January 2010

# Green Light for Midtown Evaluation Report

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The New York City Department of Transportation undertook the *Green Light for Midtown* project to simultaneously improve mobility and safety in the Midtown core, and ultimately to make the area a better place to live, work and visit. DOT made a series of targeted traffic changes along the Broadway corridor to further these goals. This evaluation report uses a comprehensive set of quantitative information to measure and assess how well the changes achieved the project goals.

DOT's analysis of the data shows that the project has improved mobility by increasing overall motor vehicle travel speeds and accommodating growing travel volumes. The data also show enhanced safety in the project area with reductions in injuries to pedestrians and motorists alike. Additionally, the project has dramatically increased satisfaction with the Times and Herald Square areas among residents, workers and visitors.

## Executive Summary

The key findings of the report are:

### Mobility

- **Travel speed data from taxi GPS systems collected in West Midtown showed a 17% improvement in northbound trips from fall 2008 to fall 2009, compared with an 8% improvement in East Midtown**
- **The speed of southbound taxi trips declined by 2% in West Midtown while East Midtown showed a 3% increase**
- **The speed of eastbound trips in West Midtown improved by 5% and westbound trips improved by 9% in fall 2009 compared with a year earlier; East Midtown showed improvements of 2% for eastbound trips and 7% for westbound trips**
- **Field travel time surveys show a 15% improvement in travel time on 6th Avenue and 4% improvement on 7th Avenue. Overall, travel time survey results are similar to taxi GPS data for northbound and southbound speeds; they also show declines in speeds on crosstown streets in West Midtown, although results are highly variable**
- **Bus travel speeds improved by 13% on 6th Avenue and fell by 2% on 7th Avenue**

### Safety

- **Injuries to motorists and passengers in the project area are down 63%**
- **Pedestrian injuries are down 35%**
- **80% fewer pedestrians are walking in the roadway in Times Square**

### Additional Results

- **74% of New Yorkers surveyed agree that Times Square has improved dramatically over the last year**
- **The number of pedestrians traveling along Broadway and 7th Avenue in Times Square increased by 11%. At Herald Square pedestrian volume increased 6%**

Given the improvements in mobility, safety and satisfaction noted above and in the following report, DOT recommends that the new network changes be made permanent and built upon for the continued vibrancy of West Midtown. This includes enhancing the Broadway corridor by upgrading the temporary materials used in the *Green Light for Midtown* project through future capital projects.

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# Introduction and Project Background

*Green Light for Midtown*, the pilot project implemented by the New York City Department of Transportation in 2009, addresses a problem and opportunity that was hidden in plain sight, that of Broadway's disruptive and dramatic diagonal path across the midtown grid. The project seeks to simultaneously improve **mobility** and **safety and provide additional benefits** in the Midtown core. It covered Broadway from Columbus Circle to 42nd Street and from 35th Street to 26th Street. This report provides a comprehensive assessment of how the project meets these important goals. This report provides the final assessment of the pilot.

## The Broadway Problem & Opportunity

Broadway runs the length of Manhattan from the Battery to Inwood. As it cuts through midtown Manhattan, Broadway creates complex multi-legged intersections with intensely active north-south avenues. This complexity was causing congestion and contributing to higher crash rates at these locations compared to other Manhattan avenue intersections. By removing the Broadway leg from these intersections, the project was designed to address several mobility and safety issues in Midtown while having the added benefit of creating a world-class destination equal to Broadway's reputation. Removing Broadway from the system allowed for an 8% and 66% increase in green signal for 7th and 6th Avenues respectively at Times and Herald Squares.

GRAPHIC 1

**Broadway Issues**

**Unbalanced Use of Space**

**Inadequate Pedestrian Facilities**

**Multi-legged Intersections**

**Long Crosswalks**

**Pedlock**

**Confusing Traffic Pattern**

GRAPHIC 2

**Diagonal Across Grid**


While the core element of *Green Light for Midtown* was removing Broadway from the traffic system at Times Square and Herald Square, dozens of coordinated traffic changes were implemented in tandem with the Broadway closures to reach the project goals. Changes range from roadway geometry alterations to traffic signal timing adjustments, crosswalk shortenings and parking regulation changes. The *Green Light for Midtown* pilot program was announced on February 27, 2009. Implementation began in late May and construction was completed by late August.

## Project Goals & Criteria for Success

The goals of *Green Light for Midtown* are to improve and maximize mobility and safety while providing additional benefits to the West Midtown community. This evaluation report uses a comprehensive set of quantitative information to assess how well the changes achieved the project's goals. Data was assembled and collected before project implementation to create a baseline and then again after project completion to gauge changes and to provide a meaningful basis for evaluation.

### Mobility

To **improve the flow of people and goods**, particularly through and around Times and Herald Squares. The mobility chapter assesses the project's effect on motorists, taxi passengers, pedestrians and bus riders using an extensive set of data.

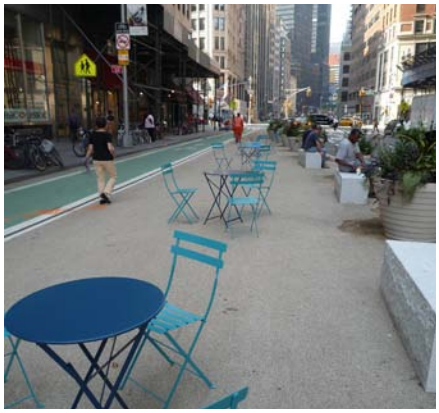
### Safety

To **improve safety** by eliminating the long crossings and awkward traffic movements created by Broadway. The safety chapter presents the latest crash data and key safety indicators.

### Additional Results

To **enhance NYC** by providing improved mobility, a comfortable walking environment, inviting streetscapes and pleasant places for workers, residents, shoppers and visitors to rest and congregate. While these benefits can be difficult to measure in the short term, a variety of inputs and feedback is used to gain an understanding of the project's full impact.

**GRAPHIC 3**
**Streetscape Elements**




# 1 Mobility

The *Green Light for Midtown* project was designed to enhance mobility in West Midtown by simplifying intersections, removing conflicts and providing additional traffic and pedestrian capacity where needed. A traffic simulation model was used in project development and is described in Appendix A. An analysis of a wide range of mobility indicators are analyzed in the report, including general traffic speeds, bus speeds, traffic volumes, bus ridership and pedestrian volumes. These indicators show that mobility improved in several key areas as a result of *Green Light for Midtown*.

## 1.1 Traffic Flow

Traffic flow impacts of the project are analyzed using primarily taxi GPS data and field travel time surveys conducted for this project. The methodology of each data source is described, followed by results and a comparison of results from the two data sources.

### 1.1.1 Taxi GPS and Field Travel Time Survey Methodologies

Taxi Global Positioning System (GPS) data are provided by the Taxi and Limousine Commission (TLC) with results compiled by DOT. The GPS devices track the speed of taxis in revenue service including time moving freely, stopped at traffic signals and delayed in congestion. Data are collected for all 13,000 taxicabs, and for every taxi trip in revenue service. DOT is currently receiving about 13 million citywide taxi trip records each month.

The taxi GPS data are an excellent measure of Manhattan travel speeds since they provide direct observation of travel times for actual trips in the area and reflect the routes chosen by taxi drivers and/or their passengers based on actual traffic conditions. The GPS device records the time and location of the start and the end of a trip in revenue service. It also records the trip length, therefore providing an average trip speed. Since taxis make up about 45% of all vehicles in the study area, they provide direct observation of a large proportion of all trip-making in the area. In addition, the taxi data consists of far more data records than other sources such as field travel time surveys, and are collected 24/7/365, which provides an opportunity to evaluate traffic speed impacts of the Green Light project on a comprehensive and reliable basis. Data in this report are based on 1,130,000 taxi trips in West Midtown in September and October 2008 and September and October 2009, and 890,000 taxi trips in East Midtown during these months.

Field travel time survey data were collected by DOT consultants for this project using the standard "floating car run" technique. Vehicles are driven the length of the roadway segment, e.g., on 7th Avenue from Central Park South to 23rd Street. The driver stays in the main flow of traffic, with approximately as many vehicles passing the floating car as are passed by the floating car. A second data collection staff person records the exact time at the start and end of the trip and at designated checkpoints.

Field travel time surveys were conducted in March 2009 (before project implementation) and September and October 2009 (after). Field travel time surveys were conducted on each avenue from 5th Avenue to 9th Avenue, major cross streets and selected minor cross streets. Approximately 140 travel time surveys were conducted on each avenue/street in the spring and approximately 140 surveys in the fall. A total of 5,723 travel time runs were conducted in the West Midtown study area.

Results from both data sources are presented in the subsequent sections of the report. The taxi GPS data provides more accurate assessments of the project's impacts than the field travel time surveys due to the size and scope of the data set.

In any analysis of traffic speeds, it is also worth noting that traffic speeds vary considerably depending on day, hour and location. The changes in traffic speeds that can be attributed to the *Green Light for Midtown* project—whether showing improvements or worsening to speeds—are in most cases smaller than the daily variation in speeds experienced in Midtown Manhattan.

### 1.1.2 Traffic Speeds Based on Taxi GPS Data

- **Northbound taxi trips in West Midtown were 17% faster in fall 2009 compared with fall 2008; this compares with an 8% increase in East Midtown**
- **The speed of southbound trips declined by 2% in West Midtown while East Midtown showed a 3% increase**
- **The speed of eastbound taxi trips improved by 5% and westbound trips improved by 9% in fall 2009 in West Midtown compared with a year earlier; East Midtown showed improvements of 2% for eastbound trips and 7% for westbound trips**

This section compares taxi speeds in the vicinity of the Broadway corridor (West Midtown) with taxi speeds in East Midtown for periods before and after implementation of the Green Light for Midtown project. The analysis compares taxi speeds in fall 2008 and fall 2009, thus controlling for seasonal variations in Midtown speeds. The East Midtown data function as a "control" that can account for overall changes in traffic speeds occurring since 2008 which were not due to the project, in particular the economic recession. Data presented is for trips that were taken weekdays between 7 am and 8 pm. Broadway was closed to traffic on May 24th with ongoing construction occurring during the summer until mid-August.

Data are for all revenue service taxicab trips that had both origin and destination in either West Midtown or East Midtown, defined as:

- **West Midtown**: 23rd Street to 59th Street, 5th Avenue to 9th Avenue inclusive of all four avenues. Results for this area reflect changes in traffic speeds for Broadway, 7th Avenue and 6th Avenue, which were directly affected by the project, and potential spillover effects on 5th, 8th and 9th Avenues.
- **East Midtown**: 23rd Street to 59th Street, inclusive, from east of 5th Avenue to the East River.

GRAPHIC 4
**Taxi Analysis Zones**


The analysis also breaks out speeds by direction of travel, since the project impacted speeds differently for northbound, southbound and crosstown trips. Graphic 5 shows the change in speed between fall 2008 and fall 2009 for all taxi trips by main direction of travel, in West and East Midtown. Data for "Northbound trips" is for those taxi trips in which a majority of the distance covered was northbound. "Southbound trips" comprise those trips in which a majority of the distance covered was southbound, and likewise for eastbound and westbound trips.

**GRAPHIC 5**

**Taxi Speeds by Area and Direction, MPH, Sept/Oct 2009 versus Sept/Oct 2008, All Trips, Weekdays 7 am – 8 pm**

*Over 50% of trip mileage is in direction indicated.

| Main Direction of travel* | West Midtown | | | East Midtown | | |
|---|---|---|---|---|---|---|
| | 2008 | 2009 | Change | 2008 | 2009 | Change |
| North | 6.5 | 7.6 | **+17%** | 7.9 | 8.5 | **+8%** |
| South | 7.3 | 7.2 | **–2%** | 8.3 | 8.5 | **+3%** |
| East | 5.7 | 6.0 | **+5%** | 7.2 | 7.3 | **+2%** |
| West | 6.0 | 6.5 | **+9%** | 5.5 | 5.9 | **+7%** |
| **Total** | **6.7** | **7.2** | **+7%** | **7.8** | **8.2** | **+5%** |

Within West Midtown, the speed of northbound trips improved substantially between fall 2008 and fall 2009. The improvement was twice as large in West Midtown (17%) as in East Midtown (8%). These results reflect the improvement to traffic operations on Sixth Avenue due to closing Broadway at the 34th Street intersection, which substantially helped northbound travel.

Results show smaller differences between West and East Midtown for southbound and crosstown taxi trips. Southbound trips showed a decline of 2% in speeds between fall 2008 and fall 2009 in West Midtown, compared with a 3% increase in East Midtown. Eastbound trips showed a 5% increase in West Midtown and 2% increase in East Midtown. Westbound trips showed a 9% increase in West Midtown and 7% increase in East Midtown.

Many of the northbound and southbound trips include a substantial amount of crosstown travel; conversely, many crosstown trips include a substantial amount of north or southbound travel. For any particular trip, it is not possible to break out the north/south travel segment from the east/west travel segment since the taxi GPS data show the trip origin and destination only and do not contain information about intermediate time points. It is possible, however, to isolate northbound and southbound avenues and crosstown streets by examining only those trips in which at least 80% of the travel was in a given direction.

Graphic 6 shows results in which over 80% of the distance of each trip is in a north, south, east or west direction. Results are very similar to results for all trips shown above. Speeds for West Midtown trips comprised of at least 80% northbound travel show slightly higher speeds (21% increase for trips that are at least 80% northbound mileage versus 17% increase in speeds for all mainly northbound trips). Results for southbound avenues and crosstown streets are nearly identical to the more comprehensive data for trips that are mainly southbound or crosstown.

**GRAPHIC 6**

**Taxi Speeds by Area and Direction, MPH, Sept/Oct 2009 versus Sept/Oct 2008, Weekdays 7 am – 8 pm**

| Trips in which over 80% of mileage is in direction indicated | West Midtown | | | East Midtown | | |
|---|---|---|---|---|---|---|
| | 2008 | 2009 | Change | 2008 | 2009 | Change |
| North | 6.6 | 8.0 | **+21%** | 8.2 | 8.9 | **+9%** |
| South | 7.7 | 7.4 | **–3%** | 8.7 | 9.0 | **+3%** |
| East | 5.3 | 5.5 | **+5%** | 7.0 | 7.0 | **+1%** |
| West | 5.9 | 6.5 | **+9%** | 5.2 | 5.5 | **+6%** |
| **Total** | **7.0** | **7.5** | **+8%** | **8.2** | **8.7** | **+6%** |

### 1.1.3 Corridor Travel Times Based on Field Travel Time Surveys

- **Northbound travel times between 23rd Street and Central Park South improved by 5% between spring and fall 2009, before and after project implementation**
- **Southbound travel times between Central Park South and 23rd Street did not change, with individual avenues showing only small changes**
- **Crosstown travel times between 5th Avenue and 11th Avenue lengthened by 13% for both eastbound and westbound streets**

The table on the next page shows before and after travel times on each street or avenue based on field travel time surveys. The percentage change is shown as a positive where the speed increased (shorter travel times) and negative where the speed decreased (lengthened travel times) to be consistent with the presentation of GPS taxi data speeds. A positive percent change reflects a shortening and improvement of travel times; a negative percent change reflects a lengthening in travel times.

Results from field travel time surveys show that the project impacted speeds differently depending on direction of travel. Northbound travel times improved by 5%. The largest improvement occurred on 6th Avenue (15% improvement), reflecting the operational improvements from removing Broadway from the grid at 34 Street and 6th Avenue. Travel times on 8th Avenue lengthened by 6%.

Southbound, there was a slight 1% lengthening in travel time. 7th Avenue showed improvement (4%) and 5th Avenue showed no change.

Travel time surveys for both eastbound and westbound streets showed 13% longer travel times. Results were highly variable by street. Westbound 34th Street improved by 22%, reflecting the additional green time for crosstown traffic at the Broadway intersection. Westbound 57th Street showed a 3% improvement. Other westbound streets showed large changes in the opposite direction (e.g., travel times lengthened by 24% on 35th Street, 38% on 49th Street and by 94% for westbound Central Park South—measured for the short distance from 5th Avenue to where the street is interrupted by the Time Warner Center at Central Park South).

Eastbound 34th Street showed a 7% improvement in travel times, while eastbound 57th Street showed a lengthening of 24%. As with westbound streets, measured travel times on other eastbound streets were highly variable.

| | | 7 – 10 am | | | 10 am – 2 pm | | | 4 – 7 pm | | | Daily Avg 7 am – 8 pm | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Corridor | Before | After | % Δ* | Before | After | % Δ* | Before | After | % Δ* | Before | After | % Δ* |
| North | 8th Ave | 09:55 | 09:24 | +5% | 12:53 | 13:47 | –7% | 11:30 | 11:53 | –3% | 11:35 | 12:14 | –6% |
| | 6th Av | 11:43 | 09:27 | +19% | 14:39 | 10:58 | +25% | 11:46 | 11:45 | +0% | 12:39 | 10:48 | +15% |
| | **Avg** | **10:49** | **09:25** | **+12.9%** | **13:46** | **12:22** | **+10.1%** | **11:38** | **11:49** | **–1.6%** | **12:07** | **11:31** | **+4.9%** |
| South | 9th Av | 09:57 | 10:38 | –7% | 12:44 | 13:02 | –2% | 11:15 | 11:39 | –4% | 11:28 | 11:57 | –4% |
| | 7th Av | 11:00 | 10:56 | +1% | 14:40 | 15:06 | –3% | 13:55 | 11:39 | +16% | 13:33 | 13:04 | +4% |
| | 5th Av | 08:44 | 08:51 | –1% | 12:07 | 12:12 | –1% | 11:57 | 12:51 | –8% | 11:26 | 11:24 | +0% |
| | **Avg** | **09:53** | **10:08** | **–2.5%** | **13:10** | **13:26** | **–2.1%** | **12:22** | **12:03** | **–2.6%** | **12:09** | **12:08** | **+0.1%** |
| East | CPS | 02:50 | 02:34 | +9% | 03:51 | 04:06 | –7% | 02:55 | 03:38 | –25% | 03:16 | 04:01 | –23% |
| | 57th St | 06:07 | 07:21 | –20% | 07:30 | 09:43 | –30% | 07:33 | 08:42 | –15% | 07:13 | 08:59 | –24% |
| | 50th St | 07:47 | 11:08 | –43% | 07:49 | 14:16 | –82% | 09:07 | 12:11 | –34% | 08:05 | 12:23 | –53% |
| | 48th St | 08:38 | 08:35 | +1% | 09:56 | 13:35 | –37% | 09:39 | 10:23 | –8% | 09:17 | 10:52 | –17% |
| | 44th St | 12:06 | 08:53 | +27% | 14:09 | 14:01 | +1% | 13:24 | 13:31 | –1% | 13:11 | 11:58 | +9% |
| | 42nd St | 09:08 | 10:02 | –10% | 09:42 | 10:41 | –10% | 09:59 | 09:40 | +3% | 09:38 | 10:16 | –7% |
| | 36th St | 07:37 | 07:46 | –2% | 10:22 | 16:48 | –62% | 10:27 | 10:39 | –2% | 09:54 | 11:53 | –20% |
| | 34th St | 08:02 | 07:37 | +5% | 10:55 | 11:34 | –6% | 11:52 | 09:40 | +19% | 10:47 | 10:01 | +7% |
| | **Avg** | **07:46** | **07:59** | **–2.7%** | **09:17** | **11:50** | **–27.6%** | **09:22** | **09:48** | **–4.6%** | **08:55** | **10:02** | **–12.7%** |
| West | CPS | 02:08 | 04:13 | –98% | 02:18 | 04:40 | –103% | 02:41 | 04:43 | –76% | 02:24 | 04:40 | –94% |
| | 57th St | 08:08 | 07:38 | +6% | 09:13 | 08:21 | +9% | 08:06 | 07:56 | +2% | 08:31 | 08:14 | +3% |
| | 49th St | 07:21 | 08:43 | –19% | 09:22 | 14:33 | –55% | 09:13 | 12:56 | –40% | 08:41 | 12:01 | –38% |
| | 47th St | 08:58 | 08:22 | +7% | 10:17 | 12:39 | –23% | 10:20 | 11:15 | –9% | 09:56 | 10:51 | –9% |
| | 45th St | 08:39 | 07:28 | +14% | 10:29 | 12:22 | –18% | 10:35 | 10:17 | +3% | 10:03 | 10:17 | –2% |
| | 42nd St | 07:17 | 08:07 | –11% | 07:54 | 09:08 | –16% | 09:23 | 08:39 | +8% | 08:06 | 08:39 | –7% |
| | 35th St | 07:03 | 09:24 | –33% | 10:06 | 13:32 | –34% | 11:20 | 13:37 | –20% | 10:00 | 12:25 | –24% |
| | 34th St | 04:47 | 04:21 | +9% | 05:45 | 04:59 | +13% | 08:08 | 05:31 | +32% | 06:18 | 04:56 | +22% |
| | **Avg** | **06:47** | **07:17** | **–7.2%** | **08:10** | **10:02** | **–22.7%** | **08:43** | **09:21** | **–7.4%** | **07:59** | **09:00** | **–12.6%** |

GRAPHIC 7

**Field Survey Travel Times by Direction, Corridor & Period, March 2009 vs Sept / Oct 2009**

**North and southbound are between 59th Street / CPS and 23rd Street Crosstown between 5th and 11th Avenues**

*Percent change in travel time shown as positive for a decline in travel time (increase in speed) and negative for an increase in travel time (decrease in speed)

### 1.1.4 Comparison of Taxi GPS and Field Travel Time Surveys

Results from taxi GPS data and field travel time surveys utilize quite different data collection methodologies and data sources, and could reasonably be expected to produce somewhat different results. This section compares results and discusses likely reasons for differences where they occur.

In comparing results, it should be noted that the taxi GPS analysis compares speeds for fall 2008 and fall 2009 to eliminate any seasonal effects, and uses East Midtown as a "control" for the overall improvement in traffic speed that has resulted from the recession. The travel time surveys compare travel times between spring 2009 and fall 2009. The spring to fall comparison is potentially subject to seasonal variations; analysis of taxi GPS data for East Midtown show 2% lower speeds in the fall as compared with the spring. For the purposes of this comparison, results from the travel time surveys are adjusted by 2% to reflect the seasonal effects estimated based on East Midtown data.

The northbound results from the two sources show improvements in travel speeds of somewhat different magnitudes. Taxi GPS data show speeds for northbound avenues (the 80% data) improving by 21% in West Midtown compared with a 9% improvement in East Midtown, a difference of 12%. Travel time surveys show a 5% improvement in speeds, which grows to 7% with the seasonal adjustment.

Southbound results are also somewhat different, but in the opposite direction. Taxi GPS data show a 3% drop in speeds for southbound avenues in West Midtown while East Midtown shows a 3% improvement. This suggests that southbound speeds worsened by 6%, controlling for the overall increase in Midtown traffic speeds during the last year. Travel time surveys show no change in travel times, which when adjusted for seasonality becomes a 2% improvement. The travel time surveys thus show a slight improvement in southbound speeds while taxi GPS data suggest a relatively small decline in speeds.

For east/west travel, the differences are more pronounced. Taxi GPS data show speeds improving by 5% for eastbound streets in West Midtown and by 1% in East Midtown, for a 4% net improvement. The figures for westbound streets are 9% increase in West Midtown and 6% increase in East Midtown, for a 3% net improvement. These compare with field travel time surveys showing both eastbound and westbound speeds declining by 13%. Adjusted for seasonality, the change becomes an 11% reduction in crosstown speeds.

Variations in results are due to inherent differences in methodology between the two data sources. First, taxi GPS data reflect actual taxi volumes on each street and avenue, while the field surveys are not weighted by volumes on each street/avenue. Second, taxi GPS data reflect actual routing choices of drivers and passengers, who wish to avoid the slowest route options. Third, field surveys were conducted for selected crosstown streets only, with an emphasis on streets that the traffic model forecast would most likely be affected by the program. Streets with lesser forecasted impact were not surveyed and thus the average of crosstown field surveys is likely to overstate the actual

increases in travel time. These differences illustrate that travel time surveys are more useful for assessing project impacts on individual streets or avenues, while taxi GPS data are more useful for assessing impacts on people making actual trips in the project area.

### 1.1.5 Bus Travel Speeds

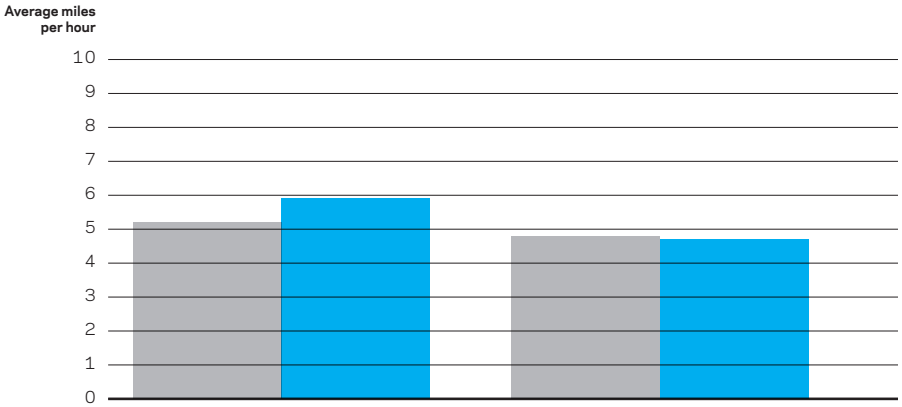
- **Bus travel speeds on 6th Avenue improved by 13% and fell by 2% on 7th Avenue**
- **Average wait time for southbound buses has decreased by 50% from an average of 2 minutes to just under 1 minute**

Bus speeds on 6th Avenue improved by an average of 13.5%, reflecting the operational improvements at Herald Square

In general, travel speeds through the Times Square area have fallen slightly (–2.1%). Routes that were rerouted from the direct travel path on Broadway (M6 and M7) have encountered larger delays and reduced speeds due to the introduction of more turns, which are subject to pedestrian interference. For some riders using these buses, however, these increases in travel time are offset by the 50% decrease in average wait time for southbound passengers due to the consolidation of southbound routes onto 7th Avenue. Speeds improved on routes with minimal modifications (M10, M20, and M104, which have no additional turns). Increases in travel speeds on 7th Avenue from Central Park South to 14th Street reflect improvements in general traffic operations in this segment, and the installation of a PM rush-hour bus-lane on 7th Avenue south of 42nd Street.

GRAPHIC 8

**Bus Travel Speeds Before (April 2009) vs. After (October 2009)**




| | 6th Avenue (Northbound, M5, M6/7, 14th Street to 34th Street) | 7th Avenue (Southbound, M6, M7, M10/104, M20, Central Park South to 14th Street) |
|---|---|---|
| Before | **5.2** | **4.8** |
| After | **5.9** | **4.7** |
| % Change | 13% | –2% |

## 1.2 Traffic Volume & Patterns

Extensive traffic data collection using automatic traffic recording machines (ATRs) and manual counts show that there was very little change in overall traffic volume in Midtown Manhattan before and after the project, but that traffic patterns in West Midtown were changed substantially by the *Green Light for Midtown* project. Volumes on northbound and southbound avenues were measured at screenlines at 60th Street, 57th Street, 44th Street, and 34th Street, and at critical crosstown streets where diversions were anticipated, in order to determine the shift in traffic patterns as a result of *the project*. Origin-and-destination data and turning movement counts were collected to provide additional details about diversions.

### 1.2.1 Traffic Volumes by Screenline

- **Vehicle volumes entering the West Midtown study area from the north and south increased slightly (3%)**

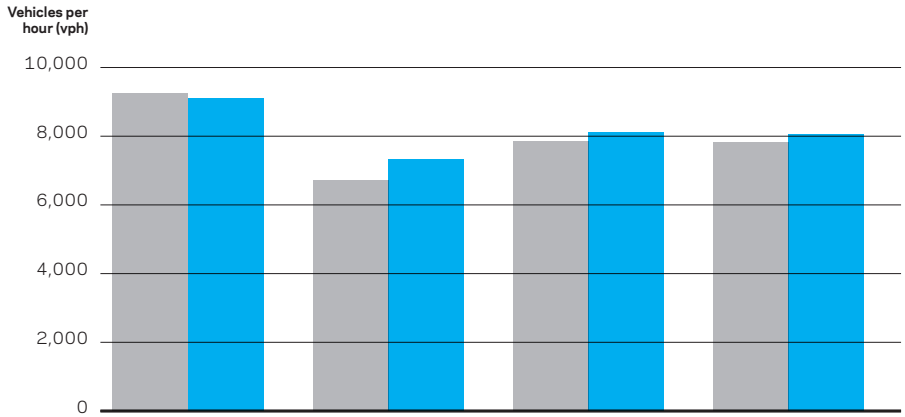
**60th Street Screenline Southbound**

Volumes measured on 12th Avenue/Route 9A, 11th Avenue/West End Avenue, 9th Avenue/Columbus Avenue, Broadway, and 5th Avenue at 60th Street indicate that slightly more traffic is being processed after closure of Broadway at Times Square. Total southbound volume increased by 2.8 % to 8,053 vehicles per hour [vph] after implementation from 7,831 vph before implementation.

GRAPHIC 9

**60th Street Screenline Volumes, Southbound, Before & After, By Period**

**12th Avenue/Route 9A, West End Avenue, Columbus Avenue, Broadway, 5th Avenue**




| | 7am–10am | 12pm–2pm | 4pm–7pm | 7am–8pm |
|---|---|---|---|---|
| Before | **9,254** | **6,710** | **7,857** | **7,831** |
| After | **9,087** | **7,308** | **8,114** | **8,053** |
| % Change | –1.8% | 8.9% | 3.3% | 2.8% |

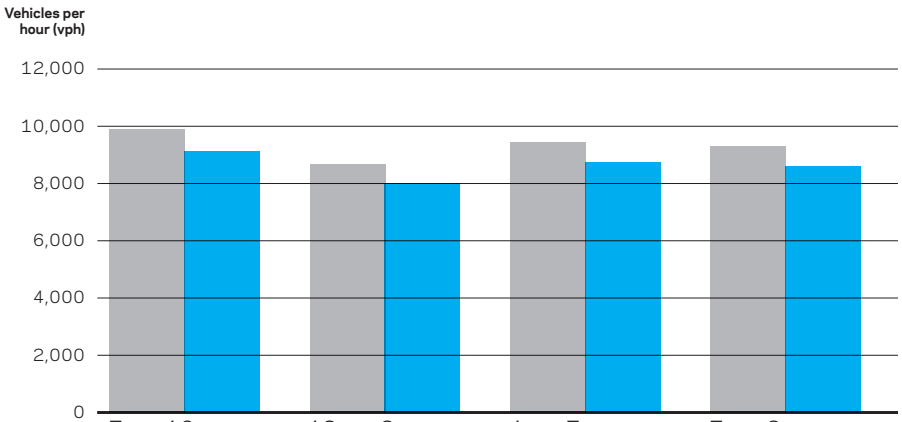
## 44th Street Screenline Southbound

Southbound volume at 44th Street between 12th Avenue/Route 9A and 5th Avenue inclusive fell by 7.6 % (to 8,619 vph from 9,324 vph) after implementation. At 44th Street, Broadway is no longer available for southbound traffic. The increase at 60th Street but decrease at 44th Street suggests that southbound travelers may have chosen routes further east.

GRAPHIC 10

**44th Street Screenline Volumes, Southbound Before and After, By Period**

**12th Avenue/9A, 11th Avenue, 9th Avenue, 7th Avenue, and 5th Avenue**




| | 7am–10am | 12pm–2pm | 4pm–7pm | 7am–8pm |
|---|---|---|---|---|
| Before | **9,900** | **8,689** | **9,455** | **9,324** |
| After | **9,142** | **8,021** | **8,737** | **8,619** |
| % Change | –7.7% | –7.7% | –7.6% | –7.6% |

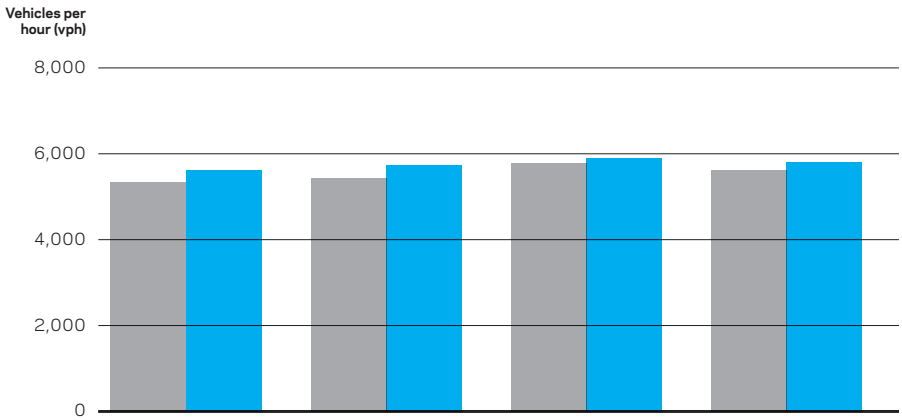
## 34th Street Screenline Northbound

Northbound volumes measured on Madison Avenue, 6th Avenue, 8th Avenue, and 10th Avenue at 34th Street indicate that a slightly higher volume of northbound traffic is entering West Midtown. Total northbound volume at 34th Street increased 3.3% after implementation (to 5,812 vph from 5,627 vph).

GRAPHIC 11

**34th Street Screenline Volumes, Northbound, Before & After, By Period**

**Madison Avenue, 6th Avenue, 8th Avenue, and 10th Avenue**



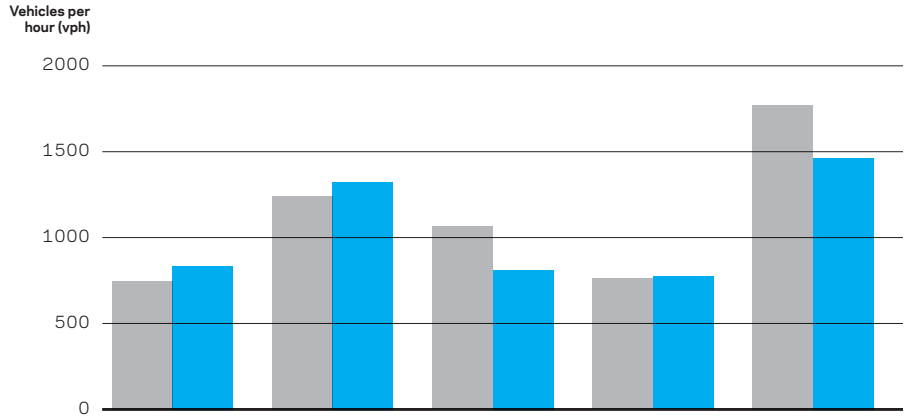

| | 7am–10am | 12pm–2pm | 4pm–7pm | 7am–8pm |
|---|---|---|---|---|
| Before | **5,335** | **5,441** | **5,782** | **5,627** |
| After | **5,628** | **5,735** | **5,908** | **5,812** |
| % Change | 5.5% | 5.4% | 2.2% | 3.3% |

## 1.2.2 Traffic Volumes by Avenue

### 57th Street Southbound

Routes used by southbound vehicles on Broadway and 7th Avenue changed as a result of the implementation of the project. At 57th Street, 10 blocks in advance of the discontinuation, traffic fell on Broadway by only 23.6% with only a 1.4% increase on 7th Avenue, the signed diversion route.

GRAPHIC 12
**57th Street Volumes by Avenue, Southbound Before and After, 7am – 8pm**



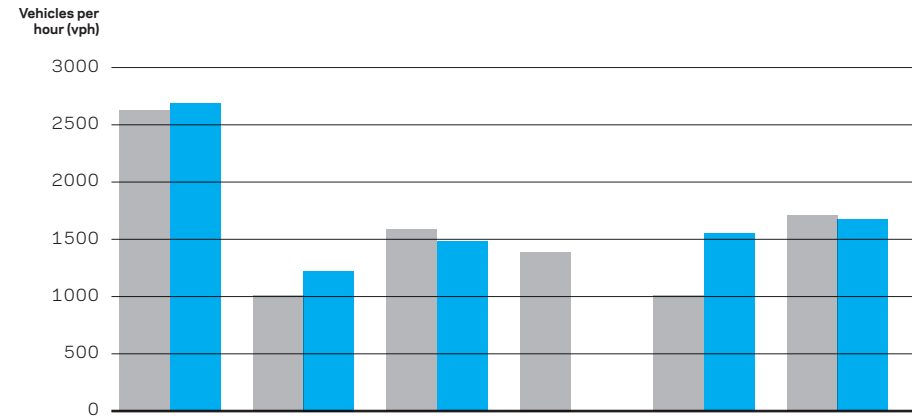

| | 11th Ave | 9th Ave | Broadway | 7th Ave | 5th Ave |
|---|---|---|---|---|---|
| Before | 748 | 1,244 | 1,064 | 762 | 1,773 |
| After | 835 | 1,324 | 812 | 773 | 1,464 |
| % Change | 11.6% | 6.4% | –23.6% | 1.4% | –17.4% |

### 44th Street Southbound

- **Volume on 7th Avenue increased by 53%**

Before implementation, about 1,400 vehicles per hour used Broadway in Times Square. After implementation, these 1,400 vehicles, including 220 through-trips, were diverted from Broadway to other routes, times of day, or modes of travel. The primary results of these diversions were increases in traffic volume on 7th Avenue and on 11th Avenue, of 53.4% and 21.6%, respectively. Volumes on 5th Avenue decreased 1.9%. On 9th Avenue, volumes decreased by 6.4%, indicating that 7th Avenue and 11th Avenue may now be preferred routes for some traffic. Overall 9th Avenue traffic volume, averaging counts at 57th Street and 44th Street, declined by 1%. Volumes on 12th Avenue/Route 9A increased by 2.3%.

GRAPHIC 13
**44th Street Volumes by Avenue, Southbound, Before and After, 7am – 8pm**



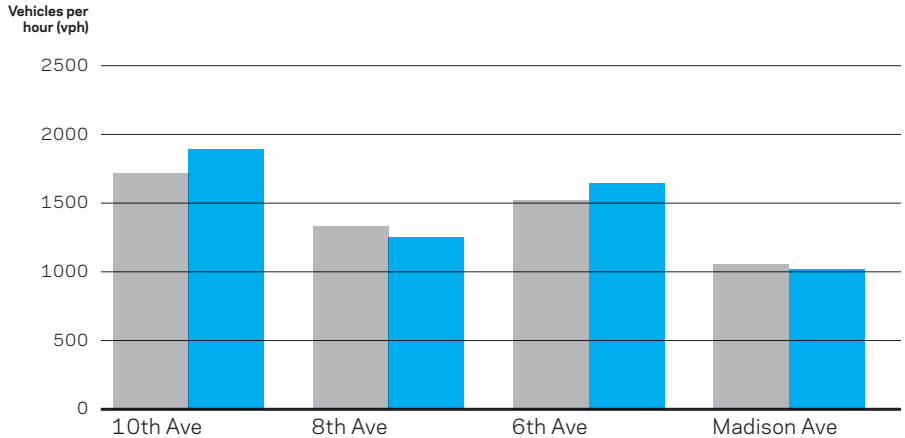

| | Rte 9a/12 Ave | 11th Avenue | 9th Avenue | Broadway | 7th Avenue | 5th Avenue |
|---|---|---|---|---|---|---|
| Before | 2,625 | 1,006 | 1,585 | 1,389 | 1,012 | 1,707 |
| After | 2,685 | 1,223 | 1,483 | 0 | 1.553 | 1,674 |
| % Change | 2.3% | 21.6% | –6.4% | –100% | 53.4% | –1.9% |

## 34th Street Northbound

- **Volume on 6th Avenue at 34th Street increased by 8%**

Northbound, some traffic shifted to 6th Avenue, where volumes increased 7.9%, indicating that the elimination of Broadway and its extra signal phase at Herald Square made this route more attractive compared with other routes.

GRAPHIC 14
**34th Street Volumes by Avenue, Northbound, Before & After, 7am – 8pm**




| | 10th Ave | 8th Ave | 6th Ave | Madison Ave |
|---|---|---|---|---|
| Before | **1,719** | **1,329** | **1,524** | **1,055** |
| After | **1,895** | **1,250** | **1,645** | **1,022** |
| % Change | 10.2% | –5.9% | 7.9% | –3.2% |

## 1.2.3 Turning Movements from Broadway and 7th Avenue

- **Turns from 7th Avenue onto westbound streets decreased by 51%, reflecting simpler traffic patterns**

Turning movement counts indicate that turns from Broadway onto eastbound streets have increased as a percentage of total traffic, as have turns from eastbound streets onto 7th Avenue. Left-turning traffic on Broadway at 50th Street rose from 8.9% to 17.7% of total traffic, indicating that southbound traffic on Broadway is "shuffling" eastward to 7th Avenue.

Prior to implementation of the project, southbound traffic on 7th Avenue north of 45th Street was required to "shuffle" via westbound streets to continue southbound on 7th Avenue. After the reconnection of 7th Avenue across 45th Street as part of *the project*, southbound traffic has a simplified route. This has led to decreased westbound volumes, and turns from 7th Avenue onto westbound streets north of 45th Street decreased 51%, even as southbound traffic on 7th Avenue increased by 53%.

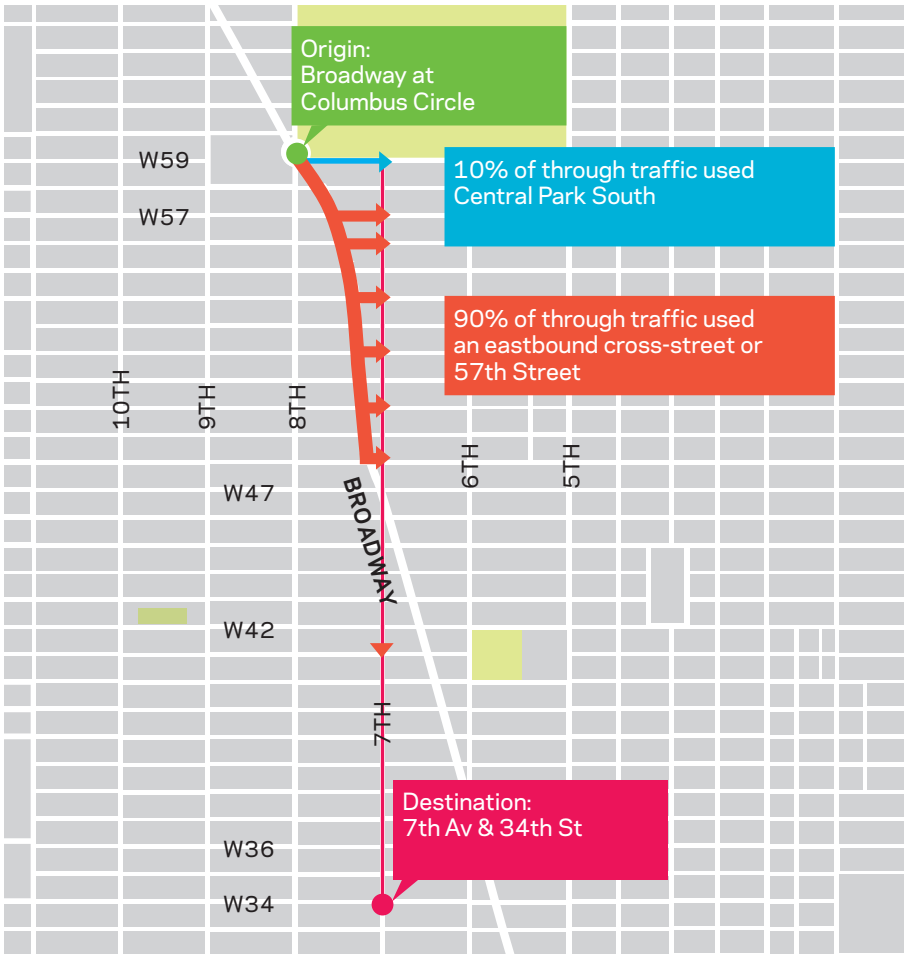
## 1.2.4 Travel Paths of Broadway Through-Traffic

- **Only 10% of through southbound drivers at Columbus Circle used the signed route to 7th Avenue via Central Park South, instead using short crosstown blocks between Broadway and 7th Avenue**

Origin-destination surveys conducted via video recording devices indicate that routes used by southbound vehicles on Broadway and 7th Avenue changed as a result of the implementation of the project. With the Broadway-to-7th Avenue route closed, southbound through-traffic from Broadway north of Columbus Circle now primarily uses eastbound cross-streets between Central Park South and 48th Street to shuffle from Broadway to 7th Avenue. Survey results indicate that both before and after implementation of the project, most Broadway traffic was local in origin and destination. Both before and after implementation, only about 20% of vehicles using Broadway at 60th Street travelled on 7th Avenue through Times Square. After implementation, more than 90% of this through-traffic with destinations south of Times Square remained on Broadway south of Columbus Circle, using short eastbound blocks to access 7th Avenue.

GRAPHIC 15

**Origin & Destination**
**Columbus Circle to Penn Station**



### 1.2.5 Volumes on Crosstown Streets

Changes in crosstown volumes varied widely street by street, in part due to changes to traffic patterns for vehicles moving from Broadway and 7th Avenue. Volumes were collected by ATRs on seven eastbound and seven westbound streets from 33rd Street to Central Park South.

North of 45th Street, volumes on eastbound streets approaching Broadway decreased 2%. However, volumes increased on some eastbound diversion routes between Broadway and 7th Avenue, including Central Park South eastbound from Columbus Circle to 7th Avenue (+6%). On westbound streets, volumes approaching 7th Avenue decreased 19.4%. The smallest decrease was found on 51st Street (8.6%), and the largest on 49th Street (30.6%).

South of 45th Street, volumes on eastbound streets approaching Broadway increased 2.1%, with the largest increases on 40th Street (+9.4%) and 44th Street (+15.2%). Volumes on westbound streets approaching Broadway decreased 9.8%, but westbound volume increased on 34th Street by 12.4% and on 42nd Street by 4.7%. Signalization changes increased the available capacity on these streets.

The final diversion routes north of the Times Square and Herald Square plazas reflected small increases, indicating that most traffic diverted before reaching the last available turn from Broadway. Volumes on 47th Street between Broadway and 8th Avenue, where southbound Broadway traffic must continue, increased 5.4%. Volumes on 35th Street between Broadway and 7th Avenue, where southbound Broadway traffic must continue, increased 10.7%.

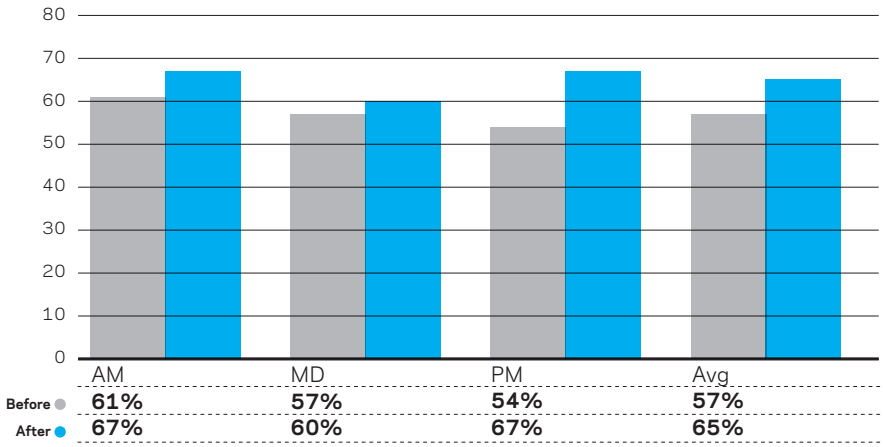
### 1.2.6 Vehicle Classification

- **Taxis and Black Cars increased as a percentage of traffic entering Times Square from 57% to 65%**

Taxis and livery vehicles made up the vast majority of vehicles in the study area, both before and after implementation of the project, increasing slightly after implementation. Manual counts showed that over 60% of all vehicles using southbound routes in West Midtown were taxicabs or livery cars. Private vehicles accounted for less than one-third of traffic volume. The remaining vehicles were trucks, buses, or bicycles. Taxis and Black Cars increased as a percentage of traffic entering Times Square from 57% to 65%. This potentially indicates a reduced use of Broadway/7th Avenue as a through route from points north and west to points south and east by passenger vehicles.

GRAPHIC 16

**For-Hire Vehicle Percentage of Southbound Traffic in Times Square (at 47th Street)**




| | AM | MD | PM | Avg |
|---|---|---|---|---|
| Before | 61% | 57% | 54% | 57% |
| After | 67% | 60% | 67% | 65% |

## 1.2.7 Taxi Pick-Up, Drop-Off & Occupancy

- **Taxi drop-offs in the Times Square area increased 14%, while pick-ups decreased 9%**

Based on GPS records of taxi trips, the number of drop-offs in the Times Square area on an average weekday increased by 14% (from 1,369 to 1,565), while the number of pick-ups decreased by 9% (from 2,169 to 1,982). It is possible that the changes in drop-off and pick-up patterns in Times Square reflect more people visiting and then using other modes to leave the areas. The combined total number of drop-offs and pick-ups were essentially unchanged (3,538 before and 3,547 after). Occupancy of for-hire vehicles was observed in the "after" period; through-moving taxi vehicles on 7th Avenue were 84% occupied, while black cars were 70% occupied. Crosstown occupancy was much lower for both taxis (55%) and black cars (56%).

GRAPHIC 17

**Taxis in Times Square**

## 1.2.8 Bus Ridership

- **Bus ridership on 6th Avenue routes increased by 1.5%**
- **Bus ridership decreases were less on 7th Avenue compared to other Manhattan routes (3.5% versus 5.2%)**

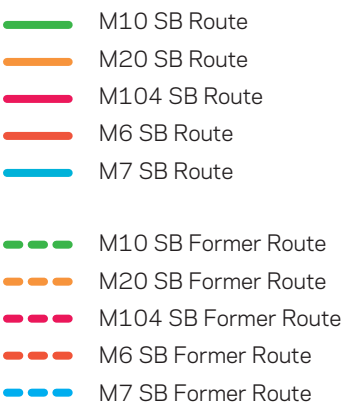
Bus ridership is a primary measure of the quality of bus service, since it is affected by bus routing, convenience, frequency of service, travel time and speed and other factors. Comparing changes in ridership on the affected routes with changes on all Manhattan bus routes adjusts for any overall trends that may have been caused by the spring 2009 fare increase and the economic slowdown. Ridership totals as provided by New York City Transit (NYCT) for September and October 2008 are compared to the same period in 2009. Ridership on unaffected routes in Manhattan fell by 5.2%. Routes using 7th Avenue (M6, M7, M10, M20 and M104) experienced a smaller, 3.5% decrease. On routes using 6th Avenue (M5, M6 and M7) ridership actually increased by 1.5%. This performance may reflect the decreased wait time for southbound buses and reduced travel time on 6th Avenue.

**GRAPHIC 18**
**Bus route changes**

In response to the traffic flow changes in Times Square and Herald Square, MTA New York City Transit made changes to Manhattan bus routes. In general, all routes that were operated southbound on Broadway were rerouted to operate on 7th Avenue.

As a result of these changes, the M10 / M20 / M104 routing is approximately ¼ mile longer and the M6 routing is almost ½ mile longer. The M7 route is shorter than before, but it no longer serves Union Square.

Northbound buses operating on 6th Avenue did not require any routing changes, although they benefited from the operational improvements in Herald Square.




# 1.3 Pedestrian Travel

Pedestrians outnumber all other forms of traffic in West Midtown. In Times Square and Herald Square there are ten times as many pedestrians as motor vehicles. Because of the high number of pedestrians, especially at peak travel times, pedestrians in Times Square and Herald Square would often spill over into the roadway before the project was implemented. The project has increased the already high number of pedestrians by creating attractive and safe spaces for walking. The increased foot traffic has been accommodated by both the plazas in Times Square and Herald Square and by expanded sidewalk space on Broadway from Columbus Circle to Times Square. Data was collected manually.

## 1.3.1 Changes in Pedestrian Volume

- **Pedestrian volume increased 11% in Times Square**
- **Pedestrian volume increased 6% in Herald Square**

The project dramatically increased the amount of sidewalk and other walking space in heavily congested areas of Midtown. In addition, the new spaces have been landscaped and include seating and other features. The new spaces have attracted more foot traffic to the Times and Herald Square areas, already among the most popular destinations in the world. The increases represent a combination of pre-existing demand that could not be met by the sidewalks before the project and new demand created by the new plaza spaces.

**Times Square**

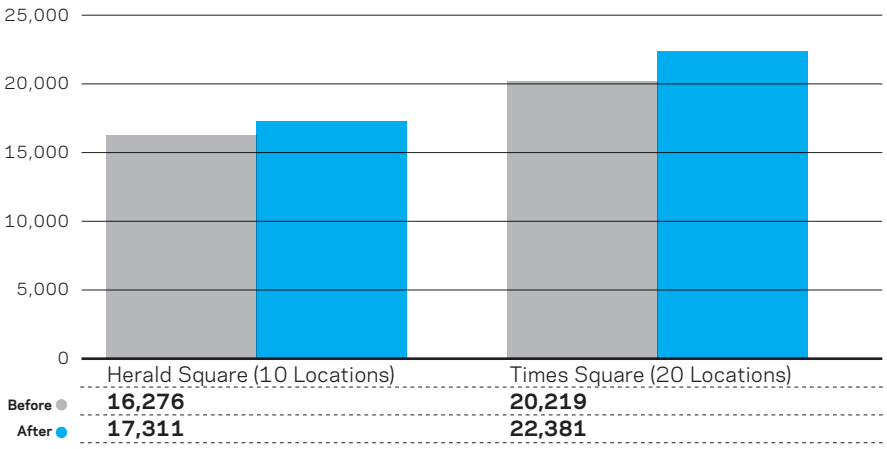
Pedestrian volumes in Times Square increased 11% overall. These pedestrians may include commuters and shoppers for whom 7th Avenue and Broadway are the most direct or desirable routes, but whom once avoided sidewalk congestion in Times Square by using alternate routes. Sidewalk volumes corroborate this trend. The number of people walking along Broadway and 7th Avenue between 46th and 47th Streets, historically one of the most crowded parts of Times Square, increased by 17%. The most dramatic change occurred in the heart of Times Square, where the opening of new crosswalks between islands has increased the total north-south pedestrian capacity of 7th Avenue and Broadway. Crosswalks drawing the most new pedestrians include 7th Avenue at 46th Street (+114% in the east crosswalk) and 7th Avenue at 45th Street (+20% in the west and new middle crosswalks). Pedestrian volumes also increased on Broadway at 42nd Street (+16%), where the new plaza connects with existing plazas south of 42nd Street. In Times Square, pedestrians consisted of 77% of all north-south travelers before the project and 81% in after counts.

**Herald Square**

Pedestrian volumes in Herald Square have increased substantially since the project was completed. Throughout the day, eastbound and westbound pedestrian volumes increased 7%, and northbound and southbound pedestrian volumes increased 5%, with an overall increase of 6%. At peak periods—where crowding may have previously limited the attractiveness of Herald Square to pedestrians—the increases were even greater, with eastbound and westbound volumes increasing 32% and northbound and southbound volumes increasing 34%. The increases were highest at or near the plaza locations. At the southeast corner of 34th Street at 6th Avenue, east-west pedestrian traffic increased 142% and north-south pedestrian traffic increased 60% in the peak hour. In the Broadway plaza between 34th and 35th Streets, north-south pedestrian traffic increased 45%.

**GRAPHIC 19**

**Pedestrian Volumes Average of Peak Hours (ped/hr)**




## 1.3.2 Changes in Pedestrian Travel Patterns

In Times Square especially, the reconfiguration has dramatically improved pedestrian circulation. Based on survey observations and feedback from the public, the project has moved the "stopping" activities—such as looking at billboards, consulting a transit map, taking a picture—from the sidewalk to the new public spaces in the Broadway roadbed. This has freed up space in the previously chronically congested sidewalk for pedestrians moving from place to place such as between the subway and office.

Pedestrian volumes shifted in the Times Square and Herald Square areas, with the opening of new crosswalks in Times Square and the simplified crossings in Herald Square attracting many more pedestrians. East-west crossings have decreased 3%, and have shifted from the center of Times Square at 45th Street to the south end of Times Square at 43rd Street. Since north-south movement has increased, the slight decrease in east-west pedestrian crossings may reflect the improved attractiveness of Times Square as a pedestrian route; east-west crossings in the "before" period may have included some pedestrians who had walked north or south on a parallel avenue in order to avoid crowded before conditions in Times Square.

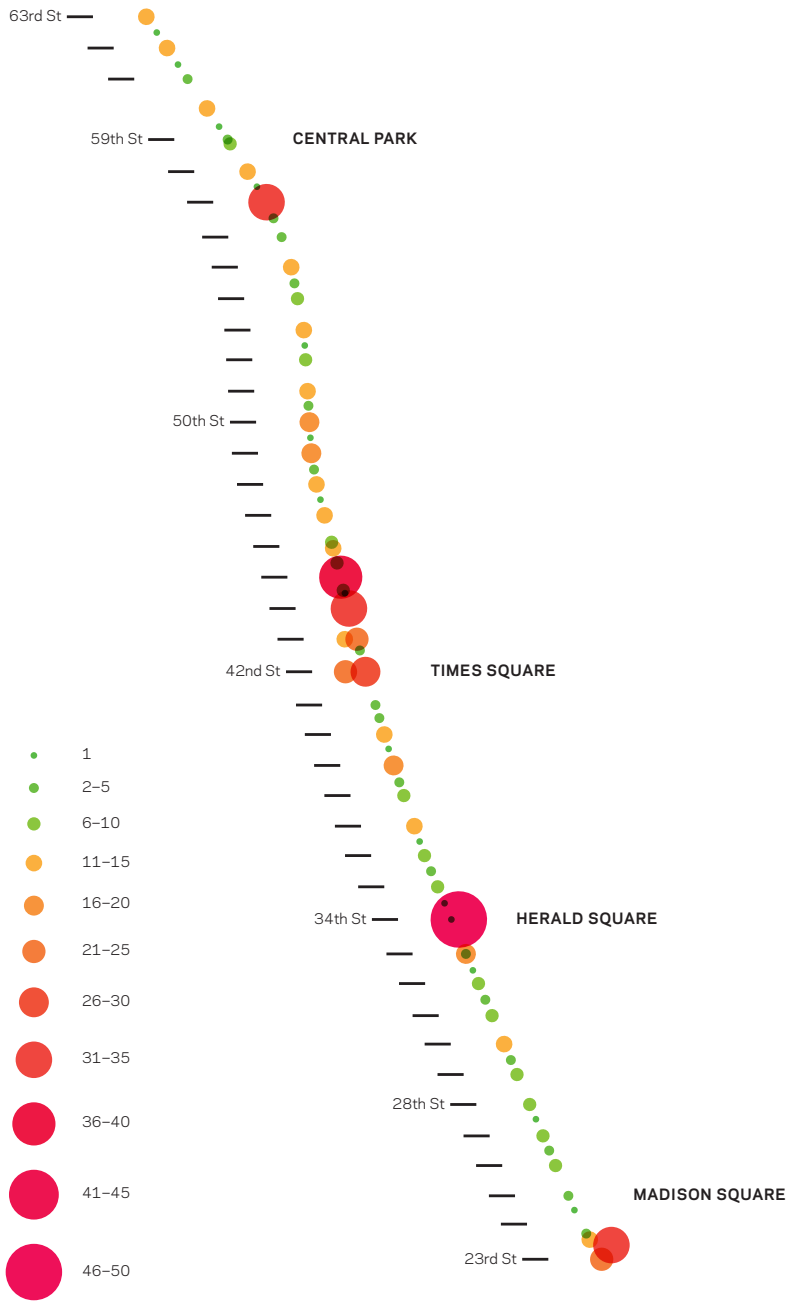
### 1.3.3 Subway Access Patterns

Data from NYCT subway turnstile boardings were analyzed to identify changes in the behavior of subway customers based on the *Green Light for Midtown* project. At the 49th Street and 7th Avenue N,R,W subway station, boardings shifted consistently from the northern entrances at 49th Street to the southern entrances at 47th Street. At Herald Square B,D,F,N,Q,R,V,W subway station, entrances located near or adjacent to new plaza space saw a relative increase in boardings (between 0.7 and 4.4 percentage points higher than the station average), whereas those located farther from a new plaza space saw a relative decrease in boardings. These changes suggest that the new plaza spaces are drawing additional pedestrians to those entrances.

# 2
# Safety

Improving safety for everyone who uses New York City's streets is DOT's primary mission. Crash data has shown that the Green Light for Midtown improvements are increasing safety. Due to the Broadway diagonal, at Times Square pedestrian crashes had been 137% higher than at other avenues in the area. The project was designed to increase safety for pedestrians, bicyclists, and vehicle occupants on the most heavily used sidewalks and roadways in the City. The improvements to safety were measured using NYPD crash data to construct before-and-after crash histories, and observing changes in pedestrian behavior and their compliance with signals.

**GRAPHIC 20**
**Pre-*Green Light for Midtown***
**Broadway Pedestrian Crash Map**



## 2.1 Safety Features

The major categories of safety features in the *Green Light for Midtown* project are simplified intersections, shortened crosswalks, organized and defined traffic lanes and separation of conflicting movements. By applying these safety features to the Broadway corridor, DOT was able to dramatically improve safety for motorists, pedestrians and cyclists in the project area (Broadway from Columbus Circle to 42nd Street and from 35th Street to 26th Street.)

### 2.1.1 Simplified Intersections

The diagonal route of Broadway creates irregular and complex intersections at each junction with a major north-south avenue. These intersections have historically resulted in higher crash rates than other nearby intersections. Simplifying these multi-legged intersections by removing one of the three streets from the intersection has had an immediate safety impact. Vehicles approach and leave the intersections in fewer directions making the traffic more predictable, more organized and therefore safer.

GRAPHIC 21
**Simplified Intersection at W. 33th Street / 6th Avenue and Broadway**

### 2.1.2 Shortened Crosswalks

Before the project was implemented, complex Broadway / avenue intersections created unusually long crosswalks where pedestrians had to cross both Broadway and the adjacent avenue in a single signal cycle. Closing the sections of Broadway at avenue intersections shortened these crosswalks, which in turn significantly reduced pedestrian exposure to motor vehicle traffic and created a much safer walking environment in Times and Herald Squares.

### 2.1.3 Organized & Defined Traffic Lanes

Rerouting Broadway traffic to 7th Avenue required creating specialized turn lanes to accommodate the new traffic patterns. These turn lanes not only process traffic more efficiently, they also improve the predictability of traffic, enhancing safety. Numerous turn lanes were created along Broadway, 7th Avenue and on cross-streets as part of the project. In addition numerous lane lines and pavement marking arrows were added. The improved predictability of traffic movements at these intersections improves safety for motorists and pedestrians alike.

GRAPHIC 22
**Shortened Crosswalk at W. 51st Street**


### 2.1.4 Separated Movements & Reduced Exposure to Vehicles

Several of the defined traffic lanes noted above were used to create separated traffic and pedestrian movements, where conflicting movements are now controlled by dedicated traffic signal phases rather than by motorists yielding. Separated movements significantly reduce the chance of a crash and provide a clear and robust safety enhancement.

## 2.2 Before & After Crash Data

- **Injuries to motor vehicle occupants in the project area are down 63%**
- **Pedestrian injuries in the project area are down 35%**
- **Pedestrian injuries declined by 40% in Times Square**
- **Pedestrian injuries declined by 53% in Herald Square**

Based on preliminary NYPD data comparing June through November 2009 (six months) to the same months of three previous years, the project dramatically improved pedestrian safety in Times and Herald Squares. Pedestrian injuries fell by 35% in the project area, including Broadway from 26th Street to 36th Street and 42nd Street to Columbus Circle, 6th Avenue from 33rd Street to 35th Street, and 7th Avenue from

42nd Street to 47th Street. In Times Square, where fewer pedestrians are walking in the street, pedestrian injuries decreased dramatically by 40%. In Herald Square, pedestrian injuries decreased by 53%. The project has had safety benefits across modes; injuries for all modes fell by 39%. The improvements at Herald Square can be attributed to significantly simplified intersection operations and increased pedestrian compliance.

**GRAPHIC 23**
**Injuries by Mode, Before vs. After**

| | Before (Avg.)* | After** | Change | % Change |
|---|---|---|---|---|
| Vehicle Occupant | 27 | 10 | –17 | –63% |
| Pedestrian | 37 | 24 | –13 | –35% |
| Bicycle | 11 | 12 | 1 | 9% |
| All Modes | 75 | 46 | –29 | –39% |

Source: NYPD *06/01/2006 to 11/30/2006, 06/01/2007 to 11/30/2007, 06/01/2008 to 11/30/2008 (Average of three 6 month–periods.) **Actual 06/01/2009 to 11/30/2009

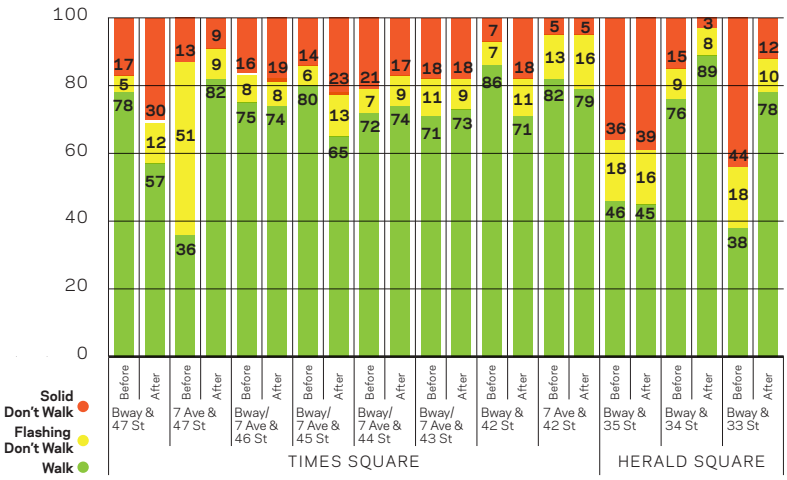
## 2.3 Pedestrian Signal Compliance

- **Pedestrian signal compliance rates in the Herald Square area increased substantially, with compliance increasing from 76% to 89% at 6th Avenue & 34th Street and from 38% to 78% at 6th Avenue & 33rd Street**
- **Compliance increased from 36% to 82% at 7th Avenue & 47th Street**

Pedestrian signal compliance rates (based on manual counts) in the Herald Square area increased substantially, with compliance increasing from 76% to 89% at 6th Avenue & 34th Street and from 38% to 78% at 6th Avenue & 33rd Street, indicating that the new, simplified traffic system at Herald Square better accommodates pedestrian trips. Signal compliance in Times Square, while already higher than in Herald Square, varied depending on pedestrian walking patterns. Compliance increased dramatically from 36% to 82% at 7th Avenue & 47th Street, and increased slightly at 7th Avenue & 43rd Street and 7th Avenue & 44th Street.

GRAPHIC 24

**Percentage of All Pedestrians in Crosswalks during Signal Phase**




Simplification of intersections in both Times Square and Herald Square likely contributed to increased compliance. In Times Square, the presence of traffic control agents as well as contracted pedestrian managers may have been a factor toward better pedestrian compliance at several intersections. Improved pedestrian signal compliance contributes to safety as pedestrians are exposed to less risk of crash. In Times Square, the design of two intersections, Broadway at 47th Street and 7th Ave at 45th Street has traffic turning right on a green arrow when pedestrians receive a "DONT WALK" signal. In these conditions, pedestrian compliance is typically poor and the conflicts between pedestrians and turning vehicles delays traffic and can contribute to crashes. Robust management of traffic and pedestrians at these locations has contributed to satisfactory traffic operations and safe travel for pedestrians.

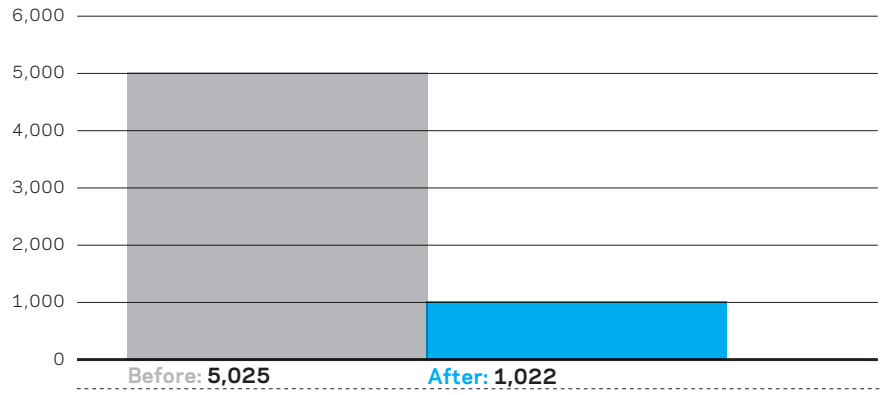
## 2.4 Pedestrians Walking in the Roadway

- **80% fewer pedestrians are walking in the roadway on 7th Avenue between 45th and 46th Streets**

The expansion of pedestrian space in Times Square has dramatically cut the number of pedestrians walking in the roadway, improving pedestrian safety in one of the most crowded places in the world. The large number of pedestrians spilling off sidewalks into the roadway indicated overcrowding and had been a longstanding issue in Times Square. After implementation of *Green Light for Midtown*, the number of pedestrians walking in the roadway on 7th Avenue between 45th and 46th Streets decreased 80%, to 1,022 from 5,025. This dramatic decrease in the number of pedestrians walking in the roadway, without a large change in the number of pedestrians on the sidewalk, indicates that pedestrian flow on 7th Avenue has become safer and more efficient as stationary activities and some pedestrian travel have shifted to the Broadway plazas.

GRAPHIC 25

**Pedestrians Walking In Roadway, 7th Avenue between 45th and 46th, 8:30am – 1am**



# 3 Additional Results

In addition to mobility and safety, the project provided additional enhancements to the area. A large body of experience and research from around the world indicates that attractive streetscape and urban public space improvements can enhance local business performance in retail and real estate sectors. Local examples include the Hudson River Park and the Highline on Manhattan's west side and Bryant Park in Midtown, all of which have demonstrated positive economic impacts on their neighborhoods.[1] Findings presented here suggest that the project is making Broadway in Midtown a more attractive and comfortable place for pedestrians, shoppers and patrons of restaurants and entertainment venues.

While it is still too soon to say with absolute certainty that Green Light for Midtown has had a positive local economic influence, as macro-economic conditions in New York and globally worsened in the fall of 2008, several factors suggest that the project is creating public value. This chapter draws from a variety of surveys and analyses to identify the additional results of the project.

## 3.1 Drawing People

For most retail districts, foot traffic is a good proxy for retail sales and rents. As presented in the previous chapters, the project has alleviated pedestrian crowding and difficult walking conditions in both Times and Herald Squares leading to increased pedestrian volumes and a shift in pedestrian activates. Both of these trends, as impacts continue to be monitored, will likely lead to an increase in economic activity.

### 3.1.1 Pedestrian Behavior

- **84% more people are staying (e.g. reading, eating, taking photographs) in Times and Herald Squares**
- **42% of NYC residents surveyed in Times Square say they shop in the neighborhood more often since the changes**
- **70% of theatre goers say the plazas have had a positive impact on their experience**
- **26% of Times Square employees report leaving their offices for lunch more frequently**

A closer look at how people are reacting to the new spaces indicates heightened economic potential. The proportion and types of stationary activities in which people engaged in Times and Herald Squares were analyzed to provide a measure of whether people are spending time (and likely, money) in a place as opposed to just passing through. More people are stopping on Broadway on both weekdays and weekends and engaging in activities (e.g. sitting, eating and talking) that are consistent with the area's continued vibrancy.

Data collected in May and October of 2009 showed increases in the number of people using the public space for stationary activities (standing or sitting). The number of people who stopped to use public space were counted to create "snapshots" of the stationary population at four sites:

1. Hudson River Park: *The Impact of Hudson River Park on Property Values* Regional Plan Association, October 2008. Bryant Park: *How Smart Parks Investment Pays its Way.* New Yorkers for Parks/ Ernst &Young. New York, NY 2007. High Line: The High Line: the Feasibility and Economic Impact of Re-Use. Prepared by Hamilton, Rabinovitz and Alschuler, Inc. New York.

- **Between 34th and 35th Streets**
- **Between 38th and 39th Streets**
- **Between 39th and 40th Streets**
- **Between 44th and 45th Streets**

At each location the stationary population increased. In the busiest locations (34th and 44th Streets), typical mid-afternoon counts in October showed between 100 and 150 stationary pedestrians at any given time, representing increases of 84% during peak periods (mid- to late weekday afternoons) over May counts. Other areas (between 38th and 40th Streets) also saw increases in peak population on the order of 20–30%, though the overall populations observed on these blocks were smaller (between 30 and 45 pedestrians during mid-afternoon weekday peaks).

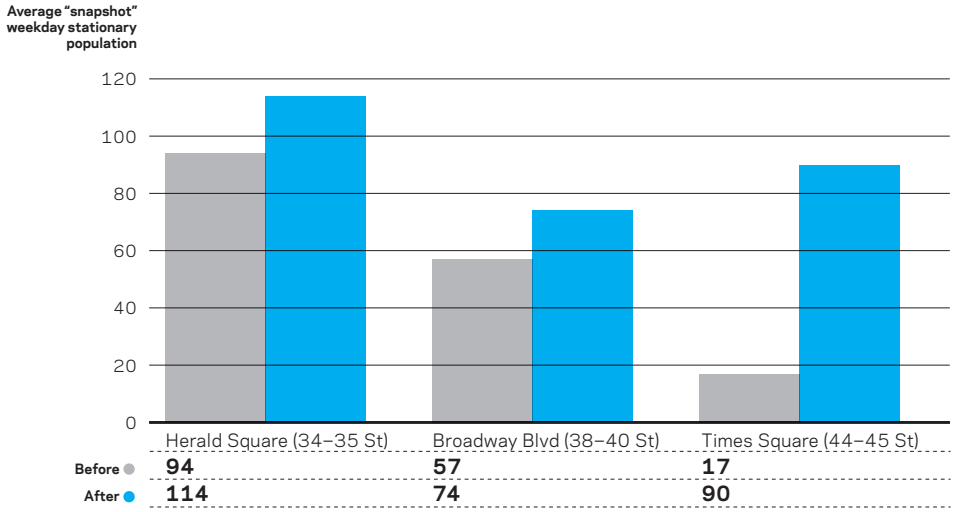

The mix of activities in the public spaces has shifted as well. For most blocks surveyed, the overall increase in the number of people was comprised of a sharp increase in the number of people sitting in the public space. More people were observed eating, reading and taking photographs.

These findings generally agree with findings of the Times Square Alliance (TSA) in a new survey about changes in behavior with positive economic implications related to the new public areas and expanded pedestrian spaces in Times Square. A substantial proportion of respondents to TSA surveyors said that they were going out in the Times Square area after work, shopping in the neighborhood and spending time in the area on weekends more often since the implementation of *Green Light for Midtown*. Responses included 42% of New York City residents stating that they shopped in the Times Square neighborhood more often and 26% of people employed in Times Square saying that they now leave their office buildings for lunch more frequently.[2]

2.Times Square Alliance/Strategy One "Times Square Pedestrian Plaza Audit." Summary, slide 10. Nov. 2009.

Theatre-goers also responded positively to the TSA survey: 70% said the Times Square plazas had a positive impact on the theatre-going experience, versus only 7% who said the plazas had a negative impact.[3]

**GRAPHIC 26**
**Average Stationary Population (Persons Observed)**




## 3.1.2 Broadway as an Attraction

- **74% of New Yorkers agree that Times Square has improved dramatically over the last year**
- **43% fewer people in the project area stated that they would avoid the area if they could**
- **The percentage of area employees satisfied with the Times Square experience increased by 72% (from 43% to 74% of those surveyed)**

Times Square Alliance's findings about behavior and business opinion are also largely in line with general public opinion regarding Times Square as an increasingly attractive place and destination. Overall opinion among TSA survey respondents was 81% favoring the Times Square pedestrian plaza, with 37% indicating a "very positive" opinion.[4] The survey also found that 74% of New York City residents agreed that "Times Square had improved dramatically over the last year." These findings represent a significant increase in positive response from a July 2009 Quinnipiac University Polling Institute survey, which found that registered voters in New York City favored the changes along Broadway by roughly two to one.[5] The difference is likely attributable to the direct exposure to the changes experienced by those surveyed by the Times Square Alliance, versus the Quinnipiac sample which included more people who had not yet visited Broadway since implementation of *Green Light for Midtown*.

These opinion results represent a significant change in overall perceptions of Broadway among New Yorkers and visitors. A NYC DOT survey undertaken along Broadway in Midtown before the project was implemented found that only 40% of respondents "strongly agreed" to the statement "I like being out on the street here." This echoed the results of a 2008 Times Square Alliance study that focused solely on

3. Op cit, slide 11.

4. Times Square Alliance, op cit slide 8.

5. "New York City Voters Like Car-Free Times Square" Quinnipiac University Polling Institute, July 29 2009

GRAPHIC 27

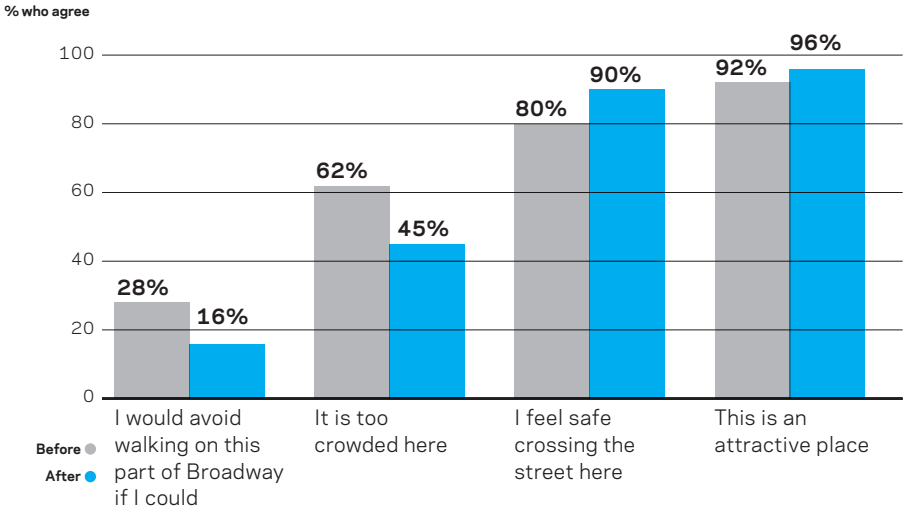
**People Enjoying Public Space in Times Square**


Times Square, where over 90% of respondents from the New York City and tri-state area responded that they "typically try to avoid Times Square at certain times and on certain days," and a 2004 Times Square Alliance study that showed that over-crowded streets were the number one reason why area employees would wish to work elsewhere.

An identical survey done in October 2009 shows a striking change with negative perceptions significantly declining and positive perceptions increasing.

GRAPHIC 28

**Changing Perceptions of Broadway, NYCDOT Survey**




The DOT surveys of residents, visitors, workers, and tourists were performed in early May ("before") and early October ("after") at three locations within the project area: in Times Square between 44th and 45th Streets; in Herald Square between 34th and 35th Streets; and on Broadway between 27th and 29th Streets. The surveys took place on weekdays and weekends and covered a broad sample of pedestrians. In the 20s, the majority of pedestrians were employed in the area. In Herald Square there was a mix of workers, residents and tourists. In Times Square, the majority of pedestrian interviewed were tourists and/or theatregoers.

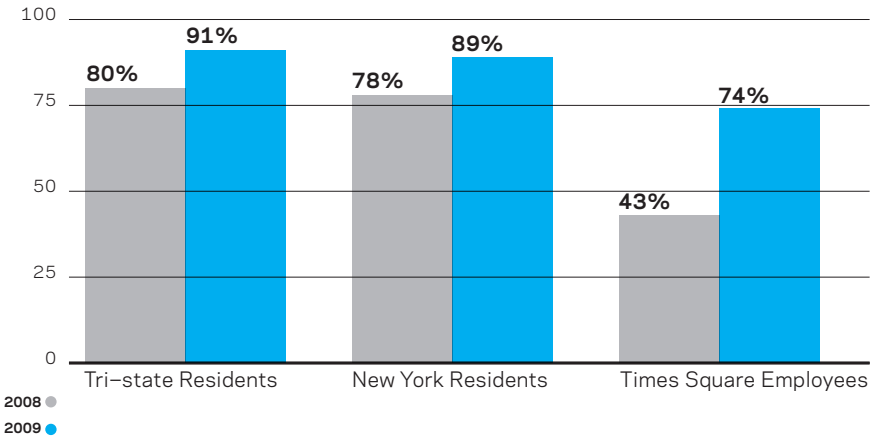
Finally, the surveys provided insight into how people travel to these three sections of Broadway. Nearly half of the Manhattan residents interviewed reported that they got to Broadway by walking, and another 40% said they arrived by transit. The same pattern held for tourists who live outside the metro area. Among residents of the other four boroughs, 75% of those interviewed arrived by transit. Among suburbanites, about two-thirds came by transit, while about 20% came by car — the only travel market from which a significant number of travelers drove to the project area.

A more recent survey by the Times Square Alliance confirms these results. Satisfaction with Times Square improved dramatically. The percentage of area employees satisfied with the Times Square experience increased by 72% (from 43% to 74% of those surveyed).

GRAPHIC 29

**Times Square Alliance Satisfaction Survey** [6]

**Satisfaction with Times Square experience**




6. Times Square Alliance, op cit slide 21

# Conclusions & Looking Forward

*The Green Light for Midtown* project has improved the mobility, safety and public perception of Midtown.

- **Mobility has improved based on taxi GPS data. Speeds for northbound trips have increased by 17% and were down 2% for southbound trips**
- **Safety has been enhanced as injuries to motorists and passengers are down 63% and pedestrian injuries in the project area are down 35%**
- **The number of pedestrians traveling along Broadway and 7th Avenue in Times Square increased by 11%. At Herald Square pedestrian volume increased 6%**
- **A November 2009 survey by the Times Square Alliance found that 74% of New York City residents agree that Times Square has improved dramatically over the last year**

The project greatly benefited from the input and participation of numerous area stakeholders. The energetic cooperation of the maintenance partners, the Times Square Alliance and the 34th Street Partnership, and our sister agencies, NYPD, FDNY, DSNY, DPR and TLC have been essential to the project's success.

Given the improvements in mobility, safety and satisfaction, DOT recommends that the new network changes be made permanent and built upon for the continued vibrancy of West Midtown. This includes enhancing the Broadway corridor by upgrading the temporary materials used in the *Green Light for Midtown* project through future capital projects.

# Appendix A Traffic Simulation Model

Before the launch of *Green Light for Midtown*, a detailed traffic micro-simulation model was developed based on existing conditions and traffic patterns in West Midtown (the area bounded by and including 66th Street, 5th Avenue, 14th Street and 11th Avenue) to test the potential effect of the proposed traffic changes. The model was based primarily on data from 2007 and 2008, plus some data from studies done in prior years and was built to assess the weekday PM peak period when traffic congestion is most acute. The model analyzed a set of proposed changes closely corresponding to *Green Light for Midtown* implementation in summer 2009. Both the "before" and "after" results from the model are computer simulations of traffic conditions.

After the simulation was completed, DOT made numerous adjustments to the plan following the stakeholder consultation process described in Appendix B. DOT also collected extensive new traffic volume and travel time data using the "floating car" method of traveling along study corridors. These field travel time surveys collected in the spring are the source of the "before" conditions against which "after" data is compared in the field travel time survey section of this report. Comparison of travel time results between the computer projections of the micro-simulation model and on-street data collection should be done with caution because computer models provide the combined average speed of every vehicle traveling along a corridor, including those that turn on and off at various points, while field data is the average speed of travel "runs" by data collectors driving down the entire corridor.

Overall, real-world "after" conditions are generally consistent with the predictions of the micro-simulation model, considering the complexity of the midtown traffic system and the significance of the project elements. As detailed in the report, overall traffic volumes increased modestly and travel times improved along the 6th and 7th Avenue corridors which were previously disrupted by Broadway, as predicted by the simulation model.

The notable differences between the predictions of the simulation and changes observed between the real world before and after data are:

- Traffic volume on 6th Avenue at Herald Square increased by 8% compared to a predicted decrease of 2%
- At 57th Street it was expected that Broadway would have 33% less traffic as it diverted to other routes. The actual decline was 24%
- Less diverted Broadway traffic used 9th Avenue than predicted. Traffic fell by 1% on 9th Avenue (averaging volume at 57th Street and 44th Street) compared to a predicted increase of 27%
- At 44th Street, 11th Avenue saw a 22% increase in traffic volume vs. a predicted increase of 7%
- The simulation anticipated respective 37% and 17% decreases in trip travel time on 6th and 7th Avenues, while observed changes based on field travel time surveys were 15% and 4% (7am – 8pm)
- On 34th Street, eastbound and westbound travel time improved by 7% and 22%, respectively, versus anticipated improvements of only 1% and 9%
- Overall crosstown travel times on major east-west streets increased by 13% versus a predicted decrease of 10%

Potential reasons for discrepancies between actual versus predicted changes in the performance of the system include:

- Modifications to the project's initial design during detailed engineering included allowing turns to West 45th Street from 7th Avenue, providing or maintaining neighborhood parking opportunities where restricting parking would improve traffic operations and efforts to discourage traffic diversions to 9th Avenue.
- Illegal stopping and standing in the new fourth lane of 7th Avenue in the Times Square area.
- Improved conditions on 6th Avenue in Herald Square increased traffic volumes on the avenue further north (in the 40s and 50s).
- Motorists using short crosstown blocks on streets further south to divert from Broadway rather than the signed route from Columbus Circle to 7th Avenue via Central Park South
- The staging of special events impacted the traffic lanes on 6th and 7th Avenues and some crosstown streets.

Comparisons between field travel time survey results and model results are provided in the following table.

**GRAPHIC A1**

**Change in Travel Times by Direction & Corridor, Field Surveys vs. Simulation Model, 4pm – 7pm***

*Percent change in travel time shown as positive for a decline in travel time (increase in speed) and negative for an increase in travel time (decrease in speed)

| Direction | Corridor | % Change* | Model % Change |
|---|---|---|---|
| North | 8th Ave | –3% | +24% |
| | 6th Ave | +0% | +37% |
| | **Avg** | **–1.6%** | **+31.0%** |
| South | 9th Ave | –4% | +17% |
| | 7th Ave | +16% | +17% |
| | 5th Ave | –8% | +0% |
| | **Avg** | **+2.6%** | **+13.0%** |
| East | CPS | –25% | –29% |
| | 57th St | –15% | –2% |
| | 50th St | –34% | +9% |
| | 48th St | –8% | –1% |
| | 44th St | –1% | +12% |
| | 42th St | +3% | –13% |
| | 36th St | –2% | –10% |
| | 34th St | +19% | +0% |
| | **Avg** | **–4.6%** | **–1.0%** |
| West | CPS | –76% | +11% |
| | 57th St | +2% | –5% |
| | 49th St | –40% | +9% |
| | 47th St | –9% | +12% |
| | 45th St | +3% | –3% |
| | 42th St | +8% | +2% |
| | 35th St | –20% | +14% |
| | 34th St | +32% | +4% |
| | **Avg** | **–7.4%** | **+5.2%** |

North and southbound are between 59th Street/CPS and 23rd Street. Crosstown is between 5th and 11th Avenues. Before data was collected in March 2009 while after data was collected in September and October

# Appendix B Public Outreach & Consultation

The design and operation of *Green Light for Midtown* benefitted from the informed comments and recommendations made by a broad spectrum of concerned and interested individuals and organizations. The project would not have been nearly as effective without the thoughtful insight provided by:

- elected officials at all levels of government
- Business Improvement Districts, community boards and civic organizations
- local businesses including the hotel, theatre, parking, livery, trucking, real estate and tourism industries
- transportation and planning professionals
- governmental and other official agencies

DOT's public outreach for the project was extensive. The outreach included numerous public and private meetings with stakeholders, multiple press events, wide distribution of targeted brochures and flyers to inform as many people as possible of the project and upcoming project meetings to solicit feedback prior to its implementation. Following the project's completion in August, the public was encouraged to provide feedback through a survey hosted on the DOT's website and at two open public forums. This section summarizes DOT's substantial public outreach effort, the project partners that helped make the project possible and feedback provided by various stakeholders.

## B.1 Public Meetings

DOT presented its project formally at two public community board meetings: Community Board 5 on March 16th and Community Board 4 on March 18th. Two public Open Houses were also held on March 11th and 12th, so that businesses, stakeholders, residents and other interested parties could discuss the project in detail with DOT staff. The Open Houses consisted of one-on-one interactions between Department staff and members of the public. In this way, individual questions or concerns were directly addressed. In addition, DOT discussed the project with all local elected officials and staff.

## B.2 Stakeholder Involvement

In the months leading to the project's implementation, in addition to the community board meetings and open houses mentioned above, DOT held a series of focused meetings with stakeholders to develop key aspects of the project in a collaborative manner. The meetings included Business Improvement Districts (BIDs), who became our partners in maintaining the new plaza spaces, local community boards, elected officials, local media, real estate industry, the theatre community, government agencies, taxi industry, policy groups, delivery companies, advocacy groups, the hotel and tourism industry and sign companies that maintain the Times Square billboards and neon signs. Specific outreach efforts included:

### B.2.1 Building Owners

During the outreach phase of the project the Department met with BOMA (Building Owners and Managers Association), REBNY (Real Estate Board of New York) as well as a number of property owners in the Broadway area. DOT staff discussed in great detail how the project would affect the overall area as well as individual properties. DOT addressed specific issues such as the need for truck loading and unloading at individual buildings, garbage removal etc., as well as larger issues of how the project could enhance the desirability of the Broadway area for tenants, investors, and other stakeholders.

### B.2.2 Broadway Theatre

Working with the Mayor's Office of Film, Theatre, and Broadcasting, as well as the Department of Cultural Affairs, DOT met several times with representatives of the theatres. This included representatives of the Schubert Organization, Nederlander Productions, Jujamcyn Theaters, the League of American Theatres and Producers, the Manhattan Theatre Club, the Roundabout Theatre, and the New 42nd Street. DOT staff spoke at length with these stakeholders about how the project would affect them. The theatres initially had concerns over several of the turn restrictions proposed for Times Square. In response to their concerns, a turning lane was added to allow vehicles to turn from southbound 7th Avenue to westbound 45th Street, which houses a number of theatres. DOT also produced a flyer specifically for theatre-goers to inform them of the changes and how to access the theatres. Since implementation, the theatres have been generally supportive of the project. It has been pointed out that Times Square stays open later at night now due to the new pedestrian spaces, and this enhances the overall environment for the theatres.

### B.2.3 Hotel Representatives

During the outreach phase the Department met with the Hotel Association, a meeting which included dozens of representatives of hotels within the Broadway area. DOT reviewed how the project would affect the individual hotels, spending time discussing how the valet services of the various hotels would operate given new traffic patterns. DOT staff also met during and after implementation with several hotels that were more directly affected—the Doubletree Hotel in Times Square, Crowne Plaza Times Square and the Sheraton New York Hotel.

### B.2.4 Tour Bus Companies

In the course of implementing the project, DOT met extensively with both Gray Line Sightseeing and City Sights, which previously had stops within the Times Square bow-tie. Because of the importance of Times Square as both a pick-up area for tourists and a destination on the tours, DOT made arrangements to allocate new tour bus stops within Times Square. DOT is working closely with these entities to limit the number of buses at these stops and to ensure that their operations run efficiently.

### B.2.5 Retail

The Department has made continual outreach to the retailers along Broadway from Columbus Circle to Madison Square. DOT staff handed out flyers to every establishment inviting them to our Open Houses, and a number of retailers came to ask questions. Working with the Times Square Alliance and the 34th Street Partnership, DOT addressed issues of specific retailers regarding garbage pick-up and ability to receive deliveries. Parking and double parking data show that access and delivery needs have been met despite the elimination of traffic on some blocks of Broadway.

## B.3 Stakeholder Influence / Impact

Communication with the various stakeholders helped to define important project elements and to ensure that people who use Broadway on a daily basis were able to influence the project development. Significant project elements developed as a result of these consultations include:

### B.3.1 Right Turn at Seventh Avenue & W. 45th Street

To optimize traffic flow on 7th Avenue through Times Square, DOT had considered maintaining the ban of the right turn from 7th Avenue onto W.45th Street. The ban would eliminate the conflict between right turning vehicles and the large number of pedestrians that utilize the west crosswalk at this intersection. Delays in vehicles attempting to make the right turn would have prevented through traffic from advancing in one or more travel lanes on 7th Avenue. Local hotels, theatres and other interested parties requested that DOT consider allowing this turn to allow patrons arriving in private cars and taxis to access their venues and ensure business operations would not be adversely impacted by the project.

To accommodate the right turn, DOT developed a dedicated right-turn lane with adequate storage capacity and signal phase in addition to a protected pedestrian refuge island. This project element was added subsequent to the traffic modeling phase and may have contributed to travel times and speeds that differed from those modeled pre-implementation. Vehicles can now make this turn safely and with a minimal impact to through vehicles on 7th Avenue. Pedestrians have a higher level of safety than they experienced before the project.

### B.3.2 Pedestrian Movement

During the public input sessions, many people commented on the bicycle lane configuration of the 2008 Broadway project from W.42nd to W.35th Streets, suggesting that the bicycle lane and plaza spaces be swapped. In that project, the bicycle lane was placed between the sidewalk and new pedestrian plazas. For *Green Light for Midtown* the new pedestrian zones were placed directly adjacent to the sidewalk with the bicycle lane closer to the parking lane. This arrangement provides a seamless extension of the sidewalk. In addition, pedestrian managers were contracted to improve pedestrian compliance.

GRAPHIC B1

**Right-turn Lane at 7th Avenue & W. 45th Street and Public Space Adjacent to Sidewalk**



## B.4 DOT Public Information Efforts

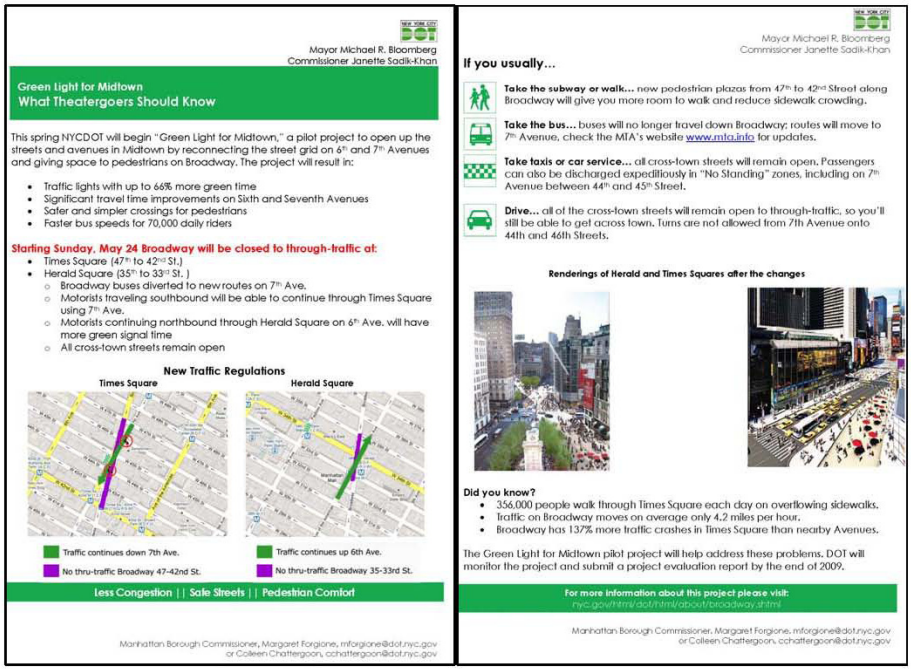
### B.4.1 Website, Brochures and Flyers

From the initial public announcement of the project in February 2009, DOT's website has been used to distribute project details, designs, timelines, projected impacts, scheduled public meetings, photos and other project information. Brochures detailing the project were distributed at public meetings to give an informative project overview. The *Green Light for Midtown* outline has been downloaded over 17,000 times since it was added to the DOT website.

To ensure that the public was properly notified about project meetings, DOT physically distributed thousands of brochures throughout the project area. These were distributed to businesses, retail establishments and residential buildings both informing them of the initial March meetings and providing information about the upcoming construction in May. Through DOT email lists, as well as lists from the two Community Boards, the Times Square Alliance and the 34th Street Partnership, thousands of emails were sent out to advertise the public meetings, open houses and the changes about to take place on the street.

DOT created several specialized flyers to inform key stakeholders groups about the project. Working with the Taxi and Limousine Commission, a flyer was created and distributed to thousands of taxi drivers informing them of the changes prior to implementation. Also, a flyer was created specifically for Broadway theatre patrons to explain bus and roadway changes and confirm that full access to all theatres was still available.

**GRAPHIC B2**
**Theatergoer Flyer**



Mayor Michael R. Bloomberg
Commissioner Janette Sadik-Khan

**Green Light for Midtown**
**What Theatergoers Should Know**

This spring NYCDOT will begin "Green Light for Midtown," a pilot project to open up the streets and avenues in Midtown by reconnecting the street grid on 6th and 7th Avenues and giving space to pedestrians on Broadway. The project will result in:

- Traffic lights with up to 66% more green time
- Significant travel time improvements on Sixth and Seventh Avenues
- Safer and simpler crossings for pedestrians
- Faster bus speeds for 70,000 daily riders

**Starting Sunday, May 24 Broadway will be closed to through-traffic at:**

- Times Square (47th to 42nd St.)
- Herald Square (35th to 33rd St. )
  - Broadway buses diverted to new routes on 7th Ave.
  - Motorists traveling southbound will be able to continue through Times Square using 7th Ave.
  - Motorists continuing northbound through Herald Square on 6th Ave. will have more green signal time
  - All cross-town streets remain open

**New Traffic Regulations**

Times Square



Herald Square



**Less Congestion | | Safe Streets | | Pedestrian Comfort**

Manhattan Borough Commissioner, Margaret Forgione, mforgione@dot.nyc.gov
or Colleen Chattergoon, cchattergoon@dot.nyc.gov

Mayor Michael R. Bloomberg
Commissioner Janette Sadik-Khan

**If you usually...**

**Take the subway or walk...** new pedestrian plazas from 47th to 42nd Street along Broadway will give you more room to walk and reduce sidewalk crowding.

**Take the bus...** buses will no longer travel down Broadway; routes will move to 7th Avenue, check the MTA's website www.mta.info for updates.

**Take taxis or car service...** all cross-town streets will remain open. Passengers can also be discharged expeditiously in "No Standing" zones, including on 7th Avenue between 44th and 45th Street.

**Drive...** all of the cross-town streets will remain open to through-traffic, so you'll still be able to get across town. Turns are not allowed from 7th Avenue onto 44th and 46th Streets.

**Renderings of Herald and Times Squares after the changes**

**Did you know?**

- 356,000 people walk through Times Square each day on overflowing sidewalks.
- Traffic on Broadway moves on average only 4.2 miles per hour.
- Broadway has 137% more traffic crashes in Times Square than nearby Avenues.

The Green Light for Midtown pilot project will help address these problems. DOT will monitor the project and submit a project evaluation report by the end of 2009.

**For more information about this project please visit:**
nyc.gov/html/dot/html/about/broadway.shtml

Manhattan Borough Commissioner, Margaret Forgione, mforgione@dot.nyc.gov
or Colleen Chattergoon, cchattergoon@dot.nyc.gov

## B.4.2 Implementation Updates

To ensure that project implementation created minimal disruption, DOT issued comprehensive implementation updates online, in the media, on regional highway variable message signs (VMS) and on portable VMS boards deployed throughout Manhattan. Providing timely and informative messages to drivers and pedestrians led to a remarkably smooth implementation period, especially for a project of this scale affecting such busy roadways.

## B.5
## Public Feedback

After implementation of the project, DOT held two open public forums on October 1st and October 5th at the Marriott Marquis in Times Square and the New Yorker Hotel near Herald Square, respectively. The purpose of these forums was to solicit project feedback from the public. Participants were invited to share their opinions on traffic issues, pedestrian spaces, programming and urban design. Representatives from the DOT, the Times Square Alliance and 34th Street Partnership were present to facilitate discussions and answer questions.

**GRAPHIC B3**
**Public Input Forum at the Marriott Marquis**

In addition, DOT created a survey to solicit public feedback. Members of the public were "intercepted" on site to inform the data analysis for this report. The survey was also posted on the DOT website as a way to obtain input from those who were unable to attend the input forums. This survey included an introductory statement which a brief overview of the project and its intended goals. Participants were able to provide their input on the project's impact and how the DOT could improve upon it.

As of November 6, 2009, 539 people participated in the survey. Most of the participants (72%) provided feedback on the Times Square section of the project and the majority of the responses were generally positive. While 67% of respondents felt Broadway is still too crowded, only 37% would avoid walking on Broadway, 79% said that they like being out on the street, 74% felt that Broadway is now an attractive place, 78% felt safe crossing the street and 93% said that the pedestrian plazas make the area a nicer place to be. In addition, 72% said that they would bring visiting friends and family to Broadway and 93% of respondents would like to return to the area surveyed.

The insights gained from the forums, online surveys and the traffic data collection efforts enable DOT to continue improving the Broadway corridor and to plan for future capital construction work in the area.


NEW YORK CITY
DOT