Livingston Street Transit Priority

Purpose

- Improve bus speeds and reliability on five major bus routes that converge on Livingston Street
- Reduce congestion
- Better organize roadway use among buses, general traffic, and deliveries/parking

Outreach

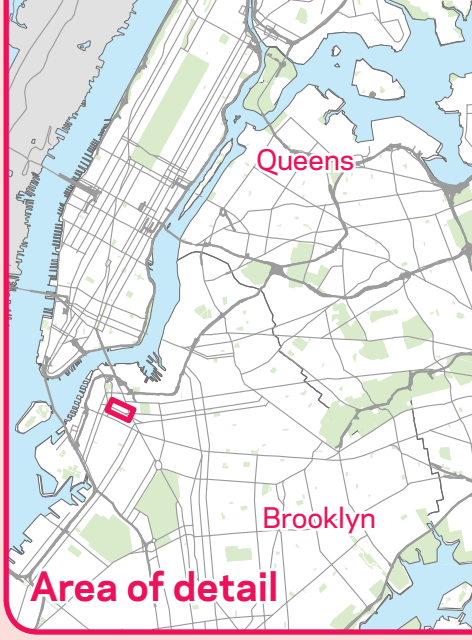
- Project was developed in response to request from the Metropolitan Transportation Authority (MTA) for bus lane improvements to assist with its operations on Livingston Street
- DOT worked cooperatively with Court-Livingston-Schermerhorn Business Improvement District (CLS BID) to gain support of corridor businesses and adjusted plan to accommodate legitimate delivery needs
- DOT presented the project to Brooklyn Community Board 2 (CB2) in April 2010 and garnered its support

Approach

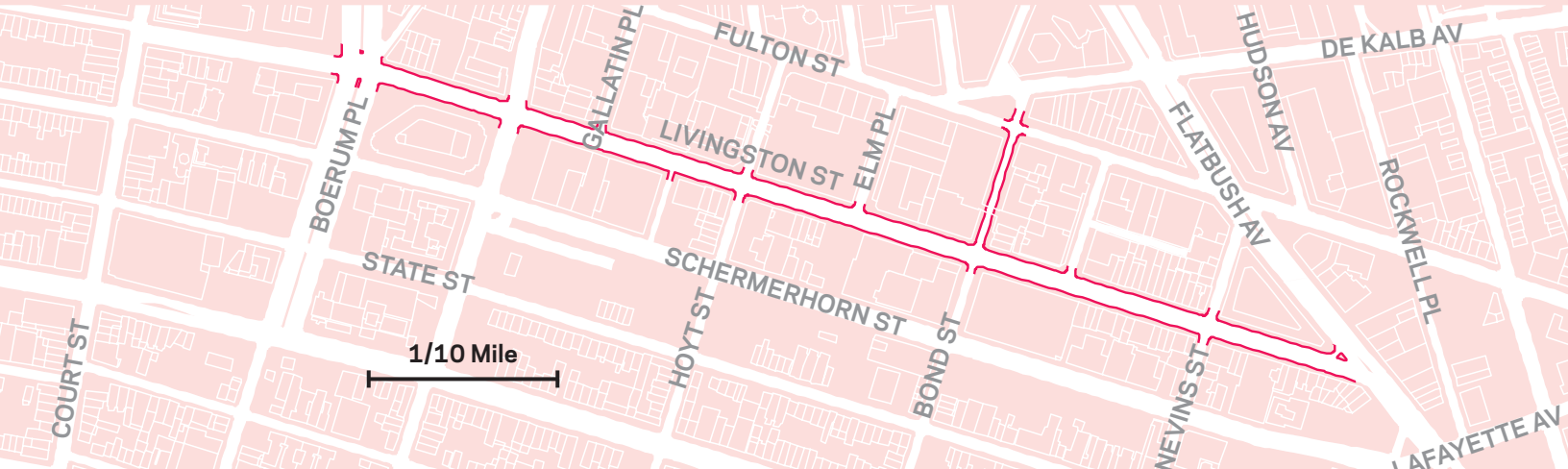
- Expanded hours of existing bus lanes from peak-hour peak-direction only to Monday through Friday 7 a.m. to 7 p.m.
- Implemented signal enhancements to speed bus travel, including longer cycle lengths and a leading bus interval at the intersection of Livingston Street and Flatbush Avenue
- Increased visibility of bus lanes with red paint and large overhead signage
- Offset eastbound bus lane from curb to allow for additional parking and curbside activity and further discourage bus lane infractions

Results

- Bus travel times within the corridor improved by an average of 12% westbound and 14% eastbound
- Overall bus lane infractions during the morning peak hour (general traffic driving, standing, or parking in the bus lanes) decreased by over 50%



Livingston Street is an important east-west corridor in Downtown Brooklyn that connects Boerum Place and Flatbush Avenue, both of which provide direct access to Manhattan via the Brooklyn and Manhattan bridges. Three local and two limited buses use the corridor, resulting in up to 40 buses per hour at peak times. Livingston Street, which has a significant amount of institutional, commercial retail and office uses, is also within one block of multiple subway lines (2, 3, 4, 5, A,C,F,G) and the high volume Fulton Mall commercial district.



Livingston Street Transit Priority

Livingston Street between Boerum Place and Flatbush Avenue is a significant commercial east-west corridor in Downtown Brooklyn that also hosts three local and two limited stop MTA- New York City Transit (NYCT) bus routes. In 2010 DOT in collaboration with MTA significantly upgraded the existing bus lanes and added other transit priority measures to promote faster and more reliable trips for the tens of thousands of daily bus riders in the corridor.

Planned improvements were developed with MTA input and shared with both the CLS BID and CB2. The CLS BID helped DOT share the proposal with Livingston Street merchants, who generally recognized the need for better bus operations. In April 2010 the proposal was presented to the CB2 transportation committee, which voted in support. Implementation occurred in early summer 2010. The immediate benefit was to allow NYCT to initiate its diversion of all Fulton Mall bus routes while a new concrete roadway was constructed on that important transit corridor. With the improvements, Livingston Street was able to accommodate twice the number of buses as normal for several months without major incident. The end of the Fulton Mall bus diversion allowed MTA and DOT to measure the impact of new changes under normal bus operating conditions.

In 2009 the DOT began to investigate the potential for improved bus priority on Livingston Street, which hosts more than 40 buses per hour at peak times. MTA had expressed concerns about the effectiveness of the existing curbside bus lanes, which at the time were in effect during only three hours per weekday in each direction. The curbside signs designating the bus lanes were small and some were missing, and markings were worn. Because of this there was a general perception that the lanes were not being respected by motorists and not as effective as they could be. In addition, five other bus routes would be diverted to Livingston Street for several months during the reconstruction of Fulton Mall.

DOT studied options to enhance Livingston Street's ability to efficiently accommodate and process buses, both during the Fulton Mall work and after construction was complete. The existing 50-foot, two-way roadway was marked with a single wide 13-foot general travel lane and a 12-foot parking/part-time bus lane in each direction. Reducing lane widths allowed for an increase from four to five total lanes. In the westbound direction the bus lane would remain at the curb, but eastbound the bus lane would be offset eight feet from the south curb, allowing for fulltime curbside parking. It was recommended that the bus lanes be painted red for greater visibility and extended from their former limited hours to 7 a.m. to 7 p.m., Monday through Friday.

Several additional bus priority measures were implemented. The cycle lengths on Livingston Street signalized intersections were increased from 60 seconds to 90 seconds, providing more continuous green light time for buses. Two closely spaced stops were consolidated into one to reduce bus delay. Finally, at the critical eastbound approach to Flatbush Avenue right turning vehicles were segregated from the bus lane by a barrier of flexible bollards. In coordination, a "leading bus interval", or dedicated bus signal, now provides vehicles in the bus lane with a five-second head start over general traffic.

The project also took into account commercial business loading and parking concerns. One large department store which received deliveries on the north side was concerned that the curbside bus lane hours on that side would be expanded from 7-10 a.m. to all day. A solution was to create a "delivery window" between 10 a.m. and 4 p.m. in a small section of the corridor, allowing for deliveries to take place in the bus lane during those non-peak hours. Livingston Street merchants were pleased that parking would now be available all day on the south side of the street.

Bus lanes were painted red and large overhead signs were installed along the corridor to increase the visibility of the bus lanes.

Right-turning vehicles were separated from buses on eastbound Livingston Street at Flatbush Avenue by bollards and a dedicated bus signal was installed to allow buses a five second head start to make the turn onto Flatbush Avenue.

New bus lanes improved bus speeds by 12 - 14%.

DOT conducted observations of bus lane infractions, including illegal driving, standing or parking and compared them with similar observations conducted before the project was implemented. In the morning peak period, overall bus lane infraction decreased by 50%, and stopped vehicles completely blocking the bus lane as a proportion of overall infractions also decreased. Although the evening peak period saw about the same amount of overall bus lane infractions, the most deleterious type of illegal bus lane use - standing and parking - decreased by 44%. The one area where the new changes have not had a positive impact has been in violations by Dollar Vans. The drivers of these vans do not appear to be influenced by clearer signage and markings but rather deliberately drive in the bus lanes to pick up and transport passengers.

Bus travel times within the corridor improved by an average of 12% westbound and 14% eastbound. The changes provide concrete benefits, in the form of travel time saved, to tens of thousands of bus riders every day.

Westbound Livingston Street Bus Lane Infractions - Morning Peak Flatbush Avenue to Boerum Place

	Before	After	Change	% Change
Parking	18	3	-15	-83%
Standing/Stopping	25	13	-12	-48%
Driving	1	5	4	400%
Total	44	21	-23	-52%

Before data collected in April 2009. After Data collected in November 2010. Data collected by MTA-NYCT.

Eastbound Livingston Street Bus Lane Infractions - Evening Peak Flatbush Avenue to Boerum Place

	Before	After	Change	% Change
Parking	8	1	-7	-88%
Standing/Stopping	26	19	-7	-27%
Driving	10	26	16	160%
Total	44	46	2	5%

Before data collected in April 2009. After Data collected in November 2010. Data collected by MTA-NYCT.

Average Eastbound Livingston Street Bus Travel Times Flatbush Avenue to Boerum Place

	Before	After	Change	% Change
AM Peak	05:15	05:32	00:16	5%
Midday Peak	07:46	06:01	-01:45	-23%
PM Peak	05:10	04:33	-00:37	-12%
All Times	06:26	05:32	-00:54	-14%

Before data collected in March 2010. After Data collected in March 2011. Times shown in minutes, seconds. Data collected by MTA-NYCT.

Average Westbound Livingston Street Bus Travel Times Flatbush Avenue to Boerum Place

	Before	After	Change	% Change
AM Peak	04:31	04:04	-00:27	-10%
Midday Peak	06:44	06:11	-00:33	-8%
PM Peak	06:42	05:17	-01:25	-21%
All Times	06:11	05:26	-00:45	-12%

Before data collected in March 2010. After Data collected in March 2011. Times shown in minutes, seconds. Data collected by MTA-NYCT.