



Park Ave Tunnel: Safety Improvements in Manhattan

May 14, 2009



Park Ave Tunnel Safety Improvements

Today's Presentation

- Project Location
- History
- Project Area
- Before Conditions
- Major Issues
- Crash Data
- Improvements (1999 & 2008)
- Results



Park Ave Tunnel Safety Improvements

Project Location

- New York City
- Midtown Manhattan
- Park Ave & E. 33rd St
- Park Ave & E. 40th St





Park Ave Tunnel Safety Improvements

History

- 1834: Originally built as an open railroad cut
 - used by steam and horse-drawn trains
- 1852: covered to create tunnel
- 1870-1934: used by electric streetcars
- 1937: converted to automotive use



Park Avenue tunnel exit near 40th Street, showing a northbound streetcar.



Park Avenue tunnel entrance near 33rd Street during construction of subway, 1900



Park Ave Tunnel Safety Improvements

Project Area

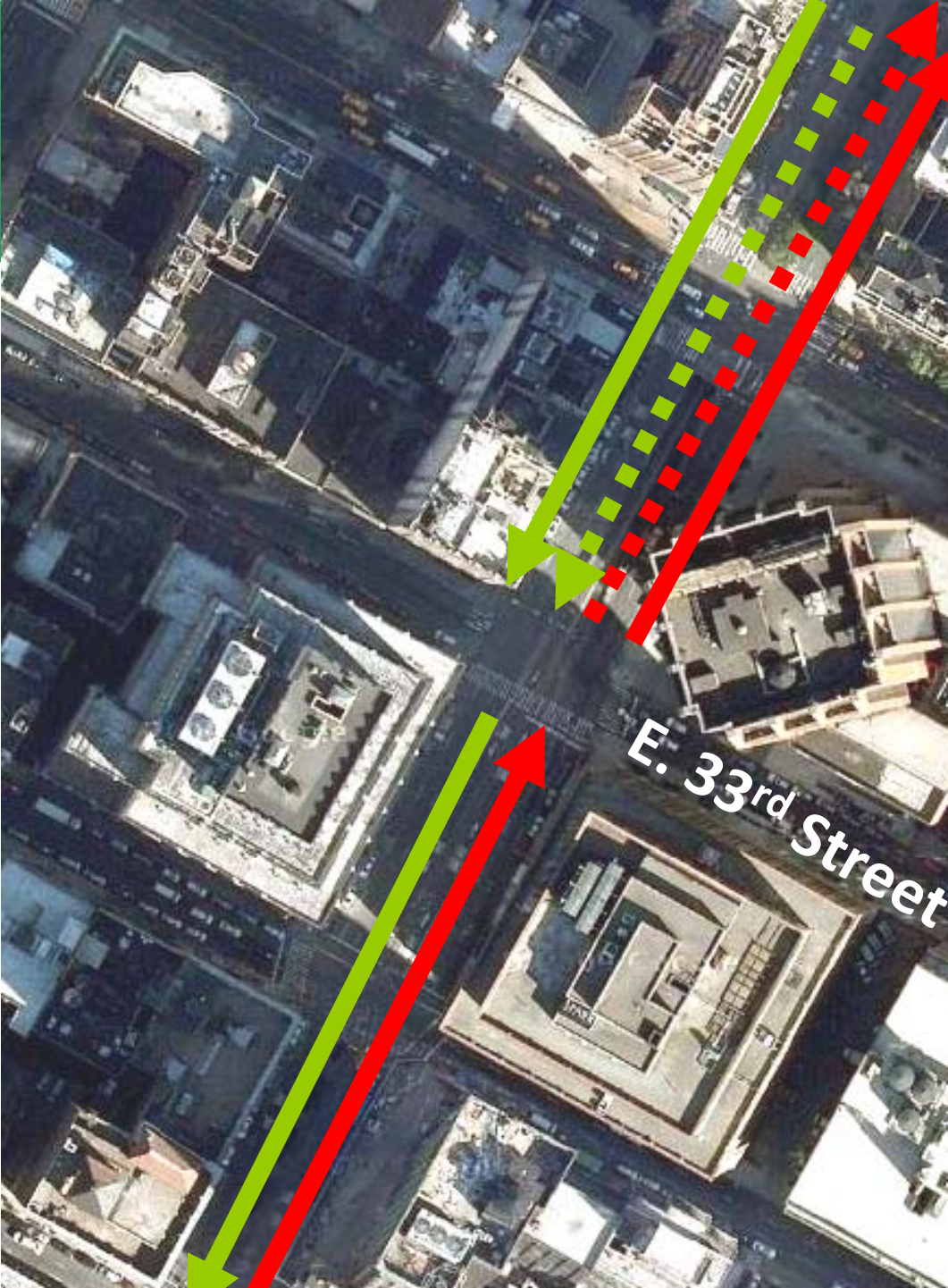
- At Grade (South of 33rd St)
- At Grade & Tunnel (33rd – 40th Sts)
- Viaduct (40th – 46th Sts)
- At Grade (North of 46th St)





Park Avenue at E. 33rd Street

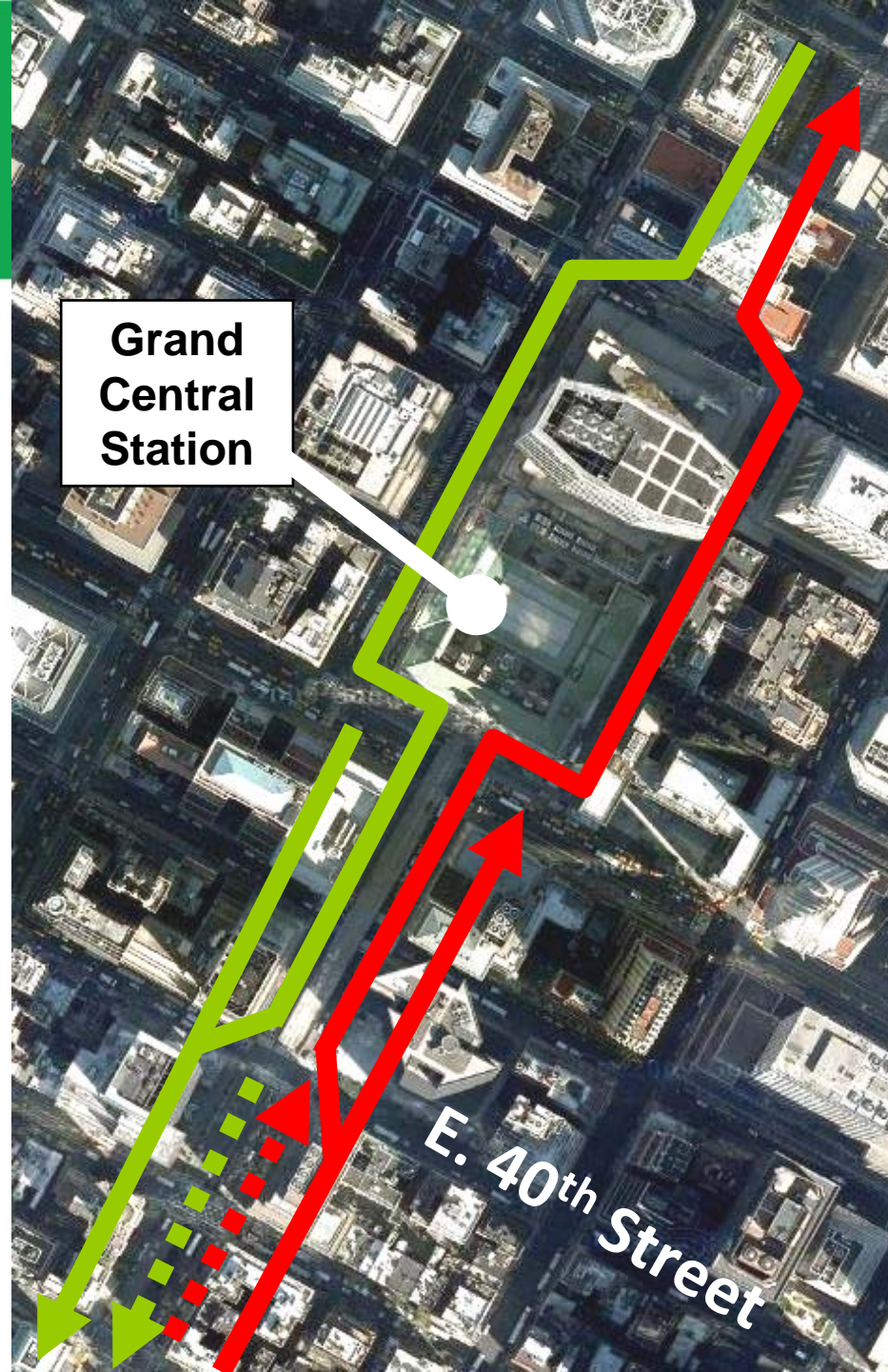
BEFORE



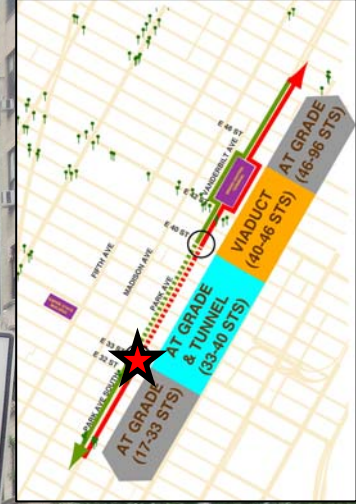


Park Avenue, E. 40th Street to E. 46th Street

BEFORE



Before Conditions



**E. 33rd St and
Park Ave facing
North**

Before Conditions



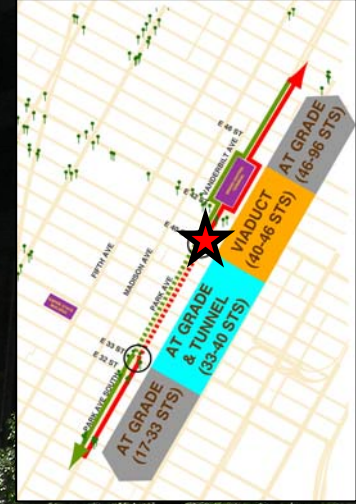
**E. 33rd St &
Park Ave
facing South**

Before Conditions



**E. 40th St and
Park Ave facing
South**

Before Conditions



**E. 40th St and
Park Ave facing
South**



Park Ave Tunnel Safety Improvements

Major Issues

- Pedestrian-Vehicle conflicts at mouth of the tunnel
- Poor pedestrian visibility into tunnel
- High-speed traffic exiting tunnel
- Pedestrians crossing against signal
- Pedestrians stranded in middle of intersection





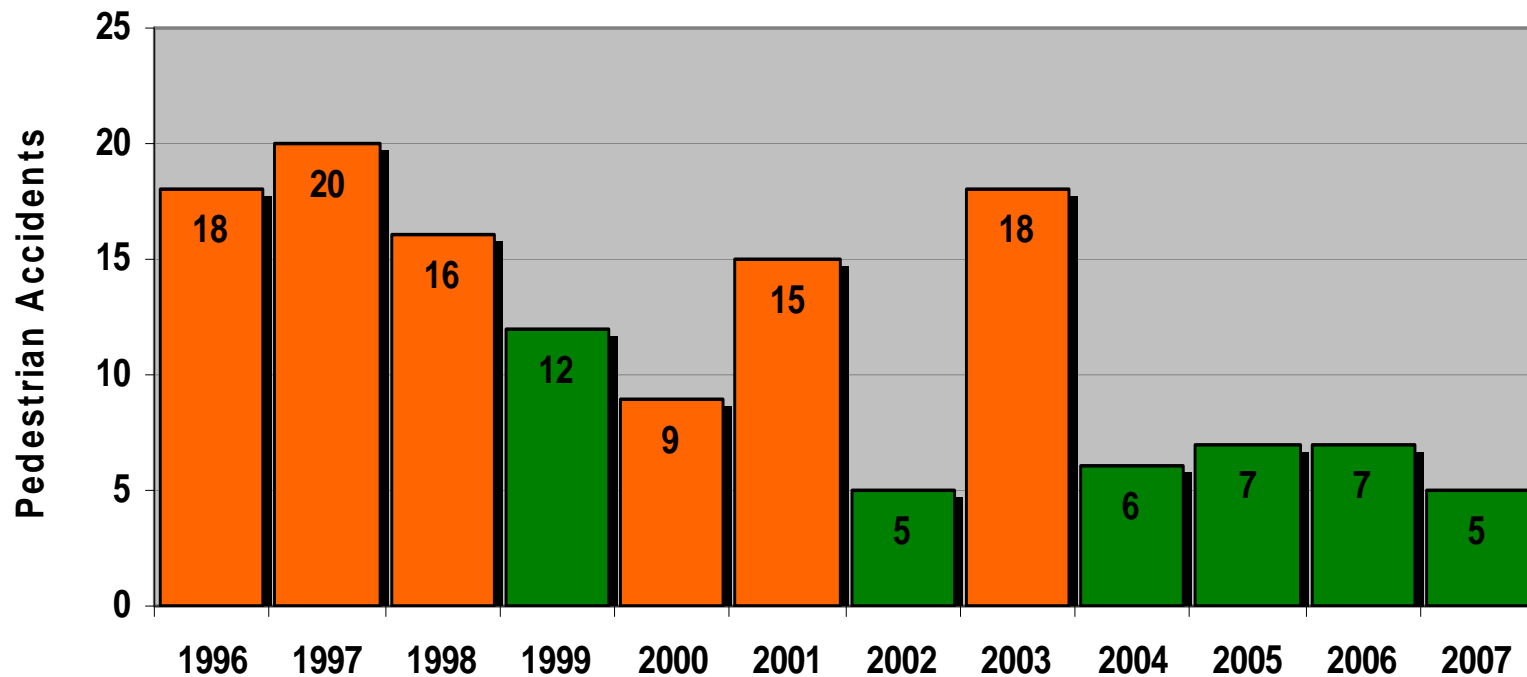
Park Ave Tunnel Safety Improvements

Crash History

- **#1 Pedestrian Crash Location in NYC**

(1996, 1997, 1998, 2000, 2001, 2003)

- Average 1996-2007 = 11.6 per year





Park Ave Tunnel Safety Improvements

Pedestrian Behavior

- 81% of pedestrians struck were crossing **against the signal**
- 66% were struck by **southbound vehicles**

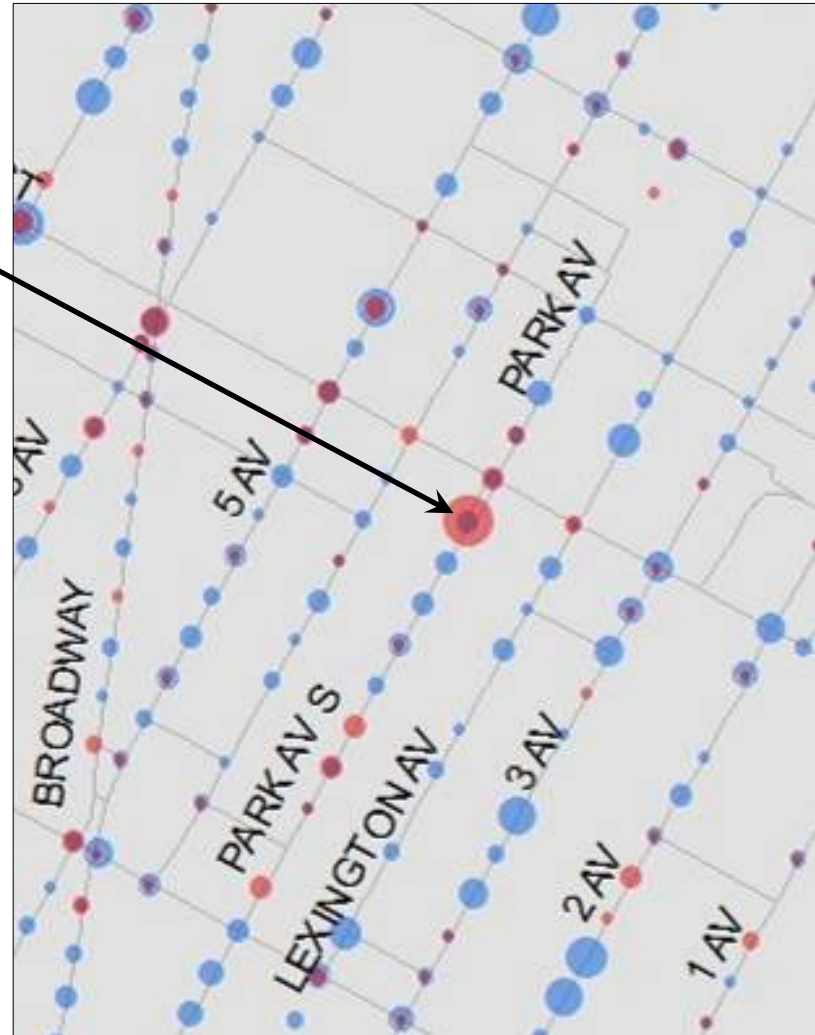
Pedestrian Actions
Midtown Manhattan
2004-2006
Injuries per Location

Crossing Against Signal

● 10

Crossing With Signal

● 10





Park Ave Tunnel Safety Improvements

1999 Improvements

- WB through movement on E 33rd St. banned
- Jersey barriers installed
- High risk northern crosswalk eliminated
- Pedestrian fencing installed at NW corner and median





Park Ave Tunnel Safety Improvements

1999 Improvements (cont.)

- Flexible delineators installed to separate tunnel entrance and exit





Park Ave Tunnel Safety Improvements

1999 Improvements (cont.)

- Pedestrian and vehicle signage upgraded





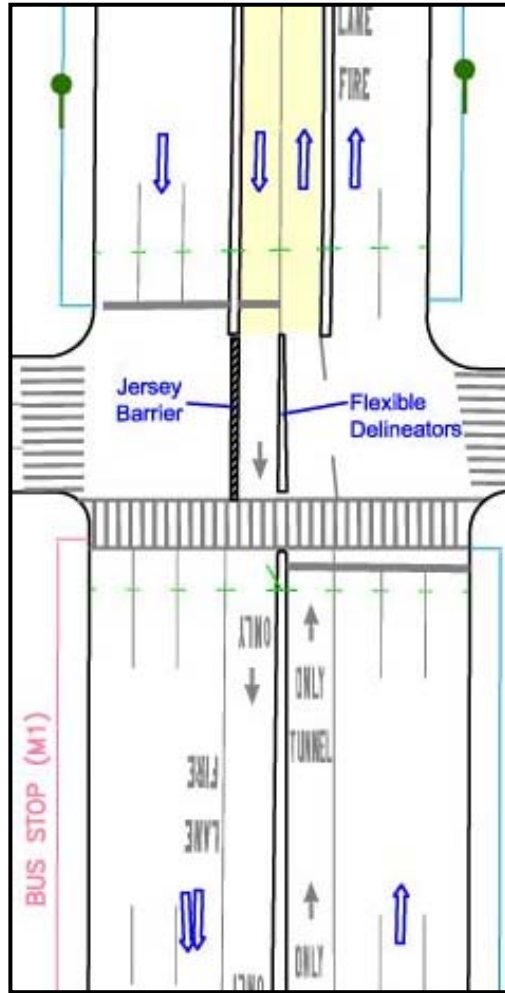
Park Avenue at E. 33rd Street

BEFORE

AFTER



2008 Improvements at E. 33rd St

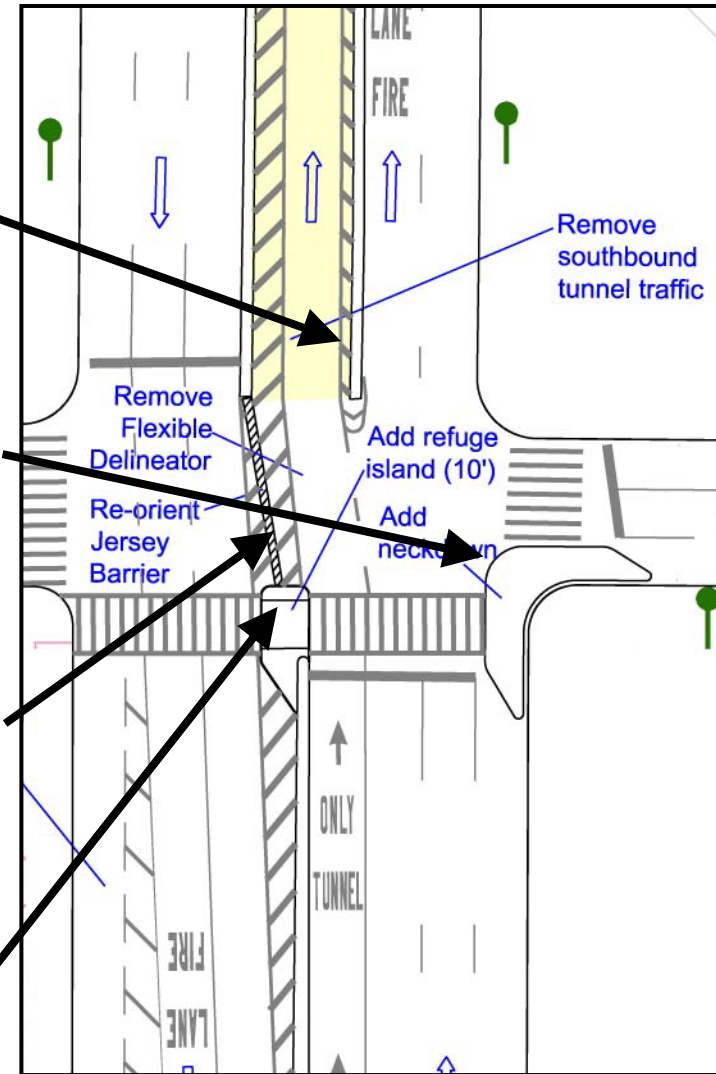


- Converted Park Ave Tunnel to **One-Way Traffic Only**, closing SB lane

- Neckdown on SE corner to shorten crossing, align with NE corner

- Realigned Jersey barriers to separate NB tunnel traffic from SB local traffic

- 10' pedestrian refuge island in south crosswalk

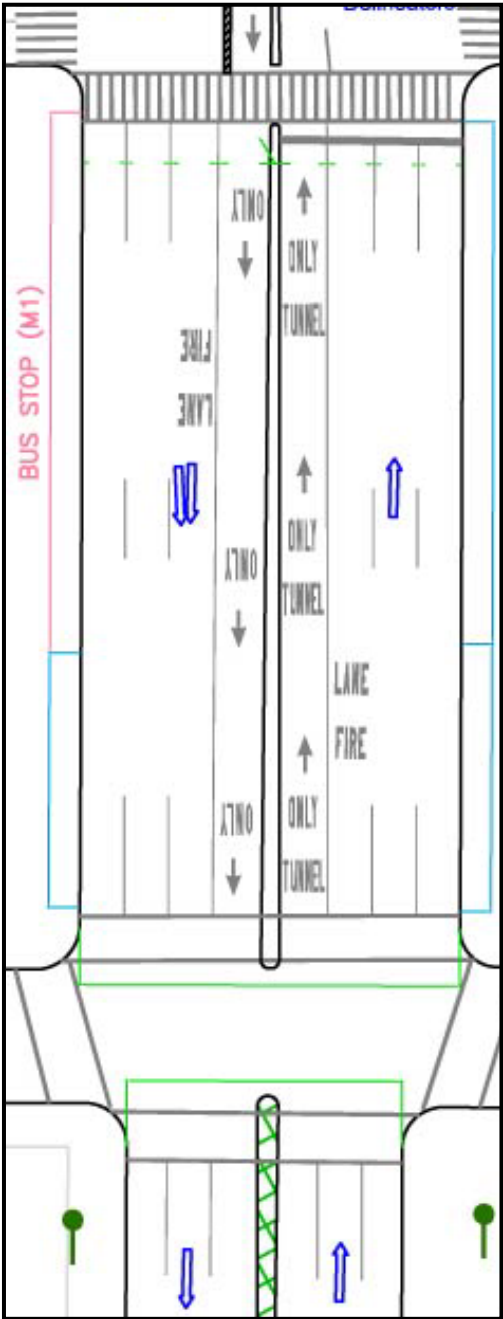


After Conditions

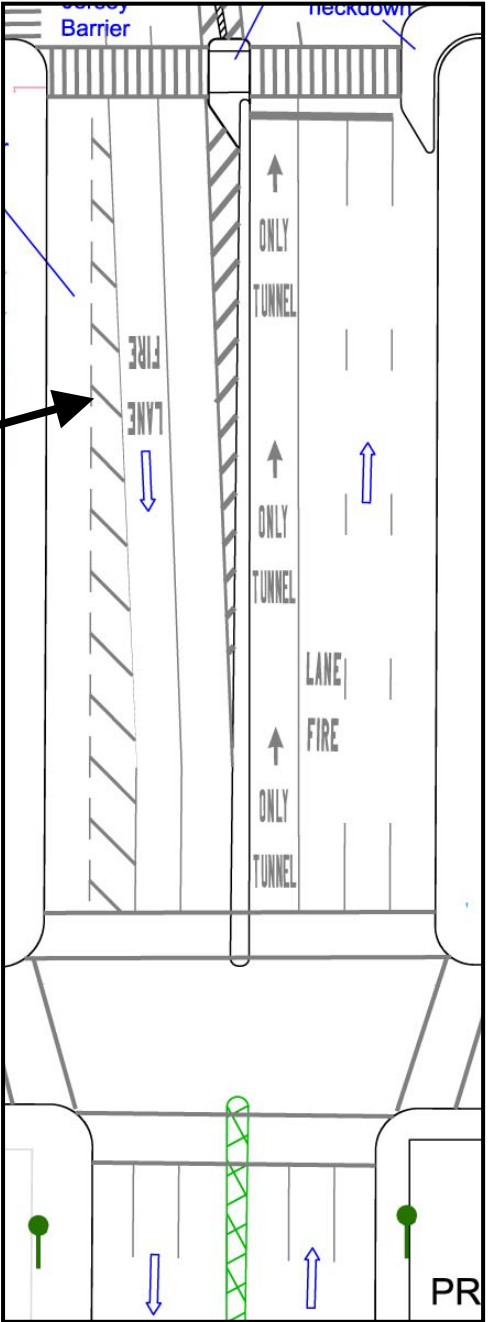
Before Conditions

Improvements South of E. 33rd St

- Channelize moving lanes on SB Park Avenue south of East 33rd St. to align with downstream traffic south of East 32nd St.



Before Conditions



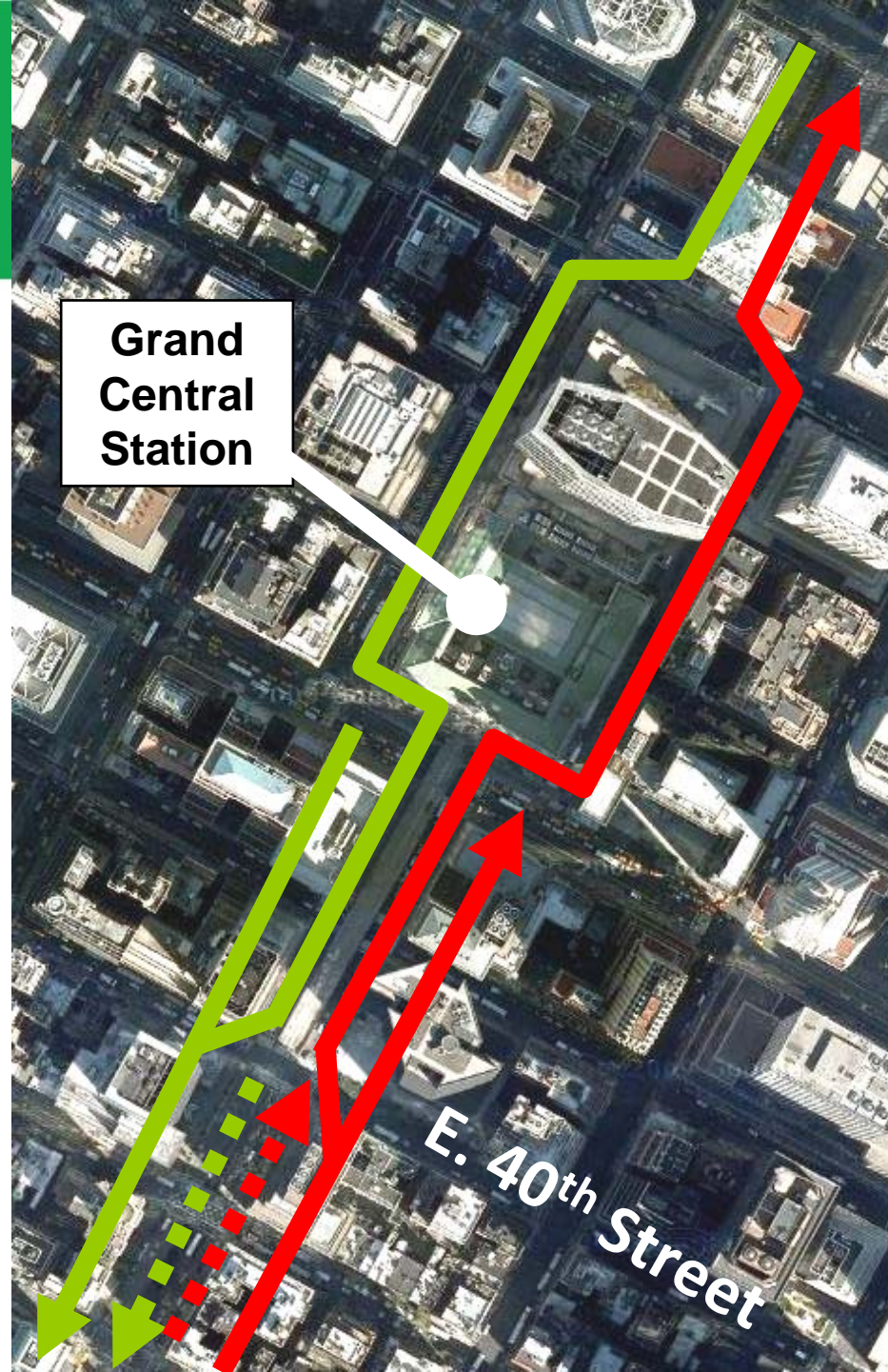
After Conditions



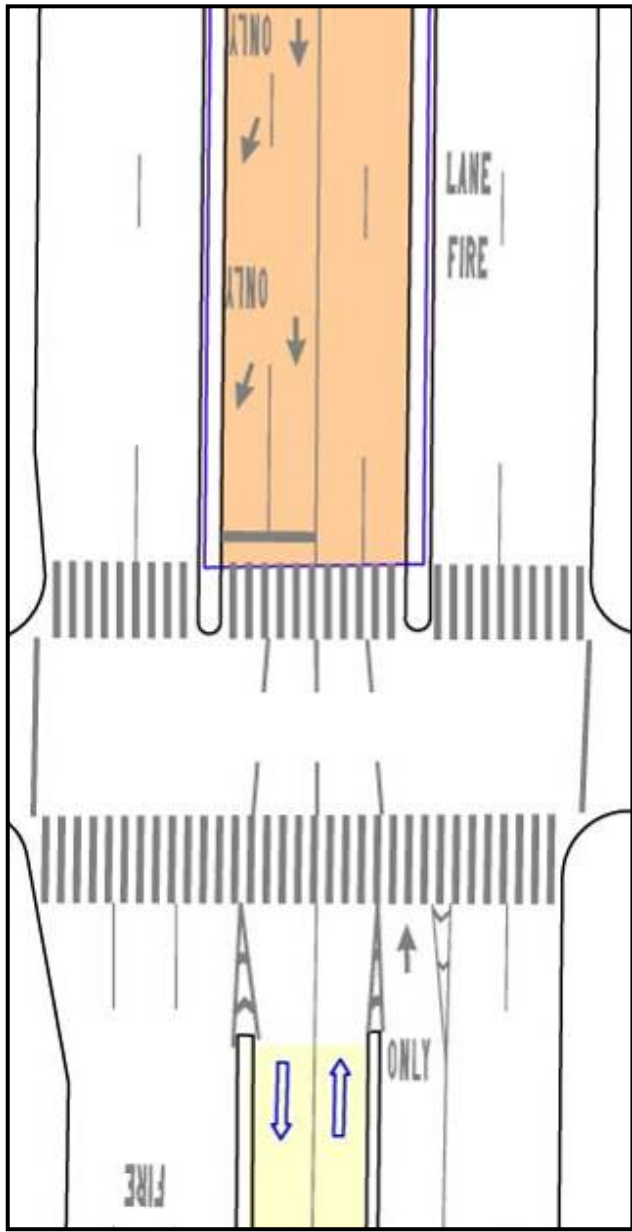
Park Avenue, E. 40th Street to E. 46th Street

BEFORE

AFTER

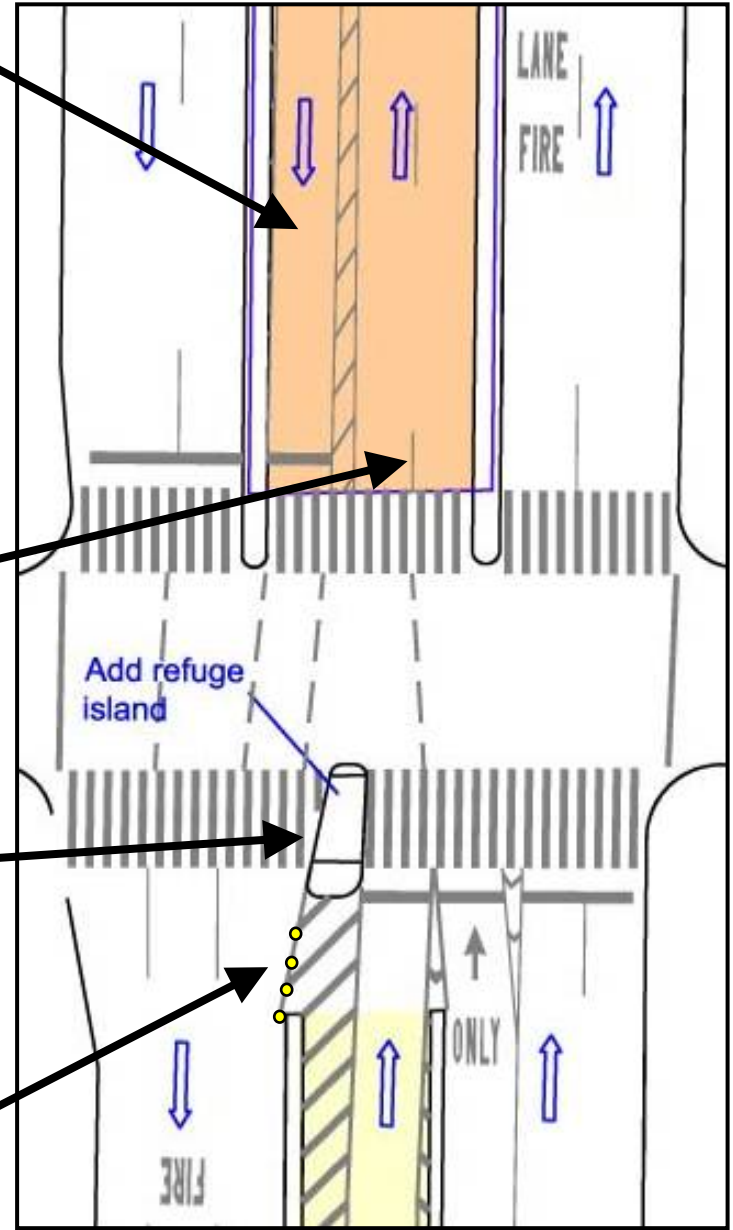


2008 Improvements at E. 40th St



Before Conditions

- SB viaduct lanes reduced from two to one
- SB viaduct directs vehicles to SB Park Avenue main line
- NB viaduct lanes widened to 10' from 9'
- 8' pedestrian refuge island on the south crosswalk of East 40th St.
- Installed flexible delineators



After Conditions



Park Ave Tunnel Safety Improvements

BEFORE



E. 33rd St & Park Ave Facing North

AFTER





Park Ave Tunnel Safety Improvements

BEFORE



**E. 33rd St at Park Ave facing
South**

AFTER





Park Ave Tunnel Safety Improvements

BEFORE



E. 33rd St Southeast Corner

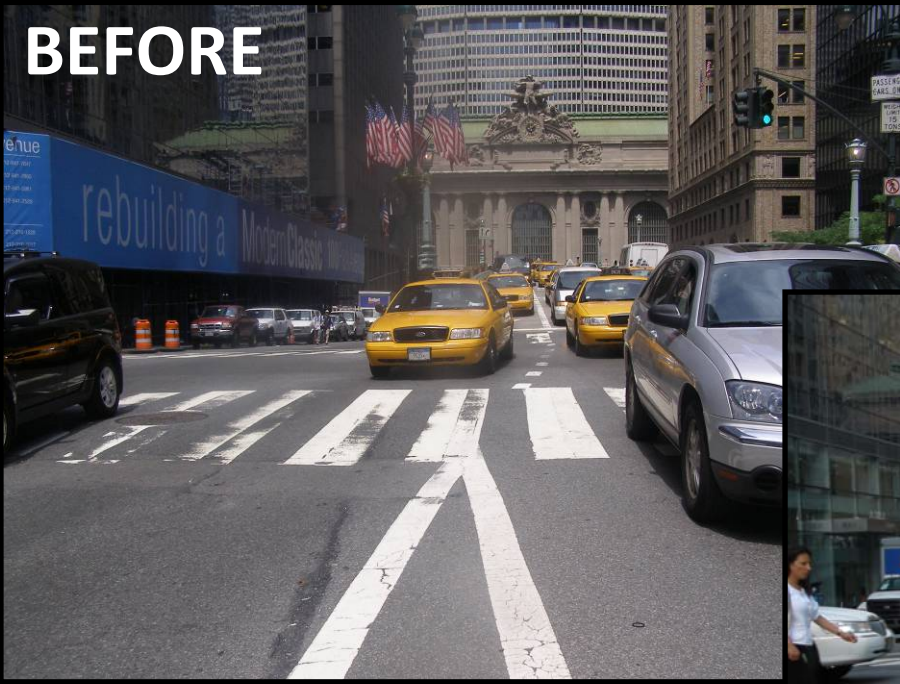
AFTER





Park Ave Tunnel Safety Improvements

BEFORE



E. 40th St & Park Ave Facing North

AFTER





Park Ave Tunnel Safety Improvements

BEFORE



**E. 40th St &
Park Ave
Facing
South**



AFTER



Park Ave Tunnel Safety Improvements



Signage (After)





Park Ave Tunnel Safety Improvements

Results

- Zero pedestrians injured while crossing Park Avenue at 33rd St since implementation
- Total Injuries at Park Avenue & 33rd Street have decreased by 74%
- Pedestrian injuries on the Park Avenue SB local lanes have decreased by 46%
- Illegal EB & WB pedestrian crossings decreased by 50%
- 30 pedestrians per hour wait in refuge



Park Ave Tunnel Safety Improvements

Results (cont.)

- SB travel times from E. 49th to 31st increased by **1 min** at AM peak, **2-3 min** at PM peak
- Traffic still composed primarily of taxis: 50-73%
- Queues are on viaduct, where impact is low
- SB viaduct operating better than expected
 - 875 vph in one lane
 - 25% switched routes or modes



Park Ave Tunnel Safety Improvements

Park Ave and E. 33rd St Today





Park Ave Tunnel Safety Improvements

Comments or Questions?

