



NHTSA IS FAILING BICYCLISTS

Ken McLeod and Caron Whitaker | League of American Bicyclists



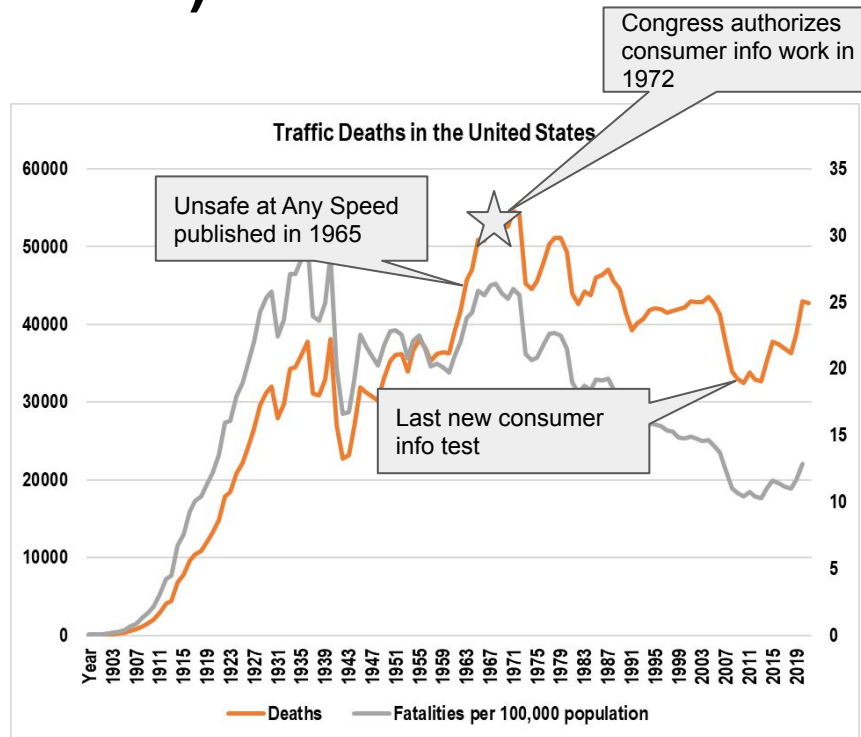
History of the National Highway Traffic Safety Administration (NHTSA)

Part of USDOT

- a. Less than 1% of DOT budget

Created in 1970

- b. Since 2017 has been acting without a confirmed administrator for all but 2 months





What is the National Highway Traffic Safety Administration (NHTSA)?

Two Agencies in one:

1. Safer People

- a. Through Highway Traffic Safety Grants administered by states (~70% of budget)

2. Safer Vehicles

- a. Through recall authority, standards, and testing (~16% of budget)
- b. First standard predates agency and set standards for seatbelts

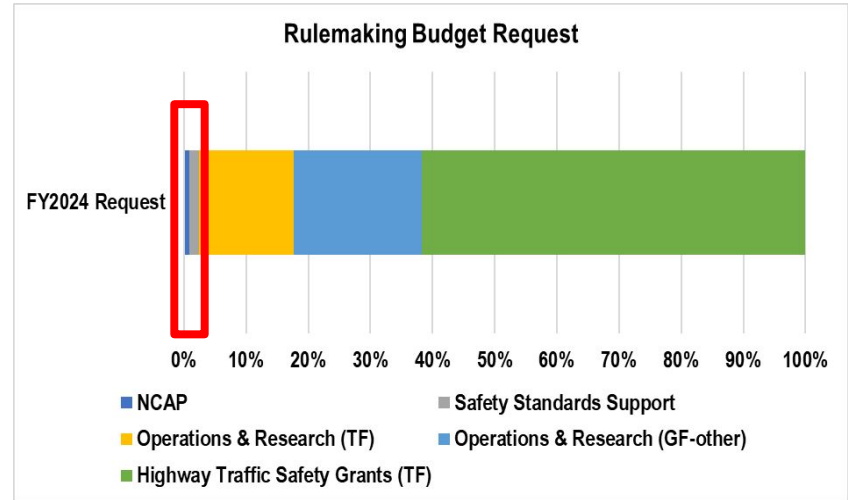




How does NHTSA create Safer Vehicles?

Safer Vehicles created through recall authority, standards, and testing (~16% of budget)

- **New Car Assessment Program (NCAP) is less than 1% of NHTSA's budget**
- **Vehicles Standards are 1.5%**

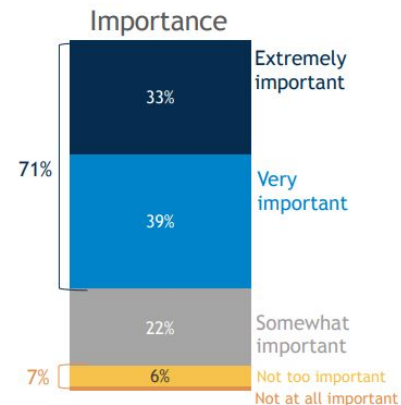




Background on NCAP

New Car Assessment Program tests new vehicles and promotes a 5-star rating to inform consumer choice

- Not a regulation - does not require vehicles to have specific technologies
 - Public testing provides consumer information so consumers can choose safer vehicles
 - Widely credited with being cost-effective and pro-market
 - Most vehicles currently receive 4-5 stars
- Widely copied by other countries due to success with 8 global NCAPs in 2019



How important is it to you personally to have access to safety information such as the **5-star** Safety Ratings when purchasing a new vehicle?

https://lindseyresearch.com/wp-content/uploads/2020/05/NHTSA-2020-0016-0001-NCAP_5-Star_Quantitative_Full_Report_dated_2020-05-05.pdf



Background on NCAP

Euro NCAP			Introduced, Updated	US NCAP		Introduced	
Adult Occupant Protection	Frontal	Full Width Rigid Barrier Crash Test	2015	Adult Occupant Protection	Frontal	Full Width Rigid Barrier Crash Test	1979
		Offset Deformable Barrier Crash Test	1997, 2015				
	Side	Moving Deformable Barrier Crash Test	1997, 2015		Side	Moving Deformable Barrier Crash Test	1997
		Pole Impact Crash Test	2001, 2015			Pole Impact Crash Test	2011
		Far Side Sled Test	2018, 2020				
	Rear Whiplash	Headrest Geometry Evaluation	2009				
Sled Tests		2009					
Child Occupant Protection	Child Seat	Vehicle Design	1997, 2016				
		Fit and Ease of Installation	2013, 2016				
	Frontal	Offset Deformable Barrier Crash Test	1997, 2016				
Vulnerable Road Users	Impact Protection	Side	Moving Deformable Barrier Crash Test	1997, 2016			
		Head Impact Test	1997, 2013				
		Upper Leg Impact Test	1997, 2015				
		Lower Leg Impact Test	1997, 2014				
				Rollover Resistance	Static Stability Factor	2001	
					Dynamic Handling	2004	
Driver Assistance Technologies	Forward Collision Warning (FCW) Automatic Emergency Braking (AEB)	City - Dynamic Test	2014, 2018				
		Interurban - Dynamic Test	2014, 2018				
		Pedestrian - Dynamic Test	2016, 2018				
		Cyclist - Dynamic Test	2018				
	Seatbelt Reminders		2002, 2018				
	Speed Assistance Systems (SAS)		2009, 2018				
Lane Support Systems (LSS)	Lane Departure Warning (LDW)		2014, 2018				
	Lane Keeping Assist		2014, 2018				
	Emergency Lane Keeping		2014, 2018				



The League and NHTSA's NCAP

NHTSA has not updated the New Car Assessment Program in over a decade

- **2013 NHTSA proposes updates to NCAP**
- **2015 NHTSA proposes updates to NCAP**
 - **League and its supporters provide >60% of comments (out of 300+)**
 - “The League recommends that crash avoidance systems are evaluated for their effectiveness at detecting and avoiding crashes with bicyclists and other non-occupants or, at the very least, that NHTSA develops a timeline for when bicyclists will be included in testing procedures for crash avoidance technologies and take appropriate steps to make the public aware that crash avoidance technologies may not detect and avoid crashes with bicyclists and other non-occupants not included in testing procedures.”
- **2018 NHTSA public meeting on NCAP**
 - “A large number of individuals submitted comments requesting that NCAP account for pedestrians and bicyclists in its rating system, as members of the League of American Bicyclists.”
- **2022 NHTSA proposes updates to NCAP and somewhat addresses timeline required by Congress**
 - More than 14,000 comments, including more than 2,000 from League and its supporters
- **2023 NHTSA proposes pedestrian crashworthiness testing**



The League and NHTSA

Since 2015 the League has asked for crash avoidance tech and a timeline for including bicyclist safety

NHTSA has yet to propose testing crash avoidance tech for bicyclist safety or a timeline for including bicyclist safety in its vehicle safety efforts

- “Section 24213(b) of the [Bipartisan Infrastructure Law] also requires that the Agency publish a notice ‘to establish a means for providing to consumers information relating to pedestrian, bicyclist, or other vulnerable road user safety technologies’ within one year of enactment.”
<https://www.regulations.gov/document/NHTSA-2021-0002-0001>
- NHTSA published a notice, but did not provide a specific timeline for inclusion other than “2025 or beyond”



Bicyclist-AEB Safety Opportunity

Systems designed with the three most common deadly crash scenarios in mind have the **potential to help mitigate or prevent up to 26 percent of bicycle crashes and 52 percent of fatal crashes.**

Systems that also address the remaining two most common crash modes could help mitigate or prevent up to a total of 47 percent of crashes and 54 percent of fatal crashes

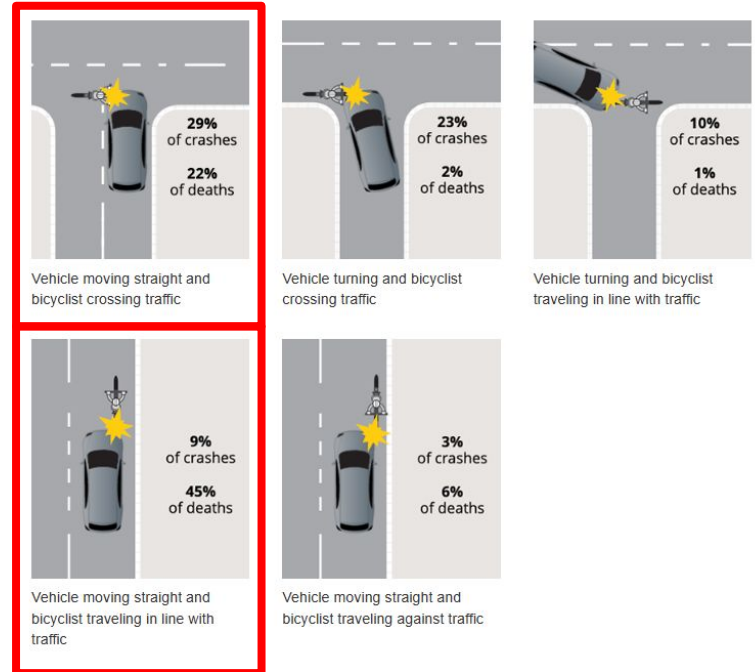
<https://www.iihs.org/news/detail/bicycle-crash-study-could-guide-design-of-bicyclist-detection-systems>

The Subaru Eyesight system reduced parallel crashes it was designed for by 29 percent but had only a minor impact on crashes with bicyclists overall

<https://www.iihs.org/news/detail/subarus-bicyclist-detection-shows-positive-results>

Common crash scenarios:

Crashes involving bicyclists and fronts of passenger cars



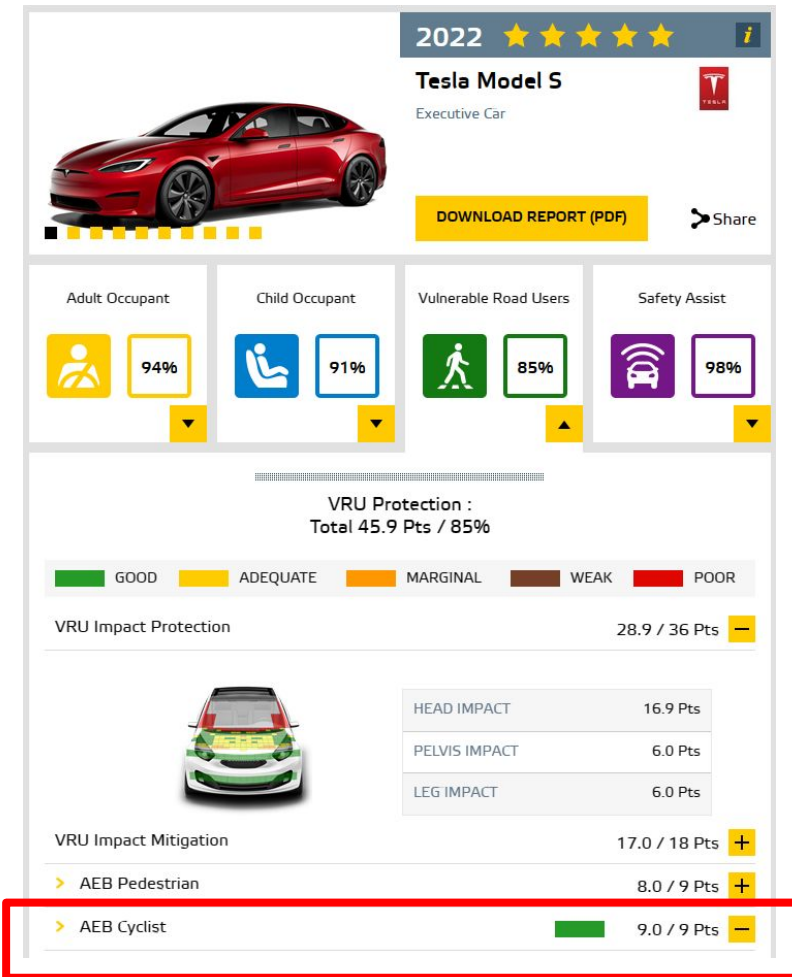


NHTSA on Bicyclist-AEB

“NHTSA believes that detecting cyclists is technically more challenging for vehicle AEB systems than detecting pedestrians since cyclists often move at higher speeds.”

<https://www.regulations.gov/document/NHTSA-2021-0002-0001>

- We are not asking for new tests with new technical challenges
- We are asking for tests done for 5 years in Europe that US manufacturers currently do well in when tested
- We want to know if Americans get the same safety as other countries

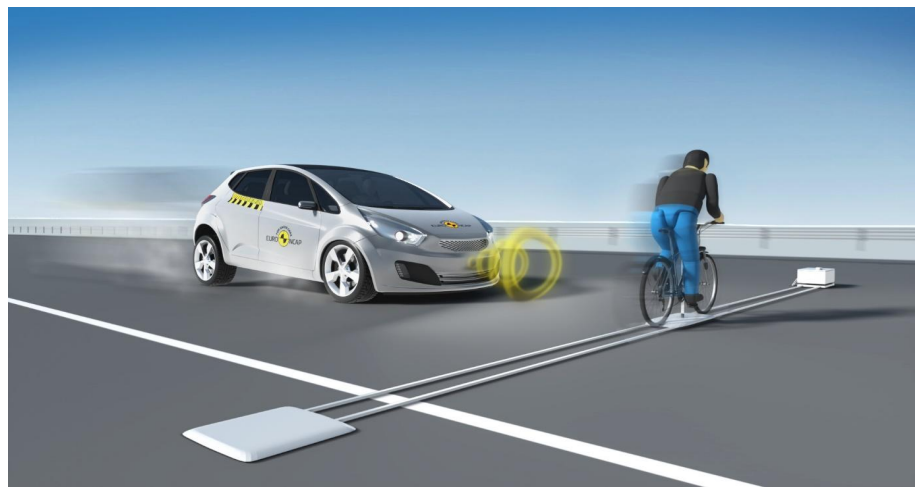




The League and Bicyclist-AEB

NHTSA's established criteria (78 FR 20599) for inclusion in NCAP are:

1. Technology addresses a safety need;
2. System designs exist that can mitigate the safety problem;
3. Technology provides the potential for safety benefits; and
4. Performance-based objective test procedure exists that can assess system performance.

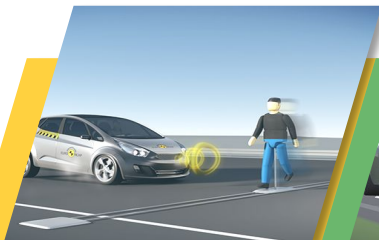


Tested by Euro NCAP since 2018



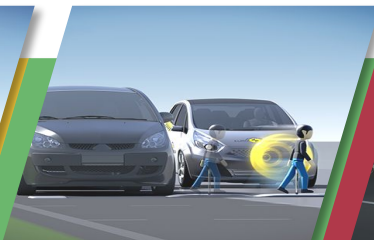
Bicyclist and Pedestrian-AEB

- Bicyclists and Pedestrians are different
 - EuroNCAP has different tests
 - Bicyclists speeds are higher
 - Vehicle speeds are also often higher
- NHTSA has not yet proposed any bicyclist-AEB tests
 - NHTSA has not yet proposed parity or harmonization with pedestrian-AEB tests



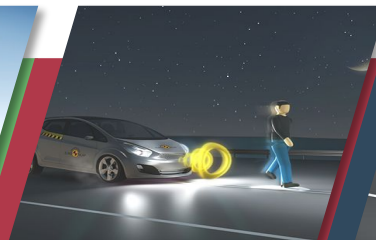
Adult Crossing Walking / Running

Car speed: 20-60 km/h
Pedestrian: 5 and 8 km/h
Impact point: 25% / 50%
Daylight / Night-time*



Child Crossing Obstructed

Car speed: 20-60 km/h
Pedestrian: 5 km/h
Impact point: 75%
Daylight / Night-time



Adult Longitudinal Walking

Car speed: 20-60/80 km/h
Pedestrian: 5 km/h
Impact point: 25% / 50%
Daylight / Night-time



Cyclist Longitudinal & Crossing

Car speed: 20-60/80 km/h
Cyclist: 15/20 km/h
Impact point: 25% / 50%
Daylight



“the Agency seeks comment on the appropriate timeframe for adding a cyclist component to NCAP”

Hyundai America Technical Center, Inc. Comments
Docket No. NHTSA-2021-0002

(36) Considering not only the increasing number of cyclists killed on U.S. roads but also the limitations of current AEB systems in detecting cyclists, the Agency seeks comment on the appropriate timeframe for adding a cyclist component to NCAP and requests from vehicle manufacturers information on any currently available models that have the capability to validate the cyclist target and test procedures used by Euro NCAP to support evaluation for a future NCAP program upgrade.

If NHTSA completely harmonize with Euro NCAP for pedalcyclists, then HATCI supports including the test protocol and suggest to add it to the near-term plan for stakeholders to review for appropriateness to include in the NCAP.

If NHTSA elects to not completely harmonize with Euro NCAP, then HATCI requests NHTSA provide the draft test procedure for review and comment before including it into the NCAP roadmap.

(36) Considering not only the increasing number of cyclists killed on U.S. roads but also the limitations of current AEB systems in detecting cyclists, the Agency seeks comment on the appropriate timeframe for adding a cyclist component to NCAP and requests from vehicle manufacturers information on any currently available models that have the capability to validate the cyclist target and test procedures used by Euro NCAP to support evaluation for a future NCAP program upgrade.

GM Comments:

GM recommends introducing bicycle detection as a second phase of NCAP program updates as part of a mid-term NCAP revision. This recommendation allows the NCAP program to continue to develop and evolve, while aligning with technology availability and capabilities across manufacturers. In addition, GM recommends harmonizing with the Euro NCAP cyclist target. Refer to Question (33).

(36) Considering not only the increasing number of cyclists killed on U.S. roads but also the limitations of current AEB systems in detecting cyclists, the Agency seeks comment on the appropriate timeframe for adding a cyclist component to NCAP and requests from vehicle manufacturers information on any currently available models that have the capability to validate the cyclist target and test procedures used by Euro NCAP to support evaluation for a future NCAP program upgrade.

Honda supports the potential future inclusion of AEB for bicyclists since the crash data in the US indicates the need. As systems with these capabilities are just now starting to enter the fleet, we recommend that the agency evaluate these systems according to the Euro NCAP AEB VRU protocol. After including PAEB S1 and S4 scenarios into NCAP as a priority, the agency should evaluate whether AEB systems for cyclists meet the criteria for inclusion in NCAP. Honda has already begun deploying AEB systems for detecting cyclists. The 2022 Honda Civic is designed to achieve crash avoidance in the Euro NCAP AEB VRU protocol in the CBFA, CBNA, CBLA, and CBTA (farside turn) cyclist scenarios.¹³

(37) In addition to the test procedures used by Euro NCAP, are there others that NHTSA should consider to address the cyclist crash population in the U.S. and effectiveness of systems?

In addition to harmonizing with Euro NCAP protocols that already includes testing scenarios for cyclists and motorcycles, Tesla recommends that NHTSA research pedestrian and cyclist crossings and other road features that are specific to the US market to further improve the test protocol as cycle lanes and road markings can vary greatly from state-to-state or even city-to-city.

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BMW Response:

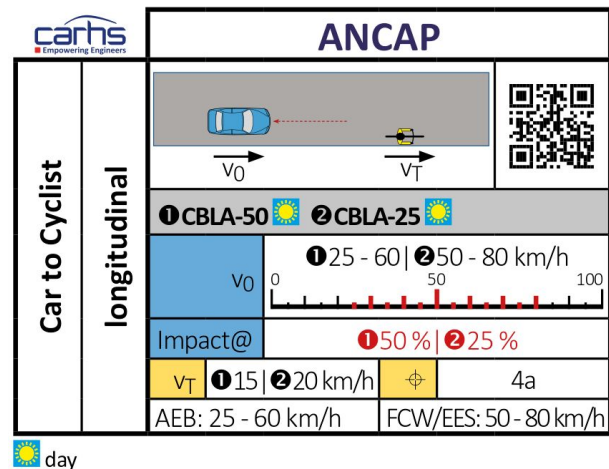
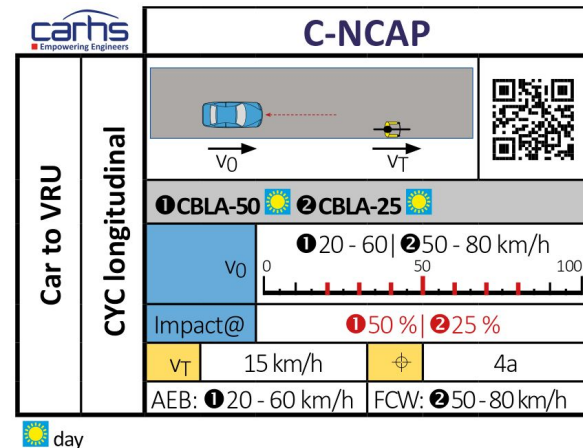
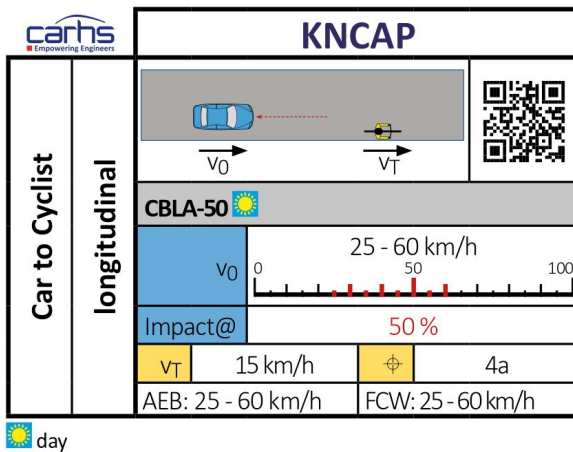
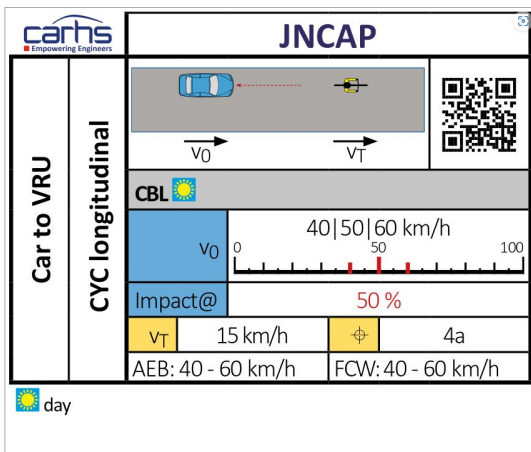
This is a standard feature for BMW vehicles with start of production after 2017.



Global tests for bicyclist-AEB

Bicyclist-AEB is now part of testing in Japan, Korea, Australia, and China

<https://www.safetywissen.com/requirement/>





NHTSA - Crashworthiness

EuroNCAP first adopted pedestrian crash testing in 1997

China, Australia & New Zealand, Japan, Korea, or Latin American & the Caribbean have all since adopted pedestrian crash testing

UN Global Technical Regulation #9 on pedestrian safety has been around since 2005

In 2023, cyclist head injury testing was incorporated into update of EuroNCAP



Tested by Euro NCAP since 1997



Bicyclist Crashworthiness

“NHTSA notes that, at this time, **there are not widely accepted objective test procedures for crashworthiness bicyclist protection evaluation of vehicles, and thus it does not meet the four prerequisites for inclusion NCAP.** However, it may be possible that countermeasures that reduce injury risk for pedestrians may also have a positive effect for bicyclists. **The Agency recognizes that Euro NCAP has proposed incorporating bicyclist impact tests in the future. NHTSA will continue to monitor that effort,** continue to evaluate whether objective test procedures can be developed, and may reassess the inclusion of bicyclist safety in NCAP in the future.”

<https://www.regulations.gov/document/NHTSA-2023-0020-0001>

This prerequisite for 5-star overall ratings is applied to all official full scale and sub-system tests performed by Euro NCAP:

Table 2.2
Tests and key body regions

Full Scale Test	Body Regions per Occupant		
	Driver	Front Passenger	Rear Passenger(s)
Frontal MPDB	Head & Neck Chest	Head & Neck Chest	Head Chest ¹
Frontal FW	Head Neck Chest	Head Chest	Head Chest
Side MDB	Head Chest Abdomen Pelvis		Head
Side Pole	Head Chest Abdomen Pelvis		
Sub-System Test	Body Regions per Stature		
	Pedestrian Adult	Pedestrian Child	Cyclist
Vulnerable Road User	Head Pelvis Femur Knee & Tibia	Head	Head

¹. Applicable to Q10 Chest 3ms exceedance calculation, 2023-2024.

3.11.4 The cyclist zone is defined as all grid points rearward of WAD 2100mm up to and including WAD 2500mm. See Figure 20.

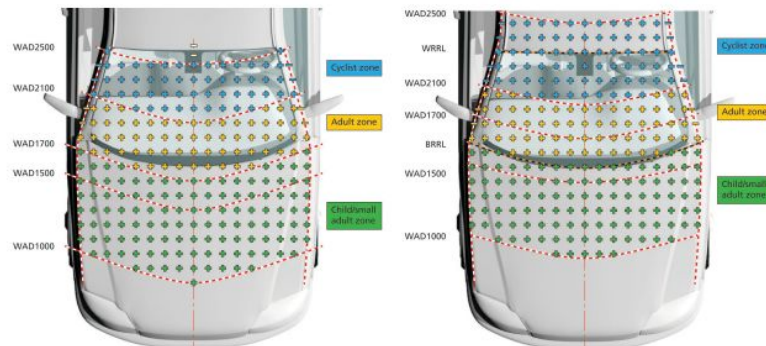


Figure 20 Identification of VRU headform zones



NHTSA Delays

In a decade of inaction we went from needing tests to be “feasible” to needing tests to be “widely accepted”

“NHTSA notes that, at this time, **there are not widely accepted objective test procedures for crashworthiness bicyclist protection evaluation of vehicles, and thus it does not meet the four prerequisites for inclusion NCAP.**”

<https://www.regulations.gov/document/NHTSA-2023-0020-0001>

In general, there are four prerequisites for considering an area for adoption as a new NCAP enhancement. First, a safety need must be known or be capable of being estimated based on what is known. Next, vehicle and equipment designs must exist or at least be anticipated in prototype designs that are capable of mitigating the safety need. Third, a safety benefit must be estimated, based on the anticipated performance of the existing or prototype design. Finally, it must be feasible to develop a performance-based objective test procedure to measure the ability of the vehicle technology to mitigate the safety issue.^[3]

<https://www.federalregister.gov/documents/2013/04/05/2013-07766/new-car-assessment-program-ncap>



NHTSA - Crashworthiness

Crashworthiness may indirectly show larger, taller, wider vehicles such as SUVs and trucks are less safe for pedestrians, but:

- A pass/fail rating is proposed, reducing the availability of information on the poor performance of the most dangerous vehicles
- Tall vehicles with high bumpers (LBRL > 500mm or 19.7 inches) will automatically fail, reducing the availability of information on their poor performance
 - Expected to be 20% of vehicles
- Failing vehicles can still earn 5-stars

Proposed results only visible on NHTSA's website, not at dealerships



<https://www.axios.com/ford-pickup-trucks-history>

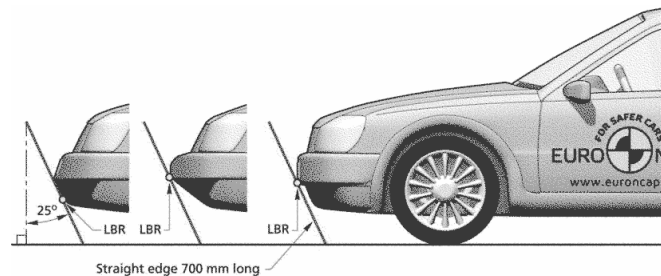


Figure 5: Marking the Lower Bumper Reference Line (LBRL)⁷⁴



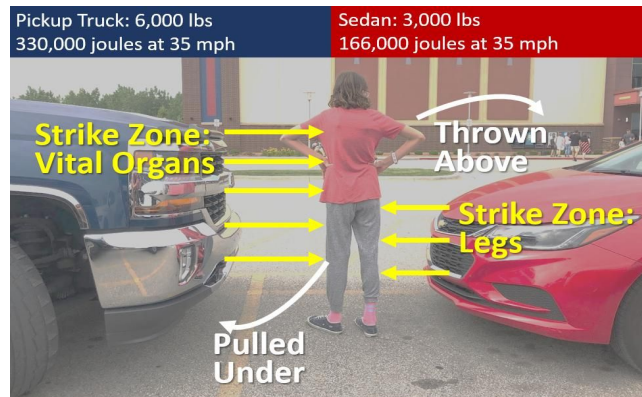
Congress has asked for Action

People have noticed new cars and trucks are taller, and it's a common talking point in stories about rising deaths for people walking

What the IIJA (SEC. 24214) did:

- By November 2023, we will get a notice and a report
 - **Notice** will potentially update hood and bumper standards, including standards for the safety of people biking and walking and crash avoidance
 - **Report** will describe current status of standards, and may include a plan for incorporating crash avoidance technology

NHTSA tests show US versions of vehicles sold in EU perform worse: [Vehicle Bumper Performance in Part 581 Versus Pedestrian Leg Protection \(bts.gov\)](#)



<https://twitter.com/KostelecPlan/status/1149036067456053248>



NHTSA Has a Bad Record of Responding

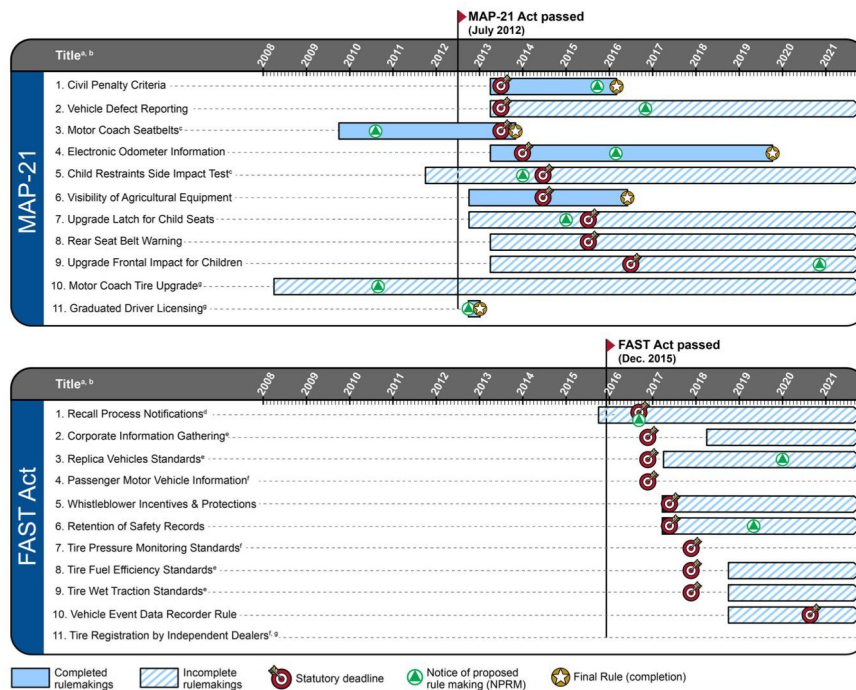
Vision: “NHTSA aims to be the global leader in motor vehicle and highway safety.” - [NHTSA's Core Values | NHTSA](#)

Reality: “The NTSB considers the slow pace of progress in NCAP expansion as the primary reason for the underutilization of NCAP potential”

- National Transportation Safety Board [Comments on NCAP](#)

“the U.S. NCAP program is dangerously close to irrelevance.” - NTSB remarks at [Roadmap for Safer Vehicles 2030](#)

Figure 3: Duration and Status of Rulemakings Mandated by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST Act), as of April 11, 2022



Source: GAO analysis of reginfo.gov data. | GAO-22-104635



NHTSA - Call to Action

Specifics of proposals and deliberation are not great

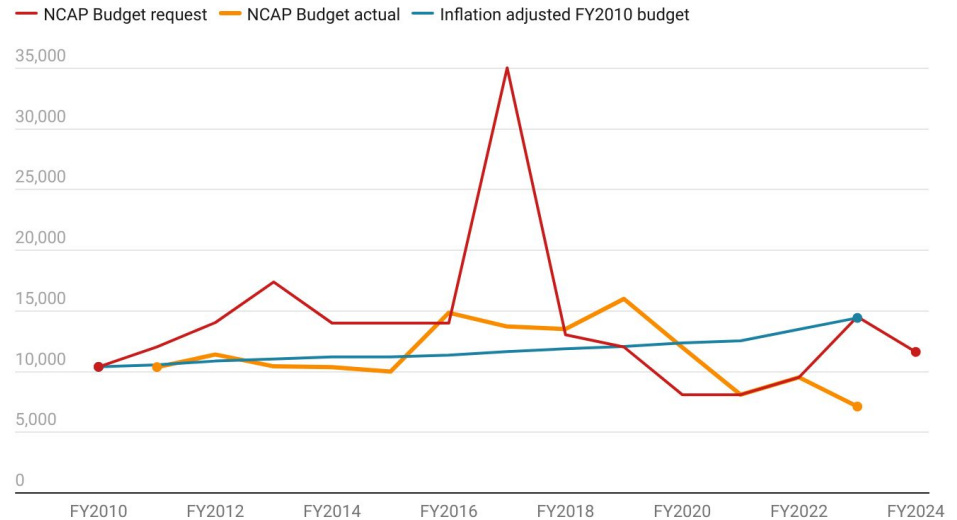
Pattern and practice of exclusion and delay is worse

Continued exclusion and delay is unacceptable, we need your help for that message to break through

America will not be a traffic safety leader if it's traffic safety agency refuses to lead

New Car Assessment Program Budget over Time (in thousands)

For the past decade, the budget for NHTSA's New Car Assessment Program has stayed close to the inflation-adjusted budget from 2010. As NHTSA is tasked to do more testing, of more complex safety technology, additional resources will be needed.



Budget shown in 1,000s. Highest budget request was ~\$35 million. Lowest actual budget was ~\$8 million.

Chart: The League of American Bicyclists • Source: NHTSA • Created with Datawrapper



NHTSA - Call to Action

Action Alert to submit comments on Proposed Vehicle Safety Standard for Pedestrian-AEB

- Absolutely great that Pedestrian-AEB is proposed
 - Estimated cost of \$27.38 per passenger car and \$11.74 per light truck annually
- Proposal largely harmonizes with ECE Regulation No. 152 that also includes bicyclist-AEB
 - NHTSA specifically did not propose bicyclist-AEB inclusion

NHTSA promises a bicyclist-AEB report completed by the end of the year

- Our demand = That report better show a way forward from endless delays and exclusion



<https://bikeleague.org/the-national-highway-traffic-safety-administration-is-failing-bicyclists/>



END OF PRESENTATION



NHTSA - Call to Action

- More people are being killed in “frontover” crashes
 - Frontovers are responsible for 386 deaths and over 14,000 injuries per year, 75% involved a larger size vehicle, 61% involved a parent or someone who knows the child hit
- FY2024 budget has \$2 million to research impact of size and weight on pedestrian safety





NHTSA - Call to Action

GUIDELINES FOR AV INTERACTIONS WITH PEOPLE ON BIKES

The League has long been advocating for putting the safety of people biking and walking first in the development of self-driving vehicle technology. That's why we're excited to partner with companies Like Cruise and Waymo that share our vision of improved safety for all road users.

We hope that the technical guidelines help this emerging technology contribute to a more Bicycle Friendly America for everyone by ensuring the future of transportation in the United States is one where people bicycling, walking and rolling are made safer, and their rights to the road are preserved. Protecting people biking, walking and rolling is not an edge case for Automated Vehicles, but must be a core competency.

- | | |
|--|---|
| #1: Cyclists Should Be a Distinct Object Class | + |
| #2: Typical Cyclist Behavior Should Be Expected | + |
| #3: Cycling Infrastructure and Local Laws Should Be Mapped | + |
| #4: A SDS Should Drive in a Consistent And Understandable Way | + |
| #5: Prepare for Uncertain Situations and Proactively Slow Down | + |
| #6: Cyclist Scenarios Should Be Tested Continuously | + |

Our guidelines for AV-Cyclist interactions are endorsed by:

Our efforts to promote AV-Cyclist safety are endorsed by:

Contact us to sign onto the AV Guidelines

<https://bikeleague.org/take-action/policy-advocacy/on-the-issues/automated-vehicles/>



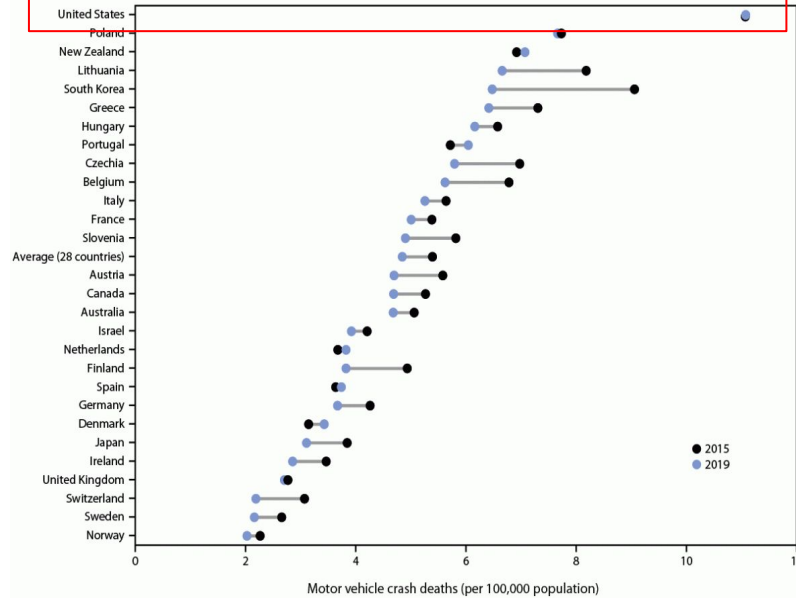
NHTSA - Call to Action



<https://twitter.com/tomflood1/status/1627717383316963339/photo/1>

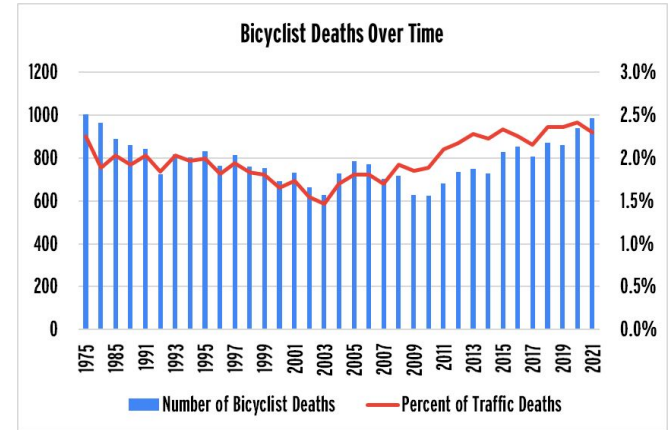
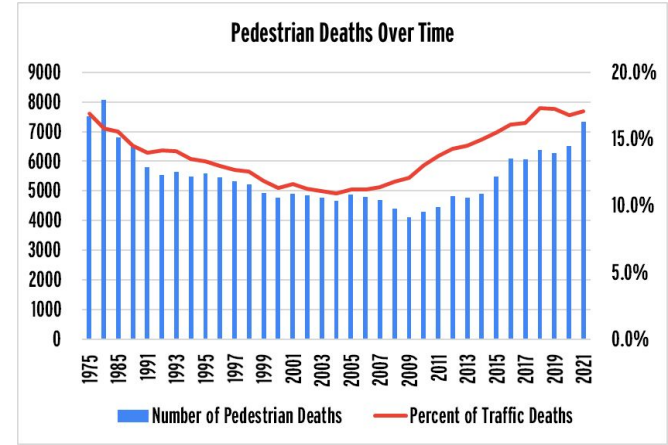


NHTSA - Call to Action



Since 2009
https://www.cdc.gov/mmwr/volumes/71/wr/mm7126a1.htm?s_cid=mm7126a1_w#11_down
 • ~79% increase in pedestrian deaths

• ~57% increase in bicyclist deaths





TRUCK SAFETY

Problem

- 4% of registered vehicles are a large truck
- 11% of **Bicyclist Fatalities** are from crashes with large trucks.

A Solution

Research: **Lateral Protective Devices (side guards)** can stop a cyclists from:

- Getting sucked under the truck
- Getting crushed by the back wheel of a turning truck





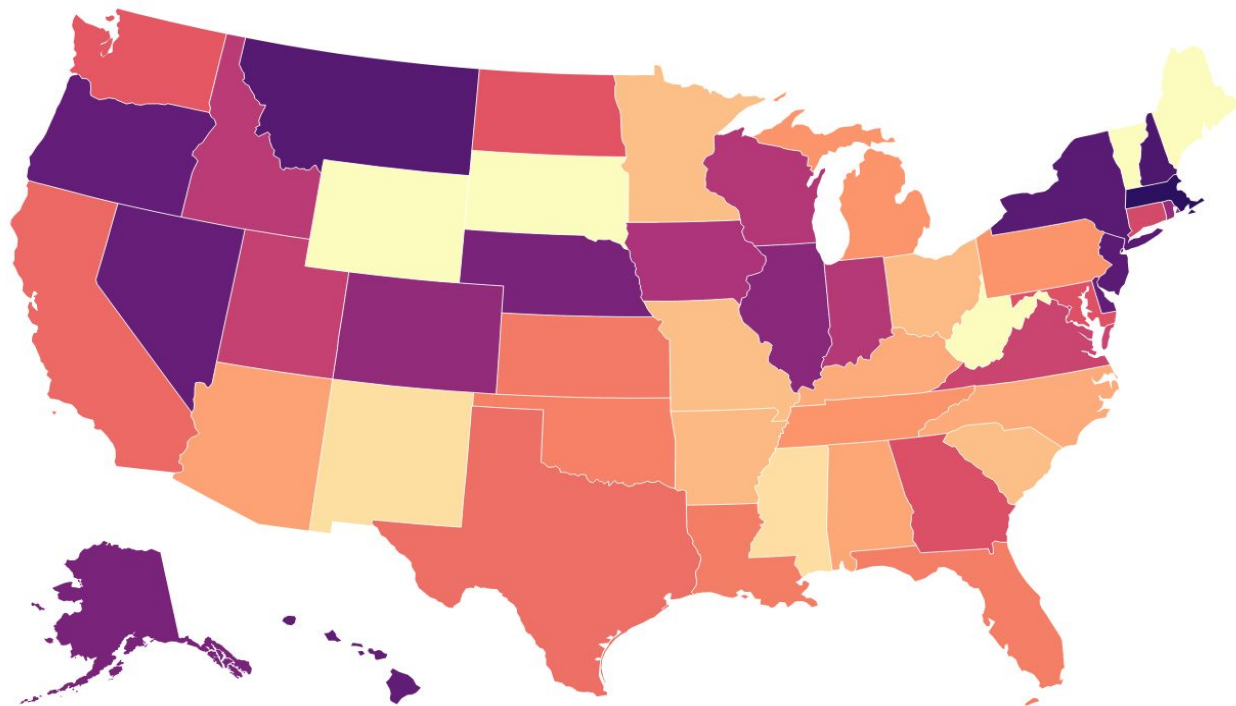
SIDE GUARDS AKA LATERAL PROTECTIVE DEVICE (LPD)



Source:UMass Traffic Safety Research



Percent of Bicyclist Fatalities from Large Truck Crashes 2016-2020



Large Trucks:
4% of registered vehicles

BUT

11% of Bicyclist Fatalities



TWO COMMON TYPES OF SIDE CRASHES

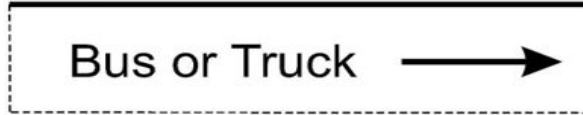
1- Truck overtaking cyclists/ cyclist losing control - When a truck passes close by to a bicyclist, and the vacuum created under the truck pulls the bicyclists under the truck

2- Truck driver turns into cyclists



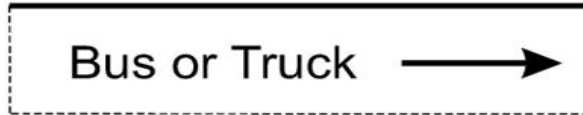
THE PROBLEM WITH BIG VEHICLES

Bike Position $-.5$



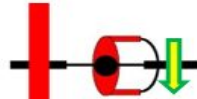
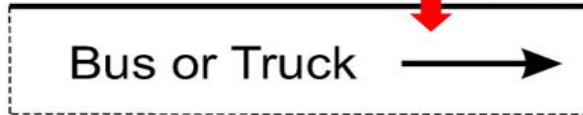
Bicyclist pushed away from the vehicle

0



Bicyclist steers toward the vehicle to stabilize

.5



Vacuum pulling bicyclist toward the vehicle is added to the steering force



Cyclist lucky to be alive

Still shots from video-

https://www.youtube.com/watch?v=z19m_70GKSU

Analysis by

Brian Sherlock

International Safety Specialist

Amalgamated Transit Union

Bicyclist is adjacent to the lane line





Bicyclist has entered the low pressure zone and is being pulled to the right





.44 seconds
after the front
bumper
reaching the
bicyclist, the low
pressure zone
has pulled the
rider
horizontally half-
way to the initial
contact at the
tractor rear axle





Probable
contact with
rear axle





Bicyclist
attempting to
steer left





Bicyclist in
secondary low
pressure zone
from the truck
trailer





1.24 seconds
after the front
bumper reaches
the bicyclist,
contact occurs
with trailer axle.





Approximate
outline of tire
sidewall





Extremely Lucky
to be alive

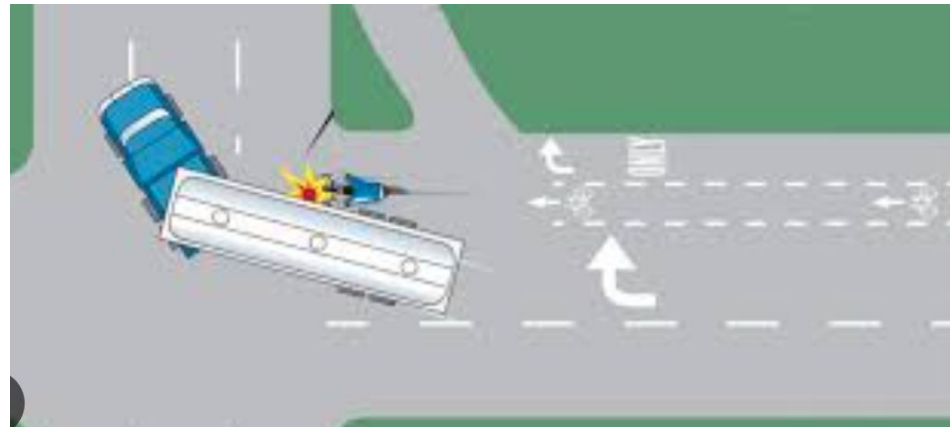




TWO COMMON TYPES OF CRASHES

1- Truck overtaking cyclists/ cyclist losing control - When a truck passes close by to a bicyclist, and the vacuum created under the truck pulls the bicyclists under the truck

2- Truck driver turns into cyclists

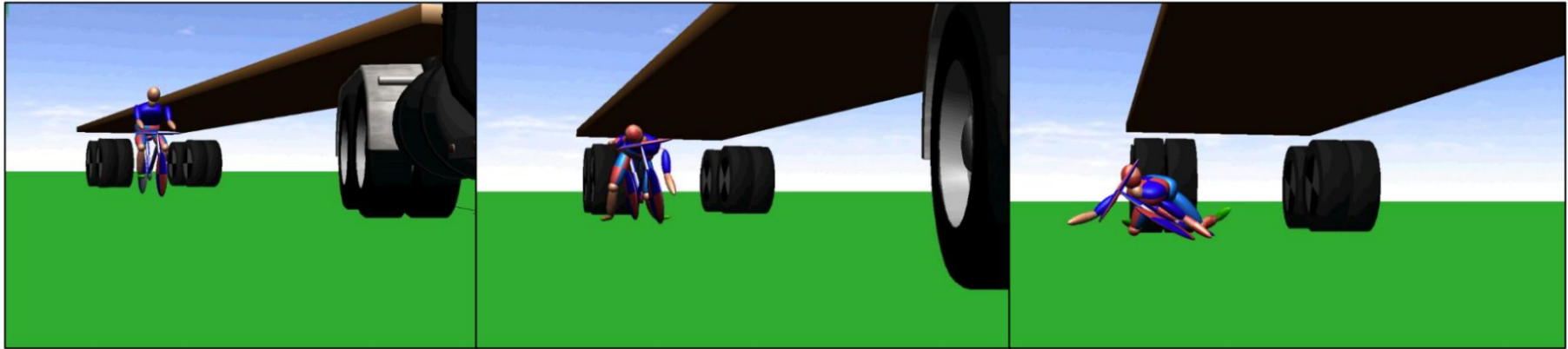




SIDE GUARDS AND TURNING TRUCKS

Notional turning crash simulation

No LPD



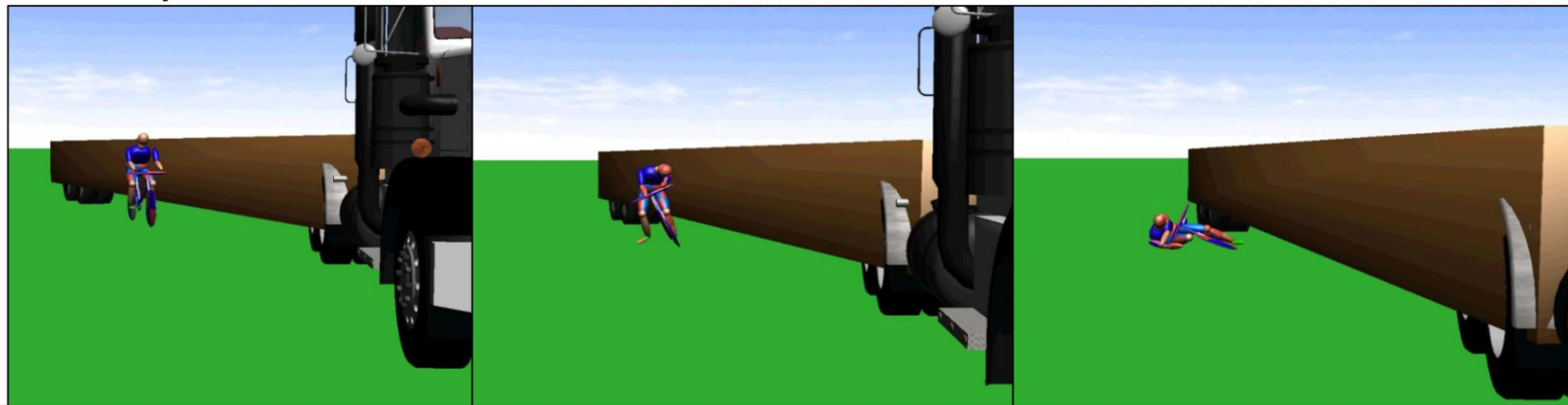
Source: Seven Hills Engineering



SIDE GUARDS AND TURNING TRUCKS

Notional turning crash simulation

Aerodynamic LPD



Source: Seven Hills Engineering



SIDE GUARDS AKA LATERAL PROTECTIVE DEVICE (LPD)



13.8 inches Max clearance is lower than UN standard in order to better prevent cyclists fatalities



2017

2017 US DOT recognizes an increase in bicyclists/ VRU fatalities in crashes with Large Trucks

US DOT Volpe Center (Research Arm of DOT) directed to research crashes and the potential of side guards to reduce fatalities



SIDEGUARDS CREATE PHYSICAL BARRIER





RESEARCH SHOWS

Literature review by the US DOT Volpe Center found:

11 studies including both field and Volpe studies

In sideguard related crashes, sideguards:

- Reduced Bicyclist fatalities 55-75%,
- Reduced Pedestrian fatalities by 20-27%

Conclusion: sideguards work!





WHY DON'T WE HAVE SIDEGUARDS?

American Trucking Association lobbied on report language

- 6 months of meetings
- US DOT conceded to ATA reviewing/ offering edits to the report

Resulting in DOT agencies removing from the 2020 Final Report:

- Any reference to benefits of a regulation
- 70 pages of the report, including study results.

How do we know this?

6. RECOMMENDATIONS

The present analysis provides a baseline set of results for FMCSA to consider in developing potential policies related to side guard standardization and deployment. This report recommends two parallel tracks of next steps: development of a new FMCSR and development of an industry standard.

To achieve the advantages outlined in this report, at minimum, a new side guard FMCSR should address:

- Side guard installation on new trucks and new trailers exceeding 10,000 pound GVWR.
- Dimensional requirements and performance-based mechanical requirements, including flexibility to use non-side guard truck parts and accessories. ~~to meet these requirements~~
 - Potentially establishing two tiers of compliance: a minimum set of requirements, e.g., aligned with the UN Regulation 73, and a more stringent set of recommended or best practice criteria.
- Acceptable methods to demonstrate installation and maintenance compliance.
- Retrofitting of aftermarket side guards on existing trucks |

Suggested ~~Recommended~~ next steps toward developing a side guard FMCSR include the following:

- Determine the extent to which truck operators are likely to deploy lateral underide technology in the absence of ~~Federal promotion or or federal requirements of their use~~. This analysis may involve development of a more in-depth business case for owners, one that accounts for payback periods and differences between truck vintages and uses that considers the payback period of equipping side guards given the vintage and use of the truck.
- For particular-specific policy considerations, the model developed in this report should be expanded to incorporate dynamics ~~between~~ of fuel use reductions, on VMT, and vehicle retirement.
- Researchers should further explore the benefit-cost implications of the ~~potential~~ safety impact of side guards on non-VRU-involved truck crashes (e.g., truck-involved crashes with automobiles at low speeds or equipped with ADAS and automation systems).

6. RECOMMENDATIONS

The present analysis provides a baseline set of results for FMCSA to consider in developing potential policies related to side guard standardization and deployment. ~~This report describes two sets of next steps: development of a new FMCSR and development of an industry standard.~~ This report recommends development of a consistent, consensus-based industry standard through a standards development organization⁷⁹ that would support current efforts led by truck manufacturers and major truck fleets.

¶

To achieve the advantages outlined in this report, a new side guard FMCSR industry standard should address:¶

~~Side guard installation on new trucks and new trailers exceeding 10,000 pound GVWR.¶~~

~~Dimensional requirements and performance-based mechanical requirements, including flexibility to use non-side guard truck parts and accessories.¶~~

~~Potentially establishing two tiers of compliance: a minimum set of requirements, e.g., aligned with the UN Regulation 73, and a more stringent set of recommended or best practice criteria.¶~~

~~Acceptable methods to demonstrate installation and maintenance compliance.¶~~

~~Retrofitting of aftermarket side guards on existing trucks.¶~~

~~Suggested Recommended next steps toward developing a side guard FMCSR include the following:¶~~

~~Determine the extent to which truck operators are likely to deploy lateral underide technology in the absence of [Federal] promotion or or federal requirements of their use. This analysis may involve development of a more in-depth business case for owners, one that accounts for payback periods and differences between truck vintages and uses that considers the payback period of equipping side guards given the vintage and use of the truck.¶~~

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~~Researchers should further explore the benefit-cost implications of the potential safety impact of side guards on non-VRU-involved truck crashes (e.g., truck-involved crashes with automobiles at low speeds or equipped with ADAS and automation systems).¶~~

Drafts of a report by Volpe Center researchers before (left) and after government officials assured industry lobbyists that the report would not include any regulatory recommendations.



2021 INFRASTRUCTURE BILL

TRUCK SAFETY ADVOCATES

- Advocated for Congress to require US DOT to set a regulation for side underride guards

WHAT IS IN THE BILL: DOT Required to:

- complete additional research on side underride guards to better understand the overall effectiveness of side underride guards;
- assess the feasibility, cost- benefit of installing side underride guards



SIDE UNDERRIDE GUARDS VS. SIDEGUARD



Side Underride guards-

- Goal is to stop the car before the occupants living space is under the truck.
- Need it to stop a car at 40 mph through contact to the grill/ hood.



Sideguards (LPDs) -

- Goal is keep a fallen cyclist/ pedestrian from being in the path of the rear wheel.
- Need a lower side guard that doesn't allow a fallen cyclist



NHTSA RESPONSE

Released an “advanced” Notice of Proposed Rulemaking

- The cost/ benefit analysis shows cost is higher than the benefit.
- Did NOT include VRU, or motorcyclists
- Limited the types of car-truck crashes they looked at

Two goals

- Require side guards
- Create precedent to consider bicyclist fatalities



The car Joshua Moran was driving when he was involved in an underride crash in November 2021. (Abigail Guibard)

WHAT WE CAN DO



NOW IS THE TIME



U.S. Department of Transportation

ABOUT DOT ▾

PRIORITIES ▾

CONNECT ▾



National Roadway Safety Strategy

The United States Department of Transportation National Roadway Safety Strategy (NRSS) outlines the Department's comprehensive approach to significantly reducing serious injuries and deaths on our Nation's highways, roads, and streets. This is the first step in working toward an ambitious long-term goal of reaching zero roadway fatalities.

[FIND OUT HOW U.S. DOT IS IMPLEMENTING THE NRSS](#)





CHANGE THE PATTERN NOW

We don't want to have to battle with NHTSA to include bicyclists in
EVERY SINGLE NEW TECHNOLOGY

Large Truck AEB

Blind spot detection

Stay in lane technology

Autonomous and Connected Vehicle technology





WHAT WE WANT

Long term goal- Fundamental change at NHTSA

- NHTSA to include bicyclists in ALL its vehicle safety evaluations

Pushback

- Detecting and responding to bicyclists is hard for today's technology

Shorter term goal-

- Include cyclists AEB in the NCAP
- Revise the Truck side underride guard cost- benefit analysis to include VRU (including motorcyclists) fatalities and serious injuries



BIKELEAGUE ON NHTSA

BE IN THE CONVERSATION ON VEHICLE SAFETY

Be visible to NHTSA/ Connect NHTSA to larger DOT

- Expertise and content
- Be more proactive

Partner with Industry

- Principles for testing with bicyclists
- Join advisory boards

Build Coalitions

Newest partner- American Motorcyclist Association





WHAT YOU CAN DO

Individuals

- ACTION ALERT - To NHTSA on Cyclists AEB
<https://bikeleague.org/take-action/action-center/>

Organizations/ Bike clubs

Sign onto letter to Secretary Buttigieg asking for NHTSA to:

- Include Cyclist and Motorcyclist AEB in the NCAP
- Include VRU (including motorcyclists) fatalities and serious injuries in the cost- benefit analysis on truck side underride guards.