NE	67.5	A	22.9	D*	27.3	C	Widen one adjacent sidewalk by 0.5 feet (from 7.5' to 8')

Notes:
* denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

Effects of Traffic Mitigation on Pedestrian Conditions

Proposed traffic mitigation measures (discussed previously) would potentially affect pedestrian conditions at a total of 34 analyzed crosswalks and 36 analyzed corner areas at nine intersections in one or more peak hours. Tables 20-16 and 20-17 show conditions at these pedestrian elements with the proposed traffic mitigation measures. As shown in Tables 20-16 and 20-17, all of the affected crosswalks and corner areas would continue to operate at LOS C or better in all peak hours, and there would be no new significant adverse impacts to any of these sidewalks or crosswalks in any analyzed peak hour as a result of the proposed traffic mitigation.

Proposed Schedule for Pedestrian Mitigation Measures

Subject to DOT approval, the mitigation measures described above would be implemented to mitigate the significant adverse pedestrian impacts resulting from full build-out of the Proposed Actions in 2030. As the development of the Proposed Actions would be expected to occur over an approximately 15-year period, it is possible that some of the significant adverse impacts to sidewalks, crosswalks and corner areas could occur prior to full build-out in 2030.

Based on the anticipated construction schedule shown in Chapter 19, "Construction," incremental pedestrian trips generated by projected development could potentially result in significant adverse pedestrian impacts beginning in the 3rd quarter of 2018 with the completion of the first two phases of site 67. This level of development would result in a net increase of 475 dwelling units, 44,816 gsf of office space, 10,000 gsf of restaurant space, and 92,720 gsf of community facility (community center and medical office) space, along with a 26,592 gsf reduction in retail space, and would potentially generate more than the *CEQR Technical Manual* analysis threshold of 200 peak hour pedestrian trips in one or more peak periods on nearby sidewalks or crosswalks that have been identified as significantly adversely impacted. These impacted pedestrian elements would include the north sidewalk on Atlantic Avenue between Logan and Chestnut Streets, and the west crosswalk on Atlantic Avenue at Euclid Avenue. At this earlier point in time, implementation of the mitigation measures developed for full build-out of the Proposed Actions in 2030 would be considered to address the potential significant adverse pedestrian impacts at these locations.

H. AIR QUALITY

Chapter 14, "Air Quality," presents the maximum predicted carbon monoxide (CO) and particulate matter (PM_{10} and $PM_{2.5}$) concentrations related to traffic generated by the Proposed Actions, and concludes that the Proposed Actions would not result in significant adverse air quality impacts, with the exception of the intersection of Atlantic Avenue and Logan Street, which is predicted to exceed the annual *de minimis* criterion of 0.1 $\mu g/m^3$. Therefore, air quality mitigation is required at this location.

Traffic mitigation measures were developed to reduce congestion and increase speeds along Logan Street in the affected area. Table 20-17 presents the results of the mobile source analysis with the proposed traffic mitigation measures in place.

As shown in the table, the results of this modeling analysis (performed in accordance with methodologies described in Chapter 14, "Air Quality") indicate that annual incremental concentrations of $PM_{2.5}$ would be significantly lower than the With-Action condition, and would not exceed the *de minimis* criteria for $PM_{2.5}$. No unmitigated significant adverse air quality impacts would remain upon incorporation of the mitigation measures.

TABLE 20-16
Action-With-Traffic-Mitigation Crosswalk Conditions

Intersection	Crosswalk		No-Action Condition: Average Pedestrian Space (ft^2/ped)			No-Action Condition: Level of Service			With-Action-Condition: Average Pedestrian Space (ft^2/ped)			With-Action-Condition: Level of Service			Action-With-Mitigation: Average Pedestrian Space (ft^2/ped)			Action-With-Mitigation: Level of Service			Recommended Mitigation[1]
			AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
Fulton Street and Pennsylvania Avenue	X1	North	554.0	487.9	319.5	A	A	A	340.2	250.7	236.4	A	A	A	311.3	232.2	236.4	A	A	A	- Transfer 3s and 2s of green time from EB to NB/SB in AM and midday peak hours, respectively.
	X2	East	724.0	557.4	419.7	A	A	A	355.5	211.0	161.1	A	A	A	384.8	221.9	161.1	A	A	A	
	X3	South	261.6	223.0	238.5	A	A	A	125.4	107.3	153.4	A	A	A	113.9	98.1	153.4	A	A	A	
	X4	West	960.4	732.3	500.0	A	A	A	516.6	382.3	329.5	A	A	A	551.3	396.9	329.5	A	A	A	
Fulton Street and Logan Street	X8	North	177.6	202.2	106.4	A	A	A	117.3	122.2	88.6	A	A	A	1267.6	122.2	100.6	A	A	A	- Transfer 2s and 3s of green time from NB/SB to EB/WB in AM and PM peak hours, respectively.
	X9	East	416.5	449.0	479.0	A	A	A	180.9	244.4	260.4	A	A	A	160.8	244.4	217.4	A	A	A	
	X10	South	218.3	196.9	139.2	A	A	A	60.4	93.8	78.0	A	A	A	66.8	93.8	91.5	A	A	A	
	X11	West	333.9	169.5	198.1	A	A	A	123.5	99.8	134.6	A	A	A	108.2	99.8	109.9	A	A	A	
Fulton Street and Euclid Avenue	X16	North	260.9	249.8	181.8	A	A	A	192.0	124.7	120.1	A	A	A	178.1	124.7	111.3	A	A	A	- Transfer 2s of green time from EB/WB to SB in AM and PM peak hours.
	X17	East	359.8	379.5	332.1	A	A	A	308.1	243.4	258.1	A	A	A	349.8	243.4	292.6	A	A	A	
	X18	South	428.9	246.6	213.7	A	A	A	50.0	87.6	111.5	B	A	A	46.0	87.6	102.5	B	A	A	
	X19	West	717.2	333.3	365.4	A	A	A	345.7	146.3	157.1	A	A	A	396.9	146.3	178.5	A	A	A	
Atlantic Avenue and Pennsylvania Avenue	X20	North	1586.4	347.0	451.6	A	A	A	737.8	130.7	146.4	A	A	A	710.6	130.7	146.4	A	A	A	- Transfer 1s of green time from EB to NB/SB in AM peak hour.
	X21	East	131.5	233.6	246.7	A	A	A	78.0	106.5	130.7	A	A	A	85.8	106.5	130.7	A	A	A	
	X22	South	779.3	607.4	492.0	A	A	A	572.9	209.5	220.8	A	A	A	556.0	209.5	220.8	A	A	A	
	X23	West	114.0	217.6	252.5	A	A	A	86.2	135.0	163.6	A	A	A	97.0	135.0	163.6	A	A	A	
Atlantic Avenue and Highland Place	X32	North	469.3	334.6	401.7	A	A	A	189.5	148.1	219.3	A	A	A	152.5	116.6	176.3	A	A	A	- Introduce new EB leading signal phase (13s in the AM, MD, PM peak hours)
	X33	East	441.1	392.6	313.1	A	A	A	129.6	75.1	63.3	A	A	A	129.6	75.1	63.3	A	A	A	
	X34	West	139.8	242.4	199.4	A	A	A	95.4	74.4	65.4	A	A	A	95.4	74.4	65.4	A	A	A	
Atlantic Avenue and Logan Street	X35	North	579.7	240.4	317.2	A	A	A	102.7	66.5	98.2	A	A	A	107.8	63.8	94.3	A	A	A	- Transfer 4s of green time from EB/WB to NB/SB in midday and PM peak hours, respectively. - Narrow west sidewalk on Logan Street at NW corner by 3 feet.
	X36	East	386.6	166.4	248.5	A	A	A	153.0	48.7	73.6	A	B	A	153.0	57.0	85.8	A	B	A	
	X37	South	753.7	294.1	487.9	A	A	A	228.4	85.1	142.4	A	A	A	228.4	78.8	132.1	A	A	A	
	X38	West	361.7	188.8	203.2	A	A	A	103.2	56.2	82.1	A	B	A	103.2	64.5	93.8	A	A	A	
Atlantic Avenue and Euclid Avenue	X39	North	1159.2	457.9	742.8	A	A	A	441.9	97.1	146.4	A	A	A	441.9	91.3	142.2	A	A	A	- Transfer 4s of green time from EB/WB to NB/SB in midday (for pedestrian mitigation) and 2s in the PM peak hour (for traffic mitigation).
	X40	East	281.4	339.6	270.6	A	A	A	138.5	74.2	78.9	A	A	A	138.5	99.8	94.3	A	A	A	
	X41	South	2842.6	738.6	1119.9	A	A	A	828.5	224.2	371.9	A	A	A	828.5	211.6	361.6	A	A	A	
	X42	West	275.5	82.64	106.3	A	A	A	56.4	18.6	24.1	B	**D**	* C	56.4	24.5	28.2	B	C	C	
Liberty Avenue and Shepherd Avenue	X50	North	384.8	891.1	442.9	A	A	A	324.7	307.6	275.1	A	A	A	324.7	307.6	263.3	A	A	A	- Transfer 3s of green time from EB/WB to SB in PM peak hour.
	X51	East	186.9	976.2	278.6	A	A	A	97.4	277.3	174.0	A	A	A	97.4	277.3	191.9	A	A	A	
	X52	South	165.4	842.5	659.3	A	A	A	151.5	291.3	330.9	A	A	A	151.5	291.3	316.2	A	A	A	
Liberty Avenue and Montauk Avenue	X57	North	577.5	936.9	718.5	A	A	A	390.3	204.6	229.3	A	A	A	384.3	204.6	225.8	A	A	A	- Transfer 3s of green time from EB/WB to NB/SB in AM and PM peak hours.
	X58	East	481.8	477.8	503.4	A	A	A	320.5	109.6	128.9	A	A	A	333.4	109.6	134.3	A	A	A	
	X59	South	433.8	991.7	749.9	A	A	A	302.7	198.1	234.7	A	A	A	298.2	198.1	231.2	A	A	A	
	X60	West	514.1	444.1	481.8	A	A	A	222.9	79.3	101.7	A	A	A	232.5	79.3	105.9	A	A	A	

Notes:

***** denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

[1] Reflects traffic mitigation measures unless otherwise noted.

TABLE 20-17
Action-With-Traffic-Mitigation Corner Area Conditions

Intersection	Corner		No-Action Condition						With-Action-Condition						Action-With-Mitigation						Recommended Mitigation[1]
			Average Pedestrian Space (ft^2/ped)			Level of Service			Average Pedestrian Space (ft^2/ped)			Level of Service			Average Pedestrian Space (ft^2/ped)			Level of Service			
			AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
Fulton Street and Pennsylvania Avenue	C1	NE	2015.5	1954.3	1479.7	A	A	A	1162.5	860.2	902.1	A	A	A	1162.2	860.2	902.1	A	A	A	- Transfer 3s and 2s of green time from EB to NB/SB in AM and midday peak hours, respectively.
	C2	SE	1325.9	1346.6	1270.1	A	A	A	627.0	523.8	638.4	A	A	A	626.0	523.5	638.4	A	A	A	
	C3	SW	1313.8	1290.4	1091.9	A	A	A	620.9	563.5	606.0	A	A	A	620.5	563.2	606.0	A	A	A	
	C4	NW	2815.3	2133.5	1541.2	A	A	A	1663.6	1203.9	1121.1	A	A	A	1663.6	1203.9	1121.1	A	A	A	
Fulton Street and Logan Street	C7	NE	454.1	471.7	304.6	A	A	A	277.3	298.7	242.5	A	A	A	277.4	298.7	243.1	A	A	A	- Transfer 2s and 3s of green time from NB/SB to EB/WB in AM and PM peak hours, respectively.
	C8	SE	464.8	438.8	322.6	A	A	A	173.5	253.7	224.9	A	A	A	173.9	253.7	225.4	A	A	A	
	C9	SW	724.7	572.4	475.5	A	A	A	211.4	272.6	235.2	A	A	A	211.6	272.6	235.2	A	A	A	
	C10	NW	669.2	610.8	471.4	A	A	A	409.7	395.1	381.8	A	A	A	409.8	395.1	381.9	A	A	A	
Fulton Street and Euclid Avenue	C15	NE	440.6	549.2	380.7	A	A	A	369.3	321.2	285.3	A	A	A	369.1	321.2	285.0	A	A	A	- Transfer 2s of green time from EB/WB to SB in AM and PM peak hours.
	C16	SE	1151.8	926.0	813.1	A	A	A	256.1	399.7	493.6	A	A	A	255.8	399.7	493.3	A	A	A	
	C17	SW	571.9	300.3	287.4	A	A	A	84.1	114.6	142.2	A	A	A	83.3	114.6	142.1	A	A	A	
	C18	NW	673.4	540.3	425.6	A	A	A	461.0	261.3	256.7	A	A	A	460.6	261.3	256.5	A	A	A	
Atlantic Avenue and Pennsylvania Avenue	C19	NE	2236.4	1195.6	1584.3	A	A	A	1306.8	554.8	780.9	A	A	A	1307.2	554.8	780.9	A	A	A	- Transfer 1s of green time from EB to NB/SB in AM peak hour.
	C20	SE	804.6	721.0	641.8	A	A	A	511.9	280.3	329.0	A	A	A	512.1	280.3	329.0	A	A	A	
	C21	SW	1163.7	927.2	912.4	A	A	A	914.0	510.7	574.7	A	A	A	914.1	510.7	574.7	A	A	A	
	C22	NW	2859.7	1586.5	1955.1	A	A	A	1927.0	793.1	1041.3	A	A	A	1927.4	793.1	1041.3	A	A	A	
Atlantic Avenue and Highland Place	C29	NE	1680.3	1380.8	1544.9	A	A	A	699.9	483.2	684.9	A	A	A	697.7	480.9	682.8	A	A	A	- Introduce new EB leading signal phase (13s in the AM, MD, PM peak hours)
	C30	NW	973.3	1018.1	1045.9	A	A	A	510.9	392.1	473.3	A	A	A	508.4	389.9	471.5	A	A	A	
Atlantic Avenue and Logan Street	C31	NE	362.3	175.8	254.7	A	A	A	109.7	42.5	70.4	A	B	A	109.7	43.0	71.0	A	B	A	- Transfer 4s of green time from EB/WB to NB/SB in midday and PM peak hours, respectively. - Narrow west sidewalk on Logan Street at NW corner by 3 feet.
	C32	SE	746.1	291.9	455.3	A	A	A	269.0	83.3	137.1	A	A	A	269.0	83.9	137.7	A	A	A	
	C33	SW	1165.2	550.2	702.3	A	A	A	353.7	163.6	253.6	A	A	A	353.7	163.9	254.0	A	A	A	
	C34	NW	941.7	443.9	539.0	A	A	A	235.1	132.4	197.5	A	A	A	186.9	103.8	156.4	A	A	A	
Atlantic Avenue and Euclid Avenue	C35	NE	1467.7	873.3	1152.9	A	A	A	634.6	185.8	262.9	A	A	A	634.6	185.5	262.9	A	A	A	- Transfer 4s of green time from EB/WB to NB/SB in midday (for pedestrian mitigation) and 2s in the PM peak hour (for traffic mitigation).
	C36	SE	1678.5	1098.6	1297.7	A	A	A	790.6	322.4	455.5	A	A	A	790.6	322.7	455.8	A	A	A	
	C37	SW	3191.0	892.7	1257.0	A	A	A	746.8	219.9	331.1	A	A	A	746.8	221.2	331.8	A	A	A	
	C38	NW	1559.2	520.0	775.8	A	A	A	428.7	109.3	163.4	A	A	A	428.7	109.9	163.7	A	A	A	
Liberty Avenue and Shepherd Avenue	C45	NE	286.7	899.9	407.1	A	A	A	195.4	331.5	266.1	A	A	A	195.4	331.5	266.2	A	A	A	- Transfer 3s of green time from EB/WB to SB in PM peak hour.
	C46	SE	369.3	1638.7	911.6	A	A	A	263.0	531.3	490.2	A	A	A	263.0	531.3	490.6	A	A	A	
Liberty Avenue and Montauk Avenue	C51	NE	747.2	974.0	885.6	A	A	A	514.4	230.4	274.0	A	A	A	514.3	230.4	274.0	A	A	A	- Transfer 3s of green time from EB/WB to NB/SB in AM and PM peak hours.
	C52	SE	315.4	552.2	476.7	A	A	A	220.6	113.6	138.8	A	A	A	220.5	113.6	138.8	A	A	A	
	C53	SW	591.3	891.8	867.4	A	A	A	370.4	181.4	233.6	A	A	A	370.4	181.4	233.7	A	A	A	
	C54	NW	323.7	436.2	358.3	A	A	A	183.6	84.5	100.7	A	A	A	183.6	84.5	100.7	A	A	A	

Notes:

[1] Reflects traffic mitigation measures unless otherwise noted.

TABLE 20-17
Maximum Predicted Annual Average $PM_{2.5}$ Concentrations with Traffic Mitigation

Receptor Site	Location	Annual Concentration (µg/m³)	
		Increment	Increment (with Mitigation)
2	Atlantic Avenue & Logan Street	0.14	0.03
Note: $PM_{2.5}$ *de minimis* criteria—annual (neighborhood scale), 0.1 µg/m³.			

I. NOISE

Chapter 16, "Noise," concludes that the Proposed Actions would result in a significant adverse noise impact on Richmond Street between Fulton Street and Dinsmore Place, with predicted noise level increases of 4.9 dBA at this location. According to field observations, all of the residences at this location appear to have double-glazed windows, and most of the residences appear to have through-wall air conditioners or window air conditioners (i.e., an alternate means of ventilation).

Residential units with double-glazed windows and an alternate means of ventilation would be expected to achieve approximately 25 dBA of attenuation resulting in interior $L_{10(1)}$ values of approximately 50 dBA during the AM peak hour and approximately 47 dBA during the PM peak hour. With respect to upgrades at the residential units, there are no further practical or feasible mitigation measures that would fully or partially mitigate the significant adverse noise impact at these locations.

Residential units with double-glazed windows and no alternate means of ventilation would be expected to achieve approximately five dBA of attenuation resulting in interior $L_{10(1)}$ values of approximately 70 dBA during the AM peak hour and approximately 67 dBA during the PM peak hour. Window air conditioners potentially could be installed at these residential units to provide an alternate means of ventilation. With the window air conditioners and a closed-window condition, interior $L_{10(1)}$ values would be approximately 50 dBA during the AM peak hour and approximately 47 dBA during the PM peak hour, which would partially mitigate the significant adverse noise impact at these locations. With respect to upgrades at the residential units, there are no further practical or feasible mitigation measures that would fully mitigate the significant adverse noise impact at these locations.

Other potential measures to fully mitigate the noise impact at these locations may be examined between the DEIS and FEIS. Potential mitigation measures may include rerouting traffic where feasible.

J. CONSTRUCTION

Historic and Cultural Resources

As described in Chapter 18, "Historic and Cultural Resources," development under the Proposed Actions—specifically, on projected development sites 7, 13, 35, 38, 39, 49, and 74 and potential development sites A3, A7, A8, A18, A40, A41, A50, A65, A70, A82, A86, A87, and A95—could result in inadvertent construction-related damage to ten NYCL- and/or S/NR-eligible historic resources, as they are located within 90 feet of one or more of the aforementioned projected and potential development sites. These seven eligible resources include Prince Hall Temple (S/NR-eligible), the former East New York Savings Bank (S/NR- and NYCL-eligible), the Magistrates Court (S/NR- and NYCL-eligible), the Empire State Dairy Building (S/NR- and NYCL-eligible), St. Michael's Roman Catholic Church (S/NR- and NYCL-eligible), Firehouse Engine 236 (S/NR-eligible), Our Lady of Loreto Roman Catholic Church (S/NR- and NYCL-eligible), 1431 Herkimer Street (S/NR- and NYCL-eligible), Grace Baptist Church (S/NR- and NYCL-eligible), and the Church of the Blessed Sacrament (S/NR- and NYCL-eligible).

Development under the Proposed Actions could result in construction-related impacts to these ten non-designated resources. The New York City Building Code, under section C26-112.4, provides some measures of protection for all

properties against accidental damage from adjacent construction by requiring that all buildings, lots, and service facilities adjacent to foundation and earthwork areas be protected and supported. For designated NYCL and S/NR-listed historic buildings located within 90 feet of a proposed construction site, additional protective measures under the DOB's TPPN #10/88 supplement the procedures of C26-112.4 by requiring a monitoring program to reduce the likelihood of construction damage and detect at an early stage the beginnings of damage so that construction procedures can be changed. For the ten non-designated resources that are within 90 feet of one or more of the projected and/or potential development sites, development under the Proposed Actions could potentially result in construction-related impacts to the resources, and the protective measures under TPPN #10/88 would only apply if the resources become designated.

In order to make TPPN #10/88 or similar measures applicable to historic resources in the absence of site-specific approval, a mechanism would have to be developed to ensure implementation and compliance, since it is not known and cannot be assumed that owners of these properties would voluntarily implement this mitigation. DCP, as lead agency, will explore the viability of this mitigation measure between the DEIS and FEIS.

Noise

Chapter 19, "Construction," concludes that the Proposed Actions would have the potential to result in significant adverse construction noise impacts at several locations throughout the rezoning area. For all the smaller individual projected development sites throughout the rezoning area, significant adverse construction noise impacts were determined to potentially occur at receptors that are adjacent to two or more projected development sites. However, adjacent projected development sites may not be constructed consecutively, which would result in periods where there would be lower or no construction noise followed by periods of higher construction noise, but with a duration of less than two years. Construction of all buildings on projected development sites 66 and 67 is expected to occur over 67 months and construction of all buildings on projected development site 46 is expected to occur over 41 months. The worst-case month during the construction period was analyzed. Although the duration of construction activities would occur for two consecutive years or more, the type of activity occurring on a development site would progress through the major construction stages and noise generated during each of these construction stages could vary substantially and, as a consequence, noise levels which exceed the noise impact threshold criteria may not be sustained for the entirety of two consecutive years or more. An evaluation of construction noise during a representative two-year time period for these large development sites will be completed between the DEIS and FEIS. If that analysis finds that a significant adverse construction noise impact would occur, mitigation measures will be explored and presented in the FEIS.