

## POLICY BRIEF

# Peer-reviewed study finds side underride guards economically justified while NHTSA still has not proposed a safety rule

A peer-reviewed cost-benefit analysis demonstrates that the economic and safety benefits of side underride guards outweigh the costs.

**Result: All modeled scenarios produced positive net economic benefits on a present-value basis, ranging from \$137 million to \$2.8 billion.**

### Why this matters

- Congress directed NHTSA in 2021 to assess the feasibility, benefits, and costs of side underride guards, but federal rulemaking has not advanced.
- NHTSA issued an advance notice of proposed rulemaking in April 2023, but review of public comments remains incomplete more than three years after publication.
- The findings are directly relevant to the Stop Underrides Act 2.0 bill ([S.3775/H.R.7354](#)) concerning side underride protection for new semitrailers.

### Policy takeaway

The modeled results meet conditions identified by NHTSA and industry for side underride guard rulemaking, including economic justification and technological feasibility.

Repeated side underride crashes and multimillion-dollar verdicts and settlements increase the legal and financial risk of operating trailers without side underride guards.

Source: Hein, E. (2026). Cost-benefit analysis of side underride guards for new semitrailers in the United States. Journal of Progress in Safety & Security, 2. DOI: [10.59490/jps.2.2026.8512](#)

|                  |                                                  |
|------------------|--------------------------------------------------|
| <b>\$7.4B</b>    | estimated annual societal cost of side underride |
| <b>300 / 400</b> | estimated annual fatalities and serious injuries |
| <b>39</b>        | break-even threshold (lives saved equal costs)   |

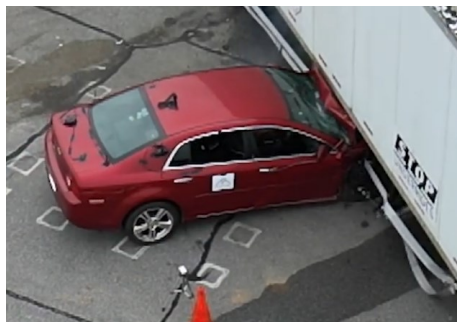
[link](#)

### Scope

The study evaluates a potential federal requirement for side underride guards on new U.S. semitrailers using a cost-benefit framework that mirrors NHTSA's cohort-scaling approach.



**Above:** IIHS [crash test](#) into tractor-trailer equipped with an *AngelWing* side impact guard on August 29, 2017, at the Second Underride Roundtable. 40 mph

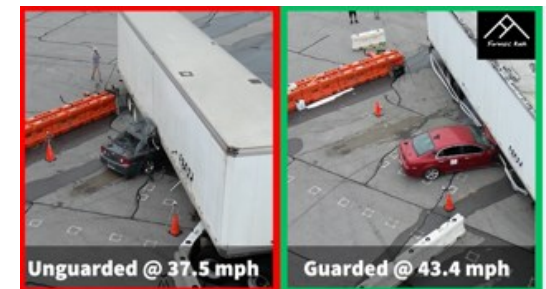


**Above:** Collision Safety Consulting [crash test](#) into tractor-trailer equipped with a *SafetySkirt* side impact guard on August 3, 2023, at the NCSHP in Raleigh. 43.4 mph

# **STOP** UNDERRIDES

## Preventing Underride Deaths at 40 mph Is Possible:

## Make Truck Crashes **SURVIVABLE** With Impact Guards



[annaleahmary.com](#)

| Annual Fatalities From Underride By Type and Kind of Victim |            |            |            |              |
|-------------------------------------------------------------|------------|------------|------------|--------------|
|                                                             | Front      | Rear       | Side       | Total        |
| Passenger Vehicles                                          | 164        | 287        | 179        | 468          |
| Pedestrians                                                 | 457        | 15         | 221        | 693          |
| Bicyclists                                                  | 57         | 1          | 100        | 158          |
| Motorcyclists                                               | 83         | 79         | 279        | 441          |
| <b>TOTAL</b>                                                | <b>761</b> | <b>382</b> | <b>779</b> | <b>1,760</b> |

Figures from the 2024 ACUP Report based on FARS data & NTSB 2014 Study based on Trucks in Fatal Accidents

Above: [link](#) Below: [Link](#)

"NTSB has long recognized the need for underride protection. Since the '70s in fact. In 2013 and 2014, we issued key recommendations urging the National Highway Traffic Safety Administration to require commercial trucks to have strong rear and side underride protection systems that prevent injuries to passenger vehicle occupants during a crash.

"Unfortunately, our work is not done. NTSB will continue to push for our recommendations to be implemented by NHTSA. Strong rear & side underride protection must be required on all trucks & trailers," said NTSB Board Member Thomas Chapman in a message to participants of the **STOP Underrides National Town Hall** on April 15.



Stoughton RIG [Crash Test](#) 40 mph 12/2025

### The 2022 Rear Impact Guard Rule Was OBSOLETE The Day It Was Published:

- The top RIG meets the TOUGHGUARD standard.
- The bottom RIG meets the 2022 Rule.



### Sapa/Hydro RIG 2017 Testing At 40 mph



Modified version of the IIHS TOUGHGUARD 30% Overlap Semi-Trailer Underride Evaluation Crash Test Protocol

Above: [Tested by NHTSA](#) in 2018



[RIG Retrofit 38+ MPH, 1/2020](#)





Stoughton Trailers didn't just meet IIHS TOUGHGUARD® standards, we exceeded them. Our rear impact guard performed at 40 MPH, exceeding the truck industry 35 MPH benchmark. It met the automotive test standard for the median speed of real-world crashes involving serious injuries. That's 37% more crash energy absorbed with no passenger compartment intrusion in testing, underscoring the critical role of trailer design and construction.



Tested under the most challenging 30% overlap impact protocols, our design delivers superior energy absorption and structural integrity, helping reduce injury severity and save lives. "This successful 40 MPH test result shows Stoughton's commitment to safety," said IIHS President David Harkey.

This isn't optional safety. It's standard on every new Stoughton dry van and refrigerated trailer at no additional cost or weight. Can your company afford not to use the safest trailer on the road?

Don't settle for meeting the standard. Exceed it.

**STOUGHTON®** 608-877-8635  
StoughtonTrailers.com



Table 7. PCI observations – Strengthened guards

| Overlap               | Strengthened Guard | 40 mph<br>PCI/No-PCI | 45 mph<br>PCI/No-PCI |
|-----------------------|--------------------|----------------------|----------------------|
| 30 Percent<br>Overlap | Wabash             | PCI                  | PCI                  |
|                       | Manac              | No PCI               | PCI                  |
|                       | Great Dane         | PCI                  | PCI                  |
| 50 Percent<br>Overlap | Wabash             | No PCI               | No PCI               |
|                       | Manac              | No PCI               | No PCI               |
|                       | Great Dane         | No PCI               | PCI                  |
| Full Width            | Wabash             | No PCI               | No PCI               |
|                       | Manac              | No PCI               | No PCI               |
|                       | Great Dane         | No PCI               | No PCI               |

NHTSA-contracted Elemance Research Report, July 2025

[Study Link](#)