A. INTRODUCTION

In accordance with the *City Environmental Quality Review (CEQR) Technical Manual*, where significant adverse impacts are identified, mitigation to reduce or eliminate the impacts to the fullest extent practicable is developed and evaluated.

Measures to further mitigate adverse impacts may be refined and evaluated between the Draft Environmental Impact Statement (DEIS) and Final EIS (FEIS). Therefore, the FEIS may include more complete information and commitments on all practicable mitigation measures to be implemented with the proposed projects.

B. PRINCIPAL CONCLUSIONS

Community Facilities

Elementary Schools

As discussed in Chapter 4, "Community Facilities," the demand for elementary school seats within CSD 32, sub-district 2 would increase to 111.4 percent utilization compared to No-Action conditions of 104 percent utilization. This would represent a 7.4 percent increase in the deficiency of available seats in this portion of the study area. The 264 elementary school students generated by the Proposed Action in CSD 32, sub-district 2 would increase the shortfall of available seats to 408, up from 143 seats. This would constitute a significant adverse impact. Potential mitigation measures are currently being explored by the Applicant in consultation with the lead agency and the New York City Department of Education (DOE) and the New York City School Construction Authority (SCA) and will be refined between Draft and Final EIS. These potential mitigation measures are discussed in detail below. If feasible mitigation is found, the impacts will be considered mitigated. Absent the implementation of such measures, the Proposed Action could have an unmitigated significant adverse impact.

Open Space

The Proposed Action would result in a significant open space impact. Potential partial mitigation measures are currently being explored by the Applicant in consultation with the lead agency and the New York City Department of Parks and Recreation (DPR) and will be refined between Draft and Final EIS. If feasible mitigation is found, the impacts will be considered partially mitigated. These potential mitigation measures are discussed in detail below. As the significant adverse impact on open space would not be fully mitigated, the Proposed Action would result in an unavoidable adverse impact on open space.

Transportation

The traffic impact analysis indicates that there would be the potential for significant adverse impacts at four intersections – two in each of the weekday AM and Saturday midday peak hours, three in the weekday midday peak hour, and four in the weekday PM peak hour, as outlined below.

Weekday AM Peak Hour

- Melrose Street and Bushwick Avenue – westbound approach; and
- Noll Street and Bushwick Avenue –westbound left-right movement.

Weekday Midday Peak Hour

- Forrest Street and Bushwick Avenue – northbound approach;
- Arion Place/Beaver Street and Bushwick Avenue – northbound through movement; and
- Noll Street and Bushwick Avenue – westbound left-right movement.

Weekday PM Peak Hour

- Forrest Street and Bushwick Avenue – northbound approach;
- Arion Place/Beaver Street and Bushwick Avenue – eastbound left-right movement;
- Melrose Street and Bushwick Avenue – westbound approach; and
- Noll Street and Bushwick Avenue – westbound left-right movement.

Saturday Midday Peak Hour

- Arion Place/Beaver Street and Bushwick Avenue – northbound through movement; and
- Noll Street and Bushwick Avenue – westbound left-right movement.

All of these impacts could be fully mitigated through a combination of standard signal timing changes, changes to curbside parking regulations, and installation of a traffic signal without any additional significant adverse impacts to pedestrian or parking conditions.

C. COMMUNITY FACILITIES

Elementary Schools

As discussed in Chapter 4, "Community Facilities," the demand for elementary school seats within CSD 32, sub-district 2 would increase to 111.4 percent utilization compared to No-Action conditions of 104 percent utilization. This would represent a 7.4 percent increase in the deficiency of available seats in this portion of the study area. The 264 elementary school students generated by the Proposed Action in CSD 32, sub-district 2 would increase the shortfall of available seats to 408, up from 143 seats. This would constitute a significant adverse impact.

As discussed in Chapter 4, "Community Facilities," the Proposed Action would result in 909 dwelling units within CSD 32, sub-district 2, of which 872 would be generated by the Applicant's sites. In order

for the Applicant to avoid a significant adverse impact, the project would have to be reduced to 612 units, which would generate 178 elementary school students. An increase of 178 elementary school students in CSD 32, sub-district 2 would exacerbate the existing shortfall by 4.9% and would be below the CEQR threshold that would be considered a significant adverse impact. With the DEIS' assumption of 872 units on the Applicant's sites, the project would generate 253 elementary school students in CSD 32, sub-district 2. The difference between the CEQR threshold for significance and the Proposed Action results in a maximum shortfall of 75 students.

The elementary school impact would be triggered and mitigation required after 612 dwelling units are constructed. As shown in Table 16-1, after the completion of site 3 in September 2016, approximately 683 dwelling units would be added to CSD 32, sub-district 2.

Table 16-1:
Elementary School Mitigation Timing for Applicant Sites

Projected Development Site	Dwelling Units	Anticipated Completion**
1	132	June 2015
Site 2 (Buildings D, E, F)*	251	December 2015
3	300	September 2016
TOTAL	***683***	

*Building C is located within CSD 14
** Based on Figure 15-1 in Chapter 15, "Construction"

Potential mitigation measures for this significant adverse impact are discussed below.

NYC Department of Education (DOE) and NYC School Construction Authority (SCA) would continue to monitor trends in demand for school seats in the area. DOE/SCA responses to identified demand could take place in stages and include administrative actions and/or enlargement of existing schools, followed by the later construction or lease of new school facilities at an appropriate time.

To eliminate or alleviate this significant adverse impact, the following mitigation measures are currently being explored by the Applicant in consultation with the SCA/DOE:

- Reconfiguration of certain existing administrative and support space within P.S. 145 (located at 100 Noll Street) to create additional classroom space; or
- Provide new classroom space within one of the Applicant's proposed buildings.

These preliminary mitigation options will be further explored and refined with DOE/SCA between the Draft and Final EIS. If one of these mitigation measures are implemented, the impact will be considered fully mitigated.

D. OPEN SPACE

As discussed in Chapter 5, "Open Space," given the anticipated decrease in the active, passive, and total 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 Action would result in a significant adverse impact to the total open space resources in the residential study area.

In order for the Applicant to avoid a significant open space adverse impact, the project would have to be reduced to 260 units, which would generate 767 residents. An increase of 767 residents would result in a 0.99% decrease in the residential study area's total open space ratio. As discussed in the *CEQR Technical Manual*, in areas that are extremely lacking in open space, a reduction as small as 1 percent

may be considered significant, depending on the area of the City. As such, the open space impact would occur after the completion of 260 dwelling units. For Applicant controlled properties, the completion of 260 dwelling units is anticipated to occur after sites 1 and 2 are constructed (see Table 16-1 above), in December of 2015.

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.

Mitigation measures are currently being explored by the Applicant in consultation with the New York City Department of Parks (DPR) and the lead agency, DCP. The Applicant is proposing the following possible measures to partially mitigate the Proposed Action's significant adverse open space impact:

- Provide funding to DPR for the creation of adult fitness equipment at Green Central Knoll;
- Provide approximately 17,235 sf ft (0.4 acres) of publicly accessible on-site open space;
- Other mitigation options, to be determined, identified by DPR.

The proposed on-site open space would be located on the Applicant's property between sites 3 & 4 (see Figure 16-1 for preliminary illustrative plan) and would be accessible by the public from Stanwix Street and Evergreen Avenue. The details of the proposed on-site open space will be refined between the Draft and Final EIS. The Final EIS will include an analysis of how the proposed residential buildings would affect the proposed open space.

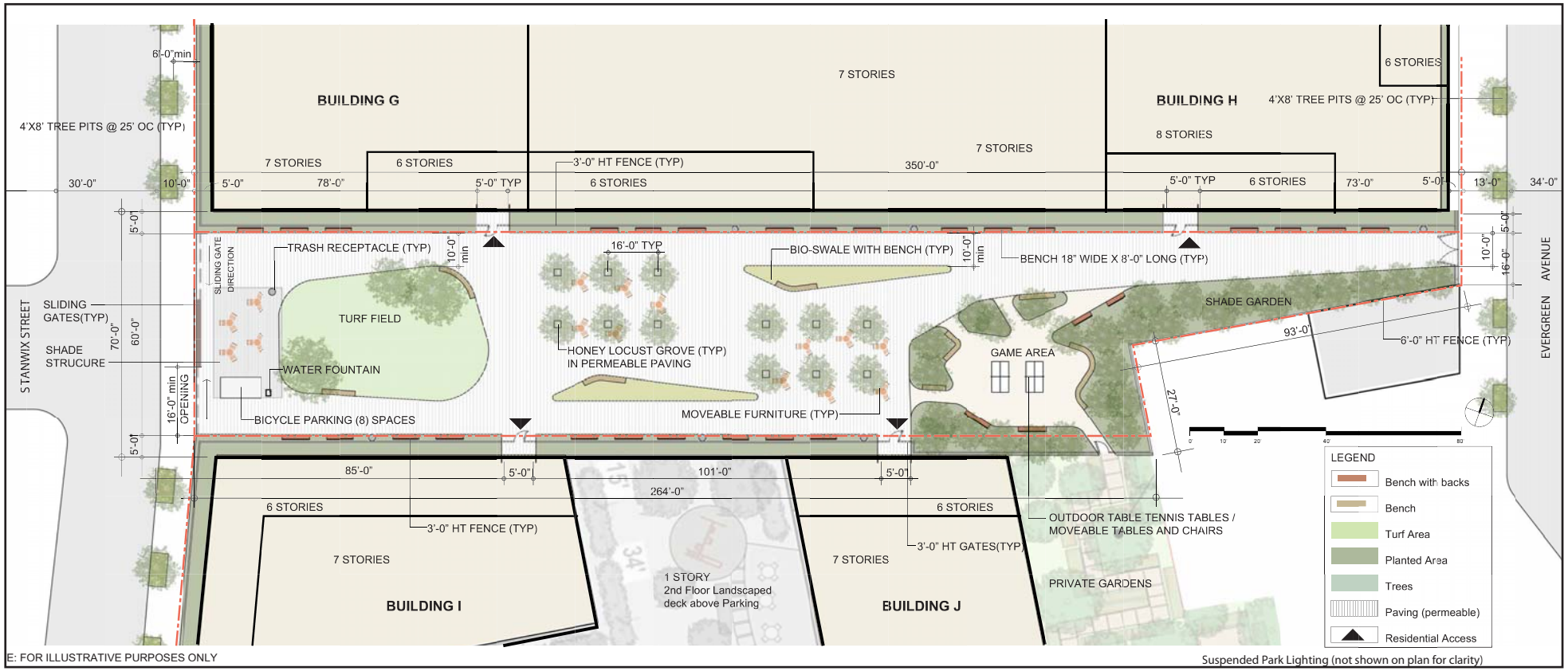
These mitigation measures and others will be explored further by the Applicant in consultation with DCP and DPR between the Draft and Final EIS. If feasible mitigation is found, the impacts will be considered partially mitigated. As the significant adverse impact on open space would not be fully mitigated, the Proposed Action would result in an unavoidable adverse impact on open space.

E. TRANSPORTATION

As discussed in Chapter 10, "Transportation," the analyses identified the potential for significant adverse traffic impacts, while impacts to area transit (subway and bus) facilities and services, pedestrian elements and parking are not anticipated. Where traffic impacts were identified, measures that could be implemented to mitigate these impacts are discussed below.

Traffic

The traffic impact analysis indicates that there would be the potential for significant adverse impacts at two intersections each in the weekday AM and Saturday MD peak hours, three intersections each in the weekday midday peak hour, and four intersections each in the PM peak hour. Table 16-2 summarizes the recommended mitigation measures to address these impacts, which are subject to review and approval by NYCDOT. As shown in Table 16-2, these measures consist of standard signal timing changes and parking regulation modifications, which are considered low-cost, readily implementable measures as per Table 16-18 in the *CEQR Technical Manual*, and conform to the guidance in NYCDOT's 2009 *Street Design Manual*. In addition, a new warranted traffic signal would be installed at the Bushwick Avenue/Noll Street intersection reflecting of the change in street direction of Noll Street to westbound and its extension east of Evergreen Avenue due to the newly mapped segment of the street.



Rheingold Development Rezoning EIS

Figure 16-1

Proposed On-Site Public Open Space
For Illustriative Purposes Only

Table 16-2
Proposed Traffic Mitigation Measures

Intersection	Approach	No Build Signal Timing (Seconds) (1)				Build With Mitigation Signal Timing (Seconds) (1)				Proposed Mitigations
		AM	MD	PM	SAT MD	AM	MD	PM	SAT MD	
1. Forrest Street (E) @ Bushwick Ave (N-S)	WB NB/SB PED	34 86	47 73	28 92	47 73	- 86 34	- 73 47	- 92 28	- 73 47	- Implement a no standing 7 AM-7 PM, Mon-Fri regulation for 100' on east curb of NB approach.
2. Noll Street (W) @ Bushwick Ave (N-S)	WB NB/SB	- -	- -	- -	- -	34 86	47 73	30 90	47 73	- Install new traffic signal with 120s cycle length.
3. Arion Place (E)/ Beaver Street (S) @ Bushwick Ave (N-S)	EB SB (Beaver St) NB/SB	24 24 72	31 29 60	24 24 72	31 29 60	24 24 72	30 28 62	24 24 72	29 29 62	- Implement a no standing 7 AM-7 PM, Mon-Fri regulation for 100' on south curb of EB approach. - Transfer 1s of green time from EB and SB (Beaver St) to NB/SB in MD peak hour. - Transfer 2s of green time from EB to NB/SB in Saturday midday peak hour.
4. Melrose Street (W) @ Bushwick Ave (N-S)	WB NB/SB	28 92	35 85	28 92	35 85	31 89	35 85	31 89	35 85	- Implement a no standing 7-10 AM, Mon-Fri regulation for 100' on north curb of WB approach. - Transfer 3s of green time from NB/SB to WB in AM and PM peak hours.

Notes :
(1) Signal timings shown indicate Green plus Yellow (including All Red) for each phase.

Table 16-3

2016 Build With Mitigation Level of Service Analysis

		Weekday AM Peak Hour										
		2016 No-Build			2016 Build				2016 Build Mitigation			
INTERSECTION	LANE GROUP	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS			V/C Ratio	Delay (sec.)	LOS
2. Noll Street (W) @	WB-LR	--	--	--	0.88	137.10	F	*	WB-LR	0.24	38.3	D
Bushwick Avenue (N-S)	SB-LT	0.04	12.0	B	--	--	--		NB-T	0.64	12.6	B
									SB-T	0.36	9.3	A
		(Unsignalized)			(Unsignalized)				(Signalized)			
3. Arion Place (E)/ Beaver Street (S) @									EB-L	0.47	52.8	D
Bushwick Ave (N-S)	EB-LR	0.68	62.6	E	0.71	65.8	E		EB-R	0.28	48.0	D
	NB-T	0.66	20.4	C	0.73	22.4	C			0.73	22.4	C
Bushwick Avenue	SB-T	0.49	17.8	B	0.47	17.5	B			0.47	17.5	B
Beaver Street	SB-LT	0.58	55.6	E	0.58	55.6	E			0.58	55.6	E
4. Melrose Street (W) @	WB-LTR	0.38	46.4	D	0.97	99.1	F	*	WB-LT	0.40	44.4	D
Bushwick Ave (N-S)									WB-R	0.44	45.6	D
	NB-LT	0.58	9.0	A	0.60	9.3	A			0.62	11.0	B
	SB-TR	0.55	9.4	A	0.54	9.1	A			0.56	10.7	B

		Weekday Midday Peak Hour										
		2016 No-Build			2016 Build				2016 Build Mitigation			
INTERSECTION	LANE GROUP	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS			V/C Ratio	Delay (sec.)	LOS
1. Forrest Street (E) @	WB-LTR	0.17	27.6	C	--	--	--			--	--	--
Bushwick Ave (N-S)	NB-LT	0.88	35.1	D	NB-LTR 1.04	67.8	E	*	NB-LTR	0.91	37.4	D
	SB-TR	0.55	18.5	B	SB-LTR 0.55	18.6	B		SB-LTR	0.55	18.6	B
2. Noll Street (W) @	WB-LR	--	--	--	0.40	33.8	D	*	WB-LR	0.15	27.3	C
Bushwick Avenue (N-S)	SB-LT	0.02	9.9	A	--	--	--		NB-T	0.81	27.8	C
									SB-T	0.49	17.4	B
		(Unsignalized)			(Unsignalized)				(Signalized)			
3. Arion Place (E)/ Beaver Street (S) @									EB-L	0.26	42.3	D
Bushwick Ave (N-S)	EB-LR	0.51	47.3	D	0.59	51.5	D		EB-R	0.37	45.2	D
	NB-T	0.83	38.5	D	0.94	51.1	D	*		0.91	44.5	D
Bushwick Avenue	SB-T	0.65	29.3	C	0.63	28.7	C			0.61	26.7	C
Beaver Street	SB-LT	0.66	53.7	D	0.66	54.0	D			0.69	56.5	E

		Weekday PM Peak Hour										
		2016 No-Build			2016 Build				2016 Build Mitigation			
INTERSECTION	LANE GROUP	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS			V/C Ratio	Delay (sec.)	LOS
1. Forrest Street (E) @	WB-LTR	0.40	46.5	D	--	--	--			--	--	--
Bushwick Ave (N-S)	NB-LT	0.73	14.6	B	NB-LTR 1.03	56.1	E	*	NB-LTR	0.90	26.6	C
	SB-TR	0.45	7.4	A	SB-LTR 0.48	7.7	A		SB-LTR	0.48	7.7	A
2. Noll Street (W) @	WB-LR	--	--	--	0.51	33.4	D	*	WB-LR	0.37	44.2	D
Bushwick Avenue (N-S)	SB-LT	0.04	9.7	A	--	--	--		NB-T	0.62	11.4	B
									SB-T	0.42	7.9	A
		(Unsignalized)			(Unsignalized)				(Signalized)			
3. Arion Place (E)/ Beaver Street (S) @									EB-L	0.46	54.1	D
Bushwick Ave (N-S)	EB-LR	0.78	70.9	E	0.90	90.5	F	*	EB-R	0.45	52.5	D
	NB-T	0.63	21.1	C	0.72	24.1	C			0.72	24.1	C
Bushwick Avenue	SB-T	0.58	18.5	B	0.57	18.4	B			0.57	18.4	B
Beaver Street	SB-LT	1.05	118.5	F	1.05	118.5	F			1.05	118.5	F
4. Melrose Street (W) @	WB-LTR	0.33	44.8	D	0.57	52.7	D	*		0.50	47.1	D
Bushwick Ave (N-S)	NB-LT	0.62	11.0	B	0.67	12.1	B			0.69	14.3	B
	SB-TR	0.60	9.1	A	0.60	9.1	A			0.62	10.7	B

		Saturday Midday Peak Hour										
		2016 No-Build			2016 Build				2016 Build Mitigation			
INTERSECTION	LANE GROUP	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS			V/C Ratio	Delay (sec.)	LOS
2. Noll Street (W) @	WB-LR	--	--	--	0.42	45.8	E	*	WB-LR	0.11	26.8	C
Bushwick Avenue (N-S)	SB-LT	0.01	9.9	A	--	--	--		NB-T	0.79	26.3	C
									SB-T	0.50	17.5	B
		(Unsignalized)			(Unsignalized)				(Signalized)			
3. Arion Place (E)/ Beaver Street (S) @	EB-LR	0.33	42.4	D	0.37	43.8	D			0.41	46.6	D
Bushwick Ave (N-S)	NB-T	0.85	39.1	D	0.95	51.7	D	*		0.92	44.8	D
Bushwick Avenue	SB-T	0.67	29.4	C	0.64	28.6	C			0.62	26.7	C
Beaver Street	SB-LT	0.74	57.4	E	0.74	57.4	E			0.74	57.4	E

Notes:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, Dfl-Analysis considers a defacto left-turn lane on this approach

V/C ratio - volume to capacity ratio

LOS - level of service

* - denotes an impacted movement

Table 16-3 compares the v/c ratios, delays and levels of service with implementation of these measures to both the No-Action and With-Action conditions. Under *CEQR Technical Manual* criteria, a significant adverse traffic impact is considered fully mitigated when the resulting level of service (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 Section D in Chapter 10, "Transportation." Under these criteria, if a lane group under the Action-with-Mitigation condition is within LOS A, B or C, or marginally acceptable LOS D (average control delay less than or equal to 45.0 seconds/vehicle for signalized intersections and 30.0 seconds/vehicle for unsignalized intersections), the impact has been mitigated. If the lane group is projected to operate at worse than mid-LOS D (i.e., delay greater than 45 seconds/vehicle at signalized intersections or 30 seconds/vehicle at unsignalized intersections) or at LOS E or F under the Action-With-Mitigation condition, then the impact is considered mitigated when:

- The lane group would operate at LOS D under the No-Action condition and would experience an increase of less than five seconds of delay under the Action-With-Mitigation condition;
- The lane group would operate at LOS E under the No-Action condition and would experience an increase in projected delay of less than four seconds; and
- The lane group would operate at LOS F under the No-Action condition and would experience an increase in projected delay of less than three seconds.

As shown in Table 16-3, with implementation of the recommended mitigation measures, all of the significant adverse traffic impacts would be fully mitigated. Each of the recommended mitigation measures and their effects on traffic conditions are discussed below.

Forrest Street and Bushwick Avenue

The significant adverse impact to the northbound approach in the MD and PM peak hours could be fully mitigated by implementing a no standing 7AM-7PM, Monday through Friday regulation for 100' on the east curb of the northbound approach.

Noll Street and Bushwick Avenue

The significant adverse impact to the westbound left-right movement on Noll Street in all peak hours could be fully mitigated by installing a new traffic signal with a 120 second cycle length. As discussed above, the installation of the traffic signal reflects the change in street direction of Noll Street to westbound and its extension east of Evergreen Avenue due to the newly mapped segment of the street.

Arion Place/Beaver Street and Bushwick Avenue

The significant adverse impact to the northbound through movement on Bushwick Avenue in the weekday MD peak period could be fully mitigated by shifting one second of green time from the eastbound and southbound approaches to the northbound/southbound approaches. The significant adverse impact to the northbound through movement on Bushwick Avenue could be fully mitigated by shifting two seconds of green time from the eastbound approach to the northbound/southbound approach in the Saturday MD peak period. The significant adverse impact to the eastbound left-right movement in the PM peak period could be fully mitigated by implementing a no standing 7AM-7PM, Monday through Friday regulation for 100' on the south curb of the eastbound approach. It should be noted that while the Proposed Action would not result in a significant adverse impact in the AM peak period at this location, because the no standing 7AM-7PM Monday through Friday standard regulation being proposed would be required to be implemented during the AM peak period as well, the LOS for the eastbound left-right movement would be improved as a result.

Melrose Street and Bushwick Avenue

The significant adverse impacts to the westbound through movement on Melrose Street in the weekday AM and PM peak periods could be fully mitigated by shifting three seconds of green time from the northbound/southbound approaches to the westbound approach as well as implementing a no standing 7AM-10AM, Monday through Friday regulation for 100' on north curb of the westbound approach.

Implementation of Mitigation Measures

Application and implementation of traffic mitigation measures can require the approval of various agencies, depending upon the jurisdiction and type of mitigation proposed. Approval and/or implementation by NYCDOT would be required for the proposed traffic mitigation measures described above. In the absence of the implementation of these mitigation measures, unmitigated conditions would remain.

Effects of Traffic Mitigation on Pedestrian Conditions

As discussed above, the recommended mitigation measures would include changes to existing signal timings of up to three seconds at a total of two intersections and the installation of a new traffic signal at one intersection where significant adverse traffic impacts are forecast. With these recommended changes, pedestrians would continue to have sufficient time to cross the street at all locations.

Effects of Traffic Mitigation on Parking Conditions

The recommended traffic mitigation plan for the intersection of Forrest Street and Bushwick Avenue includes supplementing an existing no standing 7AM-10AM, Monday through Friday regulation with a no standing 7AM-7PM, Monday-Friday regulation for 100 feet along the east curb on the Bushwick Avenue approach. This would result in the elimination of up to five curbside parking spaces during the weekday midday and PM peak periods. As this proposed parking restriction would be limited to the weekday midday and PM peak period, it would not affect parking conditions during the overnight period. As discussed above, in addition to signal timing changes, the recommended traffic mitigation plan for the intersection of Melrose Street and Bushwick Avenue includes supplementing an existing no parking 8AM-9:30AM Monday and Thursday regulation with a no standing 7AM-10AM, Monday-Friday regulation for 100 feet along the north curb on the Melrose Street approach. This would result in the elimination of up to five curbside parking spaces during the weekday AM peak period. As this proposed parking restriction would be limited to the weekday AM peak period, it would not affect parking conditions during the midday, PM, and overnight periods. In addition, given the relatively small number of parking spaces displaced and the availability of alternative modes of transportation in this area, any potential on-street parking shortfall resulting from this recommended traffic mitigation would not be considered a significant adverse impact under *CEQR Technical Manual* criteria.