



MOVING TOWARDS  
**ZERO**  
DEATHS

# COLORADO STRATEGIC HIGHWAY SAFETY PLAN

*prepared for*  
**Colorado Department of Transportation**

*October 2014*

*Prepared for:*  
**Colorado Department of Transportation**  
**Traffic and Operations**

**October 2014**

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*Image courtesy of Dave Hattan, FHU.*



## EXECUTIVE SUMMARY

Colorado has made tremendous progress in reducing the deaths and preventable injuries caused by traffic crashes. In the last 10 years (2002 to 2012), traffic-related fatalities in Colorado dropped 36 percent and serious injuries declined 35 percent. This is a remarkable achievement considering the continued growth in the state with new residents, businesses, and visitors joining the millions that travel Colorado roads and highways each year to enjoy our beautiful surroundings.

Hundreds of safety professionals from every corner of the state collaborated to develop a Strategic Highway Safety Plan (SHSP) to keep Colorado moving – Towards Zero Deaths. Colorado is ready to meet this challenge.

Towards Zero Deaths, or TZD, is not just a slogan – it is a realistic movement that recognizes the objective for every individual, every family and every community should be zero deaths on Colorado’s transportation network. Roadway users, motorists and non-motorists alike, expect that they are going to arrive at their destination safely. Nobody expects to be involved in a crash, for example, when they get in their car, walk, or bike to work. This document represents our collective aspiration to make travel in Colorado as safe as possible by reducing crashes, injuries, and *Moving Colorado Towards Zero Deaths*.

Colorado’s updated SHSP builds on the success of the past and the state’s previous Strategic Plan for Improving Roadway Safety (SPIRS) adopted on October 1, 2006. This SHSP provides innovative, data-driven approaches to address issues that can impact traffic safety including emerging issues such as the change in Colorado’s marijuana laws. This SHSP draws on the experience, knowledge, and expertise of a multidisciplinary group of government agencies and private sector organizations committed to the TZD goal, and relies on their continued commitment and tireless efforts to achieve our collective goal, *Moving Towards Zero Deaths*.

## Executive Summary

The SHSP provides the direction to guide Colorado's traffic investments, policies, programs and decisions for the next five years (2015 to 2019) in eight key "emphasis areas"-

- Aging Road Users (65+);
- Bicyclists and Pedestrians;
- Data;
- Impaired Driving;
- Infrastructure - Rural and Urban;
- Motorcyclists;
- Occupant Protection;
- Young Drivers (15-20); and
- Distracted Driving Task Force.

Since Colorado does not currently have sufficient data on distracted driving, a Task Force was formed to develop a definition for distracted driving and conduct research to identify effective countermeasures.

Through the SHSP update process, Colorado developed a bold vision for transportation safety in the State: *"The future for Colorado is zero deaths so all travelers, whether they drive, walk, ride, or bike, arrive at their destinations safely."* A supporting mission statement was adopted to achieve this vision: *"Colorado will promote a safety culture to save lives and reduce the human, social, and economic costs of crashes through the outreach and collective action of engineering, education, enforcement, and emergency medical services as outlined in the Strategic Highway Safety Plan (SHSP)."*

To demonstrate and measure progress, realistic interim goals were established for fatalities, serious injuries, fatality rate, and serious injury rate. These goals are to reduce fatalities from 548 in 2008 to 416 in 2019; reduce serious injuries from 3,580 in 2008 to 2,578 in 2019; reduce the fatality rate from 1.15 in 2007 to 0.88 in 2019; and reduce the serious injury rate from 7.5 in 2008 to 5.5 in 2019.

A great deal of time and hard work went into developing the strategies and action steps for the SHSP because safety stakeholders recognize it can no longer be business as usual. **For Colorado to achieve realistic reductions in traffic-related fatalities and serious injuries, everyone - whether they drive, walk, ride, or bike - must keep the TZD goal foremost in their mind every trip, every time.**

We invite you to read how Colorado will continue our traffic safety progress over the next five years and join us in staying safe on the roads and *Moving Colorado Towards Zero Deaths*.

## SHSP EXECUTIVE COMMITTEE

Members of the SHSP Executive Committee oversee the SHSP update and implementation process. A complete description of their roles appears in Appendix under Update Process.

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*Colorado Department of Transportation*

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*Program Delivery Team Leader*

*Federal Highway Administration*

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*Senior Director*

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*Chief*

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*Director*

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*Director*

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*Management & Operations*

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*Federal Highway Administration*

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*Safety/Traffic Engineer*

*Federal Highway Administration*

**Bill Watada**

*Region Administrator*

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## SHSP STEERING COMMITTEE

Members of the SHSP Steering Committee provide day-to-day guidance for the SHSP. A complete description of their roles and responsibilities appears in the Appendix under Update Process.

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*Environment*

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*Engineers*

**Mark Radtke**

*Colorado Municipal League*

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*Region 3*

*Colorado Department of Transportation*

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*Federal Highway Administration*

**Leslie Nelson-Taullie**

*National Highway Traffic Safety Administration*



## THANK YOU TO HIGHWAY SAFETY PARTNERS

The update of the Strategic Highway Safety Plan (SHSP) was possible due to the hard work and dedication of hundreds of safety stakeholders from every region of Colorado. These stakeholders devoted their time and energy to provide their ideas and establish implementable action plans that will continue the positive trend of reducing fatal, major, and all other crashes in the state. Each of the agencies and organizations listed here work diligently every day to improve safety on Colorado's roads and highways. We thank them for their ongoing support and willingness to continue working together to take the SHSP to the next level in implementation. A special thanks goes to the members of the Executive Committee and Steering Committee who provided the critical leadership and oversight to the update process.

AAA	Colorado Local Technical Assistance Program (LTAP)
AARP	Colorado Municipal League
Adams County Transportation Department	Colorado Springs Police Department
Aging Well Jefferson County	Colorado State Patrol
Amelie Company	Colorado State University Police Department
Arapahoe County	Colorado Teen Driving Alliance
Arapahoe County Sheriff's Office	Colorado Transportation Commission
Avon Police Department	Conservation Innovation Grants
Bicycle Colorado	Crossroads Turning Points, Inc.
Bike Clear Creek County	Delta County Public Health
Bike Fort Collins	Denver Regional Council of Governments
Bike Jeffco	Department of Public Health and Environment
Broomfield Police Department	Department of Public Safety, Office of Research and Statistics
Brain Injury Alliance of Colorado	Department of Revenue, Division of Motor Vehicles
Broomfield LCC	Department of Transportation
Central Front Range Transportation Planning Region	CDOT Regions
City of Aspen	Division of Operations
City of Aurora	Division of Transportation Development
City of Boulder	DTD Bicycle/Pedestrian Maintenance
City of Colorado Springs	Office of Transportation Safety
City of Canon City	Safety and Traffic Engineering Branch
City of Delta	Development Construction Services
City of Durango	Donor Alliance
City of Fort Collins	Douglas County
City of Grand Junction	Drive Smart Colorado
City of Lafayette	Drive Smart Evergreen
City of La Junta	Drive Smart Weld County
City of Lone Tree	DUID Victim Voices
City of Loveland	Durango Development
City of Montrose	Durango Wheel Club
City of Pueblo	East High School Student Council
City of Steamboat Springs	Eastern Transportation Planning Region
Colorado Association of Road Supervisors and Engineers	Encana Oil & Gas, Inc.
Colorado Center for Law and Policy	Federal Highway Administration
Colorado Commission on Indian Affairs	Foothills Regional Emergency Medical and Trauma Advisory Councils
Colorado Cross-Disability Coalition, Atlantis Community	Grand Junction Police Department
Colorado Driving Institute	Grand Valley Bikes
Colorado Health Information Dataset	Grand Valley Metropolitan Planning Organization
Colorado Judicial Branch, State Court Administrator's Office	Grand Valley Regional Transportation Committee
Colorado Lifesaver	Gunnison Valley Transportation Planning Region

## Executive Summary

Hinsdale County Sheriff's Office  
Hispanidad  
Intermountain Transportation Planning Region  
Jefferson County Public Health  
Jefferson County LCC  
LaPlata County  
La Plata County Sheriff's Office  
Larimer County  
MADD Colorado  
Master Drive  
Memorial Hospital  
Mesa County  
National Highway Traffic Safety Administration  
North Front Range Metropolitan Planning Organization  
Northwest Transportation Planning Region  
Office of Congressman Scott Tipton  
Office of Mesa County Commissioner Steve Acquafresca  
Otero County  
PACE  
Penrose St. Francis Hospital  
Pikes Peak Area Council of Governments  
Pitkin County  
Pueblo Active Community Environment  
Pueblo Area Council of Governments  
Pueblo School District 60  
Saguache County Road and Bridge/CARSE Regional Transportation District  
Roaring Fork Transportation Authority  
Rocky Mountain Insurance Information Association  
SAFEKids Colorado  
San Juan Basin Health Department  
San Luis Valley Transportation Planning Region  
Share the Road Initiative  
South Central Council of Governments  
South Central Transportation Planning Region  
Southeast Transportation Planning Region  
Southern Ute Indian Tribe  
Southern Ute Community Action Programs  
Southwest Center for Independence  
Southwest Transportation Planning Region  
Speak Now Colorado  
Statewide Traffic Records Coordinating Committee (STRAC)  
Statewide Transportation Advisory Committee (STAC)  
Summit County  
Swedish Medical Center  
The Children's Hospital  
Town of Castle Rock  
Town of Parker  
Town of Castle Rock  
UCHealth/Safe Kids Larimer County  
University of Colorado, Denver  
Upper Front Range Transportation Planning Region  
Urban Trails Committee  
U.S. Defenders, Coalition of Independent Riders (COIR), COC  
U.S. Forest Service, USDA  
Ute Water  
Walk Denver  
Western Regional EMS Council, Inc.  
White River National Forest  
WPX Energy  
911 Driving School

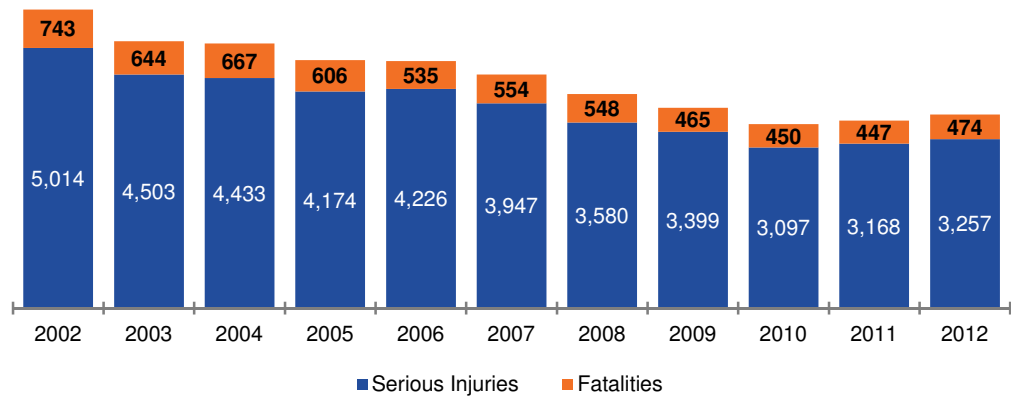
This is not a plan written to sit on the shelf. It is a plan of action that will carry the safety message forward for the next five years. The ability to put the plan into action requires participation from all safety stakeholders. State and local agencies, municipalities, counties, private sector non-profits and organizations, corporations and businesses, and individual residents all benefit from a safe highway transportation system. We invite everyone interested in traffic safety to get involved by sending a message to [dot\\_shsp@state.co.us](mailto:dot_shsp@state.co.us).



# INTRODUCTION

Colorado has made tremendous progress in reducing the deaths and preventable injuries caused by traffic crashes. In the last decade (2002 to 2012), traffic-related fatalities in Colorado dropped 36 percent and serious injuries declined 35 percent as shown in Figure 1.

**Figure 1. Fatalities and Serious Injuries**  
2002 to 2012



There are however, warning signs of possible increases in traffic crashes in the future. Colorado is meeting this challenge through the updated Strategic Highway Safety Plan (SHSP) that builds on the success of the past and the state’s previous Strategic Plan for Improving Roadway Safety (SPIRS) adopted on October 1, 2006. The update, which is required by the Federal Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) law, provided an opportunity to assess progress and reconsider the state’s traffic safety priorities. The final result is the SHSP, a coordinated plan to guide investments and decisions that integrate national, state, and regional safety plans and performance targets. The SHSP:

## Introduction

- Employs a data-driven and evidence-based process;
- Focuses on key priorities and emphasis areas;
- Seeks ideas and input from public and private stakeholders;
- Develops strategies, actions, and implementation plans with safety partners; and
- Establishes performance targets, strategies, and action steps.

A major part of the update process was a review of pertinent data to identify the state's most serious traffic safety problems. Based on their review, members of the SHSP Executive and Steering Committees selected the following emphasis areas for the plan:

- Aging Road Users (65+);
- Bicyclists and Pedestrians;
- Data;
- Impaired Driving;
- Infrastructure – Rural and Urban;
- Motorcyclists;
- Occupant Protection;
- Young Drivers (15–20); and
- Distracted Driving Task Force.

The Steering Committee discussed distracted driving to determine if it should be an emphasis area. The state does not currently have sufficient data on distracted driving to create a separate emphasis area, mainly because it is difficult to prove a driver was distracted at the time of a crash. However, given the importance of the issue, the Steering Committee decided to form a Distracted Driving Task Force to develop a definition for distracted driving and conduct research to identify effective countermeasures.



## VISION, MISSION, AND GOAL

To guide the SHSP, leadership from the Executive and Steering Committees reaffirmed a vision of a state where no one would die in traffic-related crashes along with a mission statement detailing how this vision will be accomplished. Stakeholders who participated in regional meetings or a statewide webinar confirmed this approach. A vision statement provides the inspiration and framework for the plan, and the mission statement details the purpose. Both Committees felt strongly that Toward Zero Deaths (TZD) should be the ultimate aspirational vision for the plan, and that realistic and achievable steps should be set for Colorado to move closer to zero deaths.

### VISION

*The future for Colorado is zero deaths so all travelers, whether they drive, walk, ride, or bike, arrive at their destinations safely.*

### MISSION

*Colorado will promote a safety culture to save lives and reduce the human, social, and economic costs of crashes through the outreach and collective action of engineering, education, enforcement, and emergency medical services as outlined in the Strategic Highway Safety Plan (SHSP).*

## GOAL

Hundreds of safety professionals from every corner of the state combined their collective wisdom to develop the SHSP and establish the direction to keep Colorado *Moving Towards Zero Deaths*. Towards Zero Deaths or TZD is not just a slogan, it is a realistic movement that recognizes the goal for every roadway user is zero deaths. Whether driving, riding, walking or biking on Colorado's transportation network, all travelers expect that they, their family members, and their friends are going to get to their destination safely!

The TZD vision is a perfect match for Coloradans who are justifiably proud of the quality of life they enjoy. To underscore its importance and highlight how all Colorado travelers can help



achieve this vision, the SHSP team designed this logo and slogan that leaves no doubt where the state is heading.

The Federal law, Moving Ahead for Progress in the 21st Century Act, or MAP-21, requires states to establish four overall performance targets – the number and rate for both traffic fatalities and serious injuries. In Colorado, a serious injury is defined as an evident incapacitating injury. This is any injury other than a fatal injury which prevents the injured person from walking, driving, or normally continuing the activities he/she was capable of performing before the injury occurred. Incapacitating injuries include severe lacerations, broken or distorted limbs, and internal injuries, as well as an injured party transported to a hospital because of the severity of their injuries.

The SHSP leadership team used the *Moving Towards Zero Deaths* vision to direct the selection of specific fatality and serious injury goals. After considerable consideration of Federal Highway Administration (FHWA), National Highway Traffic Safety Administration (NHTSA), and American Association of State Highway and Transportation Officials (AASHTO) guidance and leadership on goal setting, the Executive Committee and Steering Committee chose the following visionary goals for this plan to continue to move Colorado Towards Zero Deaths.

Nationally, TZD is defined as reducing traffic-related deaths and serious injuries by one-half by 2030. **For Colorado, this means saving an average of one life per month or reducing fatalities from 548 in 2008 to 416 by 2019.** Figure 2 shows the actual reductions in traffic-related fatalities from 2008 to 2013 and the projected reduction goals if the five-year SHSP is tracked on a yearly basis. Recognizing fluctuations will occur, the average reduction in fatalities is 12 per year, or approximately 2.5 percent per year during the life of the plan (2014 to 2019).

**Figure 2. Fatalities**

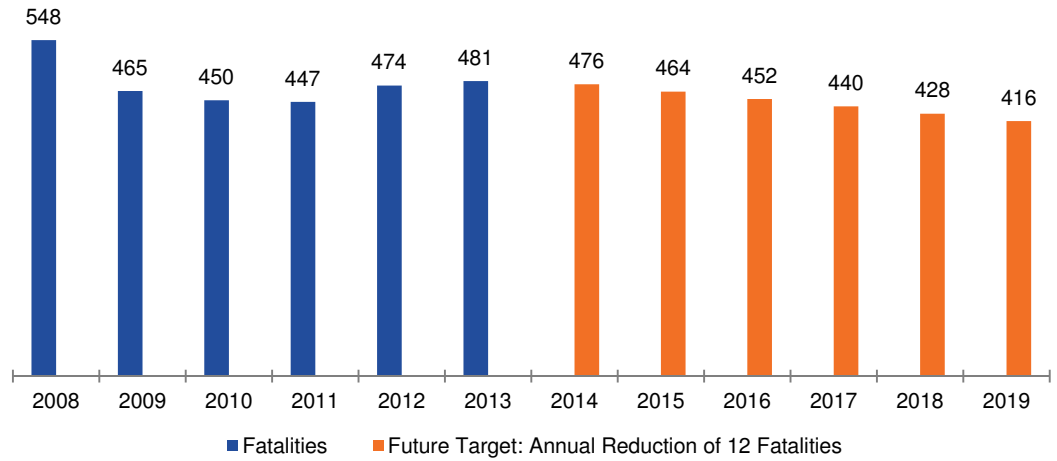
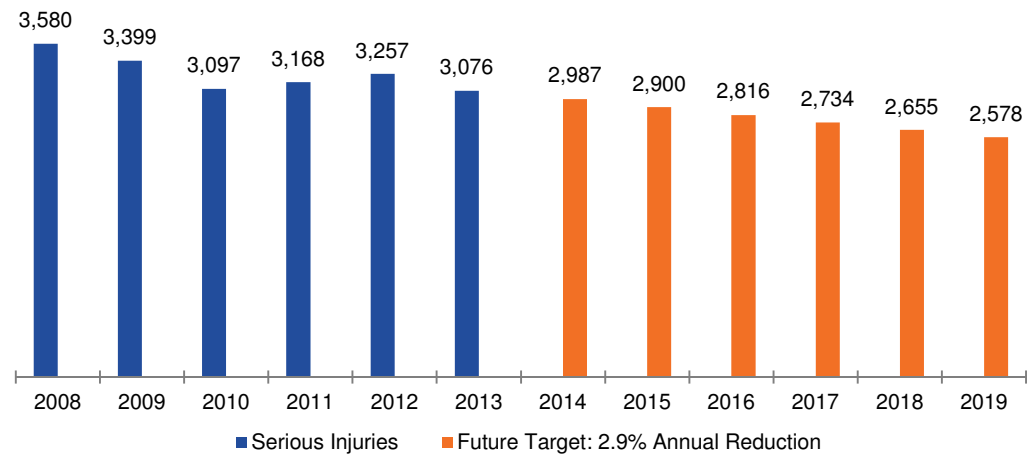


Figure 3 shows the annual serious injury reductions from 2008 to 2013 and the projected reduction goals based on a 2.9 percent per year decrease, again recognizing there will be fluctuations during the five-year life of the plan. This compliments the overall Toward Zero Deaths vision supported by a number of Federal agencies and national traffic safety associations and organizations.

**Figure 3. Serious Injuries**



MAP-21 also requires states to have rate performance targets, which are based on vehicle miles traveled. Figure 4 shows the Colorado reduction goals in fatality rates based on the 2.5 percent per year reduction which would mean a drop from a 1.02 fatality rate in 2013 to .88 in 2019.

Figure 4. Fatality Rate

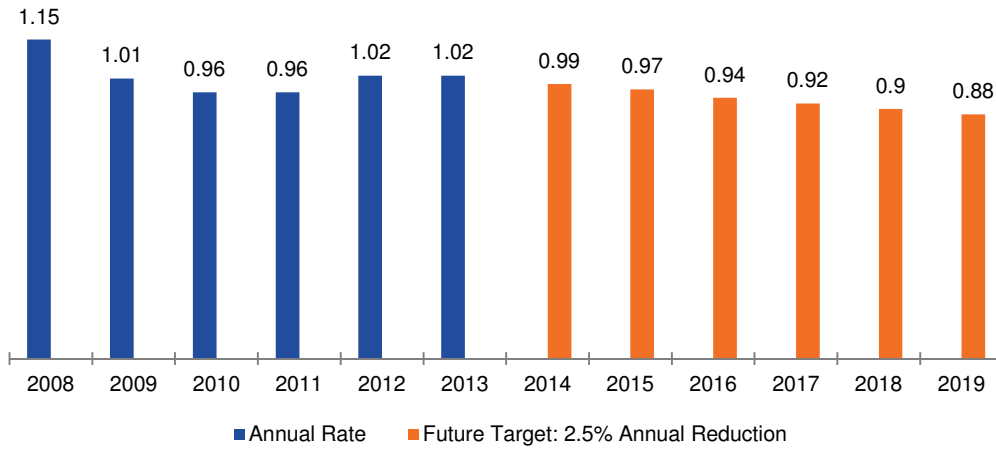
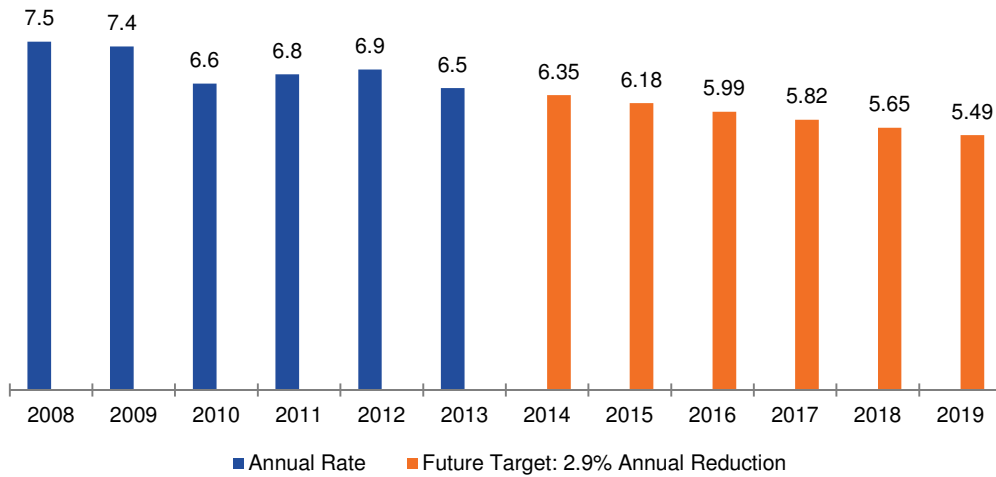


Figure 5 shows the rate reduction goals for serious injuries based on a 2.9 percent per year reduction which translates into a rate reduction from 6.5 in 2013 to 5.49 in 2019.

Figure 5. Serious Injury Rate







## EMPHASIS AREAS

Emphasis areas are a required component of all Strategic Highway Safety Plans and are determined through data analysis and broad stakeholder input. Emphasis areas help direct the state’s resources, and organize stakeholders into teams which concentrate on a strategic problem area and produce an achievable action plan. The emphasis area action plans focus the SHSP implementation efforts on achieving the established goals. The Federal Highway Administration (FHWA) guidance suggests that emphasis areas should reflect “the greatest potential for reducing fatalities and injuries”. In practice, states have identified areas based on a number of factors, including crash reduction potential, stakeholder support, and implementation progress. Common approaches include comprehensively addressing all crash issues; creating a tiered structure based on priority; and grouping related issues within broad categories to help narrow focus.

Colorado used data analysis and stakeholder input to select emphasis areas in the SHSP which include the following:

- Aging Road Users (65+);
- Bicyclists and Pedestrians;
- Data;
- Impaired Driving;
- Infrastructure - Rural and Urban;
- Motorcyclists;
- Occupant Protection;
- Young Drivers (15-20); and
- Distracted Driving Task Force.

## *Emphasis Areas*

If an issue is not listed as an emphasis area it does not mean it will not be addressed either through a strategy or action step in the SHSP or as part of another transportation safety plan. The intent of the SHSP is to focus action where there is the greatest potential for crash reduction.

The emphasis area action plans can be found later in this document. Action plans focus the state's resources where they are most needed and keep the plan alive during the implementation phase. Developed by each emphasis area team, the action plans identify the strategies and action steps that will be implemented to achieve the goals and later evaluated to determine progress. Detailed action plans, which also include action step leaders and timelines for implementation, can be found in a separate SHSP Implementation Plan document. These more detailed plans are "living, breathing" documents which are revised by the teams during implementation as actions are completed and adjusted as needed to achieve the established goals.

Emphasis area goals are not included in the SHSP document. Emphasis area teams will meet once the plan is launched with subject matter experts to review the strategies and action steps in the plan and identify fatality and serious injury targets that reflect the planned approach and effectiveness of crash mitigation. The fatality and serious injury goals along with other outcome and output performance measures will be evaluated annually as a part of the SHSP Evaluation Plan, and coordinated with the SHSP goals.

Following is a brief synopsis of each of the emphasis areas which includes information on the extent of the problem over the last five years, and the strategies in the plan. The total for fatalities and for serious injuries does not add up to 100 percent because traffic fatalities are rarely caused by a single factor, and a fatality and serious injury may be counted in multiple emphasis areas. For instance, a fatality may result when someone speeds through an intersection or runs off the road because they were impaired. An intersection fatality that involves impairment would be counted in both emphasis areas.

Five-Year Trends



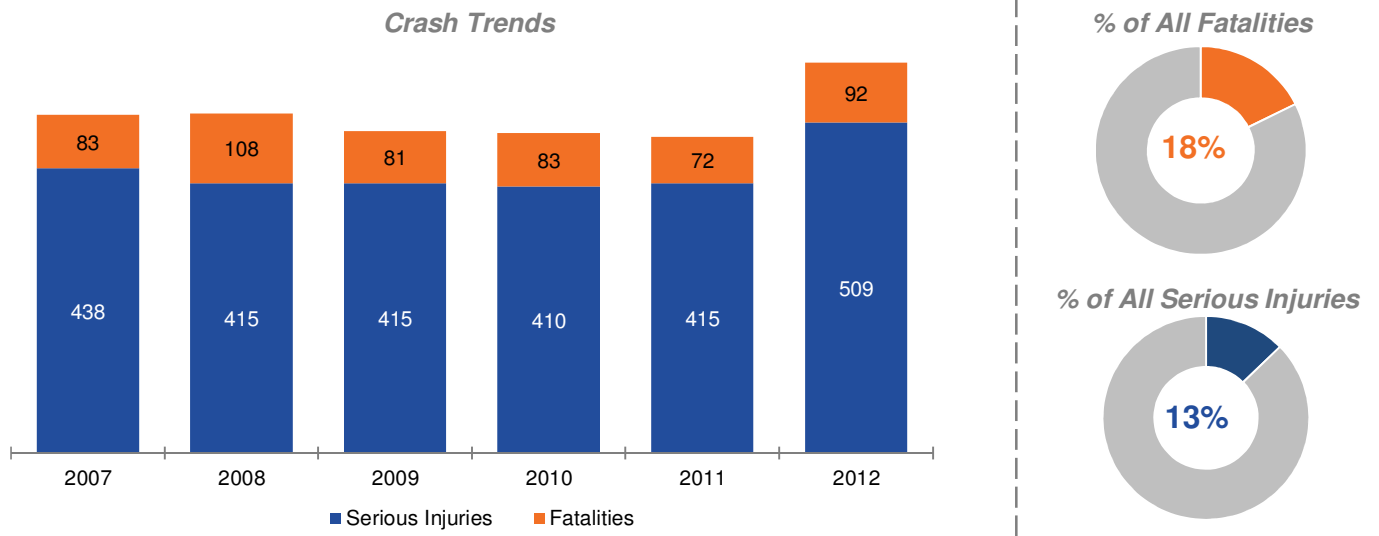
Image courtesy of Dave Hattan, FHU.

**AGING ROAD USERS**

*Note: For all emphasis areas, the trend arrows compare changes which occurred between two five-year periods: 2003-2007 and 2008-2012.*

The Census Bureau estimates the number of people age 65 or older in the U.S. will double by 2030. According to the U.S. Census Bureau, 12.3 percent of the Colorado’s population in 2013 is age 65 or older. According to the FHWA, in 2012 individuals age 65 and over make up over 14 percent of all licensed drivers in the state. Research indicates the current and future population of aging road users will drive more and longer than any generation in history, which will impact the overall transportation system. Aging does have an effect on driving ability. As people age eyesight, flexibility, reaction time, etc., are affected. The key to ensuring the safety of the aging road user population is to develop a program that enables them to travel as long as it is possible to do so safely. In comparison to the 2003 to 2007 timeframe, fatalities involving one or more drivers age 65 or older increased nearly 2 percent (1.9 percent) and serious injuries decreased over 1 percent (1.4 percent) in the most recent five-year period (2008-2012).

**Figure 6. Aging Road User Involved Fatalities and Serious Injuries**  
2007 to 2012



On an annual basis, fatalities resulting from crashes involving one or more drivers age 65 or older increased from 83 in 2007 to 92 in 2012 and represent 18 percent of all fatalities. Serious injuries increased from 438 in 2007 to 509 in 2012 and account for 13 percent of all serious injuries as shown in Figure 6.

**STRATEGIES**

1. Provide education about aging and driving issues and communicate on how to help aging road users stay on the road for as long as they can safely do so.
2. Develop and promote aging road user licensing policies and practices.
3. Improve the safety of the roadway and built environment for aging road users.
4. Identify and promote opportunities for alternative transportation.
5. Establish and maintain partnerships for aging road user safety.