ACUP Mission

The Bipartisan Infrastructure Law gives the ACUP a dual mission:

1. provide advice and recommendations to the Agency and
2. assess the Agency's progress in advancing safety regulations.

ACUP's Legal Duties

(d) ADVISORY COMMITTEE ON UNDERRIDE PROTECTION.—
(1) ESTABLISHMENT.—The Secretary shall establish an Advisory Committee on Underride Protection to provide advice and recommendations to the Secretary on safety regulations to reduce underride crashes and fatalities relating to underride Crashes…

6) REPORT.—The Committee shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a biennial report that—
(A) describes the advice and recommendations made to the Secretary; and
(B) includes an assessment of progress made by the Secretary in advancing safety regulations relating to underride crashes

DOT’s Responsibility

The law also requires DOT to support the ACUP's work. The Secretary is required to provide "information" when the ACUP requests it.

DOT's Legal Duties

5) SUPPORT.—On request of the Committee, the Secretary shall provide information, administrative services, and supplies necessary for the Committee to carry out the duties of the Committee.

ACUP Needs Information Only NHTSA Possesses

We need to review the basis used by NHTSA to make determinations in both its **final rule on rear impact guards** and its **ANPRM on side underride guards**.

Only NHTSA possesses that information, since NHTSA did not reveal it publicly in their rulemakings.

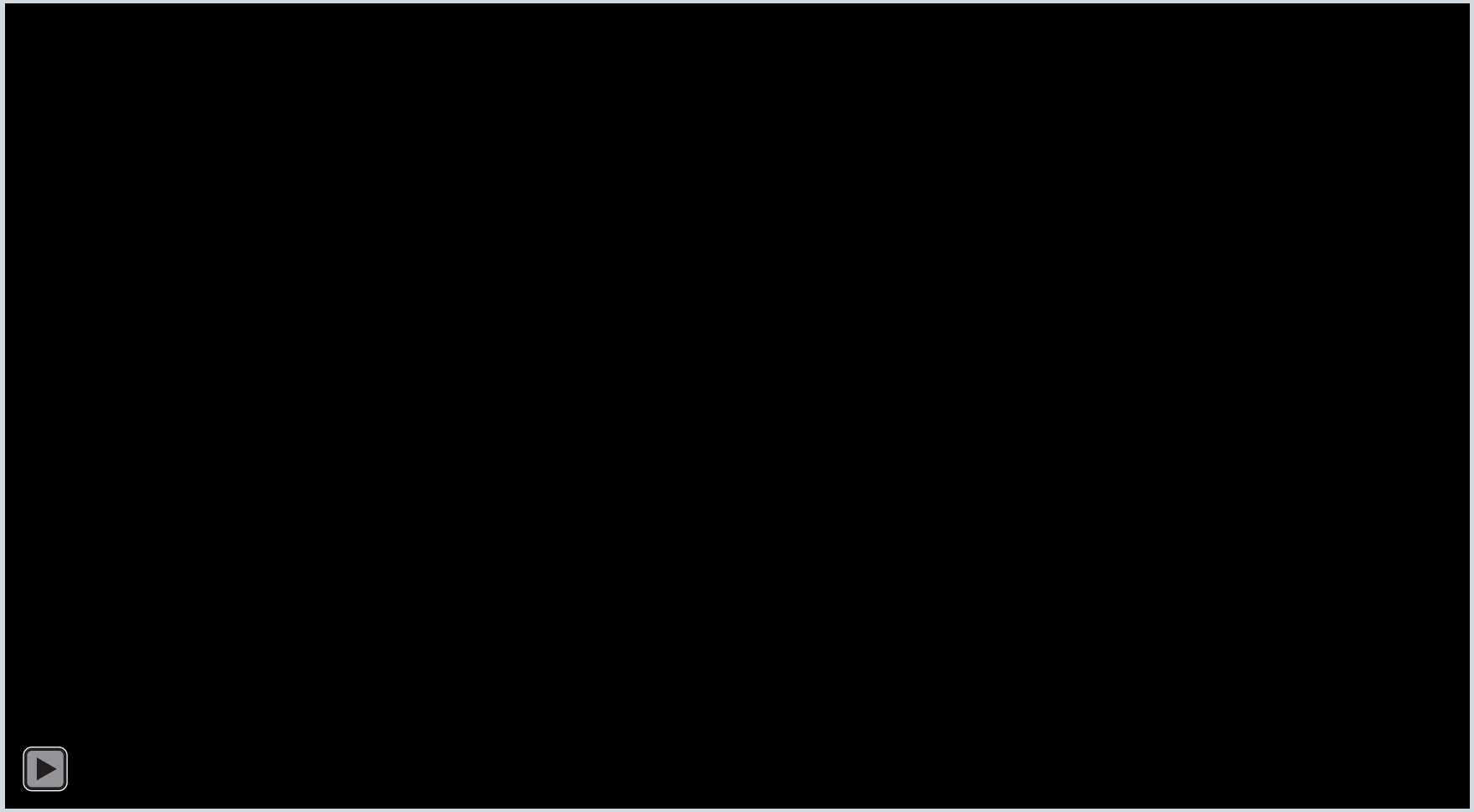
Example 1 from the Side Guard ANPRM

NHTSA did not count underride crashes resulting in deaths involving:

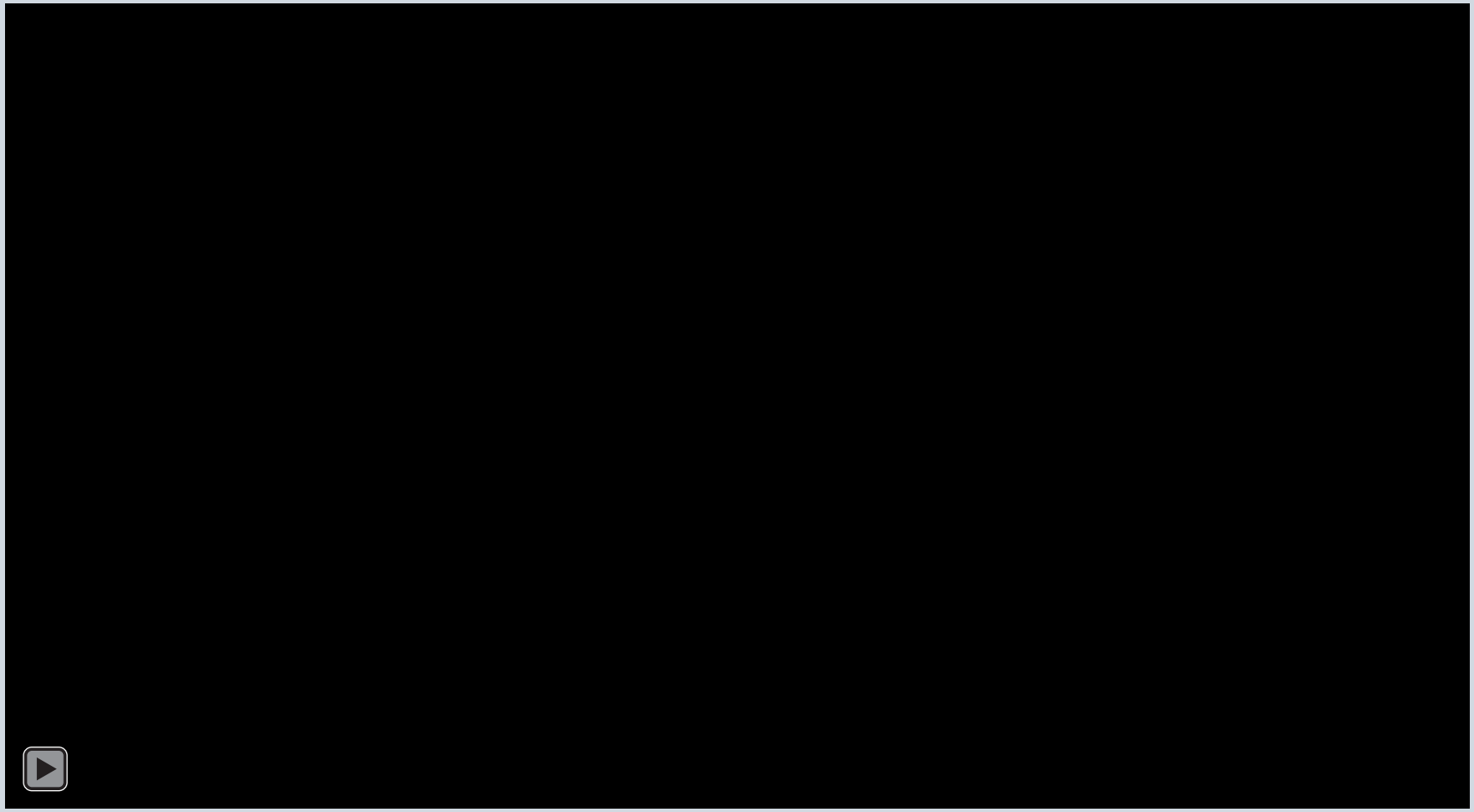
Single Unit Trucks
Multiple Vehicles
Pedestrians
Bicyclists
Motorcyclists
Speeds above 40 mph

Exclusions reduced the estimated number of preventable underride deaths. ACUP needs to review NHTSA's basis for excluding these crashes from its analysis.

Multi-vehicle Side Underride at Highway Speeds



Multi-vehicle Side Underride at Highway Speeds – Slo-mo



Example 2 from the Side Guard ANPRM

NHTSA stated that, "*From the PCR review of 184 relevant cases in the 2017 FARS data files, NHTSA estimated that 19.9 percent of side underride fatalities occurred at impact speeds below 64 km/h (40 mph). For evaluating the benefits of side underride guards, the subset of crashes at impact speeds below 64 km/h (40 mph) are relevant because 64 km/h (40 mph) is the maximum impact speed at which the existing side underride guard considered in this analysis have demonstrated passenger vehicle occupant protection*."

NHTSA should explain how it determined impact speeds and why it did not base its determination on studies of electronic data recorders.

Example 3 from the Side Guard ANPRM

The following reports, studies, and reviews that are mentioned in but missing from the docket of NHTSA's ANPRM for side underride protection:

1. "In 2019 the National Highway Traffic Safety Administration studied side-underride crashes involving CTs and LPVs. The effects of speed limit, vehicle age, occupant age, belt use, and road surface conditions on occupant fatalities are also discussed in this study"; and

2. "In February 2020 NHTSA's State Data Reporting System Division conducted a special review of FARS cases that were identified as possible underride/Ooerride [sic] cases as part of an Evaluation of Vehicle Underride and Associated Fatalities in Light Vehicle Crashes into the Side of Truck Trailers Report."

Example 4 from the Side Guard ANPRM

Did NHTSA consider in its cost-benefit analysis the following:

1. Calculation of cost of side guards based on anything besides the current cost of the AngelWing side guard?

2. Cost of side guards based on methods taking into account economies of scale, including cost/lb of trailer production?

Example 5 from the Side Guard ANPRM

Provide all completed components — namely cost-benefit analysis, vehicle parts interactions report, recommendations, and proposals for voluntary adoption — included in the Volpe Study, ***"Study of Truck Side Guards to Reduce Pedestrian Fatalities,"*** but omitted from the final FMCSA report, ***A Literature Review of Lateral Protection Devices on Trucks Intended for Reducing Pedestrian and Cyclist Fatalities*** (DOT, May 2020).

The study's Cost Benefit Analysis Information can be found on Volpe website.

Example 6 from the Side Guard ANPRM

Information submitted to the Office of Defects Investigations from trailer manufacturers, in response to an Information Request (IR) issued by ODI on December 9, 2021, will provide the ACUP with essential information for evaluating underride regulatory analysis. This information should be accessible to the ACUP.

NHTSA Also Excluded Data from Its Final RIG Rule

NHTSA made determinations, without revealing its basis for doing so, that led it to decline requiring impact guards meeting the 30% offset standard.

Exclusions reduced the available evidence that supported requiring impact guards meeting the 30% offset standard.

Example 1 from the Final RIG Rule

NHTSA concluded “that trailers that have the main vertical supports for the guard more outboard *may not perform as well* in full overlap crashes as trailers that have the vertical supports more inboard” (emphasis added).

What is the basis for this conclusion? Did NHTSA base it on data, and if so, what was it?

Example 2 from the Final RIG Rule

NHTSA excluded from its analysis the 30% offset impact protection design marketed by Stoughton Trailers, which the manufacturer claims does not add weight or fuel costs. Stoughton says “The rear guard resists compartmental intrusion of an automobile when the location of impact is at 30% to 100% overlap of the width of the car to the underride guard,” with “no added weight,” “no negative impact on aerodynamics,” and “no additional costs.” But NHTSA asserted that achieving those characteristics was not feasible,

> *It does not appear feasible engineering-wise for the additional material (two steel vertical members on the outer edge of the horizontal member that is bolted to a reinforced undercarriage) not to add weight or cost to the trailer. Accordingly, NHTSA decided not to include this guard design in this analysis*

What basis did NHTSA have for that assertion? Did NHTSA conduct any assessments of the Stoughton trailer?

Example 3 from the Final RIG Rule

NHTSA applied a 50% reduction in estimating the incremental effectiveness of rear guards meeting a 30% offset standard.

What is the basis for reducing the incremental effectiveness of rear guards meeting the standard?

Example 4 from the Final RIG Rule

NHTSA did not apply a 28% reduction to account for NHTSA's estimate of the percentage of new manufactured trailers and semitrailers that already met the 30% offset standard. NHTSA acknowledged in footnote 19 of the final rule that "There were 211,807 new trailers sold in 2020, among which 65 percent (137,675 = 211,807 x 0.65) are required to be equipped with rear impact guards. Among applicable trailers, 28 percent are already equipped with guards that mitigate PCI in 30 percent overlap crashes."

Why did NHTSA not reduce the cost of requiring a 30% offset standard by the proportion of trailers (28%) that already meet that standard?

Example 5 from the Final RIG Rule

NHTSA determined which vehicles are appropriate and which are not appropriate for a 30% offset standard, concluding that "available data do not show that a standard for a 30 percent overlap crash at 35 mph would be reasonable, practicable, or appropriate for *all* the vehicles subject to FMVSS No. 223 and FMVSS No. 224" (emphasis in original).

What was the basis NHTSA used for determining which vehicles were appropriate for the 30% offset standard?

Front Underride Protection

The UNECE, as well as many countries, recognized the known safety hazard from collisions with the front of large trucks resulting in death and significant injuries and, subsequently, adopted a Front Underride Protection Standard.

NHTSA has not harmonized U.S. standards, on front bumpers for commercial motor vehicles, with those of other countries or regions, pursuant to federal law.

NHTSA should provide ACUP with information pertaining to the reasons it has not harmonized U.S. standards.

Technical Briefings from Outside Experts

ACUP will need to receive briefings on relevant information from the following experts:

1. the authors of the Texas A&M ***Computer Modeling and Evaluation Of Side Underride Protective Device Designs*** study.
2. the authors of the Volpe ***Study of Truck Side Guards to Reduce Pedestrian Fatalities***,
3. the engineers at Stoughton Trailers on their claims to produce trailers with rear impact guards that prevent passenger compartment intrusion (PCI) that do not add additional weight, cost, or negatively impact aerodynamics
4. the authors of NHTSA rear underride research studies, including preliminary results of the study currently in progress.
5. Trailer manufacturer engineers who drafted the TTMA recommended practice on side guards.

Bringing Motions To a Vote

At our previous meeting, I moved that ACUP request the information and briefings I've just discussed.

Procedurally, we learned that motions made at one meeting lay over until the subsequent meeting. Today is that meeting.

At what point in today's agenda would it be appropriate to vote on **the motions I made** at our last meeting to request information from NHTSA (RIG Rule, Side Guards), Working Groups (Meeting Schedule), and Briefings from Experts?

Crash Avoidance Technologies & Underride Prevention

Feedback from Shawn Harrington, Crash Reconstructionist & Forensic Engineer, Forensic Rock:

- Many passenger vehicle owner's manuals specifically exclude crossing vehicle scenarios from Forward Collision Warning and Automatic Emergency Braking scenarios.
- Many current passenger vehicles would not completely stop a vehicle from closing speeds greater than 40 mph in rear scenarios.
- Many vehicles struggled to detect the side of a logging trailer in my testing and simply did not warn.
- I believe that the side of trailers represent an edge condition with today's current ADAS technology.
- Detecting the side of a trailer was not part of the passenger vehicle NPRM for AEB recently issued, only rears of passenger vehicles were. As manufacturers "tune for the test," I do not expect the majority of systems to handle side of trailers in the same way.