

3.6 MITIGATION

INTRODUCTION

The technical analyses presented in this environmental impact statement (EIS) examine the potential for significant adverse impacts that may result from the proposed action. This chapter discusses the mitigation measures proposed to minimize or avoid the potential significant adverse impacts that have been identified in the area of transportation. Significant adverse impacts that cannot be fully mitigated through reasonably practicable measures are identified and discussed in Chapter 7, “Unavoidable Adverse Impacts.”

3.6.1 TRANSPORTATION

As discussed in Chapter 3, “Transportation,” seven signalized intersections were analyzed for weekday AM, midday, PM, and Saturday peak hour conditions. Significant adverse impacts were identified at two intersections, Webster Avenue with Bedford Park Boulevard and Webster Avenue with East Fordham Road, with five significantly impacted lane groups during each analysis peak hour.

As described in the following discussion and detailed in Tables 3.6-1 and 3.6-2, most traffic impacts on the local street network can be mitigated by standard traffic engineering improvements such as signal phasing and timing modifications, parking prohibitions and lane restriping. These measures are consistent with the range of traffic capacity improvements that have been proposed and implemented for other projects in the city. The 2020 Build level of service analysis without and with mitigation as well as proposed mitigation measures are presented separately below.

Webster Avenue and East Fordham Road

Significant traffic impacts at this intersection are projected on the eastbound East Fordham Road left turn lane and southbound Webster Avenue through and right turn lane group for all peak hours analyzed, and on the southbound Webster Avenue left turn lane for the midday, PM and Saturday peak hours. The traffic mitigation measures for the impact to the southbound through and right turn lane group would encompass prohibiting parking on the west side of Webster Avenue for a distance of 150 feet north of East Fordham Road and restriping the approach for an exclusive right turn lane plus two through lanes and an exclusive left turn lane. In addition, one second of green traffic signal time would need to be shifted during the AM peak hour from the east-west phase to the north-south protected left turn phase to preclude a new impact from occurring on the northbound left turn lane after the southbound approach is reconfigured. The traffic mitigation measure for the impact to the eastbound left turn lane during the Saturday peak would encompass shifting one second of green time from the east-west phase to the east-west protected left turn phase. The impact to the eastbound left turn lane and the impact to the southbound left turn lane cannot be fully mitigated during the AM, midday and PM peak hours and the midday, PM and Saturday peak hours, respectively.

Webster Avenue and Bedford Park Boulevard

Significant traffic impacts at this intersection are projected on the eastbound Bedford Park Boulevard approach for all peak hours analyzed; on the westbound approach for the AM, midday and PM peak hours; on the westbound de facto left turn during the Saturday peak hour; and, on the southbound left turn lane during the AM peak hour. The traffic mitigation measures for the impact to the eastbound approach would encompass prohibiting parking on south side of Bedford Park Boulevard for a distance of 150 feet west of Webster Avenue and restriping the approach for an exclusive right turn lane, through lane and through and left turn lane. The traffic mitigation measures for the westbound approach would encompass similarly restriping the approach for an exclusive right turn lane, through lane and through and left turn lane. In addition, to mitigate the impact on the southbound left turn lane during the AM peak hour, one second of green time would be shifted from the east-west phase to the north-south phase; and, to mitigate the impact to the westbound de facto left turn lane during the Saturday peak hour, two seconds of green time would be shifted from the north-south phase to the east-west phase.

Table 3.6-1: Recommended Mitigation Measures

Intersection	AM Peak Hour	MD Peak Hour	PM Peak Hour	SAT Peak Hour																								
Webster Avenue (N-S) @ East Fordham Road (E-W)	Impact on eastbound left turn lane cannot be fully mitigated	Impact on eastbound left turn lane cannot be fully mitigated	Impact on eastbound left turn lane cannot be fully mitigated	Shift one second of green time from the E-W phase to the E-W left turn phase: <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;"><u>Phase</u></td> <td style="padding: 2px 10px;"><u>G</u></td> <td style="padding: 2px 10px;"><u>A</u></td> <td style="padding: 2px 10px;"><u>R</u></td> </tr> <tr> <td style="padding: 2px 10px;">EBL/WBL</td> <td style="padding: 2px 10px; text-align: center;">9</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td style="padding: 2px 10px;">EB/WB</td> <td style="padding: 2px 10px; text-align: center;">57</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td style="padding: 2px 10px;">NBL/SBL</td> <td style="padding: 2px 10px; text-align: center;">9</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td style="padding: 2px 10px;">NB/SB</td> <td style="padding: 2px 10px; text-align: center;">25</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td colspan="4" style="padding: 2px 10px; text-align: right;">Cycle length = 120 sec</td> </tr> </table>	<u>Phase</u>	<u>G</u>	<u>A</u>	<u>R</u>	EBL/WBL	9	3	2	EB/WB	57	3	2	NBL/SBL	9	3	2	NB/SB	25	3	2	Cycle length = 120 sec			
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Cycle length = 120 sec																												
No mitigation required	Impact on southbound left turn lane cannot be fully mitigated	Impact on southbound left turn lane cannot be fully mitigated	Impact on southbound left turn lane cannot be fully mitigated																									
<ol style="list-style-type: none"> 1. To mitigate impact on southbound through and right turn lane group prohibit parking on the west side of Webster Avenue to 150 feet north of East Fordham Road. Restripe approach for four lanes (left, 2-through, right, all 10.5 feet wide). (6 spaces) 2. Shift one second of green time from the E-W phase to the N-S left turn phase: <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;"><u>Phase</u></td> <td style="padding: 2px 10px;"><u>G</u></td> <td style="padding: 2px 10px;"><u>A</u></td> <td style="padding: 2px 10px;"><u>R</u></td> </tr> <tr> <td style="padding: 2px 10px;">EBL/WBL</td> <td style="padding: 2px 10px; text-align: center;">8</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td style="padding: 2px 10px;">EB/WB</td> <td style="padding: 2px 10px; text-align: center;">58</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td style="padding: 2px 10px;">NBL/SBL</td> <td style="padding: 2px 10px; text-align: center;">9</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td style="padding: 2px 10px;">NB/SB</td> <td style="padding: 2px 10px; text-align: center;">25</td> <td style="padding: 2px 10px; text-align: center;">3</td> <td style="padding: 2px 10px; text-align: center;">2</td> </tr> <tr> <td colspan="4" style="padding: 2px 10px; text-align: right;">Cycle length = 120 sec</td> </tr> </table> 	<u>Phase</u>	<u>G</u>	<u>A</u>	<u>R</u>	EBL/WBL	8	3	2	EB/WB	58	3	2	NBL/SBL	9	3	2	NB/SB	25	3	2	Cycle length = 120 sec				To mitigate impact on southbound through and right turn lane group prohibit parking on the west side of Webster Avenue for 150 feet north of East Fordham Road. Restripe approach for four lanes (left, 2-through, one right, all 10.5 feet wide). (6 spaces)	To mitigate impact on southbound through and right turn lane group prohibit parking on the west side of Webster Avenue for 150 feet north of East Fordham Road. Restripe approach for four lanes (left, 2-through, one right, all 10.5 feet wide). (6 spaces)	To mitigate impact on southbound through and right turn lane group prohibit parking on the west side of Webster Avenue for 150 feet north of East Fordham Road. Restripe approach for four lanes (left, 2-through, one right, all 10.5 feet wide). (6 spaces)	
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EBL/WBL	8	3	2																									
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Cycle length = 120 sec																												

Source: Parsons Brinckerhoff, 2010

Table 3.6-1: Recommended Mitigation Measures (Con't)

Intersection	AM Peak Hour	MD Peak Hour	PM Peak Hour	SAT Peak Hour											
Webster Avenue (N-S) @ Bedford Park Boulevard (E-W)	To mitigate impact on eastbound approach, prohibit parking on the south side of Bedford Park Boulevard for 150 feet north of Webster Avenue. Restripe approach for three lanes (left+through, through, right, all 10.0 feet wide). (6 spaces)	To mitigate impact on eastbound approach, prohibit parking on the south side of Bedford Park Boulevard for 150 feet north of Webster Avenue. Restripe approach for three lanes (left+through, through, right, all 10.0 feet wide). (6 spaces)	To mitigate impact on eastbound approach, prohibit parking on the south side of Bedford Park Boulevard for 150 feet north of Webster Avenue. Restripe approach for three lanes (left+through, through, right, all 10.0 feet wide). (6 spaces)	To mitigate impact on eastbound approach, prohibit parking on the south side of Bedford Park Boulevard for 150 feet north of Webster Avenue. Restripe approach for three lanes (left+through, through, right, all 10.0 feet wide). (6 spaces)											
	To mitigate impact on westbound approach, restripe approach for three lanes (left+through, through, right, all 10.0 feet wide)	To mitigate impact on westbound approach, restripe approach for three lanes (left+through, through, right, all 10.0 feet wide)	To mitigate impact on westbound approach, restripe approach for three lanes (left+through, through, right, all 10.0 feet wide)	None required. Mitigation measures for AM, midday and PM peak hour assumed to be in effect.											
	No mitigation required	No mitigation required	No mitigation required	To mitigate impact on westbound de facto left turn lane shift two seconds of green time from N-S phase to E-W phase: <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;"><u>Phase</u></td> <td style="padding: 0 10px;"><u>G</u></td> <td style="padding: 0 10px;"><u>A</u></td> <td style="padding: 0 10px;"><u>R</u></td> </tr> <tr> <td style="padding: 0 10px;">EB/WB</td> <td style="padding: 0 10px;">34</td> <td style="padding: 0 10px;">3</td> <td style="padding: 0 10px;">2</td> </tr> <tr> <td style="padding: 0 10px;">NB/SB</td> <td style="padding: 0 10px;">46</td> <td style="padding: 0 10px;">3</td> <td style="padding: 0 10px;">2</td> </tr> </table> Cycle length = 90 sec	<u>Phase</u>	<u>G</u>	<u>A</u>	<u>R</u>	EB/WB	34	3	2	NB/SB	46	3
<u>Phase</u>	<u>G</u>	<u>A</u>	<u>R</u>												
EB/WB	34	3	2												
NB/SB	46	3	2												

Source: Parsons Brinckerhoff, 2010

Table 3.6-1: Recommended Mitigation Measures (Con't)

Intersection	AM Peak Hour	MD Peak Hour	PM Peak Hour	SAT Peak Hour												
Webster Avenue (N-S) @ Bedford Park Boulevard (E-W)	To mitigate impact on southbound left turn lane shift one second of green time from E-W phase to N-S phase: <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="padding-right: 10px;"><u>Phase</u></td> <td style="padding-right: 10px;"><u>G</u></td> <td style="padding-right: 10px;"><u>A</u></td> <td><u>R</u></td> </tr> <tr> <td>EB/WB</td> <td>51</td> <td>3</td> <td>2</td> </tr> <tr> <td>NB/SB</td> <td>59</td> <td>3</td> <td>2</td> </tr> </table> Cycle length = 120 sec	<u>Phase</u>	<u>G</u>	<u>A</u>	<u>R</u>	EB/WB	51	3	2	NB/SB	59	3	2	No mitigation required	No mitigation required	No mitigation required
<u>Phase</u>	<u>G</u>	<u>A</u>	<u>R</u>													
EB/WB	51	3	2													
NB/SB	59	3	2													

Source: Parsons Brinckerhoff, 2010

Table 3.6-2: Mitigation Conditions Level of Service Analysis

Signalized Intersection	Approach ¹	AM Peak Hour												MD Peak Hour											
		NO BUILD				BUILD				MITIGATION				NO BUILD				BUILD				MITIGATION			
		Lane Group ²	V/C Ratio	Delay (sec.)	LOS	Lane Group ²	V/C Ratio	Delay (sec.)	LOS	Lane Group ²	V/C Ratio	Delay (sec.)	LOS	Lane Group ²	V/C Ratio	Delay (sec.)	LOS	Lane Group ²	V/C Ratio	Delay (sec.)	LOS	Lane Group ²	V/C Ratio	Delay (sec.)	LOS
Bedford Park Boulevard (E-W) @ Webster Avenue (N-S)	EB	LTR	0.94	54.5	D	LTR	0.99	66.2	E &	LTR	0.71	33.9	C	LTR	0.99	62.6	E	LTR	1.08	91.0	F &	LTR	0.63	28.4	C
		LT				LT				LT	0.28	24.1	C	LT				LT				LT	0.51	28.3	C
		R				R				R				R				R				R			
	WB	LTR	0.95	53.1	D	LTR	1.04	74.4	E &	LTR	0.88	41.2	D	LTR	0.99	61.4	E &	LTR				LTR	0.81	36.0	D
		LT				LT				LT	0.23	23.1	C	LT				LT				LT	0.37	24.5	C
		R				R				R				R				R				R			
	NB	L	0.68	40.5	D	L	0.72	44.4	D	L	0.70	41.4	D	L	0.53	20.0	B	L	0.59	22.8	C	L	0.59	22.8	C
		TR	0.62	25.2	C	TR	0.62	25.2	C	TR	0.61	24.3	C	TR	0.46	13.9	B	TR	0.51	14.6	B	TR	0.51	14.6	B
	SB	L	1.13	132.3	F	L	1.14	138.3	F &	L	1.11	125.7	F	L	0.49	19.5	B	L	0.56	22.7	C	L	0.56	22.7	C
		TR	0.56	23.7	C	TR	0.58	24.1	C	TR	0.57	23.3	C	TR	0.44	13.8	B	TR	0.45	13.9	B	TR	0.45	13.9	B
	Intersection			44.9	D			53.4	D			40.9	D			30.7	C			41.6	D			22.6	C
	East Fordham Road (E-W) @ Webster Avenue (N-S)	EB	L	0.93	73.7	E	L	0.96	81.1	F &	L	0.99	90.7	F	L	0.76	39.3	D	L	0.91	61.4	E &	L	0.91	61.4
TR			0.96	47.2	D	TR	0.96	47.2	D	TR	0.98	51.5	D	TR	0.96	44.9	D	TR	0.96	44.9	D	TR	0.96	44.9	D
L			0.49	26.2	C	L	0.49	26.2	C	L	0.50	27.7	C	L	0.64	29.6	C	L	0.64	29.6	C	L	0.64	29.6	C
WB		T	0.89	36.1	D	T	0.89	36.1	D	T	0.90	38.3	D	T	0.90	36.0	D	T	0.90	36.0	D	T	0.90	36.0	D
		R	0.48	23.7	C	R	0.49	24.0	C	R	0.50	24.9	C	R	0.47	23.4	C	R	0.51	24.2	C	R	0.51	24.2	C
		L	1.08	143.2	F	L	1.08	141.4	F	L	1.01	121.5	F	L	1.04	108.5	F	L	1.10	127.8	F †	L	0.90	69.3	E
NB		TR	0.86	62.2	E	TR	0.86	61.8	E	TR	0.86	61.8	E	TR	0.90	54.4	D	TR	0.91	56.7	E	TR	0.91	56.7	E
		L	0.90	88.7	F	L	0.91	91.0	F	L	0.85	78.0	E	L	0.87	67.6	E	L	0.94	82.1	F &	L	0.94	82.1	F
SB		TR	1.22	161.4	F	TR	1.28	186.8	F &	TR				TR	0.98	70.0	E	TR	1.10	105.3	F &	TR			
		T				T				T	0.94	72.0	E	T				T				T	0.67	38.5	D
		R				R				R	0.97	117.1	F	R				R				R	1.01	110.2	F
Intersection				67.3	E			72.0	E			56.5	E			49.6	D			57.7	E			48.2	D
Bedford Park Boulevard (E-W) @ Webster Avenue (N-S)	EB	LTR	1.03	76.2	E	LTR	1.07	86.2	F &	LTR	0.76	35.2	D	LTR	0.92	47.1	D	LTR	0.95	52.5	D &	LTR	0.65	27.1	C
		LT				LT				LT	0.28	23.7	C	LT				LT				LT	0.26	20.9	C
		R				R				R				R				R				R			
	WB	LTR	1.12	105.1	F	LTR	1.18	127.1	F &	LTR	1.06	83.2	F	LTR				LTR				LTR			
		LT				LT				LT				LT				LT				LT			
		DefL				DefL				DefL				DefL	1.08	116.3	F	DefL	1.22	166.0	F &	DefL	1.08	112.3	F
	NB	TR				TR				TR				TR	0.75	33.4	C	TR	0.77	34.3	C	TR			
		T				T				T				T				T				T	0.63	27.8	C
		R				R				R	0.32	24.1	C	R				R				R	0.21	20.0+	C
	SB	L	0.61	32.7	C	L	0.68	37.8	D	L	0.68	37.8	D	L	0.32	14.3	B	L	0.33	14.7	B	L	0.35	16.3	B
		TR	0.68	26.7	C	TR	0.76	29.5	C	TR	0.76	29.5	C	TR	0.48	14.3	B	TR	0.49	14.5	B	TR	0.51	16.0	B
	Intersection			59.2	E			68.5	E			42.7	D			32.5	C			38.2	D			27.5	C
East Fordham Road (E-W) @ Webster Avenue (N-S)	EB	L	0.77	43.1	D	L	0.95	72.2	E &	L	0.95	72.2	E	L	0.69	34.5	C	L	0.82	46.8	D &	L	0.79	43.3	D
		TR	0.96	47.8	D	TR	0.96	47.8	D	TR	0.96	47.8	D	TR	0.77	30.1	C	TR	0.77	30.1	C	TR	0.79	31.4	C
		L	0.60	31.8	C	L	0.60	31.8	C	L	0.60	31.8	C	L	0.73	33.1	C	L	0.73	33.1	C	L	0.70	31.5	C
	WB	T	0.83	32.8	C	T	0.83	32.8	C	T	0.83	32.8	C	T	0.80	31.1	C	T	0.80	31.1	C	T	0.82	32.5	C
		R	0.58	27.5	C	R	0.59	27.9	C	R	0.58	27.9	C	R	0.58	27.3	C	R	0.60	27.9	C	R	0.61	29.0	C
		L	1.13	156.8	F	L	1.13	153.1	F	L	0.97	103.2	F	L	0.96	100.7	F	L	0.99	108.7	F †	L	0.78	61.5	E
	NB	TR	0.81	57.0	E	TR	0.82	57.7	E	TR	0.82	57.7	E	TR	0.91	67.5	E	TR	0.92	68.8	E	TR	0.92	68.8	E
		L	0.79	66.7	E	L	0.85	76.1	E &	L	0.85	76.1	E	L	1.09	136.1	F	L	1.14	152.5	F &	L	1.14	152.5	F
	SB	TR	1.19	150.2	F	TR	1.24	170.3	F &	TR				TR	0.94	71.8	E	TR	0.99	82.7	F &	TR			
		T				T				T	0.81	56.5	E	T				T				T	0.60	47.2	D
		R				R				R	1.06	137.9	F	R				R				R	0.93	98.8	F
	Intersection			62.8	E			67.3	E			51.8	D			48.7	D			52.2	D			48.1	D

Source: Parsons Brinckerhoff, 2010

Notes:

- 1. EB - Eastbound, WB - Westbound, NB - Northbound, SB - Southbound
 - 2. L - Left, T - Through, R - Right, DefL - De Facto Left Turn
- Congested intersections are designated by shading.

Notes:

- & - Significant impact
- † Not a significant impact (no project-generated vehicles in lane group)