

**APPENDIX 22:**  
**MITIGATION**

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# **APPENDIX 22: MITIGATION**

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**HUNTER’S POINT SOUTH  
REZONING AND RELATED ACTIONS  
Final Environmental Impact Statement**

Appendix 22: Mitigation – Tables

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

TABLE OF CONTENTS

22-1	2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON - AM PEAK HOUR
22-2	2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON - MIDDAY PEAK HOUR
22-3	2017 NO BUILD VS. BUILD AND MITIGATION TRAFFIC LEVELS OF SERVICE COMPARISON - PM PEAK HOUR

**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		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>VERNON BOULEVARD</b>														
<b>VERNON BOULEVARD &amp; 48TH AVENUE</b>														
Vernon Boulevard	NB	LT	0.74	25.3	C	LT	0.83	29.7	C	LT	0.77	24.4	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; WB green time remains at 17 s; NB/SB green time shifts from 41 s to 44 s].
	SB	TR	0.93	40.3	D	TR	1.03	62.2	E	TR	0.96	42.5	D	
48th Avenue	EB	L	0.41	35.1	D	L	0.42	35.2	D	L	0.52	40.6	D	
		R	0.31	34.3	C	R	0.31	34.3	C	R	0.40	39.2	D	
	WB	LTR	0.90	60.7	E	LTR	0.90	60.7	E	LTR	0.90	60.7	E	
<b>Overall Intersection</b>	-		<b>0.81</b>	<b>38.4</b>	<b>D</b>	-	<b>0.86</b>	<b>48.2</b>	<b>D</b>	-	<b>0.86</b>	<b>39.2</b>	<b>D</b>	
<b>VERNON BOULEVARD &amp; 49TH AVENUE</b>														
Vernon Boulevard	NB	LTR	0.78	17.5	B	LTR	0.86	21.5	C	LTR	0.68	13.0	B	- Modify cycle length from 60 s to 90 s. [EB green time shifts from 19 s to 22 s; NB/SB green time shifts from 31 s to 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	1.19	112.2	F	
49th Avenue	EB	LTR	0.19	15.9	B	LTR	0.33	17.8	B	LTR	0.43	32.9	C	
<b>Overall Intersection</b>	-		<b>0.93</b>	<b>112.4</b>	<b>F</b>	-	<b>1.07</b>	<b>120+</b>	<b>F*</b>	-	<b>0.98</b>	<b>66.5</b>	<b>E</b>	
<b>VERNON BOULEVARD &amp; 50TH AVENUE</b>														
Vernon Boulevard	NB	TR	0.73	15.5	B	TR	0.78	17.7	B	TR	0.92	39.2	D	- Install "No Standing 7:00 AM - 10:00 AM" regulation along the west curb of SB Vernon Boulevard for the entire block to gain an additional through lane in the AM peak period. - Install "No Standing 7:00 AM - 10:00 AM" regulation along the west curb of the receiving side of SB Vernon Boulevard for 80 ft. from the intersection and restripe it as two receiving lanes for AM peak period. - Install advance warning sign for lane drop on SB Vernon Boulevard receiving side. - Modify cycle length from 60 s to 90 s. [EB green time shifts from 19 s to 40 s; NB/SB green time shifts from 31 s to 40 s; all phases have 3 s of amber and 2 s of all red time].
	SB	LT	0.98	40.7	D	LT	1.11	79.8	E	LT	0.70	23.3	C	
50th Avenue	EB	LTR	0.77	38.5	D	LTR	1.20+	120+	F*	LTR	0.87	43.9	D	
<b>Overall Intersection</b>	-		<b>0.90</b>	<b>29.9</b>	<b>C</b>	-	<b>1.19</b>	<b>84.2</b>	<b>F</b>	-	<b>0.89</b>	<b>34.1</b>	<b>C</b>	
<b>VERNON BOULEVARD &amp; 51ST AVENUE</b>														
Vernon Boulevard	NB	LT	0.95	38.0	D	LT	1.06	68.7	E	LT	0.80	25.4	C	- Modify cycle length from 60 s to 90 s. [WB green time shifts from 25 s to 35 s; NB/SB green time shifts from 25 s to 45 s; all phases have 3 s of amber and 2 s of all red time].
	SB	TR	0.91	32.6	C	TR	1.12	90.1	F	TR	0.93	38.0	D	
51st Avenue	WB	LTR	0.57	15.0	B	LTR	0.86	22.6	C	LTR	0.95	42.2	D	
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>28.0</b>	<b>C</b>	-	<b>0.99</b>	<b>54.8</b>	<b>D</b>	-	<b>0.94</b>	<b>36.4</b>	<b>D</b>	
<b>VERNON BOULEVARD &amp; BORDEN AVENUE</b>														
Vernon Boulevard	SB	L	1.12	89.4	F	L	1.12	89.4	F	L	0.82	30.5	C	- <b>Partially Mitigated.</b> - Install "No Standing Anytime" regulation along the west curb of 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 an additional 9 ft. - Install "No Standing 7:00 AM - 7:00 PM" regulation along the south curb of EB Borden Avenue 250 ft. from the intersection and restripe the approach from one 24 ft. lane with parking to one 12 ft. shared left-through lane and one 12 ft. through lane. - Shift the centerline of WB Borden Avenue 6 ft. to the north tapered 150 ft. from the intersection. Restripe the receiving side of EB Borden Avenue as two 11 ft. lanes. - Restripe WB Borden Avenue from one 13 ft. through lane and one 15 ft. channelized right turn lane to one 11 ft. through lane and one 11 ft. through-right lane. - Restripe the receiving side of WB Borden Avenue from one 30 ft. lane with parking to one 11 ft. lane and one 19 ft. lane with parking. - Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 25 s to 46 s; SB green time shifts from 25 s to 34 s; all phases have 3 s of amber and 2 s of all red time].
		LR	0.67	19.6	B	LR	1.42	120+	F*	R	0.82	40.2	D	
Borden Avenue	EB	LT	0.81	23.0	C	LT	1.20+	120+	F*	LT	1.20+	120+	F*	
	WB	T	0.27	12.2	B	T	0.54	15.1	B	TR	0.72	19.4	B	
<b>Overall Intersection</b>	-		<b>0.97</b>	<b>43.9</b>	<b>D</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.12</b>	<b>87.4</b>	<b>F</b>	

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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 (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		
<b>VERNON BOULEVARD &amp; 44TH DRIVE</b>														
Vernon Boulevard	NB	LTR	0.71	13.5	B	LTR	0.80	17.0	B	LTR	0.71	14.1	B	- Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 16 s to 22 s; NB/SB green time shifts from 34 s to 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	1.20+	120+	F*	
44th Drive	EB	LTR	0.32	20.5	C	LTR	0.32	20.5	C	LTR	0.36	31.8	C	
	WB	LTR	0.67	26.1	C	LTR	0.69	26.7	C	LTR	0.78	43.2	D	
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>115.3</b>	<b>F</b>	
<b>VERNON BOULEVARD &amp; QUEENS PLAZA SOUTH</b>														
Vernon Boulevard	NB	TR	0.81	19.9	B	TR	0.90	26.8	C	TR	0.66	11.2	B	- Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 21 s to 20 s; NB/SB green time shifts from 29 s to 60 s; all phases have 3 s of amber and 2 s of all red time].
	SB	LT	1.20+	120+	F*	LT	1.20+	120+	F*	LT	1.20+	120+	F*	
Queens Plaza South	WB	L	0.04	12.9	B	L	0.04	12.9	B	L	0.06	27.8	C	<b>Partially Mitigated.</b> Install "No Standing Anytime" regulation along the west curb of 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 an additional 9 ft.
		R	0.40	17.0	B	R	0.40	17.0	B	R	0.65	41.4	D	
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	
<b>JACKSON AVENUE/NORTHERN BOULEVARD</b>														
<b>JACKSON AVENUE &amp; 50TH AVENUE</b>														
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 along the north curb of EB 50th Avenue 150 ft. from the intersection and restripe the approach from one 30 ft. lane with parking on both sides to one 11 ft. left turn lane and one 19 ft. through-right lane with parking along the south curb.
	SB	LT	0.28	11.4	B	LT	0.45	13.4	B	LT	0.50	14.1	B	
50th Avenue	EB	LTR	0.68	43.1	D	LTR	0.99	77.8	E	L	0.52	37.9	D	
		-	-	-	-	-	-	-	-	TR	0.55	38.8	D	
	WB	L	0.35	35.3	D	L	0.38	36.1	D	L	0.53	41.6	D	
50th Avenue WB Right (Unsignalized)	WB	R	-	10.7	B	R	-	13.2	B	R	-	13.2	B	
<b>Overall Intersection</b>	-	-	<b>0.42</b>	<b>20.9</b>	<b>C</b>	-	<b>0.63</b>	<b>29.2</b>	<b>C</b>	-	<b>0.52</b>	<b>20.6</b>	<b>C</b>	
<b>JACKSON AVENUE &amp; 49TH AVENUE</b>														
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 along the south curb of EB Jackson Avenue for the entire block, shift the centerline 5 ft. to the north, and restripe the approach from one 11 ft. through lane and one 18 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	45.8	D	TR	1.19	120+	F*	T	0.45	39.4	D	
		-	-	-	-	-	-	-	-	R	0.56	21.3	C	- Prohibit WB Jackson Avenue left turn onto the 11th Street service road. - Restripe WB Jackson Avenue from one 11 ft. left-through lane and one 20 ft. through lane to one 26 ft. through lane. - Restripe WB Jackson Avenue receiving lane from one 11 ft. lane and one 20 ft. lane with parking to one 26 ft. lane with parking for 120 ft. - Permit EB Jackson Avenue right-turn to the Pulaski Bridge during the exclusive WB Jackson Avenue phase.
	WB	LT	0.33	16.9	B	LT	0.58	20.9	C	T	0.72	25.2	C	
<b>Overall Intersection</b>	-	-	<b>0.57</b>	<b>31.0</b>	<b>C</b>	-	<b>0.85</b>	<b>74.8</b>	<b>E</b>	-	<b>0.64</b>	<b>28.1</b>	<b>C</b>	
<b>JACKSON AVENUE &amp; 11TH STREET (PULASKI BRIDGE)</b>														
11th Street (Pulaski Bridge)	NB	-	-	-	-	-	-	-	-	L	0.80	54.9	D	- Post signs on the Pulaski Bridge to direct right turning traffic to the 11th Street service road with signs for Queens Boulevard/Queensboro Bridge traffic.
		LT	1.20+	120+	F*	LT	1.20+	120+	F*	T	0.90	43.1	D	
		R	1.09	99.8	F	R	1.15	120+	F*	-	-	-	-	- Restripe NB 11th Street service road approach traffic island to allow for one 12 ft. right turn lane and one 20 ft. right turn lane with parking by prohibiting parking along the west curb. - Restripe NB Pulaski Bridge shared left-through lane to one exclusive left turn lane.
Jackson Avenue	SB	LTR	0.71	32.6	C	LTR	0.72	32.8	C	LTR	0.72	32.9	C	
	EB	LT	0.47	31.8	C	LT	0.85	44.8	D	LT	0.85	44.8	D	
	WB	DefL	1.15	116.4	F	DefL	1.20+	120+	F*	L	1.00	74.0	E	- Post signs along WB Jackson Avenue to advise motorists of the double left turn onto the Pulaski Bridge and one through lane for Jackson Avenue traffic.
		T	0.40	18.3	B	T	0.69	24.9	C	T	0.74	27.0	C	
11th Street Service Road	NB	R	1.20+	120+	F*	R	1.20+	120+	F*	R	0.70	15.8	B	- Install "No Standing Anytime" regulation along the north curb of WB Jackson Avenue for the entire block and restripe the approach from one 10 ft. shared left-through lane and one 20 ft. through lane with parking to two 10 ft. left turn lanes and one 10 ft. through lane.
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>109.5</b>	<b>F</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>0.91</b>	<b>39.4</b>	<b>D</b>	- Prohibit WB Jackson Avenue left turn movement during the permitted EB/WB phase.

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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		
<b>JACKSON AVENUE &amp; 21ST STREET</b>														
21st Street	NB	LTR	0.85	39.7	D	LTR	0.87	42.0	D	LTR	0.84	39.7	D	<b>- Partially Mitigated.</b> - Install "No Standing 7:00 AM - 7:00 PM" regulation along the east curb of NB 21st Street for 250 ft. from the intersection to eliminate friction due to parking. - Install "No Standing 7:00 AM - 10:00 AM; 4:00 PM - 7:00 PM" regulation along the north curb of WB Jackson Avenue for the entire block to eliminate friction due to parking. - Modify signal timing: shift 1 s of green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 42 s to 43 s; NB/SB green time shifts from 50 s to 49 s].
	SB	LTR	0.60	29.4	C	LTR	0.68	31.7	C	LTR	0.70	32.9	C	
Jackson Avenue	EB	L	1.00	88.9	F	L	1.20+	120+	F*	L	1.20+	120+	F*	
		TR	0.76	38.8	D	TR	0.95	53.9	D	TR	0.93	49.7	D	
	WB	L	0.51	23.5	C	L	0.58	27.6	C	L	0.57	26.4	C	
		TR	0.81	40.9	D	TR	0.97	56.1	E	TR	0.88	44.2	D	
<b>Overall Intersection</b>	-		<b>0.93</b>	<b>41.5</b>	<b>D</b>	-	<b>1.60</b>	<b>71.6</b>	<b>E</b>	-	<b>1.20+</b>	<b>65.5</b>	<b>E</b>	
<b>JACKSON AVENUE &amp; THOMSON AVENUE</b>														
Jackson Avenue	NB	TR	0.57	18.8	B	TR	0.73	22.6	C					- Mitigation not required.
	SB	L	0.26	15.9	B	L	0.35	18.6	B					
		T	0.51	17.7	B	T	0.53	18.1	B					
Thomson Avenue	WB	L	0.46	30.7	C	L	0.65	35.3	D					
		R	0.10	25.3	C	R	0.10	25.3	C					
<b>Overall Intersection</b>	-		<b>0.53</b>	<b>20.1</b>	<b>C</b>	-	<b>0.70</b>	<b>23.0</b>	<b>C</b>					
<b>JACKSON AVENUE &amp; 44TH DRIVE</b>														
Jackson Avenue	NB	L	0.15	34.6	C	L	0.16	34.8	C					- Unmitigatable Impact.
		TR	0.85	49.9	D	TR	0.92	56.9	E					
	SB	L	1.01	63.7	E	L	1.04	72.1	E					
		TR	0.54	8.5	A	TR	0.57	8.7	A					
44th Drive	EB	LTR	1.10	107.8	F	LTR	1.10	107.8	F					
	WB	LTR	1.13	113.7	F	LTR	1.13	113.7	F					
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>64.2</b>	<b>E</b>	-	<b>1.11</b>	<b>65.9</b>	<b>E</b>					
<b>JACKSON AVENUE/QUEENS PLAZA EAST &amp; QUEENS BOULEVARD</b>														
Jackson Ave - Northern Blvd	NB	TR	0.49	29.5	C	TR	0.52	30.1	C					- Mitigation not required.
	SB	LTR	0.73	28.4	C	LTR	0.76	29.3	C					
Queens Boulevard	EB	T	0.86	40.2	D	T	0.86	40.2	D					
	WB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*					
<b>Overall Intersection</b>	-		<b>1.06</b>	<b>120+</b>	<b>F*</b>	-	<b>1.08</b>	<b>120+</b>	<b>F*</b>					
<b>NORTHERN BOULEVARD/QUEENS PLAZA EAST &amp; BRIDGE PLAZA</b>														
Northern Boulevard / Queens Plaza East	NB	DefL	1.08	120+	F*	DefL	1.19	120+	F*					- Unmitigatable Impact.
		T	0.88	27.7	C	T	0.94	36.1	D					
	SB	T	1.17	120+	F*	T	1.20+	120+	F*					
		R	1.01	67.7	E	R	1.01	67.7	E					
Bridge Plaza	EB	L	0.92	53.6	D	L	0.92	53.6	D					
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>79.2</b>	<b>E</b>	-	<b>1.20+</b>	<b>87.0</b>	<b>F</b>					
<b>NORTHERN BOULEVARD &amp; QUEENS PLAZA NORTH/41ST AVENUE</b>														
Northern Boulevard	NB	L	0.08	19.8	B	L	0.08	20.5	C					- Mitigation not required.
		TR	0.34	5.4	A	TR	0.37	5.5	A					
	SB	LTR	1.01	54.7	D	LTR	1.02	59.2	E					
Queens Plaza North/41st Avenue	WB	LTR	0.14	43.6	D	LTR	0.14	43.6	D					
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>42.1</b>	<b>D</b>	-	<b>0.71</b>	<b>44.8</b>	<b>D</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		
<b>NORTHERN BOULEVARD/31ST STREET &amp; 40TH AVENUE</b>														
31st Street	SB	LTR	1.17	120+	F*	LTR	1.20+	120+	F*	LTR	1.10	111.2	F	- Modify signal timing: shift 2 s of green time from EB-through/WB phase to EB-left/SB phase [EB-through/WB green time shifts from 85 s to 83 s; EB-left/SB green time shifts from 25 s to 27 s].
Northern Boulevard	EB	L	1.20+	120+	F*	L	1.20+	120+	F*	L	1.20+	120+	F*	
		T	0.38	7.3	A	T	0.39	7.3	A	T	0.40	8.2	A	
	WB	TR	0.93	30.2	C	TR	0.94	31.2	C	TR	0.97	36.3	D	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>103.6</b>	<b>F</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>97.4</b>	<b>F</b>	
<b>21ST STREET</b>														
<b>21ST STREET &amp; QUEENS PLAZA NORTH</b>														
21st Street	NB	LT	0.61	16.5	B	LT	0.70	18.7	B					- Mitigation not required.
	SB	TR	0.96	22.6	C	TR	0.99	26.9	C					
Queens Plaza North	WB	LTR	0.90	51.0	D	LTR	0.90	51.0	D					
<b>Overall Intersection</b>	-		<b>0.94</b>	<b>27.5</b>	<b>C</b>	-	<b>0.95</b>	<b>30.1</b>	<b>C</b>					
<b>21ST STREET &amp; QUEENS PLAZA SOUTH</b>														
21st Street	NB	LTR	0.43	13.2	B	LTR	0.48	13.9	B	LTR	0.46	12.2	B	- Restripe SB 21st Street from one 10 ft. left-through lane lane and one 22 ft. through-right lane to one 12 ft. left-through lane and one 14 ft. through-right lane and hatch the remaining 6 ft. along the west curb. - 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	79.6	E	LTR	1.19	107.0	F	LTR	1.10	65.0	E	
Queens Plaza South	EB	LTR	0.61	39.3	D	LTR	0.61	39.3	D	LTR	0.67	43.5	D	
<b>Overall Intersection</b>	-		<b>0.96</b>	<b>59.2</b>	<b>E</b>	-	<b>1.00</b>	<b>75.8</b>	<b>E</b>	-	<b>0.97</b>	<b>49.2</b>	<b>D</b>	
<b>21ST STREET &amp; 44TH DRIVE</b>														
21st Street	NB	LTR	0.86	27.9	C	LTR	0.97	41.3	D	LTR	0.95	38.3	D	- Install "No Standing Anytime" regulation along the west curb of SB 21st Street for 120 feet from the intersection. - Restripe SB 21st Street from one 25 ft. lane with parking to one 12 ft. exclusive left turn lane and one 13 ft. through-right lane by restricting parking along the west curb for 120 feet.
	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	L	0.59	20.7	C	
		-	-	-	-	-	-	-	-	TR	0.76	22.1	C	
44th Drive	EB	LTR	0.95	65.4	E	LTR	0.96	66.4	E	LTR	0.96	66.4	E	
	WB	LTR	0.78	44.7	D	LTR	0.79	45.1	D	LTR	0.79	45.1	D	
<b>Overall Intersection</b>	-		<b>1.13</b>	<b>71.1</b>	<b>E</b>	-	<b>1.20+</b>	<b>90.6</b>	<b>F</b>	-	<b>0.95</b>	<b>39.5</b>	<b>D</b>	
<b>VAN DAM STREET</b>														
<b>VAN DAM STREET &amp; THOMSON AVENUE/QUEENS BOULEVARD</b>														
Van Dam Street	NB	L	1.20+	120+	F*	L	1.20+	120+	F*					- Unmitigatable Impact.
		TR	1.20	120+	F*	TR	1.20	120+	F*					
Queens Boulevard (to Queens Boulevard.)	EB	T	1.01	87.1	F	T	1.01	87.1	F					
Queens Boulevard (to Van Dam Street)		T	1.14	120+	F*	T	1.14	120+	F*					
Queens Boulevard (to Thomson Avenue WB)		R	0.10	50.6	D	R	0.10	50.6	D					
Thomson Avenue	EB	T	0.24	16.5	B	T	0.31	17.4	B					
		R	1.04	77.9	E	R	1.04	77.9	E					
Queens Boulevard (to Thomson Avenue WB)	WB	L	1.18	120+	F*	L	1.20+	120+	F*					
Queens Boulevard (to Viaduct)		TR	0.49	10.9	B	TR	0.49	10.9	B					
<b>Overall Intersection</b>	-		<b>1.13</b>	<b>103.3</b>	<b>F</b>	-	<b>1.13</b>	<b>109.9</b>	<b>F</b>					
<b>VAN DAM STREET &amp; LIE EXIT RAMP</b>														
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. - Modify signal phasing plan: Add a new lag phase for SB approach with WB right turn only; maintain the existing 120 s cycle length with the following signal timing: WB green time is 56 s, NB/SB green time is 38 s, and SB/WB-right only green time is 11 s (each phase has 3 s amber and 2 s all red).
	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	1.16	120+	F*	
		-	-	-	-	-	-	-	-	R	1.01	120+	F*	
<b>Overall Intersection</b>	-		<b>1.08</b>	<b>119.8</b>	<b>F</b>	-	<b>1.12</b>	<b>120+</b>	<b>F*</b>	-	<b>1.06</b>	<b>120+</b>	<b>F*</b>	

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		
<b>VAN DAM STREET &amp; BORDEN AVENUE</b>														
Van Dam Street	NB	TR	0.63	42.6	D	TR	0.63	42.6	D	TR	0.70	46.8	D	- Modify signal timing plan: Maintain the existing 120 s cycle length with the following signal timing: EB green time is 43 s, NB/SB green time is 28 s, and SB green time is 34 s (each phase has 3 s amber and 2 s all red).  [Measures reflect changes needed for coordination with the intersection of Van Dam Street and LIE Exit Ramp; otherwise mitigation is not needed.]
	SB	DefL	0.97	52.1	D	DefL	0.97	52.1	D	DefL	0.90	41.9	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	
<b>Overall Intersection</b>	-		<b>0.81</b>	<b>41.3</b>	<b>D</b>	-	<b>0.85</b>	<b>41.5</b>	<b>D</b>	-	<b>0.82</b>	<b>37.8</b>	<b>D</b>	
<b>CENTER BOULEVARD</b>														
<b>CENTER BOULEVARD &amp; 51ST AVENUE</b>														
Center Boulevard	NB	-	-	-	-	T	0.61	13.1	B	T	0.61	13.1	B	- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]
	SB	-	-	-	-	T	0.11	8.1	A	T	0.11	8.1	A	
51st Avenue	WB	-	-	-	-	LR	0.39	17.0	B	LR	0.41	17.3	B	
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.52</b>	<b>13.3</b>	<b>B</b>	-	<b>0.53</b>	<b>13.5</b>	<b>B</b>	
<b>CENTER BOULEVARD &amp; BORDEN AVENUE</b>														
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 resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
		-	-	-	-	R	0.68	30.8	C	R	0.74	33.3	C	
	SB	-	-	-	-	L	0.28	35.2	D	L	0.28	35.2	D	
Borden Avenue	WB	-	-	-	-	R	0.63	43.9	D	R	0.63	43.9	D	
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.77</b>	<b>37.2</b>	<b>D</b>	-	<b>0.80</b>	<b>40.1</b>	<b>D</b>	
<b>CENTER BOULEVARD &amp; 54TH AVENUE</b>														
Center Boulevard	NB	-	-	-	-	T	0.49	17.0	B	T	0.49	17.0	B	- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
54th Avenue	WB	-	-	-	-	R	0.65	14.0	B	R	0.74	16.3	B	
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.58</b>	<b>15.6</b>	<b>B</b>	-	<b>0.64</b>	<b>16.6</b>	<b>B</b>	
<b>CENTER BOULEVARD &amp; 55TH AVENUE</b>														
Center Boulevard	NB	-	-	-	-	TR	0.35	9.5	A					- Mitigation not required.
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.34</b>	<b>9.5</b>	<b>A</b>					
<b>CENTER BOULEVARD &amp; 56TH AVENUE</b>														
Center Boulevard	NB	-	-	-	-	T	0.04	13.5	B					- Mitigation not required.
56th Avenue	WB	-	-	-	-	R	0.66	14.2	B					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.41</b>	<b>14.2</b>	<b>B</b>					
<b>2ND STREET</b>														
<b>2ND STREET &amp; 51ST AVENUE</b>														
2nd Street	(UNSIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]
	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	
<b>Overall Intersection</b>	-	-	-	<b>3.7</b>	<b>A</b>	-	<b>0.24</b>	<b>12.5</b>	<b>B</b>	-	<b>0.25</b>	<b>12.6</b>	<b>B</b>	
<b>2ND STREET &amp; BORDEN AVENUE</b>														
2nd Street	(UNSIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
	SB	LT	-	7.8	A	LTR	0.52	45.0	D	LTR	0.52	45.0	D	
Borden Avenue	EB	-	-	-	-	TR	0.71	30.2	C	TR	0.77	31.9	C	
	WB	LR	-	13.6	B	DefL	0.82	30.8	C	DefL	0.90	42.4	D	
		-	-	-	-	T	0.23	6.5	A	T	0.23	6.5	A	
<b>Overall Intersection</b>	-	-	-	<b>8.0</b>	<b>A</b>	-	<b>0.74</b>	<b>29.1</b>	<b>C</b>	-	<b>0.77</b>	<b>32.6</b>	<b>C</b>	

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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		
<b>2ND STREET &amp; 54TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. 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
<b>Overall Intersection</b>	-	-	<b>4.3</b>	<b>A</b>	-	<b>0.47</b>	<b>15.9</b>	<b>B</b>	-	<b>0.53</b>	<b>16.5</b>	<b>B</b>		
<b>2ND STREET &amp; 55TH AVENUE</b>													- Mitigation not required.	
2nd Street	SB	-	-	-	-	LT	0.11	10.8	B					
55th Avenue	EB	-	-	-	-	TR	0.12	11.0	B					
<b>Overall Intersection</b>	-	-	-	-	-	<b>0.11</b>	<b>10.9</b>	<b>B</b>						
<b>2ND STREET &amp; 56TH AVENUE</b>													- Mitigation not required.	
2nd Street	SB	-	-	-	-	T	0.06	10.5	B					
		-	-	-	-	R	0.50	14.9	B					
<b>Overall Intersection</b>	-	-	-	-	-	<b>0.50</b>	<b>14.3</b>	<b>B</b>						
<b>11TH STREET</b>														
<b>11TH STREET &amp; 44TH DRIVE</b>													- Mitigation not required.	
11th Street	NB	LTR	0.73	15.5	B	LTR	0.73	15.7	B					
	SB	LTR	0.60	14.1	B	LTR	0.60	14.1	B					
44th Drive	EB	LTR	0.67	32.3	C	LTR	0.68	32.4	C					
	WB	LTR	0.80	38.2	D	LTR	0.81	38.8	D					
<b>Overall Intersection</b>	-	<b>0.75</b>	<b>21.8</b>	<b>C</b>	-	<b>0.76</b>	<b>22.0</b>	<b>C</b>						
<b>UNSIGNALIZED INTERSECTIONS</b>														
<b>CENTER BOULEVARD</b>														
<b>CENTER BOULEVARD &amp; 48TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>				<b>(UNSIGNALIZED INTERSECTION)</b>								- Unmitigatable Impact.	
Center Boulevard	NB	-	-	-	-	-	-	-	-					
	SB	LT	-	12.3	B	LT	-	16.7	C					
		T	-	12.3	B	T	-	16.5	C					
48th Avenue	WB	L	-	17.7	C	L	-	34.2	D					
		R	-	12.8	B	R	-	17.6	C					
<b>Overall Intersection</b>	-	-	<b>9.7</b>	<b>A</b>	-	-	<b>11.2</b>	<b>B</b>						
<b>CENTER BOULEVARD &amp; 49TH AVENUE</b>													- Mitigation not required.	
Center Boulevard	SB	LT	-	7.9	A	LT	-	9.5	A					
49th Avenue	WB	LR	-	13.6	B	LR	-	23.8	C					
<b>Overall Intersection</b>	-	-	<b>3.3</b>	<b>A</b>	-	-	<b>4.0</b>	<b>A</b>						
<b>CENTER BOULEVARD &amp; 50TH AVENUE</b>													- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]	
Center Boulevard	SB	L	FREEFLOW	A	LT	-	11.9	B	LT	-	12.0	B		
50th Avenue	WB	R	FREEFLOW	A	-	-	-	-	-	-	-	-		
<b>Overall Intersection</b>	-	FREEFLOW	<b>A</b>	-	-	<b>2.0</b>	<b>A</b>	-	-	<b>2.0</b>	<b>A</b>	-		



**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		
<b>5TH STREET &amp; 51ST AVENUE</b>														
5th Street	NB	LT	-	8.1	A	LT	-	8.3	A	LT	-	9.8	A	<ul style="list-style-type: none"> <li>- Designate 51st Avenue as a way WB only roadway.</li> <li>- Install "All Way" Stop control sign on all approaches.</li> <li>- Install "No Standing Anytime" regulation along the west curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 19 ft. approach lane with parking and one 11 ft. receiving lane.</li> <li>- Install "No Standing Anytime" regulation along the east curb of SB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 19 ft. approach lane with parking and one 11 ft. receiving lane.</li> <li>- Meets the MUTCD Stop control criteria - Option D in Section 2B.07.</li> <li><b>[Measures reflect geometric improvements needed for the PM peak period; otherwise mitigation is not needed.]</b></li> </ul>
	SB	TR	-	-	-	-	-	-	-	TR	-	12.0	B	
51st Avenue	EB	LR	-	13.8	B	LR	-	13.4	B	-	-	-	-	
	WB	LTR	-	14.1	B	LTR	-	21.3	C	LTR	-	11.6	B	
<b>Overall Intersection</b>	-	-	-	<b>5.2</b>	<b>A</b>	-	-	<b>8.8</b>	<b>A</b>	-	-	<b>11.4</b>	<b>B</b>	
<b>5TH STREET &amp; BORDEN AVENUE</b>														
	(UN SIGNALIZED INTERSECTION)				(UN SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				<ul style="list-style-type: none"> <li>- Signal warranted (intersection meets the peak hour warrant).</li> <li>- 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].</li> <li>- Install "No Standing Anytime" regulation along the west curb of SB 5th Street and shift the centerline 4 ft. to the west to restripe SB approach from one 15 ft. lane with parking to one 11 ft. lane.</li> <li>- Restripe EB Borden Ave approach from one 29 ft. lane to one 14.5 ft. exclusive left turn lane and one 14.5 ft. through lane.</li> </ul>	
5th Street	SB	LR	-	18.4	C	LR	-	120+	F*	LR	0.59	19.4		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	0.88	23.2		C
<b>Overall Intersection</b>	-	-	-	<b>6.9</b>	<b>A</b>	-	-	<b>Note (5)</b>	<b>F*</b>	-	<b>0.79</b>	<b>22.9</b>	<b>C</b>	
<b>11TH STREET/11TH PLACE</b>														
<b>11TH STREET &amp; BORDEN AVENUE AT QMT TOLL PLAZA EXIT RAMP</b>														
	(UN SIGNALIZED INTERSECTION)				(UN SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				<ul style="list-style-type: none"> <li>- <b>Partially Mitigated.</b></li> <li>- Signal warranted (intersection meets the peak hour warrant).</li> <li>- Install a new traffic signal with a 90-second cycle length. [EB+SB right turn green time is 43 s; WB+EB-left+NB right turn green time is 37 s; both phases have 3 s of amber and 2 s of all red time].</li> <li>- Prohibit NB 11th Street left turns (on to Borden Avenue) and through movement (on to QMT/LIE) and restripe this approach as one 20 ft. right turn only lane.</li> <li>- Prohibit SB QMT Exit left turns (on to Borden Avenue) and through movement (on to 11th Street) and restripe this approach as one 26 ft. right turn only lane.</li> <li>- Restripe EB Borden Avenue from one 20 ft. lane to one 10 ft. left turn lane and one 10 ft. through-right lane.</li> <li>- 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.</li> <li>- Allow Right Turn on Red from SB QMT Exit.</li> <li>- Provide signage along the QMT to direct traffic headed to 11th Street and EB Borden Avenue to use the 21st Street ramp.</li> </ul>	
11th Street	NB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.05	16.1		B
	SB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.17	13.7		B
Borden Avenue	EB	LTR	-	120+	F*	LTR	-	120+	F*	L	1.20+	120+		F*
	-	-	-	-	-	-	-	-	-	TR	0.48	17.3		B
	WB	LTR	-	7.8	A	LTR	-	8.1	A	LTR	0.97	39.6	D	
<b>Overall Intersection</b>	-	-	-	<b>Note (5)</b>	<b>F*</b>	-	-	<b>Note (5)</b>	<b>F*</b>	-	<b>1.20+</b>	<b>107.2</b>	<b>F</b>	
<b>11TH PLACE &amp; 50TH AVENUE</b>														
11th Place	SB	TR	-	18.8	C	TR	-	20.1	C	TR	-	21.4	C	<ul style="list-style-type: none"> <li>- Mitigation not required.</li> <li><b>[Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]</b></li> </ul>
50th Avenue	WB	LT	-	7.8	A	LT	-	7.9	A	LT	-	7.9	A	
<b>Overall Intersection</b>	-	-	-	<b>8.1</b>	<b>A</b>	-	-	<b>8.0</b>	<b>A</b>	-	-	<b>8.0</b>	<b>A</b>	
<b>11TH STREET SERVICE ROAD &amp; 49TH AVENUE</b>														
11th Street Service Road	NB	R	-	11.2	B	R	-	11.2	B					<ul style="list-style-type: none"> <li>- Mitigation not required.</li> </ul>
49th Avenue	WB	R	-	10.5	B	R	-	10.5	B					
<b>Overall Intersection</b>	-	-	-	<b>3.9</b>	<b>A</b>	-	-	<b>3.9</b>	<b>A</b>					

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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		
<b>11TH STREET &amp; QUEENS PLAZA SOUTH</b>														
11th Street	NB	LTR	-	17.6	C	LTR	-	18.3	C					- Mitigation not required.
Queens Plaza South	EB	LT	-	14.6	B	LT	-	14.9	B					
		TR	-	11.1	B	TR	-	11.1	B					
	WB	LT	-	12.0	B	LT	-	12.1	B					
		TR	-	9.6	A	TR	-	9.6	A					
<b>Overall Intersection</b>	-	-	-	<b>14.6</b>	<b>B</b>	-	-	<b>15.0</b>	<b>C</b>					
<b>OTHER UNSIGNALIZED INTERSECTIONS</b>														
<b>21ST STREET &amp; 50TH AVENUE</b>														
21st Street	NB	LT	FREEFLOW	A	A	LT	FREEFLOW	A	A					- Mitigation not required.
50th Avenue	SB	R	FREEFLOW	A	A	R	FREEFLOW	A	A					
<b>Overall Intersection</b>	-	-	FREEFLOW	<b>A</b>	<b>A</b>	-	FREEFLOW	<b>A</b>	<b>A</b>					
<b>JACKSON AVENUE &amp; 51ST AVENUE</b>														
Jackson Avenue	NB	T	-	9.1	A	T	-	11.9	B	T	-	11.9	B	- Mitigation not required.
51st Avenue	WB	TR	-	12.9	B	TR	-	16.4	C	TR	-	16.8	C	<b>[Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]</b>
<b>Overall Intersection</b>	-	-	-	<b>3.9</b>	<b>A</b>	-	-	<b>5.1</b>	<b>A</b>	-	-	<b>5.1</b>	<b>A</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) Overall delay cannot be calculated since the delay for some of the movements is beyond the threshold delay of HCS methodology.

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		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>VERNON BOULEVARD</b>														
<b>VERNON BOULEVARD &amp; 48TH AVENUE</b>														
Vernon Boulevard	NB	LT	0.68	23.2	C	LT	0.73	24.8	C					- Mitigation not required.
	SB	TR	0.69	23.4	C	TR	0.76	25.6	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					
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>28.4</b>	<b>C</b>	-	<b>0.68</b>	<b>29.6</b>	<b>C</b>					
<b>VERNON BOULEVARD &amp; 49TH AVENUE</b>														
Vernon Boulevard	NB	LTR	0.69	14.5	B	LTR	0.73	15.7	B	LTR	0.58	11.0	B	- Modify cycle length from 60 s to 90 s. [EB green time shifts from 19 s to 22 s; NB/SB green time shifts from 31 s to 58 s; all phases have 3 s of amber and 2 s of all red time]. <b>[Measures reflect change in signal timing needed for the AM/PM peak period; otherwise mitigation is not needed.]</b>
	SB	LTR	0.64	13.3	B	LTR	0.70	14.6	B	LTR	0.56	10.5	B	
49th Avenue	EB	LTR	0.17	15.7	B	LTR	0.20	16.0	B	LTR	0.26	29.5	C	
<b>Overall Intersection</b>	-		<b>0.49</b>	<b>14.0</b>	<b>B</b>	-	<b>0.53</b>	<b>15.2</b>	<b>B</b>	-	<b>0.50</b>	<b>12.1</b>	<b>B</b>	
<b>VERNON BOULEVARD &amp; 50TH AVENUE</b>														
Vernon Boulevard	NB	TR	0.72	15.3	B	TR	0.77	17.1	B	TR	0.89	36.4	D	- Modify cycle length from 60 s to 90 s. [EB green time shifts from 19 s to 40 s; NB/SB green time shifts from 31 s to 40 s; all phases have 3 s of amber and 2 s of all red time].
	SB	LT	0.59	12.7	B	LT	0.67	14.3	B	LT	0.86	35.0	D	
50th Avenue	EB	LTR	0.72	33.6	C	LTR	1.11	107.7	F	LTR	0.74	32.8	C	
<b>Overall Intersection</b>	-		<b>0.72</b>	<b>17.6</b>	<b>B</b>	-	<b>0.89</b>	<b>37.5</b>	<b>D</b>	-	<b>0.82</b>	<b>35.1</b>	<b>D</b>	
<b>VERNON BOULEVARD &amp; 51ST AVENUE</b>														
Vernon Boulevard	NB	LT	0.75	21.0	C	LT	0.80	23.4	C	LT	0.77	28.4	C	- Modify cycle length from 60 s to 90 s. [WB green time shifts from 25 s to 41 s; NB/SB green time shifts from 25 s to 39 s; all phases have 3 s of amber and 2 s of all red time].
	SB	TR	0.64	17.5	B	TR	0.82	24.4	C	TR	0.78	29.2	C	
51st Avenue	WB	LTR	0.71	17.9	B	LTR	1.01	45.9	D	LTR	0.98	44.5	D	
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>18.7</b>	<b>B</b>	-	<b>0.91</b>	<b>34.7</b>	<b>C</b>	-	<b>0.89</b>	<b>36.8</b>	<b>D</b>	
<b>VERNON BOULEVARD &amp; BORDEN AVENUE</b>														
Vernon Boulevard	SB	L	0.98	46.6	D	L	0.98	46.6	D	L	0.94	46.8	D	- Install "No Standing Anytime" regulation along the west curb of 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 an additional 9 ft.  - Install "No Standing 7:00 AM - 7:00 PM" regulation along the south curb of EB Borden Avenue 250 ft. from the intersection and restripe the approach from one 24 ft. lane with parking to one 12 ft. shared left-through lane and one 12 ft. through lane.  - Shift the centerline of WB Borden Avenue 6 ft. to the north tapered 150 ft. from the intersection. Restripe the receiving side of EB Borden Avenue as two 11 ft. lanes.  - Restripe WB Borden Avenue from one 13 ft. through lane and one 15 ft. channelized right turn lane to one 11 ft. through lane and one 11 ft. through-right lane.  - Restripe the receiving side of WB Borden Avenue from one 30 ft. lane with parking to one 11 ft. lane and one 19 ft. lane with parking.  - Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 25 s to 53 s; SB green time shifts from 25 s to 27 s; all phases have 3 s of amber and 2 s of all red time].
		LR	0.56	16.6	B	LR	1.03	64.0	E	R	0.72	40.1	D	
Borden Avenue	EB	LT	0.58	16.6	B	LT	1.20+	120+	F*	DefL	0.88	41.6	D	
		-	-	-	-	-	-	-	-	T	0.43	11.2	B	
	WB	T	0.50	14.7	B	T	0.71	18.6	B	TR	0.69	14.6	B	
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>26.5</b>	<b>C</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>0.90</b>	<b>27.2</b>	<b>C</b>	

**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	
<b>VERNON BOULEVARD &amp; 44TH DRIVE</b>														
Vernon Boulevard	NB	LTR	0.81	17.9	B	LTR	0.85	19.8	B	LTR	0.75	15.5	B	- Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 16 s to 22 s; NB/SB green time shifts from 34 s to 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	1.20+	120+	F*	
44th Drive	EB	LTR	0.54	23.3	C	LTR	0.54	23.3	C	LTR	0.59	36.2	D	
	WB	LTR	0.72	26.8	C	LTR	0.72	26.9	C	LTR	0.81	43.9	D	
<b>Overall Intersection</b>	-		<b>1.17</b>	<b>92.3</b>	<b>F</b>	-	<b>1.20</b>	<b>101.1</b>	<b>F</b>	-	<b>1.14</b>	<b>76.0</b>	<b>E</b>	
<b>VERNON BOULEVARD &amp; QUEENS PLAZA SOUTH</b>														
Vernon Boulevard	NB	TR	0.94	32.3	C	TR	0.97	37.8	D	TR	0.71	12.4	B	- Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 21 s to 20 s; NB/SB green time shifts from 29 s to 60 s; all phases have 3 s of amber and 2 s of all red time].
	SB	LT	1.20+	120+	F*	LT	1.20+	120+	F*	LT	1.20	114.0	F	
Queens Plaza South	WB	L	0.10	13.4	B	L	0.10	13.4	B	L	0.16	28.9	C	
	R		0.36	16.2	B	R	0.36	16.2	B	R	0.58	37.9	D	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.04</b>	<b>62.6</b>	<b>E</b>	
<b>JACKSON AVENUE/NORTHERN BOULEVARD</b>														
<b>JACKSON AVENUE &amp; 50TH AVENUE</b>														
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 along the north curb of the EB 50th Avenue 150 ft. from the intersection and restripe the approach from one 30 ft. lane with parking on both sides to one 11 ft. left turn lane and one 19 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	0.33	11.9	B	LT	0.47	13.7	B	LT	0.51	14.2	B	
50th Avenue	EB	LTR	0.45	35.5	D	LTR	0.57	38.6	D	L	0.32	33.4	C	
	-	-	-	-	-	-	-	-	-	TR	0.29	32.8	C	
	WB	L	0.36	35.1	D	L	0.37	35.5	D	L	0.62	43.7	D	
50th Avenue WB Right (Unsignalized)	WB	R	-	10.9	B	R	-	12.3	B	R	-	12.3	B	
<b>Overall Intersection</b>	-		<b>0.37</b>	<b>17.6</b>	<b>B</b>	-	<b>0.51</b>	<b>18.4</b>	<b>B</b>	-	<b>0.55</b>	<b>19.1</b>	<b>B</b>	
<b>JACKSON AVENUE &amp; 49TH AVENUE</b>														
49th Avenue	SB	LTR	0.34	28.2	C	LTR	0.39	29.1	C	LTR	0.41	29.5	C	- Install "No Standing Anytime" regulation along the south curb of EB Jackson Avenue for the entire block, shift the centerline 5 ft. to the north, and restripe the approach from one 11 ft. through lane and one 18 ft. shared through-right lane with parking to two 11 ft. through lanes and one 12 ft. exclusive right turn lane. - Prohibit WB Jackson Avenue left turn onto the 11th Street service road. - Restripe WB Jackson Avenue from one 11 ft. left-through lane and one 20 ft. through lane to one 26 ft. through lane. - Restripe WB Jackson Avenue receiving lane from one 11 ft. and one 20 ft. lane with parking to one 26 ft. lane with parking for 120 feet. - Permit EB Jackson Avenue right-turn to the Pulaski Bridge during the exclusive WB Jackson Avenue phase.
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	
	WB	LT	0.34	16.9	B	LT	0.51	19.5	B	T	0.67	23.7	C	
<b>Overall Intersection</b>	-		<b>0.53</b>	<b>30.0</b>	<b>C</b>	-	<b>0.70</b>	<b>37.2</b>	<b>D</b>	-	<b>0.56</b>	<b>27.1</b>	<b>C</b>	
<b>JACKSON AVENUE &amp; 11TH STREET (PULASKI BRIDGE)</b>														
11th Street (Pulaski Bridge)	NB	-	-	-	-	-	-	-	-	L	0.58	38.8	D	- Post signs on the Pulaski Bridge to direct right turning traffic to the 11th Street service road with signs for Queens Boulevard/Queensboro Bridge traffic. - Restripe NB 11th Street service road approach traffic island to allow for one 12 ft. right turn lane and one 20 ft. right turn lane with parking by prohibiting parking along the west curb. - Restripe NB Pulaski Bridge shared left-through lane to one exclusive left turn lane. - Post signs along WB Jackson Avenue to advise motorists of the double left turn onto the Pulaski Bridge and one through lane for Jackson Avenue traffic. - Install "No Standing Anytime" regulation along the north curb of WB Jackson Avenue for the entire block and restripe the approach from one 10 ft. shared left-through lane and one 20 ft. through lane with parking to two 10 ft. left turn lanes and one 10 ft. through lane. - Prohibit WB Jackson Avenue left turn movement during the permitted EB/WB phase.
	LT		0.82	40.0	D	LT	1.03	73.9	E	T	0.63	32.6	C	
	R		0.81	45.0	D	R	0.81	45.0	D	-	-	-	-	
	SB	LTR	0.53	30.6	C	LTR	0.56	31.3	C	LTR	0.56	31.5	C	
Jackson Avenue	EB	LT	0.47	31.7	C	LT	0.81	41.9	D	LT	0.81	41.9	D	
	WB	DefL	1.07	90.6	F	DefL	1.19	120+	F*	L	0.91	59.7	E	
	T		0.47	19.6	B	T	0.69	24.9	C	T	0.73	27.1	C	
11th Street Service Road	NB	R	0.89	65.5	E	R	0.89	65.5	E	R	0.47	11.4	B	
<b>Overall Intersection</b>	-		<b>1.00</b>	<b>48.1</b>	<b>D</b>	-	<b>1.20+</b>	<b>64.3</b>	<b>E</b>	-	<b>0.76</b>	<b>33.9</b>	<b>C</b>	

**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	
<b>JACKSON AVENUE &amp; 21ST STREET</b>														
21st Street	NB	LTR	1.06	89.5	F	LTR	1.10	104.0	F	LTR	1.03	80.5	F	- Partially Mitigated. - Install "No Standing 7:00 AM - 7:00 PM" regulation along the east curb of NB 21st Street for 250 ft. from the intersection to eliminate friction due to parking.
	SB	LTR	0.74	40.8	D	LTR	0.83	45.0	D	LTR	0.83	45.0	D	
Jackson Avenue	EB	L	0.71	24.4	C	L	1.07	108.7	F	L	1.07	108.7	F	
		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	0.45	15.9	B	
		TR	0.71	29.4	C	TR	0.79	32.1	C	TR	0.79	32.1	C	
	<b>Overall Intersection</b>	-	<b>0.87</b>	<b>41.7</b>	<b>D</b>	-	<b>1.11</b>	<b>52.7</b>	<b>D</b>	-	<b>1.08</b>	<b>48.4</b>	<b>D</b>	
<b>JACKSON AVENUE &amp; THOMSON AVENUE</b>														
Jackson Avenue	NB	TR	0.61	21.9	C	TR	0.66	22.9	C					- Mitigation not required.
	SB	L	0.16	16.3	B	L	0.17	16.6	B					
		T	0.47	19.3	B	T	0.48	19.5	B					
Thomson Avenue	WB	L	0.42	27.4	C	L	0.48	28.5	C					
		R	0.24	25.2	C	R	0.24	25.2	C					
	<b>Overall Intersection</b>	-	<b>0.53</b>	<b>21.8</b>	<b>C</b>	-	<b>0.58</b>	<b>22.6</b>	<b>C</b>					
<b>JACKSON AVENUE &amp; 44TH DRIVE</b>														
Jackson Avenue	NB	L	0.19	12.3	B	L	0.20	12.4	B					- Mitigation not required.
		TR	0.87	21.4	C	TR	0.89	23.5	C					
	SB	L	0.46	15.8	B	L	0.47	16.4	B					
		TR	0.48	4.0	A	TR	0.50	4.0	A					
44th Drive	EB	DefL	1.20+	120+	F*	DefL	1.20+	120+	F*					
		TR	0.75	51.1	D	TR	0.75	51.1	D					
	WB	LTR	0.98	75.0	E	LTR	0.98	75.0	E					
	<b>Overall Intersection</b>	-	<b>1.08</b>	<b>47.7</b>	<b>D</b>	-	<b>1.09</b>	<b>47.8</b>	<b>D</b>					
<b>JACKSON AVENUE/QUEENS PLAZA EAST &amp; QUEENS BOULEVARD</b>														
Jackson Ave - Northern Blvd	NB	TR	0.54	30.4	C	TR	0.55	30.6	C					- Mitigation not required.
	SB	LTR	0.55	24.5	C	LTR	0.57	24.8	C					
Queens Boulevard	EB	T	0.98	53.1	D	T	0.98	53.1	D					
	WB	LTR	1.02	58.1	E	LTR	1.02	58.1	E					
	<b>Overall Intersection</b>	-	<b>0.90</b>	<b>46.5</b>	<b>D</b>	-	<b>0.91</b>	<b>46.4</b>	<b>D</b>					
<b>NORTHERN BOULEVARD/QUEENS PLAZA EAST &amp; BRIDGE PLAZA</b>														
Northern Boulevard / Queens Plaza East	NB	LT	0.73	18.1	B	LT	0.75	18.7	B					- Mitigation not required.
	SB	T	0.72	27.7	C	T	0.74	28.5	C					
		R	0.6	13.7	B	R	0.6	13.7	B					
Bridge Plaza	EB	L	0.93	54.7	D	L	0.93	54.7	D					
	<b>Overall Intersection</b>	-	<b>0.82</b>	<b>27.7</b>	<b>C</b>	-	<b>0.83</b>	<b>28.0</b>	<b>C</b>					
<b>NORTHERN BOULEVARD &amp; QUEENS PLAZA NORTH/41ST AVENUE</b>														
Northern Boulevard	NB	L	0.09	10.3	B	L	0.09	10.4	B					- Mitigation not required.
		TR	0.31	5.1	A	TR	0.32	5.2	A					
	SB	LTR	0.69	14.9	B	LTR	0.69	15.1	B					
Queens Plaza North/41st Avenue	WB	LTR	0.14	43.6	D	LTR	0.14	43.6	D					
	<b>Overall Intersection</b>	-	<b>0.51</b>	<b>12.3</b>	<b>B</b>	-	<b>0.51</b>	<b>12.3</b>	<b>B</b>					

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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	
<b>NORTHERN BOULEVARD/31ST STREET &amp; 40TH AVENUE</b>														
31st Street	SB	LTR	0.69	48.2	D	LTR	0.70	48.6	D	LTR	0.67	46.9	D	- Modify signal timing: shift 1 s of green time from EB-through/WB phase to EB-left/SB phase [EB-through/WB green time shifts from 85 s to 84 s; EB-left/SB green time shifts from 25 s to 26 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	0.42	7.9	A	
	WB	TR	0.43	7.6	A	TR	0.43	7.6	A	TR	0.43	8.1	A	
<b>Overall Intersection</b>	-		<b>0.94</b>	<b>102.1</b>	<b>F</b>	-	<b>0.97</b>	<b>109.6</b>	<b>F</b>	-	0.93	97.2	F	
<b>21ST STREET</b>														
<b>21ST STREET &amp; QUEENS PLAZA NORTH</b>														
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	33.1	C	TR	0.85	34.0	C	TR	0.82	31.2	C	
Queens Plaza North	WB	LTR	0.32	21.1	C	LTR	0.32	21.1	C	LTR	0.33	22.5	C	
<b>Overall Intersection</b>	-		<b>0.86</b>	<b>120+</b>	<b>F*</b>	-	<b>0.88</b>	<b>120+</b>	<b>F*</b>	-	<b>0.87</b>	<b>117.4</b>	<b>F</b>	
<b>21ST STREET &amp; QUEENS PLAZA SOUTH</b>														
21st Street	NB	LTR	0.93	15.1	B	LTR	0.95	17.2	B	LTR	0.95	17.2	B	- Mitigation not required. - Restripe SB 21st Street from one 10 ft. left-through lane and one 22 ft. through-right lane to one 12 ft. left-through lane and one 14 ft. through-right lane and hatch the remaining 6 ft. along the west curb.
	SB	LTR	0.70	15.3	B	LTR	0.73	16.0	B	LTR	0.70	15.2	B	
Queens Plaza South	EB	LTR	0.82	58.4	E	LTR	0.82	58.4	E	LTR	0.82	58.4	E	
<b>Overall Intersection</b>	-		<b>0.90</b>	<b>19.3</b>	<b>B</b>	-	<b>0.91</b>	<b>20.7</b>	<b>C</b>	-	<b>0.91</b>	<b>20.5</b>	<b>C</b>	[Measures reflect geometric improvements needed for the AM peak period; otherwise mitigation is not needed.]
<b>21ST STREET &amp; 44TH DRIVE</b>														
21st Street	NB	LTR	0.68	11.9	B	LTR	0.71	12.6	B	LTR	0.70	12.3	B	- Install "No Standing Anytime" regulation along the west curb of SB 21st Street for 120 feet from the intersection. - Restripe SB 21st Street from the 25 ft. lane with parking to one 12 ft. exclusive left turn lane and one 13 ft. through-right lane by restricting parking along the west curb for 120 feet.
	SB	LTR	1.03	47.1	D	LTR	1.06	59.2	E	L	0.30	12.3	B	
		-	-	-	-	-	-	-	-	TR	0.72	12.5	B	
44th Drive	EB	LTR	0.69	41.9	D	LTR	0.69	41.9	D	LTR	0.69	41.9	D	
	WB	LTR	0.94	59.6	E	LTR	0.94	59.9	E	LTR	0.94	59.9	E	
<b>Overall Intersection</b>	-		<b>1.00</b>	<b>40.3</b>	<b>D</b>	-	<b>1.02</b>	<b>44.6</b>	<b>D</b>	-	<b>0.79</b>	<b>28.0</b>	<b>C</b>	
<b>VAN DAM STREET</b>														
<b>VAN DAM STREET &amp; THOMSON AVENUE/QUEENS BOULEVARD</b>														
Van Dam Street	NB	L	1.20+	120+	F*	L	1.20+	120+	F*					- Unmitigatable Impact.
		TR	1.11	111.2	F	TR	1.11	111.2	F					
Queens Boulevard (to Queens Boulevard.)	EB	T	0.67	31.0	C	T	0.67	31.0	C					
Queens Boulevard (to Van Dam Street)		T	0.94	61.7	E	T	0.94	61.7	E					
Queens Boulevard (to Thomson Avenue WB)		R	0.08	35.5	D	R	0.08	35.5	D					
Thomson Avenue	EB	T	0.64	22.4	C	T	0.67	22.9	C					
		R	1.17	115.4	F	R	1.17	115.4	F					
Queens Boulevard (to Thomson Avenue WB)	WB	L	0.92	67.2	E	L	0.97	74.1	E					
Queens Boulevard (to Viaduct)		TR	0.33	9.2	A	TR	0.33	9.2	A					
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>68.8</b>	<b>E</b>	-	<b>1.20+</b>	<b>69.5</b>	<b>E</b>					
<b>VAN DAM STREET &amp; LIE EXIT RAMP</b>														
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	1.18	109.2	F	TR	1.20+	120+	F*	T	1.07	65.6	E	
		-	-	-	-	-	-	-	-	R	0.95	29.1	C	- 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 green time is 40 s, NB/SB green time is 20 s, and SB/WB-right only green time is 15 s (each phase has 3 s amber and 2 s all red).
<b>Overall Intersection</b>	-		<b>1.16</b>	<b>108.3</b>	<b>F</b>	-	<b>1.20</b>	<b>120+</b>	<b>F*</b>	-	<b>1.10</b>	<b>76.8</b>	<b>E</b>	

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			
<b>VAN DAM STREET &amp; BORDEN AVENUE</b>															
Van Dam Street	NB	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						
		T	0.22	10.6	B	T	0.22	10.6	B						
Borden Avenue	EB	LTR	0.59	26.6	C	LTR	0.62	27.2	C						
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>27.4</b>	<b>C</b>	-	<b>0.80</b>	<b>27.6</b>	<b>C</b>						
<b>CENTER BOULEVARD</b>															
<b>CENTER BOULEVARD &amp; 51ST AVENUE</b>															
Center Boulevard	NB	-	-	-	-	T	0.37	10.1	B	T	0.37	10.1	B	- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]	
	SB	-	-	-	-	T	0.04	7.7	A	T	0.04	7.7	A		
51st Avenue	WB	-	-	-	-	LR	0.21	15.0	B	LR	0.25	15.4	B		
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.30</b>	<b>10.9</b>	<b>B</b>	-	<b>0.32</b>	<b>11.2</b>	<b>B</b>		
<b>CENTER BOULEVARD &amp; BORDEN AVENUE</b>															
Center Boulevard	NB	-	-	-	-	TR	0.67	23.8	C	TR	0.77	27.8	C	- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]	
		-	-	-	-	R	0.49	20.5	C	R	0.61	23.3	C		
	SB	-	-	-	-	L	0.10	15.4	B	L	0.10	15.4	B		
Borden Avenue	WB	-	-	-	-	R	0.35	18.2	B	R	0.35	18.2	B		
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.52</b>	<b>21.2</b>	<b>C</b>	-	<b>0.56</b>	<b>24.0</b>	<b>C</b>		
<b>CENTER BOULEVARD &amp; 54TH AVENUE</b>															
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 resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]	
54th Avenue	WB	-	-	-	-	R	0.27	9.2	A	R	0.39	10.3	B		
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.27</b>	<b>12.8</b>	<b>B</b>	-	<b>0.35</b>	<b>12.8</b>	<b>B</b>		
<b>CENTER BOULEVARD &amp; 55TH AVENUE</b>															
Center Boulevard	NB	-	-	-	-	TR	0.23	8.7	A					- Mitigation not required.	
<b>Overall Intersection</b>	-	-	-	-	-		<b>0.22</b>	<b>8.7</b>	<b>A</b>						
<b>CENTER BOULEVARD &amp; 56TH AVENUE</b>															
Center Boulevard	NB	-	-	-	-	T	0.06	13.7	B					- Mitigation not required.	
56th Avenue	WB	-	-	-	-	R	0.37	10.1	B						
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.25</b>	<b>10.8</b>	<b>B</b>						
<b>2ND STREET</b>															
<b>2ND STREET &amp; 51ST AVENUE</b>															
2nd Street	(UNSIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]
51st Avenue	SB	LT	-	7.7	A	LTR	0.04	10.4	B	LTR	0.04	10.4	B		
	WB	LR	-	9.7	A	LT	0.28	12.2	B	LT	0.31	12.4	B		
<b>Overall Intersection</b>	-	-	-	<b>2.8</b>	<b>A</b>	-	<b>0.16</b>	<b>11.9</b>	<b>B</b>	-	<b>0.17</b>	<b>12.1</b>	<b>B</b>		
<b>2ND STREET &amp; BORDEN AVENUE</b>															
2nd Street	(UNSIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
Borden Avenue	SB	LT	-	7.7	A	LTR	0.22	17.7	B	LTR	0.22	17.7	B		
	EB	-	-	-	-	TR	0.47	18.4	B	TR	0.58	19.6	B		
	WB	LR	-	11.9	B	DefL	0.76	16.0	B	DefL	0.83	20.7	C		
		-	-	-	-	T	0.17	6.5	A	T	0.17	6.5	A		
<b>Overall Intersection</b>	-	-	-	<b>7.0</b>	<b>A</b>	-	<b>0.51</b>	<b>15.9</b>	<b>B</b>	-	<b>0.57</b>	<b>18.1</b>	<b>B</b>		

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		
<b>2ND STREET &amp; 54TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(SIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. 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	
<b>Overall Intersection</b>	-	-	<b>5.6</b>	<b>A</b>	-	<b>0.36</b>	<b>14.3</b>	<b>B</b>	-	<b>0.42</b>	<b>14.3</b>	<b>B</b>		
<b>2ND STREET &amp; 55TH AVENUE</b>														- Mitigation not required.
2nd Street	SB	-	-	-	-	LT	0.20	11.3	B					
55th Avenue	EB	-	-	-	-	TR	0.05	10.5	B					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.12</b>	<b>11.3</b>	<b>B</b>					
<b>2ND STREET &amp; 56TH AVENUE</b>														- Mitigation not required.
2nd Street	SB	-	-	-	-	T	0.06	10.6	B					
		-	-	-	-	R	0.51	15.1	B					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.50</b>	<b>14.5</b>	<b>B</b>					
<b>11TH STREET</b>														
<b>11TH STREET &amp; 44TH DRIVE</b>														- Mitigation not required.
11th Street	NB	LTR	0.56	12.5	B	LTR	0.57	12.5	B					
	SB	LTR	0.36	10.5	B	LTR	0.36	10.5	B					
44th Drive	EB	LTR	0.73	33.6	C	LTR	0.73	33.6	C					
	WB	LTR	0.77	36.1	D	LTR	0.77	36.2	D					
<b>Overall Intersection</b>	-	<b>0.63</b>	<b>21.7</b>	<b>C</b>	-	<b>0.64</b>	<b>21.7</b>	<b>C</b>						
<b>UNSIGNALIZED INTERSECTIONS</b>														
<b>CENTER BOULEVARD</b>														
<b>CENTER BOULEVARD &amp; 48TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(UNSIGNALIZED INTERSECTION)</b>								- Unmitigatable Impact.
Center Boulevard	NB	-	-	-	-	-	-	-	-					
	SB	LT	-	120+	F*	LT	-	120+	F*					
		T	-	120+	F*	T	-	120+	F*					
48th Avenue	WB	L	-	120+	F*	L	-	120+	F*					
		R	-	120+	F*	R	-	120+	F*					
<b>Overall Intersection</b>	-	-	<b>Note (5)</b>	<b>F*</b>	-	-	<b>Note (5)</b>	<b>F*</b>						
<b>CENTER BOULEVARD &amp; 49TH AVENUE</b>														- Unmitigatable Impact.
Center Boulevard	SB	LT	-	16.0	C	LT	-	23.5	C					
49th Avenue	WB	LR	-	80.1	F	LR	-	120+	F*					
<b>Overall Intersection</b>	-	-	<b>12.5</b>	<b>B</b>	-	-	<b>31.4</b>	<b>D</b>						
<b>CENTER BOULEVARD &amp; 50TH AVENUE</b>														- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]
Center Boulevard	SB	L	FREEFLOW	A	LT	-	11.1	B	LT	-	11.2	B		
50th Avenue	WB	R	FREEFLOW	A	-	-	-	-	-	-	-	-		
<b>Overall Intersection</b>	-	-	<b>FREEFLOW</b>	<b>A</b>	-	-	<b>2.3</b>	<b>A</b>	-	-	<b>2.3</b>	<b>A</b>		

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		
<b>CENTER BOULEVARD &amp; 57TH AVENUE</b>														
57th Avenue	NB	-	-	-	-	T	-	9.7	A				- Mitigation not required.	
<b>Overall Intersection</b>		-	-	-	-			<b>9.7</b>	<b>A</b>					
<b>2ND STREET</b>														
<b>2ND STREET &amp; 50TH AVENUE</b>														
2nd Street	NB	LR	-	11.0	B	-	-	-	-				- Mitigation not required.	
50th Avenue	EB	-	-	-	-	TR	FREEFLOW		A					
<b>Overall Intersection</b>		-	-	<b>5.6</b>	<b>A</b>		FREEFLOW		<b>A</b>					
<b>2ND STREET &amp; 57TH AVENUE</b>														
2nd Street	SB	-	-	-	-	T	-	9.7	A				- Mitigation not required.	
<b>Overall Intersection</b>		-	-	-	-			<b>9.7</b>	<b>A</b>					
<b>5TH STREET</b>														
<b>5TH STREET &amp; 48TH AVENUE</b>														
5th Street	NB	LTR	-	9.5	A	LTR	-	9.6	A				- Mitigation not required.	
	SB	LTR	-	9.4	A	LTR	-	9.5	A					
48th Avenue	EB	LT	-	9.0	A	LT	-	9.1	A					
		TR	-	8.6	A	TR	-	8.7	A					
	WB	LT	-	9.8	A	LT	-	9.8	A					
		TR	-	8.7	A	TR	-	8.8	A					
<b>Overall Intersection</b>		-	-	<b>9.4</b>	<b>A</b>			<b>9.4</b>	<b>A</b>					
<b>5TH STREET &amp; 49TH AVENUE</b>														
5th Street	NB	LTR	-	9.6	A	LTR	-	9.6	A				- Unmitigatable Impact.	
	SB	LTR	-	9.0	A	LTR	-	9.0	A					
49th Avenue	EB	LTR	-	34.9	D	LTR	-	43.6	E					
	WB	LTR	-	29.5	D	LTR	-	32.1	D					
<b>Overall Intersection</b>		-	-	<b>8.1</b>	<b>A</b>			<b>10.5</b>	<b>B</b>					
<b>5TH STREET &amp; 50TH AVENUE</b>														
5th Street	(UNSIGNALIZED INTERSECTION)					(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				
	NB	-	-	-	-	-	-	-	-	TR	0.35	13.0	B	- Signal warranted (intersection meets the peak hour warrant)
	SB	LT	-	7.9	A	LT	-	7.8	A	LT	0.37	13.3	B	- 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].
50th Avenue	EB	LTR	-	34.3	D	LTR	-	120+	F*	LTR	0.38	13.2	B	- Install "No Standing Anytime" regulation along 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.
<b>Overall Intersection</b>		-	-	<b>7.1</b>	<b>A</b>			<b>109.6</b>	<b>F</b>		<b>0.38</b>	<b>13.2</b>	<b>B</b>	- Install "No Standing Anytime" regulation along the east curb of SB 5th Street for 120 ft. 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.



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		
<b>11TH STREET &amp; QUEENS PLAZA SOUTH</b>														
11th Street	NB	LTR	-	15.9	C	LTR	-	16.2	C					- Mitigation not required.
Queens Plaza South	EB	LT	-	12.8	B	LT	-	12.9	B					
		TR	-	9.8	A	TR	-	9.9	A					
	WB	LT	-	10.8	B	LT	-	10.8	B					
		TR	-	9.8	A	TR	-	9.9	A					
<b>Overall Intersection</b>	-	-	-	<b>13.4</b>	<b>B</b>	-	-	<b>13.6</b>	<b>B</b>					
<b>OTHER UNSIGNALIZED INTERSECTIONS</b>														
<b>21ST STREET &amp; 50TH AVENUE</b>														
21st Street	NB	LT	FREEFLOW	A	A	LT	FREEFLOW	A	A					- Mitigation not required.
50th Avenue	SB	R	FREEFLOW	A	A	R	FREEFLOW	A	A					
<b>Overall Intersection</b>	-	-	FREEFLOW	<b>A</b>	<b>A</b>	-	FREEFLOW	<b>A</b>	<b>A</b>					
<b>JACKSON AVENUE &amp; 51ST AVENUE</b>														
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 resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
51st Avenue	WB	TR	-	14.8	B	TR	-	18.7	C	TR	-	20.5	C	
<b>Overall Intersection</b>	-	-	-	<b>4.7</b>	<b>A</b>	-	-	<b>5.4</b>	<b>A</b>	-	-	<b>5.4</b>	<b>A</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) Overall delay cannot be calculated since the delay for some of the movements is beyond the threshold delay of HCS methodology.

     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	
<b>SIGNALIZED INTERSECTIONS</b>														
<b>VERNON BOULEVARD</b>														
<b>VERNON BOULEVARD &amp; 48TH AVENUE</b>														
Vernon Boulevard	NB	LT	0.79	27.9	C	LT	0.89	35.7	D	LT	0.76	24.3	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; WB green time remains at 17 s; NB/SB green time shifts from 41 s to 44 s].
	SB	TR	0.96	42.4	D	TR	1.05	66.6	E	TR	0.98	44.4	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	
<b>Overall Intersection</b>	-		<b>0.85</b>	<b>45.0</b>	<b>D</b>	-	<b>0.90</b>	<b>58.5</b>	<b>E</b>	-	<b>0.91</b>	<b>44.8</b>	<b>D</b>	
<b>VERNON BOULEVARD &amp; 49TH AVENUE</b>														
Vernon Boulevard	NB	LTR	0.64	13.2	B	LTR	0.68	14.0	B	LTR	0.54	10.2	B	- Modify cycle length from 60 s to 90 s. [EB green time shifts from 19 s to 22 s; NB/SB green time shifts from 31 s to 58 s; all phases have 3 s of amber and 2 s of all red time].
	SB	LTR	0.97	35.6	D	LTR	1.07	61.5	E	LTR	0.86	20.1	C	
49th Avenue	EB	LTR	0.16	15.6	B	LTR	0.20	16.0	B	LTR	0.26	29.5	C	
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>25.8</b>	<b>C</b>	-	<b>0.74</b>	<b>40.7</b>	<b>D</b>	-	<b>0.70</b>	<b>16.9</b>	<b>B</b>	
<b>VERNON BOULEVARD &amp; 50TH AVENUE</b>														
Vernon Boulevard	NB	TR	0.64	13.3	B	TR	0.67	14.0	B	TR	0.63	16.1	B	- Modify cycle length from 60 s to 90 s. [EB green time shifts from 19 s to 30 s; NB/SB green time shifts from 31 s to 50 s; all phases have 3 s of amber and 2 s of all red time]. <b>[Measures reflect changes in the intersection needed for AM/MD peak periods; otherwise mitigation is not needed.]</b>
	SB	LT	0.85	20.9	C	LT	0.97	34.6	C	LT	0.90	29.1	C	
50th Avenue	EB	LTR	0.43	21.3	C	LTR	0.73	34.5	C	LTR	0.69	39.3	D	
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>17.9</b>	<b>B</b>	-	<b>0.88</b>	<b>27.2</b>	<b>C</b>	-	<b>0.82</b>	<b>25.9</b>	<b>C</b>	
<b>VERNON BOULEVARD &amp; 51ST AVENUE</b>														
Vernon Boulevard	NB	LT	0.92	34.2	C	LT	1.04	62.1	E	LT	0.84	30.9	C	- Modify cycle length from 60 s to 90 s. [WB green time shifts from 25 s to 38 s; NB/SB green time shifts from 25 s to 42 s; all phases have 3 s of amber and 2 s of all red time].
	SB	TR	0.87	26.2	C	TR	1.04	57.6	E	TR	0.93	37.3	D	
51st Avenue	WB	LTR	0.51	14.1	B	LTR	0.91	26.1	C	LTR	0.97	41.9	D	
<b>Overall Intersection</b>	-		<b>0.71</b>	<b>24.5</b>	<b>C</b>	-	<b>0.98</b>	<b>44.6</b>	<b>D</b>	-	<b>0.95</b>	<b>38.0</b>	<b>D</b>	
<b>VERNON BOULEVARD &amp; BORDEN AVENUE</b>														
Vernon Boulevard	SB	L	1.09	75.4	E	L	1.09	75.4	E	L	0.93	41.5	D	- <b>Partially Mitigated.</b> - Install "No Standing Anytime" regulation along the west curb of 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. - Install "No Standing 7:00 AM - 7:00 PM" regulation along the south curb of EB Borden Avenue 250 ft. from the intersection and restripe the approach from one 24 ft. lane with parking to one 12 ft. shared left-through lane and one 12 ft. through lane. - Shift the centerline of WB Borden Avenue 6 ft. to the north tapered 150 ft. from the intersection. Restripe the receiving side of EB Borden Avenue as two 11 ft. lanes. - Restripe WB Borden Avenue from one 13 ft. through lane and one 15 ft. channelized right turn lane to one 11 ft. through lane and one 11 ft. through-right lane. - Restripe the receiving side of WB Borden Avenue from one 30 ft. lane with parking to one 11 ft. lane and one 19 ft. lane with parking. - Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 25 s to 50 s; SB green time shifts from 25 s to 30 s; all phases have 3 s of amber and 2 s of all red time].
		LR	0.59	16.9	B	LR	1.20+	120+	F*	R	0.80	42.7	D	
Borden Avenue	EB	LT	0.91	35.9	D	LT	1.20+	120+	F*	DefL	1.20+	120+	F*	
		-	-	-	-	-	-	-	-	T	0.57	14.7	B	
	WB	T	0.58	15.7	B	T	1.18	107.2	F	TR	0.92	25.1	C	
<b>Overall Intersection</b>	-		<b>1.00</b>	<b>40.9</b>	<b>D</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>83.7</b>	<b>F</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	Mvt.	2017 No Build				2017 Build				2017 Build with Mitigation				Mitigation Measures
		V/C	Delay	LOS		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
<b>VERNON BOULEVARD &amp; 44TH DRIVE</b>														
Vernon Boulevard	NB	LTR	0.91	25.3	C	LTR	0.96	33.3	C	LTR	0.88	24.5	C	- Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 16 s to 24 s; NB/SB green time shifts from 34 s to 56 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	1.20+	120+	F*	
44th Drive	EB	LTR	0.31	19.7	B	LTR	0.31	19.7	B	LTR	0.31	28.5	C	
	WB	LTR	0.85	34.1	C	LTR	0.86	34.9	C	LTR	0.86	44.9	D	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	
<b>VERNON BOULEVARD &amp; QUEENS PLAZA SOUTH</b>														
Vernon Boulevard	NB	TR	1.18	108.2	F	TR	1.20+	120+	F*	TR	0.98	36.4	D	- Modify cycle length from 60 s to 90 s. [EB/WB green time shifts from 21 s to 25 s; NB/SB green time shifts from 29 s to 55 s; all phases have 3 s of amber and 2 s of all red time].
	SB	LT	1.20+	120+	F*	LT	1.20+	120+	F*	LT	1.20+	120+	F*	
Queens Plaza South	WB	L	0.06	13.0	B	L	0.06	13.0	B	L	0.07	24.1	C	
		R	0.61	20.7	C	R	0.61	20.7	C	R	0.79	43.0	D	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	
<b>JACKSON AVENUE/NORTHERN BOULEVARD</b>														
<b>JACKSON AVENUE &amp; 50TH AVENUE</b>														
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 along the north curb of EB 50th Avenue 150 ft. from the intersection and restripe the approach from one 30 ft. lane with parking on both sides to one 11 ft. left turn lane and one 19 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	0.54	14.6	B	
50th Avenue	EB	LTR	0.40	34.7	C	LTR	0.54	37.8	D	L	0.29	32.9	C	
		-	-	-	-	-	-	-	-	TR	0.29	32.8	C	
	WB	L	0.30	33.7	C	L	0.32	34.2	C	L	0.62	43.4	D	
50th Avenue WB Right (Unsignalized)	WB	R	-	10.8	B	R	-	12.2	B	R	-	12.2	B	
<b>Overall Intersection</b>	-		<b>0.31</b>	<b>16.7</b>	<b>B</b>	-	<b>0.51</b>	<b>17.6</b>	<b>B</b>	-	<b>0.57</b>	<b>18.9</b>	<b>B</b>	
<b>JACKSON AVENUE &amp; 49TH AVENUE</b>														
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 along the south curb of EB Jackson Avenue for the entire block, shift the centerline 5 ft. to the north, and restripe the approach from one 11 ft. through lane and one 18 ft. shared through-right lane with parking to two 11 ft. through lanes and one 12 ft. exclusive right turn lane.  - Prohibit WB Jackson Avenue left turn onto the 11th Street service road. - Restripe WB Jackson Avenue from one 11 ft. left-through lane and one 20 ft. through lane to one 26 ft. through lane. - Restripe WB Jackson Avenue receiving lane from one 11 ft. and one 20 ft. lane with parking to one 26 ft. lane with parking for 120 feet. - 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	0.37	38.1	D	
		-	-	-	-	-	-	-	-	R	0.42	18.5	B	
	WB	LT	0.31	16.6	B	LT	0.58	20.9	C	T	0.78	27.0	C	
<b>Overall Intersection</b>	-		<b>0.50</b>	<b>30.5</b>	<b>C</b>	-	<b>0.69</b>	<b>36.3</b>	<b>D</b>	-	<b>0.59</b>	<b>27.4</b>	<b>C</b>	
<b>JACKSON AVENUE &amp; 11TH STREET (PULASKI BRIDGE)</b>														
11th Street (Pulaski Bridge)	NB	-	-	-	-	-	-	-	-	L	1.20+	120+	F*	- <b>Partially Mitigated.</b> - Post signs on the Pulaski Bridge to direct right turning traffic to the 11th Street service road with signs for Queens Boulevard/Queensboro Bridge traffic. - Restripe NB 11th Street service road approach traffic island to allow for one 12 ft. right turn lane and one 20 ft. right turn lane with parking by prohibiting parking along the west curb. - Restripe NB Pulaski Bridge shared left-through lane to one exclusive left turn lane. - Post signs along WB Jackson Avenue to advise motorists of the double left turn onto the Pulaski Bridge and one through lane for Jackson Avenue traffic. - Install "No Standing Anytime" regulation along the north curb of WB Jackson Avenue for the entire block and restripe the approach from one 10 ft. shared left-through lane and one 20 ft. through lane with parking to two 10 ft. left turn lanes and one 10 ft. through lane. - Prohibit WB Jackson Avenue left turn movement 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	1.17	120+	F*	LT	1.20+	120+	F*	T	0.82	41.4	D	
		R	0.89	50.7	D	R	0.93	57.9	E	-	-	-	-	
	SB	LTR	0.75	33.3	C	LTR	0.77	34.4	C	LTR	0.84	40.9	D	
Jackson Avenue	EB	LT	0.48	31.9	C	DefL	0.79	61.1	E	LT	0.84	45.0	D	
		-	-	-	-	T	0.83	47.1	D	-	-	-	-	
	WB	DefL	1.15	104.9	F	DefL	1.15	104.7	F	L	1.11	103.5	F	
		T	0.47	19.5	B	T	0.83	31.6	C	T	0.84	30.0	C	
11th Street Service Road	NB	R	0.60	46.5	D	R	0.60	46.5	D	R	0.47	11.4	B	
<b>Overall Intersection</b>	-		<b>1.16</b>	<b>73.1</b>	<b>E</b>	-	<b>1.20+</b>	<b>111.0</b>	<b>F</b>	-	<b>1.18</b>	<b>59.6</b>	<b>E</b>	

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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	
<b>JACKSON AVENUE &amp; 21ST STREET</b>														
21st Street	NB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	LTR	1.20	120+	F*	- <b>Partially Mitigated.</b> - Install "No Standing 7:00 AM - 7:00 PM" regulation along the east curb of NB 21st Street for 250 ft. from the intersection to eliminate friction due to parking. - Install "No Standing 7:00 AM - 10:00 AM; 4:00 PM - 7:00 PM" regulation along the north curb of WB Jackson Avenue for the entire block to eliminate friction due to parking.
	SB	LTR	1.13	109.9	F	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	
Jackson Avenue	EB	L	0.86	40.0	D	L	1.20+	120+	F*	L	1.20+	120+	F*	
	TR		0.52	26.6	C	TR	0.60	28.1	C	TR	0.60	28.1	C	
	WB	L	0.47	16.1	B	L	0.51	17.3	B	L	0.51	17.3	B	
	TR		0.88	38.3	D	TR	1.01	58.2	E	TR	0.94	44.7	D	
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>72.0</b>	<b>E</b>	-	<b>1.20+</b>	<b>103.1</b>	<b>F</b>	-	<b>1.20+</b>	<b>93.5</b>	<b>F</b>	
<b>JACKSON AVENUE &amp; THOMSON AVENUE</b>														
Jackson Avenue	NB	TR	0.57	20.4	C	TR	0.64	21.8	C					- Mitigation not required.
	SB	L	0.19	16.4	B	L	0.22	17.2	B					
	T		0.51	19.4	B	T	0.54	19.8	B					
Thomson Avenue	WB	L	0.53	30.0	C	L	0.71	35.4	D					
	R		0.10	23.4	C	R	0.10	23.4	C					
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>21.6</b>	<b>C</b>	-	<b>0.67</b>	<b>23.8</b>	<b>C</b>					
<b>JACKSON AVENUE &amp; 44TH DRIVE</b>														
Jackson Avenue	NB	L	0.15	25.9	C	L	0.15	26.0	C					- Mitigation not required.
	TR		0.50	29.9	C	TR	0.52	30.2	C					
	SB	L	0.47	15.8	B	L	0.48	16.0	B					
	TR		0.52	10.0	A	TR	0.54	10.2	B					
44th Drive	EB	LTR	0.95	59.8	E	LTR	0.95	59.8	E					
	WB	LTR	0.72	38.9	D	LTR	0.72	38.9	D					
<b>Overall Intersection</b>	-		<b>0.74</b>	<b>30.9</b>	<b>C</b>	-	<b>0.75</b>	<b>30.8</b>	<b>C</b>					
<b>JACKSON AVENUE/QUEENS PLAZA EAST &amp; QUEENS BOULEVARD</b>														
Jackson Ave - Northern Blvd	NB	TR	1.03	73.1	E	TR	1.05	79.1	E					- <b>Unmitigatable Impact.</b>
	SB	LTR	0.81	38.8	D	LTR	0.87	42.7	D					
Queens Boulevard	EB	T	0.86	32.3	C	T	0.86	32.3	C					
	WB	LTR	1.16	120+	F*	LTR	1.16	120+	F*					
<b>Overall Intersection</b>	-		<b>1.06</b>	<b>89.4</b>	<b>F</b>	-	<b>1.07</b>	<b>90.8</b>	<b>F</b>					
<b>NORTHERN BOULEVARD/QUEENS PLAZA EAST &amp; BRIDGE PLAZA</b>														
Northern Boulevard / Queens Plaza East	NB	LT	0.73	26.9	C	LT	0.76	27.8	C					- Mitigation not required.
	SB	T	0.8	39.6	D	T	0.86	43.6	D					
	R		0.71	20.6	C	R	0.71	20.6	C					
Bridge Plaza	EB	L	0.86	36.1	D	L	0.86	36.1	D					
<b>Overall Intersection</b>	-		<b>0.84</b>	<b>29.3</b>	<b>C</b>	-	<b>0.87</b>	<b>30.2</b>	<b>C</b>					
<b>NORTHERN BOULEVARD &amp; QUEENS PLAZA NORTH/41ST AVENUE</b>														
Northern Boulevard	NB	L	0.08	12.2	B	L	0.08	12.7	B					- Mitigation not required.
	TR		0.31	5.1	A	TR	0.32	5.1	A					
	SB	LTR	0.71	17.5	B	LTR	0.73	17.9	B					
Queens Plaza North/41st Avenue	WB	LTR	0.14	43.8	D	LTR	0.14	43.8	D					
<b>Overall Intersection</b>	-		<b>0.50</b>	<b>13.2</b>	<b>B</b>	-	<b>0.51</b>	<b>13.5</b>	<b>B</b>					

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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	
<b>NORTHERN BOULEVARD/31ST STREET &amp; 40TH AVENUE</b>														
31st Street	SB	LTR	0.81	52.8	D	LTR	0.86	55.3	E	LTR	0.82	52.2	D	- Modify signal timing: shift 1 s of green time from EB-through/WB phase to EB-left/SB phase [EB-through/WB green time shifts from 85 s to 84 s; EB-left/SB green time shifts from 25 s to 26 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	0.67	11.0	B	
	WB	TR	0.53	8.6	A	TR	0.53	8.6	A	TR	0.54	9.1	A	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	
<b>21ST STREET</b>														
<b>21ST STREET &amp; QUEENS PLAZA NORTH</b>														
21st Street	NB	LT	1.20+	120+	F*	LT	1.20+	120+	F*	LT	1.20+	115.4	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].
Queens Plaza North	SB	TR	0.53	18.6	B	TR	0.57	19.2	B	TR	0.54	17.2	B	
	WB	LTR	0.61	32.4	C	LTR	0.61	32.4	C	LTR	0.65	35.6	D	
<b>Overall Intersection</b>	-		<b>0.97</b>	<b>77.7</b>	<b>E</b>	-	<b>1.01</b>	<b>92.9</b>	<b>F</b>	-	<b>1.00</b>	<b>73.7</b>	<b>E</b>	
<b>21ST STREET &amp; QUEENS PLAZA SOUTH</b>														
21st Street	NB	LTR	0.96	12.4	B	LTR	0.98	16.8	B	LTR	0.98	16.8	B	- Mitigation not required. - Restripe SB 21st Street from one 10 ft. left-through lane lane and one 22 ft. through-right lane to one 12 ft. left-through lane and one 14 ft. through-right lane and hatch the remaining 6 ft. along the west curb. - [Measures reflect geometric improvements needed for the AM peak period; otherwise mitigation is not needed.]
Queens Plaza South	SB	LTR	0.68	9.7	A	LTR	0.72	10.7	B	LTR	0.70	10.1	B	
	EB	LTR	1.13	120+	F*	LTR	1.13	120+	F*	LTR	1.13	120+	F*	
<b>Overall Intersection</b>	-		<b>0.99</b>	<b>25.2</b>	<b>C</b>	-	<b>1.01</b>	<b>27.7</b>	<b>C</b>	-	<b>1.01</b>	<b>27.5</b>	<b>C</b>	
<b>21ST STREET &amp; 44TH DRIVE</b>														
21st Street	NB	LTR	0.83	25.1	C	LTR	0.88	28.4	C	LTR	0.91	33.0	C	- Install "No Standing Anytime" regulation along the west curb of SB 21st Street for 120 feet from the intersection. - Restripe SB 21st Street from the 25 ft. lane with parking to one 12 ft. exclusive left turn lane and one 13 ft. through-right lane by restricting parking along the west curb for 120 feet.
44th Drive	SB	LTR	1.20+	120+	F*	LTR	1.20+	120+	F*	L	0.27	12.3	B	
		-	-	-	-	-	-	-	-	TR	1.09	75.8	E	
	EB	LTR	0.80	46.7	D	LTR	0.80	46.9	D	LTR	0.80	46.9	D	
	WB	LTR	0.89	55.1	E	LTR	0.90	55.9	E	LTR	0.90	55.9	E	
<b>Overall Intersection</b>	-		<b>1.12</b>	<b>78.9</b>	<b>E</b>	-	<b>1.18</b>	<b>97.1</b>	<b>F</b>	-	<b>1.03</b>	<b>54.8</b>	<b>D</b>	
<b>VAN DAM STREET</b>														
<b>VAN DAM STREET &amp; THOMSON AVENUE/QUEENS BOULEVARD</b>														
Van Dam Street	NB	L	1.20+	120+	F*	L	1.20+	120+	F*					- Unmitigatable Impact.
		TR	1.20+	120+	F*	TR	1.20+	120+	F*					
Queens Boulevard (to Queens Boulevard.)	EB	T	1.14	114.7	F	T	1.14	114.7	F					
Queens Boulevard (to Van Dam Street)		T	1.19	120+	F*	T	1.19	120+	F*					
Queens Boulevard (to Thomson Avenue WB)		R	0.08	49.3	D	R	0.08	49.3	D					
Thomson Avenue	EB	T	1.14	99.3	F	T	1.17	113.6	F					
		R	0.97	55.1	E	R	0.97	55.1	E					
Queens Boulevard (to Thomson Avenue WB)	WB	L	0.59	61.9	E	L	0.71	65.3	E					
Queens Boulevard (to Viaduct)		TR	0.33	8.0	A	TR	0.33	8.0	A					
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>106.5</b>	<b>F</b>	-	<b>1.20+</b>	<b>110.1</b>	<b>F</b>					
<b>VAN DAM STREET &amp; LIE EXIT RAMP</b>														
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 WB right turn only; maintain the existing 120 s cycle length with the following signal timing: WB green time is 55 s, NB/SB green time is 38 s, and SB/WB-right only green time is 12 s (each phase has 3 s amber and 2 s all red).  [Measures reflect changes needed for coordination with the intersection of Van Dam Street and Borden Avenue and geometric improvements needed for the AM and midday peak periods.]
LIE Exit Ramp	SB	TR	1.20+	120+	F*	TR	1.20+	120+	F*	TR	1.20+	120+	F*	
	WB	TR	1.08	76.0	E	TR	1.20+	120+	F*	T	1.20+	120+	F*	
		-	-	-	-	-	-	-	-	R	0.88	29.3	C	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>118.8</b>	<b>F</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	

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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		
<b>VAN DAM STREET &amp; BORDEN AVENUE</b>														
Van Dam Street	NB	TR	0.50	39.4	D	TR	0.50	39.4	D	TR	0.59	44.9	D	- Modify signal timing plan: Maintain the existing 120 s cycle length with the following signal timing: EB green time is 45 s, NB/SB green time is 26 s, and SB green time 34 s (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	0.68	23.4	C	
Borden Avenue	EB	LTR	1.13	104.0	F	LTR	1.16	119.3	F	LTR	1.11	96.8	F	
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120+</b>	<b>F*</b>	
<b>CENTER BOULEVARD</b>														
<b>CENTER BOULEVARD &amp; 51ST AVENUE</b>														
Center Boulevard	NB	-	-	-	-	T	0.47	11.2	B	T	0.47	11.2	B	- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]
	SB	-	-	-	-	T	0.05	7.8	A	T	0.05	7.8	A	
51st Avenue	WB	-	-	-	-	LR	0.16	14.6	B	LR	0.19	14.9	B	
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.35</b>	<b>11.4</b>	<b>B</b>	-	<b>0.36</b>	<b>11.5</b>	<b>B</b>	
<b>CENTER BOULEVARD &amp; BORDEN AVENUE</b>														
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 resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
		-	-	-	-	R	0.47	30.8	C	R	0.56	32.9	C	
	SB	-	-	-	-	L	0.10	25.9	C	L	0.10	25.9	C	
Borden Avenue	WB	-	-	-	-	R	0.49	32.4	C	R	0.49	32.4	C	
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.55</b>	<b>32.0</b>	<b>C</b>	-	<b>0.58</b>	<b>33.5</b>	<b>C</b>	
<b>CENTER BOULEVARD &amp; 54TH AVENUE</b>														
Center Boulevard	NB	-	-	-	-	T	0.27	15.1	B	T	0.27	15.1	B	- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
54th Avenue	WB	-	-	-	-	R	0.39	10.4	B	R	0.50	11.6	B	
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.35</b>	<b>12.8</b>	<b>B</b>	-	<b>0.41</b>	<b>13.1</b>	<b>B</b>	
<b>CENTER BOULEVARD &amp; 55TH AVENUE</b>														
Center Boulevard	NB	-	-	-	-	TR	0.24	8.8	A					
<b>Overall Intersection</b>	-	-	-	-	-		<b>0.24</b>	<b>8.8</b>	<b>A</b>					
<b>CENTER BOULEVARD &amp; 56TH AVENUE</b>														
Center Boulevard	NB	-	-	-	-	T	0.02	13.5	B					- Mitigation not required.
56th Avenue	WB	-	-	-	-	R	0.46	11.1	B					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.29</b>	<b>11.3</b>	<b>B</b>					
<b>2ND STREET</b>														
<b>2ND STREET &amp; 51ST AVENUE</b>														
2nd Street	(UNSIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Mitigation not required. [Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]
51st Avenue	SB	LT	-	7.6	A	LTR	0.05	10.5	B	LTR	0.05	10.5	B	
	WB	LR	-	10.5	B	LT	0.49	14.4	B	LT	0.50	14.6	B	
<b>Overall Intersection</b>	-	-	-	<b>2.3</b>	<b>A</b>	-	<b>0.27</b>	<b>13.8</b>	<b>B</b>	-	<b>0.28</b>	<b>14.0</b>	<b>B</b>	
<b>2ND STREET &amp; BORDEN AVENUE</b>														
2nd Street	(UNSIGNALIZED INTERSECTION)					(SIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)				- Adjust signal timing such that: WB-lead green time is 40 s; EB/WB green time is 40 s; and SB green time 25 s [Each phase has 3 s of amber and 2 s of red time]. [Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street.]
Borden Avenue	SB	LT	-	7.7	A	LTR	0.49	43.3	D	LTR	0.51	44.5	D	
	EB	-	-	-	-	TR	0.47	29.5	C	TR	0.61	35.5	D	
	WB	LR	-	11.0	B	DefL	0.98	42.5	D	DefL	0.97	43.9	D	
<b>Overall Intersection</b>	-	-	-	<b>6.5</b>	<b>A</b>	-	<b>0.86</b>	<b>33.4</b>	<b>C</b>	-	<b>0.84</b>	<b>36.0</b>	<b>D</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		
<b>2ND STREET &amp; 54TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(SIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				
2nd Street	SB	LT	-	8.0	A	LTR	0.99	40.0	D	LTR	1.01	44.3	D	- Mitigation not required.
54th Avenue	WB	LR	-	9.4	A	LT	0.21	11.6	B	LT	0.30	12.3	B	[Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]
<b>Overall Intersection</b>	-	-	<b>6.0</b>	<b>A</b>	-	<b>0.60</b>	<b>35.3</b>	<b>D</b>	-	<b>0.66</b>	<b>37.2</b>	<b>D</b>		
<b>2ND STREET &amp; 55TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(SIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				
2nd Street	SB	-	-	-	-	LT	0.37	12.6	B					- Mitigation not required.
55th Avenue	EB	-	-	-	-	TR	0.06	10.6	B					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.21</b>	<b>12.5</b>	<b>B</b>					
<b>2ND STREET &amp; 56TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(SIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				
2nd Street	SB	-	-	-	-	T	0.02	10.3	B					- Mitigation not required.
		-	-	-	-	R	0.88	28.3	C					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.89</b>	<b>27.7</b>	<b>C</b>					
<b>11TH STREET</b>														
<b>11TH STREET &amp; 44TH DRIVE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(SIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				
11th Street	NB	LTR	0.55	12.4	B	LTR	0.55	12.4	B					- Mitigation not required.
	SB	LTR	0.58	13.3	B	LTR	0.58	13.3	B					
44th Drive	EB	LTR	0.93	49.3	D	LTR	0.93	49.3	D					
	WB	LTR	1.07	85.6	F	LTR	1.08	87.6	F					
<b>Overall Intersection</b>	-	<b>0.74</b>	<b>37.3</b>	<b>D</b>	-	<b>0.74</b>	<b>37.8</b>	<b>D</b>						
<b>UNSIGNALIZED INTERSECTIONS</b>														
<b>CENTER BOULEVARD</b>														
<b>CENTER BOULEVARD &amp; 48TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(UNSIGNALIZED INTERSECTION)</b>				<b>(UNSIGNALIZED INTERSECTION)</b>				
Center Boulevard	NB	-	-	-	-	-	-	-	-					- Unmitigatable Impact.
	SB	LT	-	28.0	D	LT	-	120+	F*					
		T	-	25.3	D	T	-	43.5	E					
48th Avenue	WB	L	-	120+	F*	L	-	120+	F*					
		R	-	45.4	E	R	-	120+	F*					
<b>Overall Intersection</b>	-	-	<b>50.5</b>	<b>F</b>	-	-	<b>Note (5)</b>	<b>F*</b>						
<b>CENTER BOULEVARD &amp; 49TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(UNSIGNALIZED INTERSECTION)</b>				<b>(UNSIGNALIZED INTERSECTION)</b>				
Center Boulevard	SB	LT	-	10.3	B	LT	-	13.4	B					- Unmitigatable Impact.
49th Avenue	WB	LR	-	29.1	D	LR	-	63.7	F					
<b>Overall Intersection</b>	-	-	<b>3.6</b>	<b>A</b>	-	-	<b>5.7</b>	<b>A</b>						
<b>CENTER BOULEVARD &amp; 50TH AVENUE</b>	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(UNSIGNALIZED INTERSECTION)</b>				<b>(UNSIGNALIZED INTERSECTION)</b>				
Center Boulevard	SB	L	FREEFLOW	A	A	LT	-	10.9	B	LT	-	10.9	B	- Mitigation not required.
50th Avenue	WB	R	FREEFLOW	A	A	-	-	-	-	-	-	-	-	[Build with mitigation delays are due to diversions resulting from the mitigation of 5th Street and 51st Avenue. However, no significant impact occurs.]
<b>Overall Intersection</b>	-	-	<b>FREEFLOW</b>	<b>A</b>	-	-	<b>1.8</b>	<b>A</b>	-	-	<b>1.8</b>	<b>A</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			
<b>CENTER BOULEVARD &amp; 57TH AVENUE</b>															
57th Avenue	NB	-	-	-	-	T	-	9.6	A					- Mitigation not required.	
<b>Overall Intersection</b>		-	-	-	-	-	-	<b>9.6</b>	<b>A</b>						
<b>2ND STREET</b>															
<b>2ND STREET &amp; 50TH AVENUE</b>															
2nd Street	NB	LR	-	14.5	B	-	-	-	-	-	-	-	-	-	- Mitigation not required.
50th Avenue	EB	-	-	-	-	TR	FREEFLOW	-	A	TR	FREEFLOW	-	A		
<b>Overall Intersection</b>		-	-	<b>8.8</b>	<b>A</b>	-	FREEFLOW	-	<b>A</b>	-	FREEFLOW	-	<b>A</b>		
<b>2ND STREET &amp; 57TH AVENUE</b>															
2nd Street	SB	-	-	-	-	T	-	9.6	A					- Mitigation not required.	
<b>Overall Intersection</b>		-	-	-	-	-	-	<b>9.6</b>	<b>A</b>						
<b>5TH STREET</b>															
<b>5TH STREET &amp; 48TH AVENUE</b>															
5th Street	NB	LTR	-	11.3	B	LTR	-	11.3	B					- Mitigation not required.	
	SB	LTR	-	9.5	A	LTR	-	9.6	A						
48th Avenue	EB	LT	-	9.4	A	LT	-	9.4	A						
		TR	-	8.8	A	TR	-	8.9	A						
	WB	LT	-	9.8	A	LT	-	9.8	A						
		TR	-	9.3	A	TR	-	9.3	A						
<b>Overall Intersection</b>		-	-	<b>10.1</b>	<b>B</b>	-	-	<b>10.1</b>	<b>B</b>						
<b>5TH STREET &amp; 49TH AVENUE</b>															
5th Street	NB	LTR	-	9.6	A	LTR	-	9.6	A					- Unmitigatable Impact.	
	SB	LTR	-	9.7	A	LTR	-	9.6	A						
49th Avenue	EB	LTR	-	64.2	F	LTR	-	104.2	F						
	WB	LTR	-	51.7	F	LTR	-	67.4	F						
<b>Overall Intersection</b>		-	-	<b>8.9</b>	<b>A</b>	-	-	<b>16.2</b>	<b>C</b>						
<b>5TH STREET &amp; 50TH AVENUE</b>															
5th Street	(UNSIGNALIZED INTERSECTION)					(UNSIGNALIZED INTERSECTION)				(SIGNALIZED INTERSECTION)					
	NB	-	-	-	-	-	-	-	-	TR	0.42	13.5	B	- Signal warranted (intersection meets the peak hour warrant)	
	SB	LT	-	7.9	A	LT	-	7.9	A	LT	0.32	12.6	B	- 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].	
50th Avenue	EB	LTR	-	39.2	E	LTR	-	120+	F*	LTR	0.34	12.9	B	- Install "No Standing Anytime" regulation along 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.	
<b>Overall Intersection</b>		-	-	<b>6.3</b>	<b>A</b>	-	-	<b>120+</b>	<b>F*</b>	-	<b>0.38</b>	<b>13.1</b>	<b>B</b>	- Install "No Standing Anytime" regulation along the east curb of SB 5th Street for 120 ft. 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.	

**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	
<b>5TH STREET &amp; 51ST AVENUE</b>														
5th Street	NB	LT	-	7.9	A	LT	-	8.2	A	LT	-	14.6	B	<ul style="list-style-type: none"> <li>- Designate 51st Avenue as a way WB only roadway.</li> <li>- Install "All Way" Stop control sign on all approaches.</li> <li>- Install "No Standing Anytime" regulation along the west curb of NB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 19 ft. approach with parking and one 11 ft. receiving lane.</li> <li>- Install "No Standing Anytime" regulation along the east curb of SB 5th Street and restripe it from one 30 ft. lane with parking on both sides to one 19 ft. approach with parking and one 11 ft. receiving lane.</li> <li>- Meets the MUTCD Stop control criteria - Option D in Section 2B.07.</li> </ul>
	SB	TR	-	-	-	-	-	-	-	TR	-	11.9	B	
51st Avenue	EB	LR	-	15.0	C	LR	-	120+	F*	-	-	-	-	
	WB	LTR	-	17.0	C	LTR	-	120+	F*	LT	-	14.7	B	
<b>Overall Intersection</b>	-	-	-	<b>4.4</b>	<b>A</b>	-	-	<b>Note (5)</b>	<b>F*</b>	-	-	<b>13.9</b>	<b>B</b>	
<b>5TH STREET &amp; BORDEN AVENUE</b>														
	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(UNSIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				<ul style="list-style-type: none"> <li>- Signal warranted (intersection meets the peak hour warrant)</li> <li>- 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].</li> <li>- Install "No Standing Anytime" regulation along the west curb of SB 5th Street and shift the centerline 4 ft. to the west to restripe SB approach from one 15 ft. lane with parking to one 11 ft.</li> <li>- Restripe EB Borden Ave approach from one 29 ft. lane to one 14.5 ft. exclusive left turn lane and one 14.5 ft. through lane.</li> </ul>
5th Street	SB	LR	-	15.7	C	LR	-	120+	F*	LR	0.60	27.8	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	1.02	39.0	D	
<b>Overall Intersection</b>	-	-	-	<b>3.7</b>	<b>A</b>	-	-	<b>Note (5)</b>	<b>F*</b>	-	<b>0.93</b>	<b>27.0</b>	<b>C</b>	
<b>11TH STREET/11TH PLACE</b>														
<b>11TH STREET &amp; BORDEN AVENUE AT QMT TOLL PLAZA EXIT RAMP</b>														
	<b>(UNSIGNALIZED INTERSECTION)</b>					<b>(UNSIGNALIZED INTERSECTION)</b>				<b>(SIGNALIZED INTERSECTION)</b>				<ul style="list-style-type: none"> <li>- <b>Partially Mitigated.</b></li> <li>- Signal warranted (intersection meets the peak hour warrant).</li> <li>- Install a new traffic signal with a 90-second cycle length. [EB+SB right turn green time is 37 s; WB+EB-left+NB right turn green time is 43 s; both phases have 3 s of amber and 2 s of all red time].</li> <li>- Prohibit NB 11th Street left turns (on to Borden Avenue) and through movement (on to QMT/LIE) and restripe this approach as one 20 ft. right turn only lane.</li> <li>- Prohibit SB QMT Exit left turns (on to Borden Avenue) and through movement (on to 11th Street) and restripe this approach as one 26 ft. right turn only lane.</li> <li>- Restripe EB Borden Avenue from one 20 ft. lane to one 10 ft. left turn lane and one 10 ft. through-right lane.</li> <li>- 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.</li> <li>- Allow Right Turn on Red from SB QMT Exit.</li> <li>- Provide signage along the QMT to direct traffic headed to 11th Street and EB Borden Avenue to use the 21st Street ramp.</li> </ul>
11th Street	NB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.06	12.7	B	
	SB	LTR	-	120+	F*	LTR	-	120+	F*	R	0.22	17.6	B	
Borden Avenue	EB	LTR	-	117.8	F	LTR	-	120+	F*	L	1.20+	120+	F*	
	WB	LTR	-	8.1	A	LTR	-	8.1	A	TR	0.53	21.9	C	
<b>Overall Intersection</b>	-	-	-	<b>Note (5)</b>	<b>F*</b>	-	-	<b>Note (5)</b>	<b>F*</b>	-	<b>1.20+</b>	<b>62.7</b>	<b>E</b>	
<b>11TH PLACE &amp; 50TH AVENUE</b>														
11th Place	SB	TR	-	13.4	B	TR	-	13.6	B	TR	-	14.7	B	<ul style="list-style-type: none"> <li>- Mitigation not required.</li> </ul>
50th Avenue	WB	LT	-	7.6	A	LT	-	7.7	A	LT	-	7.7	A	
<b>Overall Intersection</b>	-	-	-	<b>5.4</b>	<b>A</b>	-	-	<b>5.2</b>	<b>A</b>	-	-	<b>4.7</b>	<b>A</b>	
<b>11TH STREET SERVICE ROAD &amp; 49TH AVENUE</b>														
11th Street Service Road	NB	R	-	9.9	A	R	-	9.9	A					<ul style="list-style-type: none"> <li>- Mitigation not required.</li> </ul>
49th Avenue	WB	R	-	9.3	A	R	-	9.3	A					
<b>Overall Intersection</b>	-	-	-	<b>3.2</b>	<b>A</b>	-	-	<b>3.2</b>	<b>A</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		
<b>11TH STREET &amp; QUEENS PLAZA SOUTH</b>														
11th Street	NB	LTR	-	14.7	B	LTR	-	15.0	B					- Mitigation not required.
Queens Plaza South	EB	LT	-	13.2	B	LT	-	13.3	B					
		TR	-	10.3	B	TR	-	10.4	B					
	WB	LT	-	11.3	B	LT	-	11.3	B					
		TR	-	9.6	A	TR	-	9.7	A					
<b>Overall Intersection</b>	-	-	-	<b>12.8</b>	<b>B</b>	-	-	<b>12.9</b>	<b>B</b>					
<b>OTHER UNSIGNALIZED INTERSECTIONS</b>														
<b>21ST STREET &amp; 50TH AVENUE</b>														
21st Street	NB	LT	FREEFLOW	A	A	LT	FREEFLOW	A	A					- Mitigation not required.
50th Avenue	SB	R	FREEFLOW	A	A	R	FREEFLOW	A	A					
<b>Overall Intersection</b>	-	-	FREEFLOW	<b>A</b>	<b>A</b>	-	FREEFLOW	<b>A</b>	<b>A</b>					
<b>JACKSON AVENUE &amp; 51ST AVENUE</b>														
Jackson Avenue	NB	T	-	9.4	A	T	-	11.2	B	T	-	11.2	B	- Mitigation not required. <b>[Build with mitigation delays are due to diversions resulting from the mitigation of Borden Avenue and 11th Street. However, no significant impact occurs.]</b>
51st Avenue	WB	TR	-	11.7	B	TR	-	15.2	C	TR	-	16.1	C	
<b>Overall Intersection</b>	-	-	-	<b>4.7</b>	<b>A</b>	-	-	<b>4.8</b>	<b>A</b>	-	-	<b>4.7</b>	<b>A</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) Overall delay cannot be calculated since the delay for some of the movements is beyond the threshold delay of HCS methodology.

Denotes a significant impact