A. INTRODUCTION

As outlined in Chapter 1, "Project Description," the proposed action consists of land use actions that would facilitate the development of a new predominantly residential mixed-use development on the two-block-project-area owned by the Applicant. The reasonable worst-case development scenario (RWCDS) With-Action condition for the proposed action consists of approximately 1,147 dwelling units (DUs), of which approximately 344 DUs would be affordable housing DUs (30 percent of the total); approximately 64,807 gross square feet (gsf) of local retail space; approximately 128,128 gsf of parking space, consisting of 427 spaces, as required by zoning; and approximately 26,000 sf of publicly-accessible open space. The potential for the proposed action to result in significant adverse impact was evaluated in Chapters 2 through 18 of this EIS.

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. This chapter considers mitigation measures to address significant adverse impacts generated by the proposed action. Measures to further mitigate adverse impacts will continue to be evaluated between the Draft EIS (DEIS) and Final EIS (FEIS). Therefore, the FEIS may include additional information and commitments on all practicable mitigation measures to be implemented with the proposed action.

The proposed action has the potential to result in significant adverse impacts to community facilities and services (intermediate schools) and transportation (traffic). Potential mMitigation measures for each of these technical areas are identified below.

B. PRINCIPAL CONCLUSIONS

Community Facilities and Services

Intermediate Schools

As disclosed in Chapter 4, "Community Facilities and Services," the proposed action would result in a significant adverse impact on intermediate schools in Sub-district 1 of Community School District (CSD) 14. The proposed action would result in the introduction of approximately 138 additional intermediate school students. The study area utilization would exceed the 100 percent utilization threshold, increasing from 135.9 percent in the No-Action Condition to 142.0 percent in the With-Action Condition. The utilization rate would be approximately 6.2 percentage points higher compared to the No-Action condition. The 138 students generated by the proposed action would increase the shortfall of available seats from 804 to 942. The difference between the CEQR

threshold for significance and the With-Action Condition results in a maximum shortfall of 28 seats.

The analysis identified that the significant adverse impact to intermediate schools would occur upon occupancy of 921 new DUs, i.e., the number of units introduced into the study area that are projected to increase the collective utilization rate of the public intermediate schools in the study in excess of 5 percent between the No-Action and With-Action conditions, and that in order to fully mitigate the impact, intermediate school capacity in the study area would need to increase by 28 seats, i.e., the number of seats necessary to reduce the collective utilization rate of public intermediate schools in the study area to no greater than a 5 percent increase over the No-Action condition.

As recorded in the Restrictive Declaration to be recorded against the project area, in order to fully mitigate this impact, the Declarant, i.e., the applicant or its successor(s) to fee title in the project area, would be required to either provide funding to the DOE/SCA or perform work to increase the intermediate school capacity by 28 seats at school(s) in the school study area where such capacity increase is warranted (as determined by DOE/SCA). Before building permits resulting cumulatively in the construction of 921 or more DUs in the project may be applied for by the applicant or issued by DOB, either funding from the applicant must be accepted by DOE/SCA or an agreement among these parties regarding the performance of work to increase capacity be executed. Furthermore, before the applicant can apply for or DOB can issue a temporary certificate of occupancy for development resulting cumulatively in 921 or more DUs, either funding from the applicant must be accepted by DOE/SCA or work to increase capacity completed to the satisfaction of DOE/SCA. The RD also specifies that the offer of school mitigation by the applicant must be accepted within a prescribed timeframe and process or the applicant would have no further school mitigation obligation.

In addition, under the terms of the RD the applicant may conduct an additional analysis, in accordance with *CEQR Technical Manual* guidelines, to determine whether, based on the data available at the time of the additional analysis, the extent of the impacts and/or timing of when the impacts on public intermediate schools are projected to occur varies from that which had been identified the FEIS. Where the additional analysis demonstrates, to the reasonable satisfaction of the SCA and DOE, in consultation with DCP, as lead agency, that the extent of the impacts and/or timing of when the impacts are projected to occur varies from that set forth in the FEIS, the Public School Mitigation Measure shall be adjusted accordingly to reflect the modification of minimum number of intermediate school seats necessary to reduce the increase in collective utilization of public intermediate schools in the study area to no greater than a 5 percent increase over the No-Action condition or a reduction of overall capacity to less than 100 percent.

If the demand for school seats is as high as the methodology in this analysis projects and the shortfall of school seats occurs, either one or a combination of the following measures, as noted in the CEQR Technical Manual, would need to be undertaken:

* Relocating administrative functions from a school building to another site, thereby freeing up space for classrooms;

- * Making space within the buildings associated with the proposed project or elsewhere in the school study area available to the Department of Education (DOE);
- Restructuring or reprogramming existing school space;
- * Providing for new capacity (seats) by constructing a new school or an addition to an existing school;
- * Other measures may be identified in consultation with the School Construction Authority (SCA) and DOE that do not create additional capacity but may nevertheless serve to alleviate capacity constraints.

At this time, there has been no commitment to adopt any of the above-mentioned administrative actions and/or capital solutions. Between the DEIS and FEIS, potential mitigation will be reviewed with DOE and SCA to determine its feasibility.

Absent a commitment to implement one or more of the above measures, the proposed action would result in an unmitigated significant adverse impact on public intermediate schools if projections prove correct.

Transportation

Traffic

As described in Chapter 12, "Transportation," the proposed action would result in significant adverse impacts at seven study area intersections during one or more analyzed peak hours; specifically, four lane groups at four intersections during the weekday AM peak hour; four three lane groups at three two intersections during the weekday midday peak hour; eight lane groups at six intersections during the weekday PM peak hour; and one lane group at one intersection 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 the anticipated traffic impacts. Implementation of the recommended traffic engineering improvements is subject to review and approval by the New York City Department of Transportation (DOT) prior to implementation. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified, if possible. Table 19-1 shows that significant adverse impacts would be fully mitigated at all analyzed lane groups and intersections during all analyzed peak hours.

Table 19-1, Summary of Lane Groups/Intersections with Significant Adverse Traffic Impacts

	Lane Groups/ Intersections	Lane Groups/ Intersections With No	Intersections With	Mitigated Lane Groups/	Lane Groups/
Peak Hour	Analyzed	Significant Impacts	Significant Impacts	Intersections	Intersections
Weekday AM	29 <u>31</u> /10	25 <u>27</u> /6	4/4	4/4	0/0
Weekday Midday	28 <u>29</u> /10	24 <u>26</u> / 7 <u>8</u>	4 <u>3</u> / <u>32</u>	4 <u>3</u> / <u>3</u> 2	0/0
Weekday PM	29 <u>31</u> /10	21 <u>23</u> /4	8/6	8/6	0/0
Saturday Midday	28 <u>30</u> /10	27 <u>29</u> /9	1/1	1/1	0/0

C. COMMUNITY FACILITIES AND SERVICES

Intermediate Schools

The project area is located in Sub-district 1 of CSD 14. Since the proposed action would result in the introduction of a new residential population, which would generate a demand on local school resources, the EIS assessed the effects on school capacity within the sub-district, which serves as the study area for analysis per the *CEQR Technical Manual*. As presented in Chapter 4, "Community Facilities and Services," the new population introduced by the proposed project would result in a significant adverse impact on intermediate schools. Specifically, the analysis found that as a result of the proposed action, the intermediate school utilization rate in the 2019 build year would increase from 135.9 percent to 142.0 percent, an approximately 12.06.1 percentage point increase. In terms of the number of seats, the shortfall of intermediate school seats would change from 804 under No-Action conditions to 942 under With-Action conditions. As the With-Action utilization rate would exceed 100 percent and would increase by 5 percent or more, a significant adverse impact would occur. The projected shortfall of seats that this analysis identifies within the sub-district study area is based on conservative assumptions regarding future background growth and students generated by new development.

The analysis identified that the significant adverse impact to intermediate schools would occur upon occupancy of 921 new DUs, i.e., the number of units introduced into the study area that are projected to increase the collective utilization rate of the public intermediate schools in the study in excess of 5 percent between the No-Action and With-Action conditions, and that in order to fully mitigate the impact, intermediate school capacity in the study area would need to increase by 28 seats, i.e., the number of seats necessary to reduce the collective utilization rate of public intermediate schools in the study area to no greater than a 5 percent increase over the No-Action condition.

As recorded in the Restrictive Declaration to be recorded against the project area, in order to fully mitigate this impact, the Declarant, i.e., the applicant or its successor(s) to fee title in the project area, would be required to either provide funding to the DOE/SCA or perform work to increase the intermediate school capacity by 28 seats at school(s) in the school study area where such capacity increase is warranted (as determined by DOE/SCA). Before building permits resulting cumulatively in the construction of 921 or more DUs in the project may be applied for by the applicant or issued by DOB, either funding from the applicant must be accepted by DOE/SCA or an agreement among these parties regarding the performance of work to increase capacity be executed. Furthermore, before the applicant can apply for or DOB can issue a temporary certificate of occupancy for development resulting cumulatively in 921 or more DUs, either funding from the applicant must be accepted by DOE/SCA or work to increase capacity completed to the satisfaction of DOE/SCA. The RD also specifies that the offer of school mitigation by the applicant must be accepted within a prescribed timeframe and process or the applicant would have no further school mitigation obligation.

In addition, under the terms of the RD the applicant may conduct an additional analysis, in accordance with *CEQR Technical Manual* guidelines, to determine whether, based on the data available at the time of the additional analysis, the extent of the impacts and/or timing of when the

impacts on public intermediate schools are projected to occur varies from that which had been identified the FEIS. Where the additional analysis demonstrates, to the reasonable satisfaction of the SCA and DOE, in consultation with DCP, as lead agency, that the extent of the impacts and/or timing of when the impacts are projected to occur varies from that set forth in the FEIS, the Public School Mitigation Measure shall be adjusted accordingly to reflect the reduction or increase, as the case may be, immodification of minimum number of intermediate school seats necessary to reduce the increase in collective utilization of public intermediate schools in the study area to no greater than a 5 percent increase over the No-Action condition or a reduction of overall capacity to less than 100 percent.

If the demand for school seats is as high as the methodology in this analysis projects and the shortfall of school seats occurs, either one or a combination of the following measures, as noted in the CEQR Technical Manual, would need to be undertaken:

- * Relocating administrative functions from a school building to another site, thereby freeing up space for classrooms;
- * Making space within the buildings associated with the proposed project or elsewhere in the school study area available to the DOE;
- * Restructuring or reprogramming existing school space;
- * Providing for new capacity (seats) by constructing a new school or an addition to an existing school;
- * Other measures may be identified in consultation with SCA and DOE that do not create additional capacity but may nevertheless serve to alleviate capacity constraints.

At this time, there has been no commitment to adopt any of the above-mentioned administrative actions and/or capital solutions. Between the DEIS and FEIS, potential mitigation will be reviewed with DOE and SCA to determine its feasibility.

Absent a commitment to implement one or more of the above measures, the proposed action would result in an unmitigated significant adverse impact on public elementary schools if projections prove correct.

D. TRANSPORTATION

Traffic

As described in Chapter 12, "Transportation," the proposed action would result in significant adverse impacts at seven study area intersections during one or more analyzed peak hour; specifically, four lane groups at four intersections during the weekday AM peak hour, four three lane groups at three two intersections during the weekday midday peak hour, eight lane groups at six intersections during the weekday PM peak hour, and one lane group at one intersection during the Saturday midday peak hour.

As demonstrated below, <u>most_all_of</u> the traffic impacts could be mitigated through the implementation of traffic engineering improvements, including:

- Modification of traffic signal phasing and/or timing;
- Modification of roadway striping; and
- Elimination of on-street parking to add an additional travel lane.

The types of mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. Table 19-2 summarizes the recommended mitigation measures for each of the intersections with identified significant adverse traffic impacts during the weekday AM, midday, and PM and/or Saturday midday peak hours. Implementation of the recommended traffic engineering improvements is subject to review and approval by DOT prior to implementation. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified, if possible. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

Tables 19-3 through 19-6 show the volume-to-capacity (v/c) ratios, delays, and levels of service (LOS) for all lane groups at each impacted intersection and compares them to No-Action and With-Action conditions for the weekday AM, midday, and PM and Saturday midday peak hours, respectively. According to *CEQR Technical Manual* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action-with-Mitigation condition compared to the No-Action condition is no longer deemed significant following the impact criteria described in Chapter 12, "Transportation." Tables 19-3 through 19-6 show that significant adverse impacts would be fully mitigated at all analyzed lane groups and intersections during all analyzed peak hours. Proposed mitigation measures may be refined in coordination with the lead agency and DOT between the DEIS and FEIS.

Effects of Traffic and Sidewalk Mitigation on Corner Area and Crosswalk Conditions

Proposed traffic mitigation measures (discussed previously) would potentially affect pedestrian conditions in one or more peak hours at a total of two analyzed crosswalks and seven analyzed corner areas at two intersections. Tables 19-7 and 19-8 show conditions at these pedestrian elements with the proposed traffic mitigation measures. As shown in Tables 19-7 and 19-8, all of the affected crosswalks and corner areas would continue to operate at an uncongested LOS B or better in all peak hours, and there would be no new significant adverse impacts to any of these corner areas or crosswalks in any analyzed peak hour as a result of the proposed traffic mitigation measures.

Table 19-2, Proposed Traffic Mitigation Measures

			No-A	Action	· · · · · ·	1		osed			
				Timing				Timing			
			-	nds) (1)			-	nds) (1)			
				, (.,			(, (.,			Impacted
Intersection	Signal Phase	AM	MD	PM	SAT	AM	MD	PM	SAT	Recommended Mitigation	Periods
1. Harrison Avenue (EB/WB) @	EB	36	24	36	24	33	25	32	24	- Install "No Standing 7-10AM, 4-7PM, Mon-Fri" along entire length of south curb of EB approach.	All Periods (2)
Union Avenue (NB/SB)	All Red (Lorimer St)	36	34	36	34	36	31	37	33	- Transfer 3s of green time from EB to NB/SB in AM and PM.	
	NB/SB	48	32	48	32	51	34	51	33	- Transfer 2s of green time from All Red to NB/SB in MD.	
										- Transfer 1s of green time from All Red to EB in MD.	
										- Transfer 1s of green time from EB to All Red in PM.	
										- Transfer 1s of green time from All Red to NB/SB in SAT.	
2. Lorimer Street (EB/WB) @	EB/WB	36	34	36	34	36	31	37	33	- Transfer 3s of green time from SB to NB/SB in AM and PM.	AM (2)
Union Avenue (NB/SB)	NB/SB	48	32	48	32	51	34	51	33	- Transfer 2s of green time from EB/WB to NB/SB in MD.	
	SB	36	24	36	24	33	25	32	24	- Transfer 1s of green time from EB/WB to SB in MD.	
										- Transfer 1s of green time from SB to EB/WB in PM.	
										- Transfer 1s of green time from EB/WB to NB/SB in MD.	
5. Flushing Avenue/Gerry Street (EB/WB) @	EB/WB	80	58	80	58	80	58	81	58	- Install "No Standing Anytime" on both curbs of NB approach for 250'	AM/MD/PM
Union Avenue/Marcy Avenue (NB)	NB	40	32	40	32	40	32	39	32	- Restripe NB approach with a 13' shared left-through lane, a 12.5' through lane, and a 13' right-turn lane.	
										- Transfer 1s of green time from NB to EB/WB in PM.	
6. Lorimer Street (EB/WB) @	EB/WB	36	34	36	34	36	31	37	33	- Transfer 3s of green time from SB2 to SB1 in AM and PM.	PM (2)
Harrison Avenue (SB)	SB1	48	32	48	32	51	34	51	33	- Transfer 2s of green time from EB/WB to SB1 in MD.	
	SB2	36	24	36	24	33	25	32	24	- Transfer 1s of green time from EB/WB to SB2 in MD.	
										- Transfer 1s of green time from SB2 to EB/WB in PM.	
										- Transfer 1s of green time from SB2 to EB/WB in PM.	
7. Walton Street (EB) @				UNSIGN	IALIZED					- Install "No Standing Anytime for 100' along south curb of EB approach.	PM
Harrison Avenue (SB)										- Restripe EB approach as one 8' parking lane, one 13' through lane, and one 13' right-turn lane.	
8. Wallabout Street (EB/WB) @	EB/WB	48	36	48	36	<u>50</u>	36	50	36	- Transfer 2s of green time from SB to EB/WB in AM and PM.	AM/PM
Harrison Avenue (SB)	SB	72	54	72	54	<u>70</u>	54	<u>70</u>	54		
9. Gerry Street (EB/WB) @	EB	44	48	44	48	44	48	43	48	- Transfer 1s of green time from EB to SB in PM.	PM
Harrison Avenue (SB)	SB	76	72	76	72	76	72	77	72		

Notes:

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

⁽²⁾ The intersections of Union Avenue @ Harrison Avenue, Lorimer Street @ Union Avenue, and Lorimer Street @ Harrison Avenue share a signal. Therefore, a signal timing change at one of these intersections affects the signal timings at the other two intersections.

Table 19-3, ${\bf Action\text{-}with\text{-}Mitigation\ Traffic\ Conditions\ at\ Impacted\ Intersections\ -}$ Weekday AM Peak Hour

					WEEKD	AY AM PI	AK HO	UR			
	LANE		No-Actio	n	1	With-Acti	ion		Action	With Mi	tigation
	GROUP	V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS
		RATIO	(sec.)		RATIO	(sec.)			RATIO	(sec.)	
1. Harrison Avenue (E-W) @	EB - LTR	0.92	80.6	F	0.93	82.0	F		0.89	78.3	Е
Union Avenue (N-S)	NB - LT	0.67	38.2	D	0.74	41.1	D		0.65	33.9	С
	SB - LTR	1.48	280.7	F	1.62	342.1	F	*	1.31	205.4	F
2. Lorimer Street (E-W) @	EB - LTR	0.39	42.2	D	0.39	42.3	D		0.39	42.3	D
Union Avenue (N-S)	WB - LT	0.29	38.2	D	0.29	38.2	D		0.29	38.2	D
	NB - LTR	0.81	49.1	D	0.90	59.5	E	*	0.84	49.3	D
	SB - LTR	0.25	9.5	Α	0.26	9.7	Α		0.26	9.7	Α
5. Flushing Avenue - Gerry Street (E-W) @	EB - LT	0.59	16.9	В	0.62	17.8	В		0.62	17.8	В
Marcy Avenue - Union Avenue (NB)	WB - TR (Flushing)	0.54	14.9	В	0.59	16.1	В		0.59	16.1	В
(Gerry Street Unsignalized)	WB - R (Gerry)	0.12	17.9	<u>C</u>	0.23	33.5	<u>D</u>		0.23	33.5	<u>D</u>
	NB - LT	-	-	-	-	-	-		0.74	44.6	<u>D</u>
	NB - R	-	-	-	-	-	-		0.76	57.7	Е
	NB - LTR	<u>1.19</u>	142.0	F	1.25	166.8	F	*	-	<u>47.9</u>	<u>D</u>
6. Lorimer Street (E-W) @	EB - TR	0.21	36.9	D	0.22	37.1	D		0.22	37.1	D
Harrison Avenue (SB)	WB - LT	0.47	43.4	D	0.48	43.6	D		0.48	43.6	D
	SB - LTR	0.42	11.3	В	0.42	11.4	В		0.42	11.4	В
7. Walton Street (EB) @	EB - T	-	-	-	-	-	-		0.22	21.6	С
Harrison Avenue (SB)	EB - R	-	-	-	-	-	-		0.08	12.8	В
(Unsignalized)	EB - TR	0.22	16.1	С	0.33	22.4	С		-	18.1	С
	SB - LT	0.02	8.5	Α	0.02	8.8	Α		0.02	8.5	Α
					ļ						
8. Wallabout Street (E-W) @	EB - R	0.20	28.1	С	0.39	33.8	С		0.37	<u>31.5</u>	С
Harrison Avenue (SB)	WB - LT	0.69	<u>41.8</u>	D	0.80	<u>51.4</u>	D	*	0.76	45.8	D
	SB - TR	0.56	20.2	С	0.58	20.7	С		0.59	22.4	С

Notes:

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

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

V/C Ratio - Volume to Capacity Ratio, sec. - Seconds

LOS - Level of Service

* - Denotes a congested movement (LOS E or F, or V/C ratio greater than or equal to 0.9)

Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Table 19-4, Action-with-Mitigation Traffic Conditions at Impacted Intersections – Weekday Midday Peak Hour

	vveekua	iy Mhac	иау ге	ak nou	1						
					WEEKDAY	MIDDAY	PEAK I	IOUR		,	
	LANE		No-Actio	n	1	With-Acti	ion		Action	With Mi	tigation
	GROUP	V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS
		RATIO	(sec.)		RATIO	(sec.)			RATIO	(sec.)	
1. Harrison Avenue (E-W) @	EB - LTR	0.93	73.8	E	0.95	79.0	Е	*	0.90	67.0	Е
Union Avenue (N-S)	NB - LT	0.62	33.9	С	0.65	35.1	D		0.61	31.8	С
	SB - LTR	1.23	172.2	F	1.32	204.3	F	*	1.19	150.7	F
2. Lorimer Street (E-W) @	EB - LTR	0.17	23.6	С	0.18	23.7	С		0.20	26.3	С
Union Avenue (N-S)	WB - LT	0.10	22.5	С	0.11	22.5	С		0.12	24.8	С
	NB - LTR	0.82	45.9	D	0.86	50.8	D		0.80	42.4	D
	SB - LTR	0.23	11.0	В	0.28	11.7	В		0.26	10.0	Α
5. Flushing Avenue - Gerry Street (E-W) @	EB - LT	0.69	18.1	В	0.80	24.4	С		0.80	24.4	С
Marcy Avenue - Union Avenue (NB)	WB - TR (Flushing)	0.52	13.1	В	0.57	14.1	В		0.57	14.1	В
(Gerry Street Unsignalized)	WB - R (Gerry)	0.04	12.9	<u>B</u>	0.18	42.8	<u>E</u>		0.18	42.8	<u>E</u>
	NB - LT	-	-	-	-	-	-		0.51	28.3	С
	NB - R	-	-	-	-	-	-		0.80	56.0	Е
	NB - LTR	0.82	39.7	D	0.95	57.4	Ε	*	-	36.1	D
6. Lorimer Street (E-W) @	EB - TR	0.13	22.8	С	0.13	22.9	С		0.15	25.2	С
Harrison Avenue (SB)	WB - LT	0.21	24.1	С	0.21	24.2	С		0.24	26.9	С
	SB - LTR	0.32	11.7	В	0.33	11.8	В		0.31	10.1	В
7. Walton Street (EB) @	EB - T	-	-	-	-	-	-		0.20	25.4	D
Harrison Avenue (SB)	EB - R	-	-	-	-	-	-		0.11	15.6	С
(Unsignalized)	EB - TR	0.14	12.8	В	0.32	25.0	С		-	20.6	С
	SB - LT	0.01	7.8	Α	0.01	8.8	Α		0.01	8.8	Α
1											

Notes:

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

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

V/C Ratio - Volume to Capacity Ratio, sec. - Seconds

LOS - Level of Service

* - Denotes a congested movement (LOS E or F, or V/C ratio greater than or equal to 0.9)

Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Table 19-5, Action-with-Mitigation Traffic Conditions at Impacted Intersections – Weekday PM Peak Hour

	vveek	day PN	i reai	1 Hour							
						AY PM PE		UR			
	LANE		No-Actio	n	V	With-Acti	on		Action	With Mi	tigation
	GROUP	V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS
		RATIO	(sec.)		RATIO	(sec.)			RATIO	(sec.)	
1. Harrison Avenue (E-W) @	EB - LTR	0.84	64.9	E	0.87	69.0	Е	*	0.82	64.6	Е
Union Avenue (N-S)	NB - LT	0.46	31.5	С	0.49	32.0	С		0.46	29.3	С
	SB - LTR	1.20	154.3	F	1.30	194.4	F	*	1.18	144.2	F
2. Lorimer Street (E-W) @	EB - LTR	0.27	38.5	D	0.27	38.6	D		0.26	37.6	D
Union Avenue (N-S)	WB - LT	0.35	39.1	D	0.36	39.4	D		0.35	38.4	D
	NB - LTR	0.68	40.5	D	0.72	42.7	D		0.67	38.0	D
	SB - LTR	0.29	10.0	Α	0.35	10.8	В		0.36	11.3	В
5. Flushing Avenue - Gerry Street (E-W) @	EB - LT	0.80	26.9	С	0.96	49.3	D	*	0.93	44.1	D
Marcy Avenue - Union Avenue (NB)	WB - TR (Flushing)	0.53	14.7	В	0.57	15.3	В		0.56	14.7	В
(Gerry Street Unsignalized)	WB - R (Gerry)	0.06	15.3	<u>C</u>	0.24	52.0	F		0.24	52.0	<u>F</u>
	NB - LT	-	-	-	-	-	-		0.55	39.3	D
	NB - R	-	-	-	-	-	-		0.80	65.3	<u>E</u>
	NB - LTR	0.87	54.4	D	0.99	75.5	Е	*	-	46.6	D
6. Lorimer Street (E-W) @	EB - TR	0.22	37.1	D	0.23	37.4	D		0.22	36.4	D
Harrison Avenue (SB)	WB - LT	0.90	74.7	E	0.93	82.6	F	*	0.90	74.7	Е
	SB - LTR	0.36	10.4	В	0.37	10.5	В		0.37	11.0	В
7. Walton Street (EB) @	EB - T	-	-	-	-	-	-		0.35	35.4	Е
Harrison Avenue (SB)	EB - R	-	-	-	-	-	-		0.09	16.0	С
(Unsignalized)	EB - TR	0.24	18.7	С	0.46	36.9	Е	*	-	28.8	D
	SB - LT	0.03	8.0	Α	0.03	8.5	Α		0.03	8.5	Α
8. Wallabout Street (E-W) @	EB - R	0.29	29.4	С	0.52	37.9	D		0.49	34.9	<u>C</u>
Harrison Avenue (SB)	WB - LT	0.56	<u>36.0</u>	D	0.75	<u>47.4</u>	D	*	0.71	<u>42.7</u>	D
	SB - TR	0.76	<u>27.6</u>	С	<u>0.79</u>	30.1	С		0.82	33.3	С
9. Gerry Street (E-W) @	EB - TR	0.23	30.9	С	0.32	32.7	С		0.32	33.7	С
Harrison Avenue (SB)	WB - LT	<u>0.16</u>	29.9	<u>C</u>	0.22	31.1	<u>C</u> D		0.23	31.9	<u>C</u>
	<u>SB - LTR</u>	<u>0.93</u>	<u>39.1</u>	<u>D</u>	<u>0.96</u>	<u>45.8</u>	<u>D</u>	*	<u>0.95</u>	<u>42.5</u>	<u>D</u>

Notes:

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

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

V/C Ratio - Volume to Capacity Ratio, sec. - Seconds

LOS - Level of Service

* - Denotes a congested movement (LOS E or F, or V/C ratio greater than or equal to 0.9)

Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Table 19-6, Action-with-Mitigation Traffic Conditions at Impacted Intersections – Saturday Midday Peak Hour

	Saturua	iy iviiut	лау т с	ak Hou	1						
			•		SATURDAY	MIDDAY	PEAK H	IOUR	₹	,	•
	LANE		No-Actio	n	'	With-Acti	ion		Action	With M	itigation
	GROUP	V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS
		RATIO	(sec.)		RATIO	(sec.)			RATIO	(sec.)	
1. Harrison Avenue (E-W) @	EB - LTR	0.36	34.4	С	0.38	34.9	С		0.38	34.9	С
Union Avenue (N-S)	NB - LT	0.36	27.3	С	0.42	28.2	С		0.40	27.2	С
	SB - LTR	0.67	40.2	D	0.79	48.8	D	*	0.75	44.0	D
2. Lorimer Street (E-W) @	EB - LTR	0.17	23.7	С	0.17	23.7	С		0.18	24.6	С
Union Avenue (N-S)	WB - LT	0.14	22.9	С	0.15	23.0	С		0.16	23.8	С
	NB - LTR	0.49	30.3	С	0.56	32.0	С		0.54	30.6	С
	SB - LTR	0.09	9.6	Α	0.13	9.9	Α		0.12	9.4	Α
5. Flushing Avenue - Gerry Street (E-W) @	EB - LT	0.51	13.0	В	0.56	14.1	В		0.56	14.1	В
Marcy Avenue - Union Avenue (NB)	WB - TR (Flushing)	0.44	11.6	В	0.48	12.3	В		0.48	12.3	В
(Gerry Street Unsignalized)	WB - R (Gerry)	0.03	12.6	<u>B</u>	0.10	29.1	D		0.10	29.1	D
	NB - LT	-	-	-	-	-	-		0.32	25.4	С
	NB - R	-	-	-	-	-	-		0.80	55.0	<u>D</u>
	NB - LTR	0.64	31.9	<u>C</u>	0.75	36.9	D		-	36.9	D
6. Lorimer Street (E-W) @	EB - TR	0.26	25.2	С	0.27	25.5	С		0.28	26.5	С
Harrison Avenue (SB)	WB - LT	0.33	26.0	С	0.35	26.4	С		0.37	27.4	С
	SB - LTR	0.20	10.4	В	0.21	10.5	В		0.20	10.0	Α
7. Walton Street (EB) @	EB - T	-	-	-	-	-	-		0.07	19.6	С
Harrison Avenue (SB)	EB - R	-	-	-	-	-	-		0.08	18.0	С
(Unsignalized)	EB - TR	0.06	12.6	В	0.16	21.2	С		-	18.7	С
	SB - LT	0.00	7.4	Α	0.00	7.9	Α		0.00	7.9	Α

Notes:

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

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

V/C Ratio - Volume to Capacity Ratio, sec. - Seconds

LOS - Level of Service

* - Denotes a congested movement (LOS E or F, or V/C ratio greater than or equal to 0.9)

Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Table 19-7, Action-with-Mitigation Crosswalk Conditions

	Table 15-7, Action-wi		8							
		Street	Crosswalk	Avg. Conditions (w/Conflicting Vehicles) - Weekday AM Peak Hour						
		Width Width No-Action With-Action		Mitigation						
No.	Location	(feet)	(feet)	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	
<u>X4</u>	Wallabout St @ Harrison Ave - north	40.0	<u>12.0</u>	335.0	<u>A</u>	104.3	<u>A</u>	110.1	<u>A</u>	
<u>X5</u>	Wallabout St @ Harrison Ave - south	40.0	9.0	177.8	<u>A</u>	65.0	<u>A</u>	69.5	<u>A</u>	
<u>X6</u>	Wallabout St @ Harrison Ave - west	33.5	<u>14.0</u>	1,005.5	<u>A</u>	261.6	<u>A</u>	252.9	<u>A</u>	
				Avg. Conditions (w/Conflicting Vehicles) -						
				Avg. C	onditic	ns (w/Co	nflictin	g Vehicle	s) -	
		Street	Crosswalk	Avg. C		ons (w/Co ekday PM		U	s) -	
		Street Width	Crosswalk Width	Avg. C	Wee	•	Peak F	U	,	
No.	Location				Wee	kday PM	Peak F	lour	,	
No.	Location Gerry St-Flushing Av @ Union-Marcy Avs - north	Width	Width	No-Act	We e	ekday PM With-Ad	Peak F	lour Mitiga	tion	
		Width (feet)	Width (feet)	No-Act SF/Ped	We do	wkday PM With-Ad SF/Ped	Peak Fation	lour Mitigat SF/Ped	tion LOS	
<u>X2</u>	Gerry St-Flushing Av @ Union-Marcy Avs - north	Width (feet) 48.0	Width (feet) 13.0	No-Act SF/Ped	Wee ion LOS	With-Ad SF/Ped	Peak Hetion LOS	Mitigat SF/Ped	tion LOS	
<u>X2</u> <u>X3</u>	Gerry St-Flushing Av @ Union-Marcy Avs - north Gerry St-Flushing Av @ Union-Marcy Avs - east	Width (feet) 48.0 62.0	Width (feet) 13.0 14.0	No-Act SF/Ped 155.1 207.8	ion LOS A A	With-Ad SF/Ped 90.6 67.7	Peak Footion LOS A A	Mitigat SF/Ped 92.2 64.4	tion LOS A A	

Notes:

AM - w eekday 7:30-8:30 AM peak hour

PM - w eekday 4:30-5:30 PM peak hour

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Table 19-8, Action-with-Mitigation Corner Conditions

	Table 19-8, Action-with-							
			Avera	_			Weekda	ay
				А	M Peal	к нос	ır	
			No-Act	ion	With-A	ction	Mitigat	ion
No.	Intersection	Corner	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
C9	Wallabout St @ Harrison Ave	northeast	904.2	Α	479.5	Α	479.5	Α
C10	Wallabout St @ Harrison Ave	southeast	548.5	Α	322.0	Α	322.0	Α
C11	Wallabout St @ Harrison Ave	southw est	993.5	Α	381.2	Α	381.6	Α
C12	Wallabout St @ Harrison Ave	northw est	426.3	Α	333.0	Α	333.4	Α
			Avera	age (Condition	ons -	Weekda	ay
				P	M Peal	k Hou	ır	•
			No-Act	ion	With-A	ction	Mitigation	
No.	Intersection	Corner	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
No.	Intersection Gerry St-Flushing Av @ Union-Marcy Avs	Corner northeast	SF/Ped 362.5	LOS A	SF/Ped 164.4	LOS A	SF/Ped 164.5	LOS A
_								
C5	Gerry St-Flushing Av @ Union-Marcy Avs	northeast	362.5	Α	164.4	Α	<u>164.5</u>	Α
C5 C6	Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs	northeast southeast	362.5 454.7	A A	164.4 216.5	A A	164.5 216.3	A A
C5 C6 C7	Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs	northeast southeast southw est	362.5 454.7 743.6	A A A	164.4 216.5 491.9	A A A	164.5 216.3 491.7	A A A
C5 C6 C7 C8	Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs	northeast southeast southw est northw est	362.5 454.7 743.6 231.3	A A A A	164.4 216.5 491.9 143.2	A A A A	164.5 216.3 491.7 143.2	A A A A
C5 C6 C7 C8	Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs Gerry St-Flushing Av @ Union-Marcy Avs Wallabout St @ Harrison Ave	northeast southeast southw est northw est northeast	362.5 454.7 743.6 231.3 1,138.6	A A A	164.4 216.5 491.9 143.2 468.5	A A A	164.5 216.3 491.7 143.2 468.7	A A A A A A
C5 C6 C7 C8 <u>C9</u> C10	Gerry St-Flushing Av @ Union-Marcy Avs Wallabout St @ Harrison Ave Wallabout St @ Harrison Ave	northeast southeast southw est northw est northeast southeast	362.5 454.7 743.6 231.3 1,138.6 1,372.9	A A A A A	164.4 216.5 491.9 143.2 468.5 354.9	A A A A A	164.5 216.3 491.7 143.2 468.7 355.4	A A A A
C5 C6 C7 C8 C9 C10	Gerry St-Flushing Av @ Union-Marcy Avs Wallabout St @ Harrison Ave Wallabout St @ Harrison Ave Wallabout St @ Harrison Ave	northeast southwest southwest northwest northeast southeast southwest	362.5 454.7 743.6 231.3 1,138.6 1,372.9 2,047.6	A A A A A A A	164.4 216.5 491.9 143.2 468.5 354.9 302.5	A A A A A A A	164.5 216.3 491.7 143.2 468.7 355.4 302.6	A A A A A A A A
C5 C6 C7 C8 C9 C10 C11 C12	Gerry St-Flushing Av @ Union-Marcy Avs Wallabout St @ Harrison Ave	northeast southw est northw est northeast southeast southeast southw est northw est	362.5 454.7 743.6 231.3 1,138.6 1,372.9 2,047.6 713.2	A A A A A A A A	164.4 216.5 491.9 143.2 468.5 354.9 302.5 281.1	A A A A A A A A A	164.5 216.3 491.7 143.2 468.7 355.4 302.6 281.2	A A A A A A A A A

AM - w eekday 7:30-8:30 AM peak hour

PM - w eekday 4:30-5:30 PM peak hour

SF/Ped - average square feet per pedestrian.

LOS - level of service.