

APPENDIX 22:

MITIGATION

HUNTER’S POINT SOUTH REZONING AND RELATED ACTIONS EIS APPENDIX 22: MITIGATION – TABLES

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APPENDIX TABLE 22-1
HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS EIS
2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (AM PEAK HOUR)

INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures	
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
SIGNALIZED INTERSECTIONS															
VERNON BOULEVARD															
VERNON BOULEVARD & 48TH AVENUE															
Vernon Boulevard	NB	LT	0.74	25.1	C	LT	0.82	29.2	C	LT	0.78	25.7	C	- Modify signal timing: shift 2 s of green time from EB phase to NB/SB phase [EB green time shifts from 17 s to 15 s; NB/SB green time shifts from 41 s to 43 s].	
	SB	TR	0.90	35.9	D	TR	1.00	53.4	D	TR	0.95	41.7	D		
48th Avenue	EB	L	0.41	35.1	D	L	0.42	35.2	D	L	0.48	38.5	D		
		R	0.31	34.3	C	R	0.31	34.3	C	R	0.36	37.3	D		
	WB	LTR	0.90	60.7	E	LTR	0.90	60.7	E	LTR	0.90	60.7	E		
Overall Intersection		-	0.79	36.6	D	-	0.84	44.4	D	-	0.84	39.0	D		
VERNON BOULEVARD & 49TH AVENUE															
Vernon Boulevard	NB	LTR	0.78	17.3	B	LTR	0.85	21.2	C	LTR	0.68	12.9	B	- Modify cycle length from 60 s to 90 s. [EB green time is 22 s; NB/SB green time is 58 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	1.17	101.1	F		
49th Avenue	EB	LTR	0.19	15.9	B	LTR	0.33	17.8	B	LTR	0.43	32.9	C		
Overall Intersection		-	0.90	102.8	F	-	1.05	120+	F*	-	0.96	60.2	E		
VERNON BOULEVARD & 50TH AVENUE															
Vernon Boulevard	NB	TR	0.75	16.5	B	TR	0.83	20.3	C	TR	0.94	43.3	D	- Partially Mitigated. - Install "No Standing 7:00 AM - 10:00 AM" regulation on the west curb of the SB Vernon Boulevard for the entire block to gain an additional through lane in the AM peak period. - Modify cycle length from 60 s to 90 s. [EB green time is 39 s; NB/SB green time is 41 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	LT	0.93	31.2	C	LT	1.05	60.2	E	LT	0.65	21.3	C		
50th Avenue	EB	LTR	0.65	27.9	C	LTR	1.20+	120+	F*	LTR	0.90	50.3	D		
Overall Intersection		-	0.82	24.4	C	-	1.16	79.8	E	-	0.92	36.5	D		
VERNON BOULEVARD & 51ST AVENUE															
Vernon Boulevard	NB	LT	0.93	34.6	C	LT	1.03	57.2	E	LT	0.78	24.3	C	- Modify cycle length from 60 s to 90 s. [WB green time is 35 s; NB/SB green time is 45 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	TR	0.88	29.6	C	TR	1.03	58.3	E	TR	0.85	29.4	C		
51st Avenue	WB	LTR	0.55	14.7	B	LTR	0.79	19.5	B	LTR	0.88	33.2	C		
Overall Intersection		-	0.74	25.8	C	-	0.91	41.0	D	-	0.86	29.7	C		
VERNON BOULEVARD & BORDEN AVENUE															
Vernon Boulevard	SB	L	1.10	82.1	F	L	1.10	82.1	F	L	0.81	38.7	D	- Install "No Standing Anytime" regulation on the west curb of the SB Vernon Boulevard for 120 ft. and restripe the approach from one 9 ft. left-turn lane and one 15 ft. left-right lane to two 11 ft. left-turn lanes and one 11 ft. right-turn lane by switching the parking on the east side from angle to parallel to gain additional 9 ft. Install "No Standing 7:00 AM - 7:00 PM" regulation on the south curb of the EB Borden Avenue 120 ft. from the intersection and restripe the approach from one 16 ft. travel lane with parking to one 12 ft. shared left through and one 12 ft. through lane. - Shift centerline of the WB Borden Avenue 6 ft. to the north tapered 150 ft. from the intersection. Restripe EB Borden Avenue receiving as two 11 ft. lanes. - Restripe WB Borden Avenue from one 13 ft. through lane and one 15 ft. channelized right-turn lane to two 11 ft. through lane and one 11 ft. right-turn lane by shifting the north curb 11 ft. to the north. - Restripe WB Borden Avenue receiving from one 22 ft. lane with parking to two 11 ft. lanes with parking. - Modify cycle length from 60 s to 120 s with EB-lead phase. [SB green time is 45 s; EB-lead green time is 21 s; EB/WB green time is 39 s; all phases have 3 s of amber and 2 s of all red time].	
		LR	0.67	19.3	B	LR	1.06	67.7	E	R	0.58	33.7	C		
Borden Avenue	EB	LT	0.81	22.9	C	LT	1.20+	120+	F*	LT	0.98	43.0	D		
	WB	T	0.27	12.1	B	T	0.53	15.1	B	T	0.41	32.3	C		
Overall Intersection		-	0.95	41.2	D	-	1.20+	120+	F*	-	0.91	39.3	D		

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2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (AM PEAK HOUR)

INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures	
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
VERNON BOULEVARD & 44TH DRIVE															
Vernon Boulevard	NB	LTR	0.62	11.2	B	LTR	0.71	13.1	B	LTR	0.73	13.4	B	- Modify signal timing: shift 1 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 16 s to 15 s; NB/SB green time shifts from 34 s to 35 s].	
	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*		
44th Drive	EB	LTR	0.32	20.5	C	LTR	0.32	20.5	C	LTR	0.35	22.1	C	- Restripe NB/SB Vernon Boulevard approach as follows: 150 feet upstream of the stop bar, shift the centerline 2 ft. to the east to increase the lane width to 16 ft. Shift the centerline on NB Vernon Boulevard 2 ft. to the east to coincide with the SB approach reducing the lane width to 12 ft.	
	WB	LTR	0.67	26.1	C	LTR	0.69	26.7	C	LTR	0.76	31.1	C		
Overall Intersection		-	1.11	88.6	F	-	1.20	113.9	F	-	1.14	85.7	F		
JACKSON AVENUE/NORTHERN BOULEVARD															
JACKSON AVENUE & 50TH AVENUE															
Jackson Avenue	NB	TR	0.18	10.5	B	TR	0.30	11.6	B	TR	0.30	11.6	B	- Install "No Standing Anytime" regulation on the north curb of the EB 50th Avenue 150 ft. from the intersection and restripe the approach from one 14 ft. lane with parking on both sides to one 11 ft. left turn lane and one 11 ft. through-right lane with parking along the south curb.	
	SB	LT	0.28	11.4	B	LT	0.45	13.4	B	LT	0.45	13.4	B		
50th Avenue	EB	LTR	0.66	42.3	D	LTR	0.97	73.1	E	L	0.45	35.9	D		
	-	-	-	-	-	-	-	-	-	TR	0.53	38.2	D		
50th Avenue WB Right (Unsignalized)	WB	L	0.35	35.1	D	L	0.37	36.0	D	L	0.52	41.0	D		
	WB	R	-	10.7	B	R	-	13.2	B	R	-	13.2	B		
Overall Intersection		-	0.41	20.5	C	-	0.63	27.8	C	-	0.48	20.0	C		
JACKSON AVENUE & 49TH AVENUE															
49th Avenue	SB	LTR	0.41	29.6	C	LTR	0.50	31.5	C	LTR	0.51	31.8	C	- Install "No Standing Anytime" regulation on the south curb of EB Jackson Avenue for the entire block, shift the centerline 5 ft. to the north, and restripe the approach from a 11 ft. through, one 10 ft. shared through-right lane with parking to two 11 ft. through lanes and one 12 ft. exclusive right turn lane.	
Jackson Avenue	EB	TR	0.71	45.7	D	TR	1.09	104.2	F	T	0.45	39.4	D		
	-	-	-	-	-	-	-	-	-	R	0.48	19.7	B	- Restripe WB Jackson Avenue from one 11 ft. left-through lane and one 20 ft. through lane to one 26 ft. through lane.	
	WB	LT	0.33	16.9	B	LT	0.57	20.7	C	T	0.69	24.2	C		
	Overall Intersection		-	0.57	30.9	C	-	0.83	57.4	E	-	0.62	27.6	C	- Prohibit WB Jackson Avenue left-turn on to the 11th Street service road.
															- Restripe WB Jackson Avenue receiving lane from one 11 ft. and one 12 ft. lane with parking to one 18 ft. lane with parking.
															- Permit EB Jackson Avenue right-turn to the Pulaski Bridge during the exclusive WB Jackson Avenue phase.
JACKSON AVENUE & 11TH STREET (PULASKI BRIDGE)															
11th Street (Pulaski Bridge)	NB	-	-	-	-	-	-	-	-	L	0.79	54.3	D	- Post signs on the Pulaski Bridge to direct the right turning traffic to the 11th Street service road with signs for Queens Boulevard/Jackson Avenue East traffic.	
	LT	1.20+	120+	F*	LT	1.20+	120+	F*	T	0.90	43.0	D			
	R	1.12	111.4	F	R	1.18	120+	F*	-	-	-	-	-	- Restripe the NB 11th Street service road approach traffic island to allow for two 12 ft. right-turn lanes by removing parking along the west curb.	
	SB	LTR	0.71	32.5	C	LTR	0.71	32.7	C	LTR	0.72	32.8	C		
Jackson Avenue	EB	LT	0.47	31.8	C	LT	0.85	44.8	D	LT	0.84	44.2	D	- Restripe the NB Pulaski Bridge shared left-through lane to an exclusive left-turn lane.	
	WB	DefL	1.10	97.1	F	DefL	1.20+	120+	F*	L	0.95	64.8	E		
11th Street Service Road	T	0.40	18.3	B	T	0.69	24.9	C	T	0.70	25.5	C	- Install "No Standing Anytime" regulation on the north curb of the WB Jackson Avenue approach for 150 ft. and restripe the approach from a 10 ft. shared left-through and a 12 ft. through lane with parking to two 10 ft. left-turn lanes and a 10 ft. through lane.		
	NB	R	1.20+	120+	F*	R	1.20+	120+	F*	R	0.71	16.1		B	
Overall Intersection		-	1.20	109.1	F	-	1.20+	120+	F*	-	0.90	37.5	D	- Prohibit the WB Jackson Avenue left-turn during the permitted EB/WB phase.	
JACKSON AVENUE & 21ST STREET															
21st Street	NB	LTR	0.84	39.3	D	LTR	0.87	41.4	D	LTR	0.89	44.5	D	- Partially Mitigated.	
	SB	LTR	0.58	28.9	C	LTR	0.66	31.2	C	LTR	0.68	32.2	C		
Jackson Avenue	EB	L	0.98	83.0	F	L	1.20+	120+	F*	L	1.20+	120+	F*	- Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB-lead phase [EB/WB-lead green time shifts from 13 s to 14 s; NB/SB green time shifts from 50 s to 49 s].	
	TR	0.78	39.4	D	TR	0.97	56.4	E	TR	0.97	56.4	E			
	WB	L	0.51	23.7	C	L	0.59	28.0	C	L	0.67	30.6	C	- Install "No Standing 7:00 AM - 10:00 AM; 4:00 PM - 7:00 PM" regulation on the north curb of WB Jackson Avenue for the entire block.	
	TR	0.79	39.7	D	TR	0.94	51.7	D	TR	0.86	42.9	D			
Overall Intersection		-	0.91	40.8	D	-	1.20+	69.7	E	-	1.20+	63.7	E		

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures					
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS						
JACKSON AVENUE & THOMSON AVENUE																			
Jackson Avenue	NB	TR	0.57	18.9	B	TR	0.73	22.8	C	- Mitigation not required.									
	SB	L	0.26	16.0	B	L	0.35	18.7	B										
Thomson Avenue		T	0.49	17.4	B	T	0.52	17.8	B										
	WB	L	0.45	30.5	C	L	0.64	35.0	C										
		R	0.10	25.3	C	R	0.10	25.3	C										
Overall Intersection		-	0.52	19.9	B	-	0.69	22.9	C										
JACKSON AVENUE & 44TH DRIVE																			
Jackson Avenue	NB	L	0.15	34.5	C	L	0.15	34.7	C	L	0.15	33.8	C	- Modify signal timing: shift 1 s of green time from SB-lead phase to NB/SB phase [SB-lead green time shifts from 35 s to 34 s; NB/SB green time shifts from 33 s to 34 s]. - Restripe SB Jackson Avenue 10 ft. left-turn lane to 11 ft. left-turn lane by reducing the hatched center median width by one foot.					
		TR	0.87	51.4	D	TR	0.94	59.6	E	TR	0.92	54.9	D						
44th Drive	SB	L	1.03	69.1	E	L	1.06	78.8	E	L	1.03	70.5	E						
		TR	0.53	8.3	A	TR	0.55	8.6	A	TR	0.55	8.5	A						
	EB	LTR	1.12	115.7	F	LTR	1.12	115.7	F	LTR	1.12	115.7	F						
	WB	LTR	1.19	120+	F*	LTR	1.19	120+	F*	LTR	1.19	120+	F*						
Overall Intersection		-	1.12	73.3	E	-	1.17	75.3	E	-	1.12	73.2	E						
JACKSON AVENUE/QUEENS PLAZA EAST & QUEENS BOULEVARD																			
Jackson Ave - Northern Blvd	NB	TR	0.51	30.5	C	TR	0.54	31.1	C	- Mitigation not required.									
	SB	T	0.64	33.1	C	T	0.67	33.8	C										
Queens Boulevard	EB	T	0.53	17.7	B	T	0.53	17.7	B										
	WB	TR	1.20+	120+	F*	TR	1.20+	120+	F*										
Overall Intersection		-	0.96	89.8	F	-	0.98	89.1	F										
NORTHERN BOULEVARD & QUEENS PLAZA NORTH/41ST AVENUE																			
Northern Boulevard	NB	DefL	1.10	120+	F*	DefL	1.10	120+	F*	DefL	1.10	120+	F*	- Modify signal timing: shift 2 s of green time from WB phase to NB/SB phase [WB green time shifts from 20 s to 18 s; NB/SB green time shifts from 35 s to 37 s].					
		TR	0.63	31.2	C	TR	0.67	32.4	C	TR	0.65	30.5	C						
	SB	LT	1.17	120+	F*	LT	1.20+	120+	F*	LT	1.14	120+	F*						
		R	1.14	116.2	F	R	1.14	116.2	F	R	1.10	100.5	F						
Queens Plaza North/41st Avenue	EB	L	0.85	45.4	D	L	0.85	45.4	D	L	0.85	45.4	D						
	WB	LTR	0.06	42.2	D	LTR	0.06	42.2	D	LTR	0.06	43.9	D						
Overall Intersection		-	1.13	102.4	F	-	1.16	106.9	F	-	1.16	93.5	F						
NORTHERN BOULEVARD/31ST STREET & 40TH AVENUE																			
31st Street	SB	LTR	1.11	118.4	F	LTR	1.16	120+	F*	LTR	0.99	78.7	E	- Modify signal timing: shift 3 s of green time from EB-through/WB phase to EB-left/SB phase [EB-through/WB green time shifts from 85 s to 82 s; EB-left/SB green time shifts from 25 s to 28 s].					
Northern Boulevard	EB	L	1.20+	120+	F*	L	1.20+	120+	F*	L	1.20+	120+	F*						
		T	0.38	7.2	A	T	0.39	7.3	A	T	0.40	8.6	A						
	WB	TR	0.92	29.1	C	TR	0.92	29.9	C	TR	0.97	37.3	D						
Overall Intersection		-	1.20+	120+	F*	-	1.20+	120+	F*	-	1.20+	118.7	F						
21ST STREET																			
21ST STREET & QUEENS PLAZA NORTH																			
21st Street	NB	LT	0.61	16.4	B	LT	0.70	18.7	B	LT	0.65	15.8	B	- Modify signal timing: shift 3 s of green time from WB phase to NB/SB phase [WB green time shifts from 37 s to 34 s; NB/SB green time shifts from 73 s to 76 s].					
	SB	TR	0.96	22.3	C	TR	0.98	26.4	C	TR	0.94	17.8	B						
Queens Plaza North	WB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	0.93	58.0	E		- Restripe WB Queens Plaza North from one 30 ft. lane with a bus stop to one 11 ft. shared left-through lane and one 11 ft. through-right lane with a bus stop.				
Overall Intersection		-	1.20+	95.2	F	-	1.20+	95.2	F	-	0.94	25.6	C	[Measures reflect changes needed for the MD and PM peak periods; otherwise mitigation is not needed.]					

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures	
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
21ST STREET & QUEENS PLAZA SOUTH															
21st Street	NB	LTR	0.43	13.2	B	LTR	0.48	13.9	B	LTR	0.46	12.2	B	- Modify signal timing: shift 3 s of green time from EB phase to NB/SB phase [EB green time shifts from 37 s to 34 s; NB/SB green time shifts from 73 s to 76 s].	
	SB	LTR	1.13	76.3	E	LTR	1.19	102.9	F	LTR	1.13	77.4	E		
Queens Plaza South	EB	L	0.27	32.3	C	L	0.27	32.3	C	L	0.29	34.8	C		
		TR	0.45	35.9	D	TR	0.45	35.9	D	TR	0.50	39.2	D		
Overall Intersection		-	0.90	56.4	E	-	0.94	72.5	E	-	0.94	56.3	E		
21ST STREET & 44TH DRIVE															
21st Street	NB	LTR	0.86	27.8	C	LTR	0.96	41.0	D	LTR	0.96	41.0	D	- Install "No Standing 7:00 AM - 7:00 PM" regulation on the west curb of SB 21st Street for the entire block.	
	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	1.16	107.5	F		
44th Drive	EB	LTR	0.95	64.6	E	LTR	0.95	65.5	E	LTR	0.95	65.5	E		
	WB	LTR	0.77	44.2	D	LTR	0.78	44.6	D	LTR	0.78	44.6	D		
Overall Intersection		-	1.12	68.8	E	-	1.20	88.2	F	-	1.09	66.4	E		
VAN DAM STREET															
VAN DAM STREET & THOMSON AVENUE/QUEENS BOULEVARD															
Van Dam Street	NB	L	1.20+	120+	F*	L	1.20+	120+	F*					- Unmitigatable Impact.	
		TR	1.06	107.8	F	TR	1.06	107.8	F						
Queens Boulevard (to Queens Boulevard.)	EB	T	1.09	113.5	F	T	1.09	113.5	F						
Queens Boulevard (to Van Dam Street)		T	1.03	96.8	F	T	1.03	96.8	F						
Queens Boulevard (to Thomson Avenue WB)		R	0.09	47.9	D	R	0.09	47.9	D						
Thomson Avenue	EB	T	0.23	15.0	B	T	0.30	15.9	B						
		R	1.01	68.5	E	R	1.01	68.5	E						
Queens Boulevard (to Thomson Avenue WB)	WB	L	1.19	120+	F*	L	1.20+	120+	F*						
Queens Boulevard (to Viaduct)		TR	0.50	12.2	B	TR	0.50	12.2	B						
Overall Intersection		-	1.17	105.7	F	-	1.17	112.2	F						
VAN DAM STREET & LIE EXIT RAMP															
Van Dam Street	NB	LT	0.42	22.6	C	LT	0.42	22.6	C	LT	0.70	40.3	D	- Restripe WB Queens Midtown Expressway Exit Ramp from two 11 ft. through lanes and one 11 ft. shared through-right lane to two 11 ft. through lanes and one 11 ft. exclusive right-turn lane.	
	SB	TR	0.94	42.0	D	TR	0.94	42.0	D	TR	0.96	45.4	D		
LIE Exit Ramp	WB	TR	1.20	120+	F*	TR	1.20+	120+	F*	T	1.15	120+	F*	- Modify signal phasing plan: Add a new lag phase for the SB approach with the WB right-turn only; maintain the existing 120 s cycle length with the following signal timing: WB = 56 s green, NB/SB = 38 s green time, and SB/WB-right only = 11 s of green time (each phase has 3 s amber and 2 s all red).	
		-	-	-	-	-	-	-	-	R	1.01	120+	F*		
Overall Intersection		-	1.07	119.2	F	-	1.12	120+	F*	-	1.06	120+	F*		
VAN DAM STREET & BORDEN AVENUE															
Van Dam Street	NB	TR	0.63	42.6	D	TR	0.63	42.6	D	TR	0.70	46.8	D	- Mitigation not required.	
	SB	DefL	0.97	52.1	D	DefL	0.97	52.1	D	DefL	0.92	43.6	D		
		T	0.30	14.7	B	T	0.30	14.7	B	T	0.30	14.7	B		
Borden Avenue	EB	LTR	0.54	32.1	C	LTR	0.66	34.6	C	LTR	0.66	34.6	C	- Modify signal timing plan to coordinate with Van Dam Street and LIE Exit Ramp: Maintain the existing 120 s cycle length with the following signal timing: EB = 43 s green, NB/SB = 28 s green time, and SB = 34 s of green time (each phase has 3 s amber and 2 s all red).	
Overall Intersection		-	0.81	41.3	D	-	0.85	41.5	D	-	0.83	38.5	D		

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
CENTER BOULEVARD														
CENTER BOULEVARD & 51ST AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.63	13.6	B	T	0.63	13.6	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
	SB	-	-	-	-	T	0.11	8.1	A	T	0.11	8.1	A	
51st Avenue	WB	-	-	-	-	LR	0.40	17.2	B	LR	0.42	17.5	B	
Overall Intersection		-	-	-	-	-	0.54	13.7	B	-	0.55	13.9	B	
CENTER BOULEVARD & BORDEN AVENUE														
Center Boulevard	NB	-	-	-	-	TR	0.86	39.1	D	TR	0.91	44.1	D	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
		-	-	-	-	R	0.68	30.8	C	R	0.74	33.3	C	
Borden Ave	SB	-	-	-	-	L	0.28	35.2	D	L	0.28	35.2	D	
	WB	-	-	-	-	R	0.63	43.9	D	R	0.63	43.9	D	
Overall Intersection		-	-	-	-	-	0.77	37.2	D	-	0.80	40.1	D	
CENTER BOULEVARD & 54TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.50	17.1	B	T	0.50	17.1	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
54th Avenue	WB	-	-	-	-	R	0.66	14.3	B	R	0.75	16.8	B	
Overall Intersection		-	-	-	-	-	0.60	15.8	B	-	0.65	17.0	B	
CENTER BOULEVARD & 56TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.05	16.4	B					- Mitigation not required.
56th Avenue	WB	-	-	-	-	R	0.64	11.4	B					
Overall Intersection		-	-	-	-	-	0.45	11.8	B					
2ND STREET														
2ND STREET & 51ST AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.4	A	LTR	0.09	10.7	B	LTR	0.09	10.7	B	
51st Avenue	WB	LR	-	10.3	B	LT	0.39	13.3	B	LT	0.40	13.4	B	
Overall Intersection		-	-	3.7	A	-	0.24	12.5	B	-	0.25	12.6	B	
2ND STREET & BORDEN AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.8	A	LTR	0.51	44.9	D	LTR	0.45	41.3	D	
Borden Avenue	EB	-	-	-	-	TR	0.71	30.2	C	TR	0.80	34.3	C	
	WB	LR	-	13.6	B	DefL	0.73	34.1	C	DefL	0.83	43.8	D	
		-	-	-	-	T	0.23	6.5	A	T	0.24	7.6	A	
Overall Intersection		-	-	8.0	A	-	0.78	29.8	C	-	0.79	33.9	C	
2ND STREET & 54TH AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.5	A	LTR	0.68	17.4	B	LTR	0.72	18.3	B	
54th Avenue	WB	LR	-	9.4	A	LT	0.25	11.9	B	LT	0.34	12.6	B	
Overall Intersection		-	-	4.3	A	-	0.47	15.9	B	-	0.53	16.5	B	

APPENDIX TABLE 22-1
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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
2ND STREET & 55TH AVENUE														
2nd Street	SB	-	-	-	-	LT	0.11	10.8	B					- Mitigation not required.
55th Avenue	EB	-	-	-	-	TR	0.13	11.1	B					
Overall Intersection		-	-	-	-	-	0.12	10.9	B					
2ND STREET & 56TH AVENUE														
2nd Street	SB	-	-	-	-	T	0.03	2.5	A					- Mitigation not required.
		-	-	-	-	R	0.29	3.5	A					
Overall Intersection		-	-	-	-	-	0.29	3.4	A					
11TH STREET														
11TH STREET & 44TH DRIVE														
11th Street	NB	LTR	0.73	15.5	B	LTR	0.73	15.7	B	LTR	0.75	16.6	B	- Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 53 s to 52 s; EB/WB green time shifts from 27 s to 28 s].
	SB	LTR	0.60	14.0	B	LTR	0.60	14.1	B	LTR	0.61	14.9	B	
44th Drive	EB	LTR	0.64	31.4	C	LTR	0.64	31.4	C	LTR	0.62	30.0	C	[Measures reflect changes in signal timing needed for the PM peak period; otherwise mitigation is not needed.]
	WB	LTR	0.80	38.0	D	LTR	0.81	38.4	D	LTR	0.78	35.8	D	
Overall Intersection		-	0.75	21.6	C	-	0.76	21.8	C		0.76	21.7	C	
UNSIGNALIZED INTERSECTIONS														
CENTER BOULEVARD														
CENTER BOULEVARD & 48TH AVENUE		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 120-second cycle length. [NB/SB green time is 60 s; WB green time is 50 s; both phases have 3 s of amber and 2 s of all red time]. - Restripe NB Center Boulevard from unmarked 63 ft. curb to curb with parking on both sides to one 11 ft. through and one 11 ft. through-right NB lanes and two SB receiving lanes with parking on the east and west curbs.
Center Boulevard	NB	-	-	-	-	-	-	-	-	TR	0.17	16.5	B	
	SB	LT	-	12.3	B	LT	-	16.7	C	LT	0.17	16.7	B	
		T	-	12.3	B	T	-	16.5	C	-	-	-	-	
48th Avenue	WB	L	-	17.7	C	L	-	34.2	D	L	0.09	21.3	C	
		R	-	12.8	B	R	-	17.6	C	R	0.17	22.8	C	
Overall Intersection		-	-	9.7	A	-	-	11.2	B	-	0.17	17.7	B	
CENTER BOULEVARD & 49TH AVENUE														
Center Boulevard	SB	LT	-	7.9	A	LT	-	9.5	A					- Mitigation not required.
49th Avenue	WB	LR	-	13.6	B	LR	-	23.8	C					
Overall Intersection		-	-	3.3	A	-	-	4.0	A					
CENTER BOULEVARD & 50TH AVENUE														
Center Boulevard	SB	L	FREEFLOW		A	LT	-	11.9	B	LT	-	12.0	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
50th Avenue	WB	R	FREEFLOW		A	-	-	-	-	-	-	-	-	
Overall Intersection		-	FREEFLOW		A	-	-	2.0	A	-	-	2.0	A	
CENTER BOULEVARD & 55TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	-	12.1	B					- Mitigation not required.
		-	-	-	-	TR	-	14.2	B					
Overall Intersection		-	-	-	-	-	-	13.2	B					
CENTER BOULEVARD & 57TH AVENUE														
57th Avenue	NB	-	-	-	-	T	-	9.7	A					- Mitigation not required.
Overall Intersection		-	-	-	-	-	-	9.7	A					

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
2ND STREET														
2ND STREET & 50TH AVENUE														
2nd Street	NB	LR	-	13.5	B	-	-	-	-					- Mitigation not required.
50th Avenue	EB	TR	-	-	-	TR	FREEFLOW		A					
Overall Intersection	-	-	6.4	A	-	FREEFLOW		A						
2ND STREET & 57TH AVENUE														
2nd Street	SB	-	-	-	-	T	-	9.7	A					- Mitigation not required.
Overall Intersection	-	-	-	-	-	-	-	9.7	A					
5TH STREET														
5TH STREET & 48TH AVENUE														
5th Street	NB	LTR	-	9.9	A	LTR	-	9.9	A					- Mitigation not required.
	SB	LTR	-	13.2	B	LTR	-	13.4	B					
48th Avenue	EB	LT	-	10.1	B	LT	-	10.1	B					
		TR	-	9.9	A	TR	-	9.9	A					
	WB	LT	-	11.2	B	LT	-	11.2	B					
		TR	-	9.5	A	TR	-	9.5	A					
Overall Intersection	-	-	11.4	B	-	-	11.5	B						
5TH STREET & 49TH AVENUE														
		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [NB/SB green time is 30 s; EB/WB green time is 20 s; both phases have 3 s of amber and 2 s of all red time]. - Install "No Standing Anytime" regulation on the east curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the west side. - Install "No Standing Anytime" regulation on the north curb of EB 49th Avenue and WB 49th Avenue 120 ft. from the intersection and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the south side.
5th Street	NB	LTR	-	9.0	A	LTR	-	9.0	A	LTR	0.30	9.6	A	
	SB	LTR	-	8.1	A	LTR	-	8.1	A	LTR	0.53	11.9	B	
49th Avenue	EB	LTR	-	21.4	C	LTR	-	34.8	D	LTR	0.24	15.2	B	
	WB	LTR	-	22.1	C	LTR	-	25.8	D	LTR	0.11	14.2	B	
Overall Intersection	-	-	4.3	A	-	-	8.0	A	-	0.41	12.0	B		
5TH STREET & 50TH AVENUE														
		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [NB/SB green time is 25 s; EB green time is 25 s; both phases have 3 s of amber and 2 s of all red time]. - Install "No Standing Anytime" regulation on the east curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the west side. - Install an east-west crosswalk on the south side of the intersection to accommodate pedestrians.
5th Street	NB	-	-	-	-	-	-	-	-	TR	0.26	12.1	B	
	SB	LT	-	7.7	A	LT	-	7.7	A	LT	0.53	15.3	B	
50th Avenue	EB	LTR	-	33.0	D	LTR	-	120+	F*	LTR	0.57	15.7	B	
Overall Intersection	-	-	8.7	A	-	-	120+	F*	-	0.55	14.8	B		
5TH STREET & 51ST AVENUE														
5th Street	NB	LT	-	8.1	A	LT	-	8.3	A	LT	-	9.7	A	- Designate 51st Avenue as one way WB only. - Install "All Way" Stop control sign on all approaches. [Measures reflect geometric improvements needed for the PM peak period; otherwise mitigation is not needed.]
	SB	TR	-	-	-	-	-	-	-	TR	-	12.1	B	
51st Avenue	EB	LR	-	13.6	B	LR	-	12.7	B	-	-	-	-	
	WB	LTR	-	13.9	B	LTR	-	20.9	C	LTR	-	11.6	B	
Overall Intersection	-	-	5.2	A	-	-	8.7	A	-	-	11.5	B		

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
5TH STREET & BORDEN AVENUE														
		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [SB green time is 20 s; EB/WB green time is 30 s; both phases have 3 s of amber and 2 s of all red time]. - Install an east-west crosswalk on the north side of the intersection to accommodate pedestrians. - Install "No Standing Anytime" regulation on the west curb of SB 5th Street and shift the centerline 4 ft. to the west to gain a 11 ft. moving lane.
5th Street	SB	LR	-	18.3	C	LR	-	120+	F*	LR	0.59	19.5	B	
Borden Avenue	EB	L	-	7.9	A	L	-	120+	F*	L	0.15	9.0	A	
		-	-	-	-	-	-	-	-	T	0.92	24.3	C	
	WB	-	-	-	-	-	-	-	-	TR	0.87	22.5	C	
Overall Intersection	-	-	6.9	A	-	-	120+	F*	-	0.79	22.6	C		
11TH STREET/11TH PLACE														
11TH STREET & BORDEN AVENUE AT QMT TOLL PLAZA EXIT RAMP														
		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Partially Mitigated. - Prohibit NB 11th Street left (on to Borden Avenue) and through (on to QMT/LIE) movements and restripe it as 20 ft. right turn only lane. - Prohibit SB QMT Exit left (on to Borden Avenue) and through (on to 11th Street) movements and restripe it as 26 ft. right turn only lane. - Restripe EB Borden Avenue from one 20 ft. lane to one 10 ft. left turn lane and one 10 ft. through-right lane. - Restripe WB Borden Avenue from one 22 ft. lane to one 11 ft. shared left-through lane and one 11 ft. shared through-right lane. - Install a new traffic signal with a 60-second cycle length. [EB+SB right turn green time is 26 s; WB+EB-left+NB right turn green time is 24 s; both phases have 3 s of amber and 2 s of all red time]. - Allow Right Turn on Red from the SB QMT Exit. - Provide signage along the QMT to direct traffic headed to 11th Street and EB Borden Avenue to use the 21st Street ramp
11th Street	NB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.06	11.2	B	
	SB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.19	10.8	B	
Borden Avenue	EB	LTR	-	120+	F*	LTR	-	120+	F*	L	1.20+	120+	F*	
		-	-	-	-	-	-	-	-	TR	0.53	14.4	B	
	WB	LTR	-	7.8	A	LTR	-	8.1	A	LTR	0.99	36.3	D	
Overall Intersection	-	-	120+	F*	-	-	120+	F*	-	1.20+	96.3	F		
11TH PLACE & 50TH AVENUE														
11th Place	SB	TR	-	18.7	C	TR	-	20.0	C	TR	-	21.2	C	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
50th Avenue	WB	LT	-	7.8	A	LT	-	7.9	A	LT	-	7.9	A	
Overall Intersection	-	-	8.2	A	-	-	8.0	A	-	-	8.1	A		
11TH STREET SERVICE ROAD & 49TH AVENUE														
11th Street Service Road	NB	R	-	11.2	B	R	-	11.2	B					- Mitigation not required.
49th Avenue	WB	R	-	10.5	B	R	-	10.5	B					
Overall Intersection	-	-	3.9	A	-	-	3.9	A						
11TH STREET & QUEENS PLAZA SOUTH														
11th Street	NB	LTR	-	17.2	C	LTR	-	17.9	C					- Mitigation not required.
Queens Plaza South	EB	LT	-	14.5	B	LT	-	14.8	B					
		TR	-	11.0	B	TR	-	11.1	B					
	WB	LT	-	11.9	B	LT	-	12.0	B					
		TR	-	9.5	A	TR	-	9.6	A					
Overall Intersection	-	-	14.4	B	-	-	14.8	B						
OTHER UNSIGNALIZED INTERSECTIONS														
21ST STREET & 50TH AVENUE														
21st Street	NB	LT	FREEFLOW	A	LT	FREEFLOW	A							- Mitigation not required.
50th Avenue	SB	R	FREEFLOW	A	R	FREEFLOW	A							
Overall Intersection	-	FREEFLOW	A	-	FREEFLOW	A								

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
JACKSON AVENUE & 51ST AVENUE														
Jackson Avenue	NB	T	-	9.1	A	T	-	11.9	B	T	-	11.9	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
51st Avenue	WB	TR	-	12.9	B	TR	-	16.4	C	TR	-	16.8	C	
Overall Intersection		-	-	3.9	A	-	-	5.1	A	-	-	5.1	A	
VERNON BOULEVARD & QUEENS PLAZA SOUTH														
		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 90-second cycle length. [NB/SB green time is 57 s; EB/WB green time is 23 s; both phases have 3 s of amber and 2 s of all red time]. - Install "No Standing Anytime" regulation on the west curb of SB Vernon Boulevard 150 ft. from the intersection and restripe the approach from a 14 ft. lane with parking to one 11 ft. left-turn lane and one 11 ft. through lane.
Vernon Boulevard	NB	TR	-	-	-	TR	-	-	-	TR	0.69	13.7	B	
	SB	LT	-	11.0	B	LT	-	11.5	B	L	0.94	40.9	D	
		-	-	-	-	-	-	-	-	T	0.90	24.4	C	
Queens Plaza South	WB	L	-	120+	F*	L	-	120+	F*	L	0.06	25.5	C	
		R	-	16.4	C	R	-	17.9	C	R	0.54	34.3	C	
Overall Intersection		-	-	5.1	A	-	-	5.4	A	-	0.82	24.5	C	

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
(5) F* indicates levels of service F conditions with delays in excess of two minutes for the movement with the asterik (*).

Denotes a significant impact

APPENDIX TABLE 22-2
HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS EIS
2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (MIDDAY PEAK HOUR)

INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures	
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
SIGNALIZED INTERSECTIONS															
VERNON BOULEVARD															
VERNON BOULEVARD & 48TH AVENUE															
Vernon Boulevard	NB	LT	0.67	23.0	C	LT	0.72	24.5	C					- Mitigation not required.	
	SB	TR	0.67	22.6	C	TR	0.73	24.7	C						
	48th Avenue	EB	L	0.28	33.8	C	L	0.29	34.0	C					
			R	0.40	39.3	D	R	0.40	39.3	D					
		WB	LTR	0.77	50.4	D	LTR	0.77	50.4	D					
Overall Intersection		-	0.63	28.1	C	-	0.67	29.2	C						
VERNON BOULEVARD & 49TH AVENUE															
Vernon Boulevard	NB	LTR	0.68	14.4	B	LTR	0.73	15.5	B	LTR	0.58	10.9	B	- Modify cycle length from 60 s to 90 s. [EB green time is 22 s; NB/SB green time is 58 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	LTR	0.63	13.1	B	LTR	0.69	14.3	B	LTR	0.55	10.4	B		
	49th Avenue	EB	LTR	0.17	15.7	B	LTR	0.20	16.0	B	LTR	0.26	29.5		C
Overall Intersection		-	0.49	13.9	B	-	0.53	15.0	B	-	0.49	12.1	B	[Measures reflect change in signal timing needed for the AM/PM peak period; otherwise mitigation is not needed.]	
VERNON BOULEVARD & 50TH AVENUE															
Vernon Boulevard	NB	TR	0.72	15.6	B	TR	0.76	16.9	B	TR	0.89	35.9	D	- Modify cycle length from 60 s to 90 s. [EB green time is 40 s; NB/SB green time is 40 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	LT	0.58	12.5	B	LT	0.65	13.9	B	LT	0.83	32.4	C		
	50th Avenue	EB	LTR	0.64	27.9	C	LTR	1.02	79.0	E	LTR	0.69	29.2		C
Overall Intersection		-	0.69	16.7	B	-	0.86	30.7	C	-	0.79	33.1	C		
VERNON BOULEVARD & 51ST AVENUE															
Vernon Boulevard	NB	LT	0.74	20.8	C	LT	0.78	22.6	C	LT	0.65	20.1	C	- Modify cycle length from 60 s to 90 s. [WB green time is 35 s; NB/SB green time is 45 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	TR	0.63	17.3	B	TR	0.78	22.3	C	TR	0.65	19.9	B		
	51st Avenue	WB	LTR	0.61	15.4	B	LTR	0.80	19.7	B	LTR	0.93	37.9		D
Overall Intersection		-	0.68	17.5	B	-	0.79	21.1	C	-	0.77	29.2	C	[Measures reflect change in signal timing needed for the AM peak period; otherwise mitigation is not needed.]	
VERNON BOULEVARD & BORDEN AVENUE															
Vernon Boulevard	SB	L	0.97	44.7	D	L	0.97	44.7	D	L	0.75	36.3	D	- Install "No Standing Anytime" regulation on the west curb of the SB Vernon Boulevard for 120 ft. and restripe the approach from one 9 ft. left-turn lane and one 15 ft. left-right lane to two 11 ft. left-turn lanes and one 11 ft. right-turn lane by switching the parking on the east side from angle to parallel to gain additional 9 ft.	
		LR	0.55	16.5	B	LR	1.02	62.4	E	R	0.55	34.4	C		
	Borden Avenue	EB	LT	0.57	16.5	B	LT	1.20+	120+	F*	DefL	0.43	17.3		B
		-	-	-	-	-	-	-	-	-	T	0.54	19.6		B
	WB	T	0.49	14.6	B	T	0.70	18.4	B	T	0.51	34.1	C		
Overall Intersection		-	0.77	25.8	C	-	1.20+	120+	F*	-	0.85	30.1	C	- Install "No Standing 7:00 AM - 7:00 PM" regulation on the south curb of the EB Borden Avenue 120 ft. from the intersection and restripe the approach from one 16 ft. travel lane with parking to one 12 ft. shared left through and one 12 ft. through lane.	
- Shift centerline of the WB Borden Avenue 6 ft. to the north tapered 150 ft. from the intersection. Restripe EB Borden Avenue receiving as two 11 ft. lanes.															
- Restripe WB Borden Avenue from one 13 ft. through lane and one 15 ft. channelized right-turn lane to two 11 ft. through lane and one 11 ft. right-turn lane by shifting the north curb 11 ft. to the north.															
- Restripe WB Borden Avenue receiving from one 22 ft. lane with parking to two 11 ft. lanes with parking.															
- Modify cycle length from 60 s to 120 s with EB-lead phase. [SB green time is 45 s; EB-lead green time is 21 s; EB/WB green time is 39 s; all phases have 3 s of amber and 2 s of all red time].															

APPENDIX TABLE 22-2
HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS EIS
2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (MIDDAY PEAK HOUR)

INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
VERNON BOULEVARD & 44TH DRIVE														
Vernon Boulevard	NB	LTR	0.72	13.8	B	LTR	0.75	14.8	B	LTR	0.78	15.3	B	- Modify signal timing: shift 1 s of green time from EB/WB phase to NB/SB phase [EB/WB green time shifts from 16 s to 15 s; NB/SB green time shifts from 34 s to 35 s].
	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	1.16	95.1	F	
44th Drive	EB	LTR	0.54	23.3	C	LTR	0.54	23.3	C	LTR	0.58	25.4	C	- Restripe NB/SB Vernon Boulevard approach as follows: 150 feet upstream of the stop bar, shift the centerline 2 ft. to the east to increase the lane width to 16 ft. Shift the centerline on NB Vernon Boulevard 2 ft. to the east to coincide with the SB approach reducing the lane width to 12 ft.
	WB	LTR	0.71	26.6	C	LTR	0.72	26.9	C	LTR	0.78	30.9	C	
Overall Intersection		-	1.07	65.5	E	-	1.10	72.8	E	-	1.04	52.2	D	
JACKSON AVENUE/NORTHERN BOULEVARD														
JACKSON AVENUE & 50TH AVENUE														
Jackson Avenue	NB	TR	0.20	10.7	B	TR	0.28	11.4	B	TR	0.28	11.4	B	- Install "No Standing Anytime" regulation on the north curb of the EB 50th Avenue 150 ft. from the intersection and restripe the approach from one 14 ft. lane with parking on both sides to one 11 ft. left turn lane and one 11 ft. through-right lane with parking along the south curb.
	SB	LT	0.33	11.9	B	LT	0.47	13.7	B	LT	0.47	13.7	B	
50th Avenue	EB	LTR	0.44	35.5	D	LTR	0.57	38.4	D	L	0.28	32.5	C	[Measures reflect changes needed for the AM peak period; otherwise mitigation is not needed.]
	-	-	-	-	-	-	-	-	-	TR	0.29	32.6	C	
50th Avenue WB Right (Unsignalized)	WB	L	0.35	35.0	D	L	0.37	35.4	D	L	0.62	43.6	D	
	WB	R	-	10.9	B	R	-	12.3	B	R	-	12.3	B	
Overall Intersection		-	0.37	17.6	B	-	0.51	18.3	B	-	0.52	18.8	B	
JACKSON AVENUE & 49TH AVENUE														
49th Avenue	SB	LTR	0.36	28.6	C	LTR	0.39	29.1	C	LTR	0.41	29.5	C	- Install "No Standing Anytime" regulation on the south curb of EB Jackson Avenue for the entire block, shift the centerline 5 ft. to the north, and restripe the approach from a 11 ft. through, one 10 ft. shared through-right lane with parking to two 11 ft. through lanes and one 12 ft. exclusive right turn lane.
Jackson Avenue	EB	TR	0.67	44.6	D	TR	0.92	59.5	E	T	0.45	39.4	D	
	-	-	-	-	-	-	-	-	-	R	0.34	17.4	B	- Restripe WB Jackson Avenue from one 11 ft. left-through lane and one 20 ft. through lane to one 26 ft. through lane.
	WB	LT	0.34	16.9	B	LT	0.51	19.5	B	T	0.64	22.8	C	
Overall Intersection		-	0.54	30.0	C	-	0.70	37.2	D	-	0.55	26.8	C	- Prohibit WB Jackson Avenue left-turn on to the 11th Street service road.
JACKSON AVENUE & 11TH STREET (PULASKI BRIDGE)														
11th Street (Pulaski Bridge)	NB	-	-	-	-	-	-	-	-	L	0.58	38.8	D	- Post signs on the Pulaski Bridge to direct the right turning traffic to the 11th Street service road with signs for Queens Boulevard/Jackson Avenue East traffic.
	LT	0.82	39.9	D	LT	1.03	73.5	E	T	0.63	32.6	C		
	R	0.81	45.0	D	R	0.81	45.0	D	-	-	-	-	- Restripe the NB 11th Street service road approach traffic island to allow for two 12 ft. right-turn lanes by removing parking along the west curb.	
	SB	LTR	0.52	30.6	C	LTR	0.56	31.3	C	LTR	0.56	31.4		C
Jackson Avenue	EB	LT	0.47	31.7	C	LT	0.81	41.9	D	LT	0.80	41.4	D	- Restripe the NB Pulaski Bridge shared left-through lane to an exclusive left-turn lane.
	WB	DefL	1.06	85.4	F	DefL	1.17	120+	F*	L	0.90	58.1	E	
11th Street Service Road	T	0.47	19.6	B	T	0.69	24.9	C	T	0.69	25.3	C	- Install "No Standing Anytime" regulation on the north curb of the WB Jackson Avenue approach for 150 ft. and restripe the approach from a 10 ft. shared left-through and a 12 ft. through lane with parking to two 10 ft. left-turn lanes and a 10 ft. through lane.	
	NB	R	0.89	65.5	E	R	0.89	65.5	E	R	0.47	11.4		B
Overall Intersection		-	0.99	47.0	D	-	1.20+	62.9	E	-	0.75	33.4	C	- Prohibit the WB Jackson Avenue left-turn during the permitted EB/WB phase.
JACKSON AVENUE & 21ST STREET														
21st Street	NB	LTR	1.05	86.2	F	LTR	1.09	100.1	F	LTR	1.02	77.2	E	- Partially Mitigated.
	SB	LTR	0.73	40.3	D	LTR	0.81	44.2	D	LTR	0.81	44.2	D	
Jackson Avenue	EB	L	0.71	24.2	C	L	1.06	105.6	F	L	1.03	96.0	F	- Install "No Standing 10:00 AM - 7:00 PM" regulation on the east curb of NB 21st Street for 120 ft. from the intersection.
	TR	0.52	24.8	C	TR	0.57	25.9	C	TR	0.57	25.9	C		
	WB	L	0.43	15.2	B	L	0.45	15.9	B	L	0.55	17.8	B	
	TR	0.71	29.2	C	TR	0.78	31.9	C	TR	0.76	30.8	C		
Overall Intersection		-	0.87	40.9	D	-	1.10	51.5	D	-	1.04	46.1	D	

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
JACKSON AVENUE & THOMSON AVENUE														
Jackson Avenue	NB	TR	0.61	21.8	C	TR	0.66	22.9	C					- Mitigation not required.
	SB	L	0.15	16.2	B	L	0.17	16.6	B					
Thomson Avenue		T	0.47	19.3	B	T	0.48	19.4	B					
	WB	L	0.42	27.3	C	L	0.48	28.5	C					
		R	0.24	25.2	C	R	0.24	25.2	C					
Overall Intersection		-	0.53	21.7	C	-	0.58	22.5	C					
JACKSON AVENUE & 44TH DRIVE														
Jackson Avenue	NB	L	0.19	12.2	B	L	0.19	12.3	B	L	0.19	12.3	B	- Restripe SB Jackson Avenue 10 ft. left-turn lane to 11 ft. left-turn lane by reducing the hatched center median width by one foot.
		TR	0.87	21.3	C	TR	0.89	23.1	C	TR	0.89	23.1	C	
44th Drive	SB	L	0.55	18.9	B	L	0.56	19.7	B	L	0.54	18.8	B	[Measures reflect geometric improvements needed for the AM peak period; otherwise mitigation is not needed.]
			TR	0.47	3.9	A	TR	0.48	4.0	A	TR	0.48	4.0	
	EB	DefL	1.20+	120+	F*	DefL	1.20+	120+	F*	DefL	1.20+	120+	F*	
			TR	0.75	51.1	D	TR	0.75	51.1	D	TR	0.75	51.1	
	WB	LTR	1.11	113.1	F	LTR	1.11	113.1	F	LTR	1.11	113.1	F	
Overall Intersection		-	1.12	59.9	E	-	1.13	59.8	E	-	1.13	59.7	E	
JACKSON AVENUE/QUEENS PLAZA EAST & QUEENS BOULEVARD														
Jackson Ave - Northern Blvd	NB	TR	0.57	32.3	C	TR	0.58	32.5	C					- Mitigation not required.
	SB	T	0.38	29.2	C	T	0.39	29.4	C					
Queens Boulevard	EB	T	0.60	18.3	B	T	0.60	18.3	B					
	WB	TR	0.62	18.8	B	TR	0.62	18.8	B					
Overall Intersection		-	0.60	22.6	C	-	0.61	22.7	C					
NORTHERN BOULEVARD & QUEENS PLAZA NORTH/41ST AVENUE														
Northern Boulevard	NB	LTR	0.70	25.2	C	LTR	0.71	25.5	C					- Mitigation not required.
	SB	LT	0.69	33.5	C	LT	0.72	34.2	C					
			R	0.73	15.1	B	R	0.73	15.1	B				
Queens Plaza North/41st Avenue	EB	L	0.98	53.1	D	L	0.98	53.1	D					
	WB	LTR	0.06	31.7	C	LTR	0.06	31.7	C					
Overall Intersection		-	0.80	30.2	C	-	0.80	30.4	C					
NORTHERN BOULEVARD/31ST STREET & 40TH AVENUE														
31st Street	SB	LTR	0.68	47.8	D	LTR	0.69	48.1	D	LTR	0.61	43.7	D	- Modify signal timing: shift 3 s of green time from EB-through/WB phase to EB-left/SB phase [EB-through/WB green time shifts from 85 s to 82 s; EB-left/SB green time shifts from 25 s to 28 s].
Northern Boulevard	EB	L	1.20+	120+	F*	L	1.20+	120+	F*	L	1.20+	120+	F*	
		T	0.41	7.5	A	T	0.41	7.5	A	T	0.43	8.8	A	
	WB	TR	0.42	7.5	A	TR	0.42	7.5	A	TR	0.43	8.9	A	
Overall Intersection		-	0.93	100.7	F	-	0.98	111.8	F	-	0.89	79.9	E	
21ST STREET														
21ST STREET & QUEENS PLAZA NORTH														
21st Street	NB	LT	1.20+	120+	F*	LT	1.20+	120+	F*	LT	1.20+	120+	F*	- Modify signal timing: shift 2 s of green time from WB phase to NB/SB phase [WB green time shifts from 55 s to 53 s; NB/SB green time shifts from 55 s to 57 s].
	SB	TR	0.83	33.0	C	TR	0.84	33.9	C	TR	0.81	31.1	C	
Queens Plaza North	WB	LTR	0.60	27.6	C	LTR	0.60	27.6	C	LTR	0.31	22.2	C	- Restripe WB Queens Plaza North from one 30 ft. lane with a bus stop to one 11 ft. shared left-through lane and one 11 ft. through-right lane with a bus stop.
Overall Intersection		-	1.00	120+	F*	-	1.02	120+	F*	-	0.86	116.7	F	

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures	
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
21ST STREET & QUEENS PLAZA SOUTH															
21st Street	NB	LTR	0.93	14.7	B	LTR	0.95	16.8	B					- Mitigation not required.	
	SB	LTR	0.70	15.2	B	LTR	0.72	15.8	B						
Queens Plaza South	EB	L	0.30	38.1	D	L	0.30	38.1	D						
		TR	0.39	39.6	D	TR	0.39	39.6	D						
Overall Intersection		-	0.78	17.2	B	-	0.79	18.6	B						
21ST STREET & 44TH DRIVE															
21st Street	NB	LTR	0.68	11.8	B	LTR	0.71	12.6	B	LTR	0.71	12.6	B	- Install "No Standing 7:00 AM - 7:00 PM" regulation on the west curb of SB 21st Street for the entire block.	
	SB	LTR	1.01	43.3	D	LTR	1.05	54.6	D	LTR	0.92	23.9	C		
44th Drive	EB	LTR	0.68	41.7	D	LTR	0.68	41.7	D	LTR	0.68	41.7	D		
	WB	LTR	0.94	59.6	E	LTR	0.94	59.6	E	LTR	0.94	59.6	E		
Overall Intersection		-	0.99	38.9	D	-	1.01	42.8	D	-	0.92	32.1	C		
VAN DAM STREET															
VAN DAM STREET & THOMSON AVENUE/QUEENS BOULEVARD															
Van Dam Street	NB	L	1.20+	120+	F*	L	1.20+	120+	F*					- Unmitigatable Impact.	
		TR	1.10	107.6	F	TR	1.10	107.6	F						
Queens Boulevard (to Queens Boulevard.)	EB	T	0.66	30.9	C	T	0.66	30.9	C						
Queens Boulevard (to Van Dam Street)		T	0.93	61.3	E	T	0.93	61.3	E						
Queens Boulevard (to Thomson Avenue WB)		R	0.08	35.5	D	R	0.08	35.5	D						
Thomson Avenue	EB	T	0.65	22.6	C	T	0.68	23.2	C						
		R	1.19	120+	F*	R	1.19	120+	F*						
Queens Boulevard (to Thomson Avenue WB)	WB	L	0.94	70.3	E	L	0.99	79.4	E						
Queens Boulevard (to Viaduct)		TR	0.32	9.1	A	TR	0.32	9.1	A						
Overall Intersection		-	1.20+	71.1	E	-	1.20+	72.1	E						
VAN DAM STREET & LIE EXIT RAMP															
Van Dam Street	NB	LT	0.23	15.8	B	LT	0.23	15.8	B	LT	0.58	34.8	C	- Restripe WB Queens Midtown Expressway Exit Ramp from two 11 ft. through lanes and one 11 ft. shared through-right lane to two 11 ft. through lanes and one 11 ft. exclusive right-turn lane.	
	SB	TR	1.14	120+	F*	TR	1.14	120+	F*	TR	1.14	120+	F*		
LIE Exit Ramp	WB	TR	1.17	107.8	F	TR	1.20+	120+	F*	T	1.06	64.4	E	- Modify signal phasing plan: Add a new lag phase for the SB approach with the WB right-turn only; maintain the existing 90 s cycle length with the following signal timing: WB = 40 s green, NB/SB = 20 s green time, and SB/WB-right only = 15 s of green time (each phase has 3 s amber and 2 s all red).	
		-	-	-	-	-	-	-	-	R	0.95	29.1	C		
Overall Intersection		-	1.16	107.6	F	-	1.20	120+	F*	-	1.10	76.4	E		
VAN DAM STREET & BORDEN AVENUE															
Van Dam Street	NB	TR	0.67	40.5	D	TR	0.67	40.5	D	TR	0.67	40.5	D	- Mitigation not required.	
	SB	DefL	0.88	27.1	C	DefL	0.88	27.1	C	DefL	0.90	28.7	C		
		T	0.22	10.6	B	T	0.22	10.6	B	T	0.22	10.6	B	- Modify signal phasing to allowed pedestrian movements to match AM/PM peak periods.	
Borden Avenue	EB	LTR	0.59	26.6	C	LTR	0.62	27.2	C	LTR	0.62	27.2	C		
Overall Intersection		-	0.78	27.4	C	-	0.80	27.6	C	-	0.81	28.4	C		

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
CENTER BOULEVARD														
CENTER BOULEVARD & 51ST AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.38	10.2	B	T	0.38	10.2	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
	SB	-	-	-	-	T	0.04	7.7	A	T	0.04	7.7	A	
51st Avenue	WB	-	-	-	-	LR	0.21	15.1	B	LR	0.26	15.5	B	
Overall Intersection		-	-	-	-	-	0.31	11.1	B	-	0.33	11.3	B	
CENTER BOULEVARD & BORDEN AVENUE														
Center Boulevard	NB	-	-	-	-	TR	0.67	23.7	C	TR	0.64	36.2	D	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
		-	-	-	-	R	0.49	20.5	C	R	0.51	33.2	C	
Borden Ave	SB	-	-	-	-	L	0.10	15.4	B	L	0.08	24.3	C	
	WB	-	-	-	-	R	0.35	18.2	B	R	0.28	27.2	C	
Overall Intersection		-	-	-	-	-	0.52	21.1	C	-	0.46	33.0	C	
CENTER BOULEVARD & 54TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.27	15.2	B	T	0.29	15.2	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
54th Avenue	WB	-	-	-	-	R	0.29	9.3	A	R	0.39	10.4	B	
Overall Intersection		-	-	-	-	-	0.28	12.9	B	-	0.35	12.9	B	
CENTER BOULEVARD & 56TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.08	16.6	B					- Mitigation not required.
56th Avenue	WB	-	-	-	-	R	0.36	7.9	A					
Overall Intersection		-	-	-	-	-	0.27	9.4	A					
2ND STREET														
2ND STREET & 51ST AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.7	A	LTR	0.04	10.4	B	LTR	0.04	10.4	B	
51st Avenue	WB	LR	-	9.7	A	LT	0.28	12.2	B	LT	0.30	12.4	B	
Overall Intersection		-	-	2.8	A	-	0.16	11.9	B	-	0.17	12.1	B	
2ND STREET & BORDEN AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.7	A	LTR	0.21	17.5	B	LTR	0.24	38.0	D	
Borden Avenue	EB	-	-	-	-	TR	0.47	18.4	B	TR	0.42	25.4	C	
	WB	LR	-	11.9	B	DefL	0.60	13.9	B	DefL	0.58	19.6	B	
		-	-	-	-	T	0.17	6.5	A	T	0.14	6.9	A	
Overall Intersection		-	-	7.0	A	-	0.60	15.2	B	-	0.65	22.8	C	
2ND STREET & 54TH AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.7	A	LTR	0.56	15.1	B	LTR	0.58	15.4	B	
54th Avenue	WB	LR	-	9.9	A	LT	0.16	11.2	B	LT	0.27	12.0	B	
Overall Intersection		-	-	5.6	A	-	0.36	14.3	B	-	0.42	14.3	B	

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
2ND STREET & 55TH AVENUE														
2nd Street	SB	-	-	-	-	LT	0.20	11.4	B					- Mitigation not required.
55th Avenue	EB	-	-	-	-	TR	0.05	10.6	B					
Overall Intersection		-	-	-	-	-	0.13	11.3	B					
2ND STREET & 56TH AVENUE														
2nd Street	SB	-	-	-	-	T	0.04	2.5	A					- Mitigation not required.
		-	-	-	-	R	0.29	3.5	A					
Overall Intersection		-	-	-	-	-	0.29	3.4	A					
11TH STREET														
11TH STREET & 44TH DRIVE														
11th Street	NB	LTR	0.56	12.5	B	LTR	0.56	12.5	B	LTR	0.57	13.2	B	- Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 53 s to 52 s; EB/WB green time shifts from 27 s to 28 s]. [Measures reflect change in signal timing needed for the PM peak period; otherwise mitigation is not needed.]
	SB	LTR	0.36	10.4	B	LTR	0.36	10.4	B	LTR	0.37	11.0	B	
44th Drive	EB	LTR	0.72	33.3	C	LTR	0.72	33.3	C	LTR	0.69	31.6	C	
	WB	LTR	0.77	35.9	D	LTR	0.77	36.0	D	LTR	0.74	33.6	C	
Overall Intersection		-	0.63	21.6	C	-	0.63	21.6	C	-	0.63	21.1	C	
UNSIGNALIZED INTERSECTIONS														
CENTER BOULEVARD														
CENTER BOULEVARD & 48TH AVENUE		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 120-second cycle length. [NB/SB green time is 60 s; WB green time is 50 s; both phases have 3 s of amber and 2 s of all red time]. - Restripe NB Center Boulevard from unmarked 63 ft. curb to curb with parking on both sides to one 11 ft. through and one 11 ft. through-right NB lanes and two SB receiving lanes with parking on the east and west curbs.
Center Boulevard	NB	-	-	-	-	-	-	-	-	TR	0.14	16.3	B	
	SB	LT	-	120+	F*	LT	-	120+	F*	DefL	0.16	17.0	B	
		T	-	120+	F*	T	-	120+	F*	T	0.10	16.1	B	
48th Avenue	WB	L	-	120+	F*	L	-	120+	F*	L	0.10	21.5	C	
		R	-	120+	F*	R	-	120+	F*	R	0.19	22.8	C	
Overall Intersection		-	-	120+	F*	-	-	120+	F*	-	0.17	18.5	B	
CENTER BOULEVARD & 49TH AVENUE														
Center Boulevard	SB	LT	-	16.0	C	LT	-	23.5	C					- Unmitigatable Impact.
49th Avenue	WB	LR	-	80.1	F	LR	-	120+	F*					
Overall Intersection		-	-	12.5	B	-	-	31.4	D					
CENTER BOULEVARD & 50TH AVENUE														
Center Boulevard	SB	L	FREEFLOW	A		LT	-	11.1	B	LT	-	11.2	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
50th Avenue	WB	R	FREEFLOW	A		-	-	-	-	-	-	-	-	
Overall Intersection		-	FREEFLOW	A		-	-	2.3	A	-	-	2.3	A	
CENTER BOULEVARD & 55TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	-	10.9	B					- Mitigation not required.
		-	-	-	-	TR	-	12.8	B					
Overall Intersection		-	-	-	-	-	-	11.9	B					
CENTER BOULEVARD & 57TH AVENUE														
57th Avenue	NB	-	-	-	-	T	-	9.7	A					- Mitigation not required.
Overall Intersection		-	-	-	-	-	-	9.7	A					

APPENDIX TABLE 22-2
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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
2ND STREET														
2ND STREET & 50TH AVENUE														
2nd Street	NB	LR	-	11.0	B	-	-	-	-					- Mitigation not required.
50th Avenue	EB	-	-	-	-	TR	FREEFLOW		A					
Overall Intersection	-	-	5.6	A	-	FREEFLOW		A						
2ND STREET & 57TH AVENUE														
2nd Street	SB	-	-	-	-	T	-	9.7	A					- Mitigation not required.
Overall Intersection	-	-	-	-	-	-	-	9.7	A					
5TH STREET														
5TH STREET & 48TH AVENUE														
5th Street	NB	LTR	-	9.4	A	LTR	-	9.5	A					- Mitigation not required.
	SB	LTR	-	9.3	A	LTR	-	9.4	A					
48th Avenue	EB	LT	-	9.0	A	LT	-	9.0	A					
		TR	-	8.6	A	TR	-	8.7	A					
	WB	LT	-	9.7	A	LT	-	9.7	A					
		TR	-	8.7	A	TR	-	8.7	A					
Overall Intersection	-	-	9.3	A	-	-	9.3	A						
5TH STREET & 49TH AVENUE														
		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [NB/SB green time is 30 s; EB/WB green time is 20 s; both phases have 3 s of amber and 2 s of all red time]. - Install "No Standing Anytime" regulation on the east curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the west side. - Install "No Standing Anytime" regulation on the north curb of EB 49th Avenue and WB 49th Avenue 120 ft. from the intersection and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the south side.
5th Street	NB	LTR	-	9.6	A	LTR	-	9.6	A	LTR	0.25	9.2	A	
	SB	LTR	-	8.9	A	LTR	-	8.9	A	LTR	0.33	9.8	A	
49th Avenue	EB	LTR	-	33.9	D	LTR	-	42.0	E	LTR	0.19	14.8	B	
	WB	LTR	-	28.9	D	LTR	-	31.1	D	LTR	0.14	14.5	B	
Overall Intersection	-	-	8.2	A	-	-	10.5	B	-	0.27	10.9	B		
5TH STREET & 50TH AVENUE														
		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [NB/SB green time is 25 s; EB green time is 25 s; both phases have 3 s of amber and 2 s of all red time]. - Install "No Standing Anytime" regulation on the east curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the west side. - Install an east-west crosswalk on the south side of the intersection to accommodate pedestrians.
5th Street	NB	-	-	-	-	-	-	-	-	TR	0.32	12.7	B	
	SB	LT	-	7.9	A	LT	-	7.8	A	LT	0.36	13.1	B	
50th Avenue	EB	LTR	-	32.8	D	LTR	-	120+	F*	LTR	0.37	13.0	B	
Overall Intersection	-	-	6.8	A	-	-	104.0	F	-	0.36	12.9	B		
5TH STREET & 51ST AVENUE														
5th Street	NB	LT	-	8.1	A	LT	-	8.2	A	LT	-	9.6	A	- Designate 51st Avenue as one way WB only.
	SB	TR	-	-	-	-	-	-	-	TR	-	10.1	B	
51st Avenue	EB	LR	-	12.7	B	LR	-	9.6	A	-	-	-	-	[Measures reflect geometric improvements needed for the PM peak period; otherwise mitigation is not needed.]
	WB	LTR	-	14.0	B	LTR	-	27.7	D	LT	-	11.4	B	
Overall Intersection	-	-	6.3	A	-	-	13.9	B	-	-	10.6	B		

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2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (MIDDAY PEAK HOUR)

														Mitigation Measures	
INTERSECTION & APPROACH	2017 No Build					2017 Build				2017 Build with Mitigation					
	Mvt.	V/C	Delay	LOS		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
5TH STREET & BORDEN AVENUE	(UNSIGNALIZED INTERSECTION)					(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [SB green time is 20 s; EB/WB green time is 30 s; both phases have 3 s of amber and 2 s of all red time]. - Install a east-west crosswalk on the north side of the intersection to accommodate pedestrians. - Install "No Standing Anytime" regulation on the west curb of SB 5th Street and shift the centerline 4 ft. to the west to gain a 11 ft. moving lane.	
5th Street	SB	LR	-	12.6	B	LR	-	120+	F*	LR	0.46	17.7	B		
Borden Avenue	EB	L	-	7.9	A	L	-	17.4	C	L	0.03	7.7	A		
		-	-	-	-	-	-	-	-	T	0.49	11.1	B		
	WB	-	-	-	-	-	-	-	-	TR	0.77	17.4	B		
Overall Intersection	-	-	4.3	A		-	-	120+	F*	-	0.65	15.1	B		
11TH STREET/11TH PLACE															
11TH STREET & BORDEN AVENUE AT QMT TOLL PLAZA EXIT RAMP	(UNSIGNALIZED INTERSECTION)					(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Prohibit NB 11th Street left (on to Borden Avenue) and through (on to QMT/LIE) movements and restripe it as 20 ft. right turn only lane. - Prohibit SB QMT Exit left (on to Borden Avenue) and through (on to 11th Street) movements and restripe it as 26 ft. right turn only lane. - Restripe EB Borden Avenue from one 20 ft. lane to one 10 ft. left turn lane and one 10 ft. through-right lane. - Restripe WB Borden Avenue from one 22 ft. lane to one 11 ft. shared left-through lane and one 11 ft. shared through-right lane. - Install a new traffic signal with a 60-second cycle length. [EB+SB right turn green time is 26 s; WB+EB-left+NB right turn green time is 24 s; both phases have 3 s of amber and 2 s of all red time]. - Allow Right Turn on Red from the SB QMT Exit. - Provide signage along the QMT to direct traffic headed to 11th Street and EB Borden Avenue to use the 21st Street ramp	
11th Street	NB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.14	11.9	B		
	SB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.21	11.0	B		
Borden Avenue	EB	LTR	-	27.5	D	LTR	-	80.7	F	L	0.93	23.0	C		
		-	-	-	-	-	-	-	-	TR	0.39	12.7	B		
	WB	LTR	-	7.7	A	LTR	-	7.8	A	LTR	0.75	18.1	B		
Overall Intersection	-	-	120+	F*		-	-	120+	F*	-	0.89	18.7	B		
11TH PLACE & 50TH AVENUE														- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]	
11th Place	SB	TR	-	12.5	B	TR	-	12.6	B	TR	-	13.7	B		
50th Avenue	WB	LT	-	7.7	A	LT	-	7.8	A	LT	-	7.8	A		
Overall Intersection	-	-	5.4	A		-	-	5.2	A	-	-	4.7	A		
11TH STREET SERVICE ROAD & 49TH AVENUE														- Mitigation not required.	
11th Street Service Road	NB	R	-	9.4	A	R	-	9.4	A						
49th Avenue	WB	R	-	9.7	A	R	-	9.7	A						
Overall Intersection	-	-	3.8	A		-	-	3.8	A						
11TH STREET & QUEENS PLAZA SOUTH														- Mitigation not required.	
11th Street	NB	LTR	-	15.9	C	LTR	-	16.1	C						
Queens Plaza South	EB	LT	-	12.8	B	LT	-	12.8	B						
		TR	-	9.8	A	TR	-	9.8	A						
	WB	LT	-	10.8	B	LT	-	10.8	B						
		TR	-	9.8	A	TR	-	9.9	A						
Overall Intersection	-	-	13.3	B		-	-	13.5	B						
OTHER UNSIGNALIZED INTERSECTIONS															
21ST STREET & 50TH AVENUE														- Mitigation not required.	
21st Street	NB	LT	FREEFLOW	A		LT	FREEFLOW	A							
50th Avenue	SB	R	FREEFLOW	A		R	FREEFLOW	A							
Overall Intersection	-		FREEFLOW	A		-	FREEFLOW	A							

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INTERSECTION & APPROACH	2017 No Build					2017 Build				2017 Build with Mitigation				Mitigation Measures					
	Mvt.	V/C	Delay	LOS		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS						
JACKSON AVENUE & 51ST AVENUE																			
Jackson Avenue	NB	T	-	9.5	A		T	-	11.5	B		T	-	11.5	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]			
51st Avenue	WB	TR	-	14.8	B		TR	-	18.7	C		TR	-	20.5	C				
Overall Intersection					-	-	4.7	A		-	-	5.4	A		-		-	5.4	A
VERNON BOULEVARD & QUEENS PLAZA SOUTH																			
	(UNSIGNALIZED INTERSECTION)					(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)									
Vernon Boulevard	NB	TR	-	-	-		TR	-	-	-		TR	0.75	15.4	B	- Install a new traffic signal with a 90-second cycle length. [NB/SB green time is 57 s; EB/WB green time is 23 s; both phases have 3 s of amber and 2 s of all red time].			
	SB	LT	-	10.2	B		LT	-	10.3	B		L	0.52	12.8	B				
Queens Plaza South		-	-	-	-		-	-	-	-		T	0.71	14.6	B	- Install "No Standing Anytime" regulation on the west curb of SB Vernon Boulevard 150 ft. from the intersection and restripe the approach from a 14 ft. lane with parking to one 11 ft. left-turn lane and one 11 ft. through lane.			
	WB	L	-	120+	F*		L	-	120+	F*		L	0.15	26.6	C				
		R	-	17.2	C		R	-	17.7	C		R	0.49	32.3	C				
Overall Intersection					-	-	8.6	A		-	-	9.3	A		-	0.67	16.7	B	

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
(5) F* indicates levels of service F conditions with delays in excess of two minutes for the movement with the asterik (*).

Denotes a significant impact

APPENDIX TABLE 22-3
HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS EIS
2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (PM PEAK HOUR)

Intersection & Approach		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures	
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
Signalized Intersections															
Vernon Boulevard															
Vernon Boulevard & 48th Avenue															
Vernon Boulevard	NB	LT	0.77	26.9	C	LT	0.87	33.4	C	LT	0.75	23.5	C	- Modify signal timing: shift 3 s of green time from EB phase to NB/SB phase [EB green time shifts from 17 s to 14 s; NB/SB green time shifts from 41 s to 44 s].	
	SB	TR	0.94	39.0	D	TR	1.03	60.6	E	TR	0.96	40.7	D		
	48th Avenue	EB	L	0.41	36.4	D	L	0.42	36.8	D	L	0.55	44.6		D
			R	0.24	34.4	C	R	0.24	34.4	C	R	0.32	40.5		D
	WB	LTR	1.02	90.0	F	LTR	1.02	90.0	F	LTR	1.02	90.0	F		
Overall Intersection		-	0.84	43.2	D	-	0.89	54.9	D	-	0.90	43.0	D		
Vernon Boulevard & 49th Avenue															
Vernon Boulevard	NB	LTR	0.63	13.0	B	LTR	0.67	13.8	B	LTR	0.53	10.1	B	- Modify cycle length from 60 s to 90 s. [EB green time is 22 s; NB/SB green time is 58 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	LTR	0.96	32.7	C	LTR	1.05	56.4	E	LTR	0.85	19.3	B		
	49th Avenue	EB	LTR	0.16	15.6	B	LTR	0.20	16.0	B	LTR	0.26	29.5		C
Overall Intersection		-	0.65	24.1	C	-	0.73	37.8	D	-	0.69	16.5	B		
Vernon Boulevard & 50th Avenue															
Vernon Boulevard	NB	TR	0.64	13.4	B	TR	0.67	14.0	B	TR	0.78	27.6	C	- Modify cycle length from 60 s to 90 s. [EB green time is 40 s; NB/SB green time is 40 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	LT	0.84	20.2	C	LT	0.95	30.8	C	LT	0.54	19.5	B		
	50th Avenue	EB	LTR	0.39	19.8	B	LTR	0.68	30.5	C	LTR	0.45	20.8		C
Overall Intersection		-	0.67	17.4	B	-	0.84	24.7	C	-	0.61	22.6	C	[Measures reflect changes in the intersection needed for AM/MD peak periods; otherwise mitigation is not needed.]	
Vernon Boulevard & 51st Avenue															
Vernon Boulevard	NB	LT	0.90	31.5	C	LT	1.01	54.6	D	LT	0.72	22.0	C	- Modify cycle length from 60 s to 90 s. [WB green time is 35 s; NB/SB green time is 45 s; all phases have 3 s of amber and 2 s of all red time].	
	SB	TR	0.85	25.0	C	TR	1.02	50.9	D	TR	0.85	27.2	C		
	51st Avenue	WB	LTR	0.48	13.8	B	LTR	0.82	20.1	C	LTR	0.94	39.1		D
Overall Intersection		-	0.69	23.1	C	-	0.92	37.9	D	-	0.89	31.6	C		
Vernon Boulevard & Borden Avenue															
Vernon Boulevard	SB	L	1.07	70.1	E	L	1.08	72.7	E	L	0.82	38.8	D	- Install "No Standing Anytime" regulation on the west curb of the SB Vernon Boulevard for 120 ft. and restripe the approach from one 9 ft. left-turn lane and one 15 ft. left-right lane to two 11 ft. left-turn lanes and one 11 ft. right-turn lane by switching the parking on the east side from angle to parallel to gain additional 9 ft.	
		LR	0.59	16.9	B	LR	1.20+	120+	F*	R	0.76	44.7	D		
	Borden Avenue	EB	LT	0.90	34.3	C	LT	1.20+	120+	F*	DefL	0.66	29.1		C
		-	-	-	-	-	-	-	-	T	0.67	22.7	C		
WB		T	0.57	15.5	B	T	1.17	102.7	F	T	0.85	43.8	D		
Overall Intersection		-	0.98	38.6	D	-	1.20+	120+	F*	-	1.08	36.9	D	- Install "No Standing 7:00 AM - 7:00 PM" regulation on the south curb of the EB Borden Avenue 120 ft. from the intersection and restripe the approach from one 16 ft. travel lane with parking to one 12 ft. shared left through and one 12 ft. through lane.	
- Shift centerline of the WB Borden Avenue 6 ft. to the north tapered 150 ft. from the intersection. Restripe EB Borden Avenue receiving as two 11 ft. lanes.															
- Restripe WB Borden Avenue from one 13 ft. through lane and one 15 ft. channelized right-turn lane to two 11 ft. through lane and one 11 ft. right-turn lane by shifting the north curb 11 ft. to the north.															
- Restripe WB Borden Avenue receiving from one 22 ft. lane with parking to two 11 ft. lanes with parking.															
- Modify cycle length from 60 s to 120 s with EB-lead phase. [SB green time is 45 s; EB-lead green time is 21 s; EB/WB green time is 39 s; all phases have 3 s of amber and 2 s of all red time].															

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HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS EIS
2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (PM PEAK HOUR)

INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures	
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
VERNON BOULEVARD & 44TH DRIVE															
Vernon Boulevard	NB	LTR	0.80	16.5	B	LTR	0.85	19.1	B	LTR	0.91	24.6	C	- Restripe NB/SB Vernon Boulevard approach as follows: 150 feet upstream of the stop bar, shift the centerline 2 ft. to the east to increase the lane width to 16 ft. Shift the centerline on NB Vernon Boulevard 2 ft. to the east to coincide with the SB approach reducing the lane width to 12 ft.	
	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*		
44th Drive	EB	LTR	0.31	19.7	B	LTR	0.31	19.7	B	LTR	0.31	19.7	B		
	WB	LTR	0.84	33.7	C	LTR	0.86	34.7	C	LTR	0.86	34.7	C		
Overall Intersection		-	1.20+	120+	F*	-	1.20+	120+	F*	-	1.20+	120+	F*		
JACKSON AVENUE/NORTHERN BOULEVARD															
JACKSON AVENUE & 50TH AVENUE															
Jackson Avenue	NB	TR	0.19	10.6	B	TR	0.26	11.2	B	TR	0.26	11.2	B	- Install "No Standing Anytime" regulation on the north curb of the EB 50th Avenue 150 ft. from the intersection and restripe the approach from one 14 ft. lane with parking on both sides to one 11 ft. left turn lane and one 11 ft. through-right lane with parking along the south curb. [Measures reflect changes needed for the AM peak period; otherwise mitigation is not needed.]	
	SB	LT	0.27	11.3	B	LT	0.49	13.8	B	LT	0.49	13.8	B		
50th Avenue	EB	LTR	0.39	34.5	C	LTR	0.53	37.6	D	L	0.26	32.1	C		
	-	-	-	-	-	-	-	-	-	TR	0.28	32.6	C		
50th Avenue WB Right (Unsignalized)	WB	L	0.30	33.6	C	L	0.31	34.1	C	L	0.62	42.9	D		
	WB	R	-	10.8	B	R	-	12.2	B	R	-	12.2	B		
Overall Intersection		-	0.31	16.6	B	-	0.50	17.5	B	-	0.53	18.4	B		
JACKSON AVENUE & 49TH AVENUE															
49th Avenue	SB	LTR	0.30	27.3	C	LTR	0.33	27.8	C	LTR	0.33	27.8	C	- Install "No Standing Anytime" regulation on the south curb of EB Jackson Avenue for the entire block, shift the centerline 5 ft. to the north, and restripe the approach from a 11 ft. through, one 10 ft. shared through-right lane with parking to two 11 ft. through lanes and one 12 ft. exclusive right turn lane. - Restripe WB Jackson Avenue from one 11 ft. left-through lane and one 20 ft. through lane to one 26 ft. through lane. - Prohibit WB Jackson Avenue left-turn on to the 11th Street service road. - Restripe WB Jackson Avenue receiving lane from one 11 ft. and one 12 ft. lane with parking to one 18 ft. lane with parking. - Permit EB Jackson Avenue right-turn to the Pulaski Bridge during the exclusive WB Jackson Avenue phase.	
Jackson Avenue	EB	TR	0.69	44.8	D	TR	0.91	58.2	E	T	0.28	30.6	C		
	-	-	-	-	-	-	-	-	-	R	0.42	18.5	B		
	WB	LT	0.31	16.6	B	LT	0.58	20.9	C	T	0.75	26.1	C		
Overall Intersection		-	0.50	30.5	C	-	0.69	36.3	D	-	0.57	25.5	C		
JACKSON AVENUE & 11TH STREET (PULASKI BRIDGE)															
11th Street (Pulaski Bridge)	NB	-	-	-	-	-	-	-	-	L	1.20+	120+	F*	- Partially Mitigated. - Post signs on the Pulaski Bridge to direct the right turning traffic to the 11th Street service road with signs for Queens Boulevard/Jackson Avenue East traffic. - Restripe the NB 11th Street service road approach traffic island to allow for two 12 ft. right-turn lanes by removing parking along the west curb. - Restripe the NB Pulaski Bridge shared left-through lane to an exclusive left-turn lane. - Install "No Standing Anytime" regulation on the north curb of the WB Jackson Avenue approach for 150 ft. and restripe the approach from a 10 ft. shared left-through and a 12 ft. through lane with parking to two 10 ft. left-turn lanes and a 10 ft. through lane. - Prohibit the WB Jackson Avenue left-turn during the permitted EB/WB phase. - Modify signal timing: shift 4 s of green time from NB/SB phase to WB-lead phase [NB/SB phase green time shifts from 45 s to 41 s; WB-lead phase green time shifts from 28 s to 32 s].	
		LT	1.16	119.4	F	LT	1.20+	120+	F*	T	0.82	41.3	D		
Jackson Avenue	R	0.84	46.0	D	R	0.88	50.9	D	-	-	-	-			
	SB	LTR	0.74	33.2	C	LTR	0.77	34.2	C	LTR	0.84	40.8			D
	EB	LT	0.48	31.9	C	DefL	0.79	61.1	E	LT	0.84	44.4			D
	-	-	-	-	-	T	0.83	47.1	D	-	-	-			-
11th Street Service Road	WB	DefL	1.16	107.5	F	DefL	1.16	107.3	F	L	1.11	105.9	F		
		T	0.47	19.5	B	T	0.83	31.6	C	T	0.80	27.6	C		
Overall Intersection		-	1.16	72.9	E	-	1.20+	110.8	F	-	1.17	60.1	E		
JACKSON AVENUE & 21ST STREET															
21st Street	NB	LTR	1.18	120+	F*	LTR	1.20+	120+	F*	LTR	1.17	120+	F*	- Partially Mitigated. - Install "No Standing 10:00 AM - 7:00 PM" regulation on the east curb of NB 21st Street for 120 ft. from the intersection. - Install "No Standing 7:00 AM - 10:00 AM; 4:00 PM - 7:00 PM" regulation on the north curb of WB Jackson Avenue for the entire block.	
	SB	LTR	1.12	105.0	F	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*		
Jackson Avenue	EB	L	0.87	40.9	D	L	1.20+	120+	F*	L	1.20+	120+	F*		
	TR	0.50	26.2	C	TR	0.58	27.7	C	TR	0.58	27.7	C			
	WB	L	0.46	15.8	B	L	0.50	17.0	B	L	0.56	18.4	B		
	TR	0.88	38.8	D	TR	1.01	59.8	E	TR	0.93	43.0	D			
Overall Intersection		-	1.01	68.7	E	-	1.20+	100.5	F	-	1.20+	89.2	F		

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures					
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS						
JACKSON AVENUE & THOMSON AVENUE																			
Jackson Avenue	NB	TR	0.55	20.1	C	TR	0.62	21.5	C	- Mitigation not required.									
	SB	L	0.18	16.3	B	L	0.21	17.0	B										
		T	0.52	19.5	B	T	0.54	19.9	B										
Thomson Avenue	WB	L	0.52	29.9	C	L	0.71	35.2	D										
		R	0.10	23.4	C	R	0.10	23.4	C										
Overall Intersection		-	0.54	21.5	C	-	0.66	23.6	C										
JACKSON AVENUE & 44TH DRIVE																			
Jackson Avenue	NB	L	0.15	25.9	C	L	0.15	26.0	C						L	0.15	26.0	C	- Restripe SB Jackson Avenue 10 ft. left-turn lane to 11 ft. left-turn lane by reducing the hatched center median width by one foot. [Measures reflect geometric improvements needed for the AM peak period; otherwise mitigation is not needed.]
		TR	0.48	29.6	C	TR	0.50	29.9	C	TR	0.50	29.9	C						
	SB	L	0.53	16.6	B	L	0.53	16.8	B	L	0.52	16.4	B						
44th Drive		TR	0.52	10.0	A	TR	0.54	10.2	B	TR	0.54	10.2	B						
	EB	LTR	0.97	62.1	E	LTR	0.97	62.1	E	LTR	0.97	62.1	E						
	WB	LTR	0.76	40.4	D	LTR	0.76	40.4	D	LTR	0.76	40.4	D						
	Overall Intersection		-	0.76	31.6	C	-	0.77	31.5	C	-	0.76	31.4	C					
JACKSON AVENUE/QUEENS PLAZA EAST & QUEENS BOULEVARD																			
Jackson Ave - Northern Blvd	NB	TR	0.62	27.3	C	TR	0.63	27.6	C	- Mitigation not required.									
	SB	T	0.37	20.1	C	T	0.40	20.5	C										
Queens Boulevard	EB	T	0.79	28.1	C	T	0.79	28.1	C										
	WB	TR	1.15	120+	F*	TR	1.15	120+	F*										
Overall Intersection		-	0.88	77.8	E	-	0.88	77.1	E										
NORTHERN BOULEVARD & QUEENS PLAZA NORTH/41ST AVENUE																			
Northern Boulevard	NB	LTR	1.08	89.9	F	LTR	1.11	103.4	F	LTR	1.08	90.6	F	- Modify signal timing: shift 1 s of green time from WB phase to permitted NB/SB phase [WB green time shifts from 20 s to 19 s; NB/SB green time shifts from 25 s to 26 s].					
	SB	LT	0.86	57.5	E	LT	0.94	67.2	E	LT	0.88	58.2	E						
		R	0.86	29.0	C	R	0.86	29.0	C	R	0.84	27.6	C						
Queens Plaza North/41st Avenue	EB	L	0.91	41.7	D	L	0.91	41.7	D	L	0.91	41.7	D						
	WB	LTR	0.06	42.2	D	LTR	0.06	42.2	D	LTR	0.06	43.1	D						
	Overall Intersection		-	0.78	52.8	D	-	0.78	58.0	E	-	0.79	52.9		D				
NORTHERN BOULEVARD/31ST STREET & 40TH AVENUE																			
31st Street	SB	LTR	0.81	52.4	D	LTR	0.85	54.6	D	LTR	0.75	47.5	D		- Modify signal timing: shift 3 s of green time from EB-through/WB phase to EB-left/SB phase [EB-through/WB green time shifts from 85 s to 82 s; EB-left/SB green time shifts from 25 s to 28 s].				
Northern Boulevard	EB	L	1.20+	120+	F*	L	1.20+	120+	F*	L	1.20+	120+	F*						
		T	0.66	10.4	B	T	0.66	10.4	B	T	0.69	12.2	B						
	WB	TR	0.51	8.4	A	TR	0.51	8.4	A	TR	0.53	9.9	A						
Overall Intersection		-	1.20+	120+	F*	-	1.20+	120+	F*	-	1.20+	120+	F*						
21ST STREET																			
21ST STREET & QUEENS PLAZA NORTH																			
21st Street	NB	LT	1.20+	119.4	F	LT	1.20+	120+	F*	LT	1.20	112.5	F	- Modify signal timing: shift 3 s of green time from WB phase to NB/SB phase [WB green time shifts from 45 s to 42 s; NB/SB green time shifts from 65 s to 68 s].					
	SB	TR	0.53	18.6	B	TR	0.57	19.2	B	TR	0.54	17.1	B						
Queens Plaza North	WB	LTR	1.16	120+	F*	LTR	1.16	120+	F*	LTR	0.63	34.8	C		- Restripe WB Queens Plaza North from one 30 ft. lane with a bus stop to one 11 ft. shared left-through lane and one 11 ft. through-right lane with a bus stop.				
	Overall Intersection		-	1.19	92.7	F	-	1.20+	106.9	F	-	0.98	72.0			E			

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
21ST STREET & QUEENS PLAZA SOUTH														
21st Street	NB	LTR	0.95	11.5	B	LTR	0.98	15.6	B	- Mitigation not required.				
	SB	LTR	0.67	9.6	A	LTR	0.71	10.6	B					
Queens Plaza South	EB	L	0.52	50.8	D	L	0.52	50.8	D					
	TR		0.80	64.2	E	TR	0.80	64.2	E					
Overall Intersection		-	0.92	16.3	B	-	0.94	18.9	B					
21ST STREET & 44TH DRIVE														
21st Street	NB	LTR	0.82	24.5	C	LTR	0.86	27.5	C	LTR	0.86	27.5	C	- Install "No Standing 7:00 AM - 7:00 PM" regulation on the west curb of SB 21st Street for the entire block.
	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	1.14	96.6	F	
44th Drive	EB	LTR	0.80	46.7	D	LTR	0.80	46.9	D	LTR	0.80	46.9	D	
	WB	LTR	0.89	54.9	D	LTR	0.90	55.6	E	LTR	0.90	55.6	E	
Overall Intersection		-	1.11	75.7	E	-	1.17	93.7	F	-	1.06	64.1	E	
VAN DAM STREET														
VAN DAM STREET & THOMSON AVENUE/QUEENS BOULEVARD														
Van Dam Street	NB	L	1.20+	120+	F*	L	1.20+	120+	F*	- Unmitigatable Impact.				
	TR		1.11	120+	F*	TR	1.11	120+	F*					
Queens Boulevard (to Queens Boulevard.)	EB	T	1.20	120+	F*	T	1.20	120+	F*					
Queens Boulevard (to Van Dam Street)		T	1.08	111.1	F	T	1.08	111.1	F					
Queens Boulevard (to Thomson Avenue WB)		R	0.07	46.7	D	R	0.07	46.7	D					
Thomson Avenue	EB	T	1.15	102.2	F	T	1.18	116.6	F					
		R	1.00	62.8	E	R	1.00	62.8	E					
Queens Boulevard (to Thomson Avenue WB)	WB	L	0.60	62.0	E	L	0.72	65.4	E					
Queens Boulevard (to Viaduct)		TR	0.34	9.1	A	TR	0.34	9.1	A					
Overall Intersection		-	1.20+	105.4	F	-	1.20+	109.1	F					
VAN DAM STREET & LIE EXIT RAMP														
Van Dam Street	NB	LT	0.35	21.6	C	LT	0.35	21.6	C	LT	0.52	35.5	D	- Unmitigatable Impact. - Restripe WB Queens Midtown Expressway Exit Ramp from two 11 ft. through lanes and one 11 ft. shared through-right lane to two 11 ft. through lanes and one 11 ft. exclusive right-turn lane. - Modify signal phasing plan: Add a new lag phase for the SB approach with the WB right-turn only; maintain the existing 120 s cycle length with the following signal timing: WB = 55 s green, NB/SB = 38 s green time, and SB/WB-right only = 12 s of green time (each phase has 3 s amber and 2 s all red).
	SB	TR	1.20+	120+	F*	TR	1.20+	120+	F*	TR	1.20+	120+	F*	
LIE Exit Ramp	WB	TR	1.08	73.8	E	TR	1.20+	120+	F*	T	1.20+	120+	F*	
		-	-	-	-	-	-	-	-	R	0.88	29.3	C	
Overall Intersection		-	1.20+	117.9	F	-	1.20+	120+	F*	-	1.20+	120+	F*	
VAN DAM STREET & BORDEN AVENUE														
Van Dam Street	NB	TR	0.50	39.4	D	TR	0.50	39.4	D	TR	0.59	44.9	D	- Unmitigatable Impact. - Modify signal timing plan to coordinate with Van Dam Street and LIE Exit Ramp: Maintain the existing 120 s cycle length with the following signal timing: EB = 43 s green, NB/SB = 26 s green time, and SB = 36 s of green time (each phase has 3 s amber and 2 s all red).
	SB	DefL	1.20+	120+	F*	DefL	1.20+	120+	F*	DefL	1.20+	120+	F*	
		T	0.66	21.6	C	T	0.66	21.6	C	T	0.67	22.0	C	
Borden Avenue	EB	LTR	1.13	104.0	F	LTR	1.16	119.3	F	LTR	1.16	119.3	F	
Overall Intersection		-	1.20+	120+	F*	-	1.20+	120+	F*	-	1.20+	120+	F*	

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
CENTER BOULEVARD														
CENTER BOULEVARD & 51ST AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.49	11.5	B	T	0.49	11.5	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
	SB	-	-	-	-	T	0.05	7.8	A	T	0.05	7.8	A	
51st Avenue	WB	-	-	-	-	LR	0.17	14.7	B	LR	0.20	14.9	B	
Overall Intersection		-	-	-	-	-	0.36	11.6	B	-	0.37	11.7	B	
CENTER BOULEVARD & BORDEN AVENUE														
Center Boulevard	NB	-	-	-	-	TR	0.61	33.6	C	TR	0.68	35.7	D	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
		-	-	-	-	R	0.47	30.8	C	R	0.56	32.9	C	
Borden Ave	SB	-	-	-	-	L	0.10	25.9	C	L	0.10	25.9	C	
	WB	-	-	-	-	R	0.49	32.4	C	R	0.49	32.4	C	
Overall Intersection		-	-	-	-	-	0.55	32.0	C	-	0.57	33.5	C	
CENTER BOULEVARD & 54TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.28	15.2	B	T	0.28	15.2	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
54th Avenue	WB	-	-	-	-	R	0.40	10.5	B	R	0.51	11.7	B	
Overall Intersection		-	-	-	-	-	0.35	12.8	B	-	0.42	13.3	B	
CENTER BOULEVARD & 56TH AVENUE														
Center Boulevard	NB	-	-	-	-	T	0.03	16.3	B					- Mitigation not required.
56th Avenue	WB	-	-	-	-	R	0.45	8.7	A					
Overall Intersection		-	-	-	-	-	0.31	9.2	A					
2ND STREET														
2ND STREET & 51ST AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.6	A	LTR	0.05	10.5	B	LTR	0.05	10.5	B	
51st Avenue	WB	LR	-	10.5	B	LT	0.48	14.4	B	LT	0.50	14.6	B	
Overall Intersection		-	-	2.3	A	-	0.27	13.8	B	-	0.28	14.0	B	
2ND STREET & BORDEN AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	7.7	A	LTR	0.49	43.3	D	LTR	0.49	43.3	D	
Borden Avenue	EB	-	-	-	-	TR	0.45	27.9	C	TR	0.52	29.1	C	
	WB	LR	-	11.0	B	DefL	0.89	36.0	D	DefL	0.93	43.7	D	
		-	-	-	-	T	0.23	6.8	A	T	0.23	6.8	A	
Overall Intersection		-	-	6.5	A	-	0.82	30.5	C	-	0.85	33.6	C	
2ND STREET & 54TH AVENUE		(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
2nd Street	SB	LT	-	8.0	A	LTR	0.99	40.0	D	LTR	1.01	44.3	D	
54th Avenue	WB	LR	-	9.4	A	LT	0.21	11.6	B	LT	0.30	12.3	B	
Overall Intersection		-	-	6.0	A	-	0.60	35.3	D	-	0.66	37.2	D	

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
2ND STREET & 55TH AVENUE														
2nd Street	SB	-	-	-	-	LT	0.38	12.7	B					- Mitigation not required.
55th Avenue	EB	-	-	-	-	TR	0.06	10.6	B					
Overall Intersection		-	-	-	-	-	0.22	12.5	B					
2ND STREET & 56TH AVENUE														
2nd Street	SB	-	-	-	-	T	0.01	2.4	A					- Mitigation not required.
		-	-	-	-	R	0.51	5.0	A					
Overall Intersection		-	-	-	-	-	0.51	5.0	A					
11TH STREET														
11TH STREET & 44TH DRIVE														
11th Street	NB	LTR	0.55	12.3	B	LTR	0.55	12.4	B	LTR	0.57	13.1	B	- Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB phase [NB/SB green time shifts from 53 s to 52 s; EB/WB green time shifts from 27 s to 28 s].
	SB	LTR	0.57	13.3	B	LTR	0.57	13.3	B	LTR	0.59	14.0	B	
44th Drive	EB	LTR	0.91	45.8	D	LTR	0.91	45.8	D	LTR	0.87	41.2	D	
	WB	LTR	1.06	82.6	F	LTR	1.07	86.0	F	LTR	1.03	71.1	E	
Overall Intersection		-	0.74	35.7	D	-	0.74	36.6	D	-	0.74	32.6	C	
UNSIGNALIZED INTERSECTIONS														
CENTER BOULEVARD														
CENTER BOULEVARD & 48TH AVENUE		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 120-second cycle length. [NB/SB green time is 60 s; WB green time is 50 s; both phases have 3 s of amber and 2 s of all red time]. - Restripe NB Center Boulevard from unmarked 63 ft. curb to curb with parking on both sides to one 11 ft. through and one 11 ft. through-right NB lanes and two SB receiving lanes with parking on the east and west curbs.
Center Boulevard	NB	-	-	-	-	-	-	-	-	TR	0.16	16.5	B	
	SB	LT	-	28.0	D	LT	-	120+	F*	LT	0.07	15.7	B	
		T	-	25.3	D	T	-	43.5	E	-	-	-	-	
48th Avenue	WB	L	-	120+	F*	L	-	120+	F*	L	0.11	21.6	C	
		R	-	45.4	E	R	-	120+	F*	R	0.38	26.8	C	
Overall Intersection		-	-	50.5	E	-	-	120+	F*	-	0.26	19.4	B	
CENTER BOULEVARD & 49TH AVENUE														- Unmitigatable Impact.
Center Boulevard	SB	LT	-	10.3	B	LT	-	13.4	B					
49th Avenue	WB	LR	-	29.1	D	LR	-	63.7	F					
Overall Intersection		-	-	3.6	A	-	-	5.7	A					
CENTER BOULEVARD & 50TH AVENUE														- Mitigation not required. [Build with mitigation delays are due to diversions from the 5th Street and 51st Avenue intersection mitigation. However, no significant impact occurs.]
Center Boulevard	SB	L	FREEFLOW	A	A	LT	-	10.9	B	LT	-	10.9	B	
50th Avenue	WB	R	FREEFLOW	A	A	-	-	-	-	-	-	-	-	
Overall Intersection		-	FREEFLOW	A	A	-	-	1.8	A	-	-	1.8	A	
CENTER BOULEVARD & 55TH AVENUE														- Mitigation not required.
Center Boulevard	NB	-	-	-	-	T	-	10.9	B					
		-	-	-	-	TR	-	24.5	C					
Overall Intersection		-	-	-	-	-	-	19.0	C					
CENTER BOULEVARD & 57TH AVENUE														- Mitigation not required.
57th Avenue	NB	-	-	-	-	T	-	9.6	A					
Overall Intersection		-	-	-	-	-	-	9.6	A					

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INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
2ND STREET														
2ND STREET & 50TH AVENUE														
2nd Street	NB	LR	-	14.5	B	-	-	-	-	-	-	-	-	- Mitigation not required.
50th Avenue	EB	-	-	-	-	TR	FREEFLOW		A	TR	FREEFLOW		A	
Overall Intersection		-	-	8.8	A	-	FREEFLOW		A	-	FREEFLOW		A	
2ND STREET & 57TH AVENUE														
2nd Street	SB	-	-	-	-	T	-	9.6	A					- Mitigation not required.
Overall Intersection		-	-	-	-	-	-	9.6	A					
5TH STREET														
5TH STREET & 48TH AVENUE														
5th Street	NB	LTR	-	11.1	B	LTR	-	11.1	B					- Mitigation not required.
	SB	LTR	-	9.5	A	LTR	-	9.6	A					
48th Avenue	EB	LT	-	9.3	A	LT	-	9.4	A					
		TR	-	8.8	A	TR	-	8.8	A					
	WB	LT	-	9.7	A	LT	-	9.7	A					
		TR	-	9.2	A	TR	-	9.3	A					
Overall Intersection		-	-	10.0	A	-	-	10.0	B					
5TH STREET & 49TH AVENUE														
5TH STREET & 49TH AVENUE		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [NB/SB green time is 30 s; EB/WB green time is 20 s; both phases have 3 s of amber and 2 s of all red time].
5th Street	NB	LTR	-	9.6	A	LTR	-	9.6	A	LTR	0.42	10.5	B	
	SB	LTR	-	9.6	A	LTR	-	9.6	A	LTR	0.35	10.0	A	
49th Avenue	EB	LTR	-	62.4	F	LTR	-	98.4	F	LTR	0.18	14.7	B	- Install "No Standing Anytime" regulation on the east curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the west side.
	WB	LTR	-	50.6	F	LTR	-	64.4	F	LTR	0.09	14.0	B	
Overall Intersection		-	-	8.9	A	-	-	15.6	C	-	0.32	11.0	B	- Install "No Standing Anytime" regulation on the north curb of EB 49th Avenue and WB 49th Avenue 120 ft. from the intersection and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the south side.
5TH STREET & 50TH AVENUE														
5TH STREET & 50TH AVENUE		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Install a new traffic signal with a 60-second cycle length. [NB/SB green time is 25 s; EB green time is 25 s; both phases have 3 s of amber and 2 s of all red time].
5th Street	NB	-	-	-	-	-	-	-	-	TR	0.40	13.3	B	
	SB	LT	-	7.9	A	LT	-	7.8	A	LT	0.31	12.5	B	
50th Avenue	EB	LTR	-	38.0	E	LTR	-	120+	F*	LTR	0.34	12.8	B	- Install "No Standing Anytime" regulation on the east curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 11 ft. approach and one 11 ft. receiving lane with parking on the west side.
Overall Intersection		-	-	6.2	A	-	-	120+	F*	-	0.37	12.9	B	
5TH STREET & 51ST AVENUE														
5th Street	NB	LT	-	7.9	A	LT	-	8.2	A	LT	-	14.1	B	- Designate 51st Avenue as one way WB only.
	SB	TR	-	-	-	-	-	-	-	TR	-	11.8	B	
51st Avenue	EB	LR	-	14.8	B	LR	-	120+	F*	-	-	-	-	- Install "All Way" Stop control sign on all approaches.
	WB	LTR	-	16.7	C	LTR	-	120+	F*	LT	-	14.5	B	
Overall Intersection		-	-	4.5	A	-	-	120+	F*	-	-	13.6	B	

APPENDIX TABLE 22-3
HUNTER'S POINT SOUTH REZONING AND RELATED ACTIONS EIS
2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (PM PEAK HOUR)

INTERSECTION & APPROACH		2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
5TH STREET & BORDEN AVENUE		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				<div>- Install a new traffic signal with a 60-second cycle length. [SB green time is 11 s; EB/WB green time is 39 s; both phases have 3 s of amber and 2 s of all red time].</div> <div>- Install a east-west crosswalk on the north side of the intersection to accommodate pedestrians.</div> <div>- Install "No Standing Anytime" regulation on the west curb of SB 5th Street and shift the centerline 4 ft. to the west to gain a 11 ft. moving lane.</div>
5th Street	SB	LR	-	15.6	C	LR	-	120+	F*	LR	0.60	27.9	C	
Borden Avenue	EB	L	-	8.2	A	L	-	120+	F*	L	0.06	4.1	A	
	-	-	-	-	-	-	-	-	-	T	0.45	5.9	A	
	WB	-	-	-	-	-	-	-	-	TR	1.01	36.3	D	
Overall Intersection	-	-	-	3.8	A	-	-	120+	F*	-	0.92	25.4	C	
11TH STREET/11TH PLACE														
11TH STREET & BORDEN AVENUE AT QMT TOLL PLAZA EXIT RAMP		(UNSIGNALIZED INTERSECTION)				(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				<div>- Prohibit NB 11th Street left (on to Borden Avenue) and through (on to QMT/LIE) movements and restripe it as 20 ft. right turn only lane.</div> <div>- Prohibit SB QMT Exit left (on to Borden Avenue) and through (on to 11th Street) movements and restripe it as 26 ft. right turn only lane.</div> <div>- Restripe EB Borden Avenue from one 20 ft. lane to one 10 ft. left turn lane and one 10 ft. through-right lane.</div> <div>- Restripe WB Borden Avenue from one 22 ft. lane to one 11 ft. shared left-through lane and one 11 ft. shared through-right lane.</div> <div>- Install a new traffic signal with a 60-second cycle length. [EB+SB right turn green time is 22 s; WB+EB-left+NB right turn green time is 28 s; both phases have 3 s of amber and 2 s of all red time].</div> <div>- Allow Right Turn on Red from the SB QMT Exit.</div> <div>- Provide signage along the QMT to direct traffic headed to 11th Street and EB Borden Avenue to use the 21st Street ramp</div>
11th Street	NB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.06	8.9	A	
	SB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.24	13.7	B	
Borden Avenue	EB	LTR	-	109.8	F	LTR	-	120+	F*	L	1.18	103.2	F	
	-	-	-	-	-	-	-	-	-	TR	0.67	19.7	B	
	WB	LTR	-	8.1	A	LTR	-	8.1	A	LTR	1.00	35.4	D	
Overall Intersection	-	-	-	120+	F*	-	-	120+	F*	-	120+	53.9	D	
11TH PLACE & 50TH AVENUE														<div>- Mitigation not required.</div> <div>[Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]</div>
11th Place	SB	TR	-	13.4	B	TR	-	13.6	B	TR	-	14.7	B	
50th Avenue	WB	LT	-	7.6	A	LT	-	7.6	A	LT	-	7.6	A	
Overall Intersection	-	-	-	5.4	A	-	-	5.2	A	-	-	4.7	A	
11TH STREET SERVICE ROAD & 49TH AVENUE														<div>- Mitigation not required.</div>
11th Street Service Road	NB	R	-	9.9	A	R	-	9.9	A					
49th Avenue	WB	R	-	9.3	A	R	-	9.3	A					
Overall Intersection	-	-	-	3.2	A	-	-	3.2	A					
11TH STREET & QUEENS PLAZA SOUTH														<div>- Mitigation not required.</div>
11th Street	NB	LTR	-	14.6	B	LTR	-	14.9	B					
	EB	LT	-	13.1	B	LT	-	13.3	B					
Queens Plaza South		TR	-	10.3	B	TR	-	10.3	B					
	WB	LT	-	11.3	B	LT	-	11.3	B					
		TR	-	9.6	A	TR	-	9.7	A					
Overall Intersection	-	-	-	12.7	B	-	-	12.9	B					
OTHER UNSIGNALIZED INTERSECTIONS														
21ST STREET & 50TH AVENUE														<div>- Mitigation not required.</div>
21st Street	NB	LT	FREEFLOW	A	LT	FREEFLOW	A							
50th Avenue	SB	R	FREEFLOW	A	R	FREEFLOW	A							
Overall Intersection	-		FREEFLOW	A	-	FREEFLOW	A							

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2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON (PM PEAK HOUR)

INTERSECTION & APPROACH	2017 No Build					2017 Build				2017 Build with Mitigation				Mitigation Measures		
	Mvt.	V/C	Delay	LOS		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS			
JACKSON AVENUE & 51ST AVENUE																
Jackson Avenue	NB	T	-	9.4	A		T	-	11.2	B		T	-	11.2	B	- Mitigation not required. [Build with mitigation delays are due to diversions from the Borden Avenue and 11th Street intersection mitigation. However, no significant impact occurs.]
51st Avenue	WB	TR	-	11.7	B		TR	-	15.2	C		TR	-	16.1	C	
Overall Intersection	-	-	4.7	A		-	-	4.8	A		-	-	4.7	A		
VERNON BOULEVARD & QUEENS PLAZA SOUTH																
		(UNSIGNALIZED INTERSECTION)					(UNSIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)				
Vernon Boulevard	NB	TR	-	-	-		-	-	-	-		TR	0.98	38.0	D	- Install a new traffic signal with a 90-second cycle length. [NB/SB green time is 55 s; EB/WB green time is 25 s; both phases have 3 s of amber and 2 s of all red time].
	SB	LT	-	10.8	B		LT	-	11.1	B		L	0.67	20.4	C	
		-	-	-	-	-		-	-	-	-		T	0.74	16.5	
Queens Plaza South	WB	L	-	120+	F*		L	-	120+	F*		L	0.08	24.2	C	- Install "No Standing Anytime" regulation on the west curb of SB Vernon Boulevard 150 ft. from the intersection and restripe the approach from a 14 ft. lane with parking to one 11 ft. left-turn lane and one 11 ft. through lane.
		R	-	33.5	D		R	-	37.0	E		R	0.77	41.1	D	
Overall Intersection	-	-	8.6	A		-	-	9.5	A		-	0.91	29.7	C		

(1) Control delay is measured in seconds per vehicle.
(2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
(5) F* indicates levels of service F conditions with delays in excess of two minutes for the movement with the asterik (*).

Denotes a significant impact