

APPENDIX D
MODIFIED TWO WAY PROPOSAL

Appendix D: Modified Two-Way Proposal Traffic Impact Analysis¹

A. INTRODUCTION

As described in Chapter 14, “Traffic and Parking,” the Flushing Commons Draft Environmental Impact Statement (DEIS) analyzed a One-Way Pair with Contra Flow bus lanes scenario for Main and Union Streets between Northern Boulevard and Sanford Avenue. Subsequent to the publication of the DEIS, the New York City Department of Transportation (NYCDOT), through its ongoing efforts to improve vehicular and pedestrian traffic conditions in downtown Flushing, developed a proposal for an alternative roadway configuration (Modified Two-Way) for further study. Although still a proposal, NYCDOT believes that the Modified Two-Way proposal, which would essentially retain most of the existing roadway configuration for Main and Union Streets but would impose several turn prohibitions and a street direction reversal with the possibility of incorporating pedestrian space improvements, if implemented, may improve traffic flow and safety in downtown Flushing. NYCDOT continues to study this proposal.

This Appendix to the Flushing Commons Final Environmental Impact Statement (FEIS) provides an assessment of traffic operations anticipated to result from the implementation of the Modified Two-Way proposal and compares the potential impacts the Flushing Commons project may have on this roadway network to those identified in Chapter 14, “Traffic and Parking” for the One-Way Pair with Contra Flow bus lanes scenario. A mitigation analysis was also prepared to identify feasible measures to mitigate projected impacts if the Modified Two-Way roadway network is implemented. The numbers of mitigatable and unmitigatable significant adverse traffic impacts for the proposed project under both roadway network configurations results of this analysis were then compared.

B. MODIFIED TWO-WAY PROPOSAL TRAFFIC IMPACT ANALYSIS

The analysis of the Modified Two-Way proposal incorporated the projected No Build and Build incremental traffic volumes developed for the DEIS under the One-Way Pair with Contra Flow bus lanes scenario and adjusted these traffic volumes to reflect the two-way operation of both Main and Union Streets. The analysis also accounted for specific turn prohibitions and roadway configuration changes identified by NYCDOT. The future 2013 No Build and Build peak hour traffic volumes under the Modified Two-Way roadway network are presented in **Figures D-1** through **D-8**.

Overall, the analyses showed that operations under the Modified Two-Way proposal, if implemented, would be more favorable than those evaluated for the One-Way Pair with Contra Flow bus lanes. As summarized in **Table D-1**, the proposed project with the Modified Two-Way roadway network would result in five fewer significantly impacted intersections (12 vs. 17) during the weekday AM peak hour, and one fewer significantly impacted intersection during

¹ This appendix is new to the FEIS.

Table D-1
Comparison of Projected Significant Impacts and Mitigated Intersections
Between the One-Way Pair With Contra Flow Bus Lanes Plan and
the Modified Two-Way Proposal

	One-Way Plan				Modified Two-Way Proposal			
	AM	Mid	PM	Sat	AM	Mid	PM	Sat
Roosevelt Avenue Corridor								
College Point Blvd	▲				▲			
Prince Street	▲	▲	▲	▲		▲	▲	▲
Main Street	▲	▲	▲	▲				▲
Union Street	▲	▲	▲	▲	▲	▲	▲	▲
Bowne Street	▲	▲	▲	▲	▲	▲	▲	▲
Parsons Blvd	▲	▲	▲	▲	▲	▲	▲	▲
Northern Boulevard Corridor								
Prince Street	▲	▲	▲	▲	▲	▲	▲	▲
Main Street	▲	▲	▲	▲			▲	
Union Street	▲	▲	▲	▲	▲	▲	▲	▲
Bowne Street			▲	▲			▲	▲
Parsons Blvd	▲	▲	▲	▲	▲	▲	▲	▲
College Point Blvd WB (north intersection)					▲	▲	▲	▲
College Point Blvd EB (south intersection) **								
Union Street Corridor								
37th Ave	▲	▲	▲	▲	▲	▲	▲	▲
38th Ave								▲
39th Ave		▲	▲	▲	▲	▲	▲	▲
Sanford Ave	▲		▲	▲			▲	▲
Main Street Corridor								
37th Ave	▲	▲	▲	▲		▲	▲	
38th Ave	▲	▲	▲	▲	▲			▲
39th Ave						▲	▲	▲
41st Ave /Kissena Blvd	▲	▲		▲	▲	▲		▲
Sanford Ave		▲	▲	▲				▲
37th Avenue Corridor								
Prince Street				▲				
138th Street **						▲	▲	▲
Bowne Street								
38th Avenue Corridor								
Prince Street **								
138th Street **								
39th Avenue Corridor								
Prince Street			▲	▲				
138th Street **	▲	▲	▲	▲		▲	▲	▲
Lipmann Arcade (midblock location)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sanford Avenue Corridor								
Bowne Street	▲			▲				
Parsons Blvd			▲				▲	
Total Impacted Intersections	17	16	19	21	12	15	18	20
With All Impacts Fully Mitigated	4	5	6	7	7	5	10	7
With Impacts Partially Mitigated or Unmitigated	13	11	13	14	5	10	8	13
Notes:								
** = Unsignalized Intersection								
▲ = Significant impact under CEQR guidelines on one or more turning movement or intersection approach.								

each of the weekday midday (15 vs. 16), weekday PM (18 vs. 19), and Saturday midday (20 vs. 21) peak hours than it would with the One-Way Pair with Contra Flow bus lanes. Furthermore, significant adverse traffic impacts identified for the proposed project with the Modified Two-Way roadway network could also be more readily mitigated and there are expected to be fewer intersections with partially mitigated or unmitigatable impacts.

The detailed analysis results for the 2013 No Build, Build, and Mitigated Build conditions for the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours under the Modified Two-Way proposal are shown in **Tables D-2 to D-5**, respectively. Of the 12 significantly impacted intersections during the weekday AM peak hour, 7 could be fully mitigated while 5 would remain unmitigatable; of the 15 significantly impacted intersections during the weekday midday peak hour, 5 could be fully mitigated while 10 would remain unmitigatable; of the 18 significantly impacted intersections during the weekday PM peak hour, 10 could be fully mitigated while 8 would remain unmitigatable; of the 20 significantly impacted intersections during the Saturday midday peak hour, 7 could be fully mitigated while 13 would remain unmitigatable.

The range of measures proposed to mitigate the significant adverse impacts of the proposed project with the Modified Two-Way roadway network proposal, as detailed below, would be similar to those identified in Chapter 14, “Traffic and Parking” for the One-Way Pair with Contra Flow bus lanes.

ROOSEVELT AVENUE CORRIDOR

ROOSEVELT AVENUE/COLLEGE POINT BOULEVARD

- Re-allocate 1 second of green time from the east-west phase to the north-south phase during the weekday AM peak hour.

ROOSEVELT AVENUE/BOWNE STREET

- Re-allocate 3 seconds of green time from the north-south phase to the east-west phase during the weekday AM peak hour.
- Re-allocate 4 seconds of green time from the north-south phase to the east-west phase during the weekday midday and PM peak hour.
- Re-allocate 4 seconds from the north-south phase to the east-west phase during the Saturday midday peak hour.

NORTHERN BOULEVARD CORRIDOR

NORTHERN BOULEVARD/PRINCE STREET

- Re-allocate 1 second of green time from the east-west permissive phase to the east-west dual left-turn phase during the weekday AM and PM peak hours.
- Re-allocate 2 seconds of green time from the east-west permissive phase to the east-west dual left-turn phase during the weekday midday peak hour.

NORTHERN BOULEVARD/MAIN STREET

- Re-allocate 2 seconds of green time from the northbound phase to the east-west phase during the weekday PM peak hour.

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NORTHER BOULEVARD/BOWNE STREET

- Re-allocate 2 seconds of green time from the northbound phase to the east-west phase during the weekday PM peak hour.
- Re-allocate 2 seconds of green time from the east-west phase to the westbound lag phase during the Saturday midday peak hour.

NORTHERN BOULEVARD/PARSONS BOULEVARD

- Re-allocate 2 seconds of green time from the east-west permissive phase to the east-west dual left-turn phase during the weekday AM peak hour.
- Re-allocate 2 seconds of green time from east-west dual left-turn phase to the east-west permissive phase during the weekday midday peak hour.

NORTHERN BOULEVARD/COLLEGE POINT BOULEVARD (NORTH INTERSECTION)

- Re-allocate 1 second of green time from the north-south phase to the westbound phase during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours.

UNION STREET CORRIDOR

UNION STREET/37TH AVENUE

- Re-allocate 4 seconds of green time from the westbound phase to the north-south phase during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours.

UNION STREET/38TH AVENUE

- Re-allocate 1 second of green time from the pedestrian phase to the north-south phase during the Saturday midday peak hour.

UNION STREET/39TH AVENUE

- Re-allocate 2 seconds of green time from the north-south phase to the eastbound phase during the weekday AM peak hour.

UNION STREET/SANFORD AVENUE

- Re-allocate 4 seconds of green time from the east-west phase to the north-south phase during the weekday PM peak hour.

MAIN STREET CORRIDOR

MAIN STREET/37TH AVENUE

- Re-allocate 1 second of green time from the north-south phase to the westbound phase during the weekday midday peak hour.
- Re-allocate 4 seconds of green time from the north-south phase to the westbound phase during the weekday PM peak hour.

MAIN STREET/38TH AVENUE

- Re-allocate 2 seconds of green time from the north-south phase to the eastbound phase during the weekday AM peak hour.

- Re-allocate 3 seconds of green time from the eastbound phase to the north-south phase during the Saturday midday peak hour.

MAIN STREET/39TH AVENUE

- Re-allocate 4 seconds of green time from the east-west phase to the north-south phase during the weekday midday, weekday PM, and Saturday midday peak hours.

MAIN STREET/SANFORD AVENUE

- Re-allocate 2 seconds of green time from the westbound phase to the north-south phase during the Saturday midday peak hour.

37TH AVENUE CORRIDOR

138TH STREET/37TH AVENUE

- Convert existing minor street stop control to all-way stop control.

39TH AVENUE CORRIDOR

138TH STREET/39TH AVENUE

- Eliminate existing minor street stop sign and convert intersection from stop control to signal control. A preliminary signal warrant analysis was conducted for the same proposed mitigation as part of the mitigation analyses prepared for the One-Way Pair with Contra Flow bus lanes (see Chapter 20, "Mitigation"). This analysis showed that signalizing the intersection would be warranted by the high projected pedestrian crossing volumes. Under the Modified Two-Way proposal, future pedestrian volumes at this location would be similar and projected vehicular traffic volumes would be higher than those projected for the One-Way Pair with Contra Flow bus lanes. Therefore, the signalization of this intersection would be similarly warranted.

SANFORD AVENUE CORRIDOR

SANFORD AVENUE/PARSONS BOULEVARD

- Re-allocate 4 seconds of green time from the north-south phase to the east-west phase during the weekday PM peak hour.

Table D-2
No Build, Build, and Mitigated Build LOS Comparison: Weekday AM Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
Roosevelt Ave / College Pt Blvd	EB	LTR	0.69	33.1	C	0.69	33.1	C	0.70	34.3	C	Fully Mitigated
		T after L	0.12	11.2	B	0.12	11.2	B	0.12	10.6	B	
	WB	LTR	0.59	39.0	D	0.61	39.5	D	0.63	40.7	D	
		T after L	0.14	34.9	C	0.15	35.0	C	0.14	34.4	C	
	NB	L	1.84	433.7	F	1.85	440.6	F	1.82	424.8	F	
		TR	0.63	17.6	B	0.63	17.6	B	0.62	16.6	B	
	SB	T	0.66	31.2	C	0.66	31.2	C	0.65	30.0	C	
		R	0.30	28.2	C	0.30	28.2	C	0.29	27.4	C	
Overall			85.5	F		86.7	F		84.3	F		
Northern Blvd / Prince Street	EB	L	1.06	127.1	F	1.09	136.2	F	1.02	114.3	F	Fully Mitigated
		Main Rd T	0.39	11.2	B	0.42	11.5	B	0.42	12.0	B	
	EB Serv Rd	TR	0.16	10.0	A	0.17	10.0	A	0.17	10.4	B	
	WB	L	1.07	162.6	F	1.21	209.8	F	1.07	156.9	F	
		Main Rd T	0.83	16.9	B	0.84	17.4	B	0.85	18.7	B	
	WB Serv Rd	TR	0.34	15.5	B	0.34	15.5	B	0.35	16.1	B	
	NB	LTR	4.64	1713.0	F	4.64	1713.0	F	4.64	1713.0	F	
		SB	LTR	1.14	133.6	F	1.14	133.6	F	1.14	133.6	
Overall			135.7	F		134.1	F		133.0	F		
37th Ave / Prince Street	WB	LTR	0.60	20.5	C	0.60	20.5	C				No Impact
		NB	LT	0.27	10.6	B	0.27	10.6	B			
	SB	TR	0.57	15.0	B	0.60	15.8	B				
		Overall		15.8	B		16.1	B				
39th Ave / Prince Street	WB	LTR	0.59	28.3	C	0.62	29.5	C				No Impact
		NB	LT	0.40	8.6	A	0.40	8.7	A			
	SB	TR	0.32	7.9	A	0.32	7.9	A				
		Overall		12.3	B		12.7	B				
Roosevelt Ave / Prince Street	EB	DefL	0.53	22.7	C	0.54	23.5	C				No Impact
		T	0.40	16.7	B	0.40	16.7	B				
	WB	TR	0.45	15.9	B	0.46	16.1	B				
		L	0.09	26.0	C	0.09	26.0	C				
	NB	TR	0.08	25.8	C	0.08	25.8	C				
		SB	LR	0.67	40.7	D	0.70	42.0	D			
Overall			22.1	C		22.6	C					
Northern Blvd / Main Street	EB	T	0.65	27.7	C	0.67	28.1	C				No Impact
		R	0.84	3.2	A	0.62	4.1	A				
	WB	L	0.08	26.9	C	0.08	26.9	C				
		T after L	0.03	22.9	C	0.03	22.9	C				
		T	1.15	88.7	F	1.16	89.0	F				
	NB	TR	0.31	23.4	C	0.56	25.0	C				
		L after T	0.37	35.4	D	0.43	36.3	D				
Overall			55.7	E		54.8	E					
37th Ave / Main Street	WB	LTR	0.61	33.4	C	0.74	38.1	D				No Impact
		NB	LT	0.55	14.5	B	0.58	15.0	B			
	SB	TR	0.39	11.9	B	0.45	12.5	B				
		Overall		19.3	B		21.5	C				
38th Ave / Main Street	EB	LTR	0.73	42.5	D	0.80	47.6	D	0.77	43.1	D	Fully Mitigated
		NB	TR	0.52	13.8	B	0.52	13.8	B	0.53	15.4	
	SB	LT	0.61	15.7	B	0.67	17.0	B	0.69	19.1	B	
		Overall		20.4	C		22.3	C		22.8	C	
39th Ave / Main Street	NB	LTR	0.74	18.8	B	0.88	27.4	C				No Impact
		SB	LTR	0.58	15.0	B	0.92	34.0	C			
	Overall			17.2	B		30.4	C				
Roosevelt Ave / Main Street	EB	LTR	0.46	21.4	C	0.47	21.5	C				No Impact
		WB	LTR	0.61	23.0	C	0.62	23.3	C			
	NB	T	0.69	31.5	C	0.74	33.3	C				
		SB	T	0.60	28.8	C	0.60	29.0	C			
Overall			26.7	C		27.5	C					

Appendix D: Modified Two-Way Proposal Traffic Impact Analysis

**Table D-2 (cont'd)
No Build, Build, and Mitigated Build LOS Comparison: Weekday AM Peak Hour**

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
41st Ave / Main St / Kissena Blvd	WB	T	1.01	78.1	E	1.05	88.3	F	1.05	88.3	F	Unmitigated
	NB	L	0.74	36.8	D	0.75	37.2	D	0.75	37.2	D	
		TR	1.05	72.2	E	1.10	87.1	F	1.10	87.1	F	
	SB	L	0.19	24.1	C	0.19	24.1	C	0.19	24.1	C	
		TR	0.30	17.1	B	0.31	17.2	B	0.31	17.2	B	
Overall				58.9	E		68.4	E		68.4	E	
Sanford Ave / Main Street	WB	LTR	0.93	52.7	D	0.95	56.2	E				No Impact
	NB	LT	0.73	25.1	C	0.76	26.4	C				
	SB	TR	0.27	15.3	B	0.28	15.4	B				
	Overall				35.2	D		37.1	D			
39th Ave / Midblock Crossing	EB	T	n/a	n/a	n/a	0.47	24.6	C				No Impact
	Overall				n/a	n/a		24.6	C			
Northern Blvd / Union Street	EB	L	1.06	118.5	F	1.15	148.1	F	1.15	148.1	F	Unmitigated
		T	0.79	35.8	D	0.80	36.2	D	0.80	36.2	D	
		R	0.54	32.7	C	0.63	35.9	D	0.63	35.9	D	
	WB	L	0.90	59.9	E	1.11	116.1	F	1.11	116.1	F	
		TR	1.21	130.1	F	1.22	136.9	F	1.22	136.9	F	
	NB	TR	0.66	31.6	C	0.64	31.0	C	0.64	31.0	C	
	SB	LTR	0.99	67.5	E	1.01	71.5	E	1.01	71.5	E	
Overall				84.2	F		90.8	F		90.8	F	
37th Ave / Union Street	WB	LTR	0.59	26.2	C	0.62	27.4	C	0.71	33.9	C	Unmitigated
	NB	DefL	1.28	181.5	F	2.17	566.8	F	1.82	408.9	F	
		T	0.71	19.6	B	0.69	18.9	B	0.64	14.0	B	
	SB	TR	0.80	20.2	C	0.98	40.9	D	0.89	23.0	C	
Overall				40.7	D		118.4	F		84.6	F	
38th Ave / Union Street	EB	LTR	0.25	19.5	B						No Impact	
	NB	LTR	0.92	29.8	C							
		TR				0.70	16.2	B				
	SB	LTR	0.76	20.7	C							
		DefL				0.69	35.1	D				
	T				0.53	14.4	B					
Overall				25.7	C		17.4	B				
39th Ave / Union Street	EB	L	0.45	23.3	C	0.50	24.2	C	0.47	22.2	C	Fully Mitigated
		R	0.29	20.8	C	0.92	55.7	E	0.86	44.3	D	
	NB	T	0.50	12.7	B	0.51	12.9	B	0.54	14.7	B	
	SB	T	0.27	10.4	B	0.26	10.3	B	0.27	11.7	B	
Overall				14.4	B		22.8	C		21.2	C	
Roosevelt Ave / Union Street	EB	L	0.88	55.8	E	1.01	91.6	F	1.01	91.6	F	Unmitigated
		TR	0.75	24.3	C	0.76	24.7	C	0.76	24.7	C	
	WB	L	0.50	19.7	B	0.50	19.8	B	0.50	19.8	B	
		TR	1.12	91.1	F	1.21	125.2	F	1.21	125.2	F	
	NB	LTR	0.83	29.9	C	0.80	27.8	C	0.80	27.8	C	
	SB	L	0.20	17.4	B	0.74	40.7	D	0.74	40.7	D	
		TR	0.68	24.0	C	0.81	30.4	C	0.81	30.4	C	
Overall				43.7	D		54.6	D		54.6	D	
Sanford Ave / Union Street	EB	DefL	0.54	25.3	C	0.54	25.3	C				No Impact
		TR	0.28	14.6	B	0.28	14.6	B				
	WB	LTR	0.96	46.3	D	0.96	46.3	D				
	NB	LTR	0.64	27.7	C	0.69	29.8	C				
	SB	LTR	0.66	25.3	C	0.76	28.5	C				
Overall				32.1	C		33.3	C				
Northern Blvd / Bowne Street	EB	TR	0.62	17.4	B	0.62	17.4	B				No Impact
	WB	L	0.53	32.8	C	0.58	35.9	D				
		T	0.95	20.0	B	0.98	24.6	C				
	NB	L	0.76	50.8	D	0.76	50.8	D				
		R	0.25	34.1	C	0.25	34.1	C				
Overall				22.4	C		25.1	C				

Table D-2 (cont'd)
No Build, Build, and Mitigated Build LOS Comparison: Weekday AM Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
37th Ave / Bowne Street	NB	L	0.31	13.3	B	0.32	13.5	B				No Impact
		T	0.52	15.4	B	0.52	15.4	B				
	SB	TR	0.51	15.3	B	0.53	15.7	B				
		Overall		15.1	B		15.3	B				
Roosevelt Ave / Bowne Street	EB	L	0.24	17.8	B	0.25	18.2	B	0.23	16.0	B	Fully Mitigated
		TR	0.40	19.0	B	0.58	23.4	C	0.56	20.9	C	
	WB	LTR	1.04	73.7	E	1.09	89.7	F	1.04	70.9	E	
	NB	L	0.31	28.1	C	0.31	28.1	C	0.33	31.0	C	
		TR	0.69	36.4	D	0.69	36.4	D	0.73	40.8	D	
	SB	L	0.23	27.2	C	0.23	27.2	C	0.27	30.6	C	
		TR	0.39	28.0	C	0.39	28.0	C	0.42	30.6	C	
Overall		46.9	D		52.7	D		46.3	D			
Sanford Ave / Bowne Street	EB	LTR	0.67	23.6	C	0.72	25.6	C				No Impact
	WB	LT	0.88	34.2	C	0.88	34.5	C				
		R	0.32	15.0	B	0.32	15.0	B				
	NB	LTR	0.90	47.4	D	0.90	47.4	D				
	SB	L	0.33	23.4	C	0.33	23.4	C				
		TR	0.67	28.8	C	0.67	28.8	C				
Overall		32.1	C		32.5	C						
Northern Blvd / Parsons Blvd	EB	L	0.51	48.7	D	0.51	48.7	D	0.56	51.8	D	Fully Mitigated
		TR	1.12	92.8	F	1.12	93.2	F	1.08	74.4	E	
	WB	L	0.34	37.2	D	0.34	37.2	D	0.35	36.2	D	
		TR	1.39	208.8	F	1.44	231.7	F	1.39	206.2	F	
	NB	L	0.80	68.7	E	0.80	68.7	E	0.80	68.4	E	
		TR	0.43	35.4	D	0.43	35.4	D	0.43	35.4	D	
	SB	LTR	1.17	146.9	F	1.17	146.9	F	1.17	146.9	F	
Overall		152.7	F		166.3	F		147.9	F			
Roosevelt Ave / Parsons Blvd	EB	LTR	0.58	29.5	C	0.80	40.7	D	0.80	40.7	D	Unmitigated
	WB	LTR	1.09	97.8	F	1.16	123.5	F	1.16	123.5	F	
	NB	LTR	1.56	296.8	F	1.56	296.8	F	1.56	296.8	F	
	SB	LTR	0.84	42.7	D	0.84	42.7	D	0.84	42.7	D	
	Overall		138.8	F		141.4	F		141.4	F		
Sanford Ave / Parsons Blvd	EB	LTR	0.69	27.8	C	0.74	30.5	C				No Impact
	WB	LTR	1.12	101.8	F	1.12	103.5	F				
	NB	LTR	1.11	98.8	F	1.11	98.8	F				
	SB	LTR	0.93	44.6	D	0.93	44.6	D				
	Overall		72.4	E		72.8	E					
WB Northern Blvd / College Pt Blvd	WB	LTR	1.40	226.6	F	1.43	237.1	F	1.37	212.5	F	Fully Mitigated
	NB	T	0.34	5.6	A	0.34	5.6	A	0.34	6.1	A	
	SB	T	0.56	7.2	A	0.56	7.3	A	0.57	8.0	A	
	Overall		59.8	E		63.1	E		57.5	E		
UNSIGNALIZED INTERSECTIONS												
EB Northern Blvd / College Pt Blvd	SB	LT	0.25	12.8	B	0.27	13.0	B				No Impact
38th Ave / Prince Street	SB	LT	0.12	8.5	A	0.14	8.6	A				No Impact
37th Ave / 138th Street	NB	L	0.29	19.5	C	0.22	19.1	C				No Impact
	WB	LT	0.10	7.8	A	0.09	7.7	A				
38th Ave / 138th Street	EB	L	0.11	10.1	B	0.06	9.6	A				No Impact
		R	0.13	9.6	A	0.18	9.7	A				
39th Ave / 138th Street	SB	L	0.28	11.6	B	0.37	13.0	B				No Impact
	EB	LT	0.05	8.9	A	0.03	8.8	A				

Appendix D: Modified Two-Way Proposal Traffic Impact Analysis

Table D-3
No Build, Build, and Mitigated Build LOS Comparison: Weekday Midday Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
Roosevelt Ave / College Pt Blvd	EB	LTR	0.72	23.1	C	0.72	23.1	C				No Impact
		T after L	0.13	13.4	B	0.13	13.4	B				
	WB	LTR	0.54	26.9	C	0.59	27.7	C				
		T after L	0.09	29.3	C	0.10	29.4	C				
	NB	L	1.56	303.9	F	1.56	303.9	F				
		TR	0.72	21.9	C	0.72	21.9	C				
	SB	T	0.81	35.0	C	0.81	35.0	C				
R		0.58	33.7	C	0.58	33.7	C					
Overall				54.3	D		54.1	D				
Northern Blvd / Prince Street	EB	L	0.74	60.4	E	0.78	63.2	E	0.72	56.3	E	Fully Mitigated
		T	0.50	15.8	B	0.56	16.6	B	0.57	18.0	B	
	EB Serv Rd	TR	0.14	11.9	B	0.15	12.0	B	0.15	12.9	B	
		L	1.13	187.6	F	1.37	273.8	F	1.07	156.6	F	
	Main Rd	T	0.57	21.4	C	0.63	22.6	C	0.66	24.7	C	
		TR	0.35	22.1	C	0.35	22.1	C	0.36	23.5	C	
	NB	LTR	2.39	692.2	F	2.39	692.2	F	2.39	692.2	F	
SB	LTR	0.71	48.0	D	0.71	48.0	D	0.71	48.0	D		
	Overall				73.0	E		73.3	E		71.5	E
37th Ave / Prince Street	WB	LTR	0.64	21.4	C	0.64	21.4	C				No Impact
		LT	0.24	10.3	B	0.24	10.3	B				
	SB	TR	0.25	10.5	B	0.31	11.0	B				
Overall				15.8	B		15.7	B				
39th Ave / Prince Street	WB	LTR	0.64	20.7	C	0.69	22.7	C				No Impact
		LT	0.61	18.4	B	0.62	18.8	B				
	SB	TR	0.23	12.3	B	0.23	12.3	B				
Overall				18.3	B		19.3	B				
Roosevelt Ave / Prince Street	EB	DefL	1.19	133.3	F	1.28	171.1	F	1.28	171.1	F	Unmitigated
		T	0.77	20.4	C	0.77	20.4	C	0.77	20.4	C	
	WB	TR	0.51	10.9	B	0.55	11.4	B	0.55	11.4	B	
		L	0.21	27.1	C	0.21	27.1	C	0.21	27.1	C	
	NB	TR	0.09	24.5	C	0.09	24.5	C	0.09	24.5	C	
LR		0.87	61.0	E	0.98	83.0	F	0.98	83.0	F		
Overall				40.0	D		48.3	D		48.3	D	
Northern Blvd / Main Street	EB	T	0.78	31.0	C	0.82	32.5	C				No Impact
		R	0.50	2.9	A	0.61	4.0	A				
	WB	L	0.03	29.7	C	0.03	29.7	C				
		T after L	0.01	22.8	C	0.01	22.8	C				
		T	0.75	14.4	B	0.78	15.0	B				
	NB	TR	0.48	23.4	C	0.65	27.4	C				
		L after T	0.38	35.5	D	0.52	37.8	D				
R	0.45	24.5	C	0.60	29.6	C						
Overall				21.3	C		23.2	C				
37th Ave / Main Street	WB	LTR	0.69	24.2	C	0.96	47.2	D	0.94	41.1	D	Fully Mitigated
		LT	0.45	16.2	B	0.50	17.1	B	0.52	18.1	B	
	SB	TR	0.49	16.5	B	0.59	18.0	B	0.60	19.2	B	
Overall				19.5	B		30.3	C		28.3	C	
38th Ave / Main Street	EB	LTR	0.46	18.8	B	0.51	19.7	B				No Impact
		TR	0.56	18.3	B	0.56	18.3	B				
	SB	LT	0.66	20.5	C	0.77	24.1	C				
Overall				19.3	B		21.1	C				
39th Ave / Main Street	NB	LTR	0.95	41.9	D	1.02	56.4	E	0.91	30.9	C	Partially Mitigated
		LTR	0.93	37.1	D							
	SB	DefL				1.39	229.5	F	1.17	136.3	F	
		TR				1.15	106.3	F	1.05	65.0	E	
Overall				39.4	D		102.5	F		60.4	E	
Roosevelt Ave / Main Street	EB	LTR	0.67	19.0	B	0.68	19.2	B				No Impact
		LTR	0.70	20.1	C	0.74	21.5	C				
	WB	T	0.82	32.9	C	0.93	42.9	D				
		T	0.49	22.7	C	0.50	22.9	C				
Overall				24.0	C		27.8	C				

Table D-3 (cont'd)

No Build, Build, and Mitigated Build LOS Comparison: Weekday Midday Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
41st Ave / Main St / Kissena Blvd	WB	T	0.82	36.6	D	0.88	42.4	D	0.88	42.4	D	Unmitigated
		L	0.74	37.2	D	0.75	37.8	D	0.75	37.8	D	
	NB	TR	1.10	86.5	F	1.15	107.5	F	1.15	107.5	F	
		L	0.30	17.1	B	0.30	17.1	B	0.30	17.1	B	
	SB	TR	0.29	16.0	B	0.29	16.1	B	0.29	16.1	B	
Overall			54.2 D			65.6 E			65.6 E			
Sanford Ave / Main Street	WB	LTR	0.86	31.3	C	0.89	33.7	C				No Impact
	NB	LT	0.78	27.6	C	0.84	30.9	C				
	SB	TR	0.43	18.7	B	0.44	18.8	B				
	Overall			27.5 C			29.8 C					
39th Ave / Midblock Crossing	EB	T	n/a	n/a	n/a	0.80	33.5	C				No Impact
	Overall			n/a n/a n/a			33.5 C					
Northern Blvd / Union Street	EB	L	1.02	103.3	F	1.16	147.5	F	1.16	147.5	F	Unmitigated
		T	0.75	34.3	C	0.77	34.9	C	0.77	34.9	C	
		R	0.57	33.9	C	0.77	44.4	D	0.77	44.4	D	
	WB	L	0.84	42.1	D	1.22	151.1	F	1.22	151.1	F	
		TR	0.95	44.9	D	0.96	46.1	D	0.96	46.1	D	
		TR	0.55	28.6	C	0.56	28.9	C	0.56	28.9	C	
	SB	LTR	0.89	50.6	D	1.06	87.1	F	1.06	87.1	F	
	Overall			43.1 D			59.0 E			59.0 E		
37th Ave / Union Street	WB	LTR	0.56	25.8	C	0.59	26.6	C	0.67	32.7	C	Unmitigated
		DefL	1.11	115.5	F	1.91	457.2	F	1.61	319.7	F	
	NB	T	0.61	16.5	B	0.63	16.9	B	0.58	12.6	B	
		TR	0.72	17.8	B	1.41	208.6	F	1.27	146.5	F	
Overall			32.9 C			174.9 F			125.0 F			
38th Ave / Union Street	EB	LTR	0.48	23.4	C							No Impact
	NB	LTR	0.87	25.7	C							
		TR				0.69	16.0	B				
	SB	LTR	0.50	13.2	B							
		LT				0.36	11.4	B				
Overall			21.5 C			14.7 B						
39th Ave / Union Street	EB	L	0.42	22.3	C	0.47	23.5	C	0.47	23.5	C	Unmitigated
		R	0.64	29.5	C	1.98	476.2	F	1.98	476.2	F	
	NB	T	0.53	13.2	B	0.57	13.7	B	0.57	13.7	B	
	SB	T	0.29	10.6	B	0.23	10.1	B	0.23	10.1	B	
Overall			16.4 B			172.9 F			172.9 F			
Roosevelt Ave / Union Street	EB	L	0.87	63.4	E	1.21	175.6	F	1.21	175.6	F	Unmitigated
		TR	0.87	30.1	C	0.88	31.0	C	0.88	31.0	C	
	WB	L	0.79	44.5	D	0.81	46.5	D	0.81	46.5	D	
		TR	1.15	103.0	F	1.28	157.2	F	1.28	157.2	F	
	NB	LTR	0.61	21.5	C	0.57	20.3	C	0.57	20.3	C	
	SB	L	0.36	20.1	C	1.00	76.1	E	1.00	76.1	E	
		TR	0.84	32.2	C	1.13	98.7	F	1.13	98.7	F	
Overall			49.0 D			85.8 F			85.8 F			
Sanford Ave / Union Street	EB	DefL	0.26	15.4	B	0.25	15.0	B				No Impact
		TR	0.21	13.7	B	0.21	13.7	B				
	WB	LTR	0.60	19.9	B	0.58	19.5	B				
	NB	LTR	0.29	19.4	B	0.29	19.5	B				
	SB	LTR	0.62	24.1	C	0.77	28.8	C				
Overall			20.8 C			23.2 C						
Northern Blvd / Bowne Street	EB	TR	0.68	18.5	B	0.70	18.9	B				No Impact
		L	0.50	34.0	C	0.60	41.6	D				
	WB	T	0.50	7.1	A	0.54	7.4	A				
		L	0.57	41.7	D	0.57	41.7	D				
	NB	R	0.27	34.5	C	0.27	34.5	C				
Overall			17.1 B			17.6 B						

Appendix D: Modified Two-Way Proposal Traffic Impact Analysis

**Table D-3 (cont'd)
No Build, Build, and Mitigated Build LOS Comparison: Weekday Midday Peak Hour**

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
37th Ave / Bowne Street	NB	L	0.26	12.4	B	0.27	12.7	B				No Impact
		T	0.45	14.1	B	0.45	14.1	B				
	SB	TR	0.46	14.4	B	0.50	15.1	B				
	Overall			14.0	B		14.4	B				
Roosevelt Ave / Bowne Street	EB	L	0.15	13.6	B	0.17	14.0	B	0.14	11.3	B	Partially Mitigated
		TR	0.97	53.3	D	1.31	172.3	F	1.20	125.2	F	
	WB	LTR	1.08	79.1	E	1.16	109.8	F	1.06	71.5	E	
	NB	L	0.35	23.2	C	0.35	23.2	C	0.41	28.3	C	
		TR	0.35	21.1	C	0.35	21.1	C	0.40	24.7	C	
	SB	L	0.07	17.7	B	0.07	17.7	B	0.09	20.5	C	
		TR	0.38	21.6	C	0.38	21.6	C	0.44	25.4	C	
Overall			53.1	D		107.8	F		77.9	E		
Sanford Ave / Bowne Street	EB	LTR	0.37	15.4	B	0.47	17.2	B				No Impact
	WB	LT	0.50	17.3	B	0.50	17.4	B				
		R	0.13	12.6	B	0.13	12.6	B				
	NB	LTR	0.48	21.9	C	0.48	21.9	C				
	SB	L	0.21	20.1	C	0.21	20.1	C				
		TR	0.50	22.8	C	0.50	22.8	C				
Overall			18.8	B		19.1	B					
Northern Blvd / Parsons Blvd	EB	L	0.55	53.3	D	0.55	54.1	D	0.61	57.4	E	Partially Mitigated
		TR	1.04	62.6	E	1.07	72.0	E	1.03	57.4	E	
	WB	L	0.32	37.3	D	0.33	39.3	D	0.35	38.3	D	
		TR	1.31	176.1	F	1.44	230.8	F	1.39	206.5	F	
	NB	L	0.62	49.0	D	0.62	49.0	D	0.62	49.0	D	
		TR	0.43	35.5	D	0.43	35.5	D	0.43	35.5	D	
	SB	LTR	1.04	103.2	F	1.04	103.2	F	1.04	103.2	F	
Overall			110.1	F		138.9	F		123.7	F		
Roosevelt Ave / Parsons Blvd	EB	LTR	1.51	266.6	F	1.97	470.8	F	1.97	470.8	F	Unmitigated
	WB	LTR	1.47	245.8	F	1.63	316.3	F	1.63	316.3	F	
	NB	LTR	0.75	31.1	C	0.75	31.1	C	0.75	31.1	C	
	SB	LTR	0.65	25.2	C	0.65	25.2	C	0.65	25.2	C	
	Overall			177.2	F		285.0	F		285.0	F	
Sanford Ave / Parsons Blvd	EB	LTR	0.50	21.4	C	0.63	24.7	C				No Impact
	WB	LTR	0.71	28.2	C	0.72	28.7	C				
	NB	LTR	0.73	26.2	C	0.73	26.2	C				
	SB	LTR	0.55	19.2	B	0.55	19.2	B				
	Overall			24.1	C		24.9	C				
WB Northern Blvd / College Pt Blvd	WB	LTR	1.46	251.4	F	1.50	267.1	F	1.44	240.8	F	Fully Mitigated
	NB	T	0.34	5.6	A	0.34	5.6	A	0.35	6.2	A	
	SB	T	0.42	6.1	A	0.42	6.2	A	0.43	6.8	A	
	Overall			73.4	E		78.8	E		71.9	E	
UNSIGNALIZED INTERSECTIONS												
EB Northern Blvd / College Pt Blvd	SB	LT	0.40	17.4	C	0.44	18.3	C				No Impact
38th Ave / Prince Street	SB	LT	0.19	8.7	A	0.22	8.9	A				No Impact
37th Ave / 138th Street	NB	L	0.64	26.9	D	0.60	37.6	E	0.25	10.6	B	Fully Mitigated
	WB	LT	0.12	7.6	A	0.16	7.8	A				
		T							0.33	10.2	B	
38th Ave / 138th Street	EB	L	0.25	12.4	B	0.12	11.4	B				No Impact
		R	0.27	10.7	B	0.41	12.7	B				
39th Ave / 138th Street	SB	L	0.92	60.1	F	1.53	278.2	F	0.88	39.8	D	Fully Mitigated
	EB	LT	0.24	12.4	B	0.18	11.9	B	0.75	38.7	D	

Table D-4
No Build, Build, and Mitigated Build LOS Comparison: Weekday PM Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
Roosevelt Ave / College Pt Blvd	EB	LTR	0.85	34.3	C	0.85	34.6	C				No Impact
		T after L	0.15	16.5	B	0.15	16.5	B				
	WB	LTR	0.47	33.0	C	0.50	33.5	C				
		T after L	0.09	36.8	D	0.10	36.9	D				
	NB	L	1.56	322.1	F	1.56	322.1	F				
		TR	0.69	25.3	C	0.69	25.3	C				
	SB	T	1.04	74.2	E	1.04	74.2	E				
		R	0.40	33.6	C	0.40	33.6	C				
Overall			65.7	E		65.6	E					
Northern Blvd / Prince Street	EB	L	0.94	77.0	E	0.98	83.9	F	0.94	76.1	E	Fully Mitigated
		Main Rd T	0.94	29.8	C	0.99	37.8	D	1.00	42.0	D	
	EB Serv Rd	TR	0.17	12.2	B	0.17	12.2	B	0.18	12.7	B	
	WB	L	1.21	207.3	F	1.34	256.0	F	1.21	200.5	F	
		Main Rd T	0.75	28.9	C	0.79	30.2	C	0.81	31.6	C	
	WB Serv Rd	TR	0.44	27.4	C	0.45	27.4	C	0.46	28.2	C	
	NB	LTR	2.98	954.2	F	2.98	954.2	F	2.98	954.2	F	
		SB	LTR	0.93	70.0	E	0.93	70.0	E	0.93	70.0	
Overall			100.8	F		103.4	F		103.8	F		
37th Ave / Prince Street	WB	LTR	0.82	30.7	C	0.82	30.7	C				No Impact
		NB	LT	0.23	10.2	B	0.23	10.2	B			
	SB	TR	0.62	16.5	B	0.66	17.4	B				
		Overall		21.4	C		21.7	C				
39th Ave / Prince Street	WB	LTR	0.57	18.8	B	0.60	19.8	B				No Impact
		NB	LT	0.82	30.5	C	0.83	31.5	C			
	SB	TR	0.55	16.9	B	0.55	16.9	B				
		Overall		22.9	C		23.5	C				
Roosevelt Ave / Prince Street	EB	DefL	1.07	101.5	F	1.13	122.8	F	1.13	122.8	F	Unmitigated
		T	1.18	120.4	F	1.18	120.4	F	1.18	120.4	F	
	WB	TR	0.52	17.3	B	0.55	17.8	B	0.55	17.8	B	
		L	0.13	26.7	C	0.13	26.7	C	0.13	26.7	C	
	NB	TR	0.12	26.2	C	0.13	26.6	C	0.13	26.6	C	
		SB	LR	0.75	44.4	D	0.89	59.2	E	0.89	59.2	
	Overall			68.5	E		72.1	E		72.1	E	
Northern Blvd / Main Street	EB	T	1.26	156.2	F	1.30	173.6	F	1.25	151.0	F	Fully Mitigated
		R	0.68	5.3	A	0.74	6.9	A	0.73	6.6	A	
	WB	L	0.06	37.5	C	0.06	37.5	D	0.06	35.9	D	
		T after L	0.01	22.8	C	0.01	22.8	C	0.02	24.6	C	
		T	0.89	19.7	B	0.91	20.9	C	0.88	17.5	C	
	NB	TR	0.67	33.2	C	0.77	37.2	D	0.81	40.6	D	
		L after T	0.45	36.7	D	0.51	37.8	D	0.54	39.9	D	
	R		0.58	33.6	C	0.68	38.5	D	0.72	42.8	D	
Overall			70.7	E		22.8	C		22.8	C		
37th Ave / Main Street	WB	LTR	0.81	41.9	D	0.96	58.8	E	0.87	43.7	D	Fully Mitigated
		NB	LT	0.59	15.2	B	0.63	16.1	B	0.68	20.4	
	SB	TR	0.50	13.4	B	0.55	14.1	B	0.59	17.5	B	
		Overall		23.7	C		30.6	C		27.7	C	
38th Ave / Main Street	EB	LTR	0.53	31.6	C	0.59	33.2	C				No Impact
		NB	TR	0.63	15.9	B	0.63	15.9	B			
	SB	LT	0.66	16.7	B	0.72	18.2	B				
		Overall		19.8	B		21.0	C				
39th Ave / Main Street	NB	LTR	0.79	21.2	C	0.95	37.3	D	0.87	24.0	C	Fully Mitigated
		SB	LTR	0.81	22.4	C	1.04	59.4	E	0.96	36.9	
	Overall		21.8	C		48.4	D		30.5	C		
Roosevelt Ave / Main Street	EB	LTR	0.84	32.5	C	0.85	33.9	C				No Impact
		WB	LTR	0.86	35.9	D	0.90	39.2	D			
	NB	T	0.70	31.8	C	0.75	33.8	C				
		SB	T	0.76	34.1	C	0.77	34.7	C			
	Overall		33.6	C		35.5	C					

Appendix D: Modified Two-Way Proposal Traffic Impact Analysis

**Table D-4 (cont'd)
No Build, Build, and Mitigated Build LOS Comparison: Weekday PM Peak Hour**

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
41st Ave / Main St / Kissena Blvd	WB	T	0.78	40.1	D	0.81	42.1	D				No Impact
	NB	L	0.84	47.7	D	0.84	48.5	D				
		TR	0.85	35.0	C	0.91	41.1	D				
	SB	L	0.46	28.7	C	0.46	28.7	C				
		TR	0.30	17.0	B	0.31	17.1	B				
Overall				33.8	C		36.6	D				
Sanford Ave / Main Street	WB	LTR	0.93	52.3	D	0.96	57.2	E				No Impact
	NB	LT	0.85	32.7	C	0.89	36.4	D				
	SB	TR	0.37	16.6	B	0.38	16.6	B				
	Overall				36.7	D		40.1	D			
39th Ave / Midblock Crossing	EB	T	n/a	n/a	n/a	0.75	31.1	C				No Impact
	Overall				n/a	n/a		31.1	C			
Northern Blvd / Union Street	EB	L	0.87	69.6	E	0.94	84.0	F	0.94	84.0	F	Unmitigated
		T	0.91	42.2	D	0.93	44.4	D	0.93	44.4	D	
		R	0.77	43.8	D	0.86	52.9	D	0.86	52.9	D	
	WB	L	1.00	92.5	F	1.23	168.5	F	1.23	168.5	F	
		TR	0.91	40.6	D	0.92	41.1	D	0.92	41.1	D	
	NB	TR	0.67	32.0	C	0.68	32.3	C	0.68	32.3	C	
	SB	LTR	0.97	64.6	E	0.98	68.2	E	0.98	68.2	E	
	Overall				46.2	D		52.7	D		52.7	
37th Ave / Union Street	WB	LTR	0.34	21.2	C	0.36	21.6	C	0.42	25.4	C	Unmitigated
	NB	DefL	1.21	159.2	F	1.56	305.8	F	1.30	192.0	F	
		T	0.73	20.4	C	0.74	20.8	C	0.68	15.2	B	
	SB	TR	0.96	37.0	D	1.24	136.4	F	1.13	86.0	F	
Overall				44.7	D		115.5	F		74.8	E	
38th Ave / Union Street	EB	LTR	0.54	24.6	C						No Impact	
	NB	LTR	0.86	24.4	C							
		TR				0.66	15.3	B				
	SB	LTR	0.76	19.9	B							
		LT				0.61	15.5	B				
Overall				22.8	C		15.4	B				
39th Ave / Union Street	EB	L	0.54	24.9	C	0.60	26.7	C	0.60	26.7	C	Unmitigated
		R	0.56	26.3	C	1.61	311.0	F	1.61	311.0	F	
	NB	T	0.45	12.1	B	0.46	12.3	B	0.46	12.3	B	
	SB	T	0.32	10.9	B	0.27	10.5	B	0.27	10.5	B	
Overall				16.3	B		113.3	F		113.3	F	
Roosevelt Ave / Union Street	EB	L	0.75	32.6	C	0.85	45.2	D	0.85	45.2	D	Unmitigated
		TR	1.16	99.9	F	1.17	104.2	F	1.17	104.2	F	
	WB	L	0.88	66.7	E	0.90	71.7	E	0.90	71.7	E	
		TR	1.10	86.3	F	1.18	116.4	F	1.18	116.4	F	
	NB	LTR	0.55	19.9	B	0.52	19.4	B	0.52	19.4	B	
	SB	L	0.39	20.1	C	0.90	50.4	D	0.90	50.4	D	
		TR	0.93	41.0	D	1.17	115.2	F	1.17	115.2	F	
Overall				61.7	E		87.9	F		87.9	F	
Sanford Ave / Union Street	EB	LTR	0.36	15.1	B	0.36	15.1	B	0.40	18.0	B	Fully Mitigated
	WB	LTR	0.56	19.1	B	0.55	18.8	B	0.61	22.7	C	
	NB	LTR	1.26	173.7	F	1.52	286.9	F	1.11	116.1	F	
	SB	LTR	0.96	46.3	D	1.11	88.7	F	0.98	47.1	D	
Overall				50.5	D		84.9	F		45.1	D	
Northern Blvd / Bowne Street	EB	TR	1.02	46.7	D	1.04	52.9	D	1.00	41.4	D	Fully Mitigated
	WB	L	0.50	49.0	D	0.56	52.2	D	0.56	51.2	D	
		T	0.54	7.4	A	0.56	7.6	A	0.55	6.4	A	
	NB	L	0.67	45.6	D	0.67	45.5	D	0.71	49.3	D	
		R	0.41	37.6	D	0.41	37.6	D	0.44	39.9	D	
Overall				32.9	C		36.1	D		30.1	C	

Table D-4 (cont'd)
No Build, Build, and Mitigated Build LOS Comparison: Weekday PM Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
37th Ave / Bowne Street	NB	L	0.21	11.8	B	0.22	11.9	B				No Impact
		T	0.62	17.7	B	0.62	17.7	B				
	SB	TR	0.52	15.5	B	0.55	16.0	B				
	Overall			16.3	B		16.5	B				
Roosevelt Ave / Bowne Street	EB	L	0.20	16.6	B	0.20	16.8	B	0.18	14.3	B	Partially Mitigated
		TR	0.98	60.8	E	1.30	176.4	F	1.22	140.9	F	
	WB	LTR	1.01	66.4	E	1.10	93.4	F	1.00	60.8	E	
	NB	L	0.27	27.4	C	0.27	27.4	C	0.31	31.3	C	
		TR	0.44	29.2	C	0.44	29.2	C	0.49	32.8	C	
	SB	L	0.13	24.4	C	0.13	24.4	C	0.15	27.4	C	
		TR	0.42	28.7	C	0.42	28.7	C	0.46	32.3	C	
Overall			50.8	D		102.2	F		80.0	F		
Sanford Ave / Bowne Street	EB	LTR	0.72	24.1	C	0.79	28.0	C				No Impact
	WB	LT	0.53	18.1	B	0.53	18.2	B				
		R	0.14	12.6	B	0.14	12.6	B				
	NB	LTR	0.59	24.7	C	0.59	24.7	C				
	SB	L	0.42	25.3	C	0.42	25.3	C				
		TR	0.64	26.9	C	0.64	26.9	C				
Overall			22.9	C		24.2	C					
Northern Blvd / Parsons Blvd	EB	L	0.67	52.2	D	0.67	52.8	D	0.67	52.8	D	Unmitigated
		TR	1.03	52.2	D	1.05	60.6	E	1.05	60.6	E	
	WB	L	0.42	46.1	D	0.42	46.5	D	0.42	46.5	D	
		TR	1.25	149.8	F	1.31	176.8	F	1.31	176.8	F	
	NB	L	0.53	45.6	D	0.53	45.6	D	0.53	45.6	D	
		TR	0.46	36.2	D	0.46	36.2	D	0.46	36.2	D	
	SB	LTR	1.26	180.5	F	1.26	180.5	F	1.26	180.5	F	
	Overall			94.6	F		107.5	F		107.5	F	
Roosevelt Ave / Parsons Blvd	EB	LTR	1.28	173.6	F	1.69	351.2	F	1.69	351.2	F	Unmitigated
	WB	LTR	1.27	169.9	F	1.42	233.9	F	1.42	233.9	F	
	NB	LTR	1.18	135.1	F	1.18	135.1	F	1.18	135.1	F	
	SB	LTR	0.91	52.3	D	0.91	52.3	D	0.91	52.3	D	
	Overall			135.9	F		215.6	F		215.6	F	
Sanford Ave / Parsons Blvd	EB	LTR	0.97	56.6	E	1.06	82.3	F	0.96	51.7	D	Fully Mitigated
	WB	LTR	0.82	36.3	D	0.84	38.6	D	0.75	27.5	C	
	NB	LTR	0.78	29.0	C	0.78	29.0	C	0.88	43.8	D	
	SB	LTR	0.73	25.1	C	0.73	25.1	C	0.82	34.4	C	
	Overall			37.6	D		46.7	D		40.2	D	
WB Northern Blvd / College Pt Blvd	WB	LTR	0.97	63.3	E	0.99	68.5	E	0.95	58.9	E	Fully Mitigated
	NB	T	0.37	5.8	A	0.37	5.8	A	0.38	6.4	A	
	SB	T	0.63	8.1	A	0.63	8.1	A	0.65	8.9	A	
	Overall			17.5	B		18.7	B		17.5	B	
UNSIGNALIZED INTERSECTIONS												
EB Northern Blvd / College Pt Blvd	SB	LT	0.31	14.3	B	0.33	14.6	B				No Impact
38th Ave / Prince Street	SB	LT	0.18	8.8	A	0.20	9.0	A				No Impact
37th Ave / 138th Street	WB	L	0.74	37.3	E	0.75	60.0	F	0.25	10.7	B	Fully Mitigated
		LT	0.09	7.6	A	0.15	7.8	A				
		L							0.31	10.1	B	
		T						0.79	23.2	C		
38th Ave / 138th Street	EB	L	0.22	10.8	B	0.19	11.1	B				No Impact
		R	0.25	10.3	B	0.34	12.0	B				
39th Ave / 138th Street	SB	L	0.76	39.0	E	1.21	146.8	F	0.82	36.5	D	Fully Mitigated
	EB	LT	0.11	13.2	B	0.03	12.6	B	0.64	35.8	D	

Appendix D: Modified Two-Way Proposal Traffic Impact Analysis

Table D-5
No Build, Build, and Mitigated Build LOS Comparison: Saturday Midday Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
Roosevelt Ave / College Pt Blvd	EB	LTR	0.72	22.9	C	0.72	22.9	C				No Impact
		T after L	0.12	13.3	B	0.12	13.3	B				
	WB	LTR	0.62	28.4	C	0.66	29.2	C				
		T after L	0.14	29.9	C	0.16	30.0	C				
	NB	L	1.27	183.0	F	1.27	183.0	F				
		TR	1.00	57.0	E	1.03	57.0	E				
	SB	T	1.16	114.3	F	1.16	114.3	F				
R		0.56	32.7	C	0.56	32.7	C					
Overall				66.2	E		65.9	E				
Northern Blvd / Prince Street	EB	L	0.93	79.5	E	0.97	88.4	F	0.97	88.4	F	Unmitigated
		Main Rd T	1.03	50.8	D	1.11	79.1	E	1.11	79.1	E	
	EB Serv Rd	TR	0.32	13.7	B	0.35	14.2	B	0.35	14.2	B	
		L	1.53	326.8	F	1.86	468.1	F	1.86	468.1	F	
	Main Rd	T	0.88	28.0	C	0.93	31.8	C	0.93	31.8	C	
		WB Serv Rd TR	0.46	24.0	C	0.82	34.4	C	0.82	34.4	C	
	NB	LTR	4.03	1432.0	F	4.03	1432.0	F	4.03	1432.0	F	
	SB	LTR	0.96	75.1	E	0.96	75.1	E	0.96	75.1	E	
Overall				127.6	F		140.3	F		140.3	F	
37th Ave / Prince Street	WB	LTR	0.71	24.1	C	0.71	24.1	C				No Impact
		NB	LT	0.28	12.3	B	0.28	10.6	B			
	SB	TR	0.67	17.1	B	0.74	19.4	B				
		Overall				18.1	B		19.2	B		
39th Ave / Prince Street	WB	LTR	0.64	25.6	C	0.70	27.9	C				No Impact
		NB	LT	0.89	42.5	D	0.91	45.2	D			
	SB	TR	0.51	20.9	C	0.51	20.9	C				
		Overall				31.4	C		33.2	C		
Roosevelt Ave / Prince Street	EB	DefL	2.07	513.3	F	2.23	586.2	F	2.23	586.2	F	Unmitigated
		T	1.25	142.0	F	1.25	142.0	F	1.25	142.0	F	
	WB	TR	0.62	12.4	B	0.65	13.1	B	0.65	13.1	B	
		L	0.15	25.6	C	0.15	25.6	C	0.15	25.6	C	
	NB	TR	0.10	24.7	C	0.12	25.0	C	0.12	25.0	C	
		SB	LR	0.98	70.4	E	1.17	131.3	F	1.17	131.3	
Overall				145.3	F		160.7	F		160.7	F	
Northern Blvd / Main Street	EB	T	0.78	29.1	C	0.80	29.6	C				No Impact
		R	0.51	1.7	A	0.58	2.0	A				
	WB	L	0.02	23.0	C	0.02	23.0	C				
		T after L	0.01	22.8	C	0.01	22.8	C				
	NB	T	0.83	16.7	B	0.86	17.6	B				
		TR	0.54	24.6	C	0.64	27.0	C				
	R	L after T	0.51	37.7	D	0.59	39.3	D				
			0.47	24.9	C	0.62	30.4	C				
Overall				22.1	E		22.8	C				
37th Ave / Main Street	WB	LTR	0.64	22.4	C	0.76	26.5	C				No Impact
		NB	LT	0.55	17.4	B	0.61	18.6	B			
	SB	TR	0.55	17.3	B	0.62	18.6	B				
		Overall				19.1	B		21.4	C		
38th Ave / Main Street	EB	LTR	0.58	20.9	C	0.68	23.1	C	0.74	27.0	C	Fully Mitigated
		NB	TR	0.67	20.6	C	0.67	20.6	C	0.62	16.8	
	SB	LT	0.94	41.7	D	1.04	64.6	E	0.95	39.9	D	
		Overall				28.1	C		37.3	D		
39th Ave / Main Street	NB	LTR	1.33	180.7	F	1.53	267.7	F	1.35	184.8	F	Unmitigated
		SB	LTR	0.81	26.4	C	1.23	138.7	F	1.08	74.5	
	Overall				114.8	F		210.3	F		135.7	
Roosevelt Ave / Main Street	EB	LTR	1.02	52.8	D	1.04	58.2	E	1.04	58.2	E	Unmitigated
		WB	LTR	1.07	69.0	E	1.12	89.9	F	1.12	89.9	
	NB	T	0.91	39.2	D	0.98	51.0	D	0.98	51.0	D	
		SB	T	0.72	27.4	C	0.74	28.2	C	0.74	28.2	
	Overall				48.9	D		59.2	E		59.2	

Table D-5 (cont'd)

No Build, Build, and Mitigated Build LOS Comparison: Saturday Midday Peak Hour

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
41st Ave / Main St / Kissena Blvd	WB	T	0.87	40.8	D	0.92	47.3	D	0.92	47.3	D	Unmitigated
		L	0.92	65.4	E	0.95	71.4	E	0.95	71.4	E	
	NB	TR	1.26	153.6	F	1.31	174.3	F	1.31	174.3	F	
		L	0.29	17.0	B	0.29	17.0	B	0.29	17.0	B	
	SB	TR	0.68	26.4	C	0.71	27.6	C	0.71	27.6	C	
Overall				89.8	F		101.6	F		101.6	F	
Sanford Ave / Main Street	WB	LTR	0.85	30.5	C	0.86	31.1	C	0.91	36.9	D	Fully Mitigated
	NB	LT	0.97	48.4	D	1.02	61.3	E	0.97	46.7	D	
	SB	TR	0.46	19.1	B	0.47	19.3	B	0.45	17.7	B	
	Overall				35.0	C		40.3	D		36.9	
39th Ave / Midblock Crossing	EB	T	n/a	n/a	n/a	0.91	41.4	D				No Impact
	Overall				n/a	n/a		41.4	D			
Northern Blvd / Union Street	EB	L	0.76	54.6	D	0.86	70.6	E	0.86	70.6	E	Unmitigated
		T	0.89	40.9	D	0.91	42.4	D	0.91	42.4	D	
		R	0.76	43.2	D	0.87	54.1	D	0.87	54.1	D	
	WB	L	1.14	134.1	F	1.37	222.2	F	1.37	222.2	F	
		TR	1.12	94.2	F	1.13	101.0	F	1.13	101.0	F	
		TR	0.64	30.8	C	0.70	32.9	C	0.70	32.9	C	
	SB	LTR	1.02	78.1	E	1.21	145.1	F	1.21	145.1	F	
	Overall				67.1	E		85.2	F		85.2	
37th Ave / Union Street	WB	LTR	0.43	23.0	C	0.44	23.2	C	0.51	27.7	C	Unmitigated
		DefL	1.51	279.6	F	2.48	715.1	F	1.98	485.2	F	
	NB	T	0.79	23.0	C	0.87	29.5	C	0.80	20.2	C	
		TR	0.93	31.7	C	1.51	256.5	F	1.37	190.8	F	
Overall				60.0	E		230.4	F		166.3	F	
38th Ave / Union Street	EB	LTR	0.59	26.2	C						Fully Mitigated	
	NB	LTR	1.11	81.9	F							
		TR				0.80	19.2	B	0.79	17.7		B
	SB	DefL	1.35	218.0	F	1.38	230.0	F	1.30	198.7		F
		TR	0.76	21.4	C							
	Overall				70.3	E		42.9	D			38.0
39th Ave / Union Street	EB	L	0.69	29.5	C	0.72	30.5	C	0.72	30.5	C	Unmitigated
		R	0.86	45.5	D	2.35	645.1	F	2.35	645.1	F	
	NB	T	0.50	12.7	B	0.52	13.0	B	0.52	13.0	B	
		T	0.36	11.2	B	0.21	9.9	A	0.21	9.9	A	
Overall				21.6	C		255.6	F		255.6	F	
Roosevelt Ave / Union Street	EB	L	1.23	177.6	F	1.33	215.6	F	1.33	215.6	F	Unmitigated
		TR	0.92	33.8	C	0.94	36.0	D	0.94	36.0	D	
	WB	L	0.81	46.8	D	0.84	52.5	D	0.84	52.5	D	
		TR	1.17	107.5	F	1.26	147.1	F	1.26	147.1	F	
	NB	LTR	0.67	22.6	C	0.71	24.1	C	0.71	24.1	C	
	SB	L	0.53	26.9	C	1.37	220.9	F	1.37	220.9	F	
		TR	0.90	36.4	D	1.10	85.0	F	1.10	85.0	F	
Overall				55.4	E		91.6	F		91.6	F	
Sanford Ave / Union Street	EB	DefL	0.58	26.1	C	0.56	24.9	C	0.56	24.9	C	Unmitigated
		TR	0.29	14.7	B	0.29	14.7	B	0.29	14.7	B	
	WB	LTR	0.93	40.2	D	0.91	37.1	D	0.91	37.1	D	
	NB	LTR	0.57	25.2	C	0.61	26.5	C	0.61	26.5	C	
	SB	LTR	0.89	36.1	D	1.00	55.7	E	1.00	55.7	E	
Overall				33.3	C		41.1	D		41.1	D	
Northern Blvd / Bowne Street	EB	TR	0.90	26.4	C	0.93	29.9	C	0.97	36.3	D	Fully Mitigated
	WB	L	0.73	61.9	E	0.82	72.3	E	0.74	61.6	E	
		T	0.60	8.0	A	0.63	8.3	A	0.63	8.3	A	
	NB	L	0.92	67.8	E	0.92	67.4	E	0.92	67.4	E	
		R	0.51	40.0	D	0.51	40.0	D	0.51	40.0	D	
Overall				25.7	C		27.7	C		30.1	C	

Appendix D: Modified Two-Way Proposal Traffic Impact Analysis

**Table D-5 (cont'd)
No Build, Build, and Mitigated Build LOS Comparison: Saturday Midday Peak Hour**

INTERSECTION	LANE GROUP	MOVEMENT	No Build			Build			Mitigated Build			Intersection Impact Mitigated?
			V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	V/C RATIO	AVG. DELAY (sec/veh)	LOS	
SIGNALIZED INTERSECTIONS												
37th Ave / Bowne Street	NB	L	0.33	13.9	B	0.34	14.3	B				No Impact
		T	0.65	18.6	B	0.65	18.6	B				
	SB	TR	0.60	17.3	B	0.64	18.3	B				
	Overall			17.6	B		18.1	B				
Roosevelt Ave / Bowne Street	EB	L	0.35	18.2	B	0.37	19.1	B	0.32	14.7	B	Partially Mitigated
		TR	1.06	75.8	E	1.28	162.0	F	1.18	115.6	F	
	WB	LTR	1.31	173.4	F	1.50	254.0	F	1.26	147.2	F	
	NB	L	0.33	22.7	C	0.33	22.7	C	0.40	28.0	C	
		TR	0.58	25.6	C	0.58	25.6	C	0.66	31.0	C	
	SB	L	0.18	19.6	B	0.18	19.6	B	0.22	23.5	C	
		TR	0.50	23.7	C	0.50	23.7	C	0.56	28.1	C	
Overall			91.0	F		146.4	F		96.4	F		
Sanford Ave / Bowne Street	EB	LTR	0.56	19.2	B	0.64	21.4	C				No Impact
	WB	LT	0.69	21.9	C	0.69	22.1	C				
		R	0.15	12.7	B	0.15	12.7	B				
	NB	LTR	0.58	24.2	C	0.58	24.2	C				
	SB	L	0.19	19.7	B	0.19	19.7	B				
		TR	0.48	22.3	C	0.48	22.3	C				
Overall			21.3	C		21.8	C					
Northern Blvd / Parsons Blvd	EB	L	0.47	50.1	D	0.47	50.1	D	0.47	50.1	D	Unmitigated
		TR	1.26	151.4	F	1.33	178.5	F	1.33	178.5	F	
	WB	L	0.45	48.5	D	0.45	51.6	D	0.45	51.6	D	
		TR	1.38	203.9	F	1.46	238.2	F	1.46	238.2	F	
	NB	L	0.65	51.0	D	0.65	51.0	D	0.65	51.0	D	
		TR	0.52	37.1	D	0.52	37.1	D	0.52	37.1	D	
	SB	LTR	1.59	326.2	F	1.59	326.2	F	1.59	326.2	F	
Overall			171.1	F		195.0	F		195.0	F		
Roosevelt Ave / Parsons Blvd	EB	LTR	1.53	274.1	F	1.85	415.1	F	1.85	415.1	F	Unmitigated
	WB	LTR	1.33	185.1	F	1.44	233.5	F	1.44	233.5	F	
	NB	LTR	1.23	147.9	F	1.23	147.9	F	1.23	147.9	F	
	SB	LTR	0.81	33.7	C	0.81	33.7	C	0.81	33.7	C	
	Overall			175.4	F		243.5	F		243.5	F	
Sanford Ave / Parsons Blvd	EB	LTR	0.58	23.1	C	0.67	26.2	C				No Impact
	WB	LTR	0.81	33.2	C	0.82	33.9	C				
	NB	LTR	0.92	43.7	D	0.92	43.7	D				
	SB	LTR	0.75	25.9	C	0.75	25.9	C				
	Overall			32.4	C		32.9	C				
WB Northern Blvd / College Pt Blvd	WB	LTR	1.52	274.9	F	1.56	291.2	F	1.50	264.0	F	Fully Mitigated
	NB	T	0.41	6.0	A	0.41	6.0	A	0.42	6.6	A	
	SB	T	0.50	6.7	A	0.50	6.7	A	0.51	7.4	A	
	Overall			82.0	F		88.0	F		80.6	F	
UNSIGNALIZED INTERSECTIONS												
EB Northern Blvd / College Pt Blvd	SB	LT	0.37	16.9	C	0.41	17.8	C				No Impact
38th Ave / Prince Street	SB	LT	0.25	9.3	A	0.29	9.6	A				No Impact
37th Ave / 138th Street	NB	L	0.66	31.1	D	0.67	48.1	E	0.24	10.5	B	Fully Mitigated
		LT	0.09	7.6	A	0.14	7.7	A				
	WB	L							0.30	9.8	A	
		T						0.72	18.7	C		
38th Ave / 138th Street	EB	L	0.29	11.0	B	0.18	10.5	B				No Impact
		R	0.33	10.7	B	0.47	12.9	B				
39th Ave / 138th Street	SB	L	0.79	31.8	D	1.24	147.4	F	0.89	39.4	D	Fully Mitigated
	EB	LT	0.06	10.5	B	0.01	10.3	B	0.76	40.8	D	

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