

4.0 RECOMMENDATIONS

The future 2015 traffic network volumes include the existing volumes plus the background growth specified in the City Environmental Quality Review (CEQR) Technical manual (1% per year in this case) and the trips generated by known planned developments in the area. The planned revitalization of Coney Island will increase pedestrian and vehicular traffic in some areas of the study area. To account for the new trips, a 1.5% growth rate was applied to the existing traffic volumes.

The future conditions traffic analysis showed that conditions would deteriorate at many intersections in terms of v/c ratio, delay, and LOS. Table 4-1 shows intersections operating at LOS D or worse for each scenario year and peak hour. It shows that between the existing conditions and 2015 future conditions, the number of intersections operating at LOS D or worse doubled and in some instances more than doubled for each peak hour. For the AM peak hour, the number of failing intersections increased from 8 to 16; for the midday, PM, and Saturday peak hours, the number of failing intersections increased from 5 to 11, 5 to 13, and 5 to 10, respectively. Between the 2015 and 2025 future conditions, there was a slight increase in the number of failing intersections during the AM and Saturday peak hours; however, during the midday and PM peak hours there was a significant change from 11 to 21 and 13 to 24 failing intersections, respectively, due to increased volumes from projected future developments.

The future conditions analysis show that 24 intersections approaches experienced significant degradation in level of service to LOS E or F over the existing conditions, requiring various improvement measures. Table 4-2 shows the results of the capacity analyses (v/c ratios, delays, and LOS) for each critical intersection as well as the recommended improvement measures for the 2015 future condition for the AM, midday, PM, and Saturday peak hours. The critical intersections and affected periods are listed below:

1. Kings Highway and Ocean Parkway (AM, Midday, & PM)
2. Kings Highway and McDonald Avenue (AM, Midday, PM, & SAT)

3. Kings Highway and Coney Island Avenue (AM, Midday, & PM)
4. Kings Highway and Stillwell Avenue (AM, Midday, & PM)
5. Ocean Parkway and Avenue W (AM & Midday)
6. Ocean Parkway and Avenue X (AM, Midday, & PM)
7. Ocean Parkway and Avenue Z (AM, Midday, & PM)
8. Ocean Parkway and Neptune Avenue (AM, Midday, PM, & SAT)
9. Coney Island Avenue and Neptune Avenue (AM, Midday, & PM)
10. Coney Island Avenue and Avenue Z (AM & SAT)
11. Coney Island Avenue and Guider Avenue/Belt Pkwy Entrance (AM, Midday, PM, & SAT)
12. Coney Island Avenue and Brighton Beach Avenue (AM, Midday, PM, & SAT)
13. Cropsey Avenue and Bay Parkway (PM & SAT)
14. Cropsey Avenue/West 17th Street and Neptune Avenue (AM, Midday, PM, & SAT)
15. Shell Rd/West 8th Street and Neptune Avenue (AM)
16. McDonald Avenue/Shell Road and 86th Street/Avenue X (AM, Midday, PM, & SAT)
17. East 14th St and Shore Blvd/Emmons Avenue (AM)
18. Surf Avenue and Stillwell Avenue (Midday)
19. Avenue X and West 3rd Street (Midday & PM)
20. Bay 32nd Street and Benson Avenue (PM)
21. Avenue T and West 5th Street (AM)
22. 23rd Avenue and 84th Street (AM, Midday, & PM)
23. Bath Avenue and Bay 35th Avenue (AM)
24. West 8th Street and Surf Avenue (AM)

To improve safety and traffic flow along the major corridors, improve operations at congested intersections, minimize conflicts and improve safety; the following proposed measures were developed that include:

- Signal timing and geometric changes;
- Parking restrictions or modification;
- Pedestrian crossing treatments – widen crosswalks, install median;

Table 4-1: Locations with Mid LOS D or worse (Existing and Future Conditions)

Intersection	Existing				Future 2015				Future 2025			
	AM	Mid	PM	Sat	AM	Mid	PM	Sat	AM	Mid	PM	Sat
Bay Parkway/Cropsey Avenue			•	•			•	•	•	•	•	•
Bath Avenue/Bay 35th Street					•				•			
23rd Avenue/84th Street					•	•	•		•	•	•	
Kings Highway/Stillwell Avenue					•	•	•		•	•	•	
Avenue T/West 5 th Street					•				•	•	•	
Kings Highway/McDonald Avenue	•	•	•		•	•	•		•	•	•	•
Kings Highway/Ocean Parkway	•				•	•			•	•	•	•
Ocean Parkway/Avenue W	•				•				•	•	•	
Ocean Parkway/Avenue X	•				•	•	•		•	•	•	
Ocean Parkway/Avenue Z					•		•	•	•	•	•	
Ocean Parkway/Neptune Avenue	•	•	•	•	•		•	•	•	•	•	•
McDonald Avenue-Shell Road/86th Street/Avenue X	•	•	•	•	•	•	•	•	•	•	•	•
Neptune Avenue/Cropsey Avenue-West 17th Street				•	•	•	•	•	•	•	•	•
Neptune Avenue/Shell Road-West 8th Street									•	•	•	
Coney Island Avenue/Guider Avenue	•	•	•	•	•	•	•	•	•	•	•	•
Coney Island Avenue/Neptune Avenue					•			•	•	•	•	•
Coney Island Avenue/Brighton Beach Avenue	•	•	•	•	•	•	•	•	•	•	•	•
Neptune Avenue/West End Avenue									•	•	•	
Coney Island Avenue/Kings Highway					•	•				•	•	•
Avenue X/West 3rd Street						•	•			•	•	
Shell Road/Avenue Z										•	•	
Surf Avenue/Stillwell Avenue										•	•	
86th Street/Bay Parkway								•			•	•
Benson Avenue/Bay 32nd Street							•				•	
Surf Avenue/West 12th Street											•	
Coney Island Avenue/Avenue Z											•	•
Ocean Parkway/Brighton Beach Avenue				•				•				•

Table 4-2: Proposed Improvement Measures for Critical Intersections - AM Peak Hour
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Intersection	Approach/ Movement		Existing Condition 2002			Future Condition 2015			Future Condition (2015) with Improvement			Proposed Improvement Measures	
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	NB/SB	EB/WB
			Kings Highway & Ocean Parkway	EB	LTR	0.97	78.00	E	0.99	88.80	F	0.53	35.70
WB	LTR	1.05		96.00	F	1.13	121.20	F	0.64	38.20	D		
NB	TR	1.03		60.10	E	1.12	93.30	F	1.03	59.20	E		
Kings Highway & McDonald Avenue	NB	LTR	1.05	90.10	F	1.07	97.10	F	0.49	35.50	D	Prohibit parking 7-10 AM and re-stripe NB/SB to two moving lanes.	No Action Required.
	SB	LTR	1.05	103.10	F	1.11	121.20	F	0.51	36.90	D		
Kings Highway & Coney Island Avenue	EB	LTR	0.93	63.60	E	1.01	78.00	E	0.45	28.70	C	No Action Required	Prohibit parking 7 - 10 AM and re-stripe EB/NB to two moving lanes (4 meters).
	NB	L	1.05	77.70	E	1.11	95.40	F	0.91	42.80	D		
Kings Highway & Stillwell Avenue	SB	LTR	0.73	44.60	D	0.95	67.30	E	0.54	12.50	B	Add 4 seconds.	Take 4 seconds.
23rd Avenue & 84th Street	NB	LT	1.05	82.20	F	1.20	132.50	F	0.54	12.50	B	Prohibit parking 7-10 AM and provide NB to two moving lanes.	No Action Required
Bath Ave & Bay 35th Street	EB	LT	1.05	78.20	E	1.16	113.10	F	0.60	13.40	B	No Action Required	Prohibit parking for 100' from 7 - 10 AM and provide two moving lanes for EB/WB.
Avenue T & West 5th Street	EB	LT	1.05	77.70	E	1.10	88.50	F	0.49	48.80	D	Take 3 seconds.	Add 3 seconds.
Ocean Parkway & Avenue W	EB	LTR	0.84	73.30	E	0.89	79.00	E	0.49	41.10	D	Prohibit parking for 100' from 7 – 10 AM on NB service road; provide 2 moving lanes for thru and right movements.	Prohibit parking for 100' from 7 - 10 AM and provide two moving lanes for EB/WB.
	WB	LTR	0.74	51.20	D	0.79	73.30	E	0.98	51.10	D		
	NB	TR	0.95	68.60	E	1.10	78.60	E	0.71	42.60	D		
Ocean Parkway & Avenue X	EB	LTR	0.95	67.20	E	1.04	97.00	F	0.66	46.10	D	Prohibit parking for 100' from 7 – 10 AM on NB service road; provide 2 moving lanes for thru and right movements.	Prohibit parking for 100' from 7 - 10 AM and provide two moving lanes for EB/WB.
	WB	LTR	1.05	100.90	F	1.08	107.20	F	0.56	36.80	D		
	NB	TR	1.05	67.20	E	1.11	89.30	F	1.05	67.20	E		

Table 4-2: Proposed Improvement Measures for Critical Intersections - AM Peak Hour
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Intersection	Approach/ Movement		Existing Condition 2002			Future Condition 2015			Future Condition (2015) with Improvement			Proposed Improvement Measures	
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	NB/SB	EB/WB
Ocean Parkway & Avenue Z	EB	LTR	0.90	74.20	E	0.93	77.80	E	0.48	41.00	D	Prohibit parking for 100' from 7 – 10 AM on NB service road; provide 2 moving lanes for thru and right movements.	Prohibit parking 7-10 AM and provide two moving lanes for EB/WB; move bus stop 50' back.
	WB	LTR	1.05	106.50	F	1.14	132.30	F	0.57	42.60	D		
	NB	TR	0.94	33.60	C	1.09	74.20	E	1.02	46.90	D		
Shell Rd/W.8 th Street & Neptune Avenue	EB	LTR/ DefL	0.88	31.20	C	1.12	103.90	F	0.81	35.70	D	Take 4 secs. from NB/SB for EB exclusive left phase.	Create excl. left phase for EB; take 8+4 secs. from EB/WB & NB/SB approaches.
West 8 th Street & Surf Avenue	SB	L	0.77	54.6	D	0.85	62.60	E	0.41	32.50	C	Prohibit curbside parking & re-stripe SB to four moving lanes (L, L, T, R).	Install WB-L phase (12 secs.) during summer peak.
Cropsey Avenue/ W. 17th Street & Neptune Avenue	WB	TR	0.97	51.00	D	1.03	65.40	E	0.98	51.60	D	Convert W. 17 St. to one-way SB and reverse direction of W. 19 St, West 16 St, and W. 15 St. Restripe outbound north leg to 2 moving lanes, bike lane and parallel parking.	Prohibit curbside parking; re-stripe WB to three TR+IRT moving lanes. Extend EB dual left lanes to W. 19 St/
	SB	L	0.90	65.80	E	1.31	201.50	F	0.45	26.30	C		
Coney Island Avenue & Guider Avenue/Belt Pkwy Entrance	NB	DefL\L TR				0.53 0.65	22.4 23.1	C C	0.82 0.42	53.40 24.50	D C	Create exclusive LT lane and phase for NB approach.	Implemented.
	SB	DefL TR				0.98 0.75	80.10 26.40	F C	0.65	28.9	C		
E. 14th St & Shore Blvd/ Emmons Avenue	WB	L	0.79	24.9	C	1.02	60.90	E	0.67	34.50	C	No Action Required	Re-stripe WB to two (L, TR) moving lanes.
Coney Island Avenue & Avenue Z	EB	LTR	0.65	44.10	D	0.86	57.20	E	0.74	45.00	D	Take 4 seconds.	Add 4 seconds.
	WB	LTR	0.64	45.00	D	0.84	57.60	E	0.71	44.60	D		

Table 4-2: Proposed Improvement Measures for Critical Intersections - Midday Peak Hour
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Intersection	Approach/ Movement		Existing Condition 2002			Future Condition 2015			Future Condition (2015) with Improvement			Proposed Improvement Measures	
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	NB/SB	EB/WB
Kings Highway & Ocean Parkway	EB	LTR	0.78	49.60	D	0.96	75.80	E	0.54	36.20	D	No Action Required	Prohibit parking for 100'; provide 2 moving lanes.
	WB	LTR	0.85	56.50	E	1.05	96.50	F	0.60	37.60	D		
Kings Highway & McDonald Avenue	NB	LTR	1.05	89.10	F	1.28	174.40	F	0.66	32.20	C	Prohibit parking for 100'; provide 2 moving lanes.	No Action Required
	SB	LTR	1.04	88.70	F	1.37	213.60	F	0.71	34.60	C		
Kings Highway & Coney Island Avenue	NB	L	0.69	34.70	C	0.98	87.70	F	0.79	44.40	D	Add 2 seconds.	Take 2 seconds.
Kings Highway & Stillwell Avenue	NB	LTR	0.89	48.00	D	1.03	77.20	E	0.84	39.60	D	Add 4 seconds.	Take 4 seconds.
	SB	LTR	0.92	51.80	D	1.10	97.90	F	0.89	43.60	D		
23rd Avenue & 84 th Street	NB	LT	1.05	79.30	E	1.09	85.30	F	0.72	18.30	B	Prohibit parking for 100'; provide 2 moving lanes.	No Action Required
Ocean Parkway & Avenue W	EB	LTR	0.90	63.60	E	1.02	88.90	F	0.90	62.20	E	No Action Required	Prohibit parking for 100'; provide 2 moving lanes.
Ocean Parkway & Avenue X	EB	LTR	0.99	85.60	F	1.04	95.50	F	0.66	40.50	D	No Action Required	Prohibit parking for 100'; provide 2 lanes.
	WB	LTR	0.89	63.40	E	1.10	108.00	F	0.70	40.20	D		
Ocean Parkway & Avenue Z	EB	LTR	0.74	51.10	D	0.95	77.60	E	0.54	39.50	D	No Action Required	Prohibit parking for 100'; provide 2 moving lanes.
	WB	LTR	0.91	74.10	E	1.10	124.80	F	0.55	40.40	D		
Coney Island Avenue & Neptune Avenue	EB	L				0.97	78.60	E	0.52	29.60	C	Change signal phasing from two to three phase adding exclusive LT phase for EB/WB approaches. Take 8 seconds of green time.	Prohibit parking for 100'; provide 3 moving lanes. Add 8 seconds to exclusive left turn phase.
		LTR /TR	0.65	32.70	C	0.79	34.4.60	C	0.54	30.20	C		
Avenue X & West 3 Street	EB	LTR	1.05	80.7	F	1.18	126.20	F	0.96	53.50	D	Take 3 seconds.	Add 3 seconds.
Cropsey Avenue/W.17th Street & Neptune Avenue	SB	L	1.00	87.50	F	1.13	123.10	F	0.88	53.60	D	Convert W. 17 St. to one-way SB and reverse direction of W. 19 St, West 16 St, and W. 15 St. Restripe outbound north leg to 2 moving lanes, bike lane and parallel parking.	No Action Required
Surf Avenue & Stillwell Avenue	NB	LTR	0.72	56.7	E	0.96	102.2	F	0.66	45.1	D	Add 4 seconds	Take 4 seconds
Coney Island Avenue & Guider Avenue	SB	Def L	1.05	86.7	F	1.06	117.4	F	0.6	43.7	D	Create exclusive LT lane and phase for NB approach.	Implemented.

Table 4-2: Proposed Improvement Measures for Critical Intersections - Midday Peak Hour
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Intersection	Approach/ Movement		Existing Condition 2002			Future Condition 2015			Future Condition (2015) with Improvement			Proposed Improvement Measures	
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	NB/SB	EB/WB
Kings Highway & Ocean Parkway	EB	LTR	0.81	51.40	D	1.02	88.40	F	0.55	35.90	D	No Action Required	Prohibit parking 100'; make 2 moving lanes
Kings Highway & McDonald Avenue	NB	LTR	1.05	98.00	F	1.15	133.00	F	0.52	36.70	D	Prohibit parking for 100' from 4 - 7 PM; provide 2 moving lanes.	No Action Required
	SB	LTR	1.02	91.80	F	1.24	168.40	F	0.55	37.60	D		
Kings Highway & Coney Island Avenue	EB	LTR	0.81	46.30	D	0.98	72.80	E	0.48	29.60	C	No Action Required	Prohibit parking for 100' from 4 - 7 PM; provide 2 moving lanes.
Kings Highway & Stillwell Avenue	SB	LTR	0.93	63.20	E	1.13	118.20	F	0.90	53.80	D	Add 5 seconds	Take 5 seconds
23rd Avenue & 84 th Street	NB	LT	1.05	80.80	F	1.27	160.70	F	0.55	12.70	B	Prohibit parking for 100' from 4 - 7 PM; provide 2 moving lanes.	No Action Required
Bay 32 Street & Benson Avenue	WB	LT	1.05	72.80	E	1.18	117.90	F	0.57	12.40	B	No Action Required	Prohibit parking for 100' from 4 - 7 PM; provide 2 moving lanes.
Avenue X & West 3 Street	EB	LTR	1.05	75.70	E	1.09	84.20	F	0.99	54.00	D	Take 3 seconds.	Add 3 seconds.
Ocean Parkway & Avenue X	EB	LTR	1.02	92.50	F	1.10	114.80	F	0.58	37.40	D	No Action Required	Prohibit parking for 100' from 4 - 7 PM; provide 2 moving lanes.
	WB	LTR	0.80	52.70	D	0.96	76.00	E	0.52	36.10	D		
Ocean Parkway & Avenue Z	EB	LTR	0.84	63.30	E	0.94	76.00	E	0.48	38.60	D	No Action Required	Prohibit parking for 100' from 4 - 7 PM; provide 2 moving lanes.
	WB	LTR	1.05	100.70	F	1.15	134.60	F	0.60	40.80	D		
Coney Island Avenue & Neptune Avenue	EB	L	1.05	142.60	F	1.27	218.50	F	0.67	52.00	D	Change signal phasing from two to three phases adding exclusive LT phase for EB/WB approaches. Take 12 seconds of green time.	Prohibit parking 100'; make 3 moving lanes; add 12 seconds.
		TR	1.05	98.90	F	1.28	182.90	F	0.54	39.20	D		
	WB	L	1.05	144.20	F	1.28	222.40	F	0.65	50.80	D		
		TR	1.05	101.20	F	1.28	184.50	F	0.53	39.00	D		
Cropsey Avenue/ W. 17th St. & Neptune Ave	SB	L	1.05	92.20	F	1.13	115.40	F	0.92	53.90	D	Convert W. 17 St. to one-way SB and reverse direction of W. 19 St, West 16 St, and W. 15 St. Restripe outbound north leg to 2 moving lanes, bike lane and parallel parking.	

Table 4-2: Proposed Improvement Measures for Critical Intersections - PM Peak Hour
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Intersection	Approach/ Movement		Existing Condition 2002			Future Condition 2015			Future Condition (2015) with Improvement			Proposed Improvement Measures	
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	NB/SB	EB/WB
Coney Island Avenue & Guider Avenue												Create exclusive LT lane and phase for NB approach.	Changed signal timing plan in 2006; added dual EB/WB LT phase
	SB	DefL	0.94	54.90	D	1.00	92.50	F	0.4	20.60	C		
Bay Parkway & Cropsey Avenue	WB	TR	1.05	74.40	E	1.10	91.30	F	0.98	54.40	D	Convert the southern leg to 3 NB and 3 SB lanes	Re-stripe WB to 4 lanes - make 2 L+1 T + 1 R; move centerline farther south to enable 2 left lanes; add signal phase for WB exclusive left
	NB	L	1.05	115.60	F	1.20	168.60	F	0.34	41.40	D		
	SB	TR	0.96	54.50	D	1.07	84.30	F	0.96	52.30	D		

Table 4-2: Proposed Improvement Measures for Critical Intersections - Saturday Peak Hour
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Intersection	Approach/ Movement		Existing Condition 2002			Future Condition 2015			Future Condition (2015) with Improvement			Proposed Improvement Measures	
			V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	NB/SB	EB/WB
Kings Highway & McDonald Avenue	NB	LTR	0.92	58.40	E	1.00	72.90	E	0.59	30.50	C	Prohibit parking for 100'; provide 2 lanes.	
	SB	LTR	0.90	56.10	E	1.04	87.20	F	0.53	29.30	C		
Cropsey Avenue & W. 17th St/ Neptune Avenue	WB	TR	1.02	67.50	E	1.06	77.00	E	0.72	30.50	C	Convert W. 17 St. to one-way SB and reverse direction of W. 19 St, West 16 St, and W. 15 St. Restripe outbound north leg to 2 moving lanes, bike lane and parallel parking.	Prohibit parking for 100'; provide 3 lanes.
	SB	L	1.05	85.70	F	1.08	93.50	F	0.90	50.30	D		
Coney Island Avenue & Guider Avenue	NB	DefL/L				0.95	75.60	F	0.78	54.10	D	Create exclusive LT lane and phase for NB approach.	Changed signal timing plan in 2006; added dual EB/WB LT phase.
		LTR/TR	0.98	49.10	D	0.95	49.80	E	0.61	30.00	C		
	SB	DefL/L				0.84	57.80	E					
		LTR/TR	1.05	66.80	E	1.11	97.6	F	0.82	37.5	D		
Bay Parkway & Cropsey Avenue	EB	L	0.48	39.2	D	0.64	53.40	D	0.64	53.40	D	Convert the southern leg to 3 NB and 3 SB lanes	Re-stripe WB to 4 lanes - make 2 L+1 T + 1 R; move centerline farther south to enable 2 left lanes; add signal phase for WB exclusive left
		T	0.74	42.7	D	0.88	54.80	D	0.88	54.80	D		
		R	1.05	89.1	F	1.12	109.5	F	0.90	49.20	D		
	NB	L	1.05	100.80	F	1.08	106.5	F	0.53	34.10	C		
	SB	L	0.68	53.3	D	0.70	62.20	E	0.59	45.00	D		
		TR	0.95	45.5	D	1.06	71.2	E	0.95	43.50	D		
Coney Island Avenue & Avenue Z	EB	LTR	0.95	54.6	D	1.05	77.10	E	0.69	30.2	C	Prohibit parking for 100'; provide 3 moving lanes.	
	WB	LTR	0.88	46.8	D	0.99	64.00	E	0.72	35.5	D		

Based on the HCS analysis and field observations, the following locations were identified for improvements:

1. Bay Parkway/Cropsey Avenue and Bay Parkway/Shore Pkwy (Implemented)

This intersection is extremely congested with heavy vehicular traffic during the peak hours and throughout the day because Bay Parkway and Cropsey Avenue are two major arterials in the area. There is also Belt Parkway on and off ramps that feed these corridors. The existing and future conditions analysis showed that the northbound, southbound, and westbound approaches experience failing LOS (E or F).

The following measures were recommended to improve operating conditions at these intersections:

1. Bay Parkway/Cropsey Avenue. On the westbound approach, shift the centerline farther south (10 feet) to create two exclusive left turn lanes, one through, and one right turn lane; create an additional phase for the exclusive left movement.
2. Bay Parkway (between Cropsey Avenue & Shore Parkway WB). Remove the raised median and crosswalk to permit the creation of three southbound and three northbound lanes on Bay Parkway. This would enable an exclusive right turn lane for Belt Parkway WB vehicles and reduce overall delays.
3. Bay Parkway/Shore Parkway WB exit. Reconfigure the approach by reducing the size of the island and creating two exclusive right and left turn lanes.

The above recommendations/implemented measures would improve safety and facilitate operations at both the intersection of Bay Parkway/Cropsey Avenue and Bay Parkway/Shore Parkway entrance and exit ramps. Figures 4-1 and 4-2 show the existing and proposed conditions at this location, additionally, the following pictures show delay for SB traffic at this location.

Figure 4-1: Bay Parkway/Cropsey Avenue and Bay Parkway/Shore Pkwy WB - Existing Conditions

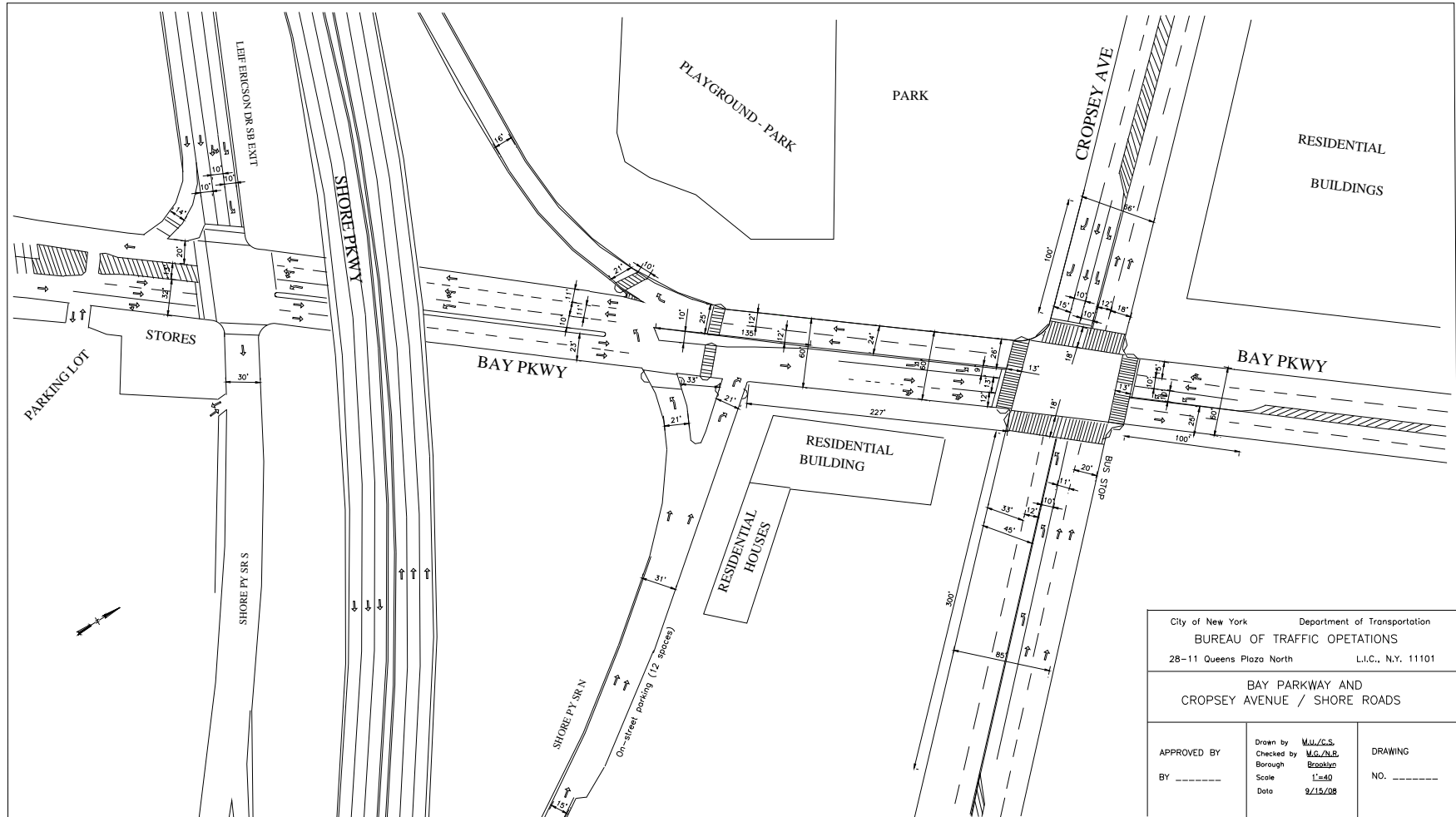
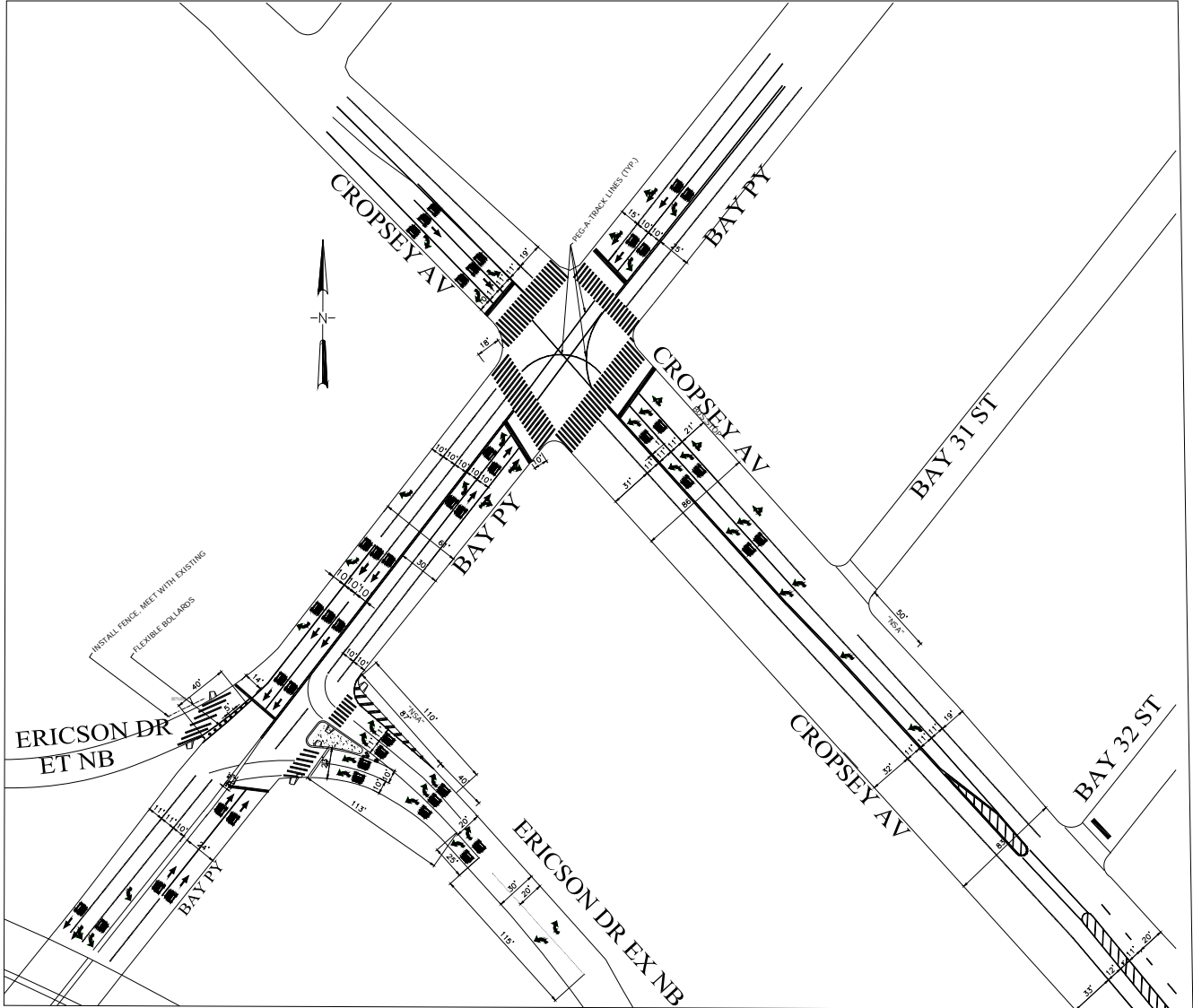


Figure 4-2: Bay Parkway/Cropsey Avenue and Bay Parkway/Shore Pkwy WB - Proposed Conditions



2. Cropsey Avenue/W. 17th Street and Neptune Avenue (Implemented)

This intersection is congested due to heavy vehicular volume and illegal parking activities at auto repair shops on the northeast and northwest corners of the intersection. Under future conditions for the AM, midday, PM, and Saturday peak hours, the southbound and westbound approaches experience LOS F.

The intersection's operation could be improved with the following measures:

1. Convert West 17th Street to one-way southbound from Neptune Avenue to Surf Avenue; convert West 19th Street to one-way northbound from Surf Avenue to Neptune Avenue; convert West 16th Street to one-way northbound from Surf Avenue to Hart Place; convert West 15th Street to one-way southbound from Hart Place to Surf Avenue; and convert Hart Place between West 16th and West 15th streets from westbound to eastbound.
2. On West 17th Street, remove parking for an additional 100 feet from the intersection on the south leg by installing "No Standing, 7AM – 7PM, Monday to Friday" parking regulations.
3. Restripe the northbound northern leg to two moving lanes, a bike lane, and parallel parking (currently angled parking).
4. Signalize the Neptune Avenue/West 19th Street intersection and install a pedestrian refuge on Neptune Avenue.

These changes would improve operations at this intersection by eliminating the southbound left conflict and delays as well as northbound delays due to illegally parked vehicles on the north leg. Figures 4-3, 4-4, and 4-5 show the existing and proposed conditions.

Figure 4-3: Neptune Avenue & Cropsey Avenue/West 17th Street - Existing Condition

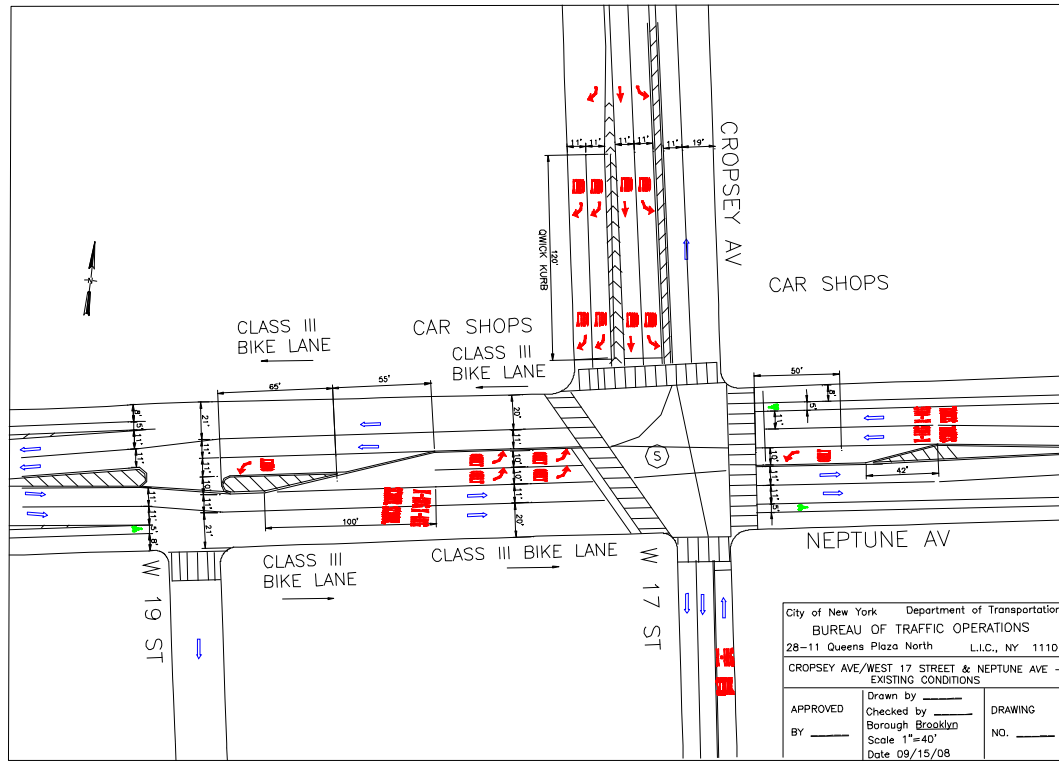


Figure 4-4: Neptune Avenue & Cropsey Avenue/West 17th Street - Proposed Condition

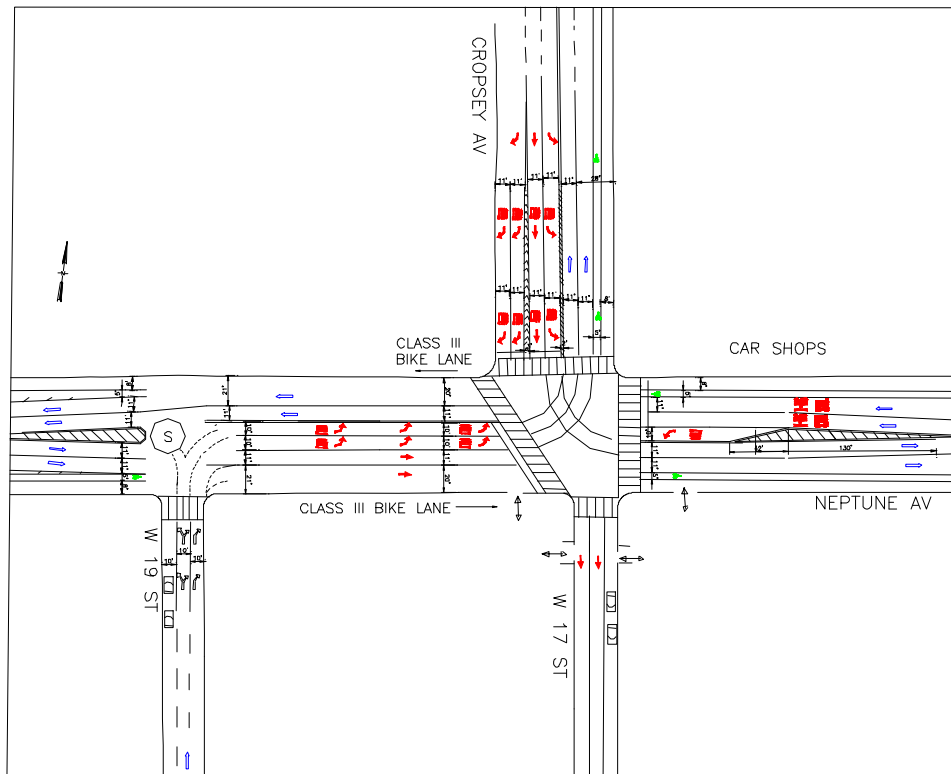
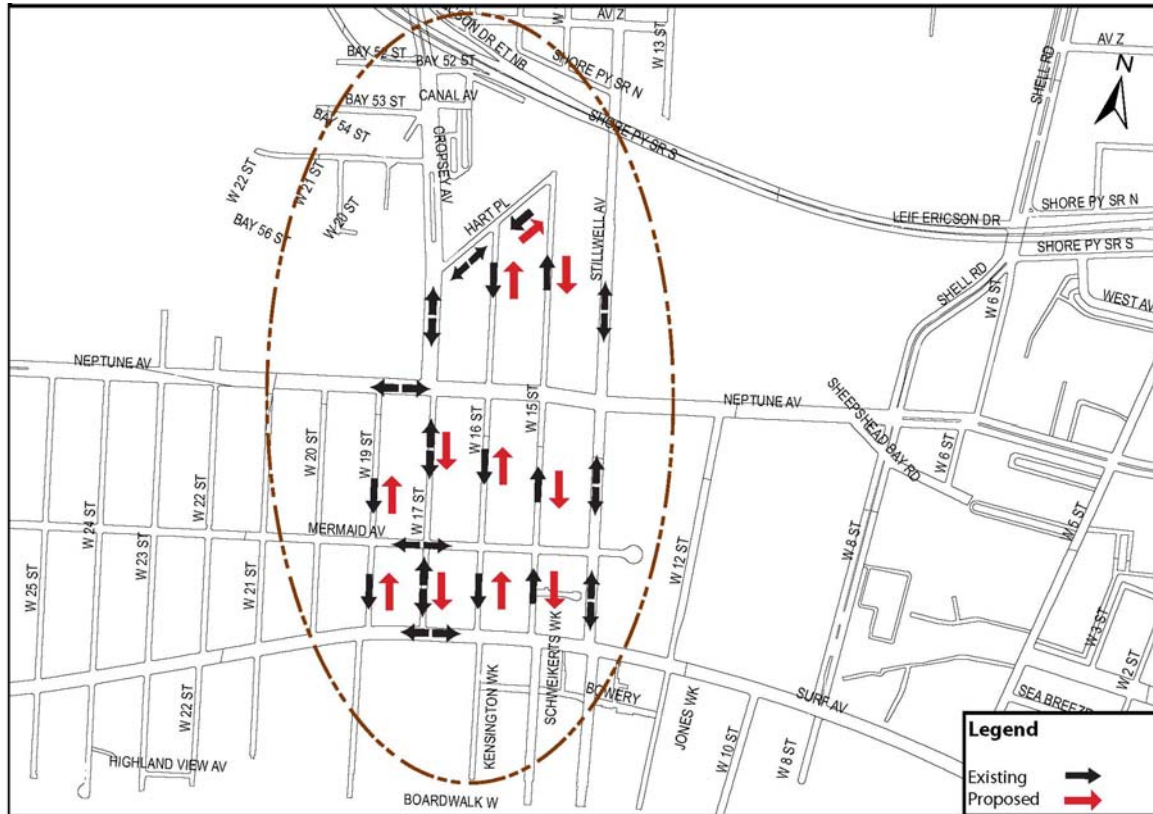


Figure 4-5: Proposed Street Direction Changes for Hart Place, West 19th, West 17th, West 16th, and West 15th Streets



3. Coney Island Avenue and Guider Avenue/Belt Pkwy Entrance

This intersection is extremely congested with heavy vehicular traffic during all peak hours and throughout the day due to Coney Island and Guider Avenues being major thoroughfares that provide access to ramps for the Belt Parkway. The existing condition analysis showed that the eastbound approach experienced a failing LOS (E or F). The future conditions analysis along with field observations show that the northbound and southbound left movements need to be improved.

The intersection’s operation could be improved by with the following measures:

1. Restripe the northbound approach to provide an exclusive left turn lane, a through, and a through-right lane; and create a 12 seconds northbound left turn phase.
2. Prohibit southbound left turns and redirect the traffic to the next intersection (Coney Island Avenue/Neptune Avenue).

As a result of these improvements, safety and operations will be improved due to fewer conflicts between through and turning vehicles. Figures 4-6 and 4-7 show the existing and proposed geometric configuration for the intersection.

4. Coney Island Avenue and Neptune Avenue

The existing and future conditions analyses showed that during the AM, midday, and PM peak hours, the eastbound and westbound approaches experience LOS F. Prohibition of the southbound left turns at Coney Island Avenue/Guider Avenue will increase the southbound left volume at Coney Island Avenue and Neptune Avenue

The following measures are proposed to improve operating conditions at this intersection:

1. Install an exclusive left lane and phase (15 secs) for the southbound and northbound movement,
2. Install a left turn phase for the eastbound/westbound traffic (13 secs.), and
3. Restrict parking for 100 feet from the intersection to provide an additional moving lane by installing “No Standing 7AM-7PM Monday to Friday” sign on the southwest and northeast curbs of Neptune Avenue. Mark the new lane for through/right movements and the inner lane for through/left movements on the east and westbound approaches.

Figures 4-8 and 4-9 show the existing and proposed conditions at this location. As a result of the above improvement measures, overall operations at this location will be improved.

Figure 4-6: Coney Island Ave & Guider Ave/Belt Pkwy Entrance - Existing Condition

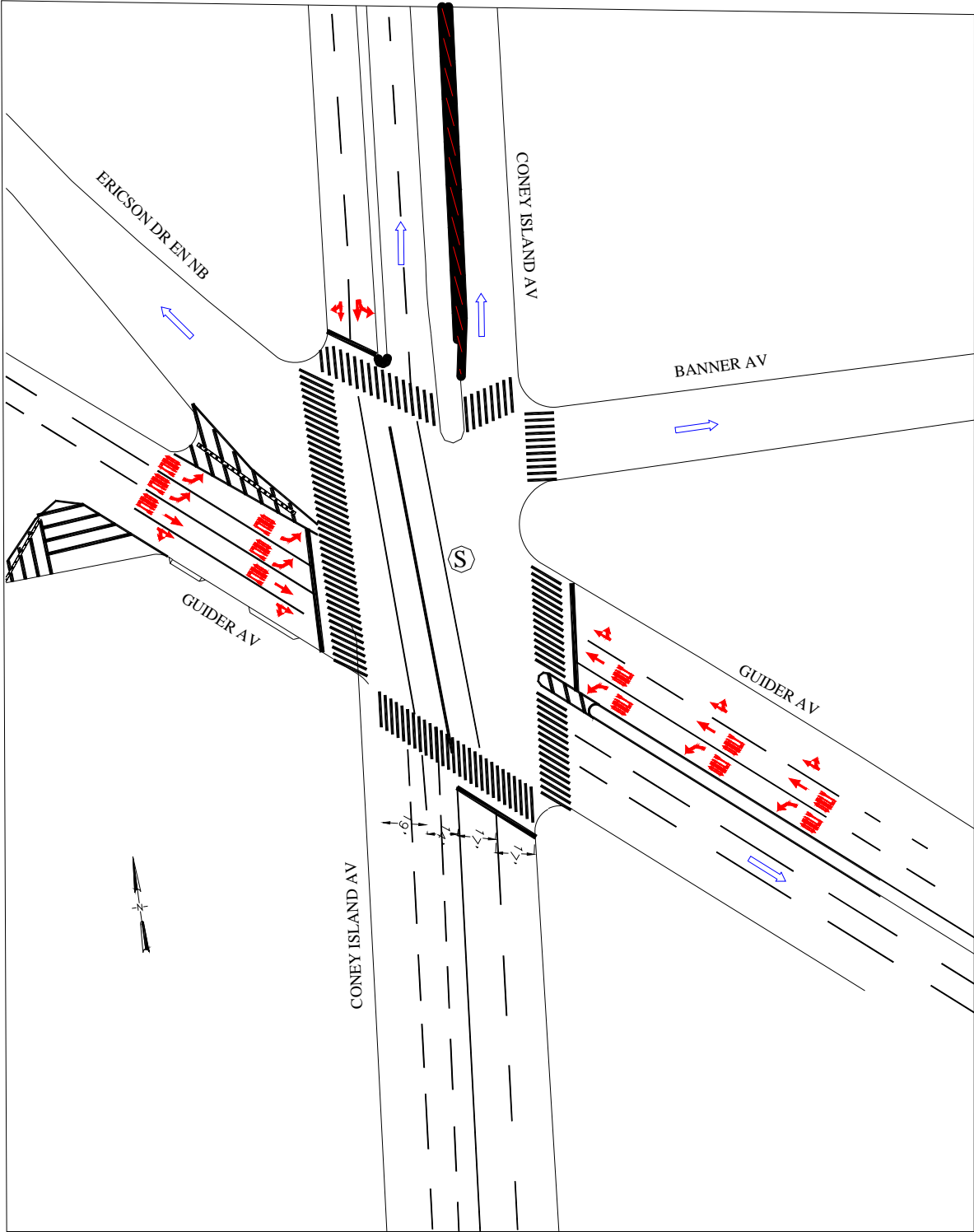


Figure 4-7: Coney Island Ave & Guider Ave/Belt Pkwy Entrance - Proposed Condition

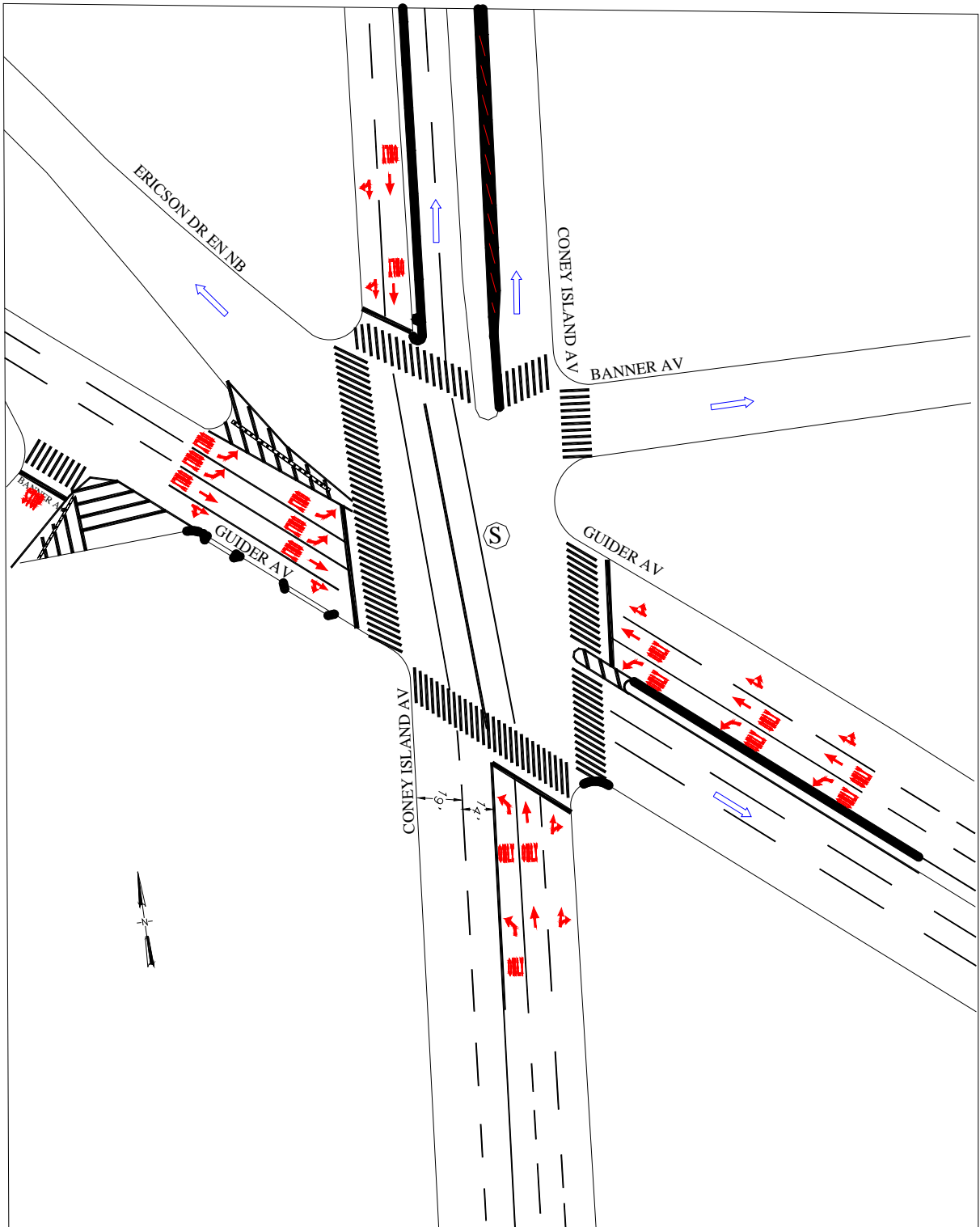
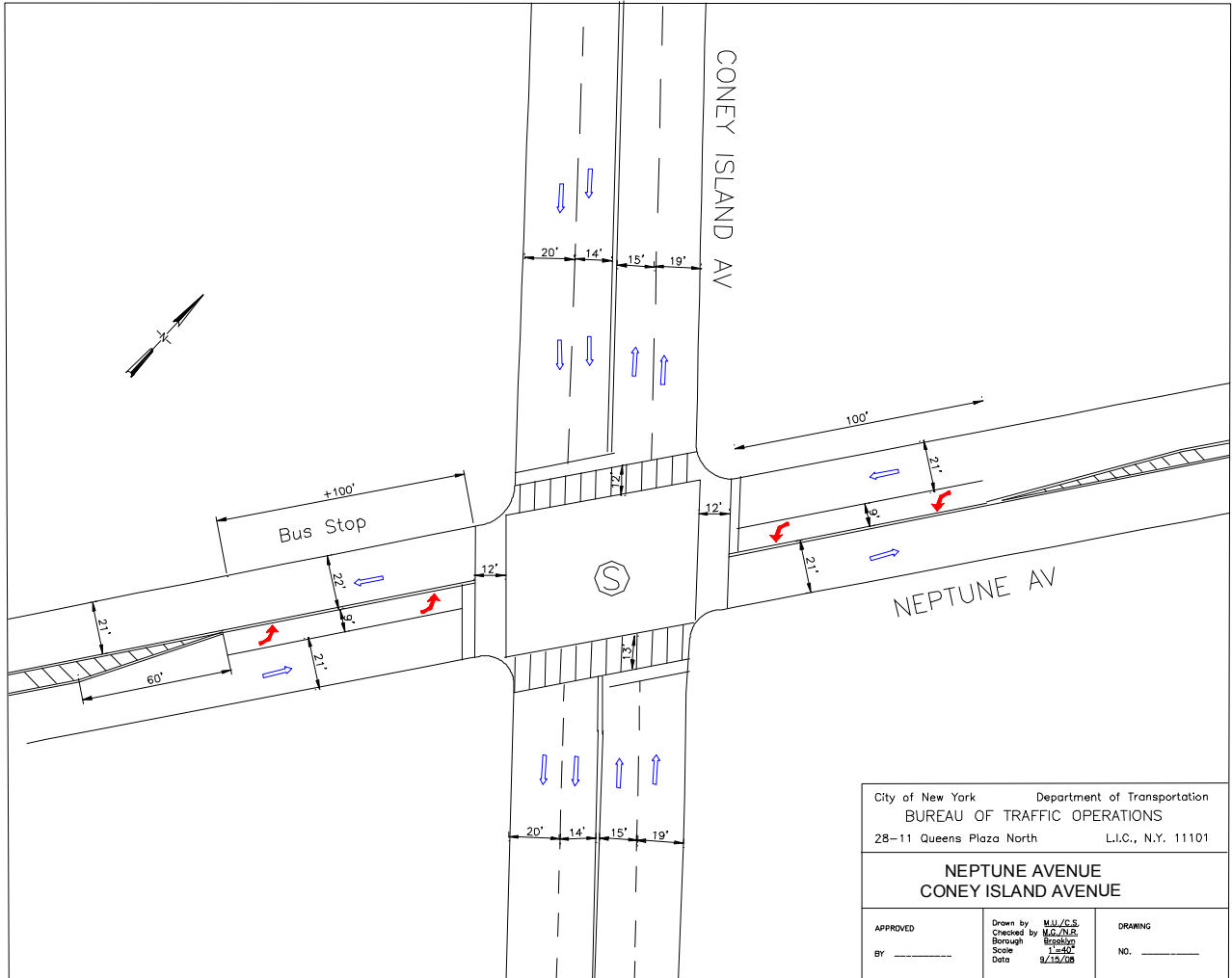
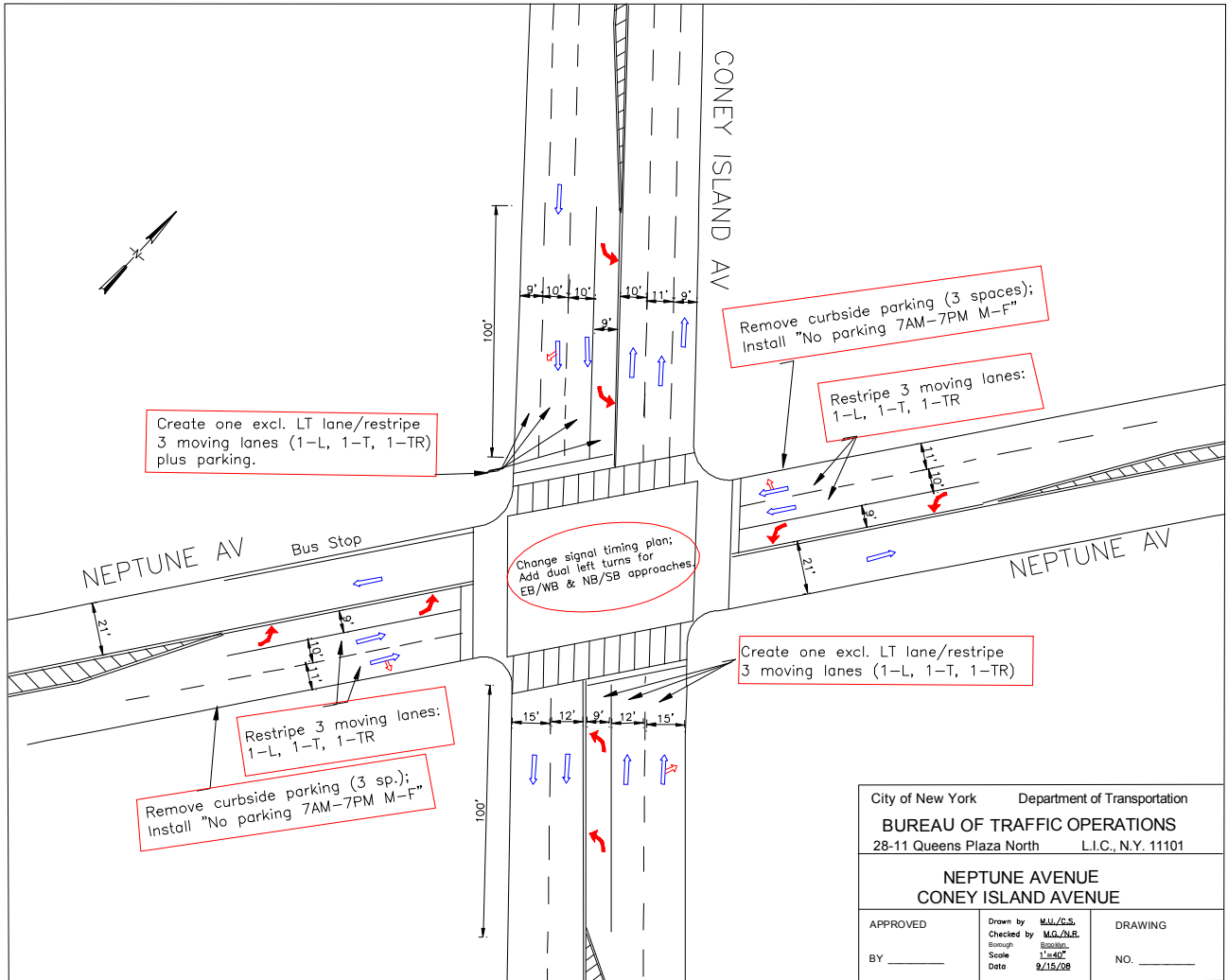


Figure 4-8: Coney Island Avenue/Neptune Avenue - Existing Condition



City of New York		Department of Transportation
BUREAU OF TRAFFIC OPERATIONS		
28-11 Queens Plaza North		L.I.C., N.Y. 11101
NEPTUNE AVENUE CONEY ISLAND AVENUE		
APPROVED	Drawn by <u>M.J./C.S.</u>	DRAWING
BY _____	Checked by <u>M.P./J.R.</u>	NO. _____
	Borough <u>Brooklyn</u>	
	Scale <u>1"=50'</u>	
	Date <u>8/12/08</u>	

Figure 4-9: Coney Island Avenue/Neptune Avenue - Proposed Condition



5. Surf Avenue Entertainment District (West 8 Street to West 19 Street)

Surf Avenue has been, and will continue to be, a major destination in Coney Island due to the many attractions located there. The following proposed recommendations would improve safety along the corridor (between West 8 Street and West 19 Street) where heavy pedestrian activity occurs.

West 8th Street.

- Extend the westbound left turn bay by 100 feet to accommodate high volumes during the peak periods.
- Modify signal timing plan to provide an exclusive left turn phase on the westbound approach during the summer months.
- Install pedestrian signal on the eastbound approach.
- During the AM peak hour, restrict parking on the southbound approach for 100 feet to provide an additional moving lane by installing “No Standing Anytime, 7AM to 10 AM” sign. The southbound approach would be restriped as four lanes (two exclusive left, one through, and one right moving lane).

The existing and proposed improvements for West 8 Street and West 10 Street are shown in Figures 4-10 and 4-11.

Figure 4-10: Surf Avenue at West 8th Street and West 10th Street - Existing Condition

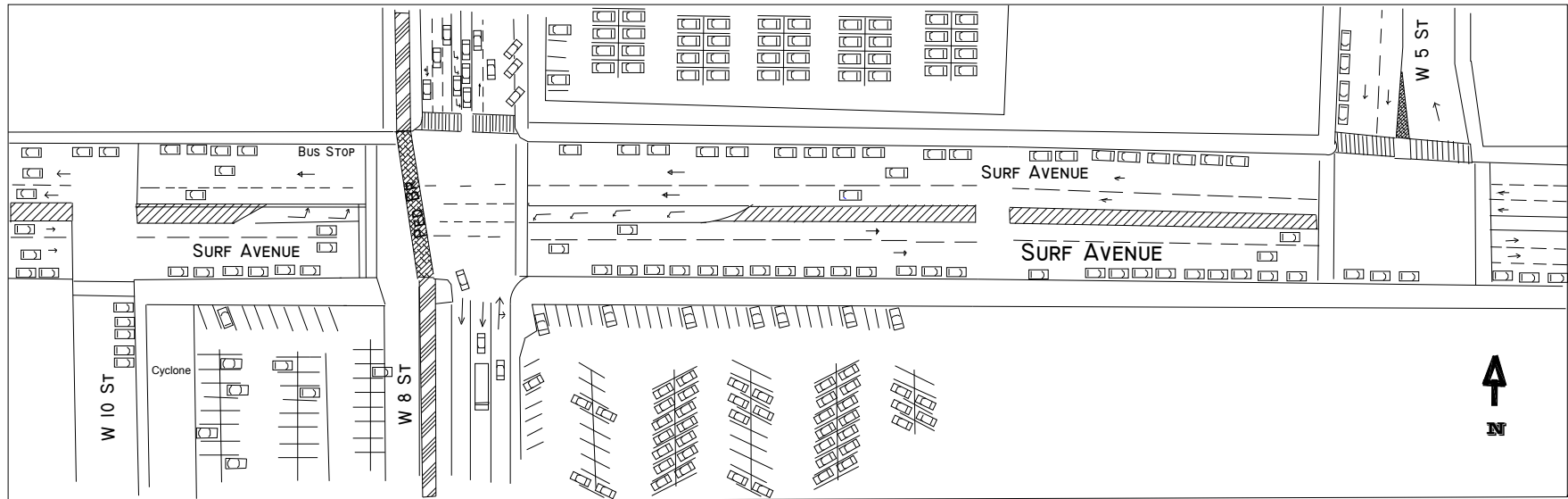
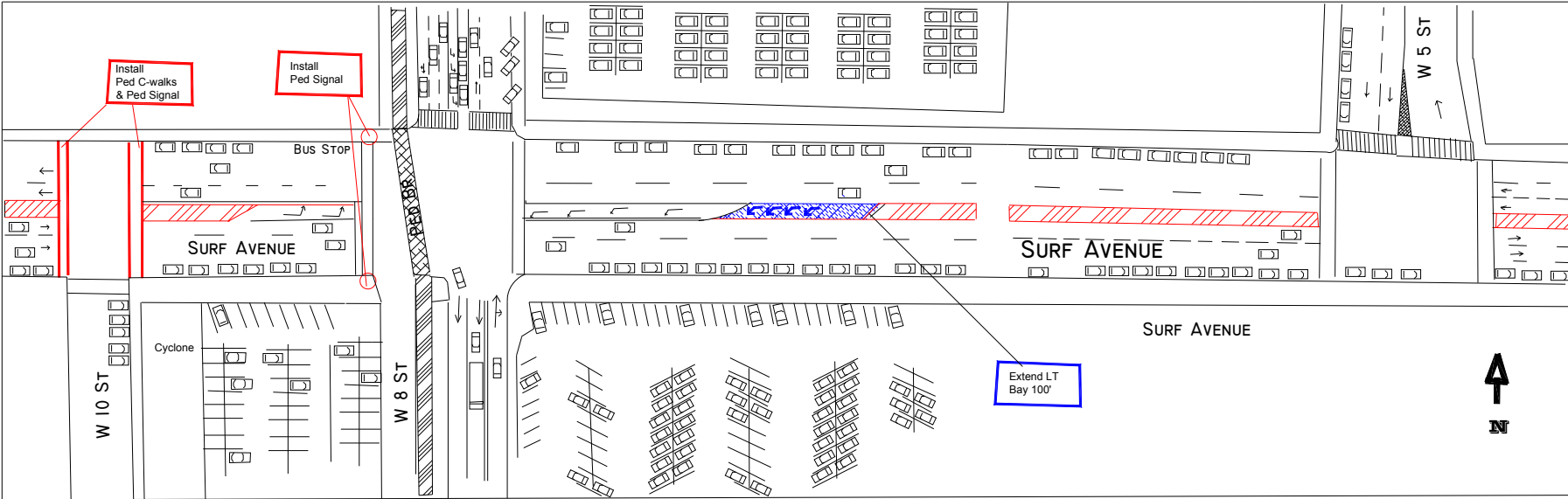


Figure 4-11: Surf Avenue from West 8th Street to West 10th Street - Proposed Condition



Stillwell Avenue.

- Reallocate four seconds of green time from EB/WB phase to the NB/SB phase during the midday peak hour.
- Install pedestrian fence on the north side of Surf Avenue at the subway entrance for 75 feet from starting at the crosswalk to encourage pedestrians to use the crosswalk. Relocate westbound bus stop 75 feet from intersection (behind pedestrian fence).
- Widen the westbound approach crosswalk from 12 to 20 feet to accommodate heavy pedestrian volume in the summer.
- Introduce a leading pedestrian interval (LPI) in the signal plan for the NB/SB movement to reduce conflicts between pedestrians and motorists.
- Daylight the northbound approach by restricting parking for approximately 75 feet from the intersection and post “No Standing Anytime” sign to create two lanes (one left-through and one right turn) in order to reduce approach delay.
- Extend westbound left turn bay for an additional 100 feet.

The existing conditions and proposed improvements for Surf Avenue/Stillwell Avenue are shown in Figures 4-12 and 4-13.

The pictures below show typical pedestrian crossing pattern at the intersection of Surf Avenue/Stillwell Avenue as passengers exit the train station during the summer peak period.



Surf & Stillwell Avenues (looking north) - Peak period pedestrian activity

Figure 4-12: Surf Avenue/Stillwell Avenue - Existing Condition

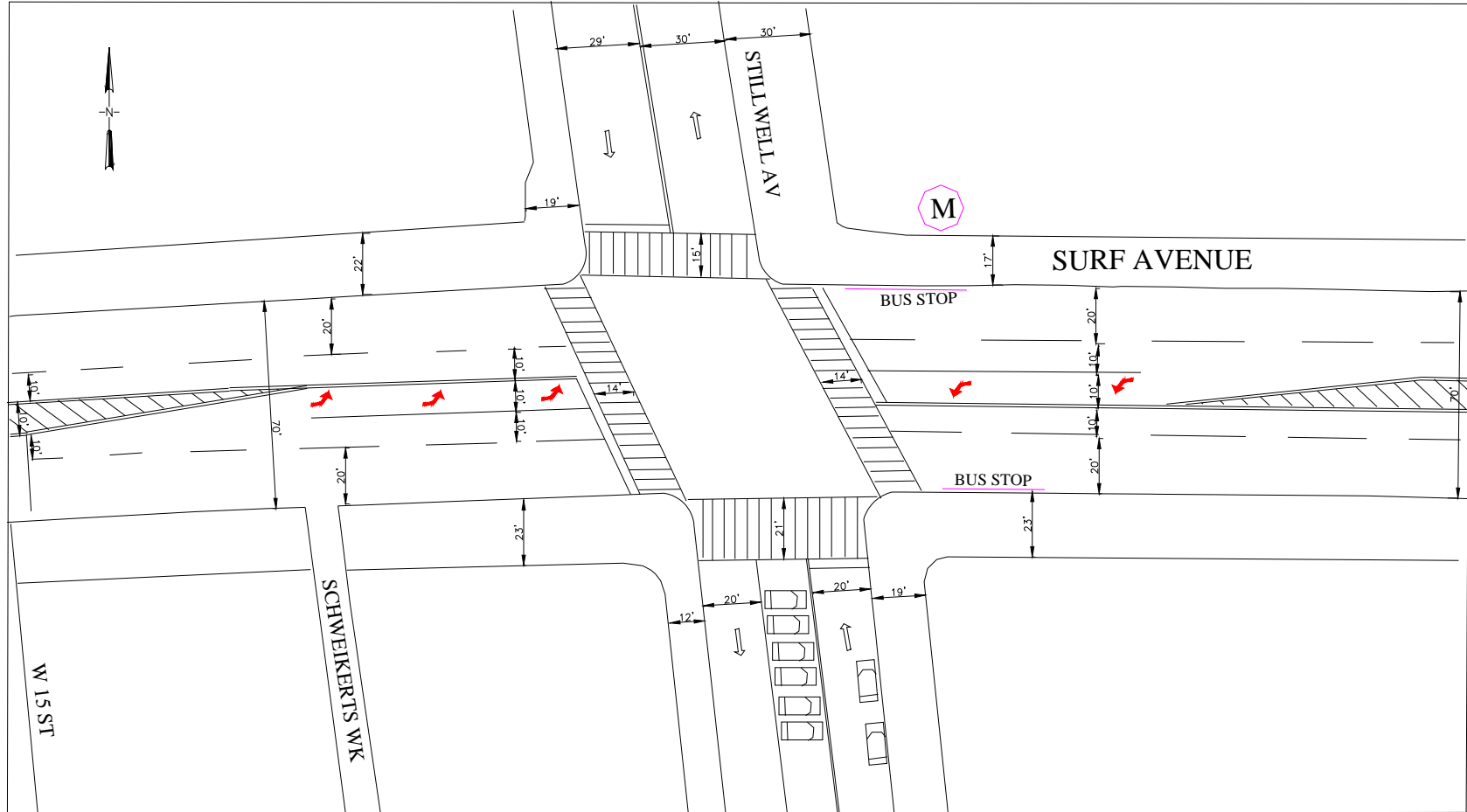
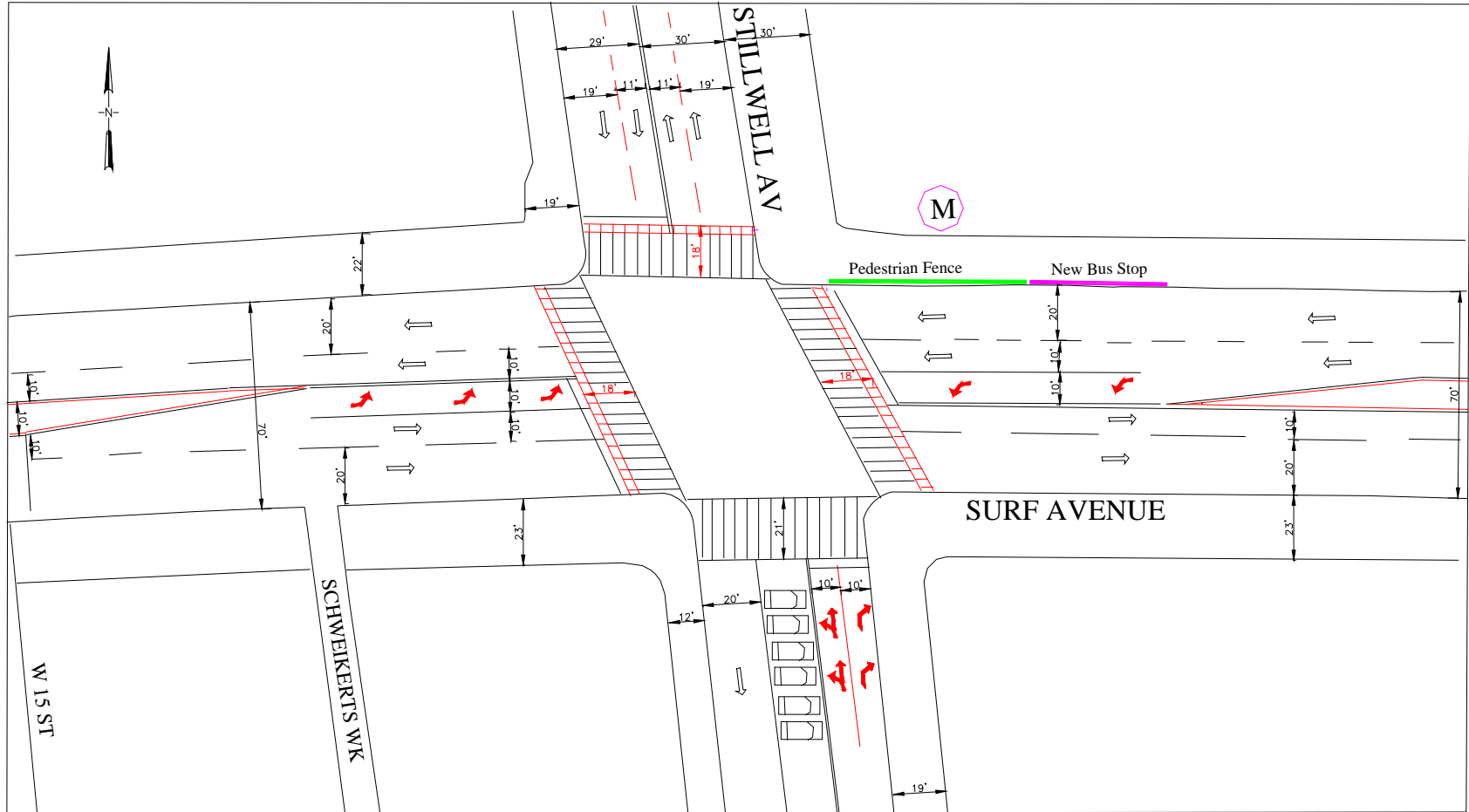


Figure 4-13: Surf Avenue/Stillwell Avenue - Proposed Condition

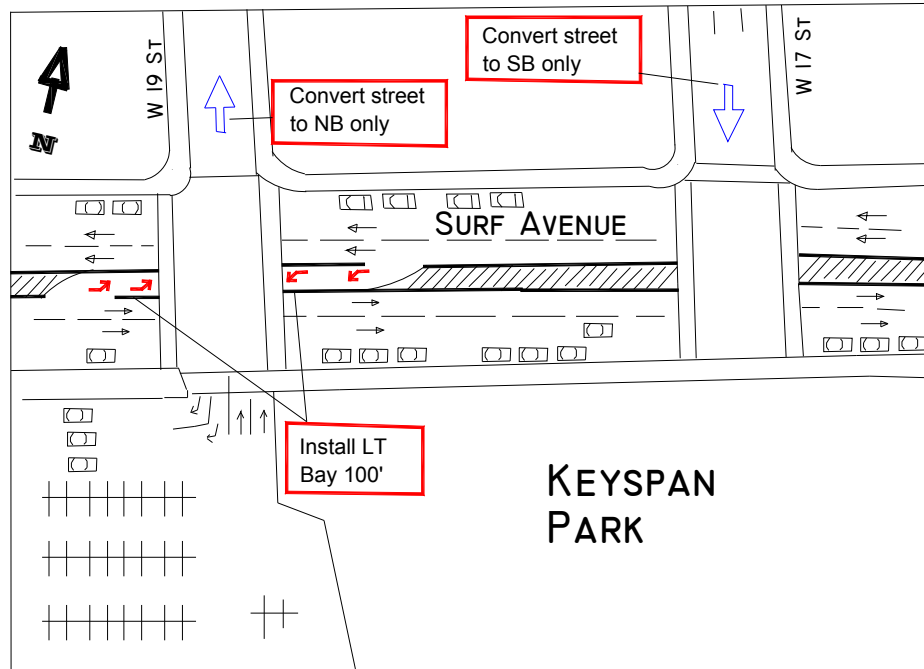


West 19th Street.

- Install left turn bays (100 feet) on the eastbound and westbound approaches.

The proposed improvements for the intersection of Surf Avenue/West 19th Street are shown in Figure 4-14.

Figure 4-14: Surf Avenue/West 19th Street - Proposed Condition



6. Shell Road/West 8th Street and Neptune Avenue

The future conditions analysis showed that during the AM peak hour, the eastbound approach experiences LOS F due to roadway capacity limitations, heavy vehicular demands and signal timing.

To improve operations during the AM peak hour, install an exclusive dual left turn phase for the eastbound and westbound approaches. Restripe eastbound and westbound approaches to provide exclusive left turn lanes for 100 feet. Reallocate eight seconds from EB/WB and four seconds from NB/SB phase for the new exclusive left turn phase. Figures 4-15 and 4-16 show the existing and proposed conditions at this location.

Figure 4-15: Neptune Avenue & Shell Road/West 8th Street - Existing Condition

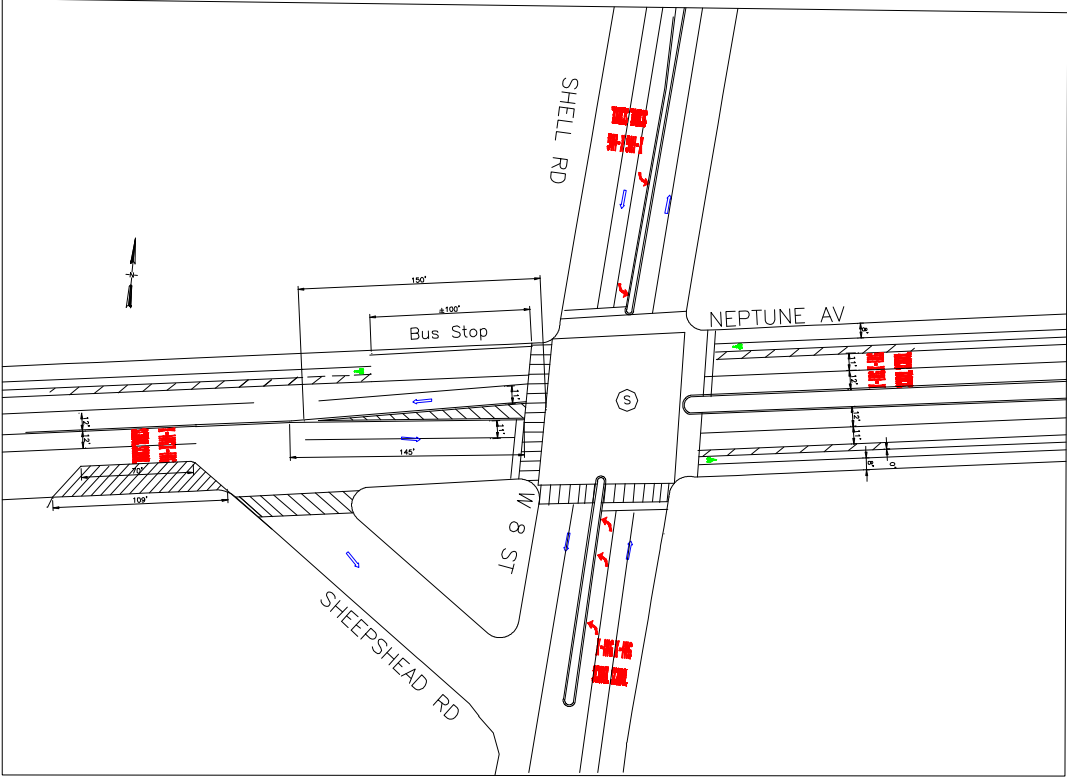
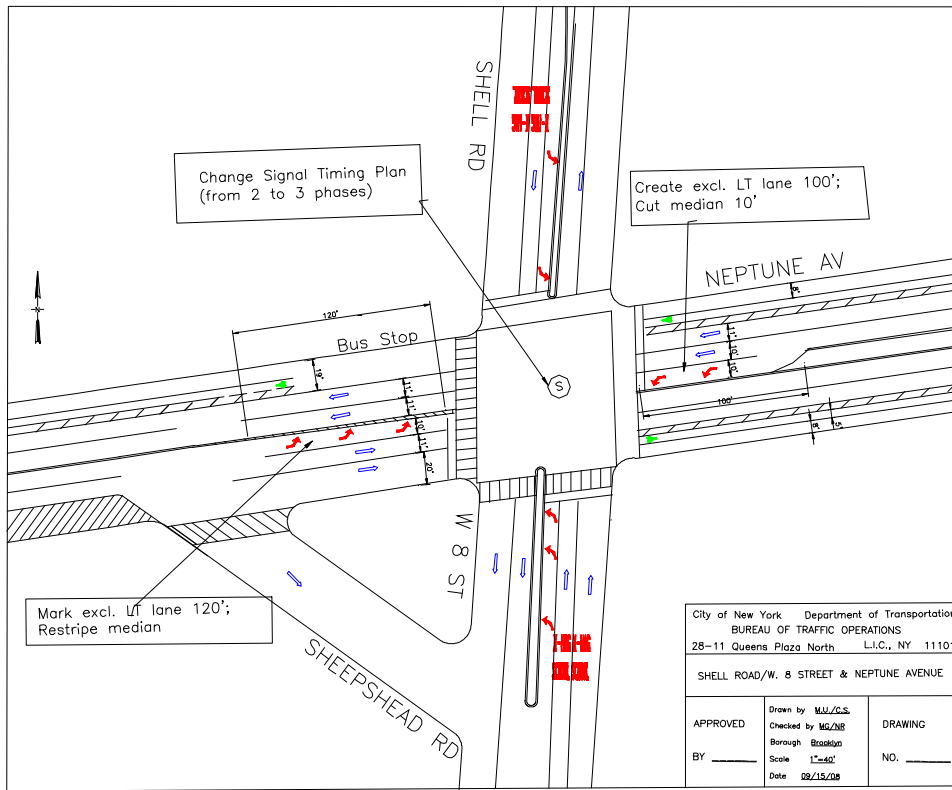


Figure 4-16: Neptune Avenue & Shell Road/West 8th Street - Proposed Conditions



7. Cropsey Avenue/Avenue Z/Shore Parkway Exit

Avenue Z merges with Shore Parkway Exit where Cropsey Avenue begins. No controls currently exist for motorists on either approach and there is an active pedestrian crossing (unmarked) a few feet away. To improve safety at this location, it is proposed that a flashing light be installed on Shore Parkway exit, a STOP sign on Avenue Z, and daylight the southern curb of Avenue Z. The existing and proposed conditions are shown in Figure 4-17 and 4-18.

Figure 4-17: Cropsey Avenue/Avenue Z/Shore Parkway Exit - Existing Condition

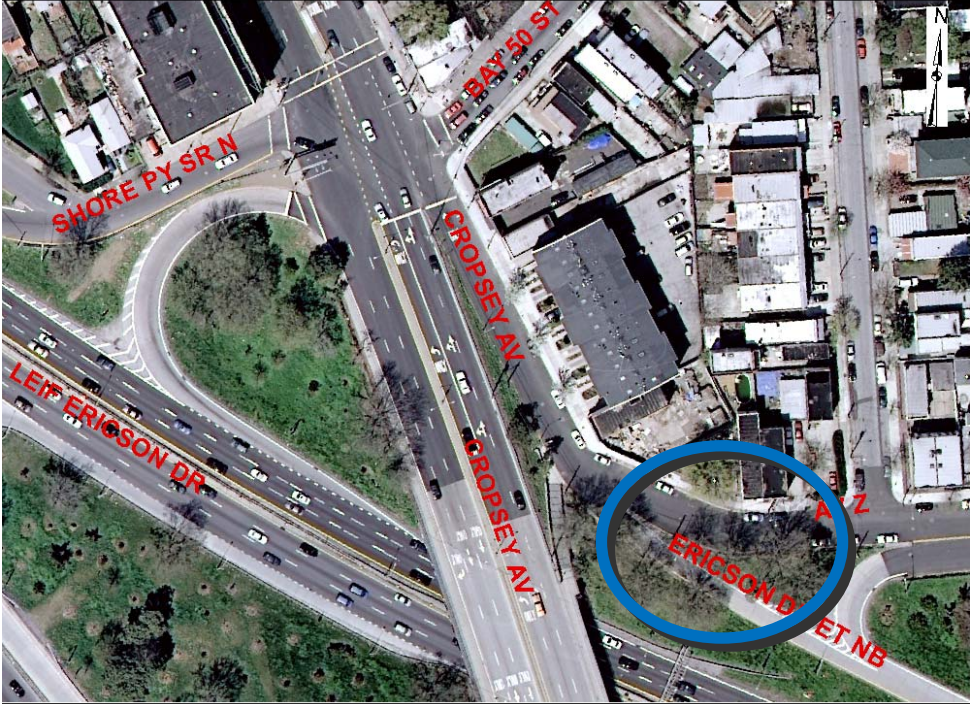
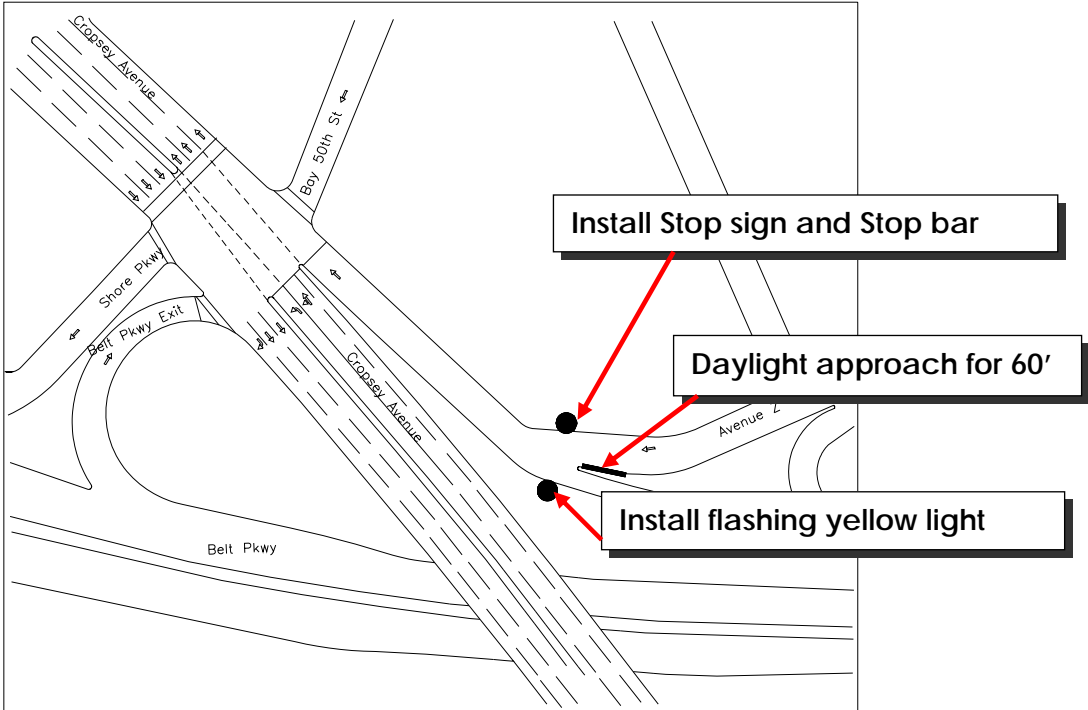


Figure 4-18: Cropsey Avenue/Avenue Z/Shore Parkway Exit - Proposed Condition



8. Ocean Parkway/West Avenue

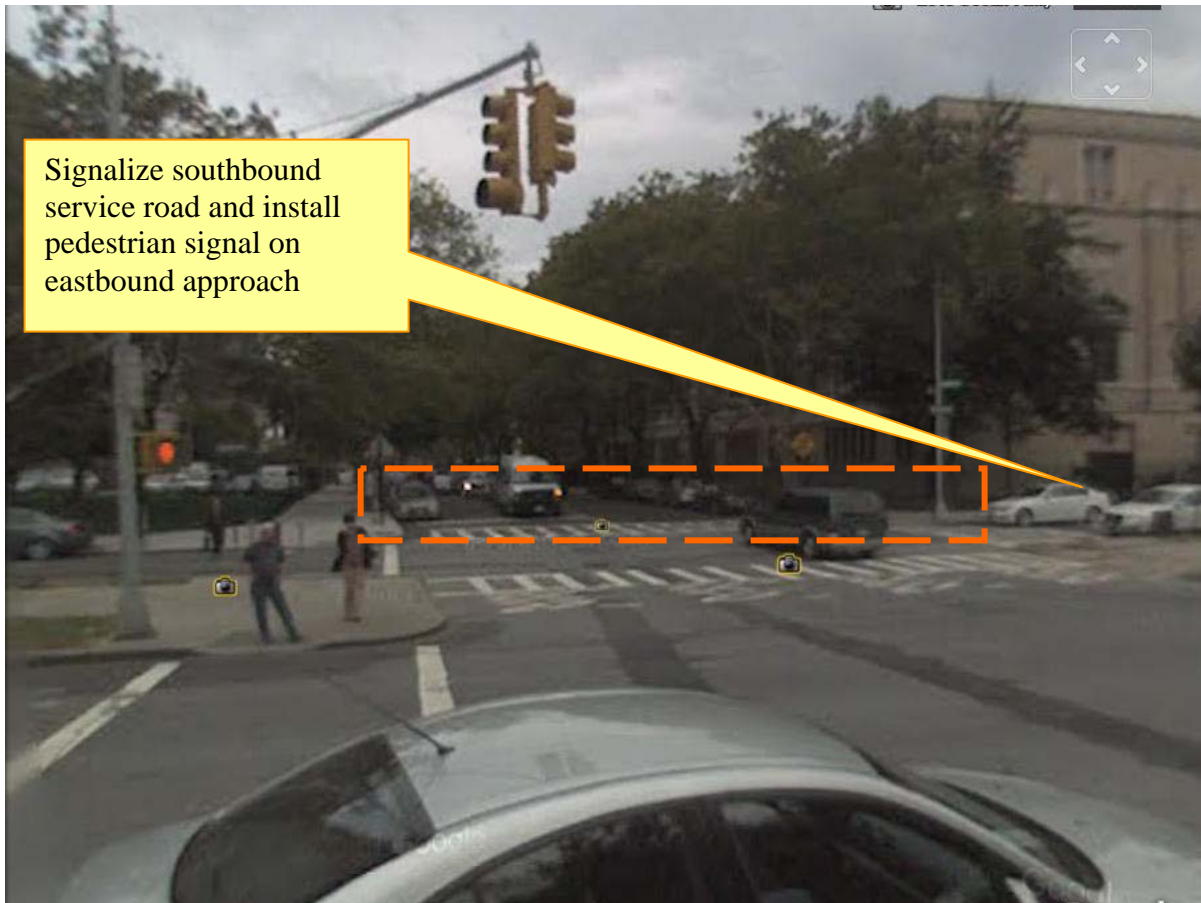
Conflict exists between Ocean Parkway mainline southbound vehicles making a right turn onto West Avenue and vehicles on service road travelling southbound. It is recommended that the service road be signalized to minimize conflicts and to facilitate the addition of a pedestrian signal on West Avenue (the eastbound approach), where many students cross the roadway. The pictures below show the existing and proposed conditions at this location.



Ocean Pkwy/West Ave – looking northwest
(no pedestrian signal on West Avenue)



Ocean Pkwy/West Ave – looking north
(pedestrian signal on Greenway)



Ocean Parkway/West Avenue – looking west

9. Brighton Beach Avenue, and 86 Street Truck Loading/Unloading Zones.

Brighton Beach Avenue between Ocean Parkway and Coney Island Avenue, and 86th Street between Bay Parkway and Stillwell Avenue are two areas where commercial activity is concentrated in the study area and where double-parked trucks are often observed.

Parking along Brighton Beach Avenue and a portion of 86th Street is controlled by meters. Figures 4-19a-b show the proposed locations for truck loading/unloading areas on each aforementioned corridor. The restricted truck loading/unloading area would be about 80 feet long (four car spaces).

Figure 4-19a: Brighton Beach Avenue - Proposed Truck Loading/Unloading Zones

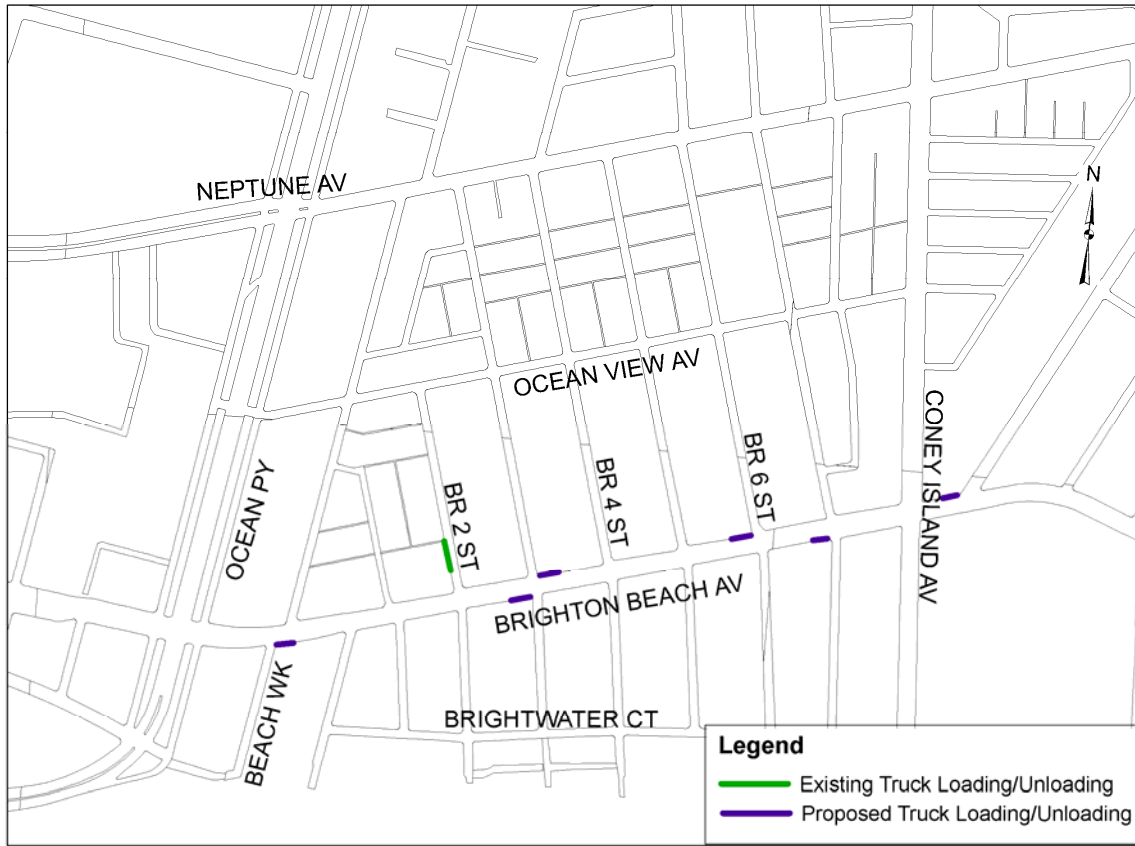


Figure 4-19b: 86th Street = Proposed Truck Loading/Unloading Zones



10. Installation of Bike Lane along West Avenue and West 5th Street

Both West Avenue and West 5th Street traverse areas that have high residential population density, green spaces, and schools. These wide streets (50 feet) operate with one moving lane in each direction. To reduce speed, improve safety, and link green spaces and recreational areas, the addition of a bike lane on both corridors would be beneficial.

11. Kings Highway and Ocean Parkway

The future conditions analysis showed that during the AM, midday, and PM peak hours, the eastbound, westbound, and northbound approaches experience LOS F.

To improve these conditions, it is recommended that parking be restricted for approximately 100 feet by installing “No Standing 7AM-7PM, Monday to Friday” sign on the northeast and southwest curbs of Kings Highway to provide an additional moving

lane. This would result in the loss of five parking spaces. The additional lane would be marked for through/right movements and the inner lane would be marked for through/left movements.

12. Kings Highway and McDonald Avenue

The analysis showed that under both the existing and future condition, the northbound and southbound approaches experience LOS F during the AM, midday, PM, and Saturday midday peak hours.

To improve these conditions, it is recommended that parking be restricted for approximately 100 feet by installing “No Standing 7AM-7PM, Monday to Friday” sign on the southeast and northwest curbs of McDonald Avenue to provide an additional moving lane during the AM, midday, and PM peak hours. The additional lane would be marked for through/right movements and the inner lane would be marked for through/left movements.

13. Kings Highway and Stillwell Avenue

The existing and future conditions analysis show that during the AM, midday, and PM peak hours, the eastbound and westbound approaches of Kings Highway experience LOS E and F.

To improve operations, reallocate four seconds of green time from the eastbound/westbound phase to the northbound/southbound Avenue phase during the AM and midday peak hours and five seconds during the PM peak hour.

14. Kings Highway and Coney Island Avenue

The existing and future conditions analysis showed that the eastbound and northbound approaches experience LOS E or F during the AM, midday, and PM peak hours.

To improve operations it is recommended that parking be restricted for 100 feet by installing “No Standing 7AM-7PM, Monday to Friday” sign on the southwest curb of Kings Highway and southeast curb of Coney Island Avenue to provide an additional moving lane during the rush hours. The additional lane in both the eastbound and northbound approach would be marked for through/right movements and the inner lane on Kings Highway would be marked for through/left movements.

15. Coney Island Avenue and Avenue Z

The future conditions analysis showed that during the AM and Saturday midday peak hours, the eastbound and westbound approaches of Avenue Z experience LOS E.

To improve operating conditions, reallocate four seconds of green time from the NB/SB (Coney Island Avenue) phase to the EB/WB (Avenue Z) phase during the AM and Saturday midday peak hours.

16. Ocean Parkway and Avenue W

The existing and future conditions analysis showed that during the AM and midday peak hours, the eastbound, westbound, and northbound approaches experience LOS E or F.

To improve operations it is recommended that parking be restricted during the AM and midday (EB and WB) peak hours for approximately 100 feet from the intersection to provide an additional moving lane by installing “No Standing 7-10 AM and Noon-3PM, Monday to Friday” regulations on the northeast and southwest curbs of Avenue W. The additional lane would be marked for through/right movements and the inner lane should be marked for through/left movements.

17. Ocean Parkway and Avenue X

The existing and future conditions analysis showed that during the AM, midday, and PM peak hours, the eastbound, westbound, and northbound approaches experience failing LOS (E or F).

On the eastbound and westbound approach, restrict parking for approximately 100 feet to provide an additional moving lane by installing “No Standing 7AM-7PM, Monday to Friday” regulation. This would involve the loss of five parking spaces during the weekday peak hours. The additional lane would be marked for through/right movements and the inner lane would be marked for through/left movements.

18. Ocean Parkway and Avenue Z

The existing and future conditions analysis showed that during the AM, midday, and PM peak hours, the eastbound, westbound, and northbound approaches experience LOS E.

On the eastbound and westbound approach, restrict parking for 100 feet to provide an additional moving lane by installing “No Standing 7AM-7PM, Monday to Friday” regulation. The additional lane would be marked for through/right movements and the inner lane would be marked for through/left movements

19. Avenue T and West 5th Street

The future conditions analysis showed that during the AM peak hour, the eastbound approach of Avenue T experiences LOS F. To improve operation, reallocate three seconds of green time from NB/SB phase to the EB/WB phase during the AM peak hour.

20. Avenue X and West 3rd Street

The future conditions analysis showed that during the midday and PM peak hours, the eastbound approach of Avenue X experiences LOS F. To improve operation, reallocate three seconds of green time from NB/SB phase to the EB/WB phase during the midday and PM peak hours.

21. Bay 32nd Street and Benson Avenue

The future conditions analysis showed that during the PM peak hour, the westbound approach experiences LOS F. To improve operation, restrict parking for 100 feet by installing “No Standing 4PM-7PM, Monday to Friday” sign on the northeast curb of Benson Avenue to provide an additional moving lane during the PM peak hour. The additional lane should be marked for through/right movements and the inner lane should be marked for through/left movements.

22. 23rd Avenue and 84th Street

The future conditions analysis showed that during the AM, midday, and PM peak hours, the northbound approach experiences LOS F. On the northbound approach restrict parking for 100 feet to provide an additional moving lane by installing “No Standing 7AM-7PM, Monday to Friday” sign. The additional lane would be marked for through/right movements and the inner lane would be marked for through/left movements.

23. Bath Avenue and Bay 35th Street

The future conditions analysis showed that during the AM peak hour, the eastbound approach experiences LOS F due to roadway capacity limitations and heavy vehicular demands.

To improve operation during the AM peak hour, restrict parking for 100 feet by installing “No Standing 7AM-10AM, Monday to Friday” sign on the southwest curb of Bath Avenue to provide an additional moving lane. The additional lane would be marked for through/right movements and the inner lane would be marked for through/left movements.

Recent Improvements

As part of the Brighton Beach Senior Pedestrian Focus Study several improvements were implemented throughout Brighton Beach. Some of the improvement measures were area-wide while others were location-specific.

Some area-wide improvements included:

1. changing the signal timing for pedestrian crossing time from 4 feet/second to 3 feet/second
2. installing stop bars 10 feet from the crosswalk at signalized intersections, and
3. upgrading or refurbishing signage, ramps, roadbeds, and curbs.

The location-specific improvements are as follows:

1. Ocean Parkway/Neptune Avenue. Improvement measures implemented at this location include:
 - Signal phase for vehicles making right turn from south bound Ocean Parkway mainline
 - Installation of pedestrian refuge on Ocean Parkway mainline
 - Reduction of the number of moving lanes between Belt Parkway and Sea Breeze Avenue from three lanes to two north of Neptune Avenue and four lanes to three south of Neptune Avenue
 - Reduction in the number of moving lanes on west bound Neptune Avenue from two to one.
 - Installation of high visibility crosswalks
2. Brighton Beach Avenue Corridor. Improvement measures include:
 - Installation of truck loading and unloading zones on the northside of corridor between Brighton 3 and 4 streets as well as Brighton 6 and 7 streets.
 - Installation of stop bars 10 feet from the crosswalk
 - Repair of broken sidewalks and curbs at West Brighton Avenue/West 5th Street, Brighton Beach Avenue/Ocean Parkway, and Brighton Beach Avenue/Brighton 4th Street.

3. Brighton Beach Avenue/Coney Island Avenue. Improvement measures include:
 - Installation of pedestrian refuge islands on the north and south legs of Coney Island Avenue and the east leg of Brighton Beach Avenue
 - Removal of the Barnes Dance from the signal timing plan and installation of a eight-second leading pedestrian interval (LPI) for both crossings
 - Installation of pedestrian signal on pillar of north crosswalk

4. Neptune Avenue/West 5th Street. Improvements measures include:
 - Removal of Barnes Dance from the signal timing plan and installation of a 12-second leading pedestrian interval (LPI) for Neptune Avenue crossing and a eight-second leading pedestrian interval (LPI) for West 5th Street.
 - Installation of left turn bay on westbound Neptune Avenue