



The Honorable Ann Carlson
Chief Counsel
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20950

Re: Side Underride Guards; Advance Notice of Proposed Rulemaking; Docket No. NHTSA-2023-0012

Dear Chief Counsel Carlson:

Thank you for the opportunity to comment on the National Highway Traffic Safety Administration (NHTSA)'s Advanced Notice of Proposed Rulemaking (ANPRM) for side underride guards for large trucks. The Association of Pedestrian and Bicycle Professionals (APBP) was dismayed to find that the cost-benefit analysis in this ANPRM did not include the benefits of the vulnerable road user lives (including people bicycling, walking or using mobility devices) that could be saved when determining if a side underride guard requirement on new tractor trailers was worth the cost. We ask that NHTSA review and revise your cost-benefit analysis to include vulnerable road users and motorcyclists.

APBP is a community of practitioners working to create more walkable, bikeable, and transit-accessible places. We foster peer knowledge sharing, advance technical expertise, and support the professional development of our members who work in government, consulting firms, and in non-profit organizations in the fields of transportation planning and engineering, urban design and planning, public health, and active living.

As practitioners we know that truck safety is a necessary component of vulnerable road safety and is necessary to meet the goals of the National Roadway Safety Strategy. From 2017-2020 an average of 559 vulnerable road users (not including motorcyclists) died each year in crashes with large trucks. During those years, an average of 290 motorcyclists also were killed.

We see the dangers in our communities. Nationally, 11 percent of fatalities of people bicycling and 7 percent of people walking occur in crashes with large trucks. However, those percentages are not equal. In 10 states, more than 1 in 5 bicyclist fatalities are caused by a crash with a large truck. In Massachusetts, large truck crashes account for over 48 percent of bicyclist fatalities. In 12 states, large truck crashes account for 15 percent or more of all pedestrian fatalities.

Not all of these fatalities would be avoided because of side guards, but many of them may have been. According to the 2014 Report by the National Transportation Safety Board (NTSB), 55

percent of all bicyclist-truck fatal crashes and 29 percent of all pedestrian-truck fatal crashes start with a side impact.¹ A more recent study by the US DOT Volpe Center (Volpe), which includes both tractor trailer and single unit trucks, finds that “almost 50 percent of bicyclists fatalities and over a quarter of pedestrian fatalities with large trucks start with a side impact.”

We also know that side guards (or side underride guards compliant with US Volpe sideguard standards) are effective at stopping fatalities, with research by the Volpe Center showing them being effective 55-75 percent of the time for bicyclists and 20-27 percent of the time for pedestrians.

There are also real world examples showing that side guards work. After the United Kingdom began requiring side guards on most new trucks in 1986, there was a 61 percent drop in cyclist fatalities and a 20 percent drop in pedestrian deaths in the types of crashes side guards are designed to mitigate.

When NHTSA fails to include VRU fatalities, it is undercutting safety actions by state and local governments. According to the US DOT Volpe Center, 13 US cities plus the state of Massachusetts have passed regulations to require side guards on trucks to save the lives of vulnerable road users. However, these communities and states are limited in what they can regulate, controlling only their local fleets, trucks registered in their jurisdiction, or in the case of Massachusetts, trucking companies under contract with the state.

During those same years, the FARS database shows that crashes with large trucks resulted in 3330 bicyclist injuries (396 incapacitated), 6169 pedestrian injuries (1402 incapacitated), and 4532 other non-motorist injuries (303 incapacitated). Reports on sideguard effectiveness in reducing injuries vary. Volpe found that 3-17 percent of bicyclists serious injuries could be mitigated with Volpe compliant side guards.

APBP requests NHTSA reevaluate the cost-benefit analysis to include fatalities and serious injuries of vulnerable road users and motorcyclists in its rulemaking of side underride guards.

In doing so, we ask that NHTSA also revisit the accuracy of FARS data, particularly on the location of first impact between the VRU and the truck. Both NTSB and Volpe studies found a high percentage of fatalities start with a side impact, but the NHTSA FARS data does not reflect that, and much of the crash data doesn't have that information. In reevaluating the cost-benefit analysis, NHTSA should consider a multiplying factor to relevant crashes to make up for the lack of information available on large truck-VRU crashes.

¹ Letter from NTSB to NHTSA on tractor trailers and cyclists and pedestrians. April 23, 2014 H-14-001-007. <https://www.nts.gov/safety/safety-recs/RecLetters/H-14-001-007.pdf>

APBP would like to express support for comments from other stakeholders, and asks NHTSA to review their methodology to:

- Review the metrics around vehicle speed to consider not just travel speed of the vehicle but the speed differential between a truck and a vehicle as included in NHTSA's 2018 simulations that demonstrate side guards would be effective up to 50 mph.²
- Include crashes that occur at an oblique angle, particularly those with a speed differential of greater than 40 mph. In a majority of underride collisions, the passenger vehicle is moving in a forward orientation towards the semitrailer, making contact at an oblique angle. During an oblique impact with a side underride guard, the objective is to contain and redirect the impacting vehicle. The redirected vehicle has an exit velocity and, thus, not all of the energy of the vehicle must be dissipated by the guard.
- Include crashes that involve more than one truck and one passenger vehicle. The 2012 Insurance Institute for Highway Safety's Large Truck Crash Causation Study identified 73 cases in which the most severe injury to a passenger vehicle occupant was due to side underride. One quarter of these cases (18 of 73) involved more than two vehicles.³
- Include aerodynamic fuel savings of side guards used to prevent VRU fatalities. The US DOT Volpe center found fuel savings for the 60 percent of trailers that do not voluntarily get fitted with aero skirts (or aero side guards) that can save 5 percent or more of fuel costs. That could offset the fuel consumption from added weight.
- Test how side underride guards may work with automatic emergency braking systems on other vehicles. The presence of the physical barrier of the guard can make it easier for car automatic emergency braking systems to detect trucks and stop crashes before they happen.

Thank you for the opportunity to comment on this important ANPRM. We hope NHTSA will reconsider its cost-benefit analysis by including fatalities and serious injuries of vulnerable road users and motorcyclists, as well as the assumptions made around motor vehicle underrides. Please contact Caron Whitaker, caron@clwconsulting.net with any questions.

Sincerely,

Lauren Santangelo
Executive Director

² National Highway Traffic Safety Administration, *Computer Modeling and Evaluation Of Side Underride Protective Device Designs*, April 2018, https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/13611_supd_report_041118_v4-tag.pdf

³ Brumbelow, Matthew, Insurance Institute on Highway Safety, *Large Truck Crash Causation Study*, 2012. <https://www.iihs.org/topics/bibliography/ref/2025>