
CHAPTER 24: MITIGATION

A. INTRODUCTION

The preceding chapters discussed the potential for significant adverse impacts to occur in each of the technical areas as a result of the Proposed Action. Where significant adverse impacts have been identified, in accordance with the *City Environmental Quality Review ("CEQR") Technical Manual*, potential mitigation measures are examined to minimize or eliminate these impacts. Potential mitigation measures are discussed below.

B. SOCIOECONOMIC CONDITIONS

As stated in Chapter 3, "Socioeconomic Conditions," the Proposed Action could result in significant adverse indirect residential displacement impacts. Within the study area there are an estimated 3,543 residents living in 1,189 units that are currently vulnerable to indirect displacement due to increased rents. The Proposed Action could initiate a trend toward increased rents in the study area. Although there are ongoing trends of increased rent pressures in the study area and adjacent Williamsburg and Bushwick neighborhoods, the Proposed Action's contributions to rent pressures in the study area could be significant. The Proposed Action would not result in significant adverse impacts related to direct residential displacement, direct or indirect displacement of businesses or institutions, or effects on specific industries.

The significant adverse indirect residential displacement impacts that could occur as a result of the Proposed Action would be partially mitigated by the Proposed Action's provision of ~~905~~ 844 affordable housing units for low income households which, unlike the existing unprotected units occupied by vulnerable populations, would be rent protected. Combined with the ~~322~~ 370 affordable housing units that would be developed pursuant to city actions on other sites in the future without the No-Action, there are expected to be an additional ~~1,227~~ 1,214 affordable housing units in the study area by 2018. These and other factors may lessen the impact of the Proposed Action.

C. OPEN SPACE

With the Proposed Action, the population of the open space study area would increase by 5,516 residents, from ~~92,120~~ 92,263 to ~~97,636~~ 97,779. The amount of public open space would remain the same, with 33.99 total acres of public open space, consisting of 27.41 acres of active open space and 6.58 acres of passive open space. In the future with the Proposed Action, open space ratios in the open space ratio would decrease by approximately 5.6 percent as compared to the future without the Proposed Action. The private recreational space created under the *Quality Housing Program* for all action-generated residential units in the future with the Proposed Action would contribute to alleviating some of the shortage of open space in the study area. In addition, there are several large open space resources just outside the study area and bike lanes on existing roadways in the area which would also partially alleviate the shortage of open space for ~~new~~ residents of the study area. ~~Proposed Action~~. However, the decrease in the open space ratio would exceed the 5 percent threshold for quantitative impacts under CEQR. In light of the low open space ratios for both passive and active recreation in the study area under No-Action conditions and the worsening that would occur with the Proposed Action, there would be a quantitative significant adverse open space impact.

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HPD has considered the following measures to mitigate the significant adverse quantitative open space impacts: may include:

- The creation of new open space within the open space study area; or
- The enhancement and improvement of existing open spaces within the open space study area.

HPD will explore the feasibility of implementing mitigation measures between the Draft and Final EIS and will coordinate this effort with relevant public agencies and other parties as necessary and appropriate. In the event that no mitigation measures are found feasible or practicable, the quantitative open space impact would remain unmitigated, as discussed in Chapter 26, “Unavoidable Adverse Impacts.”

In order to partially mitigate the significant adverse impact associated with the deficiency in passive open space, a site would be set aside within the open space study area at the junction of Beaver Street and Bushwick Avenue within the West Bushwick URA. The open space mitigation site is also known as URA Site 8 (Block 3137, Lots 1, 6, 9 and 11). The site is approximately 18,000 square feet and is City-owned (under HPD jurisdiction). As discussed below, once funds for the design and development of the open space are identified and secured HPD would transfer jurisdiction of the site to the Department of Parks and Recreation (DPR), which would develop and maintain the site as passive open space. The new site would partially mitigate the passive open space impact; however, the study area would continue to be underserved by passive and active open space.

According to the assessment contained in Chapter 6, “Open Space,” some open spaces within the study area are in fair condition and are in need of some improvement. The analysis also concludes that the amount of active open space in the study area is low relative to the future study area population. HPD will continue to work with DPR and other agencies to seek out opportunities for improvements to existing open spaces and increase access to recreational facilities for future residents in the study area. Short of creating new active open space, a possible measure to address the deficiency in active open space could be providing public access to existing schoolyards during non-school hours, which is an initiative of PlaNYC. However, increasing access to school yards may require capital improvements and necessitates approval of and coordination among DPR, and the New York City Department of Education (DOE). In the event that access to school yards could be provided to the public during non-school hours, this could represent a potential measure to mitigate the impact associated with the deficiency in active open space. Furthermore, some active open spaces within the Project Area and surrounding study area are in need of improvements such as repairs to children’s spray showers, water fountains, and comfort stations. In the event funding becomes available, repairs, improvements and enhancements to existing active open spaces could also be considered a partial mitigation measure to address the significant adverse impacts associated with active open space.

With respect to the creation of new active open space, the study area generally lacks sites which can accommodate features such as ball fields and playgrounds. DPR determined that passive open space is likely better suited for URA Site 8 due to its size and configuration. URA Site 8 is the largest City-owned site within the study area available for the development of new open space. Other large City-owned sites under HPD jurisdiction in the study area were considered, however, the sites are better suited to the development of much needed affordable housing.

Therefore, HPD (in consultation with DPR) has determined that new passive open space on URA Site 8 is the most practicable and reasonable measure to partially mitigate the significant adverse open space impact of the Proposed Action. Development of a passive open space on the site would provide a community amenity to residents in the surrounding neighborhoods by providing needed green space and a place for residents to gather. Although a specific design for the open space is unknown at this time, it

may include seating areas and a range of plantings and shrubbery. Because of the site's triangular shape, its orientation relative to the sun and its location at the junction of two wide streets, the site would be afforded ample sunlight throughout much of the day.

URA Site 8 is largely vacant; however, the northern portion of the site is occupied by two former commercial buildings. Prior to the transfer of jurisdiction to DPR for creation of the new open space, HPD would demolish the existing buildings, remove pavement and replace with clean soil. Funding for these activities is committed in HPD's Capital Plan. HPD is targeting demolition and site preparation activities to be completed within approximately twenty-four months. Once site preparation is completed and jurisdiction is transferred from HPD, DPR would solicit the public's input on the design of the open space.

According to the quantitative open space assessment contained in Chapter 6, "Open Space," an additional 0.40 acres of passive open space would be necessary to bring the Build Condition open space ratio to the No-build Condition open space ratio of 0.073 acres/1,000 residents. Should funding become available to construct a new open space, the addition of approximately 18,000 square feet of passive open space to the study area, which amounts to over one-third of an acre of new open space (or 0.41 acre) would increase the passive open space ratio to that of the No-Build condition, thereby mitigating the impact associated with passive open space as a result of the Proposed Action. However, as discussed above, the Proposed Action would reduce the availability of active open space and a significant adverse impact would result.

D. SHADOWS

As discussed in Chapter 7, "Shadows," the Proposed Action has the potential to result in significant adverse impacts due to shadows cast on the Bartlett Playground and the "Project Roots" Community Garden.

BARTLETT PLAYGROUND

Bartlett Playground, located along the south side of Bartlett Street, would receive significant incremental shadow coverage resulting from the future condition with the Proposed Action, specifically from future development at projected development sites 5 and 6. Sunlight sensitive resources located within the playground include deciduous trees, playground facilities, spray showers, benches and basketball courts. The duration of the shadow coverage over the four analysis periods (6 ¼ to 11 ¼ hours) would reduce the exposure of vegetation to sunlight to 3 hours on May 6th and 4 hours and 35 minutes on June 21st. While the reduction in sunlight exposure as a result of the Proposed Action would not significantly affect active recreation areas within the playground such as basketball courts, the lack of sunlight on the Bartlett Playground is a significant adverse impact during the May 6th analysis period because the resource would receive less than the minimum required for its vegetative cover and trees during part of the growing season.

HPD, in consultation with DPR, considered the following measures to mitigate significant adverse shadow impacts on the Bartlett Playground: ~~may include:~~

- eliminating projected development sites 5 and 6 (the sites creating the shadow impact);
- reducing the height of buildings causing the shadow impact; and
- choosing shade tolerant species for vegetation to be planted in areas that would be in shadow.

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The primary source of project-generated shadows on the Bartlett Playground is development that would occur as-of-right on projected development sites 5 and 6 in the future with the Proposed Action. These large development sites are predominately City-owned and would provide approximately 127 units of affordable housing at a density and scale consistent with the surrounding neighborhood. Therefore, eliminating the development sites or reducing the allowable heights of buildings on the sites would not be consistent with the goals and objectives of the Proposed Action.

According to CEQR Technical Manual, the shadow impact on the vegetation and tree canopy associated with the Bartlett Playground is considered a significant adverse impact because during the May 6th analysis period, the vegetation would receive approximately 3 hours of sunlight during the day. The CEQR Technical Manual states that 4-6 hours of sunlight per day is generally a minimum requirement, particularly in the growing season (April to October). The existing vegetation in the area of the playground that could be impacted by incremental shadows consists of approximately 7 to 10 mature honey locust trees. Replacing mature, deciduous trees with a shade tolerant species would not be feasible or practicable. Therefore the significant adverse shadow impact on Bartlett Playground would remain unmitigated.

~~HPD will explore the feasibility of implementing mitigation measures between the Draft and Final EIS and will coordinate this effort with relevant public agencies and other parties as necessary and appropriate. In the event that no mitigation measures are found feasible or practicable, the significant adverse shadow impacts will remain unmitigated, as discussed in Chapter 26, “Unavoidable Adverse Impacts.”~~

“PROJECT ROOTS” COMMUNITY GARDEN

The “Project Roots” Community Garden is located along the south side of Walton Street. Incremental shadows would primarily result from development on projected development site 24, where a distinctly taller building (80 feet in height) is projected. The duration of the shadow coverage over the four analysis periods (6 ¼ hours to 12 hours) would significantly reduce the exposure of vegetation (including the greenhouse) to sunlight and diminish the attractiveness of the open space and utility of the greenhouse.

HPD, in consultation with DPR, considered the following measures to mitigate significant adverse shadow impacts on the “Project Roots” community garden: may include:

- eliminating projected development site 24 (the site creating the shadow impact);
- reducing the height of buildings causing the shadow impact;
- choosing shade tolerant species for vegetation to be planted in areas that would be in shadow; and
- realigning/relocating the greenhouse to another area of the garden.

The primary source of project-generated shadows on the “Project Roots” community garden is development that would occur as-of-right on projected development site 24 in the future with the Proposed Action. Projected development site 24 is privately owned, and once the zoning is changed to R7A, redevelopment of the site would occur on an as-of-right basis. Excluding the development site from the area proposed for a zoning change would leave two mid-block lots zoned as M1-2 surrounded by lots zoned as R7A, which would not be consistent with the City’s zoning practices. Furthermore, restricting the allowable building height for this particular development site would not be consistent with the goals and objectives of the Proposed Action. According to the Reasonable Worst-Case Development Scenario

(RWCDs), redevelopment on the site would result in approximately 104 new residential units, of which 21 would be affordable through utilization of the Inclusionary Housing bonus.

According to CEQR Technical Manual, the shadow impact associated with the “Project Roots” community garden is considered a significant adverse impact because the greenhouse within the garden would be subject to incremental shadows throughout the year. According to DPR’s GreenThumb Program, much of the existing vegetation in the garden (excluding the greenhouse) consists of shade tolerant plant species that would not be substantially impacted by a reduction in sunlight. Furthermore, according to the GreenThumb Program, the shadows which are currently cast upon the garden from adjacent buildings have not affected the overall utilization of the garden, so it is unlikely that an additional minor contribution of shadows from project-generated development would significantly affect utilization of the garden for passive uses.

The greenhouse is used for educational purposes by students from Eugenio DeHostos School (IS 318), particularly during the months during which school is in session. The school is located across the street from the garden. Therefore, relocating the greenhouse further from the school would be impractical as it would reduce the educational value the greenhouse provides to students. Furthermore, realigning or relocating the greenhouse to another location within the garden would not mitigate the impact, as most of the garden is in shadows for much of the day (under existing, no-build and build conditions). A potential measure to address the lack of sunlight to the greenhouse (while still maintaining the garden’s current location relative to the school) could be the provision of artificial lighting to simulate natural sunlight. At this time, there is no funding commitment for the provision of artificial lighting; therefore, the significant adverse impact would be unmitigated. However, in the event that funding could be made available, the provision of artificial lighting could be considered mitigation for the significant adverse impact associated with shadows on the greenhouse.

~~HPD will explore the feasibility of implementing mitigation measures between the Draft and Final EIS and will coordinate this effort with relevant public agencies and other parties as necessary and appropriate. In the event that no mitigation measures are found feasible or practicable, the significant adverse shadow impacts will remain unmitigated, as discussed in Chapter 26, “Unavoidable Adverse Impacts.”~~

E. HISTORIC RESOURCES

As discussed in Chapter 8, “Historic Resources,” the Proposed Action would not result in significant impacts to archaeological resources, but would result in construction related impacts to two historic resources.

Inadvertent direct construction-related impacts could potentially occur to two (the Lincoln Savings Bank and the All Saints Church) of the State and/or National Registers of Historic Places S/NR eligible resources as a result of development in the Project Area. Construction activity associated with projected development sites 1 and 34 would result in potential construction-related impacts. The resource within 90 feet of projected development site 1 is the All Saints Church building, located on Throop Avenue. The resource within 90 feet of projected development site 34 is Lincoln Savings Bank which is located on Broadway.

The impacted resources would be afforded some protection from construction-related impacts under DOB regulations applicable to all buildings located adjacent to construction sites; however, since the resources are not S/NR-listed or New York City Landmarks (NYCL-designated), the resources are not afforded

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special protections under the New York City Department of Buildings' *Technical Policy and Procedure Notice #10/88*, (TPPN 10/88). However, the resources would be provided a measure of protection from construction as Building Code section 27-166 (C26-112.4), which requires that all lots, buildings, and service facilities adjacent to foundation and earthwork areas be protected and supported in accordance with the requirements of Building Construction Subchapter 7 and Building Code Subchapters 11 and 19.

Additional protective measures afforded under TPPN 10/88, which apply to designated historic resources, would not be applicable in this case, unless the eligible resources are designated in the future prior to the initiation of construction. If these resources are not designated, however, they would not be subject to the above construction protection procedures and adjacent or nearby development resulting from the Proposed Action would result in significant adverse construction-related impacts to these resources.

Potential mitigation could include measures comparable to TPPN #10/88, which include a Construction Protection Plan (CPP) submitted to LPC for review and approval. However, as discussed in Chapter 26, "Unavoidable Adverse Impacts", these impacts would be unmitigated for privately owned development sites as no mechanism to require a CPP is currently in place for private sites, aside from the standard Building Code measures identified above.

F. TRAFFIC AND PARKING

TRAFFIC

As discussed in Chapter 18, "Traffic and Parking," the Proposed Action would result in significant adverse traffic impacts at a total of nine signalized intersections in the vicinity of the Project Area in one or more peak hours by 2018. A traffic mitigation plan was therefore developed to address these impacts. This mitigation plan, summarized in Table 24-1, consists of changes to signal timing and phasing, ~~lane striping~~ and curb-side parking regulations, in order to increase capacity.

According to the *CEQR Technical Manual*, a significant traffic impact can be considered mitigated if measures implemented return projected future conditions to what they would be if a proposed action were not in place, or to acceptable levels. For a future No-Action condition level of service (LOS) mid-D, E or F, mitigation back to the No-Action condition is required; for No-Action LOS A, B or C, mitigating to mid-LOS D is required (45 seconds of delay for signalized intersections, and 30 seconds of delay for unsignalized intersections).

The effectiveness of the proposed traffic mitigation plan, in terms of addressing significant adverse impacts that would result from the Proposed Action, is shown in Table 24-2. As discussed below, the proposed traffic mitigation measures would fully mitigate all of the traffic impacts that would occur as a result of the Proposed Action in each analyzed peak hour.

BROADWAY AT UNION AVENUE/HEYWARD STREET

As shown in Table 24-1, at this intersection it is proposed to add a no standing, 7-10 AM Monday through Friday regulation to the existing no parking anytime regulation along the length of the east curb of northbound Broadway between Boerum Street and Union Avenue. As shown in Table 24-2, with this parking regulation adjustment, the significant adverse impact to the northbound approach in the weekday AM peak hour would be fully mitigated. The northbound approach would operate with 36.8 37.2 seconds of delay (LOS D) in the AM under mitigated conditions compared to 86.8 88.4 seconds of delay (LOS F) in the future condition without the Proposed Action.

BROADWAY AT GERRY STREET

As shown in Table 24-1, at this intersection it is proposed to transfer one second of green time from the northbound/southbound (Broadway) phase to the eastbound/westbound (Gerry Street) phase in the weekday AM peak period. As shown in Table 24-2, with this signal timing adjustment, the significant adverse impact to the eastbound Gerry Street approach in the weekday AM peak hour would be fully mitigated. The eastbound approach would operate with 44.8 seconds of delay (LOS D) in the AM compared to 46.7 seconds of delay (LOS D) with the Proposed Action and 41.3 seconds of delay (LOS D) with the future condition without the Proposed Action.

BROADWAY AT WHIPPLE STREET

As shown in Table 24-1, at this intersection it is proposed to transfer one second of green time from the eastbound/westbound (Whipple Street) phase to the northbound/southbound (Broadway) phase in the weekday AM peak period. As shown in Table 24-2, with this signal timing adjustment, the significant adverse impact to southbound Broadway in the weekday AM peak hour would be fully mitigated. The southbound approach would operate with ~~44.3~~ 44.8 seconds of delay (LOS D) in the AM compared to ~~47.5~~ 48.1 seconds of delay (LOS D) with the Proposed Action and ~~36.4~~ 36.7 seconds of delay (LOS D) in the future condition without the Proposed Action.

FLUSHING AVENUE AT THROOP AVENUE/THORTON STREET

As shown in Table 24-1, at this intersection it is proposed to transfer one second of green time from the southbound (Thorton Street) phase to the eastbound/westbound (Flushing Avenue) phase in the weekday AM and PM peak periods. As shown in Table 24-2, with this signal timing adjustment, the significant adverse impacts to the eastbound Flushing Avenue approach in the weekday AM and PM peak hours would be fully mitigated. In the AM peak hour, the eastbound approach would operate with 124.1 seconds of delay (LOS F) compared to 130.1 seconds of delay (LOS F) in the future condition without the Proposed Action. In the PM peak hour, the eastbound approach would operate with 108.6 seconds of delay (LOS F) compared to 113.8 seconds of delay (LOS F) in the future condition without the Proposed Action.

HARRISON AVENUE AT GERRY STREET

As shown in Table 24-1, at this intersection it is proposed to transfer four seconds of green time from the eastbound/westbound (Gerry Street) phase to the southbound (Harrison Avenue) phase in the weekday AM and PM peak periods. As shown in Table 24-2, with this signal timing adjustment, the significant adverse impacts to the southbound Harrison Avenue approach in the weekday AM and PM peak hours would be fully mitigated. The southbound approach would operate with 46.3 seconds of delay (LOS D) and 60.4 seconds of delay (LOS E) in the AM and PM peak hours, respectively, compared to 47.8 seconds of delay (LOS D) and 64.2 seconds of delay (LOS E), respectively, in the future condition without the Proposed Action.

HARRISON AVENUE AT BARTLETT STREET

As shown in Table 24-1, at this intersection it is proposed to implement a no standing, 7-10 AM and 4-7 PM, Monday through Friday regulation for 100 feet along the west curb of southbound Harrison Avenue. As shown in Table 24-2, with this parking regulation adjustment, the significant adverse impacts to the southbound Harrison Avenue approach in the weekday AM and PM peak hours would be fully mitigated. The southbound approach would operate with 22.2

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seconds of delay (LOS C) and 29.1 seconds of delay (LOS C) in the AM and PM peak hours, respectively, compared to 40.4 seconds of delay (LOS D) and 49.8 seconds of delay (LOS D), respectively, in the future condition without the Proposed Action.

HARRISON AVENUE AT FLUSHING AVENUE

As shown in Table 24-1, at this intersection it is proposed to implement a no standing 4-7 PM Monday through Friday regulation for 100 feet along the west curb of the southbound Harrison Avenue approach, and to transfer three seconds of green time from the southbound Harrison Avenue phase to the eastbound/westbound Flushing Avenue phase in the weekday AM peak period, two seconds in the midday, four seconds in the PM and two seconds in the Saturday midday peak period. As shown in Table 24-2, with these parking regulation and signal timing adjustments, the significant adverse impacts to the eastbound approach in the weekday AM peak hour and to the westbound approach in all four peak periods would be fully mitigated. The eastbound approach would operate with 52.8 seconds of delay (LOS D) in the AM compared to 62.3 seconds of delay (LOS E) in the future condition without the Proposed Action. The westbound approach would continue to operate at LOS F in all periods with 122.9, 95.9, 118.9 and 117.8 seconds of delay in the weekday AM, midday and PM and Saturday midday peak hours, respectively, compared to 129.5, 110.6, 127.1 and 126.5 seconds of delay in these periods, respectively, in the future condition without the Proposed Action.

UNION AVENUE/MARCY AVENUE AT FLUSHING AVENUE

As shown in Table 24-1, at this intersection it is proposed to ~~re-stripe the 24' wide eastbound Flushing Avenue approach to include an exclusive left turn lane and one through lane, and to transfer one second~~ three seconds of green time from the northbound Marcy Avenue phase to the eastbound/westbound Flushing Avenue phase in the weekday AM and PM peak periods. As shown in Table 24-2, with ~~these lane striping and this~~ signal timing adjustments, the significant adverse impacts to the eastbound approach in the weekday AM and PM peak hours would be fully mitigated. The eastbound approach would operate with ~~22.4~~ 44.9 seconds of delay (LOS ~~E~~ D) in the AM and ~~23.5~~ 41.6 seconds (LOS ~~E~~ D) in the PM compared to ~~95.5~~ 46.7 seconds of delay (LOS ~~F~~ D) and ~~33.3~~ 24.6 seconds (LOS C) during these periods, respectively, in the future condition without the Proposed Action.

LEE AVENUE/NOSTRAND AVENUE AT FLUSHING AVENUE

As shown in Table 24-1, at this intersection it is proposed to transfer four seconds of green time from the southbound Lee Avenue phase to the eastbound/westbound Flushing Avenue phase in the weekday AM peak period, two seconds in the midday, four seconds in the PM and three seconds in the Saturday midday peak period. As shown in Table 24-2, with these signal timing adjustments, the significant adverse impacts to the eastbound and westbound approaches in all four peak periods would be fully mitigated. The eastbound approach would operate at LOS F in the weekday AM, midday and PM peak hours and LOS E in the Saturday midday (unchanged from the No-Action condition), with 102.4, 81.4, 90.4, and 65.5 seconds of delay during these periods, respectively, compared to 120.3, 84.0, 95.1 and 76.3 seconds of delay, respectively, in the future condition without the Proposed Action. The westbound approach would continue to operate at LOS F in all periods with 121.5, 169.1, 110.9 and 122 seconds of delay in the weekday AM, midday and PM and Saturday midday peak hours, respectively, compared to

124, 182.2, 120 and 127.7 seconds of delay in these periods, respectively, in the future condition without the Proposed Action.

**Table 24-1
Proposed Traffic Mitigation Measures**

Intersection	Approach	Period	Current Signal Timing (Seconds)	Mitigation Signal Timing (Seconds)	Description of Mitigation
Broadway (N-S) at Heyward St (W)/ Union Ave (E-W)	EB/WB NB/SB	AM	48/36/48/36 72/54/72/54	48/36/48/36 72/54/72/54	Implement no standing, 7-10 AM, Monday-Friday regulation along east curb of NB approach.
Broadway (N-S) at Gerry Street (E-W)	EB/WB NB/SB	AM	36/36/36/36 84/54/84/54	37/36/36/36 83/54/84/54	Transfer 1 sec. of green time from NB/SB phase to EB/WB phase in AM peak period.
Broadway (N-S) at Whipple St (E-W)	EB/WB NB/SB	AM	48/36/48/36 72/54/72/54	47/36/48/36 73/54/72/54	Transfer 1 sec. of green time from EB/WB phase to NB/SB phase in AM peak period.
Throop Ave (N) at Flushing Ave (E-W)/ Thorton Street (S)	EB/WB NB SB	AM/PM	54/40/54/40 36/27/36/27 30/23/30/23	55/40/55/40 36/27/36/27 29/23/29/23	Transfer 1 sec. of green time from SB phase to EB/WB phase in AM <u>and PM</u> peak periods.
Harrison Ave (S) at Gerry Street (E-W)	EB/WB SB	AM/PM	48/48/48/48 72/72/72/72	44/48/44/48 76/72/76/72	Transfer 4 sec. of green time from EB/WB phase to SB phase in AM and PM peak periods.
Harrison Ave (S) at Bartlett St (E-W)	EB/WB SB	AM/PM	48/48/48/48 72/72/72/72	48/48/48/48 72/72/72/72	Implement no standing, 7-10 AM and 4-7 PM, Monday-Friday regulation for 100' along west curb of SB approach.
Harrison Ave (S) at Flushing Ave (E-W)	EB/WB SB	ALL	60/45/60/45 60/45/60/45	63/47/64/47 57/43/56/43	Transfer 3 sec. of green time from SB phase to EB/WB phase in AM peak period, 2 sec. in MD and Sat MD, and 4 sec. in PM. Implement no standing, 4-7 PM, Monday-Friday regulation for 100' along west curb of SB approach.
Union Ave (N)/ Marcy Ave (N) at Flushing Ave (E-W)/ Gerry Street (E-W)	EB/WB NB	ALL	77/58/77/58 43/32/43/32	80/58/80/58 40/32/40/32	Re-stripe EB approach to include an exclusive left turn lane and one through lane. Transfer 4 3 sec. of green time from NB phase to EB/WB phase in AM and PM peak periods.
Lee Ave (S)/ Nostrand Ave (S) at Flushing Ave (E-W)	EB/WB SB	ALL	60/45/60/45 60/45/60/45	64/47/64/48 56/43/56/42	Transfer 4 sec. of green time from SB phase to EB/WB phase in AM peak period, 2 sec. in MD, 4 sec. in PM and 3 sec. in Sat MD.

Notes: AM/MD/PM/Sat MD signal timings indicate green plus yellow (including all-red) for each phase.
EB – eastbound; WB – westbound; NB – northbound; SB – southbound.

Table 24-2
Future With the Proposed Action With Mitigation Conditions
Levels of Service at Analyzed Intersections

Intersection	Lane Group	AM Peak Hour									MD Peak Hour								
		2018 No-Action			2018 With-Action			2018 Mitigation			2018 No-Action			2018 With-Action			2018 Mitigation		
		V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS
Broadway (N-S) @ Heyward Street (W)/ Union Avenue (E-W this intersection)	EB-LTR	0.55	36.0	D	0.70	43.5	D	0.70	43.5	D	0.50	27.7	C	0.56	29.3	C	0.56	29.3	C
	WB-LTR	0.62	39.0	D	0.62	39.0	D	0.62	39.0	D	0.62	32.1	C	0.63	32.5	C	0.63	32.5	C
	NB-LT							0.91	42.7	D									
	NB-R							0.32	16.0	B									
	NB-LTR	1.09	<u>88.4</u>	F	1.14	<u>107.6</u>	F *		<u>37.2</u>	D	0.76	<u>23.7</u>	C	0.78	<u>24.7</u>	C	0.78	<u>24.7</u>	C
	SB-LT	0.69	<u>24.6</u>	C	0.71	<u>25.6</u>	C	0.74	<u>27.1</u>	C	0.48	<u>15.2</u>	B	0.51	<u>15.8</u>	B	0.51	<u>15.8</u>	B
	SB-R	0.12	13.1	B	0.13	13.2	B	0.13	13.2	B	0.11	10.4	B	0.13	10.5	B	0.13	10.5	B
Broadway (N-S) @ Gerry Street (E-W)	EB-LTR	0.40	41.3	D	0.54	46.7	D *	0.52	44.8	D	0.18	21.5	C	0.22	22.0	C	0.22	22.0	C
	WB-LR	0.17	35.9	D	0.17	35.9	D	0.16	34.9	C	0.08	20.3	C	0.08	20.3	C	0.08	20.3	C
	NB-LT	<u>0.38</u>	10.4	B	<u>0.39</u>	10.5	B	0.39	<u>11.1</u>	B	0.42	13.7	B	0.44	14.1	B	0.44	14.1	B
	SB-LT	0.75	<u>20.9</u>	C	0.76	<u>21.4</u>	C	0.77	<u>22.5</u>	C	0.79	<u>26.6</u>	C	0.81	<u>27.9</u>	C	0.81	<u>27.9</u>	C
Broadway (N-S) @ Whipple St (E-W)	EB-LR	0.39	30.7	C	0.40	30.9	C	0.41	31.8	C	0.39	24.5	C	0.39	24.6	C	0.39	24.6	C
	NB-LT	0.48	<u>18.1</u>	B	0.47	<u>18.0</u>	B	0.47	<u>17.3</u>	B	0.52	15.4	B	0.54	15.9	B	0.54	15.9	B
	SB-TR	<u>0.87</u>	<u>36.7</u>	D	0.94	<u>48.1</u>	D *	0.93	<u>44.8</u>	D	0.78	<u>25.6</u>	C	<u>0.84</u>	<u>29.5</u>	C	<u>0.84</u>	<u>29.5</u>	C
Throop Avenue (N) @ Flushing Avenue (E-W)/ Thorton Street (W)	EB-LT	1.16	130.1	F	1.18	134.0	F *	1.15	124.1	F	0.75	34.3	C	0.76	34.7	C	0.76	34.7	C
	WB-T (Flushing)	0.62	32.8	C	0.63	33.2	C	0.62	32.0	C	0.61	26.8	C	0.62	27.0	C	0.62	27.0	C
	WB-R (Flushing)	0.13	22.7	C	0.14	22.9	C	0.14	22.3	C	0.10	18.0	B	0.11	18.1	B	0.11	18.1	B
	NB-LTR (Throop)	0.83	56.4	E	0.84	57.5	E	0.84	57.5	E	0.50	32.4	C	0.52	32.7	C	0.52	32.7	C
	SB-TR (Thornton)	0.52	49.6	D	0.52	49.6	D	0.55	51.6	D	0.36	35.1	D	0.36	35.1	D	0.36	35.1	D
Harrison Avenue (S) @ Gerry Street (E-W)	EB-TR	0.13	26.6	C	0.21	28.0	C	0.23	31.2	C	0.13	26.6	C	0.23	28.4	C	0.23	28.4	C
	WB-LT	0.09	26.1	C	0.24	28.9	C	0.27	32.4	C	0.06	25.6	C	0.19	27.8	C	0.19	27.8	C
	SB-LTR	0.94	47.8	D	1.01	63.3	E *	0.95	46.3	D	0.70	25.0	C	0.76	27.6	C	0.76	27.6	C
Harrison Avenue (S) @ Bartlett Street (E-W)	SB-LTR	0.88	40.4	D	1.04	74.1	E *		22.2	C	0.70	25.5	C	0.80	31.4	C	0.80	31.4	C
	SB-LT						0.67	24.5	C										
	SB-R						0.34	16.5	B										
Harrison Avenue (S) @ Flushing Avenue (E-W)	EB-TR	0.98	62.3	E	1.00	67.0	E *	0.94	52.8	D	0.71	27.3	C	0.72	27.6	C	0.68	24.7	C
	WB-LT	1.18	129.5	F	1.23	151.2	F *	1.17	122.9	F	1.14	110.6	F	1.21	140.1	F *	1.10	95.9	F
	SB-LTR	0.65	31.2	C	0.71	33.9	C	0.75	38.6	D	0.65	25.7	C	0.68	27.1	C	0.72	30.5	C
	SB-L																		
	SB-TR																		
Union Avenue (N)/ Marcy Avenue (N) @ Flushing Avenue (E-W)/ Gerry Avenue (E-W)	EB-LT	0.95	46.7	D	0.99	56.1	E *	0.95	44.9	D	0.60	15.6	B	0.73	20.8	C	0.73	20.8	C
	WB-TR	0.78	24.8	C	0.84	28.7	C	0.80	24.4	C	0.59	14.6	B	0.63	15.7	B	0.63	15.7	B
	NB-LTR	0.56	36.8	D	0.57	37.0	D	0.62	40.6	D	0.59	30.3	C	0.61	30.8	C	0.61	30.8	C
Lee Avenue (S)/ Nostrand Ave (S) @ Flushing Avenue (E-W)	EB-TR	1.16	120.3	F	1.20	137.5	F *	1.12	102.4	F	1.07	84.0	F	1.12	102.4	F *	1.07	81.4	F
	WB-LT	1.16	124.0	F	1.25	159.2	F *	1.16	121.5	F	1.31	182.2	F	1.43	234.7	F *	1.29	169.1	F
	SB-LTR	0.60	27.0	C	0.60	27.0	C	0.65	31.0	C	0.36	17.5	B	0.36	17.5	B	0.38	19.0	B

Notes:

EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L-left, T-through, R-right
V/C Ratio - Volume to capacity ratio, Sec/veh - seconds per vehicle
LOS - Level of service
* Denotes a significant adverse impact based on CEQR Technical Manual criteria.
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.3)

Table 24-2 (continued)
Future Condition With the Proposed Action With Mitigation Conditions
Levels of Service at Analyzed Intersections

Intersection	Lane Group	PM Peak Hour									SAT MD Peak Hour									
		2018 No-Action			2018 With-Action			2018 Mitigation			2018 No-Action			2018 With-Action			2018 Mitigation			
		V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	V/C Ratio	Delay sec/veh	LOS	
Broadway (N-S) @ Heyward Street (W)/ Union Avenue (E-W this intersection)	EB-LTR	0.66	40.6	D	0.72	44.7	D	0.72	44.7	D	0.30	23.2	C	0.33	23.9	C	0.33	23.9	C	
	WB-LTR	0.80	50.2	D	0.82	52.3	D	0.82	52.3	D	0.55	29.9	C	0.55	29.9	C	0.55	29.9	C	
	NB-LT																			
	NB-R																			
	NB-LTR	0.84	<u>33.6</u>	C	<u>0.89</u>	<u>38.7</u>	D	<u>0.89</u>	<u>38.7</u>	D	0.80	<u>24.9</u>	C	0.82	<u>26.4</u>	C	0.82	<u>26.4</u>	C	
	SB-LT	<u>0.46</u>	<u>17.8</u>	B	<u>0.52</u>	<u>19.0</u>	B	<u>0.52</u>	<u>19.0</u>	B	<u>0.46</u>	14.3	B	0.48	<u>14.8</u>	B	0.48	<u>14.8</u>	B	
SB-R	0.21	14.1	B	0.23	14.3	B	0.23	14.3	B	0.10	10.2	B	0.10	10.2	B	0.10	10.2	B		
Broadway (N-S) @ Gerry Street (E-W)	EB-LTR	0.37	39.8	D	0.40	40.7	D	0.40	40.7	D	0.21	21.9	C	0.25	22.4	C	0.25	22.4	C	
	WB-LR	0.15	35.4	D	0.15	35.4	D	0.15	35.4	D	0.28	23.1	C	0.28	23.1	C	0.28	23.1	C	
	NB-TR	0.35	<u>10.1</u>	B	0.37	<u>10.4</u>	B	0.37	<u>10.4</u>	B	0.52	<u>15.5</u>	B	<u>0.54</u>	<u>15.8</u>	B	<u>0.54</u>	<u>15.8</u>	B	
	SB-LT	0.77	<u>21.6</u>	C	0.78	<u>22.3</u>	C	0.78	<u>22.3</u>	C	0.85	<u>31.6</u>	C	0.86	<u>32.6</u>	C	0.86	<u>32.6</u>	C	
Broadway (N-S) @ Whipple St (E-W)	EB-LR	0.41	31.1	C	0.42	31.2	C	0.42	31.2	C	0.48	26.1	C	0.48	26.2	C	0.48	26.2	C	
	NB-TR	0.49	<u>18.2</u>	B	<u>0.52</u>	18.7	B	<u>0.52</u>	18.7	B	0.65	<u>18.5</u>	B	0.66	18.7	B	0.66	18.7	B	
	SB-TR	0.83	<u>32.8</u>	C	0.88	<u>38.0</u>	D	0.88	<u>38.0</u>	D	<u>0.77</u>	<u>23.8</u>	C	<u>0.80</u>	<u>25.5</u>	C	<u>0.80</u>	<u>25.5</u>	C	
Throop Avenue (N) @ Flushing Avenue (E-W)/ Thorton Street (W)	EB-LT	1.12	113.8	F	1.14	118.1	F *	1.11	108.6	F	1.04	78.7	E	1.05	79.3	E	1.05	79.3	E	
	WB-T (Flushing)	0.54	30.3	C	0.55	30.3	C	0.54	29.4	C	0.48	23.5	C	0.49	23.5	C	0.49	23.5	C	
	WB-R (Flushing)	0.09	22.1	C	0.10	22.4	C	0.10	21.7	C	0.08	17.7	B	0.09	17.8	B	0.09	17.8	B	
	NB-LTR (Throop)	0.67	45.9	D	0.69	46.8	D	0.69	46.8	D	0.46	31.4	C	0.47	31.6	C	0.47	31.6	C	
	SB-TR (Thornton)	0.54	51.8	D	0.57	51.8	D	0.59	54.0	D	0.68	46.5	D	0.68	46.5	D	0.68	46.5	D	
Harrison Avenue (S) @ Gerry Street (E-W)	EB-TR	0.15	26.9	C	0.31	29.8	C	0.34	33.4	C	0.12	26.5	C	0.22	28.2	C	0.22	28.2	C	
	WB-LT	0.08	25.9	C	0.14	26.9	C	0.16	30.0	C	0.06	25.5	C	0.13	26.8	C	0.13	26.8	C	
	SB-LTR	1.02	64.2	E	1.07	81.5	F *	1.01	60.4	E	0.48	18.2	B	0.52	19.0	B	0.52	19.0	B	
Harrison Avenue (S) @ Bartlett Street (E-W)	SB-LTR	0.95	49.8	D	1.03	68.3	E *		29.1	C	0.44	18.0	B	0.51	19.5	B	0.51	19.5	B	
	SB-LT						0.82	31.8	C											
	SB-R						0.18	14.2	B											
Harrison Avenue (S) @ Flushing Avenue (E-W)	EB-TR	1.00	68.6	E	1.01	70.2	E	0.94	50.6	D	0.97	52.0	D	0.98	53.9	D	0.93	42.6	D	
	WB-LT	1.15	127.1	F	1.24	155.8	F *	1.16	118.9	F	1.17	126.5	F	1.22	142.8	F *	1.16	117.8	F	
	SB-LTR	0.91	51.5	D	0.91	51.3	D		43.6	D	0.42	19.3	B	0.43	19.5	B	0.45	21.2	C	
	SB-L						0.13	21.6	C											
	SB-TR						0.85	46.3	D											
Union Avenue (N)/ Marcy Avenue (N) @ Flushing Avenue (E-W)/ Gerry Avenue (E-W)	EB-LT	0.76	24.6	C	1.00	60.0	E *	0.93	41.6	D	0.68	16.7	B	0.75	19.4	B	0.75	19.4	B	
	WB-TR	0.62	18.4	B	0.66	19.6	B	0.63	17.1	B	0.44	11.8	B	0.47	12.3	B	0.47	12.3	B	
	NB-LTR	0.60	38.0	D	0.62	38.7	D	0.68	42.8	D	0.49	28.2	C	0.50	28.4	C	0.50	28.4	C	
Lee Avenue (S)/ Nostrand Ave (S) @ Flushing Avenue (E-W)	EB-TR	1.09	95.1	F	1.16	123.0	F *	1.08	90.4	F	1.05	76.3	E	1.10	93.4	F *	1.03	65.5	E	
	WB-LT	1.15	120.0	F	1.21	146.1	F *	1.13	110.9	F	1.17	127.7	F	1.25	159.2	F *	1.16	122.0	F	
	SB-LTR	0.53	25.0	C	0.53	25.0	C	0.57	28.5	C	0.38	17.7	B	0.38	17.7	B	0.41	20.0	C	

Notes:

EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L-left, T-through, R-right
V/C Ratio - Volume to capacity ratio, Sec/veh - seconds per vehicle
LOS - Level of service
* Denotes a significant adverse impact based on CEQR Technical Manual criteria.
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.3)

G. TRANSIT AND PEDESTRIANS

LOCAL BUS

As discussed in Chapter 19, “Transit and Pedestrians,” the Proposed Action would result in significant adverse impacts to southbound B46 bus service in the PM peak hour in the 2018 build year. As shown in Table 19-19, in the PM peak hour southbound B46 buses would be operating with a capacity shortfall of approximately 32 spaces, compared to a surplus of approximately 44 spaces in the future without the Proposed Action. According to current NYC Transit guidelines, increases in bus load levels to above their maximum capacity at any load point is considered a significant impact as it would necessitate the addition of more bus service along that route. As standard practice, NYC Transit routinely conducts ridership counts and adjusts bus service frequency to meet its service criteria, within fiscal and operating constraints. Therefore, no mitigation is needed for the Proposed Action.

H. CONSTRUCTION IMPACTS

Construction-related activities resulting from the Proposed Action are not expected to have significant adverse impacts on land use and neighborhood character, socioeconomic conditions, community facilities and services, open space, traffic and parking, air quality, noise, infrastructure, or hazardous materials conditions.

Inadvertent direct construction-related impacts could potentially occur to two (the Lincoln Savings Bank and the All Saints Church) of the State and/or National Registers of Historic Places S/NR eligible resources as a result of development in the Project Area. Construction activity associated with projected development sites 1 and 34 would result in potential construction-related impacts. The resource within 90 feet of projected development site 1 is the All Saints Church building, located on Throop Avenue. The resource within 90 feet of projected development site 34 is Lincoln Savings Bank which is located on Broadway.

The impacted resources would be afforded some protection from construction-related impacts under DOB regulations applicable to all buildings located adjacent to construction sites; however, since the resources are not S/NR-listed or New York City Landmarks (NYCL-designated), the resources are not afforded special protections under the New York City Department of Buildings’ *Technical Policy and Procedure Notice #10/88, (TPPN 10/88)*. However, the resources would be provided a measure of protection from construction as Building Code section 27-166 (C26-112.4), which requires that all lots, buildings, and service facilities adjacent to foundation and earthwork areas be protected and supported in accordance with the requirements of Building Construction Subchapter 7 and Building Code Subchapters 11 and 19.

Additional protective measures afforded under TPPN 10/88, which apply to designated historic resources, would not be applicable in this case, unless the eligible resources are designated in the future prior to the initiation of construction. If these resources are not designated, however, they would not be subject to the above construction protection procedures and adjacent or nearby development resulting from the Proposed Action would result in significant adverse construction-related impacts to these resources.

Possible mitigation for these impacts would be comparable to TPPN #10/88, which includes a Construction Protection Plan (CPP) submitted to LPC for review and approval prior to construction. However, as discussed in Chapter 26, “Unavoidable Adverse Impacts”, these impacts would be unmitigated for privately owned development sites as no mechanism to require a CPP is currently in place for private sites, aside from the standard Building Code measures identified above.