PEDESTRIAN & BICYCLIST
FOCUSED APPROACH TO SAFETY

Improving Pedestrian Safety Through Vehicle Design and Technology

Thursday, April 17, 2025

U.S. Department of Transportation
Federal Highway Administration

ZERO IS OUR GOAL
A SAFE SYSTEM IS HOW WE GET THERE

Disclaimer

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Webinar Logistics

- Please post questions at any time
- We will be saving time at the end of the session for questions and discussion
- Webinar slides and recording will be posted at

https://www.pedbikeinfo.org/webinars/webinar_details.cfm?id=133

Continuing Education Credits

- Brief questionnaire following webinar for sharing feedback. Submit a response to receive your certificate of attendance.
- Information about webinar archive materials, recording and certificates of attendance will be sent in a follow-up email this afternoon.

Webinar Objectives

- Learn about the role that vehicle technology and design play in determining the likelihood and severity of crashes involving pedestrians.
- Identify vehicle design and technology improvements that can improve safety for people outside of vehicles.
- Bring lessons and takeaways back to local, regional and Statewide pedestrian safety initiatives.

Panelist Introductions

- Sam Monfort, IIHS
- Becky Mueller, IIHS
- Greg Brannon, AAA
- Alex Epstein, Volpe National Transportation Systems Center

IIHS pedestrian research

Pedestrian Safety and Vehicle Technology/Design Webinar

April 17, 2025

IIHS HLDI

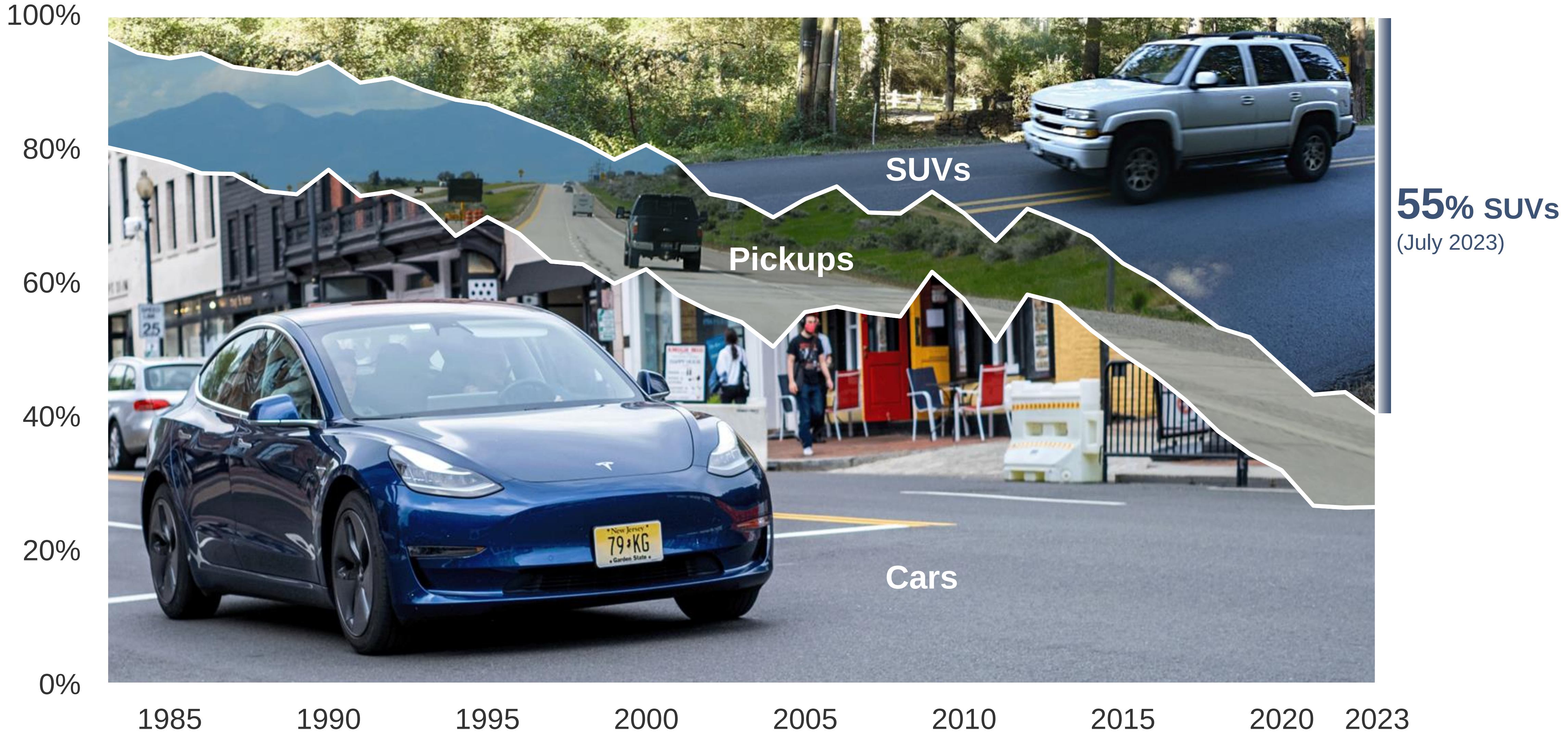
Samuel Monfort, PhD
Senior Statistician

Becky Mueller
Senior Research Engineer

U.S. pedestrian fatalities
1975-2022
8,000
6,000
4,000
2,000
0
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
83%
IIHS
HLDI

Distribution of U.S. vehicles by type

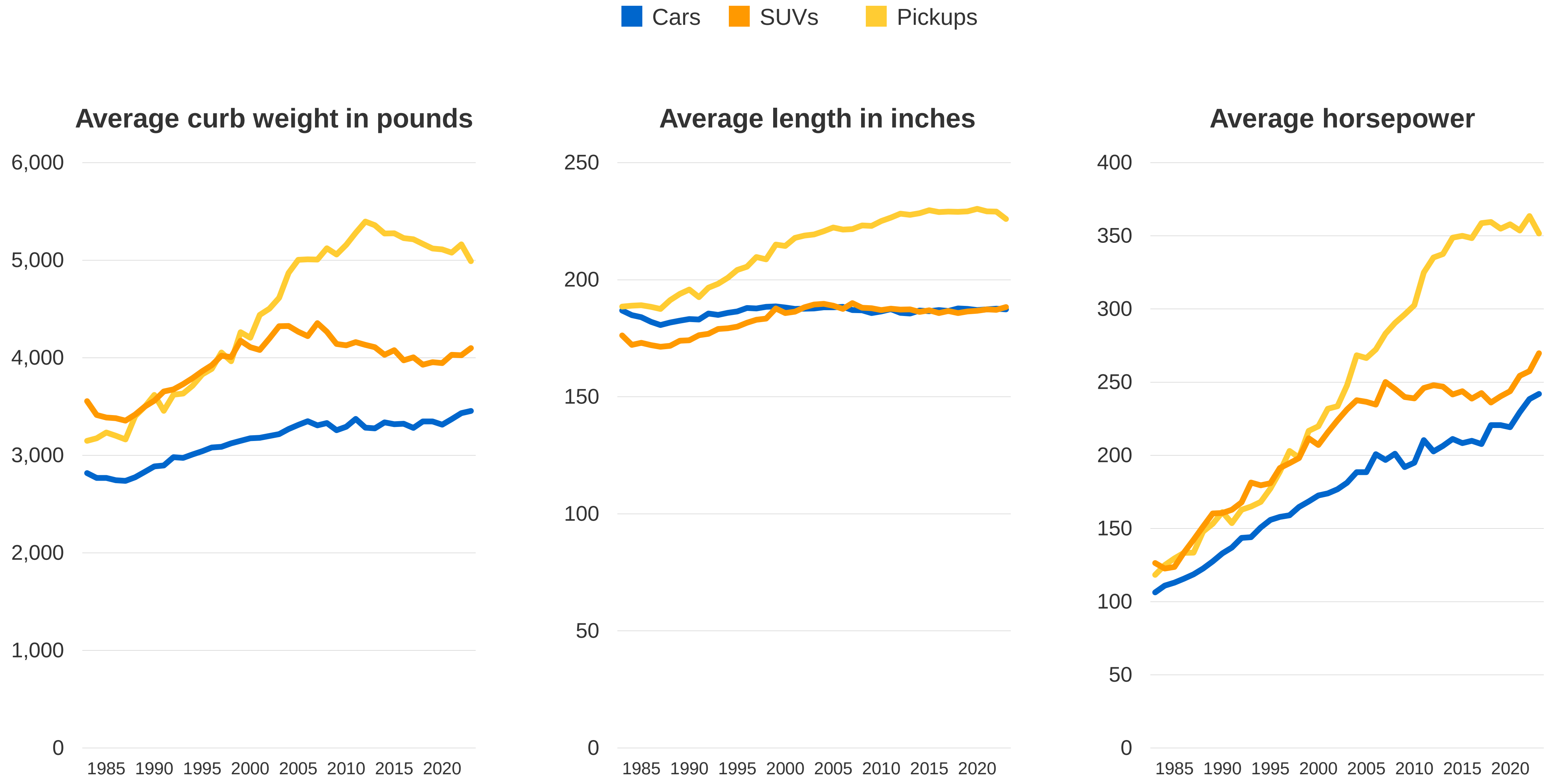
1983-2023 model years



IIHS HLDI

Changes in vehicle specs

1983-2023 model years



Previous research

Vehicle size and pedestrian injuries

Pedestrian hip height relative to vehicle front end height is a key predictor of crash kinematics and injury outcomes

(Ballesteros 2005, Longhitano 2005, Roudsari 2005)

Vehicle front-ends taller than hip height are more likely to throw a pedestrian to the ground

(Roudsari 2005, Submit 2008)

Previously available datasets reflect older US field data (PCDS) or countries where American style pickups are not common

Research question

- How does the growing US vehicle fleet influence pedestrian injury patterns?

Ballesteros, M.F., Dischinger, P.C., and Langenberg, P. (2004) Pedestrian injuries and vehicle type in Maryland, 1995–1999. Accident Analysis & Prevention 36 (1): 73-81.

Longhitano, D., Henary, B., Bhalla, K., Ivarsson, J., and Crandall, J. (2005) Influence of vehicle body type on pedestrian injury distribution. SAE Transactions: 2283-2288.

Roudsari, B.S., Mock, C.N., and Kaufman, R. (2005) An evaluation of the association between vehicle type and the source and severity of pedestrian injuries. Traffic Injury Prevention 6 (2): 185-192.

Subit, D., Kerrigan, J., Crandall, J., Fukuyama, K., Yamakazi, K., Kamui, K., and Yasuki, T. (Year) Pedestrian-vehicle interaction: Kinematics and injury analysis of four full scale tests. Proc. 2008 IRCOBI Conference.

Datasets

International Center for Automotive Medicine (Pedestrian Consortium)

Vulnerable road user Injury Prevention Alliance (VIPA)

- 211 pedestrians (data collection ongoing)
- Founded 2015; MY 2005 or newer vehicles
- Impact speed from modeling and formulas

National Highway Traffic Safety Administration

Vulnerable Road User Indepth Crash Investigation Study (VICIS)

- 92 pedestrians from 4 collection centers in US
- Collected 2022; MY 2004 or newer vehicles
- Impact speed from EDRs and formulas

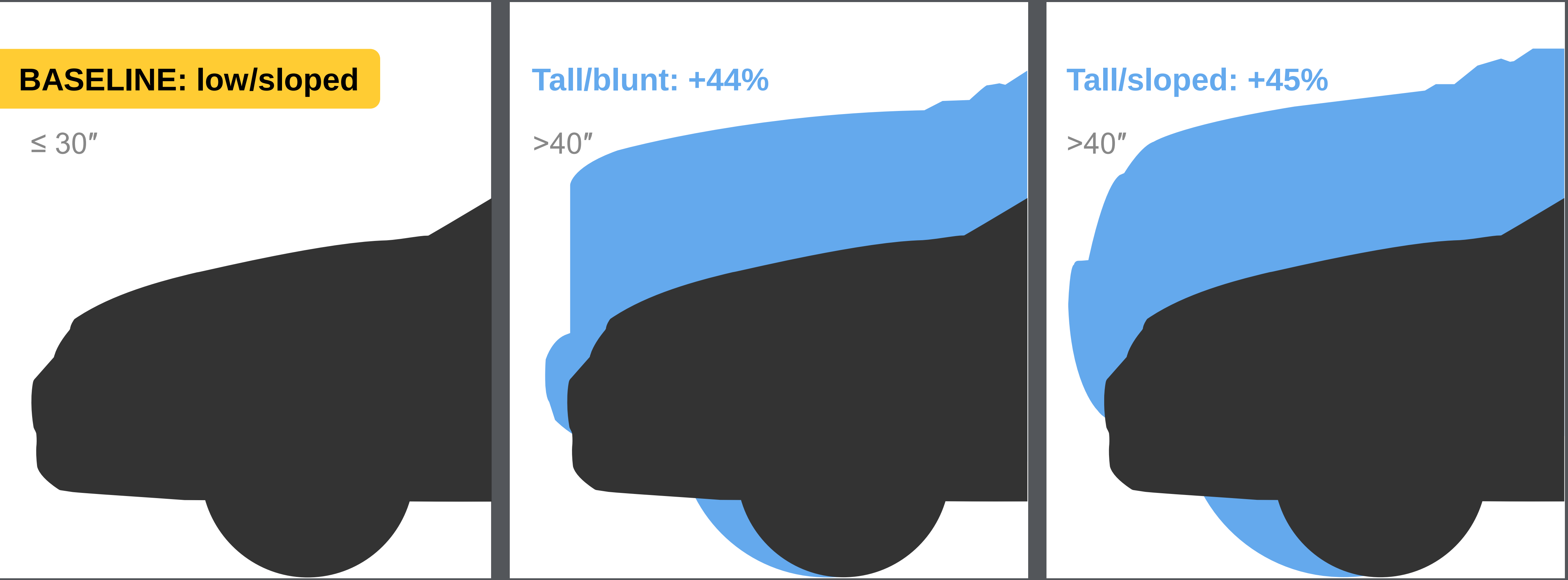
State Crash Data

Police-reported crashes aggregated from 7 states

- 17,897 pedestrians; 664 unique vehicle designs
- Crashes from 2017 - 2022
- Fatality outcomes but no impact speed

Tall, blunt vehicles put pedestrians at risk

Risk of pedestrian death in a crash, from database of nearly 18,000 crashes



IIHS HLDI

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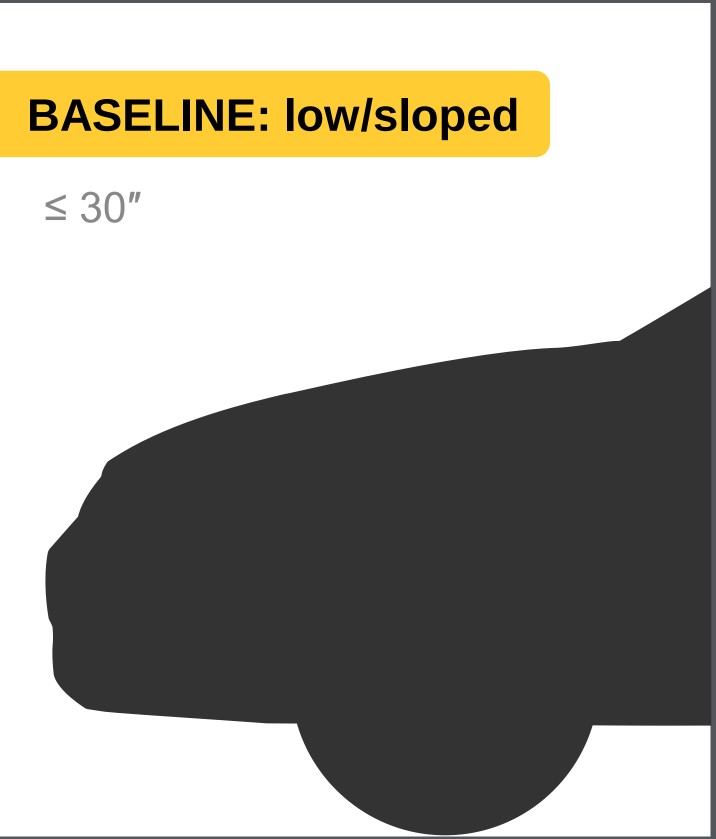
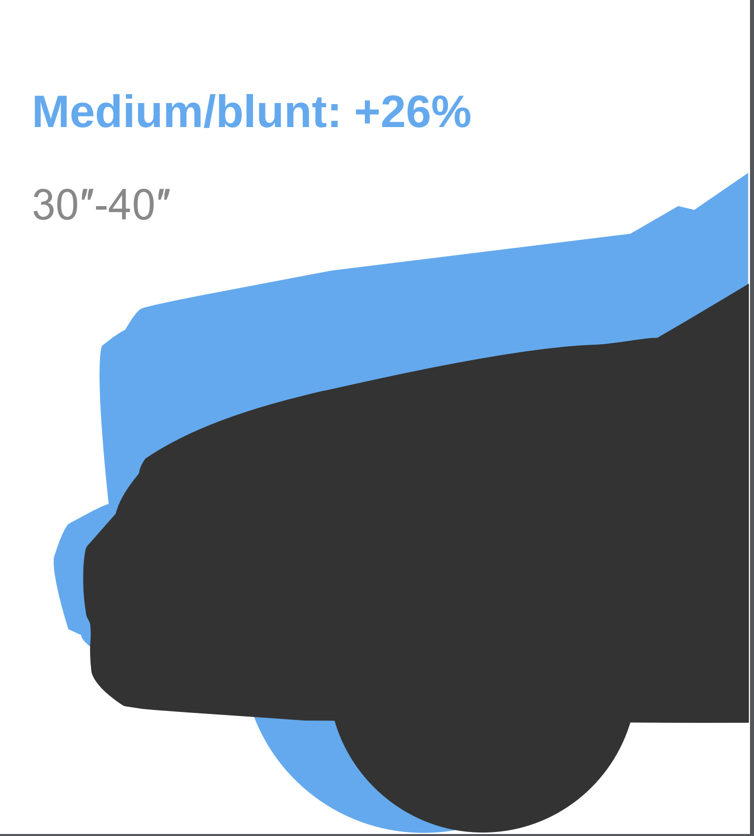
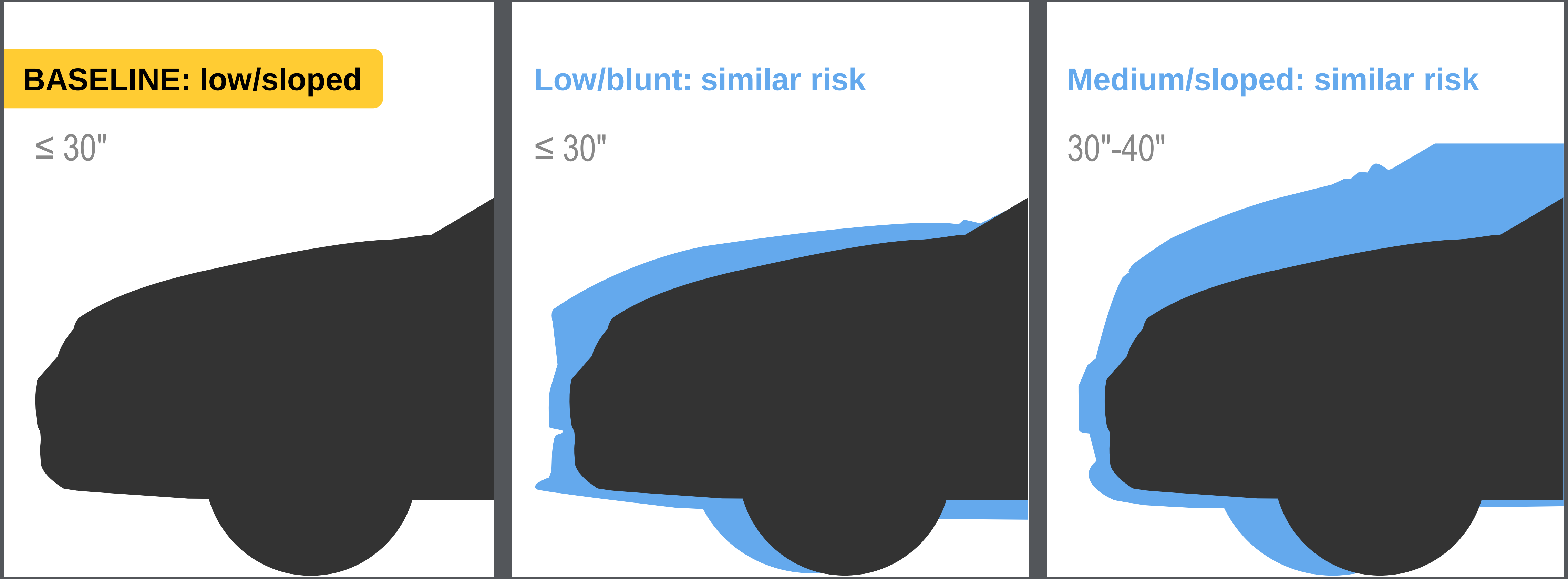




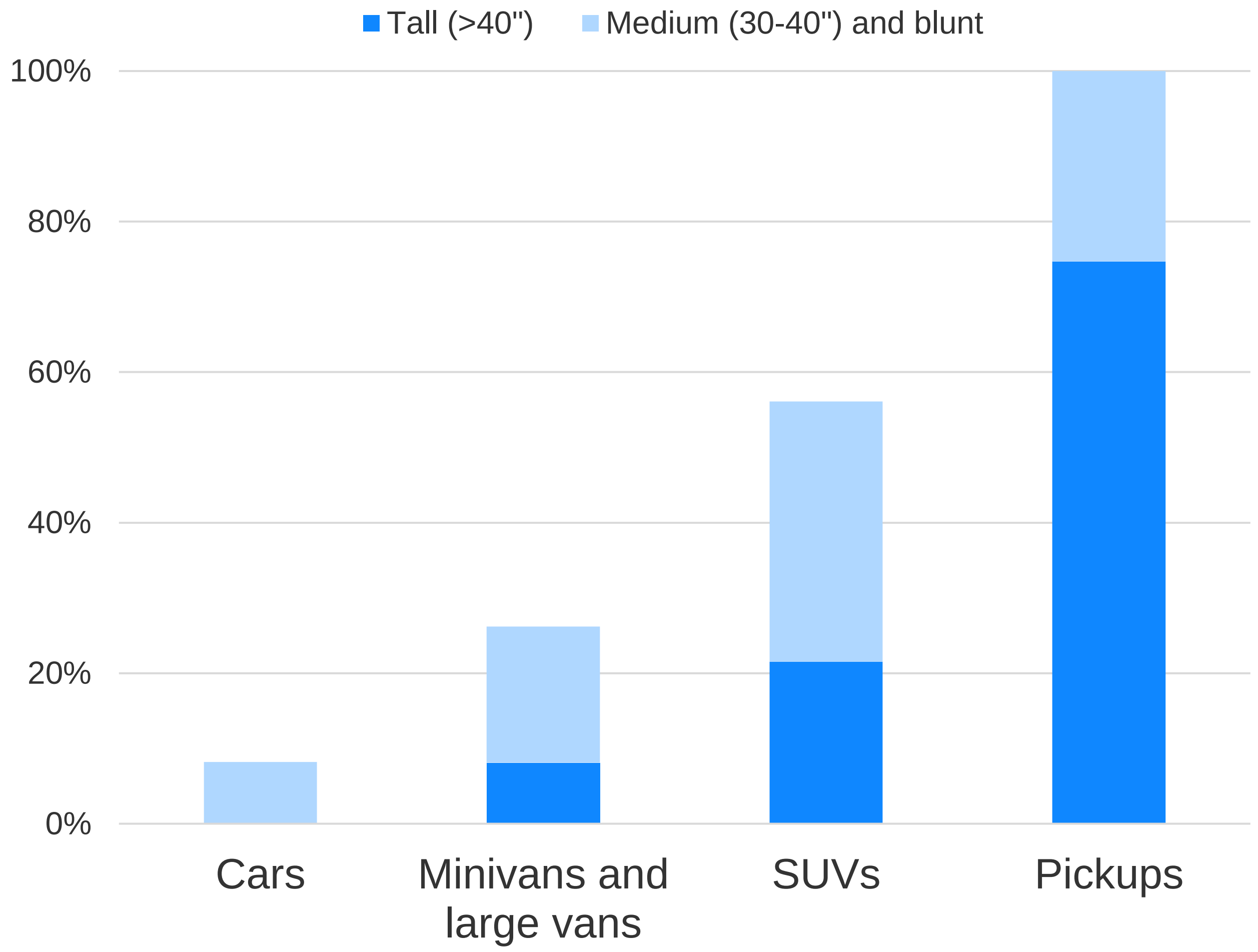
Tall, blocky vehicles put pedestrians at risk

Risk of pedestrian death in a crash, from database of nearly 18,000 crashes



56% of SUVs and
100% of pickups
had front-end shapes
with increased
fatality risk

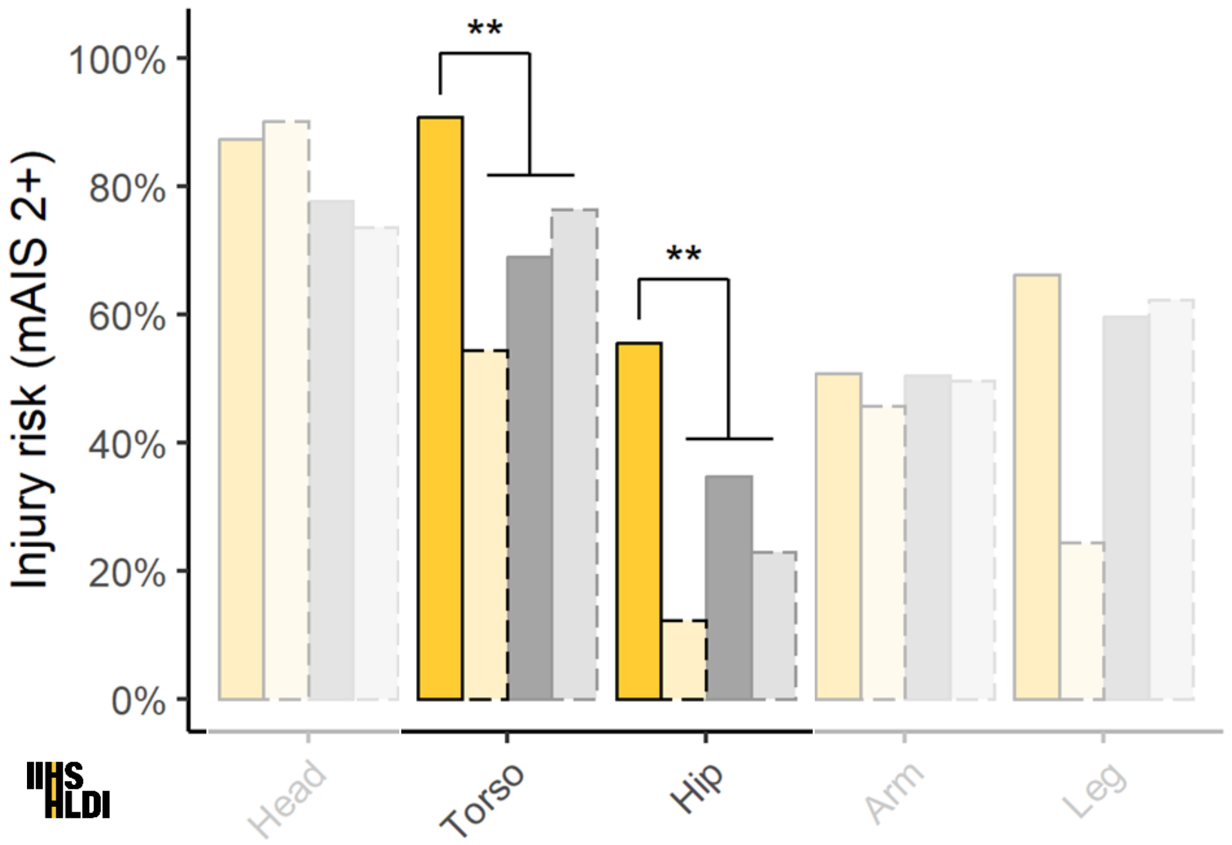
Percent of study vehicles with higher-risk front-end shapes

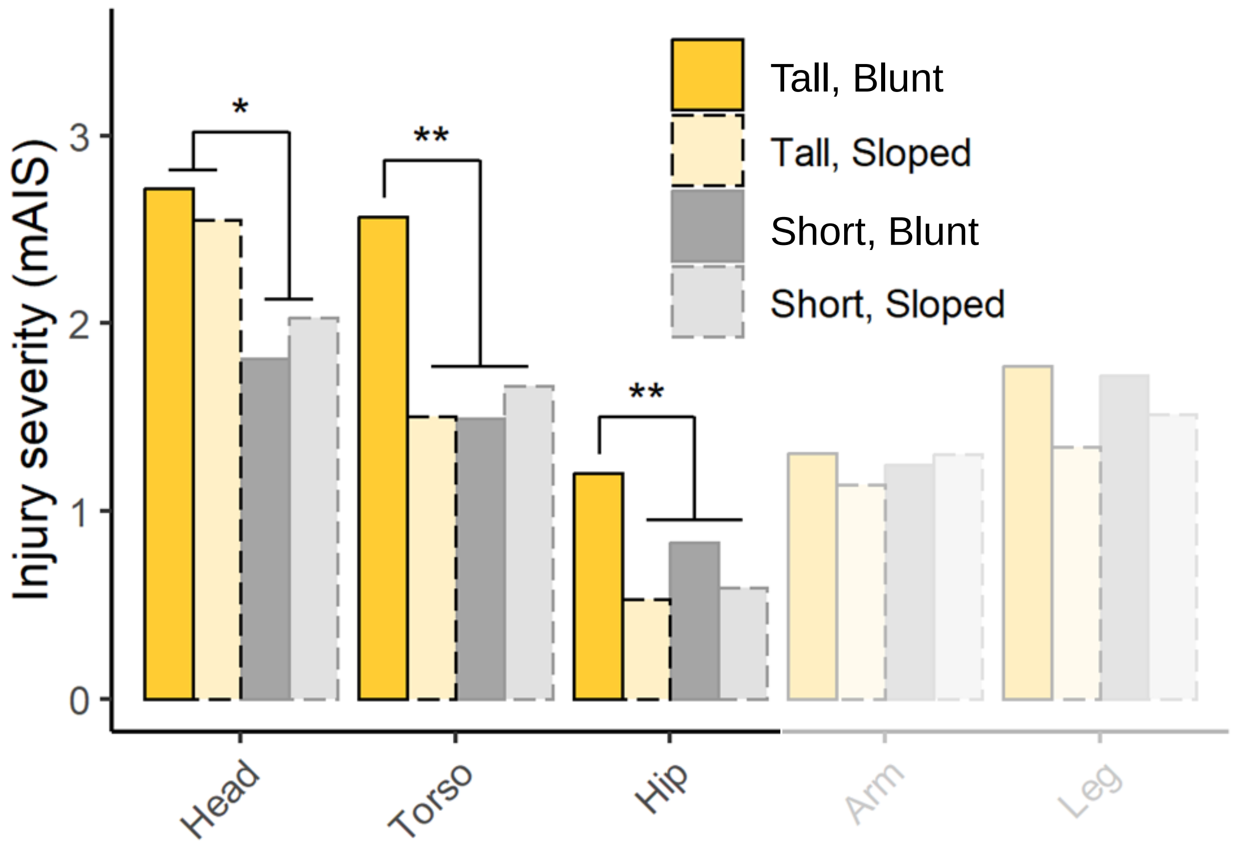


Excess injury risk stems from differences in torso, hip, head injuries

Analysis of 121 in-depth pedestrian crash records between 2015-21

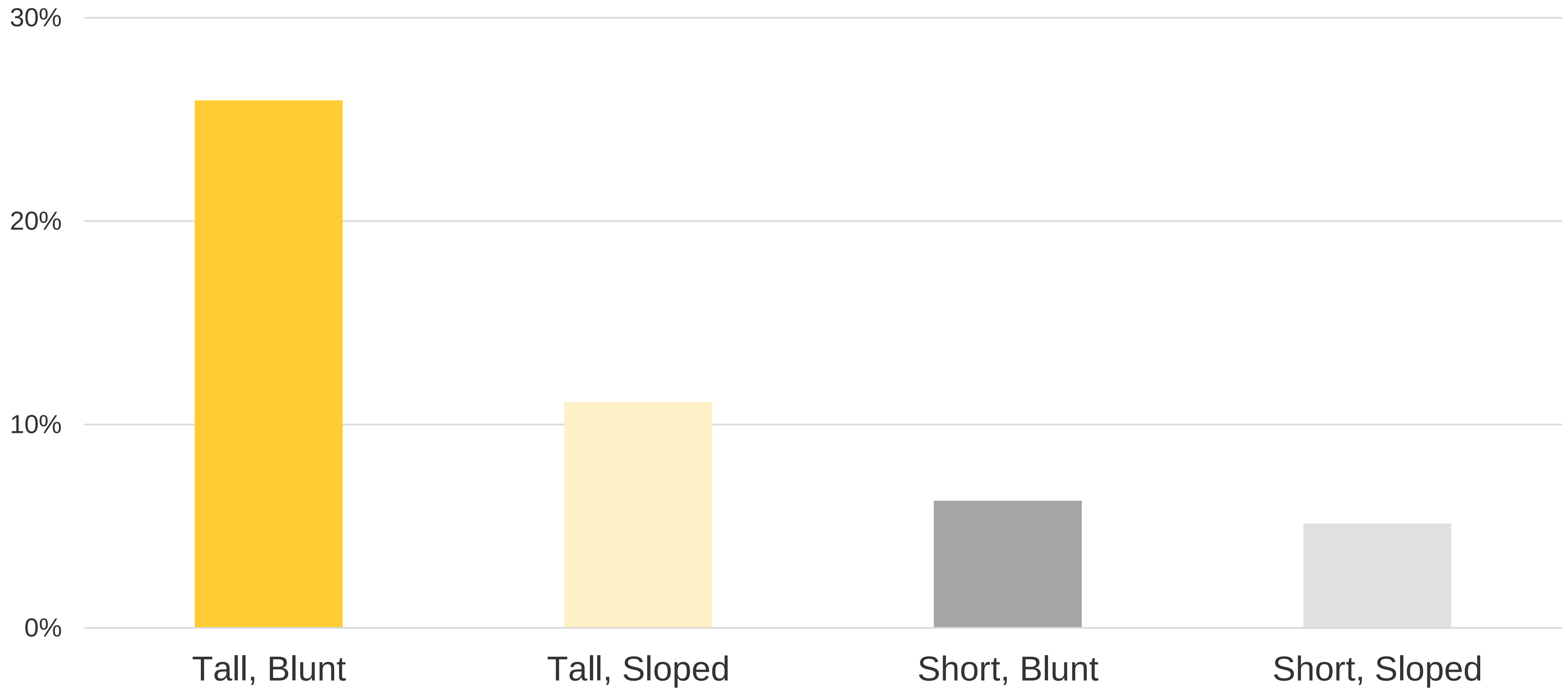
- Tall vehicles injured head **more severely**
- Tall, blunt vehicles injured torso, hip **more often** and **more severely**





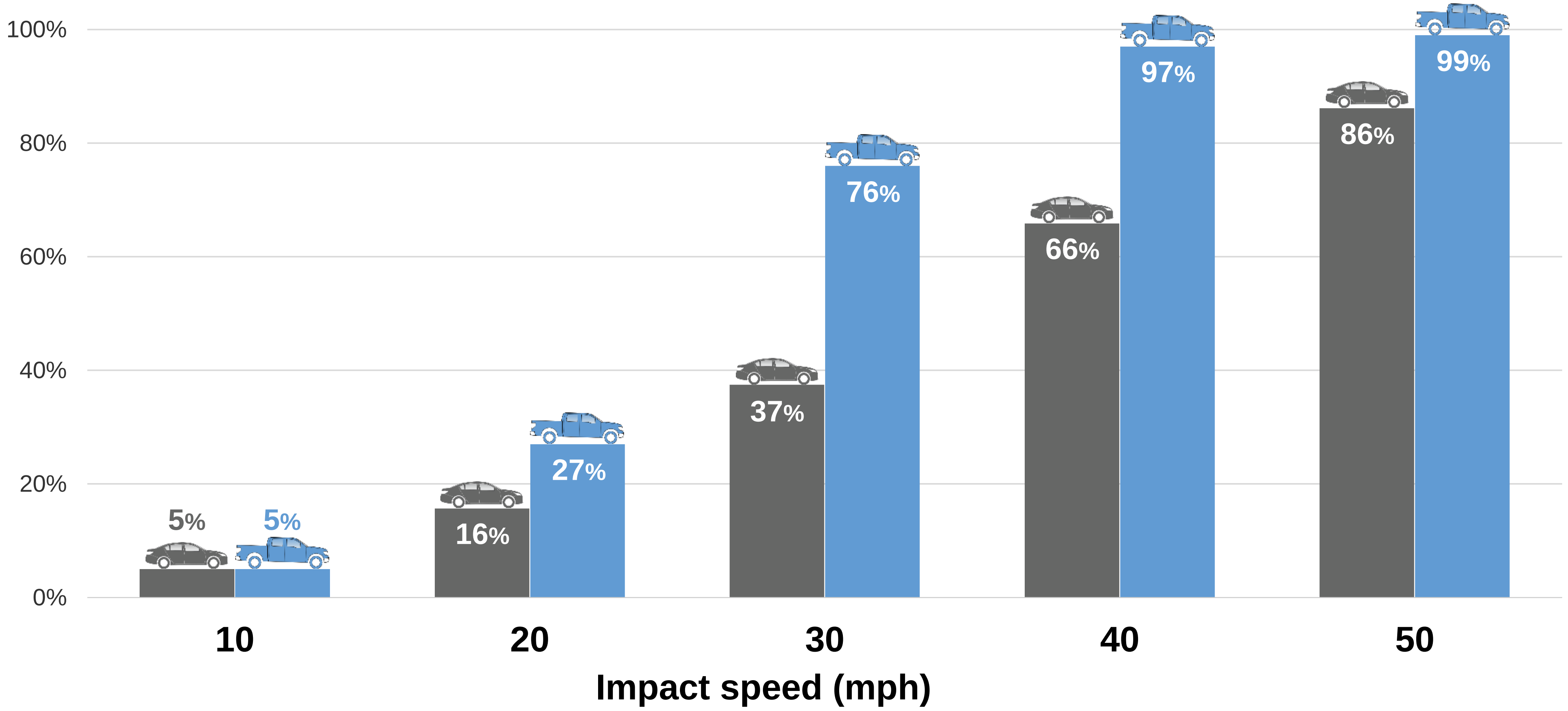
Percent of pedestrians thrown forward after impact by striking vehicle front-end shape

In crashes with moderate or greater injury severity (AIS 2+), from in-depth crash investigations

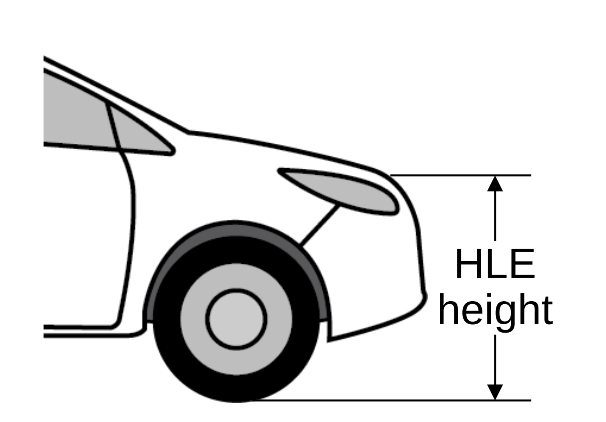


Risk of serious injury to a struck pedestrian by impact speed for median car and median pickup

Monfort, 2024



Measurements for analysis

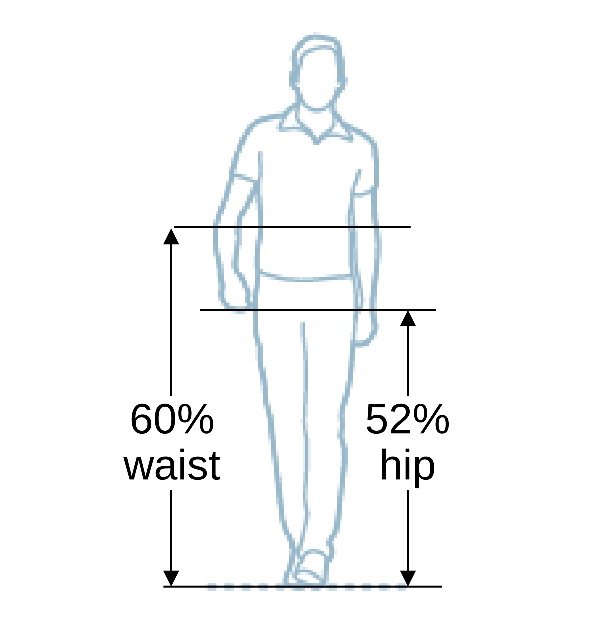


Categories for study

HLE<Ped – both pedestrian hip and waist are above vehicle HLE height

HLE=Ped – pedestrian hip is below, ped waist is above HLE

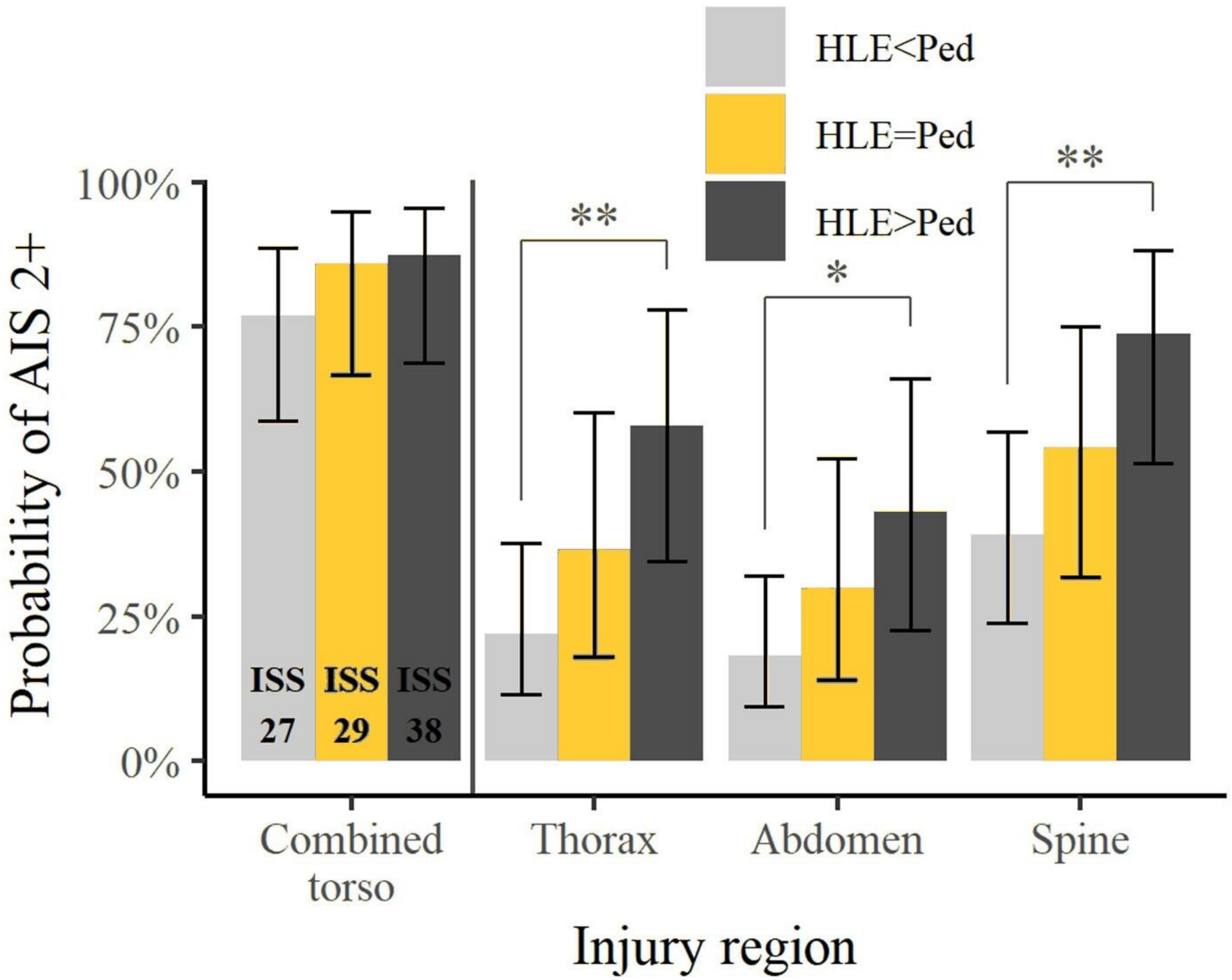
HLE>Ped – pedestrian hip and waist are below HLE



Factors to compare

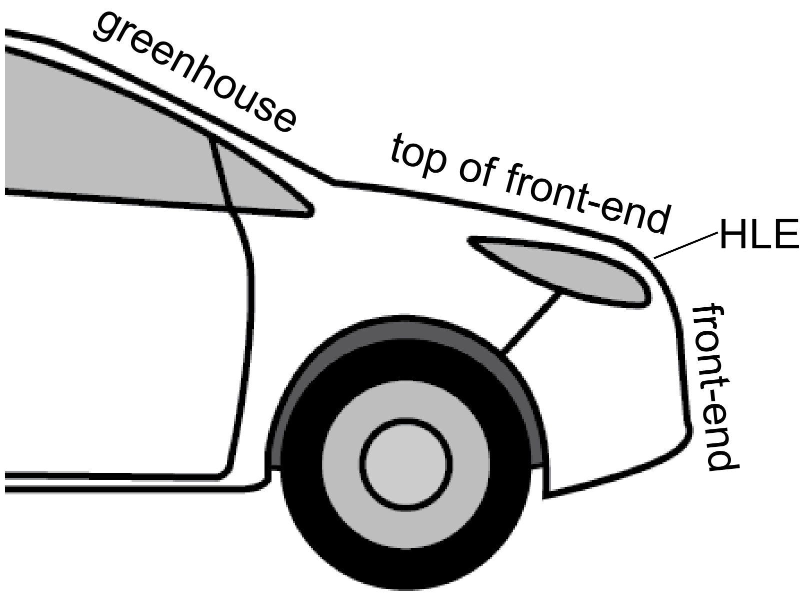
- MAIS for thorax, abdomen, spine and injury sources
- Combined torso: thorax, abdomen, spine and source of max severity injury

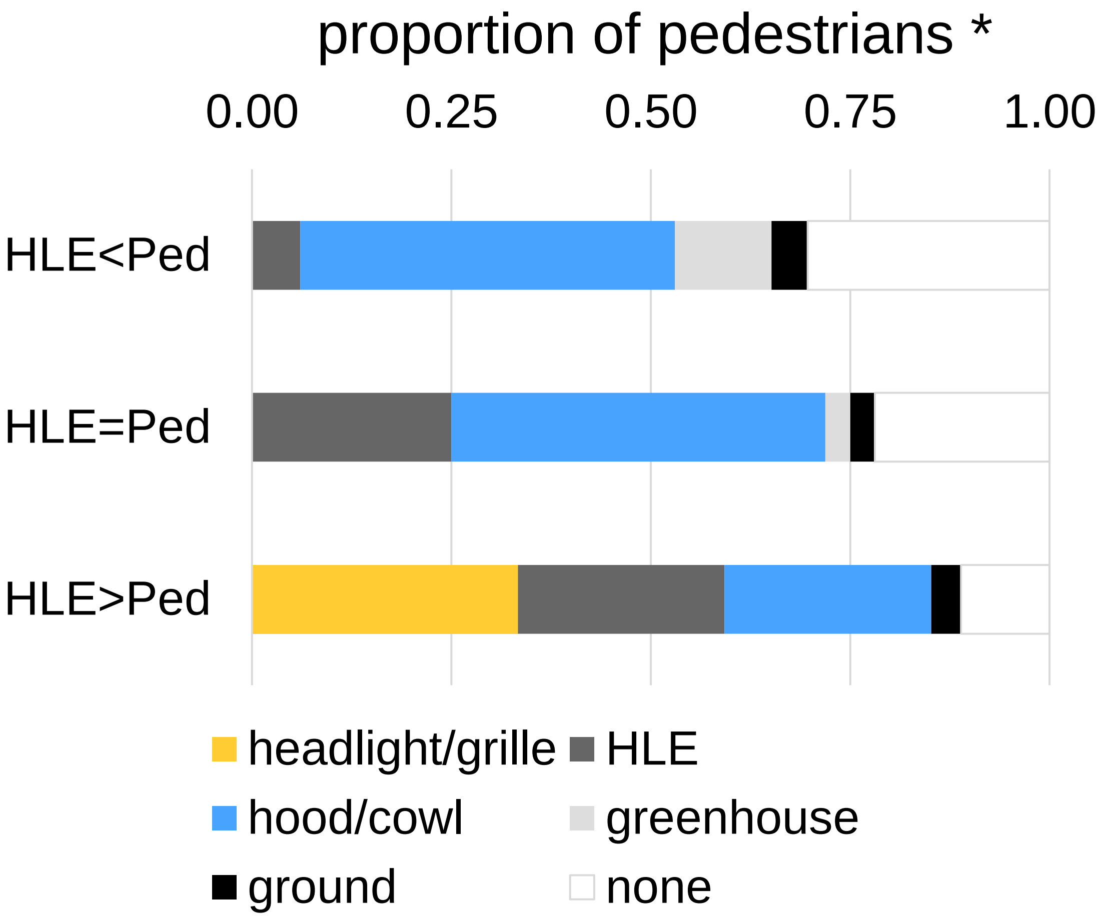
Probability of MAIS 2+ torso injuries by vehicle height category



Logistic regression controlling for age, sex, impact speed and pedestrian orientation * p<0.05; ** p<0.01

Injury source for MAIS2+ torso injury

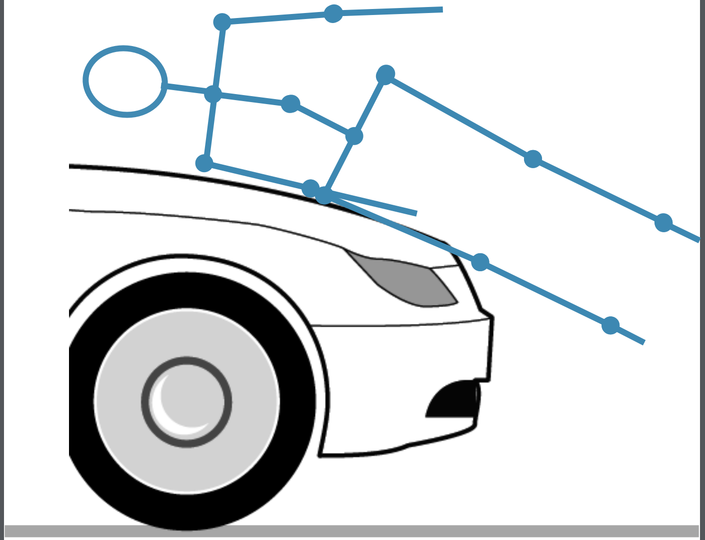




Chi-squared statistical test p=0.05 significance *p<0.001

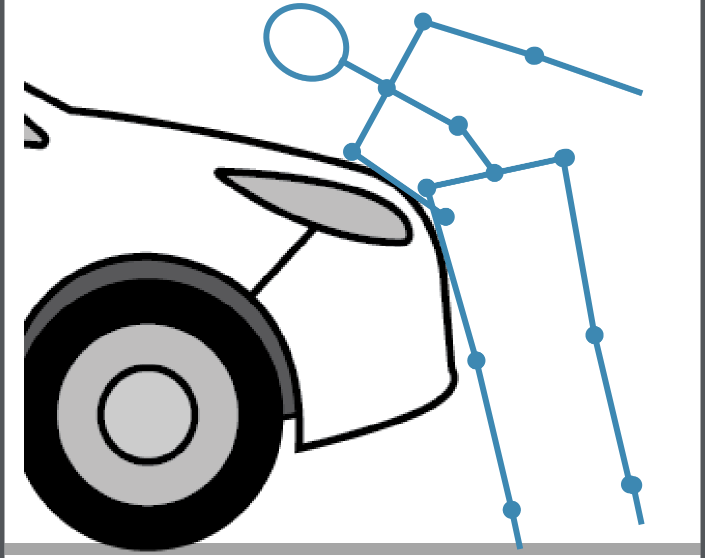
Torso kinematics and relative vehicle height

HLE<Ped



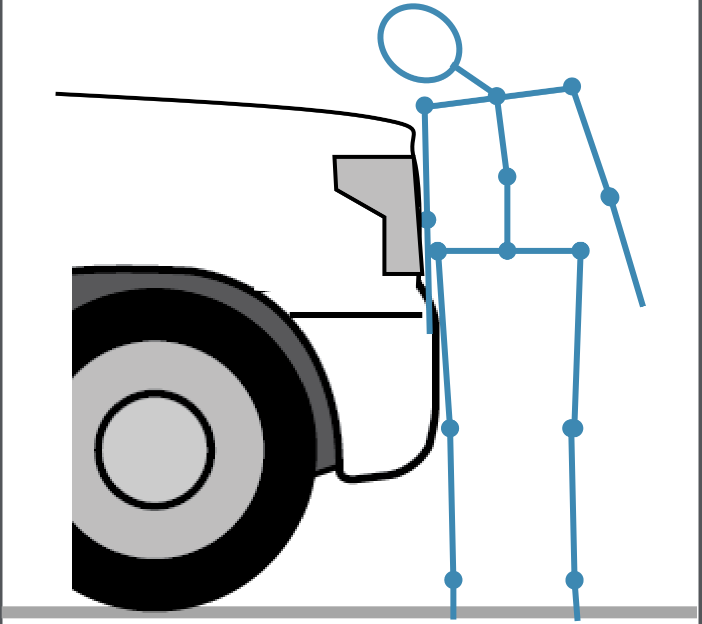
Hip above HLE
Waist above HLE

HLE=Ped



Hip below HLE
Waist above HLE

HLE>Ped



Hip below HLE
Waist below HLE

Summary

- This study examined US pedestrians struck by 2009-22 model year cars, SUVs and pickups for torso injury patterns.
- First to specifically examine late model SUVs and pickups in the context of impactor testing scenarios to identify that within this group of vehicles, the tallest vehicles (large SUVs and pickups) are associated with different vehicle torso injury sources.
- The tallest vehicles (large SUVs and pickups) are associated with the largest proportion of AIS2+ torso injuries resulting from pedestrian torso impacts with the front headlights, grille, and HLE, compared to medium and short vehicles with injuries from the hood and greenhouse.
- Tallest vehicles should not be ignored or exempted from pedestrian vehicle assessments, but more research is required to ensure testing conditions promote countermeasures that are real-world relevant

Ongoing research project

Principal Investigator: Jingwen Hu, PhD

UMTRI TRANSPORTATION RESEARCH INSTITUTE UNIVERSITY OF MICHIGAN

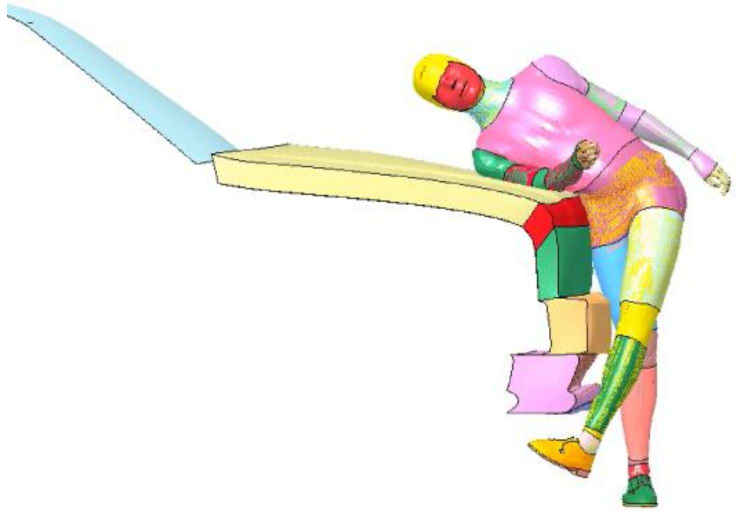
Research Objective

Use finite element (FE) vehicle and human body models to investigate effects of vehicle front-end geometry and stiffness characteristics on pedestrian injuries

- Tall boxy front-end vehicles such as midsize and large SUVs and pickups
- Torso injuries, some limited information on other body regions

Parametric study

A parametric simulation study (n~=300) will be conducted with combinations of vehicle front-end geometries, human body models and impact velocities



Inputs → **Outputs**

Inputs

- Vehicle front-end geometry based on PCA results
- Vehicle front-end material properties
- Impact speed 30 - 50 kph
- Pedestrian (M95, M50, and F05 GHBMC-PS models)

Outputs

- Torso landmark contact locations
- Wrap around distance (WAD)
- Torso impact velocity and angle
- Ribcage deformation
- Maximal principal strain
- Injury measure to other body regions

Informing the outsized pedestrian torso injury risk associated with taller vehicles

Simulation study provides insight

- Understanding torso injuries and sources for a category of vehicles (vehicle type/HLE height)
- Understanding torso injuries and sources across vehicle categories (vehicle type/HLE height)
- What are potential types of effective tall vehicle countermeasures for pedestrian torso protection

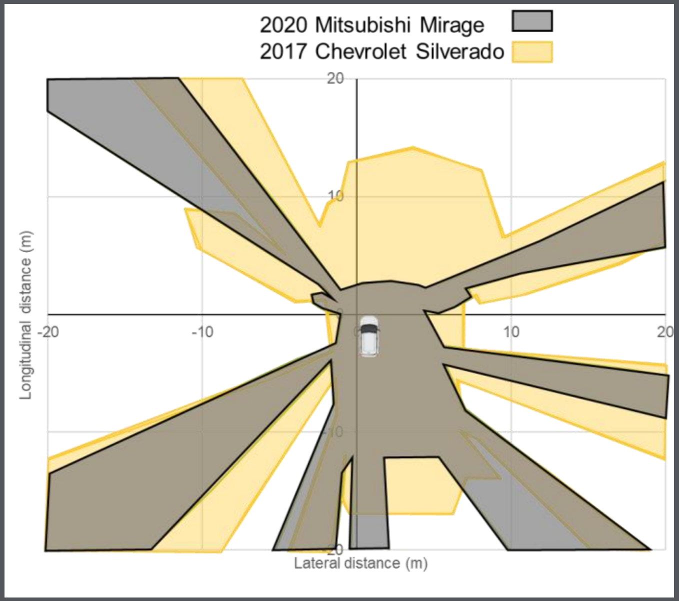
Expected study completion Q4 2025

The role of vehicle blind zones in pedestrian crashes

Results to be shared later in 2025

Ongoing research

- Creation of comparative visibility maps for vehicle models
- Provides guidance to vehicle manufacturers to minimize blind zones associated with common pedestrian scenarios (left turn, crosswalks)
- Informs consumers about vehicles that provide them better direct vision



Insurance Institute for Highway Safety
Highway Loss Data Institute

iihs.org

/iihs.org
@IIHS_autosafety
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@iihs_autosafety

THANK YOU

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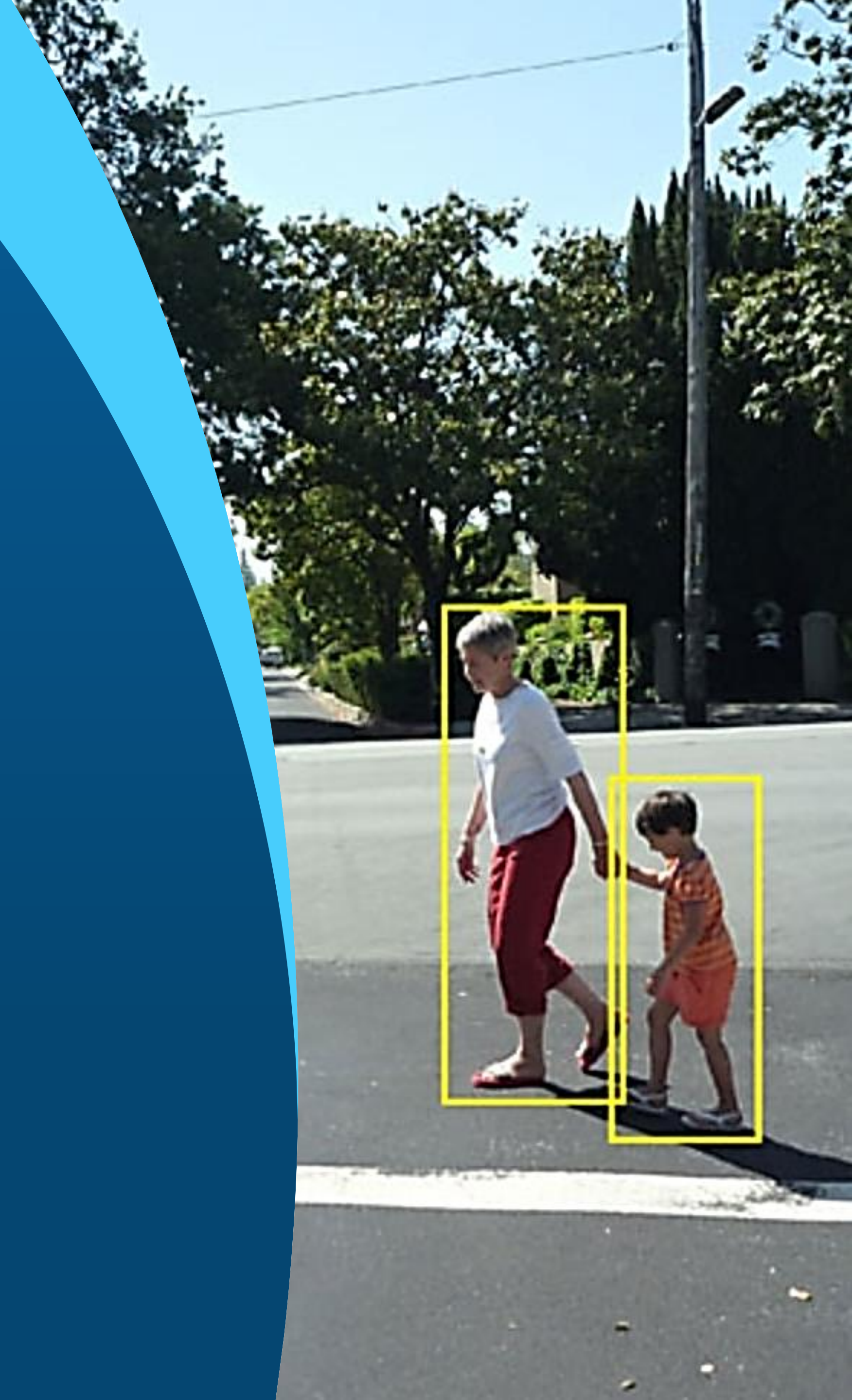
AAA’s evaluation of pedestrian detection systems



Greg Brannon

Director of Automotive Engineering and Research, AAA

Educating consumers on the effectiveness of emerging vehicle technologies

Blind-spot warning
Automatic emergency braking
Dynamic parking assistance
Dynamic driving assistance (L2)

Rear cross traffic warning
Lane departure warning
Adaptive cruise control
AEB with pedestrian detection

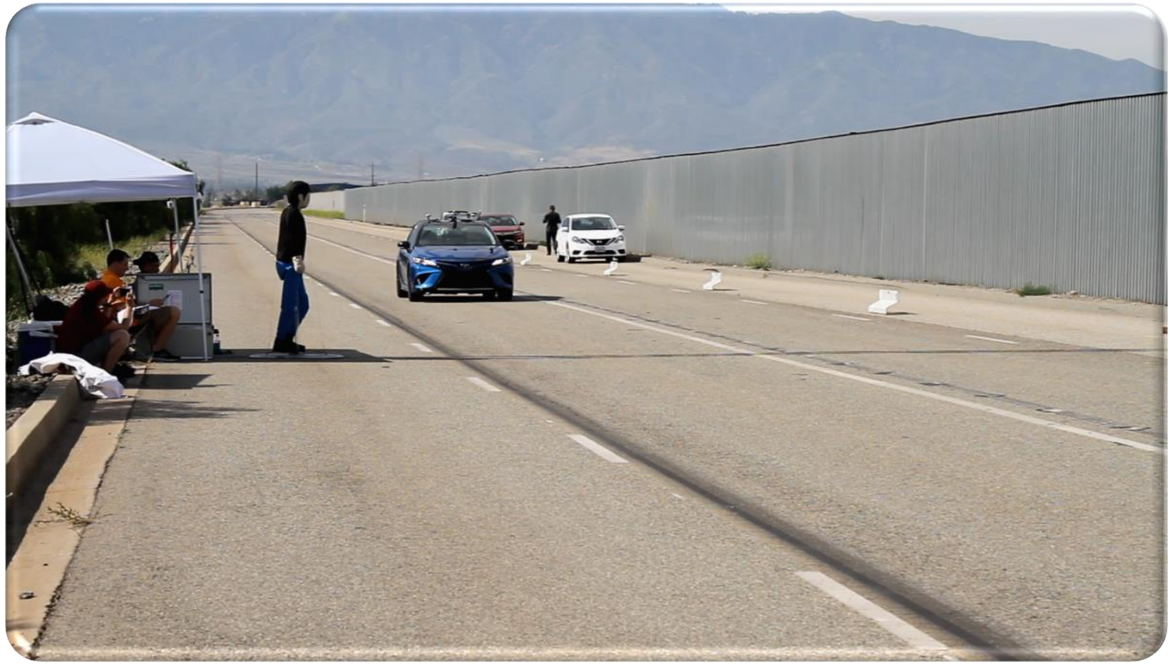
Testing goals

How do vehicles equipped with pedestrian detection systems perform:

- when encountering an adult pedestrian crossing the roadway
- when encountering challenging vehicle/pedestrian interactions, such as
    - A child pedestrian
    - A pedestrian immediately after a right curve
    - Two pedestrians alongside the roadway
- at night

Findings: Adult crossing the road

- At 20 mph:
  - 100% visual notification
  - A collision with the pedestrian was avoided 40% of the time
- At 30 mph, only one test vehicle avoided collision with the pedestrian in 2 out of 5 runs
- A significant degree of variability was noted for the same test vehicle within the same scenario



Findings: Child darting into traffic

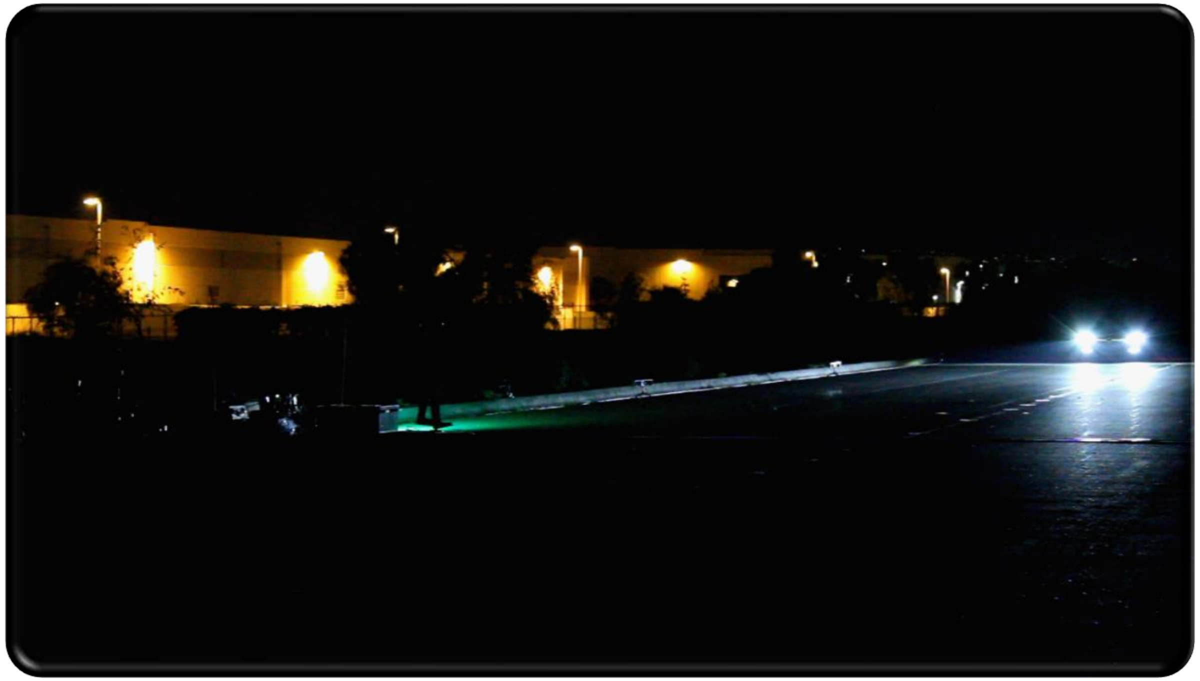
- At 20 mph, a collision occurred 89% of the time
- At 30 mph, none of the test vehicles avoided a collision with the pedestrian
- Consistent with stated limitations regarding children

Findings: Two adults on the road

- At 20 mph, a collision occurred 80% of the time
- At 30 mph, only one test vehicle avoided collision with the pedestrian in 1 out of 5 runs
- Consistent with stated limitations regarding pedestrian detection challenges

Findings: Nighttime driving

- Pedestrian detection systems were ineffective
- Consistent with stated limitations regarding poor visibility/nighttime driving



AAA's recommendations

Drivers:

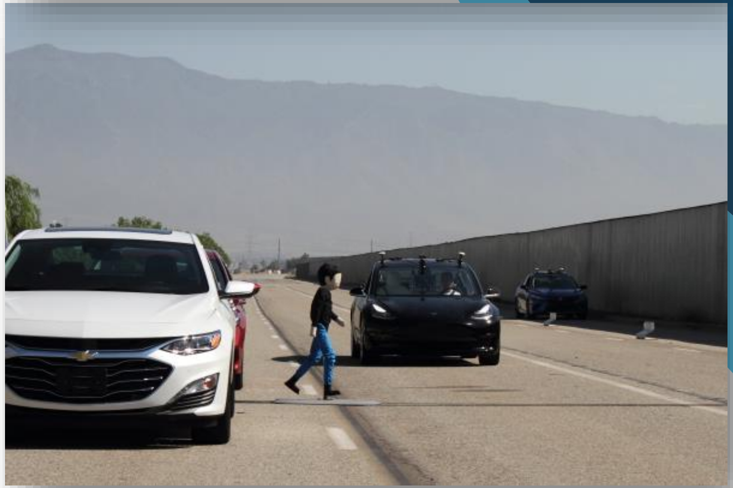
- Never rely on pedestrian detection systems to avoid a collision.
- Become familiar with ADAS features on the vehicle

Auto manufacturers:

- Enhance effectiveness in nighttime conditions

Roadway Planners:

- Overhead lighting
- Pedestrian crosswalks



DISCUSSION

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Thank You

Improving Pedestrian Safety Through Vehicle Design and Technology…and Implications for Infrastructure Planning and Ops

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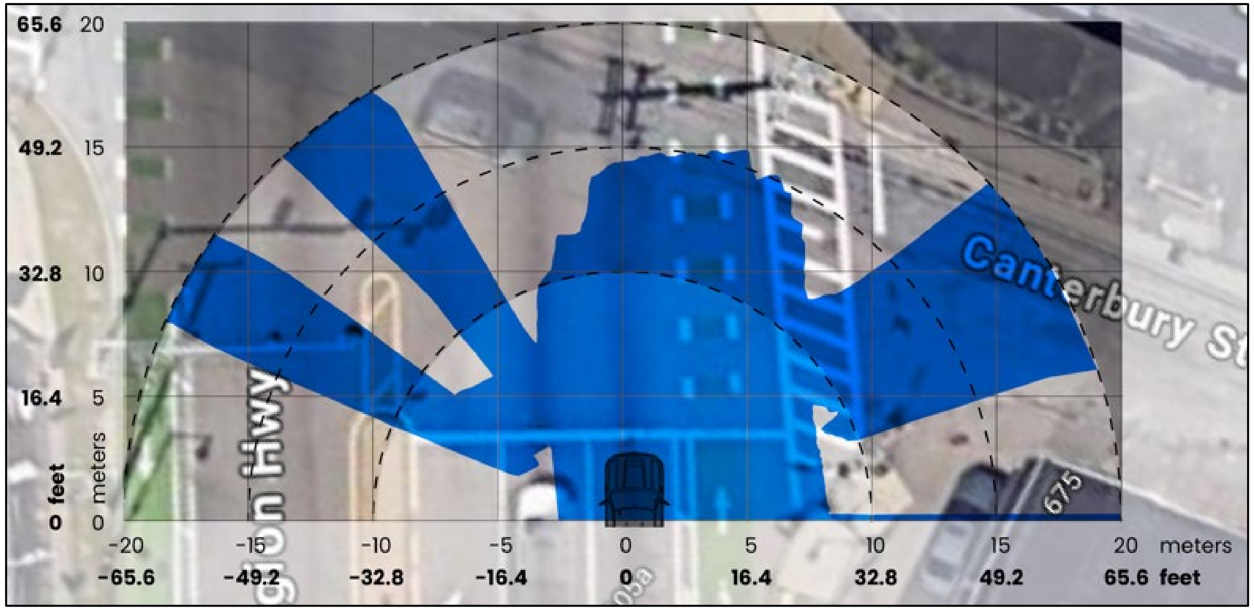

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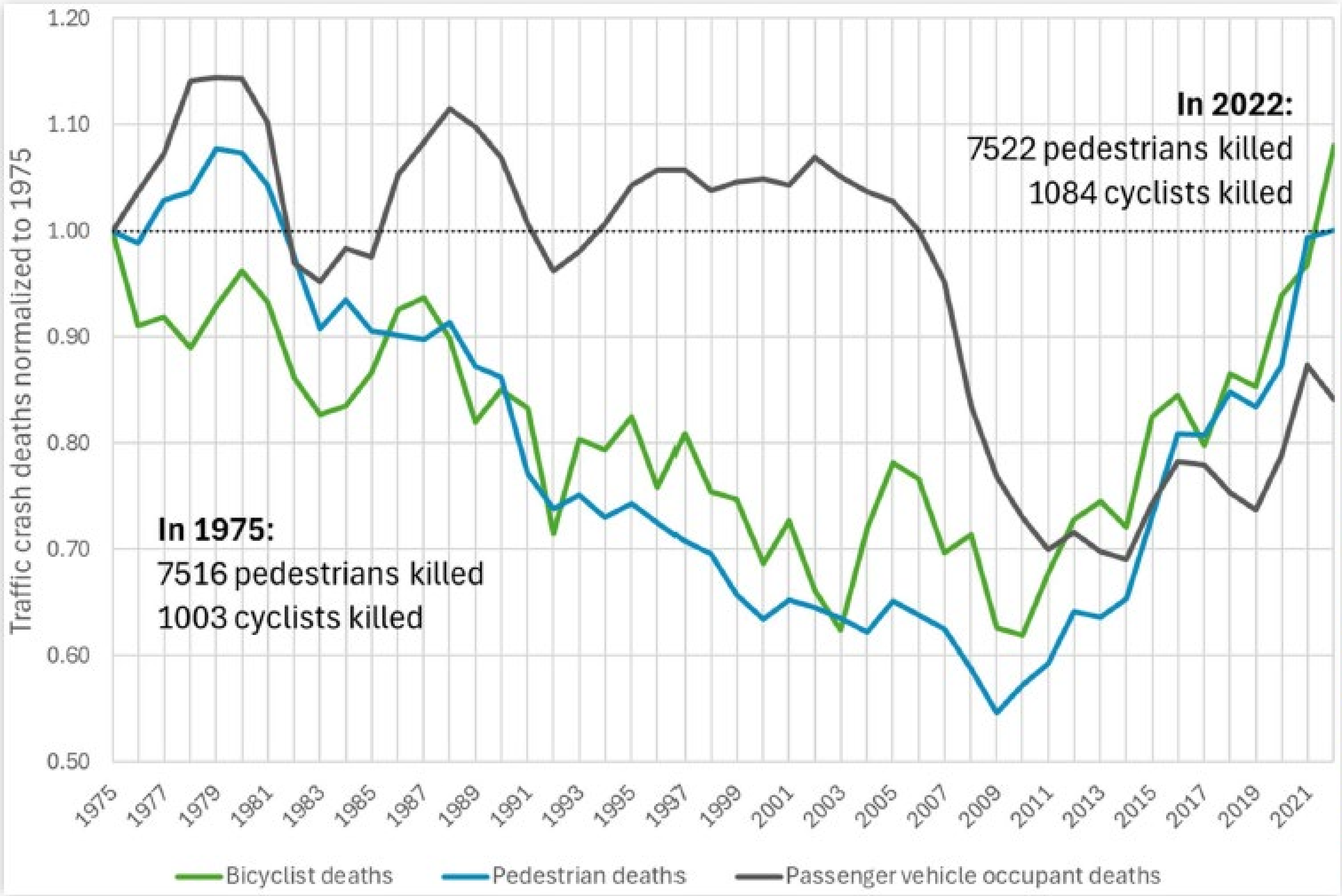
Why This Matters

FIGURE 1 Pedestrian, bicyclist, and passenger vehicle occupant deaths in the United States, 1975–2022. (Data taken from Ref. [3, 4].)



2025 US DOT Office of the Assistant Secretary for Research and Technology and US DOT Volpe National Transportation Systems Center

ANNUAL **FATALITIES**

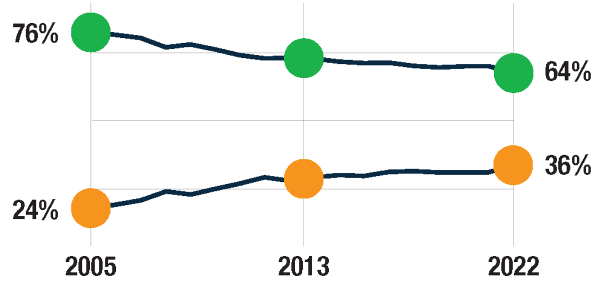
Between 2009-2022 fatalities increased by 81.7% for people walking and biking. In 2022 alone, the increase was 20.2%.

Total Increase in Fatalites 2009-2022

81.7%

INSIDE VS OUTSIDE

In 2022, 64% of fatalities were from users inside a vehicle and 36% outside a vehicle.



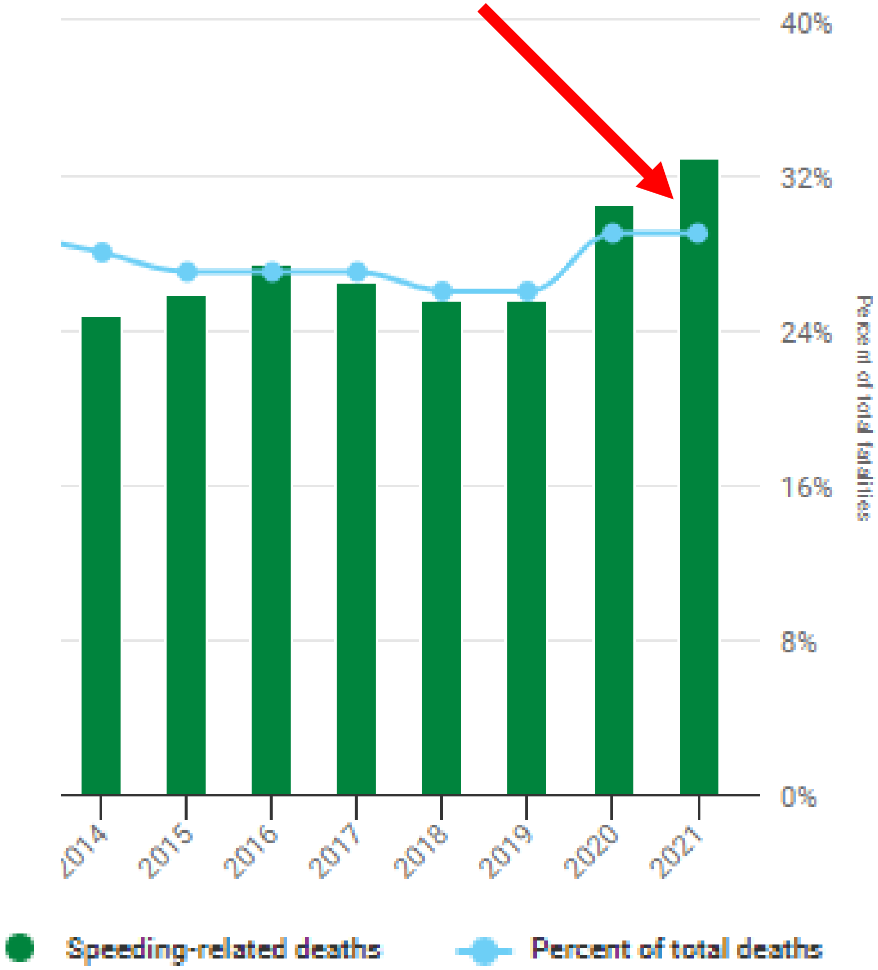
INSIDE VEHICLES

OUTSIDE VEHICLES

Sample of Safety Issues and Countermeasure Research

Speeding is killing

Speeding is implicated in **about 30% of traffic fatalities** and rising.



Source: National Safety Council

U.S. Department of Transportation Volpe Center

Current solutions to speeding

	Speeding reduction?	Fast to deploy?
Reduced speed limits	◔	◑
Speed feedback signs	◔	◕
Automated enforcement	◑	◑
Changed road design	◕	◔
Intelligent Speed Assistance	●	●

Limited speed reduction

Takes time to deploy

Fast and effective

Also: 3-10% fuel savings

The Washington Post
Democracy Dies in Darkness

Virginia

Va. to become first state to make speeding impossible for some drivers

D.C. has a similar law that will use high-tech equipment to force cars to obey the speed limit.

March 27, 2025

NTSB Calls for Technology to Reduce Speeding in All New Cars

11/14/2023

NTSB | National Transportation Safety Board

European Commission

Intelligent speed assistance (ISA) set to become mandatory across Europe

4 WASHINGTON 42°

TRENDING Weather alert Mardi Gras Discover Black Heritage Valentine's Day...

ROAD SAFETY

DC approves requiring 'speed governor' devices on dangerous drivers' cars

NYC DCAS Citywide Administrative Services

In January 2023, the city announced the initiative's early success with fleet vehicles staying within the set speed limits for 99% of miles driven.

Photo: NYCDCAS

The New York City fleet is getting a major expansion of the DCAS Intelligent Speed Assistance (ISA) program thanks for nearly $30 million in federal funding through the Safe Streets and Roads for All program.

MAYOR OF LONDON LONDONASSEMBLY

Speed-limited buses effective 'safety car' on 20mph streets

13th September 2018

ISA is available aftermarket and use is growing

SAFESPEED®
powered by MAGTEC

Advanced Intelligent Speed Assist (ISA)

STURDY

SpeedIQ

E-SMART

ISA-FIT

SCHUSTER

WESTERN EXPRESS INC.

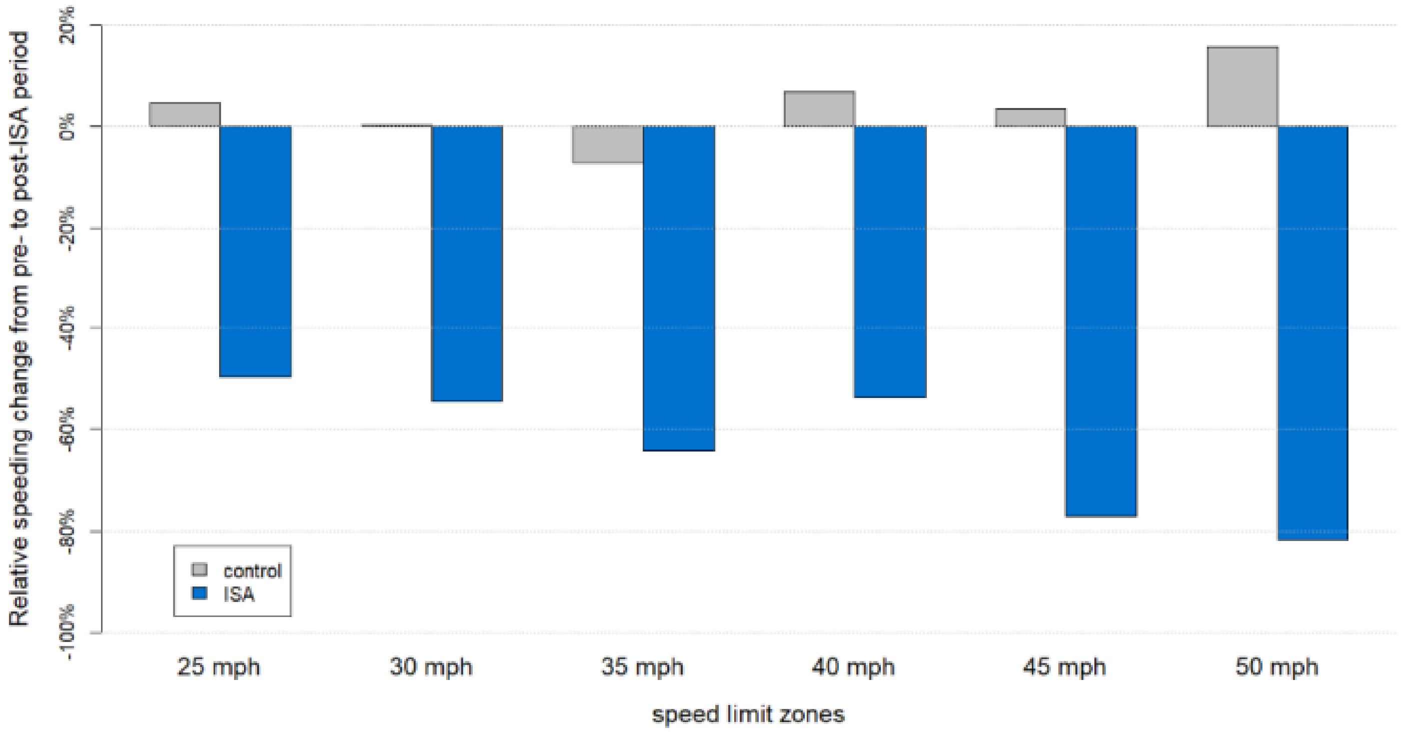
NAVAJO EXPRESS, INC.

Coca-Cola

ARNOLD Transportation Services

NYC DCAS Pilot Evaluation

- Effective at reducing severe speeding.
- 2.9 million miles driven
- **64% decrease in driving time speeding >11 mph over limit.**
- Effective even with habitual speeders
  - 49% decrease in speeding



U.S. Department of Transportation
Volpe Center


WATCH OUT FOR
BLIND ZONES
The risk of injury or death to vulnerable road users (VRUs) — pedestrians, pedalcyclists, and other non-vehicle occupants — has rapidly increased over the past 20 years.
Most pedestrian fatalities occur in the front of the vehicle.
U.S. Department of Transportation
Federal Highway Administration
For More Information: FHWA Pedestrian & Bike Safety - https://highways.dot.gov/safety/pedestrian-bicyclist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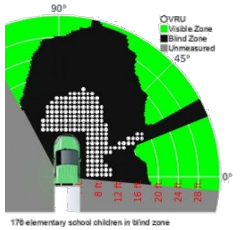
Large vehicles: blind zones

- Tall hoods, high beltlines, thick pillars
- > 700 fatalities/year

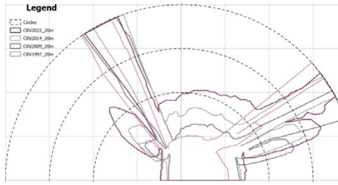

Direct Vision
Blind Zone
Indirect Vision
BOSTON
Public Schools
Focus on Children

Volpe blind zone research



Transportation Research Board

TRB



Transport for London

NACTO

TOGETHER FOR SAFER ROADS
COMPANIES DRIVEN TO SAVE LIVES

IIHS
Insurance Institute for Highway Safety

TfL-Volpe DVS info exchange
2017

NACTO best practice report
Mid 2018

NYC Fleet announcement on high vision cabs
Late 2018

Convened international DV stakeholder group with Transport Canada
Early 2020

Transport Canada

Driver simulation study; engaging external orgs 2021; new blind zone visualizations

TRB panel; Together for Safer Roads toolkit; Quebec standard 2024-25; IIHS collaboration; OST-R longitudinal, correlation studies; MassDOT study 2024

DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA

VIEW blind zone app development (w/ Olin/Santos)
2017-18

VIEW demo video with Republic Services
Late 2018

Santos Family Foundation funding for Volpe app development
2019

Engaging with UK researchers, NHTSA VRTC, and WI State Patrol
Mid 2020

VIEW validation study; Boston fleet rating prototype 2022; MA law mandating study; NYC Executive Order 39 (2024)

BNQ
Bureau de normalisation du Québec

Olin College of Engineering

SANTOS FAMILY FOUNDATION

NHTSA

Loughborough University

BOSTONIA CONDITA A.D. 1630.

NYC

massDOT
Massachusetts Department of Transportation

U.S. Department of Transportation
Volpe Center

Solution: high vision design

Low Vision

Crash rate: 87%

High Vision

Crash rate: 0%

Mitigation: advanced camera systems

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Longitudinal Analysis of Forward Blind Zone Changes in Popular Vehicle Models (1997–2023)

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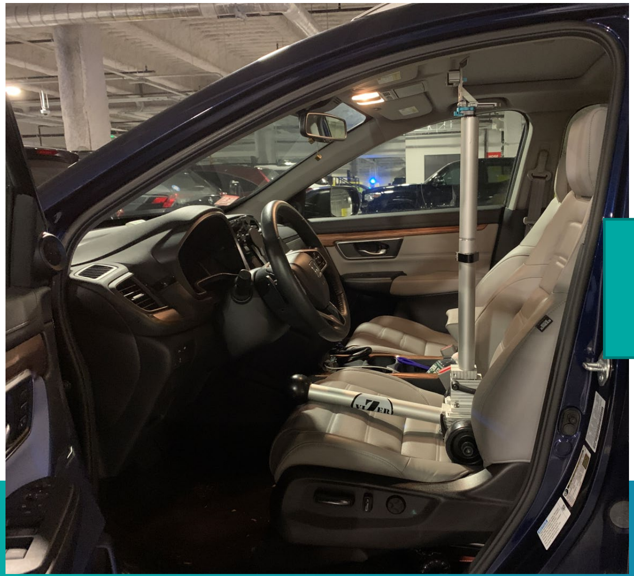
[2]U.S. Department of Transportation, USA
[3]Insurance Institute for Highway Safety, USA



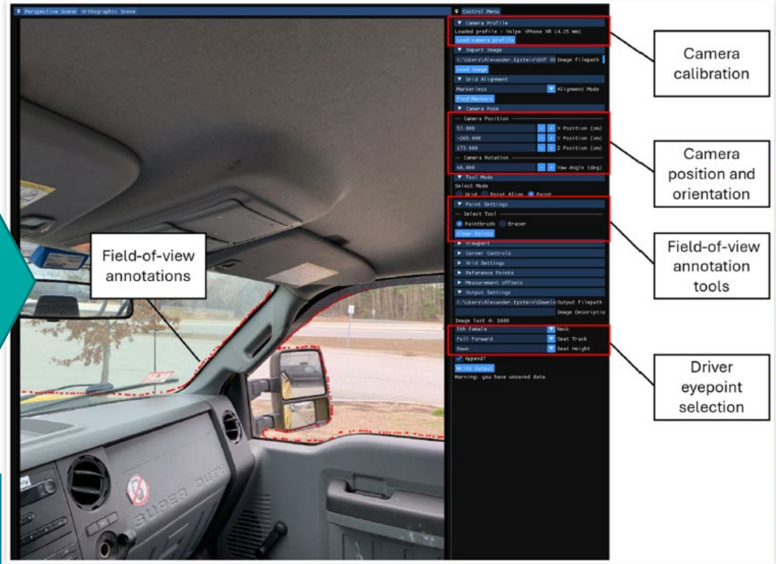
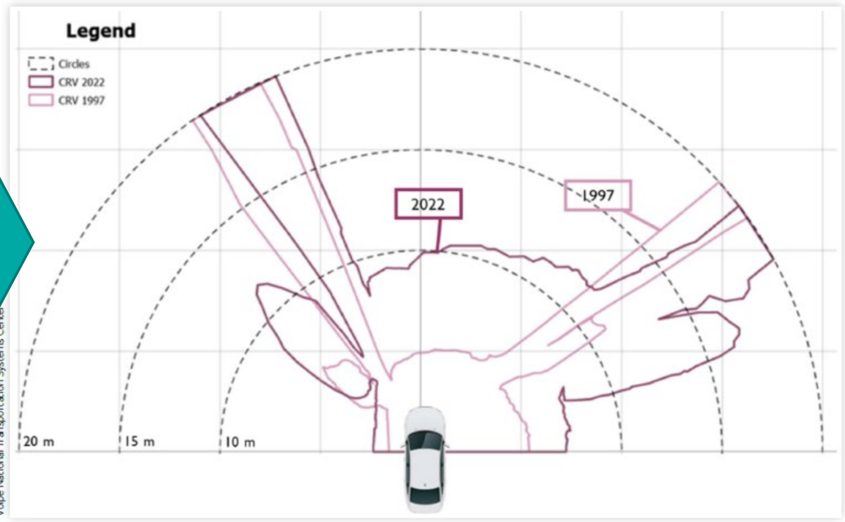
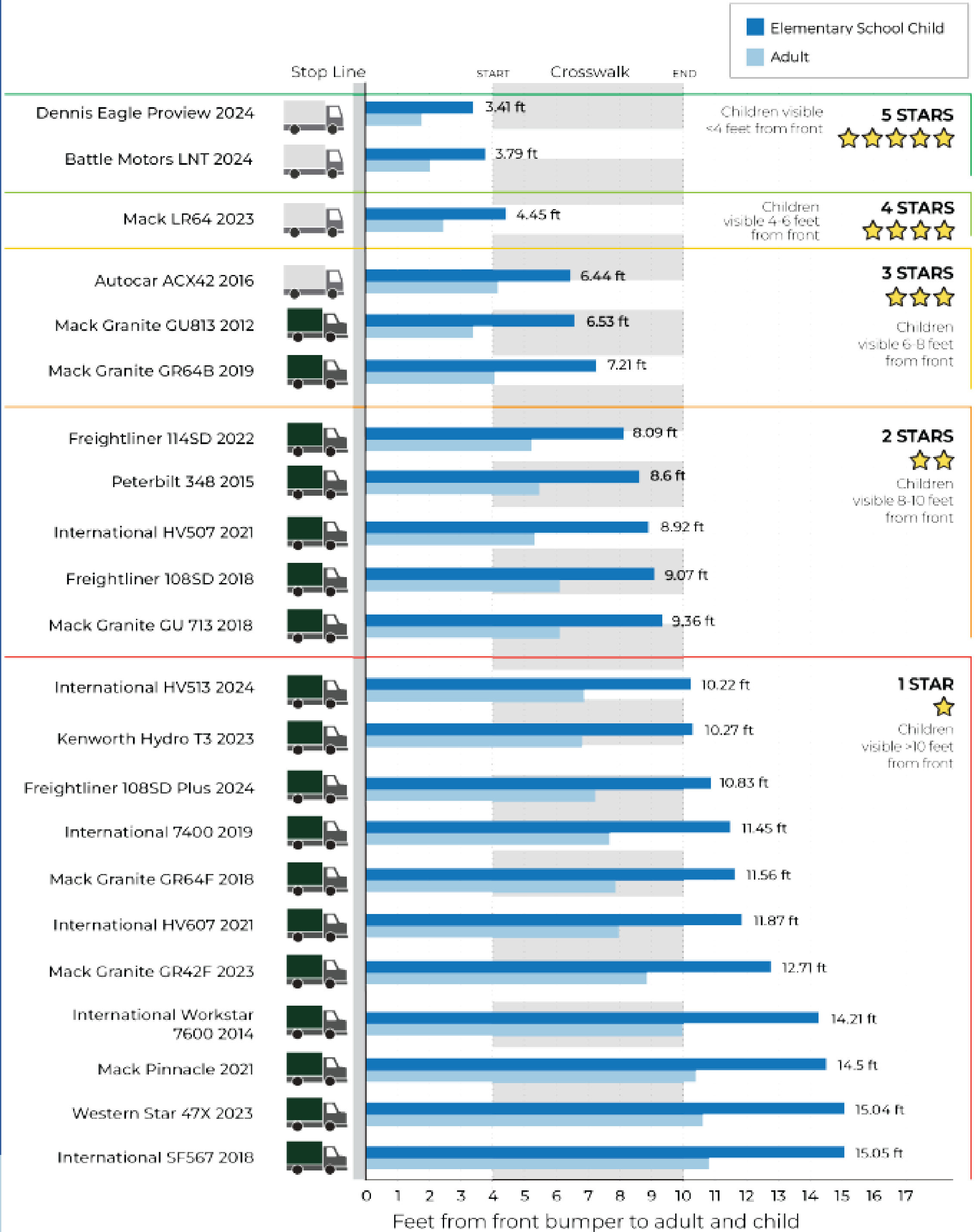


FIGURE 4 1997 and 2022 Honda CR-V overhead view showing nearest visible points at ground level for the forward 180°.

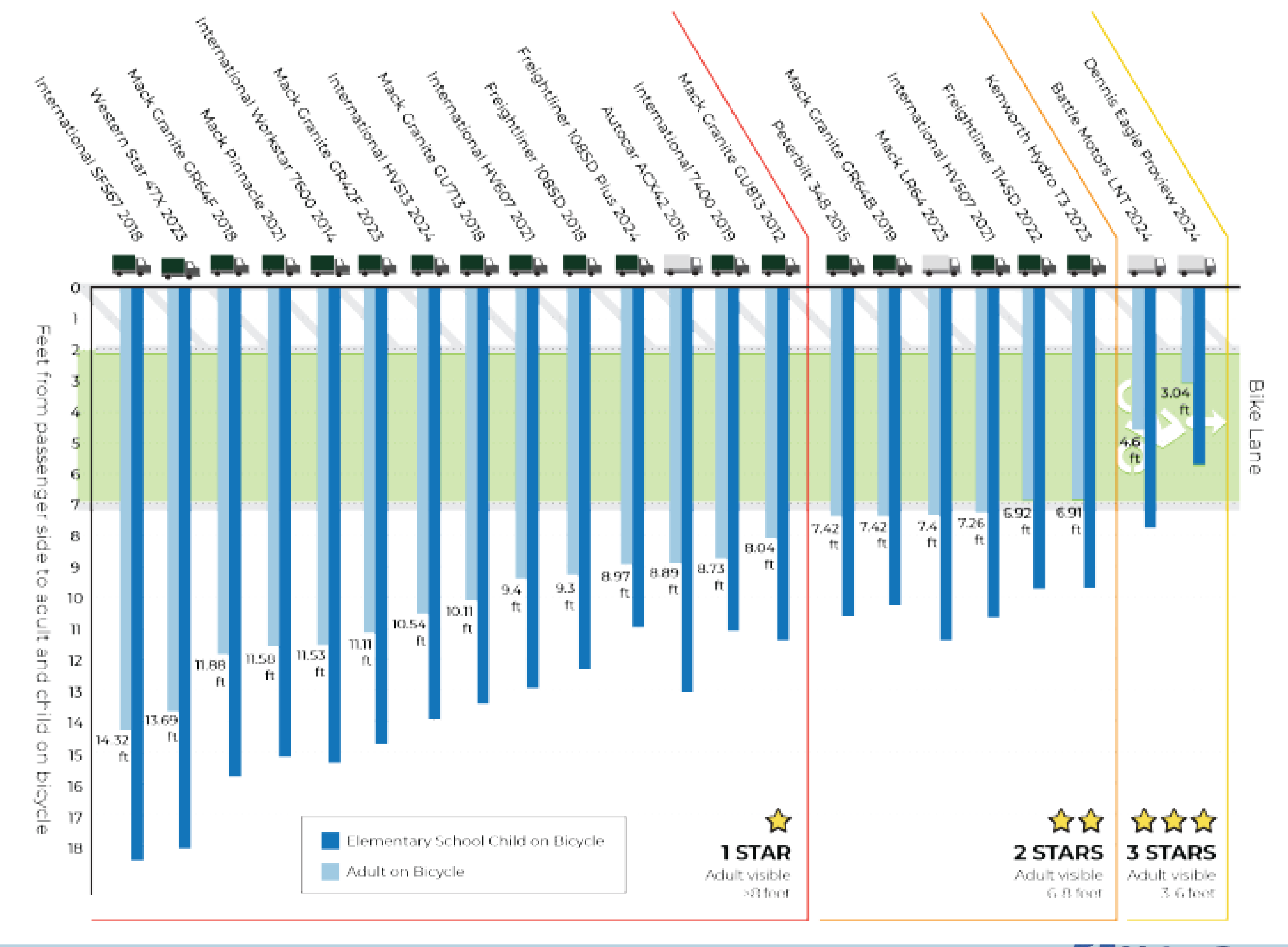



H13304
H14308
MB1553
Boston
PUBLIC WORKS

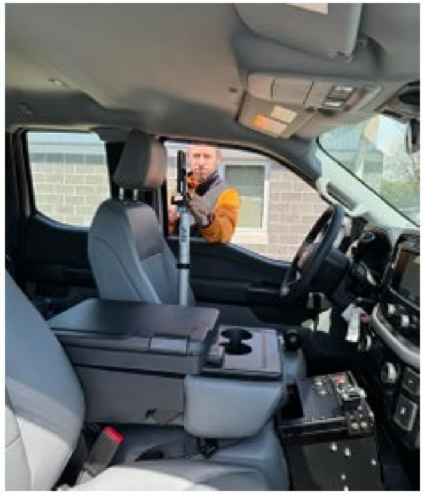
Nearest point at which an adult and child are visible to a driver in a standard crosswalk and stop bar overlaid with a five-star rating system for measured heavy-duty vehicles

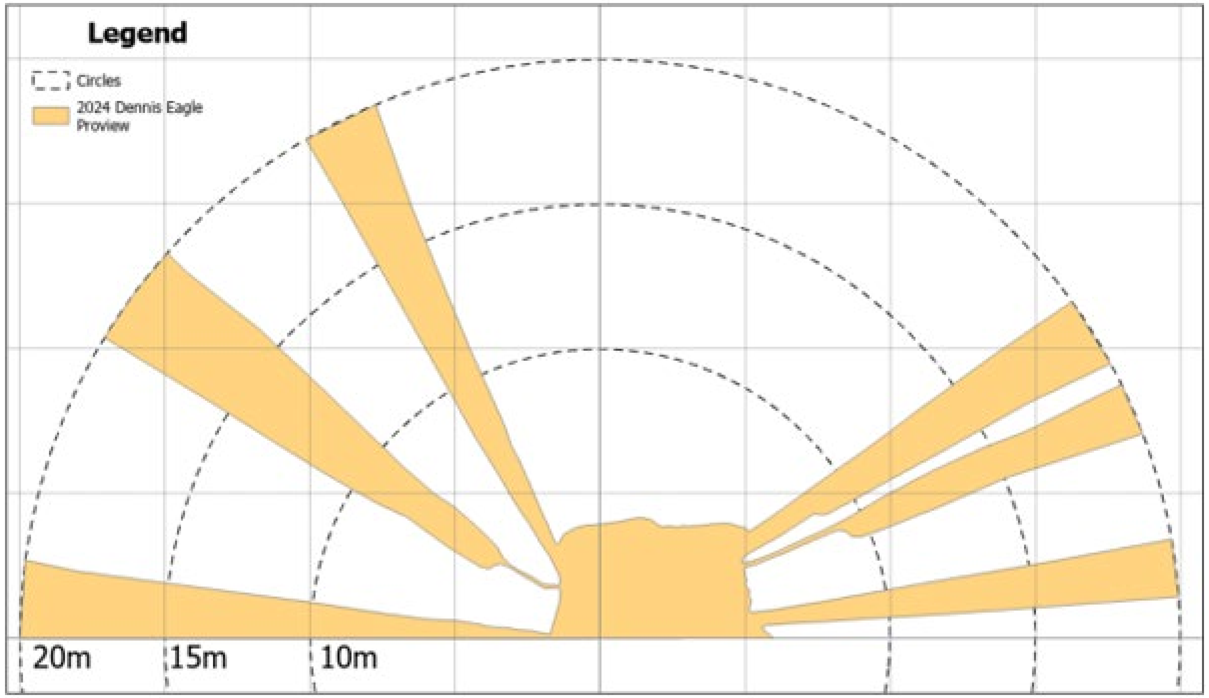


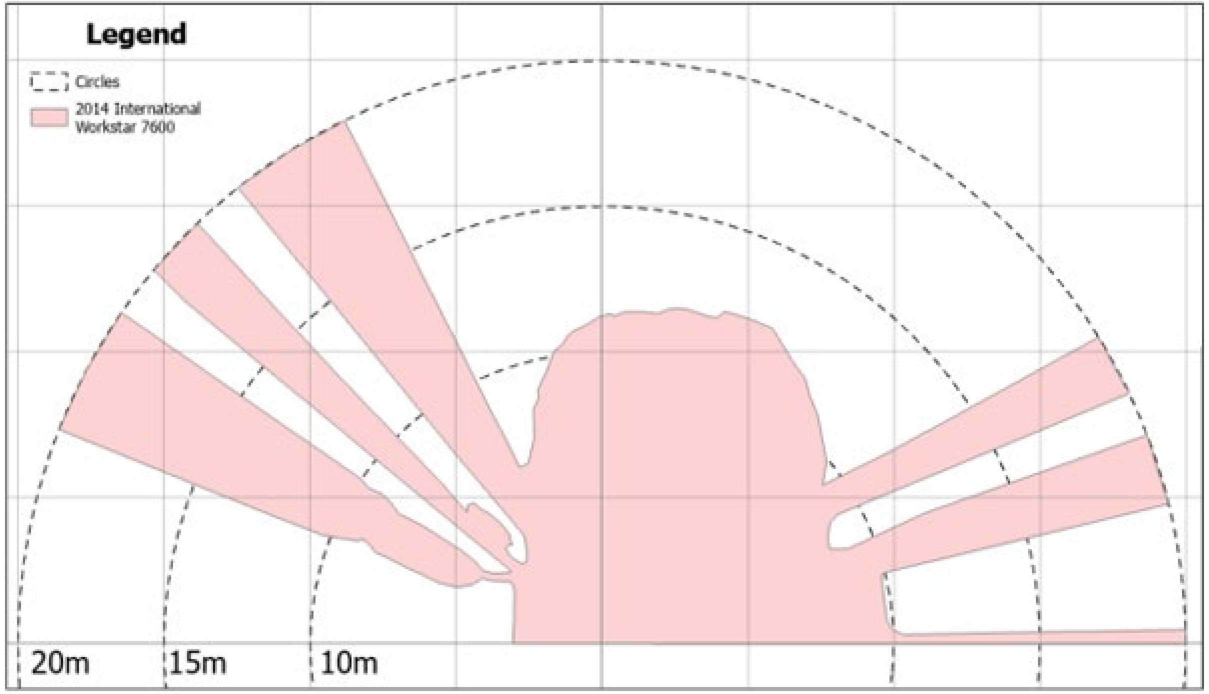
Nearest point at which an adult and child are visible to a driver in a buffered bike lane overlaid with a five-star rating system for measured heavy-duty vehicles



Direct Vision Study (MassDOT and OST-R)



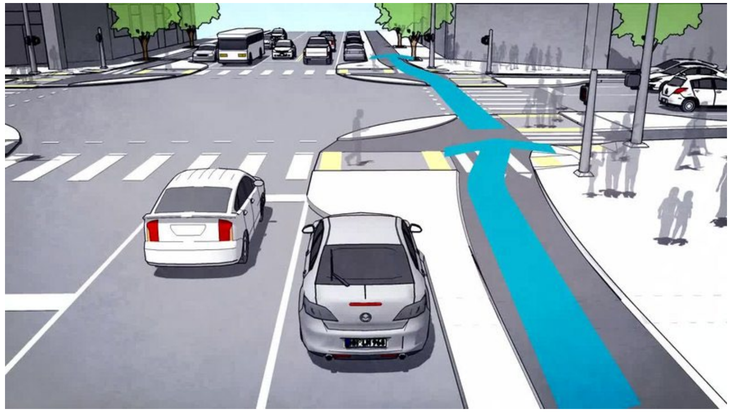


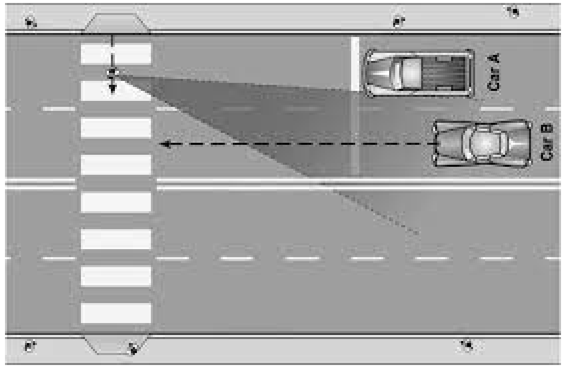


Geometric and operations-based safe street toolkit examples

- **How can we position road users in space and time to keep VRUs safely out of blind zones?**

- **Geometric design**
  - Protected intersections
  - Offsets
  - Raised crosswalks, bike lanes, and tables
- **Pavement markings**
  - Advance stop lines
  - Two-stage left box
  - Daylighting
- **Traffic control devices**
  - Near-side traffic signals
  - NTOR policy
  - LPI or exclusive ped phase
- **Modal priority networks**
  - Safe Routes to School
  - Bike networks
  - Truck routes

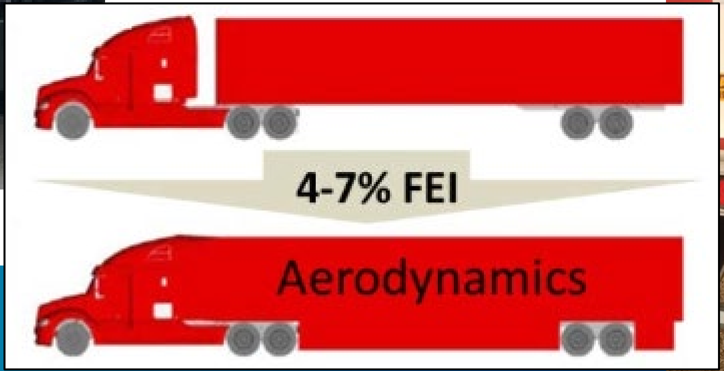




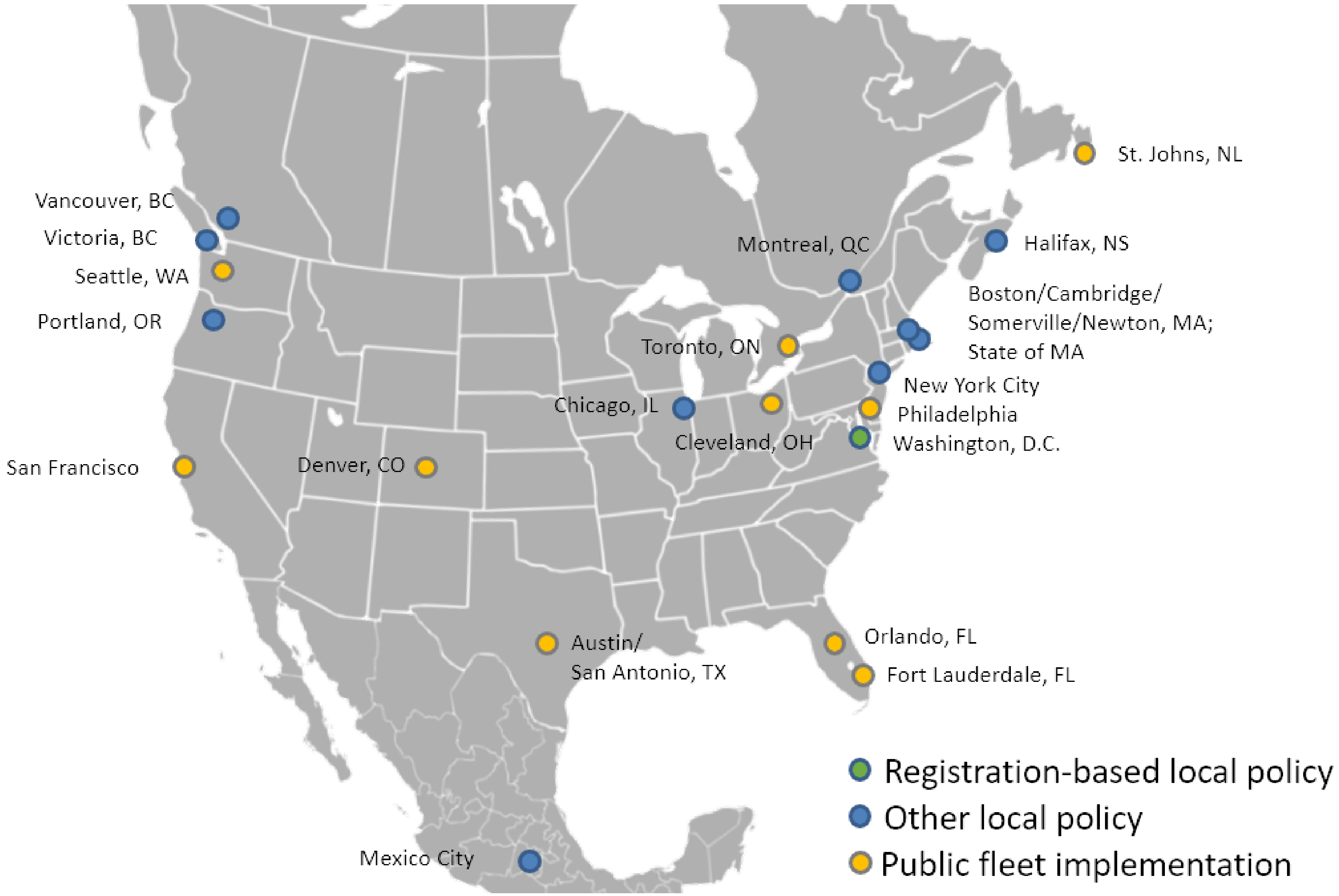
Fatal side impact crashes

- High open sides to fall under
  - Up to ~125 fatalities/year

Solution: Lateral protection devices including aerodynamic side guards

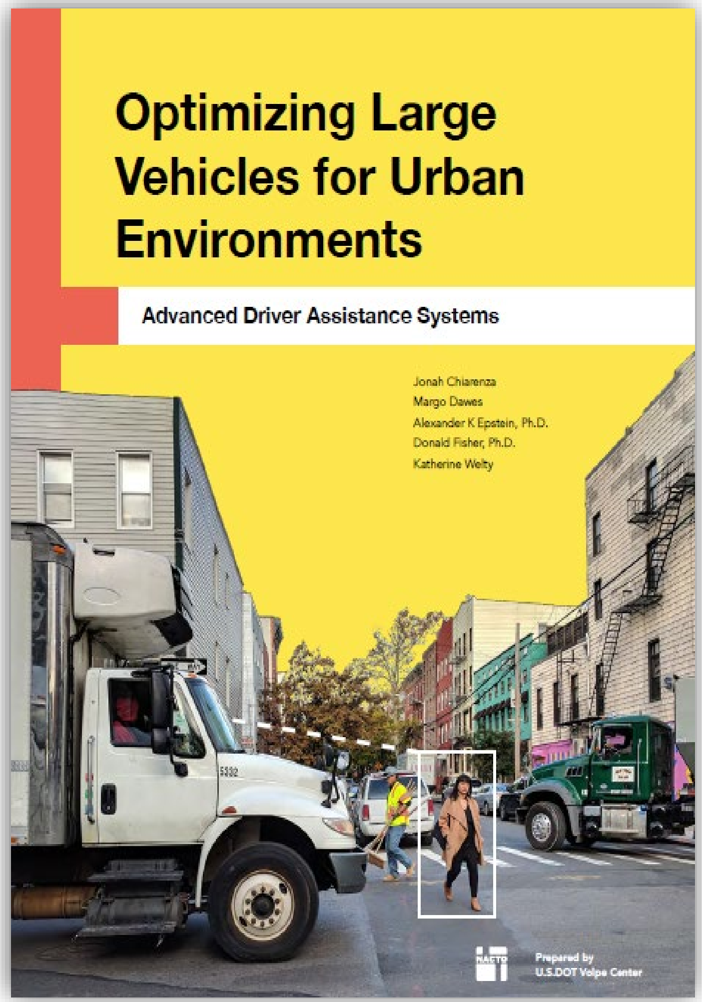


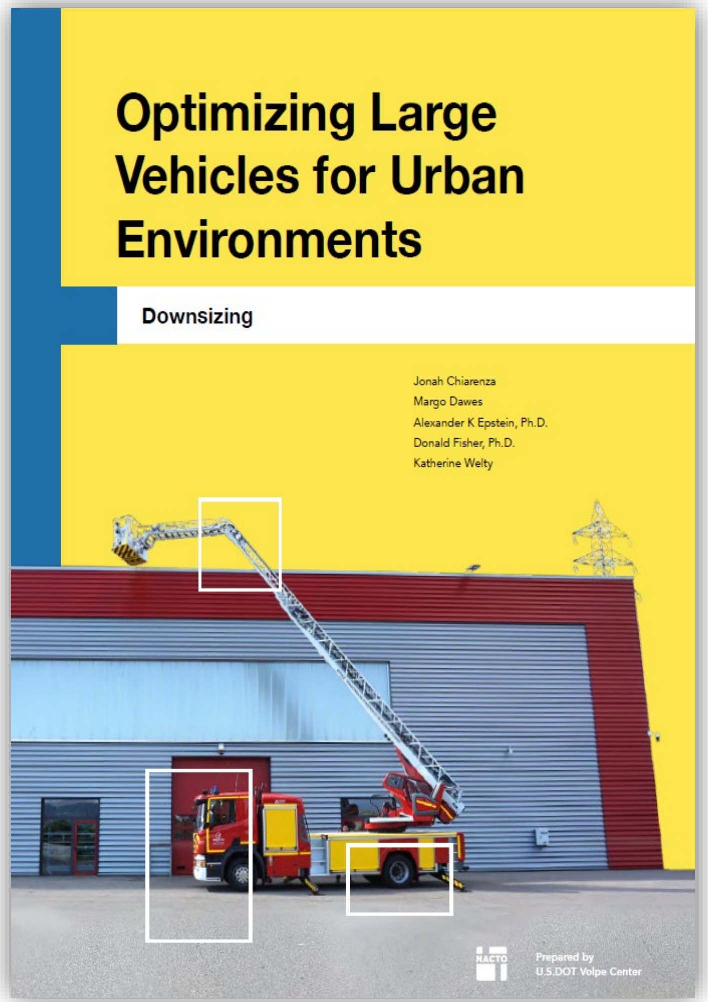
Truck Side Guard Adoption in North America



Strategy: Rightsize and Downsize

Pictured: eSwingo 200+ electric compact sweeper rented by SDOT. Photo Credit: SDOT.





Case Studies: Downsized Street Maintenance Vehicles

Boston

In 2016, the Boston Public Works Department (PWD) began purchasing downsized vehicles to maintain newly built protected bike lanes, in support of Vision Zero. The two agencies coordinate to ensure that PWD can maintain the infrastructure that Boston

Deployed John Deere Skid Steer. Source: Boston Dept. of Public Works

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Where do you start?

Tier 1

Tier 2

"Best Practices Technology"

Tier 3

"Exploratory Technology"

Table 3. 2025 SFTP update

Tier 1	Tier 2 Best Practice Technologies	Tier 3 Exploratory Technologies
High vision truck cabs where competitively available and operationally feasible *§‡	Intelligent Speed Assistance (ISA) §	Alcohol touch ignition interlock §
Truck surround cameras for new truck acquisitions when high vision truck cabs are not available *‡	AEB for medium-duty vehicles with pedestrian detection where available §	Cell phone physical or app-based lock box/ docking station ignition interlock §
Backup cameras where rear view is not otherwise included by surround cameras	Blind spot monitors	Seatbelt assurance ignition interlock systems §
Forward Collision Warning (FCW) and Pedestrian Collision Warning (PCW) for Class 1 and 2	Enhanced Seat Belt Reminder systems (ESBRs)	Universal design
Automatic Emergency Braking (AEB) for light-duty vehicles (Class 1-2) with pedestrian detection where available §	Navigation systems	Automatic Emergency Braking (AEB) for heavy-duty vehicles* §
Automatic headlights where available	Power mirrors and heated mirrors *	Connected vehicle, or vehicle-to-vehicle (V2V), communication technology
Enhanced truck rear underride guards *	Speed governors * §	License plate readers
Safety lights for work trucks, such as but not exclusive to side-visible turn signals and roadwork lights (amber)	Turning alarms *	Minimum sound detectability of electric MD/HD vehicles
Side underride guards * consistent with Local Law	Rear Automatic Emergency Braking (AEB) for all vehicle classes §	Telematics to enable siren use ‡¶
Self-adjusting volume and/or multifrequency backup alarms †	Forward Collision Warning (FCW) and Pedestrian Collision Warning (PCW) for Class 3 and above	
Additional mirrors/lenses where applicable including Fresnel lenses *	External Cameras and Recording	
Telematics to enable utilization, collision, speed, and safety reporting, among other uses ‡¶	Training where feasible in appropriate use of technologies	
Warning decals *	Lane departure warnings for medium- and heavy-duty vehicles	
Power windows where available *	Backup sensors	
Lane departure warnings for light-duty vehicles		

* Only apply to vehicles with gross vehicle weight rating over 10,000 lbs.

† Only apply to vehicles with limited or no direct rear vision (e.g., passenger/cargo vans and trucks) and to vehicles and trailers with gross vehicle weight rating of 10,000 lbs. or greater.

§ Only apply to non-emergency response vehicles

‡ NYC Executive Order 39, February 15, 2024: https://www.nyc.gov/office-of-the-mayor/news/39-003/executive-order-39

¶ NYC Executive Order 41, March 28, 2019: https://www.nyc.gov/assets/home/downloads/pdf/executive-orders/2019/eo-41.pdf

Municipal fleet safety research examples


Truck Sideguards for Vision Zero

Review and technical recommendations for Safe Fleet Transition Plan pilot deployment

Alexander K Epstein, Ph.D., Sean Peirce, Andrew Breck, Coralie Cooper, and Eran Segev

December 2014

DOT-VNTSC-DCAS-14-01

Prepared for:
Department of Citywide Administrative Services
City of New York


Launching the Safe Fleet Transition Plan

Technology and Process Recommendations

Margo Dawes and Alexander K Epstein, Ph.D.

May 2017

DOT-VNTSC-DCAS-17-01

Prepared for:
Department of Citywide Administrative Services
City of New York


Safe Fleet Transition Plan Update 2018 - 2019

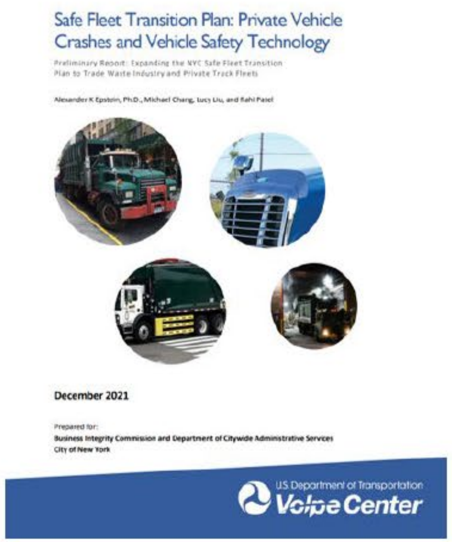
Best Practice Technologies and Processes

Alexander K Epstein, Ph.D. and Rebecca Kirazes

November 2018

DOT-VNTSC-DCAS-18-01

Prepared for:
Department of Citywide Administrative Services
City of New York

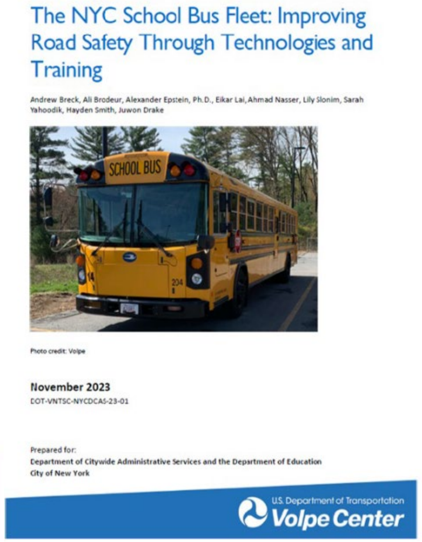

Safe Fleet Transition Plan: Private Vehicle Crashes and Vehicle Safety Technology

Preliminary Report: Expanding the NYC Safe Fleet Transition Plan to Trade Waste Industry and Private Truck Fleets

Alexander K Epstein, Ph.D., Michael Chang, Lucy Liu, and Rahi Patel

December 2021

Prepared for:
Business Integrity Commission and Department of Citywide Administrative Services
City of New York


The NYC School Bus Fleet: Improving Road Safety Through Technologies and Training

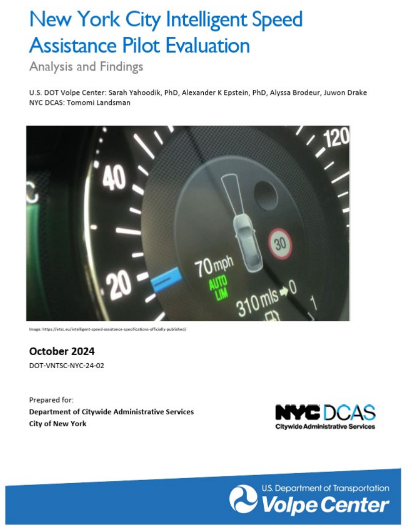
Andrew Breck, Ali Brodeur, Alexander Epstein, Ph.D., Eikar Lai, Ahmad Nasser, Lily Slonim, Sarah Yahoodik, Hayden Smith, Juwon Drake

Photo credit: Volpe

November 2023

DOT-VNTSC-NYCDCAS-23-01

Prepared for:
Department of Citywide Administrative Services and the Department of Education
City of New York


New York City Intelligent Speed Assistance Pilot Evaluation

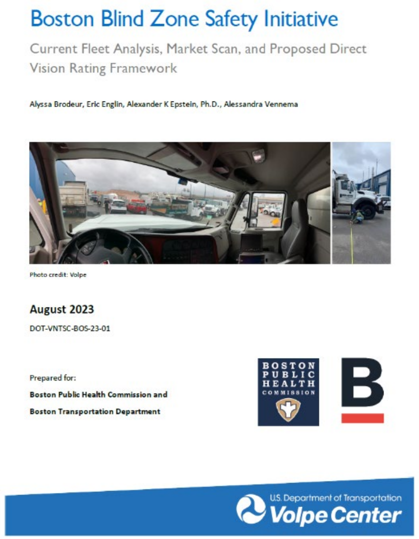
Analysis and Findings

U.S. DOT Volpe Center: Sarah Yahoodik, PhD, Alexander K Epstein, PhD, Alyssa Brodeur, Juwon Drake
NYC DCAS: Tomomi Landsman

October 2024

DOT-VNTSC-NYC-24-02

Prepared for:
Department of Citywide Administrative Services
City of New York


Boston Blind Zone Safety Initiative

Current Fleet Analysis, Market Scan, and Proposed Direct Vision Rating Framework

Alyssa Brodeur, Eric Englin, Alexander K Epstein, Ph.D., Alessandra Vennema

Photo credit: Volpe

August 2023

DOT-VNTSC-BOS-23-01

Prepared for:
Boston Public Health Commission and
Boston Transportation Department


Vision Zero San Francisco Truck Side Guard Initiative

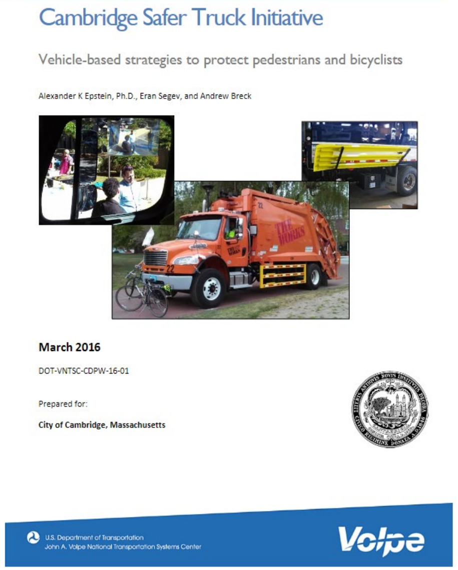
Technical Assessment and Recommendations

Alexander K Epstein, Ph.D., Andrew Breck, Coralie Cooper, and Sean Peirce

May 2016

DOT-VNTSC-SFMTA-16-01

Prepared for:
City of San Francisco Municipal Transportation Agency


Cambridge Safer Truck Initiative

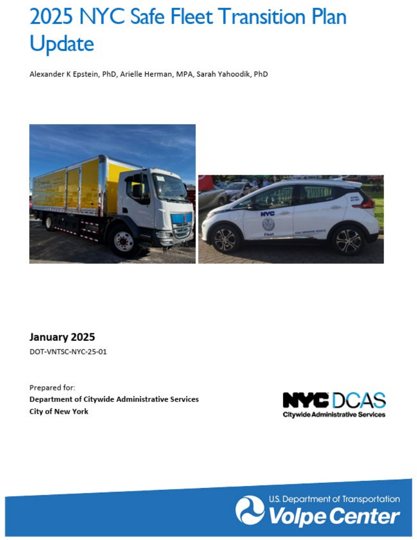
Vehicle-based strategies to protect pedestrians and bicyclists

Alexander K Epstein, Ph.D., Eran Segev, and Andrew Breck

March 2016

DOT-VNTSC-CDPW-16-01

Prepared for:
City of Cambridge, Massachusetts


2025 NYC Safe Fleet Transition Plan Update

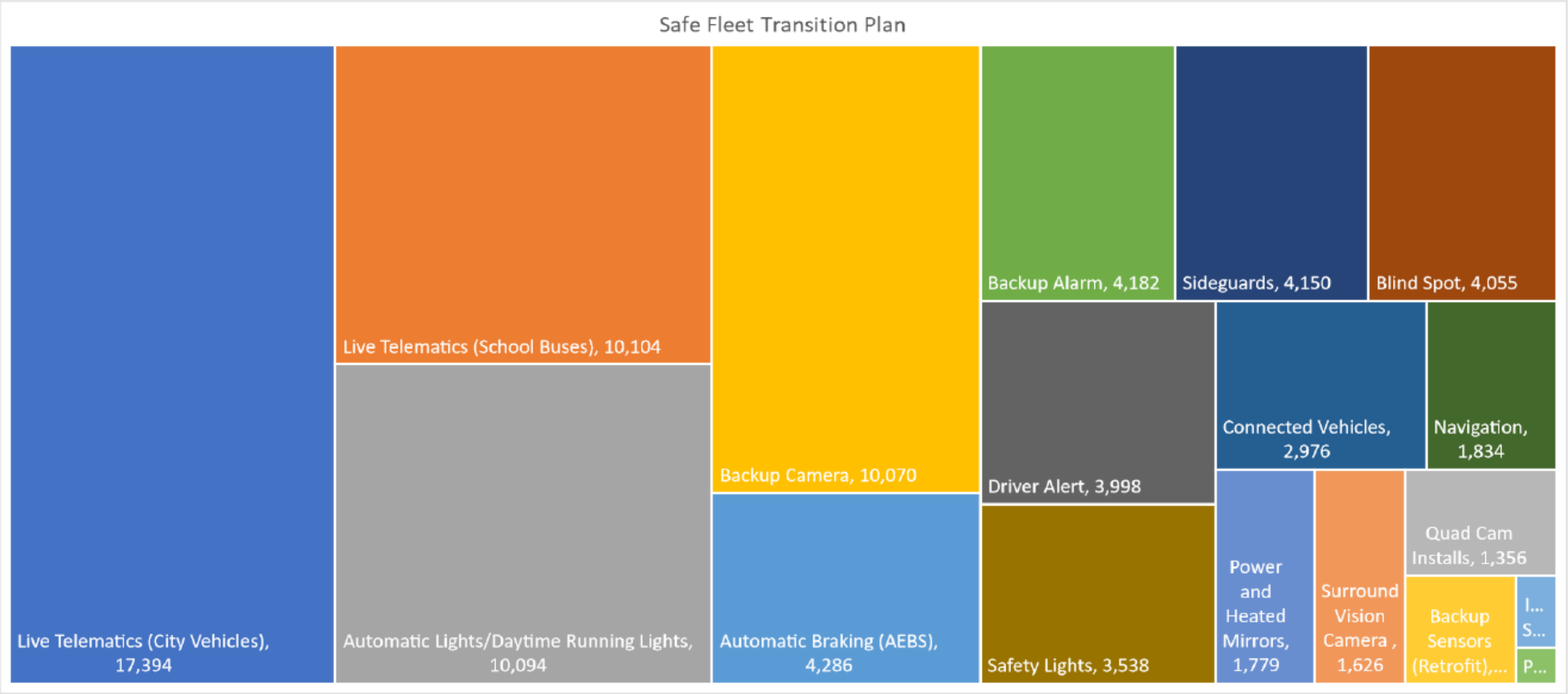
Alexander K Epstein, PhD, Arielle Herman, MPA, Sarah Yahoodik, PhD

January 2025

DOT-VNTSC-NYC-25-01

Prepared for:
Department of Citywide Administrative Services
City of New York

Safe Fleet Investments, over 100,000 since 2017



NYC DCAS Citywide Administrative Services

U.S. Department of Transportation Volpe Center

What's next?

- Support more public and private fleets to lead by example
- Anticipate more state and local action
- Evaluate blind zone safety risk reduction from infrastructure design countermeasures to large vehicle blind zones

Thank you!

Contact information

alexander.epstein@dot.gov

Experience is Key to Changing Perceptions

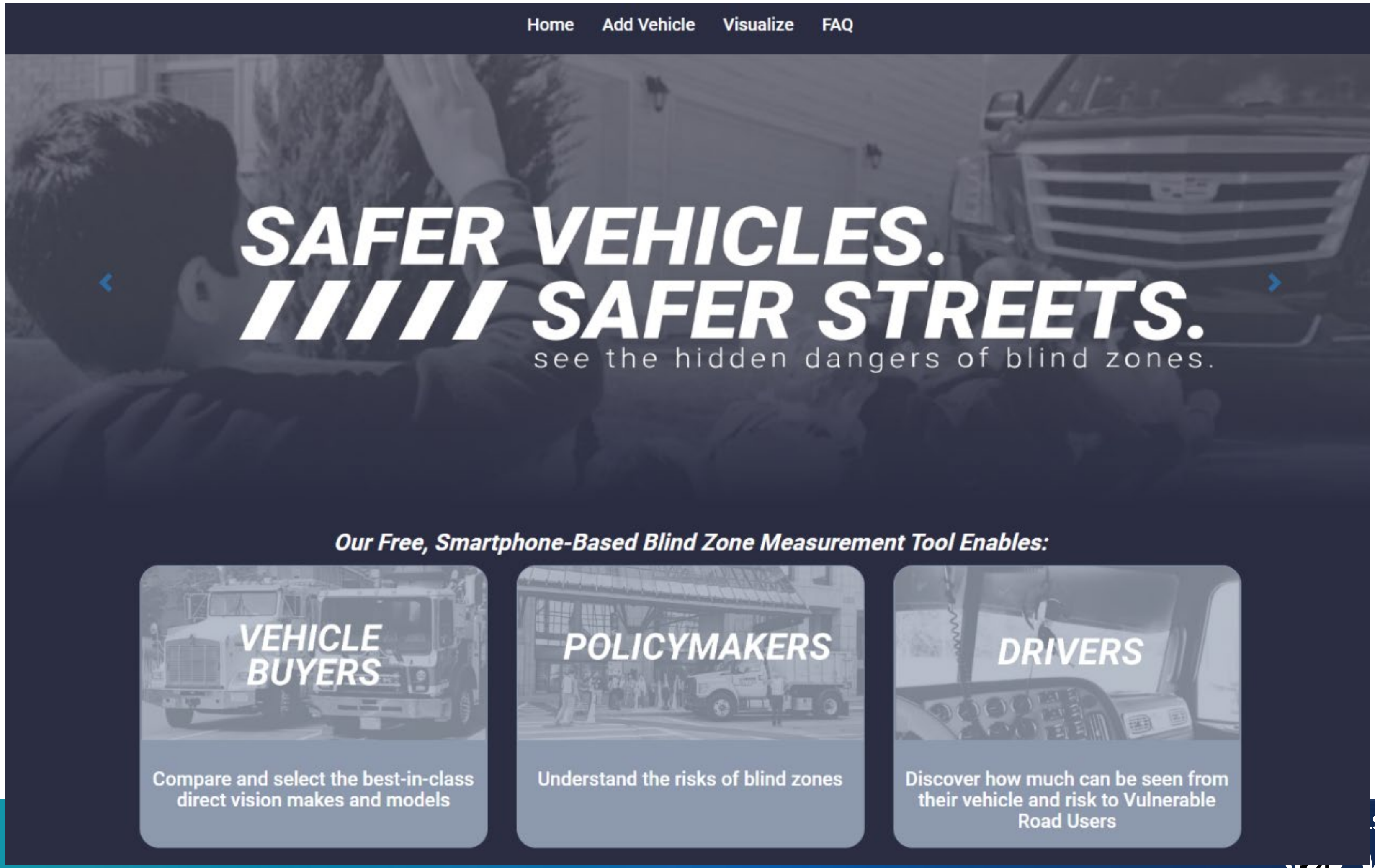
“I’d say just give it a go, it’s opened my eyes. I didn’t see how it could be improved before”

‘As a truck driver, it pains me to say this, but it’s actually pretty good’

‘I feel much more confident driving in the higher vision cab. I don’t want to go back to a standard tipper’

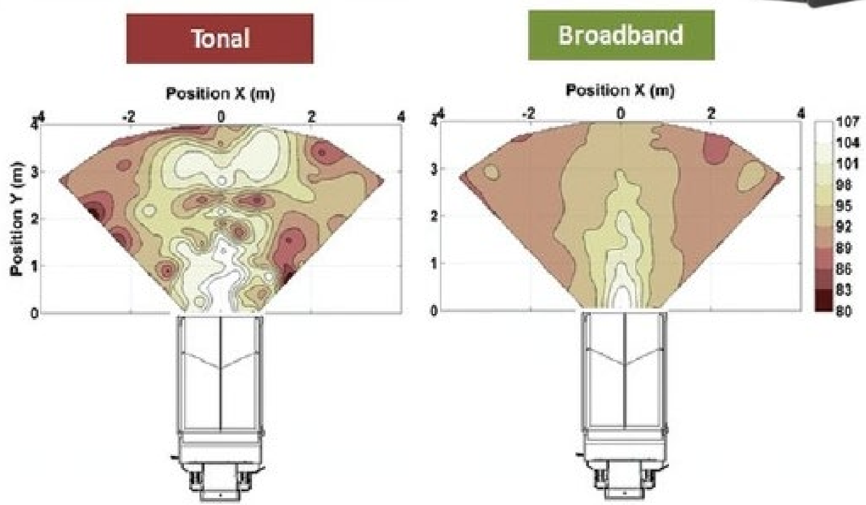
‘You just need to sit in one of the old cabs then get in the new one to realise how important this change is’

VIEW app: a web-based crowdsourced blind zone estimation tool



From best practices to implementation

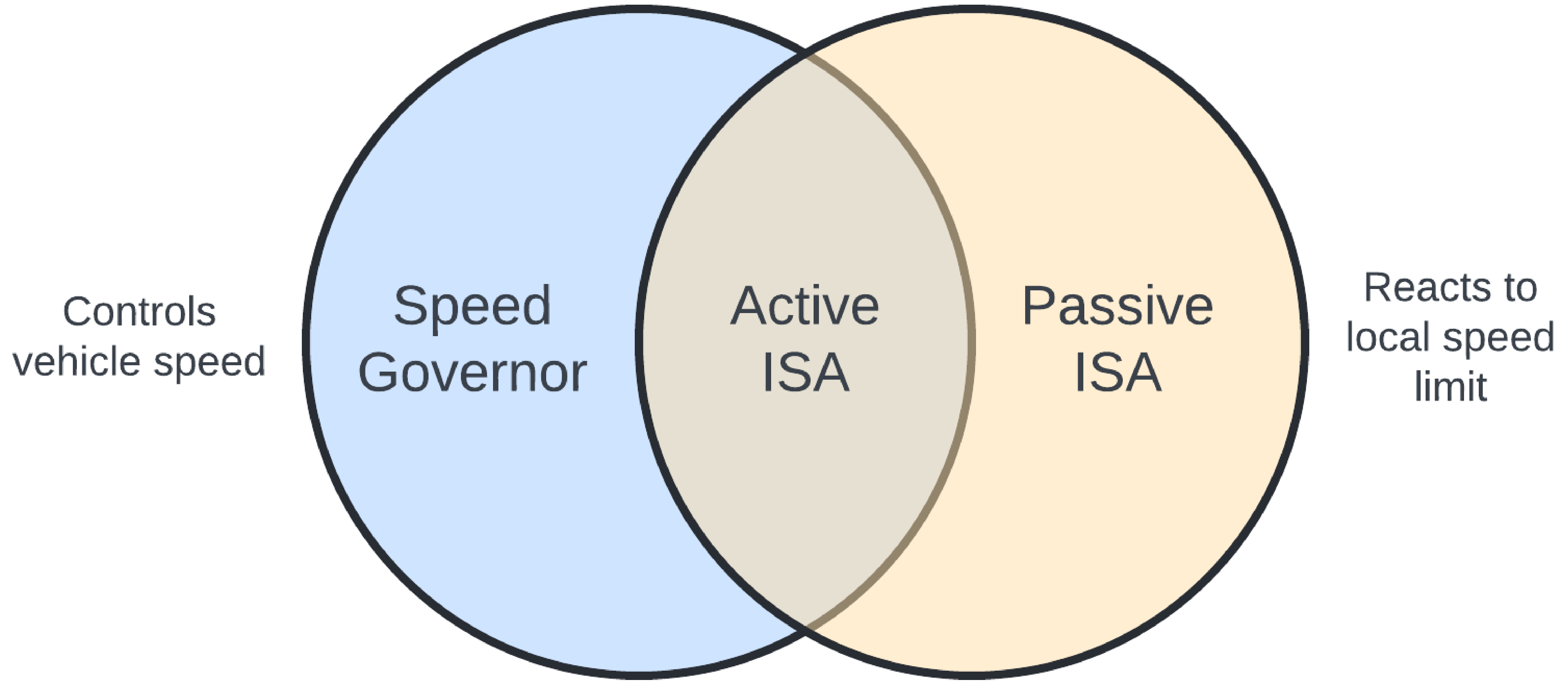
Implementation Strategy	Direct Vision Element	Example Vehicle Models
Transformative ("best in class")	*Low-entry cab forward ("high vision cab")*	Freightliner EconicSD; Dennis Eagle ProView; Mack LR; Volvo FE LEC
Incremental	*Cab forward*	Isuzu NPR; Mitsubishi Fuso; Mack MR; GMC T7500; Kenworth K370
	Sloped hood	HINO 338; Freightliner M2 106; Thomas Saf-T-Liner C2
	Peep and teardrop windows	Various makes and models



Criterion	Tonal (traditional)	Broadband
Detection		
Localization		
Perceived Urgency		
Recognition		

35

What is intelligent speed assistance (ISA)?



Questions and Discussion

Thanks for joining!

- Be on the lookout for an email with:
  - An evaluation survey
  - Meeting materials (with contact information)