NYC Pedestrian Safety Study & Action Plan
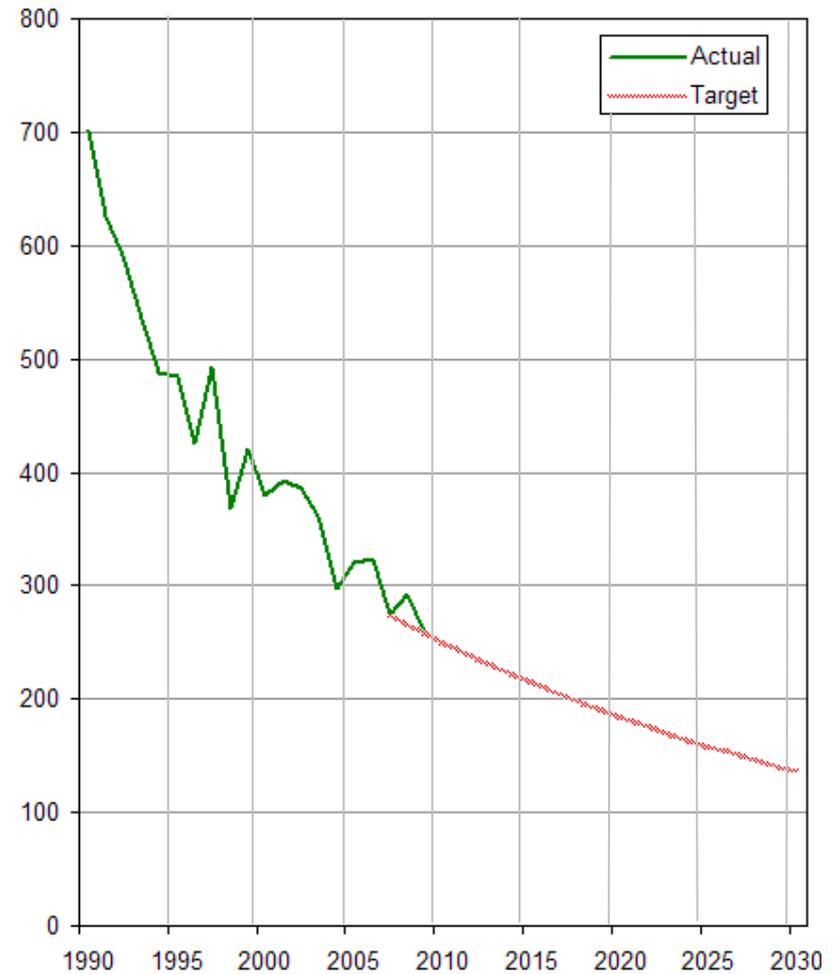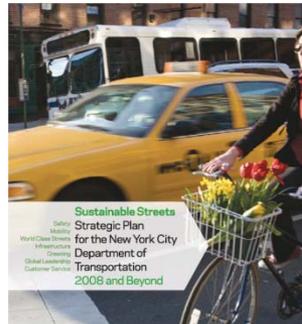
NYTMC Brown Bag Lunch Presentation

December 15, 2010

NEW YORK CITY DOT

DOT Safety Goal

Strategic Plan:
### Reduce Fatalities by 50% by 2030

From 274 (2007) to 137 (2030)

NYC Actual & Target Traffic Fatalities 1990-2030

NYC is the safest large US city and is growing safer

- Traffic fatality rate per 100,000 residents was 3.5 in NYC vs. 7.75 in other 10 largest US Cities, and 12.2 in US in 2008

- Fatality rate lower than Copenhagen (3.9) and nearly equal to Amsterdam (3.4)

- Pedestrian fatality rate per 100,000 residents was 15% less than Peer Cities' in 2008

- Pedestrian fatality rate decreased 41% to 2.0 (2000-2009) from 3.4 (1990-1999)

- Pedestrian severe injury rate decreased 40% from the decade of 1990-1999 to 2000-2009
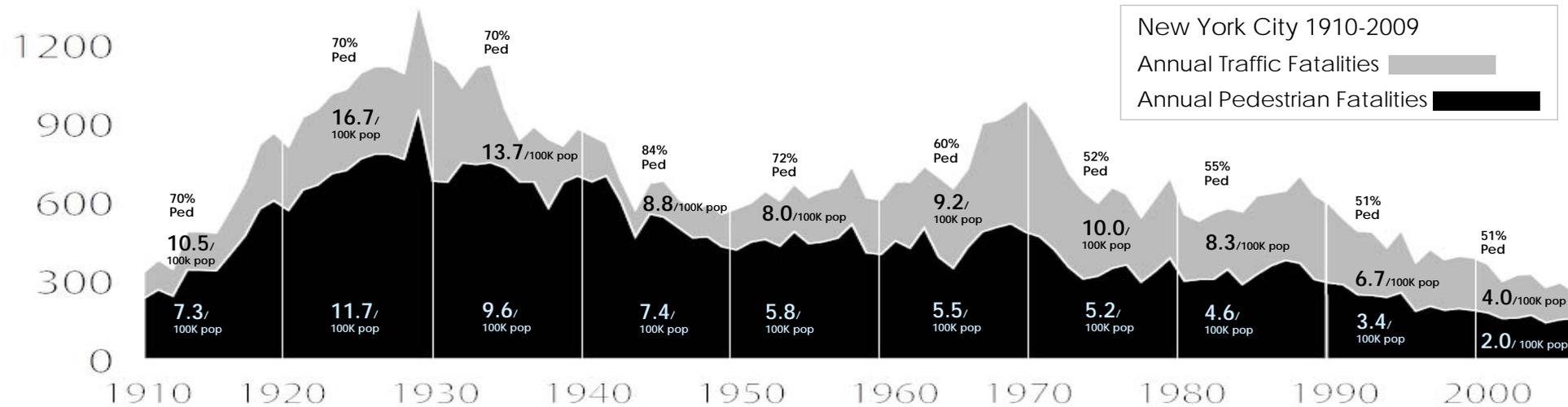
The Cost of Crashes

- **Public Health**
  - Crashes are a leading cause of potential years lost, similar to stroke, hypertension and pneumonia
- **Economic**
  - Crashes cost NYC $4.29 billion annually
- **Equity**
  - Seniors comprise 38% of pedestrian fatalities, but only 12% of the population
- **Sustainability**
  - Safer streets promote walking, cycling and transit
- **Quality of Life**
  - Road safety, like reduced crime rates, is a key factor in attracting and retaining residents to the city

Study & Action Plan Fulfill…

1. NYCDOT Strategic Plan Goal: 50% reduction in fatalities by 2030

2. NYC Pedestrian Safety Act (LL 11 of 2008) mandate to study pedestrian fatalities and severe injuries and to develop a strategy and schedule for improving pedestrian safety

3. FHWA Focus City Program request for pedestrian safety plan

Focus on Vulnerable Road Users

(Pedestrians, Bicyclists, Motorcyclists)

Vulnerable Road Users:

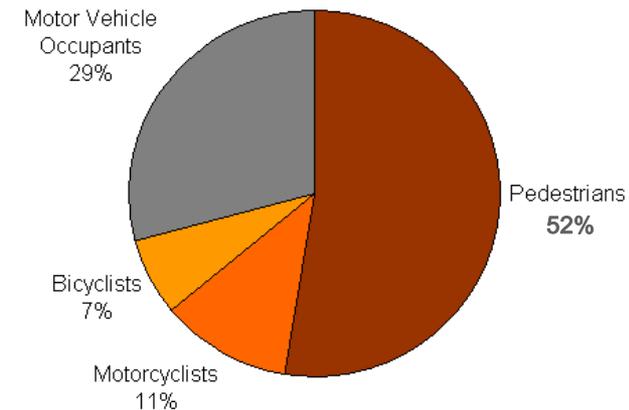## 71% of all fatalities

(2005-2009)

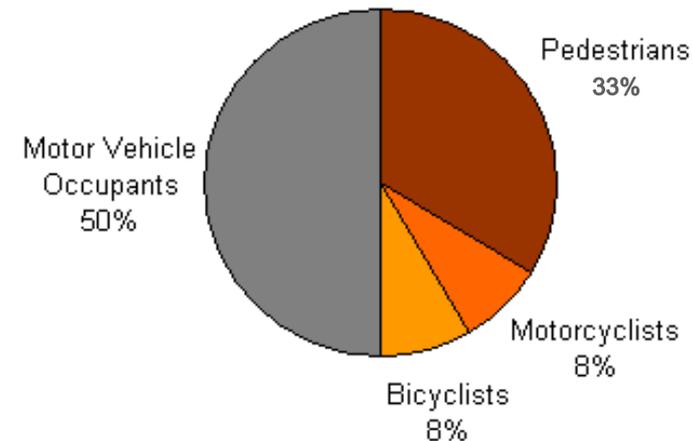Pedestrians:

52% of all fatalities

(2005-2009)

33% of all severe injuries

(2004-2008)

2005-2009 Traffic Fatalities

Motor Vehicle Occupants 29%

Pedestrians 52%

Bicyclists 7%

Motorcyclists 11%

2004-2008 Traffic Severe Injuries

Pedestrians 33%

Motor Vehicle Occupants 50%

Motorcyclists 8%

Bicyclists 8%

Proportions may not add to 100% due to rounding

Existing Safety Efforts Among Most Comprehensive in North America

Findings

Where:

Manhattan

- **Highest Crash Density**: Four times as many pedestrian KSI (Killed or Severely Injured) in **Manhattan** per mile of street (.73) as other four boroughs (.18)

- Other boroughs have higher KSI totals and higher rates per 100,000 residents and workers

- 43% of pedestrians killed in Manhattan resided in another borough or outside NYC

- In Manhattan, **Major Two-Way Streets** account for 47% of pedestrian fatalities but only 12% of the road network

Average Annual Pedestrian KSI 2004-2008

| Borough	Bronx	Brooklyn	Manhattan	Queens	Staten Island	NYC
Pedestrian KSI per mile of street	0.26	0.30	0.73	0.12	0.05	0.23
Pedestrian KSI	233	481	420	289	49	1472
Street Miles	898	1592	576	2416	983	6465
Pedestrian KSI Rate (per 100,000 residential population)	17	19	26	13	10	18
Pedestrian KSI Rate (per 100,000 daytime population)	19	21	14	15	12	17

Where: (cont.)

- 74% of pedestrian crashes occur at **intersections** (2002-2006), but:

- **Crashes are dispersed:** the 52 most common crash locations average one pedestrian KSI crash per year, and account for only 3.5% of all pedestrian KSI

- **Arterial streets** account for ~60% of pedestrian fatalities but only 15% of the road network

- Pedestrian KSI crashes on **arterial streets** are ~2/3 more deadly than crashes on non-arterial streets

- Controlling for other factors, pedestrian KSI crashes on streets with bike lanes were ~40% less deadly as other streets

When:

- 40% of pedestrian KSI crashes occurred in the **afternoon/evening** (3-9pm)

- **Late night** (3-6am) pedestrian KSI crashes are nearly twice as deadly as other time periods

- Nearly 20% more Pedestrian KSI crashes occurred per month during the **Winter holiday season** (Nov. & Dec.)

Pedestrian KSI Crashes by Time of Day

Pedestrian KSI Crashes by Time of Day: Percent Fatal

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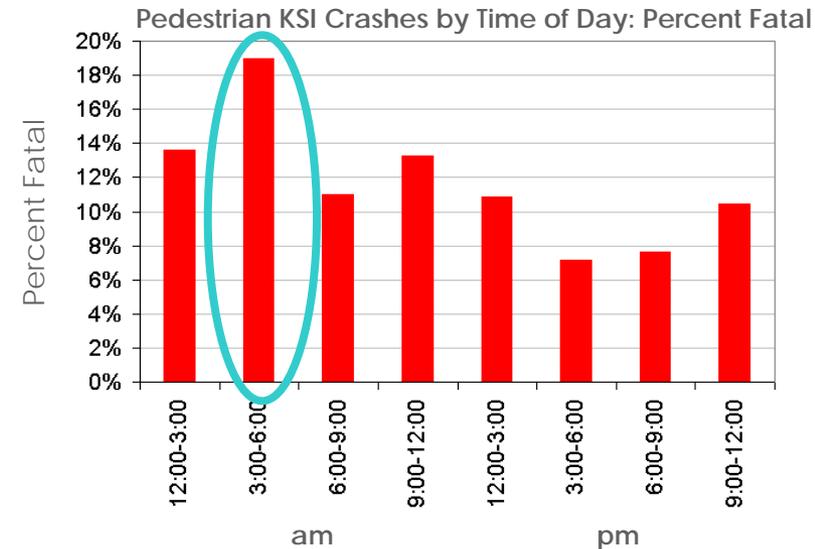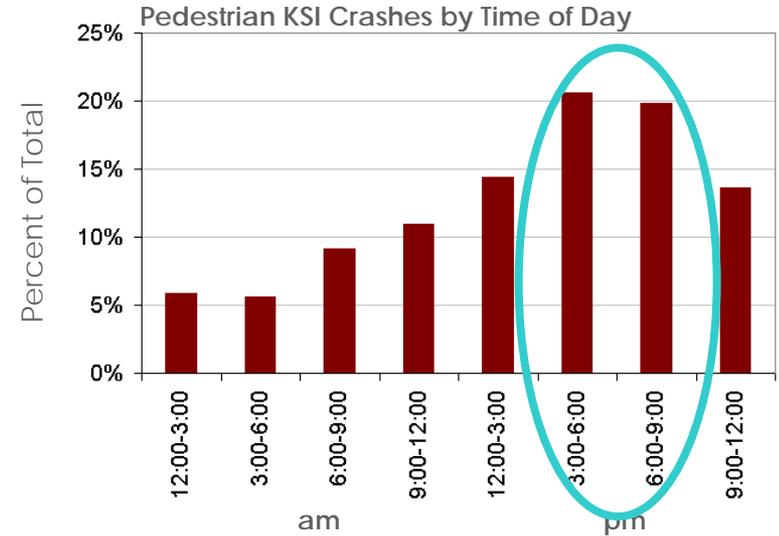
How:

- Drivers that **fail to yield** account for 26% of pedestrian KSI

- **Crossing-against-signal** pedestrian KSI crashes are 56% more deadly than crossing with the signal

- Controlling for other factors, pedestrian KSI crashes involving **driver inattention** are more than twice as deadly as others

- Pedestrian KSI crashes involving **unsafe vehicle speeds** are nearly twice as deadly as others

- Controlling for other factors, **lane-changing** pedestrian KSI crashes are more than twice as deadly as others

- **Left turning** pedestrian KSI crashes outnumber right turning crashes 3 to 1

Who:

Pedestrians

- **Over age 65** – 12% of population but 28% of severe injuries, 38% of fatalities.

- **Asian Americans** over 65 had nearly twice the average fatality rate for seniors (7.8 vs. 4.3 per 100,000)

- Areas with higher proportions of **Hispanic residents** or **Black residents**, experienced higher crashes rates (Controlling for other factors, doubling the share of Black or Hispanic residents increased crashes by ~20%)

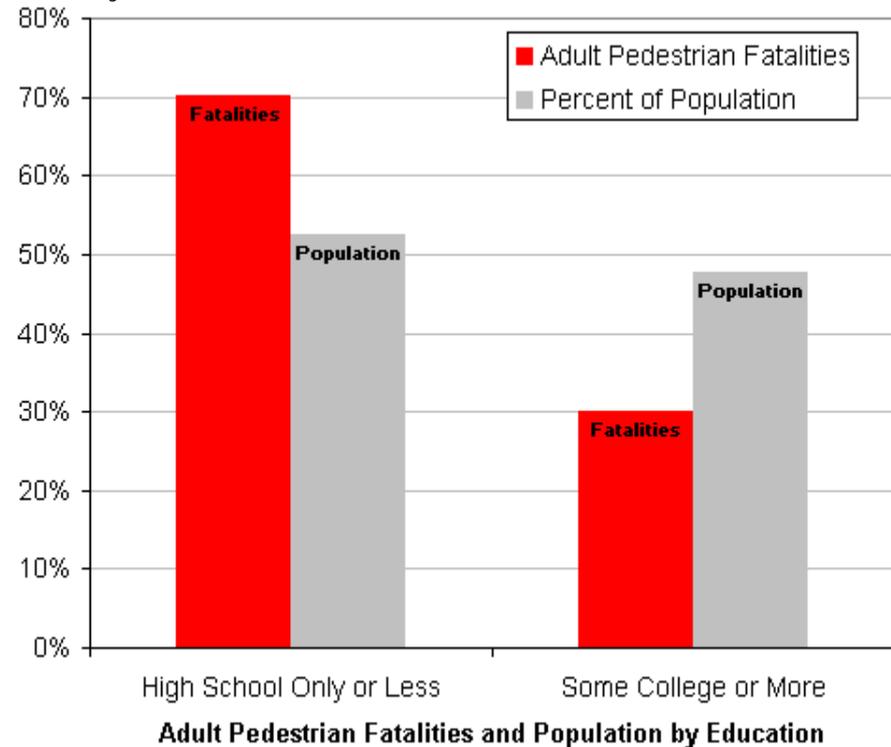- **Males** - 58% of pedestrian KSI

Pedestrian Fatality Rate by Age & Gender
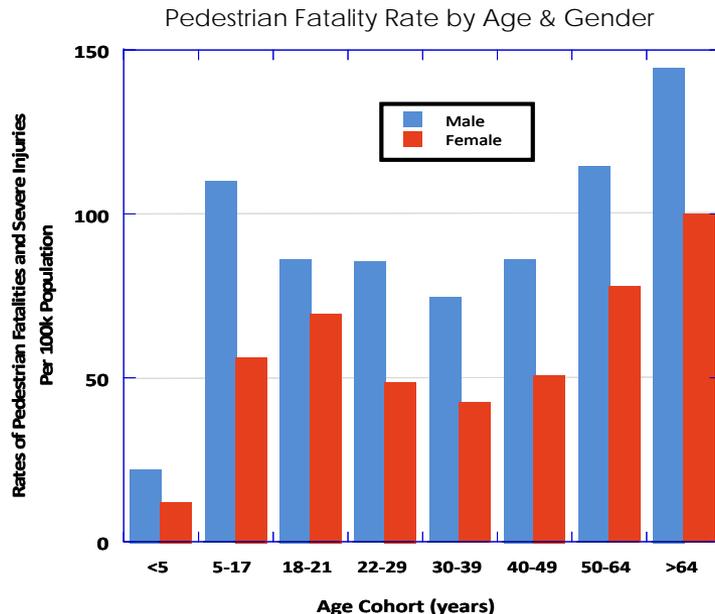
Pedestrian Fatality Rate by Race/Ethnicity & Age Group

Age	White	Black	Asian	Hispanic
Under 18	0.83	0.70	0.34	0.33
18 to 64	1.03	1.17	1.19	1.15
Over Age 65	4.68	2.16	**7.81**	4.03
All Ages	1.69	1.13	1.50	1.08

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Who:

Pedestrians (cont.)

- Residents with **high school education only or less**: 52% of adult residents but 70% of fatalities among adult residents

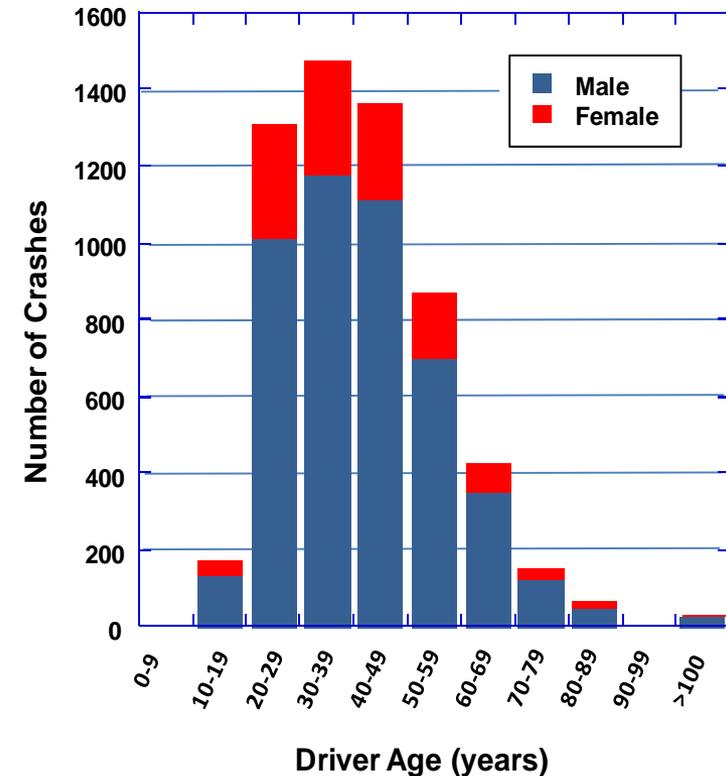- **Foreign-born** – 36% of residents but 51% of fatalities among residents

Pedestrian Fatalities and Population by Educational Attainment

Adult Pedestrian Fatalities and Population by Education

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Who:
Drivers

Pedestrian KSI by Driver Age & Gender

- 80% of pedestrian KSI crashes involved **male drivers** (57% of NYC vehicles are registered to men)

- **Private passenger cars** account for 79% of all pedestrian KSI crashes

- 16% of Manhattan pedestrian KSI crashes involved a taxi or livery car

- 31% of pedestrian KSI involving **trucks** resulted from a right turn

- 8% of pedestrian fatalities involved a **driver without a license** (2006-2008)

| Vehicle Type	% of Pedestrian KSI crashes (minus unknowns)	% of registrations (2009)
Bus	3%	0.4%
Truck	4%	3.6%
Taxi/Livery	13%	2.1%
Passenger	79%	90%

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Recommendations

Engineering 2010-2011

1.1   Install **countdown pedestrian signals** at 1,500 intersections.

1.2   Aggressively redesign **20 miles of high-crash corridors**
      Upgrade signals, markings and signage on 40 miles of high-crash corridors

1.3   Re-engineer 20 intersections on **major Manhattan two-way streets**.

1.4   Launch a pilot program to test the safety performance of **neighborhood 20 mph zone**.

1.5   Implement pilot program to **improve visibility at left turns** along avenues in Manhattan.

Enforcement

2.7 **Targeted Enforcement:** NYPD and DOT will coordinate a data-driven, citywide campaign against aggressive driving

2.8 **Drivers Without a Valid License:** NYPD will continue their efforts to identify and apprehend unlicensed drivers

2.9 **Data Collection & Sharing:**
NYPD and DOT will coordinate on geographic & crash severity analyses to enhance strategic resource deployment

2.10 **Cellphone/Texting While Driving:** NYPD will continue to crack down on drivers using handheld cellphones or texting while driving
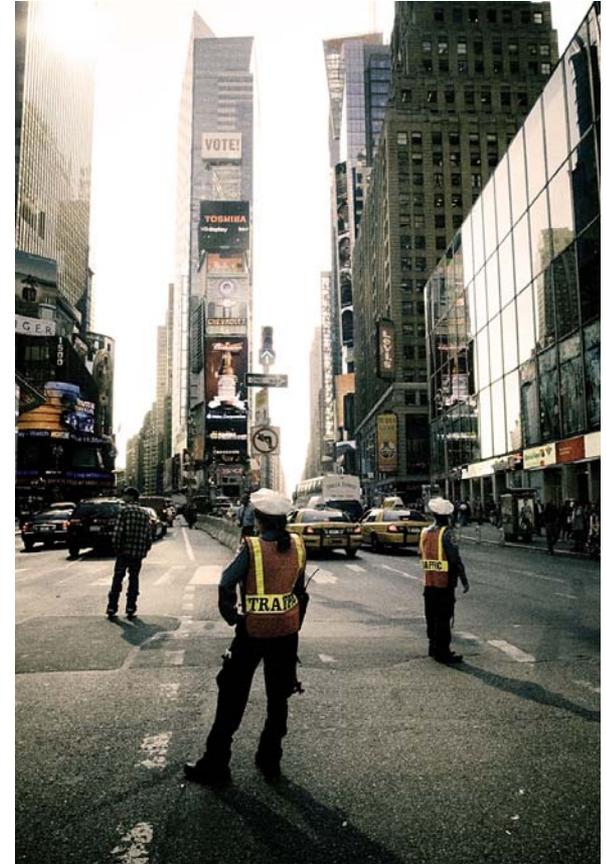
Public Communication
Education

3.11 **School Programs**
- Target programs near high risk corridors
- Expand Spanish language education efforts

3.12 **Parents**
- Target low educational attainment populations
- Focus Safe Kids Coalition outreach to new immigrant groups
- Expand non-English outreach to include Haitian Creole, Chinese (Mandarin and Cantonese) and Urdu

3.13 **Older Adults**
- Provide Safe Streets for Seniors presentations near high risk corridors
- Expand multi-language outreach, focusing on older Asian residents
- Develop comprehensive active transportation program

3.14 **Intergenerational Outreach**
- Utilize children as "Safety Deputies" to share traffic safety information
- Work with communities to create pedestrian safety-themed signs and murals

3.15 **Materials**
- Update and create new print materials highlighting dangerous driving behavior
- Translate additional materials for high-risk non-English speaking populations

Public Communication

Marketing

3.16 **"It's 30 for a Reason" Campaign**
- Reinforce 30 mph speed limit
- TV spots and billboards
- Link:
  http://www.nyc.gov/html/dot/html/about/knowthespeedlimit.shtml

3.17 **Use targeted tactics to further raise motorist awareness**
- Work with NYS DMV to deliver materials
- Introduce materials / messages at motorist education events

3.18 **Use targeted tactics to further raise pedestrian awareness**
- Pedestrian countdown signals / crossing with the light outreach
- Multi-lingual "street teams"
- Focus on areas with high populations of foreign-born residents
- Introduce materials / messages at youth and senior outreach events

Policy and Legislation

4.19 **Expand Red Light Cameras**

Only 150 permitted in NYC; more needed

4.20 **Introduce Speed Cameras**

2007 NHTSA international review: injury crash reductions of 20% to 25%

4.21 **Require Truck Crossover Mirrors**

Eliminate blind spots at front of trucks; already mandatory on school buses

4.23 **Toughen Penalties for Unlicensed Drivers**

Work with Albany and NYC District Attorneys for tougher legislation and sentences

Interagency Coordination & Cooperation

5.24 Establish **NYPD/DOT Road Safety Task Force**

> Coordinate campaigns & projects, share data, develop innovative responses to safety issues

5.25 Expand **DOT/DOHMH** collaboration on research & prevention activities

5.26 Work with New York State DMV to update **Driver's Education Curriculum** to incorporate more pedestrian, biking and urban driving information
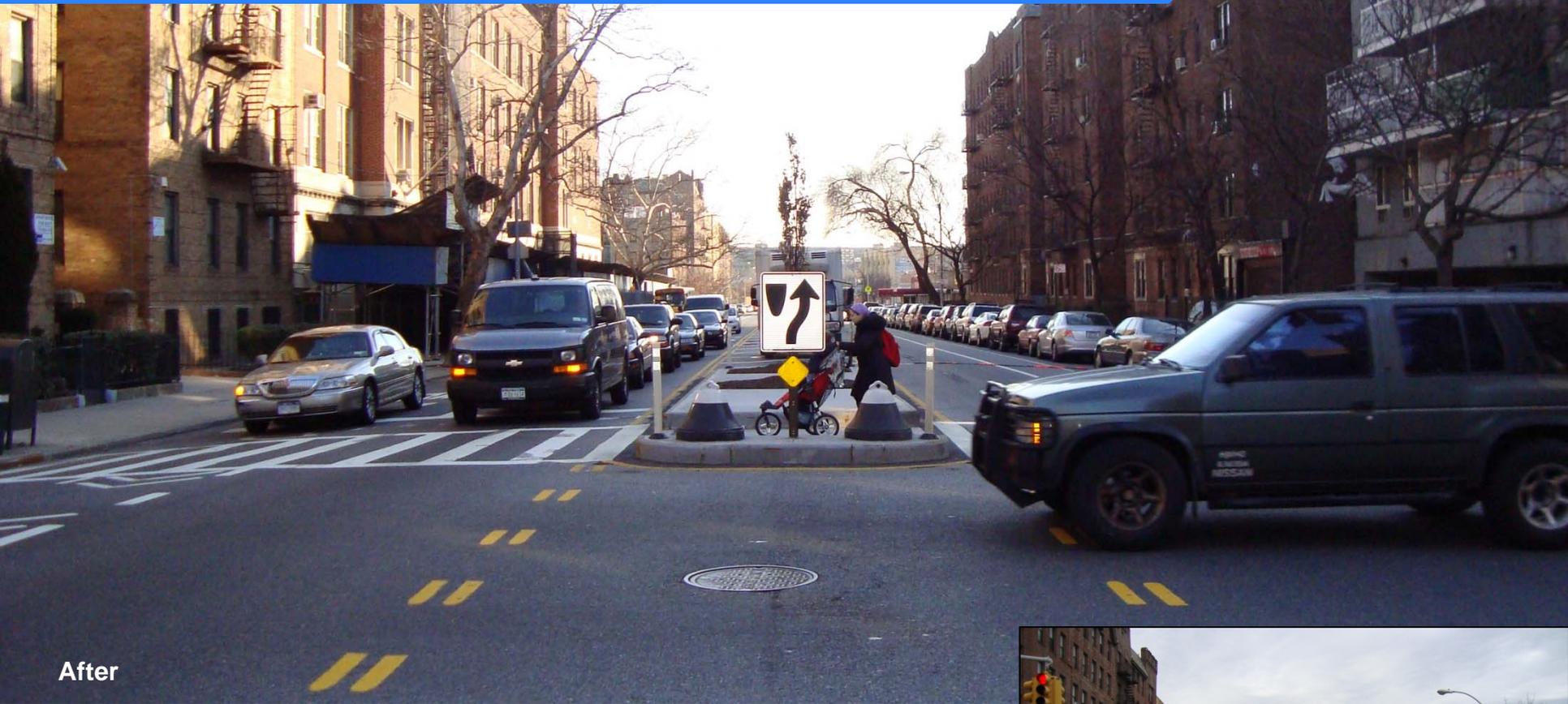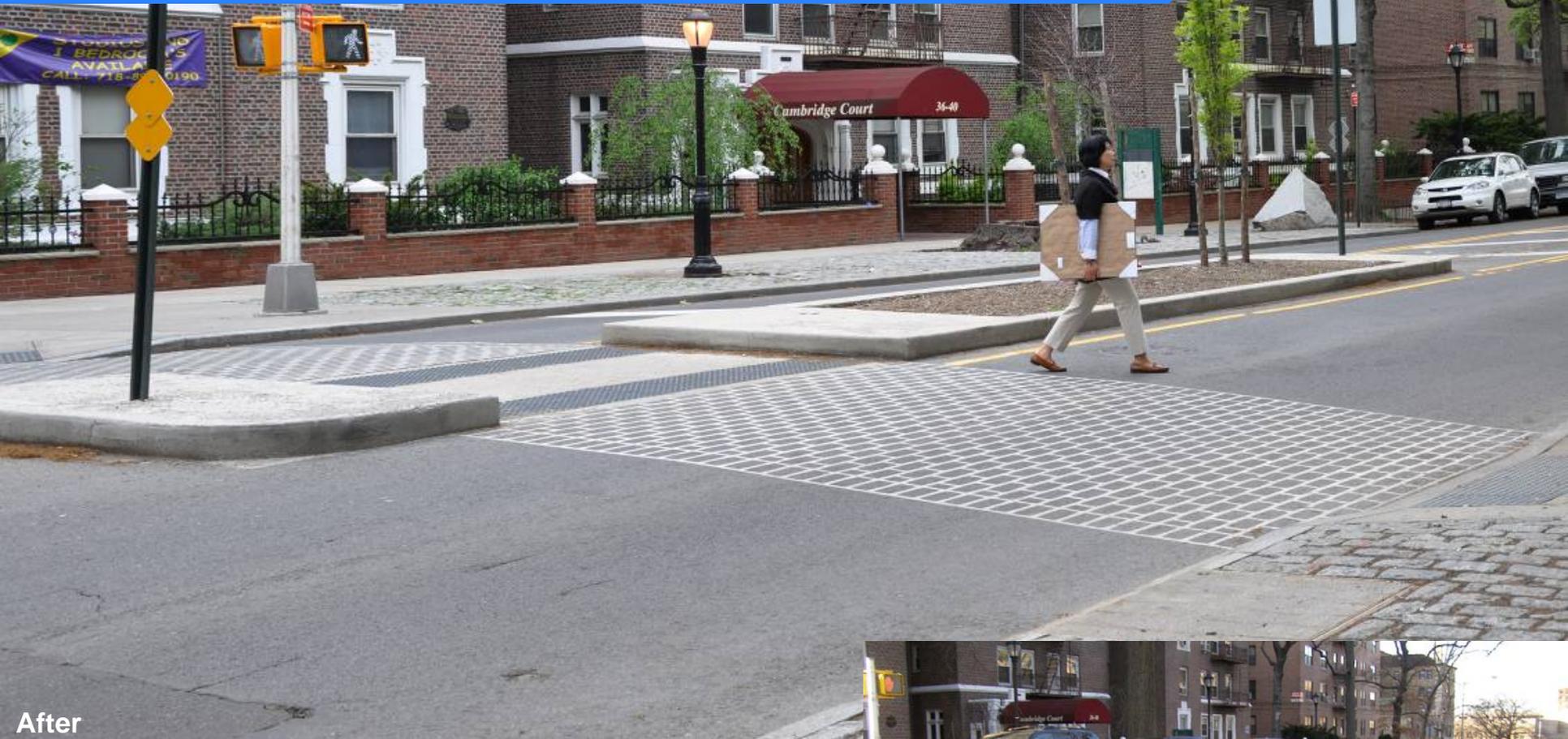
Road Diets

After

Before

Road Diets

After

Before

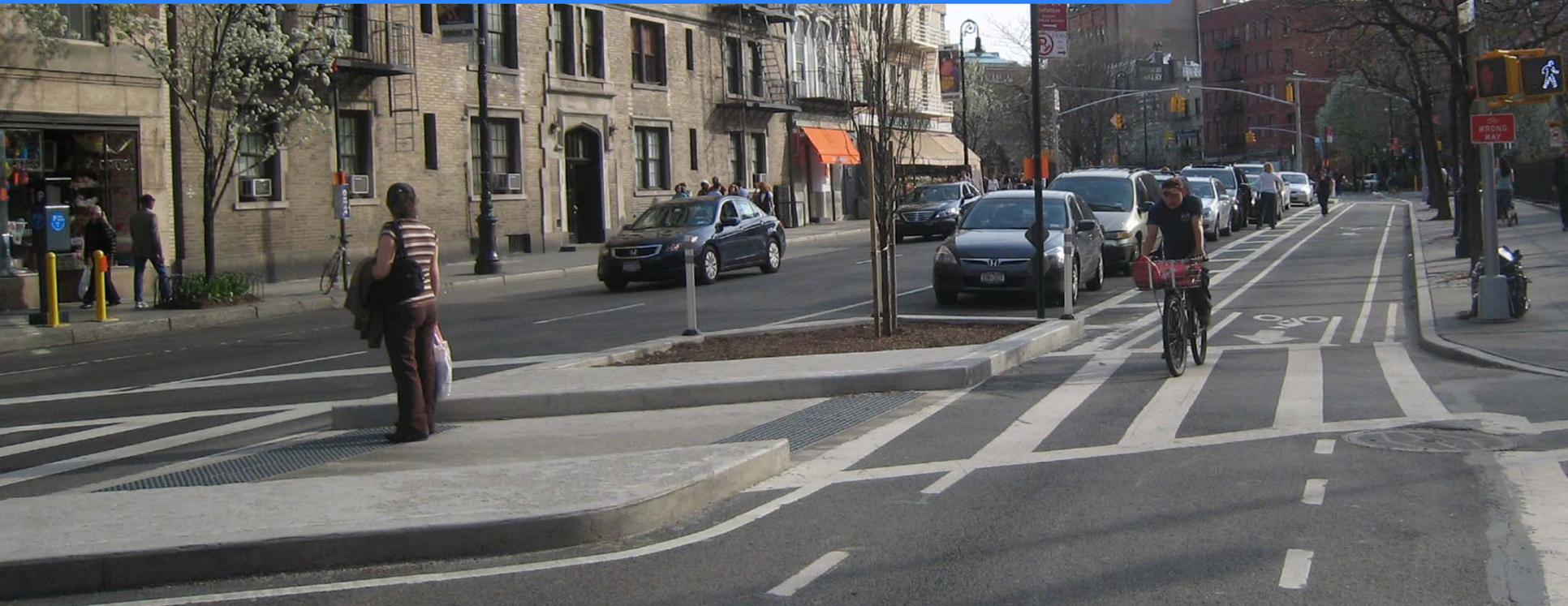# Road Narrowing

After
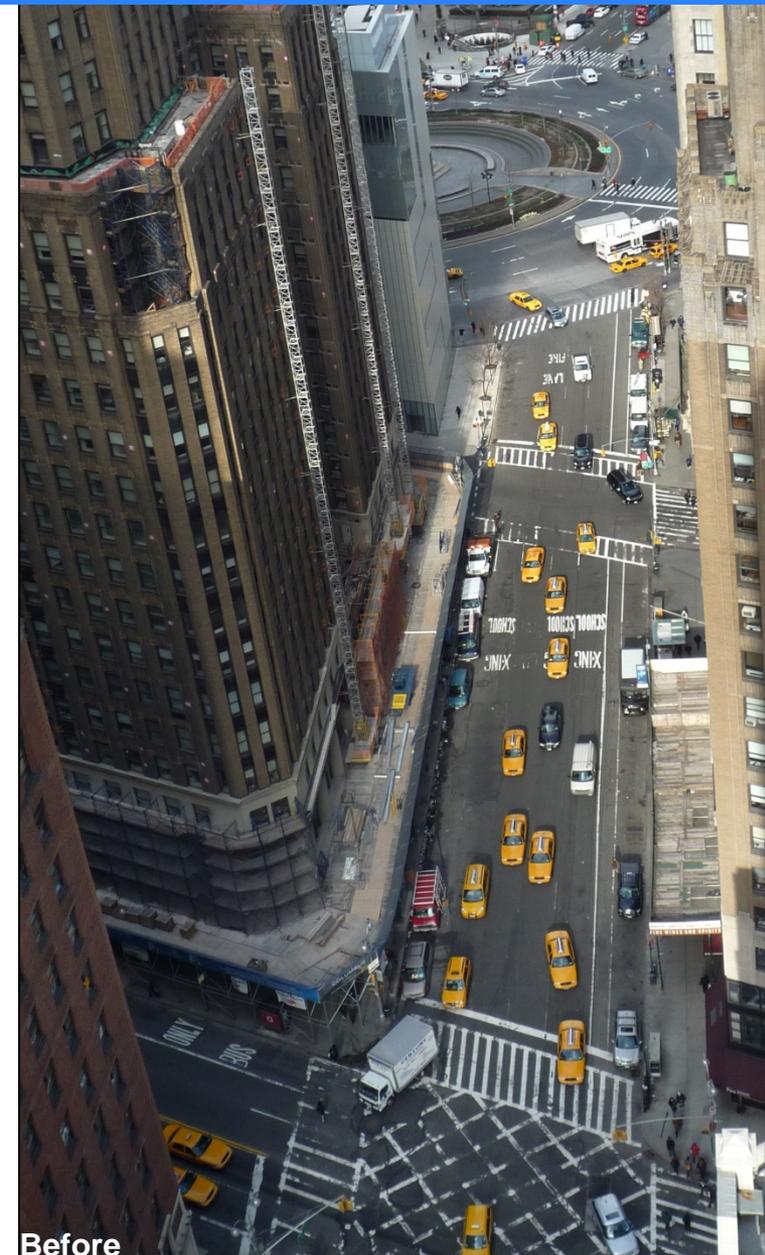
Before

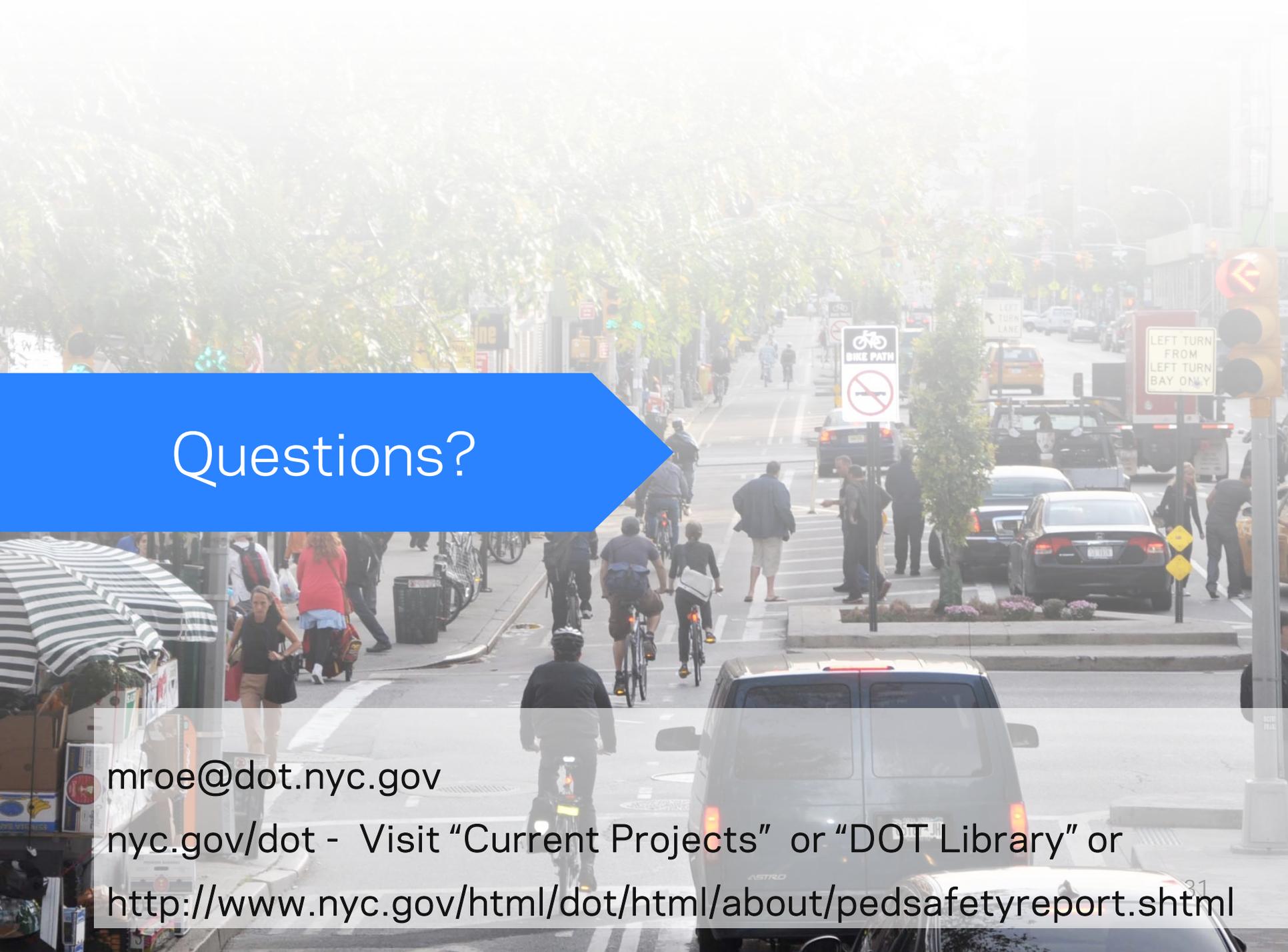# Elimination of Right-Turn Slips

After

Before

After

Plazas

Before

After

Plazas

After

Before

Questions?

mroe@dot.nyc.gov

nyc.gov/dot - Visit "Current Projects" or "DOT Library" or

http://www.nyc.gov/html/dot/html/about/pedsafetyreport.shtml