

Bridge Strike Mitigation



Purpose

- Reduce the number of bridge strikes
- Improve public safety for all motorists
- Reduce traffic congestion and delays that result from bridge strikes

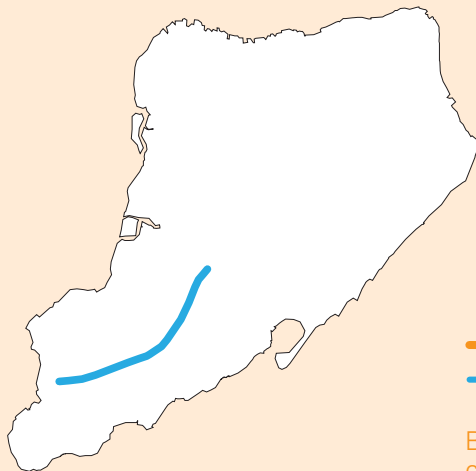
Outreach

- DOT Truck Summit in June 2008 attended by more than 125 trucking industry stakeholders; bridge strikes were identified as a prominent issue
- Continued communication with the New York State Motor Truck Association

Approach

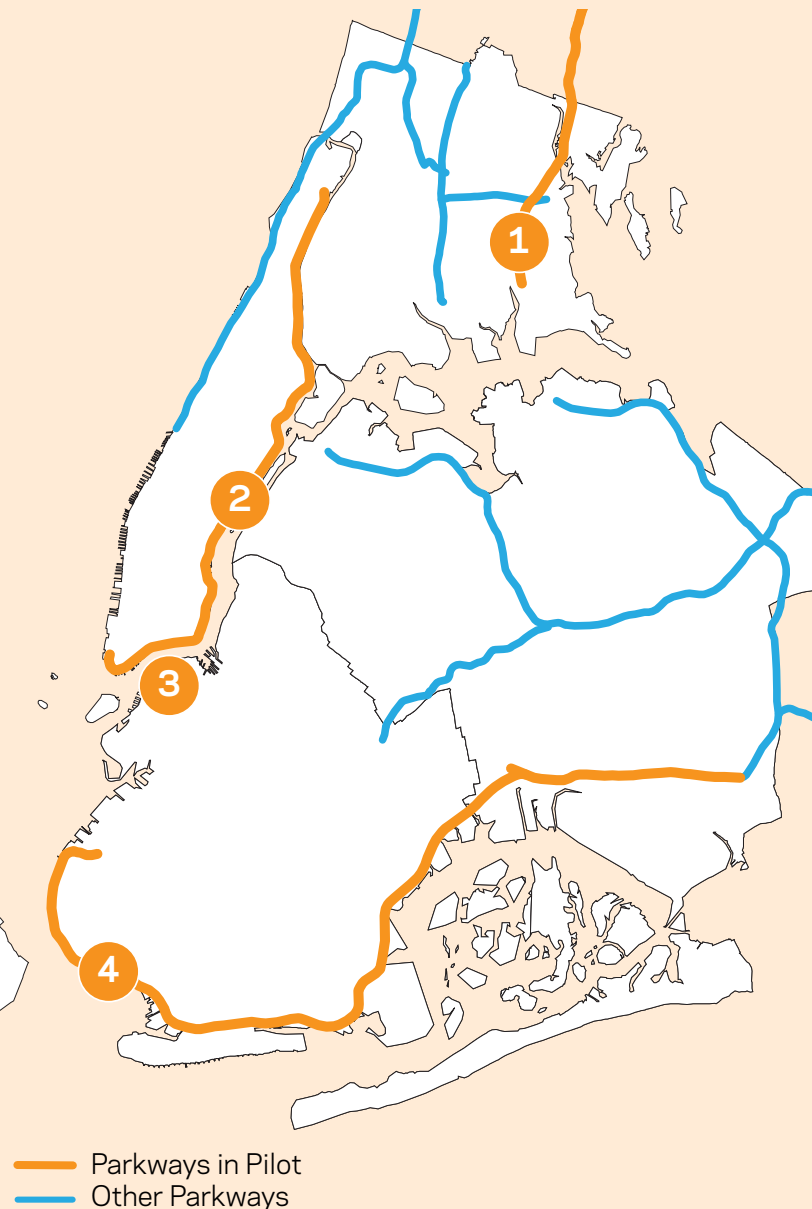
- Identified locations for new warning signage based on reported bridge strike data
- Developed attention-grabbing warning message to inform drivers to exit safely before hitting the bridge
- Installed bridge reflective covering treatment of retro-reflective material
- Developed survey for truck drivers to be administered by NYPD after bridge strikes to evaluate contributing factors

1. **Hutchinson River Parkway: Westchester Avenue**
2. **Franklin D. Roosevelt (FDR) Drive: E. 60th and 61st Streets**
3. **Brooklyn-Queens Expressway (BQE): Brooklyn Bridge**
4. **Belt Parkway: 17th Avenue Bridge**



Results

- Bridge strikes declined at two of three locations; small increase at one location although less than the citywide increase in reported bridge strikes
- Pilot identified the need to pursue additional technology improvements and education programs to keep trucks off of parkways



Bridge strikes are a public safety problem; they create congestion and traffic delays on our already congested transportation system and threaten the structural integrity of our infrastructure. New York City has 313 bridges with posted vertical clearances of less than 14 feet, more than half of which are maintained by DOT.

There are 313 “low” bridges over roadways, with vertical clearances of less than 14 feet, in New York City. Signs showing the vertical clearance are posted at each of these bridges to warn truck and bus drivers of the potential hazard. Despite these warnings, there were more than 309 reported incidents where trucks struck bridges (bridge strikes) or stopped just short of striking a bridge between 2006 and 2009, including 76 in 2009.

Bridge strikes create traffic congestion while the vehicle is cleared from the roadway, reduce traffic safety for all drivers and cause physical damage to bridges which can necessitate repairs. DOT is considering different approaches to reducing bridge strikes. Improved signs and markings are among several approaches to this problem.

DOT identified frequent bridge strike locations based on reported data compiled by the New York State Department of Transportation (NYSDOT) Integrated Incident Management System Database. Three pilot locations were selected based on the available data: FDR Drive at E. 60th Street in Manhattan, Hutchinson River Parkway at Westchester Avenue in the Bronx, and the Belt Parkway at the 17th Avenue Pedestrian Bridge in Brooklyn. The bridge treatments were installed in March 2008 on the FDR Drive and in August 2008 on the Belt Parkway and the Hutchinson River Parkway.

Two of the three pilot locations showed reductions in bridge strikes since installation. Bridge strike incidents at the FDR Drive location decreased by 56% and incidents at the Belt Parkway location decreased by 30%. The Westchester Avenue Bridge over the Hutchinson River Parkway, which has a direct connection to the Whitestone Bridge and is close to the I-95 corridor, showed a 7% increase in strikes.

One additional pilot location, the eastbound Brooklyn-Queens Expressway (BQE) at the Brooklyn Bridge, was selected because of visible damage from repeated incidents even through the state database did not show any reportable strikes. There were no incidents reported at the BQE location between when the treatment was installed in August 2008 and December 2009.

Overall, these findings indicate that the reflective treatment is a promising strategy for reducing bridge strikes at frequent strike locations, although the number of bridges and time period involved in this test can not yield a definitive conclusion. DOT is currently planning installations at other frequent strike locations.



No bridge strikes have been reported at this location since the treatment was installed on the Brooklyn Bridge overpass.



Retro-reflective material installed on Westchester Avenue bridge over the northbound Hutchinson River Parkway.

Improved signage and visual cues like retro-reflective bridge treatments are just a few of DOT's efforts to reduce bridge strikes.

Interviews of truck drivers involved in bridge strikes have identified the need for a larger education and outreach effort. To that end, DOT and its partners are pursuing a broad educational campaign to improve driver awareness of this hazard. This includes providing bridge clearance and truck route data to mapping and Global Positioning Systems (GPS) navigation providers, using height and weight detection technologies and Intelligent Transportation System (ITS) signs to complement existing signs and markings.

To further reduce the frequency of bridge strikes on all bridges citywide, a number of additional initiatives were implemented in 2008 and 2009. These include

coordination with online mapping companies to improve availability of truck specific information, improving truck route signs and advance vertical clearance signs, and working more closely with the trucking industry to educate truck drivers about traffic rules and truck routes in New York City.



Bridge strikes at the E. 60th/ 61st Street overpass on the FDR Drive are down 56% since the treatment was installed, the greatest reduction of any pilot location.

Annualized Incidents Per Year

	Before	After	% Change
FDR Drive at E 60/61 St *	2.7	1.2	-56%
HRP at Westchester **	6.8	7.2	+7%
Belt Parkway at 17 Ave Bridge **	2.3	1.6	-30%

* Bridge treatment installed March 2008

** Bridge treatment installed August 2008