
VISION
ZERO
nyc.gov/visionzero


VISION
ZERO
nyc.gov/visionzero


NEW YORK CITY
DOT


NYC
Citywide
Administrative
Services


POLICE
DEPARTMENT
CITY OF NEW YORK

VISION ZERO: EVERY TWO HOURS

- Over 250 killed, 4,000 New Yorkers severely injured each year.
- High risk driver choices are a factor in 70% of pedestrian fatalities

ACHIEVING VISION ZERO

Tools to make streets safer:

- Dialogue & education
- Enforcement to deter law-breaking drivers
- Street design
- Legislation
- Collaboration with professional drivers

VISION ZERO: DIALOGUE AND EDUCATION

- Community insight through 25 Workshops, Town Halls
- nyc.gov/visionzero
- The City and the public will create Borough Safety Action Plans

VISION ZERO: DIALOGUE AND EDUCATION

- NYPD/DOT outreach street teams in high-crash areas
- Direct work in 500 schools and after-school programs
- Focused outreach at senior centers

VISION ZERO: DIALOGUE AND EDUCATION

- Hands-on safety demonstrations

VISION ZERO: DIALOGUE AND EDUCATION

- Increased education for TLC drivers
- Follow-up training for drivers who have been in crashes
- Recognition for the safest drivers
- Increased penalties to deter unsafe driving

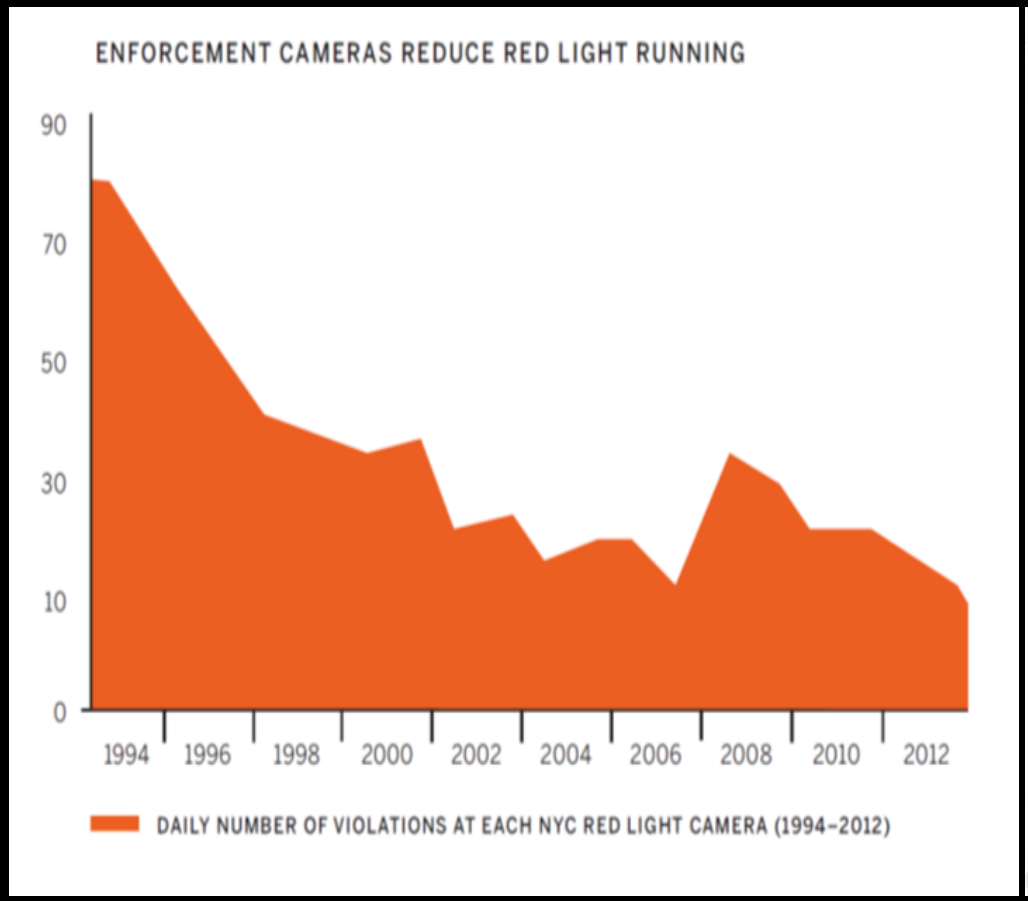
VISION ZERO: ENHANCED ENFORCEMENT

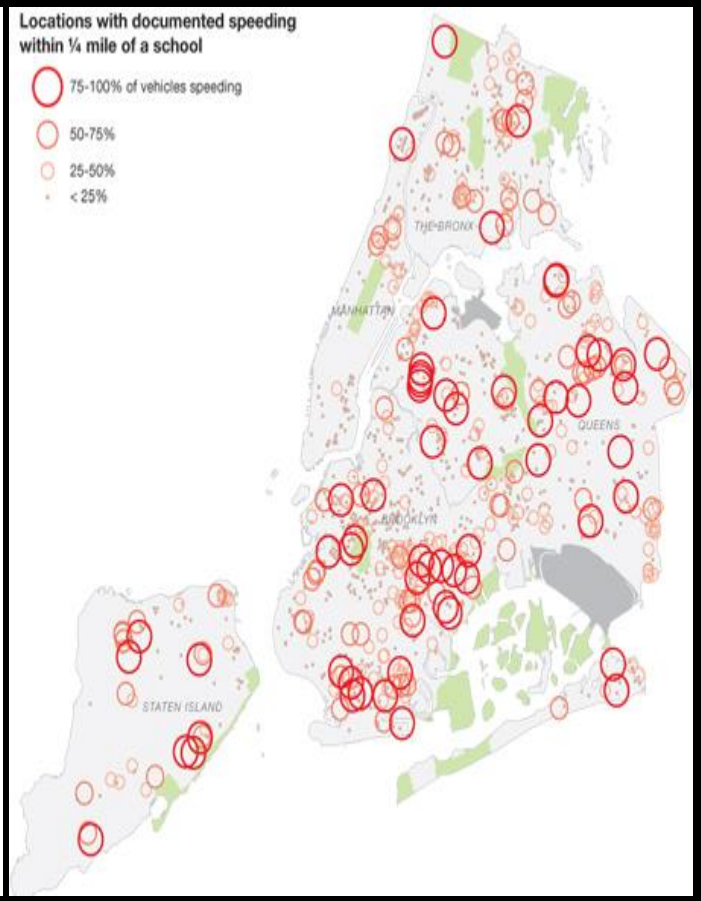
Enhanced enforcement to deter high-risk choices:

- Speeding
- Failure to yield
- Improper turns

- Texting/phoning while driving
- Signal violations

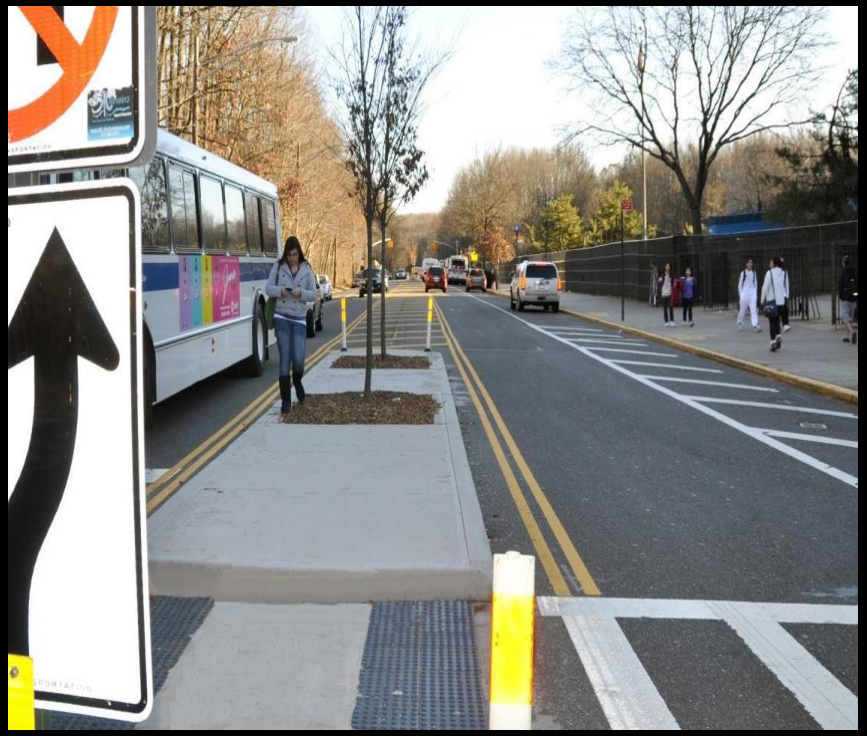
VISION ZERO: ENHANCED ENFORCEMENT





- Red light cameras have reduced NYC pedestrian injuries by 31%
- Cities with speed cameras report a 30-40% drop in serious injuries and deaths

VISION ZERO: STREET DESIGNS



- Designated space for drivers, cyclists and pedestrians
- Shorter crossing distances.
- Reduced turning conflicts.
- Safe streets are simple and predictable.

VISION ZERO: STREET DESIGNS

VISION ZERO: STREET DESIGNS

- 250 speed bumps
- 25 arterial slow zones
- 8 Neighborhood Slow Zones
- Enhanced lighting at 1,000 intersections by the end of 2015

VISION ZERO: 25 MPH


THE THEODORE
DEMANN CORP.
HYGRADE
FRANKFURTERS

VISION ZERO: Truck Fleets

TRUCK FATALITIES

- 100 truck-involved pedestrian fatalities, 2011-2013 (12% of NYC traffic fatalities)
- Size & Weight are a major factor: Truck crashes are 300% more likely to result in a pedestrian fatality than passenger vehicles impacts

WHO IS INVOLVED IN TRUCK FATALITIES

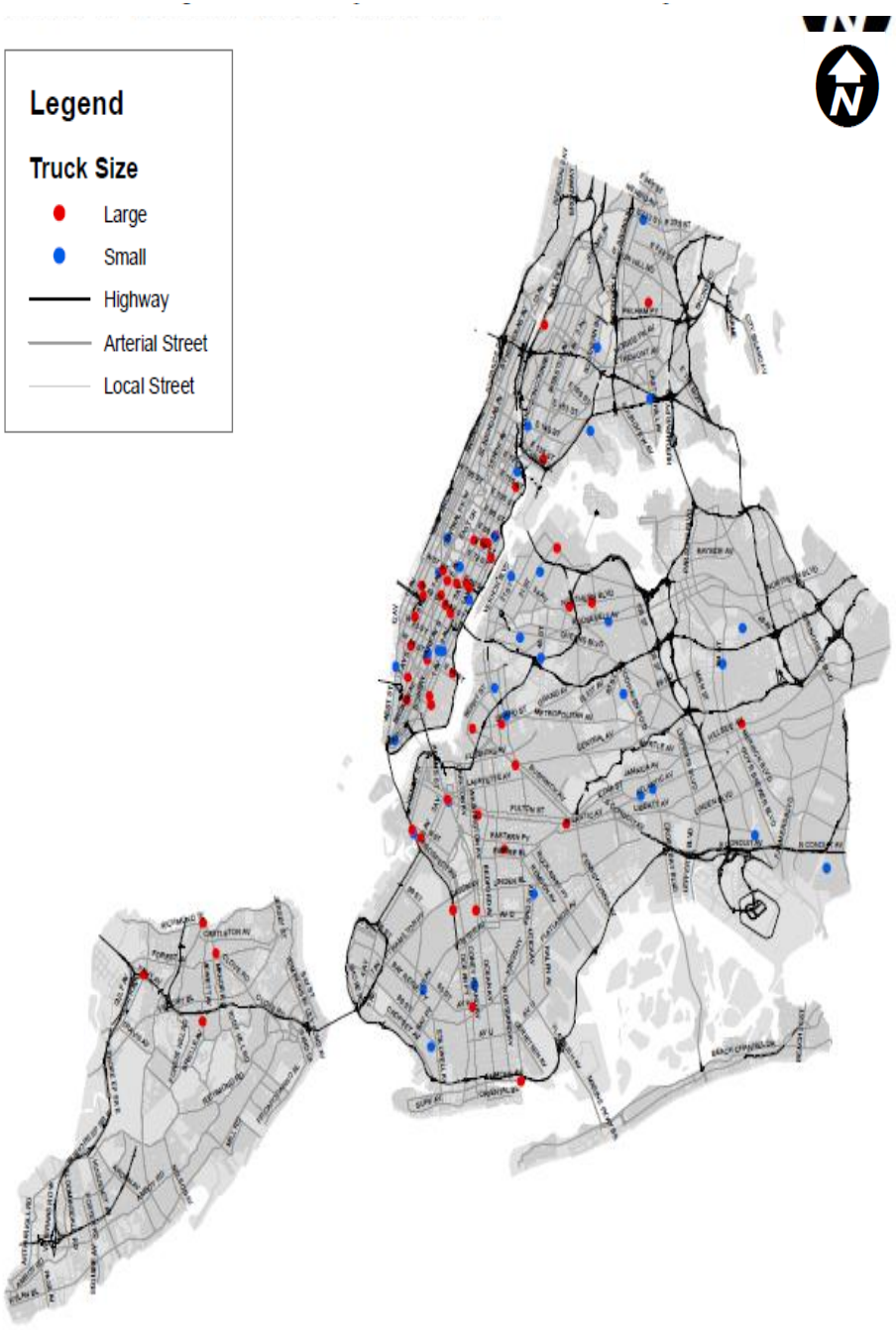
- Nearly 80% of victims were either walking or bicycling (as compared to 64% of all fatal traffic crashes)
- A small percentage of drivers were either unlicensed or had suspended licenses.
- Currently do not have data re: driver experience.

TRUCK TYPES INVOLVED IN FATAL CRASHES

Fatal Pedestrian Crashes between 2011- 2013:

1. Tractor Trailers 27%
2. Box Trucks 22%
3. Sanitation Trucks 16%

WHERE TRUCK FATALITIES OCCUR



- Nearly 50% of all pedestrians killed in truck crashes between 2011-13 pedestrian fatalities were killed in Manhattan.
  - Only 22% of all pedestrian traffic deaths occur in Manhattan.

WHERE TRUCK CRASHES OCCUR

82% of truck-related pedestrian fatalities occurred at an intersection, as opposed to 61% of all pedestrian fatalities

FATAL TRUCK CRASH PATTERNS

Right turns account for 31% of truck-related pedestrian severe injuries and fatalities, compared with only 6% for all pedestrian fatalities and serious injuries.

nyc.gov/visionzero

NEW YORK CITY DOT

POLICE DEPARTMENT CITY OF NEW YORK

NYC Taxi & Limousine Commission

Truck Types

- Tractor trailers account for 23% of fatalities between 2011-13
- 7 city vehicles were involved in ped fatalities

FATAL TRUCK CRASH PATTERNS

- Truck Blind Spots
  - Approximately one third of truck-related ped fatalities involve peds struck by the rear, right tire*
  - Right turns account for 31% of truck-related ped severe injuries and fatalities*
    - Compared with only 6% for all vehicle types**

WHERE TRUCK FATALITIES OCCUR


VISION
ZERO
nyc.gov/visionzero

NYC Fleet
Vision Zero Fleets Forum

Queens Theatre

Flushing Meadows Corona Park, Queens

October 23, 2014

Fleets Survey Results

Vision Zero Fleets Survey		
Fleet Surveyed		**51**
Private Commerical Fleets	22	
Bus companies	11	
Universities	10	
Public/Non-profit	8	
Drivers in Fleets Surveyed		**137,469**
Vehicles in Fleets Surveyed		**80,323**
Fleets with Telematics/GPS	**37**	**73%**
Fleet without Telematics/GPS	**14**	**27%**
Fleets with Driver Training	**37**	**73%**
Fleets without Driver Training	**14**	**27%**
Fleets with Side Guards	**0**	**0%**

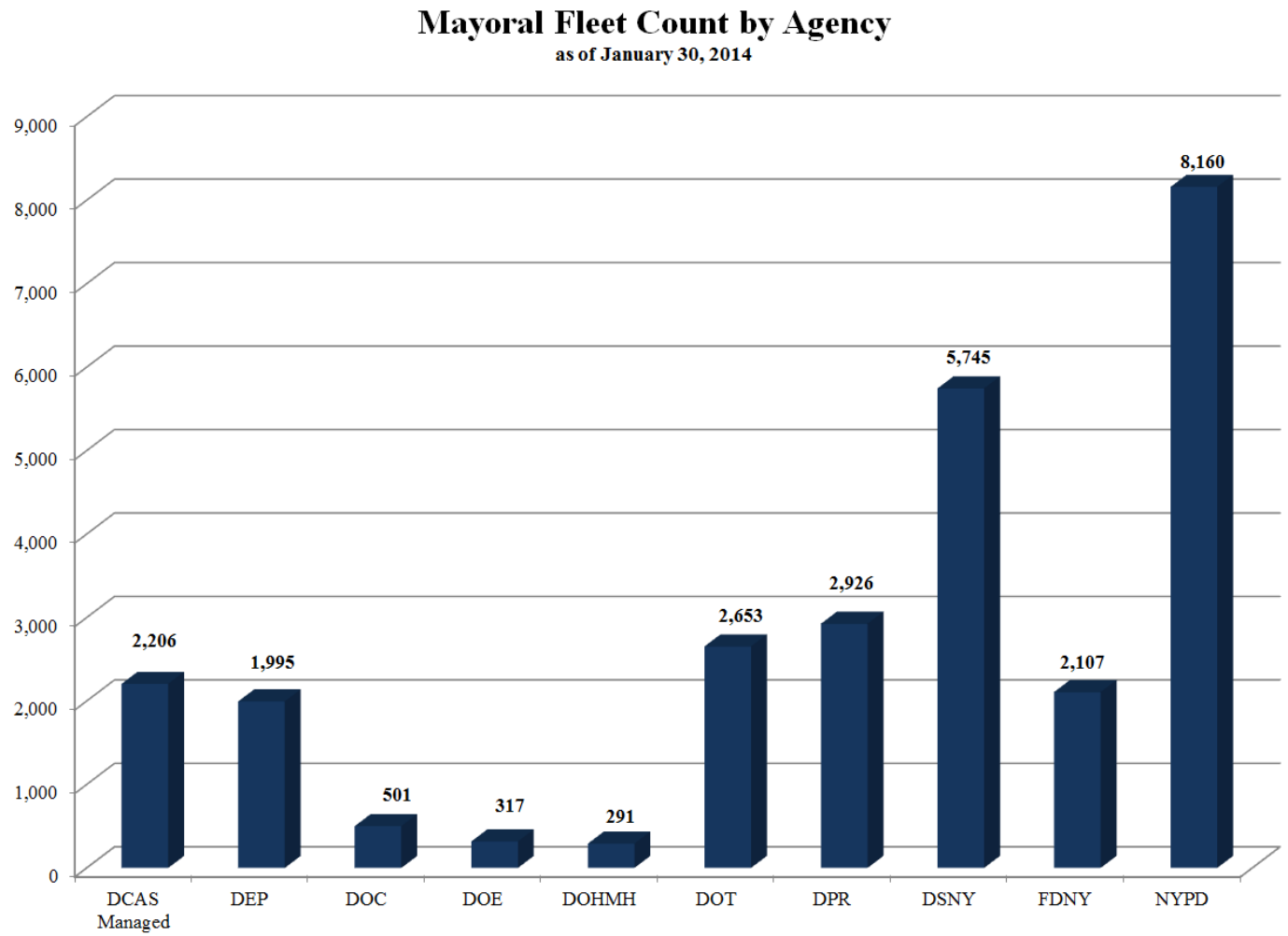
Fleets Survey Results

Best Safety Practices Cited in the Survey

1) Driver background checks
2) Driver health checks
3) On the road training
4) Defensive driving training
5) Automatic shut downs and “limp modes”
6) Random tests
7) DMV monitoring/ license events
8) Front and rear concave mirrors
9) Buzzers that driver must turn off
10) Cameras on each level of double decker bus
11) Rear view cameras
12) Rear sensors
13) Alcohol sensing vehicle locks

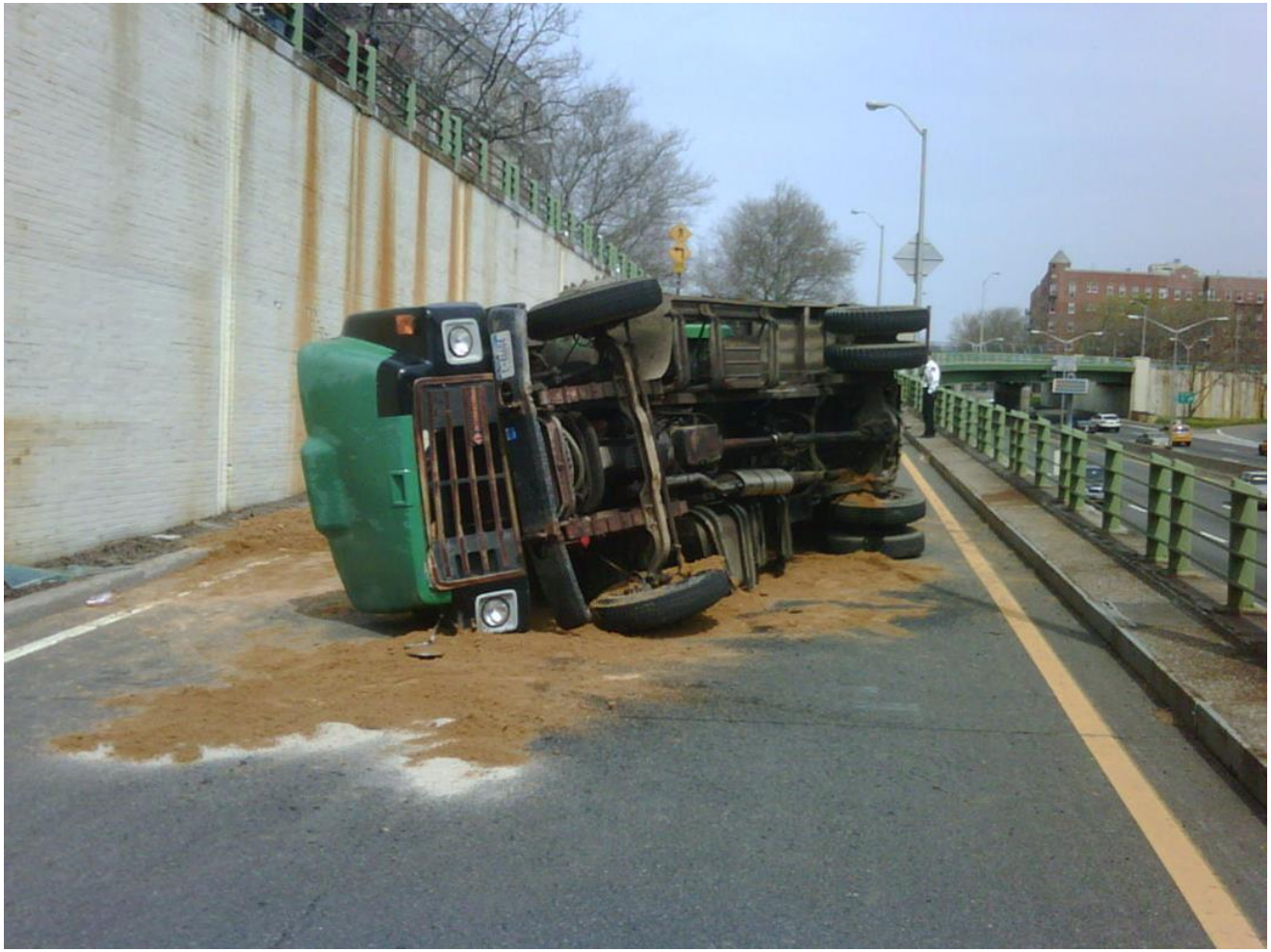
New York City's Fleet

Largest Municipal Fleet in the United States



Fleet Risk

Fleet Risk



Fleet Risk

Fleet Risk

Motor vehicle legal payouts			
	Personal injury	Property Damage	Total
FY2010	608	401	1009
FY2011	525	408	933
FY2012	520	508	1028
FY2013	473	532	1005
FY2014	434	498	932

Source: Law

Vision Zero Safety Plan

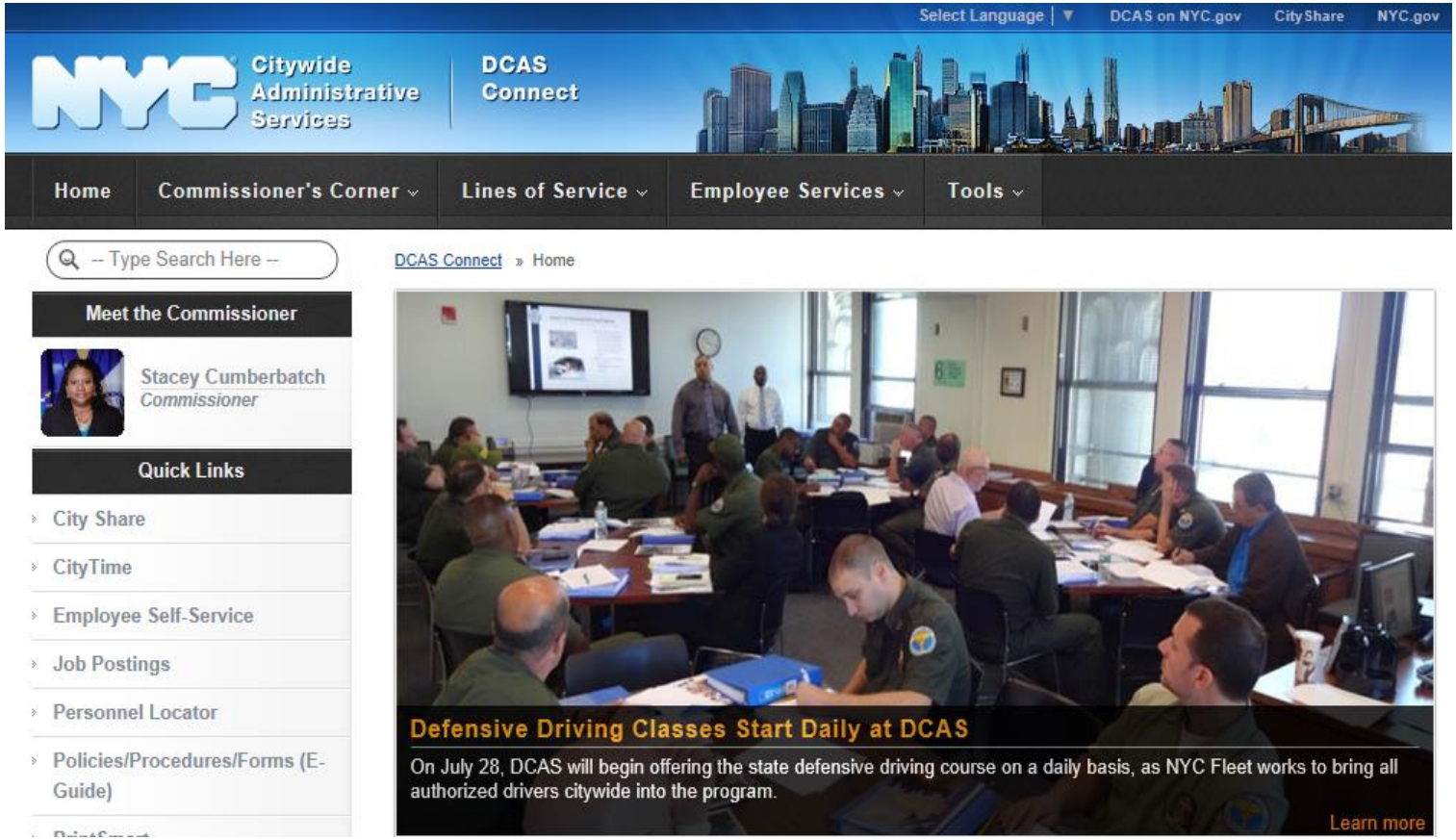
The City is focusing on four areas to improve safety:

- Training
- Specifications
- Vehicle tracking
- Collision reporting

Department of Citywide Administrative Services

- Ensure all City fleet vehicles are equipped with technology that record speeding and other dangerous driving behaviors, by the end of 2014
- Upgrade the collision tracking system for the citywide fleet through the new NYC Fleet Focus fleet system
- Oversee a citywide expansion of Defensive Driver training courses for all employees driving City vehicles
- Recommend safety related devices and designs, such as high visibility vehicles, back-up cameras, and rear wheel side guards, for City vehicles and other vehicles under City regulation

Defensive driving training for all



Safe Fleet Transition Plan

The City is reviewing all vehicle specifications to develop a first citywide set of safety specifications for fleet units and a Safe Fleet Transition Plan. Below is a preliminary list of safety systems we are assessing a part of this review:

- Side truck guards
- Driver alert systems
- Speed and safety tracking devices for all fleet units
- Navigation systems
- Backup cameras
- Turning and backup alerts
- Safety signage for fleet units and garage and parking locations
- Down-sizing fleet units
- Piloting additional technology including speed governors

Truck safety guards

Truck safety guards

Vehicle tracking and safety index

NYC is expanding its ability to track and report on the following vehicle performance:

- Speed
- Hard Braking
- Hard Acceleration
- Steering
- Seat Belt Usage
- Location
- Engine Diagnostics
- Engine RPM

Contact

Keith Kerman
Chief Fleet Officer
New York City
Deputy Commissioner,
Department of Citywide Administrative Services

kkerman@dcas.nyc.gov


VISION
ZERO
nyc.gov/visionzero

Your Online Grocer

Mike Derrig

Director Fleet Operations

- FreshDirect delivers the highest quality food from farm to table, customers can continue to live their active lives, saving time for what really matters. We know that finding a variety of groceries can be a big challenge. Solving this challenge was the idea behind FreshDirect.
- We use our direct relationships with farmers and artisans to drive superior quality in sourcing, then use technology to make it easier to shop and deliver those fresh products to customers' doors. It's faster, it's fresher: It's grocery shopping perfected.

freshdirect®

- 300 Trucks
- 600 Dispatches per Day
- 4200 Dispatches per Week
- Operates 7 Days Per Week
- 800 Drivers

Partners in Safety

Vision Zero Safety Campaign

- Harsh Breaking Incidents – 5,373 To Less then **499** per wk
- Harsh Accelerating Incidents – 21,753 to Less then **981** per wk
- Speeding Over 7 MPH - 8,632 to Less then **2,021** per wk
- Total Incidents – 35,758 to Less then **3,501** per wk

Telogis Fleet Report

Team InSight Alerts Summary

Your FreshDirect Safety Initiative

Harsh Braking Worst 20 Drivers

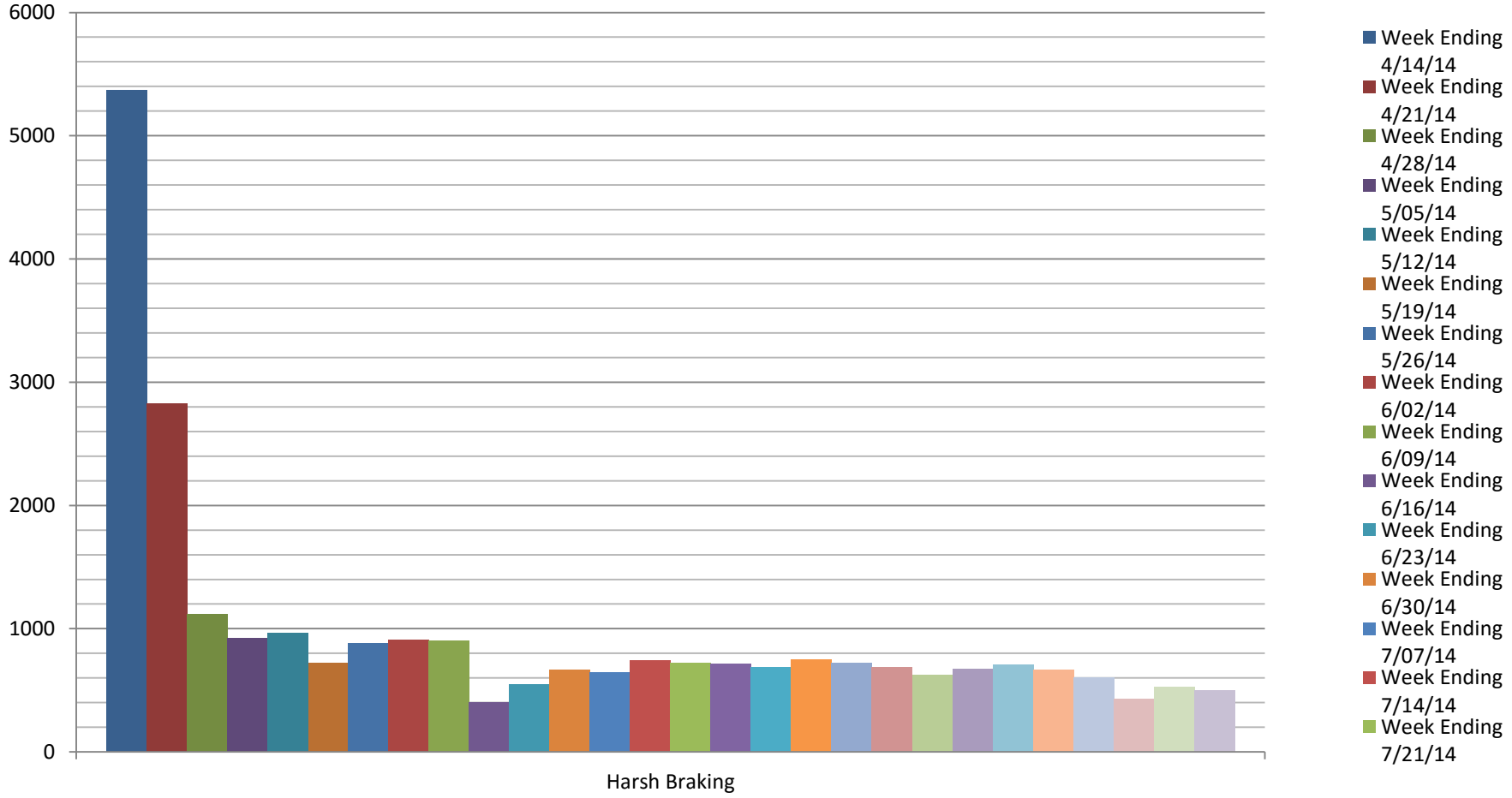
for time period: 21-Oct-2014 12:00:00 AM To 22-Oct-2014 12:00:00 AM

Previous Week By Day Comparison

Date	Safety Alerting - Harsh Acceleration	Safety Alerting - Harsh Braking	Safety Alerting - Speeding >14	Safety Alerting - Speeding >7	Total
Total Tuesday 10/21/14	**125**	**57**	**65**	**287**	**534**
Total Sunday 10/19/14	239	114	91	351	795
Total Saturday 10/18/14	103	53	49	180	385
Total Friday 10/17/14	127	63	61	299	550
Total Thursday 10/16/13	115	62	57	279	513
Total Wednesday 10/15/14	62	49	62	241	414
Total Tuesday 10/14/14	**126**	**72**	**77**	**288**	**563**
Total Monday 10/20/14	235	107	117	414	873

Driver	Safety Alerting - Harsh Acceleration	Safety Alerting - Harsh Braking	Safety Alerting - Speeding >14	Safety Alerting - Speeding >7	Total	
Total	125	57	65	287	534	
992559	4	3	3	14	24	LIC
601001	2	3	0	2	7	LIC
608784	9	2	1	6	18	LIC
609796	0	2	1	2	5	NJ
601584	2	2	0	4	8	LIC
602494	1	2	0	3	6	LIC
608269	0	2	0	2	4	LIC
609616	3	2	0	2	7	NJ
992632	13	2	0	0	15	LIC

Driver	Safety Alerting - Harsh Acceleration	Safety Alerting - Harsh Braking	Safety Alerting - Speeding >7	Total		Damages	Orders	% Damages	Over 150 Orders?
Total	981	499	2021	3501					
608911	9	12	16	37	NJ		836	0.00%	Y
608894	8	12	11	31	NJ	8	475	1.68%	Y
609017	9	11	14	34	LIC	11	394	2.79%	Y
608918	1	11	10	22	NJ	6	496	1.21%	Y
608784	25	10	25	60	LIC	11	434	2.53%	Y
607716	5	10	15	30	PHL	4	96	4.17%	N
608923	25	9	26	60	NJ	7	444	1.58%	Y
609435	13	9	24	46	NJ	8	321	2.49%	Y
609085	4	9	13	26	PHL	1	26	3.85%	N
608757	1	9	14	24	PHL	1	109	0.92%	N
609657	13	8	32	53	NJ	3	239	1.26%	Y
500021	16	8	8	32	LIC	7	588	1.19%	Y
609616	13	7	18	38	NJ	3	323	0.93%	Y
608786	4	7	15	26	PHL	4	216	1.85%	Y
608897	1	7	15	23	NJ	3	199	1.51%	Y
609179	3	7	8	18	NJ	7	379	1.85%	Y
608946	4	6	21	31	NJ	5	288	1.74%	Y
608900	12	6	6	24	NJ	10	335	2.99%	Y
609236	3	6	12	21	NJ	7	426	1.64%	Y
608898	0	6	12	18	NJ	3	199	1.51%	Y
604273	4	6	1	11	LIC		798	0.00%	Y

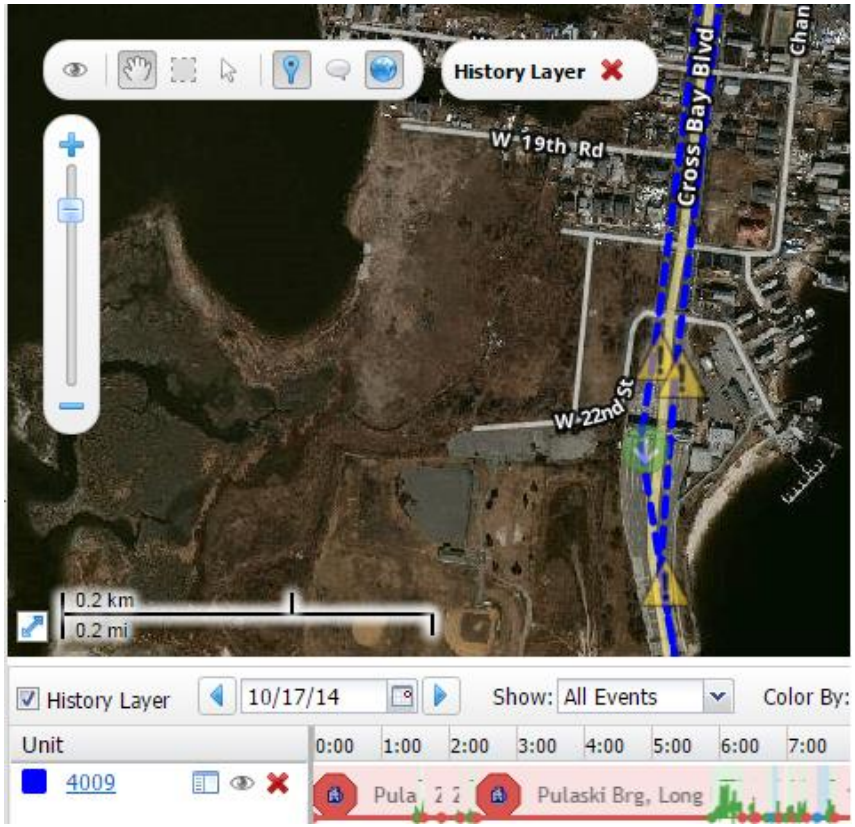

6000
5000
4000
3000
2000
1000
0
Harsh Braking
Week Ending 4/14/14
Week Ending 4/21/14
Week Ending 4/28/14
Week Ending 5/05/14
Week Ending 5/12/14
Week Ending 5/19/14
Week Ending 5/26/14
Week Ending 6/02/14
Week Ending 6/09/14
Week Ending 6/16/14
Week Ending 6/23/14
Week Ending 6/30/14
Week Ending 7/07/14
Week Ending 7/14/14
Week Ending 7/21/14

Driver Safety Compliance

DETAILS:

A non customer called in because while he was driving in Rockaway Beach Queens, the truck was 6-8 feet from his bumper flashing bright light, the non customer was unable to switch lanes because a bus was in the other lanes also the driver was 60 in a 40 area at 8:20 to 8:40

Incident Tracking



SAFETY ATTITUDE

Safer Driving Habits

Accident Reduction

Product Integrity

Customer Satisfaction

Vehicle Maintenance

Insurance Rates

Public Image

SAFETY CULTURE

Safety is SMT

Safety is Personal

Safety is about your Family

Safety is about You

Safety is a daily Briefing

Safety is a Culture

Safety is your way of Life

Vision Zero Safety Campaign

Partners For A Safer New York City

Thank You

Drive Safe


VISION
ZERO
nyc.gov/visionzero

Vision Zero: Fleets Safety Forum

The Waste and Recycling Industry's Perspective

David Biderman
davidb@wasterecycling.org
202-364-3743

Queens, New York
October 23, 2014

Background

1. Waste and recycling industry has made significant strides improving its safety record over the past 15 years.

    A. Worker fatality rate down 60%
    B. Worker injury rate down 50%
    C. Third party accident rate is declining

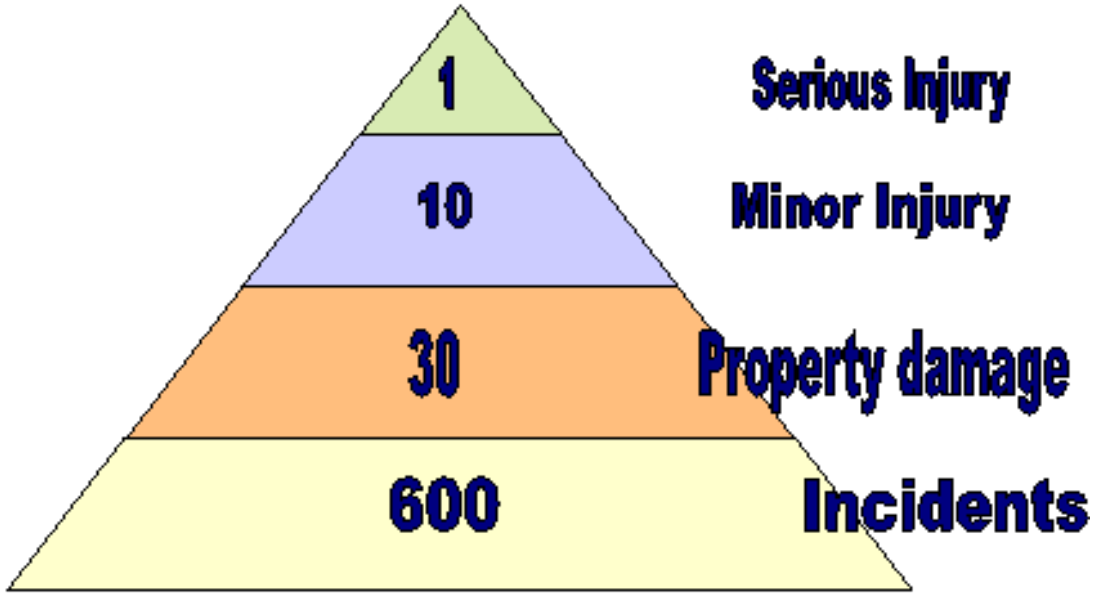
2. Significant challenges still remain:

    A. Distracted drivers
    B. Distracted pedestrians
    C. More trucks on the road as we recycle more material

Changing Behavior is Key

- The majority of accidents and injuries are caused by unsafe BEHAVIOR, not unsafe conditions.
  - Thousands of refuse and recycling trucks go out every day, and a very small percentage of them are involved in accidents.
- Safety = getting adults to change their unsafe behavior.
- Includes both workers and the general public (other drivers, bicyclists and pedestrians)

Focus on Behavior



Although the majority of accidents are minor (mailboxes, parked cars), the behaviors that cause these incidents are often the same as those that lead to more serious accidents or fatalities. The cost of the minor accidents adds up over time.

Decision Making – On the Route

What are the typical bad decisions that get solid waste drivers and other truck drivers into unsafe situations?

1. Not fit for work
2. Inadequate Pre-Trip or Post-Trip
3. Rushing/Excessive Speed
4. Personal Protective Equipment (PPE)
5. Safety Belt
6. Cell phones, texting and other distractions
7. Lack of communication with helper or other drivers

How to Reduce Accidents

1. Initial and follow up training:
   - Driving in NYC
   - Pre-trip and post-trip inspections

2. Route Observation:
   - Observe workers on routes
   - Coach if not following rules: Talk to them not at them

3. Safety meetings and communications

4. Incentives/Discipline/Termination

5. Equipment/Technology – telematics/cameras/lighting/ collision avoidance systems, etc.

DOT/OSHA/ANSI/NYC Compliance

- Every single business day, an OSHA inspector shows up at a solid waste employer to perform an inspection.
- Increased DOT focus – CSA, Hours of Service, etc.
- NYC requires carters to comply with many rules (DSNY, DOT, BIC, DEP, et al)
- ANSI Z245.1 standards
  - National consensus safety standards for the waste industry

By frequently reminding our drivers and helpers about being compliant with applicable rules, we change the culture and get them to think more about safety as a core value.

Improving Your Safety Program

- Look for patterns – time of day, type of accident or injury, certain employees (repeaters), temporary workers or weather conditions.

- Identify a few priorities based on frequency and/or severity.

Getting Workers to Care About Safety

What's in it for them?

1. Make it personal – e.g., PPE, seatbelts.
2. Incentives/discipline.

Communicate the program:

1. Signs/posters – make it interesting.
2. Verbal reminders.

Training:

1. Short, ongoing, interactive.
2. Be aware of language and literacy barriers.
3. Video – YouTube and other sources.
4. Use humor…

NW&RA's New York City chapter is endorsing Vision Zero and will be giving out bumper stickers to members to put on their trucks to promote the program.

www.wasterecycling.org


VISION
ZERO
nyc.gov/visionzero

The National Transportation Systems Center

Citywide Administrative Services

Large trucks and bicyclist-pedestrian safety

Advancing transportation innovation for the public good

October 23, 2014

U.S. Department of Transportation
Office of Research and Technology
John A. Volpe National Transportation Systems Center

Agenda

- Vision Zero charge
- Brief intro to Volpe
- Trucks in the pedestrian-cyclist safety context
  - Side underride
  - Sideguard solutions
- Sideguard specifications
- Next steps

The charge

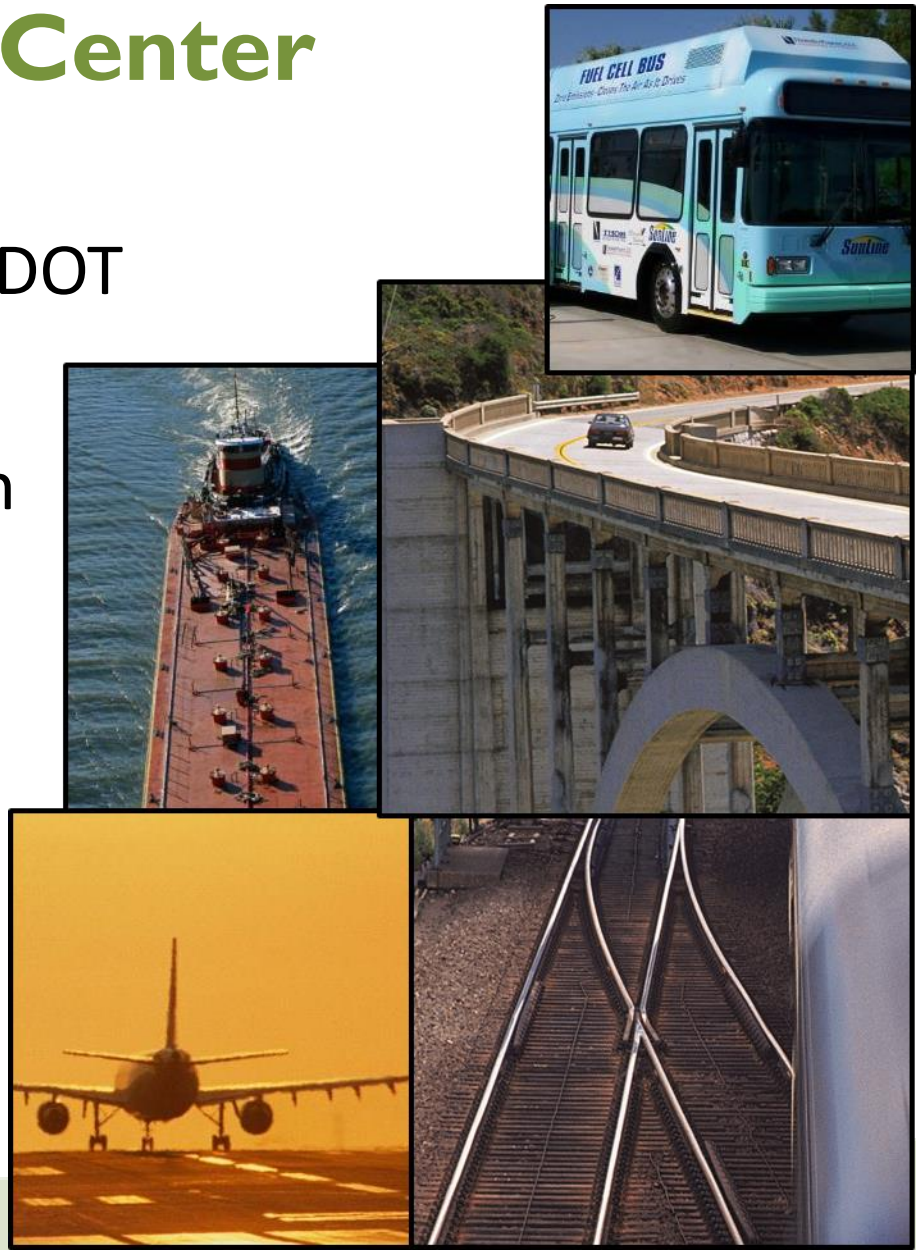
VISION ZERO

- 63 recommendations
- Recommendation #58: “Recommend safety related devices and designs, such as high visibility vehicles, back-up cameras, and **rear wheel side guards**, for City vehicles and other vehicles under City regulation.”

Legislation and Enforcement	Education	Complete Streets Infrastructure	Vehicle-based Safety

Volpe, The National Transportation Systems Center

- Unique agency within U.S. DOT
- 100% fee-for-service
- All modes of transportation
- Cross-disciplinary
- 570 federal staff,
  400 onsite contractors
- Based in Cambridge, MA



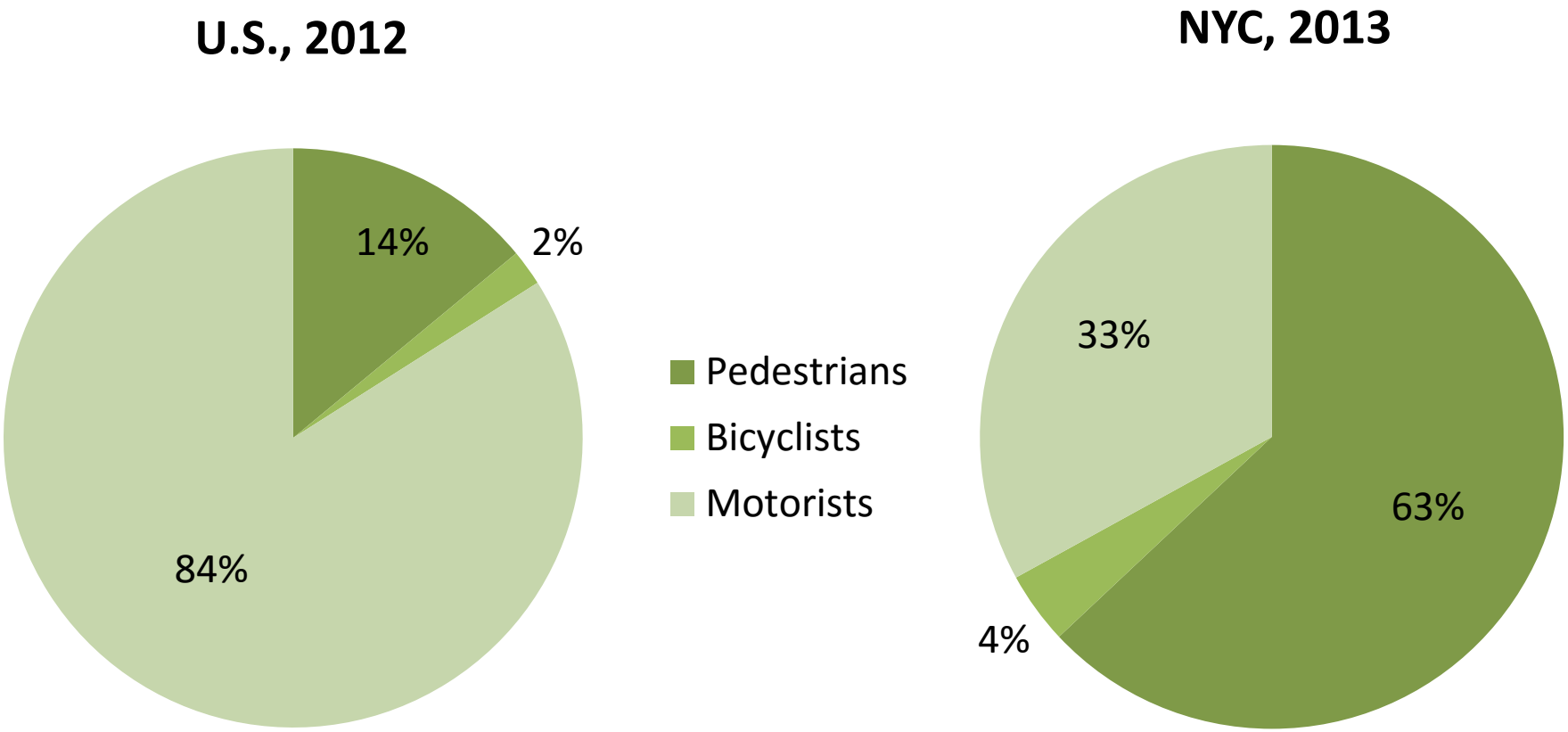
Volpe's Purpose

"Advancing transportation innovation for the public good"

Agenda

- Vision Zero charge
- Brief intro to Volpe
- Trucks in the pedestrian-cyclist safety context
  - Side underride
  - Sideguard solutions
- Sideguard specifications
- Next steps

High share of bicyclist/pedestrian fatalities in NYC



Sources: NYPD

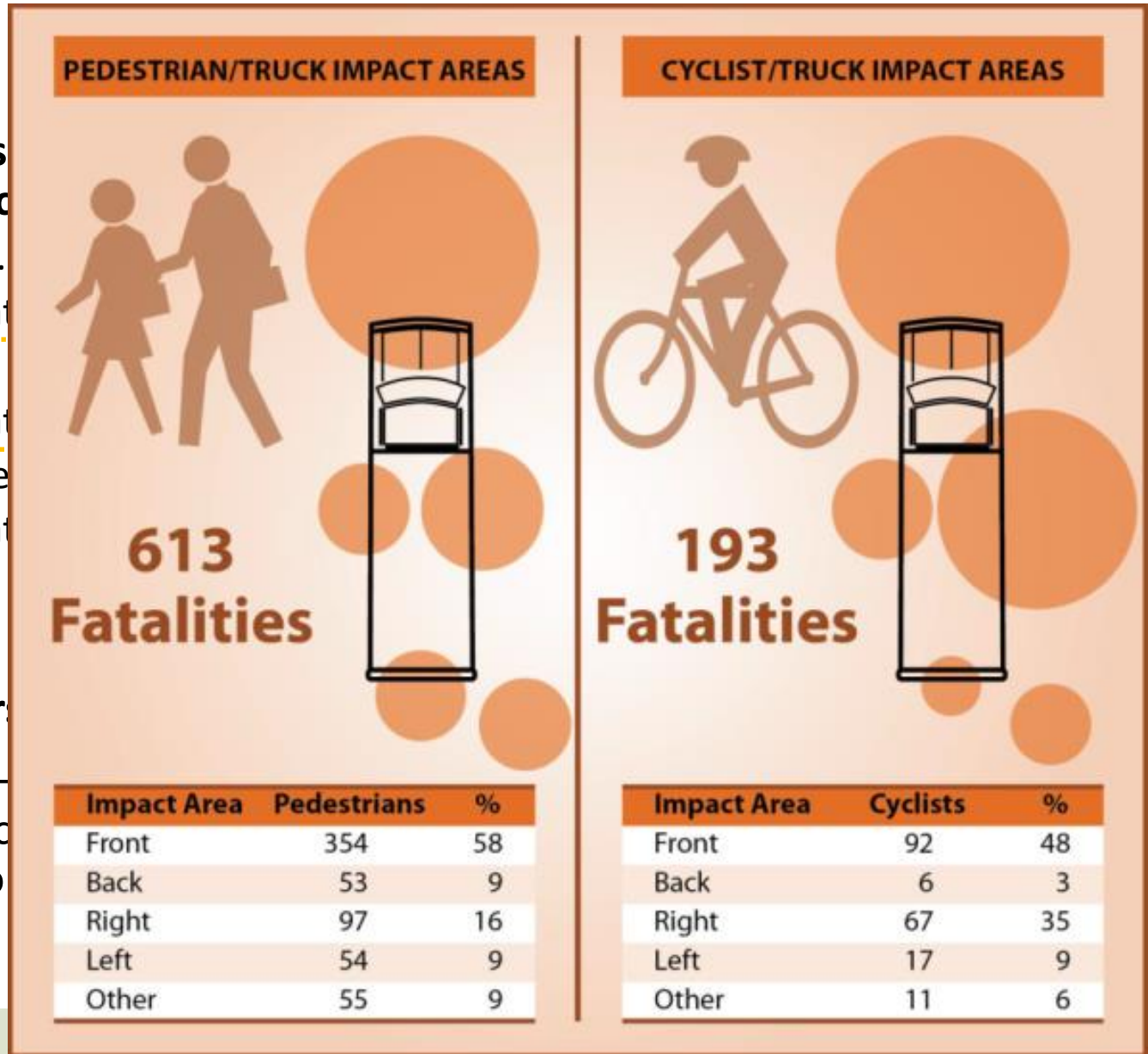
Vehicle-based safety: Trucks

Large truck design pres
for pedestrian and c

- **4%** of vehicles in U.S.
  - **11%** of cyclist fat
- **3.6%** of NYC vehicles
  - **32%** of cyclist fat
- **4%** of London vehicle
  - **53%** of cyclist fat

Key contributing factor

1. Large blind spots (L
2. Side underride → c
   under wheels in co



Impact Area	Pedestrians	%
Front	354	58
Back	53	9
Right	97	16
Left	54	9
Other	55	9

Impact Area	Cyclists	%
Front	92	48
Back	6	3
Right	67	35
Left	17	9
Other	11	6

Significance of Side Underride

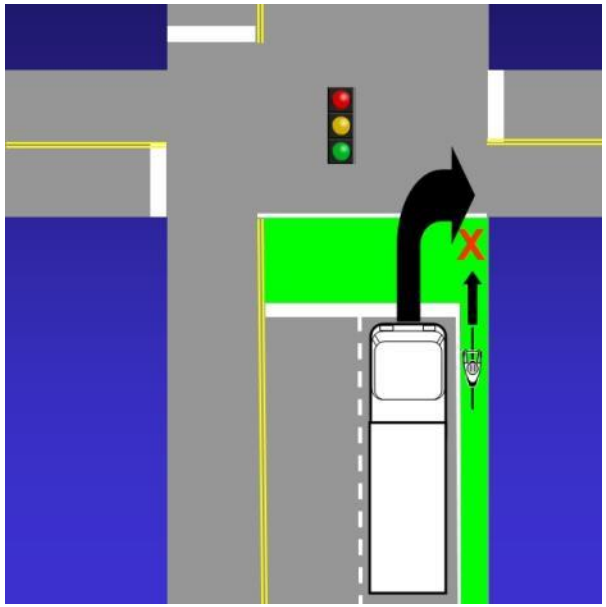
Percent of bike-truck and ped-truck fatalities with initial impact on left or right side of the truck

	Bicyclists	Pedestrians
Tractor-trailer	55%	29%
Single-unit	44%	25%

110+ such bike & ped fatalities per year in US

Side impact & side underride deaths can occur during turning maneuvers or when overtaking

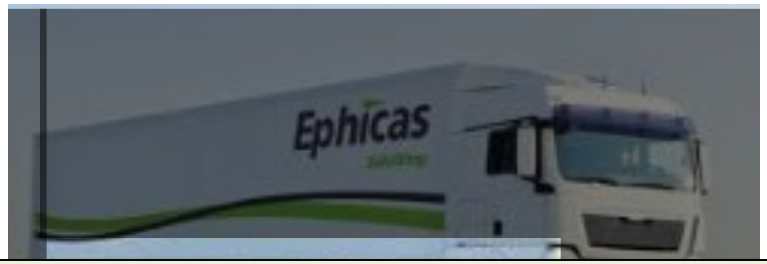
Cyclist/pedestrian falls into space between the axles and is run over by rear wheels



Sources: NHTSA, NTSB

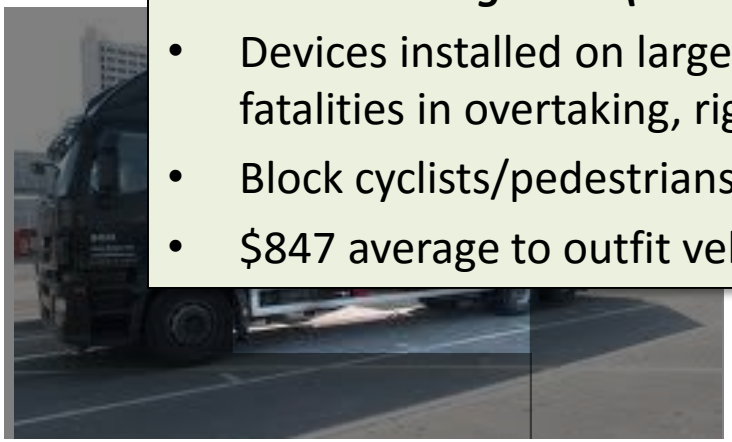
Vehicle-based countermeasure: sideguards

…for Class 3-8 trucks



Side underride guards ("sideguards") :

- Devices installed on large trucks to help prevent cyclist and pedestrian fatalities in overtaking, right-hook, and left-hook crashes
- Block cyclists/pedestrians from sliding under the rear wheels in a collision
- $847 average to outfit vehicle in EU



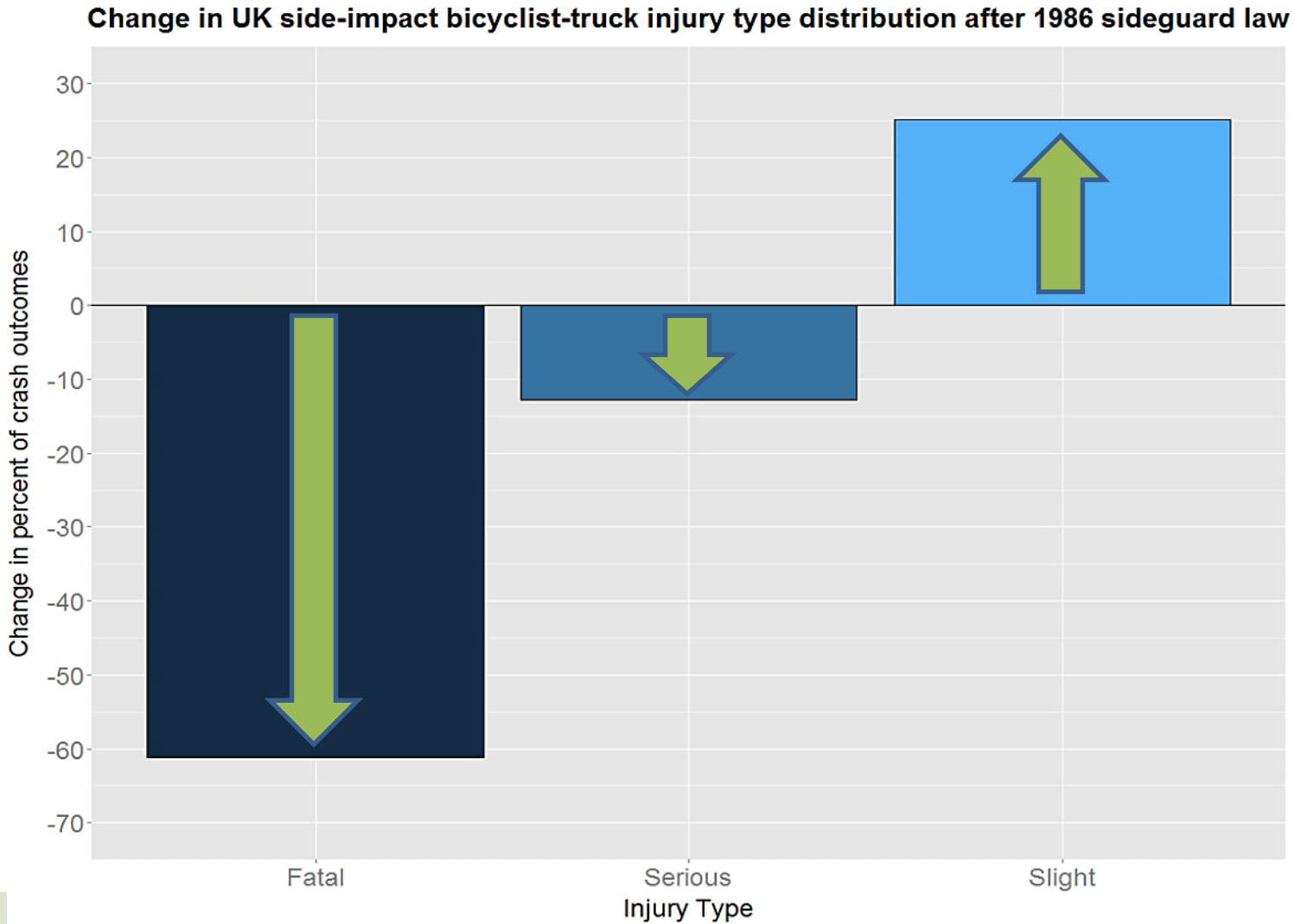
Vehicle-based countermeasure: sideguards

International safety record—UK:

61% decrease in cyclist fatalities in side-impact crashes with large trucks

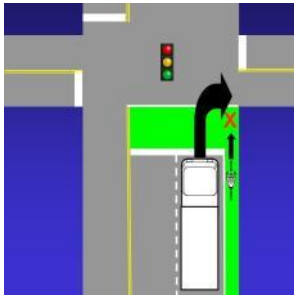
20% decrease in same types of pedestrian fatalities

UK sideguard effectiveness (2005 study)



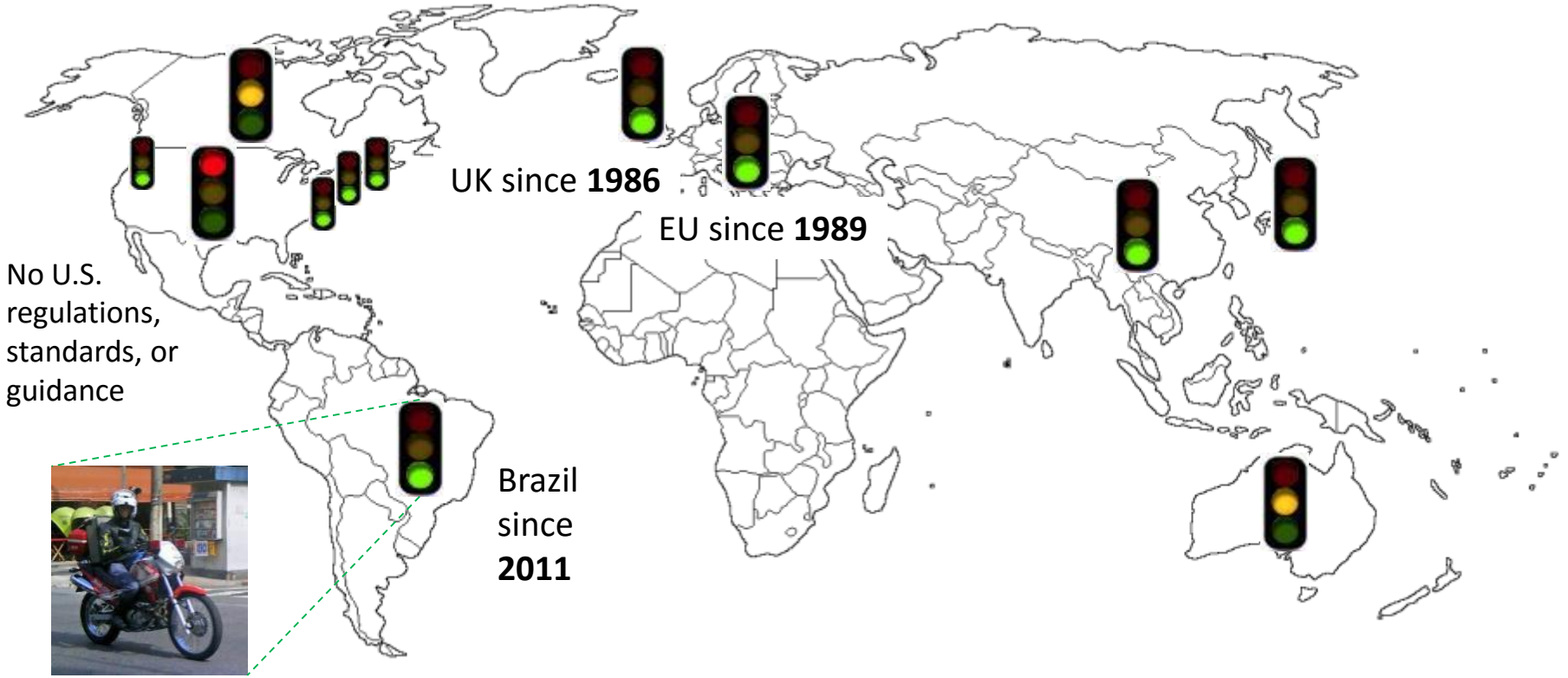
UK sideguard effectiveness (2010 study)

	Fatal	Serious	Slight	% fatal	% KSI
Exempt (no sideguard)	9	21	15	**20%**	**67%**
Not exempt (with sideguard)	7	8	44	**12%**	**25%**



Based on 2006-2008 crash data

Truck Sideguard Implementation



- **Portland, OR**
  - 2008: City Council resolution
- **Washington, DC**
  - 2008: Bicycle Safety Enhancement Act
- **Boston, MA**
  - 2013: DPW pilot with Volpe/USDOT
  - 2014: Ordinance
- **New York City**
  - 2014: DCAS study with Volpe/USDOT

NTSB large truck blind spot mitigation and sideguard recommendations

National Transportation Safety Board
Washington, DC 20594

Safety Recommendations

Require that newly manufactured truck-tractors with gross vehicle weight ratings over 26,000 pounds be equipped with visibility enhancement systems to improve the ability of drivers of tractor-trailers to detect passenger vehicles and vulnerable road users, including pedestrians, cyclists, and motorcyclists. (H-14-001)

Require that newly manufactured trailers with gross vehicle weight ratings over 10,000 pounds be equipped with side underride protection systems that will reduce underride and injuries to passenger vehicle occupants. (H-14-002)

Require that newly manufactured truck-tractors with gross vehicle weight ratings over 26,000 pounds be equipped with side underride protection systems that will reduce underride and injuries to passenger vehicle occupants. (H-14-003)

Source: NTSB

Agenda

- Vision Zero charge
- Brief intro to Volpe
- Trucks in the pedestrian-cyclist safety context
  - Side underride
  - Sideguard solutions
- Sideguard specifications
- Next steps

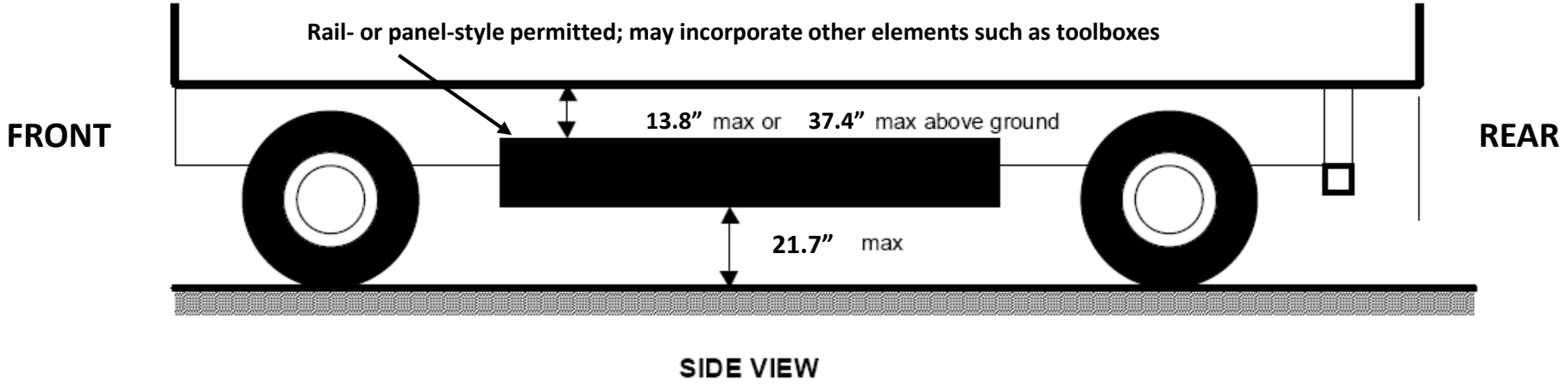
International sideguard standards and recommendations

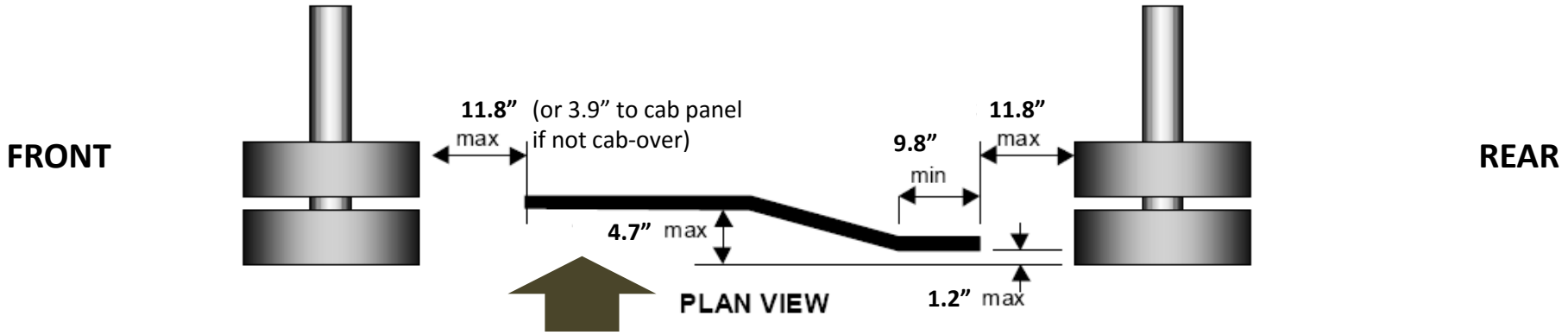
Attributes
Vehicles covered
Exemptions
Strength requirement
Max. ground clearance
Height for top of sideguard
Gap between sideguard and wheels
Designs allowed
Other vehicle components
Requirement to be flush with vehicle and to present smooth outer surface

	EU and UK Standards	Japan Standard	Monash Univ. study recommendations	TRL study recommendations	Notes and questions for NYC DCAS
Vehicles covered	Trucks over 3.5 tons	Vehicles over 8 tons	Vehicles over 3 tons		Which truck classes should be covered?
Exemptions	Special purpose vehicles for which fitment is not feasible. Exemption for long-load vehicles (e.g. timber) has been repealed. UK provides additional exemptions for tipping and refuse trucks, military vehicles, and street sweepers.	Buses	Notes that most buses and car-carrier trucks would not need sideguards because of vehicle design with low ground clearance	Notes that most UK exemptions are not actually required for technical reasons; recommends reducing exemptions and considering adjustable/movable guards before exempting	Are exemptions or adjustable/movable guards needed for vehicles with special characteristics, e.g., equipment access needs or off-road use?
Strength requirement	1 kN (225 lbs.) horizontal static force, max. deflection of 30 mm (1.2 in.) in front of wheels, 150 mm (5.9 in.) elsewhere Note: 2 kN (450 lbs.) test in UK		Recommends 2 kN (450 lbs.) test		Any reason to deviate from the 1-2 kN (225-450 lbs.) test?
Max. ground clearance	550 mm (21.7 in.)	450 mm (17.7 in.) when vehicle unladen	Recommends 350 mm (13.8 in.); argues that 550 mm (17.7 in.) is too high to ensure that ped/cyclist is kept out of wheel path		Tradeoff between safety effectiveness and operational flexibility. Do some vehicles (e.g. for snow removal) require greater ground clearance?
Height for top of sideguard	No more than 350 mm (13.8 in.) below lower edge of vehicle body, or up to 950 mm (37.4 in.) [at least 1-1.5 m (39-59 in.) for UK] above ground level if vehicle has no load platform	At least 650 mm (25.6 in.) when unladen, and no more than 550 mm (21.7 in.) below lower edge of vehicle body			EU standard appears preferable to Japan and addresses different vehicle types
Gap between sideguard and wheels	Max. gap longitudinally is 250-500 mm (9.8 -19.7 in.) in front, depending on vehicle type (typically 300 mm (11.8 in.)); for conventional cabs, EU max forward gap to cab panel is 100 mm (3.9 in.); in rear, max 300 mm (11.8 in.)				EU standard appears adequate and addresses different vehicle types. Need to qualify max distance from front tire for non-cab-over vehicles?
Designs allowed	Flush panel or rail-style. Rails must be less than 300 mm (11.8 in.) apart and each rail at minimum 50-100 mm (2-4 in.) in height.		Recommends only using flat panels due to possibility of ped/cyclist being caught on rails		Tradeoff between safety effectiveness and design flexibility/underbody access. Rail-style guards may be more amenable for retrofit and for DPF airflow.
Other vehicle components	OK to integrate vehicle components such as fuel tanks and toolboxes as long as dimensional requirements met. May not attach other components to a sideguard, however.		Cites this approach with approval		Many NYC vehicles already have fuel tanks, tool boxes, etc. – Volpe team needs detailed info on dimensions and placement.
Requirement to be flush with vehicle & present smooth outer surface	Cannot increase overall width of vehicle. Outer surface of sideguard may be no more than 120 mm (4.7 in.) inboard of outermost plane of vehicle; and no more than 30 mm (1.2 in.) inboard for the rearmost portion (at least 250 mm (9.8 in.)) of the sideguard. *Note*: UK requires 30 mm (1.2 in.) maximum inboard distance for entire guard. Specific requirements for rounded edges and overlapping sections. Gaps between sections allowed up to 25 mm (1 in.); 10 mm (0.4 in.) allowance for slightly protruding bolt/rivet heads.				EU standard is detailed in this area and appears suitable, but would need to be adapted to NYC fleet.

EU 73 schematic

Regulation No 73 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of goods vehicles, trailers and semi-trailers with regard to their lateral protection (*)



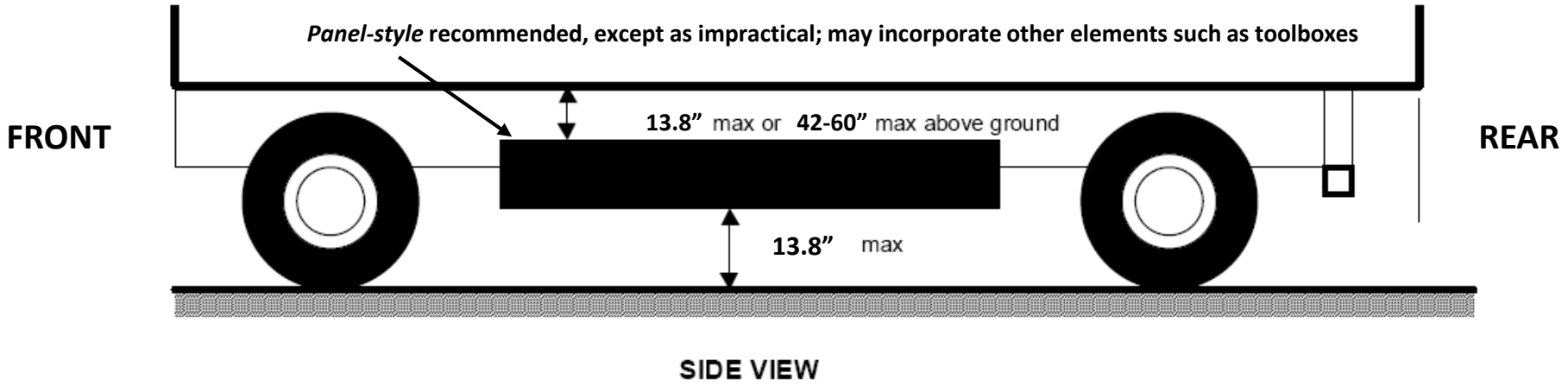


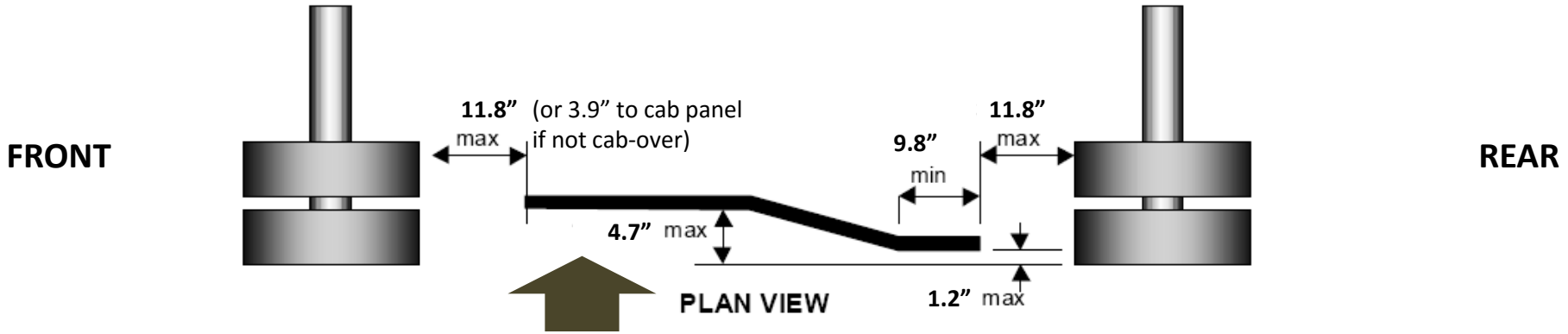
220 lbs. force test

88

Recommendation schematic

Based on EU and UK standards and on Monash Univ., Transport Research Lab and Volpe recommendations





440 lbs. force test

89

Representative sideguard OEM

- Sideguards on sanitation collectors (EU and China)

Representative sideguard OEM

- Sideguards on sanitation collectors (EU and China)

Representative sideguard retrofits

- Sideguards with fuel tank and with stabilizer arm (UK)
- Mounted to frame rail

Representative sideguard retrofits

- Retrofit sideguards mounted to underbody by vertical stanchions (UK)

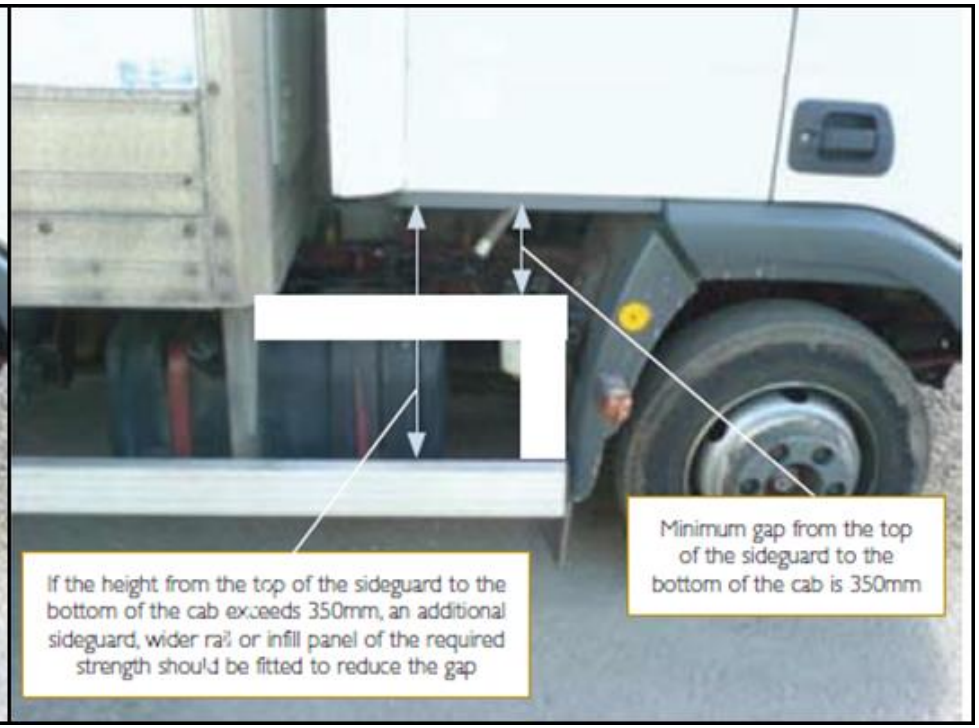
Representative sideguard retrofits

- Rack trucks (UK and China)

Representative sideguard retrofits

- Sideguards on snow plows (UK, EU)

Example implementation details



- From Freight Transport Association (FTA) compliance guide for UK fleets

Innovative sideguard OEM

- Sideguard with integrated toolboxes on RO-RO

Innovative sideguard retrofit

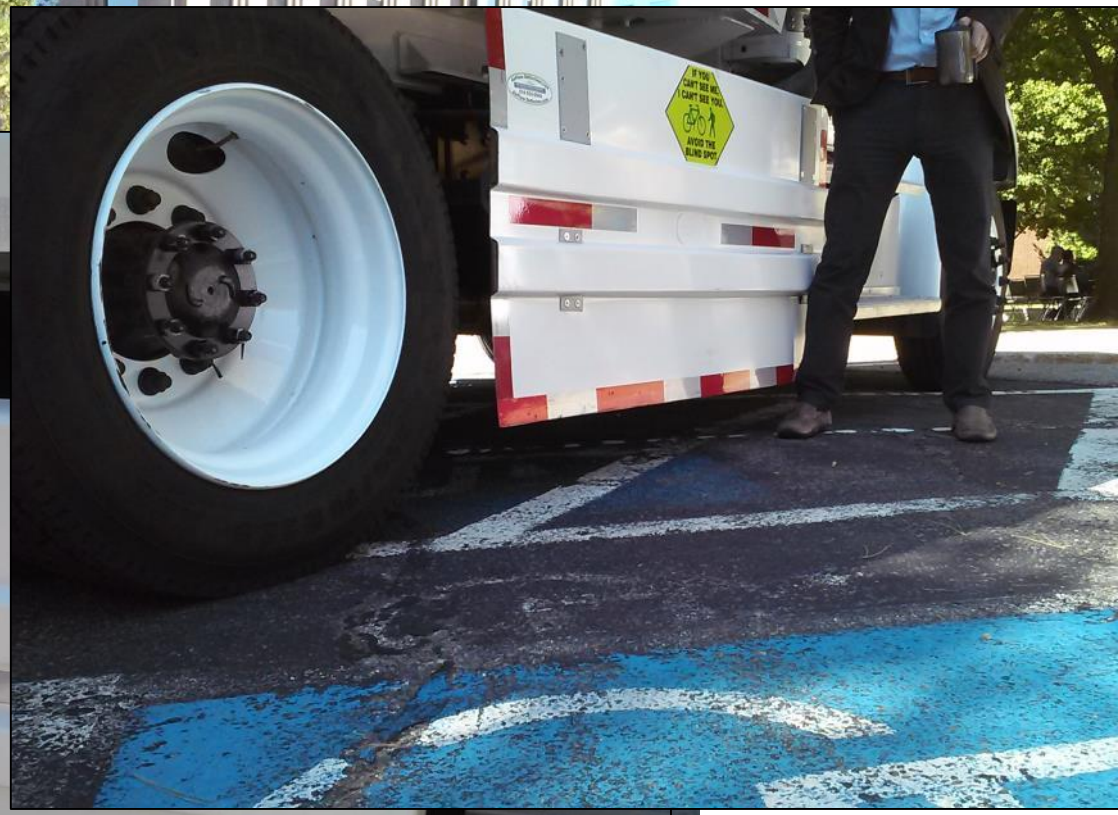
- Panel sideguard on cement mixer with flip-up rail sideguard for city operation; also includes sensor and alarm

North American sideguard deployment

- Sideguards on Boston Public Works vehicles (**not** EU/UK spec)

North American sideguard deployment

- Sideguards on Boston Public Works vehicles



North American sideguard private deployment

Also: private sector voluntary adoption in Boston, Toronto…

North American legislation

Mayor Walsh Wants 'Truck Side Guards' on All Vehicles Contracted by the City

The guards would keep cyclists from getting pulled under a vehicle's wheels in the event that a driver doesn't see them.

By Steve Annear | Boston Daily | September 9, 2014 10:13 am

Be it ordained by the City Council of Boston, as follows that the City of Boston Code be amended by adding the following ordinance:

SECTION 1. City of Boston Code, Ordinances, Chapter IV is hereby amended by inserting after Section 4-7 the following new section:--

4-8 AN ORDINANCE REQUIRING CITY VENDORS TO SAFEGUARD UNPROTECTED ROAD USERS.

4-8.1 Purpose.

Vehicles covered by this ordinance shall be so constructed and/or equipped as to offer effective protection to unprotected road users against the risk of falling under the sides of the vehicle and being caught under the wheels.

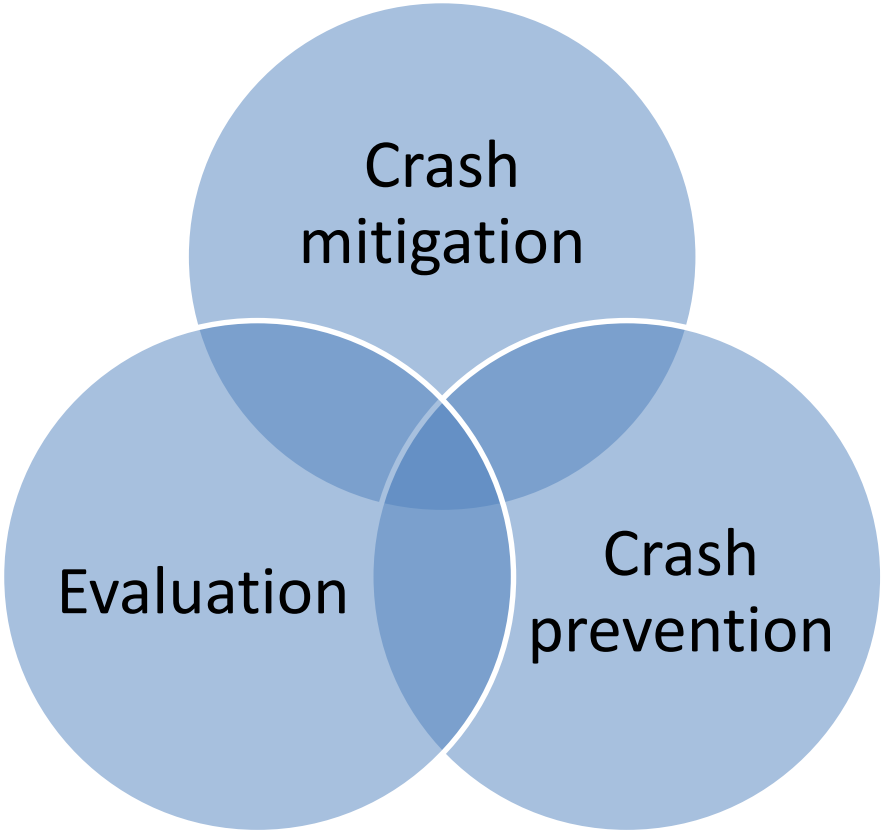
Additional issues Volpe considered

- Technically justified vehicle exemptions
  - **Very few**: street sweepers, fire engines, car carriers, "special purpose vehicles where impractical"
- Serviceability and operability requirements
  - **None of the designs impede vehicle function**
- Hazard scenarios
- Procurement flexibility to accelerate design innovation
- OEM coordination for new vehicles

Agenda

- Vision Zero charge
- Brief intro to Volpe
- Trucks in the pedestrian-cyclist safety context
  - Side underride
  - Sideguard solutions
- Tailoring solutions to unique fleet needs
- Next steps

Comprehensive vehicle-based safety

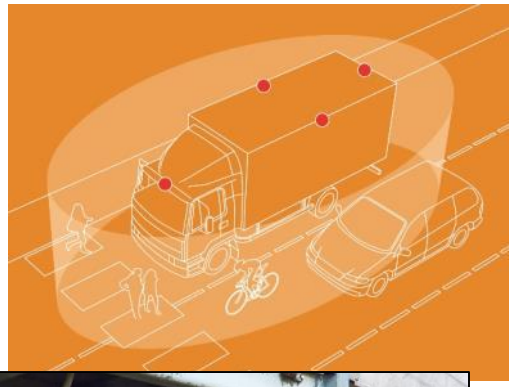


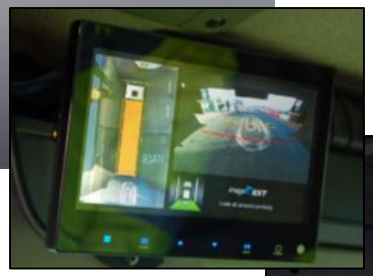
UK “all of the above” example

Source: http://www.standard.co.uk/news/london/will-this-hitech-lorry-be-the-key-to-slashing-death-toll-of-cyclists-on-londons-streets-9634886.html

Evaluate and prioritize among technologies to save the most lives

- Different sideguard designs
- Blind spot mirrors
  - Front
  - Side
- Blind spot cameras
  - Directional
  - 360-degree
- Blind spot Fresnel lenses
- Blind spot bicyclist/pedestrian sensors
  - Ultrasonic, radar, etc.
  - Interior/exterior alerts
- Turn alarms (manual or automated)
  - Audible
  - Visual
- Human factor and operator training implications
- Educational messaging: external and internal





What's next?

- Lead U.S. cities and the nation in truck-based bicyclist and pedestrian safety
  - Pilot sideguards and other safety countermeasures
  - Transfer findings and best practices nationally
  - Potentially develop voluntary program for area truck fleets

Acknowledgments

- DCAS
  - Commissioner **Stacey Cumberbatch**
  - Deputy Commissioner and Chief Fleet Management Officer of NYC DCAS **Keith Kerman**
  - **Mahanth Joishy**, **Brent Taylor**, and **Sherry Lee**
- NYC DOT
  - **Stacey Hodge, Juan Martinez, Nevada Espinoza, and Daniel Malone**
- DSNY
  - **Bill Wehner, William Ricardo, Mike Matkovico, Tom DelGrosso, and Spiro Kattan**
- **Paris Apollon** (DPR), **Arthur Barnard** (DOE), **Richard Fosbeck** (DOC), and **Robert Balzani** (NYPD)
- City of Boston
  - **Kristopher Carter** (Mayor's Office of New Urban Mechanics) and Director of Central Fleet Maintenance **Jim McGonagle**
- **Joseph Dack** (HDR, Inc.)

Thank you

Alex Epstein, Ph.D. (Project lead)
Energy Analysis and Sustainability
(617) 494-2539
alexander.epstein@dot.gov

Sean Peirce
Economic Analysis

Andrew Breck
Organizational Performance

Eran Segev
Safety Measurement and Analysis

Coralie Cooper
Energy Analysis and Sustainability

Appendix

Review of EU/UK Exemptions

- Most existing EU/UK exemptions are **not** technically justified
- Many examples of vehicles in exempt categories identified that are still fitted with sideguards
- Innovative sideguard designs address particular vehicle types, e.g. with stowable guards

Vehicle Type	UK / EU Status	TRL Study Findings	Exemption Technically Justified?	Notes / Questions for NYC
Tractor for semi-trailer	Exempt from EU standard	Fuel tanks and other structures often fill the space between axles, but **no real reason** to maintain exemption. Flat panel sideguards would be beneficial.	**No**	Review NYC inventory for relevance
Special purpose vehicles where side protection is impractical	Exempt from EU standard	Catch-all category that is **too open** to subjective interpretation	**Unclear**	
Trailers designed for very long loads	Previous EU exemption has been repealed; UK exemption remains	Continued exemption **warranted** when distance between axles is extremely long. These vehicles also move at low speed, often with police escort.	**Yes**	Review NYC inventory for relevance
Low speed vehicle (max. 15 mph)	Exempt from EU standard	Exemption is **not warranted** based on speed alone (as distinct from vehicle type)	**No**	Review NYC inventory for relevance
Tipping / Dump Truck	Additional UK exemption	Exemption is **generally not warranted**. Sideguards do not interfere with hydraulics and vehicles seldom require extreme off-road capabilities. Ground clearance is already limited by other vehicle components.	**No**	May want to consider designs with an extra, stowable lower panel that exceeds minimum requirements. This can be used while on-road and then stowed away during any off-road use (e.g. construction site).
Refuse / collection trucks	Additional UK exemption	Exemption is **generally not warranted**. Ground clearance is already limited by bodywork and equipment, so sideguards do not pose an issue and are generally compatible with operation.	**No**	Will need to review whether conventional sideguards make more sense vs. integrating underbody components.
Street sweepers	Additional UK exemption	Fitting sideguards could interfere with operations, though a stowable sideguard could work.	**Unclear**	Arguably not a high priority for sideguards due to their design and operations. Also typically low speed and conspicuous.
Military vehicles	Additional UK exemption	Continued exemption is **warranted** given the range of use for these vehicles, even though not always technically justified.	**Yes**	Likely not relevant to NYC (possible exception of some NYPD tactical vehicles)
Fire engines	Additional UK exemption	Typical design meets dimensional requirements. In cases where it does not, sideguards are indicated except when used off-road.	**Unclear**	Need to review vehicle design.
Car carriers	Additional UK exemption	Vehicle design generally already has very low ground clearance	**Unclear**	Does NYC have these? What about flatbed tow trucks?

Potential technically justified exemptions for NYC DCAS

Vehicle Type
Special purpose vehicles where side protection is impractical
Trailers designed for very long loads
Street sweepers
Military vehicles
Fire engines
Car carriers

	EU and UK Standards	Japan Standard
Vehicles covered	Trucks over 3.5 tons	Vehicles over 8 tons
Exemptions	Special purpose vehicles for which fitment is not feasible. Exemption for long-load vehicles (e.g. timber) has been repealed. UK provides additional exemptions for tipping and refuse trucks, military vehicles, and street sweepers.	Buses
Strength requirement	1 kN (225 lbs.) horizontal static force, max. deflection of 30 mm (1.2 in.) in front of wheels, 150 mm (5.9 in.) elsewhere Note: 2 kN (450 lbs.) test in UK	
Max. ground clearance	550 mm (21.7 in.)	450 mm (17.7 in.) when vehicle unladen
Height for top of sideguard	No more than 350 mm (13.8 in.) below lower edge of vehicle body, or up to 950 mm (37.4 in.) [at least 1-1.5 m (39-59 in.) for UK] above ground level if vehicle has no load platform	At least 650 mm (25.6 in.) when unladen, and no more than 550 mm (21.7 in.) below lower edge of vehicle body
Gap between sideguard and wheels	Max. gap longitudinally is 250-500 mm (9.8 -19.7 in.) in front, depending on vehicle type (typically 300 mm (11.8 in.)); for conventional cabs, EU max forward gap to cab panel is 100 mm (3.9 in.); in rear, max 300 mm (11.8 in.)	
Designs allowed	Flush panel or rail-style. Rails must be less than 300 mm (11.8 in.) apart and each rail at minimum 50-100 mm (2-4 in.) in height.	
Other vehicle components	OK to integrate vehicle components such as fuel tanks and toolboxes as long as dimensional requirements met. May not attach other components to a sideguard, however.	
Requirement to be flush with vehicle & present smooth outer surface	Cannot increase overall width of vehicle. Outer surface of sideguard may be no more than 120 mm (4.7 in.) inboard of outermost plane of vehicle; and no more than 30 mm (1.2 in.) inboard for the rearmost portion (at least 250 mm (9.8 in.)) of the sideguard. *Note*: UK requires 30 mm (1.2 in.) maximum inboard distance for entire guard. Specific requirements for rounded edges and overlapping sections. Gaps between sections allowed up to 25 mm (1 in.); 10 mm (0.4 in.) allowance for slightly protruding bolt/rivet heads.	

	Monash Univ. study recommendations	TRL study recommendations	Notes and questions for NYC DCAS
Vehicles covered	Vehicles over 3 tons		Which truck classes should be covered?
Exemptions	Notes that most buses and car-carrier trucks would not need sideguards because of vehicle design with low ground clearance	Most UK exemptions are not actually required for technical reasons; recommends reducing exemptions and considering adjustable/movable guards before exempting	Are exemptions or adjustable/movable guards needed for vehicles with special characteristics, e.g., equipment access needs or off-road use?
Strength requirement	Recommends 2 kN (450 lbs.) test		Any reason to deviate from the 1-2 kN (225-450 lbs.) test?
Max. ground clearance	Recommends 350 mm (13.8 in.); argues that 550 mm (17.7 in.) is too high to ensure that ped/cyclist is kept out of wheel path		Tradeoff between safety effectiveness and operational flexibility. Do some vehicles (e.g. for snow removal) require greater ground clearance?
Height for top of sideguard			EU standard appears preferable to Japan and addresses different vehicle types
Gap between sideguard and wheels			EU standard appears adequate and addresses different vehicle types. Need to qualify max distance from front tire for non-cab-over vehicles?
Designs allowed	Recommends only using flat panels due to possibility of ped/cyclist being caught on rails		Tradeoff between safety effectiveness and design flexibility/underbody access. Rail-style guards may be more amenable for retrofit and for DPF airflow.
Other vehicle components	Cites this approach with approval		Many NYC vehicles already have fuel tanks, tool boxes, etc. – Volpe team needs detailed info on dimensions and placement.
Requirement to be flush with vehicle & present smooth outer surface			EU standard is detailed in this area and appears suitable, but would need to be adapted to NYC fleet.

International sideguard exemptions and recommendations

- UK exemptions
- EU exemptions
- TRL report recommendations
- Are the exemptions technically justified?
- How many DCAS vehicles fall under technically justified exemptions?

International sideguard exemptions and recommendations

Vehicle Type
Tractor for semi-trailer
Special purpose vehicles where side protection is impractical
Trailers designed for very long loads
Low speed vehicle (max. 15 mph)
Tipping / Dump Truck
Refuse / collection trucks
Street sweepers
Military vehicles
Fire engines
Car carriers

Representative sideguard retrofits

- Sideguards on sanitation collectors (EU and China)

Potential priority vehicles for retrofit

- Based on DCAS inventory

Vehicle description	Quantity	Main Agencies	Notes
COLLECTION, REAR LOAD	1766	DSNY	
SWEEPER, MECHANICAL	407	DSNY, Parks	Assess whether exemption for sweepers is warranted
COLLECTION, 25 CUYD	406	DSNY	
TRUCK, SALT SPREADER	400	DOT, Corrections	
DUMP TRK, 15+ CUYD	328	DOT, DSNY	
TRUCK, RACK BODY	203	DEP, DCAS, DOT	
PUMPER, 1000GPM/500GAL	139	FDNY	Fire vehicle -- assess compatibility with sideguards
DOT HEAVY DUTY RENTALS	120	DOT	Variety of vehicles in this category including Mack 813 and Ford F-550
LADDER, 100FT/REAR MOUNT	116	FDNY	
TRUCK, CLOSED BODY	109	Parks, DCAS, Corrections	Unclear what this is or if it is a consistent / meaningful designation
TRUCK, TRACTOR	109	Parks, DSNY, DOT	Are there associated trailers?
PUMPER, 2000GPM/CMU	106	FDNY	Fire vehicle -- assess compatibility with sideguards
DUMP TRK, 4-4.5 CUYD	99	DOT, FDNY, Parks	
COLLECTION,FRONT LOAD	95	DSNY, Parks	Check configuration versus rear-load
DUMP TRK, UNDER FOUR CUYD	86	Parks, DSNY	
LADDER, 75FT/TOWER	68	FDNY	
DUMP TRK, 5-6 CUYD	59	Parks, DCAS, DEP	
RACK TRUCK W/ATTENUATOR	56	DOT	Rear-mounted attenuator shouldn't pose problem, but check
COLLECTION, ALLEY	52	DSNY	Check configuration versus rear-load
TRUCK, BOOM	31	DSNY, Parks	Check stabilizer locations
TRUCK, MOUNTED WELDER	30	DSNY	
SWEEPER, HYDRAULIC	29	DOT, Parks, DCAS, DEP	Assess whether exemption for sweepers is warranted
DUMP TRK, 11-15 CUYD	28	DEP, Parks	
DUMP TRK, 7-10 CUYD	28	DEP, Parks	
DUMP TRK, BACKUP/REAR	28	DEP, Corrections	
TRUCK, FUEL TANKER	26	DOT, DSNY	Check on location of wetlines and other equipment
TRUCK, MOUNTED CRANE	23	Parks, DCAS, DEP	
COLLECTION,REAR 20CU YD	21	DOT, FDNY, Parks	
LADDER, 100FT TRACTOR TR	21	FDNY	
LADDER, 95FT TOWER	18	FDNY	
TRUCK, WATER TANKER	16	DOT, Parks	
TRACTOR TRUCKS	14	NYPD	
HYDRANT REPAIR TRUCK	12	DEP	Unclear what form factor
TRUCK, AC TANK/SPRAYER	12	DOT	
TRUCK, CARGO BODY W/LIFT	12	DOT	
PUMPER,CMYCX 1000GPM;500G	10	FDNY, Corrections	

Representative sideguard retrofits

- Sideguards on Boston Public Works vehicles (**not** EU/UK spec)

Representative sideguard retrofits

- Sideguards on Boston Public Works vehicles (**not** EU/UK spec)

Preliminary identified sideguard vendors

Company	Headquarters	POC
Air Flow Deflector*	Montreal, QC	Diane Houle
Laydon Composites	Oakville, ON	Andy Acott
Shu-Pak Corporation	Cambridge, ON	David Tanner

**confirmed attendance at NYC Truck and Equipment Show, May 22*

To date, U.S. pilot programs appear to have used low-volume, custom fabricated equipment, as well as tool boxes

Sideguards benefits and costs

Safety benefits evidence:

61% decrease in cyclist fatalities in UK in side-impact crashes with large trucks after national sideguard law enacted

20% decrease in same types of pedestrian fatalities

All current data is from outside U.S. → need for U.S. data collection

Costs:

Diverse ways to cover the danger zone:

- Off-the-shelf sideguards ($600-$2,000+ per vehicle)
- Custom-made sideguards ($2,500 per vehicle, Boston)
- Toolboxes and fuel tanks (cost varies, Portland)

O&M costs?

Diverse designs

$847 average to outfit vehicle in EU

Representative sideguard retrofits

- Sideguard over refrigeration unit (UK)

Representative sideguard retrofits

- Sideguards over fuel tanks (UK) and with Euro VI DPFs

NYC Fleet Federation:
Tailoring the recommendations

11,772 medium or heavy duty units under DCAS

Likely sideguard candidates: ***4,734+***

Large trucks with high underbody clearance

- Refuse collection
- Dump trucks
- Flatbed and rack, etc.

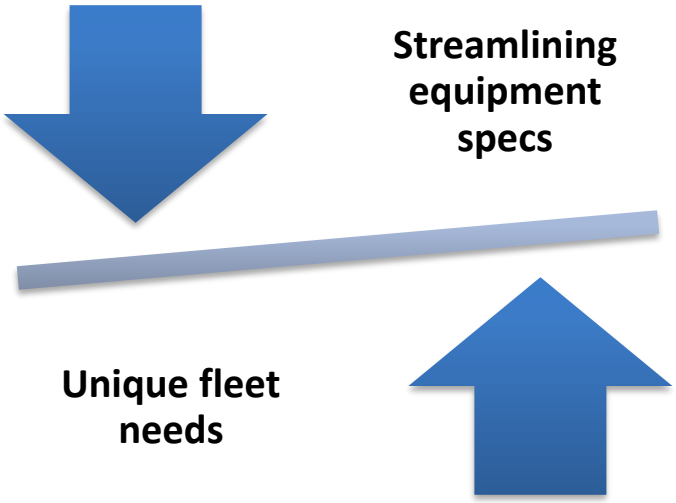
Unlikely sideguard candidates: ***3,725+***

MD/HD vehicles that don't seem to be good candidates for sideguards due to their design (no large underbody gaps)

- F-series pickups
- Econoline-type vans
- Sprinters, etc.

NYC Fleet Federation:

Unique vehicles, same safety priorities

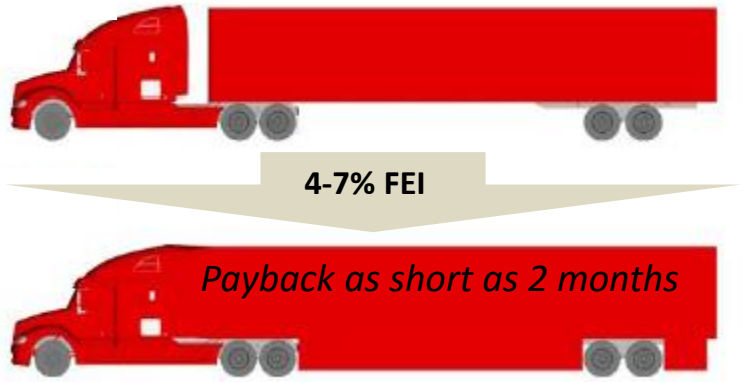


- Solutions should balance cost-effective streamlined safety specs with the uniqueness of each fleet's vehicles and mission
- Account for special operational requirements: breakover angle, snow, rough terrain, hydraulics
- A recommended approach may be **"pilot and program evaluation":**
  1. Install multiple equipment designs/configurations across multiple vehicle types
  2. Evaluate performance, cost, O&M compatibility
  3. Finalize specs and standards

Synergy? Safety + Fuel Economy

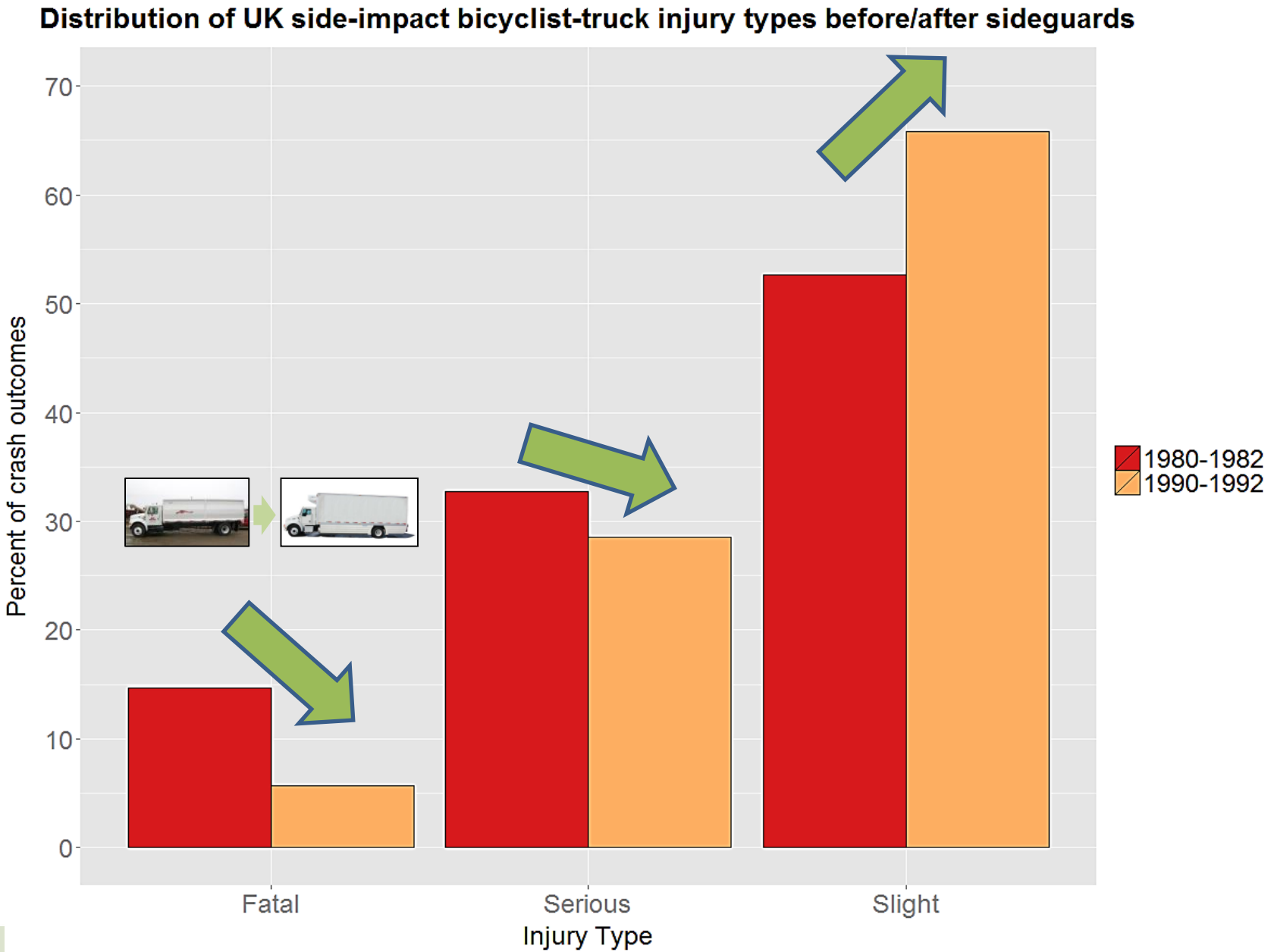
Could address <u>two</u> problems if equipment design were optimized:

- ***Fuel economy and emissions reduction***
  - *Depends on drive cycle, up to 7%*
  - *Applicable if part of a vehicle's drive cycle is highway*
- ***Cyclist & pedestrian safety***
  - *Depends on vehicle route*

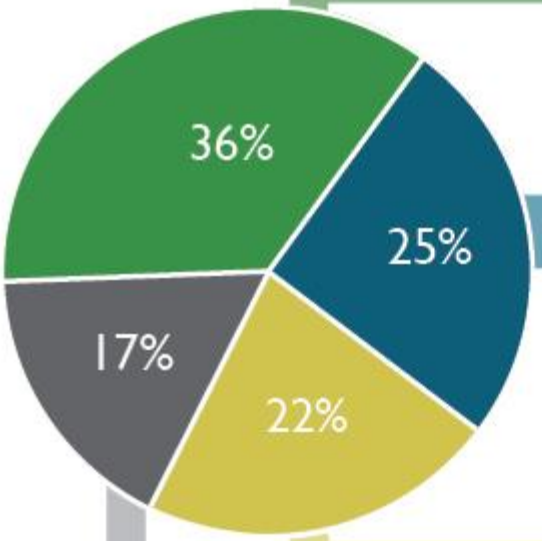


One aerodynamic sideskirt manufacturer (*Laydon*) **already claims** its product prevents bicyclist/ pedestrian underride

Sideguard effectiveness (2005 study)



Our Staff: Multidisciplinary and Multimodal



ENGINEERS

Aerospace Engineers
Chemical Engineers
Civil Engineers
Electrical Engineers
Electronics Engineers
Environmental Engineers
Fire Protection Engineers
Industrial Engineers
Marine Engineers
Mechanical Engineers

ANALYSTS

Geographic Information System Specialists
Operations Research Analysts
Organizational Development Specialists
Program Analysts
Security Specialists
Transportation Analysts

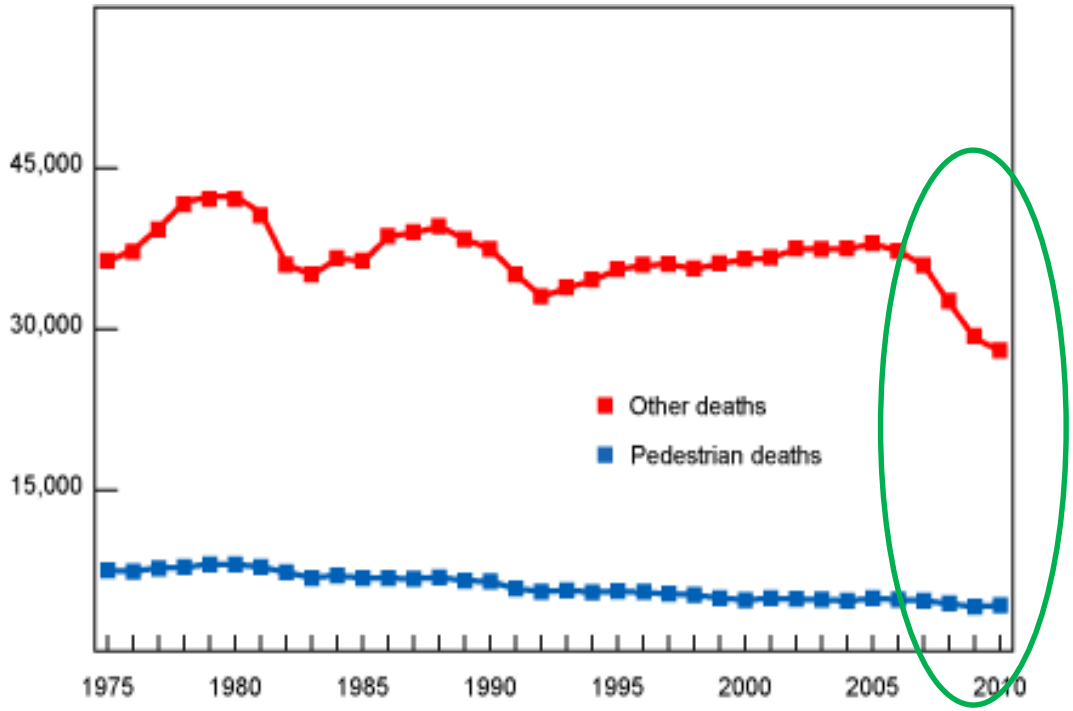
PLANNERS/SCIENTISTS

Economists
Environmental Scientists
Planners
Psychologists

IT SPECIALISTS

Progress gap in U.S. road safety

Pedestrian/cyclist deaths and other motor vehicle crash deaths, 1975-2010



- Nonmotorists were **16.4%** of 2011 fatalities, **up from 13.6%** in 2001

Sources: NTHSA (FARS), IIHS

Spec Committee Sideguard Briefing

- International sideguard standards and recommendations
- Diagrams of EU/UK standard
  - Volpe high-level recommendation
- Typical and innovative sideguard installations
- International sideguard exemptions
- Priority vehicles for sideguard retrofit
- OEMs and next steps

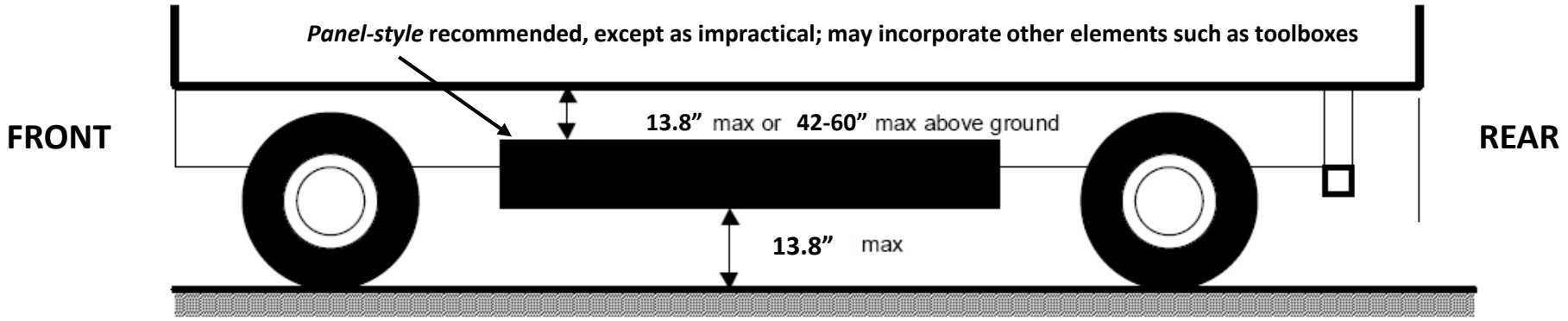
Goal: frame DCAS sideguard specification development and receive fleet input

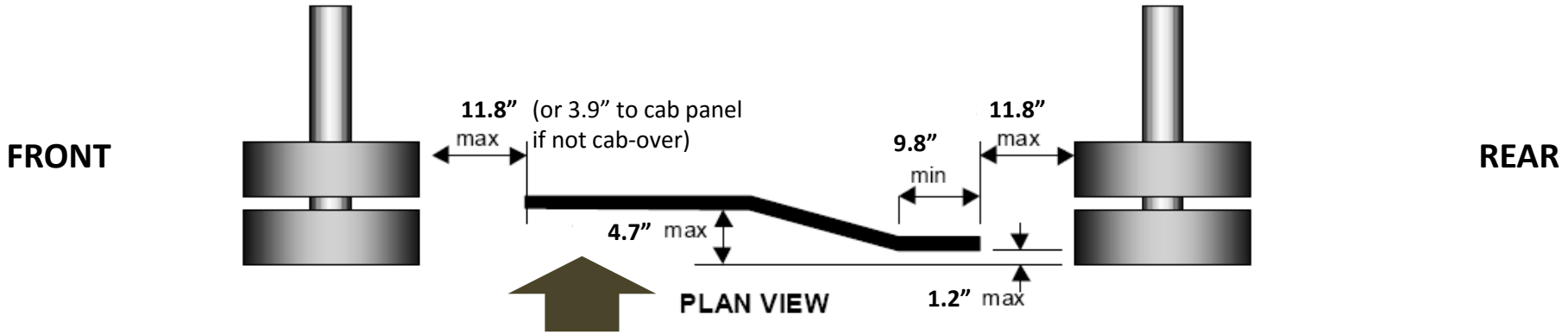
International sideguard standards and recommendations

Attributes
Vehicles covered
Exemptions
Strength requirement
Max. ground clearance
Height for top of sideguard
Gap between sideguard and wheels
Designs allowed
Other vehicle components
Requirement to be flush with vehicle and to present smooth outer surface

Recommendation schematic

Based on EU and UK standards and on Monash Univ., Transport Research Lab and Volpe recommendations





440 lbs. force test

Example sideguard specifications

Regulation No 73 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of goods vehicles, trailers and semi-trailers with regard to their lateral protection (*)

6. REQUIREMENTS

6.1. *General*

6.1.1. Vehicles in categories N_2, N_3, O_3 and O_4 must be constructed and equipped in such a way as to offer, throughout their length, effective protection to unprotected road users against the risk of falling under the sides of the vehicle and being caught under the wheels. This requirement will be considered satisfied either:

6.1.1.1. if the vehicle is equipped with a special lateral protective device (sideguards) in accordance with the requirements of paragraph 7; or

6.1.1.2. if the vehicle is so designed and/or equipped at the side that, by virtue of their shape and characteristics, its component parts can be incorporated and/or regarded as replacing the lateral protective device. Components whose combined function satisfies the requirements set out in paragraph 7 below are considered to form a lateral protective device.

Example specification

Regulation No 73 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of goods vehicles, trailers and semi-trailers with regard to their lateral protection (*)

7. TECHNICAL SPECIFICATIONS FOR LATERAL PROTECTIVE DEVICES

7.1. The lateral protective device shall not increase the overall width of the vehicle and the main part of its outer surface shall not be more than 120 mm inboard from the outermost plane (maximum width) of the vehicle. Its forward end may be turned inwards on some vehicles in accordance with paragraphs 7.4.3 and 7.4.4. Its rearward end shall not be more than 30 mm inboard from the outermost edge of the rear tyres (excluding any bulging of the tyres close to the ground) over at least the rearmost 250 mm.

7.2. The outer surface of the device shall be smooth, and so far as possible continuous from front to rear; adjacent parts may however overlap provided that the overlapping edge faces rearwards or downwards, or a gap of not more than 25 mm measured longitudinally may be left, provided that the rearward part does not protrude outboard of the forward part; domed heads of bolts or rivets may protrude beyond the surface to a distance not exceeding 10 mm and other parts may protrude to the same extent provided that they are smooth and similarly rounded; all external edges and corners shall be rounded with a radius not less than 2,5 mm.

Example specification

Regulation No 73 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of goods vehicles, trailers and semi-trailers with regard to their lateral protection (*)

7.3. The device may consist of a continuous flat surface, or of one or more horizontal rails, or a combination of surface and rails; when rails are used they shall be not more than 300 mm apart and not less than:

— 50 mm high in the case of N_2 and O_3;

— 100 mm high and essentially flat in the case of N_3 and O_4;

combinations of surfaces and rails shall form a practically continuous sideguard subject, however, to the provisions of 7.2.

7.6. The lower edge of the sideguard shall at no point be more than 550 mm above the ground.

Example specification

Regulation No 73 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of goods vehicles, trailers and semi-trailers with regard to their lateral protection (*)

7.8. Sideguards shall be essentially rigid, securely mounted (they shall not be liable to loosening due to vibration in normal use of the vehicle) and, except as regards the parts listed in paragraph 7.9, made of metal or any other suitable material. The sideguard shall be considered suitable if it is capable of withstanding a horizontal static force of 1 kN applied perpendicularly to any part of its external surface by the centre of a ram the face of which is circular and flat, with a diameter of 220 mm ± 10 mm, and if the deflection of the guard under load is then not more than:

— 30 mm over the rearmost 250 mm of the guard, and

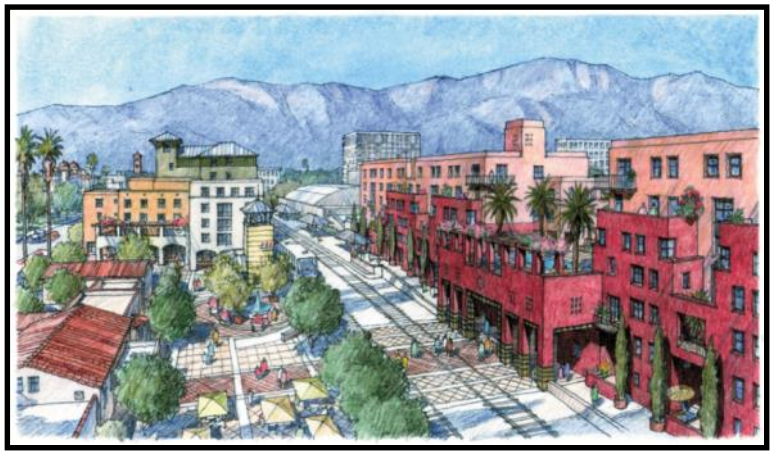
— 150 mm over the remainder of the guard.

Compliance with this requirement can be verified by calculation.

Transportation Policy and Planning

Focus

- Transportation policy and economic analysis and research that contribute to a compelling vision of transportation
- Guidance that helps decision makers make smart investments in the planning, development, management, operations, and financing of transportation systems and agencies



Example projects

- Transportation planning for national parks and public lands – *FHWA, FTA, National Park Service*
- Implementation of Strategic Highway Research Program initiatives – *FHWA*
- Understanding effects of policies and economics on traveler behaviors – *FHWA, ITS JPO*

Safety Management and Human Factors

Focus

- Acquisition, maintenance, distribution, and analysis of safety data
- Development of large-scale IT solutions to support safety inspection and enforcement
- Internationally recognized human factors research and development capabilities supporting all modes of transportation

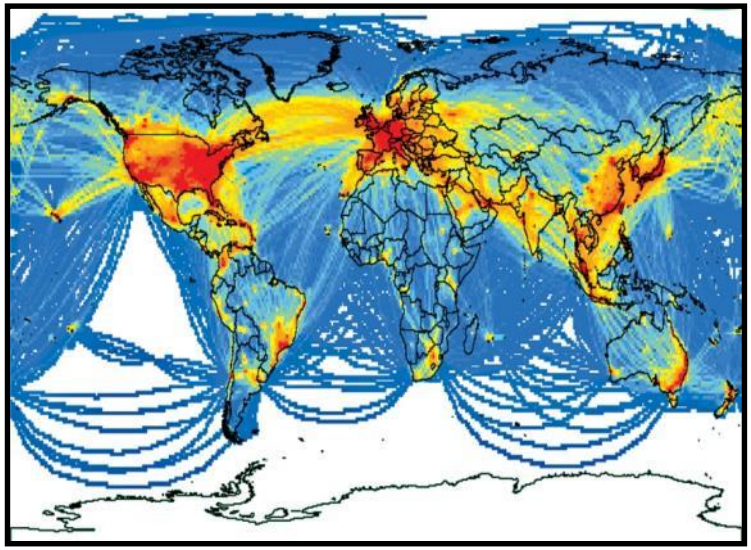
Example projects

- Safety Performance Analysis System (SPAS) – *FAA*
- Compliance, Safety, Accountability (CSA) program – *FMCSA*
- Vehicle defects reporting and tracking (safercar.gov) – *NHTSA*
- Confidential Close Call Reporting System – *FRA*
- Improving safety culture in rail – *FRA*
- Human system interaction and cockpit displays – *FAA*

Environmental and Energy Systems

Focus

- Measurement, analysis, and modeling of energy consumption, climate variability, air quality, and noise
- Research and analyses of data to provide scientific basis for energy and environmental policy



Example projects

- Aviation Environmental Design Tool (AEDT) – *FAA, NASA*
- Fuel economy research, analysis, and modeling (CAFE) – *NHTSA*
- Environmental compliance – *FAA, EPA, NPS, PHMSA*

Contact us

- Phone: 617-494-2000
- Web: www.volpe.dot.gov
- Questions: askvolpe@dot.gov


VISION
ZERO
nyc.gov/visionzero


dash
Smarter. Driving. Every Day.
DASHMOBILE.CO

Technology & Automotive

Navigate / Distract

Heads Up Display

Dash / Drive Smart

Apple / Google HMI

Tesla Digital / Self-Drive

Self-Driving

THE ULTIMATE *DATA* MACHINE

MAKE ANY CAR A ***'SMART CAR'***

Low cost device

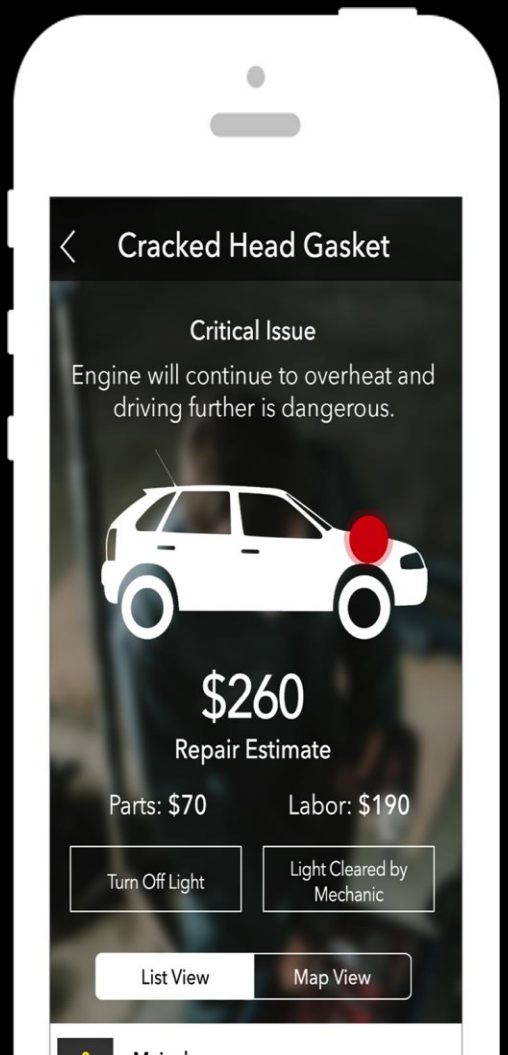
Connect to cloud

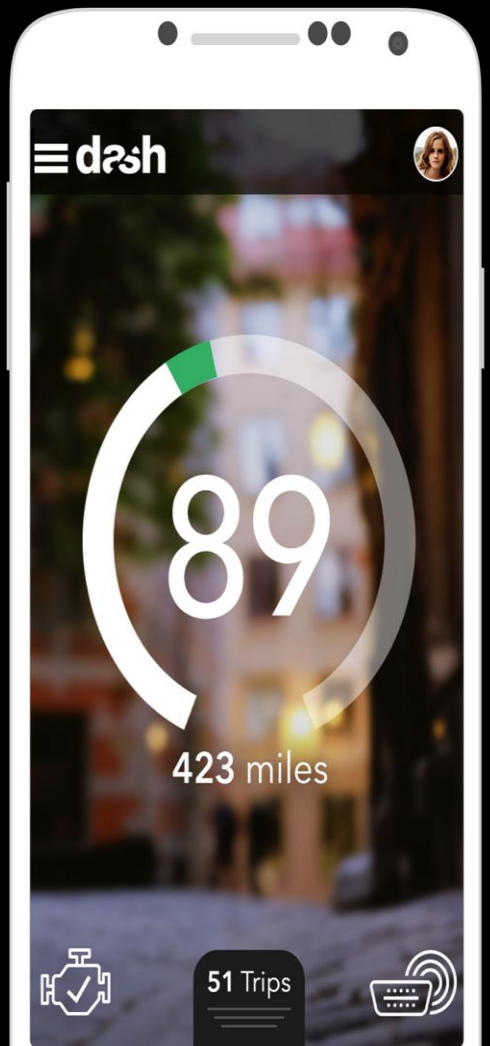
All cars since 1996

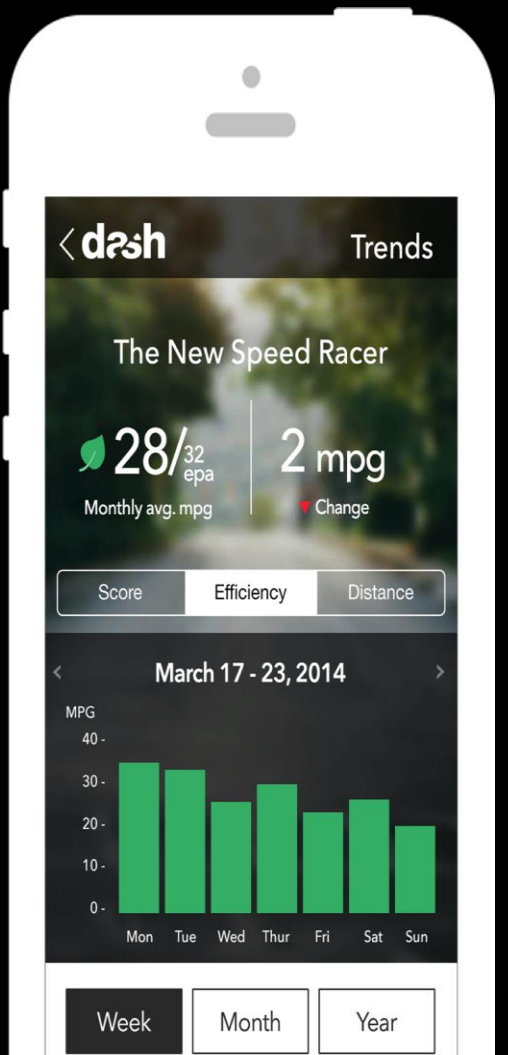
Savings

Safety

Social

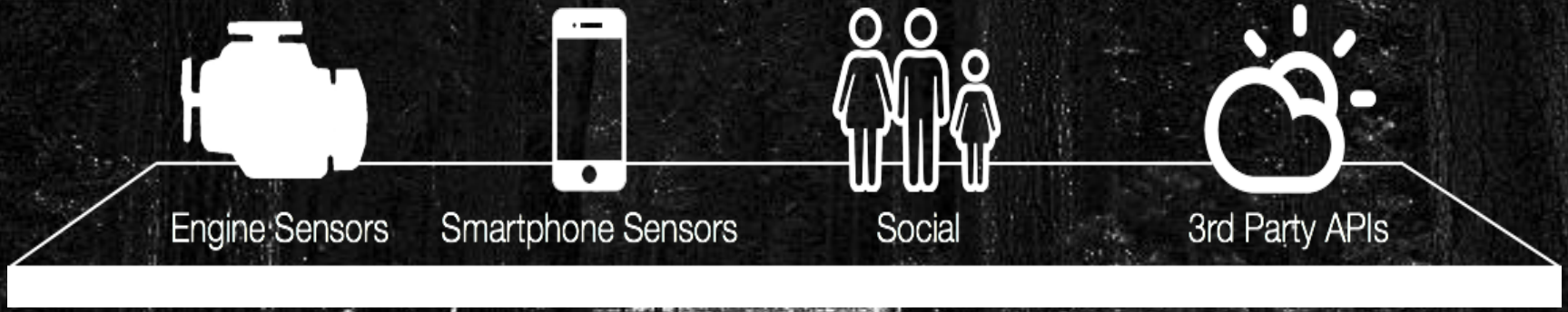






DASHMOBILE.CO

‘CHASSIS’ PLATFORM

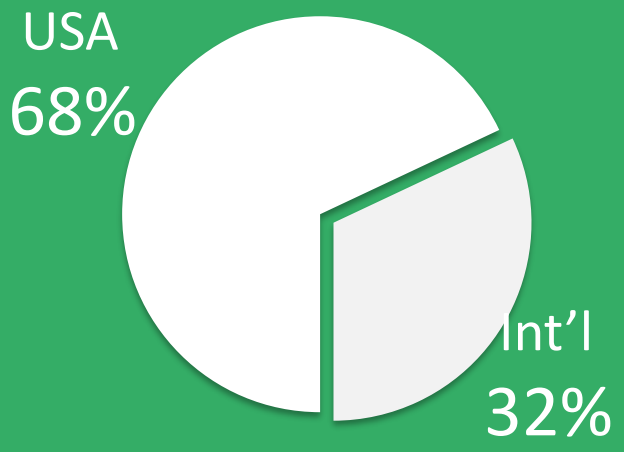



Metrics (2014)
Users
125 k
Trips
1 mil
Miles Driven
10 mil
DASHMOBILE.CO

Metrics (2014)

Countries Used

150



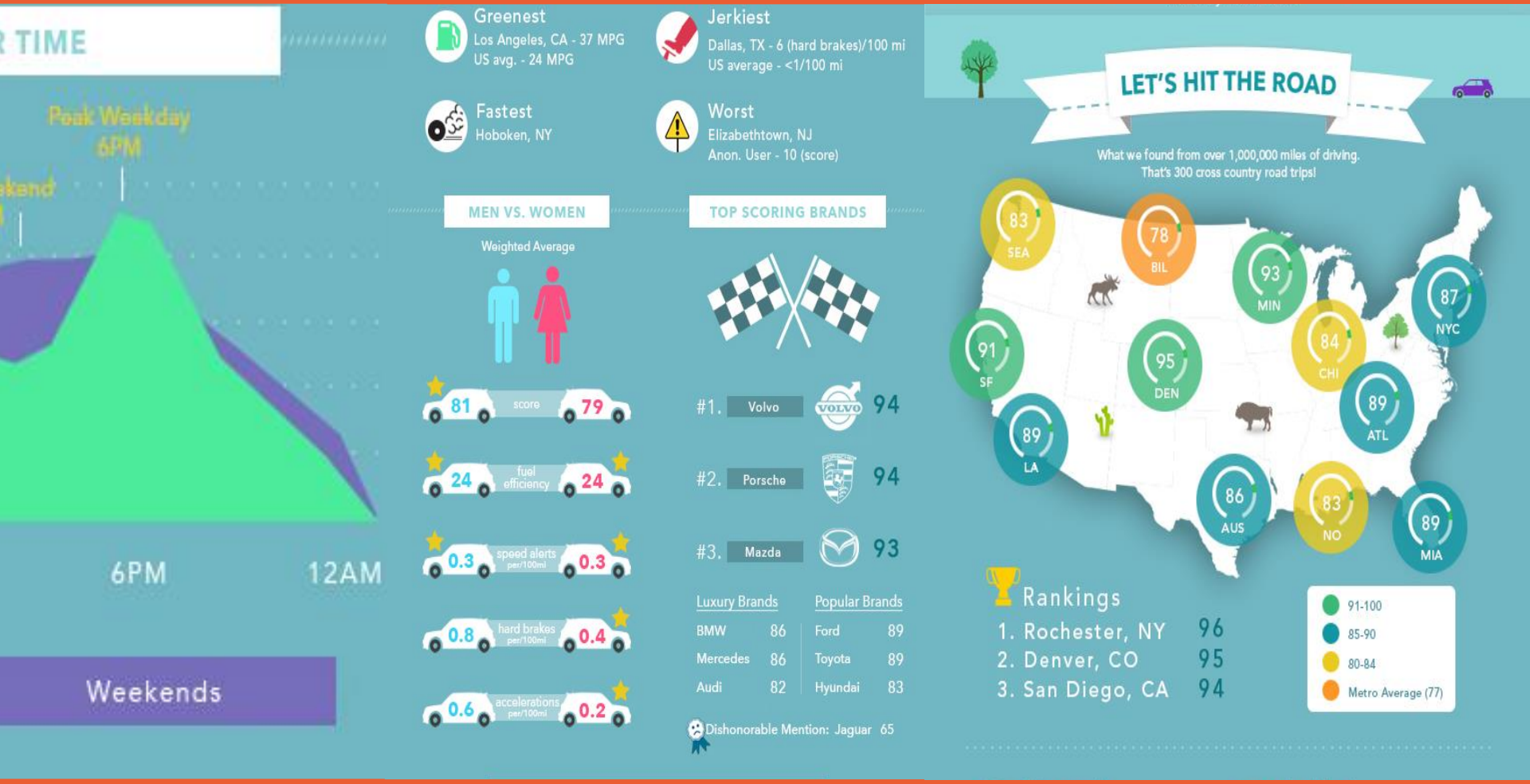
Top 5 Countries

USA
Canada
UK
Germany
Australia

Top 5 US Cities

Los Angeles
New York
Chicago
San Francisco
Atlanta

Data Insights



Recognition

THE WHITE HOUSE
WASHINGTON

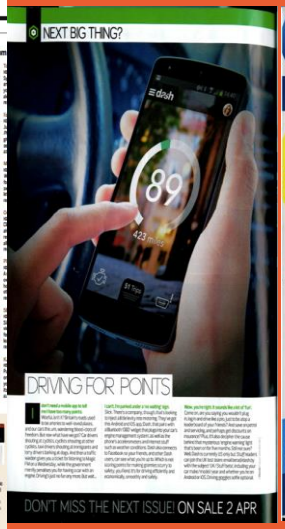
DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA

Ford

BMW

techstars

CLOUD WORLD FORUM



TechCrunch

BUSINESS INSIDER

Mashable

cnet

pandodaily


dashmobile.co
/dashmobile
@dashmobile
dash
89
423 miles
NO TEXT ON BOARD
it can wait
TEXTING & DRIVING...
it can wait
a message from at&t
dash


VISION
ZERO
nyc.gov/visionzero

40 YEARS OF

TRANSPORTATION ALTERNATIVES

EST 1973

Vision Zero Fleet Safety Forum

Hosted by NYC DOT and NYC DCAS

Queens Theatre

Flushing Meadows Corona Park

October 23, 2014

Noah Budnick

Chief Policy Officer
Transportation Alternatives

@noahbudnick

ABOUT TRANSPORTATION ALTERNATIVES

Committed to improving every New Yorker's safety and walking, biking & transit options.

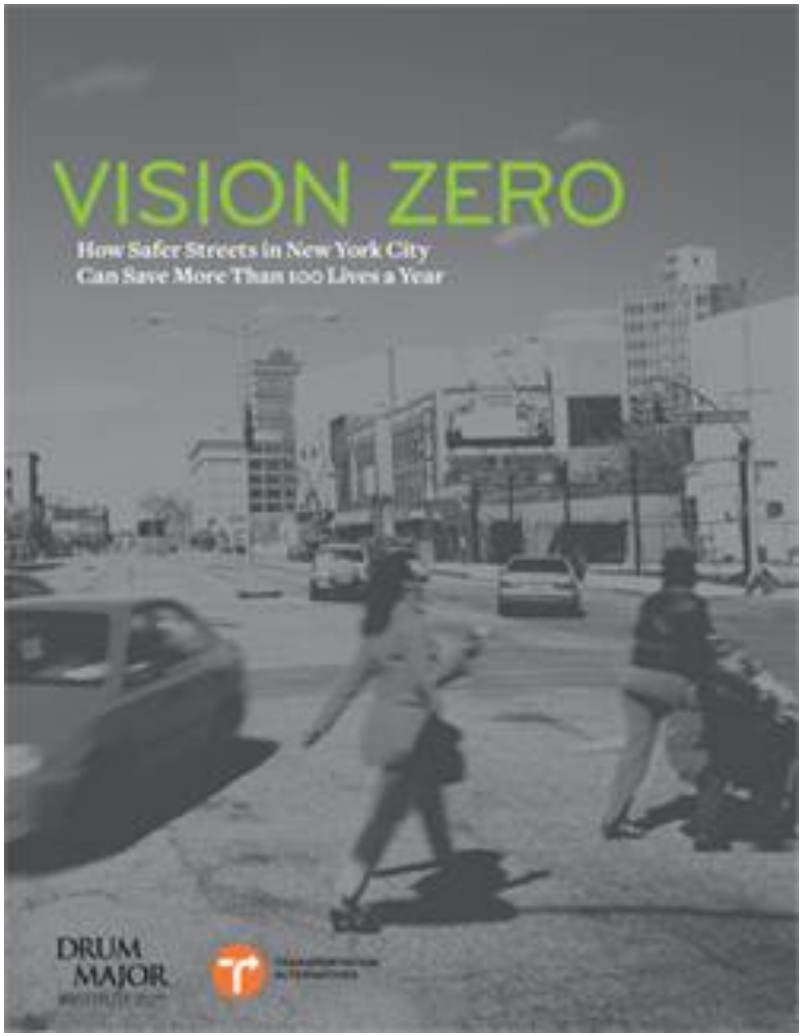
- **EST:** 1973
- **Staff:** 27 full-time, 35 part-time
- **Members:** 12,000
- **Street Activists:** 100,000

- A New Yorker is killed every 31 hours
- Every three hours, a New Yorker suffers a serious injury: dismemberment, disfigurement, or permanent disability
- Every eight minutes, a New Yorker is injured in traffic

Traffic crashes are the #1 cause of injury-related death for children.

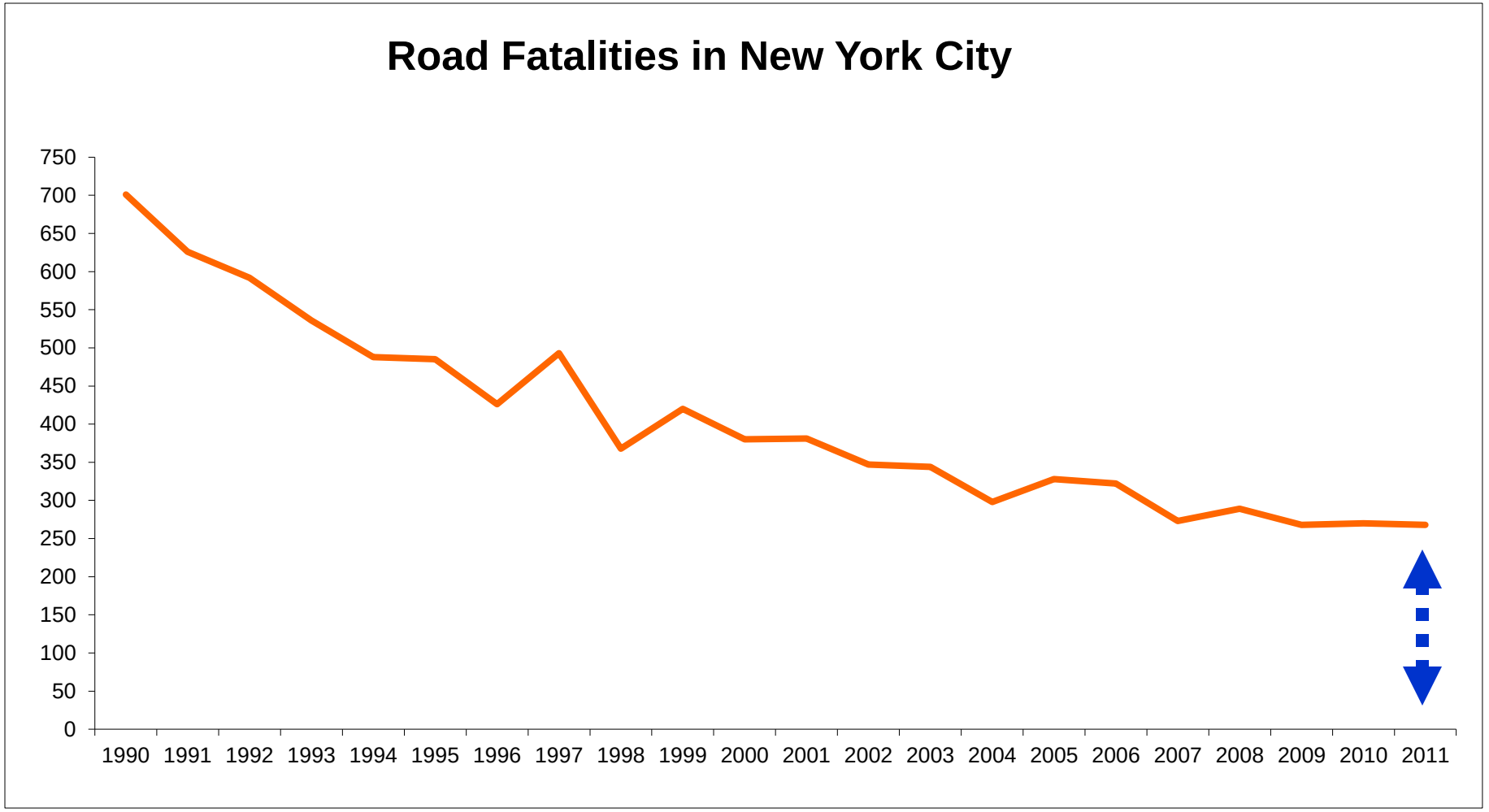
- 12% of City residents are older than 65
- 36% of pedestrians killed in traffic crashes are older than 65
- After falls, traffic crashes are the main cause of injury related death for seniors

STRATEGIC PLANNING

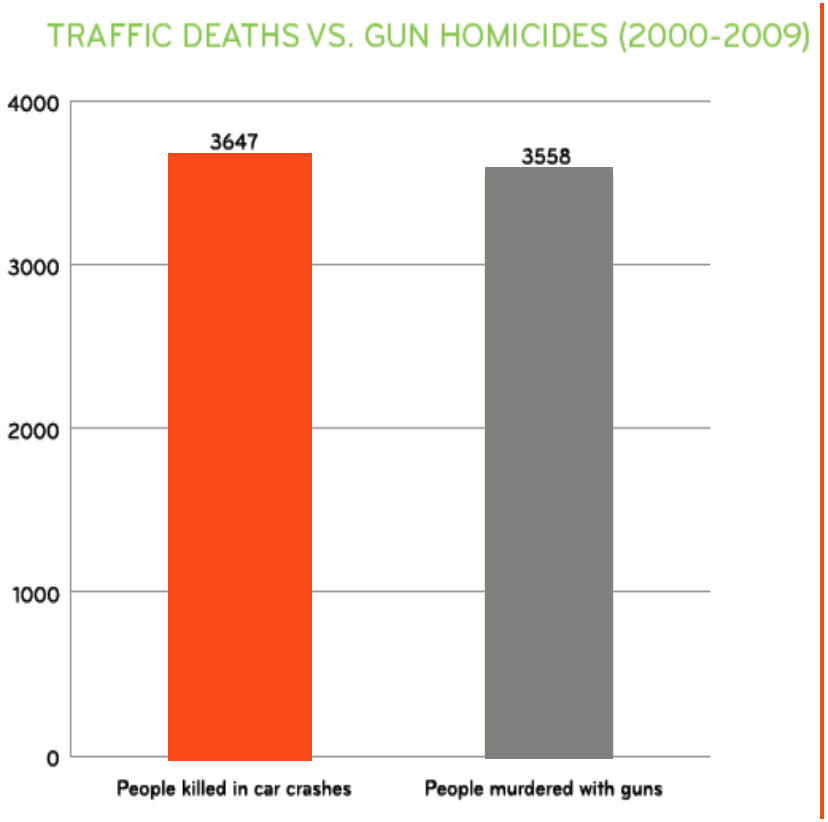


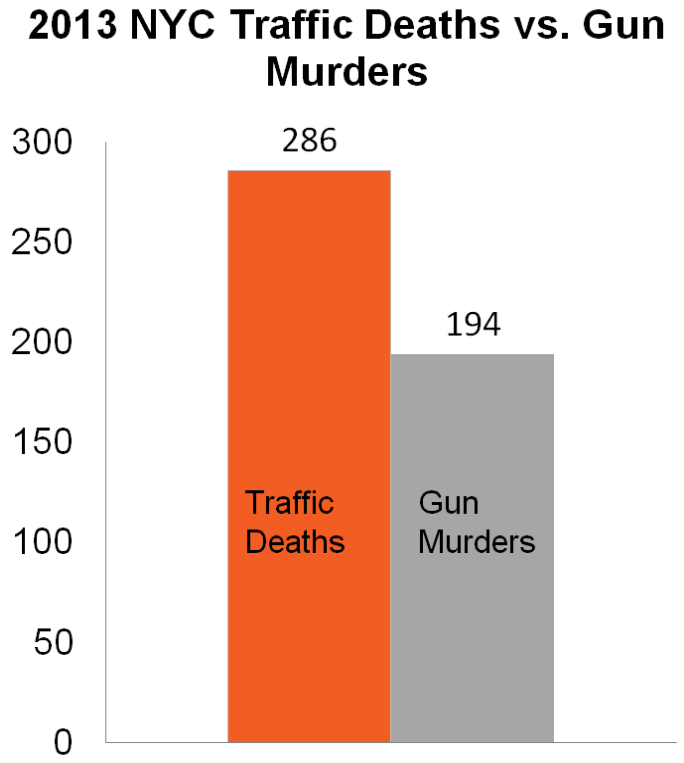
- **Traffic deaths and serious injuries are preventable:** Vision Zero is a city where no one is killed in traffic.
- **People are imperfect; they make mistakes:** Our street policies must be designed to encourage people to make better choices, and to minimize the danger posed when people don't make the best choices.
- **We know why traffic crashes happen.** Therefore, we can and must act to prevent the ensuing injuries and deaths.

DATA DRIVEN SAFETY



DATA DRIVEN SAFETY





T.A. 2013 Election Year Platform:

The Safety First Plan: A Five-Borough Blueprint for New York City Streets

- ***Data Driven Traffic Safety Enforcement***
- Though more New Yorkers are killed in traffic than murdered by guns, the New York City Police Department does not take its traffic safety mandate seriously. The data driven strategy that helped reduce street crime is not applied to traffic crime. Many of the most serious infractions -- vehicular speeding and failure to yield to pedestrians -- do not receive adequate enforcement priority. The next mayor must strengthen the NYPD's commitment to traffic safety by instituting a data driven, zero tolerance policy for traffic deaths and serious injuries and set and start work on a multi-year goal of eliminating traffic deaths in New York City.

ISSUE IMPORTANCE

I'm going to read you some issues facing New York City. Please tell me if you think the following issue is very important, somewhat important, not very important, or not at all important.

(%) Voters polled	Very important Important/Not important
Growing the economy and creating jobs	96 99/1
Preserving the quality of the mass transit system	83 96/3
Cracking down on reckless driving to improve safety	75 95/4
Fostering safer and more walkable neighborhoods	72 94/5
Protecting the environment and city parks	60 94/7
Reducing traffic congestion	51 91/7

DATA DRIVEN SAFETY

1 IN 3 VOTERS
have been seriously injured or know someone who has been seriously injured or killed in traffic

67% OF VOTERS* want protected bike lanes and pedestrian islands in their neighborhood

**77% of voters in the Bronx!*


Make our Streets SAFE!!
OUR RIGHT OF WAY
I HAVE THE RIGHT OF WAY
In NYC, Motor vehicles kill more of us than gun murder.
NOT ONE MORE KILLED


BIKENYC.ORG
STORM
TEAM
2012


NYU Wagner
public
WAGNER

Moving Violations

Queens North

August

Offense Description	MTD 2014	YTD 2014
Backing Unsafely	5	76
Brake Lights (Defect.or Improper)	33	364
Bus Lane, Driving in	0	0
Cell Phone	1010	9944
Commercial Veh on Pkwy	5	12
Defective Brakes	0	2
Disobey Sign	1743	14751
Equipment (Other)	61	401
Fail to Keep Right	5	20
Fail to Signal	50	723
Fail to Stop on Signal	625	3959
Following Too Closely	3	21
Headlights (Defect. or Improper)	25	235
Improper Lights	84	1129
Improper Passing	10	170
Improper Turn	503	3819
Improper/Missing Plates	24	276
Not Giving R of W to Pedes.	312	3745
Not Giving R of W to Veh.	32	206
One Way Street	79	295
Pavement Markings	107	1178
Safety Belt	1569	11837
School Bus, Passing Stopped	0	168
Speeding	678	5143
Spillback	14	154
Tinted Windows	389	4936
Truck Routes	16	653
U-Turn	16	133
Uninspected	38	535
Uninsured	325	4280
Unlicensed Operator	738	7650
Unregistered	65	813
Unsafe Lane Change	10	93
Other Movers	710	5298
TOTAL Movers	*9284*	*83019*

VISION ZERØ FOR CITIES *Symposium*

TRANSPORTATION ALTERNATIVES

TRAFIKVERKET
SWEDISH TRANSPORT ADMINISTRATION
VISION ZERO ACADEMY

COLUMBIA UNIVERSITY MEDICAL CENTER
Center for Injury Epidemiology and Prevention

Brooklyn Law School
ESTABLISHED 1901

FAMILIES FOR SAFE STREETS

November 13-15, 2014

- Learn about Vision Zero in the public policy and behavior change contexts
- See real world examples of Vision Zero
- Share best practices for maximum results

- More information: **transalt.org/VZCS**

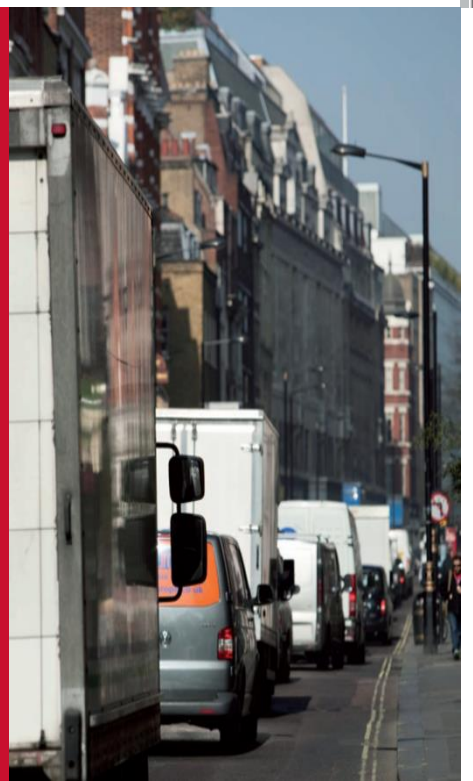
Noah Budnick

Chief Policy Officer
Transportation Alternatives

noah@transalt.org

@noahbudnick


VISION
ZERO
nyc.gov/visionzero



TRUCK SAFETY

Experiences from London

Joseph Dack

APPROACHES BY LONDON TO IMPROVE FREIGHT SAFETY

- Fleet Operator Recognition Scheme (FORS)

www.fors-online.org.uk.

- Construction Logistics and Cyclist Safety (CLOCS)

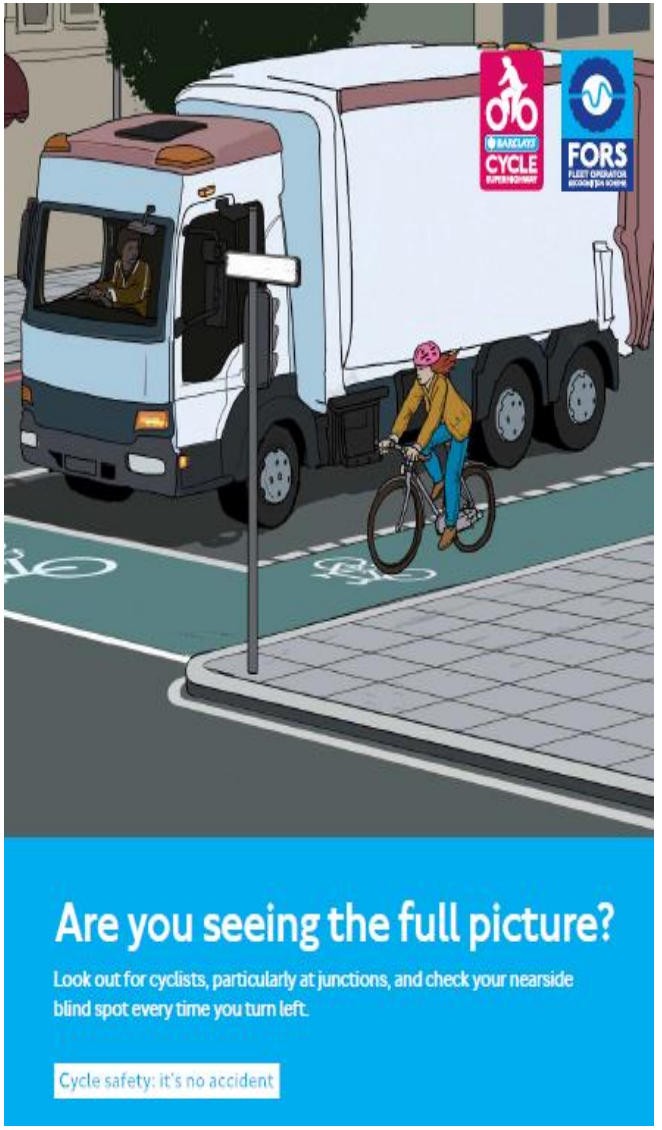
www.clocs.org.uk

FLEET OPERATOR RECOGNITION SCHEME

- FORS is based upon a standard - lawfulness, safety, efficiency, and environmental protection
  - Exceeds minimum legal requirement
- Operators independently assessed against the standard
- Free to join
- Three tiers
  - Bronze - Lawful operator that is following best practice.
  - Silver and Gold – operators demonstrating safer and greener operations.

FLEET OPERATOR RECOGNITION SCHEME

- Assists operators with information and tools to achieve the standard
  - Manager Workshops and Training
  - Driver Training
    - Safe Urban Driving Course
- Training Figures
  - Over 10,500 drivers have attended the Safe Urban Driving
  - Over 1,200 fleet managers trained
  - Over 2,100 drivers have studied the e-learning work related and road safety cycle safety modules
- Posters, briefing toolkits, driver information



FORS MEMBERSHIP LEVELS

Bronze	**2,000 operators**	**150,000 vehicles**
Silver	165 operators	19,000 vehicles
Gold	30 operators	13,000 vehicles

FORS & PROCUREMENT

- Many customers now expect fleet operators to demonstrate a commitment to road safety
- FORS shows this commitment = FORS is a contractual commitment
- FORS offers competitive advantage
- FORS helps green the supply chain
- FORS embedded in contracts across public and private sector

responsible
procurement

CONSTRUCTION LOGISTICS & CYCLIST SAFETY (FILM)

- http://www.clocs.org.uk/

CONSTRUCTION LOGISTICS & CYCLIST SAFETY

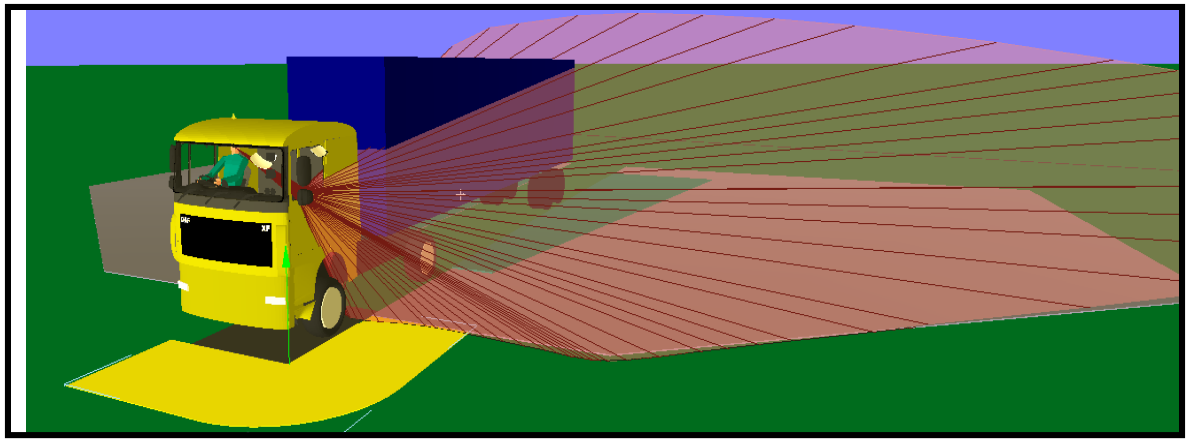
- Between 2008 and 2012, 53 per cent of cyclist fatalities in London involved a heavy goods vehicle
  - A disproportionate number of these were construction vehicles
- TfL report identified
  - Blind spots on construction vehicles could be larger than general haulage vehicles
  - Road safety was not considered in same way as health and safety on-site
  - There was little understanding of the impact of construction activity on road safety
  - There was no common standard for the industry to work to in order to manage work related road safety

CONSTRUCTION LOGISTICS & CYCLIST SAFETY

- The CLOCS vision is to fundamentally change the way the construction industry manages work related road safety.
- Three Workstreams
  - 1 - Improving vehicle safety through design and manufacture of safer new vehicles and fitting appropriate safety equipment to existing vehicles.
  - 2 - Addressing the safety imbalance in the construction industry by ensuring road safety is considered as important as health and safety on site.
  - 3 - Encouraging wider adoption of best practice across the construction logistics industry through taking best in class examples, developing a common national Standard and embedding a new cultural norm.
- Significant and high level representation from the construction industry

SAFER VEHICLE RESEARCH

- Research into vehicle blindspots



6 mirrors on this truck

EVOLUTION OF LORRY DESIGN

1970 | 1980 | 1990 | 2000 | 2010

Very little change in cab profile and improvement to driver direct vision

How the coach has evolved over the same time span

SOME PROGRESS

Utilisation of cabs with ‘best-in-class’ driver direct vision

‘I feel much more confident driving in the high vision cab. I wouldn’t want to go back to a standard tipper’
Construction tipper driver

JOSEPH.DACK@HDRINC.COM


VISION
ZERO
nyc.gov/visionzero