



Vulnerable Road User Safety Assessment

Transportation Interim Committee,
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Vulnerable Road User Safety Assessment (VRU SA)

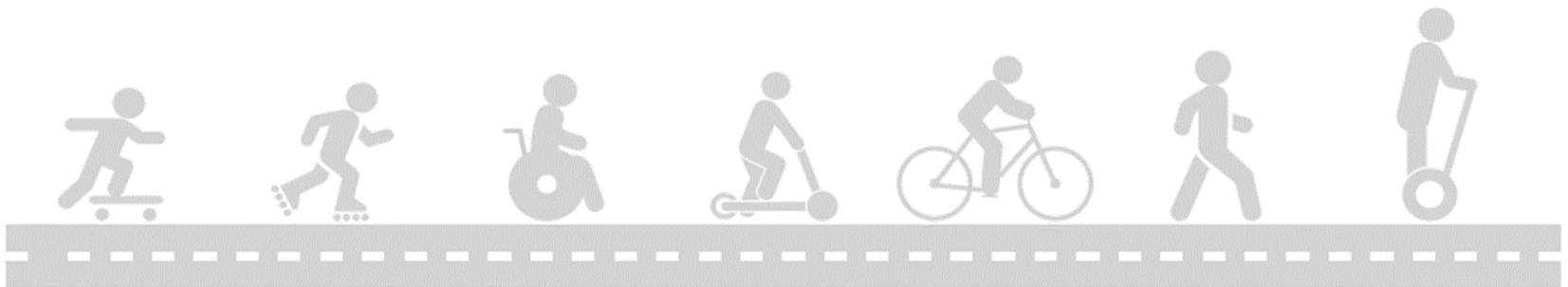
- Federal response to address the national increase of pedestrian and bicyclist fatalities.
- IIJA requires all states to develop a VRU SA.
- FHWA developed guidance & timeline for completion
- Evaluate economically disadvantaged areas with limited access to motor vehicle transport & reliant on walking & bicycling.
- Develop a list of safety strategies to mitigate safety risk to VRUs.

Vulnerable Road User

A vulnerable road user is a non-motorist, that includes a person walking; rolling, including the use of a mobility assistance device; or those bicycling.

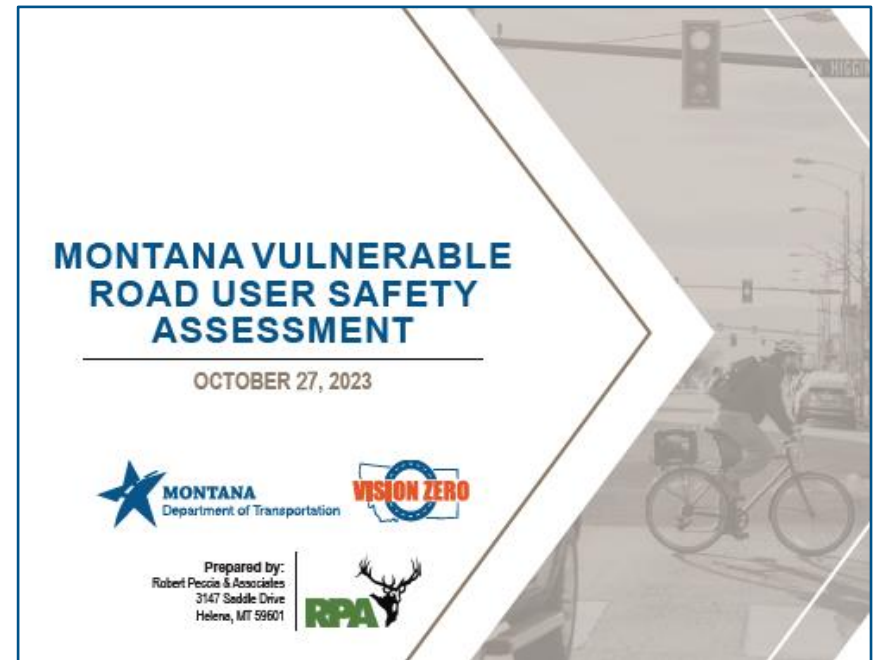
Vulnerable road user does include

- A highway worker on foot in a work zone, given they are considered a pedestrian.
- Does *not include a motorcyclist*.



Montana's Vulnerable Road User Safety Assessment (VRU SA)

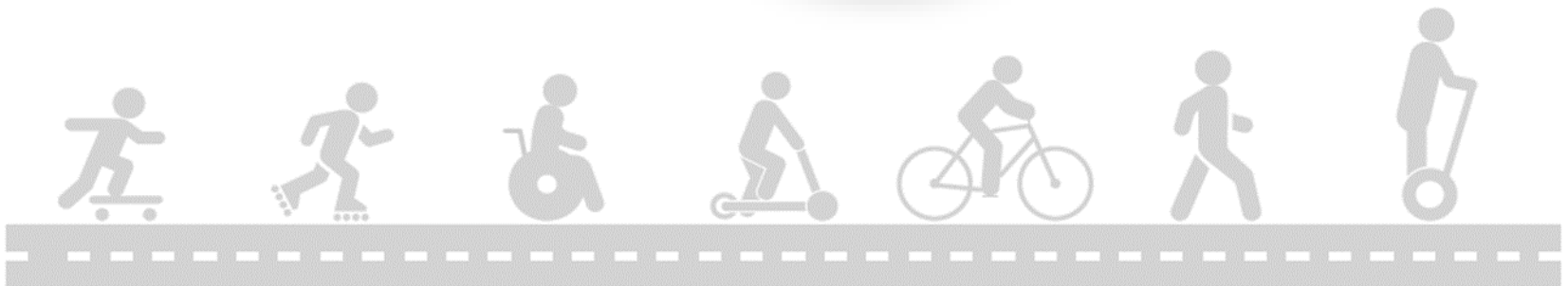
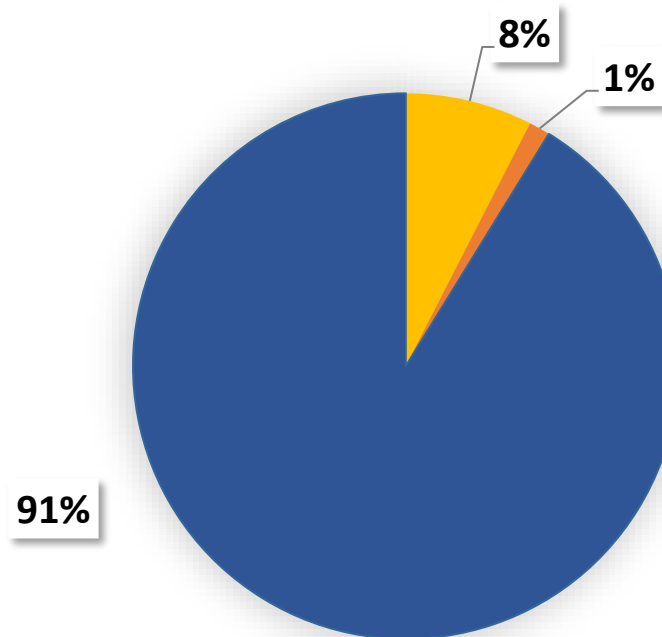
- Data driven process
- 5-year period (2017-2021)
- Analysis of VRU fatalities and serious injuries
- Evaluate disadvantaged/ high risk areas
- Identify crash factors
- Determine strategies



Percentage of VRU Fatalities of All Crash Fatalities (2017-2021)

Fatality Percentages
(2017-2021)

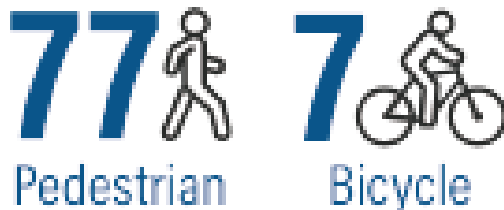
- Pedestrian
- Bicyclist
- MV Operator & Occupants



Vulnerable Road User 5-Year Period (2017-2021)

*Of the 1,384 Non-Motorists
Involved in Crashes...*

Fatalities

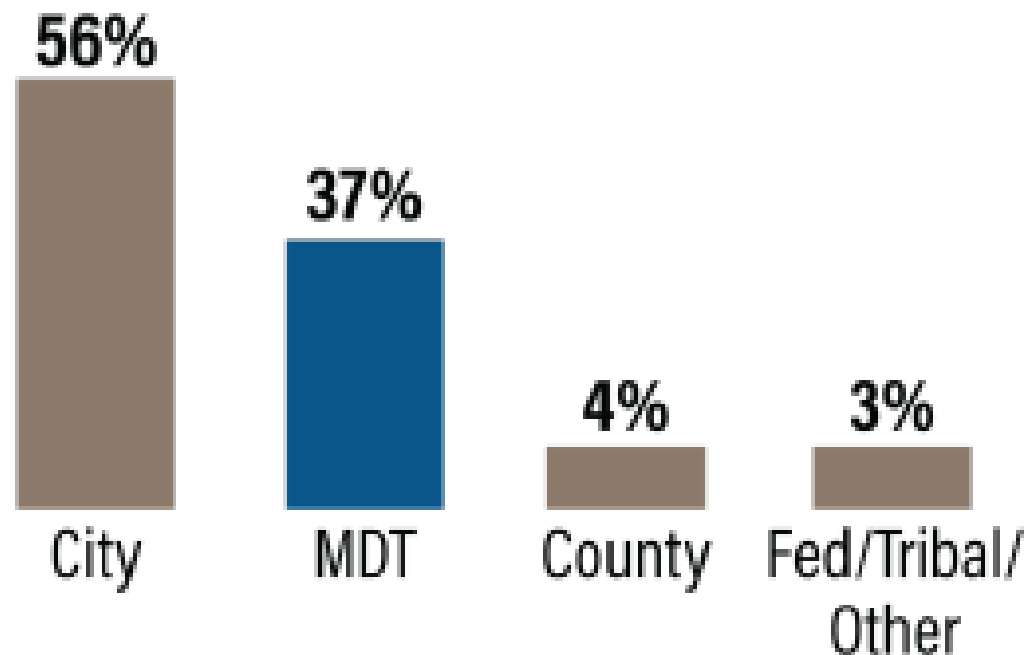


Suspected Serious Injuries



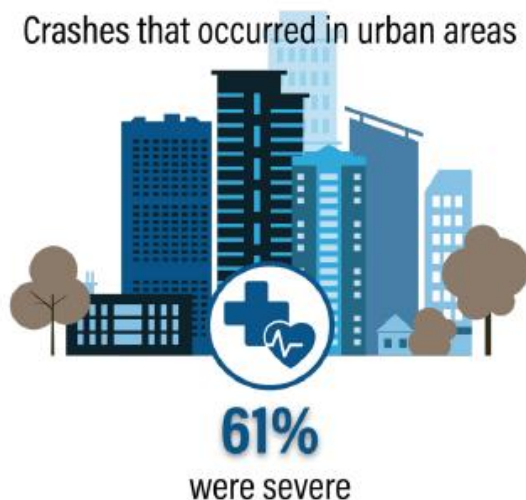
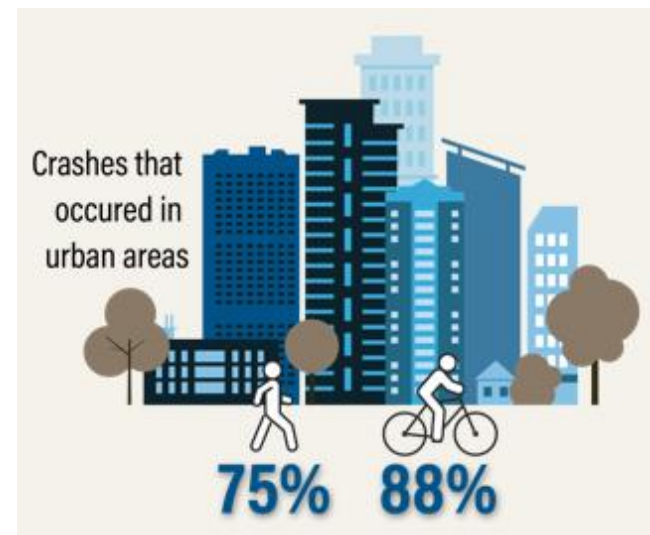
VRU Crash Characteristics

Non-Motorist Crashes Occurred on Routes Owned By:



VRU-Involved Crashes (2017-2021)

- **75% of all Pedestrian involved crashes occurred in Urban areas**
- **88% of all Bicyclist involved crashes occurred in Urban areas**



61% of VRU-involved crashes occurring in Urban area were severe.

VRU Crash Characteristics - Lighting Conditions (2017-2021)

- **59% of Pedestrian-involved severe crashes occurred under dark conditions.**
 - Mostly during Nov-Jan
- **88% of Bicyclist-involved severe crashes occurred during daylight hours**
 - Mostly during Jun-Sep



21%

Dark with
Lighting

38%

Dark No
Lighting



79%

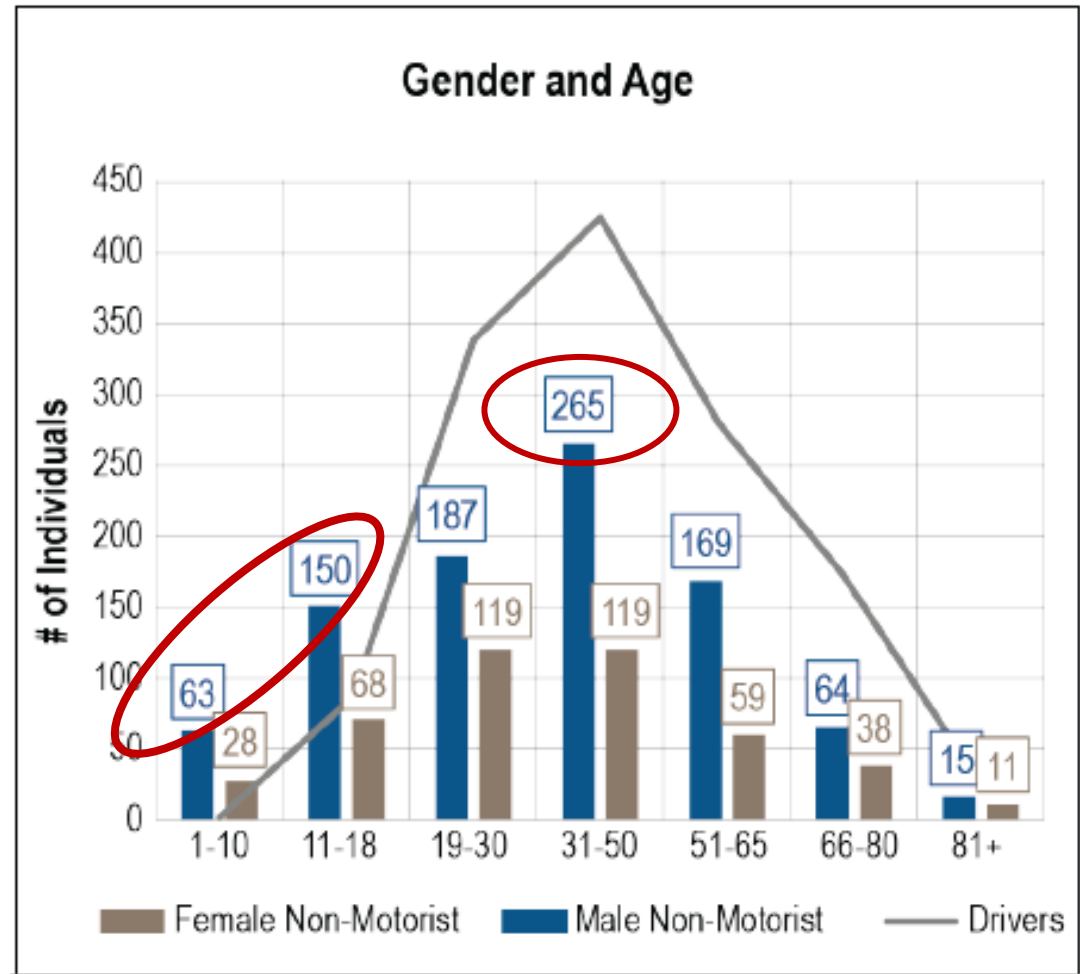
Daylight

VRU Crash Demographics (2017-2021)

29% of all VRU-involved in crashes were males between the age of 31-50

23% of all VRU-involved in crashes were males between the ages of 1-18

10% of all VRU-involved in crashes were 66 years of age and older



Of the children involved in severe VRU crashes, many were left unattended

VRU Involved Crashes



Trends based on Actions of the Pedestrian.

- Wearing dark clothing - no reflective gear or lighting
- Hit while crossing an unmarked, mid-block location.
- In the roadway improperly (impaired, standing, laying)
- Darted into street, often without looking for traffic.
- Failed to wait for pedestrian signal before crossing

VRU Involved Crashes

Trends based on Actions of the Bicyclist



- Riding on the sidewalk & did not slow down or yield before entering intersections and crosswalks.
- Riding in marked bike lanes but riding against traffic.
- Riding too fast and not able to stop before a collision

VRU Involved Crashes

Trends based on Actions of Motor Vehicle Operator

- Backing a vehicle & hitting a pedestrian
- Speeding at the time of the crash & did not have time to react or lost control of the vehicle and hit a non-motorist
- Driver's obstructed views (pedestrians emerging between cars/ glare of sun/ or headlights)
- Failure to yield to pedestrian in the crosswalk.
- Driver taking a tight turn and clipping a bicyclist



VRU Involved Crashes

Contributing Factor of both the Non-Motorist & the Driver

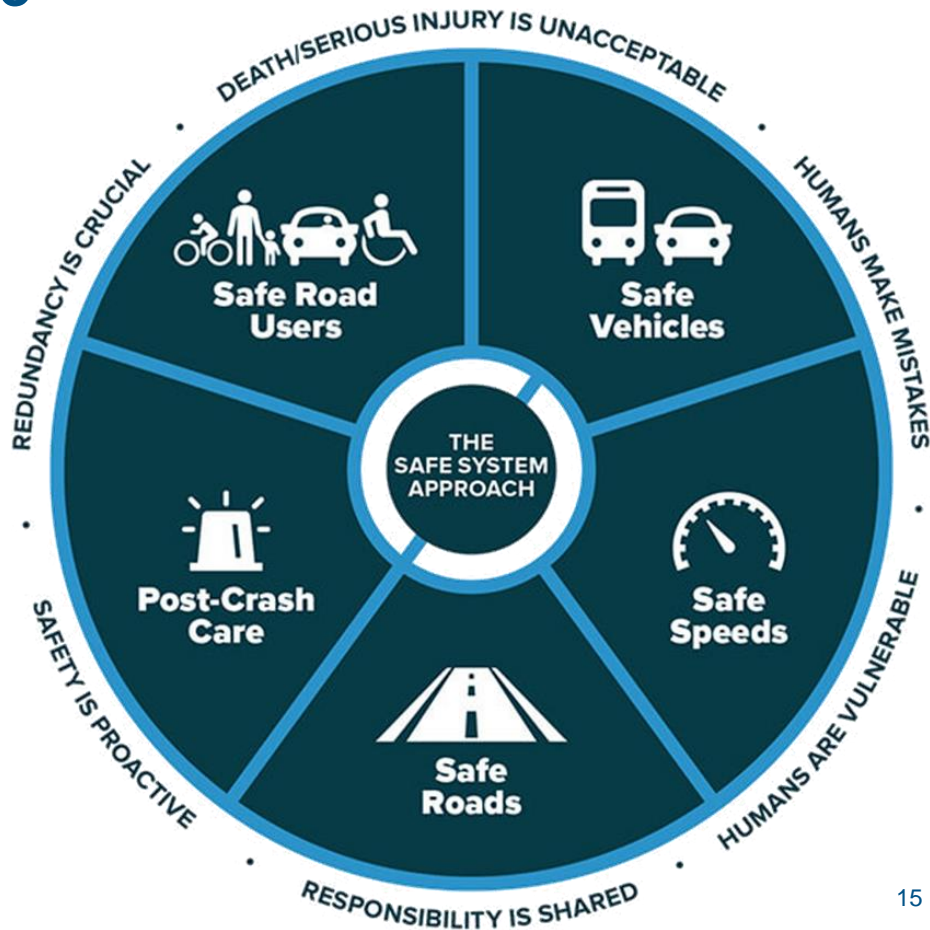
- Impairment
 - either of the VRU, the driver, or both.
- Impaired crashes were especially prevalent in rural areas.
- Distracted at the time of the crash,
 - use of headphones or another device; or reaching for an object inside a vehicle.



Safety Countermeasures

To reduce non-motorized fatalities & serious injuries we need to acknowledge-

- **Fatalities & serious injuries are unacceptable.**
- **Everyone has a responsibility.**
- **Safety is proactive.**
- **Humans are vulnerable.**
- **Redundancy is crucial.**
- **Humans make mistakes.**



VRU SA Strategies



- Focused roadway user safety education
- Enhance visibility of bicyclist & pedestrians
- Reduce crossing distance,
- Improve roadway visibility: lighting
- Designate NM, low-volume, low speed routes
- Reduce speed: roundabouts, traffic circles
- Enforce traffic laws, dynamic speed signage

Ongoing Efforts

- **Education & Outreach**
 - Traffic education, safety culture, behavioral training
- **Engineering Countermeasures**
 - Data analysis focusing on crash patterns
- **Enforcement & Adjudication**
 - Traffic laws & DUI/Drug Court & 24/7 Program
- **Emergency Medical Services & Responders**
 - Collaborative, coordinated training w/ local & state agencies.



Education



Engineering



Enforcement



EMS

Vulnerable Road User Safety Assessment

Vulnerable Road User Safety Assessment | Montana
Department of Transportation (MDT) (mt.gov)

Comprehensive Highway Safety Plan

<https://www.mdt.mt.gov/visionzero/plans/chsp.aspx>

For more information, please contact:

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