

Location: Flatbush Avenue/Bedford Avenue and Foster Avenue



Intersection of Flatbush Avenue and Foster/Bedford Avenue

Description of Existing Conditions

Flatbush Avenue intersects at an angle with two main avenues at this location, Foster Avenue and Bedford Avenue, which creates an awkwardly shaped intersection.

Flatbush Avenue has a width of 55 - 60 ft with two travel lanes in each direction of traffic. The sidewalks are approximately 11-14 ft wide in this area.

Foster Avenue is 40-45 ft wide and has one travel lane in each direction. The width of its sidewalks range from 10 to 17 ft.

Bedford Avenue travels north-south and is 45 feet wide. It has one travel lane and a bicycle lane in each direction of traffic.

Flatbush and Bedford Avenues are major traffic corridors in Brooklyn and generate significant vehicular volumes at the intersection (mainly through traffic). A moderate volume of pedestrians travels through this intersection where many pedestrians arrive by bus. This is a common transfer point for bus riders between the B41, B8 and B49.

In addition there are warning signs posted: “School Advance Warning” signs (fluorescent yellow/green sign with young pedestrians).

Level of Service Analysis (LOS)

- Vehicle Analysis

The capacity analysis shows that two of the approaches at this intersection operate acceptably, at LOS C or better for all four peak hours (eastbound to Flatbush Ave. and southbound on Bedford Ave). Three other approaches operate at LOS C or better for at least one peak hour (northbound on Flatbush and Bedford Aves; southbound on Bedford Ave.). However the rest of the intersection approaches operate at LOS D or worse with more than 40 seconds of delay. (Table C-6: Intersection Level of Service)

- Pedestrian Analysis

An analysis of the sidewalks at Flatbush Avenue/ Bedford Avenue and Foster Avenue indicates that the pedestrian LOS generally operates at a comfortable LOS A during the four peak periods. Table C-7: Sidewalks Level of Service presents a summary of the LOS results and Appendix D-1: “LOS Methodology and Vehicular and Pedestrian Traffic Volumes” has a diagram showing the labeling system for the walkways and crosswalks analyzed.

The corners and the crosswalks of this intersection operate at LOS A for all peak periods. See Tables C-8: Crosswalks Level of Service and C-9: Corners Level of Service.

Table C-6 - Intersection Level of Service

Intersection	Lane Approach	AM			MD			PM			SAT MD		
		V/C	Delay	LOS									
Flatbush/ Bedford Aves and Foster Ave	Eastbound to Flatbush												
	LTR	0.42	25.3	C	0.32	10.9	B	0.32	15.3	B	0.21	14.0	B
	Eastbound to Bedford												
	TR	1.00	95.1	F	0.73	42.2	D	0.93	71.2	E	0.61	48.5	D
	Westbound to Flatbush												
	LTR	1.02	101.2	F	0.89	56.6	E	1.00	90.0	F	0.98	85.0	F
	Westbound to Bedford												
	LT	0.96	92.2	F	0.77	44.6	D	0.94	79.8	E	0.59	47.9	D
	Northbound (Flatbush)												
	LTR	0.52	19.6	B	0.71	28.4	C	0.63	31.3	C	0.87	42.2	D
	Northbound (Bedford)												
LR	0.37	50.4	D	0.24	29.9	C	0.23	37.6	D	0.21	36.8	D	
R	0.32	45.8	D	0.22	28.2	C	0.16	35.1	D	0.19	35.5	D	
Southbound (Flatbush)													
LT	0.57	20.7	C	0.87	38.8	D	0.84	41.8	D	0.83	40.5	D	
Southbound (Bedford)													
TR	0.09	4.2	A	0.15	5.5	A	0.12	5.8	A	0.06	5.4	A	
Bedford/ Foster		Inters. Delay = 77.3		LOS = E	Inters. Delay = 36.2		LOS = D	Inters. Delay = 62.8		LOS = E	Inters. Delay = 43.2		LOS = D
Flatbush/ Foster		Inters. Delay = 35.9		LOS = D	Inters. Delay = 32.8		LOS = C	Inters. Delay = 42.8		LOS = D	Inters. Delay = 45.5		LOS = D

Table C-7 - Sidewalks Level of Service

Intersection	Walkway	AM				MD			PM			SAT		
		15 Min Vol. Two-Way	Effective Walkway Width	Pedestrian Flow Rate		15 Min Vol.	Pedestrian Flow Rate		15 Min Vol.	Pedestrian Flow Rate		15 Min Vol.	Pedestrian Flow Rate	
				p/m/f	LOS		p/m/f	LOS		p/m/f	LOS		p/m/f	LOS
Flatbush Avenue and Foster/ Bedford Avenue	1	35	18	0.1	A	28	0.1	A	31	0.1	A	23	0.1	A
	2	64	12	0.4	A	78	0.4	A	69	0.4	A	52	0.3	A
	3	31	17.8	0.1	A	37	0.1	A	31	0.1	A	22	0.1	A
	4	31	17.8	0.1	A	37	0.1	A	29	0.1	A	34	0.1	A
	5	36	12.3	0.2	A	67	0.4	A	93	0.5	A	56	0.3	A
	6	26	5	0.3	A	35	0.5	A	31	0.4	A	25	0.3	A
	7	30	5	0.4	A	35	0.5	A	40	0.5	A	24	0.3	A
	8	35	13.8	0.2	A	28	0.1	A	31	0.1	A	23	0.1	A
	9	19	13	0.1	A	16	0.1	A	17	0.1	A	12	0.1	A
	10	45	10	0.3	A	56	0.4	A	81	0.5	A	25	0.2	A

Table C-8- Crosswalks Level of Service

Intersection	Crosswalk	AM		MD		PM		SAT	
		Crosswalk Space		Crosswalk Space		Crosswalk Space		Crosswalk Space	
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
Flatbush Avenue and Foster/Bedford Avenue	North	No crosswalk							
	East	375.6	A	170.6	A	236.0	A	445.0	A
	South-A	183.8	A	188.9	A	182.5	A	464.5	A
	South-B	172.3	A	149.5	A	198.7	A	370.7	A
	West	222.9	A	169.2	A	218.3	A	444.7	A
	Center	1246.6	A	748.9	A	1029.2	A	1126.7	A

Table C-9 - Corners Level of Service

Intersection	Corner	AM		MD		PM		SAT	
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
Flatbush Avenue and Foster/ Bedford Avenue	Northwest	867	A	817.5	A	743.2	A	1244	A
	Northeast	501	A	475.2	A	434.8	A	731.6	A
	Southeast	226.3	A	198.9	A	178.2	A	346.5	A
	Southwest	194.1	A	179.6	A	161.7	A	354.9	A
	Southcorner	135.0	A	153.6	A	128.4	A	281.3	A

Pedestrian Accident Data 2004 -2006

6 pedestrian accidents

Table: C-10 – Summary of Pedestrian Accidents

<u>Accident Location</u>	<u>Year</u>	<u>Time</u>	<u>Pedestrian Action</u>	<u>P e d e s t r i a n Location</u>	<u>Vehicle Action</u>
Foster Ave	11/23/2004	daylight	crossing with signal	at intersection	going straight ahead
Foster Ave	12/12/2004	dark road lighted	crossing against signal	at intersection	going straight ahead
Foster Ave	11/26/2004	daylight	crossing – no signal or crosswalk	at intersection	going straight ahead
Foster Ave	6/3/2005	dark road lighted	crossing with signal	at intersection	going straight ahead
Foster Ave	9/23/2005	dark road lighted	crossing - no signal - marked crossing	at intersection	backing
Foster Ave	9/14/2005	daylight	crossing with signal	at intersection	going straight ahead

Problems

- Pedestrian Crossing Midblock and at “Stop Bar” locations
 Flatbush Avenue, Foster Avenue and Bedford Avenue all meet at this point. These streets do not align and are at an angle to each other. In addition “Stop bars” have been placed north of Foster Avenue to indicate where vehicles arriving at this location should stop in the middle of the block. Pedestrians were observed crossing at that particular spot. It was observed at that midblock location during the peak hours of a typical weekday that 41 pedestrians cross in the morning (7:00 - 9:00 am), 56 in the midday (12:00 – 2:00 pm) and 71 pedestrians cross in the evening (4:00 – 6:00 pm). During the weekend between 1:00 and 3:00pm 62 pedestrians typically cross Flatbush Avenue at that midblock location. In addition northbound traffic on Flatbush Avenue as it approaches Bedford Avenue often does not stop since it is permitted to make a right turn on red onto Bedford Avenue. There are signs to inform pedestrians not to cross at that particular location: “No Ped Crossing Use Crosswalks”. But these signs are ignored by pedestrians arriving at the intersection. See following map of intersection, Figure C2-a: Existing Conditions.

In addition, the passengers getting off at the bus stop on the east side of Flatbush Avenue (B41, BM2 and B103 buses) and heading westbound to Foster Avenue or southbound to Bedford Avenue often cross or jaywalk midblock to continue their route or to make a connection with the B49 going westbound which is a dangerous crossing location for pedestrians. The distance from the bus stop to the nearest crosswalk is at least 200 ft and often these pedestrians/bus passengers cross midblock and do not take the time to cross at the crosswalks (See following map of intersection).



Pedestrian crossing Flatbush Avenue midblock just north of Foster Avenue

- **Signage**
The “No Ped Crossing Use Crosswalks” signs placed midblock on Flatbush Avenue inform pedestrians not to cross at that particular location. But these signs are smaller than the other regulatory signs posted and because of their location and orientation along Flatbush Avenue they often go unnoticed to pedestrians arriving at the intersection.
- **Pedestrian Amenities**
The sidewalks on the west side of Flatbush Avenue lack trees and landscaping between Foster Avenue and Stephens Court.

Pedestrian amenities are street furniture that can make the streets more attractive and provide added convenience for pedestrians. Elements of street furniture include trees, greenstreet elements, benches, bus shelters, bicycle racks, newspaper boxes, wayfinding signage, etc.

Recommendations

- **Install a new crosswalk**
As a proposal, install a new crosswalk across Flatbush Avenue that would link the north sidewalks of Foster Avenue. This would provide a safe and designated crossing for pedestrians who often cross midblock just north of Foster Avenue. This new facility would also require an adjustment to the signal timing and the installation of a new pedestrian signal. The pedestrian signal should allow the right-of-way for crossing pedestrians during the Foster Avenue phase. During that phase traffic on Flatbush Avenue and on Bedford Avenue have the red light.
- **Improve Curb Cuts**
Improve existing curb cuts at the traffic island and add new curb cuts that would be necessary with the installation of the proposed crosswalk.

- Improve Signage

The existing signs “No Ped Crossing Use Crosswalks” are not very useful based on their placement and orientation. First of all, install double-sided signs that face all pedestrian approaches and can be seen from any direction as you approach the midblock location. Secondly, install an additional sign adjacent to or above the “No Ped Crossing Use Crosswalks” sign. This sign should be an image of a pedestrian with a red interdiction symbol over it (MUTCD manual “R9-3a” sign; see image in Appendix D-2: Standards for Signs Recommended). The graphic reinforces the first sign’s message that pedestrians are prohibited from crossing the roadway at this undesirable location.

- Streetscape Improvement

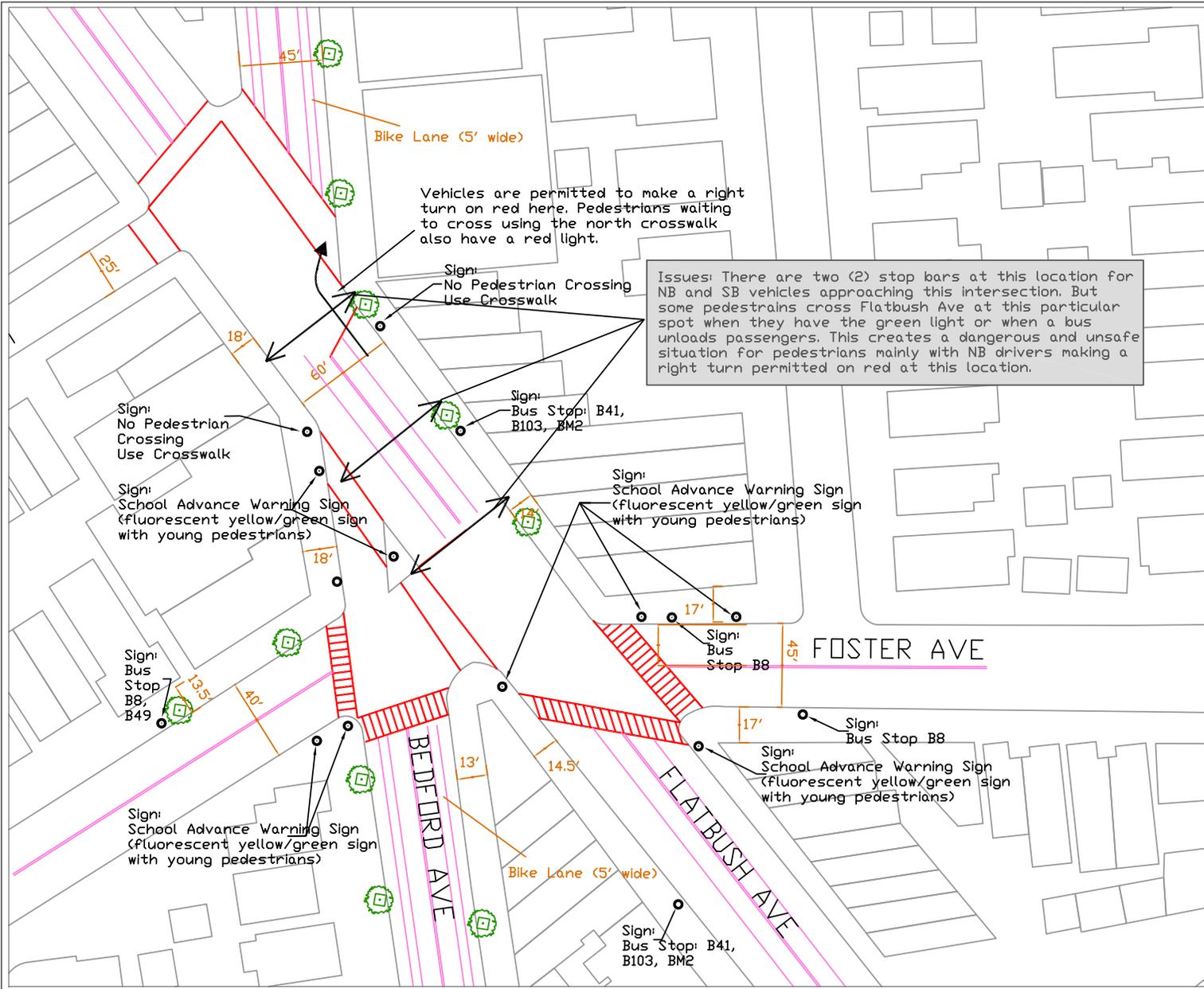
It is recommended to plant trees and add landscaping at this location near the intersection: 3 - 4 trees on the west sidewalk of Flatbush Avenue between Foster Avenue and Stephens Ct. The number of trees has been determined based on the standards set by the New York City Department of Parks and Recreation in terms of tree spacing requirements from an intersection and from street lights. The traffic island could be improved with landscaping.

In addition install bus shelters at bus stops on Flatbush Avenue and Glenwood Road where passengers wait for the arrival of a bus. It may only be possible to install a narrow bus shelter at certain locations based on the width of the sidewalk and NYCDOT’s Street Furniture requirements (see Appendix D-4: Standards for Bus Shelters).

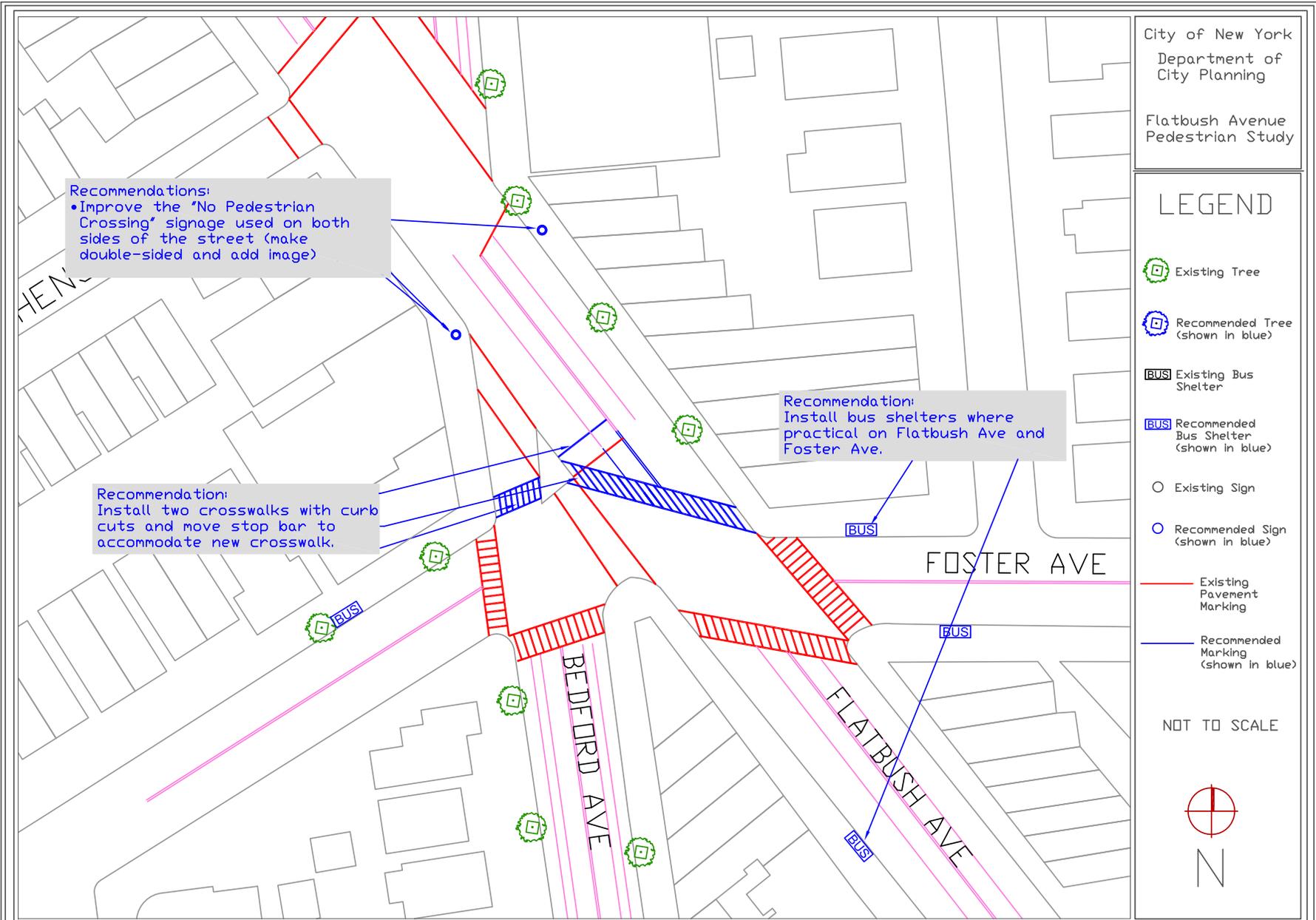
LEGEND



NOT TO SCALE



Flatbush Avenue/Bedford Avenue and Foster Avenue
Existing Conditions - Figure: C-2a



Flatbush Avenue/Bedford Avenue and Foster Avenue Recommendations - Figure: C-2b