

HIGH PEDESTRIAN CRASH LOCATIONS

Pedestrian Safety Improvements at the Top 20 Crash Intersections: 2008

Summer 2011



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Commissioner

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INTRODUCTION

In 2010, New York City experienced 271 motor-vehicle involved crash fatalities, the second lowest number of annual traffic fatalities in a century. Annual traffic fatalities have decreased 62 percent since 1990, and 32 percent since 2001. The New York City Pedestrian Safety Study & Action Plan, released in August 2010, examines eight years of traffic crash data, analyzing over 7,000 records of fatal or severe-injury pedestrian crashes, and identifies underlying causes that can be addressed to reduce these crashes. Based on the findings of this study, DOT recommends a comprehensive set of actions. This action plan consists of highly targeted, data-driven elements including engineering, enforcement, public communication, and policy and legislation. The full report is available on New York City Department of Transportation's (DOT) website (www.nyc/dot.gov).

The decrease in fatalities, as well as in crashes and injuries, is in part attributable to DOT's data-driven efforts to focus its resources on particular groups of at-risk pedestrians, and high crash locations and corridors. Two citywide programs, Safe Streets for Seniors and Safe Routes to Schools, use crash statistics to identify and address safety problems experienced by the most vulnerable populations: the elderly and children. Launched in 2008, Safe Streets for Seniors focuses on 25 neighborhoods that have a high number of pedestrian fatalities or injuries involving older adults. Already, the program has made improvements in 11 of these neighborhoods. Safety improvements have been completed at 135 schools through the Safe Routes to Schools program and another 135 schools are in the planning phase for phase two of this program.

Additionally, the Speed Reducer program has installed over 1,500 speed humps in neighborhoods citywide, with a majority located adjacent to schools. DOT's Safe Routes to Transit program improves safety and security for pedestrians at intermodal transit hubs. Various traffic calming projects have transformed several corridors into "complete streets" utilizing left turn bays, roadway narrowing, pedestrian refuge islands and bicycle lanes. These changes contributed to substantial reductions in crashes and vehicular speeding. Signal timing modifications and the installation of Leading Pedestrian Intervals—where pedestrians get a head start to cross streets before turning vehicles receive a green signal—have also contributed to improved safety.



INTRODUCTION

DOT's Safety Education program provides information and guidance to school children, senior citizens, drivers, pedestrians and cyclists, to keep New York City informed about traffic laws and the best techniques for avoiding danger and protecting other road users. DOT is also using social marketing techniques to promote its safety messages more broadly through television, radio, outdoor and online media. For example, DOT's LOOK Campaign aims to reduce risky behavior of drivers and cyclists such as aggression on the streets, lack of attention and disobeying traffic rules. This campaign has made over 1.4 million impressions via television, radio, direct mail, as well as online and outdoor advertising. In February of 2010, DOT launched a new anti-drinking and driving marketing campaign aimed at young men, the most likely people to drink, drive and crash in New York City. In October 2010, another campaign, It's 30 for a Reason, was launched targeting motorists to increase awareness of the City's 30 mph speed limit and the dangers of excessive speed.

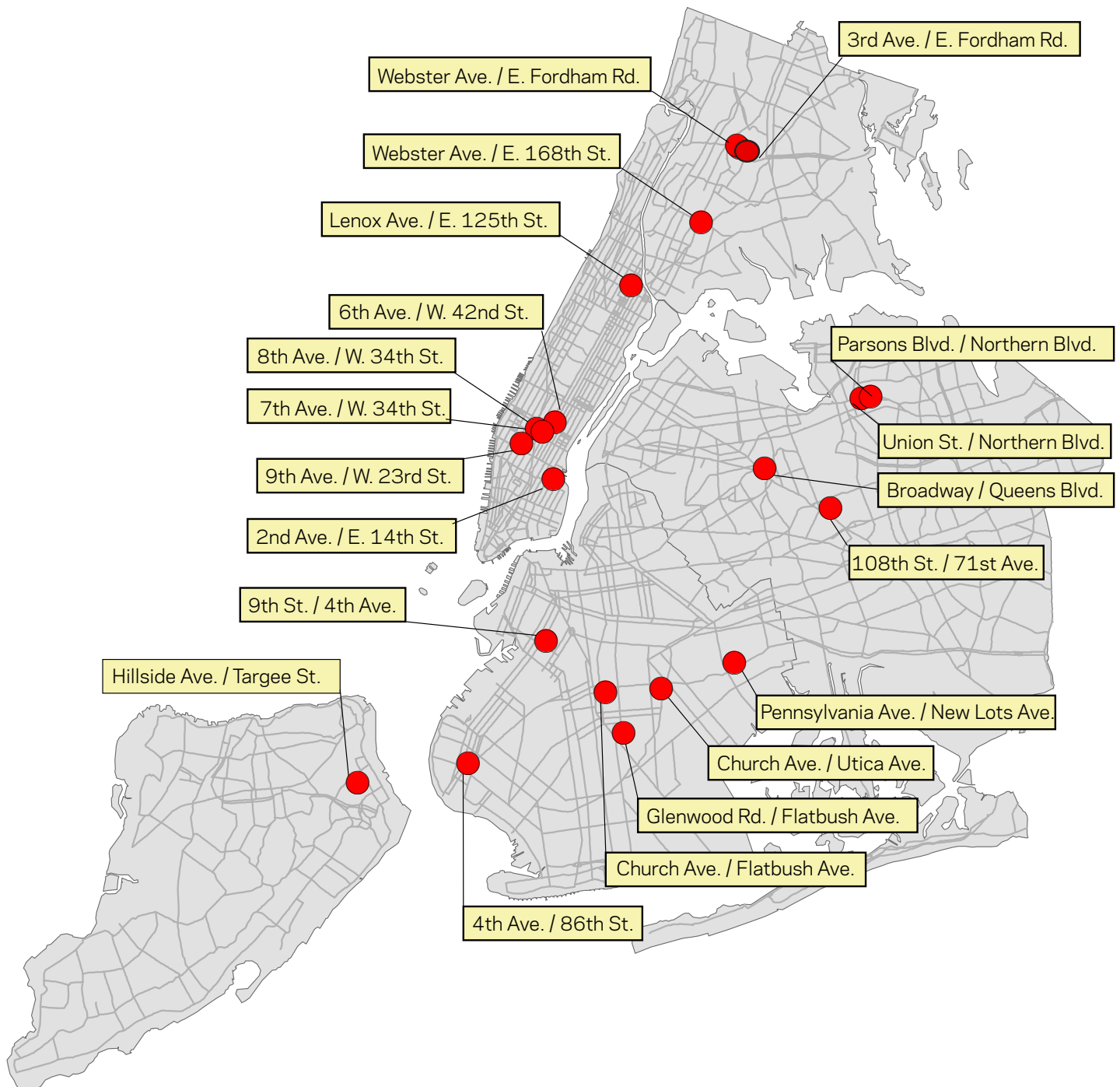
While traffic fatalities have continued to decrease, DOT is committed to finding new ways to further improve safety on our City's streets. This report specifically addresses DOT's ongoing commitment to improve safety at high pedestrian crash locations. Local Law 11 enacted on April 1, 2008 amends the administrative code of the City of New York (§19-180) to require DOT to "identify the twenty highest crash locations based upon a ranking of the total number of crashes involving pedestrians" annually within 180 days of receiving data from the State Department of Motor Vehicles and "inspect and conduct audits at such locations."

Local Law 12 of 2011 further amends the administrative code to require DOT to "identify the twenty highest crash locations based upon a ranking of the total number of crashes involving pedestrians killed or seriously injured, occurring over a five-year period." The method outlined in this provision of Local Law 12 will first apply to the top twenty high pedestrian crash locations for 2010.

The top twenty high pedestrian crash locations for 2008 are addressed in this report. The number of locations in each borough is based on the proportion of citywide pedestrian injuries by borough. Safety improvements have been recently implemented at a majority of the locations and some are scheduled to be implemented in the near future. Other locations, because of their complex roadway geometry, land use and other constraints, require further study.



TOP 20 HIGH PEDESTRIAN CRASH LOCATION MAP



TOP TWENTY CRASH LOCATIONS

1. Webster Avenue & East Fordham Road, Bronx
2. Church Avenue & Flatbush Avenue, Brooklyn
3. 4th Avenue & 9th Street, Brooklyn
4. 4th Avenue & 86th Street, Brooklyn
5. Parsons Boulevard & Northern Boulevard, Queens
6. Glenwood Road & Flatbush Avenue, Brooklyn
7. East 168th Street & Webster Avenue, Bronx
8. Third Avenue & East Fordham Road, Bronx
9. Lenox Avenue & West 125th Street, Manhattan
10. 8th Avenue & West 34th Street, Manhattan
11. West 42nd Street & Avenue of the Americas, Manhattan
12. New Lots Avenue & Pennsylvania Avenue, Brooklyn
13. 9th Avenue & West 23rd Street, Manhattan
14. Union Street & Northern Boulevard, Queens
15. Broadway & Queens Boulevard, Queens
16. 108th Street & 71st Avenue, Queens
17. 7th Avenue & West 34th Street, Manhattan
18. 2nd Avenue & East 14th Street, Manhattan
19. Utica Avenue & Church Avenue, Brooklyn
20. Hillside Avenue & Targee Street, Staten Island



BRONX



BRONX

Webster Avenue & East Fordham Road



Crashes

- Ranked 1st in Top Twenty / 1st Citywide
- 14 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, library, university, high school, B/D subway stops
- Neighborhood: Fordham
- Community Board: 5/7
- Council District: 11/15
- Land Use: Multi-family Residential, Mixed Use, Commercial, Open Space
- Bus Routes: Bx9, Bx12, Bx 15, Bx17, Bx22, Bx41, Bx55, BL-60/61
- Local Truck Routes: Webster Avenue, East Fordham Road, 3rd Avenue
- Bike Routes: Potential lanes on East Fordham Road

Issues Identified

- Heavy pedestrian traffic
- Pedestrian/vehicle conflicts
- Long crossing distances
- Poor compliance by pedestrians/high incidence of mid block crossings
- Heavily used Metro North entrance along Fordham Road
- Vehicle stacking on N/B Webster Avenue and W/B East Fordham Road



Webster Avenue & East Fordham Road



Implemented Improvements

- **Installed pedestrian countdown signals** to promote safer pedestrian crossings (August 2010)
- **Modified signal timing** to change left turn phases from leading to lagging (March 2011)

Projected Implemented Capital Improvements

- **Part of Fordham Transit Plaza, a capital project slated for construction in FY2013**
- Widen sidewalks, narrow intersection and install new pedestrian refuge Islands
- Eliminate right turn slip lane on East Fordham Road as part of the Safe Routes to School program
- Remove existing median along Fordham Road
- Increase length of left turn lane on Webster Avenue
- Refurbish markings and crosswalks with advance stop bars to increase visibility of pedestrians in crosswalks
- Install bus only lane to improve traffic flow
- Install new sidewalks and pedestrian ramps to improve accessibility for people with mobility challenges

Cars turning onto Fordham Rd from Webster Ave



Proposal: looking northwest to Webster Avenue



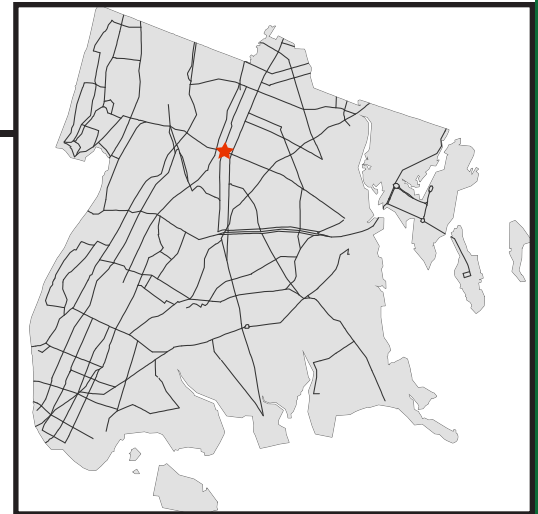
For more information please see: <http://www.nycdc.com/NewsPublications/Studies/Fordham%20Plaza/Documents/FPCharetteFinal.pdf>

BRONX

Third Avenue & East Fordham Road

Crashes

- Ranked 8th in Top Twenty /Tied for 8th Citywide
- 8 pedestrian crashes in 2008



Location/Context

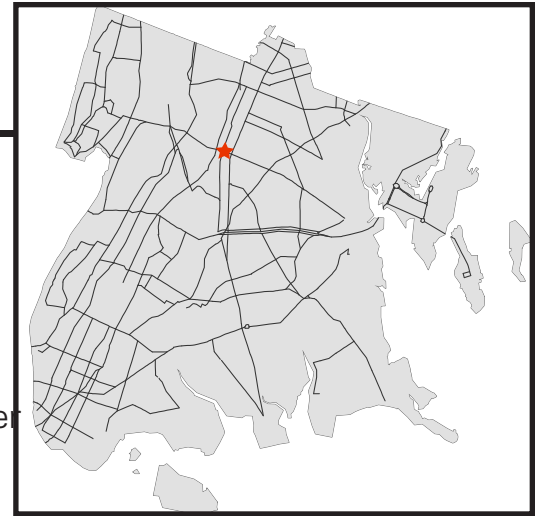
- Project Area: T-intersection, Metro-North Railroad, retail corridor library, university, high school, B/D subway stops
- Neighborhood: Fordham
- Community Board: 5/6/7
- Council District: 11/15
- Land Use: Commercial, Institutional, Open Space
- Bus Routes: Bx9, Bx12, Bx15, Bx17, Bx22, Bx41, Bx55, BL-60/61
- Local Truck Routes: Webster Avenue, East Fordham Road, 3rd Avenue
- Bike Routes: Potential lanes on East Fordham Road

Issues Identified

- Heavy pedestrian traffic
- Pedestrian/vehicle conflicts
- Long crossing distances
- Left turning buses block traffic at the intersection and contribute to queuing
- Heavily used Metro North entrances along Fordham Road



Third Avenue & East Fordham Road



Implemented Improvements

- **Installed pedestrian countdown signals** to promote safer pedestrian crossings

Projected Implemented Capital Improvements

- **Part of Fordham Transit Plaza, a capital project slated for construction in FY2013**
- Transform 3rd Avenue into a bus only road
- Reconfigure 3rd avenue to encourage use of existing crosswalks
- Narrow intersections to increase pedestrian space and reduce potential conflicts
- Contiguous plaza reduces bus/pedestrian conflicts
- Install potential route on 3rd Avenue to connect to existing bike network
- Ban left turns onto East Fordham Road from 3rd Avenue to reduce vehicle and pedestrian conflicts
- Install new sidewalks and pedestrian ramps to improve accessibility for people with mobility challenges

East Fordham Road looking east



Third Avenue proposed design



For more information please see: <http://www.nycdc.com/NewsPublications/Studies/Fordham%20Plaza/Documents/FPCharetteFinal.pdf>

BRONX

Webster Avenue & East 168th Street



Crashes

- Ranked 7th in Top Twenty / Tied for 8th Citywide
- 8 pedestrian crashes in 2008

Location/Context

- Project Area: Metro-North Railroad, Crotona Park, high school, retail B/D subway stops
- Neighborhood: East Concourse - Concourse Village
- Community Board: 3/4
- Council District: 16
- Land Use: Multi-family Residential, Mixed Use, Commercial, Industrial, Transportation/Utilities, Parking, Vacant Lot
- Bus Routes: Bx35, Bx41
- Local Truck Routes: Webster Avenue
- Bike Routes: Existing lane and route on 168th Street, existing lanes on Park Avenue

Issues Identified

- Long crossing distances
- Numerous mid block crashes on Webster Avenue near bus stop between 167th and 168th Streets
- Heavy truck loading activity



Existing mid-block bus stop encourages unsafe pedestrian crossings



Webster Avenue & East 168th Street



Implemented Improvements

- **Provided truck loading zones** on east curb of Webster Avenue between East 167th Street and East 168th Street to reduce incidence of double parked trucks
- **Eliminated mid-block bus stop** on S/B Webster Ave between East 167th Street and East 168th Street to help discourage mid-block crossing
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



Long pedestrian crossings



BROOKLYN



BROOKLYN

Church Avenue & Flatbush Avenue



Crashes

- Ranked 2nd in Top Twenty / 2nd Citywide
- 13 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, high school, charter school, church, B/Q/2/5 subway stops
- Neighborhood: Prospect Lefferts Gardens
- Community Board: 14
- Council District: 40
- Land Use: Multi-family Residential, Mixed Use, Commercial, Institutional, Open Space
- Bus Routes: B35, B41
- Local Truck Routes: Church Avenue, Flatbush Avenue, Linden Avenue, Rogers Avenue
- Bike Routes: Existing lanes on Bedford Avenue

Issues Identified

- Both Church and Flatbush Avenues are congested corridors
- School-related congestion
- Numerous merges around double-parked vehicles
- Weaving vehicles around left turning motorists
- Pedestrian/vehicle conflicts
- Long crossing distances



Heavy turns onto Flatbush Avenue

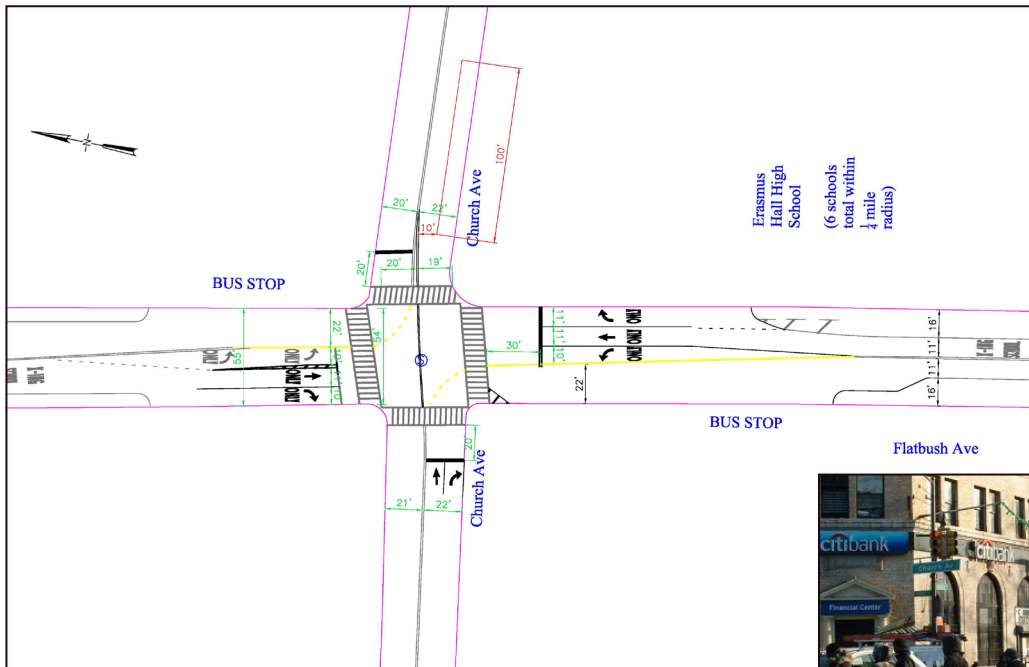


Church Avenue & Flatbush Avenue



Implemented Improvements

- **Installed new lane designation markings** on Flatbush Avenue approaches to eliminate merges and weaving
- **Defined moving lane mid block** to channelize traffic around parked vehicles
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



Proposed design



Safer crossing of Flatbush Avenue after



BROOKLYN

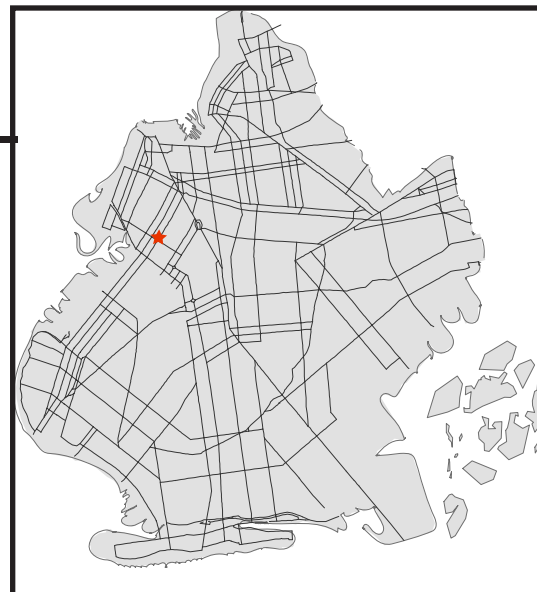
4th Avenue & 9th Street

Crashes

- Ranked 3rd in Top Twenty / 4th Citywide
- 10 pedestrian crashes in 2008

Location/Context

- Project Area: Residential corridor, church, elementary school, M/R/F/G subway stops
- Neighborhood: Gowanus/Park Slope
- Community Board: 6
- Council District: 38/39
- Land Use: 1&2-family Residential, Multi-family Residential, Mixed Use, Commercial, Institutional, Transportation/Utilities, Vacant Lot
- Bus Routes: B37, B63, B75, B77, B103
- Local Truck Routes: 3rd Avenue, 4th Avenue, 9th Street
- Bike Routes: Existing lanes on 3rd Avenue, 5th Avenue, 9th Street



Issues Identified

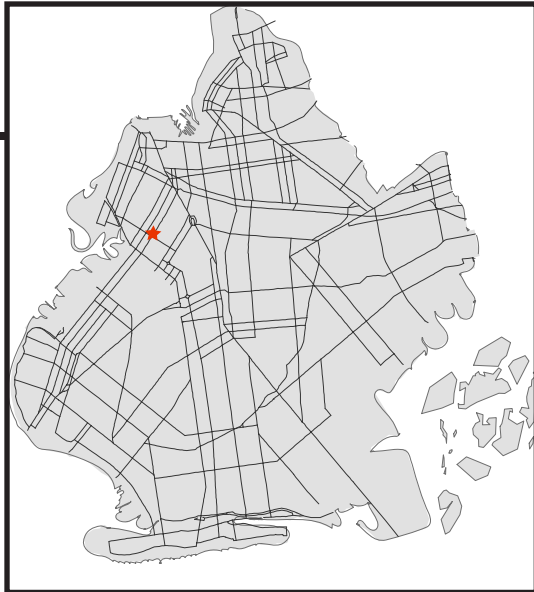
- Long crossing distances
- Higher pedestrian volumes than most 4th Avenue intersections
- Heavily used subway stations and bus stops
- Ikea Shuttle generates high pedestrian volumes
- Substandard turn bays with heavy turn volumes



Long crossing distances on 4th Avenue



4th Avenue & 9th Street



Implemented Improvements

2009 capital reconstruction:

- **Constructed curb extensions** on all four corners to shorten all pedestrian crossings
- **Refurbished markings and crosswalks** with advance stop bars to increase visibility of pedestrians in crosswalks
- **Installed leading pedestrian interval** on 4th Avenue to provide pedestrians with more conflict-free crossing time
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



New conflict-free crossing time with LPI Installation



BROOKLYN

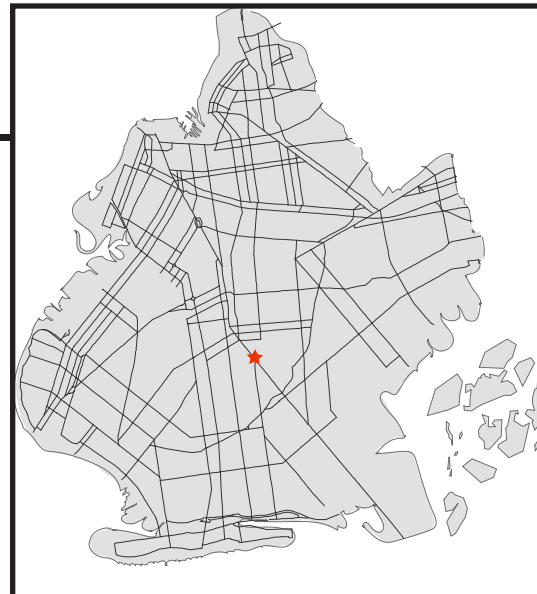
Glenwood Road & Flatbush Avenue

Crashes

- Ranked 6th in Top Twenty / Tied for 5th Citywide
- 9 pedestrian crashes in 2008

Location/Context

- Project Area: T-intersection, retail, college, Q/2/5 subway stops
- Neighborhood: Flatbush
- Community Board: 14
- Council District: 45
- Land Use: 1&2-family Residential, Multi-family Residential, Mixed Use, Commercial, Institutional
- Bus Routes: B6, B11, B41, B44, B103, BM2, Q35
- Local Truck Routes: Nostrand Avenue, Rogers Avenue
- Bike Routes: Existing lanes on Bedford Avenue, existing routes on Avenue I



Issues Identified

- No crosswalk in south crossing of Flatbush Avenue
- Pedestrians crossing where no crosswalk exists
- Inadequate crossing time
- Long crossing distances
- Vehicle queuing in E/B Glenwood Avenue lanes
- Buses turning S/B from Glenwood Avenue have tight turns

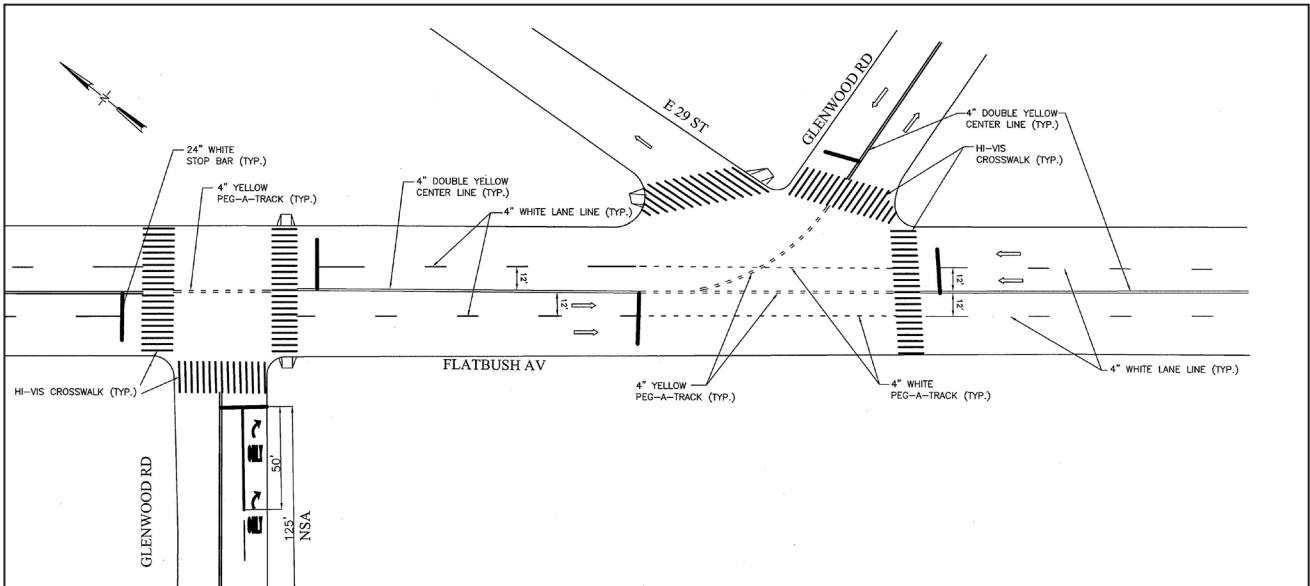


Glenwood Road & Flatbush Avenue



Implemented Improvements

- **Installed high visibility crosswalks** on Flatbush Avenue, East 29th Street and Glenwood Road for better pedestrian visibility
- **Added a new high visibility crosswalk** on east leg of Flatbush Avenue at Glenwood Road
- **Provided right turn lane** on Glenwood Road
- **Modified signal timing** to provide a safer crossing of Flatbush Avenue
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



Proposed design with new crosswalks

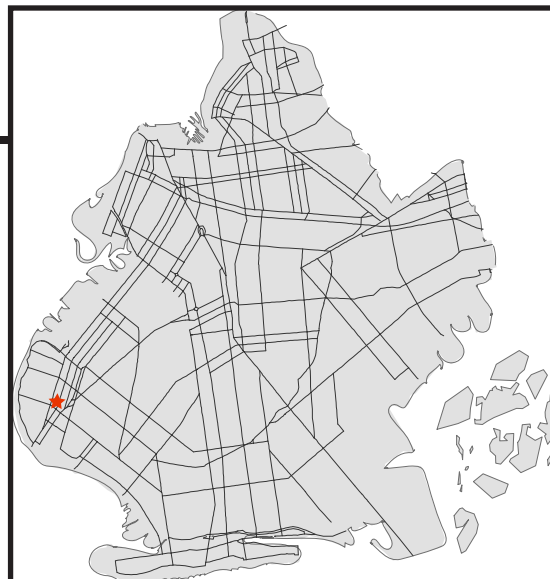


BROOKLYN

4th Avenue & 86th Street

Crashes

- Ranked 4th in Top Twenty / Tied for 5th Citywide
- 9 pedestrian crashes in 2008



Location/Context

- Project Area: Retail corridor, elementary school, R subway stop
- Neighborhood: Bay Ridge
- Community Board: 10
- Council District: 43
- Land Use: 1&2-family Residential, Multi-family Residential, Mixed Use, Commercial
- Bus Routes: B16, B63, B64, S53, S79, S93
- Local Truck Routes: 86th Street, 92nd Street, 7th Avenue

Issues Identified

- Long crossing distances
- Most crashes involved turning movements
- Multiple bus routes and R subway stop create heavy pedestrian traffic
- High retail-related pedestrian activity



Pedestrian/vehicle conflicts on 4th Avenue and 86th Street



4th Avenue & 86th Street



Implemented Improvements

- **Installed leading pedestrian interval** on 4th Avenue to provide pedestrians with more conflict-free crossing time
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings

2009 capital reconstruction:

- **Refurbished markings and crosswalks** with advance stop bars to increase visibility of pedestrians in crosswalks
- **Installed new sidewalks and pedestrian ramps** to improve accessibility for people with mobility challenges
- **Installed peg-a-tracs** to safely guide vehicles through the intersection
- **Installed oversized street name signs** on 4th Avenue and 86th Street



BROOKLYN

Pennsylvania Avenue & New Lots Avenue

Crashes

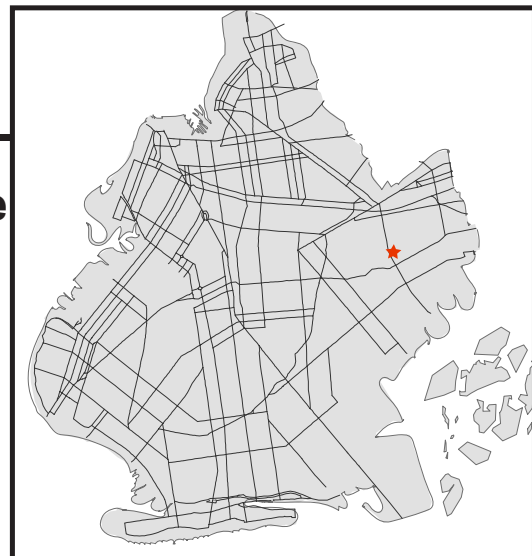
- Ranked 12th in Top Twenty / Tied for 14th Citywide
- 7 pedestrian crashes in 2008

Location/Context

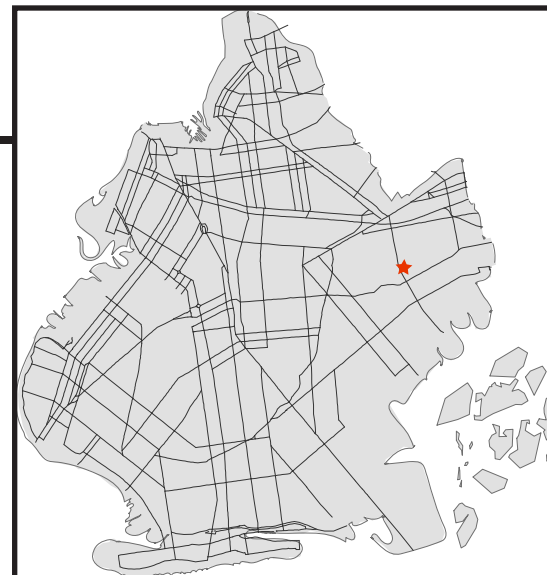
- Project Area: Charter, public and parochial schools, mixed use and residential buildings, 3 line subway stop
- Neighborhood: Bay Ridge
- Community Board: 5
- Council District: 42
- Land Use: 1&2-family Residential, Multi-family Residential, Mixed Use, Commercial, Institutional, Vacant Lot, Open Space
- Bus Routes: B83, B15, B20
- Local Truck Routes: Pennsylvania Avenue, Linden Boulevard
- Bike Routes: Potential bike routes on Vermont Avenue and Wyona Avenue

Issues Identified

- Long crossing distances
- "Invisible merge" causes vehicular conflict
- Speeding on S/B Pennsylvania Avenue, approaching New Lots Avenue



Pennsylvania Avenue & New Lots Avenue



Implemented Improvements

- **Installed pedestrian countdown signals** to promote safer pedestrian crossings

Under study for potential 2012 traffic calming project



Long crossing distances at Pennsylvania Avenue and New Lots Avenue



BROOKLYN

Utica Avenue & Church Avenue

Crashes

- Ranked 19th in Top Twenty / 26th Citywide
- 6 pedestrian crashes in 2008

Location/Context

- Project Area: Retail and mixed use corridor, hospital, cemetery
- Neighborhood: Rugby
- Community Board: 17
- Council District: 45
- Land Use: 1&2-family Residential, Multi-family Residential, Mixed Use, Commercial, Institutional, Open Space, Transportation/Utilities, Vacant Lot
- Bus Routes: B83, B15, B20
- Local Truck Routes: Utica Avenue, Linden Boulevard, Church Avenue
- Within Church Avenue Congested Corridor Study Area

Issues Identified

- Long crossing distances
- Observed red light running
- Heavy pedestrian volumes
- High number of curb cuts along Utica Avenue



Utica Avenue & Church Avenue



Implemented Improvements

- **Installed leading pedestrian interval** on Church Avenue to provide pedestrians with more conflict-free crossing time
- **Added parking lane stripe** on Church Avenue as part of Congested Corridor improvements
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



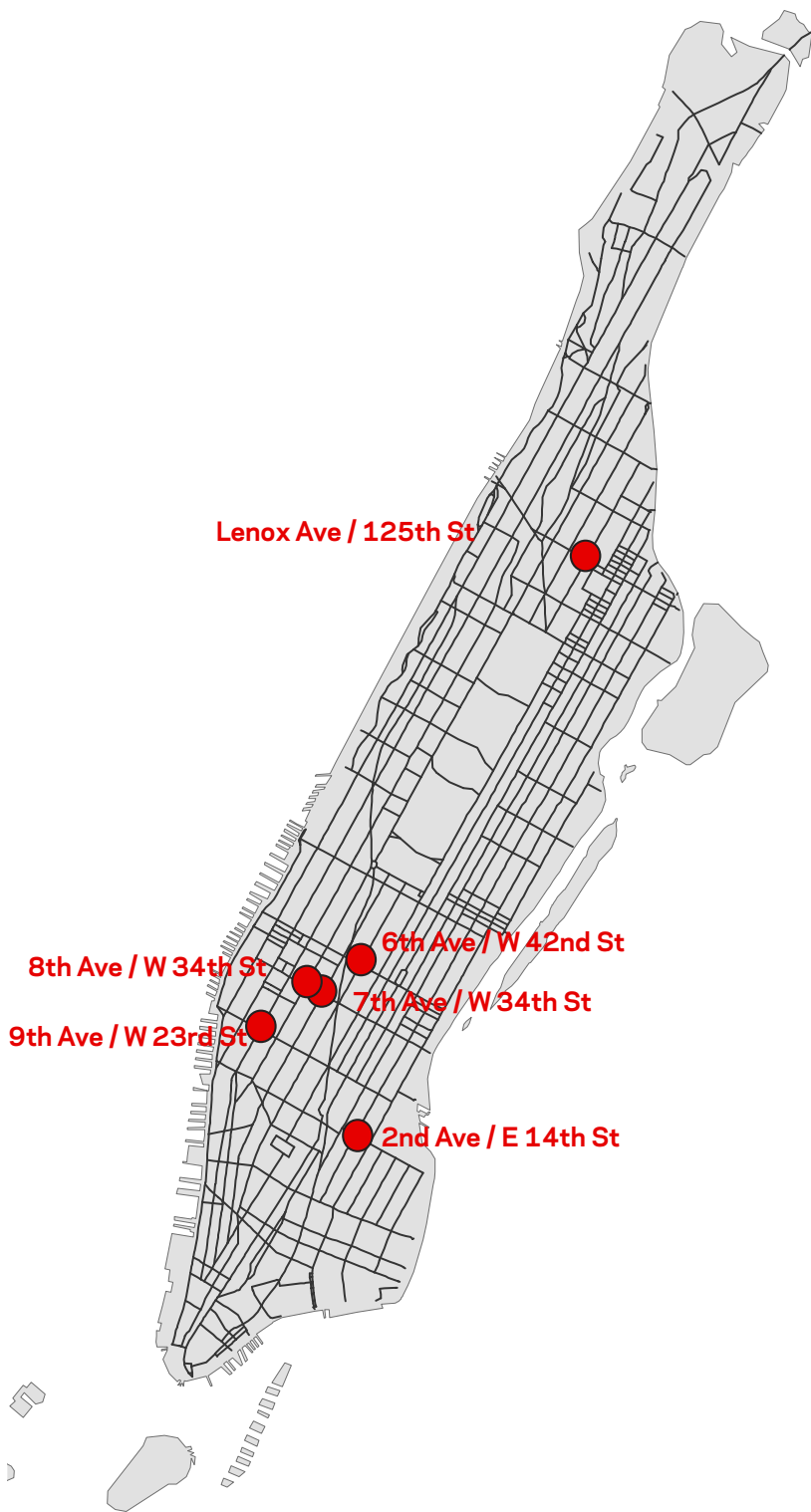
Countdown signals installed



New conflict-free crossing with LPI installation

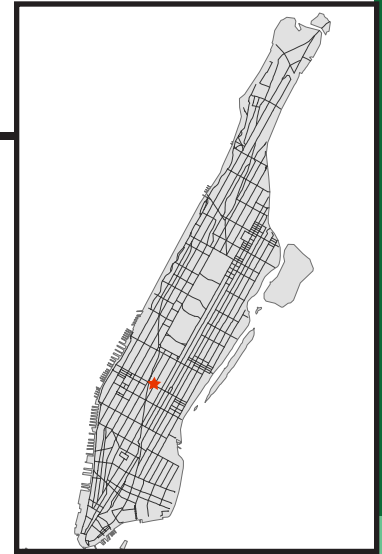


MANHATTAN



MANHATTAN

6th Avenue & West 42nd Street



Crashes

- Ranked 11th in Top Twenty / Tied for 8th Citywide
- 8 pedestrian crashes in 2008

Location/Context

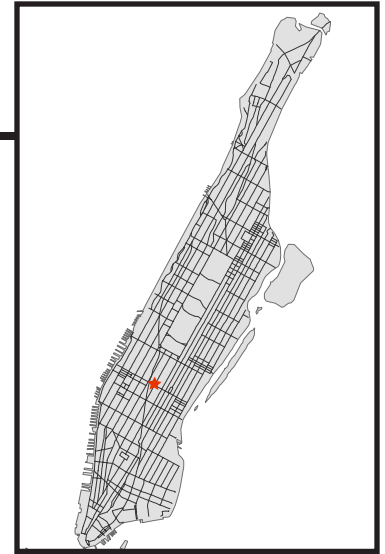
- Project Area: Retail corridor, Port Authority, A/C/E/7/1/2/3/N/Q/R/W/S/B/D/F/V subway stops
- Neighborhood: Midtown
- Community Board: 5
- Council District: 3
- Land Use: Commercial, Institutional, Open Space
- Bus Routes: M5, M6, M7, M45, M104
- Local Truck Routes: 42nd Street, 8th Avenue
- Bike Routes: Existing lanes on 6th & 8th Avenues, existing routes on 7th Avenue, existing paths on Broadway

Issues Identified

- Heavy right turn movement from W/B 42nd Street to N/B 6th Avenue conflicts with pedestrians
- Vehicles turning right from center lane on W/B 42nd Street
- Existing right turn lane is substandard width and underutilized
- Heavy pedestrian volumes
- Stop bars not up to current standards
- Long crossing distances



6th Avenue & West 42nd Street



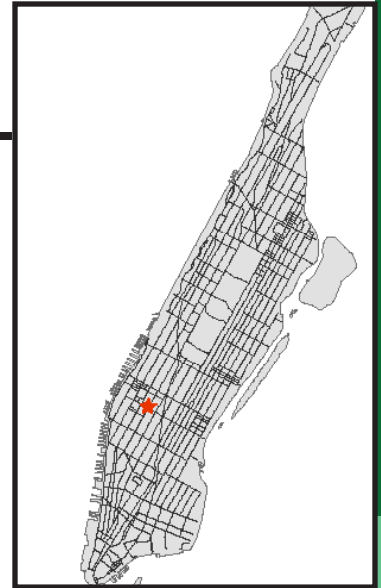
Implemented Improvements

- **Refurbished** bus lanes on 42nd Street in each direction
- **Updated and restriped** markings
- **Installed oversized street name signs** on 6th Avenue and 42nd Street
- **Repositioned stop bars** to 10-foot standard
- **Installed more visible No Left Turn signs** for E/B 42nd Street to N/B 6th Avenue
- **Installed lane designation signs** to organize traffic flow
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



MANHATTAN

8th Avenue & West 34th Street



Crashes

- Ranked 10th in Top Twenty / Tied for 8th Citywide
- 8 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, Penn Station, A/C/E/1/2/3/N/Q/R/W/B/D/F/V subway stops
- Neighborhood: Fashion District
- Community Board: 4/5
- Council District: 3
- Land Use: Mixed Use, Commercial, Institutional, Industrial, Parking, Vacant Lot
- Bus Routes: M10, M16, M20, M34
- Local Truck Routes: 9th Avenue, 8th Avenue, 7th Avenue, Limited on 34th Street
- Bike Routes: Existing paths on Broadway and 8th Avenue, existing lanes on 6th and 8th Avenues

Issues Identified

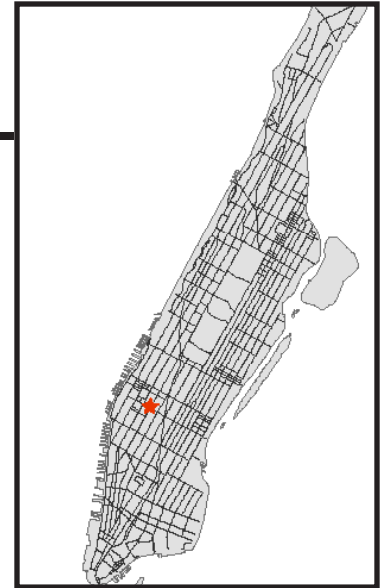
- Heavy traffic alongside existing bicycle lanes
- Existing bicycle lanes frequently blocked by motor vehicles
- Heavy truck traffic
- Long crossing distances



Existing conditions on 8th Avenue

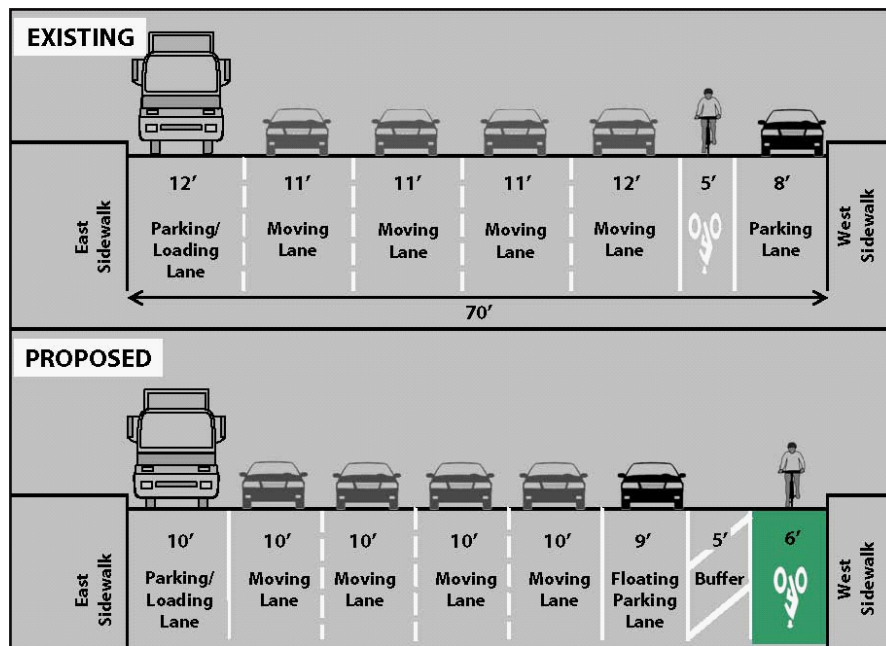


8th Avenue & West 34th Street



Implemented Improvements

- Part of 2010 8th Avenue Protected Bicycle Path Extension (23rd to 34th Street)
- Installed a “Mixing zone” to manage left turning conflicts between vehicles and cyclists
- Narrowed moving lanes and installed floating parking to reorganize traffic flow while preserving existing traffic capacity
- Refurbished markings and crosswalks with advance stop bars to increase visibility of pedestrians in crosswalks
- Installed a bicycle path on 8th Avenue to connect and extend current network
- Installed pedestrian countdown signals to promote safer pedestrian crossings



Existing conditions of roadway versus proposed configuration



MANHATTAN

Lenox Avenue & West 125th Street

Crashes

- Ranked 9th in Top Twenty / Tied for 8th Citywide
- 8 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, museum, park, college, 2/3 subway stop
- Neighborhood: Central Harlem
- Community Board: 10
- Council District: 9
- Land Use: 1&2-family Residential, Multi-family Resident, Mixed Use, Commercial, Institutional, Industrial, Open Space, Parking, Vacant Lot
- Bus Routes: M7, M60, M100, M101, M102, Bx15
- Local Truck Routes: W125th Street, Adam C Powell Street, 5th Avenue
- Bike Routes: Existing lanes on E120th Street, potential routes on E124th and E127th Streets

Issues Identified

- Pedestrian/vehicle conflicts
- Poor visibility
- Long crossing distances



Lenox Avenue and 125th Street aerial before redesign



Lenox Avenue & West 125th Street



Implemented Improvements

- **Refurbished markings and crosswalks** and advance stop bars to increase visibility of pedestrians in crosswalks
- **Installed leading pedestrian interval** on Lenox Avenue to provide pedestrians with more conflict-free crossing time
- **Relocated pedestrian signal** on northwest corner to increase visibility to crossing pedestrians while buses are in S/B bus stop.
- **Banned all left turns** at the intersection to reduce vehicle and pedestrian conflicts
- **Extended and widened medians** on Lenox Avenue to provide pedestrian refuge space and planted trees to improve the streetscape
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



Large pedestrian refuge island



New median with large tree pits



MANHATTAN

9th Avenue & West 23rd Street

Crashes

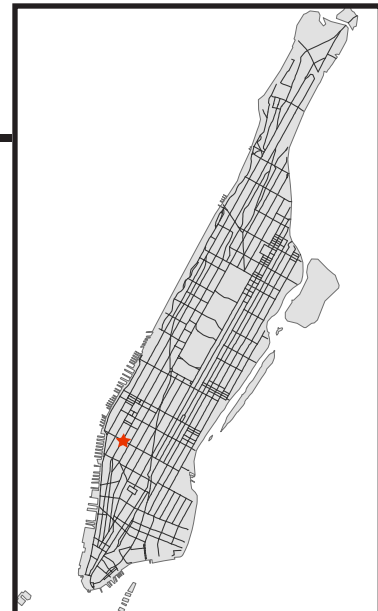
- Ranked 13th in Top Twenty / Tied for 14th Citywide
- 7 pedestrian crashes in 2008

Location/Context

- Project Area: Retail and residential corridor, Highline, C/E subway stop
- Neighborhood: Chelsea
- Community Board: 4
- Council District: 3
- Land Use: 1&2-family Residential, Multi-family Resident, Mixed Use, Commercial, Institutional
- Bus Routes: M11, M23
- Local Truck Routes: W23rd Street, 8th Avenue, 9th Avenue, 10th Avenue
- Bike Routes: Existing lanes on W20th Street, W21Street, existing paths on 9th and 8th Avenues

Issues Identified

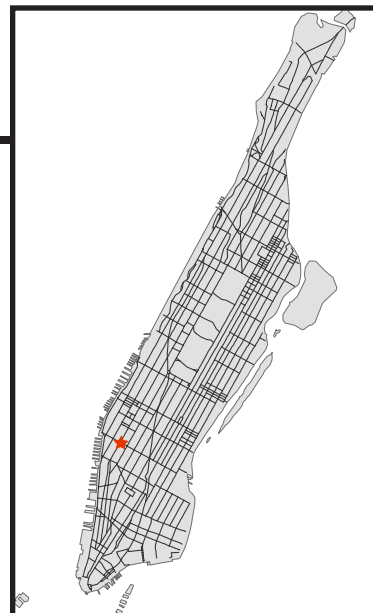
- Pedestrian/vehicle/cyclist conflicts
- Long crossing distances



9th Avenue looking north before redesign



9th Avenue & West 23rd Street



Implemented Improvements

- **Part of 2008 9th Avenue Bike Lane Project (23rd to 31st Street)**
- **Installed pedestrian safety island** in south crosswalk to reduce crossing distance
- **Installed a bicycle path** to connect and extend current network
- **Provided exclusive left turn lane on 9th Avenue** to safely guide turning vehicles
- **Banned W/B left turn** from 23rd Street
- **Added a split phase** for S/B traffic
- **Narrowed moving lanes and installed floating parking** to reorganize traffic flow while preserving existing traffic capacity
- **Installed peg-a-tracs** to safely guide vehicles through the intersection
- **Refurbished markings and crosswalks** with advance stop bars to increase visibility of pedestrians in crosswalks
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



New protected bike lane and floating parking



MANHATTAN

7th Avenue & West 34th Street



Crashes

- Ranked 17th in Top Twenty / Tied for 14th Citywide
- 7 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, Penn Station, A/C/E/1/2/3/N/Q/R/W/B/D/F/V subway stops
- Neighborhood: Fashion District
- Community Board: 5
- Council District: 3
- Land Use: Commercial, Industrial
- Bus Routes: M4, M6, M7, M10, M16, M20, M3, Q32
- Local Truck Routes: 8th Avenue, 7th Avenue, 6th Avenue, W34th Street
- Bike Routes: Existing paths on Broadway and 8th and 9th Avenues, existing lanes on 6th Avenue

Issues Identified

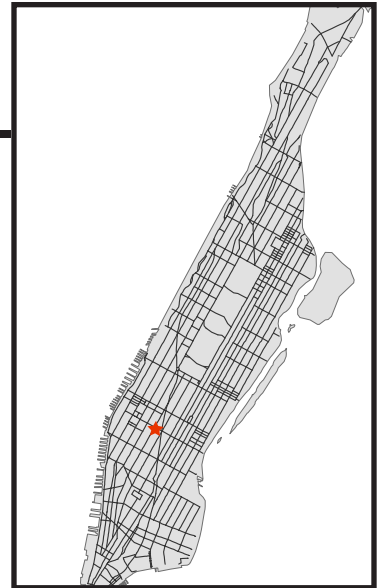
- Long crossing distances
- Heavy pedestrian volumes
- Lack of available sidewalk space



Heavy pedestrian volumes on 34th Street



7th Avenue & West 34th Street



Implemented Improvements

- **Part of 2012 34th Street Corridor Select Bus Service Project**
- **Restriped 34th Street** from six substandard lanes to five standard width lanes; curb lanes designated as bus lanes
- **Installed bus-actuated signal** for buses turning left from W/B 34th Street to S/B 7th Avenue
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings

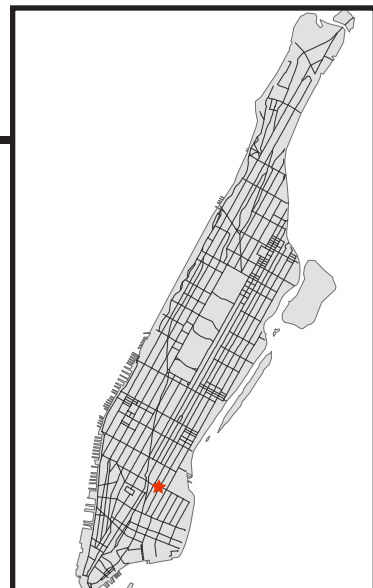


New Bus Only lane on 34th Street



MANHATTAN

2nd Avenue & East 14th Street



Crashes

- Ranked 18th in Top Twenty / Tied for 14th Citywide
- 7 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, school, hospital, L subway stop
- Neighborhood: East Village
- Community Board: 3/6
- Council District: 2
- Land Use: Multi-family Residential, Mixed Use, Commercial, Institutional, Parking, Vacant Lot
- Bus Routes: M9, M14A, M14D, M15
- Local Truck Routes: 1st Avenue, 2nd Avenue, 3rd Avenue, E14th Street
- Bike Routes: Existing lanes on 9th and 10th Streets, existing paths on 1st and 2nd Avenues, potential routes on 13th Street

Issues Identified

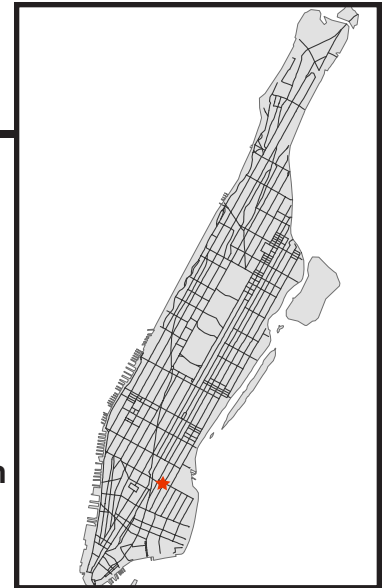
- Long crossing distances
- Pedestrian/vehicle conflicts
- Disorganized traffic flow
- N/B protected left phase blocked by pedestrians crossing against signal



Congestion and heavy pedestrian traffic 14th Street before



2nd Avenue & East 14th Street



Implemented Improvements

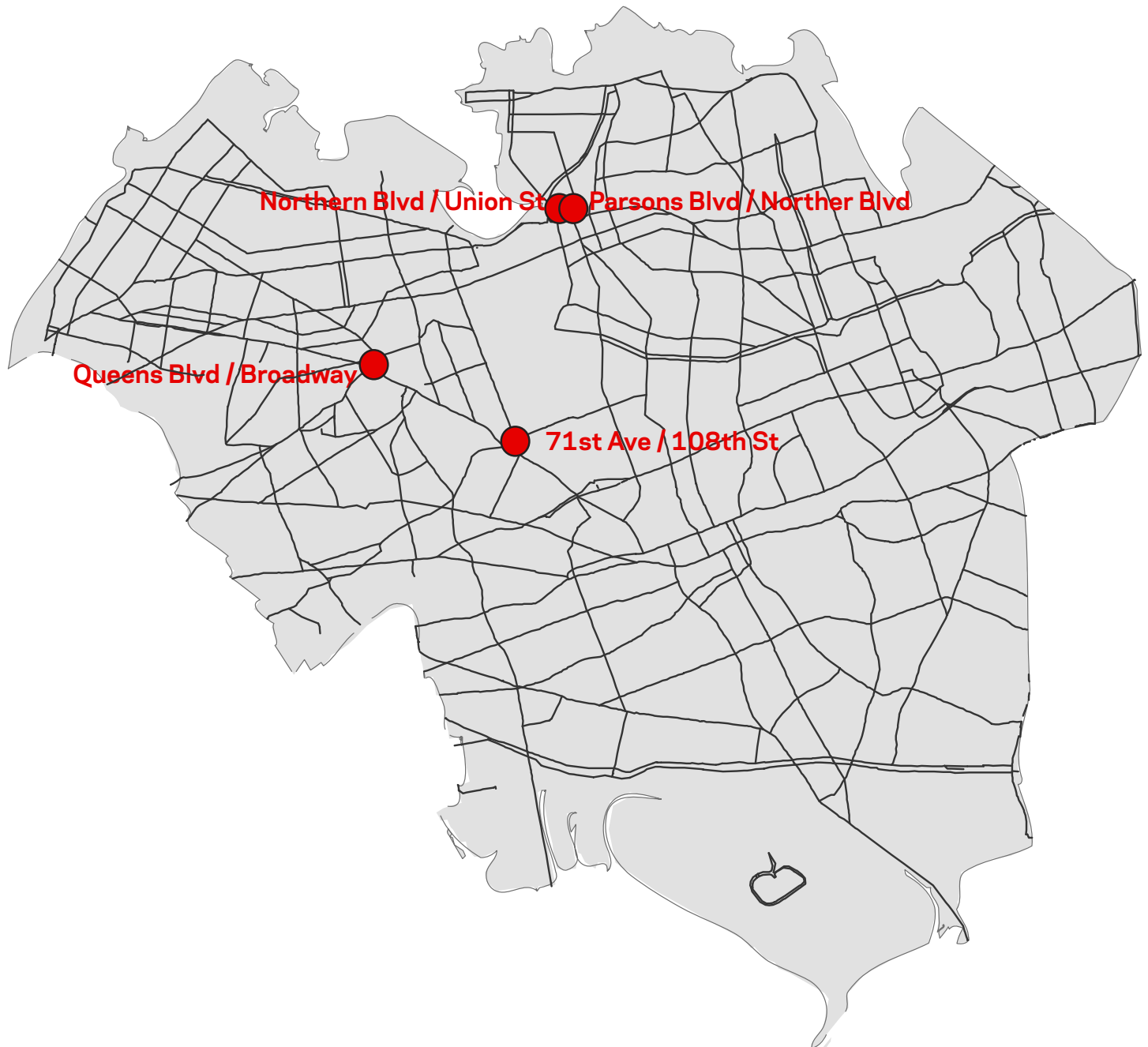
- **Part of 1st and 2nd Avenue: Complete Street BRT/SBS Redesign**
- **Added a split phase** eliminating conflicts in the east crosswalk
- **Installed a Bus Only lane** for coordinated Select Bus Service
- **Installed a bicycle path** on Second Avenue to connect and extend current network
- **Added floating parking** on Second Avenue
- **Banned left turn** from E/B 14th Street to S/B Second Avenue
- **Installed high visibility crosswalks** for better pedestrian visibility
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



New configuration of Second Avenue looking South

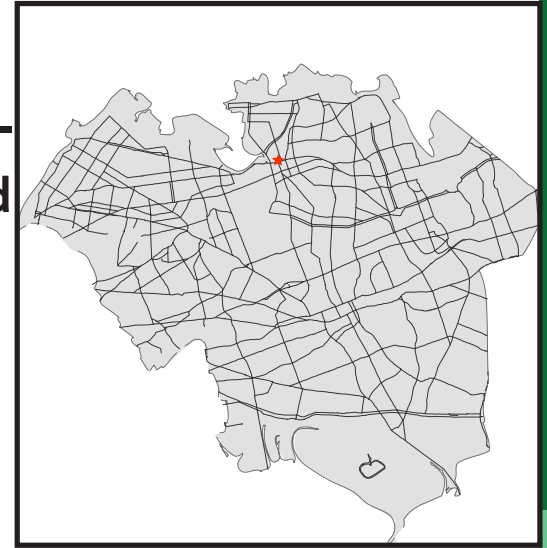


QUEENS



QUEENS

Parsons Boulevard & Northern Boulevard



Crashes

- Ranked 5th in Top Twenty / Tied for 5th Citywide
- 9 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, schools, museums, hospitals, 7 subway stop, LIRR
- Neighborhood: Flushing
- Community Board: 7
- Council District: 20
- Land Use: 1&2-family Residential, Multi-family Resident, Mixed Use, Commercial, Institutional, Industrial, Open Space, Parking, Transportation/Utilities
- Bus Routes: Q13, Q28, QM3
- Local Truck Routes: Linden Place
- Bike Routes: Potential routes on Parsons Boulevard and Roosevelt Avenue
- Within Flushing Senior Pedestrian Focus Area

Issues Identified

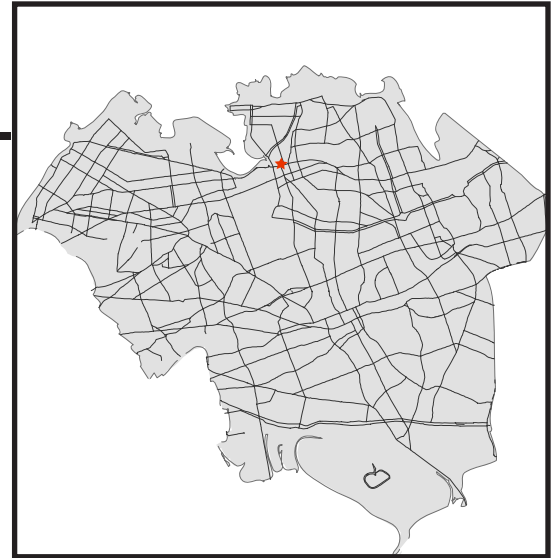
- Heavy pedestrian and vehicle volumes
- Pedestrian/vehicle conflicts
- Poor compliance by pedestrians
- Long crossing distances



Long crossing distances on Northern Boulevard



Parsons Boulevard & Northern Boulevard



Implemented Improvements

- **Installed leading pedestrian interval** on Northern Boulevard to provide pedestrians with conflict-free crossing time
- **Installed new high visibility crosswalks** for better pedestrian visibility
- **Refurbished markings and crosswalks** with advance stop bars to increase visibility of pedestrians in crosswalks
- **Installed lane designation markings** to organize traffic flow
- **Daylighted approach** on Parsons Boulevard for improved motorist visibility
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings

QUEENS

Northern Boulevard & Union Street

Crashes

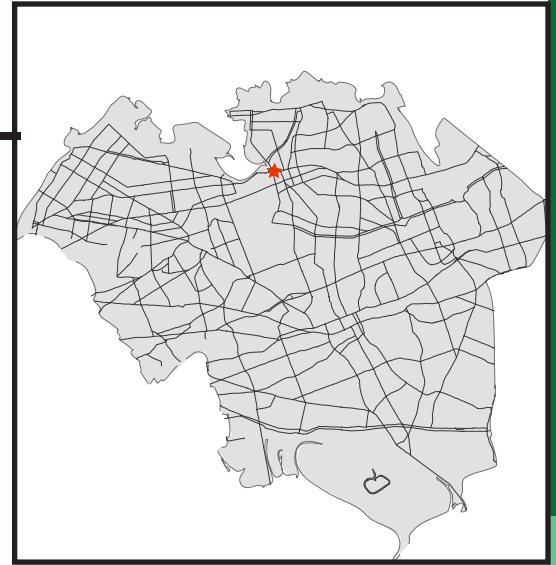
- Ranked 14th in Top Twenty / Tied for 14th Citywide
- 7 pedestrian crashes in 2008

Location/Context

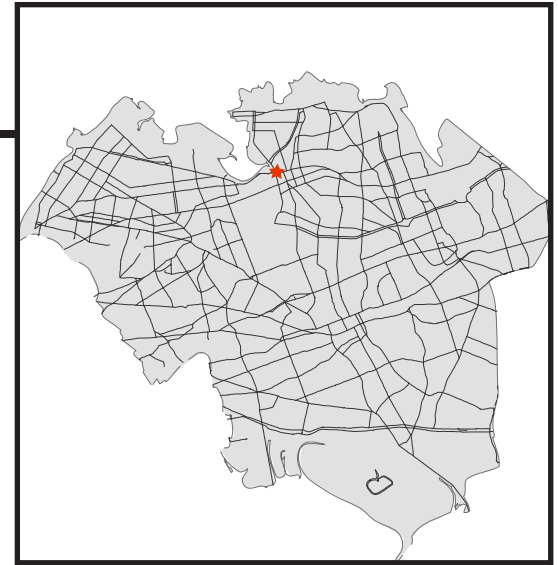
- Project Area: Retail corridor, high school, 7 subway stop, LIRR
- Neighborhood: Flushing
- Community Board: 7
- Council District: 20
- Land Use: 1&2-family Residential, Multi-family Resident, Mixed Use, Commercial, Institutional, Industrial, Open Space, Parking, Transportation/Utilities
- Bus Routes: Q13, Q14, Q16, Q20A, Q20B, Q28, Q44, QM3, Qx32,
- Local Truck Routes: Linden Place
- Bike Routes: Potential routes on Parsons Boulevard and Roosevelt Avenue

Issues Identified

- High number of turning vehicles conflicting with turning volumes
- Long crossing distances
- Skewed intersection

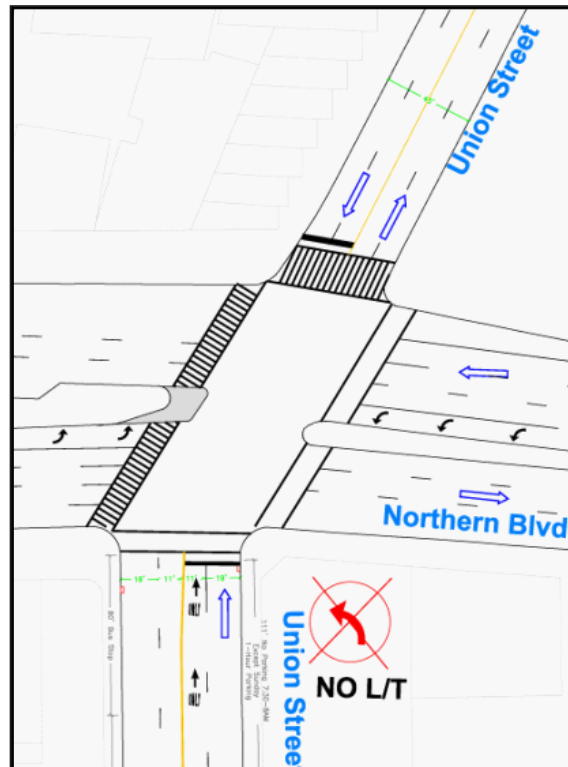


Northern Boulevard & Union Street



Implemented Improvements

- **Banned left turns** from Union Street to Northern Boulevard to reduce vehicle and pedestrian conflicts
- **Constructed curb extensions** on NW corner to shorten pedestrian crossing
- **Modified signal timing** of west crosswalk to provide safer crossing and allow protected turning phases
- **Installed pedestrian count down signals** to promote safer pedestrian crossings



Proposed design



QUEENS

Queens Boulevard & Broadway



Crashes

- Ranked 15th in Top Twenty / Tied for 14th Citywide
- 7 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, hospitals, schools, E/V/R/G subway stop, Long Island Expressway
- Neighborhood: Elmhurst
- Community Board: 4
- Council District: 25/29
- Land Use: 1&2-family Residential, Multi-family Resident, Mixed Use, Commercial, Institutional, Parking, Transportation/Utilities, Vacant Lots
- Bus Routes: Q29, Q38, Q53, Q58, Q59, QM10, QM 11, M60
- Local Truck Routes: Broadway, Junction Boulevard, Woodhaven Boulevard
- Bike Routes: Potential routes on 51st Avenue

Issues Identified

- High retail-related pedestrian activity
- Long crossing distances
- Skewed crosswalks
- Double parking on service road blocks traffic flow



Long crossing distance on Queens Boulevard before redesign



Queens Boulevard & Broadway



Implemented Improvements

- **Extended and widened medians** on Queens Boulevard to provide pedestrian refuge space
- **Realigned north crosswalk** on Queens Boulevard for better pedestrian and vehicular visibility
- **Removed parking** along west side service road
- **Modified signal timing** to provide safer crossing of Queens Boulevard
- **Improved markings and alignment** of service roads
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



Shortened crossing distance with median protection



QUEENS

71st Avenue & 108th Street

Crashes

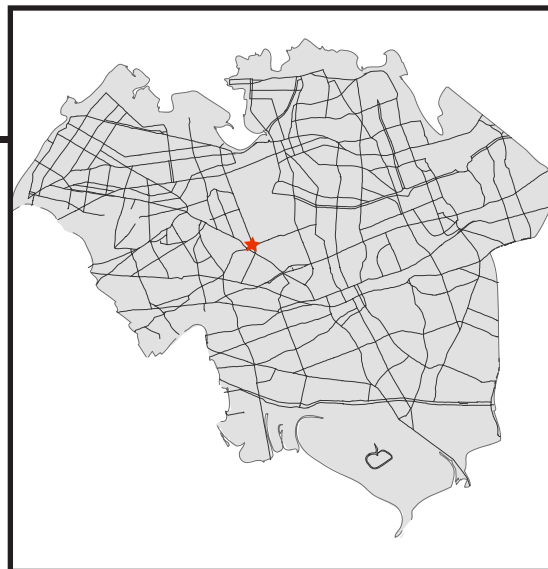
- Ranked 16th in Top Twenty / Tied for 14th Citywide
- 7 pedestrian crashes in 2008

Location/Context

- Project Area: Retail corridor, large park, stadium, E/F/R/V/G subway stops, LIRR
- Neighborhood: Forest Hills
- Community Board: 6
- Council District: 29
- Land Use: 1&2-family Residential, Multi-family Resident, Mixed Use, Commercial, Institutional, Open Space, Parking, Transportation/Utilities, Vacant Lots
- Bus Routes: Q23, QM1, QM1A, QM11, QM12, QM18, QM21, QM 4, QX63, QX64, QX68 M60, M64
- Local Truck Routes: 108th Street
- Bike Routes: Potential routes on 70th and 71st Avenues, 110th and 112th Streets

Issues Identified

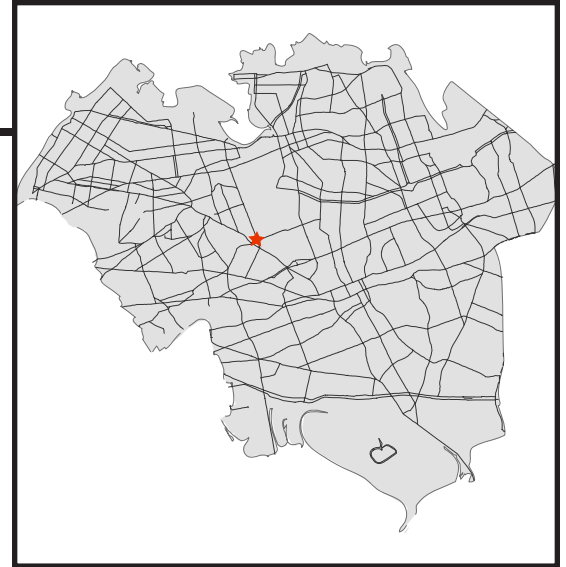
- Pedestrian/vehicle conflicts
- Most crashes involve left turns from 71st Avenue to Queens Boulevard
- Triangular island on north side of intersection encourages jaywalking
- Bus stop on 108th Street creates pedestrian blind spot
- Long crossing distances



Long crossing distances before redesign



71st Avenue & 108th Street

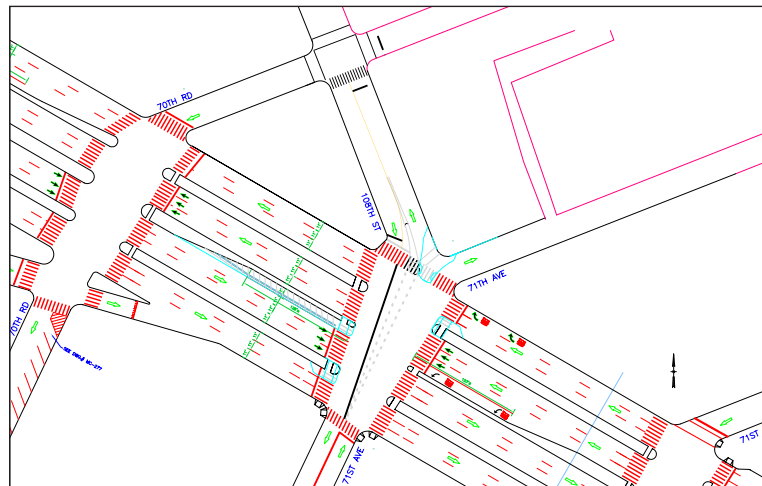


Projected Implemented Improvements

- **Install missing high visibility crosswalks** across 71st Avenue for better pedestrian visibility
- **Refurbish peg-a-tracs** on Queens Boulevard to safely guide vehicles through the intersection
- **Install No U Turn signs** for W/B Queens Boulevard
- **Modify signal timing** to provide safer crossing of Queens Boulevard
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings (completed 2010)

Projected Implemented Capital Improvements

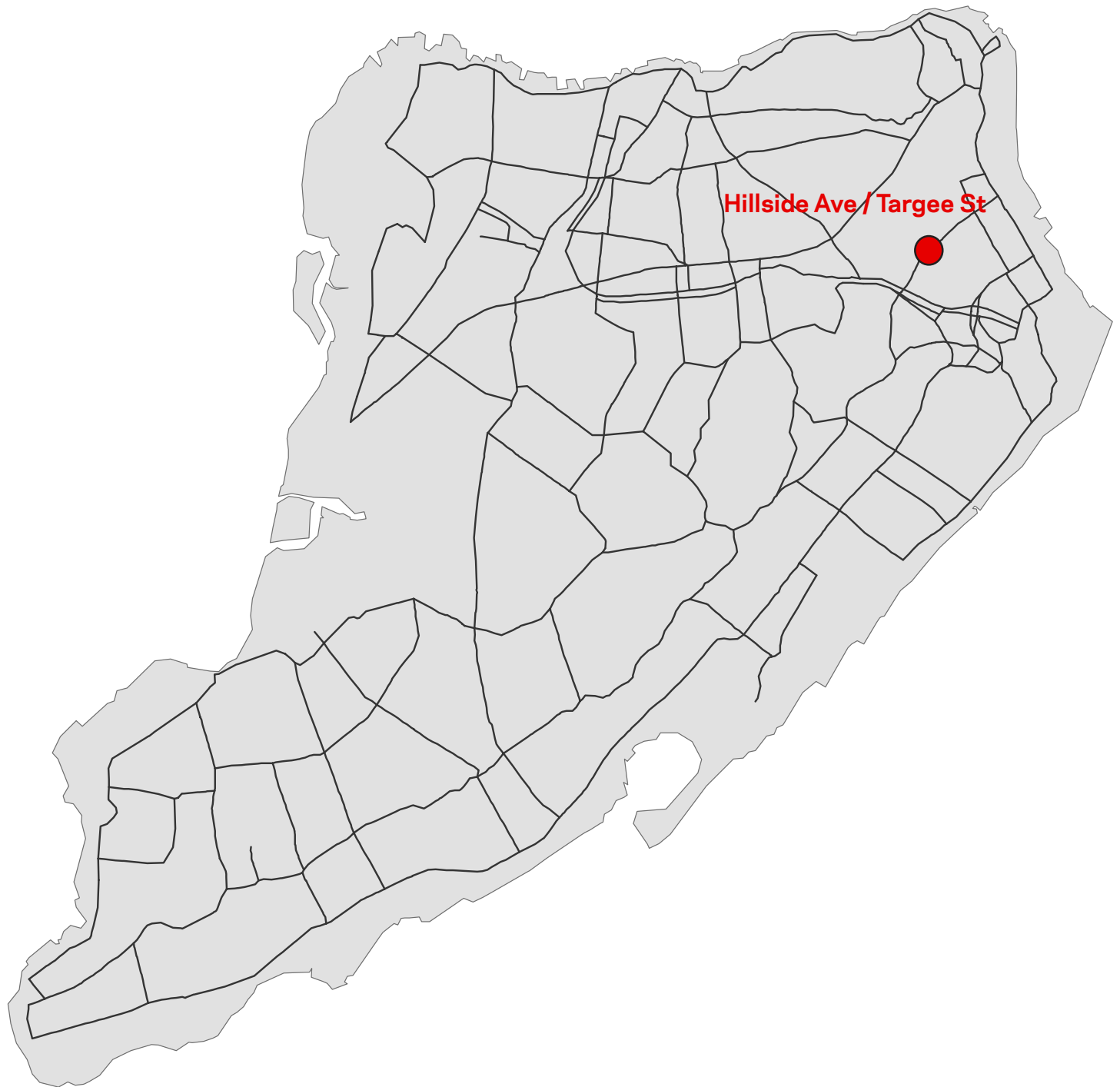
- **Submitted to Capital as part of a multi-site contract**
- **Extend and widen medians** on SW, NE service roads and in east crosswalk to provide pedestrian refuge space



Proposed design



STATEN ISLAND



STATEN ISLAND

Hillside Avenue & Targee Street

Crashes

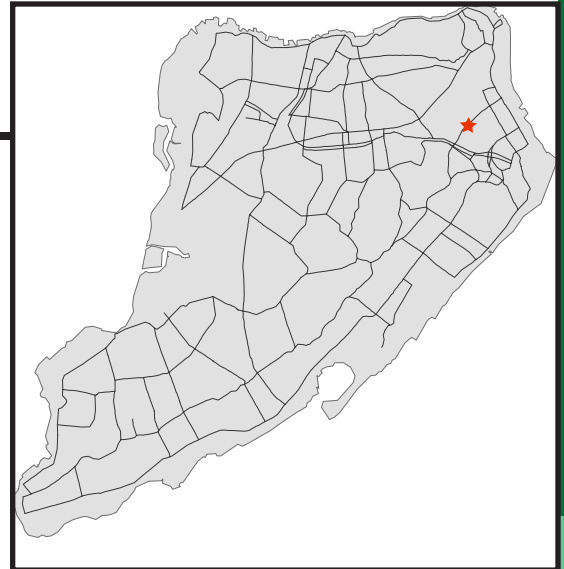
- Ranked 20th in Top Twenty / Tied for 42nd Citywide
- 5 pedestrian crashes in 2008

Location/Context

- Project Area: Retail and residential corridor, school
- Community Board: 1
- Council District: 49
- Land Use: 1&2-family Residential, Multi-family Resident, Mixed Use, Commercial, Open Space, Parking, Transportation/Utilities, Vacant Lots
- Bus Routes: S74, S76, X18
- Local Truck Routes: Targee Street, Vanderbilt Avenue, Van Duzer Street
- Bike Routes: Potential routes on Narrows Road North and Narrows Road South

Issues Identified

- Long crossing distances
- Observed speeding
- Skewed intersection allows vehicles to turn without awareness of pedestrians
- Low traffic volumes at off-peak hours



Hillside Avenue & Targee Street



Implemented Improvements

- **Installed leading pedestrian interval** on Targee Street to provide pedestrians with more conflict-free crossing time
- **Installed pedestrian countdown signals** to promote safer pedestrian crossings



New conflict-free crossing with LPI installation

