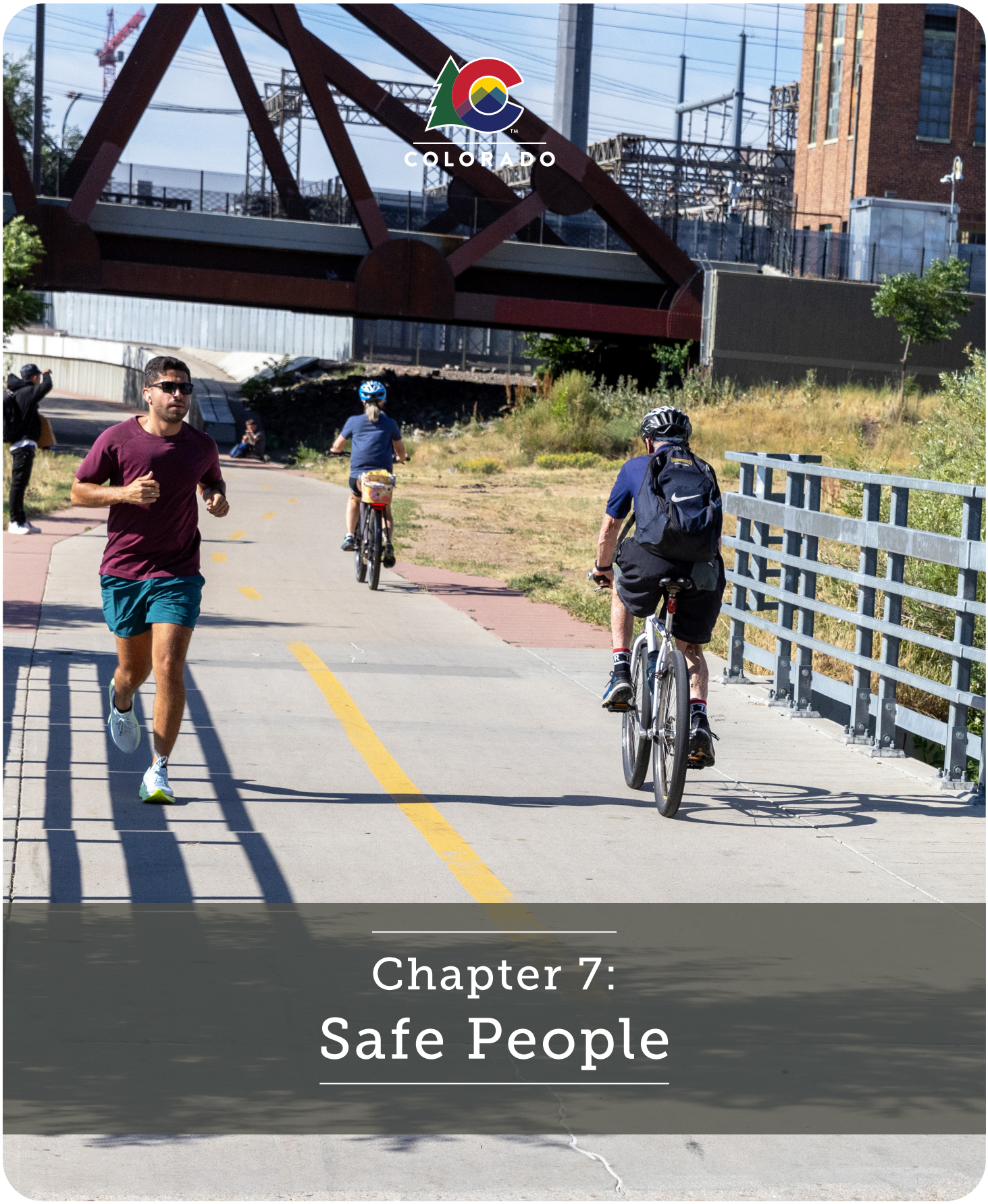


Chapter 7:
Safe People

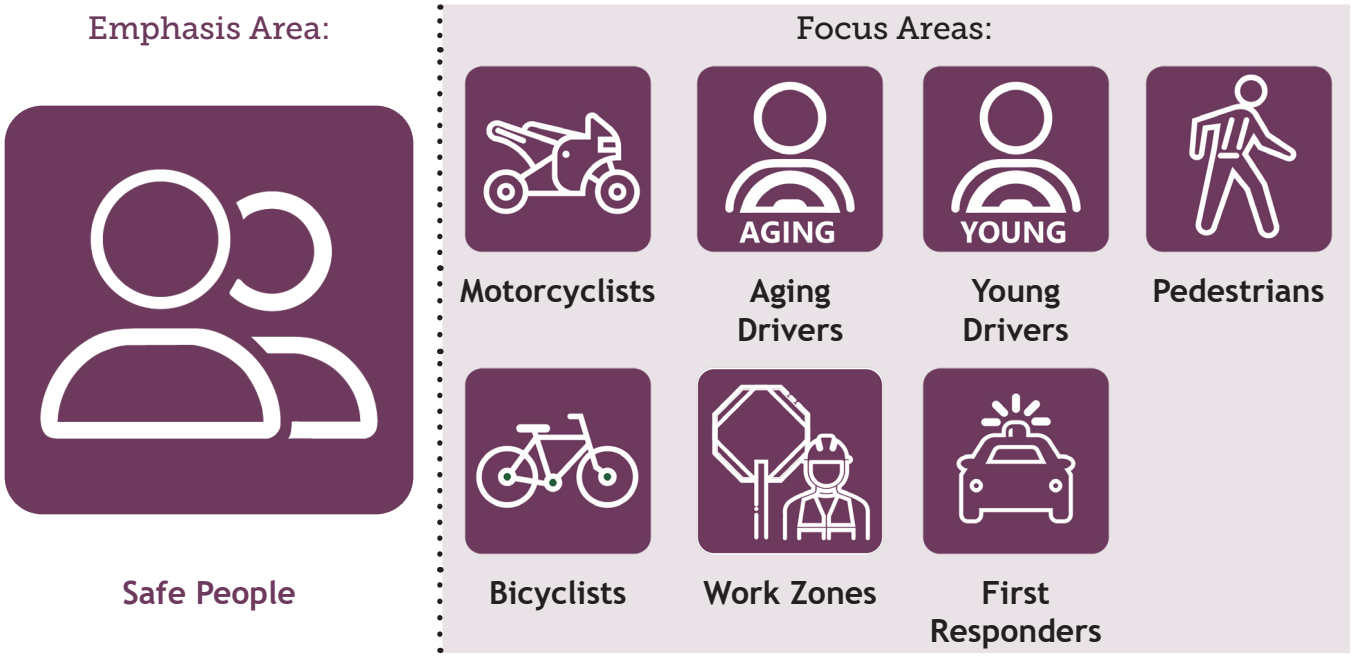
Introduction

The Safe People Emphasis Area identifies evidence-based practices to improve roadway safety for Vulnerable Road Users (VRUs) and other road users that are at a high risk of traffic fatalities and serious injuries. A VRU is defined as an individual walking, riding bicycles and rideable toys (e.g., scooters or skateboards), using personal mobility devices (e.g., walkers or wheelchairs), or someone on foot working in work zones.

The Safe People Emphasis Area prioritizes targeted infrastructure upgrades, refining policies for safer transportation systems, expanding multimodal transit options, and promoting educational opportunities that encourage best practices to safeguard VRUs and other at-risk users. This Emphasis Area chapter contains the update to Colorado's VRU Safety Assessment.

Focus Areas

The Safe People Emphasis Area identifies seven Focus Areas:



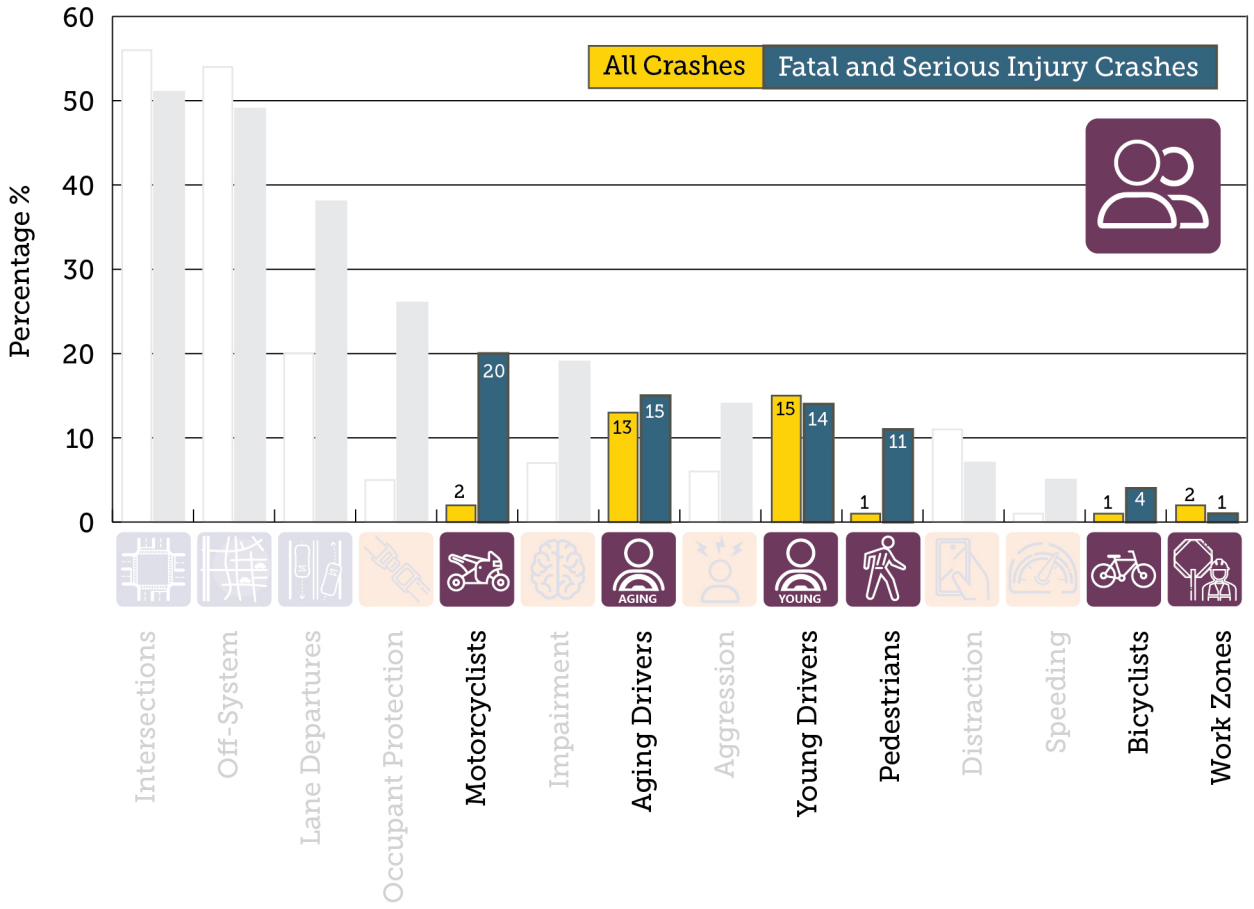


Figure 7-1: Percentage of Total & Fatal/Serious Injury Crashes Involving Focus Areas

The Safe People Emphasis Area focuses on road users most susceptible to fatalities or serious injuries, including motorcyclists, pedestrians, bicyclists, people in work zones, and first responders. This chapter also addresses younger and older drivers, who face a higher risk of serious crashes, as well as those needing personal mobility assistance.

Motorcyclists

Focus Area Definition: Crashes involving motorcyclists.

Focus Area Goal: Reduce the number of severe crashes involving motorcyclists by five percent from the previous year through 2029.

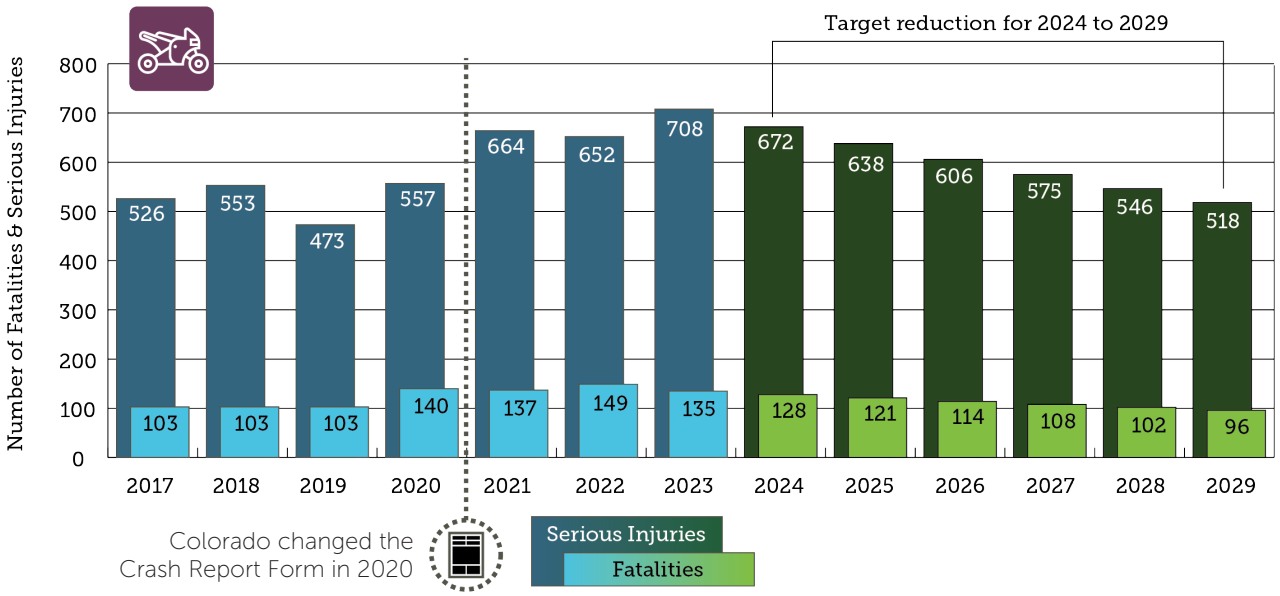
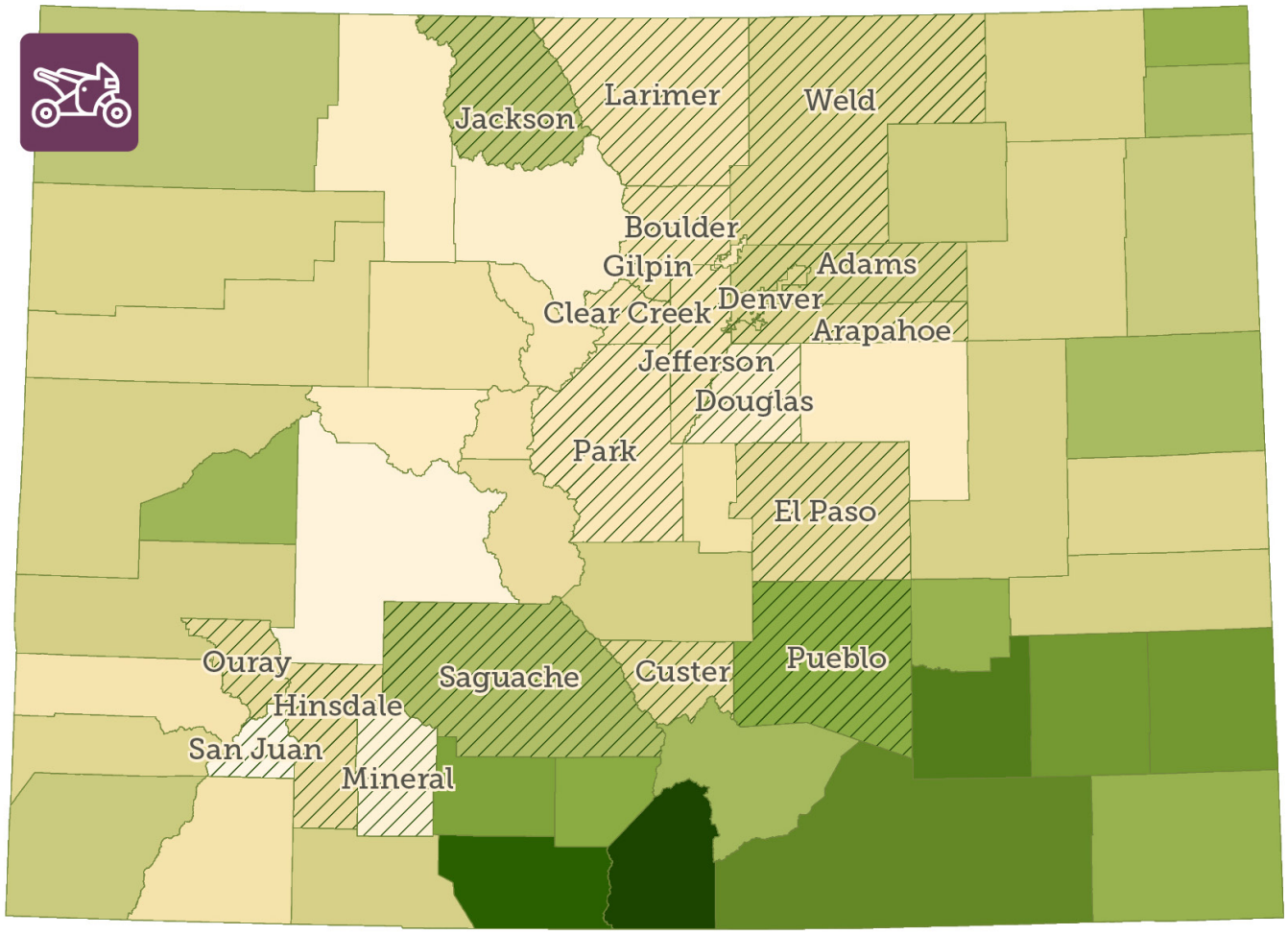


Figure 7-2: Motorcyclist-Involved Fatalities and Serious Injuries by Year (2017 to 2023)

Serious injuries among motorcyclists have steadily increased in recent years, despite a slight drop in fatalities in 2023. In 2023, 842 motorcycle fatalities and serious injuries were recorded. Motorcyclists face a disproportionate risk, accounting for 20% of all fatal and serious injury crashes, despite representing only 2% of total crashes and 1% of the total vehicle miles traveled in the state.

Figure 7-3 shows a map identifying the counties with the highest transportation disadvantage, as well as the counties with the highest motorcyclist-involved fatalities and serious injuries and the highest rates per capita. Counties with the highest number of motorcyclist-involved fatalities and serious injuries are along the Front Range, representing the most urban part of the state. When looking at fatalities and serious injuries per capita, Foothills and Southwest Colorado counties are represented.

Figure 7-3: Top Counties of Motorcyclist-Involved Fatalities and Serious Injuries



Rank	Top Counties Overall	Top Counties per Capita
1	Denver	San Juan
2	El Paso	Jackson
3	Jefferson	Hinsdale
4	Adams	Mineral
5	Larimer	Custer
6	Arapahoe	Clear Creek
7	Boulder	Gilpin
8	Douglas	Park
9	Pueblo	Ouray
10	Weld	Saguache

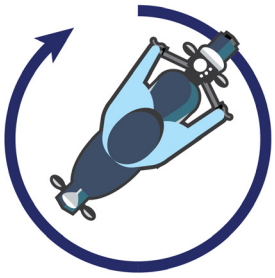
Map Legend

Weighted TDI Score

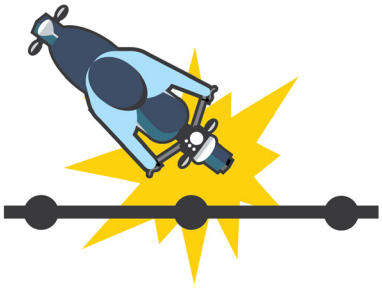
Low — High

Diagonal Striping = Top 10 overall and/or per capita counties

This map shows the Transportation Disadvantage Index (TDI) and labels the top 10 counties for total fatalities and serious injuries, along with the top 10 counties with the highest per-capita impact among relevant demographics. The table provides rankings for both categories.



Overturning
51%



Fixed Object
39%

Motorcycle crash types vary based on whether the crash was a single-vehicle versus a multi-vehicle crash. When there is a single vehicle motorcycle crash, the most common crash types are overturning (51%) and fixed object crashes (39%) often involving lane departures or loss of control. In contrast, when there are multi-vehicle crashes involving motorcyclists, the predominant crash types are approach turn (28%), broadside crashes (24%), and rear-end (18%), typically occurring on the roadway.

New Colorado Motorcycle Lane Filtering Law (2024)

Effective Date: August 7, 2024

Review Period: Law expires September 1, 2027, pending safety evaluation.

What's allowed? Motorcycles can filter between stopped vehicles when:

- Traffic is fully stopped (e.g., at a red light)
- Speed does not exceed 15 mph.
- Passing occurs within the same lane (not on the shoulder).

What's not Allowed? Lane splitting (moving between lanes of moving traffic) remains illegal.

Why? Reduces rear-end crash risks for motorcyclists.

In 2024, a major policy shift occurred as Colorado legalized lane filtering, allowing motorcyclists to pass between stopped vehicles in the same lane, traveling in the same direction. This legislation aims to reduce the numbers of motorcyclist fatalities and serious injuries resulting from rear-end crashes. In the years of 2019-2023, rear-end crashes resulted in 385 motorcyclist fatalities and serious injuries. Over the next few years, data will be closely monitored to assess the policy's effect on motorcyclist safety.

Motorcyclist Strategies

SP1: Expand motorcycle operator safety training

Expand motorcycle operator safety training campaigns.

Promote Motorcycle Operator Safety Training (MOST) courses among motorcycle riders and those who wish to learn how to ride a motorcycle. This strategy enhances and expands statewide MOST for both new and experienced riders and supports Colorado MOST's Mission to "provide a safe motorcycling program that supports motorcycle training and lifelong learning, along with motorcycle safety awareness to achieve reductions in motorcycle crashes and related injuries and fatalities."

SP2: Increase public awareness of motorcycle safety

Increase public awareness of motorcycle safety for all road users.

This strategy is focused on increasing the general public's awareness of motorcycle safety around the state. Educating all other road users on changing laws and general motorcyclist safety prevents crashes that involve both motorcyclists and other road users.

SP3: Improve motorcycle licensing and endorsement

Increase the proportion of active motorcycle riders who are legally endorsed to ride in Colorado.

This strategy aims to increase the number of riders who have an endorsement and have motorcycle safety training by promoting awareness and availability of motorcycle training and of the requirement for motorcyclists seeking to ride in Colorado to have completed training and acquired an endorsement. Increasing the skills of motorcycle riders reduces severe crashes where inexperience is a contributing factor.

SP4: Increase helmet and other personal protective equipment (PPE) use

Increase motorcyclist PPE use through education and enforcement.

Helmets and other protective equipment are key to protecting motorcyclists. Through targeted outreach, this strategy promotes the use of PPE when riding a motorcycle. When motorcyclists properly utilize PPE, the risk of a higher-severity crash is reduced.

Aging Drivers

Focus Area Definition: Crashes involving aging drivers aged 65 and older.

Focus Area Goal: Reduce the number of fatalities and serious injuries involving aging drivers by five percent from the previous year through 2029.

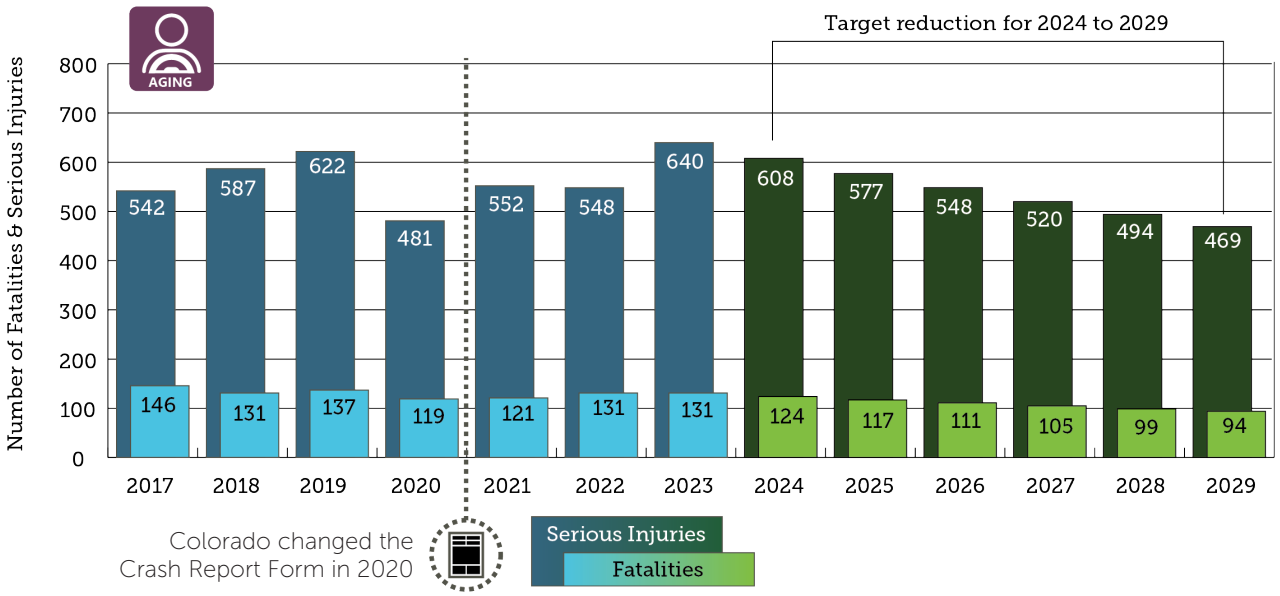
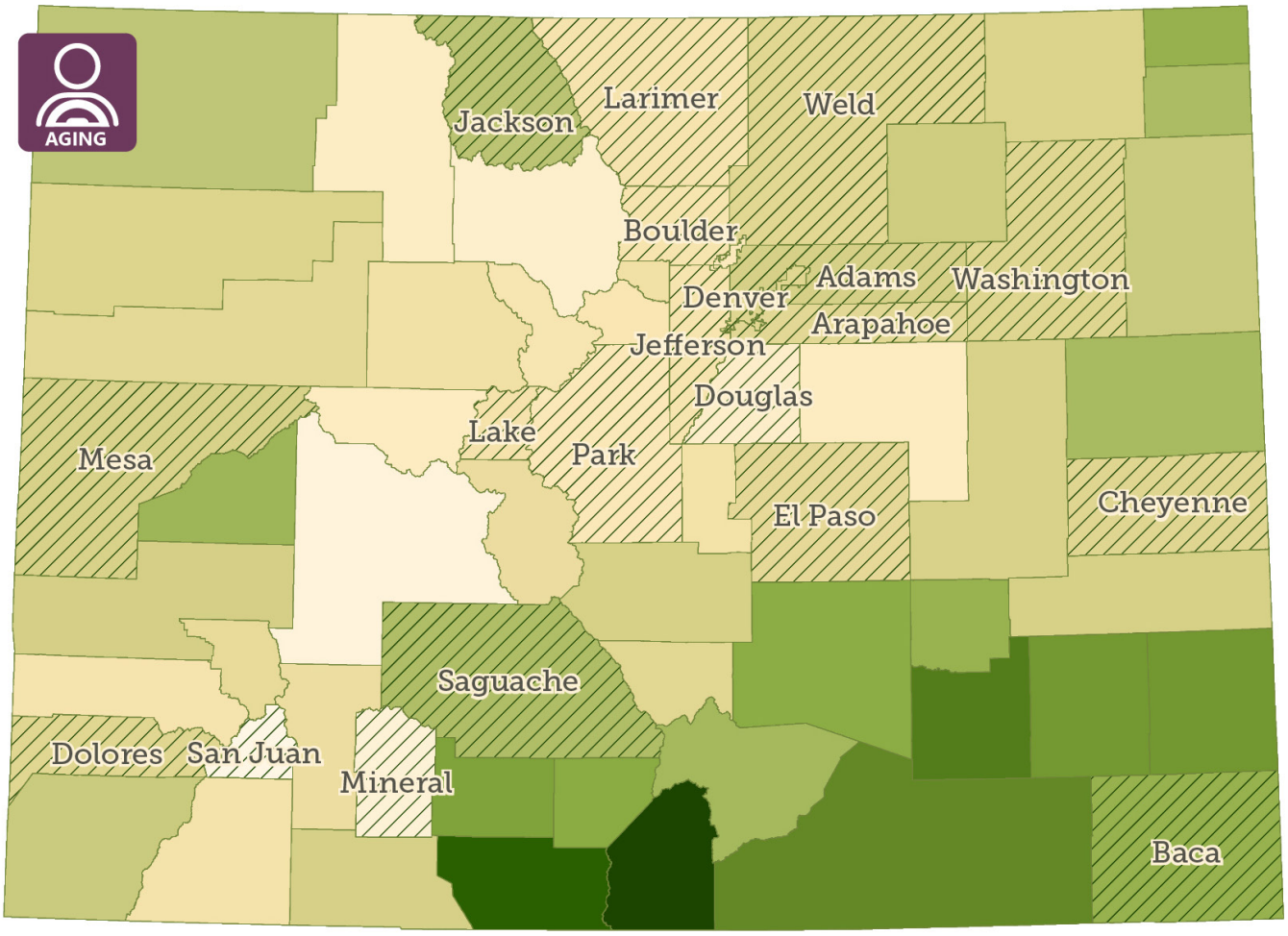


Figure 7-4: Aging Driver-Involved Fatalities and Serious Injuries by Year (2017 to 2023)

As shown in Figure 7-4, fatalities and serious injuries among aging drivers (aged 65 and older) have increased in recent years reaching 771 in 2023. Drivers aged 65 and older make up 16% of the total fatalities and serious injuries, and make up 21% of all licensed drivers. While this does not raise concern for overrepresentation of aging drivers, with the aging population that is described in Chapter 2, it is essential to address safety concerns related to aging drivers to avoid overrepresentation of older drivers in the future.

"As drivers age, their physical and mental abilities, driving behaviors and crash risks all change, though age alone is not a determinate of driving performance. Many features of the current system of roads, traffic signals and controls, laws, licensing practices, and vehicles were not designed to accommodate older drivers." —NHTSA, 2020

Figure 7-5: Top Counties of Aging Driver-Involved Fatalities and Serious Injuries



Rank	Top Counties Overall	Top Counties per Capita
1	Denver	San Juan
2	El Paso	Mineral
3	Arapahoe	Jackson
4	Jefferson	Washington
5	Boulder	Cheyenne
6	Adams	Baca
7	Larimer	Dolores
8	Weld	Saguache
9	Douglas	Park
10	Mesa	Lake

Map Legend

Weighted TDI Score

Low — High

Diagonal Striping = Top 10 overall and/or per capita counties

This map shows the Transportation Disadvantage Index (TDI) and labels the top 10 counties for total fatalities and serious injuries, along with the top 10 counties with the highest per-capita impact among relevant demographics. The table provides rankings for both categories.

Figure 7-5 shows a map identifying the counties with the highest transportation disadvantage, as well as the counties with the highest aging driver-involved fatalities and serious injuries and the highest rates per capita. Counties with the highest number of aging driver-involved fatalities and serious injuries are along the Front Range, representing the most urban part of the state. When looking at fatalities and serious injuries per capita, rural Eastern Plains and Southwest Colorado counties are represented.

Older Drivers and Pedestrians Special Rule

According to the Federal Highway Administration (FHWA), a state qualifies for the Older Drivers and Pedestrians Special Rule "if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age 65 in a state increase during the most recent 2-year period for which data are available."

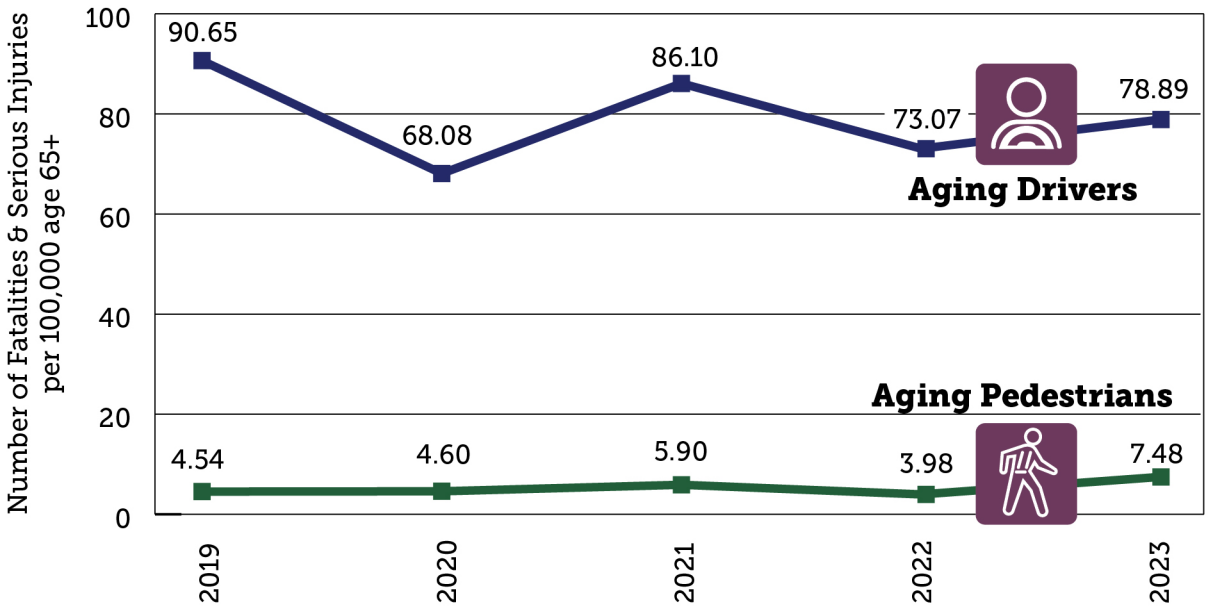


Figure 7-6: Aging Drivers and Pedestrians Fatalities and Serious Injuries Per Capita

Colorado qualifies for the Older Drivers and Pedestrians Special Rule, requiring strategies to address rising fatalities and serious injuries among those 65 and older. Aging driver fatalities have decreased from 2021-2023, while aging pedestrian fatalities have increased from 2021-2023.

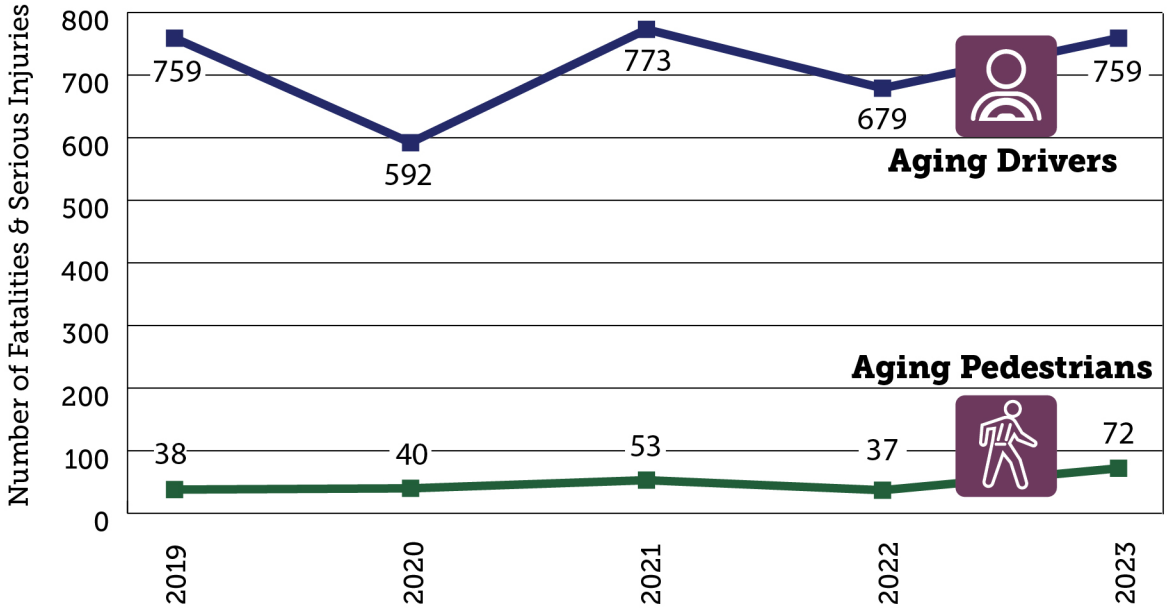


Figure 7-7: Aging Drivers and Pedestrians Fatalities and Serious Injuries

Aging Driver Strategies

Strategies related to aging drivers and pedestrians are summarized in the following. For additional aging pedestrian strategies, refer to Chapter 8.

SP5: Improve visibility of traffic control devices

Enhance road safety by widening striping and markings on high-traffic roads and increasing the visibility of traffic signs to support aging drivers (Aging Drivers Strategy).

Widening striping and increasing the visibility of traffic signs helps aging drivers navigate more easily, compensating for declines in visual acuity and low light contrasts which can be difficult to navigate. These measures enhance confidence, reduce confusion, and prevent crashes.

SP6: Improve sight distances

Improve intersection safety by providing proper intersection angles, intersection sight distance, and other design strategies that support aging drivers and pedestrians (Aging Drivers and Pedestrians Strategy).

Improving intersection safety with proper angles, sight distances, and design strategies aids aging drivers and pedestrians to see and react to potential hazards, reducing the likelihood of crashes. These improvements enhance safety by providing clearer visibility and easier navigation, helping drivers and pedestrians make safer decisions.

SP7: Expand community-based mobility options

Establish and expand community-based mobility options such as bike-sharing, carpool programs, and on-demand shuttle services in underserved areas to improve access to transportation options for those unable to drive or who choose not to drive (Aging Drivers and Pedestrians Strategy).

Establishing and expanding community-based mobility options, especially in underserved areas, provides essential transportation alternatives for individuals who cannot drive, choose not to drive, or can no longer drive safely, improving their access to jobs, healthcare, and other services. Aging drivers are more likely to cease driving if there are reliable alternatives. These options help reduce reliance on private vehicles, promote environmental sustainability, and improve access to mobility for all members of the community.

SP8: Enhance and expand resources for aging drivers

Strengthen programs for aging drivers by increasing the awareness, use, effectiveness, and quality of existing resources.(Aging Drivers Strategy).

This strategy aims to enhance available resources for aging drivers and their families to evaluate and determine if a person is able to continue driving safely. Promote existing programs and educational opportunities such as individualized driver assessments, written guides for aging drivers and their families, and existing regulations on license testing and renewals for older drivers.

Colorado Resources for Aging Drivers
Stay Safe, Stay Independent

Colorado offers programs to help aging drivers assess their skills and stay safe on the road:

Fitness-Drive Evaluation
Occupational therapy assessment for vision, reaction time, and adaptive driving solutions.

Older Driver Safety Guide
Self-assessment tools, safety tips, and legal info to help drivers make informed decisions.

Drive Smart Colorado
Workshop and resources to support safe driving habits.

Learn more: drivesmartcolorado.com

Young Drivers

Focus Area Definition: Crashes involving young drivers (aged 15 to 20).

Focus Area Goal: Reduce the number of severe crashes involving young drivers by five percent from the previous year through 2029.

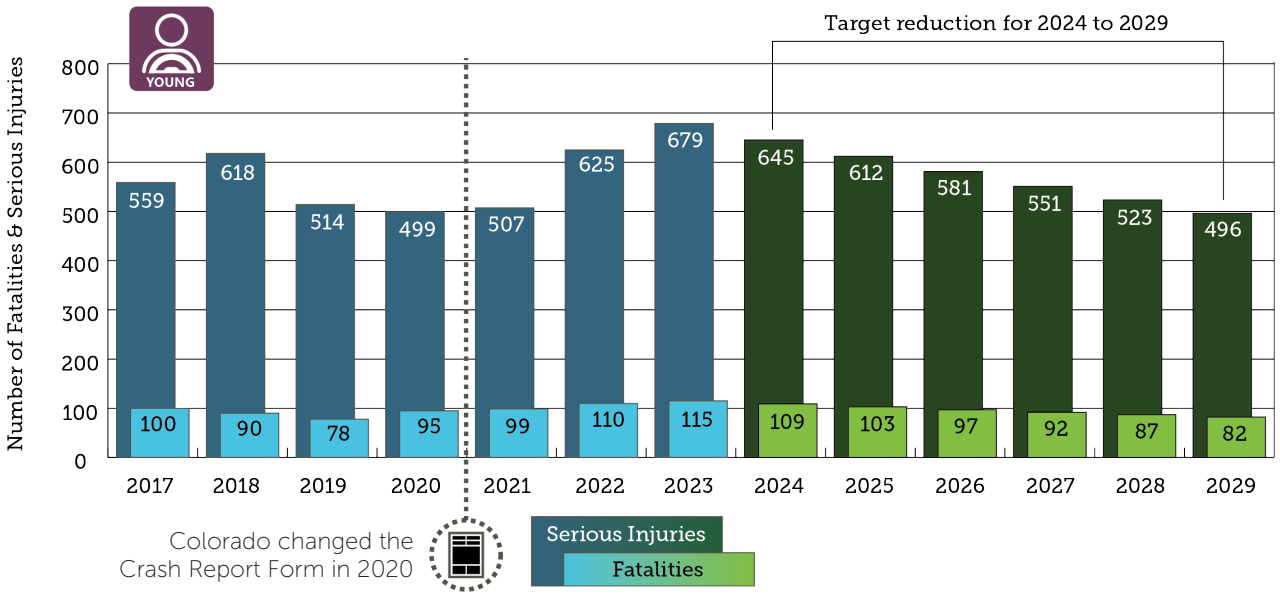


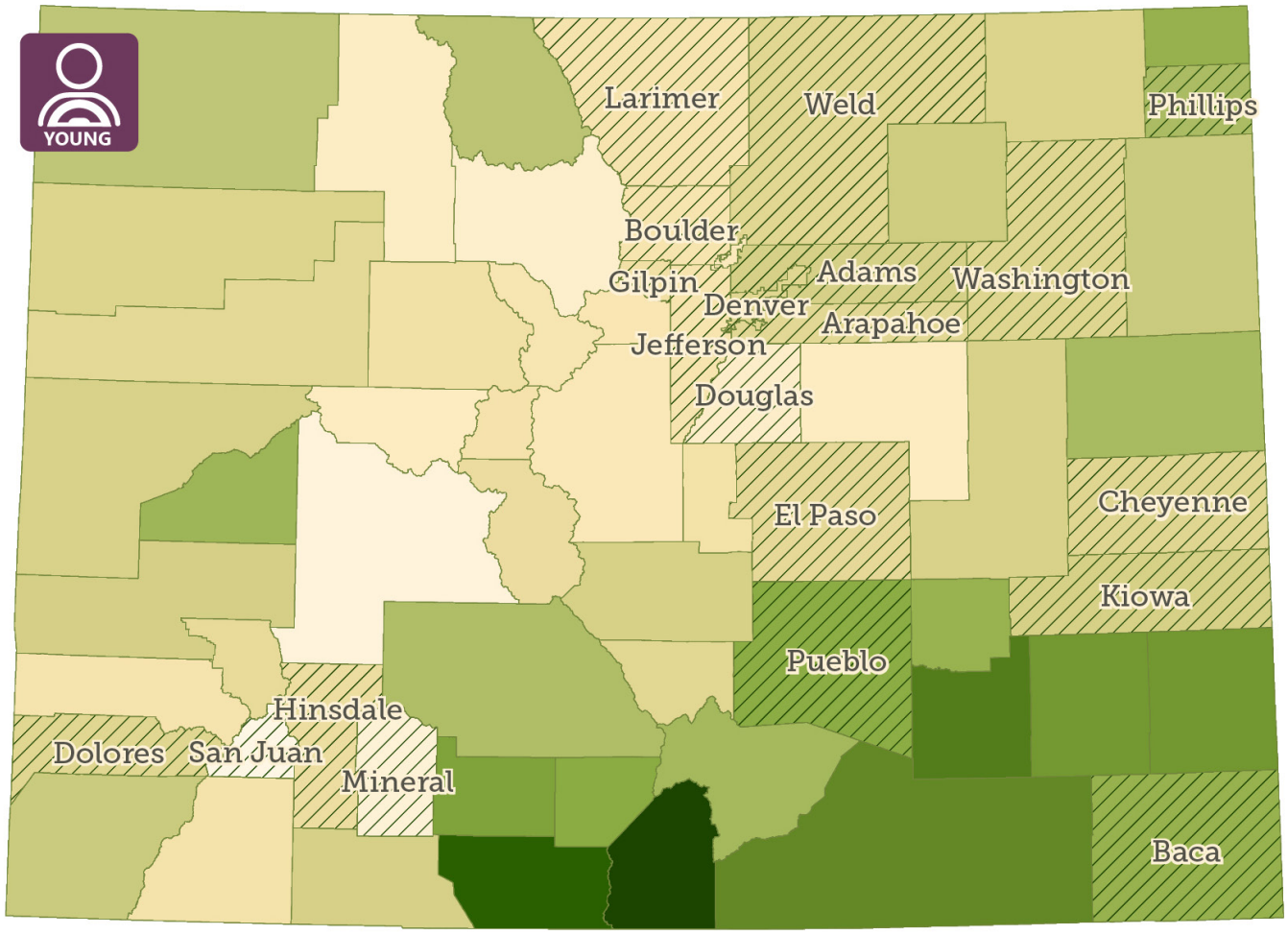
Figure 7-8: Young Driver-Involved Fatalities and Serious Injuries by Year (2017 to 2023)

As shown in Figure 7-8, fatalities and serious injuries among young drivers have risen steadily since 2020, reaching 794 in 2023.

Young drivers, involved in 14% of severe crashes and 15% of all crashes statewide, face higher risks due to inexperience and limited awareness of driving hazards. Stakeholders have identified limited access to quality driver's education, especially in rural areas, as a key concern.

Overall, 40% of fatalities and serious injuries occur on rural roads. However, rural roads account for 47% of young driver-involved fatalities and serious injuries, indicating that young driver-involved fatalities are disproportionately high along rural roads. Young drivers aged 15-20 also tend to experience a higher proportion of overturning crashes compared to all drivers. Twenty-one percent (21%) of all young driver-involved fatalities and serious injuries result from overturning crashes compared to 11% for the overall population.

Figure 7-9: Top Counties of Young Driver-Involved Fatalities and Serious Injuries



Rank	Top Counties Overall	Top Counties per Capita
1	Denver	Mineral
2	El Paso	Cheyenne
3	Adams	Kiowa
4	Arapahoe	Hinsdale
5	Weld	Baca
6	Jefferson	San Juan
7	Boulder	Washington
8	Larimer	Gilpin
9	Douglas	Phillips
10	Pueblo	Dolores

Map Legend

Weighted TDI Score

Low — High

Diagonal Striping = Top 10 overall and/or per capita counties

This map shows the Transportation Disadvantage Index (TDI) and labels the top 10 counties for total fatalities and serious injuries, along with the top 10 counties with the highest per-capita impact among relevant demographics. The table provides rankings for both categories.

Figure 7-9 shows a map identifying the counties with the highest transportation disadvantage, as well as the counties with the highest young driver-involved fatalities and serious injuries and the highest rates per capita. Counties with the highest number of young driver-involved fatalities and serious injuries are along the Front Range, representing the most urban part of the state. When looking at fatalities and serious injuries per capita, rural Eastern Plains and Southwest Colorado counties are represented.

Young Driver Strategies

SP9: Expand access to driver's education

Expand access to driver's education programs, particularly in rural areas, through partnerships with schools, online platforms, and community organizations.

Limited access to driver's education, especially in Colorado's rural areas, makes it difficult for young drivers to receive proper training. This strategy aims to increase both availability and affordability of driver's education for all young drivers around the state. Expanding driver's education through partnerships with schools, online platforms, and community organizations increases opportunities for more young drivers in all locations around the state to gain the skills needed for safer driving.

SP10: Improve quality of driver's education

Improve the quality of driver's education programs, including incorporating defensive driving, distracted driving awareness, and active transportation considerations into the curriculum.

Enhancing driver's education is of critical importance to reduce young driver crashes and improve overall roadway safety. By incorporating defensive driving and distracted driving awareness into the curriculum, this strategy addresses behaviors that disproportionately contribute to young driver-involved crashes. Additionally, increasing new drivers' awareness of active transportation safety may reduce crashes between young drivers and VRUs.

VRU Safety Assessment

Table 7-1: VRU Fatalities and Serious Injuries Compared to Total Fatalities and Serious Injuries

	2019	2020	2021	2022	2023	Percent Change (2019-2023)
VRU Fatalities and Serious Injuries	540	468	595	630	833	+54%
Total Fatalities and Serious injuries	3,797	3,518	4,359	4,440	4,874	+28%
VRU % of Total	14.2%	13.3%	13.6%	14.2%	17.1%	+2.9%

Vulnerable Road Users (VRUs) as a percentage of all fatalities and serious injuries has hovered around 14% over much of the past five years. Unfortunately, 2023 saw a sharp increase in the number of VRU fatalities and serious injuries indicating that Colorado's efforts to reduce VRU crashes has yet to result in a consistent trend reversal.

The stakeholder outreach efforts described in Chapter 3 SHSP Stakeholder Engagement provided many opportunities to consult with communities, subject matter experts and other entities on VRU-related topics. VRU safety was a recurring theme as the word cloud in Chapter 3 illustrates.

In 2023, 39 priority VRU "hot spot" locations were identified with recommended actions for each location. With the short time-frame since these locations were identified, the recommended actions were not able to be implemented. These priority locations were analyzed with updated crash data and a percent change of fatalities and serious injuries from the 2022 data collected in the VRU Assessment was identified. This can be found for pedestrians in Table 7-2 and for bicyclists in Table 7-3.

Some of the locations experienced an increase in fatalities and serious injuries while others experienced a decrease. Because the recommended actions have not yet been implemented, and the most recent safety trends indicate that VRU crashes continue to occur at these locations, it is recommended that the priority locations from the 2023 Vulnerable Road User Safety Assessment continue as part of the SHSP.

Table 7-2: Priority Locations Rolling Average of Fatalities and Serious Injuries for Pedestrians

Project Name	2017-2021 5-Year Average	2019-2023 5-Year Average	Change in 5-Year Average
E. Colfax Avenue (40C) – N. Yosemite Street to N. Peoria Street	10	9	-1
Downtown Denver Activity Center	2.6	2.6	0
S. Nevada Avenue (115A) – E. Navajo Street to E. Mill Street	3	2.8	-0.2
E. Colfax Avenue (40C) – N. Clarkson Street to N. High Street	2	2	0
Main Street (287C) – Longs Peak Avenue to 17th Avenue	2.4	4	1.6
E. Evans Avenue – S. Jackson Street to S. Syracuse Way	2.4	2	-0.4
S. Federal Boulevard (88A) – W. Iowa Avenue to W. Mississippi Avenue	2.6	2.4	-0.2
S. Townsend Avenue (550B) – Odelle Road to N. 7th Street	1	1.2	0.2
Academy Boulevard – Hancock Expressway to E. Fountain Boulevard	1	1.2	0.2
N. Speer Boulevard – W. 11th Avenue to E. Colfax Avenue	0.6	1.6	1
N. Federal Boulevard (88A) and W. Howard Place / W. 14th Avenue	1.6	0.8	-0.8
Sheridan Boulevard (95A) – W. Dakota Avenue to W. 1st Avenue	1.2	1.6	0.4
E. 6th Avenue (30A) – N. Potomac Street to N. Sable Boulevard	1.2	0.8	-0.4
Canyon Boulevard (7B) – 9th Street to 19th Street	0.8	0.2	-0.6
72nd Avenue – Meade Street to N. Irving Street	1.2	0.4	-0.8
S Parker road (83A) - E. Dartmouth Avenue to I-225	1.2	1.4	0.2
Broadway Street (93A) - 15th Street to Canyon Boulevard	0.6	0.4	-0.2
Wadsworth Boulevard (121A) - W. 19th Avenue to W. 26th Avenue	0.8	1	0.2
S. Federal Boulevard (88A) - W. Warren Avenue to 200’ North of W. Evans Avenue	1.2	0.6	-0.6
S. Wadsworth Boulevard - W. Florida Avenue to W. Mississippi Avenue	1.2	0.6	-0.6
E. Main Street (160A) - N. Beech Street to S. Veach Street	1	0.8	-0.2
Academy Boulevard and Austin Bluffs Parkway	1	1	0
Carefree Circle and N. Academy Boulevard	1	0.8	-0.2
28th Street (36B) - Spruce Street to Valmont Road	0.8	1	0.2
Wadsworth Boulevard (121A) - W. 14th Avenue to E. Colfax Avenue	0.2	0.4	0.2

Main Avenue (550B) - E. Park Avenue to E. 21st Avenue	0.6	0.2	-0.4
30th Street - Arapahoe Avenue to Walnut Street	0.2	0	-0.2
Folsom Street - University Heights Avenue to Dorm Parking Lot Entrance	0.2	0.2	0
Colorado Boulevard (2A) and E. Colfax Avenue	0.8	0.4	-0.4
Diagonal Highway (119B) - Foothills Parkway to Independence Road	0	0	0
N. Lincoln Street - E. Colfax Avenue to E. 18th Avenue	0	0	0
Broadway Street - Violet Avenue to Yarmouth Avenue	0	0	0
9th Avenue - Francis Street to Bross Street	0	0	0
E. Fountain Boulevard (24H) and S. Murray Boulevard	0.6	0.4	-0.2
Havana Street and E. 16th Avenue	0	0	0
Arapahoe Avenue (7C) - Foothills Parkway to 48th Street	0	0.2	0.2
North Avenue (6B) and N. 1st Street	0	0	0
W. Morrison Road (8A) and S. Estes Street / S. Garrison Street	0	0	0
Sheridan Boulevard (95A) and W. 10th Avenue	0	0.2	0.2

Table 7-3: Priority Locations Rolling Average of Fatalities and Serious Injuries for Bicyclists

Project Name	2017-2021 5-Year Average	2019-2023 5-Year Average	Change in 5-Year Average
E. Colfax Avenue (40C) – N. Yosemite Street to N. Peoria Street	0.2	0.6	0.4
Downtown Denver Activity Center	0.4	0.4	0
S. Nevada Avenue (115A) – E. Navajo Street to E. Mill Street	0.4	0.4	0
E. Colfax Avenue (40C) – N. Clarkson Street to N. High Street	1.4	0.8	-0.6
Main Street (287C) – Longs Peak Avenue to 17th Avenue	0.8	1	0.2
E. Evans Avenue – S. Jackson Street to S. Syracuse Way	0.6	0.6	0
S. Federal Boulevard (88A) – W. Iowa Avenue to W. Mississippi Avenue	0.2	0.2	0
S. Townsend Avenue (550B) – Odelle Road to N. 7th Street	0.8	0.6	-0.2
Academy Boulevard – Hancock Expressway to E. Fountain Boulevard	0.4	0.6	0.2
N. Speer Boulevard – W. 11th Avenue to E. Colfax Avenue	1	1	0
N. Federal Boulevard (88A) and W. Howard Place / W. 14th Avenue	0	0.4	0.4
Sheridan Boulevard (95A) – W. Dakota Avenue to W. 1st Avenue	0.2	0	-0.2

E. 6th Avenue (30A) – N. Potomac Street to N. Sable Boulevard	0.2	0.2	0
Canyon Boulevard (7B) – 9th Street to 19th Street	0.6	0.8	0.2
72nd Avenue – Meade Street to N. Irving Street	0.2	0.2	0
S Parker road (83A) - E. Dartmouth Avenue to I-225	0	0	0
Broadway Street (93A) - 15th Street to Canyon Boulevard	0.6	0.4	-0.2
Wadsworth Boulevard (121A) - W. 19th Avenue to W. 26th Avenue	0.4	0	-0.4
S. Federal Boulevard (88A) - W. Warren Avenue to 200' North of W. Evans Avenue	0	0.2	0.2
S. Wadsworth Boulevard - W. Florida Avenue to W. Mississippi Avenue	0	0.2	0.2
E. Main Street (160A) - N. Beech Street to S. Veach Street	0	0	0
Academy Boulevard and Austin Bluffs Parkway	0	0	0
Carefree Circle and N. Academy Boulevard	0	0	0
28th Street (36B) - Spruce Street to Valmont Road	0	0.4	0.4
Wadsworth Boulevard (121A) - W. 14th Avenue to E. Colfax Avenue	0.6	0.4	-0.2
Main Avenue (550B) - E. Park Avenue to E. 21st Avenue	0.2	0.2	0
30th Street - Arapahoe Avenue to Walnut Street	0.6	0.6	0
Folsom Street - University Heights Avenue to Dorm Parking Lot Entrance	0.6	0.8	0.2
Colorado Boulevard (2A) and E. Colfax Avenue	0	0	0
Diagonal Highway (119B) - Foothills Parkway to Independence Road	0.6	0.4	-0.2
N. Lincoln Street - E. Colfax Avenue to E. 18th Avenue	0.6	0.2	-0.4
Broadway Street - Violet Avenue to Yarmouth Avenue	0.6	0.2	-0.4
9th Avenue - Francis Street to Bross Street	0.6	0.6	0
E. Fountain Boulevard (24H) and S. Murray Boulevard	0	0	0
Havana Street and E. 16th Avenue	0.6	0.2	-0.4
Arapahoe Avenue (7C) - Foothills Parkway to 48th Street	0.4	0	-0.4
North Avenue (6B) and N. 1st Street	0.4	0	-0.4
W. Morrison Road (8A) and S. Estes Street / S. Garrison Street	0.4	0.2	-0.2
Sheridan Boulevard (95A) and W. 10th Avenue	0.4	0.2	-0.2

The program of strategies to reduce the safety risks for VRUs is summarized within the following Pedestrians and Bicyclists Focus Area summaries. Specific VRU projects and actions are a part of the Action Planning Process described in Chapter 10 Implementation.

Pedestrians

Focus Area Definition: Crashes that involve pedestrians being struck by vehicles.

Focus Area Goal: Reduce the number of pedestrian fatalities and serious injuries by five percent from the previous year through 2029.

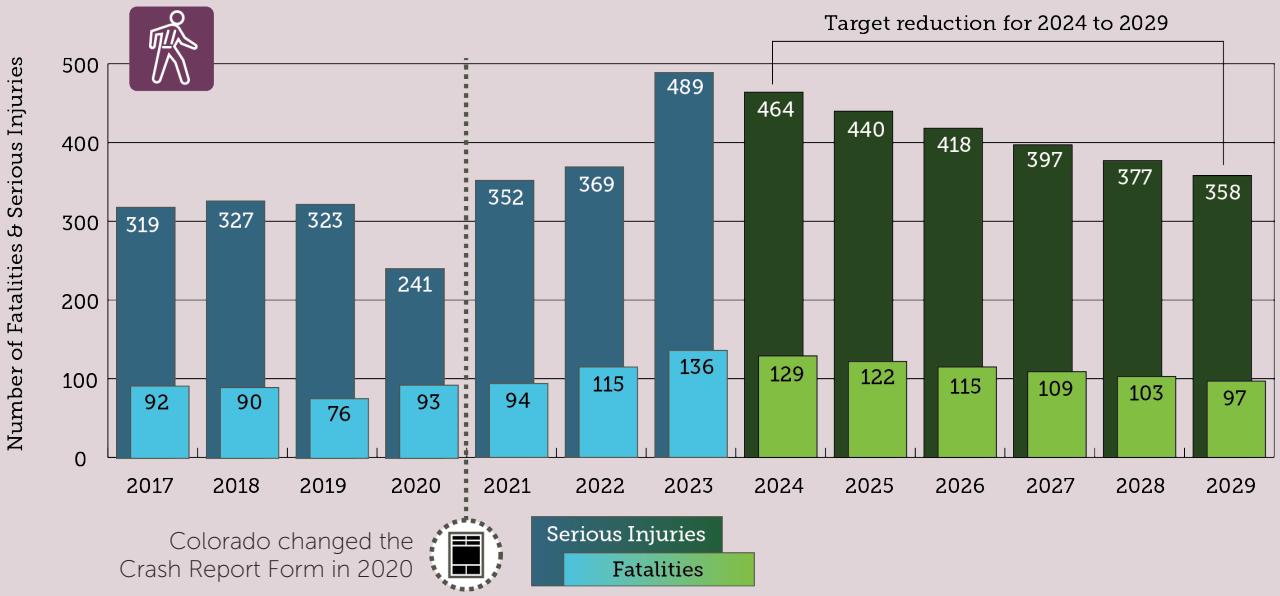
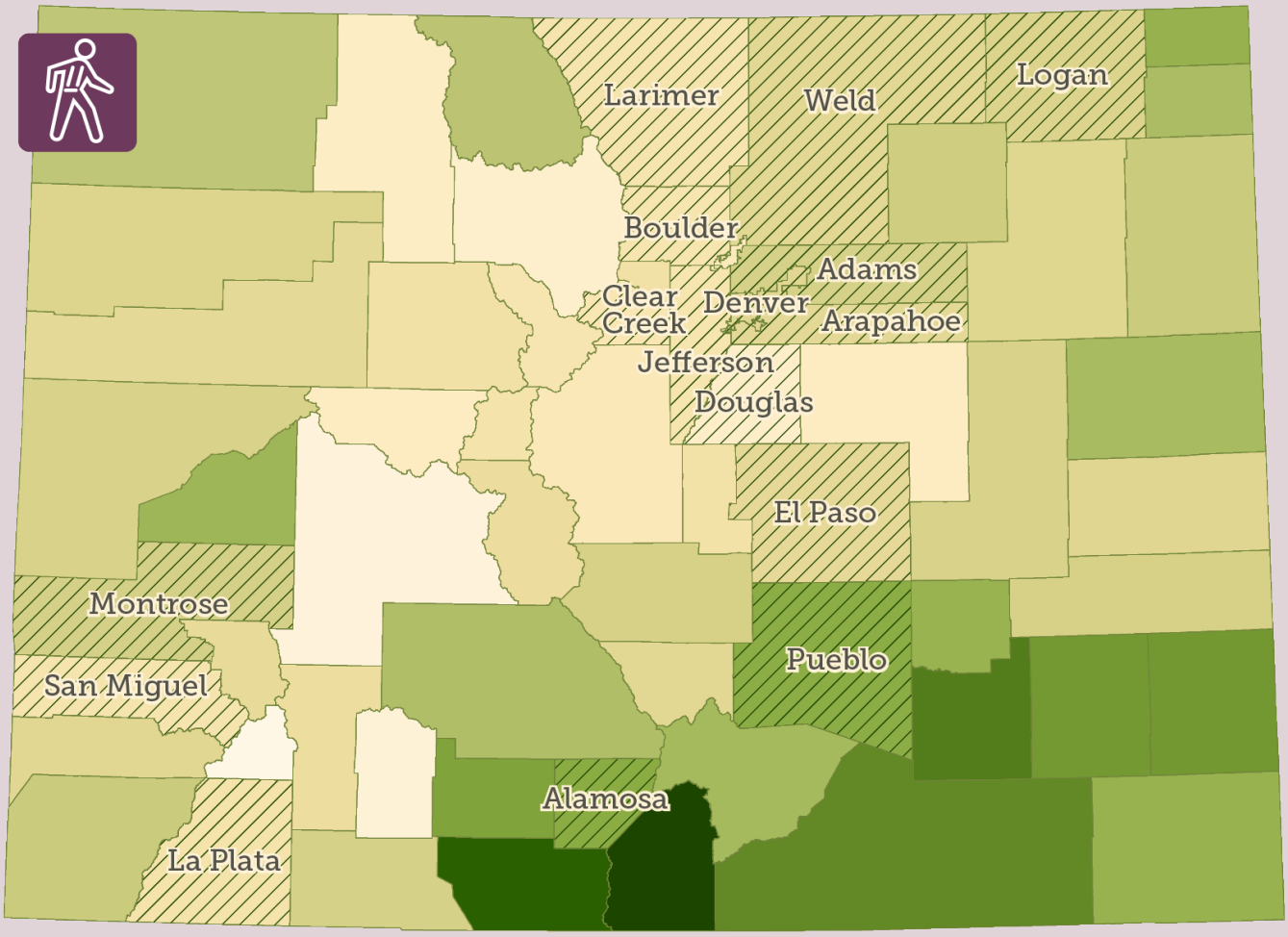


Figure 7-10: Pedestrian-Involved Fatalities and Serious Injuries by Year (2017 to 2023)

Pedestrian fatalities and serious injuries have steadily increased, reaching 625 fatalities and serious injuries in 2023 (Figure 7-10). Although pedestrians are involved in just 1% of crashes, they account for 11% (Figure 7-1) of fatal and serious injury crashes, underscoring the severity of these incidents. Reducing pedestrian crashes will directly lower overall fatalities and serious injuries statewide.

Figure 7-11: Top Counties of Pedestrian-Involved Fatalities and Serious Injuries



Rank	Top Counties Overall	Top Counties per Capita
1	Denver*	Clear Creek
2	Arapahoe*	Denver*
3	Adams*	Pueblo*
4	El Paso	Alamosa
5	Jefferson	Adams*
6	Boulder	San Miguel
7	Pueblo*	Logan
8	Larimer	Montrose
9	Weld	Arapahoe*
10	Douglas	La Plata

* represented in both top and per capita categories

Map Legend

Weighted TDI Score

Low — High

Diagonal Striping = Top 10 overall and/or per capita counties

This map shows the Transportation Disadvantage Index (TDI) and labels the top 10 counties for total fatalities and serious injuries, along with the top 10 counties with the highest per-capita impact among relevant demographics. The table provides rankings for both categories.

Figure 7-11 shows a map identifying the counties with the highest transportation disadvantage, as well as the counties with the highest pedestrian fatalities and serious injuries and the highest rates per capita. Counties with the highest number of pedestrian fatalities and serious injuries are the counties with more urban areas, mostly the counties surrounding Denver. Two counties of note are Pueblo and Alamosa as these are counties with higher TDI scores and higher levels of pedestrian fatalities and serious injuries.

About 50% of severe pedestrian crashes occur at intersections, and nearly 90% occur in urban areas, highlighting, in particular, that urban intersections are among the most high-risk locations. Working-aged adults (aged 21-64) account for the highest rate of fatalities and serious injuries per capita. There is insufficient pedestrian exposure data to truly identify the ages of pedestrians at the highest risk. As a result, one strategy is to build more complete data around pedestrian exposure.

Designers, pedestrians, and drivers all influence roadway safety, and a shared responsibility is essential to reducing crashes. According to crash reports, over 60% of fatal pedestrian crashes and 47% of serious injury pedestrian crashes involved instances where pedestrian facilities (e.g., crosswalks) were not used as designed. This shows the need for education for both drivers and pedestrians on the use of pedestrian facilities, as well as the need for improved pedestrian facilities that are easy and safe to use.

Pedestrian safety is influenced by many factors, including infrastructure design, vehicle speed, and access to safe crossings—elements that are especially important in urban areas and locations where a larger percentage of residents utilize active transportation modes. Targeted holistic improvements can support pedestrian safety including infrastructure improvements, education campaigns for both drivers and pedestrians, and policies that promote access to transportation options other than driving.

Because pedestrians are more vulnerable in crashes and face a higher likelihood of severe injury or death, minimizing pedestrian-vehicle conflicts—especially at intersections—is critical. Investing in safer crossings, traffic-calming measures, and community-driven safety programs can help reduce risks. Ensuring that safety improvements reflect the needs of target communities will help support effective safety solutions.

In 2009, Colorado adopted a new bicycle and pedestrian policy, Policy Directive 1602. This Policy Directive states “The needs of bicyclists and pedestrians shall be included in the planning, design, and operation of transportation facilities, as a matter of routine. A decision to not accommodate them shall be documented based on the exemption criteria in the procedural directive.” Moving forward, it is key that Colorado continues to address bicycles and pedestrians in all transportation facilities as a priority and not a second thought.

Pedestrian Strategies

Strategies to improve pedestrian safety are combined with strategies to improve bicyclist safety. Refer to the following Bicyclists Focus Area for more details on pedestrian and bicyclist strategies.

Bicyclists

Focus Area Definition: Crashes that involve bicyclists being struck by vehicles.

Focus Area Goal: Reduce the number of fatalities and serious injuries that involve bicyclists by five percent from the previous year through 2029.

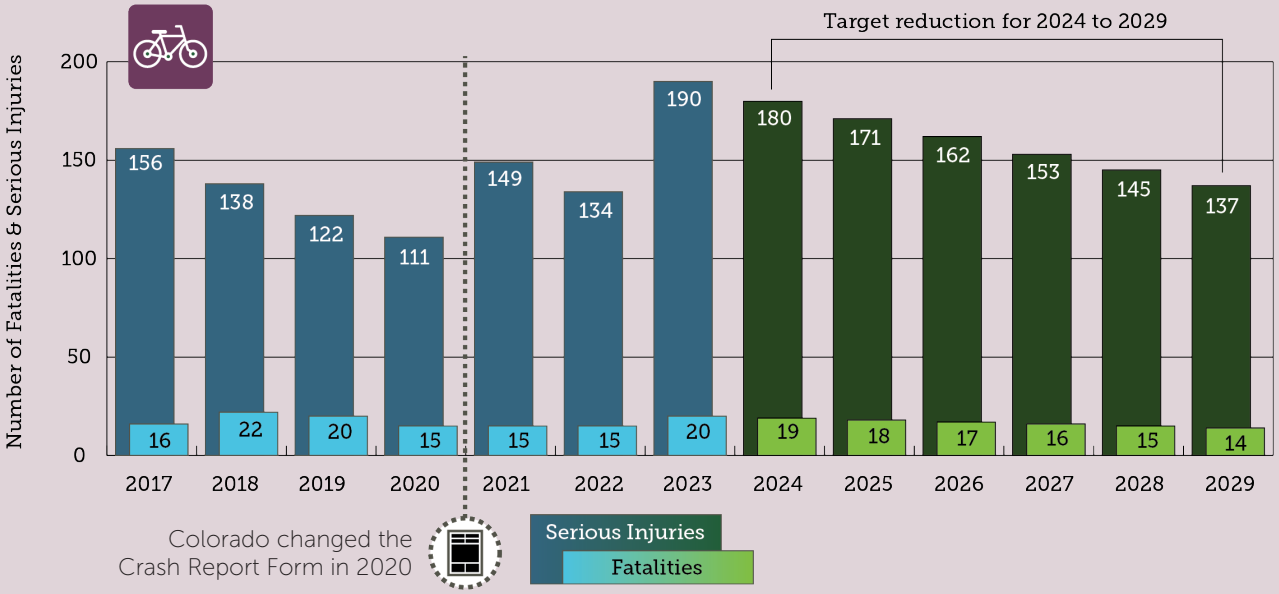


Figure 7-12: Bicyclist-Involved Fatalities and Serious Injuries by Year (2017 to 2023)

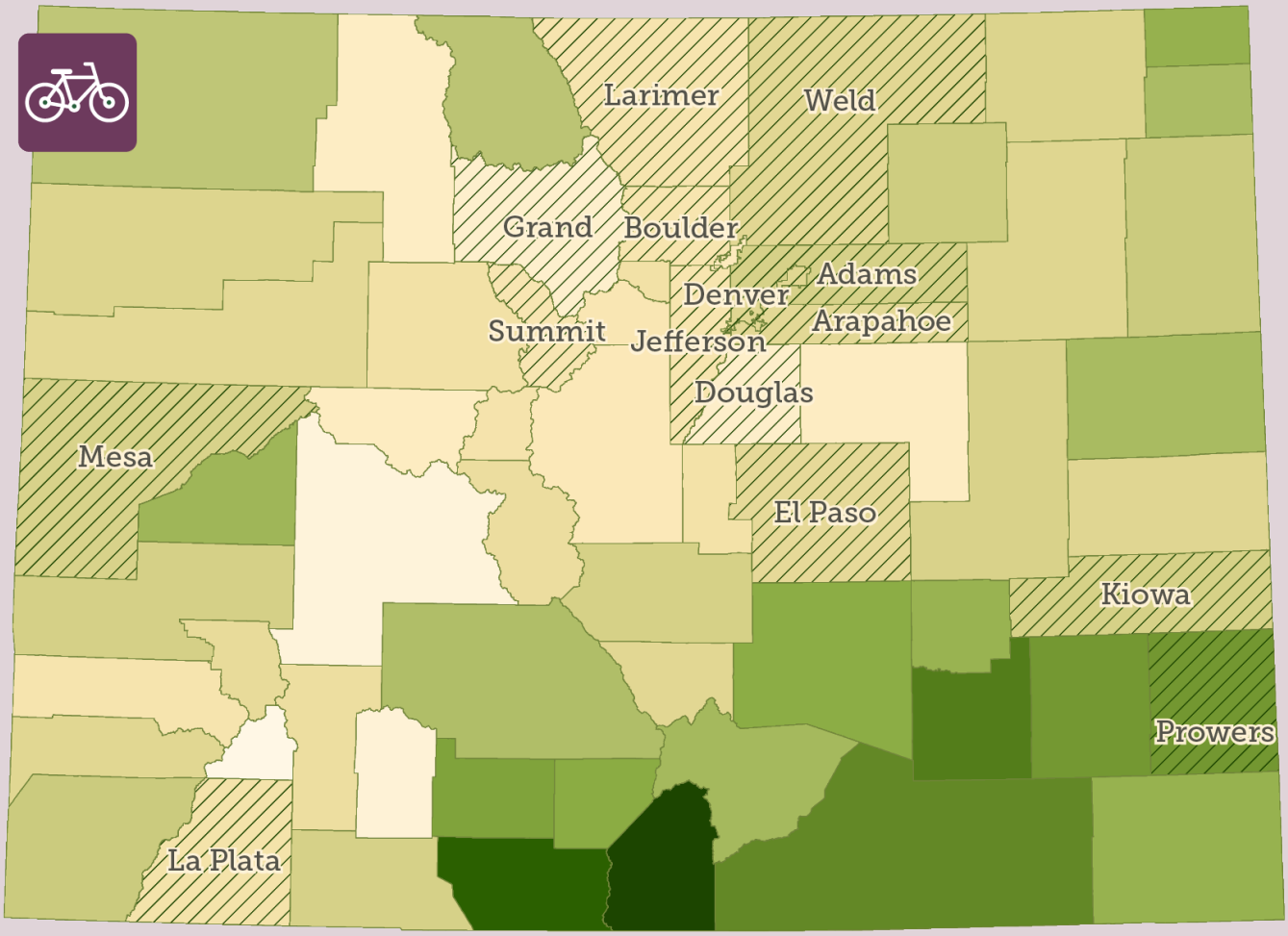
Figure 7-12 shows a sharp rise in bicyclist fatalities and serious injuries in 2023, totaling 210.

Figure 7-13 shows a map identifying the counties with the highest transportation disadvantage, as well as the counties with the highest bicyclist fatalities and serious injuries and the highest rates per capita. Similar to the pedestrian crashes, the highest number of bicyclist fatalities and serious injuries are the counties with more urban areas, mostly the counties surrounding Denver. Prowers County is the only identified county with a high TDI score and high levels of bicyclist fatalities and serious injuries.

Intersections pose the highest risk for bicyclists, accounting for 59% of serious injury crashes and 67% of fatal crashes involving bicyclists. Nearly 90% of fatal and serious injury bicyclist crashes occur in urban areas, making them a priority for safety improvements.

Similar to pedestrians, bicyclists are more vulnerable in crashes and face a higher likelihood of severe injury or death; minimizing bicycle-vehicle conflicts—especially at intersections—is critical. Investing in improved bicyclist infrastructure, traffic-calming measures, separated bike lanes, and community-driven safety programs can help reduce risks. Additionally, ensuring that outreach efforts engage and reflect the needs of all communities, especially those that experience high rates of fatalities and serious injuries, will support more effective safety solutions.

Figure 7-13: Top Counties of Bicyclist-Involved Fatalities and Serious Injuries



Rank	Top Counties Overall	Top Counties per Capita
1	Denver*	Kiowa
2	Boulder*	Boulder*
3	Jefferson*	Denver*
4	Larimer*	Larimer*
5	El Paso	Summit
6	Arapahoe	Grand
7	Adams	Prowers
8	Mesa*	Mesa*
9	Douglas	La Plata
10	Weld	Jefferson*

* represented in both top and per capita categories

Map Legend

Weighted TDI Score

Low — High

Diagonal Striping = Top 10 overall and/or per capita counties

This map shows the Transportation Disadvantage Index (TDI) and labels the top 10 counties for total fatalities and serious injuries, along with the top 10 counties with the highest per-capita impact among relevant demographics. The table provides rankings for both categories.

Pedestrian and Bicyclist Strategies

Bicyclist safety strategies focus on infrastructure upgrades and education, aligning with pedestrian safety efforts due to shared challenges.

SP11: Analyze pedestrian and bicycle crash types

Apply the Pedestrian and Bicyclist Crash Analysis Tool (PBCAT) to enhance understanding of VRU crashes.

This strategy applies the Pedestrian and Bicyclist Crash Analysis Tool (PBCAT) to better understand contributing factors and movements for VRU crashes and more accurately match a countermeasure to the safety issue. In addition, this strategy examines existing crash reporting data elements to identify opportunities to enhance the collection of data to better align with PBCAT entry fields.

SP12: Improve VRU exposure data

Improve exposure data to better understand areas at higher risk of VRU crashes.

This strategy aims to improve the data around VRU exposure in order to identify high-risk locations for VRUs by collecting VRU counts in advance of Road Safety Audits (RSA) and Corridor Studies to assess the level of risk for these roadways. This strategy also aims to implement a large-scale active transportation count program or purchase "big data" VRU exposure and origin-destination data.

SP13: Conduct Road Safety Audits (RSAs)

Conduct VRU-specific and/or expanded Road Safety Audits.

Establish an RSA process for the State of Colorado. For VRU specific RSAs, VRU exposure data will be collected prior to performing RSAs. RSAs should also include PBCAT or similar analysis of VRU crashes and an analysis of human and behavioral factors in safety improvement recommendations.

SP14: Perform regional pedestrian/bicyclist studies

Perform studies at the local and regional levels that focus on pedestrian and bicyclist safety.

Perform studies at the regional level, such as those created by CDOT's Regions 1 and 4, or by regional organizations such as Transportation Planning Regions or Metropolitan Planning Organizations, and support local agencies in conducting pedestrian and bicyclist safety studies. This strategy creates a deeper understanding of the state of pedestrian and bicyclist safety through a regional lens, contributing to statewide active transportation programming.

SP15: Analyze VRU crash demographic data

Continue to utilize demographic data to identify community-level risk factors that may be contributing to VRU crashes.

Perform demographic analysis of VRU crashes, and identify communities which are disproportionately impacted by these types of crashes. Relevant data regarding community-level data sources can help identify additional risk factors that may be contributing to high rates of VRU crashes in the specified communities. When considering VRU safety infrastructure improvement projects, these additional factors may be crucial for reducing crashes and relevant perspectives should be considered throughout all stages of project development.

SP16: Conduct VRU before-and-after studies

Continue to evaluate implemented safety projects and identify the most successful project types.

This strategy aims to continue to evaluate VRU safety projects using before-and-after studies and offer support to local agencies to perform their own before-and-after studies. The overall goal of this strategy is to compile a statewide database to build a Colorado-specific list of countermeasures proven to work.

SP17: Educate traffic safety professionals on VRU best practices

Work to continually educate traffic safety professionals on new VRU concepts and design strategies.

Bring VRU safety educational opportunities to Colorado such as CDOT and the Federal Highway Administration (FHWA) trainings on bicycle and pedestrian design, Complete Streets, and the Safe System Approach (SSA). Ensure jurisdictional personnel are provided with adequate time and support to attend and invite consultants to participate.

SP18: Inventory VRU infrastructure

Update and maintain the existing inventory of active transportation facilities on the state highway system and owned or maintained by local jurisdictions.

This strategy aims to build an inventory of active transportation facilities on the state highway system. This includes surveying local jurisdictions to determine which ones maintain active transportation facility inventories and assisting jurisdictions who are not already maintaining an inventory of active transportation facilities in creating one.

SP19: Expand VRU data sources

Expand data sources in the VRU safety assessment to include all crash types to enable a proactive approach to VRU safety.

In the 2023 Colorado VRU Safety Assessment, only VRU fatal and serious injury crashes were analyzed, which led to a much smaller dataset for identifying top contributing factors and priority locations and limiting other data analyses. This strategy aims to focus future VRU data analysis efforts on all VRU crash types enabling a more complete understanding of VRU safety around the state.

SP20: Evaluate VRU priority locations

Work to continually identify and address priority locations for VRU safety.

This strategy focuses on continuing to identify priority locations for VRU safety and address the safety needs. This includes monitoring and analyzing the safety impacts of completed projects with VRU infrastructure improvements. This also includes utilizing FHWA's Proven Safety Countermeasures to address location-specific needs based on the PBCAT analysis, exposure data, land use, trip generators, and near-miss data.

Work Zones

Focus Area Definition: Crashes occurring in work zones.

Focus Area Goal: Reduce the number of severe crashes occurring in work zones by five percent from the previous year through 2029.

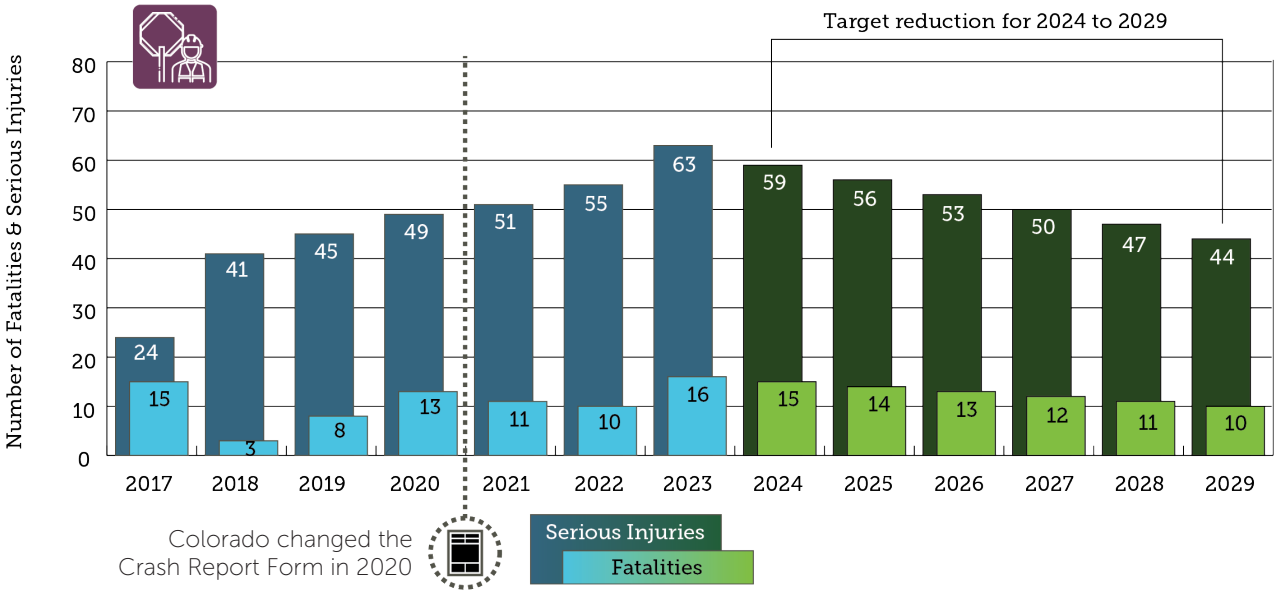
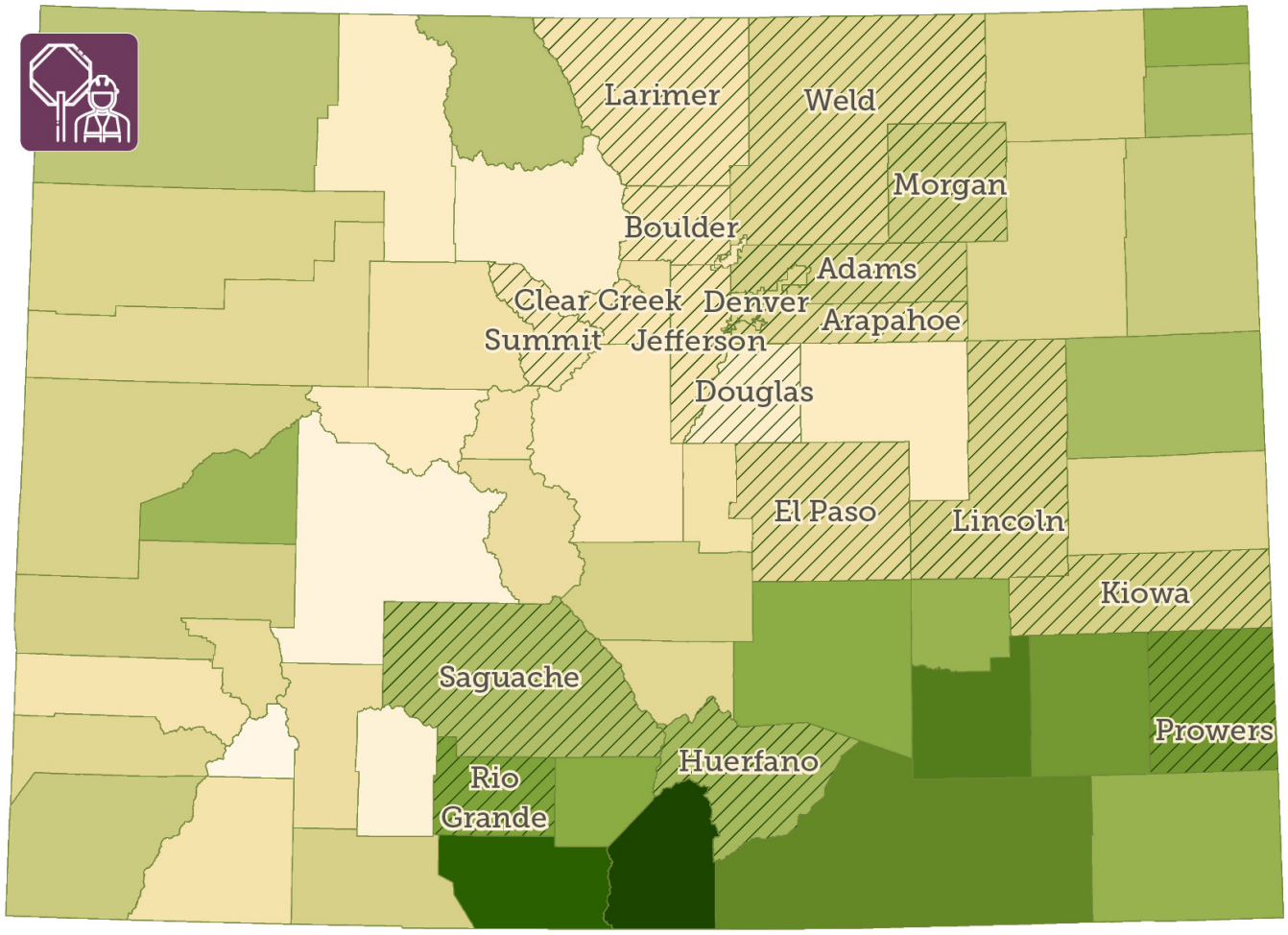


Figure 7-14: Work zone-Involved Fatalities and Serious Injuries by Year (2017 to 2023)

Work Zones are a area with limited available data, as Colorado's crash report form only began tracking work zone related crashes in 2021. Since that time, fatalities and serious injuries in work zones have steadily increased, reaching 79 in 2023, up from 65 in 2022 (Figure 7-14).

Figure 7-15 shows a map identifying the counties with the highest transportation disadvantage, as well as the counties with the highest work zone-involved fatalities and serious injuries and the highest rates per capita. The highest number of work zone-involved fatalities and serious injuries tend to be urban counties.

Figure 7-15: Top Counties of Work Zone-Involved Fatalities and Serious Injuries



Rank	Top Counties Overall	Top Counties per Capita
1	Larimer*	Kiowa
2	El Paso	Clear Creek
3	Douglas	Lincoln
4	Adams	Saguache
5	Denver	Huerfano
6	Weld	Morgan
7	Jefferson	Summit*
8	Arapahoe	Prowers
9	Boulder	Rio Grande
10	Summit*	Larimer*

* represented in both top and per capita categories

MAP LEGEND

Weighted TDI Score

Low — High

Diagonal Striping = Top 10 overall and/or per capita counties

This map shows the Transportation Disadvantage Index (TDI) and labels the top 10 counties for total fatalities and serious injuries, along with the top 10 counties with the highest per-capita impact among relevant demographics. The table provides rankings for both categories.

Although work zone crashes account for fewer fatalities and serious injuries than other Focus Areas, their rapid increase is concerning. The primary causes remain unclear, but speed discrepancies and irregular traffic patterns are major contributors. A deeper understanding of these factors is crucial to addressing, mitigating, and reducing work zone crashes.

Work Zone Strategies

SP21: Create work zone safety committee

Form a work zone safety committee to analyze available data, share lessons learned, and improve best practices.

As work zone crashes become a growing traffic safety issue in Colorado and with the addition of this data point on the DR3447 Crash Form, this strategy aims to identify key contributing factors and develop effective solutions.

First Responders

Focus Area Definition: Crashes involving first responders.

Focus Area Goal: Reduce the number of severe crashes that involve first responders by five percent from the previous year through 2029.

First responders are individuals that respond in a professional capacity to a public safety emergency. Examples include but are not limited to law enforcement, firefighters, and emergency medical technicians. Due to the dangerous environment where these individuals often work, such as high-speed roadways, this Focus Area promotes keeping first responders safe as they support others on the road. In 2023, Colorado expanded HB23-1123 Slow Down Move Over law to better protect individuals and vehicles on the roadside. This law requires all motor vehicle drivers to move to one lane apart from a stationary motor vehicle when the stationary motor vehicle has its hazard lights activated. If a driver cannot move to be one lane apart from the stationary motor vehicle, the driver must slow down and drive at a safe speed.[9]

The Colorado Standing Committee on First Responder Safety leads statewide efforts to enhance first responder protection through joint Traffic Incident Management training, improved quick clearance techniques, and public education on safe driving near roadside incidents. The strategies in this Focus Area continue supporting the committee's initiatives and collaboration with first responders to create safer roadways to ensure the safest possible roadway environment for all emergency personnel. For information regarding Traffic Incident Management, see Chapter 9 Post-Crash Care.

First Responder Strategies

SP22: Provide resources and support for first responders

Continue providing resources and technical support to strengthen the Colorado Standing Committee on First Responder's efforts in improving first responder safety.

The Colorado Standing Committee on First Responder Safety is responsible for the development and execution of the Traffic Incident Management Strategic Plan For Colorado, which was most recently updated in 2022. To avoid duplication of efforts, the SHSP supports the activities of the Colorado Standing Committee on First Responder Safety and the priorities outlined in the Traffic Incident Management Strategic Plan For Colorado.

9 Move Over or Slow Down Stationary Vehicle, HB23-1123 (2023). https://leg.colorado.gov/bills/hb23-1123