Automotive Considerations for Pedestrian Safety

J. Skyler McKinley
Regional Director, Public Affairs
jmckinley@acg.aaa.com
Fundamental Aims

1) Prevent Crashes

2) Prevent Severe Injuries & Fatalities
What causes a crash to result in severe injury or death?

It’s terribly simple. It’s something we learned about in middle school. It’s Newton’s Second Law of Motion.

Two controllable factors:

- Speed
- Vehicle Size
As a general matter of public health, public concern and public policy, we’ve all agreed to take a good, hard look at speed. It’s why we’re not allowed to drive 120 mph on the highway or 60 mph through a neighborhood or school zone. It’s common-sense, straightforward policy. The public understands and supports this sort of thing.
The safety of pedestrians is greatly improved with a lower speed. Crosswalks and countermeasures such as Road Diets and Pedestrian Refuge Islands keep speeds down.

**Severe Injury:**
- 10% at 16mph
- 25% at 23mph
- 50% at 31mph
- 75% at 39mph
- 90% at 46mph

**Death:**
- 10% at 23mph
- 25% at 32mph
- 50% at 42mph
- 75% at 50mph
- 90% at 58mph

Source: AAA Foundation, Impact Speed and a Pedestrian's Risk of Severe Injury or Death
Size kills, too.

**NHTSA:** “Pedestrians are 2-3 times more likely to suffer a fatality when struck by an SUV or pickup truck than when struck by a passenger car.”

**IIHS:** Pedestrian deaths “twice as high for SUVs, nearly three times as high for vans and minivans, and nearly four times as high for pickups as they were for cars.”

**AAAM:** “SUVs remain disproportionately likely to injure and kill pedestrians compared with cars.”

**NTSB:** “Increased risk of death and severe injury for all road users from heavier curb weights.”
Bigger vehicles are popular.

As a function of consumer choice, production trends, and vehicle electrification and related incentives, the U.S. automotive market now largely produces heavy vehicles.

• JD Power: “Over 80 percent of new vehicle sales in the U.S. are SUVs and trucks.”

• Most major OEMs are phasing out traditional sedans in favor of crossovers, SUVs, and trucks.

• IIHS: Electric vehicles are heavier by dint of their battery packs. The electric GMC Hummer weighs roughly 9,000 pounds. Its battery pack alone weighs 2,900 pounds – about the same weight as a Honda Civic.
Bigger vehicles are getting bigger

The evolution of the pickup truck

- **1980** 3,739 lbs.
- **1990** 3,928 lbs.
- **2000** 4,340 lbs.
- **2010** 5,308 lbs.
- **2020** 5,125 lbs.
Colorado’s Top Cars

Per 2022 vehicle registration data from the Colorado DMV:

1. Ford F-150 - 94,783 registrations – 4,021 to 5,740lbs
2. Chevrolet Silverado - 75,375 registrations – 4,400 to 5,620lbs
3. Subaru Outback - 55,936 registrations – 3,637 to 3,937lbs
4. Toyota Tacoma – 53,529 registrations – 3,915 to 4,550lbs
5. Jeep Grand Cherokee - 52,550 registrations – 4,238 to 4,784lbs
6. Toyota 4Runner - 51,927 registrations – 4,805 to 6,300lbs
7. Subaru Forester – 51,430 registrations – 3,454 to 3,620lbs
8. Toyota Rav4 - 43,156 registrations – 3,370 to 3,655lbs
10. GMC Sierra – 41,129 registrations – 4,430 to 7,059lbs
What can we do?

Amid skyrocketing pedestrian fatalities & rising average vehicle curb weight, what can we do to make people safer?

• Technology? Per AAA, detection systems don’t work.

• Speed Limits? Lowering speed limits is a start, but most fatalities aren’t caused by folks who obeyspeed limits.

• Size & Weight Restrictions? No way. Impossible to do at the state level, fundamentally anti-consumer choice, and flies in the face of broader Colorado electrification goals.
What’s left? Infrastructure
Reach out! We want to help. It’s what we’ve done since 1922.

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jmckinley@acg.aaa.com
303-720-9200