

# From Dangerous to Deadly: Vulnerable Road Users on Colorado Roads



**Rachel Hultin** Policy and Government Affairs Director



Our mission is to lead a passionate and growing movement that champions the interests of everyone who rides or wants to ride a bicycle in our state.



## VULNERABLE ROAD USER:

A non-motorist with a fatality analysis reporting system (FARS) person attribute code for **pedestrian, bicyclist, other cyclist, and person on personal conveyance** or an injured person that is, or is equivalent to, a pedestrian or pedalcyclist as defined in the ANSI D16.1-2007. (See 23 U.S.C. 148(a)(15) and 23 CFR 490.205).



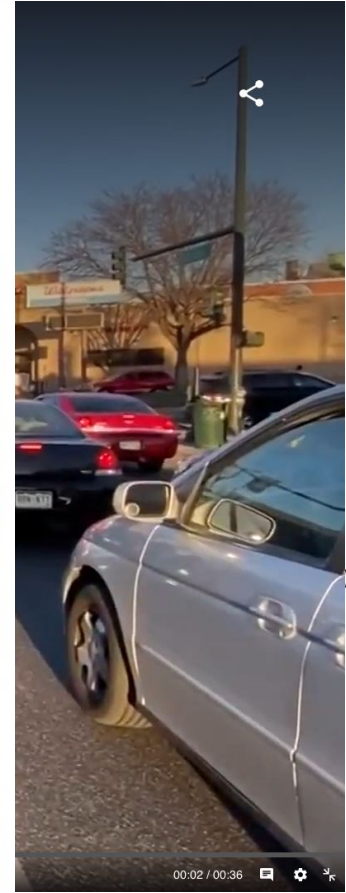
Man In Whe



## Local teen hit in crosswalk helps CDOT launch pedestrian safety campaign

Lindsey Toomer [lindsey.toomer@denvergazette.com](mailto:lindsey.toomer@denvergazette.com)

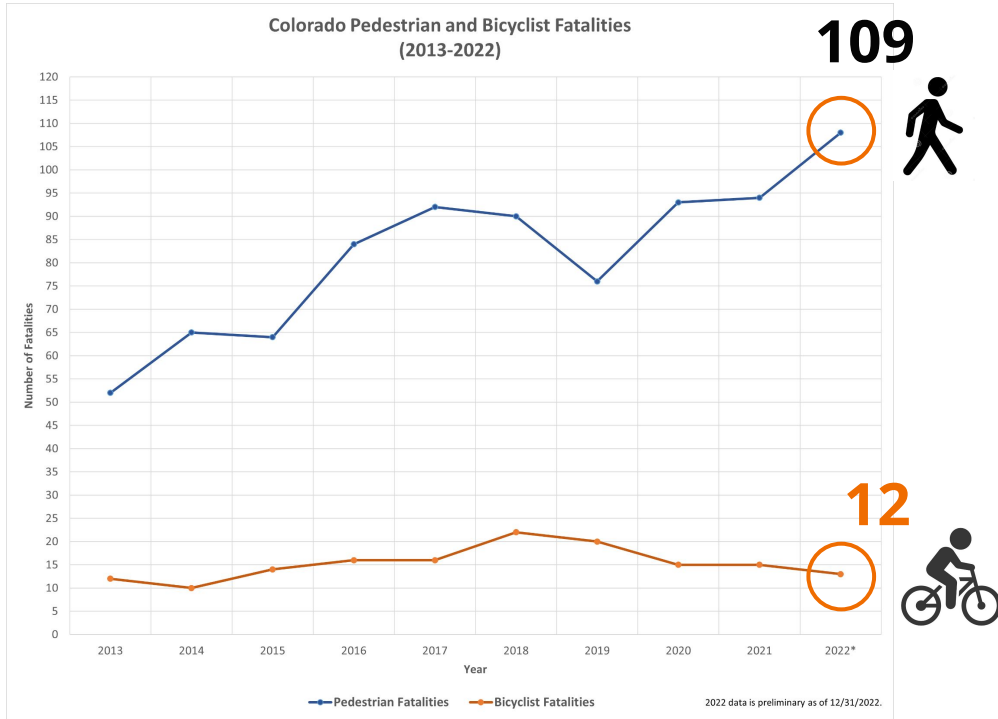
Feb 21, 2022 Updated Mar 31, 2022



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# 2022: DEADLIEST YEAR EVER ON COLORADO ROADS WITH 745 FATALITIES



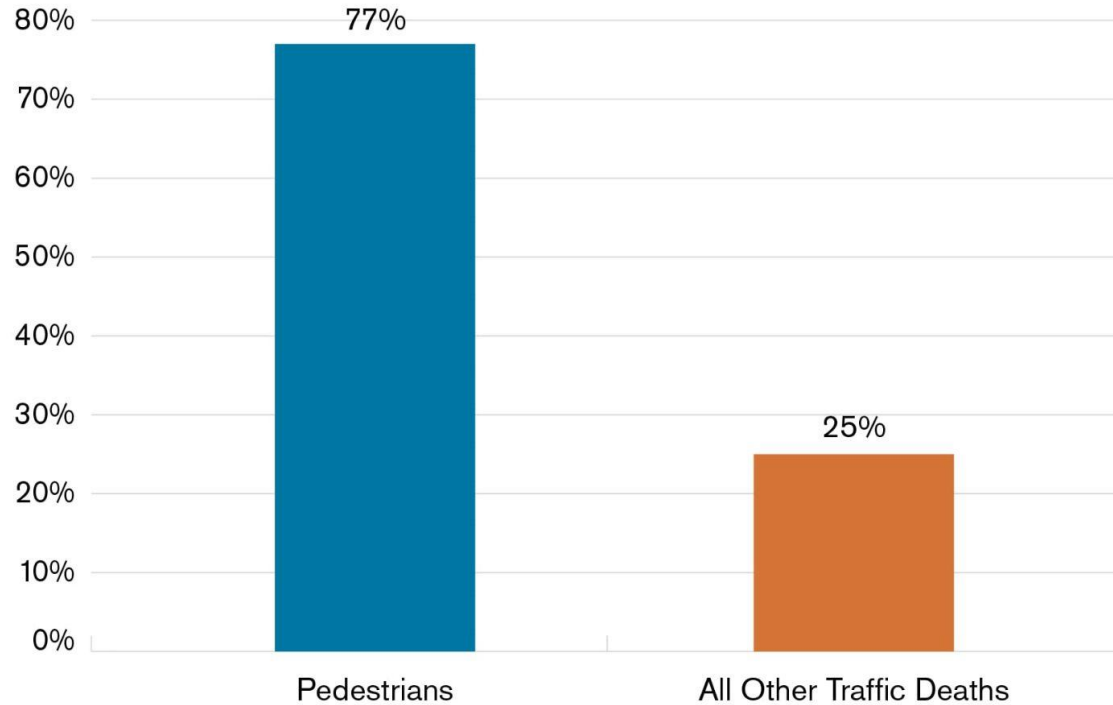
36% of the 745 fatalities were people outside a vehicle.

16% of the 745 fatalities were bicyclists and pedestrians.

*“There was also a significant increase in crashes involving pedestrians, bicyclists, and motorcyclists in 2022, according to Keith Stefanik, the Deputy Chief Engineer for CDOT.” Fox News 21*

## Pedestrian Deaths Are Increasing Faster Than All Other Traffic Fatalities

Percent Increase  
in Number of  
Traffic Deaths,  
2010-2021



# WHAT ARE CONTRIBUTING FACTORS?



- **THERE ARE MORE VRUs**
- **DANGEROUS ROAD DESIGN**
- **VEHICLE SPEED AND WEIGHT**
- **INSUFFICIENT FUNDING**
- **ROAD USER BEHAVIOR**

# VEHICLE AND PEDESTRIAN

## COLLISION SPEED AND SURVIVAL PERCENTAGE

» When a vehicle is traveling at...

20  
MPH

30  
MPH

40  
MPH

» this is the driver's field of vision.<sup>1</sup>



» It takes...<sup>2,3</sup>

40' TO



90' TO



155' TO



» and pedestrians hit at this speed have a<sup>4</sup>...

13%

Likelihood  
of fatality or  
severe injury



40%

Likelihood  
of fatality or  
severe injury



73%

Likelihood  
of fatality or  
severe injury



**Reminder:**

**The faster and heavier the  
vehicle**

**the smaller the field of vision**

**the longer it takes to stop**

**and the more deadly the  
impact for VRUs**

**This data is based on studies from over 10  
years ago. Vehicle size and weight has  
increased so fatality rates are higher**





## The Safe Systems Approach

Focuses on both human mistakes AND human vulnerability to design a system with many redundancies in place to protect everyone.

### 15% VRU Fatality Trigger HSIP

Because more than 15% of Colorado's roadway deaths were VRU's, the state is required to spend 15% of its Highway Safety Improvement Program (HSIP) on safety improvements specific to VRUs

**\$38M** HSIP Annual Funding

**\$5.6M** 15% for VRUs

**\$1.5M** 1 Mile of sidewalk

## Speed Management



[Appropriate Speed Limits for All Road Users](#)



[Speed Safety Cameras](#)



[Variable Speed Limits](#)

## Pedestrian/Bicyclist



[Bicycle Lanes](#)



[Crosswalk Visibility Enhancements](#)



[Leading Pedestrian Interval](#)



[Medians and Pedestrian Refuge Islands in Urban and Suburban Areas](#)



[Pedestrian Hybrid Beacons](#)



[Rectangular Rapid Flashing Beacons \(RRFB\)](#)



[Road Diets \(Roadway Configuration\)](#)



[Walkways](#)

# FHWA PROVEN SAFETY COUNTERMEASURES

# OPPORTUNITIES TO IMPROVE SAFETY

- Bicycle Colorado has launched SHIFT Driving™, free online driver education course on best practices and laws to share the road with VRUs
- The Infrastructure Investment and Jobs Act requires all states to complete and adopt a “Vulnerable Road User” assessment by November 15, 2023
- Colorado’s Advancing Transportation Safety Program is using a Safe Systems which includes identifying engineering principles to inform investments to reduce VRU fatality and serious injury.
- Reducing roadway fatalities is one of the Governor’s “Wildly Important Goals”
- **FUNDING INFRASTRUCTURE IMPROVEMENTS IS CRITICAL TO ACCOUNT FOR HUMAN BEHAVIOR OF ALL ROAD USERS, ESPECIALLY FOR THE MOST VULNERABLE.**



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# Thank you!

