

233rd St: Laconia Ave to Provost Ave

Traffic Calming

Bronx



233rd St: Laconia Ave to Provost Ave

Executive Summary

A high crash corridor, 233rd Street had high speeds and excess capacity. As a result, DOT developed plans to improve safety primarily via a four lane to three lane road diet. Community Board 12 was supportive of the redesign and expressed need for the project. As a result, crossing distances were shortened, speeding was reduced, and overall mobility was maintained.



233rd St at Baychester Ave facing west

Results Summary

Safety

- Total crashes for all users decreased by 17%
- Speeding on 233rd St decreased by 35% in the eastbound direction and by 21% in the westbound direction

Mobility

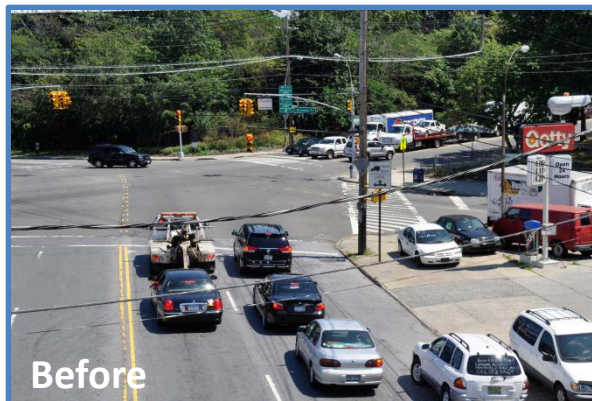
- Vehicular volumes on 233rd St were maintained for eastbound and westbound movements
- At the intersection of 233rd St, Baychester Ave, and Grenada Pl, average delay per vehicle reduced from 56 seconds to 41 seconds improving the level of service from E to D
- The east crosswalk at 233rd St and Grenada Pl is 23% shorter (from 70' to 54')

Economic Vitality & Quality of Life

- FDNY and NYPD report no adverse effect to their operations
- “I would like to take this opportunity to thank you for your continued support and input in ensuring the safety of the residents in Bronx Community Board 12, with this much needed safety improvement.”

—Father Richard F. Gorman, Chairman,
Bronx Community Board 12

Project Summary



233rd St at Baychester Ave facing east

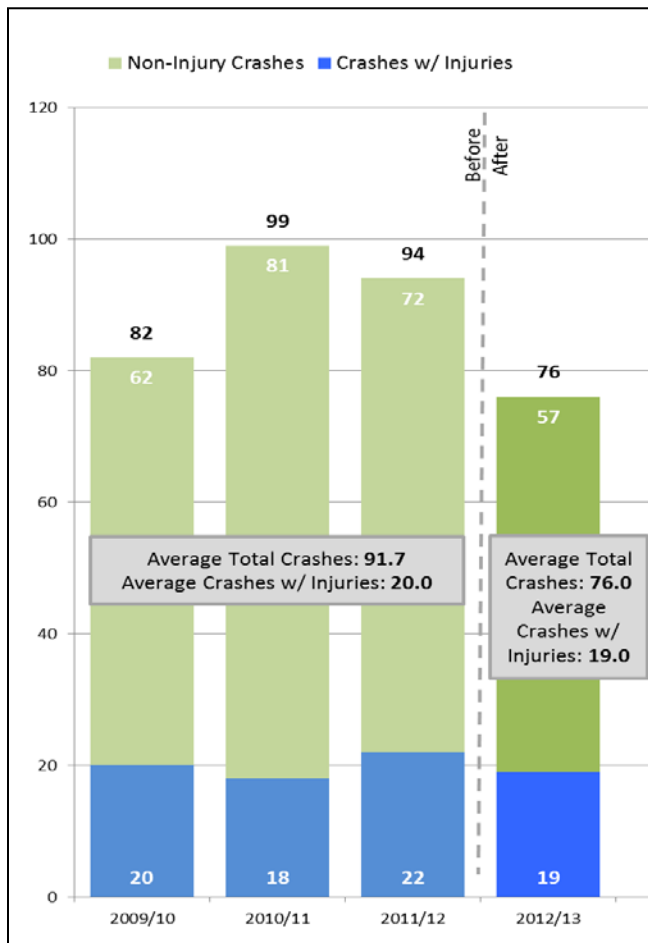
Completed September 2012:

- Installed flush center median with left turn bays
- Constructed curb extension on southwest corner of Grenada Pl at 233rd St
- Installed a 14-foot parking lane stripe and other lane designation markings to better organize traffic

233rd St: Laconia Ave to Provost Ave

Safety- Crashes and Injuries

Crashes, One-Year After Analysis



- Total crashes for all users decreased by 17%



233rd St at Baychester Ave facing west

Each before year period is the 12-month period beginning July 1 and ending June 30. The 1-yr after period is October 1, 2012 to September 30, 2013. The implementation period of July 1, 2012 to September 30, 2012 is excluded.
 Source: NYPD AIS/TAMS Crash Database

233rd St: Laconia Ave to Provost Ave

Safety- Crashes and Injuries

Crashes and Injuries One-Year After Analysis

	Before			After
	'09/ '10	'10/ '11	'11/ '12	'12/ '13
Total Crashes	82	99	94	76
Crashes w/ Injuries	20	18	22	19
Motor Vehicle Occupant	25	7	19	21
Pedestrian	7	11	9	9
Cyclist	1	0	1	0
Total Injuries	33	18	29	30

Each before year period is the 12-month period beginning July 1 and ending June 30. The 1-yr after period is October 1, 2012 to September 30, 2013. The implementation period of July 1, 2012 to September 30, 2012 is excluded.
Source: NYPD AIS/TAMS Crash Database



233rd St at Grenada Pl facing west

233rd St: Laconia Ave to Provost Ave

Safety- Speeding

Drivers traveling in excess of 30 mph

Direction	Before	After
Eastbound	72.0%	46.5%
Westbound	78.5%	62.0%

Radar speeds taken on 233 St in both directions between Wilder Ave and Hill Ave.
Before: 12-2pm September 15, 2010; sample size 200 vehicles
After: 12-1pm December 5, 2013, sample size 200 vehicles



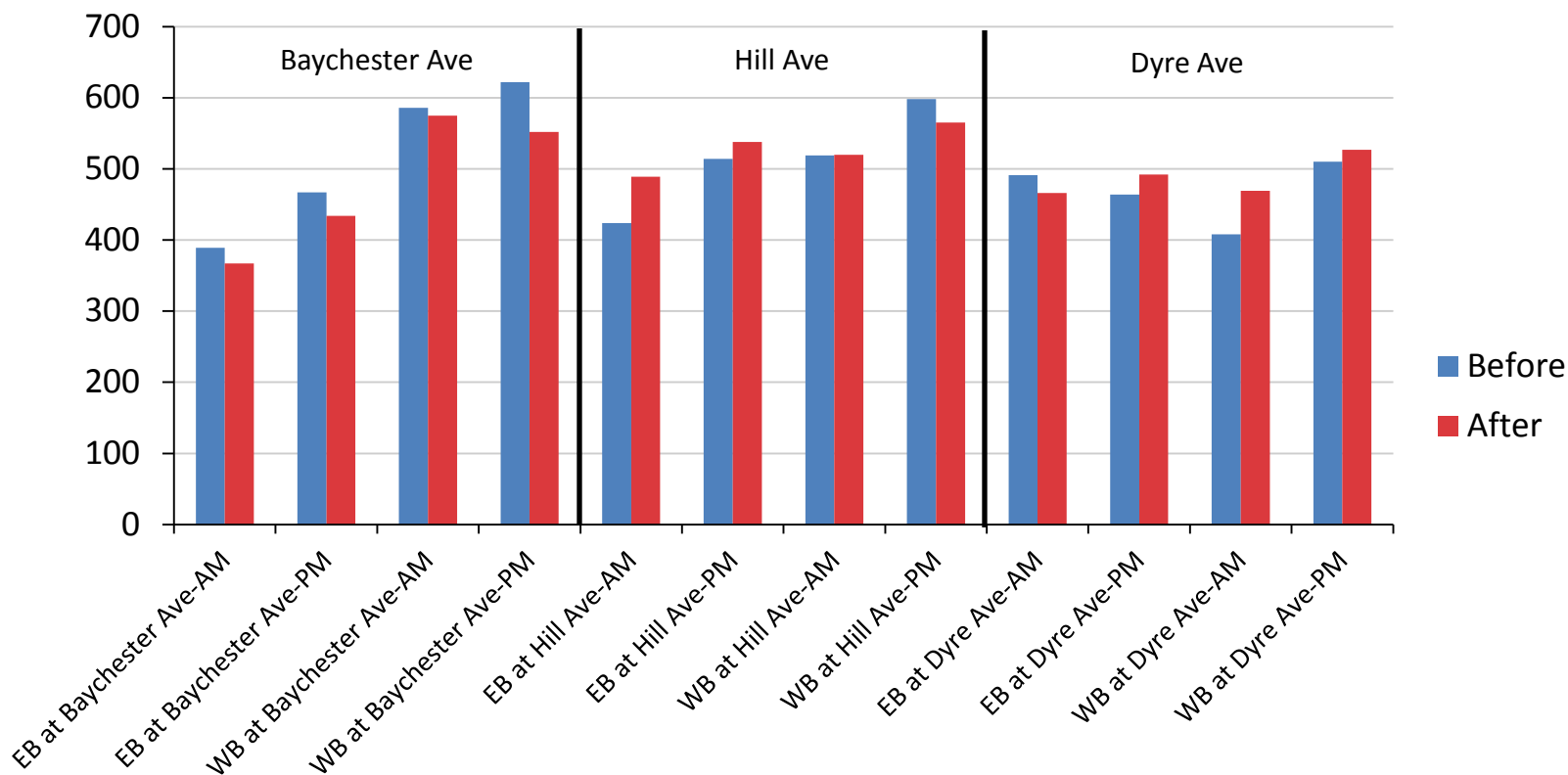
- Speeding on 233rd St was reduced by 35% in the eastbound direction and by 21% in the westbound direction

233rd St at Baychester Ave facing east

Mobility- Vehicular Volumes

- Vehicular volumes on 233rd St were maintained for eastbound and westbound movements

BEFORE AND AFTER VEHICULAR VOLUMES ON 233RD ST*



*At select cross streets within project limits

Before: Average midweek peak volume week of October 25, 2010

After: Average midweek peak volume week of October 15, 2012

Mobility-Level of Service

- At the intersection of 233rd St, Baychester Ave, and Grenada Pl; average delay per vehicle reduced from 56 seconds to 41 seconds improving the level of service from E to D

BEFORE

Intersection Approach	Movement	Volumes	AM Peak		
			v/c Ratio	Avg Delay	LOS
SEB: E 233 St	LLRR-2 lanes	L2 = 6	0.48	41.3	D
		L1 = 171			
		R1 = 186			
		R2 = 3			
WB: E 233 St	LTRR-2 lanes	L = 114	1.05	114.0	F
		T = 89			
		R1 = 234	0.33	18.4	B
		R2 = 72			
NB: Baychester Ave	LL-1 lane	L2 = 33	1.05	119	F
		L1 = 209			
	TR-2 lanes	T = 334	0.52	42.6	D
		R = 68			
SB: Baychester Ave	L-1 lane	L = 95	0.56	56.5	E
		T = 466			
	TRR-2 lanes	R1 = 25	0.69	46.5	D
		R2 = 12			
EB: Grenada Pl	LLTR-1 lane	L2 = 0	0.49	43.5	D
		L1 = 4			
		T = 131	0.20	38.7	D
		R = 65			
Overall Intersection			56.2	E	

AFTER

Intersection Approach	Movement	Volumes	AM Peak		
			v/c Ratio	Avg Delay	LOS
SEB: E 233 St	LL-1 lane	L2 = 1	0.34	39.7	D
		L1 = 146			
	RR-1 lane	R1 = 181	0.53	45.8	D
		R2 = 0			
WB: E 233 St	LT-1 lane	L = 107	0.62	50.3	D
		T = 60			
	RR-1 lane	R1 = 294	0.44	20.2	C
		R2 = 44			
NB: Baychester Ave	LL-1 lane	L2 = 30	0.79	69.5	E
		L1 = 162			
	TR-2 lanes	T = 320	0.45	41.2	D
		R = 83			
SB: Baychester Ave	L-1 lane	L = 46	0.19	46.7	D
		T = 239			
	TRR-2 lanes	R1 = 15	0.3	38.9	D
		R2 = 13			
EB: Grenada Pl	TR-1 lane	T = 108	0.25	38.2	D
		R = 50			
			0.14	37.7	D
Overall Intersection			41.2	D	

To determine level of service improvements, Synchro analysis was performed at the most complicated intersection within the corridor (233 St, Baychester Ave, and Grenada Pl). AM peak hour turn movement volumes were used because they were the highest volumes at this location throughout the day. Before turn movement volumes collected 11/4/2010. After turn movement volumes collected 12/4/12.

233rd St: Laconia Ave to Provost Ave

Mobility- Crossing Distance



233rd St at Grenada Pl facing west

- The east crosswalk at 233rd St and Grenada Pl is 23% shorter (from 70' to 54')



Quality of Life- Emergency Response

- FDNY and NYPD report no adverse effect to their operations



233rd St at Baychester Ave facing east

NYPD confirmation date: December 11, 2013
FDNY confirmation date: December 11, 2013

Economic Vitality & Quality of Life

- “I would like to take this opportunity to thank you for your continued support and input in ensuring the safety of the residents in Bronx Community Board 12, with this much needed safety improvement.”
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Bronx Community Board 12



233rd St at Prospect Ave facing south