



THE BRONX



GRAND CONCOURSE

Background

The Department has performed considerable work in the last two decades to improve vehicular and pedestrian safety on the Grand Concourse. In 1992, the Department initiated a safety study on a four-mile segment of the Grand Concourse between East 161st Street and the Mosholu Parkway. This location was selected as the site for a Pedestrian Safety Engineering Demonstration Project because, at that time, it was identified as the signalized arterial with the most pedestrian fatalities citywide. This study included comprehensive traffic analyses and the implementation of the following safety improvements throughout the study area.

- Modification of traffic signal timing to increase time for pedestrians to cross the Grand Concourse, installation of pedestrian signals at 25 intersections, installation of dual left turn phasing at the East 167th Street and Mt. Eden Avenue intersections, installation of a red light camera at East 167th Street, installation of larger red signal displays, and an increase of the cycle lengths from 90 to 120 seconds to further improve pedestrian crossing during the midday period, at night, and on weekends.
- Installation of 3,750 linear feet (nearly ¾-mile) of pedestrian separators in high pedestrian volume locations to prevent midblock crossings.
- Simplification of service road entrance and exit directional signs.
- Installation of thermoplastic pavement markings including the refurbishment of lane lines and all crosswalks, and new directional arrows, stop bars, peg-a-tracs to guide motorists making left turns, and the installation of edge lines adjacent to raised medians.

These improvements (implemented in 1993) resulted in impressive crash reductions. A comparison of statistics for the three years before (1990-1992) and the three years after (1994-1996) the implementation of these measures showed a significant reduction in overall crashes (-27%) and a dramatic decrease in fatalities (-67%).

Additional Improvements

Additional improvements were implemented to enhance these earlier efforts. These are described below:

- Existing regulatory signs (e.g., Yield, One-Way Arrows, Stop, and turn restrictions) were refurbished and upgraded in September 1999 to meet current standards. In addition, 75 school crossing signs were refurbished as part of the citywide contract in March 2000.
- All crosswalks and Stop bar pavement markings were surveyed and refurbished in August 1999.
- All school crosswalk and School Crossing pavement messages were installed in October 2000 as part of the citywide contract.
- 140 feet of damaged pedestrian barriers were repaired in August 1999.
- Dual left turn signal phases were installed at the East 165th and East 170th Street intersections in September 1999.
- Additional pedestrian signals were installed on the center median at the East 183rd Street intersection in March 2000. These were upgraded to international pedestrian signals in October 2000.
- A study was conducted to determine the need for a left turn phase at the East Tremont Avenue intersection. Left-turn phases for both directions of the Concourse were approved and were installed in April 2001.
- A left turn signal phase for the southbound Grand Concourse at East 188th Street was installed in June 2000.

- Removed “Trucks with Overweight Permit” and “Truck Restriction Ahead” signs at seven locations along the Grand Concourse (southbound at East 196th Street, southbound at East 183rd Street, northbound at Mt. Eden Avenue, southbound at Morris Avenue, southbound at East 161st Street, southbound at East Kingsbridge Road, and northbound at East 170th Street).
- All crosswalks and Stop bar pavement markings were surveyed and refurbished in May 2002.
- All vehicle and pedestrian signals on the Grand Concourse between East 138th Street and East Tremont Avenue were upgraded to LED and international displays in March 2003.
- Left turn signals were installed in both directions of the Grand Concourse at both East Tremont and East Burnside Avenues in September 2003.
- Older “Yield to Pedestrian” signage was upgraded to the newer “Attention, Drivers Yield to Pedestrian” signs in July 2004.
- “Left Turn on Left Green Arrow” or “Left Turn Signal” signage was installed at intersections with left turn signals in July 2004.
- All signage designating individual lanes for various traffic movements were installed at the following intersections in July 2004:
 - East 170th Street
 - East Tremont Avenue
 - East 161st Street
 - East 183rd Street
 - East Kingsbridge Road
 - Bedford Park Boulevard
 - East 196th Street
 - East Mt. Eden Avenue
 - East Burnside Avenue
 - East 165th Street
 - East 192nd Street
 - East 181st Street
 - East 184th Street
 - East 198th Street
 - East 204th Street
 - Van Cortlandt Avenue East

Pedestrian Separator Improvements

As part of the continuing efforts to improve pedestrian and vehicular safety, the Department repaired and replaced several pedestrian separators along the Grand Concourse in January 2003. In total, 275 linear feet of new fencing was replaced. The locations of these improvements included:

- East median north of East 183rd Street
- West median north of East 183rd Street
- West median in front of 1675, 2017, 2403, 2295 and 2039 Grand Concourse
- West median south of East 177th Street
- East median south of Echo Street
- East median north of Mt. Eden Avenue in front of Bronx Lebanon Hospital

In October 2005, 370 linear feet of pedestrian separators were repaired on the Grand Concourse southbound between Clifford Place and Mount Eden Avenue.

In the summer of 2006, the Department installed approximately 2,750 linear feet of pedestrian separators along the entire stretch of the Grand Concourse in the southbound direction and installed approximately 2,010 feet in the northbound direction. In 2005 and 2006, a grand total of 4,760 linear feet of pedestrian fencing was installed along this corridor.



GRAND CONCOURSE

PEDESTRIAN SAFETY DEMONSTRATION PROJECT

Description

A targeted pedestrian safety demonstration project was implemented in November 1999 for the 0.7-mile segment of the Grand Concourse between East 165th and East 170th Streets. The plan narrowed the service roads in each direction to one moving lane by widening the medians from 10 to 18 feet and adding a bicycle lane. The width of the service roads was reduced from 35-37 feet to a continuous 27 feet. The objective was to further improve vehicular and pedestrian safety by reducing traffic speeds and pedestrian crossing distances, while increasing pedestrian refuge space. The plan, implemented as a pilot, included the following elements:



Panoramic view of Grand Concourse prior to implementation of Pedestrian Safety Demonstration Project at East 165th Street

- Roadway Markings:

Bicycle lane installation, median widening with striping, lane transitions prior to and at the end of the study area. In addition, existing striping on the service roads were scarified. The markings work was completed in mid-November 1999. The markings were refurbished in April 2002.



Grand Concourse/East 169th Street Service Road after implementation of safety project with planters and bike lane



Typical roadway planter and parking stops along the Grand Concourse

- Sign Manufacture and Installation: “Left Lane Ends”, “Left Lane Ends 200 Feet”, “Left Lane Ends 500 Feet”, “Lane Transition”, “Bicycle Lane”, “Bike Lane Ahead” and “Bike Lane Ends” signs were manufactured and installed in November 1999.
- Planters and parking stops delineating the widened median were installed in November 1999 (following completion of sign and marking work). This included the following:
 - Placement of 24 concrete planters in six sections with three inches of stone placed in the bottom of each planter
 - Placement of 42 large plastic planters with three inches of stone placed in the bottom of each planter.
 - Placement and bolting down of concrete (495 pieces) and plastic (367 pieces) parking stops.
 - Landscaping, including soil was provided by the Parks Department’s “GreenStreets” Program. DOT provided gravel/millings for drainage.

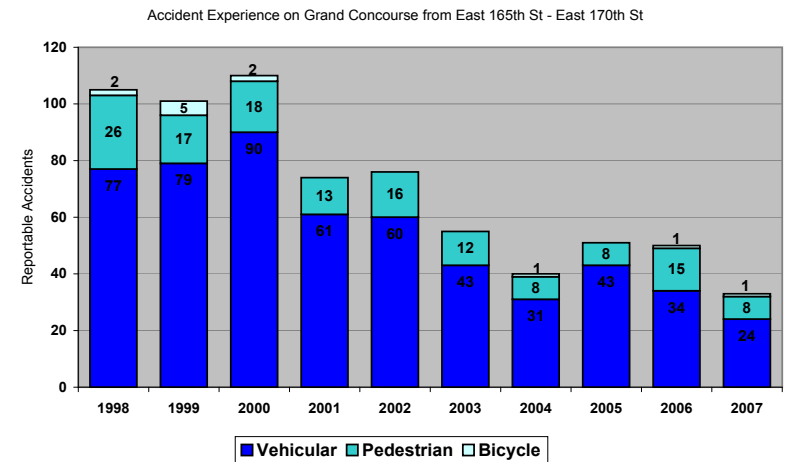
A monitoring plan (completed in June 2000) was developed to evaluate the impacts of the demonstration project. This included comparing “before” and “after” implementation levels of service, crash data, vehicle travel time runs and radar speed surveys. Findings were quite encouraging. Speeds on the service roads are slower and, since significant numbers of vehicles have diverted to the main roadway, speeding on the main roadway has been reduced as well.

Key findings:

Crashes

Overall, the crash experience along this section of the Grand Concourse has shown a significant improvement in pedestrian and vehicular safety since 1998 when there were a total of 105 reportable crashes, of which 26 involved pedestrians. In 1999, the year in which the pedestrian safety demonstration project was implemented (November), reportable crashes declined to 101, of which only 17 involved pedestrians. For comparison purposes we are using the full year (1998) for “before” data because the project was not implemented until late 1999. Although crashes increased in 2000, they began to substantially drop in 2001, and continued to decline. **Since 2001 the average of total, vehicular and pedestrian crashes per year have decreased by 45%, 48% and 56%, respectively. In 1998 and 2007, there was one fatality each year and in June 1999 there were two fatalities, both of which were the result of a single crash.**

Overall, the Department believes the impacts of the treatments implemented at this location have been successful, especially in reducing the number of pedestrian crashes along this stretch of the Grand Concourse. The Department continues to support these treatments and is actively engaged in trying to make these safety improvements permanent.



Midday Speeds (11am–2pm)

- Northbound service road - 85th percentile speed decreased 33% (from 33 to 22 mph); average speed decreased 36% (from 28 to 18 mph).
- Southbound service road - 85th percentile speed decreased 12% (from 33 to 29 mph); average speed decreased 11% (from 28 to 25 mph).
- Northbound main road - 85th percentile speed decreased 10% (from 40 to 36 mph); average speed decreased 9% (from 33 to 30 mph).
- Southbound main road - 85th percentile speed decreased 8% (from 40 mph to 37 mph); average speed was unchanged (33 mph).

Evening Speeds (8–10pm)

- Spot speed surveys conducted on the northbound service road showed that the 85th percentile speed decreased 16% (from 37 to 31 mph).

Bus Speeds

- During the midday and PM peak periods, speeds decreased 9% (to 7.3 mph from 8.0 mph)

Traffic Volumes

- Service road volumes decreased 40% (from 928 to 551 vehicles) in the AM peak hour and 29% (from 856 to 609 vehicles) in the PM peak hour.
- Main road volumes increased 19% (from 1293 to 1544 vehicles) in the AM peak hour and 15% (from 1233 to 1419) in the PM peak hour.
- Total volumes on the Concourse decreased 4% (from 2155 to 2062 vehicles).

Level of Service (LOS)

- During the peak hour in the peak direction, LOS at East 167th Street declined but remained acceptable, especially given the substantial increase in main roadway volume and reduction in capacity on the service roads. The main roadway changed from LOS B in 1995 to LOS C, and the service roadways changed from LOS B to LOS D.

Observations

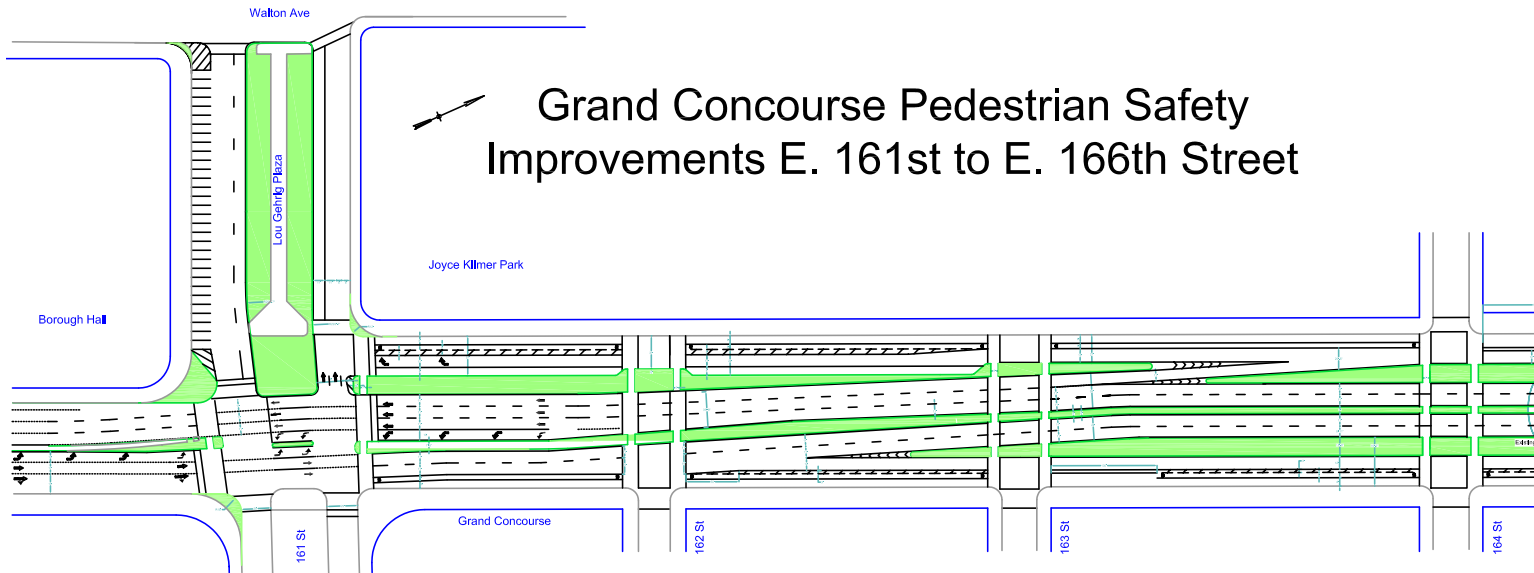
- Traffic on the service roads flowed smoothly, but is occasionally stopped when a vehicle is illegally parked at a bus stop, or when a bus is unable to pull sufficiently into a bus stop.

Recommendations

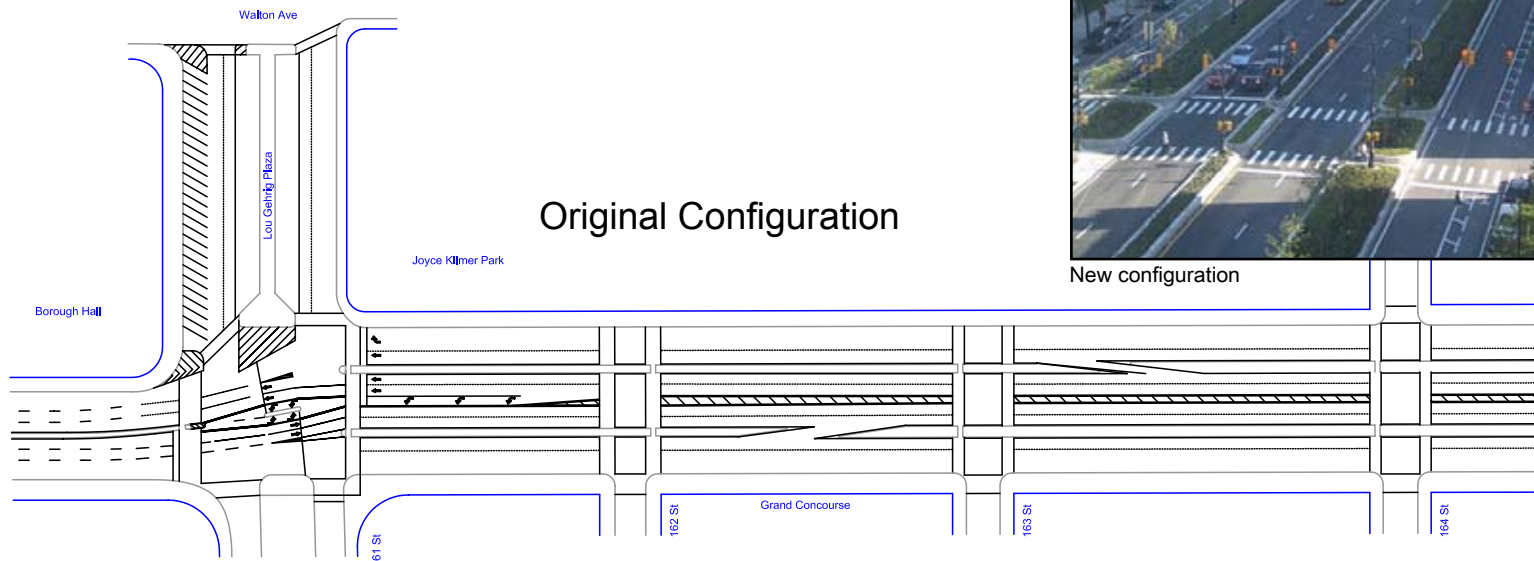
- The one-lane service road design can be extended throughout the Grand Concourse from East 163rd Street to Mosholu Parkway with the exception of the East Fordham Road area which warrants further study. The width of the service road should be 28 feet (12 feet wide moving lane, five feet wide bicycle lane with a three feet wide channelized buffer separating the bike lane from motor vehicle traffic, and an eight feet wide parking lane). This is one foot wider than the test configuration to enable traffic to pass buses and other vehicles temporarily double parked.
- **The section of the Concourse between East 161st Street and the Bronx Museum of the Arts (north of East 165th Street) was included in the East 161st Street Bridge reconstruction project completed in November of 2008.** As part of this project, NYCDOT replaced the East 161st Street Underpass Arch Structure, incorporated landscaped urban design features for Lou Gehrig Plaza and add more open space to the neighborhood. Additionally as part of the bridge reconstruction project, the Grand Concourse/East 161st Street intersection, where the service and main roads merge in the center of the intersection resulting in multiple conflict points between vehicles and pedestrians and between vehicles with other vehicles, was reconfigured. The plan shifted the northbound merge between the service and main roads to a midblock non-pedestrian location, and lengthens the merge for a smoother transition. The southbound merge between the service and main roads will be removed by forcing traffic on the service road to turn right onto westbound East 161st Street.

The new roadway realignment is shown on the following page.

Grand Concourse Pedestrian Safety Improvements E. 161st to E. 166th Street



Original Configuration



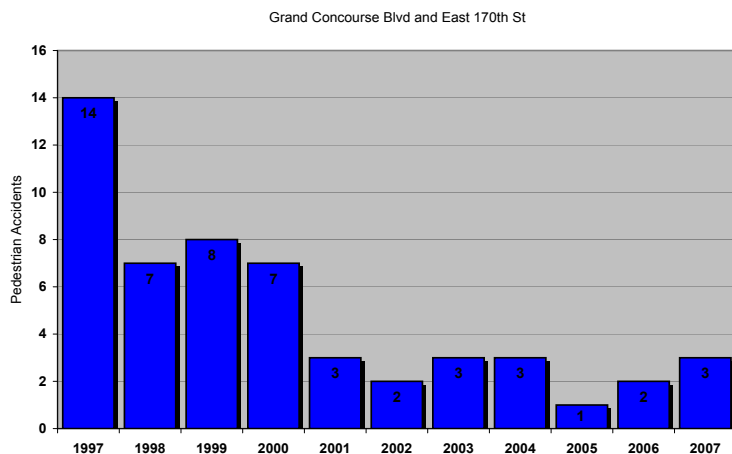


GRAND CONCOURSE / EAST 170TH STREET

HIGH PEDESTRIAN CRASH LOCATION IMPROVEMENTS

Description

The intersection of East 170th Street and the Grand Concourse is signalized and very wide (142 feet). On the Grand Concourse main roadway approach, there are two moving lanes and a left-turn lane in each direction and two moving lanes and one parking lane in each direction on the northbound and southbound service roads. There are raised medians between the main and service roads that provide refuge for pedestrians. The east side of East 170th Street has one moving lane in each direction separated by angle parking in the center. The west side of East 170th Street has one lane in each direction separated by a tunnel. The BX1 and BX2 buses run along the Grand Concourse and the BX11 and BX18 run along East 170th Street. The C and D subway entrances are on the southwest and southeast corners of the intersection.



In terms of the crash experience, in 1997 this location ranked second amongst the top 20 pedestrian crash locations with a total of 14 crashes involving pedestrians. Most of these crashes were the result of pedestrians crossing against the signal or negligent driving on the part of the vehicle operator. In 1998, pedestrian crashes decreased 50% (to seven from 14). In 1999 and 2000 there were eight pedestrian crashes. In 2001, 2003 and 2004, pedestrian crashes decreased significantly to three which is 79% less than 1997. Pedestrian crashes declined to two in 2002 and in 2005, pedestrian crashes had declined to just one. **In 2006 and 2007 crashes rose slightly to two and three respectively, but still remained much lower than before improvements were implemented.**

Concerns

- Northbound articulated buses destined to far side bus stop spill back across intersection
- Pedestrians cross against signals
- Vehicle operators make U-turns on the main roadway
- Pedestrians cross mid-block on the Grand Concourse
- Steep upgrade causes visibility problems on eastbound East 170th Street approaching the Grand Concourse

Implemented Improvements

- Installed 12" red lenses on all signals
- Installed Peg-a-Tracs to guide traffic across wide intersection
- Replaced all missing signs (September 1999)
- Upgraded Yield to Pedestrian signs
- Installed additional No U-turn signs
- Upgraded all crosswalks to high visibility
- Installed pedestrian crossing signals on all medians and upgraded them to international pedestrian signals in October 2000
- Installed dual left turn signal phases (October 1999)
- Installed signs stating "Left Turn on Green Arrow Only" in coordination with the installation of the left-turn signal
- Installed "Wait For Walk Signal" signs on all signal posts



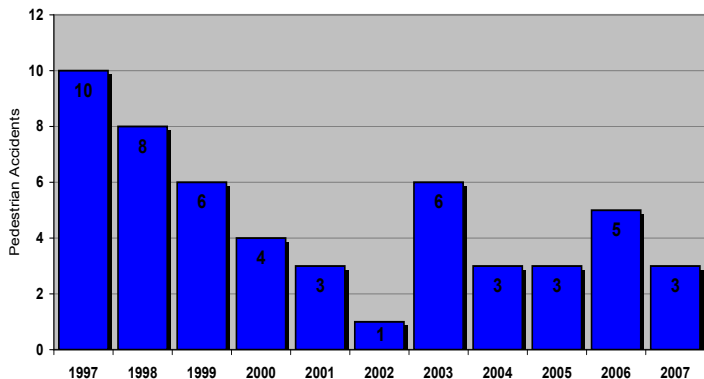
GRAND CONCOURSE / EAST 183RD STREET

HIGH PEDESTRIAN CRASH LOCATION IMPROVEMENTS

Description

The intersection of East 183rd Street and Grand Concourse is signalized. There are two moving lanes and a left-turn lane in each direction on the Grand Concourse main roadway approach and two moving lanes and one parking lane in each direction on the northbound and southbound service roads. There are two raised medians between the main and service roads that provide refuge for pedestrians. The east side of East 183rd Street has one moving lane in each direction and two parking lanes. The west side of East 183rd Street has one moving lane in each direction and two parking lanes. The BX1 and BX2 buses run along the Grand Concourse. In the northbound direction (just south of the intersection) on the Grand Concourse approaching East 183rd Street, there is a slip ramp from the service road to the main road. PS 115 is located one block east of the Grand Concourse. School 'ladder' crosswalks and school crossing signs are specified on the south and west legs and high visibility crosswalks are on the north and east legs.

Grand Concourse Blvd and East 183rd St



One of the primary safety concerns at this location is pedestrians crossing against the signal, as well as the distance involved for pedestrians to cross the Grand Concourse. As such, the improvements implemented in 1999 were aimed at improving pedestrian safety at this location.

In terms of the crash experience at this location, in 1997 this intersection ranked eight amongst the top 20 pedestrian crash locations for that year with a total of ten crashes involving pedestrians. In 1998, pedestrian crashes

decreased 20% (to eight from 10 crashes). In 1999, pedestrian crashes decreased to six from eight crashes, which is 40% less than 1997. In 2000, the first full year after the treatments were installed, pedestrian crashes decreased to four, which is 60% less than 1997. In 2001, pedestrian crashes declined to three, which is 70% less than 1997. In 2002, pedestrian crashes declined even further to one. **The two years before improvements were implemented, crashes averaged nine per year. From 2000 to 2007, after implementation, the average annual crash rate decreased to 3.5 crashes per year. There was one pedestrian fatality in both 2001 and 2005.**

The overall decline in crashes since 1997 represents a major accomplishment for the Department at this location. The decline can be attributed to the Department's ongoing efforts along the Grand Concourse corridor and the targeted pedestrian improvements made at locations along the corridor.

Improvements Implemented in 1999

- 12" red lenses on signal faces
- High visibility crosswalks installed at all four legs of the intersection
- Pedestrian barriers installed at medians to prevent mid-block crossings
- Modified the signal timing to allow for increased time for pedestrian crossing
- Replaced all missing signs
- Installed "Wait for Walk Signal" signs
- Installed pedestrian crossing signals on all medians and upgraded them to international pedestrian signals in October 2000
- Repaired three streetlights
- Increased the all-red interval to ensure that left-turning vehicles clear the intersection

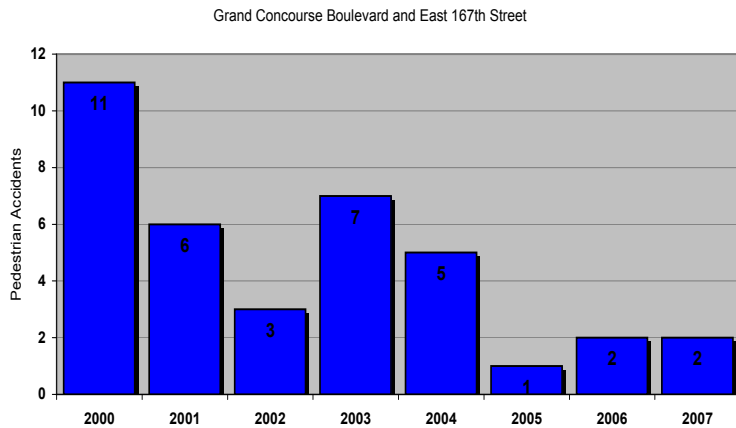


GRAND CONCOURSE / EAST 167TH STREET

HIGH PEDESTRIAN CRASH LOCATION IMPROVEMENTS

Description

Due to the high number of pedestrian crashes at this intersection, Grand Concourse and East 167th Street was designated as a priority intersection under the Pedestrian Safety Intersection Audit Plan. As a result, pedestrian safety improvement measures were implemented at this intersection.

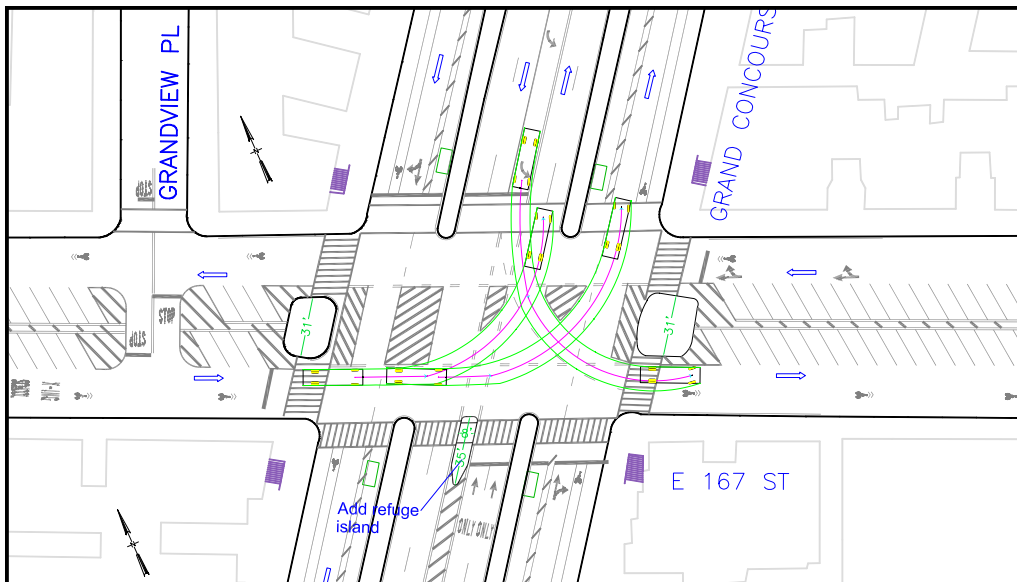


Implemented Improvements

In November 2007, the following improvements were implemented:

- All signs were refurbished
- All markings were refurbished
- The design of this wide intersection encouraged chaotic and unpredictable vehicle turning movements as vehicles on East 167th Street were permitted to turn right or left onto both the main and service roads of Grand Concourse. Intersection channelization was introduced to better direct traffic and make vehicle movements more predictable for pedestrians
- The northbound left turn from Grand Concourse onto East 167th was eliminated to provide a protected walk phase for the south crosswalk, which is a designated school crosswalk and experiences high pedestrian volumes.

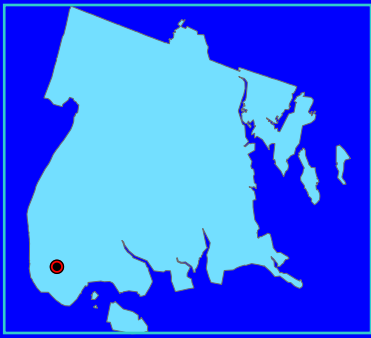
- The westbound left turn was eliminated to control unrestrained turning movements in the intersection and to protect pedestrians on the north crosswalk.
- Pedestrian signals were installed on the refuge islands at the east and west legs of East 167th St.
- Two “No Left Turn Ahead, Use Service Road, Right Upward Arrow” signs for the Grand Concourse main road prior to the slip-off exit for the service road and “No Left Turn” signs on Grand Concourse main road for new turn restriction were installed.
- The “Yield to Pedestrian” signs were upgraded and “No Left Turn” signs for westbound East 167th Street were installed.
- The left turn lane was channelized and a pedestrian refuge island was installed in its place, providing a safer refuge for pedestrians.



New intersection geometry with channelized markings and new pedestrian refuge island in south crosswalk.



New pedestrian refuge island in south crosswalk



THE HUB:

EAST 149TH STREET AT WILLIS, THIRD & MELROSE AVENUES

Description

The goal of the HUB multi-modal simplification and enhancement project was to increase pedestrian safety and access at the Bronx's busiest transit transfer point and vibrant commercial district. The intersection of East 149th Street at Willis, Third and Melrose Avenues had six legs with four streets meeting at skewed angles, requiring a three-phase signal operation and frequently experiencing illegal vehicular movements. It had been considered a "Hot Spot" for bus congestion and a pedestrian safety priority location with nine pedestrian and three bicycle injuries from 2003-2006. For years, the implementation of safety or operational improvements was delayed due to the extensive number of bus routes that serve the HUB. By working closely with NYC Transit to understand the route and passenger needs and expanding the study area to a broader traffic network, targeted solutions for each issue were developed.

The new configuration "normalizes" East 149th Street and Third Avenue allowing them to function as the major thoroughfares. The least essential movements, Melrose and Willis Avenues, were redirected away from the area. The change allowed for the creation of an additional 7,000 square foot open public space, creating a community-requested Roberto Clemente pedestrian plaza between East 148th and East 149th on Willis Avenue. This allowed additional bus stop space for northbound bus routes on Third Avenue and relieved

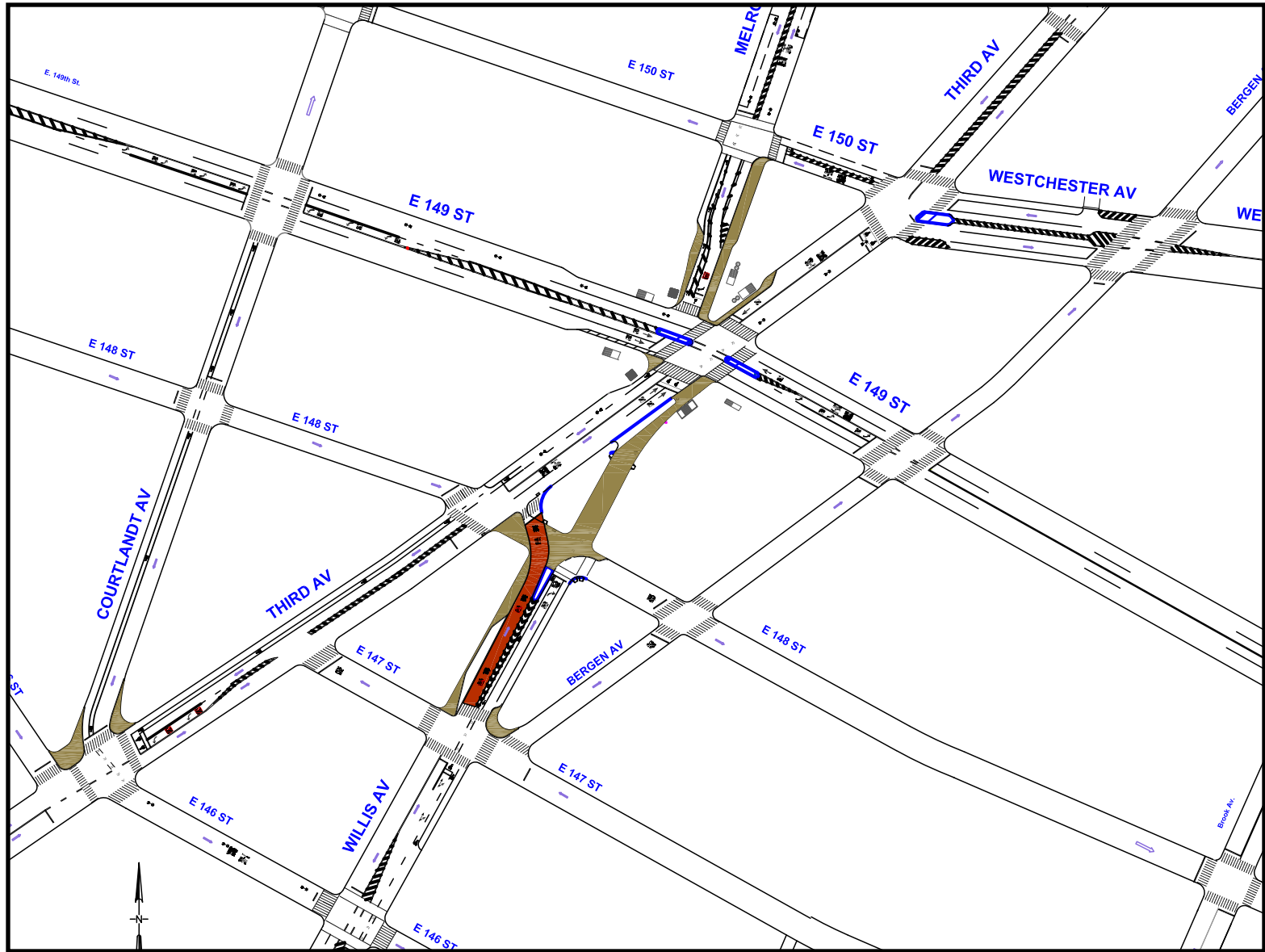
unsafe crowding at subway entrances. Other operational changes include the construction of pedestrian refuge islands on East 149th Street in the east and west crosswalks on Third Avenue; and on Westchester Avenue in Third Avenue's east crosswalk. Both Willis and Melrose Avenues were narrowed with roadway striping and planters. This shortened crosswalks and added new pedestrian space that can one day be built out with a raised sidewalk. A new bus-only lane was added to the west side of Willis Avenue between E. 148th and 149th Streets. The project also introduced key Bronx routes from the NYC Bicycle Master Plan, providing direct access to Manhattan and other Bronx neighborhoods as well as encouraging bike to transit trips.

Implemented Improvements

- Pedestrian plaza on Willis Avenue between East 148th Street to Third Avenue
- BUS ONLY lane on Willis Avenue between East 147th and Third Avenue
- Normalized intersection at Third Avenue & East 149th Street
- Pedestrian refuge islands on East 149th Street at Third Avenue
- Green Refuge Island on Westchester Avenue at Third Avenue
- Planted median island on Willis Avenue at East 148th Street
- Bicycle routes on Courtlandt, Melrose, Third and Willis Avenues



New Public Space and Bus Stop Island on Third Avenue



The Hub - new pedestrian plazas



Crosswalk on west side of Third Avenue with pedestrian refuge island



New pedestrian refuge island on East 149th Street at Third Avenue



SOUTH BRONX CHURCHES

Description

South Bronx Churches (SBC) is an organization whose membership includes area congregations and resident/tenant organizations. In the past few years, the housing stock, population and environment of the South Bronx has changed dramatically. SBC has constructed 146 new Nehemiah homes just south of St. Mary's Park in the past three years and traffic congestion has increased in the area.

Implemented Improvements

In October 2001, SBC submitted their recommendations to improve pedestrian and vehicular safety in the area bounded by East 138th and East 163rd Streets between Bruckner Boulevard and Willis Avenue. All recommendations were reviewed and the following improvements were implemented:

- Installed truck loading zones on St. Ann's Avenue between East 138th and East 139th Streets in January 2002.
- Installed an All-Way Stop control at the East 139th Street/Cypress Avenue intersection in February 2002.
- Installed "No Parking Anytime" signs on the east curb of Cypress Avenue between East 138th and East 139th Streets in January 2002.
- Installed "Do Not Enter" signs at Brook Avenue near the Major Deegan Expressway southbound exit ramp in January 2002.

- Installed a bus stop on the west curb of Bruckner Boulevard near the East 138th Street intersection in December 2001.
- Added five seconds (from 35 to 40 seconds) to cross Bruckner Boulevard at East 138th Street in February 2002.
- Installed “Keep Intersection Clear” signs at the Jackson Avenue/East 138th Street intersection in February 2002.
- Installed “Dead End” signs on Beech Terrace at St. Mary’s Park South in December 2001.
- Removed one parking space on the northwest corner of Westchester Avenue in January 2002.
- Installed additional “Yield to Pedestrian”, curve warning and reduced speed signs on St. Mary’s Park South in February 2002.
- Installed two speed reducers on Tinton Avenue between East 150th and East 152nd Streets and one on Union Avenue between East 150th and East 151st Streets in February 2002.
- Daylighting was installed at the intersection of East 137th Street and Cypress Avenue in April 2002.
- A painted median was installed on Tinton Avenue between East 156th and East 152nd Streets to narrow the roadway width in September 2002.
- Two speed reducers were installed on Jackson Avenue between East 147th and East 149th Streets in June 2002, and one reducer was installed on East 140th Street between Cypress and St. Ann’s Avenues in January 2003.
- Additional markings were installed or refurbished at the following locations:
 - Bruckner Boulevard/ East 138th Street - peg-a-tracs were installed in July 2002 to guide motorists across Bruckner Boulevard.
 - Tinton Avenue between East 152nd and East 156th Streets - a center median and a mid-block school crosswalk (along with necessary school crossing signs and word messages) were installed in October 2002.

- East 152nd Street between Jackson and Union Avenues - a lane line was installed in August 2002 to better define the moving lanes.
 - Jackson Avenue/Westchester Avenue/East 152nd Street - high visibility crosswalks, school crosswalk, and school crossing messages refurbished in October 2002.
 - Westchester Avenue/Tinton Avenue/East 156th Street - pedestrian and school crosswalks refurbished and Stop lines installed in October 2002.
 - Tinton Avenue/East 152nd Street - school crosswalks, school crossing messages, Stop lines refurbished in October 2002.
 - Cypress Avenue/East 138th Street - pedestrian and school crosswalks, school crossing messages refurbished in August 2002.
 - Cypress Avenue/East 139th Street - school crosswalks, school crosswalk messages, Stop line, Stop messages refurbished in August 2002.
 - Cypress Avenue/East 139th Street – Installed All-way stop with ‘Stop Ahead’ and ‘Stop’ message in Winter 2003.
 - Cypress Avenue/East 137th Street – Completed daylighting of intersection in Winter 2003.
 - Jackson Avenue/East 138th Street – Repositioned two ‘Keep Intersection Clear’ signs in January 2003.
- A two-way modified Class 3 bicycle route (signs and bike symbol pavement markings) was installed on St. Ann’s Avenue between East 135th and East 149th Streets (0.8 miles in each direction) in April 2003. A Class 2 bicycle lane (signs and bike symbol and long line pavement markings) was installed on St. Ann’s Avenue between East 149th and East 161st Streets (0.8 miles in each direction) in April 2003.

Street lighting improvements were completed in May 2003 at:

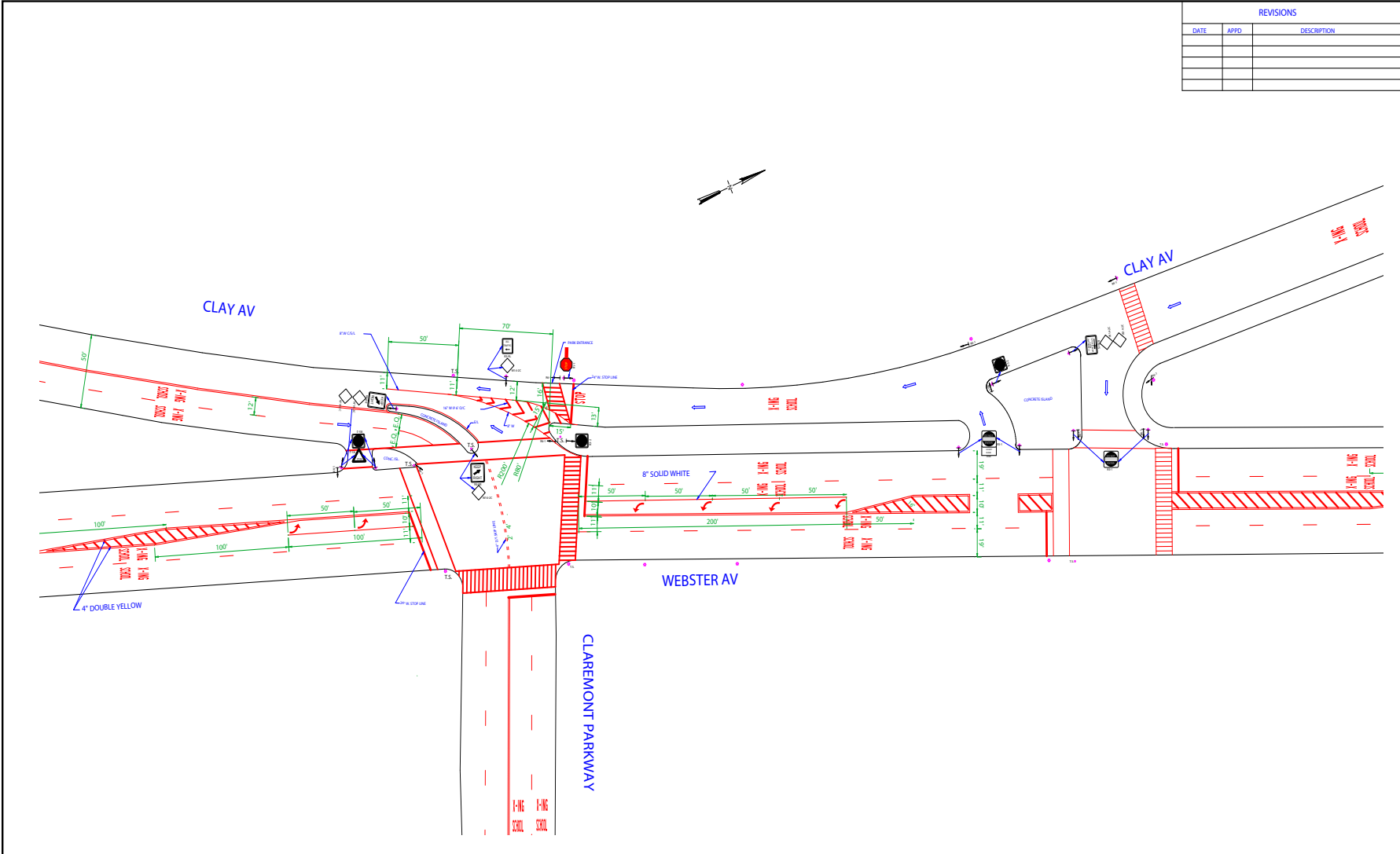
- Franklin Avenue between East 167th and East 168th Streets
 - Upgraded four existing luminaries in this area to the newer, more efficient 250 watt High Pressure Sodium (HPS) fixtures. Added light pole with new 250 watt HPS directly in front of St. Augustine Church.
- Morris Avenue between 163rd and 164th Streets
 - Installed two new 250 HPS lighting fixtures to improve visibility.

Additional markings and signs were installed in the vicinity of Our Lady of Victory Church (the intersection of Claremont Parkway @ Webster Avenue) in May 2003. Implemented improvements include:

- Installed school crosswalk on the north leg of the intersection
- Installed stop word messages on the north service road
- Installed three school crossing messages on the north leg, two on the south leg, two on the main road, and one on the service road
- Added stop lines at all approaches
- Installed peg-a-tracs to guide turning vehicles through the intersection
- Added new yield markings
- At the intersection of Webster and Clay Avenues, installed stop lines on the north, south and west legs
- Installed new advance school crossing signs on the north and south legs

The improvements are shown on the following page.

REVISIONS		
DATE	APPD	DESCRIPTION



NOTE:
 1. THIS DRAWING REPLACES DRAWING CC-101
 2. FOR WEBSTER AVE PAVEMENT MARKING SEE DWG. # MD-183(A&B)

CITY OF NEW YORK		DEPARTMENT OF TRANSPORTATION	
BUREAU OF TRAFFIC OPERATIONS		28-11 Queens Plaza North	
L.L.C. NY 11101			
CLAREMONT PARKWAY & CLAY AVENUE @ WEBSTER AVENUE			
APPROVED	Drawn by AN	Checked by BRNM	DRAWING NO. CD- 262
BY	Scale 1"=30'	Date 4/28/23	



EAST FORDHAM ROAD/ EAST KINGSBRIDGE ROAD/ BAINBRIDGE AVENUE

Description

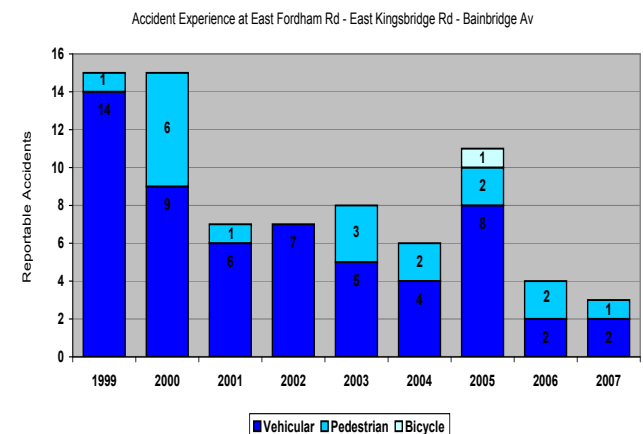
East Fordham Road/East Kingsbridge Road/Bainbridge Avenue is a graded irregularly aligned intersection located in the heart of the Fordham Road retail center and is surrounded by dense residential land use. There is a triangular-shaped Parks Department GreenStreet located between Bainbridge Avenue and East Kingsbridge Road with several benches that are utilized by people waiting for the bus, as well as shoppers and area residents. There is a two-way (eastbound and westbound) slip off the mainline of East Kingsbridge Road that connects to East Fordham Road. East Fordham Road is a major bus route for both MTA and Liberty Line Westchester County buses. Many of the shoppers in the area use mass transit and pedestrian activity and volume is very high.

One of the primary concerns at this intersection is that even though the intersection is signalized, the geometry of the roadway guides pedestrians to cross diagonally creating unnecessarily risky vehicle/pedestrian conflicts.

There were high numbers of crashes in 1999. In 2000, vehicular crashes decreased by 36% (to nine from 14) while pedestrian crashes increased significantly to six. From 2001 to 2004, reportable crashes decreased approximately 50% from the previous years but increased to 11 in 2005. Over the past two years, the number of crashes at this location have decreased dramatically to four and three in 2006 and 2007, respectively.



Original Configuration of Intersection





Detailed view of several of the improvements including one-way conversion of slip ramp, modified neckdown and flexible delineators surrounding the park

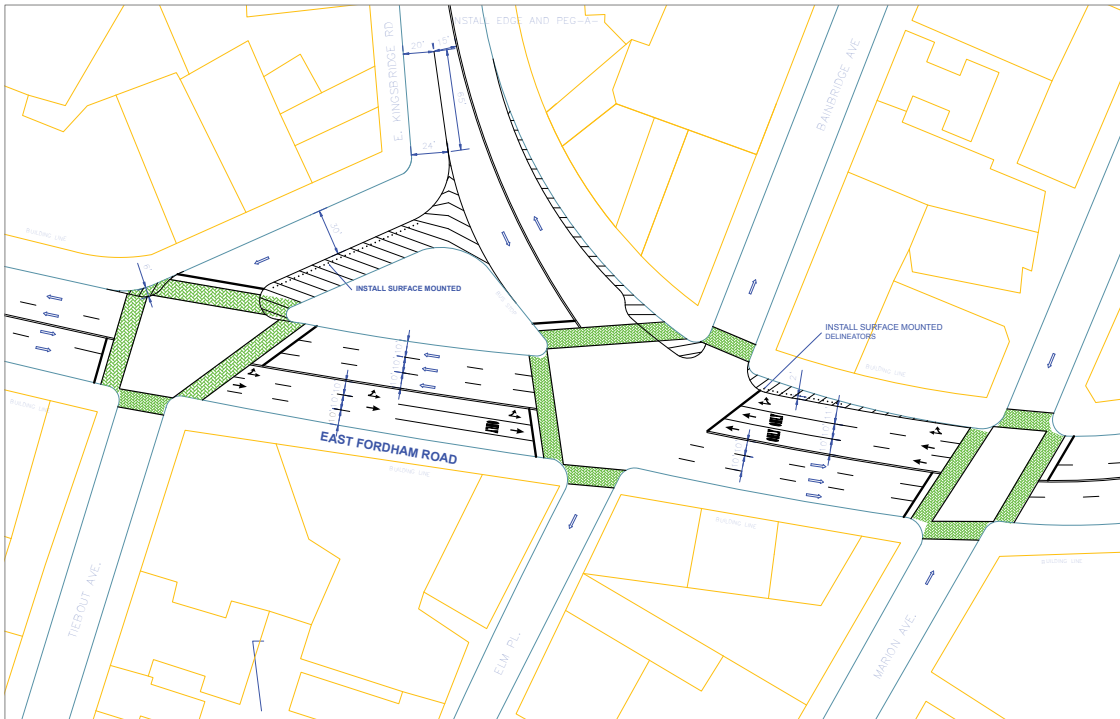


Flexible delineators and markings for increased pedestrian and vehicular safety

Improvements Implemented in September 2002

- Converted the East Kingsbridge Road slip roadway to one-way westbound from East Kingsbridge Road to East Fordham Road mainline to reduce conflicts and improve safety.
- Widened the triangular park to the west and north with pavement markings and flexible delineators to narrow the street, discourage double parking, increase pedestrian sidewalk space, and decrease crossing distance.
- Installed a modified neckdown on the northwest corner of the East Kingsbridge Road slip/East Fordham Road intersection to increase pedestrian sidewalk space and decrease crossing distance.
- Widened the East Fordham Road north sidewalk (and installed delineators) approaching Bainbridge Avenue/East Kingsbridge Road and widened the east sidewalk of East Kingsbridge Road west of Bainbridge Avenue to reduce pedestrian crossing distance and provide more sidewalk space.
- Installed Stop bars, lane assignment arrows, and double yellow and lane lines as appropriate.
- Modified signal faces as appropriate.

The improvements are shown below and were done in coordination with the installation of priority rush hour bus lanes (in both directions) on Fordham Road between University Avenue and Southern Boulevard.



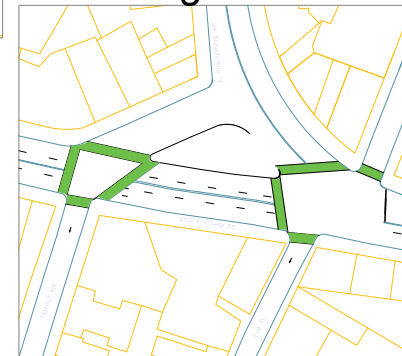
Reconfigured Intersection



GENERAL NOTES:

- * INSTALL REFLECTIVE EDGE MARKINGS ON SIDES OF ZEBRA PAVERS TO IMPROVE VISIBILITY OF CROSSWALKS AT NIGHT TO APPROACHING MOTORISTS.
- * INSTALL STOP BARS ON ALL APPROACHES.
- * EXISTING ZEBRA PAVERS SHOWN TO REMAIN.

Original Configuration



East Fordham Road @ East Kingsbridge Road
Safety Improvements

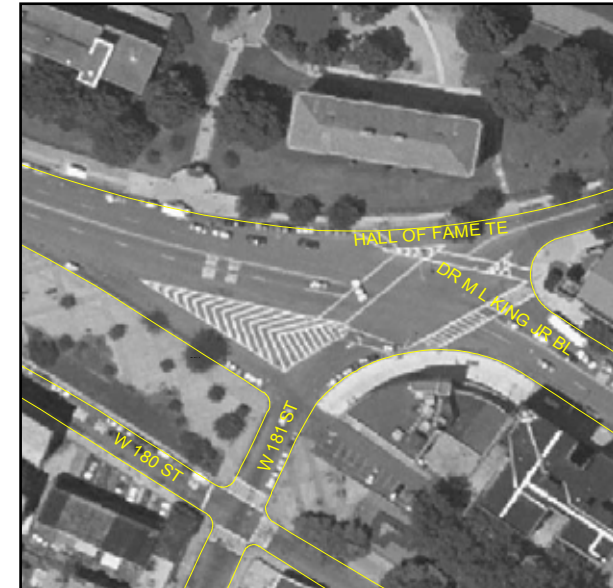


UNIVERSITY AVENUE/ WEST 181ST STREET/ HALL OF FAME TERRACE

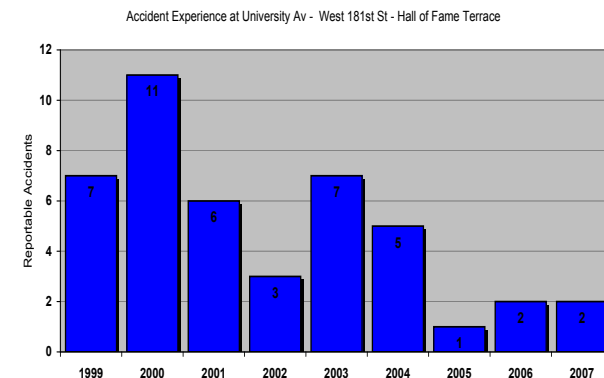
Description

In its original configuration, the intersection of University Avenue, West 181st Street and Hall of Fame Terrace was unusually wide. Due to this configuration, the roadway was configured with large painted islands that channelized traffic resulting in Stop controlled roadways and unusual approaches and turning movements. Hall of Fame Terrace is offset from West 181st Street across University Avenue and there is a steep grade on Hall of Fame Terrace approaching the intersection. Surrounding land uses include Bronx Community College, a park, a library and a church all generating high pedestrian activity.

One of the primary concerns at this location was frequent jaywalking across University Avenue, (approximately 230 feet south of the signal) which was the result of a natural pedestrian path from a park on the east side of University Avenue to the entrance of Bronx Community College on the west. While not a high crash location, this intersection was of concern to the Department due to the surrounding land uses and increase in crashes in 2000, leading the Department to take a proactive approach at this location to address the safety concerns. **In terms of the crash experience at this intersection, there was a 36% increase in crashes to 11 in 2000 from 7 in 1999, but in 2001 and 2002 they declined by 45% and 73% to six and three, respectively. After improvements were made in 2002, the average number of crashes per year decreased by 58% to 3.4 from an average of 8.0 from 1999 to 2001. Overall, the Department believes the improvements made at this intersection will continue to improve both pedestrian and vehicular safety.**

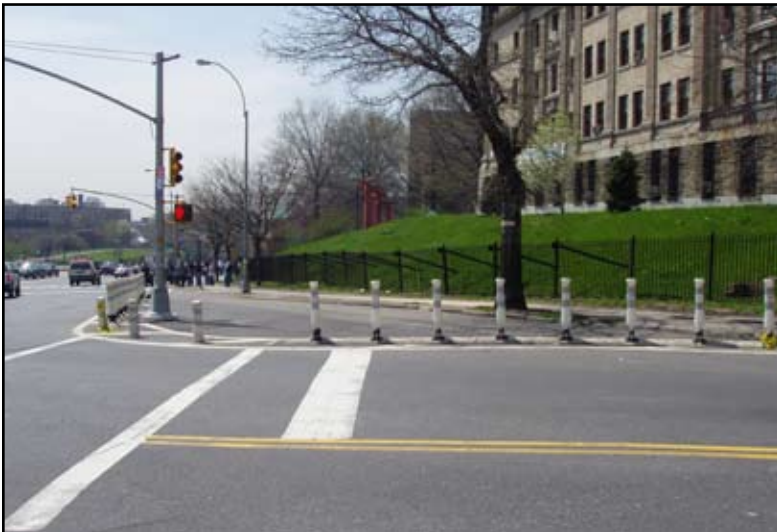


Original Configuration of Intersection





Detailed views of additional pedestrian space created by the use of curb mounted delineators and markings



Improvements Implemented in October 2002

- Reconfigured the intersection with new channelization markings in combination with curb mounted delineators to create additional pedestrian space.
- Reconstructed the existing signal to conform to the new geometry. The signal provides separate phases for Hall of Fame Terrace and West 181st Street which now operate concurrently.
- Removed “Stop” controlled slip roadways to improve pedestrian safety.
- Installed a left turn lane for northbound University Avenue.
- Upgraded crosswalk markings to high visibility on the south leg of University Avenue and West 181st Street.
- Installed a new pedestrian crossing signal with a high visibility crosswalk (approximately 230 feet south of West 181st Street) at the park walkway.
- Installed a pedestrian separator on the west side of University Avenue (in front of the entrance/exit of Bronx Community College) to direct pedestrians to the signalized crossings.

The improvements are shown on the following page.

